

CONSTRUCTION PLANS FOR FORCE MAIN 32A REPLACEMENT

MANATEE COUNTY, FLORIDA

APRIL 2023

MANATEE COUNTY PROJECT #6110580



PROJECT TEAM:

OWNER:
MANATEE COUNTY
1022 26TH AVE. E.
BRADENTON, FL 34208
CONTACT: TOM GREENE, P.E.
941-708-7450 EXT. 7412

SURVEYOR:
HYATT SURVEY SERVICES, INC.
11007 8TH AVENUE EAST,
BRADENTON, FL 34212
CONTACT: RUSSELL P. HYATT, PSM
941-748-4693

ENGINEER:
KIMLEY-HORN AND ASSOCIATES, INC.
200 CENTRAL AVENUE, SUITE 600
ST. PETERSBURG, FL 33701
CONTACT: MICHAEL A. SEMAGO, P.E.
727-498-3633

GEOTECHNICAL ENGINEER:
ARDAMAN & ASSOCIATES, INC.
1724 BARBER ROAD,
SARASOTA, FL, 34240
CONTACT: JERRY H. KUEHN, P.E.
941-922-3526

UTILITY CONTACTS:

CHARTER COMMUNICATIONS
MICHAEL DECROIX
4145 S FALKENBURG RD.
RIVERVIEW, FL, 33578
727-329-2951

TECO PEOPLE'S GAS
JOAN DOMNING
8416 PALM RIVER RD.
TAMPA, FL 33619
813-275-3783

COMCAST
JOSH DAVIS
12600 WESTLINKS DR
FORT MYERS, FL, 33913
239-253-7642

UNITI FIBER LLC
BOB MENSCHING
200 CUMBERLAND DR.
ST. AUGUSTINE, FL 32095
904-718-8152

FLORIDA POWER AND LIGHT
JOEL BRAY
386-586-6403

MCI/VERIZON BUSINESS
JAMES BARRA
2201 E. TELECOM PKWY
TEMPLE TERRACE, FL 33637
813-928-9881

FRONTIER COMMUNICATIONS
TONI CANNON
3712 W WALNUT ST.
TAMPA, FL 33607
813-875-1014

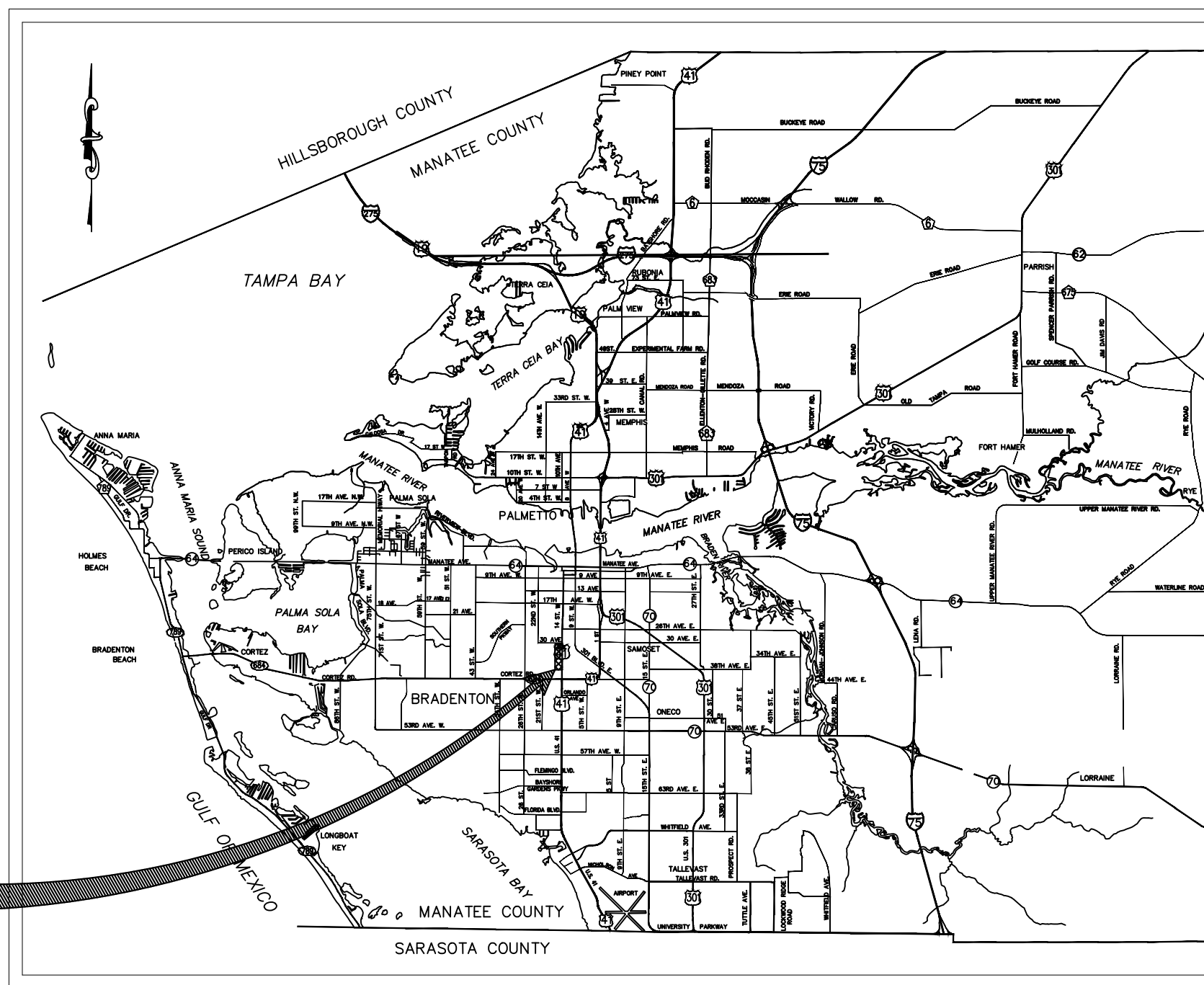
MCI/VERIZON BUSINESS
ANDREW COLE
3550 BUSCHWOOD PARK DR
(#180)
TAMPA, FL 33618
813-847-4037

MANATEE COUNTY
TRANSPORTATION
DEPARTMENT
KATHY MCMAHON
4422-C 66TH ST. W.
BRADENTON, FL 34210
941-792-8811

COBB FENDLEY - ZAYO
BRUCE HERRINGTON
305-456-5100
252-207-2400
BRUCE.HERRINGTON@COBBFENDLEY.COM

MANATEE COUNTY UTILITY
OPERATIONS
KATHY MCMAHON
4422-C 66TH ST. W.
BRADENTON, FL, 34210
941-792-8811

CROWN CASTLE NG
FIBERDIG TEAM
1500 CORPORATE DR.
CANONSBURG, PA 15317
888-632-0931



**SITE
LOCATION**

PROJECT VICINITY MAP

N.T.S.

100% DESIGN

PREPARED BY
Kimley»Horn

© 2023 KIMLEY-HORN AND ASSOCIATES, INC.
200 CENTRAL AVENUE, SUITE 600
ST. PETERSBURG, FL 33701
PHONE (727) 647-3999
WWW.KIMLEY-HORN.COM Registry No. 35106

THE SITE CONSTRUCTION STAKEOUT SHALL BE PERFORMED UNDER THE DIRECTION OF A FLORIDA REGISTERED SURVEYOR. AUTOCAD FILES WILL BE FURNISHED TO AID IN THE SITE CONSTRUCTION STAKEOUT. ANY DISCREPANCIES FOUND BETWEEN AUTOCAD FILES AND SITE CONSTRUCTION PLANS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR CLARIFICATION PRIOR TO THAT STAKEOUT.

No.	REVISIONS	DATE	BY

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DATE APR 2023	PROJECT NO. 148400099	SHEET NUMBER G-1
MICHAEL A. SEMAGO, P.E. FLORIDA LICENSE NUMBER: 87501		DATE:

SHEET LIST TABLE	
Sheet Number	Sheet Title
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G-3	SURVEY AND SUE NOTES
G-4	KEY SHEET
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GENERAL NOTES

1. THE FOLLOWING MANATEE COUNTY VERTICAL CONTROL MONUMENT WAS RECOVERED AND UTILIZED FOR THE ELEVATIONS INDICATED HEREIN: "2014 BELL" NAVD 1988 ELEVATION 16.16'.
2. THIS SURVEY IS REFERENCED TO A GRID PROJECTION OF THE FLORIDA STATE PLANE COORDINATE SYSTEM (WEST ZONE NAD 1983/2011 ADJUSTMENT).
3. THIS IS NOT A BOUNDARY SURVEY. TITLE WORK WAS NOT PROVIDED.
4. THIS SURVEY IS SUBJECT TO PERTINENT EASEMENTS, RIGHTS-OF-WAY AND RESTRICTIONS OF RECORD, IF ANY.
5. THIS SURVEY DRAWING WAS PREPARED FOR THE EXCLUSIVE USE OF THE PARTY OR PARTIES CERTIFIED TO BELOW FOR THE EXPRESS PURPOSE STATED HEREON AND/OR CONTAINED IN THE CONTRACT BETWEEN HYATT SURVEY SERVICES, INC. AND THE CLIENT FOR THIS PROJECT. COPYING, DISTRIBUTING AND/OR USING THIS DRAWING, IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN ORIGINALLY INTENDED WITHOUT WRITTEN CONSENT FROM HYATT SURVEY SERVICES, INC. IS STRICTLY PROHIBITED AND RENDERS THE SURVEYOR'S CERTIFICATION, SIGNATURE AND SEAL NULL AND VOID. ANY QUESTIONS CONCERNING THE CONTENT OR PURPOSE OF THIS DRAWING SHOULD BE DIRECTED TO HYATT SURVEY SERVICES, INC.

LEGEND

- | | | |
|------------------------------|----------------------|--------|
| ● SITE CONTROL POINT | △ SIGN | ✎ PALM |
| ● IRON ROD FOUND | □ WATER METER | ✎ PINE |
| ○ IRON PIPE FOUND | ⊕ WATER VALVE | ○ OAK |
| R/W RIGHT-OF WAY | ⊖ BACKFLOW PREVENTER | ✎ TREE |
| BM BENCHMARK | ⊙ SANITARY MANHOLE | |
| ND NAIL W/ DISC | ⊙ STORM MANHOLE | |
| PID PARCEL IDENTIFICATION | ■ GRATE INLET | |
| N/F NOW OR FORMERLY | ○ CLEANOUT | |
| (TYP) TYPICAL | > WOOD UTILITY POLE | |
| CONC CONCRETE | ⊖ GUY WIRE | |
| RCP REINFORCED CONCRETE PIPE | □ UTILITY RISER | |
| VCP VITRIFIED CLAY PIPE | □ MAILBOX | |
| CMP CORRUGATED METAL PIPE | ⊙ ELECTRICAL MANHOLE | |
| | ⊙ GAS WITNESS | |

SITE CONTROL

DESIGNATION	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM #1	1141535.940	469568.637	15.42'	ND LB 7203
BM #2	1141242.664	469654.962	16.13'	IR LB 7203
BM #3	1140883.647	469559.697	17.35'	IR LB 7203
BM #4	1140345.716	469605.463	17.84'	IR LB 7203

SUE LOCATES

	TYPE OF UTILITY	PIPE DIAMETER	MATERIAL	NORTHING	EASTING	GROUND ELEVATION	DEPTH OF UTILITY
VVH #1	GAS MAIN	1.5"	POLY	469565.8580'	1141054.8910'	16.590'	3.42'
VVH #2	WATER MAIN	6"	ASBESTOS CONCRETE	469566.9020'	1141565.4280'	15.442'	3.43'
VVH #3	WATER MAIN	8"	ASBESTOS CONCRETE	469654.0090'	1141569.0000'	15.515'	2.99'
VVH #4	STORM PIPE	UNK.	RCP	469573.8490'	1141565.7930'	15.205'	6.25'

SEWER STRUCTURES

S1 RIM 16.91' N 10" 11.52' S 15" 11.31'	S2 RIM 16.50' E 8" 5.69' S 8" 5.23' N 8" 5.00'	S3 RIM 15.68' S 8" 4.31' E 8" 4.27'
S4 RIM 15.92' N 8" 1.36' E 8" 1.35'	S5 RIM 18.34' S 8" 6.89' N 8" 6.83'	S6 RIM 15.79' N 8" 0.02' S 8" -0.04'
S7 RIM 15.44' S 8" 5.83' S 8" 2.75' E 8" 2.63' N 8" 2.39'	S8 RIM 15.22' S 8" 2.92' NW 8" 2.73'	S9 RIM 15.17' S 8" -0.74' W 8" -1.03' E 8" -1.14'
S10 RIM 15.14' W 8" -1.19' NE 8" -1.19' S 12" -1.24'	S11 RIM 18.07' E 8" 8.12' S 8" 8.12' N 8" 8.02'	

STORM STRUCTURES

ST1 N 60" RCP 6.39' S 60" RCP 6.26'	ST2 N 15" RCP 11.40' NW 15" RCP 11.38'	ST3 S 60" RCP 5.62' N 60" RCP 5.58'
ST4 N 60" RCP 5.12' S 60" RCP 5.06'	ST5 S 15" RCP 11.86'	ST6 W 18" RCP 14.24' N 60" RCP 5.15' S 60" RCP 4.98'
ST7 N 60" RCP 3.91' S 60" RCP 3.89'	ST8 W 15" RCP 11.71'	

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No.	REVISIONS	DATE	BY



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PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

KHA PROJECT 148400099
DATE APR 2023
SCALE AS SHOWN
DESIGNED BY MAS
DRAWN BY GMB
CHECKED BY JWW



FORCE MAIN 32A REPLACEMENT

MANATEE COUNTY

LICENSED PROFESSIONAL
MICHAEL A. SEMAGO, P.E.
FL LICENSE NUMBER
87501

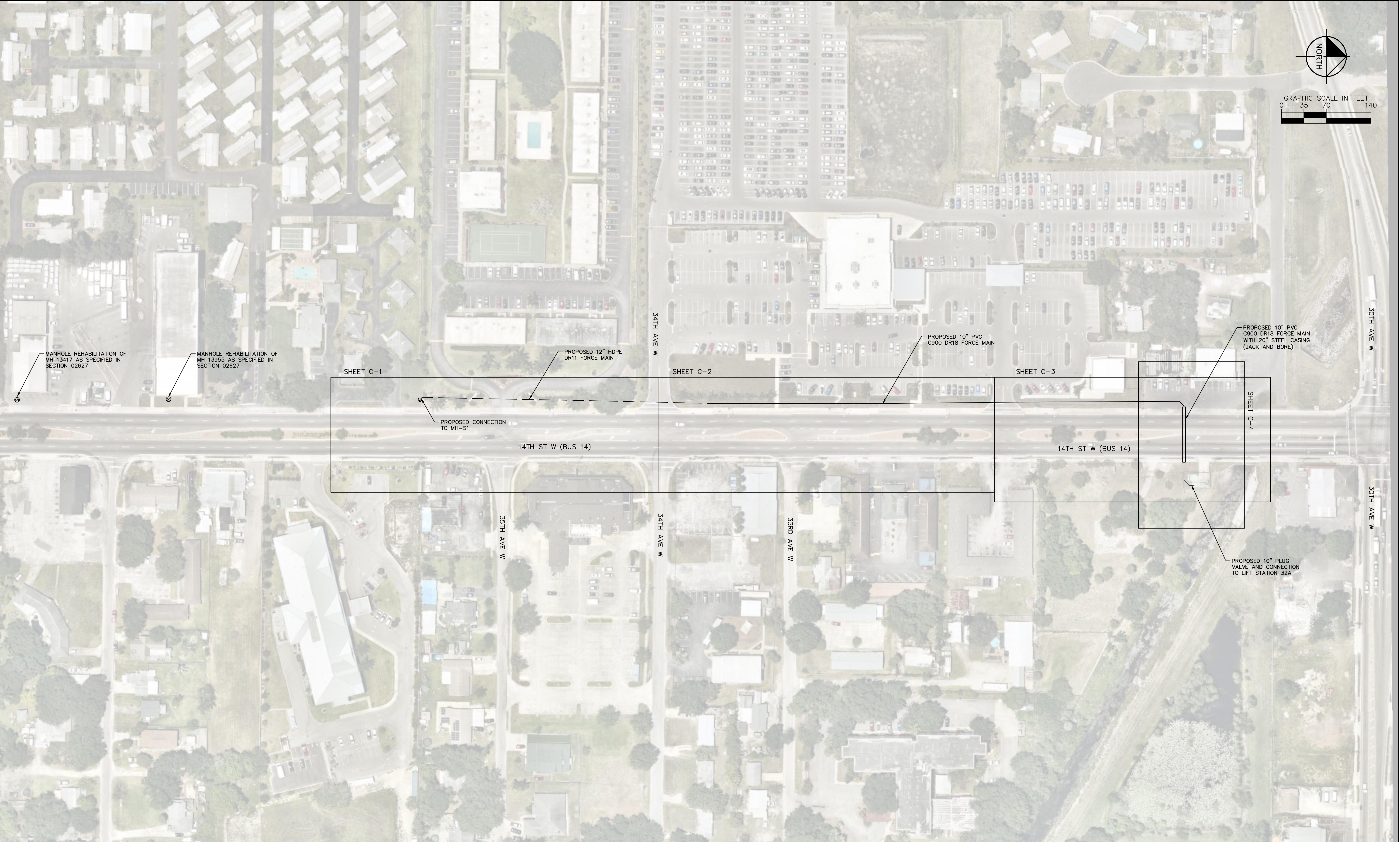
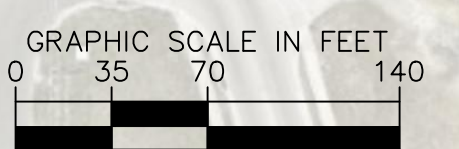
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SURVEY AND SUE NOTES

