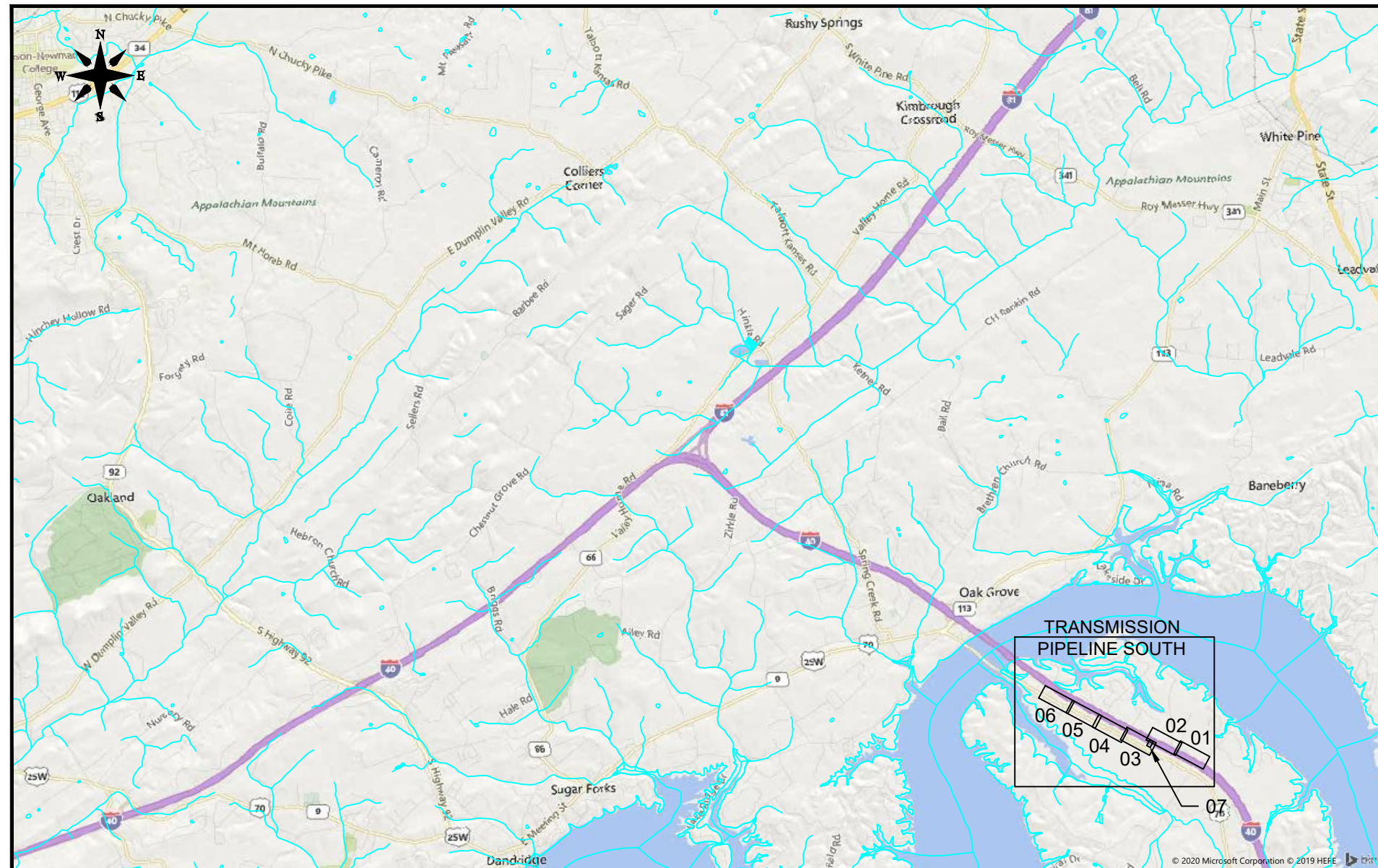


Jefferson-Cocke County Utility District

NATURAL GAS SYSTEM IMPROVEMENTS



Scale: 1" = 6600'

PROJECT LOCATION

Transmission Pipeline South
Jefferson County, Tennessee
Project: 21910.C
JCCUD Project: 663
July, 2022

PREPARED BY:

HEATH 
HEATH AND ASSOCIATES, INC.
108 W. WARREN STREET, SUITE 300
SHELBY, NORTH CAROLINA 28150
LICENSE NO. F-1035

7/6/2022 8:57:13 AM

THIS DRAWING IS FOR
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GENERAL CONSTRUCTION NOTES
NOTES ON THIS PAGE APPLY TO ALL PLAN SHEETS

