

FILE NAME: A:\2021\1601\2103_DSGN01_DWG\010_GENG-001-1601.dwg LAYOUT NAME: G-001 PRINTED: Friday, November 12, 2021 - 6:06pm USER: TBest



Borger SH 136 Utility Extension

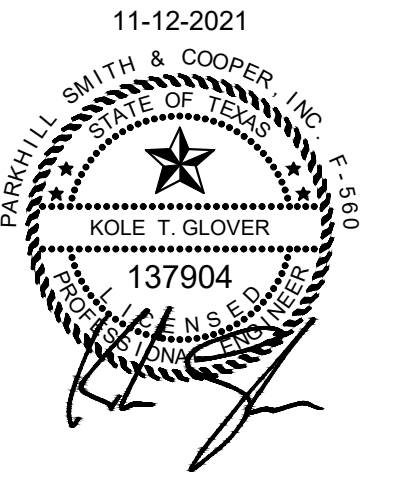
November 2021

Parkhill

Parkhill.com

Project No. 01-1601-21

Parkhill



Parkhill.com

Borger SH 136 Utility Extension



CLIENT
City Of Borger

P.O. Box 5250
Borger, Texas
806-273-0900

PROJECT NO.
1601.21

3	11-12-2021	SEALED SET
2	10-08-2021	80% Review
1	10-04-2021	60% Review

DATE DESCRIPTION

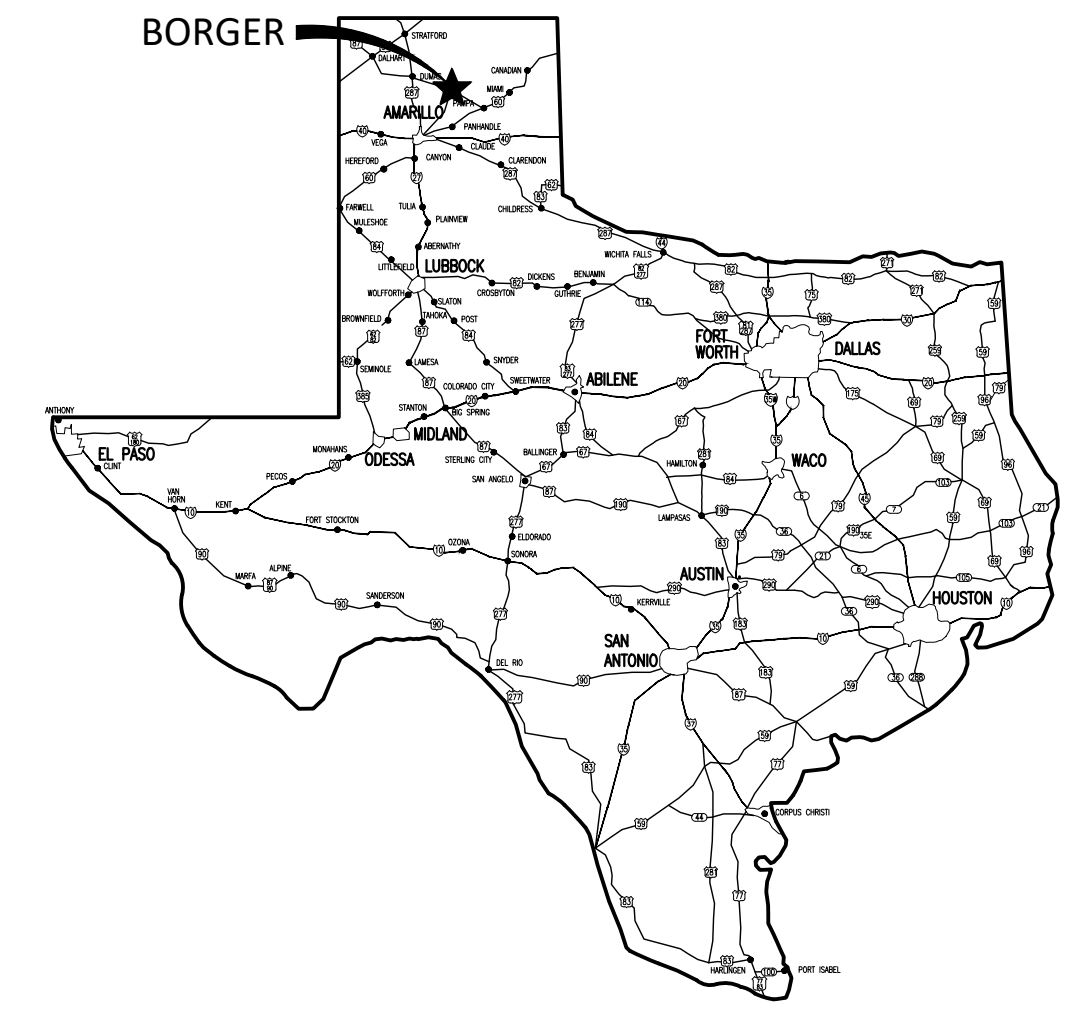
Cover Sheet

G-001

FILE NAME: A:\2021\1801.2\103_DSGN01_DWG\010_GENG-002-1601.dwg LAYOUT NAME: G-002 PRINTED: Friday, November 12, 2021 - 6:06pm USER: TBest



A1 LOCATION MAP
SCALE 1"= 300'



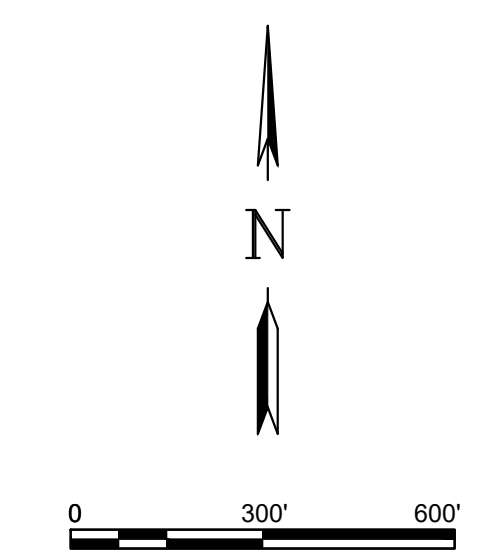
VICINITY MAP

SHEET INDEX

SHEET NO.	SHEET TITLE
G-001	Cover Sheet
G-002	Project Location Map, Vicinity Map & Sheet Index
G-003	General Notes, Legend, And Contact List
C-101	Water Line Plan And Profile Sta 0+00 To 6+00
C-102	Water Line Plan And Profile Sta 6+00 To 12+00
C-103	Water Line Plan And Profile Sta 12+00 To 15+45.67
C-104	Gravity Sewer Plan And Profile Sta 0+00 To 4+84.86
C-105	Force Main Plan And Profile Sta 0+00 To 6+00
C-106	Force Main Plan And Profile Sta 6+00 To 12+00
C-107	Force Main Plan And Profile Sta 12+00 To 15+09.78
C-201	Lift Station Site Plan And Grading Plan
C-202	Lift Station Plan View And Wet Well Plan
C-203	Lift Station Sections
C-501	Miscellaneous Utility Details
C-502	Miscellaneous Utility Details
C-503	Vault Details
E-101	Electrical Site Plan
E-501	Electrical Details
E-601	Electrical One-Line Wet Well Elevation and Load Table

SURVEY CONTROL POINTS

CONTROL POINT	DESCRIPTION
6	"X" ON CONCRETE BENCHMARK NORTHING : 3,884,321.80 EASTING : 682,346.55 ELEVATION : 3,094.27
4	1/2" IRON ROD WITH PLASTIC CAP "PSC CONTROL" NORTHING : 3,883,769.14 EASTING : 681,596.57 ELEVATION : 3,091.55



Parkhill



Parkhill.com

Borger SH 136 Utility Extension



CLIENT
City Of Borger
P.O. Box 5250
Borger, Texas
806-273-0900

PROJECT NO.
1601.21

#	DATE	DESCRIPTION
3	11-12-2021	SEALED SET
2	10-08-2021	80% Review
1	10-04-2021	60% Review

Project Location Map, Vicinity Map & Sheet Index

G-002

LEGEND

EXISTING

- GSN GAS LINE SIGN
- TPD TELECOMMUNICATION PEDESTAL
- UP UTILITY POLE
- LP LIGHT POLE
- ✕ WV WATER VALVE
- SN SIGN
- CO SEWER CLEAN OUT
- CP CONTROL POINT
- /CV IRRIGATION CONTROL VALVE
- 3068 --- EXISTING CONTOUR
- G — G — GAS LINE
- OHE — OHE — OVERHEAD ELECTRIC LINE
- S — S — SANITARY SEWER
- W — W — WATER LINE
- Wx — Wx — REUSE LINE

PROPOSED

- S — S — SEWER LINE
- W — W — WATERLINE
- FM — FM — FORCE MAIN
- SEWER MANHOLE
- ┌ PLUG
- ⊕ GATE VALVE
- ▲▲▲▲▲ WATER FITTINGS
- Ⓐ COMBINATION AIR/VAC VALVE
- 3068.7 FG FINISHED GRADE ELEVATION
- 3069.0 TS TOP OF SLAB/CONCRETE ELEVATION
- 3068 — PROPOSED CONTOUR
- - - - - PROPOSED SWALE/DITCH

GENERAL NOTES

1. ALL EXISTING UTILITIES CURRENTLY IN SERVICE MUST REMAIN IN SERVICE THROUGHOUT CONSTRUCTION OF THE NEW LINE EXCEPT AS NOTED IN THE DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES (INCLUDING SERVICE CONNECTIONS) FROM DAMAGE AS A RESULT OF CONSTRUCTION.
2. ALTHOUGH ALL EFFORTS HAVE BEEN MADE TO INDICATE ALL MAJOR EXISTING UTILITIES ON PLANS, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ALL SAID UTILITIES AS WELL AS SERVICE CONNECTIONS (WHETHER OR NOT INDICATED ON PLANS) PRIOR TO AND DURING CONSTRUCTION.
3. ALL UTILITIES ENCOUNTERED DURING CONSTRUCTION SHALL BE SHOWN ON RECORD DRAWINGS. PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES & LAND OWNERS TO VERIFY LOCATION OF EXISTING UTILITIES & CONTRACTOR SHALL CALL THE RESPECTIVE "1-CALL" NUMBER FOR SUCH UTILITIES.
4. CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH UTILITY OWNERS OF GAS, OIL, ELECTRIC, TELEPHONE, FIBER OPTIC, CABLE TV, SEWER, AND WATER FOR ANY RELOCATION AND/OR PROTECTION OF EXISTING UTILITIES AS REQUIRED BY APPLICABLE COMPANY, DURING ALL CONSTRUCTION ACTIVITIES.
5. UNLESS OTHERWISE INDICATED, ALL EXISTING ROADWAYS, SIDEWALKS, SURFACE IMPROVEMENTS, AND SURFACE GRADING AFFECTED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO ORIGINAL CONDITION AND ELEVATION BY CONTRACTOR AT NO ADDITIONAL EXPENSE TO OWNER.
6. THE CITY'S UTILITY DEPARTMENT SHALL BE NOTIFIED 72 HOURS IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES WITHIN CITY R.O.W. OR WITH CITY OWNED UTILITIES.
7. THE CONTRACTOR SHALL NOTIFY THE CITY OF BORGER UTILITY DEPT., IN WRITING, OF ANY PROPOSED DUMP SITE(S) FOR OVERBURDEN FOR REVIEW AND APPROVAL. THE CONTRACTOR SHALL OBTAIN APPROVAL OF ITS TRUCK ROUTE TO THE SITE, AS WELL AS FOR THE MATERIALS IT SHALL BE HAULING BEFORE REMOVAL OF OVERBURDEN FROM THE PROJECT SITE.
8. AS NECESSARY, CONTRACTOR IS REQUIRED TO IMPLEMENT AN APPROVED STORM WATER POLLUTION PREVENTION (SWPPP) PLAN. CONTRACTOR SHALL KEEP ALL DEBRIS & SPOIL OUT OF DRAINS, CULVERTS AND DROP INLETS AND ENSURE THAT THEY DO NOT BECOME CLOGGED AS A RESULT OF CONSTRUCTION ACTIVITIES.
9. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING UTILITY LINES BY POTHOLING AND/OR OTHER METHODS 2-WEEKS AHEAD OF PIPE LAYING CREWS TO ALLOW THE ENGINEER TIME TO INITIATE ANY NECESSARY CHANGES IN ALIGNMENT AND/OR GRADE OF THE PIPELINE.
10. CONTRACTOR SHALL PROVIDE A MINIMUM OF 4 FT. OF COVER FROM THE TOP OF PIPE TO FINISH GRADE FOR ALL NEW PIPE, UNLESS INDICATED OTHERWISE ON THE DRAWINGS AND SPECIFICATIONS. FOR NEW PIPE INSTALLATION, WHEN CROSSING UNDERNEATH EXISTING OBSTRUCTIONS AND/OR UTILITIES, THE NEW LINE SHALL HAVE A MINIMUM OF 12 INCHES OF CLEARANCE, UNLESS OTHERWISE INDICATED ON THE DRAWINGS AND SPECIFICATIONS.
11. CONTROL FOR THIS PROJECT IS BASED ON THE TEXAS COORDINATE SYSTEM OF 1983 (NAD83), TEXAS NORTH ZONE 4201, ELEVATIONS ARE BASED ON NAVD'88
CONVERGENCE = -0'39.92"
COMBINED SCALE FACTOR = 0.9997260
DISTANCES ARE AT GRID
12. PRIOR TO BEGINNING WORK ADJACENT TO AND/OR WITHIN CITY RIGHT-OF-WAY
- CONTRACTOR SHALL PREPARE A TRAFFIC CONTROL PLAN & SUBMIT TO THE CITY FOR APPROVAL. CONTRACTOR SHALL NOT BEGIN WORK UNTIL THE TRAFFIC CONTROL PLAN HAS BEEN APPROVED, A COPY OF WHICH IS TO BE PROVIDED TO THE ENGINEER. TRAFFIC CONTROL PLAN SHALL BE PREPARED IN CONFORMANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS & HIGHWAYS.
13. CONTRACTOR SHALL WORK CONTINUOUSLY TO RESTORE ROADWAYS TO PLACE THEM BACK IN SERVICE. IF IN THE OPINION OF THE ENGINEER THE CONTRACTOR IS NOT WORKING DILIGENTLY TO REPLACE THE PAVEMENT, THIS MAY BE CAUSE FOR THE CONTRACTOR TO CEASE WORK ON OTHER AREAS UNTIL THE ROADWAYS ARE RESTORED AND PAVEMENT REPLACED.
14. AS NECESSARY, COORDINATE RELOCATION OF LANDOWNER EQUIPMENT WITH PROJECT MANAGER.
15. CONTRACTOR SHALL USE A NIGHT PLUG AND SEAL THE OPENINGS OF THE PIPE DURING NON-WORKING HOURS.
16. CONTRACTOR SHALL COMPILE A RECORD OF ALL FOUND UNDERGROUND UTILITIES. THIS INFORMATION SHALL BE TRANSFERRED TO FINAL RECORD DRAWINGS.
17. CONTRACTOR SHALL EXHIBIT CAUTION DURING CONSTRUCTION ACTIVITIES AS VARIOUS BURIED AND OVERHEAD UTILITIES EXIST IN THE THE PROJECT ACTIVITIES.
18. CONTRACTOR SHALL PERFORM THE WORK AS SHOWN HEREIN AND IN THE SPECIFICATIONS IN SUCH A MANNER TO PROVIDE UNINTERRUPTED WATER AND SEWER SERVICE DURING ALL CONSTRUCTION ACTIVITIES.
19. CONTRACTOR SHALL GIVE ENGINEER 72-HOURS NOTICE FOR INSPECTION/TESTING OF ALL CRITICAL ASPECTS OF THE PROJECT. THESE INCLUDE, BUT ARE NO LIMITED TO, INSPECTION/TESTING OF: PIPE EMBEDMENT, FITTING RESTRAINT, PIPE BACKFILL, WARNING TAPE, SUBGRADE, REINFORCEMENT, CONCRETE AND FLOWFILL OPERATIONS, MANDREL TESTING, AND MANHOLE TESTING.
20. ALL BACKFILL UNLESS OTHERWISE SPECIFIED SHALL BE DONE IN 12" LIFTS, COMPACTED TO 95% OF ASTM D698, ± 2% OPTIMAL MOISTURE CONTENT.
21. THE CONTRACTOR SHALL STRICTLY COMPLY WITH ALL APPLICABLE STATUTES, REGULATIONS, ORDERS, RULES, REQUIREMENTS, AND STANDARDS OR ALL GOVERNMENTAL AUTHORITIES HAVING JURISDICTION WITH RESPECT TO THE PROJECT.
22. WHERE VALVE BOXES ARE IN CLOSE PROXIMITY CONCRETE COLLAR SHALL BE A SINGLE MONOLITHIC POUR THAT CONNECTS ALL VALVE BOXES.
23. ELEVATION AND DIMENSIONS SHOWN ARE APPROXIMATE AND BASED ON FIELD SURVEY DATA THROUGHOUT CONSTRUCTION. COORDINATE WITH ENGINEER TO ENSURE ALL REQUIREMENTS, REGULATIONS, AND DESIGN INTENT ARE MET. CONTRACTOR IS SOLELY RESPONSIBLE IN THE MEETING OF THE DESIGN INTENT.
24. ADD AND REMOVE VERTICAL BENDS AS NECESSARY FOR WATERLINE TO AVOID EXISTING UTILITIES, MAKE REQUIRED GRADE, AND NOT EXCEED MANUFACTURER DEFLECTION REQUIREMENTS.
25. WATERLINE DEFLECTIONS WHERE SPECIFIED OR REQUIRED SHALL BE ACCOMPLISHED PER PIPE MANUFACTURER REQUIREMENTS.
26. TIE IN ELEVATION FOR WATERLINE RECONNECTIONS IS UNKNOWN. ADD AND REMOVE VERTICAL BENDS AS NECESSARY TO RECONNECT.
27. FIELD VERIFY ALL WATER AND SEWERLINE MATERIAL, SIZE, AND ELEVATION PRIOR TO ORDERING AND INSTALLING.
28. THE SURFACE ELEVATION OF FEATURES SUCH AS MANHOLES, GATES VALVES, VAULTS ETC, SHALL BE SET TO THE FUTURE SURFACE ELEVATION UNLESS NOT APPLICABLE. COORDINATE AND VERIFY NECESSARY SURFACE ELEVATION PRIOR TO PLACING ALL SUCH FEATURES WITH ENGINEER.
29. ROCK MAY BE PRESENT IN THE ALIGNMENTS AND/OR LIFT STATION LOCATION, NO EXTRA COMPENSATION WILL BE MADE FOR SOLID ROCK EXCAVATION. THE CONTRACTOR IS EXPECTED TO MAKE BORING OF HIS OWN AND SATISFY HIMSELF OF THE CHARACTER OF MATERIAL WHICH WILL BE ENCOUNTERED.
30. ALL DUCTILE IRON PIPE AND FITTING USED FOR SEWER SHALL HAVE A PROTECTO 401 LINING AND COATING, ALL HARDWARE SHALL BE STAINLESS STEEL.
31. CONTRACTOR SHALL COORDINATE WITH APPLICABLE IACX ROCK CREEK ENERGY PERSONNEL, OBTAIN ALL REQUIRED PERMITS, AND ADHERE TO ALL REQUIREMENTS BY IACX ROCK CREEK ENERGY FOR CROSSING THEIR UTILITIES. CONTRACTOR SHALL SPOT VIA HYDROEXCAVATION ALL IACX ROCK CREEK ENERGY UTILITIES PRIOR TO BORE OPERATIONS. TWO WEEKS PRIOR TO BEGINNING HYDROEXCAVATION OPERATIONS CONTRACTOR SHALL CONTACT IACX ROCK CREEK ENERGY.
32. ALL VEGETATION WITHIN THE VICINITY OF PROPOSED IMPROVEMENTS SHALL BE CLEARED AND GRUBBED AS NECESSARY.

LIST OF UTILITIES AND AGENCIES

CITY OF BORGER
P.O. BOX 5250
BORGER, TEXAS
(806) 273-0900
MR. CHRIS INGRAM
DIRECTOR OF UTILITIES

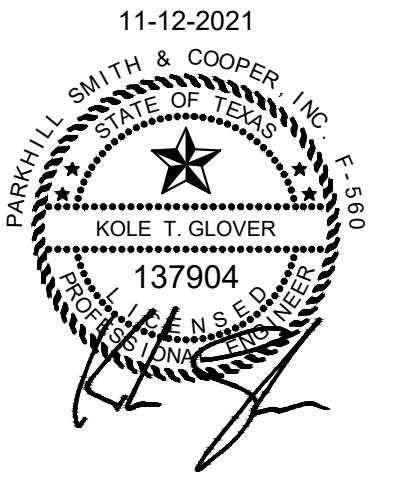
ENGINEER
PARKHILL
800 S. POLK STREET, SUITE 200
AMARILLO, TEXAS 79101
(806) 376-8600
MR. KOLE GLOVER, P.E.

TEXAS 811
11880 GREENVILLE, SUITE 120
DALLAS, TEXAS 75243
(800) 344-8377

XCEL ENERGY
414 NICOLLET MALL
MINNEAPOLIS, MN 55401
(800) 628-2121

TEXAS GAS SERVICE
P.O. BOX 219913
KANSAS CITY, MO 64121-9913
(800) 959-5325 EMERGENCY
(800) 700-2443 CUSTOMER SERVICE

Parkhill



Parkhill.com

Borger SH 136 Utility Extension



CLIENT
City Of Borger

P.O. Box 5250
Borger, Texas
806-273-0900

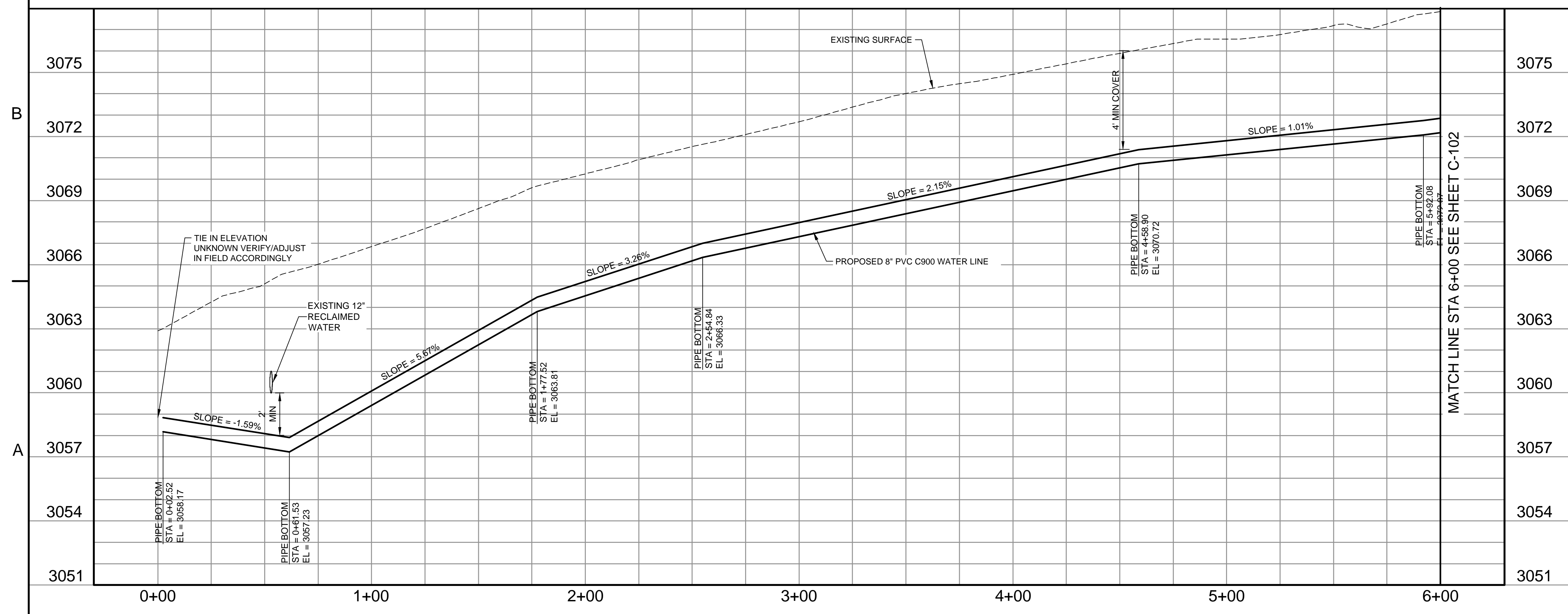
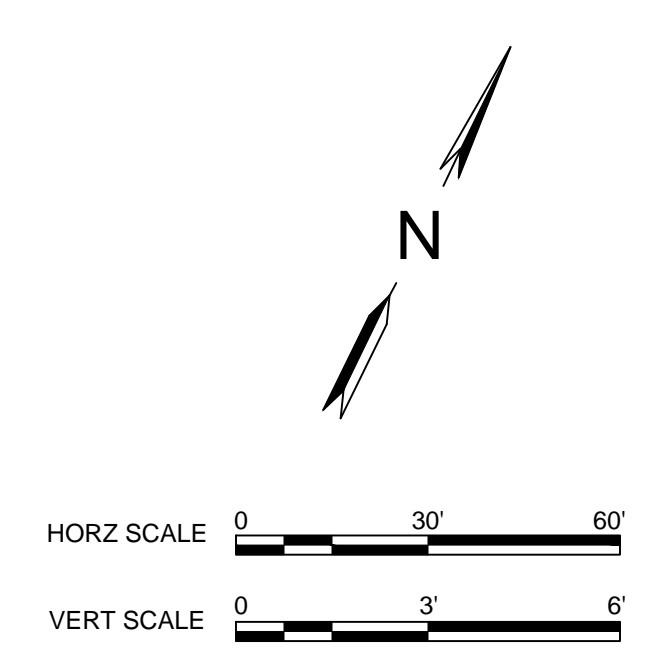
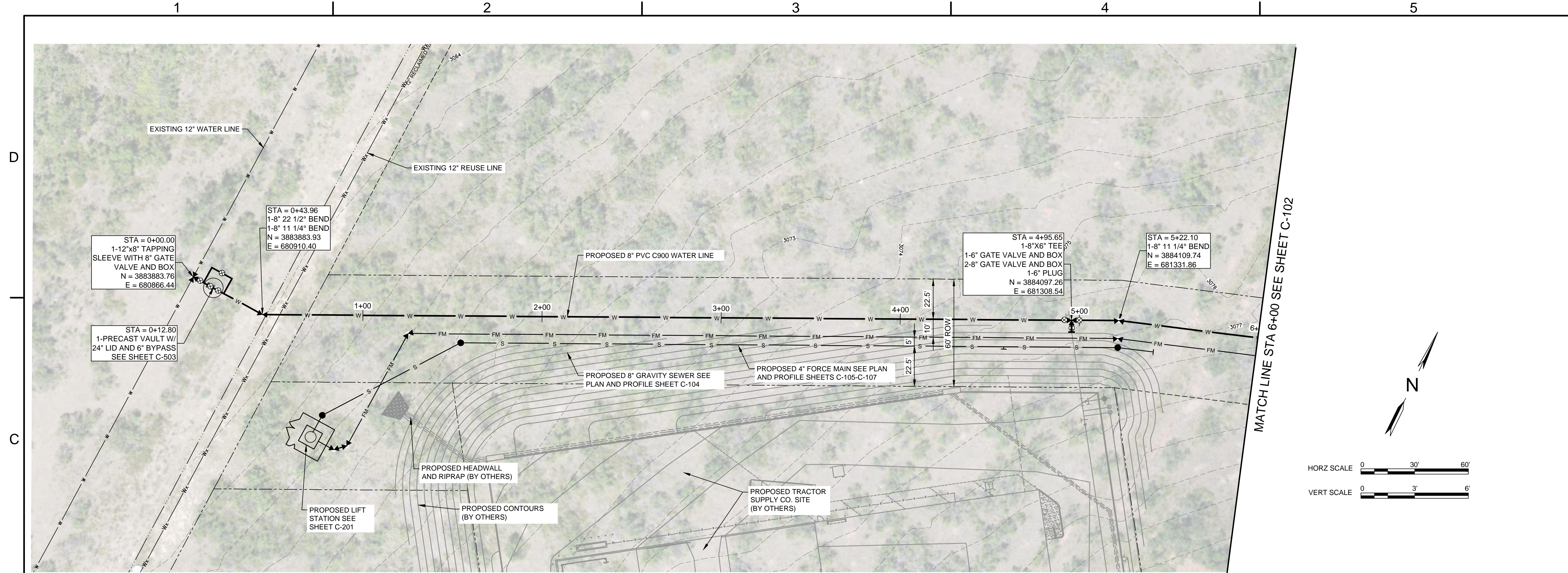
PROJECT NO.
1601.21