SHEET NUMBER

G-3

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 **Manatee County FLORIDA**

FORCE MAIN 32A REPLACEMENT

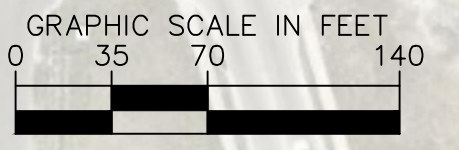
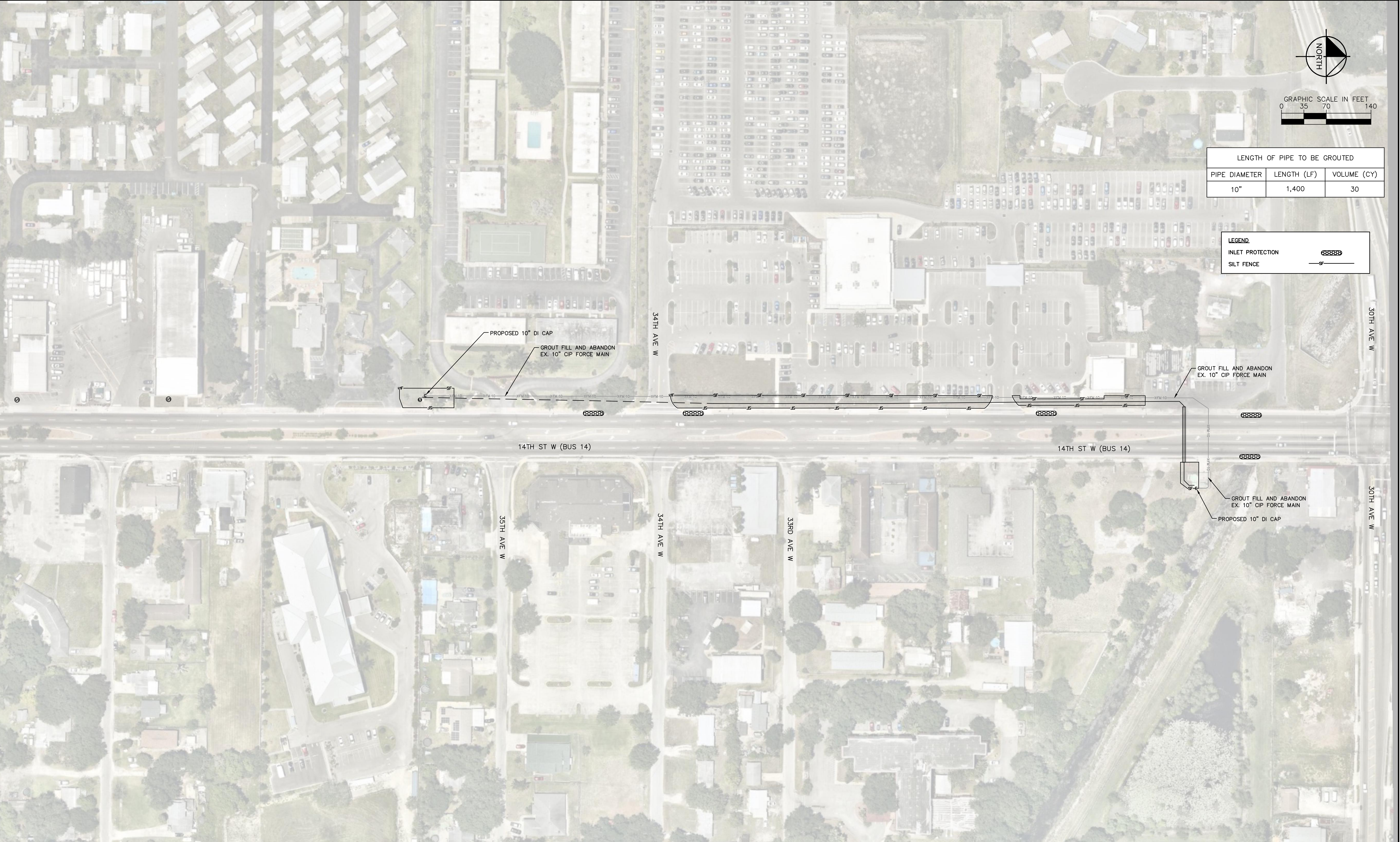
MANATEE COUNTY

LICENSED PROFESSIONAL
 MICHAEL A. SEMAGO, P.E.
 FL LICENSE NUMBER
 87501

KEY SHEET

SHEET NUMBER
G-4

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LENGTH OF PIPE TO BE GROUTED		
PIPE DIAMETER	LENGTH (LF)	VOLUME (CY)
10"	1,400	30

LEGEND	
INLET PROTECTION	
SILT FENCE	

PROPOSED 10" DI CAP
 GROUT FILL AND ABANDON EX. 10" CIP FORCE MAIN

GROUT FILL AND ABANDON EX. 10" CIP FORCE MAIN

GROUT FILL AND ABANDON EX. 10" CIP FORCE MAIN
 PROPOSED 10" DI CAP

No.	REVISIONS	DATE	BY

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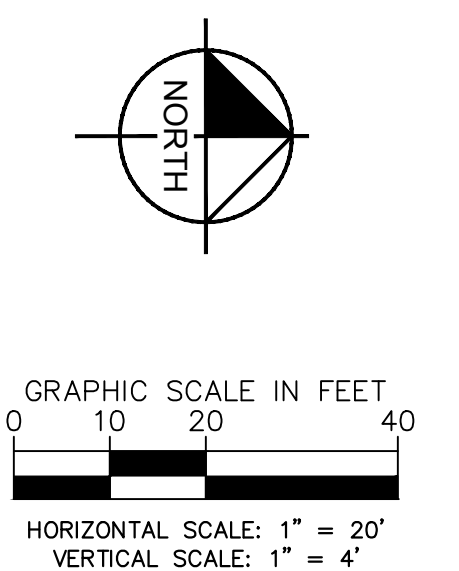
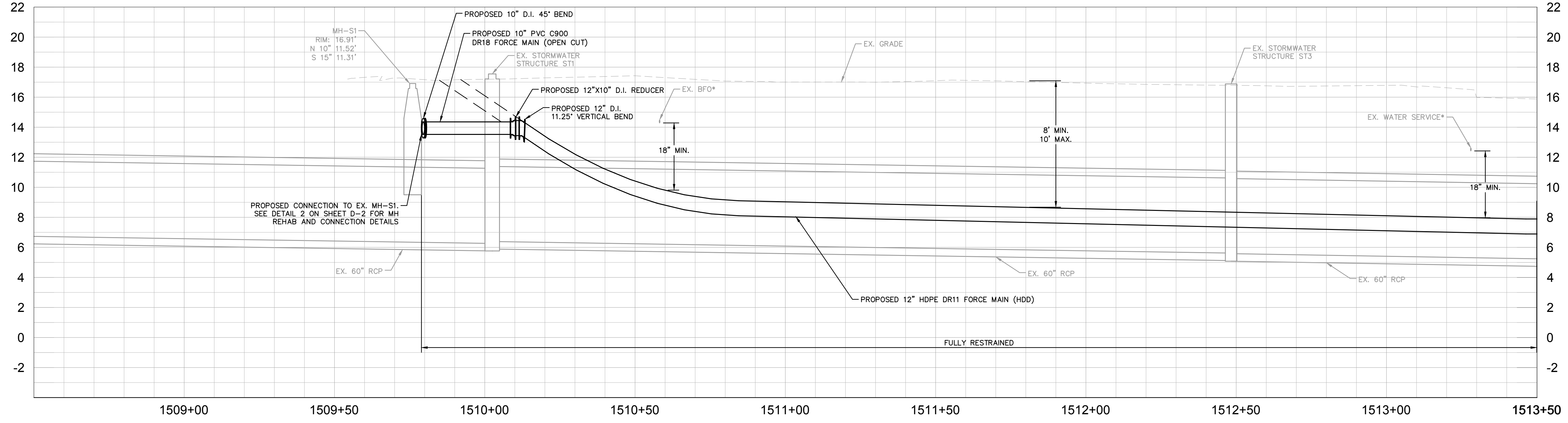
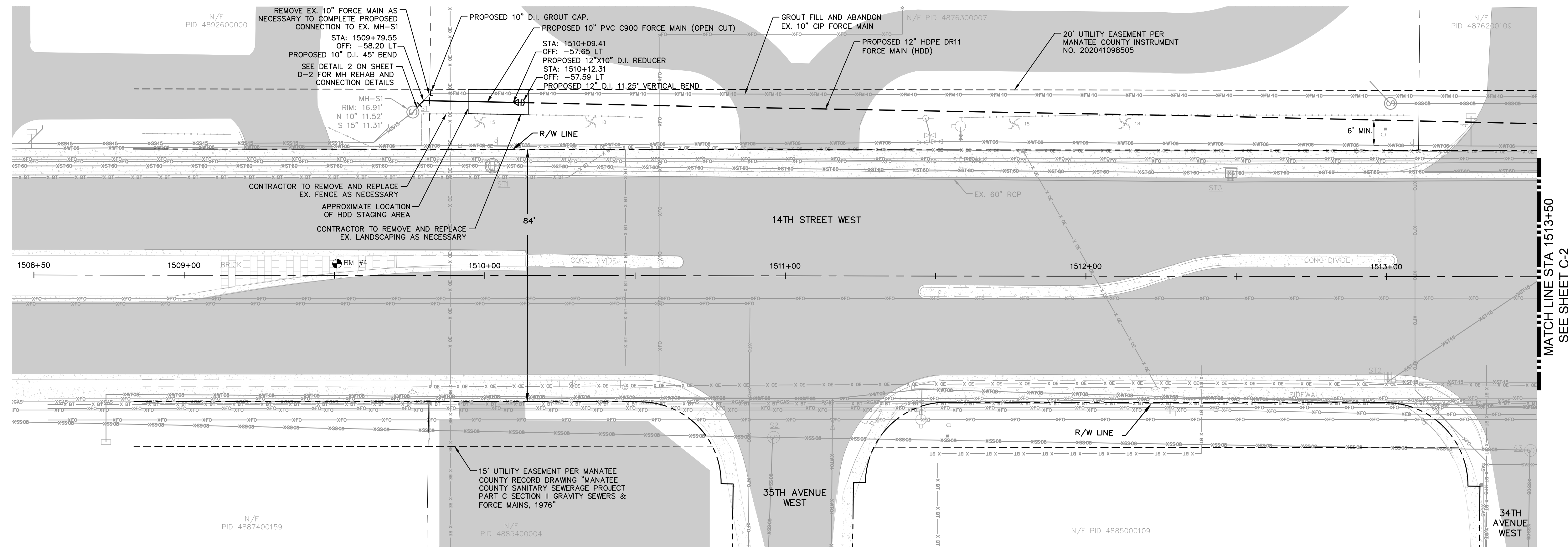

FORCE MAIN 32A REPLACEMENT
 MANATEE COUNTY

LICENSED PROFESSIONAL	MICHAEL A. SEMAGO, P.E.
FL LICENSE NUMBER	87501
FL DATE:	

GROUT AND SWPPP PLAN

SHEET NUMBER	G-5
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- LEGEND**
- OPEN CUT
 - HDD
 - SIDEWALK/CONCRETE DRIVEWAY RESTORATION
 - ASPHALT DRIVEWAY RESTORATION
 - CURB RESTORATION

- NOTES:**
1. CONTRACTOR SHALL RESTRAIN PIPE PER RESTRAIN LENGTHS TABLE ON DETAIL SHEET
 2. CONSTRUCTION DEWATERING SHALL BE CONDUCTED IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS INCLUDING BUT NOT LIMITED TO CHAPTERS 62-621.300 AND 62-620 OF THE FLORIDA ADMINISTRATIVE CODE (FAC)
 3. EXISTING GAS LINE AND BURIED ELECTRIC TO BE FIELD LOCATED WHERE NECESSARY PRIOR TO CONSTRUCTION
 4. CUTTING AND DISPOSAL OF ASBESTOS CONCRETE PIPE MUST BE PERFORMED BY A FLORIDA-LICENSED ASBESTOS ABATEMENT CONTRACTOR. CONTRACTOR MUST FURNISH ALL PERMITS, LABOR, MATERIAL, SERVICES, INSURANCE, TOOLS, EQUIPMENT, AND NOTIFICATIONS IN ACCORDANCE WITH EPA, OSHA, STATE, AND ALL OTHER APPLICABLE AGENCIES TO HANDLE AND REMOVE ASBESTOS MATERIAL SPECIFICALLY, REFER TO EPA 40 CFR PART 61 FOR ADDITIONAL REQUIREMENTS.

***NOTES:**
 THE ELEVATIONS OF THE UTILITIES MARKED WITH AN ASTERISK (*) HAVE BEEN ASSUMED ON THE BASIS OF TYPICAL ANTICIPATED SOIL COVERAGE. CONTRACTOR SHALL NOT RELY ON THIS INFORMATION FOR CONSTRUCTION, BUT SHALL BE RESPONSIBLE FOR FIELD LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL UTILITIES CROSSING THE PROPOSED FORCE MAIN. CONTRACTOR SHALL INCLUDE IN THE UNIT COST OF THE SUBJECT FORCE MAIN CONSTRUCTION, THE COST OF UTILITY ADJUSTMENTS NECESSARY TO ATTAIN DESIGN MINIMUM SEPARATION FOR UTILITIES CONFLICTING WITH THE CONSTRUCTION OF THE PROPOSED FORCE MAIN. INTERRUPTIONS OF ANY EXISTING UTILITY SERVICES SHALL BE NOTICED TO EFFECTED CUSTOMERS A MINIMUM OF 48 HOURS IN ADVANCE AND SHALL NOT EXCEED 4 HOURS IN DURATION.

WHERE CONCRETE REPAIRS ARE NECESSARY AND EXPANSION JOINTS ARE PRESENT, CONTRACTOR TO REMOVE AND REPLACE CONCRETE UP TO THE NEXT EXPANSION JOINT; OTHERWISE, REPLACE CONCRETE AS NECESSARY.

GROUNDWATER / DEWATERING NOTE:
 THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR THIS ISSUE. WHEN PERFORMING GRADING OPERATIONS DURING PERIODS OF WET WEATHER, PROVIDE ADEQUATE DEWATERING, DRAINAGE AND GROUND WATER MANAGEMENT TO CONTROL MOISTURE OF SOILS.