GENERAL CONSTRUCTION NOTES

- 1. THE STEEL TRANSMISSION PIPELINE WILL BE INSTALLED WITH A MINIMUM OF 48" OF COVER THROUGHOUT THE ENTIRE PROJECT. THE PE PIPELINE WILL BE INSTALLED WITH A MINIMUM OF 36" OF COVER; CERTAIN LOCATIONS, SUCH AS ROAD CROSSINGS, HAVE A GREATER SPECIFIED DEPTH.
- 2. THE PIPELINE WILL BE INSTALLED WITH SPECIFIED COVER UNDER ALL ROADWAYS WHETHER THE PIPELINE IS INSTALLED BY OPEN TRENCHING OR BORING.
- 3. ALL ROAD CROSSINGS SCHEDULED TO BE BORED SHALL BE MADE BY AUGER, MOLE, OR DIRECTIONAL BORING; NO WATER JET BORES WILL BE PERMITTED. TDOT PAVEMENT, FOR ROADWAYS SCHEDULED TO BE BORED, WILL NOT BE CUT WITHOUT SECURING WRITTEN PERMISSION FROM TDOT.
- 4. WHERE THE PIPELINE CROSSES DRAINAGE DITCHES, CREEKS OR LAND SUBJECT TO FLOODING, THE PIPE SHALL BE INSTALLED AT A MINIMUM COVER OF FORTY-EIGHT INCHES (48") OR AS OTHERWISE REQUIRED BY THE ENGINEER, PLANS OR SPECIFICATIONS.
- 5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES AND/OR PENALTIES RESULTING FROM ALL NON-COMPLIANCE WITH FEDERAL, STATE AND LOCAL PERMITS AND ENCROACHMENT AGREEMENTS.
- 6. A NUMBER OF UTILITIES AND DRAINAGE STRUCTURES HAVE BEEN IDENTIFIED AND ARE SHOWN ON THE PLANS DUE TO THEIR SIGNIFICANCE. OTHER UTILITIES AND DRAINAGE STRUCTURES ARE PRESENT ALONG THE ROUTE OF THE PROPOSED GAS MAINS AND HAVE NOT BEEN SHOWN ON THE PLANS. THE LOCATION OF THE UTILITIES AND DRAINAGE STRUCTURES WILL INFLUENCE THE EXACT PLACEMENT OF THE NEW GAS MAINS.
- 7. THE ALIGNMENT OF THE PIPELINE IS DETAILED ON THE PLAN SHEETS. THE CONTRACTOR MAY VARY THIS HORIZONTAL ALIGNMENT TO AVOID OTHER UTILITIES OR DRAINAGE STRUCTURES IF APPROVED BY THE ENGINEER. THE PIPELINE SHALL BE INSTALLED A MINIMUM OF 3' FROM THE TRAVEL LANE EDGE OF PAVEMENT. IF THE PRESENCE OF THE UTILITIES AND/OR DRAINAGE STRUCTURES REQUIRE THE GAS MAINS TO BE LOCATED OUTSIDE OF THE RANGES ABOVE, CONTACT THE ENGINEER FOR APPROVAL.
- 8. SOME AREAS WILL REQUIRE CLEARING. THE CONTRACTOR IS RESPONSIBLE FOR ALL NEEDED CLEARING, MINIMUM 10' EACH SIDE OF PIPE, AND PROPER DISPOSAL OF BRUSH AND TIMBER. ALL COMPENSATION TO THE CONTRACTOR SHALL BE INCORPORATED IN THE LUMP SUM PRICE FOR CLEARING.

PRESSURE TESTING

- 1. THE PIPELINE IS TO BE PIGGED AND TESTED SEPARATELY IN SECTIONS APPROVED BY JCCUD STAFF. PIPE JOINS MADE AFTER TESTING ARE TO BE SOAP BUBBLE TESTED.
- 3. A MINIMUM OF TWO "PIG" RUNS SHALL BE REQUIRED. THE FINAL PIG RUN MUST BE CLEAN AND DRY.
- 4. THE 6" AND 8" STEEL PIPE SHALL BE TESTED TO 1100 psig FOR 8 HOURS USING WATER. SEE DETAIL TESTING AND CLEANING REQUIREMENTS IN SPECIFICATIONS. THE 4" STEEL PIPE AND THE INLET SIDE OF THE REGULATOR STATION SHALL BE TESTED TO 1100 psig FOR 24 HOURS USING COMPRESSED AIR OR NITROGEN. ALL PE PIPE SHALL BE TESTED TO 100 psig FOR 24 HOURS USING COMPRESSED AIR OR NITROGEN. JOINING NEW PIPE TO EXISTING WILL BE FOLLOWED BY SOAP BUBBLE TESTING.
- 5. ALL DIRECTIONAL BORES (SPECIFIED OR NOT) SHALL BE PRE TESTED AT 100 psig FOR 2 HOURS AFTER PIPE INSTALLATION, THEN RE-TESTED AGAIN WITH ADJOINING PIPE AFTER CONNECTION.
- 6. CONTRACTOR TO SUPPLY ALL LABOR, MATERIALS, AND TESTING EQUIPMENT.

NON-DESTRUCTIVE TESTING

ALL STEEL TRANSMISSION PIPELINE WELDS SHALL BE X-RAYED. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING RADIOGRAPHS OF ALL WELDS FROM AN ACCEPTABLE NDT SERVICE COMPANY

ONE-CALL NOTES

THE CONTRACTOR IS RESPONSIBLE FOR CALLING THE LOCAL "ONE-CALL" SERVICE (811) PRIOR TO CONSTRUCTION. SEVERAL UTILITIES IN THE PROJECT AREA MAY NOT BE MEMBERS OF A "ONE-CALL" SERVICE. THESE COMPANIES MUST BE GIVEN SUFFICIENT NOTICE PRIOR TO CONSTRUCTION, IN ORDER TO MARK THEIR LINES.

PIG LAUNCHER/RECEIVER AND REGULATOR STATION

THE FABRICATION OF THE PIG LAUNCHER/RECEIVER AND REGULATOR STATION HAS BEEN COMPLETED AND THE COMPONENTS ARE LOCATED AT THE JCCUD OFFICE IN NEWPORT, TN. THE CONTRACTOR IS RESPONSIBLE FOR TRANSPORTING THE COMPONENTS TO THE SITE. THE CONTRACTOR WILL PREPARE THE SITES AND CONNECT THE PREFABRICATED ASSEMBLIES TO THE WORK IN THIS PROJECT. THE PIG LAUNCHER/RECEIVER MAY BE USED TO LAUNCH CLEANING AND DRYING PIGS FOR THE STEEL PIPE TO BE CONSTRUCTED.