#	DATE	DESCRIPTION
3	11-12-2021	SEALED SET
2	10-08-2021	80% Review
1	10-04-2021	60% Review

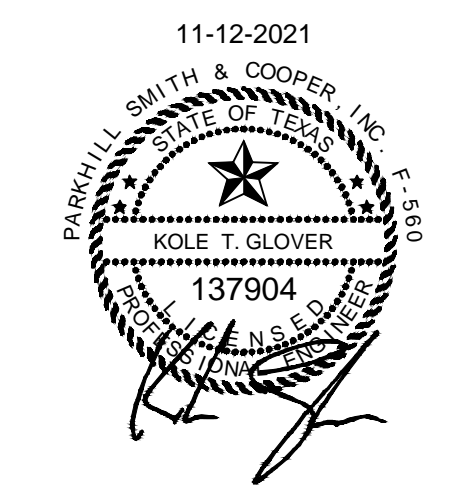
**General Notes,
Legend, And
Contact List**

G-003

FILE NAME: A:\2021\1601.2\103_DSGN01_DWG\050_CIVIL\C-101-1601.dwg LAYOUT NAME: C-101 PRINTED: Friday, November 12, 2021 - 6:28pm USER: TBest



Parkhill



Parkhill.com

Borger SH 136 Utility Extension



CLIENT
City Of Borger

P.O. Box 5250
Borger, Texas
806-273-0900

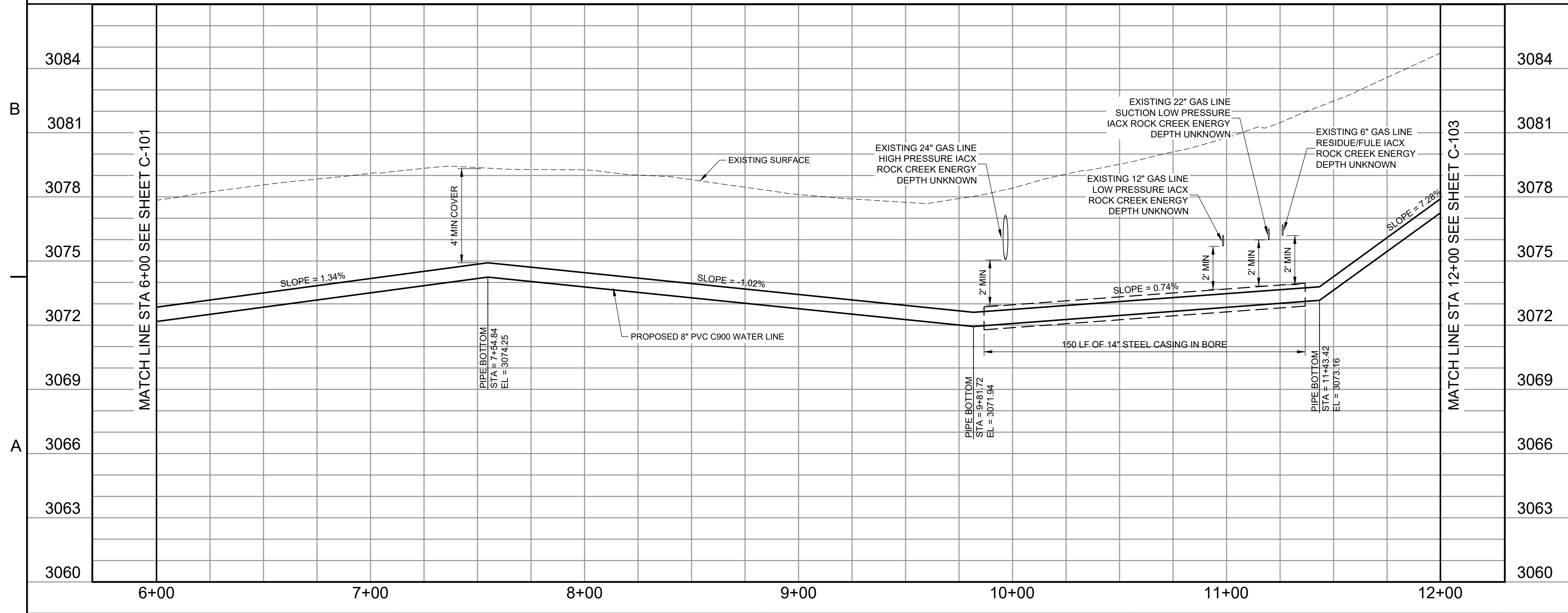
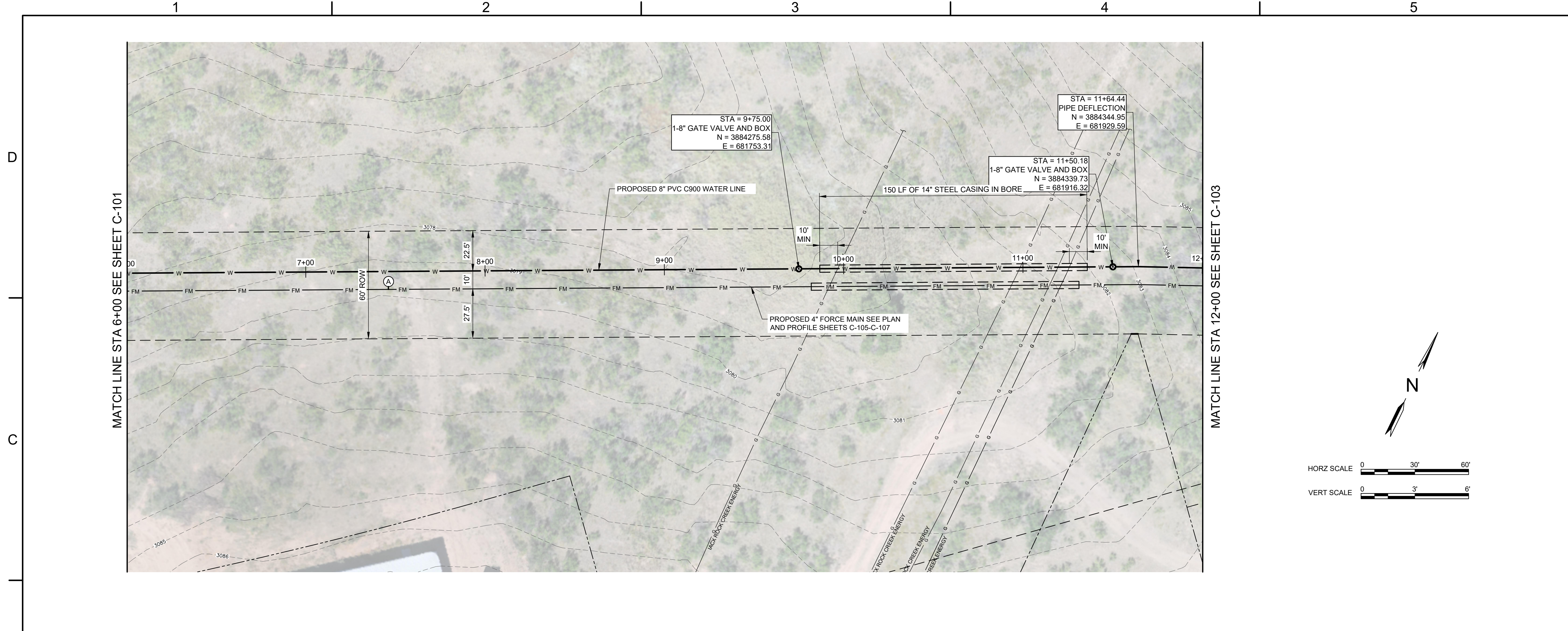
PROJECT NO.
1601.21

#	DATE	DESCRIPTION
3	11-12-2021	SEALED SET
2	10-08-2021	80% Review
1	10-04-2021	60% Review

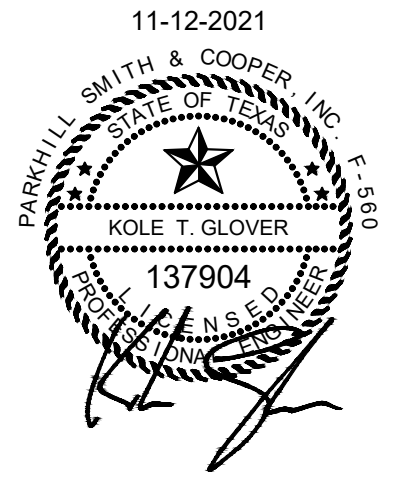
**Water Line
Plan And Profile
Sta 0+00 To
Sta 6+00**

C-101

FILE NAME: A:\2021\1801.2\103_DSGN01_DWG\050_CIVIL\C-102-1601.dwg LAYOUT NAME: C-102 PRINTED: Friday, November 12, 2021 - 6:07pm USER: TBest



Parkhill



Parkhill.com

Borger SH 136 Utility Extension



CLIENT
City Of Borger
P.O. Box 5250
Borger, Texas
806-273-0900

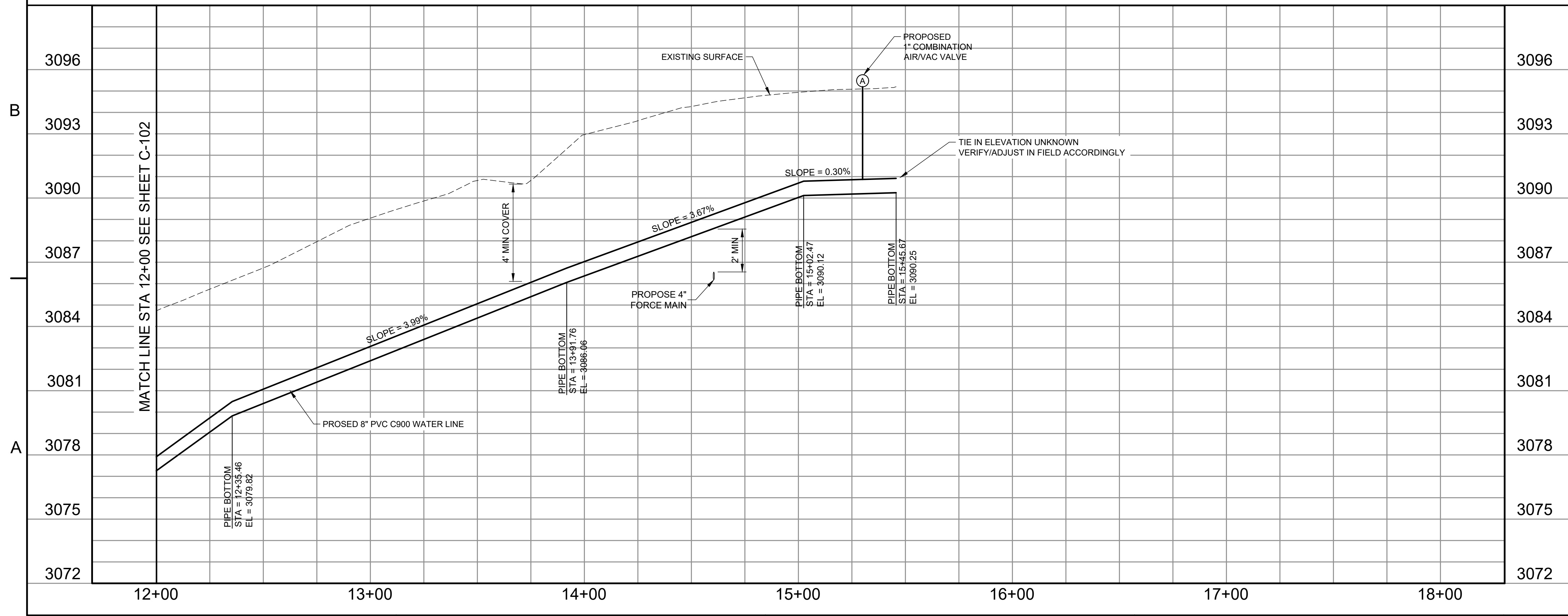
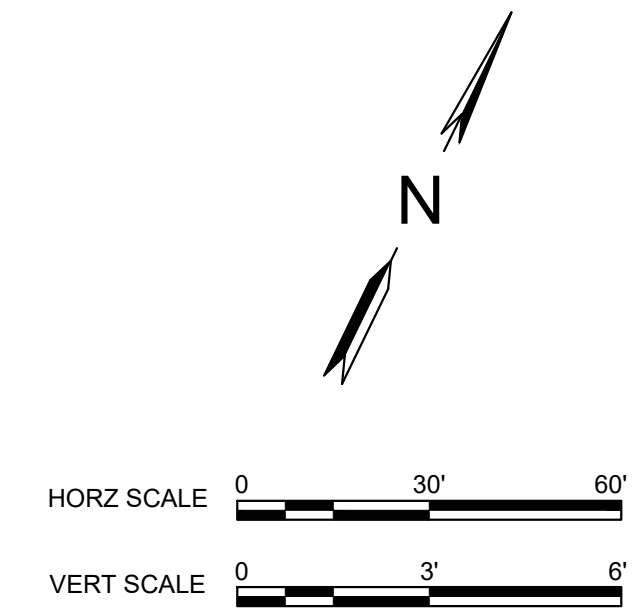
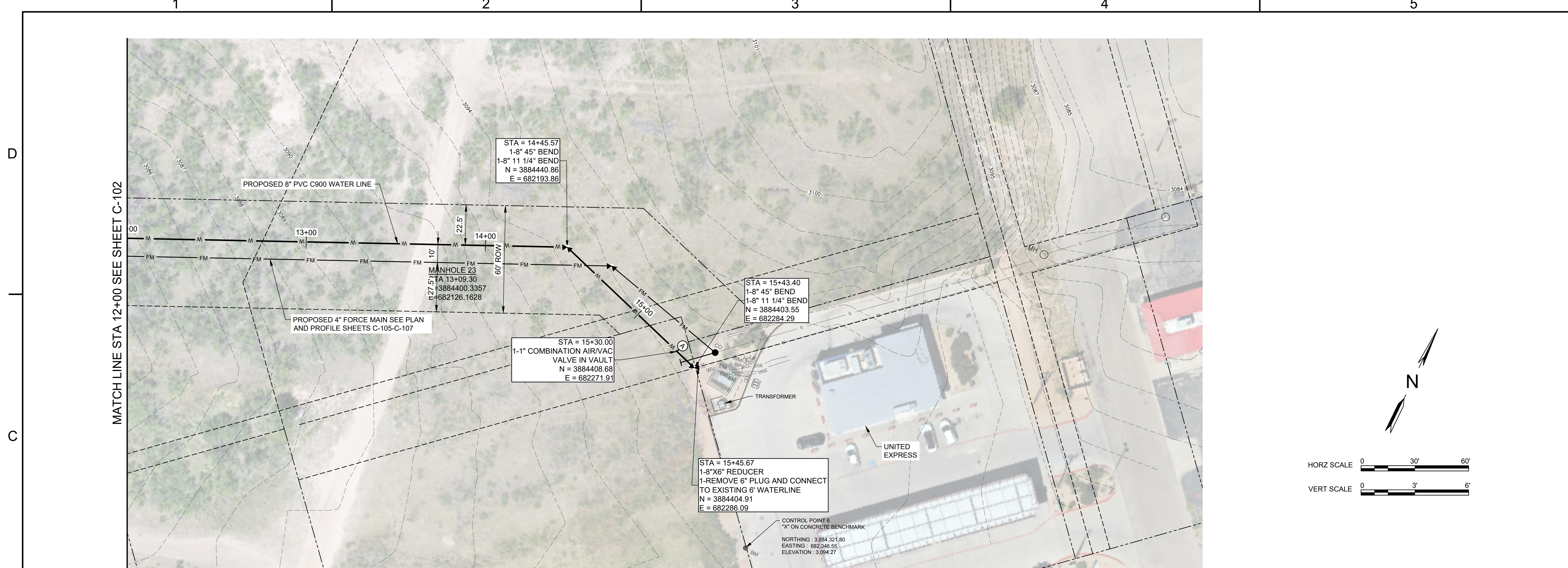
PROJECT NO.
1601.21

#	DATE	DESCRIPTION
3	11-12-2021	SEALED SET
2	10-08-2021	80% Review
1	10-04-2021	60% Review

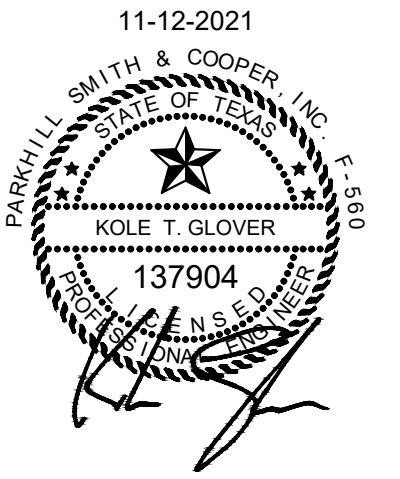
**Water Line
Plan And Profile
Sta 6+00 To
Sta 12+00**

C-102

FILE NAME: A:\2021\1601.2\103_DSGN01_DWG\050_CIVIL\C-103-1601.dwg LAYOUT NAME: C-103 PRINTED: Friday, November 12, 2021 - 6:06pm USER: TBest



Parkhill



Parkhill.com

Borger SH 136 Utility Extension



CLIENT
 City Of Borger
 P.O. Box 5250
 Borger, Texas
 806-273-0900

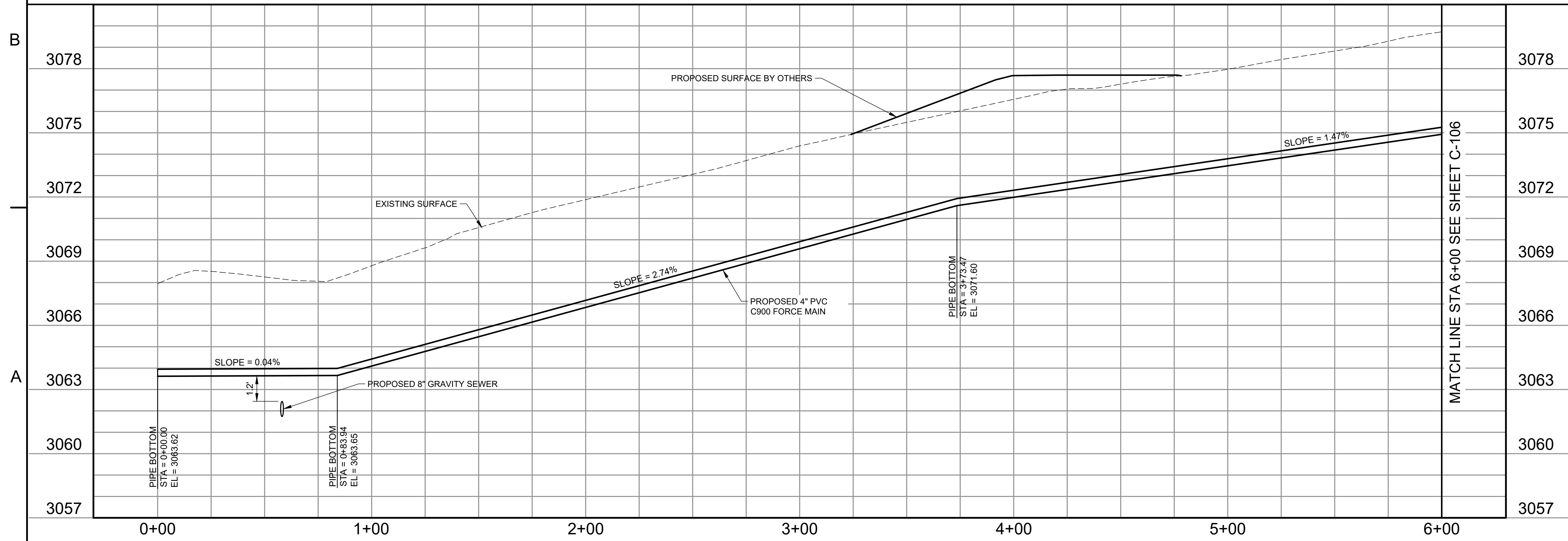
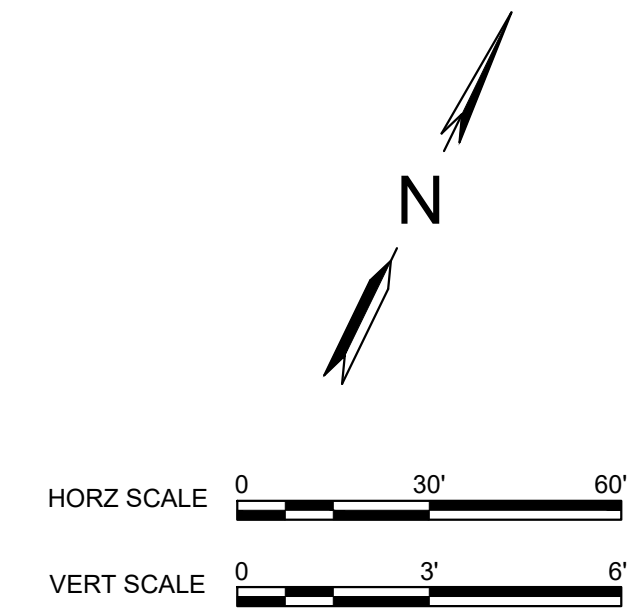
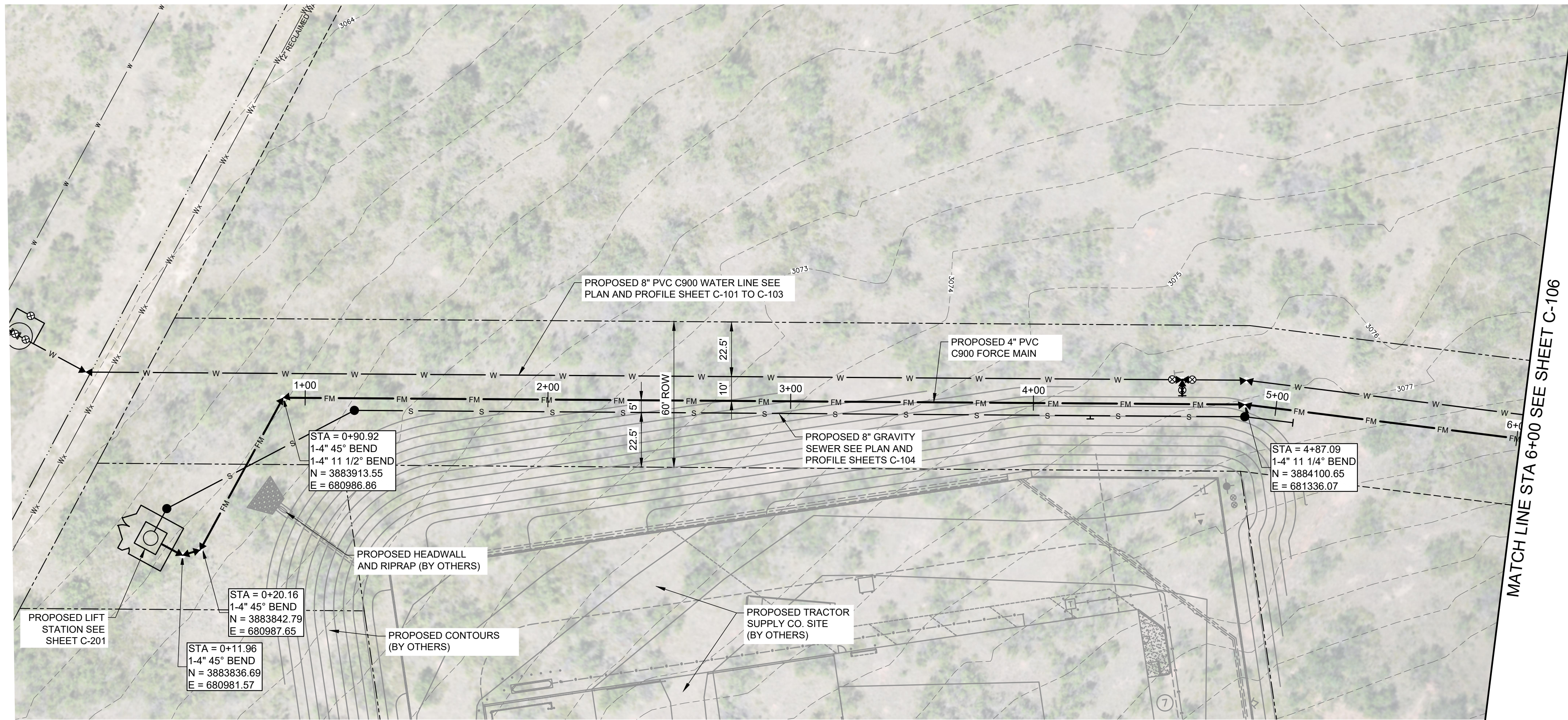
PROJECT NO.
 1601.21

#	DATE	DESCRIPTION
3	11-12-2021	SEALED SET
2	10-08-2021	80% Review
1	10-04-2021	60% Review

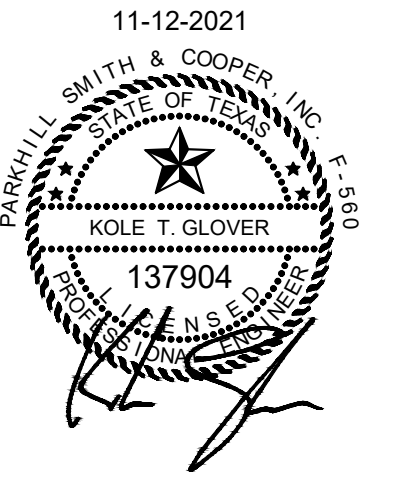
**Water Line
 Plan And Profile
 Sta 12+00 To
 Sta 15+45.67**

C-103

FILE NAME: A:\2021\1601.2\103_DS\GN01_DWG\050_CIVIL\C-105-1601.dwg LAYOUT NAME: C-105 PRINTED: Friday, November 12, 2021 - 6:07pm USER: TBest