No.	REVISIONS	DATE	BY

Kimley-Horn

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FORCE MAIN 32A REPLACEMENT

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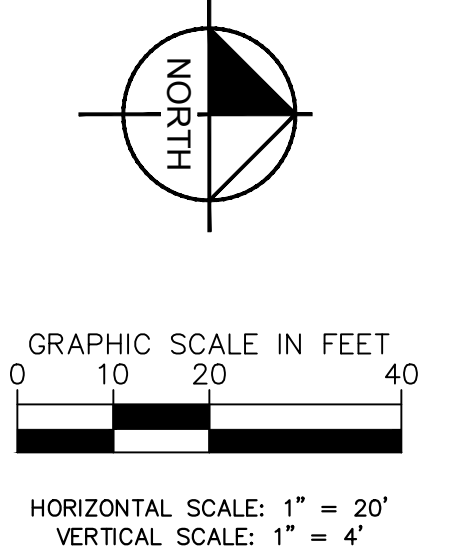
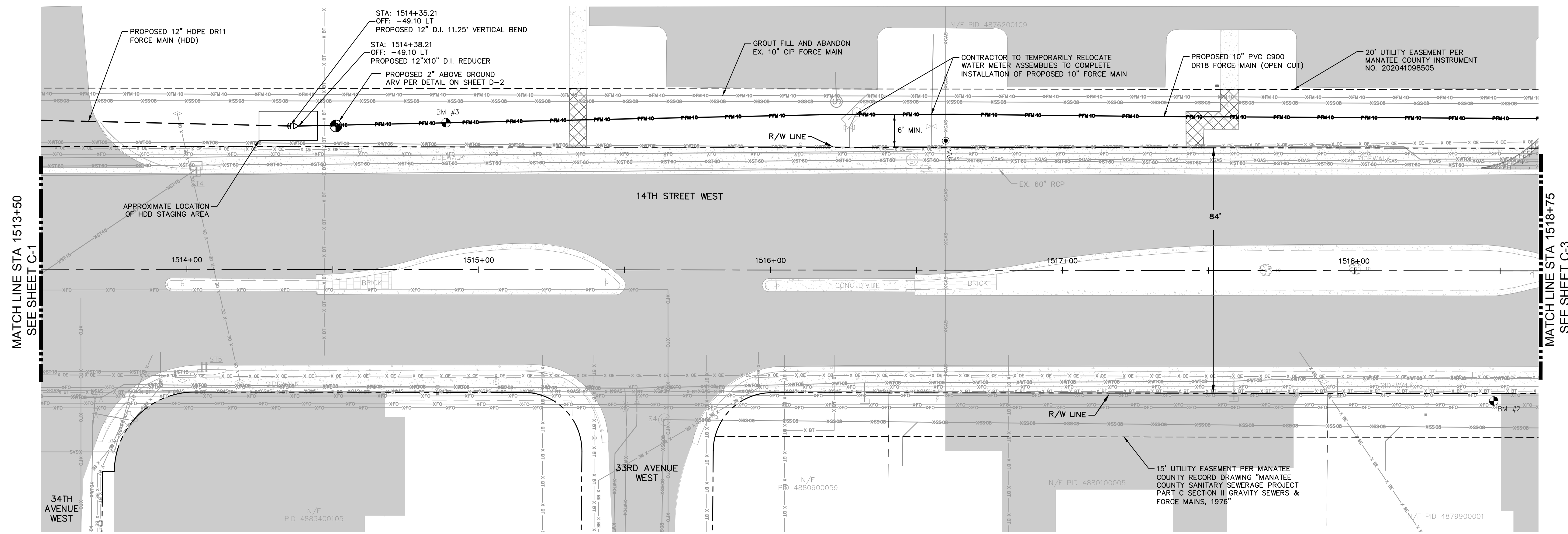
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PLAN SHEET

SHEET NUMBER

C-1

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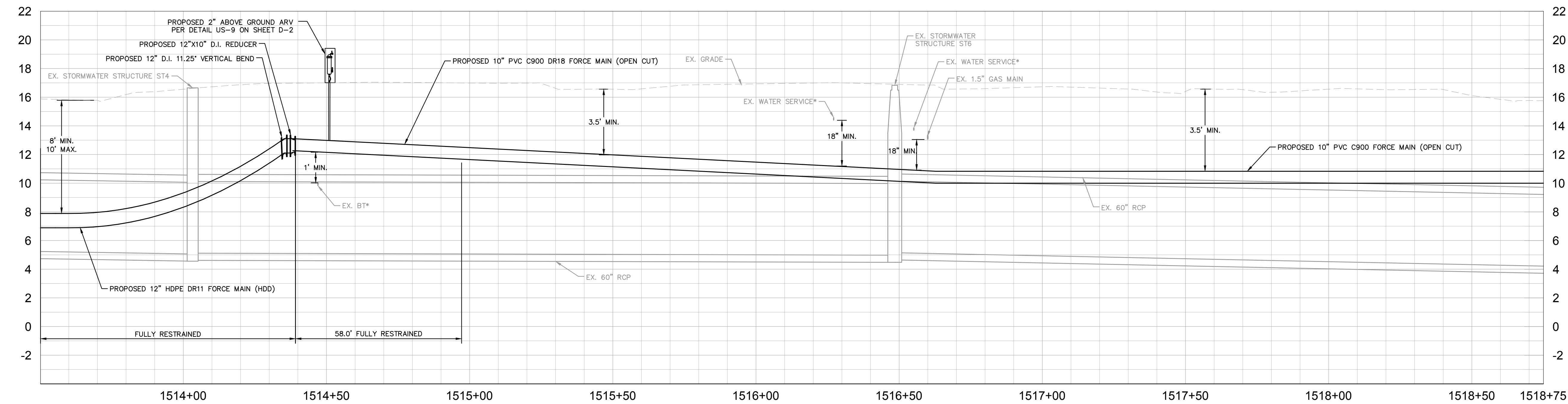
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Kimley & Horn

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Manatee County
 FLORIDA

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MANATEE COUNTY

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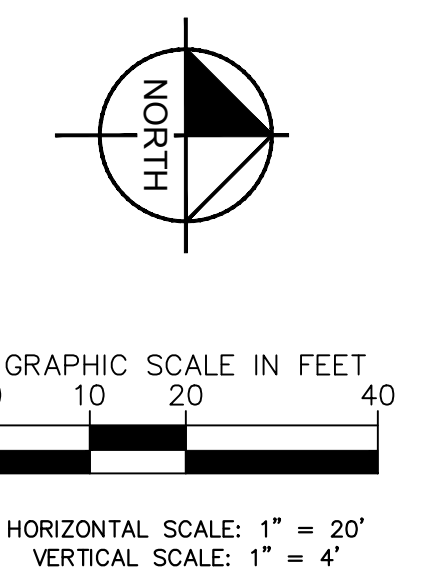
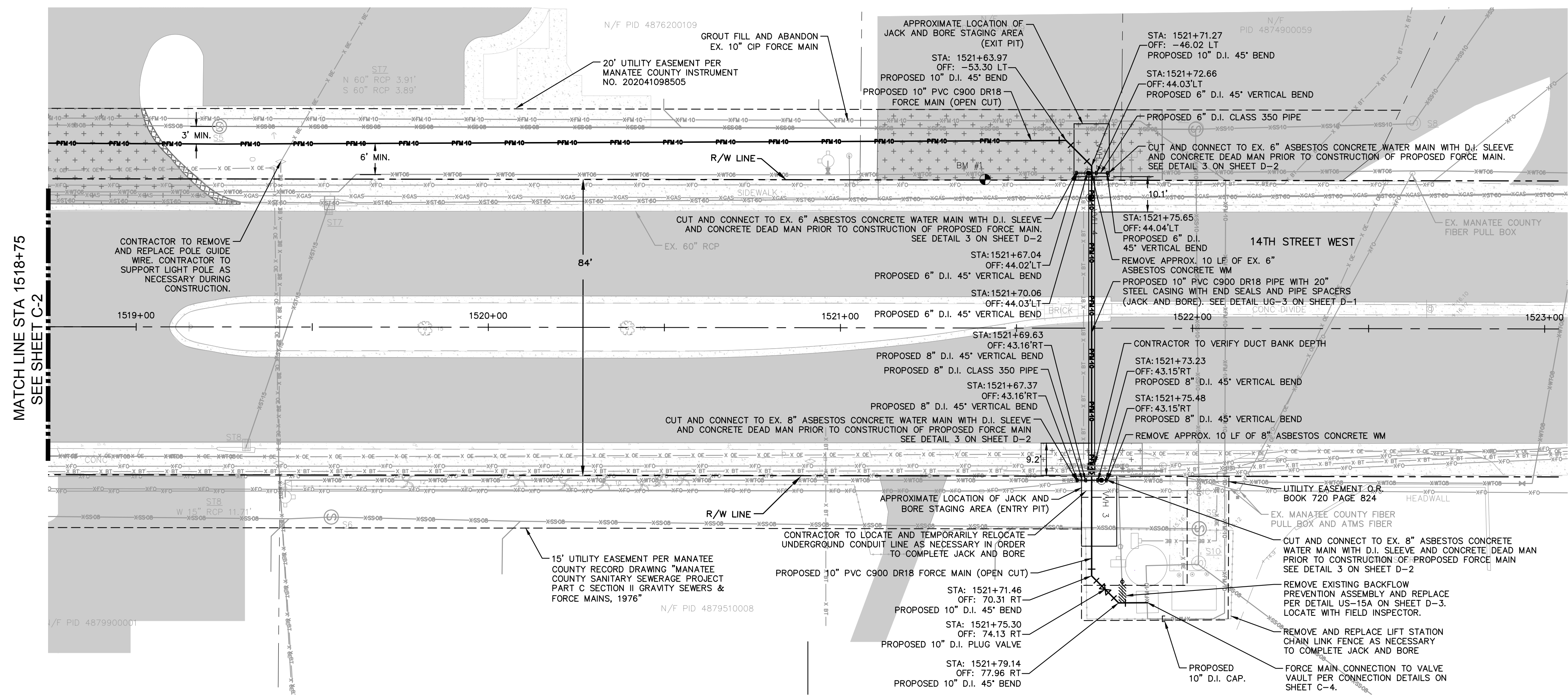
PLAN SHEET

FL DATE:

SHEET NUMBER	C-2
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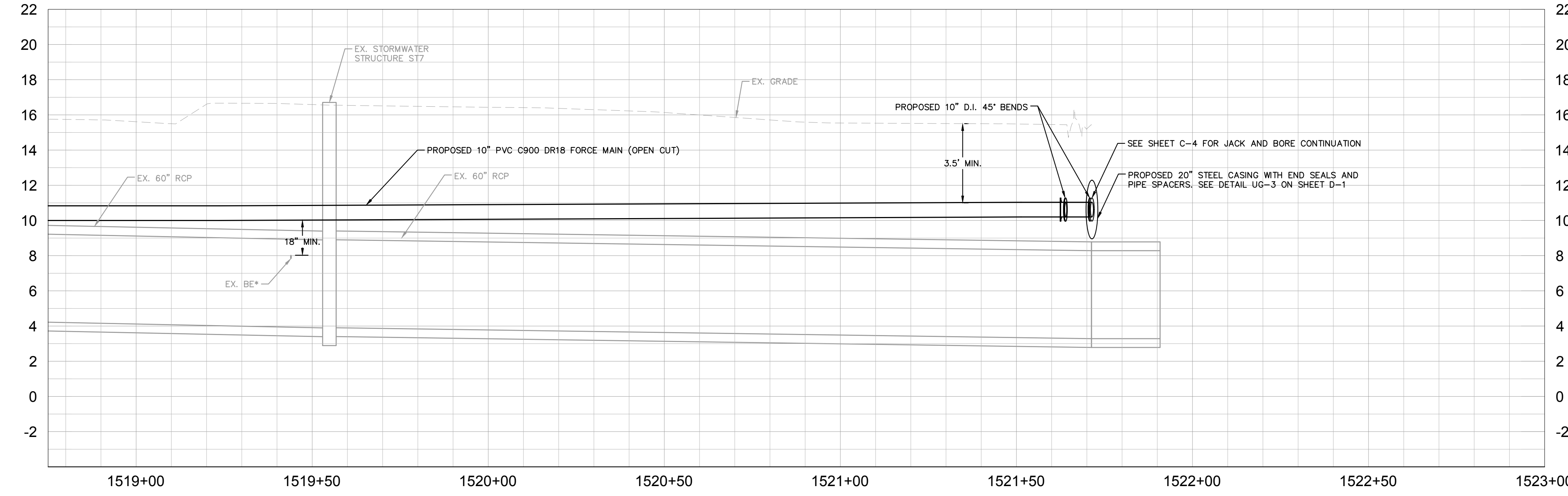


LEGEND

OPEN CUT	---
HDD	---
SIDEWALK/CONCRETE DRIVEWAY RESTORATION	▨
ASPHALT DRIVEWAY RESTORATION	+
CURB RESTORATION	▧

- NOTES:**
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 - INSTALL A FIBER OPTIC ROUTE MARKER AT THE PROPOSED PULL BOX AND RESTORE THE FIBER OPTIC LOCATION SYSTEM (I.E., ROUTE MARKERS AND TRACER WIRE).
 - ALL MATERIAL REMOVED SHALL BE REPLACED WITH LIKE KIND TYPE AND SPECIFICATION.
 - NEW ADVANCED TRAFFIC MANAGEMENT SYSTEM (ATMS) INFRASTRUCTURE SHOULD BE PLACED WHILE LEAVING EXISTING ATMS INFRASTRUCTURE IN PLACE AND INTACT AS LONG AS FEASIBLE TO LIMIT THE DURATION OF SYSTEM DOWN TIME.
 - THE DEVELOPER WILL NEED TO HIRE A CERTIFIED CONTRACTOR THAT IS LICENSED TO PERFORM THIS WORK TO RELOCATE THE ATMS INFRASTRUCTURE AT THEIR COST.
 - AT LEAST FIVE (5) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL CONTACT MUKUNDA GOPALAKRISHNA, P.E., PTOE OF THE MANATEE COUNTY TRAFFIC ENGINEERING DIVISION AT (941) 749-3500, EXT. 7813 TO INFORM HIM OF CONSTRUCTION OPERATIONS.
 - THE CONTRACTOR MUST PROVIDE A SPLICE DIAGRAM FOR THE PROPOSED SPLICE ENCLOSURE AT THIS TIME.
 - THE CONTRACTOR SHALL NOTIFY UTILITY OWNERS OF ANY EXCAVATION OR DEMOLITION ACTIVITY THROUGH SUNSHINE ONE CALL OF FLORIDA INC. (811) AND SHALL ALSO NOTIFY THOSE UTILITY OWNERS/AGENCIES LISTED WITHIN OR IMPACTED BY THESE PLANS, NOT LESS THAN TWO (2) FULL BUSINESS DAYS IN ADVANCE OF BEGINNING CONSTRUCTION ON THE JOB SITE.
 - THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING RIGHT-OF-WAY USE PERMITS WITH MATT MERRUCCI, MANATEE COUNTY PUBLIC WORKS INFRASTRUCTURE INSPECTION OFFICER, AT (941) 708-7450, EXT. 7342.
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SPECIAL NOTE
****CONTRACTOR TO VERIFY EXISTING UTILITY DEPTHS AND LOCATIONS PRIOR TO COMPLETING JACK AND BORE****



***NOTES:**
 THE ELEVATIONS OF THE UTILITIES MARKED WITH AN ASTERISK (*) HAVE BEEN ASSUMED ON THE BASIS OF TYPICAL ANTICIPATED SOIL COVERAGE. CONTRACTOR SHALL NOT RELY ON THIS INFORMATION FOR CONSTRUCTION, BUT SHALL BE RESPONSIBLE FOR FIELD LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL UTILITIES CROSSING THE PROPOSED FORCE MAIN. CONTRACTOR SHALL INCLUDE IN THE UNIT COST OF THE SUBJECT FORCE MAIN CONSTRUCTION, THE COST OF UTILITY ADJUSTMENTS NECESSARY TO ATTAIN DESIGN MINIMUM SEPARATION FOR UTILITIES CONFLICTING WITH THE CONSTRUCTION OF THE PROPOSED FORCE MAIN. INTERRUPTIONS OF ANY EXISTING UTILITY SERVICES SHALL BE NOTICED TO EFFECTED CUSTOMERS A MINIMUM OF 48 HOURS IN ADVANCE AND SHALL NOT EXCEED 4 HOURS IN DURATION.
 WHERE CONCRETE REPAIRS ARE NECESSARY AND EXPANSION JOINTS ARE PRESENT, CONTRACTOR TO REMOVE AND REPLACE CONCRETE UP TO THE NEXT EXPANSION JOINT; OTHERWISE, REPLACE CONCRETE AS NECESSARY.

GROUNDWATER / DEWATERING NOTE:
 THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR THIS ISSUE. WHEN PERFORMING GRADING OPERATIONS DURING PERIODS OF WET WEATHER, PROVIDE ADEQUATE DEWATERING, DRAINAGE AND GROUND WATER MANAGEMENT TO CONTROL MOISTURE OF SOILS.