HORIZONTAL DIRECTIONAL DRILLING NOTES

- 1. EACH SPECIFIED BORE HAS APPROXIMATE FOOTAGES REQUIRED TO MAKE THE BORE. THE CONTRACTOR WILL BE PAID THE LUMP SUM PRICE OF DIRECTIONAL BORING AT THESE LOCATIONS, REGARDLESS OF THE ACTUAL FOOTAGE BORED AT THESE LOCATIONS. PAYMENT IS CONTINGENT UPON COMPLETION OF CROSSING WITH THE PIPE IN CONDITION ACCEPTABLE TO THE ENGINEER. NO ADDITIONAL PAYMENT WILL BE MADE FOR ROCK ENCOUNTERED DURING THE DIRECTIONAL BORE.
- 2. EXIT AND ENTRANCE PITS SHOULD BE SUFFICIENT SIZE TO CONTAIN THE DRILLING MUD AND SPOILS.
- 3. DETERGENTS ARE NOT TO BE USED TO LUBRICATE THE PIPE DURING PULLBACK.
- 4. DRILL HEAD SHOULD BE MONITORED AND LOCATION MAPPED DURING THE DRILLING OPERATION. AN AS BUILT PLAN AND PROFILE OF THE DIRECTIONAL BORE SHALL BE SUPPLIED TO THE ENGINEER.
- 5. PIPE USED IN DIRECTIONAL BORE SHALL BE WELDED IF STEEL, OR BUTT FUSED IF POLYETHYLENE. BACKREAM HOLE DIAMETERS SHOULD MATCH PIPE DIAMETERS AS FOLLOWS:

PIPE OUTSIDE DIAMETER (inches)	REAMER MAXIMUM DIAMETER (inches)	REAMER MINIMUM DIAMETER (inches)
8.625	14	10
6.625	12	8
4.5	8	6
2.375	6	4

- 6. TWO STRANDS OF TRACER WIRE ARE TO BE INSTALLED WITH DIRECTIONALLY BORED POLYETHYLENE PIPE. TRACER WIRE SHALL BE COPPER CLAD STEEL OR SINGLE STRAND HARD COPPER, AWG 8 OR LARGER DIAMETER, WITH 600 VOLT POLYETHYLENE INSULATION MEETING CODE REQUIREMENTS FOR UNDERGROUND USE, AND MINIMUM TENSILE STRENGTH OF 500 POUNDS. TRACER WIRE SHALL BE FREE OF SPLICES IN BORE PATH. COPPER CLAD STEEL WIRE WILL REQUIRE APPROPRIATE CONNECTORS DESIGNED FOR COPPER CLAD STEEL WIRE.
- 7. AN MDPE WEAK LINK SHALL BE INSTALLED BETWEEN THE SWIVEL AND THE LEADING END OF POLYETHYLENE PIPE TO PREVENT OVERSTRESSING OF THE PIPE. USE REDUCERS AS NECESSARY. MAXIMUM WEAK LINK DIAMETERS ARE AS FOLLOWS:

PIPE OUTSIDE DIAMETER (inches)	WEAK LINK MAXIMUM DIAMETER (inches)	WEAK LINK WALL (SDR)	PULL FORCE NOT TO EXCEED
8.625	6.625	11	25,109
6.625	4.5	11	14,814
4.5	3.5	11	6,840
2.375	1.5	9.3	1,904