Parkhill



Parkhill.com

Borger SH 136 Utility Extension



CLIENT
City Of Borger
P.O. Box 5250
Borger, Texas
806-273-0900

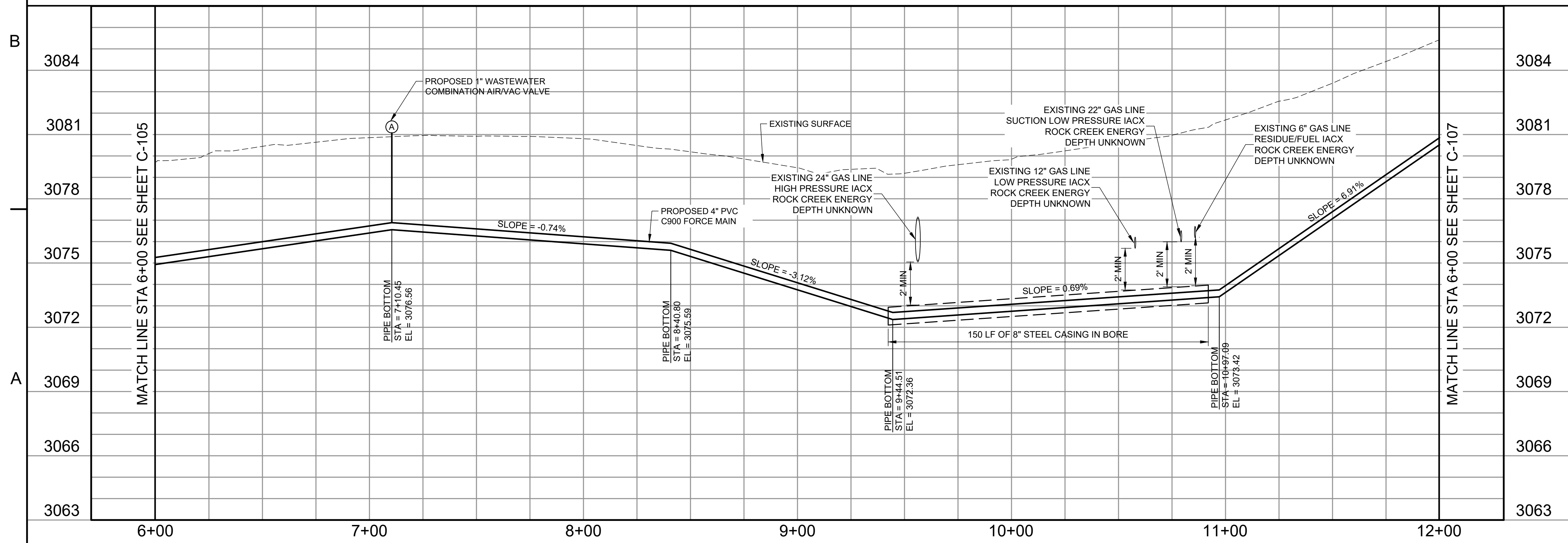
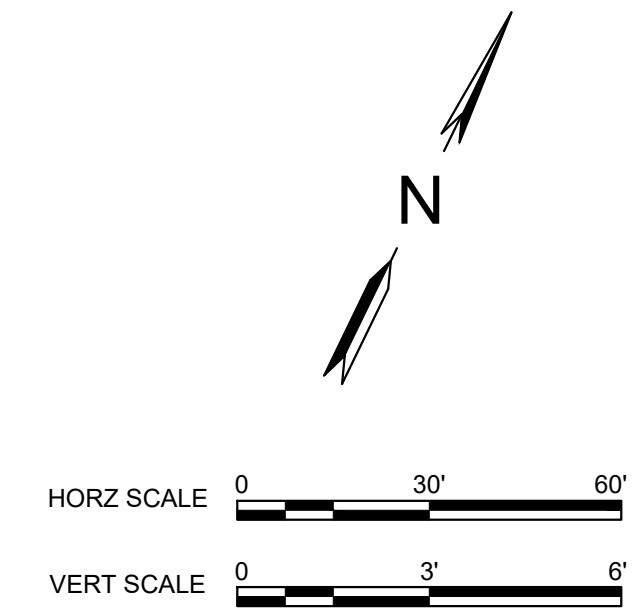
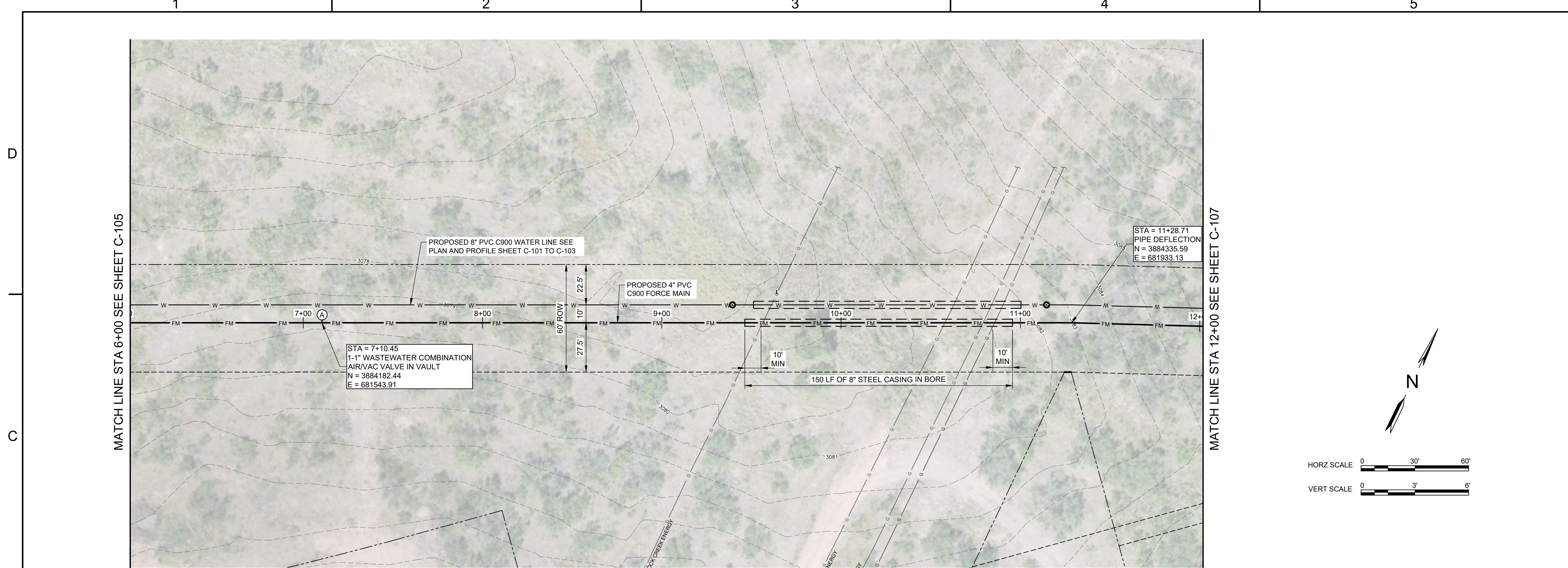
PROJECT NO.
1601.21

#	DATE	DESCRIPTION
3	11-12-2021	SEALED SET
2	10-08-2021	80% Review
1	10-04-2021	60% Review

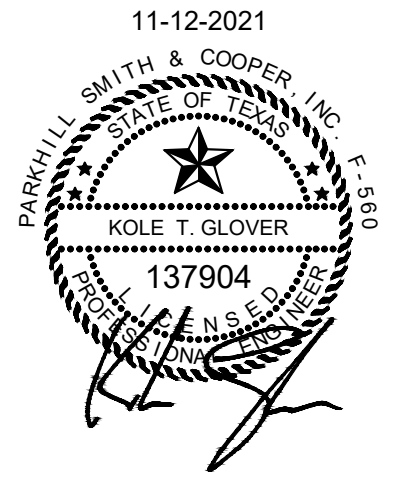
**Force Main
Plan And Profile
Sta 0+00 To
Sta 6+00**

C-105

FILE NAME: A:\2021\1601.2\103_DSGN01_DWG\050_CIVIL\C-106-1601.dwg LAYOUT NAME: C-106 PRINTED: Friday, November 12, 2021 - 6:08pm USER: TBest



Parkhill



Parkhill.com

Borger SH 136 Utility Extension



CLIENT
City Of Borger
P.O. Box 5250
Borger, Texas
806-273-0900

PROJECT NO.
1601.21

#	DATE	DESCRIPTION
3	11-12-2021	SEALED SET
2	10-08-2021	80% Review
1	10-04-2021	60% Review

**Force Main
Plan And Profile
Sta 6+00 To
Sta 12+00**

C-106

FILE NAME: A:\2021\1601.2\103_DSGN01_DWG\050_CIVIL\C-107-1601.dwg LAYOUT NAME: C-107 PRINTED: Friday, November 12, 2021 - 6:08pm USER: TBest

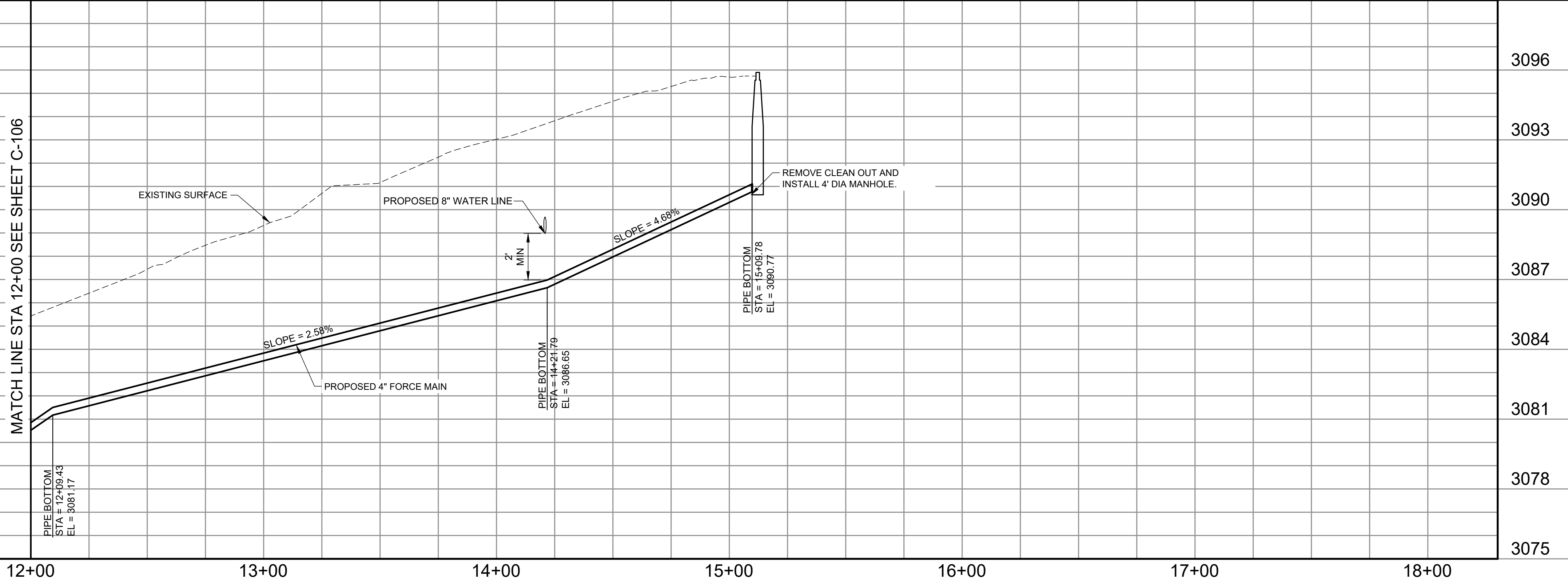
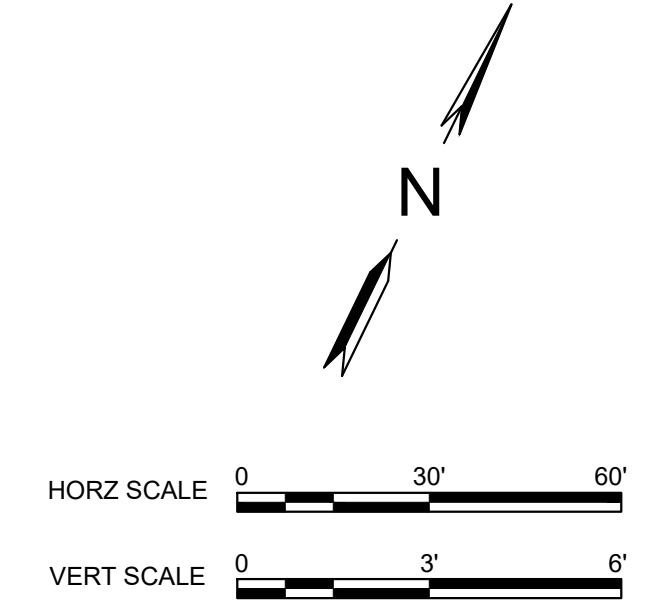
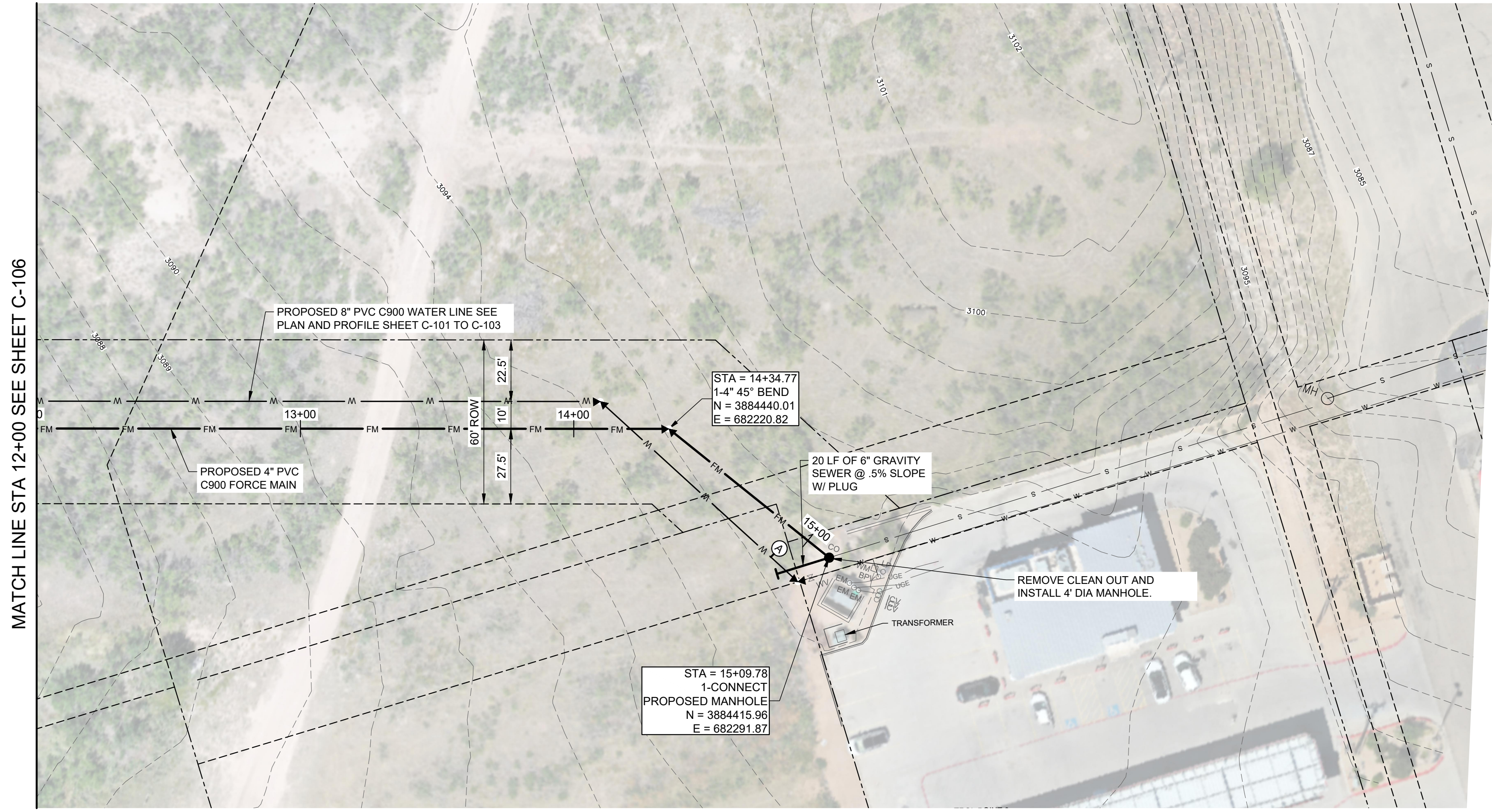
D

C

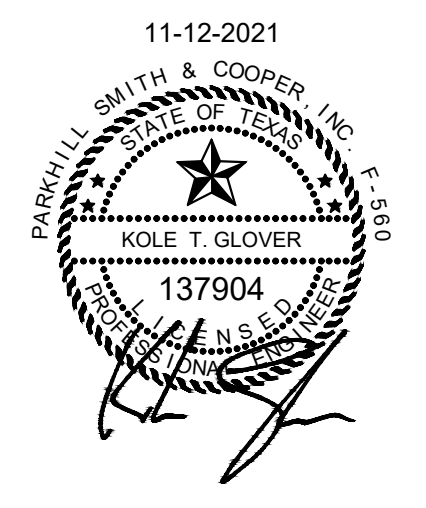
B

A

MATCH LINE STA 12+00 SEE SHEET C-106



Parkhill



Parkhill.com

Borger SH 136 Utility Extension



CLIENT
City Of Borger

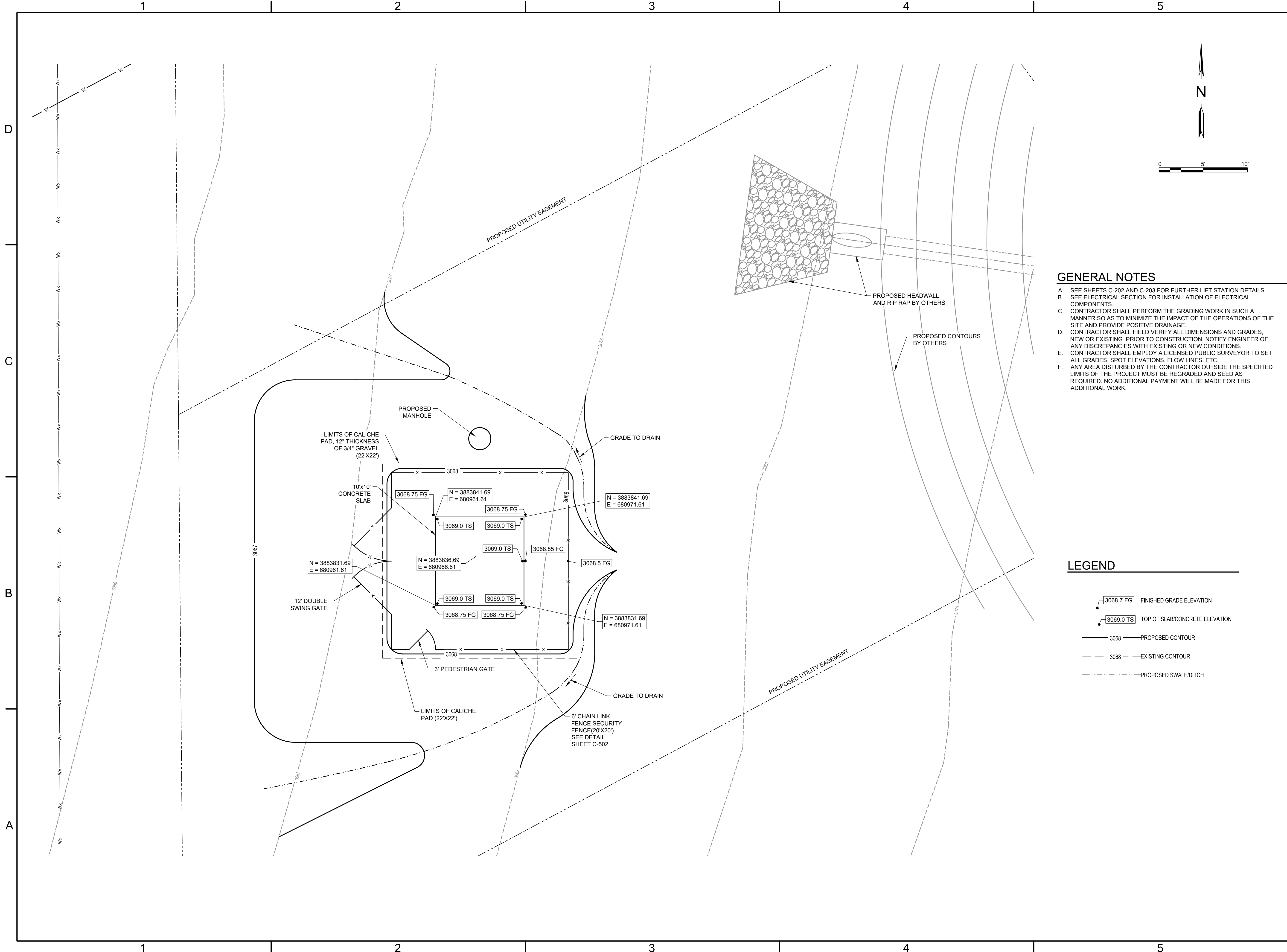
P.O. Box 5250
Borger, Texas
806-273-0900

PROJECT NO.
1601.21

#	DATE	DESCRIPTION
3	11-12-2021	SEALED SET
2	10-08-2021	80% Review
1	10-04-2021	60% Review

**Force Main
Plan And Profile
Sta 12+00 To
Sta 15+09.78
C-107**

FILE NAME: A:\2021\1601.2\103_DSGN01_DWG\050_CIVIL\C-201-1601.dwg LAYOUT NAME: C-201 PRINTED: Friday, November 12, 2021 - 6:08pm USER: TBest

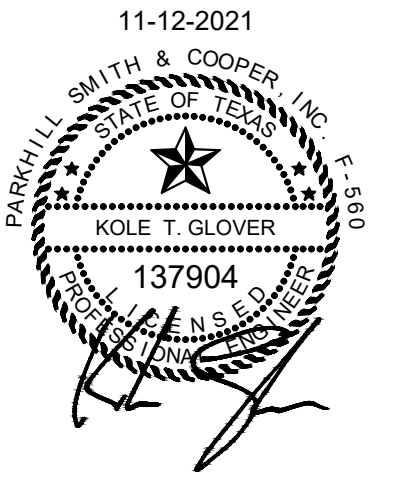


GENERAL NOTES

- A. SEE SHEETS C-202 AND C-203 FOR FURTHER LIFT STATION DETAILS.
- B. SEE ELECTRICAL SECTION FOR INSTALLATION OF ELECTRICAL COMPONENTS.
- C. CONTRACTOR SHALL PERFORM THE GRADING WORK IN SUCH A MANNER SO AS TO MINIMIZE THE IMPACT OF THE OPERATIONS OF THE SITE AND PROVIDE POSITIVE DRAINAGE.
- D. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND GRADES, NEW OR EXISTING PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY DISCREPANCIES WITH EXISTING OR NEW CONDITIONS.
- E. CONTRACTOR SHALL EMPLOY A LICENSED PUBLIC SURVEYOR TO SET ALL GRADES, SPOT ELEVATIONS, FLOW LINES, ETC.
- F. ANY AREA DISTURBED BY THE CONTRACTOR OUTSIDE THE SPECIFIED LIMITS OF THE PROJECT MUST BE REGRADED AND SEED AS REQUIRED. NO ADDITIONAL PAYMENT WILL BE MADE FOR THIS ADDITIONAL WORK.