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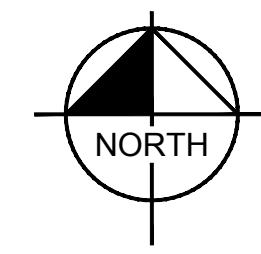
KHA PROJECT 148400099
 DATE APR 2023
 SCALE AS SHOWN
 DESIGNED BY MAS
 DRAWN BY GMB
 CHECKED BY JWW
Manatee County
FORCE MAIN 32A REPLACEMENT
 MANATEE COUNTY

LICENSED PROFESSIONAL
 MICHAEL A. SEMAGO, P.E.
 FL LICENSE NUMBER 87501
 FL DATE:

FLORIDA
PLAN SHEET
 SHEET NUMBER **C-3**

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SPECIAL NOTE
 CONTRACTOR TO VERIFY EXISTING UTILITY DEPTHS AND LOCATIONS PRIOR TO COMPLETING JACK AND BORE



GRAPHIC SCALE IN FEET
 0 10 20 40
 HORIZONTAL SCALE: 1" = 20'
 VERTICAL SCALE: 1" = 4'

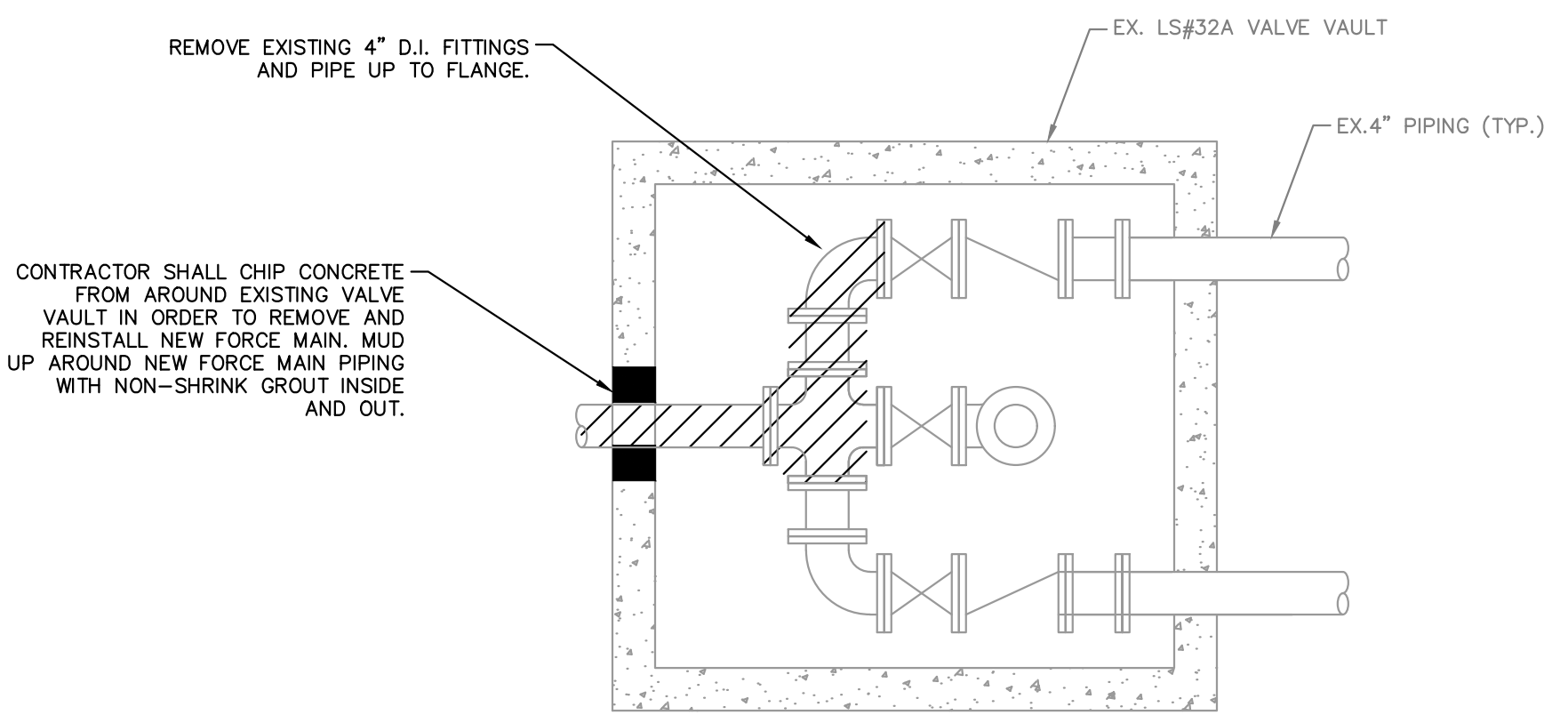
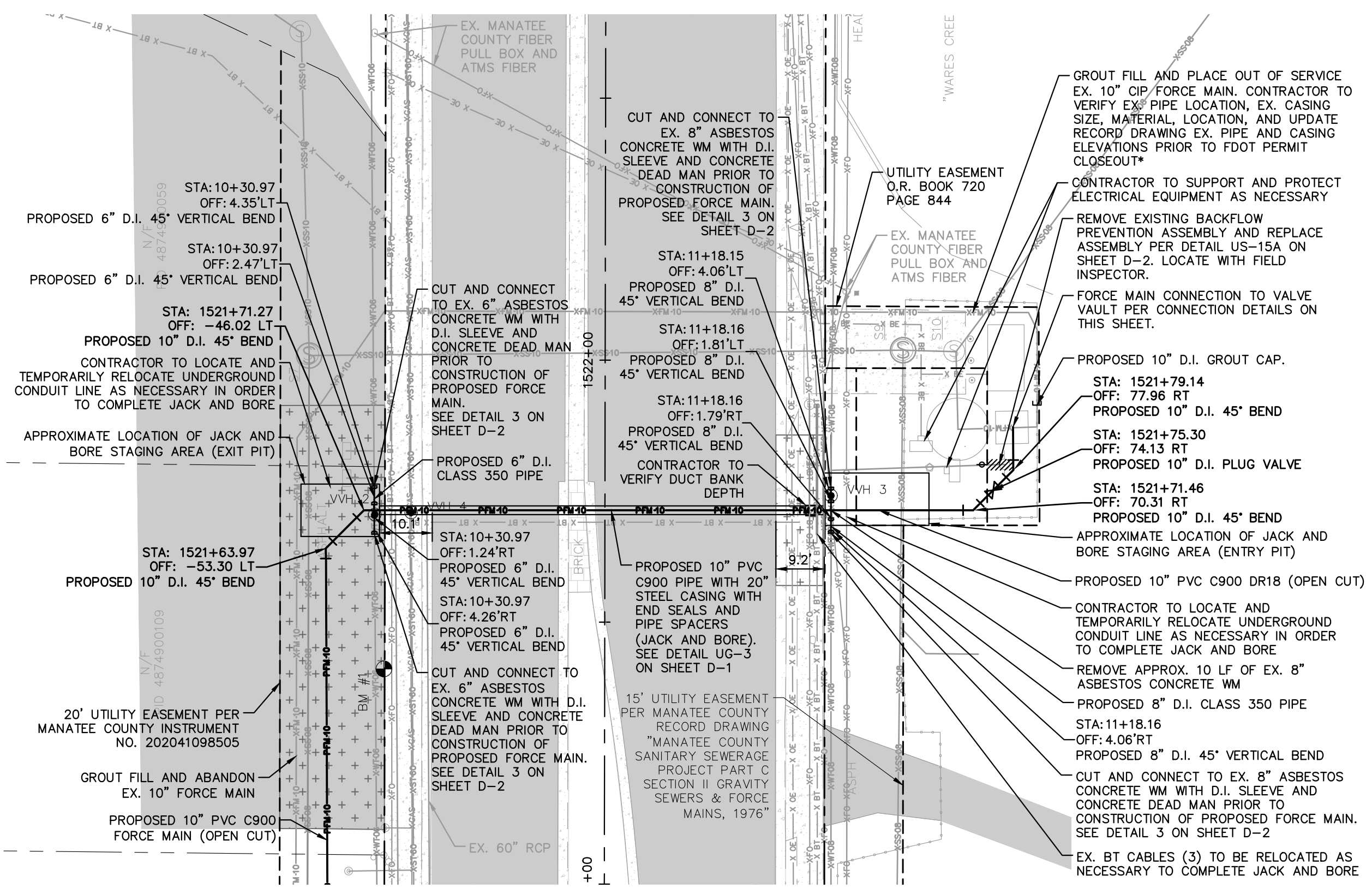
LEGEND

OPEN CUT	---
HDD	---
SIDEWALK/CONCRETE DRIVEWAY RESTORATION	▨
ASPHALT DRIVEWAY RESTORATION	+
CURB RESTORATION	▧

- NOTES:**
- CONTRACTOR SHALL RESTRAIN PIPE PER RESTRAIN LENGTHS TABLE ON DETAIL SHEET D-1
 - CONSTRUCTION DEWATERING SHALL BE CONDUCTED IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS INCLUDING BUT NOT LIMITED TO CHAPTERS 62-621.300 AND 62-620 OF THE FLORIDA ADMINISTRATIVE CODE (FAC)
 - EXISTING GAS LINE AND BURIED ELECTRIC TO BE FIELD LOCATED WHERE NECESSARY PRIOR TO CONSTRUCTION
 - CUTTING AND DISPOSAL OF ASBESTOS CONCRETE PIPE MUST BE PERFORMED BY A FLORIDA-LICENSED ASBESTOS ABATEMENT CONTRACTOR. CONTRACTOR MUST FURNISH ALL PERMITS, LABOR, MATERIAL SERVICES, INSURANCE, TOOLS, EQUIPMENT, AND NOTIFICATIONS IN ACCORDANCE WITH EPA, OSHA, STATE, AND ALL OTHER APPLICABLE AGENCIES TO HANDLE AND REMOVE ASBESTOS MATERIAL SPECIFICALLY, REFER TO EPA 40 CFR PART 61 FOR ADDITIONAL REQUIREMENTS.
 - INSTALL A FIBER OPTIC ROUTE MARKER AT THE PROPOSED PULL BOX AND RESTORE THE FIBER OPTIC LOCATION SYSTEM (I.E., ROUTE MARKERS AND TRACER WIRE).
 - ALL MATERIAL REMOVED SHALL BE REPLACED WITH LIKE KIND TYPE AND SPECIFICATION.
 - NEW ADVANCED TRAFFIC MANAGEMENT SYSTEM (ATMS) INFRASTRUCTURE SHOULD BE PLACED WHILE LEAVING EXISTING ATMS INFRASTRUCTURE IN PLACE AND INTACT AS LONG AS FEASIBLE TO LIMIT THE DURATION OF SYSTEM DOWN TIME.
 - THE DEVELOPER WILL NEED TO HIRE A CERTIFIED CONTRACTOR THAT IS LICENSED TO PERFORM THIS WORK TO RELOCATE THE ATMS INFRASTRUCTURE AT THEIR COST.
 - AT LEAST FIVE (5) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL CONTACT MUKUNDA GOPALAKRISHNA, P.E., PTOE OF THE MANATEE COUNTY TRAFFIC ENGINEERING DIVISION AT (941) 749-3500, EXT. 7813 TO INFORM HIM OF CONSTRUCTION OPERATIONS.
 - THE CONTRACTOR MUST PROVIDE A SPLICE DIAGRAM FOR THE PROPOSED SPLICE ENCLOSURE AT THIS TIME.
 - THE CONTRACTOR SHALL NOTIFY UTILITY OWNERS OF ANY EXCAVATION OR DEMOLITION ACTIVITY THROUGH SUNSHINE ONE CALL OF FLORIDA INC. (811) AND SHALL ALSO NOTIFY THOSE UTILITY OWNERS/AGENCIES LISTED WITHIN OR IMPACTED BY THESE PLANS, NOT LESS THAN TWO (2) FULL BUSINESS DAYS IN ADVANCE OF BEGINNING CONSTRUCTION ON THE JOB SITE.
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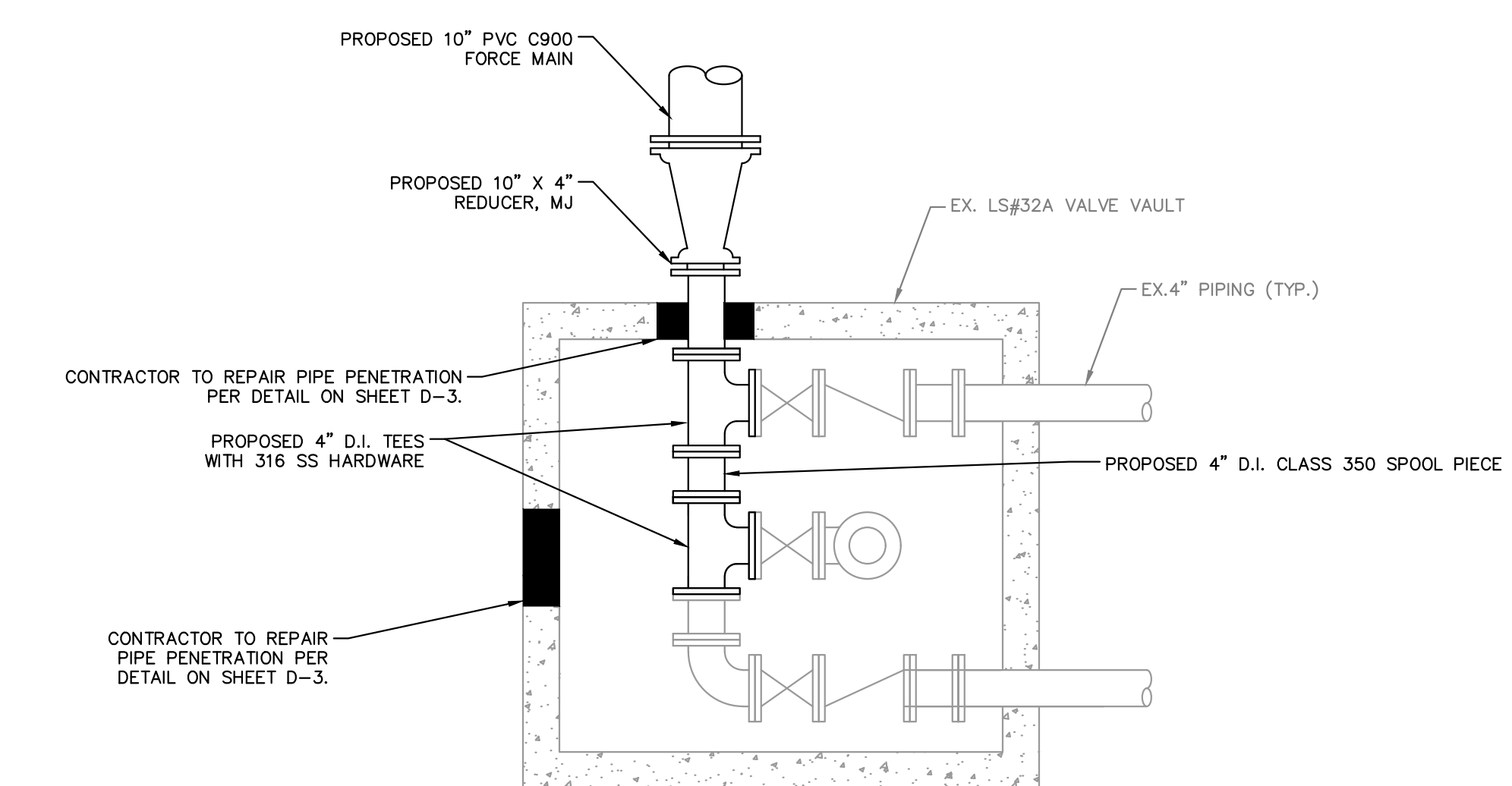
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LIFT STATION #32A EXISTING CONNECTION DEMO

SCALE: NTS

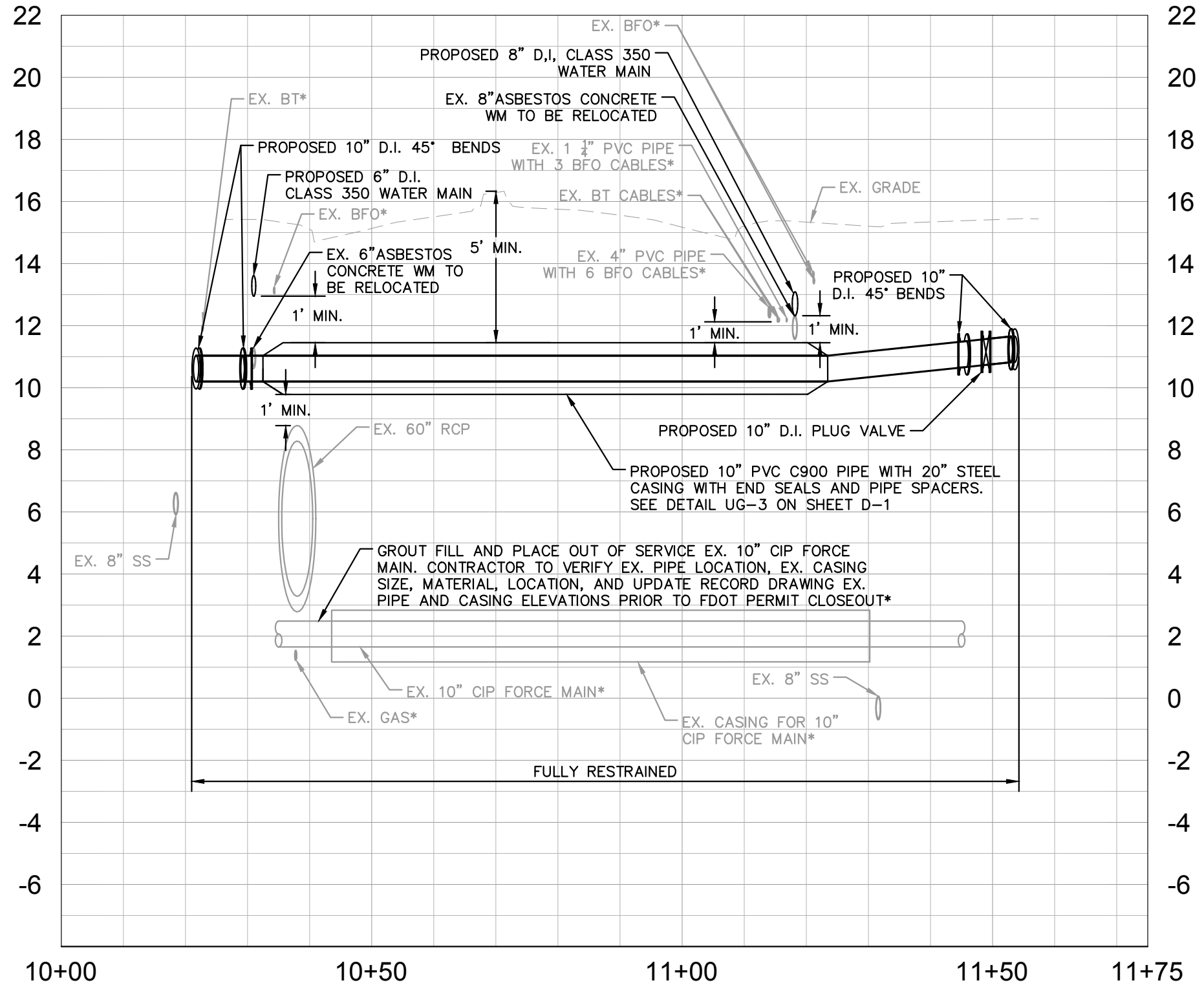
1
C-4



LIFT STATION #32A PROPOSED CONNECTION DETAIL

SCALE: NTS

2
C-4



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KHA PROJECT 148400099
DATE APR 2023
SCALE AS SHOWN
DESIGNED BY MAS
DRAWN BY GMB
CHECKED BY JWW

Manatee County

FORCE MAIN 32A REPLACEMENT

MANATEE COUNTY

LICENSED PROFESSIONAL

MICHAEL A. SEMAGO, P.E.