- 8. PIPE ROLLERS, SKATES, OR OTHER PROTECTIVE DEVICES SHALL BE USED TO PREVENT DAMAGE TO THE PIPE FROM THE EDGES OF THE PIT OR SUB-STRUCTURES DURING PULL-IN. ROLLERS SHALL BE USED UNDER PIPE TO PROTECT THE PIPE FROM GOUGES, ELIMINATE GROUND DRAG, AND REDUCE THE PULL-IN FORCE.
- 9. AN ADDITIONAL FIFTEEN FEET (15') OF PIPE SHALL BE PULLED THROUGH THE EXIT PIT, EXPOSED, AND EXAMINED FOR DAMAGE.
- 10. INSTALLATION OF THE PIPE SHOULD BE PLANNED SO BOTH THE FINAL BACKREAM AND THE PULL BACK CAN BE COMPLETED IN THE SAME DAY.
- 11. CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF EXCESS DRILLING FLUID. SPOILS AND DRILLING FLUID ARE NOT PERMITTED TO BE DISPOSED INTO STREAMS OR INTO STORM, SANITARY, OTHER DRAINAGE SYSTEMS. DISPOSAL SHOULD COMPLY WITH LOCAL ORDINANCES, REGULATIONS, AND ENVIRONMENTALLY SOUND PRACTICES.
- 12. CONTRACTOR MUST PROVIDE A WRITTEN CONTINGENCY PLAN FOR CLEAN UP OF SURFACE SEEPAGE OF DRILLING FLUID AND SPOILS BEFORE BEGINNING ANY PORTION OF PROJECT.
- 13. PIPE INSTALLED BY DIRECTIONAL BORING SHALL BE ALLOWED TO RECOVER OVERNIGHT BEFORE CONNECTION TO OTHER PIPE.
- 14. PIPE INSTALLED BY DIRECTIONAL BORING SHOULD BE PIGGED AND PRESSURE TESTED ONCE AS A SEPARATE UNIT AFTER PIPE INSTALLATION AND AGAIN AS PART OF THE OTHER INSTALLATION.
- 15. CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ANY SUBSURFACE UTILITIES DAMAGED DURING BORING, BACKREAMING, AND OTHER OPERATIONS.
- 16. IF A DRILL HOLE MUST BE ABANDONED, THE HOLE SHOULD BE FILLED WITH GROUT OR CEMENT TO PREVENT FUTURE SUBSIDENCE.
- 17. STEEL PIPE USED IN DIRECTIONAL BORES WILL BE COATED WITH 40 MILS OF POWERCRETE IN ADDITION TO THE 16-18 MILS FBE COATING. THE CONTRACTOR WILL COAT STEEL PIPE JOINTS WITH A POWERCRETE F-1 OR R-95 COATING KIT. POWERCRETE APPLICATION REQUIRES THE SUBSTRATE TEMPERATURE TO BE ABOVE 50 DEG. F AND BELOW 176 DEG. F DURING APPLICATION. PIPE IS NOT TO BE INSTALLED LESS THAN ONE AND ONE-HALF (1.5) HOURS AFTER APPLICATIONS OF POWERCRETE F-1 OR POWERCRETE R-95.
- 18. THE CONTRACTOR MAY UTILIZE DIRECTIONAL BORING TECHNIQUES IN AREAS OTHER THAN WHERE SPECIFIED AT HIS OPTION. THE CONTRACTOR SHALL BE PAID THE PRICE FOR INSTALLING THE PIPE PLUS ANY UNIT ITEMS AVOIDED AS A RESULT OF USING DIRECTIONAL BORING IN THE OPTIONAL AREAS (ITEMS SUCH AS SLICK BORING, ASPHALT CUTS, EC BLANKETS, ETC).

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JCCUD
TL SOUTH
PN: 663

NATURAL GAS SYSTEM IMPROVEMENTS
JEFFERSON-COCKE COUNTY UTILITY DISTRICT
COCKE COUNTY, TENNESSEE



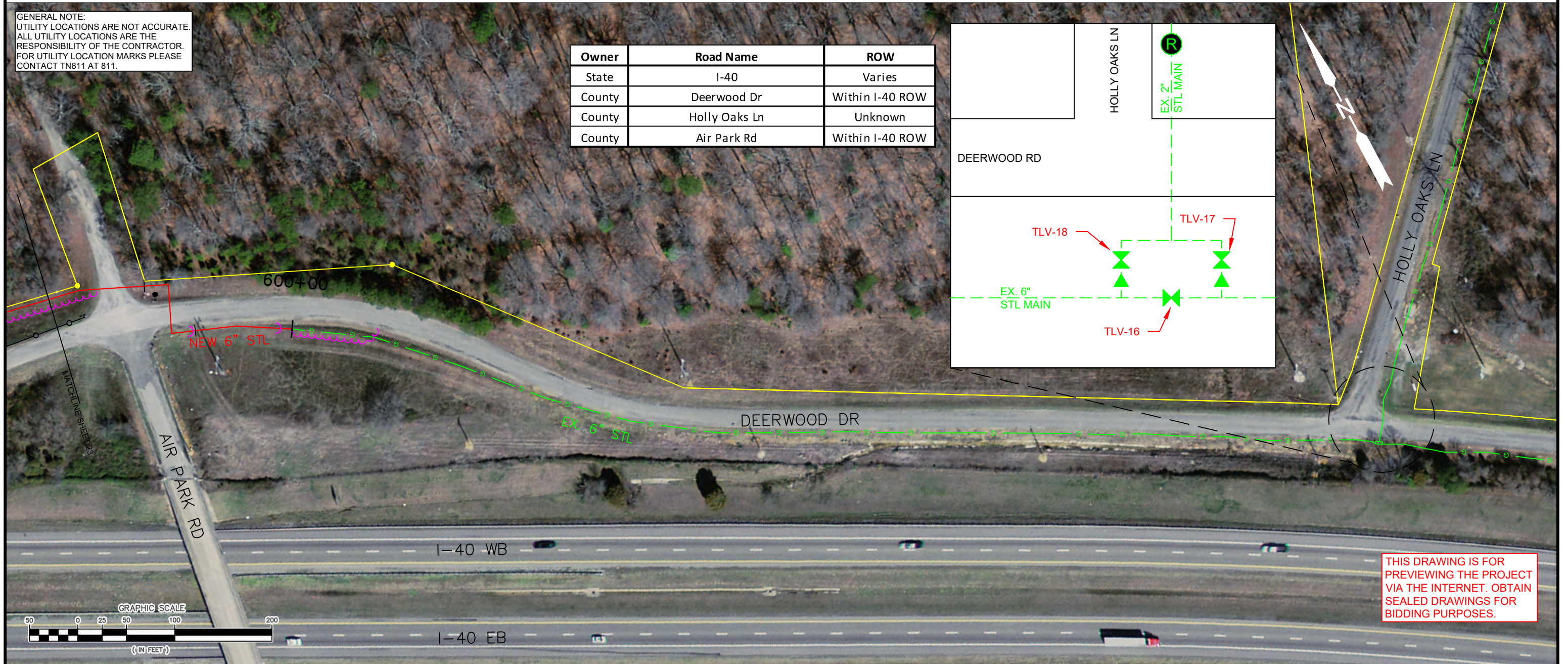
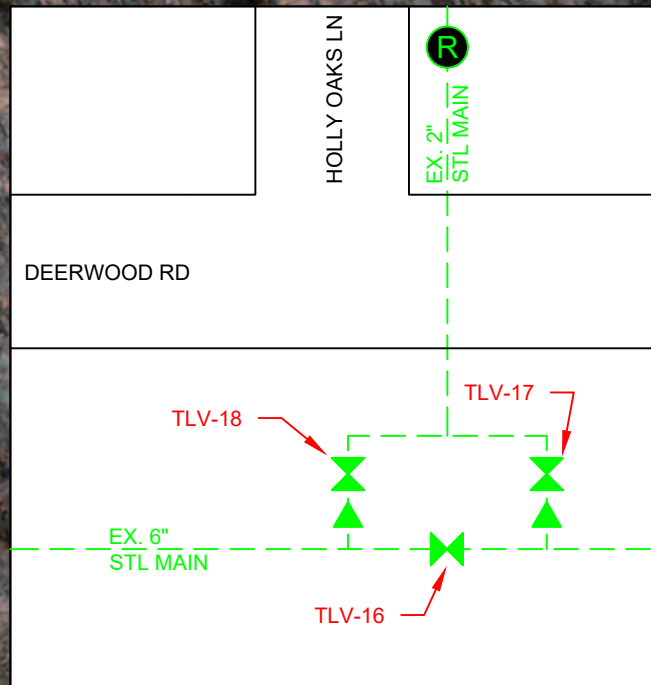
DRAWN: CMD
DATE DRAWN: 06/20/2022
APPROVED:
SCALE: SEE GRAPHIC
PROJECT NO.: 21910.C
SHEET: CONSTRUCTION NOTES 01