LEGEND

- 3068.7 FG FINISHED GRADE ELEVATION
- 3069.0 TS TOP OF SLAB/CONCRETE ELEVATION
- 3068 PROPOSED CONTOUR
- 3068 EXISTING CONTOUR
- PROPOSED SWALE/DITCH



Borger SH 136 Utility Extension



CLIENT
City Of Borger

P.O. Box 5250
Borger, Texas
806-273-0900

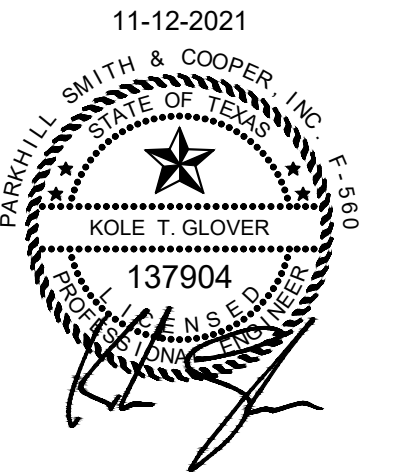
PROJECT NO.
1601.21

3	11-12-2021	SEALED SET
2	10-08-2021	80% Review
1	10-04-2021	60% Review

DATE DESCRIPTION

**Lift Station
Site Plan And
Grading Plan**

C-201



Borger SH 136 Utility Extension



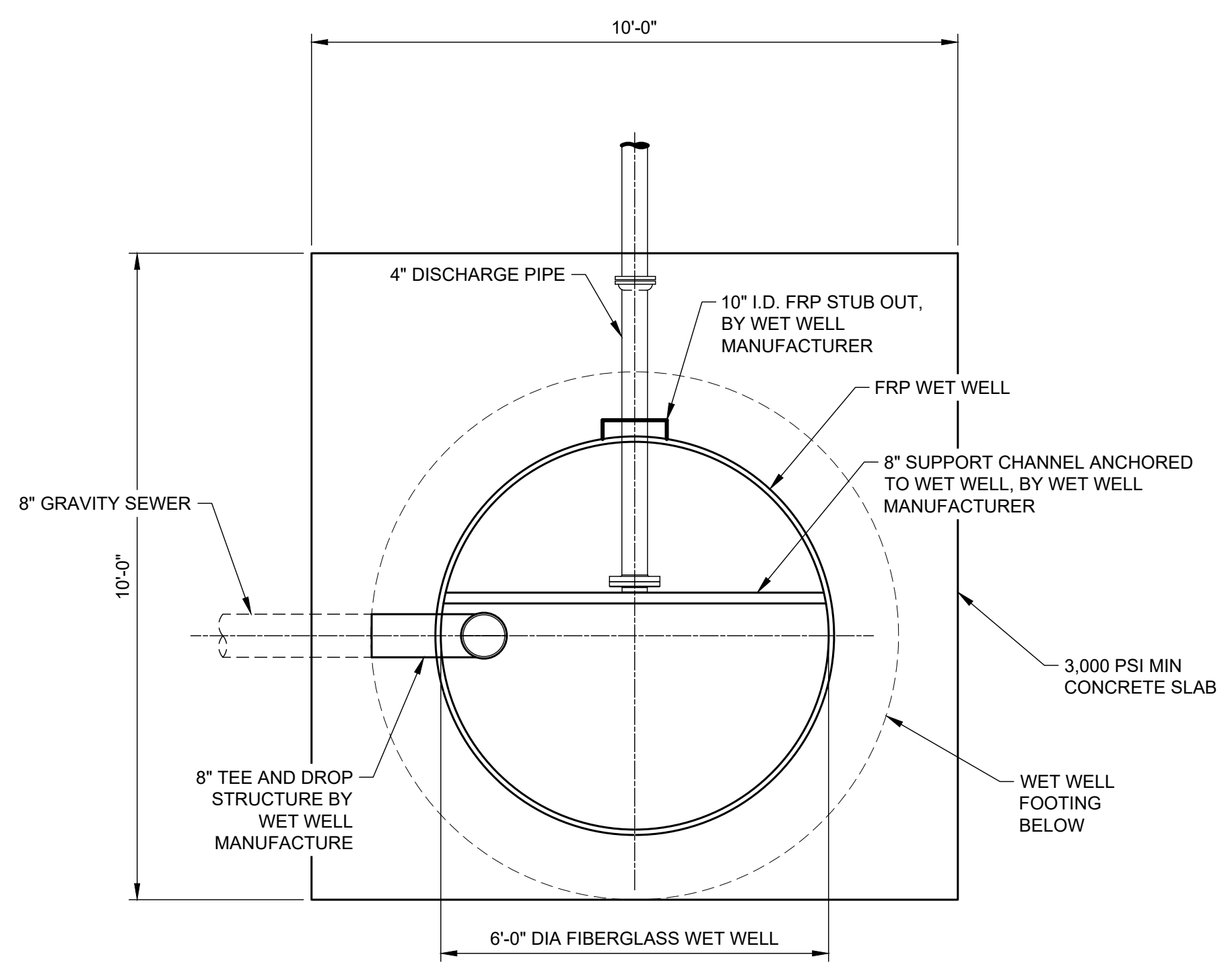
CLIENT
City Of Borger
P.O. Box 5250
Borger, Texas
806-273-0900

PROJECT NO.
1601.21

#	DATE	DESCRIPTION
3	11-12-2021	SEALED SET
2	10-08-2021	80% Review
1	10-04-2021	60% Review

Proposed Lift Station

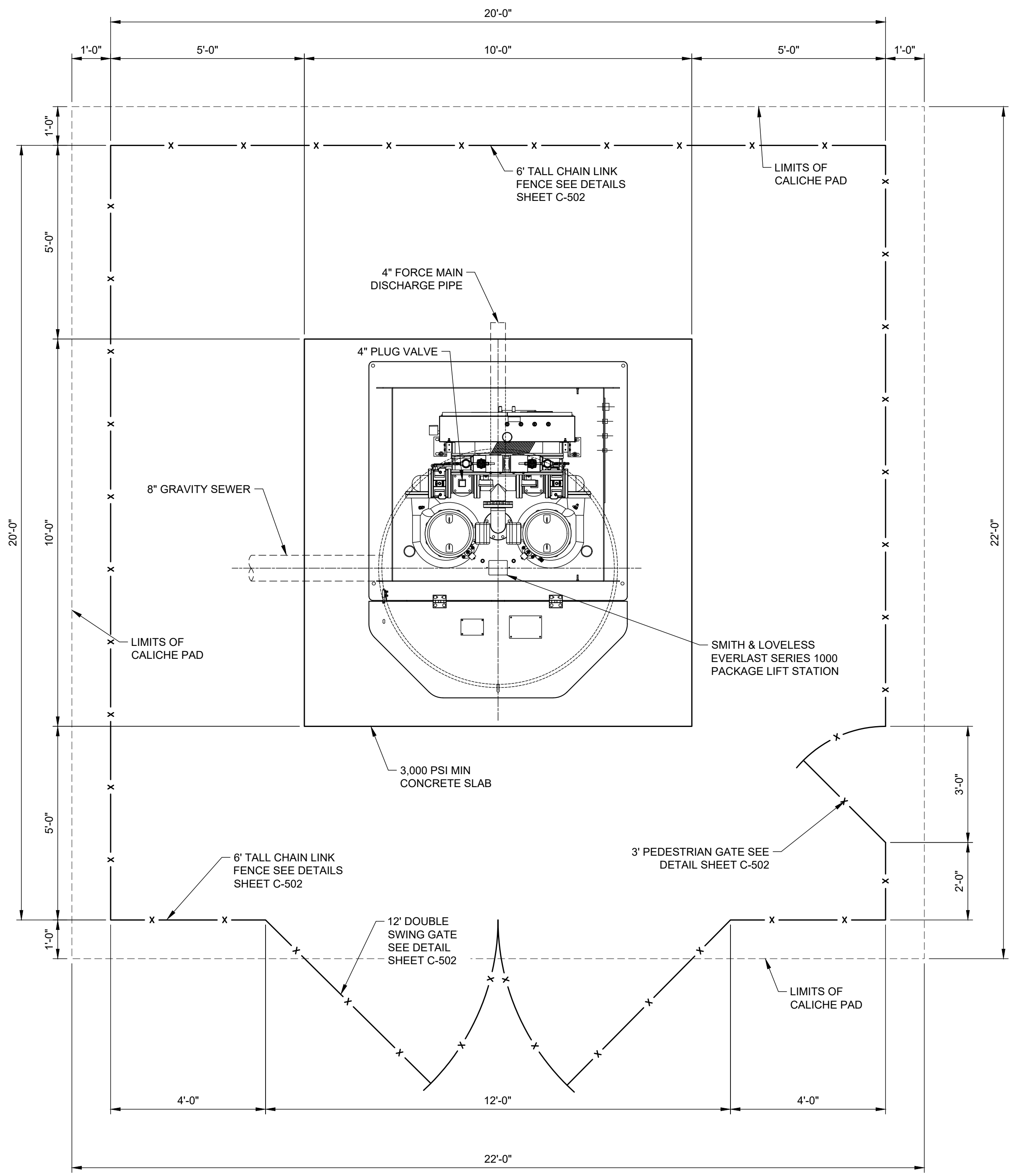
C-202



C1 LIFT STATION WET WELL
NO SCALE

GENERAL NOTES

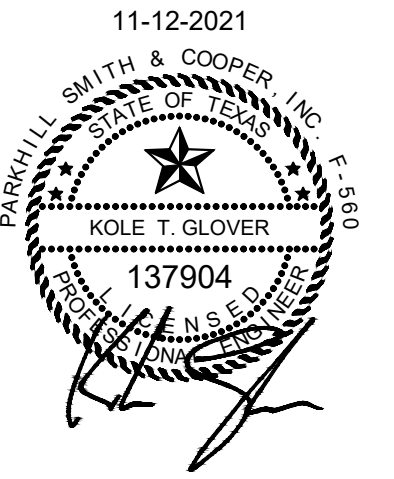
- A. CONTRACTOR SHALL FURNISH AND INSTALL THE PACKAGE LIFT STATION IN ACCORDANCE WITH THE MANUFACTURER AND TCEQ CHAPTER 217 REQUIREMENTS.
- B. FURNISH AND INSTALL ALL EQUIPMENT SHOWN OR NOT, TO PROVIDE A FULLY FUNCTIONING LIFT STATION.
- C. ELECTRICAL POWER CONNECTION TO LIFT STATION BY CONTRACTOR
- D. ORIENT LIFT STATION IN FIELD TO CORRESPOND WITH FINAL LOCATION OF FORCEMAIN.
- E. ALL DUCTILE IRON PIPE AND FITTINGS SHALL MEET THE REQUIREMENTS OF AWWA C153, PC-250PSI AND BE LINED AND COATED WITH PROTECTO 401. ALL BOLTS SHALL BE STAINLESS STEEL.
- F. #30 FELT BOND BREAKER SHALL BE PLACED AT ALL CONCRETE AND FIBERGLASS INTERFACES.
- G. ALL EXPOSED TO VIEW CONCRETE CORNERS SHALL BE CHAMFERED 3/4".
- H. LIFT STATION DESIGN CRITERIA.
 - 1. FLOW: 120 GPM
 - 2. HEAD: 47F
 - 3. AVAILABLE POWER 480 VOLT 3 PHASE



B1 LIFT STATION PLAN VIEW
NO SCALE

FILE NAME: A:\2021\1601.21\03_DSGN01_DWG\060_CIVIL\C-202-1601.dwg LAYOUT NAME: C-202 PRINTED: Friday, November 12, 2021 - 6:08pm USER: TBest

FILE NAME: A:\2021\1601.2\103_DSGN01_DWG\050_CIVIL\C-203-1601.dwg LAYOUT NAME: C-203 PRINTED: Friday, November 12, 2021 - 6:08pm USER: TBest



Borger SH 136 Utility Extension



CLIENT
City Of Borger

P.O. Box 5250
Borger, Texas
806-273-0900

PROJECT NO.
1601.21

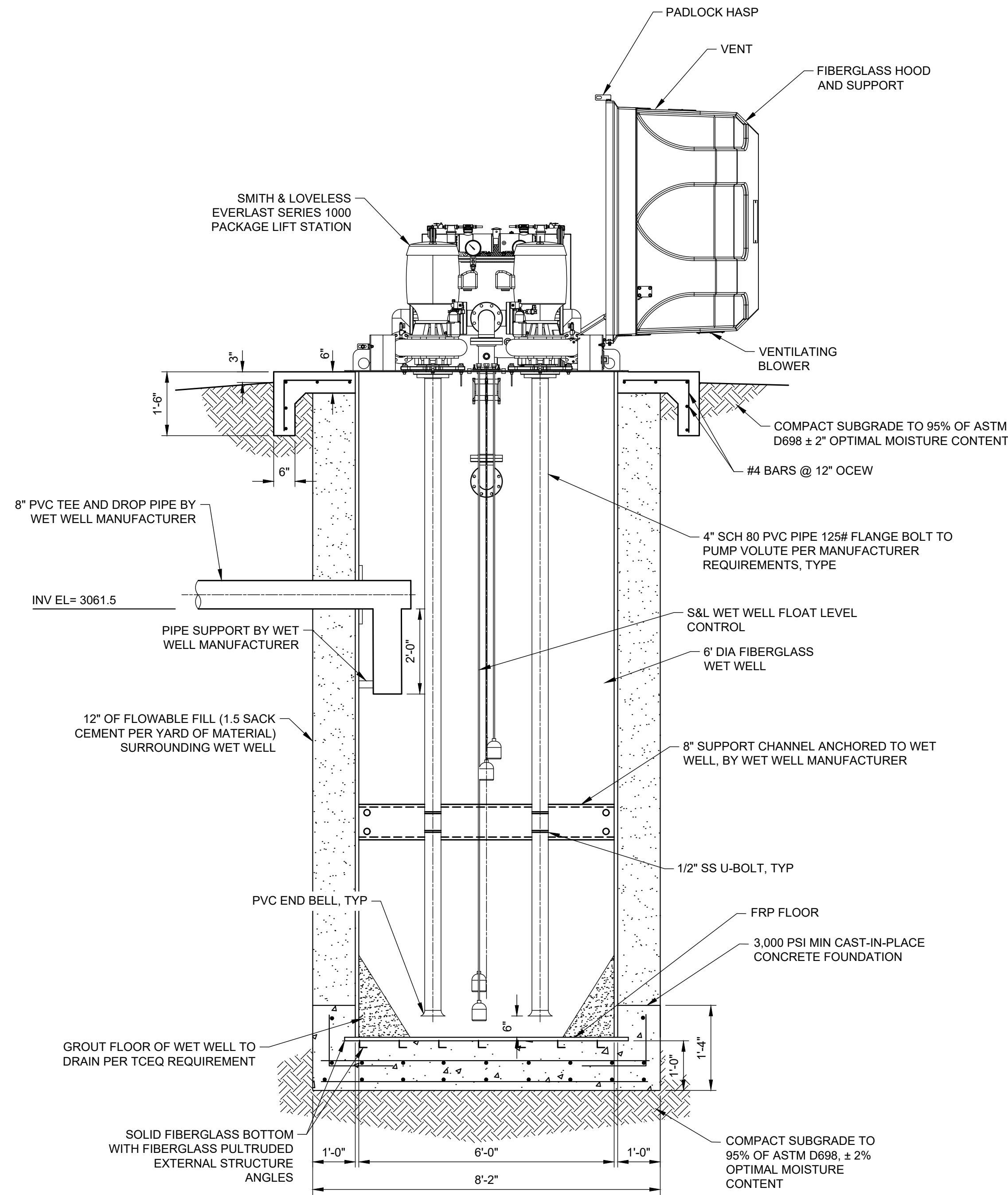
#	DATE	DESCRIPTION
3	11-12-2021	SEALED SET
2	10-08-2021	80% Review
1	10-04-2021	60% Review

Lift Station Sections

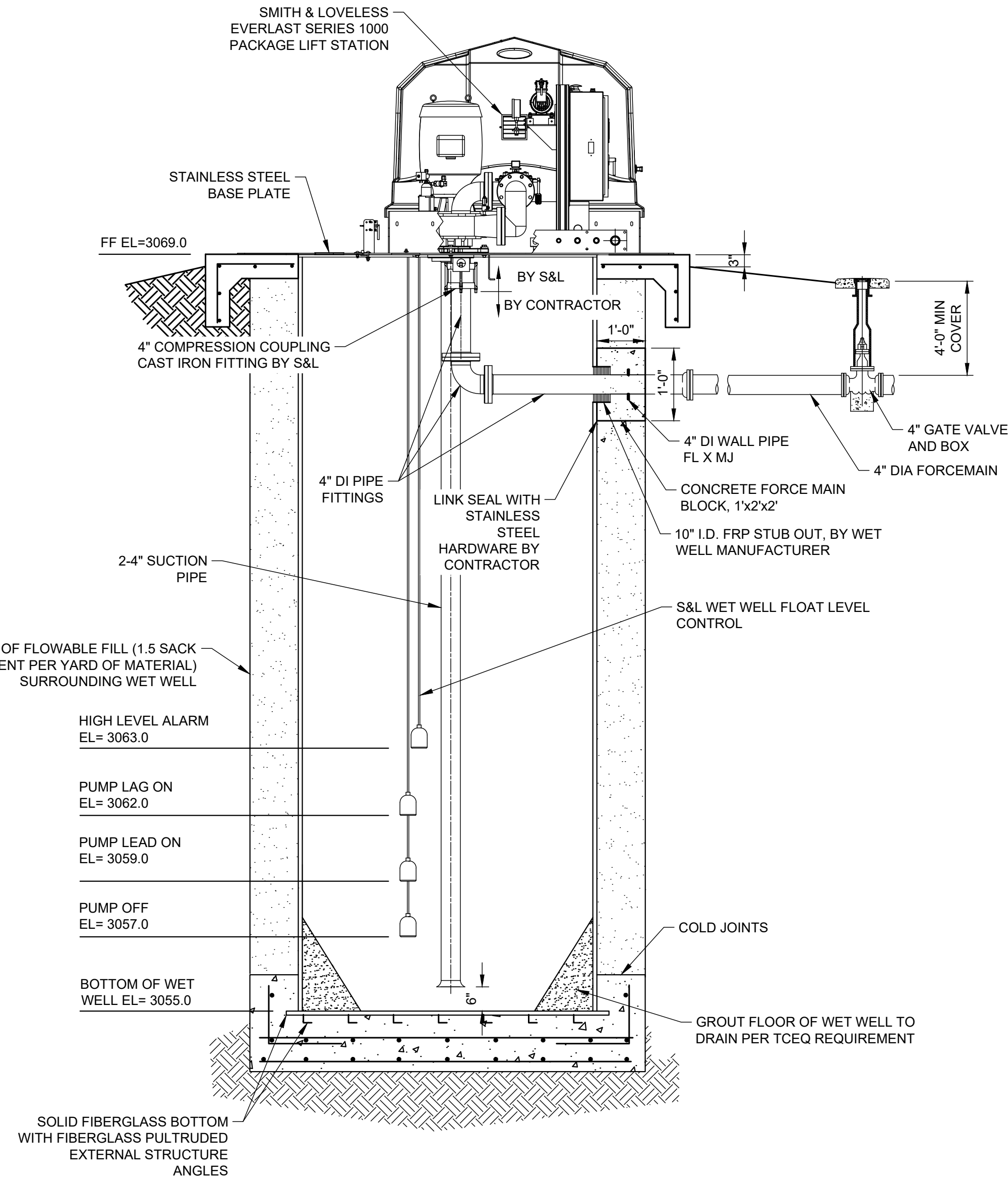
C-203

D
C
B
A

1 2 3 4 5



B1 SECTION
NO SCALE

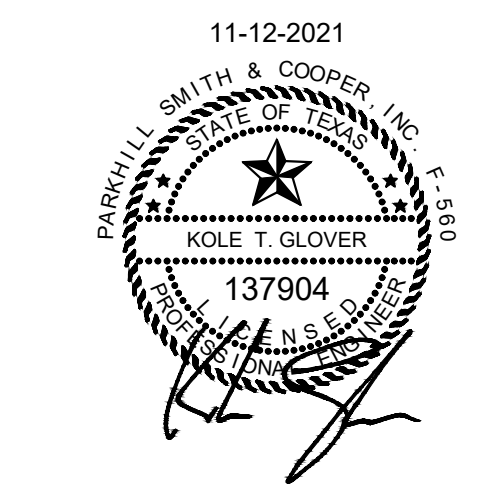
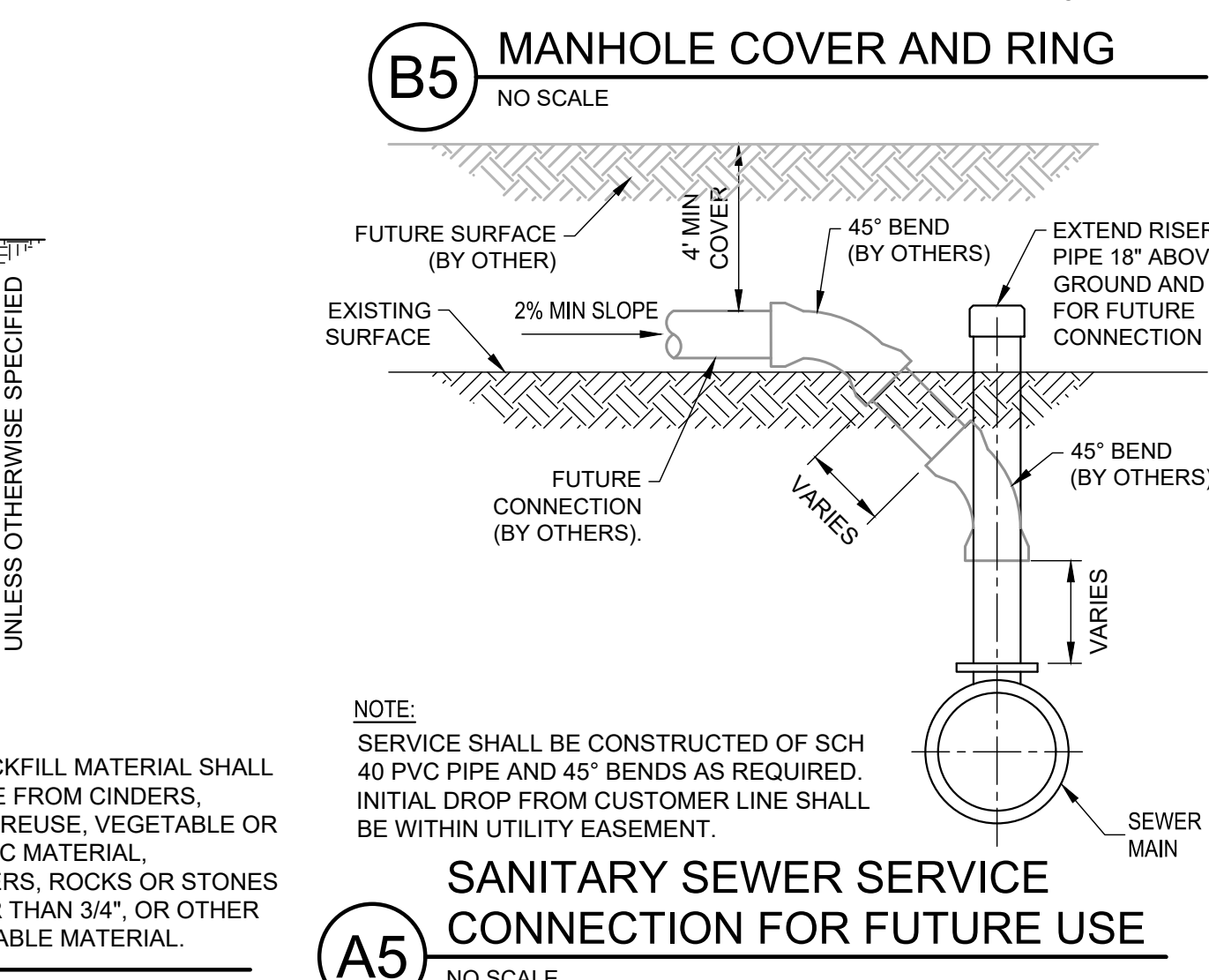
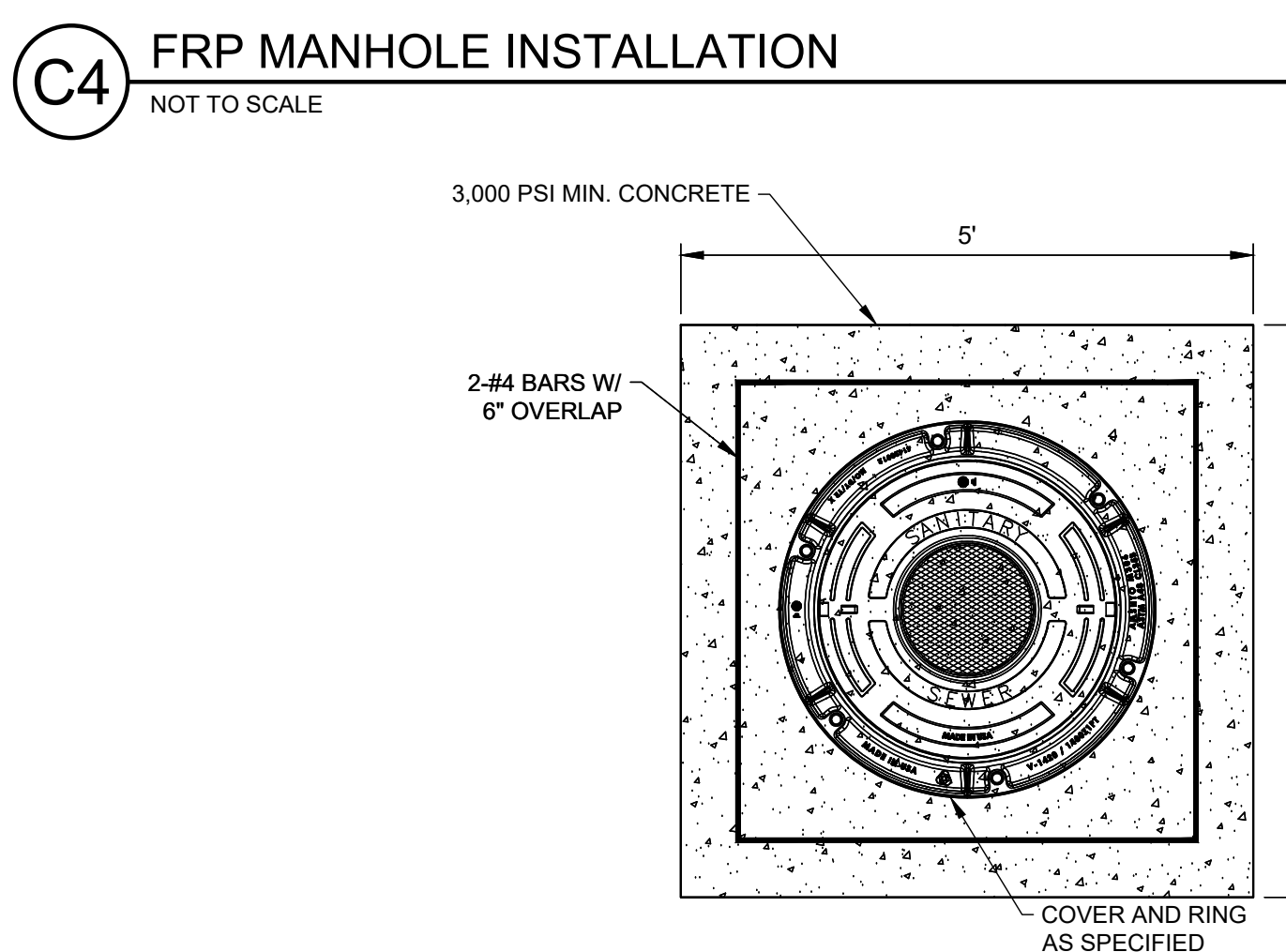
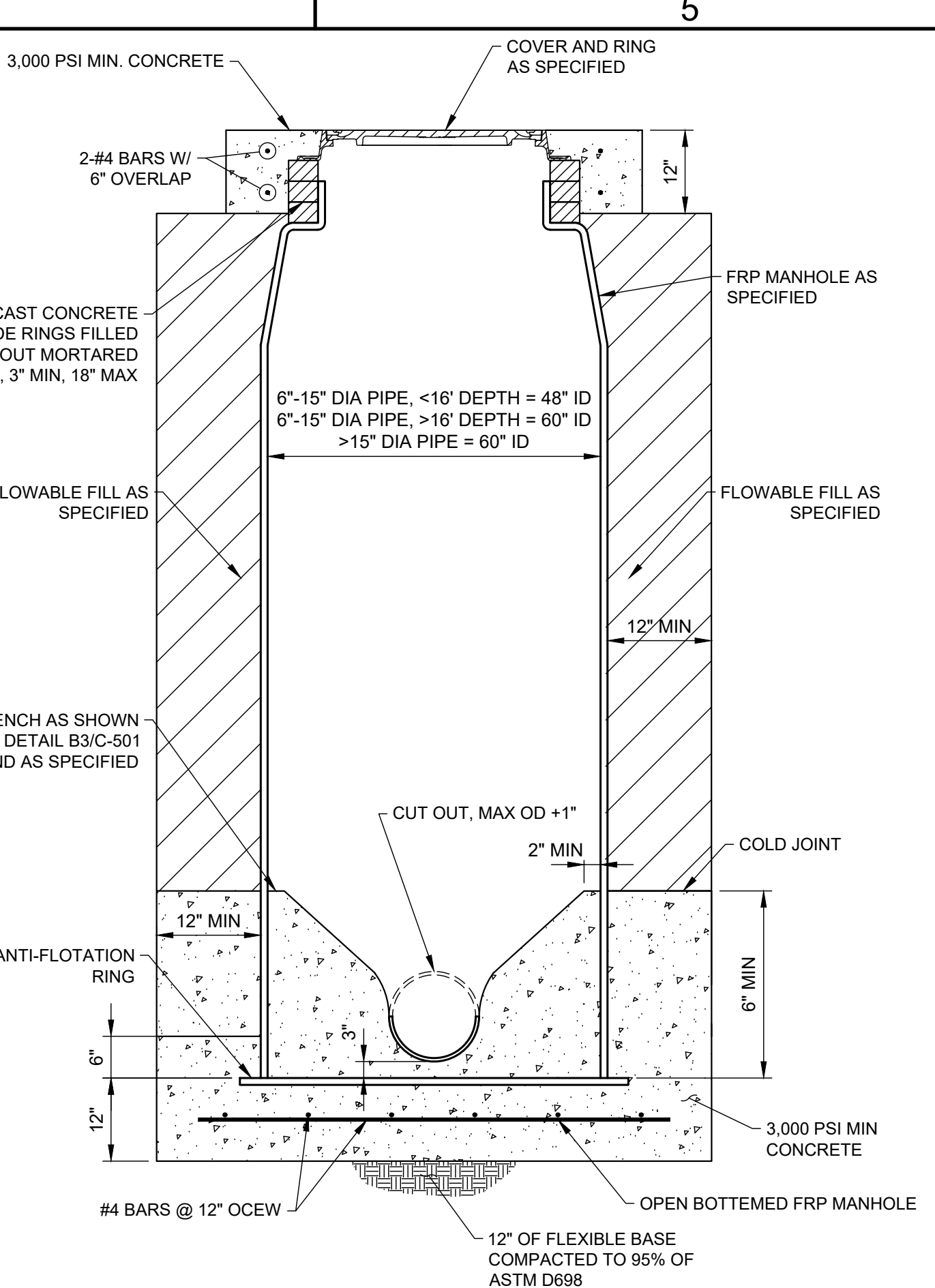
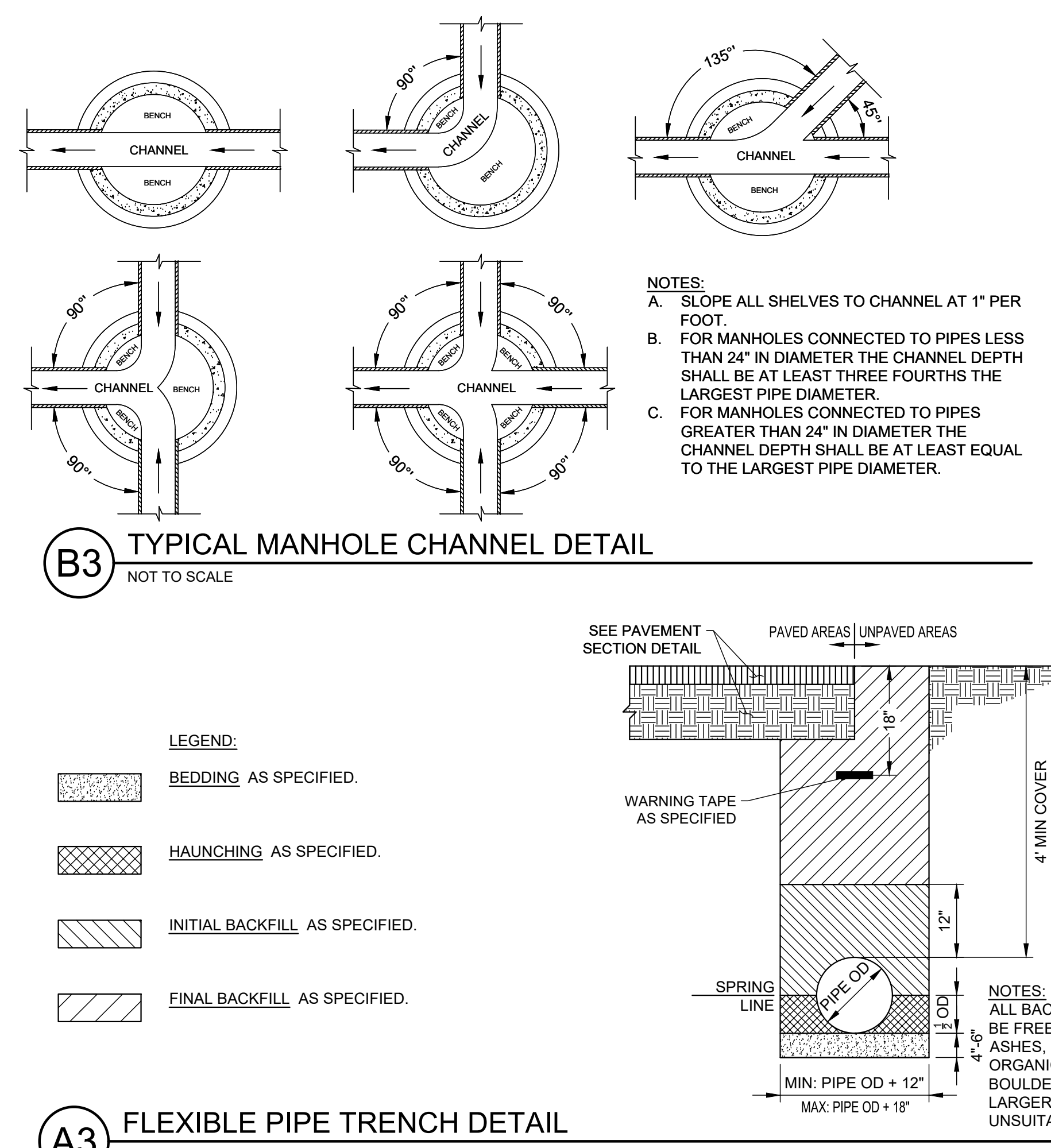
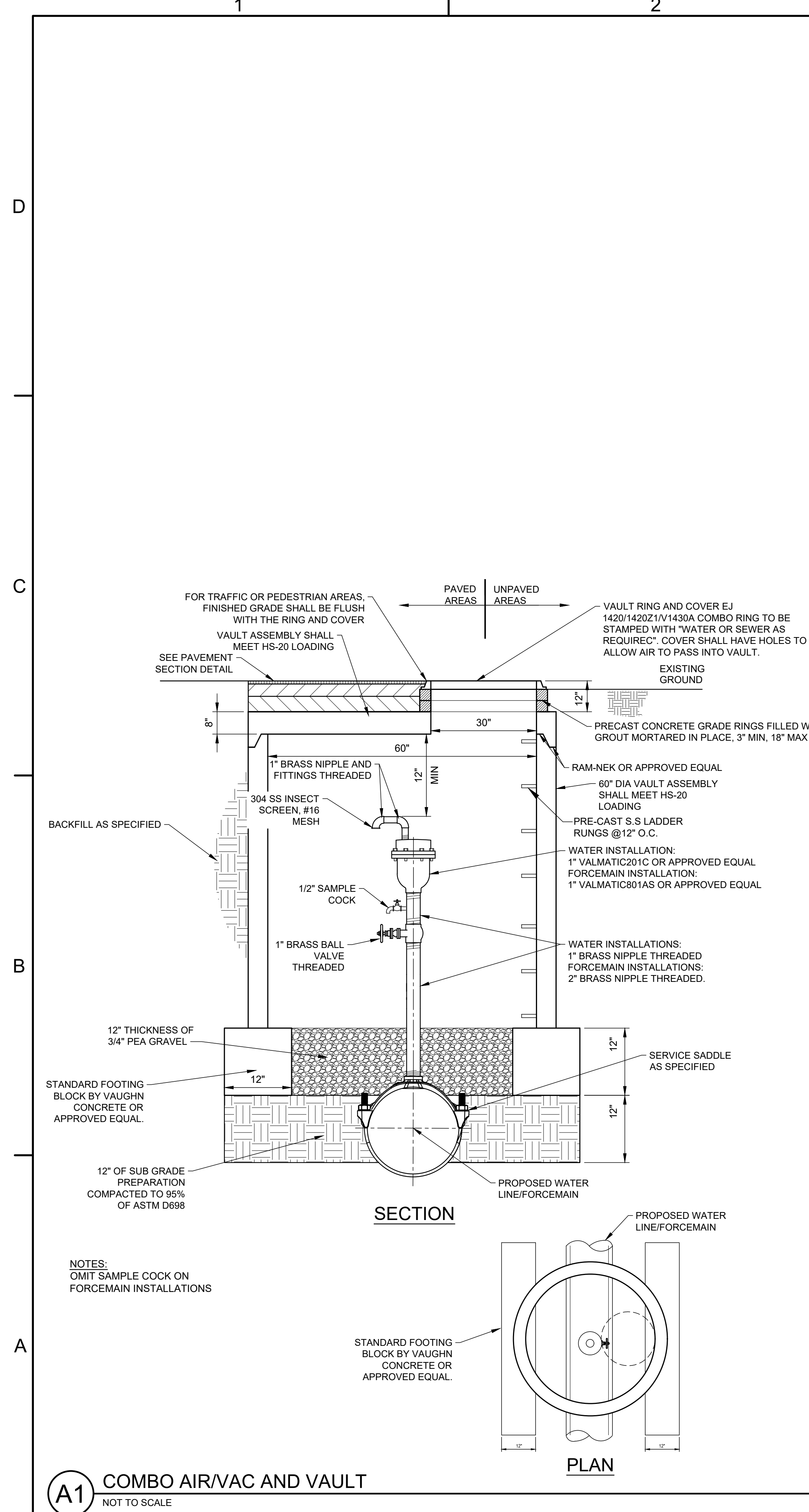