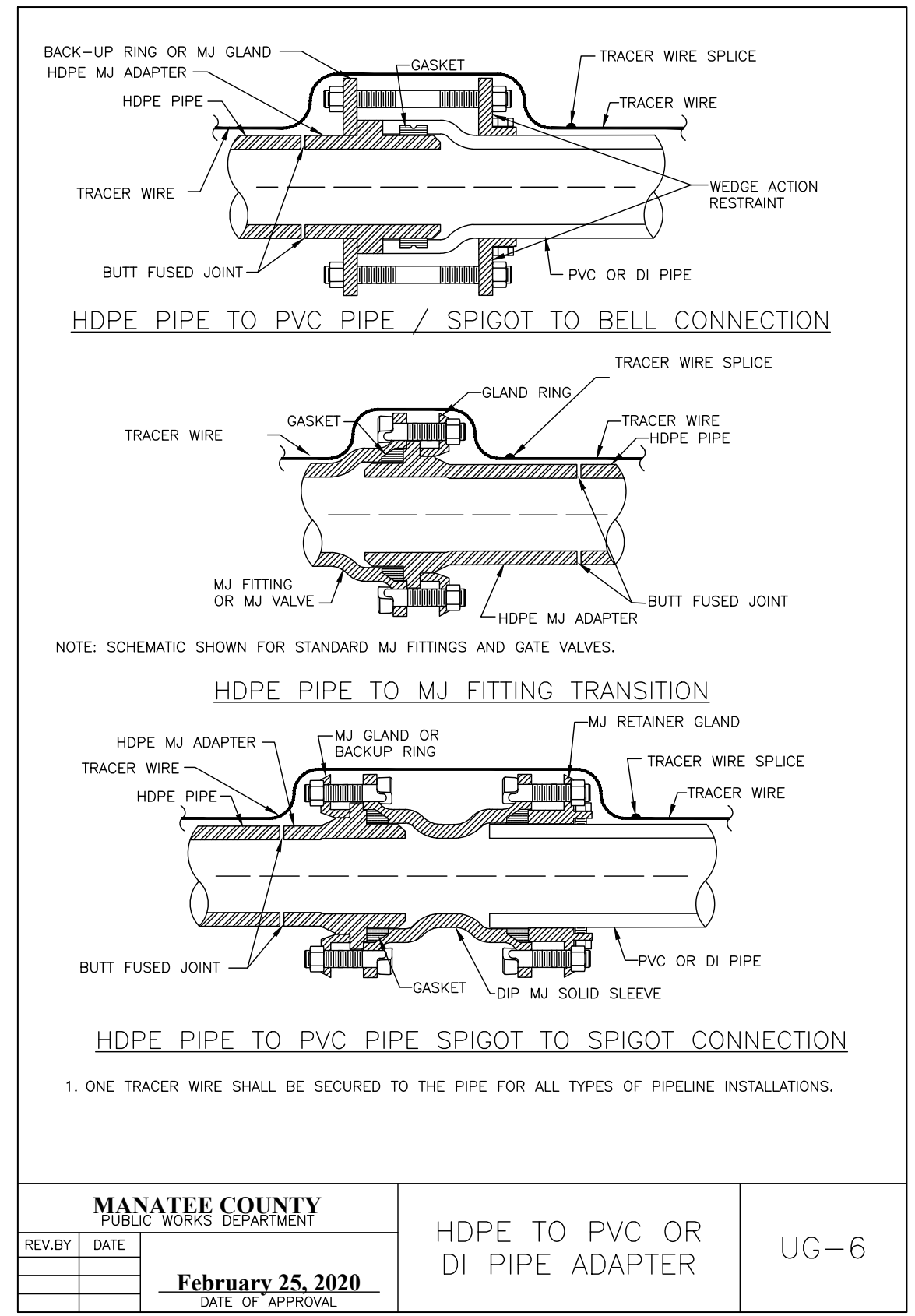
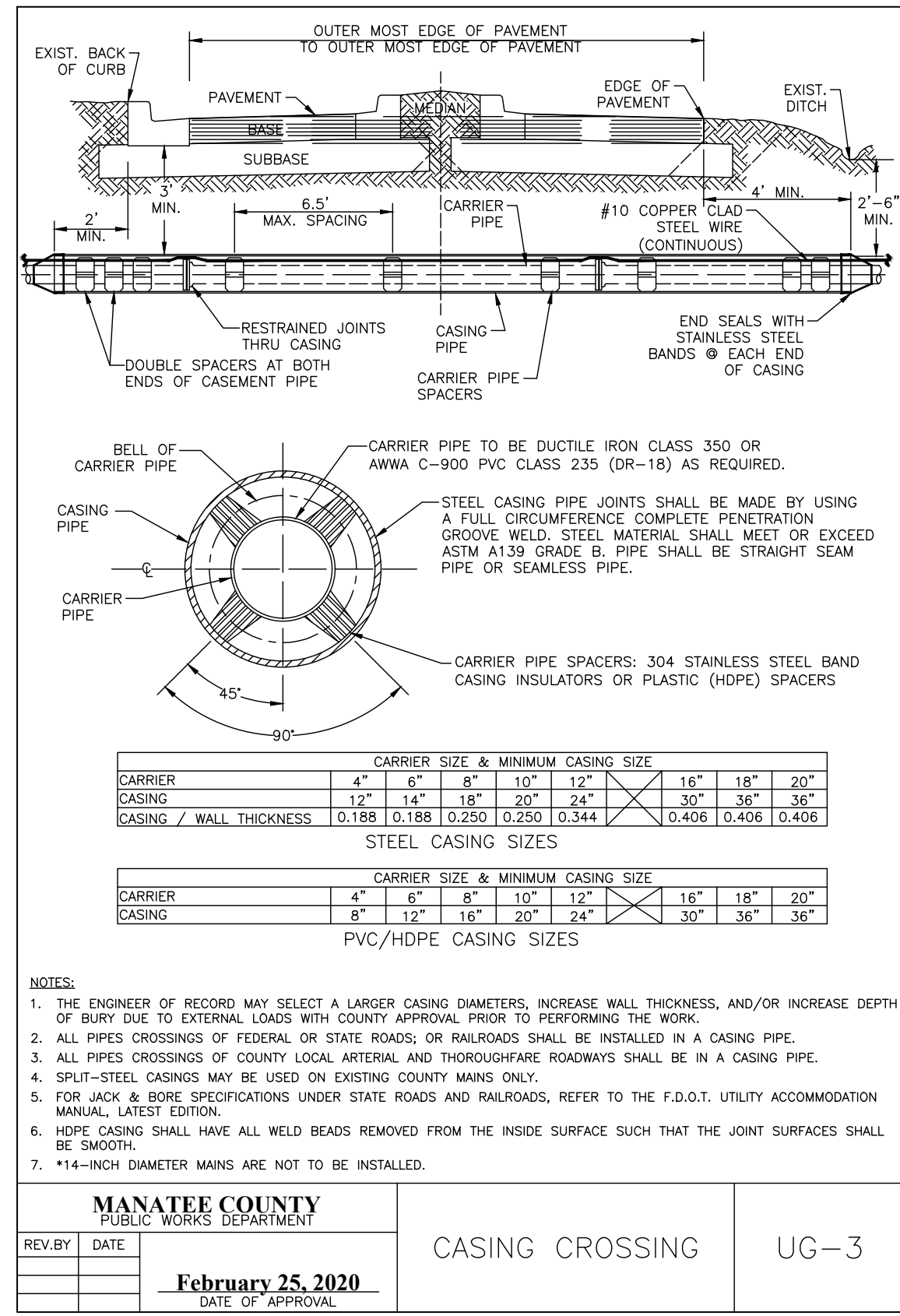
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REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR C900-16 PVC PIPE (DR-18)