INSTALL ROCK CHECK DAMS
PER DWG EC-4

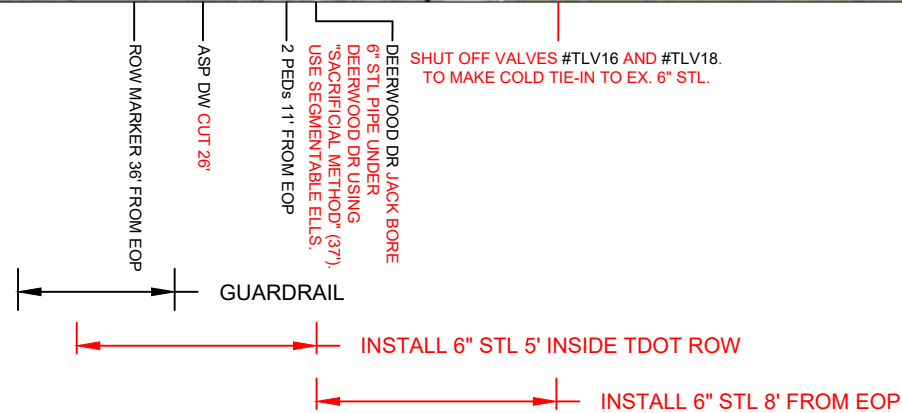
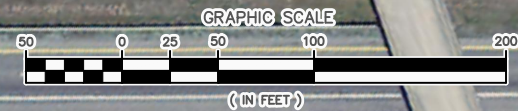
INSTALL TEMP. PIT AND
SILTFENCE FOR DEWATERING
OPERATION. VACUUM ALL FLUIDS
FOR DISPOSAL AS PER PERMIT

GENERAL NOTE:
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FOR UTILITY LOCATION MARKS PLEASE
CONTACT TN811 AT 811.

Owner	Road Name	ROW
State	I-40	Varies
County	Deerwood Dr	Within I-40 ROW
County	Holly Oaks Ln	Unknown
County	Air Park Rd	Within I-40 ROW



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NATURAL GAS SYSTEM IMPROVEMENTS
JEFFERSON-COCKE COUNTY UTILITY DISTRICT
COCKE COUNTY, TENNESSEE



DRAWN CMD	SCALE SEE GRAPHIC
DATE DRAWN 06/20/2022	PROJECT NO. 21910.C
APPROVED	SHEET 01 OF 07

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Owner	Road Name	ROW
State	I-40	Varies
County	Deerwood Dr	Within I-40 ROW
County	Tucker Pl Way	50'

INSTALL CATCH BASIN
PROTECTION PER DWG EC-8

INSTALL SILT FENCE
PER DWG EC-3

INSTALL SILT FENCE
PER DWG EC-3

615+00

NEW 6" STL

610+00

DEERWOOD DR

I-40 WB

I-40 EB

605+00

TUCKER PL WAY

MATCHLINE SHEET 22

MATCHLINE SHEET 24

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INSTALL 6" 3D 90° SEGMENTABLE ELL
HDD I-40 AS PER PLAN SHEET BORE 02.