B3 SECTION
NO SCALE

GENERAL NOTES

- A. CONTRACTOR SHALL FURNISH AND INSTALL THE PACKAGE LIFT STATION IN ACCORDANCE WITH THE MANUFACTURER AND TCEQ CHAPTER 217 REQUIREMENTS.
- B. FURNISH AND INSTALL ALL EQUIPMENT SHOWN OR NOT, TO PROVIDE A FULLY FUNCTIONING LIFT STATION.
- C. ELECTRICAL POWER CONNECTION TO LIFT STATION BY CONTRACTOR ORIENT LIFT STATION IN FIELD TO CORRESPOND WITH FINAL LOCATION OF FORCEMAIN.
- E. ALL DUCTILE IRON PIPE AND FITTINGS SHALL MEET THE REQUIREMENTS OF AWWA C153, PC-250PSI AND BE LINED AND COATED WITH PROTECTO 401. ALL BOLTS SHALL BE STAINLESS STEEL.
- F. #30 FELT BOND BREAKER SHALL BE PLACED AT ALL CONCRETE AND FIBERGLASS INTERFACES.
- G. ALL EXPOSED TO VIEW CONCRETE CORNERS SHALL BE CHAMFERED 3/4".
- H. LIFT STATION DESIGN CRITERIA.
 - 1. FLOW: 120 GPM
 - 2. HEAD: 47F
 - 3. AVAILABLE POWER 480 VOLT 3 PHASE

FILE NAME: A:\2021\1801.2\103_DSGN01_DWG\050_CIVIL\C-501-1801.dwg LAYOUT NAME: C-501 PRINTED: Friday, November 12, 2021 - 6:09pm USER: TBest



Borger SH 136 Utility Extension

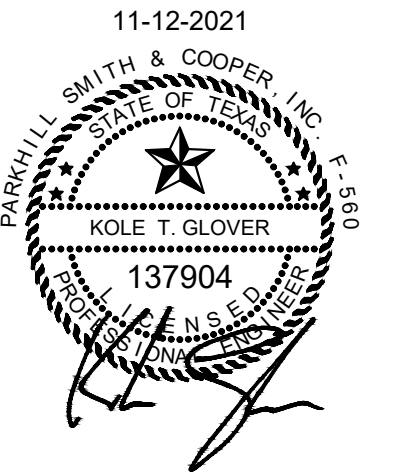


CLIENT
City Of Borger

P.O. Box 5250
Borger, Texas
806-273-0900

PROJECT NO.
1601.21

#	DATE	DESCRIPTION
3	11-12-2021	SEALED SET
2	10-08-2021	80% Review
1	10-04-2021	60% Review



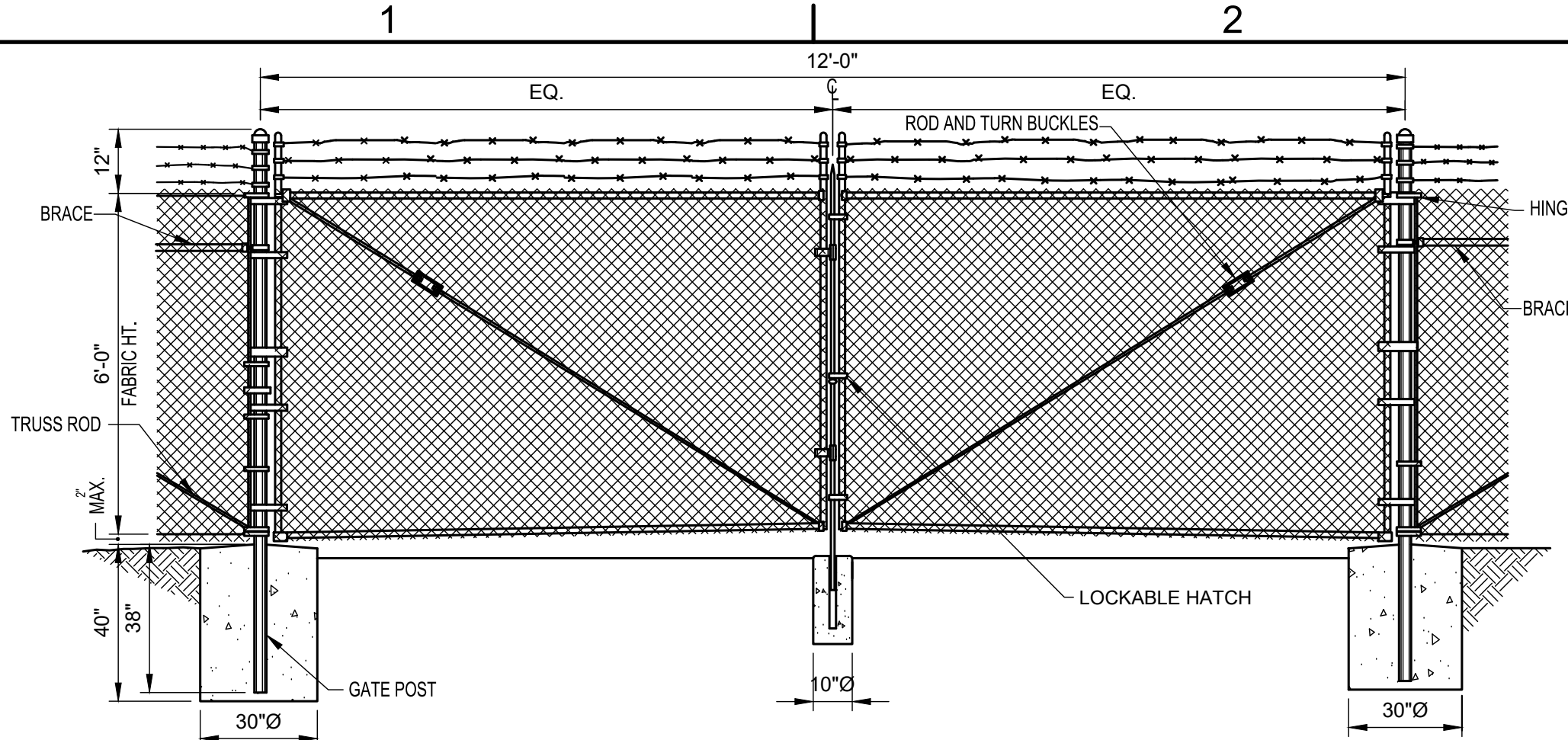
CLIENT
City Of Borger

P.O. Box 5250
Borger, Texas
806-273-0900

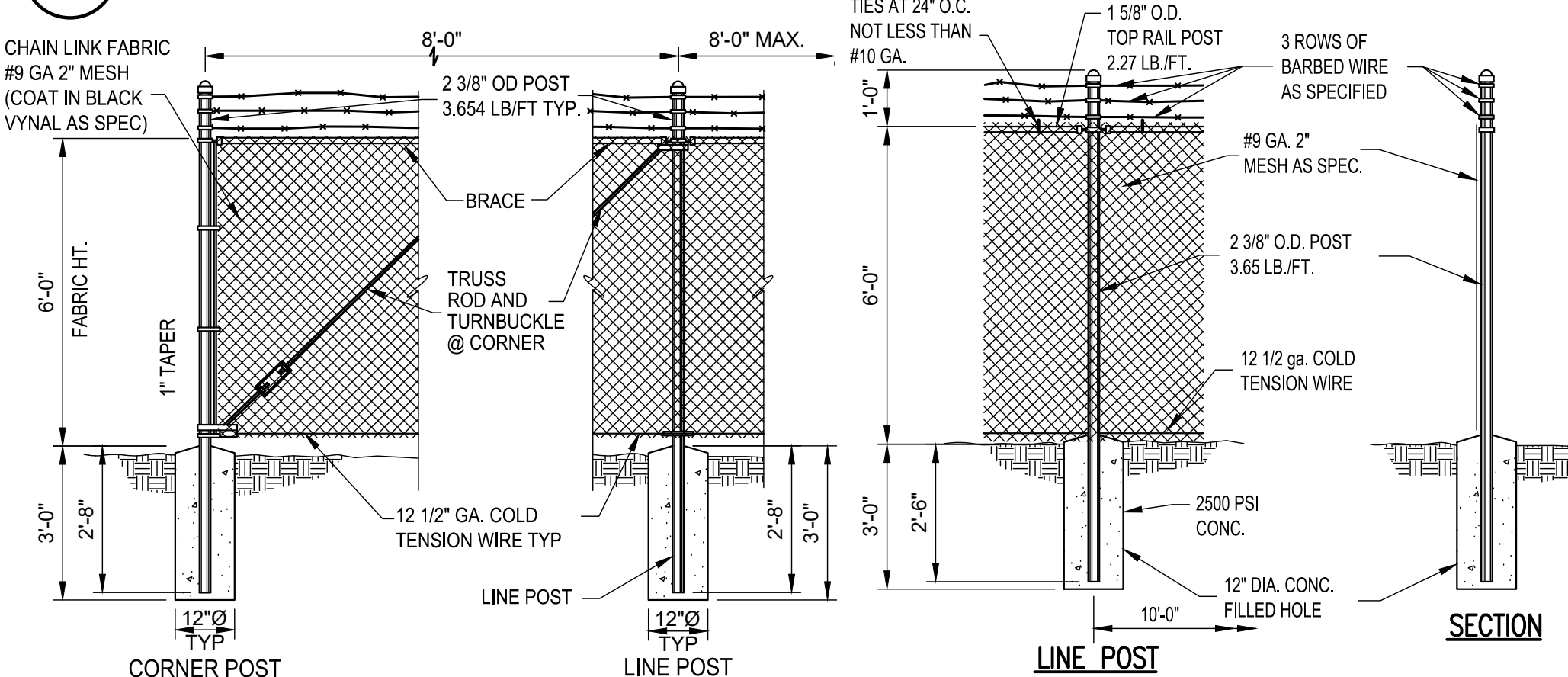
PROJECT NO.
1601.21

#	DATE	DESCRIPTION
3	11-12-2021	SEALED SET
2	10-08-2021	80% Review
1	10-04-2021	60% Review

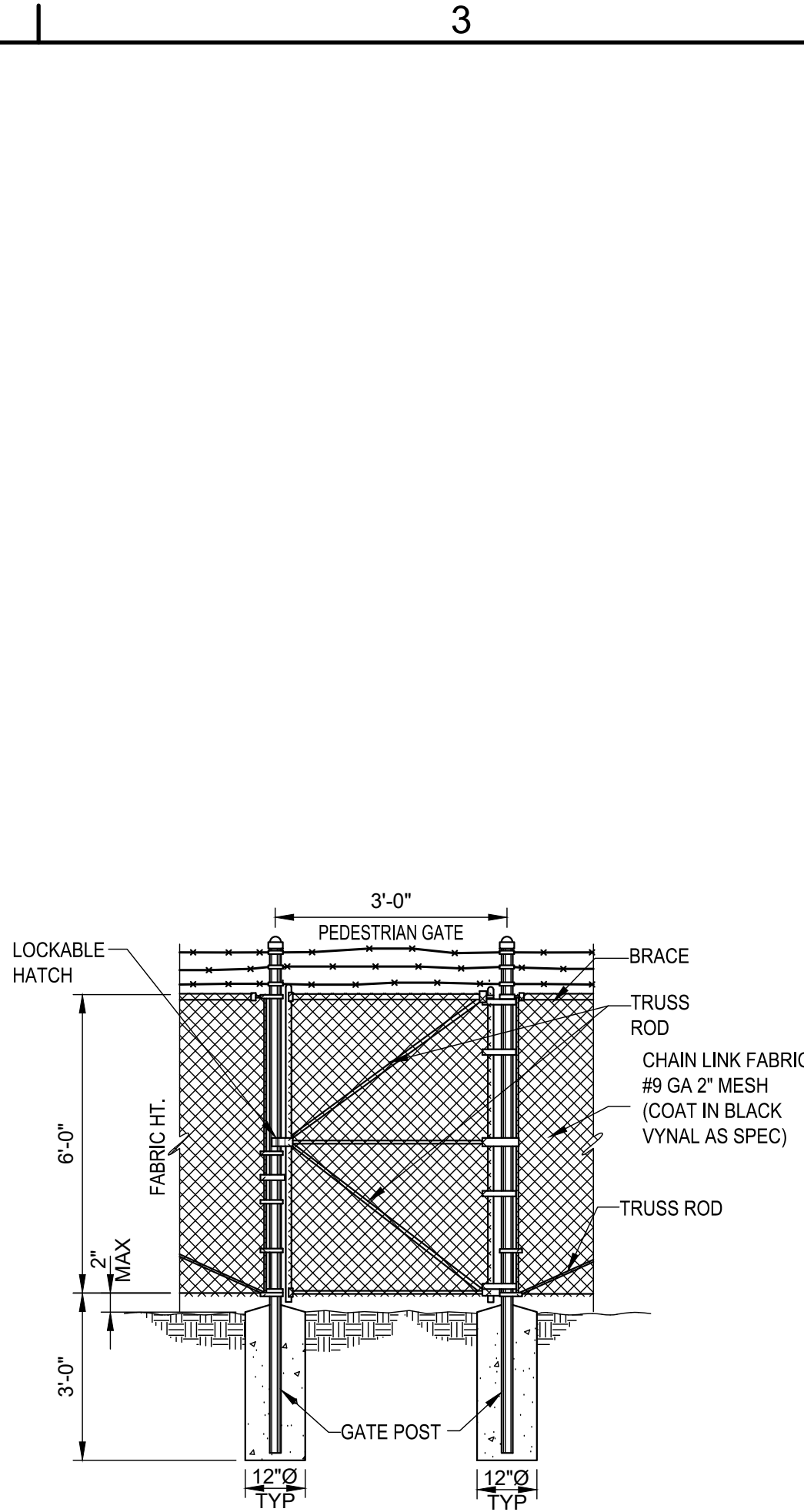
Miscellaneous Utility Details
C-502



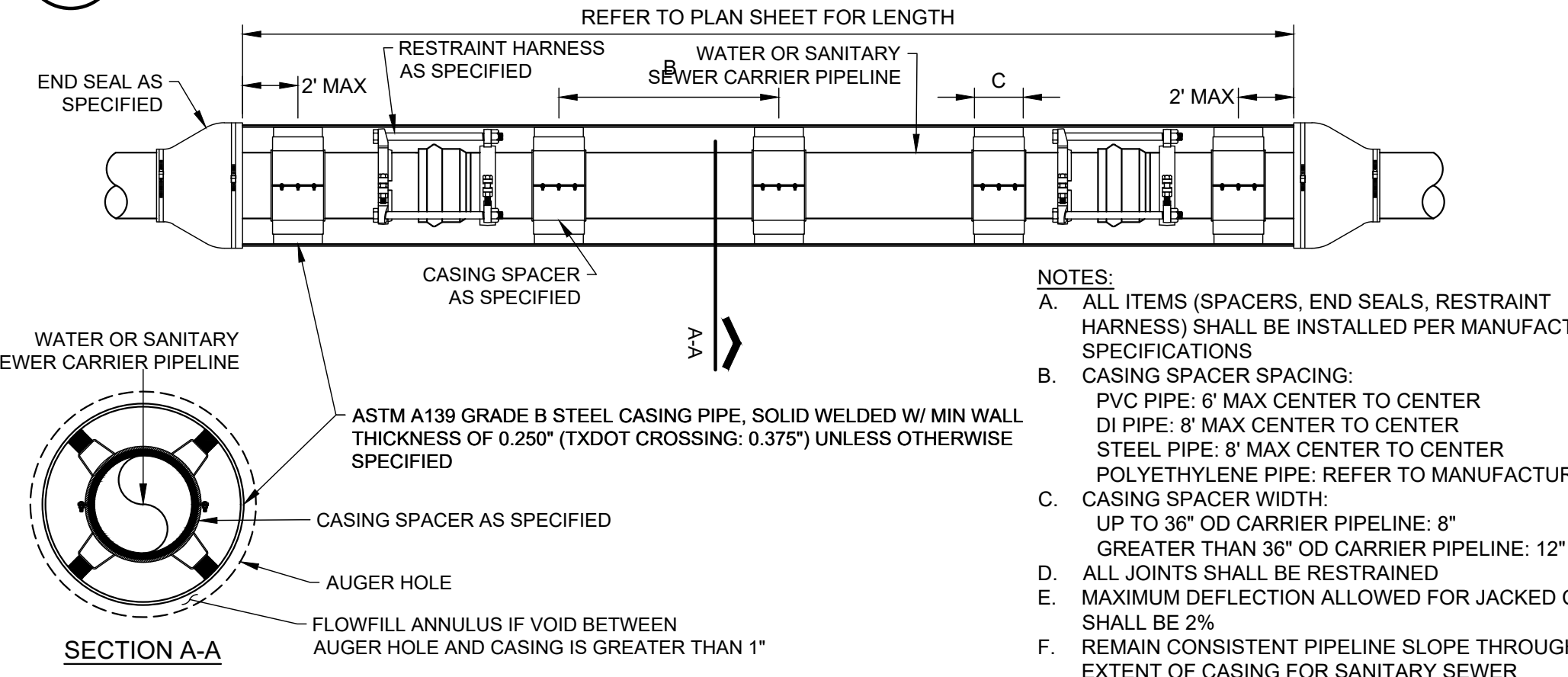
D1 12' DOUBLE SWING ENTRANCE GATE
NO SCALE