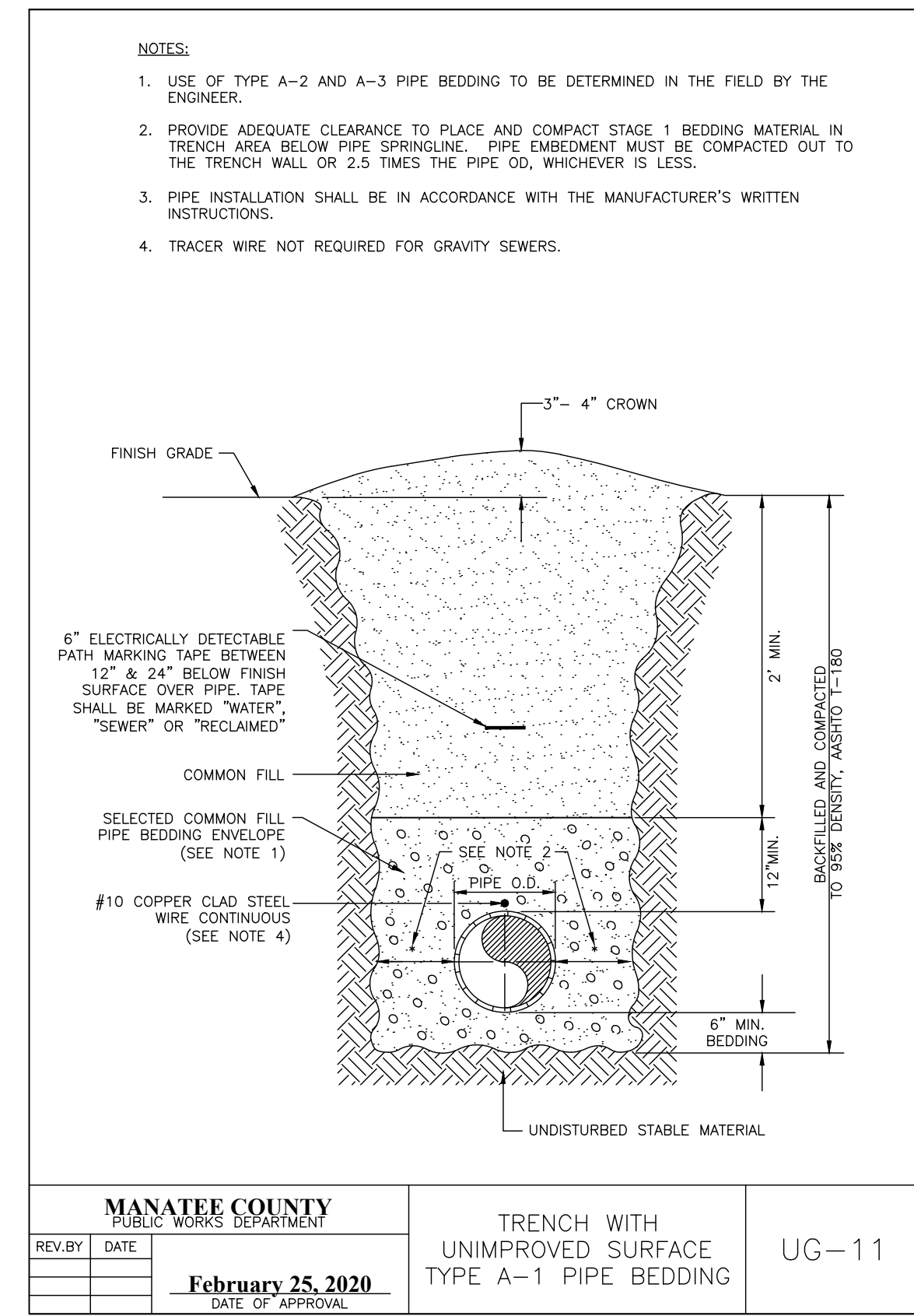
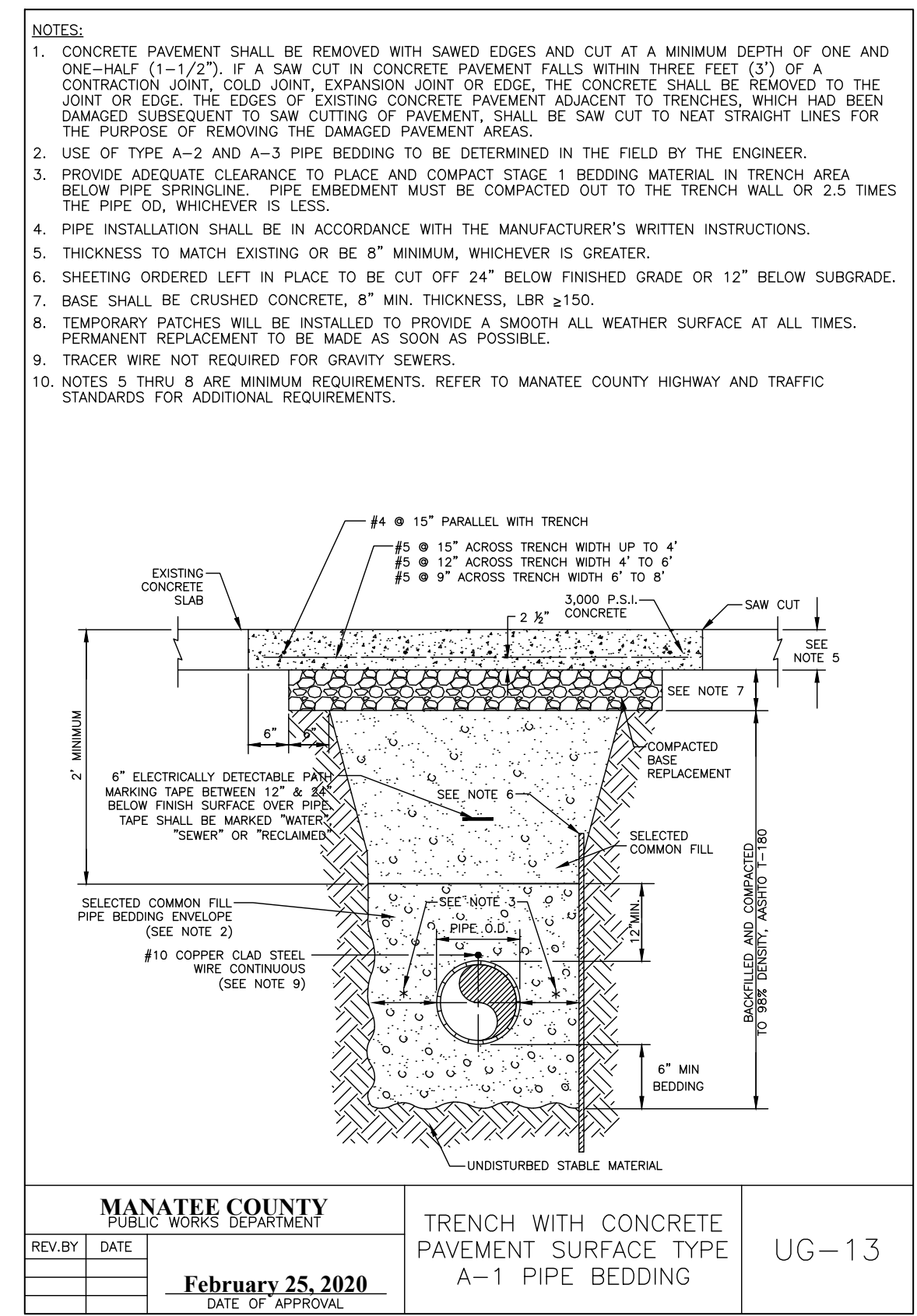
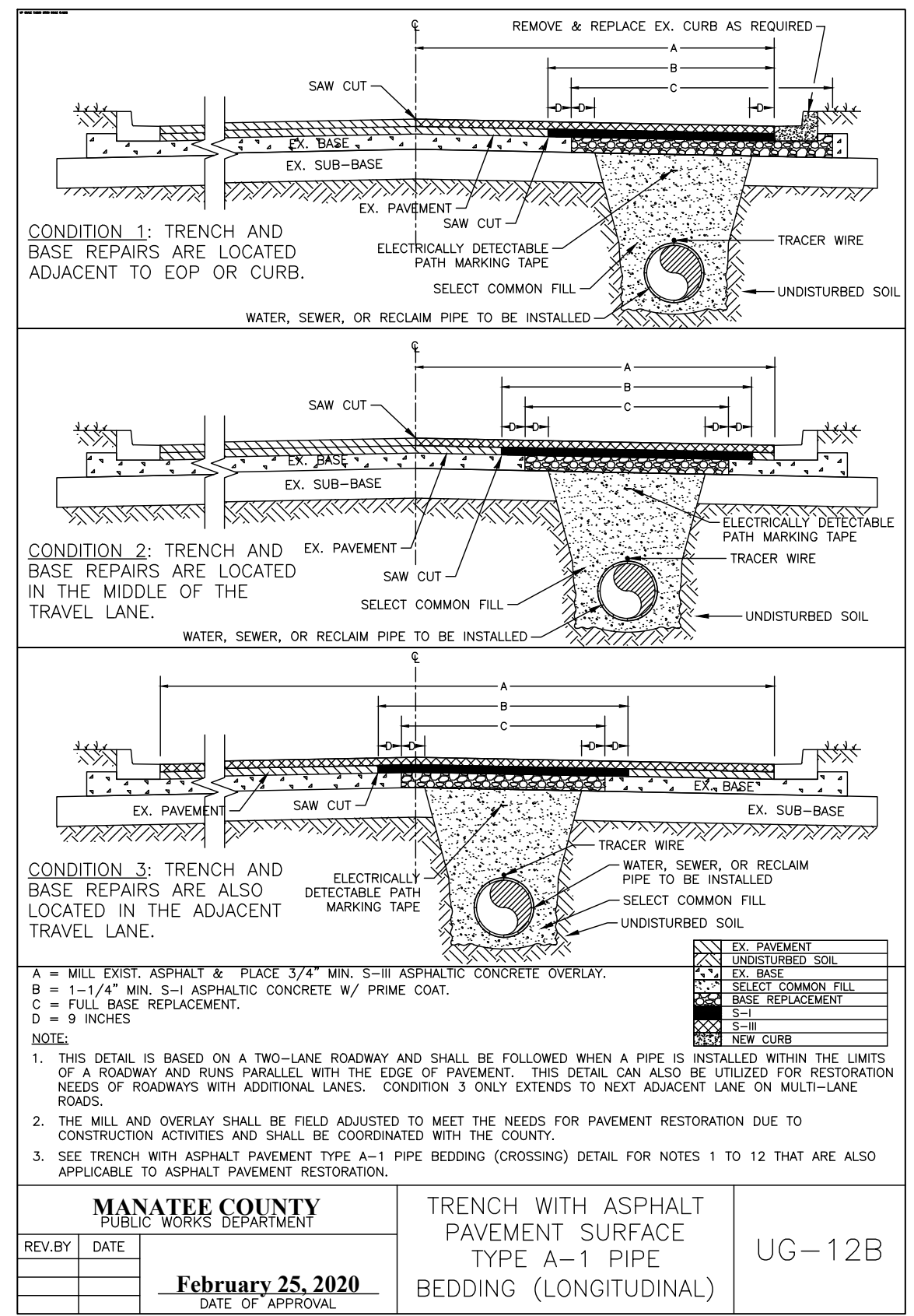
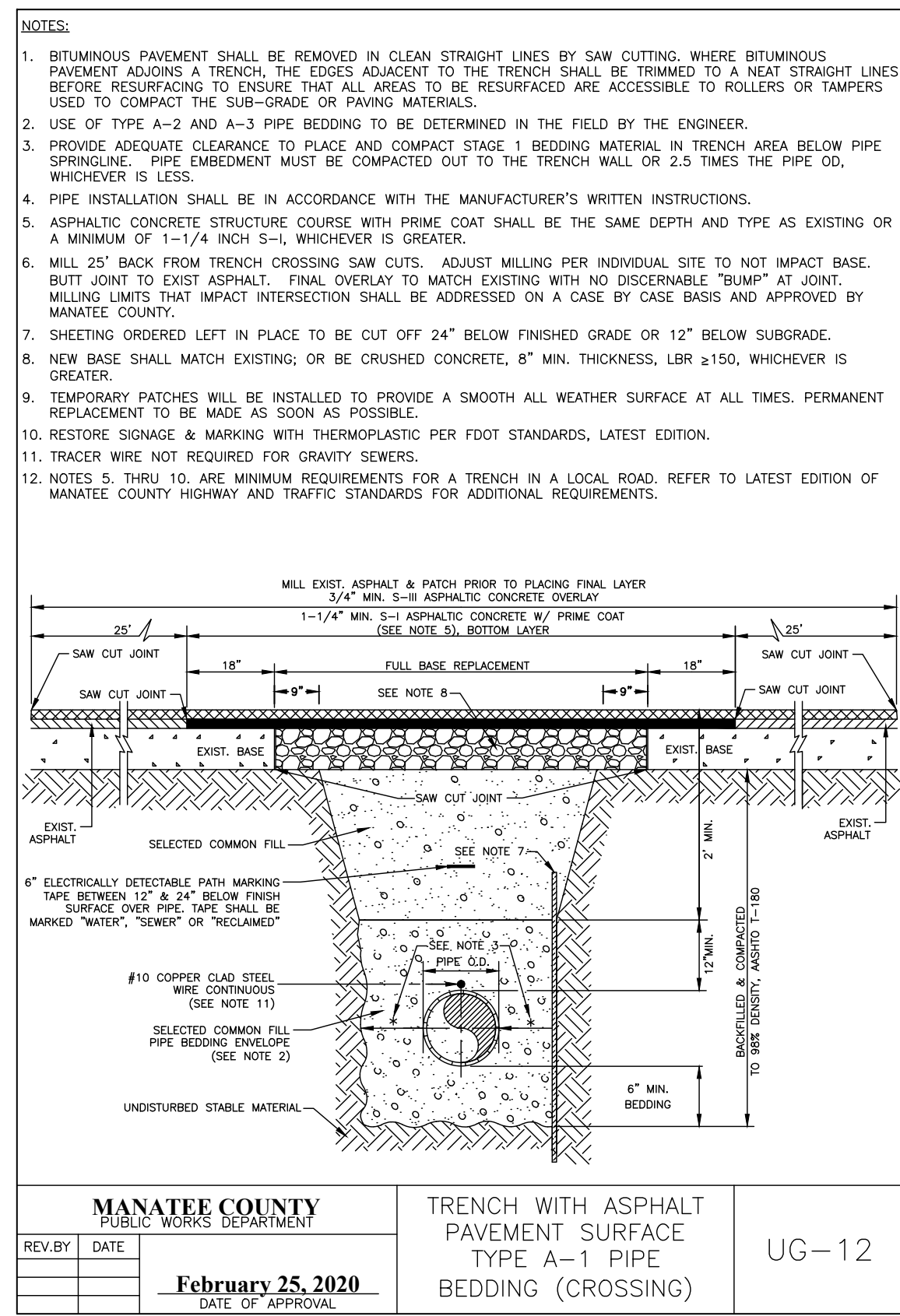
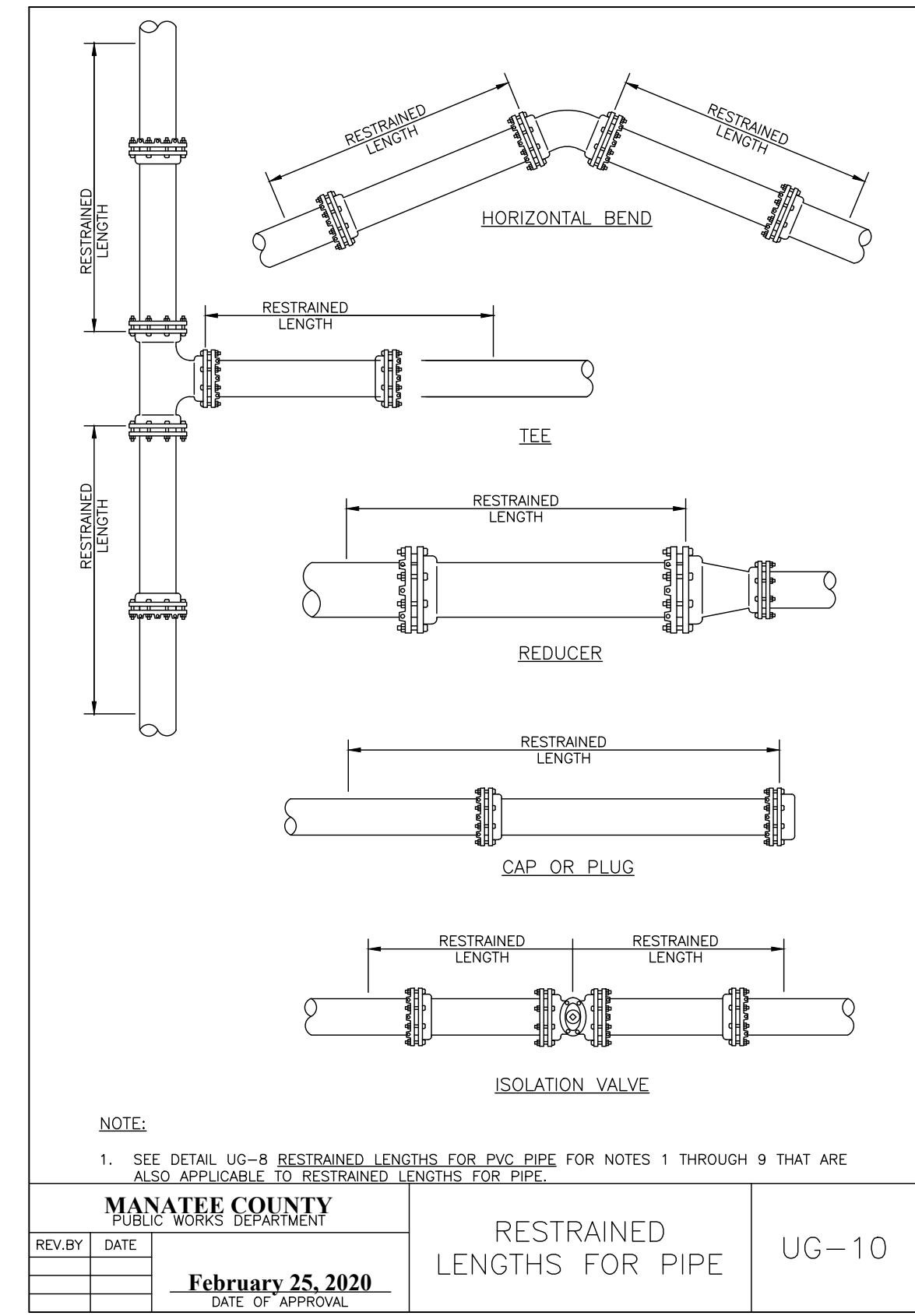
MAIN PIPE SIZE	HORIZ. BENDS			TEES										REDUCERS			PLUGS & VALVES
	90°	45°	22.5°	SIZE LENGTH										SIZE LENGTH			
24	90	38	18	X24	X20	X16	X12	X10	X8	X6	X4	X24	X20	X16	X12	158	214
20	78	32	16	X20	X16	X12	X10	X8	X6	X4	X20	X16	X12	X10	148	184	
16	66	27	13	X16	X12	X10	X8	X6	X4	X20	X16	X12	X10	107	111	151	
12	52	22	10	X12	X10	X8	X6	X4	X20	X16	X12	X10	86	86	118		
10	44	18	9	X10	X8	X6	X4	X20	X16	X12	X10	81	81	100			
8	37	15	7	X8	X6	X4	X20	X16	X12	X10	60	60	83				
6	29	12	6	X6	X4	X20	X16	X12	X10	53	53	63					
4	21	8	4	X4	X20	X16	X12	X10	45	45	45						

MANATEE COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS: February 25, 2020