TUCKER PL WAY
OPEN CUT 45'
18" RCP 23' FROM EOP
GO AROUND

INSTALL
ANODE BED
PER DWG F

INSTALL 6" STL VIA
HDD APPROX. 150'
(HDD BORE 01)
(NO PROFILE)
(PAY ITEM 3.1)

30" CMP GO AROUND

GUARDRAIL

INSTALL 6" STL 12'-20'
INSIDE TDOT ROW

INSTALL 6" STL 12' INSIDE TDOT ROW

INSTALL 6" STL 5' INSIDE TDOT ROW

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NATURAL GAS SYSTEM IMPROVEMENTS
JEFFERSON-COCKE COUNTY UTILITY DISTRICT
COCKE COUNTY, TENNESSEE

HEATH AND ASSOCIATES, INC.
100 W. WARREN ST., SUITE 300
SHELBY, NORTH CAROLINA 28150
LICENSE NO. F-1035

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PROJECT NO.
21910.C
SHEET
02 OF 07

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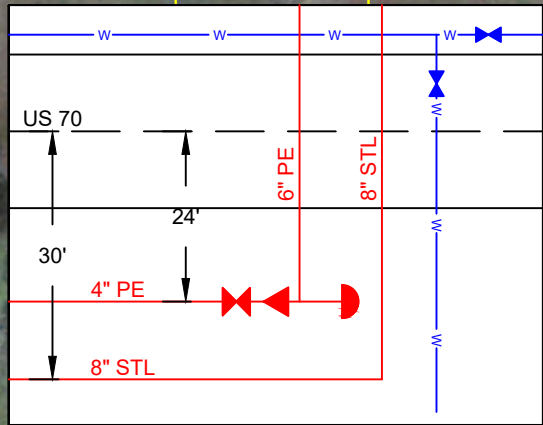
INSTALL CULVERT INLET
PROTECTION PER DWG EC-7

INSTALL CULVERT INLET
PROTECTION PER DWG EC-7

INSTALL EC BLANKET PER DWG EC-6

Owner	Road Name	ROW
State	I-40	Varies
State	US 70	66'

INSTALL PIG LAUNCHER/RECEIVER
AND REGULATOR STATION AS PER
PLAN SHEET 07.



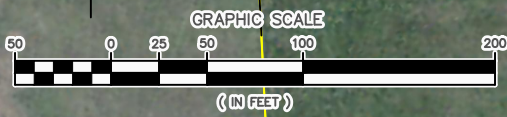
MATCHLINE SHEET 23

INSTALL 8" STL 8'-10' FROM PROP LINE
620+00
INSTALL 6" PE 13'-15' FROM PROP LINE

NEW 6" PE
NEW 8" STL

2 WV's 20' & 23' FROM CL
SLICK BORE US 70 W/
6" PE PIPE (44')
JACK BORE 8" STL PIPE UNDER US 70
USING "SACRIFICIAL METHOD" (44')

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UP 32.5' FROM CL

PED 29' FROM CL

UP 32.5' FROM CL

12" CMP 23' FROM CL GO BEHIND

18" RCP BOTH PIPES GO AROUND

UP 34' FROM CL

14" ASP DW CUT
18" CMP 32' FROM CL

24" CMP BOTH PIPES GO UNDER

13' GRAVEL DW

UP 32.5' FROM CL

18" RCP BOTH PIPES GO AROUND

UP 32.5' FROM CL

INSTALL (1) 8" STL 30 SEGMENTABLE ELL.
INSTALL 5' STUB OF 6" PE AND CAP
INSTALL (1) 8" PE TEE,
(1) 6"x4" PE REDUCER
AND (1) 4" PE VALVE.

FENCE 34' FROM CL

UG FIBER

INSTALL 4" PE 24' FROM CL

INSTALL 8" STL 30' FROM CL

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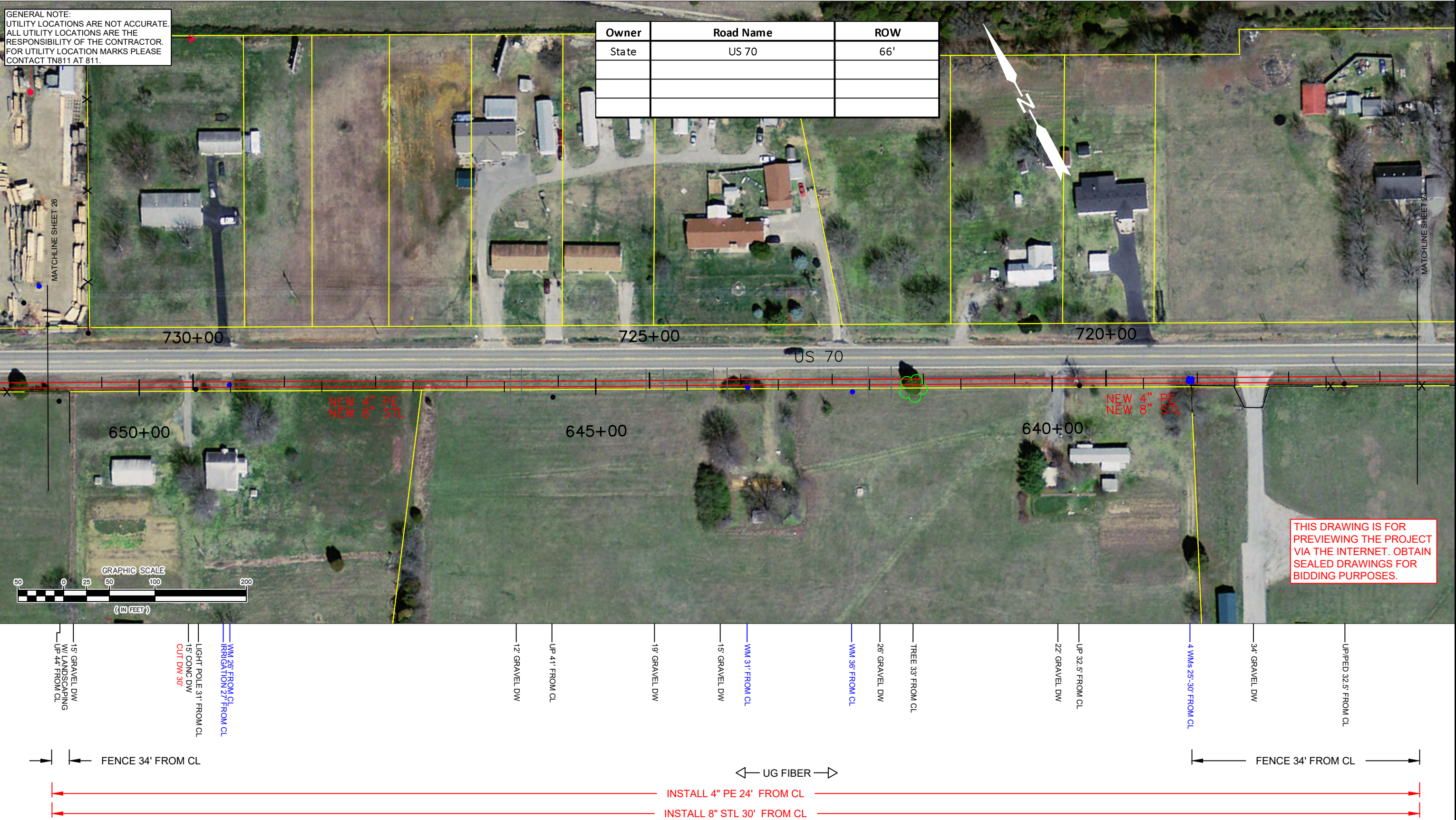
NATURAL GAS SYSTEM IMPROVEMENTS
JEFFERSON-COCKE COUNTY UTILITY DISTRICT
COCKE COUNTY, TENNESSEE