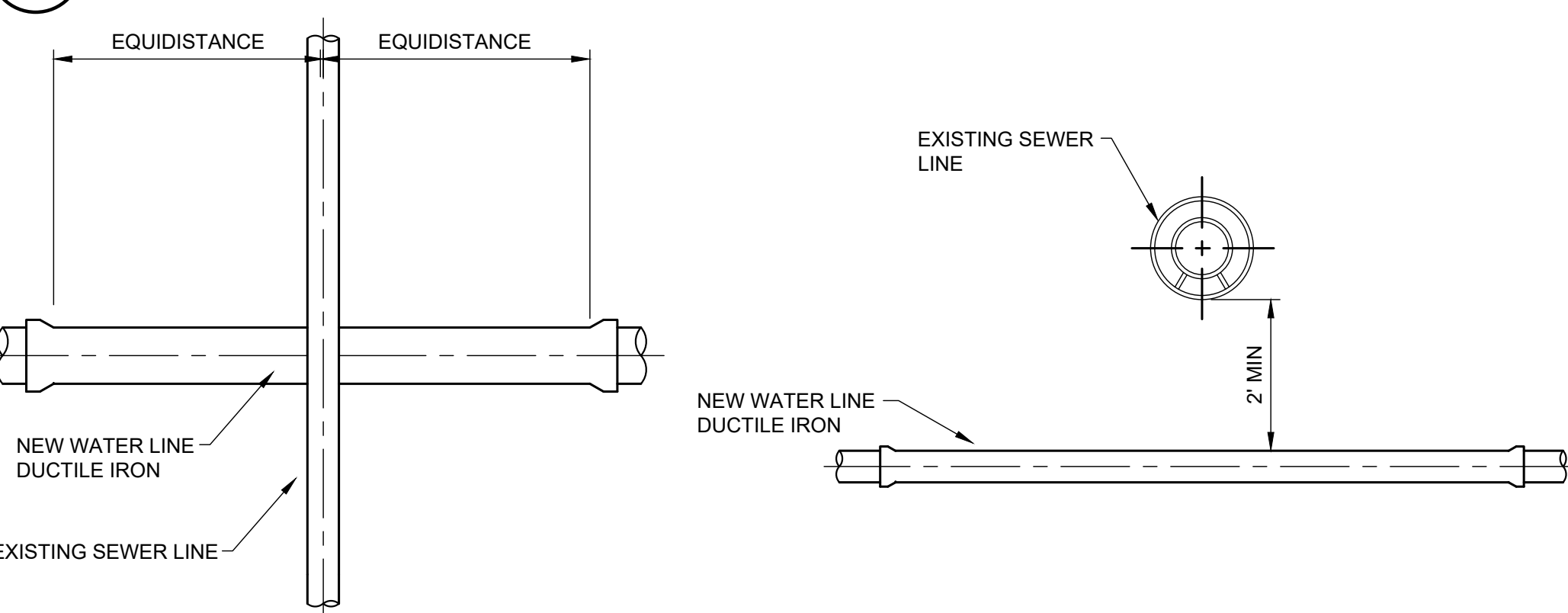
C1 TYPICAL FENCE DETAILS
NO SCALE



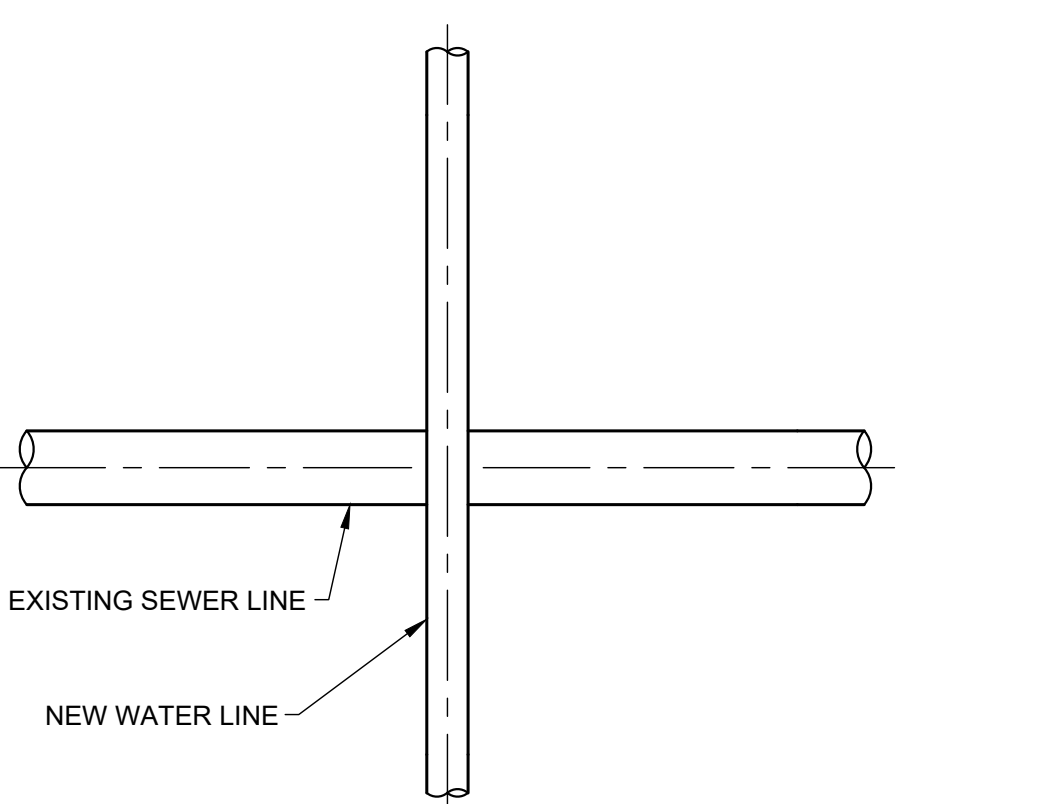
C3 3' SINGLE GATE
NO SCALE



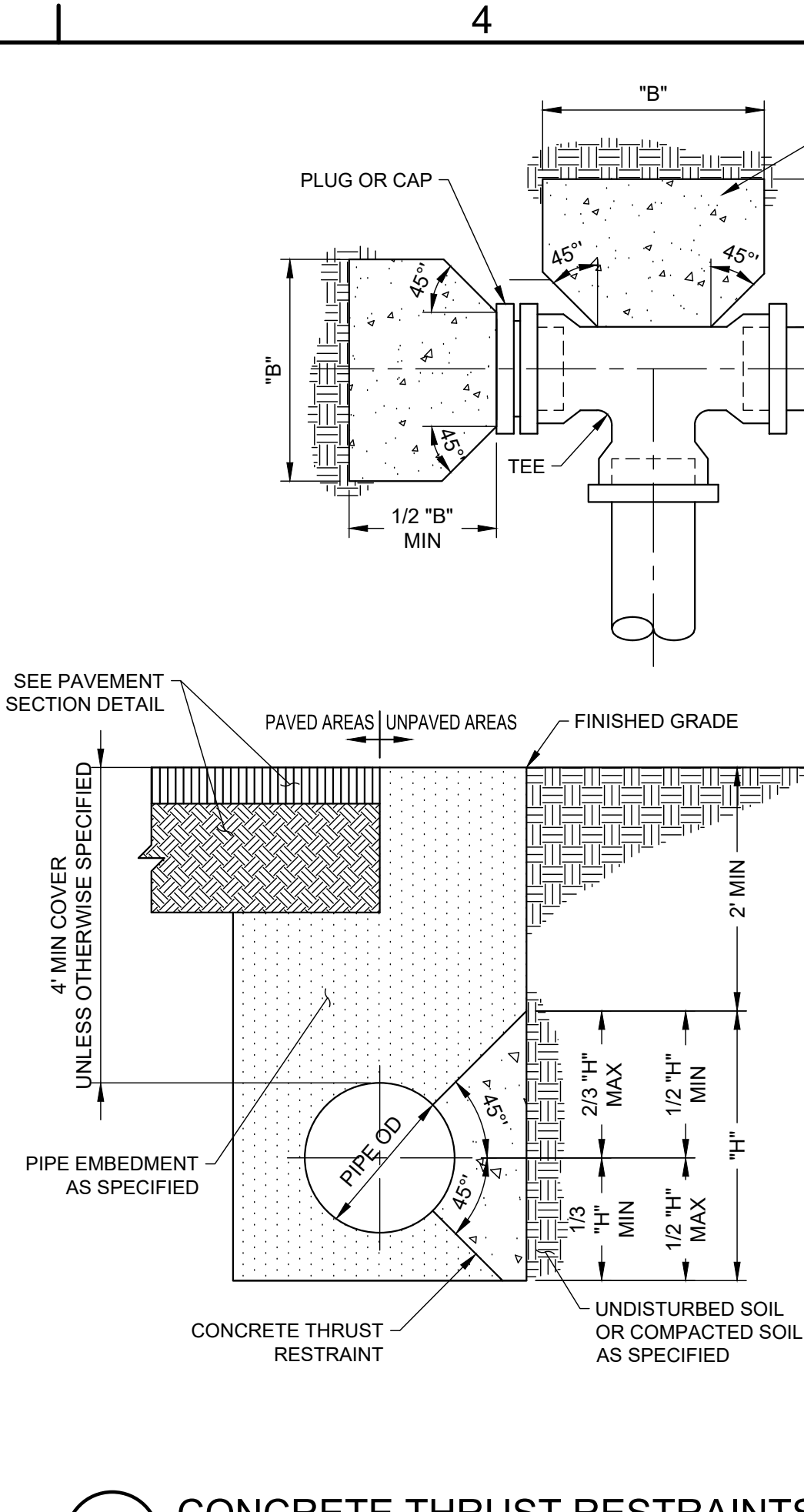
B1 CASING/BORING DETAIL
NOT TO SCALE



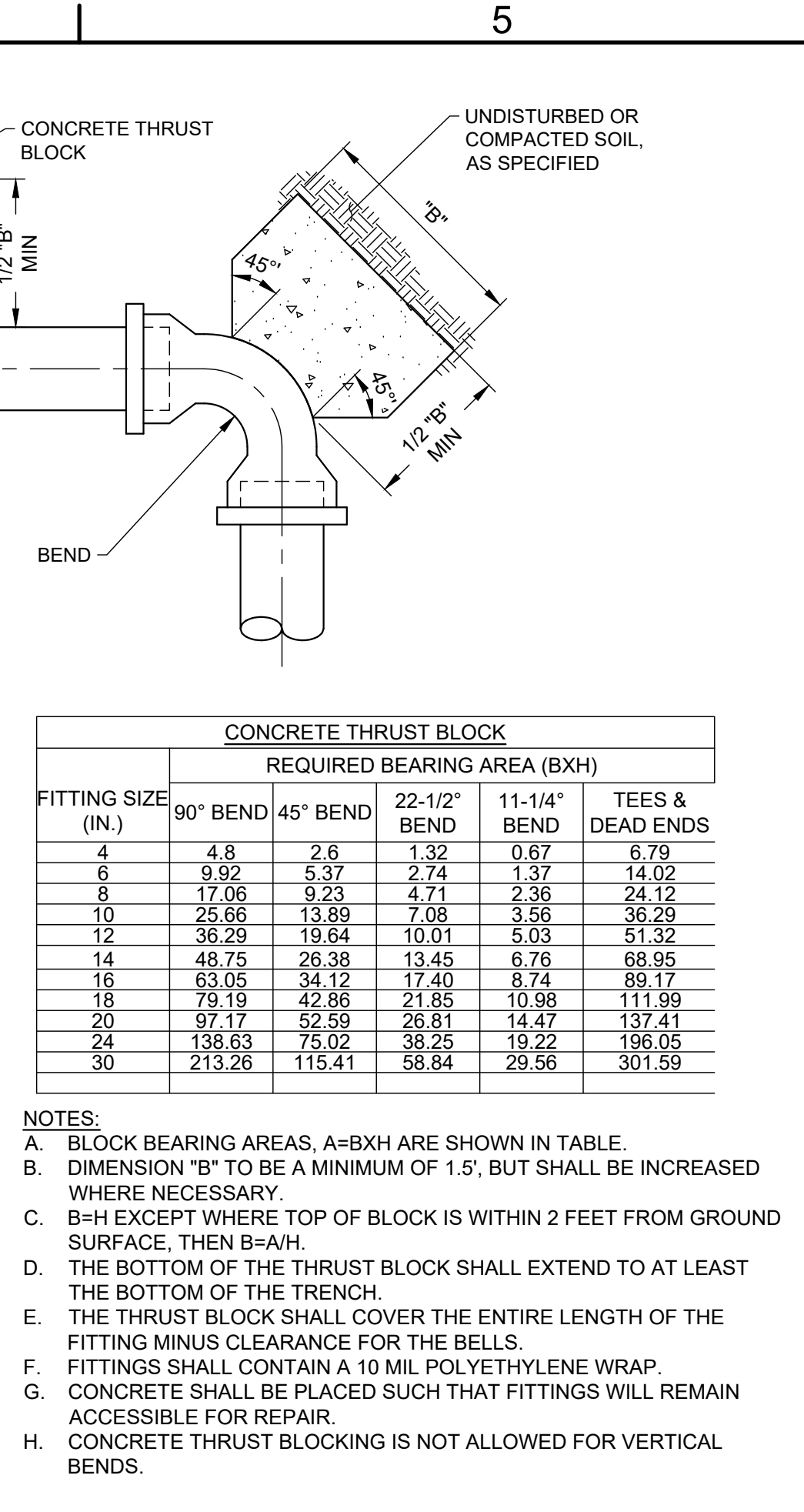
A1 PLAN SEWER CROSSING OVER WATER
NO SCALE



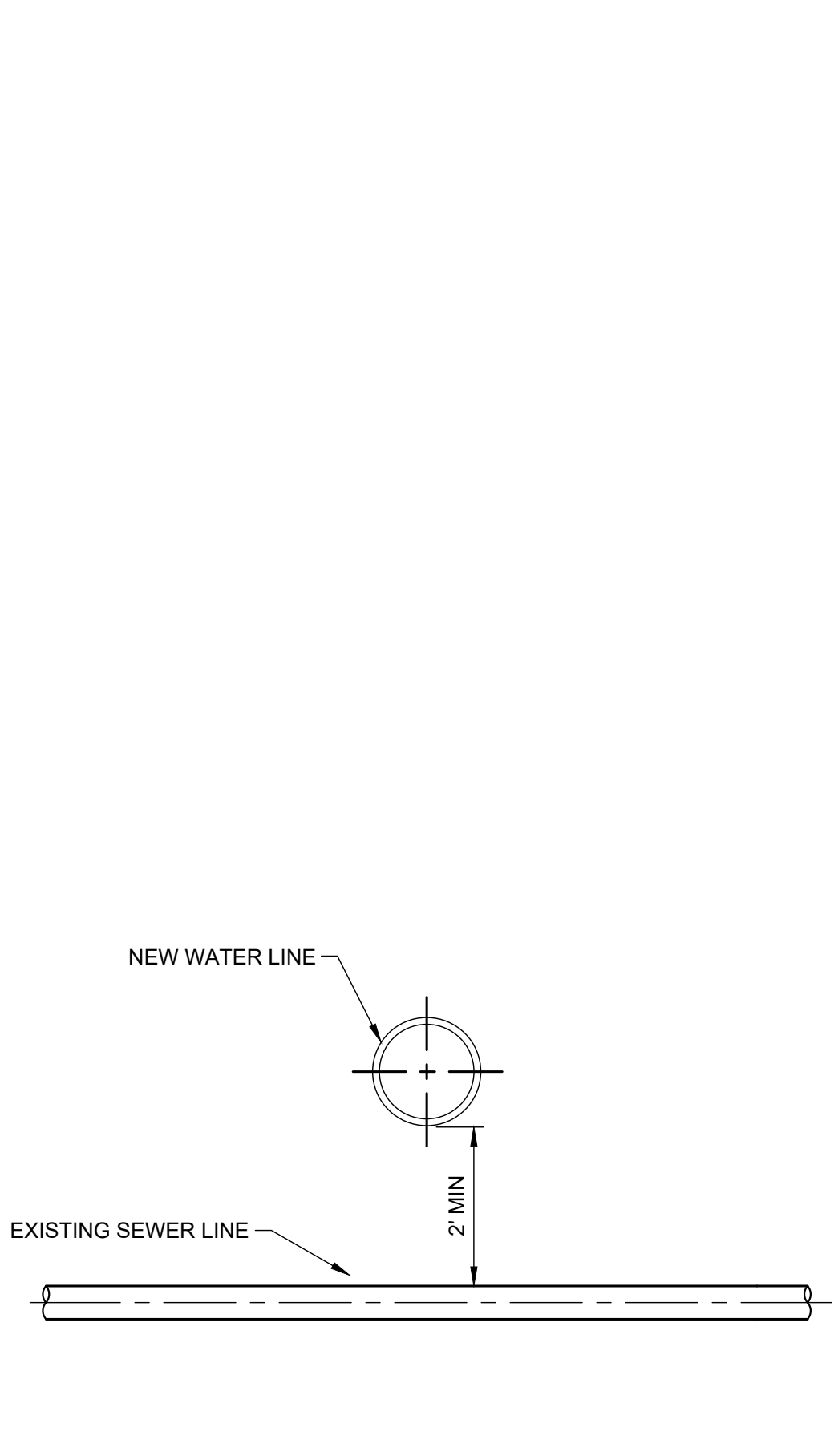
A2 SECTION SEWER CROSSING OVER WATER
NO SCALE



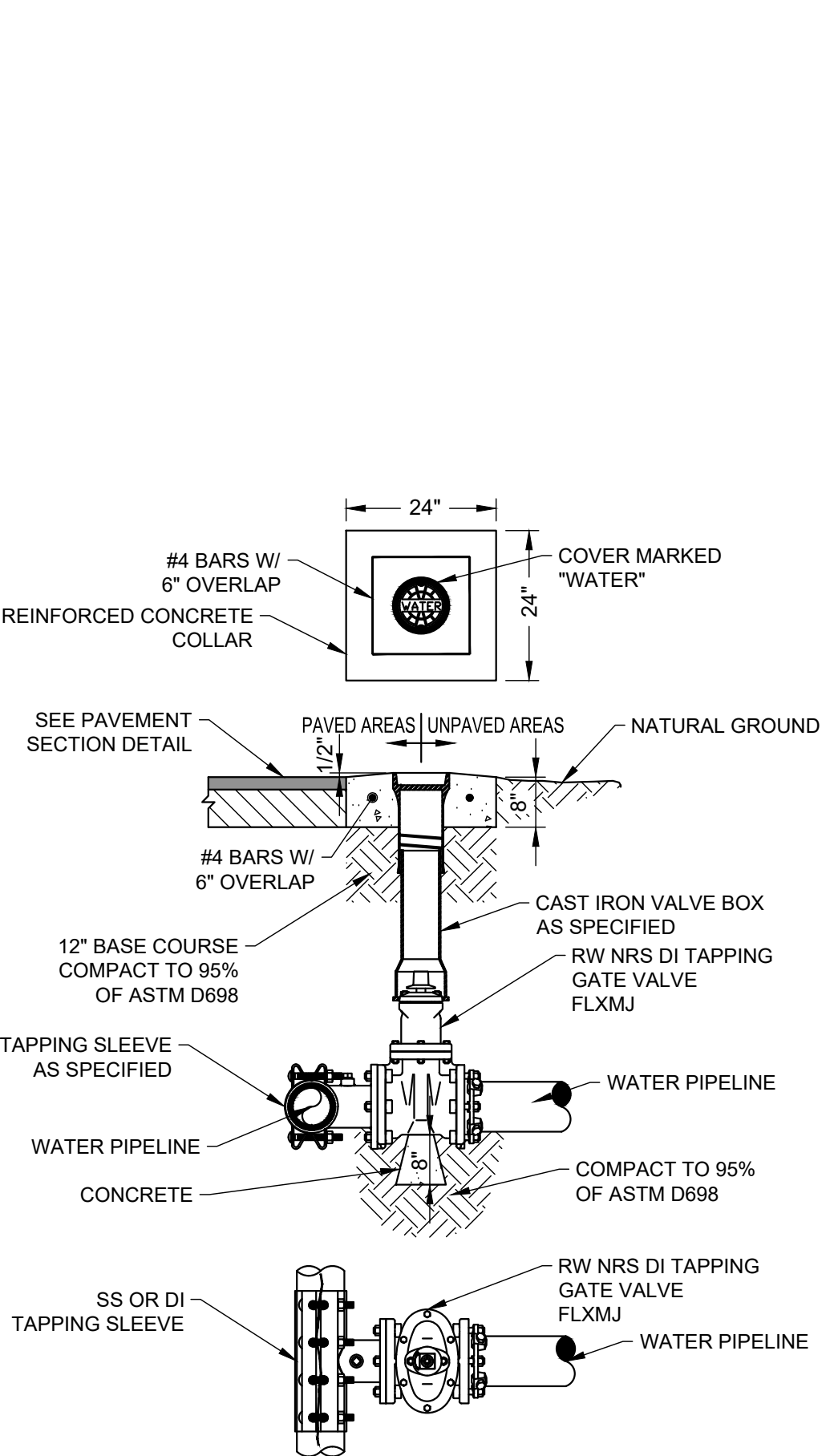
A3 PLAN WATER CROSSING OVER SEWER
NO SCALE



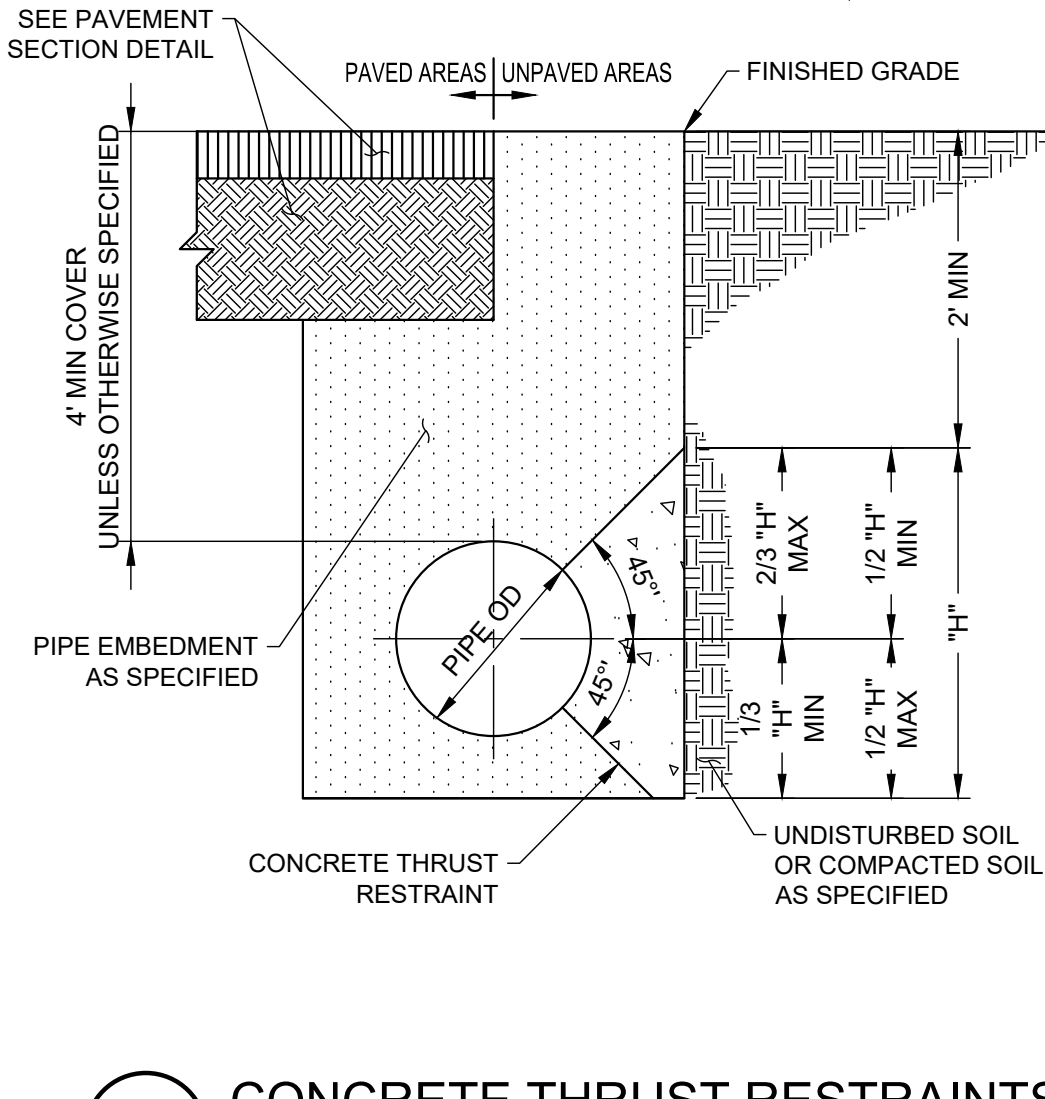
A4 SECTION WATER CROSSING OVER SEWER
NO SCALE



A5 TYP HOT TAP INSTALLATION
NOT TO SCALE



A5 TYP HOT TAP INSTALLATION
NOT TO SCALE

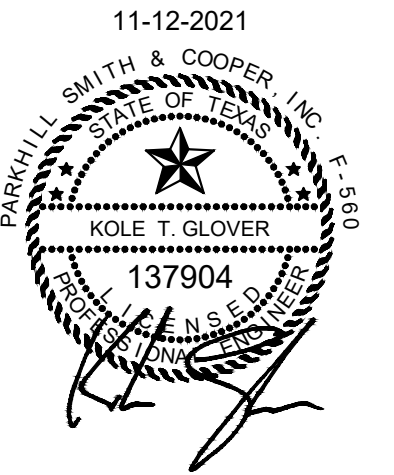


C4 CONCRETE THRUST RESTRAINTS
NO SCALE

FITTING SIZE (IN.)	CONCRETE THRUST BLOCK				TEES & DEAD ENDS
	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND	
4	4.8	2.6	1.32	0.67	6.79
6	9.92	5.37	2.74	1.37	14.02
8	17.06	9.23	4.71	2.36	24.12
10	25.66	13.89	7.08	3.56	36.29
12	36.29	19.64	10.01	5.03	51.32
14	48.75	26.38	13.45	6.76	68.95
16	63.05	34.12	17.40	8.74	89.17
18	79.19	42.86	21.85	10.98	111.99
20	97.17	52.59	26.81	14.47	137.41
24	138.63	75.02	38.25	19.22	196.05
30	213.26	115.41	58.84	29.56	301.59

- NOTES:**
- BLOCK BEARING AREAS, A=BXH ARE SHOWN IN TABLE.
 - DIMENSION "B" TO BE A MINIMUM OF 1.5', BUT SHALL BE INCREASED WHERE NECESSARY.
 - B=H EXCEPT WHERE TOP OF BLOCK IS WITHIN 2 FEET FROM GROUND SURFACE, THEN B=A/H.
 - THE BOTTOM OF THE THRUST BLOCK SHALL EXTEND TO AT LEAST THE BOTTOM OF THE TRENCH.
 - THE THRUST BLOCK SHALL COVER THE ENTIRE LENGTH OF THE FITTING MINUS CLEARANCE FOR THE BELLS.
 - FITTINGS SHALL CONTAIN A 10 MIL POLYETHYLENE WRAP.
 - CONCRETE SHALL BE PLACED SUCH THAT FITTINGS WILL REMAIN ACCESSIBLE FOR REPAIR.
 - CONCRETE THRUST BLOCKING IS NOT ALLOWED FOR VERTICAL BENDS.