DATE OF APPROVAL: February 25, 2020

RESTRAINED LENGTHS FOR PVC PIPE UG-8



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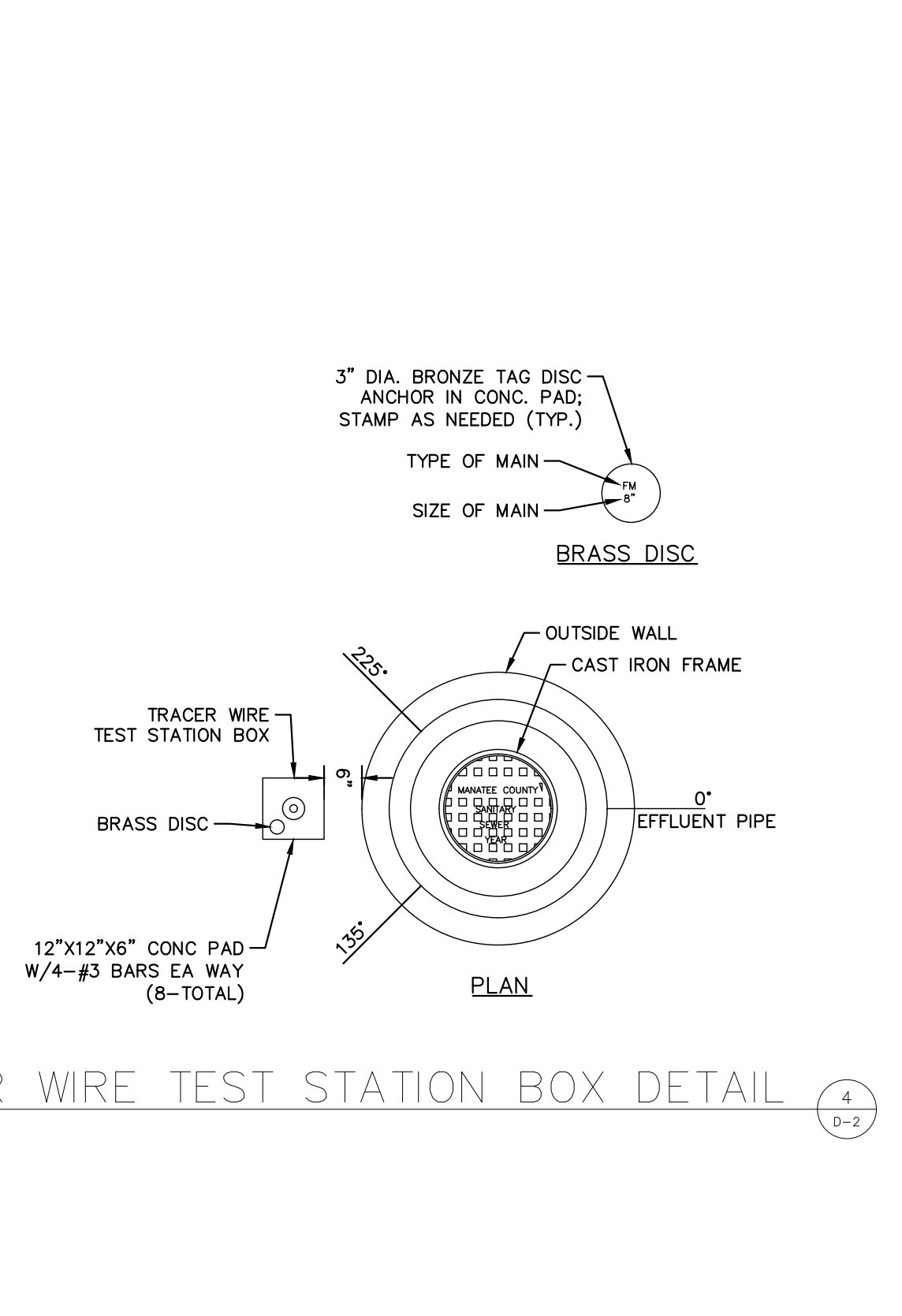
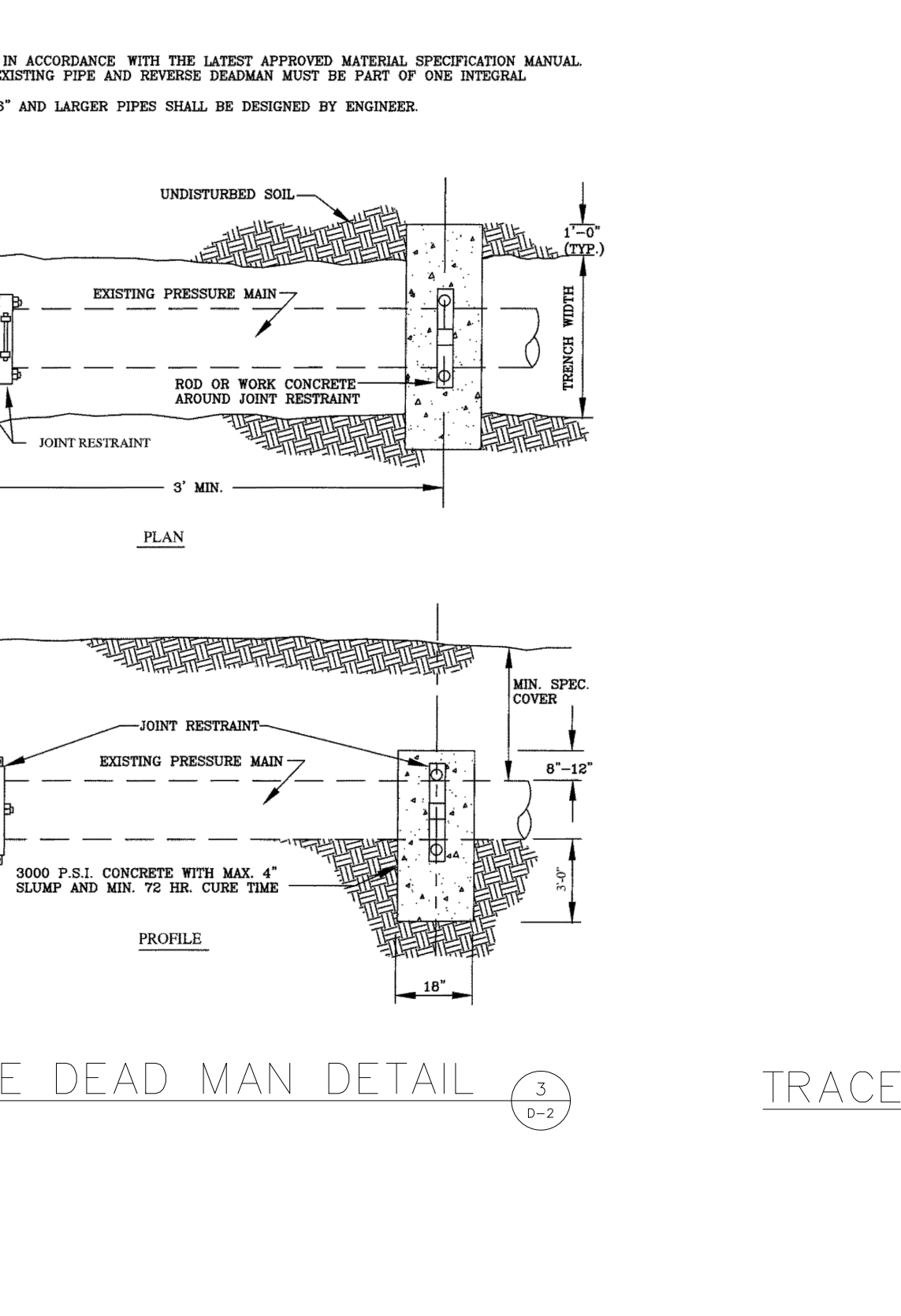
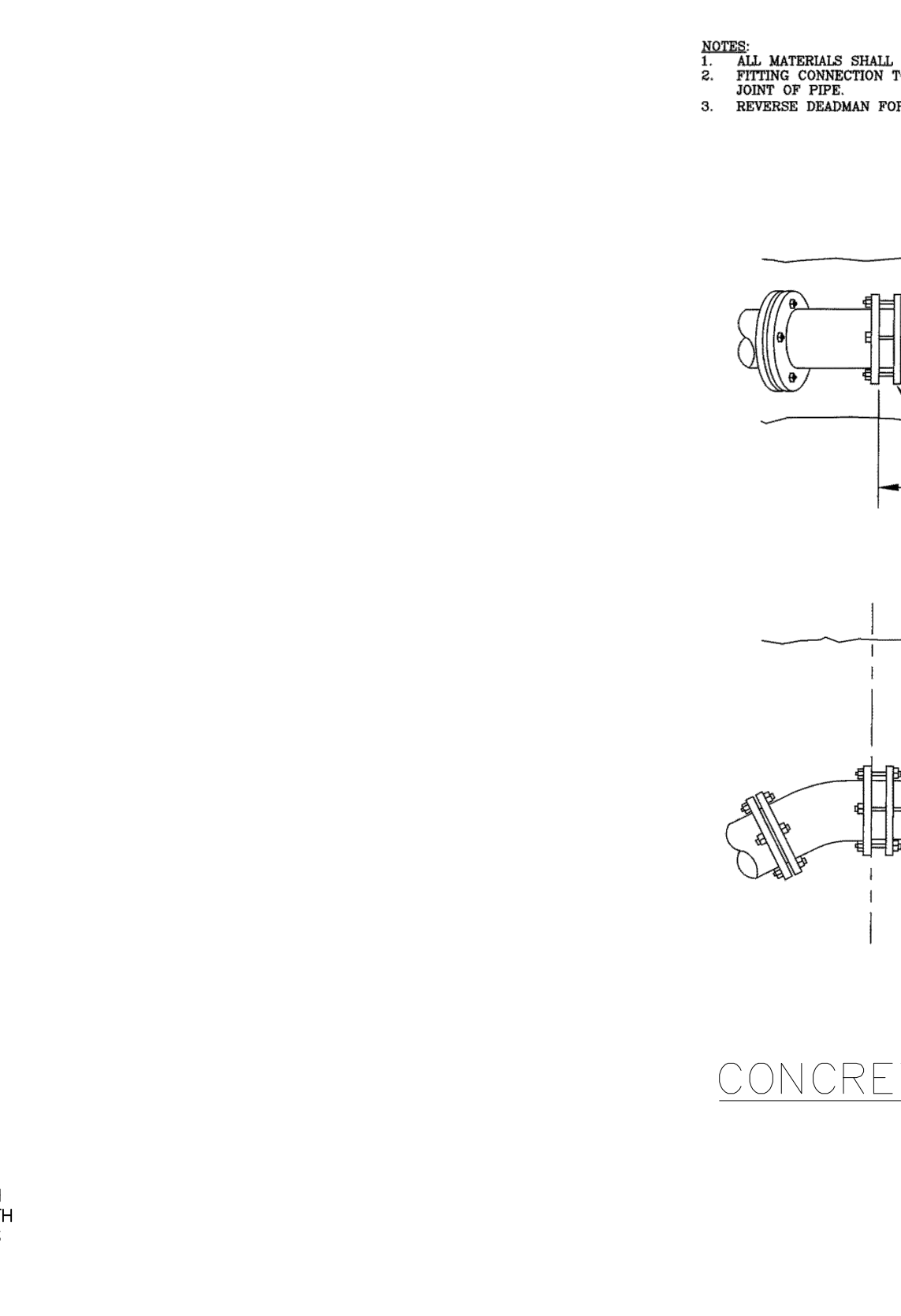
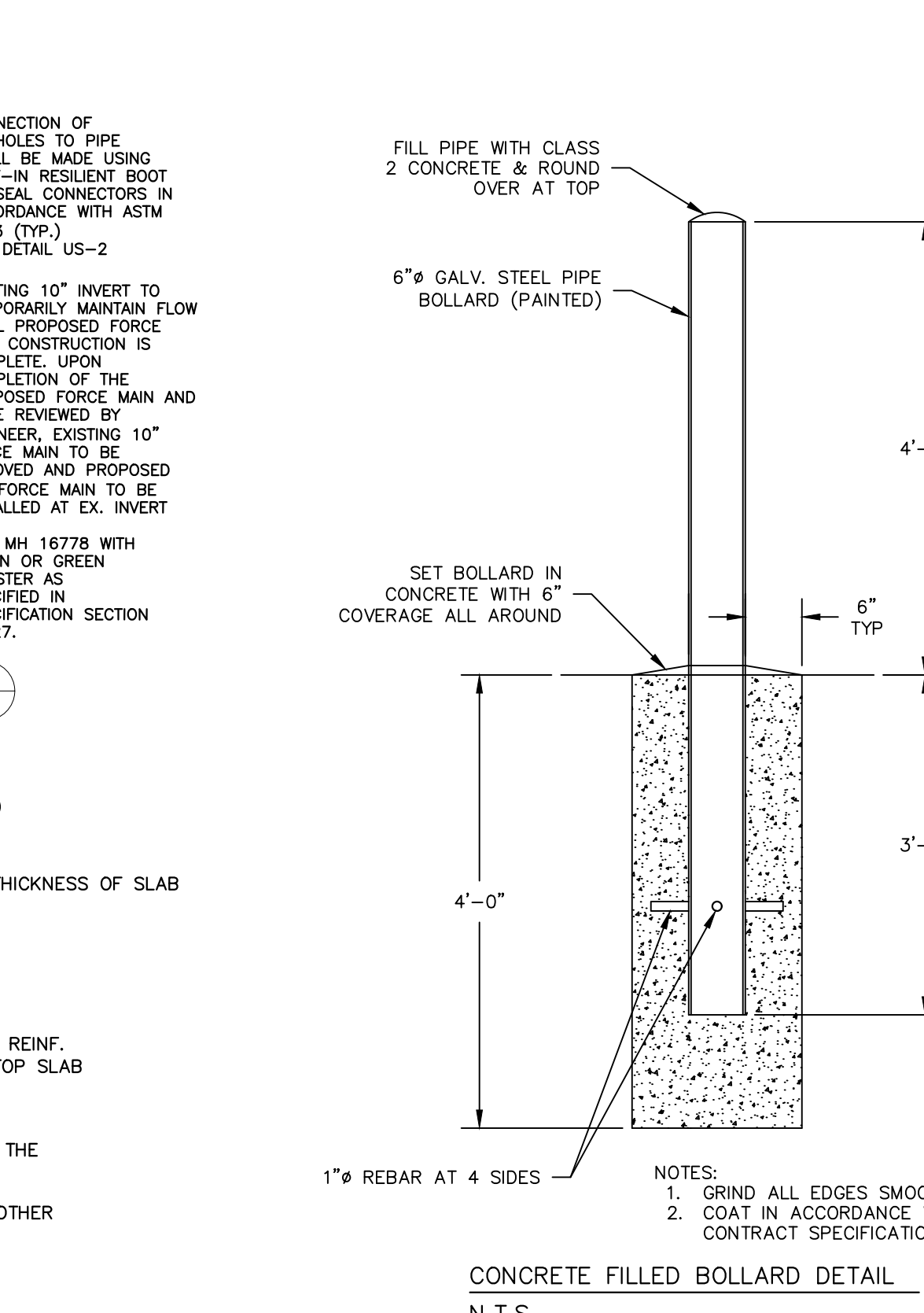
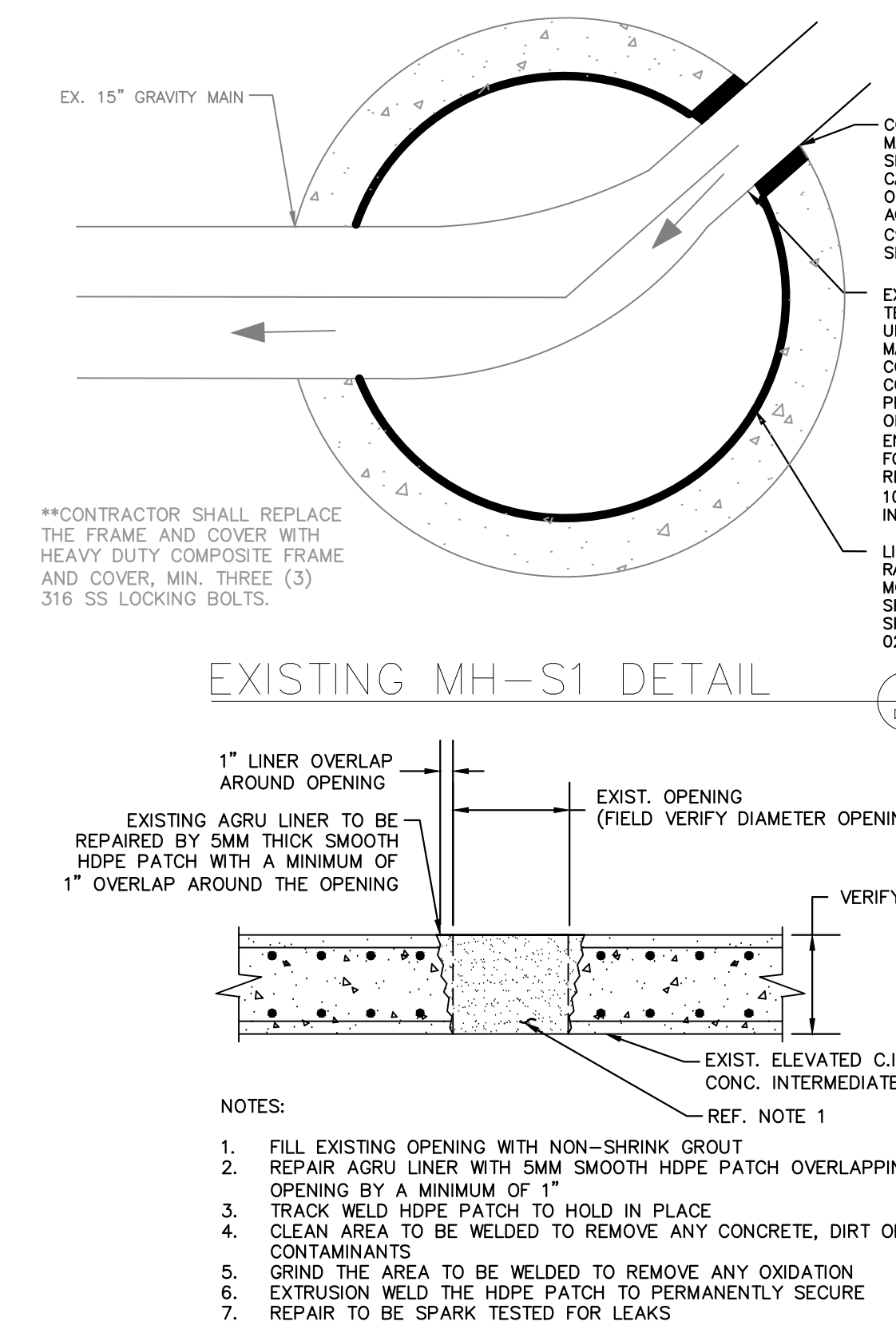