HEATH AND ASSOCIATES, INC.
100 W. WARREN ST., SUITE 300
SHELBY, NORTH CAROLINA 28150
LICENSE NO. F-1035

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06/20/2022
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SCALE
SEE GRAPHIC
PROJECT NO.
21910.C
SHEET
03 OF 07

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CONTACT TN811 AT 811.

Owner	Road Name	ROW
State	US 70	66'



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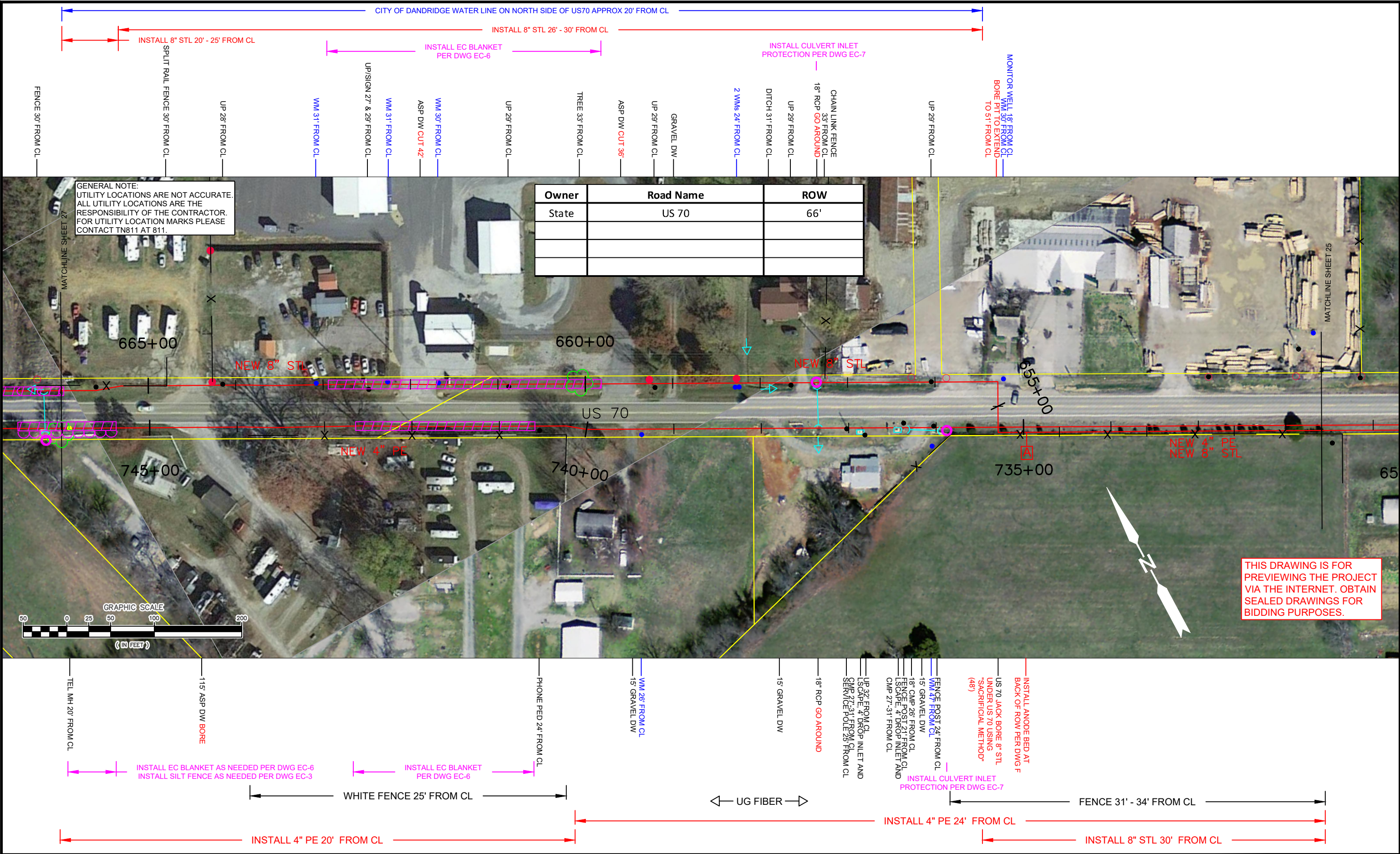
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PN: 663