FILE NAME: A:\2021\1601.21\03_DSGN01_DWG\050_CIVIL\C-502-1601.dwg LAYOUT NAME: C-502 PRINTED: Friday, November 12, 2021 - 6:09pm USER: TBest

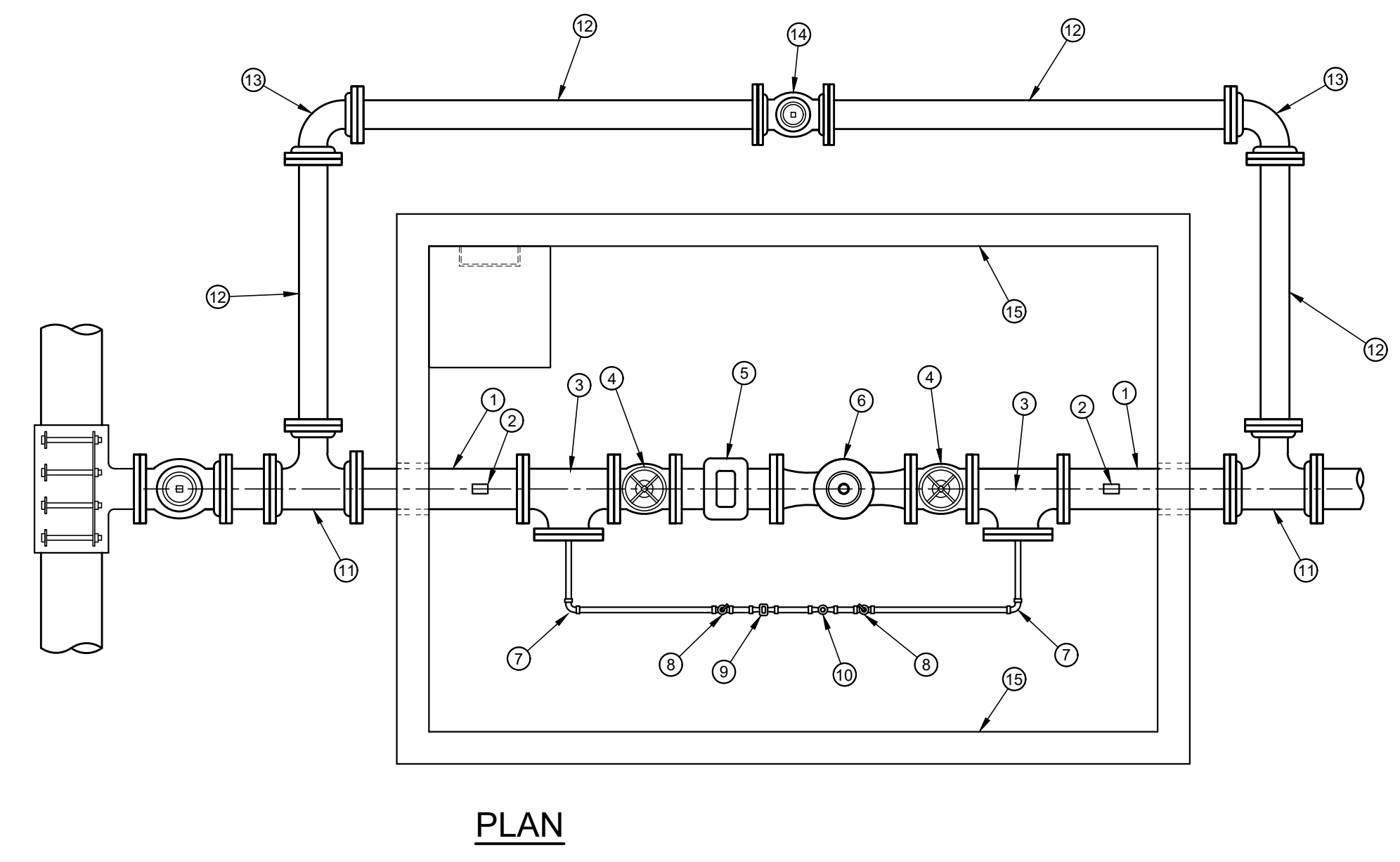
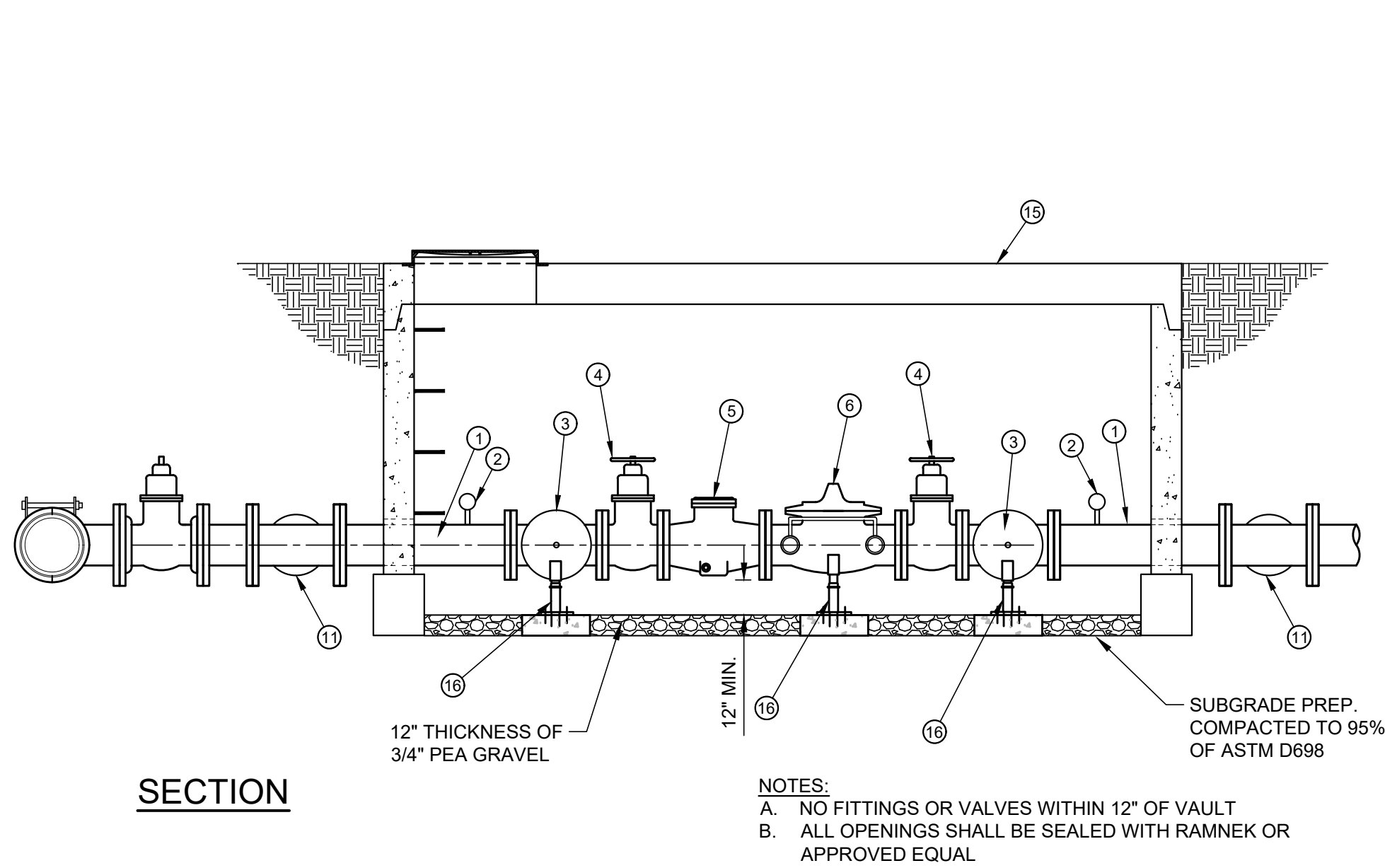


CLIENT
City Of Borger

P.O. Box 5250
Borger, Texas
806-273-0900

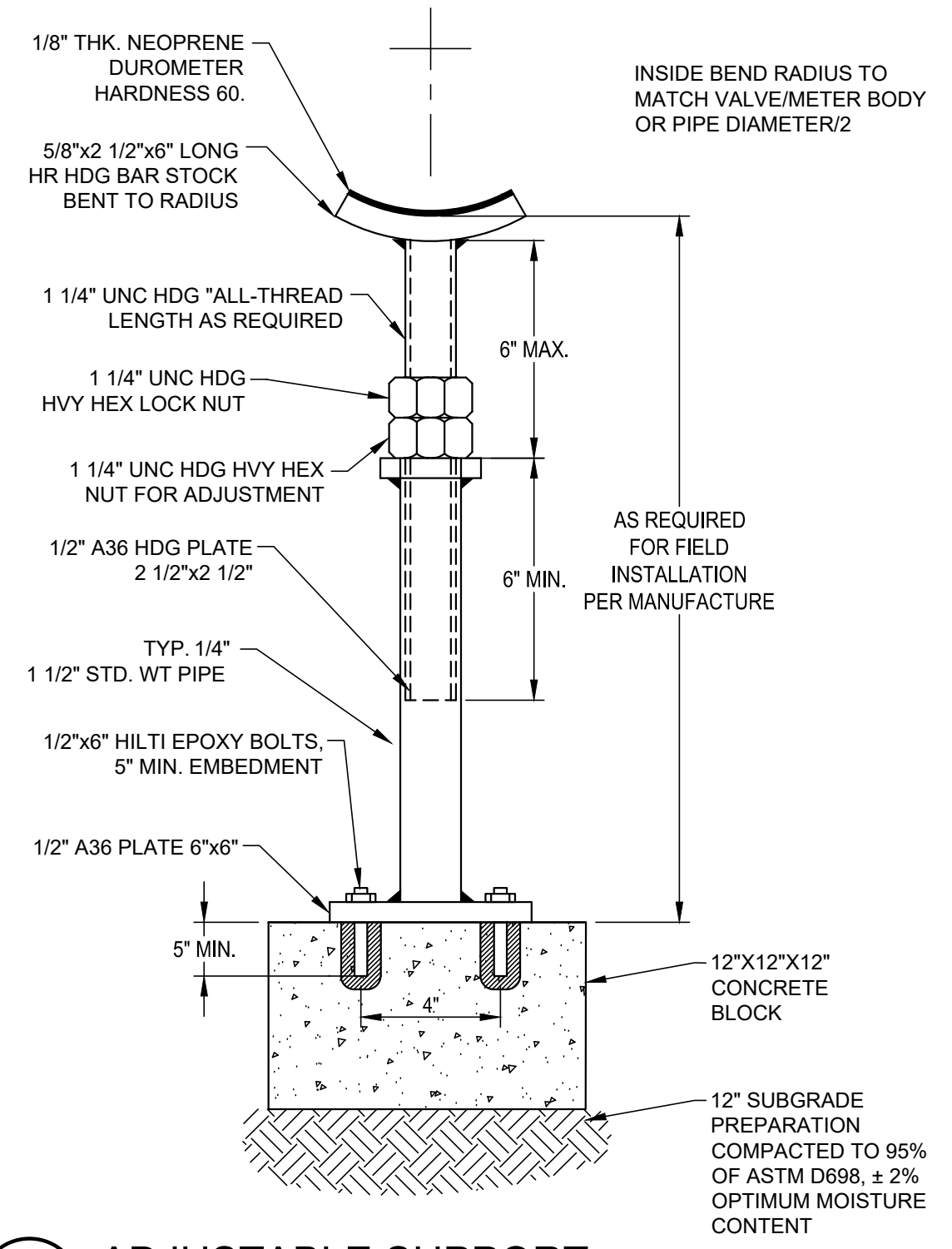
PROJECT NO.
1601.21

#	DATE	DESCRIPTION
3	11-12-2021	SEALED SET
2	10-08-2021	80% Review
1	10-04-2021	60% Review



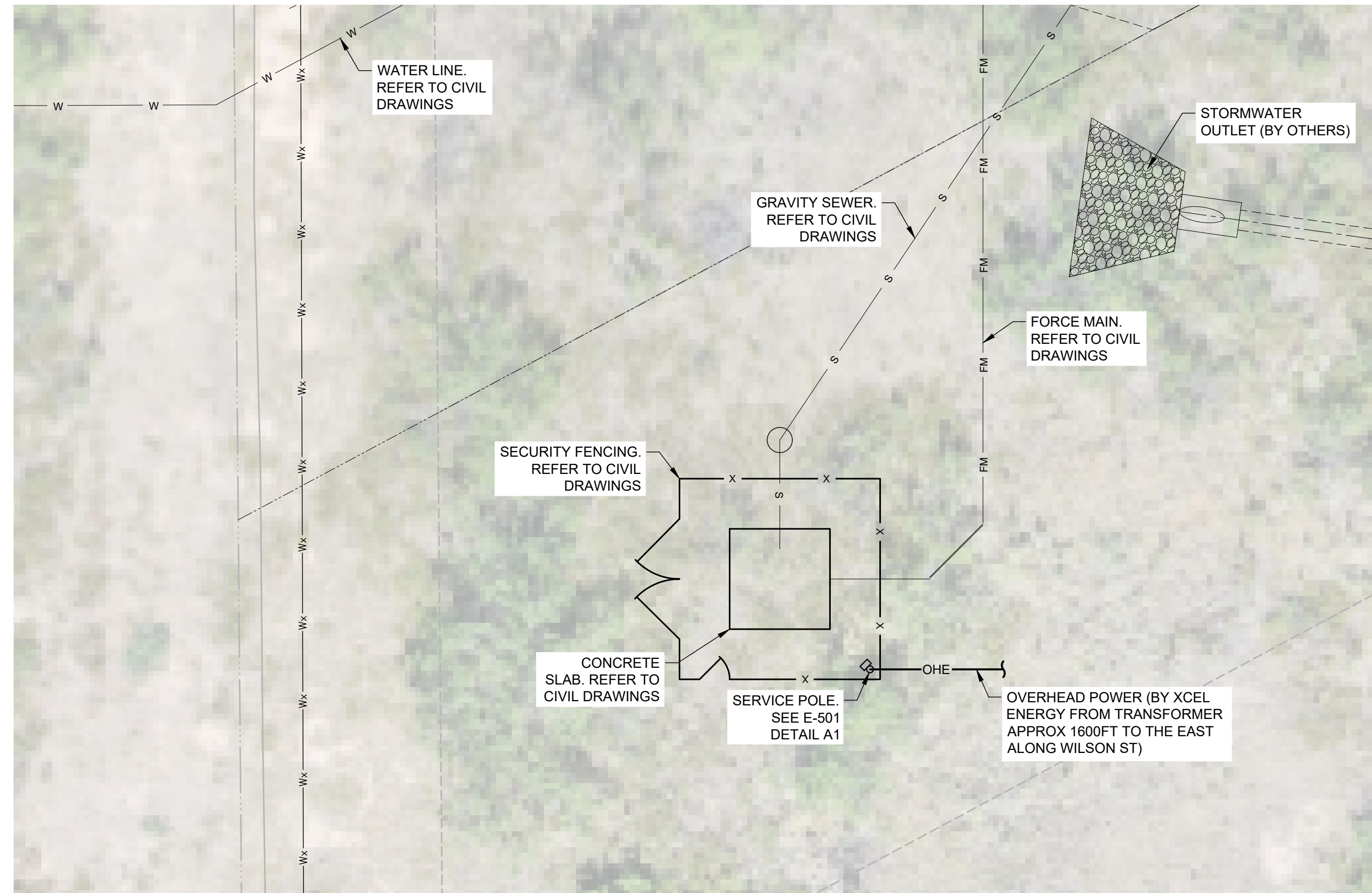
C2 PRECAST VAULT WITH PRESSURE REDUCING VALVE, GATE VALVE AND BYPASS
NO SCALE

PIPING & FITTING SCHEDULE	
1.	8" C151 PC250 DIP
2.	PRESSURE GAUGE W/ BALL VALVE
3.	8" FLANGED TEE W/ 1" TAPPED BLIND FLANGE
4.	8" GATE VALVE W/ HANDWHEEL
5.	8" CLA-VAL X34H STRAINER
6.	8" CLA-VAL 90-01KO W/ ALL TUBING AND FITTINGS STAINLESS STEEL
7.	1" BRASS NIPPLE AND FITTINGS, THREADED
8.	1" BALL VALVE, TREADED
9.	1" CLA-VAL X34H STRAINER, THREADED
10.	1" CLA-VAL 90-05KO W/ ALL TUBING AND FITTINGS STAINLESS STEEL
11.	8"x6" TEE (MJXMJ)
12.	6" PVC C900 DR 18
13.	6" 90° BEND (MJXMJ)
14.	6" GATE VALVE AND BOX
15.	VCP ITEM #8012066 W/ 24" RING & COVER, HS-20 LOAD RATING
16.	ADJUSTABLE PIPE SUPPORT (A3/C-503)

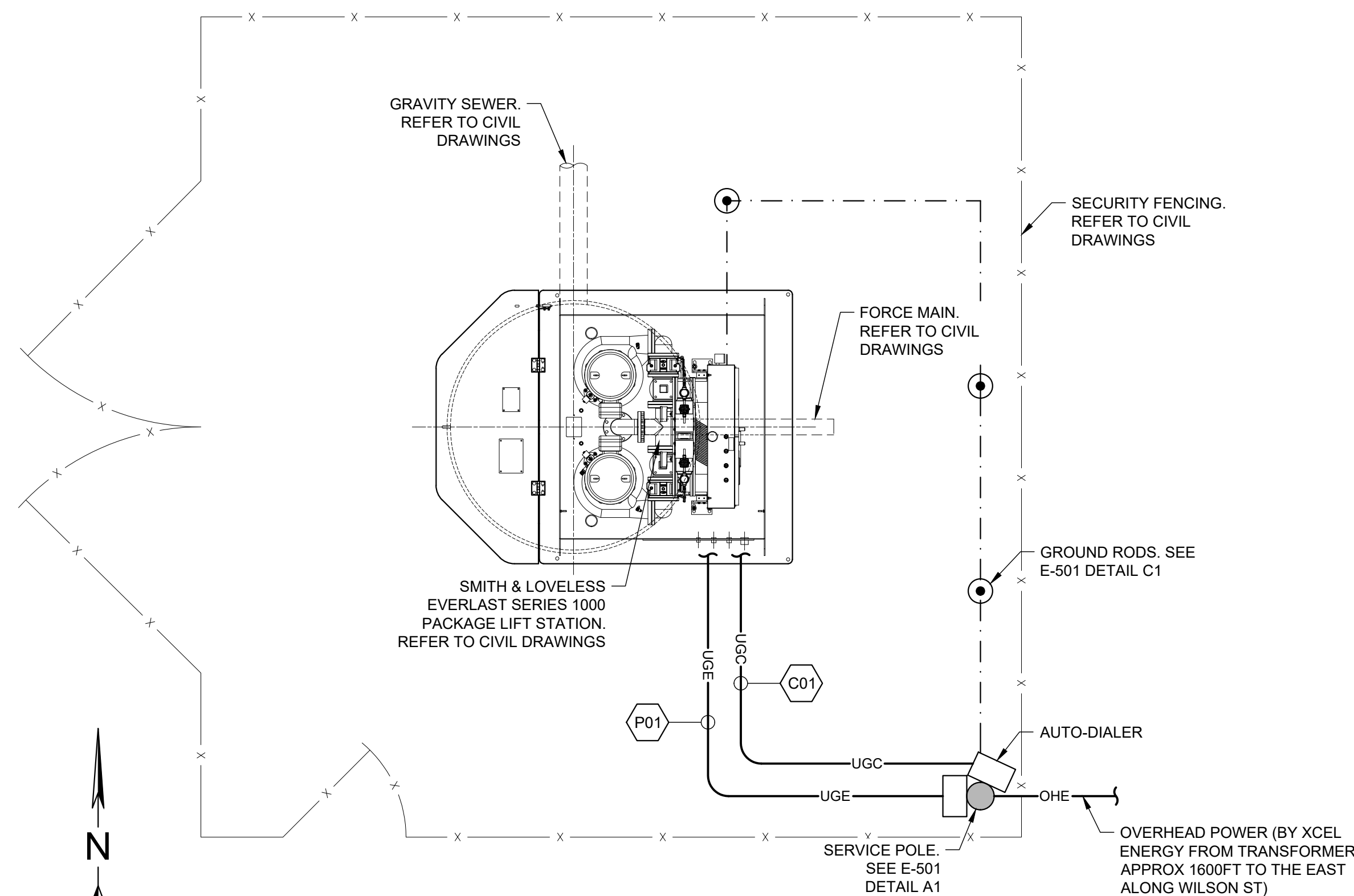
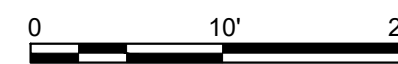


FILE NAME: A:\2021\1601.21\03_DSGN01_DWG\060_CIVIL\C-503-1601.dwg LAYOUT NAME: C-503

FILE NAME: A:\2021\1601.2\103_DSGN01_DWG\150_ELECIE-101-1601.dwg LAYOUT NAME: E-101 PRINTED: Friday, November 12, 2021 - 6:09pm USER: TBest



C2 ELECTRICAL SITE PLAN
SCALE: AS NOTED

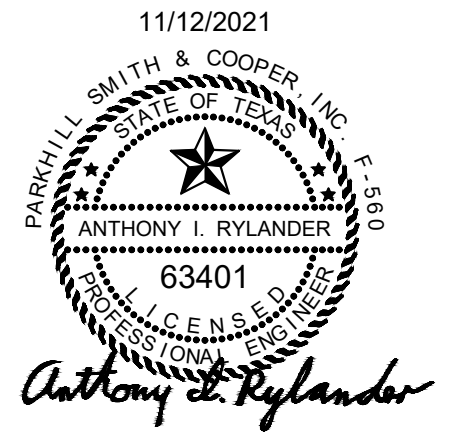


A1 ELECTRICAL LIFT STATION PLAN VIEW
SCALE: 3/8" = 1'-0"

ELECTRICAL SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
AFF	ABOVE FINISH FLOOR
J	JUNCTION BOX. NEMA 3R IF INSTALLED OUTDOORS.
GFCI	"GFCI" INDICATES GROUND FAULT CURRENT INTERRUPTING OUTLET, "WP" INDICATES WEATHERPROOF DUPLEX CONVENIENCE OUTLET. MOUNT 15" UP OR AS INDICATED.
HP	ELECTRIC MOTOR WITH HP INDICATED.
[Symbol]	HEAVY DUTY SAFETY/DISCONNECT SWITCH, TO HAVE POLES AND RATING REQUIRED. NEMA 3R RATED IF LOCATED OUTDOORS.
OHE	OVERHEAD ELECTRICAL CIRCUIT
UGE	ELECTRICAL UNDERGROUND CIRCUIT, 24" MINIMUM BELOW GRADE.
[Symbol]	EXPOSED CONDUIT
[Symbol]	SUBSLAB CONDUIT
[Symbol]	#2 BARE COPPER GROUND WIRE
[Symbol]	BREAKER OF RATING INDICATED
[Symbol]	EQUIPMENT GROUND
[Symbol]	3/4" x 10' COPPER CLAD GROUND ROD
[Symbol]	GENERATOR QUICK CONNECT
[Symbol]	HOME RUN. 3/4" CONDUIT, 2 #12, AND 1 #12 GROUND UNLESS OTHERWISE NOTED.

GENERAL NOTES

- A. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS AT NO ADDITIONAL COST TO OWNER.
- B. CONTRACTOR SHALL COORDINATE WITH TEXAS ONE CALL AND USE ALL MEANS NECESSARY TO LOCATE AND IDENTIFY EXISTING UTILITIES AS SHOWN ON THESE DRAWINGS AND AS IDENTIFIED ON CIVIL SHEETS.
- C. ANY CONFLICTS ENCOUNTERED DURING CONSTRUCTION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
- D. CONTRACTOR TO COORDINATE WITH ELECTRIC COMPANY FOR ELECTRIC SERVICE UPGRADES, TRANSFORMER POLE AND SERVICE POLE LOCATIONS.
- E. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF SERVICE POLE, WEATHERHEAD, RISER, METER CAN, DISCONNECT, AND GROUNDING ELECTRODES. COORDINATE WITH ELECTRIC COMPANY FOR REQUIREMENTS.
- F. THE ELECTRICAL DRAWINGS SHOW THE GENERAL ARRANGEMENT OF ALL CONDUIT, EQUIPMENT, ETC. AND SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION WILL PERMIT. BECAUSE OF THE SMALL SCALE OF THE ELECTRICAL DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, AND ACCESSORIES WHICH MAY BE REQUIRED.
- G. THE CONTRACTOR SHALL INVESTIGATE THE SITE CONDITIONS AFFECTING THE WORK AND SHALL ARRANGE HIS WORK ACCORDINGLY; PROVIDING FITTINGS, ELBOWS, PULL BOXES, AND ACCESSORIES AS MAY BE REQUIRED TO MEET SUCH CONDITIONS. CONTRACTOR SHALL VERIFY ALL DIMENSIONS GOVERNING THE ELECTRICAL WORK. NO ADDITIONAL COMPENSATION WILL BE ALLOWED OR CLAIMED ON THE PART OF THE CONTRACTOR FOR DIFFERENCES IN ACTUAL DIMENSIONS, AND THOSE INDICATED ON THE DRAWINGS.
- H. CONTRACTOR SHALL PROVIDE CONDUIT SEALS ON EACH CONDUIT ROUTED BETWEEN THE WET WELL AND CONTROL PANEL.
- I. ALL EXPOSED CONDUIT SHALL BE RIGID METALLIC CONDUIT. ALL CONDUIT INSTALLED BELOW GRADE SHALL BE SCHEDULE 40 PVC. ANY CONDUIT LOCATE LESS THAN 18" BELOW GRADE SHALL BE PVC COATED RIGID METALLIC CONDUIT. WHEN TRANSFERRING FROM BELOW GRADE TO ABOVE GRADE, USE PVC COATED RIGID METALLIC CONDUIT ELLS.
- J. ANY CONDUIT THAT ENTERS THE WET WELL SHALL BE PVC COATED RIGID METALLIC CONDUIT. TRANSITION FROM PVC TO PVC COATED RMC SHALL BE MADE PRIOR TO ENTERING THE WET WELL.
- K. CONDUIT INSTALLED IN VALVE VAULT SHALL BE ROUTED SUCH THAT IT DOES NOT OBSTRUCT ACCESS WITHIN THE VAULT AND SHALL BE RIGID PVC COATED CONDUIT.
- L. PROVIDE LAMCOID LABELS FOR EACH ENCLOSURE. LABELS SHALL BE 1/2" WHITE LETTERS ON BLACK BACKGROUND. LABELS SHALL BE SECURED TO ENCLOSURES USING BOLTS WITH NON REVERSING NUTS.
- M. PROVIDE FACTORY INSTALLED LABELS IN ACCORDANCE WITH NEC110.16.
- N. ALL CONDUIT SEALS SHALL BE INSTALLED NO LESS THAN 24" ABOVE FINISH GRADE.