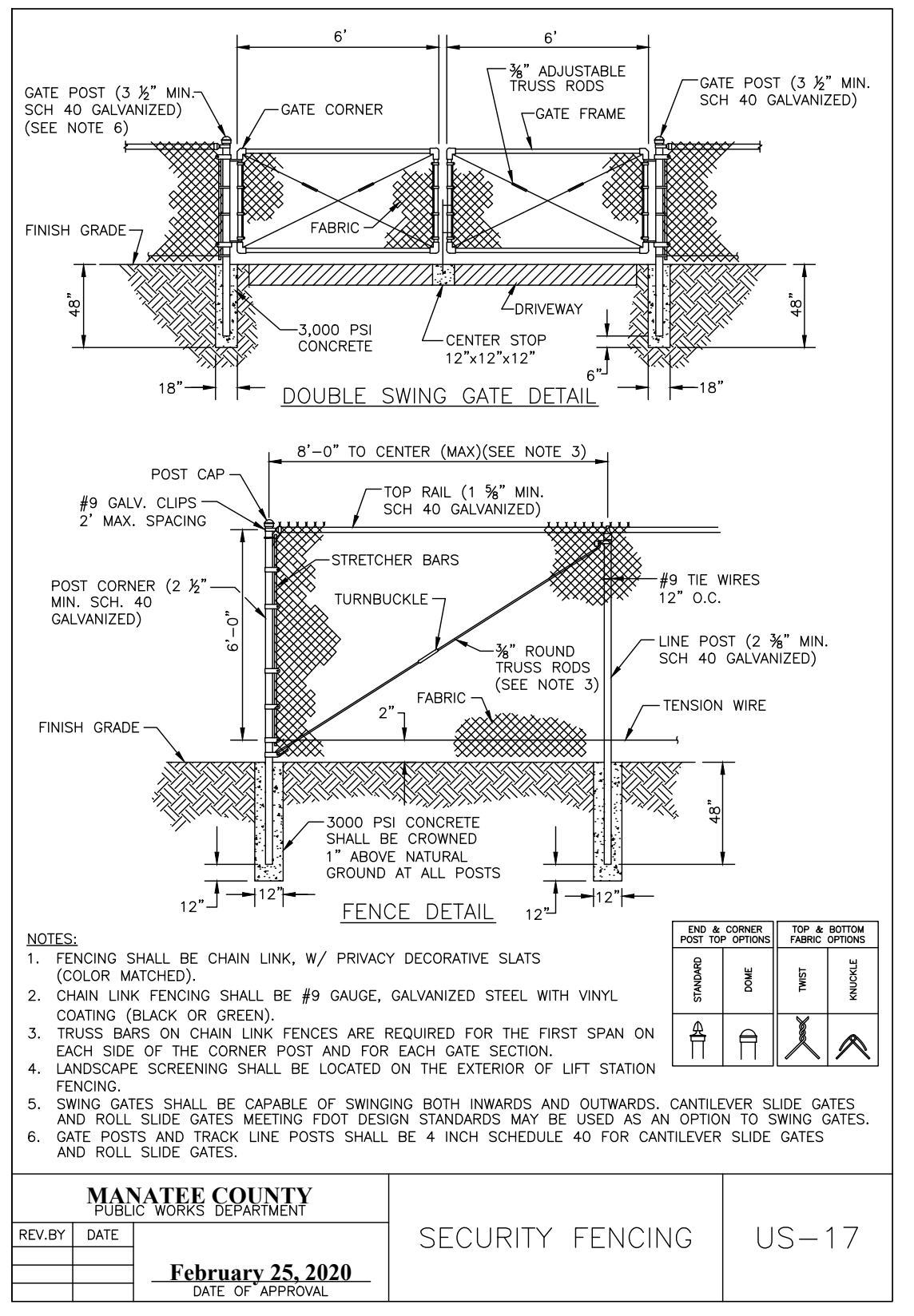
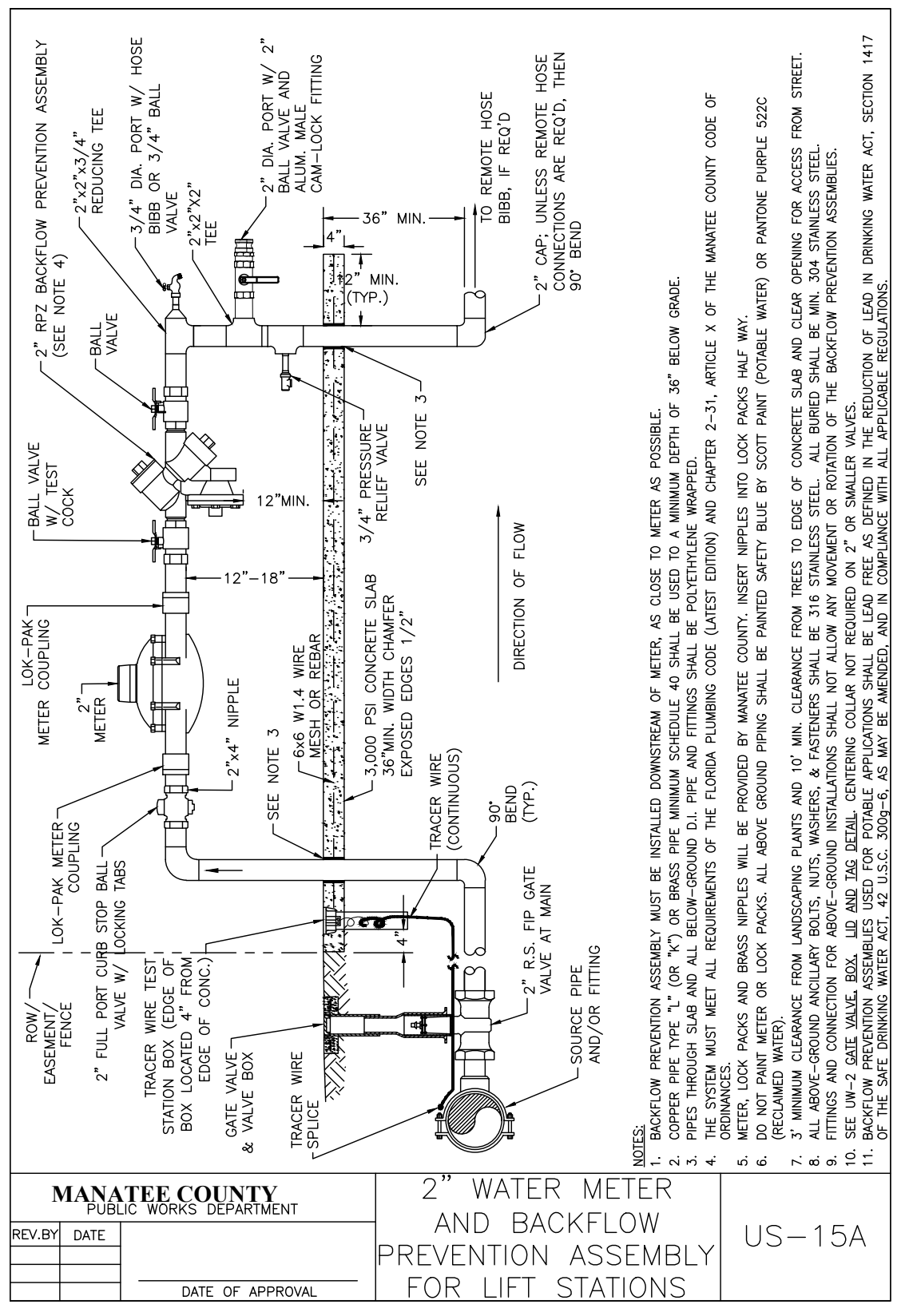
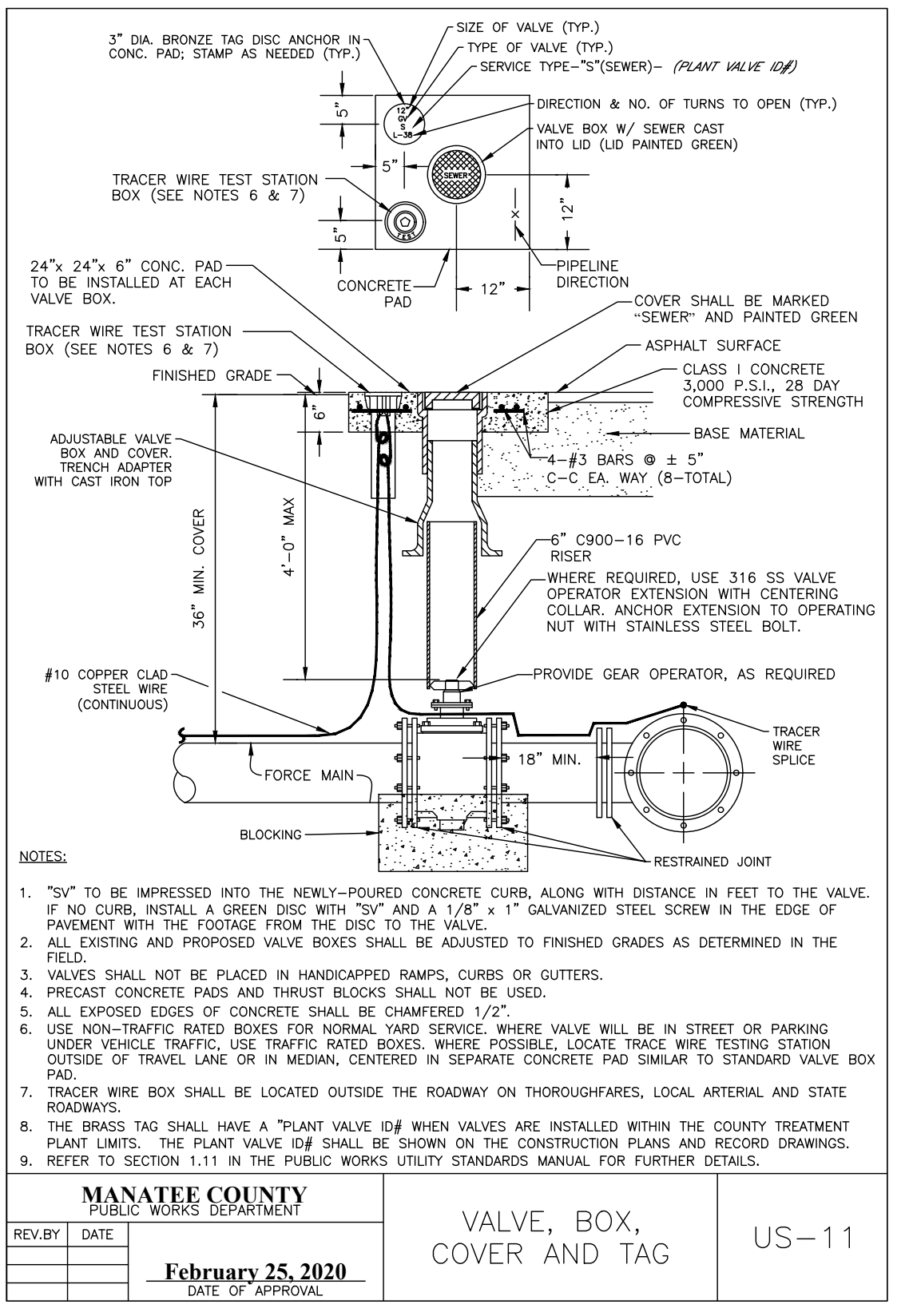
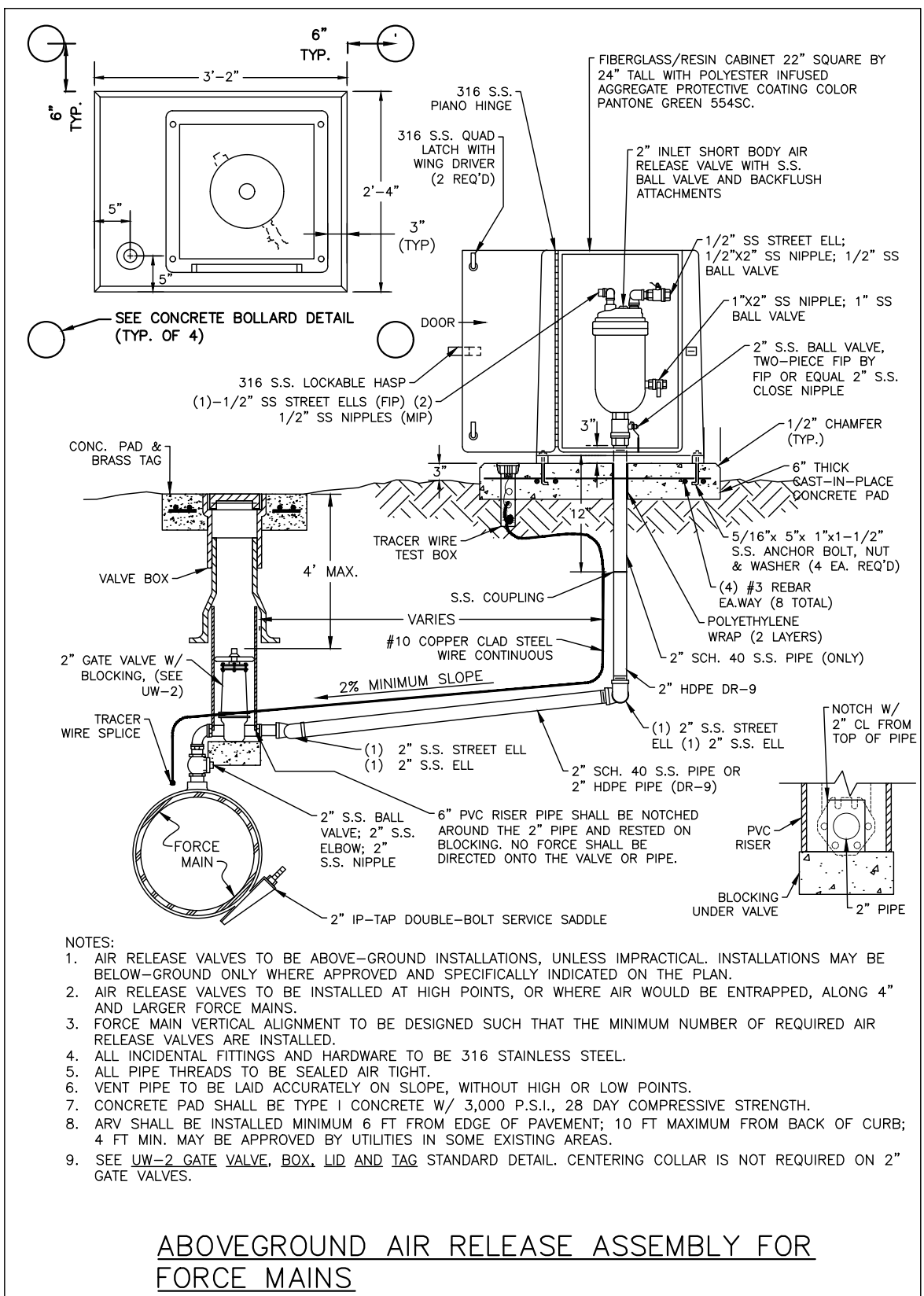
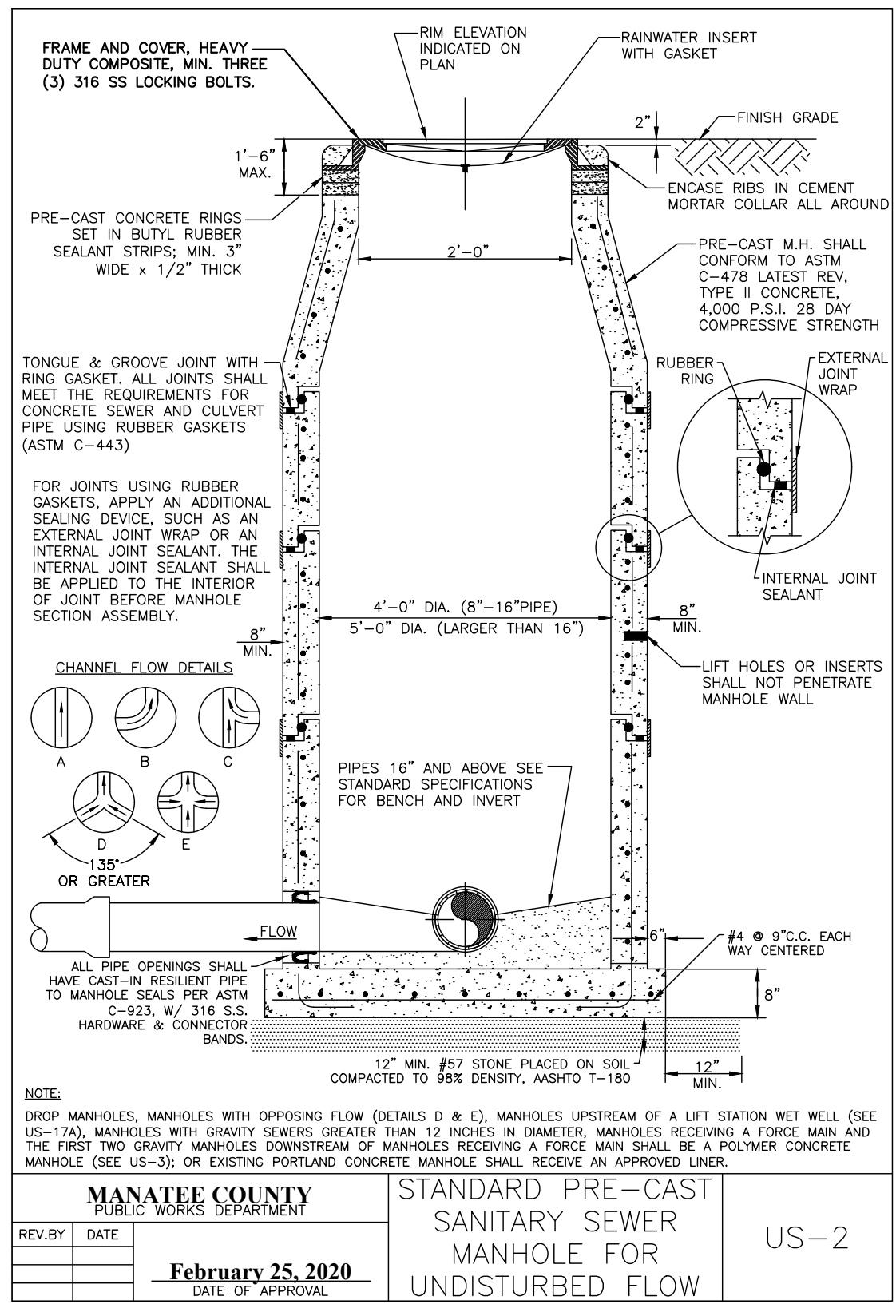
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FL DATE:

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