CLIENT
City Of Borger

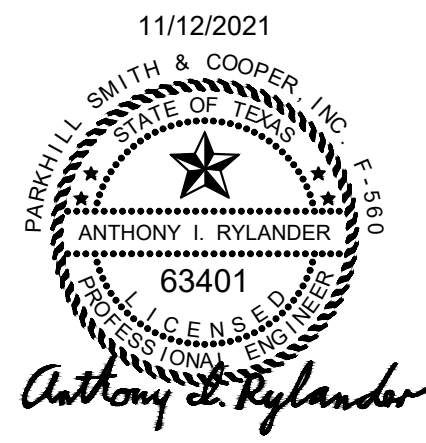
P.O. Box 5250
Borger, Texas
806-273-0900

PROJECT NO.
1601.21

#	DATE	DESCRIPTION
3	11-12-2021	SEALED SET
2	10-08-2021	80% Review
1	10-04-2021	60% Review

Electrical Site Plan

E-101



CLIENT
City Of Borger

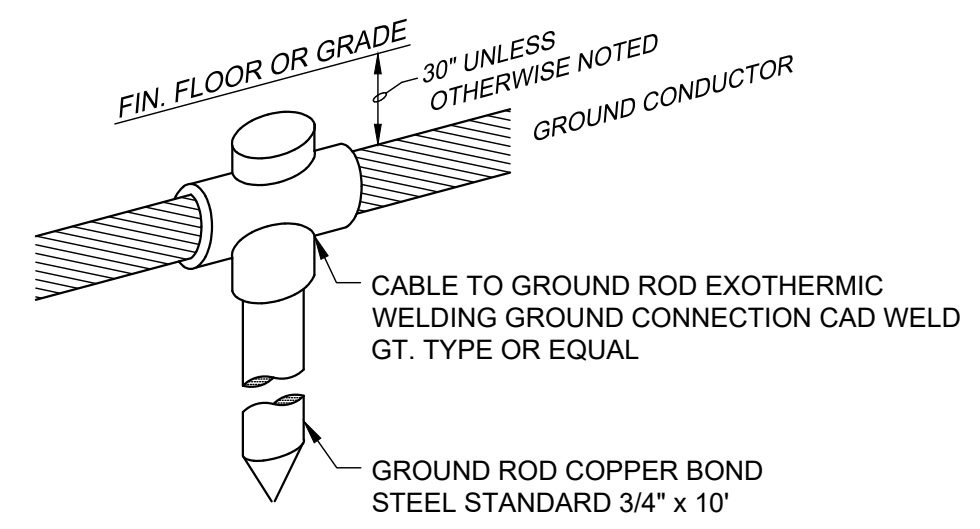
P.O. Box 5250
Borger, Texas
806-273-0900

PROJECT NO.
1601.21

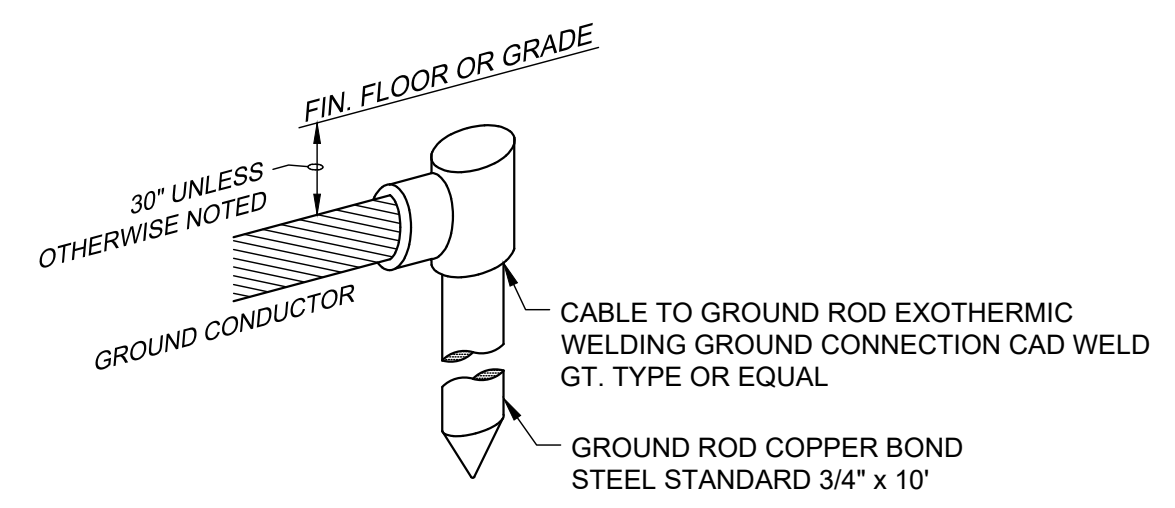
#	DATE	DESCRIPTION
3	11-12-2021	SEALED SET
2	10-08-2021	80% Review
1	10-04-2021	60% Review

Electrical Details

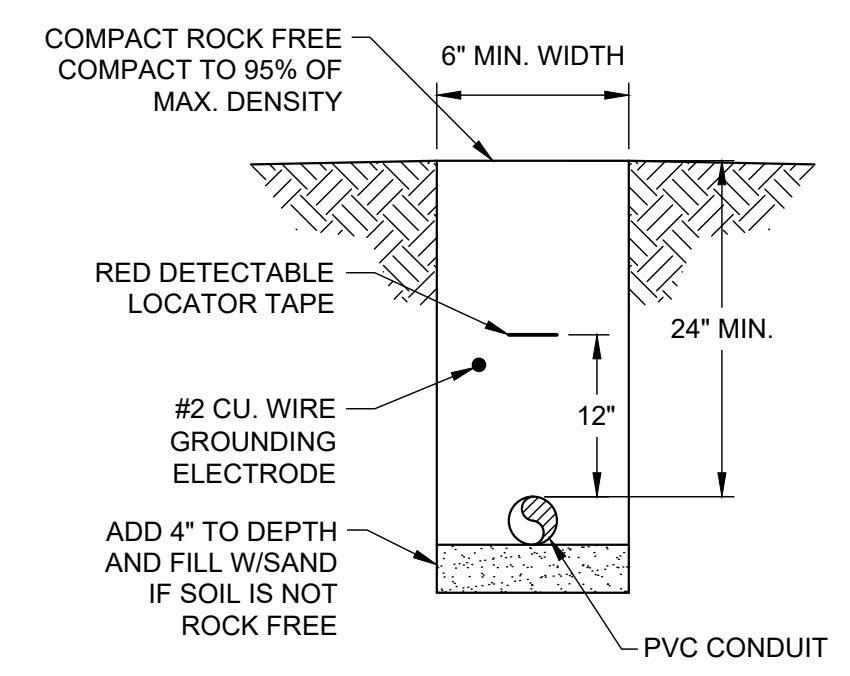
E-501



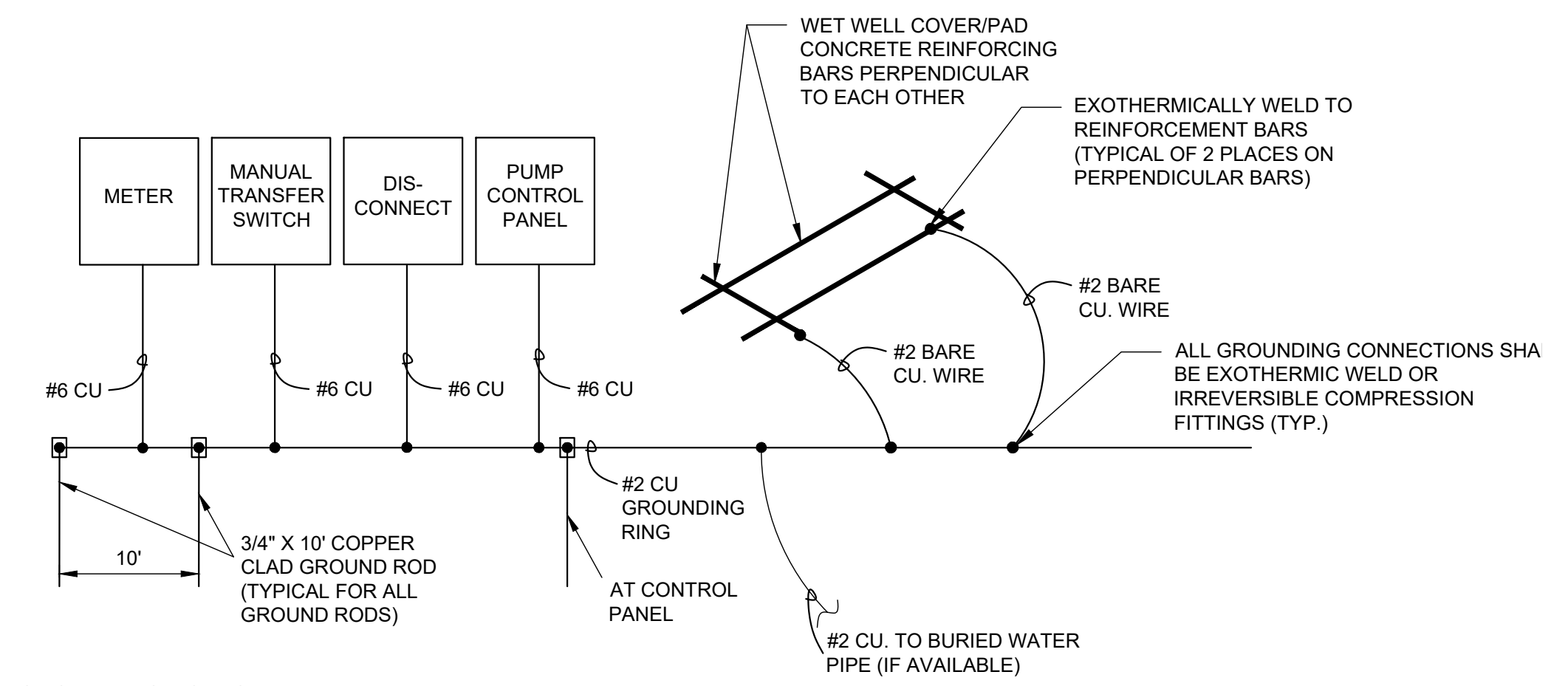
C1 HORIZONTAL CABLE TO GROUND ROD
SCALE: NONE



C2 HORIZONTAL CABLE TERMINAL TO GROUND ROD
SCALE: NONE

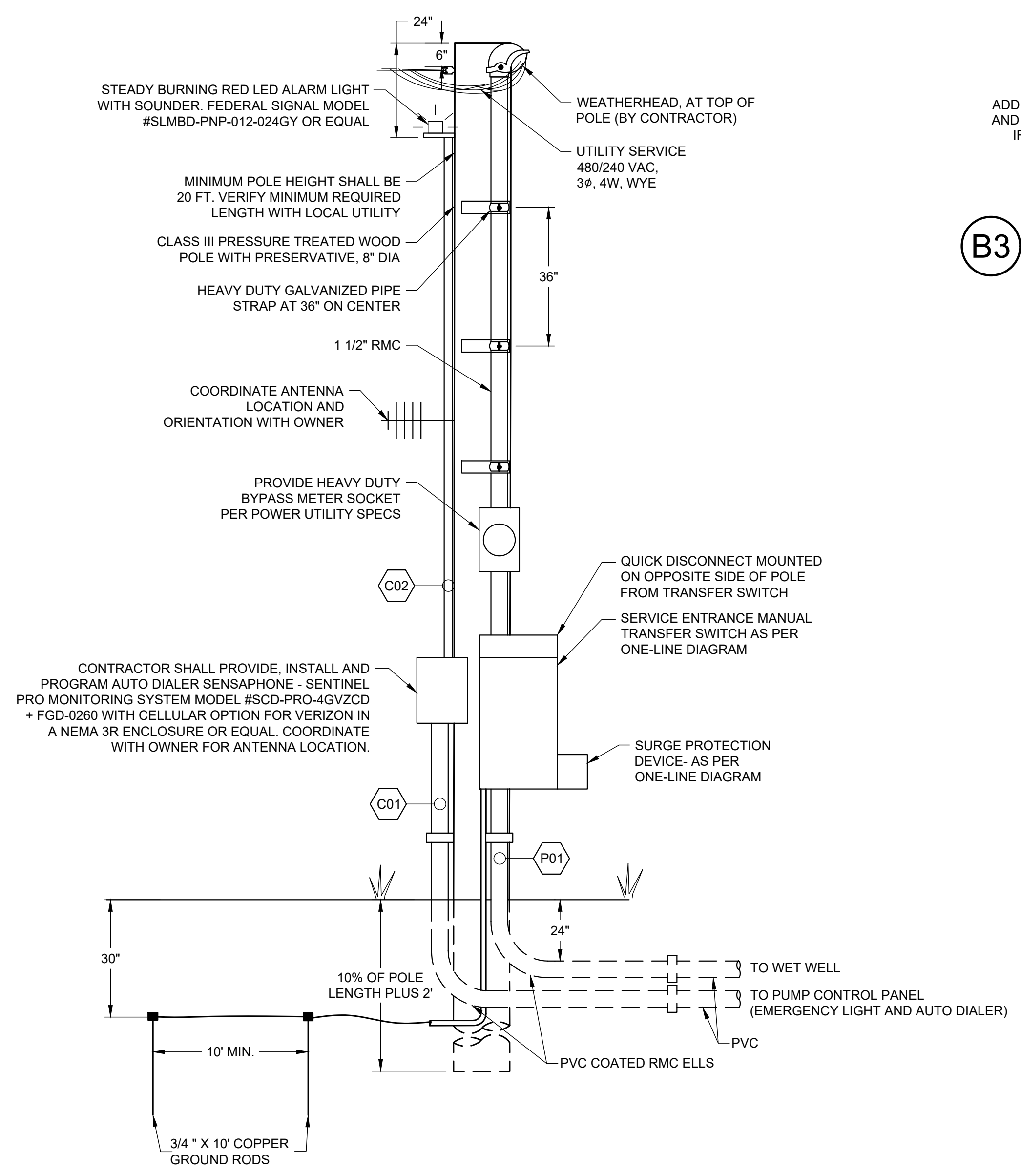


B3 BURIED CONDUIT DETAIL
SCALE: NONE



GROUNDING NOTES:
1. ALL CONNECTIONS TO UTILIZE EXOTHERMIC WELDING PROCESS EXCEPT PUMP PANEL GROUND BUS WHICH SHALL BE BOLTED.

C4 GROUNDING DETAIL
SCALE: NONE

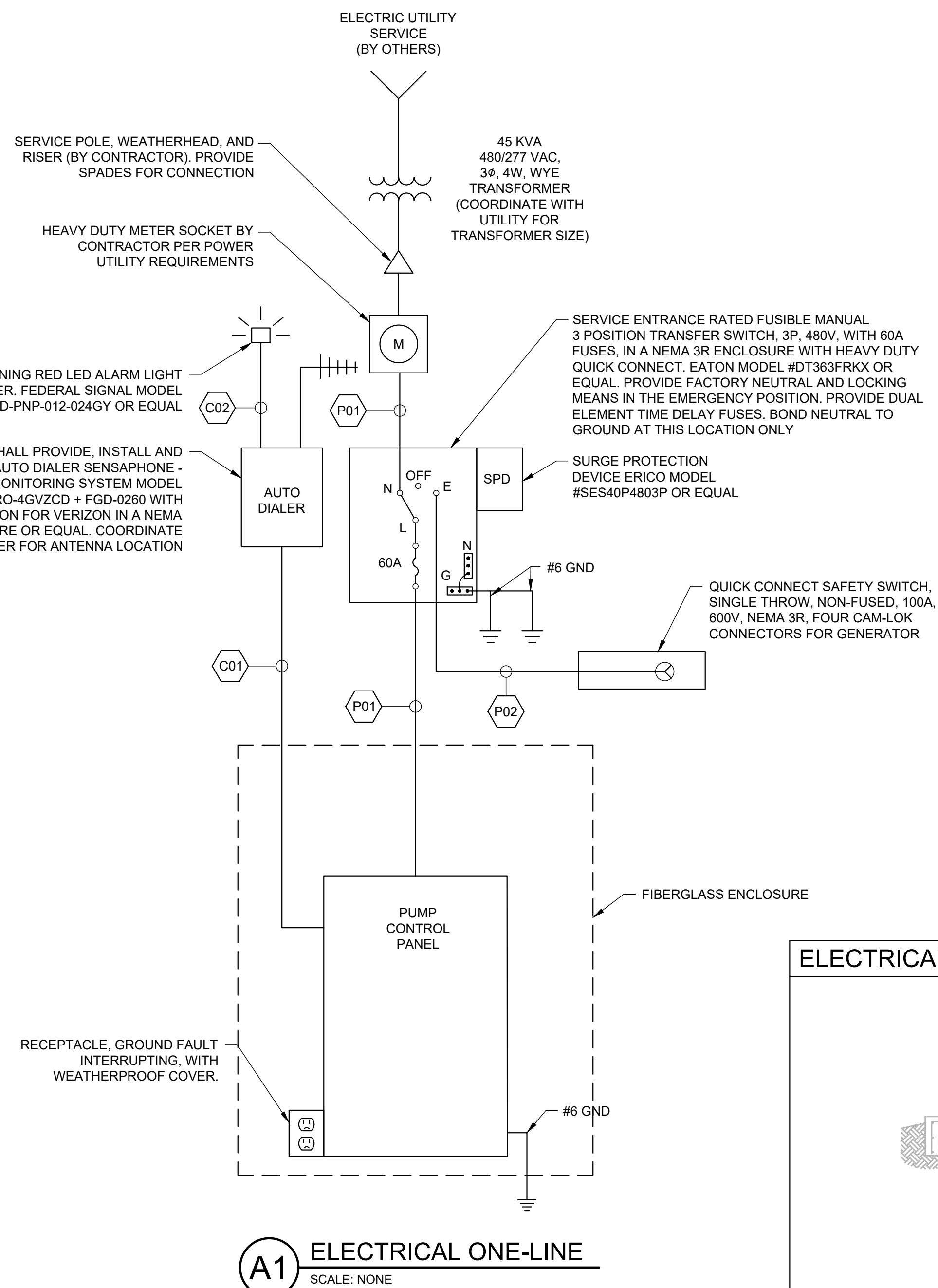


A1 SERVICE POLE DETAIL
SCALE: NONE

FILE NAME: A:\2021\1601.21\03_DSGN01_DWG\1601_ELECIE-501-1601.dwg LAYOUT NAME: E-501 PRINTED: Friday, November 12, 2021 - 6:10pm USER: TBest

FILE NAME: A:\2021\1801.21\03_DSGN01_DWG\150_ELECIE-601-1801.dwg LAYOUT NAME: E-601 PRINTED: Friday, November 12, 2021 - 6:10pm USER: TBest

D
C
B
A



A1 ELECTRICAL ONE-LINE
SCALE: NONE

LOAD TABLE													
CUSTOMER: CITY OF BORGER, TX				DATE: 10/15/2021									
PROJECT: UTILITY EXTENSION LIFT STATION				REV. NO. A									
JOB NO. 1801.21													
480	VAC, 3PH, 4W + GND			FACILITY CALCULATIONS								COMMENTS	
EQUIP TAG #	LOAD	LOAD RATING		@FULL LOAD		CONNECTED			ESTIMATED DEMAND				
		HP, KW, KVA	Est. Eff.	EST. PF	KVA	FLA	KW	BHP	KVA	AMPS	KW		
	PUMP #1	10	HP	0.88	0.82	11.6	14.0	9.5		11.6	14.0	9.5	INCLUDES 5HP FUTURE EXPANSION
	PUMP #2	10	HP	0.88	0.82	11.6	14.0	9.5		11.6	14.0	9.5	INCLUDES 5HP FUTURE EXPANSION
	CONTROL PANEL	5	KVA	0.88	0.82	5.0	6.0	4.1		5.0	6.0	4.1	
	25% OF LARGEST MOTOR	2.5	HP	0.945	0.86	2.9	3.5	2.5		2.9	3.5	2.5	
TOTALS						31.2	37.5	25.7		28.3	34.0	23.2	

MIN. SHORT CIRCUIT CURRENT RATING (NEC 110.9)

CIRCUIT BREAKERS = 10kA
PANELBOARD ISC = 10kA
CONTROL PANEL = 10kA
FUSES = 10kA

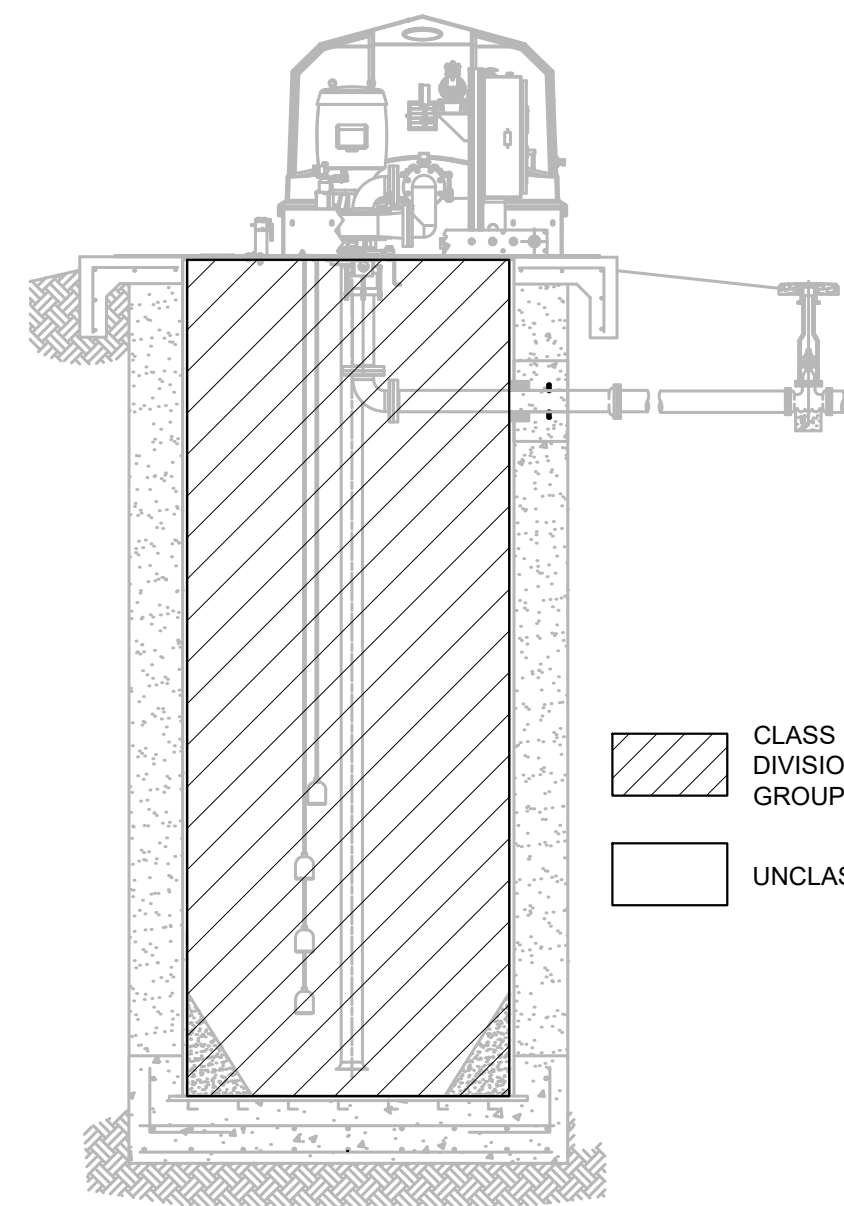
FAULT CURRENT ANALYSIS

XFMR KVA = 45 KVA
%Z = 1.50%
100% MOTOR LOAD IN AMPS = 31
AVAILABLE UTILITY = INFINITE BUS

Isc = 3.7 KA

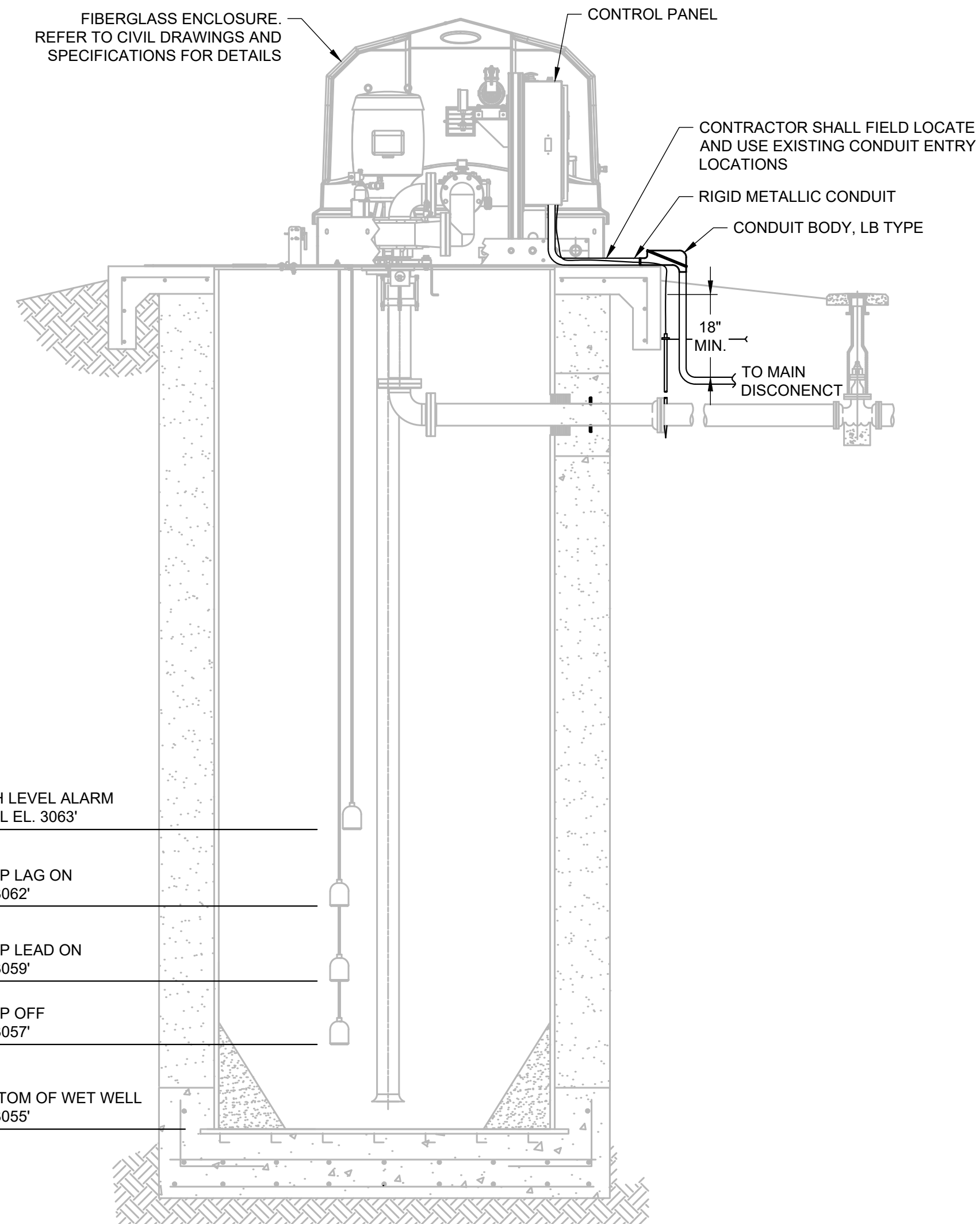
BORGER LIFT STATION CONDUIT AND CABLE SCHEDULE						
Refer to Specification 26 05 33 for conduit requirements						
Refer to Specification 26 05 19 for cable and wire requirements						
CONDUIT No.	SIZE	QTY	CONDUCTORS	FROM	TO	DRWG
P01	1 1/2"	1	4 - #4AWG, STRANDED, THHN, Cu WITH 1 - #8AWG, Cu, GROUND	UTILITY METER	TRANSFER SWITCH	E-601
P02	1"	1	4 - #4AWG, STRANDED, THHN, Cu WITH 1 - #8AWG, Cu, GROUND	TRANSFER SWITCH	QUICK DISCONNECT	E-601
C01	1"	1	10 - #12AWG, STRANDED, THHN, Cu WITH 1 - #12AWG, Cu, GROUND	PUMP CONTROL CABINET	AUTO DIALER	E-601
C02	1"	1	2 - #14AWG, STRANDED, THHN, Cu	AUTO DIALER	ALARM LIGHT	E-601

ELECTRICAL HAZARDOUS AREA CLASSIFICATION



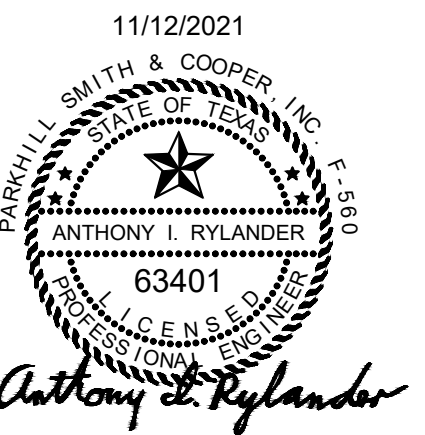
NOTES:

1. THE AREA CLASSIFICATION AS DESCRIBED ON THIS DRAWING IS BASED ON NFPA 820, STANDARD FOR FIRE PROTECTION IN WASTEWATER TREATMENT AND COLLECTION FACILITIES, AND IS INTENDED FOR THE SELECTION AND INSTALLATION OF ELECTRICAL EQUIPMENT ONLY.
2. CONDUIT SEALS SHALL BE LOCATED IN ACCORDANCE WITH AND COMPLY WITH THE REQUIREMENTS OF NEC 501.5(B) AND (C).
3. IN THE WET WELL AREA, ALL CONDUITS SHALL BE PVC COATED RIGID METALLIC CONDUIT (RMC).
4. IN THE WET WELL AREA, ALL CONDUIT FITTINGS, ELBOWS, BOXES, AND SUPPORT PRODUCTS SHALL BE PVC COATED METAL.



A4 LIFT STATION DETAIL (SIDE VIEW)
SCALE: 1/2"=1'-0"

Parkhill



Parkhill.com

Borger SH 136 Utility Extension



CLIENT
City Of Borger

P.O. Box 5250
Borger, Texas
806-273-0900

PROJECT NO.
1801.21

#	DATE	DESCRIPTION
3	11-12-2021	SEALED SET
2	10-08-2021	80% Review
1	10-04-2021	60% Review

**Electrical
One-Line,
Wet Well Elevation
and Load Table**

E-601