NATURAL GAS SYSTEM IMPROVEMENTS
JEFFERSON-COCKE COUNTY UTILITY DISTRICT
COCKE COUNTY, TENNESSEE

HEATH
HEATH AND ASSOCIATES, INC.
108 W. WARREN ST., SUITE 300
SHELBY, NORTH CAROLINA 28150
LICENSE NO. F-1035

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PROJECT NO.
21910.C
SHEET
04 OF 07



FAIR HAVEN
MISSIONARY
BAPTIST CHURCH



100' x 100' EASEMENT

GATE AND PERIMETER
FENCE PROVIDED BY
JCCUD.

CONTRACTOR TO CLEAR AND
GRADE LEVEL INSIDE OF FENCE.
SIGNIFICANT CLEARING 15'x80'.
PIPELINE CONTRACTOR TO
GRAVEL INSIDE OF FENCED AREA.

20' EASEMENT

6" PE

13'

8'

8" STL

GATE

INSTALL 8" WE INSULATOR

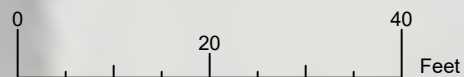
HDD EXIT POINT

50'

80'

46'

15'



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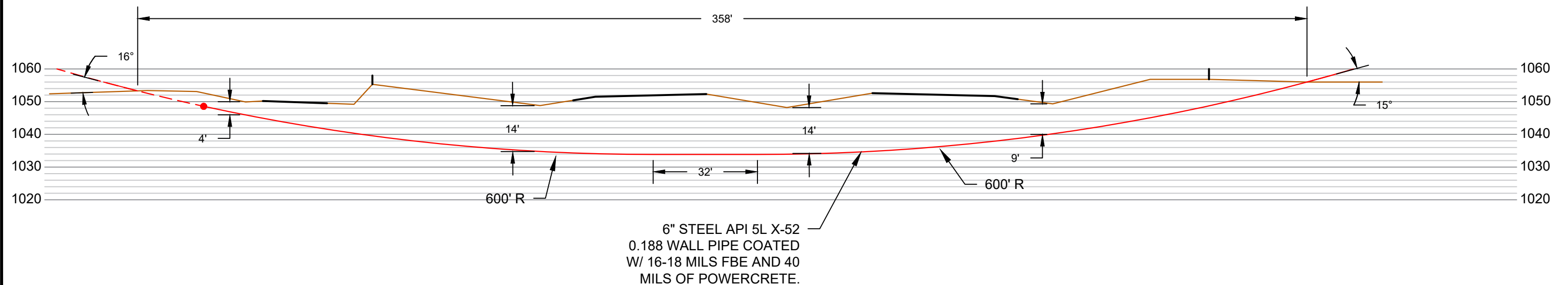
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TL SOUTH
PN: 663

NATURAL GAS SYSTEM IMPROVEMENTS
JEFFERSON-COCKE COUNTY UTILITY DISTRICT
COCKE COUNTY, TENNESSEE

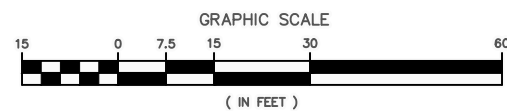


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DATE DRAWN 06/20/2022	PROJECT NO. 21910.C
APPROVED	SHEET 07 OF 07

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PROFILE

STA. 617+25
I-40 HDD
(PAY ITEM 3.2)

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7/6/2022 8:58:12 AM

JCCUD
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PN: 663

NATURAL GAS SYSTEM IMPROVEMENTS
JEFFERSON-COCKE COUNTY UTILITY DISTRICT
COCKE COUNTY, TENNESSEE



DRAWN	CMD
DATE DRAWN	06/20/2022
APPROVED	

SCALE	SEE GRAPHIC
PROJECT NO.	21910.C
SHEET	BORE 02

JEFFERSON COCKE COUNTY UTILITY DISTRICT, NEWPORT TENNESSEE

NATURAL GAS SYSTEM IMPROVEMENTS

TRANSMISSION PIPELINE SOUTH PIG LAUNCHER/RECEIVER ASSEMBLY AND REGULATOR STATION FABRICATION

Project No. 21910.C: Pipeline Construction

Project No. 21910.1: Prefabrication of Pig L/R and Regulator Station Assemblies

July, 2022

Fabrication of the pig launcher/receiver assembly and the regulator station (including providing materials) has been completed and the components are located at the JCCUD office in Newport, TN. The PRE-FABRICATION Contactor fabricated the piping illustrated in red on Plan Sheets PLR 1-8.

The Pipeline Contractor shall prepare the site, transport the assemblies prefabricated from the JCCUD office to the site, re-assemble and install the assemblies including all remaining above ground and underground piping. The Pipeline Contractor shall pressure test all remaining piping prior to connection to the fabricated assemblies. The Pipeline Contractor shall furnish and install the formed reinforced concrete piers, concrete pad, and gravel for the site. The Owner will furnish the pipe, pipeline clamps, and fittings for the work.

PREPARED BY:

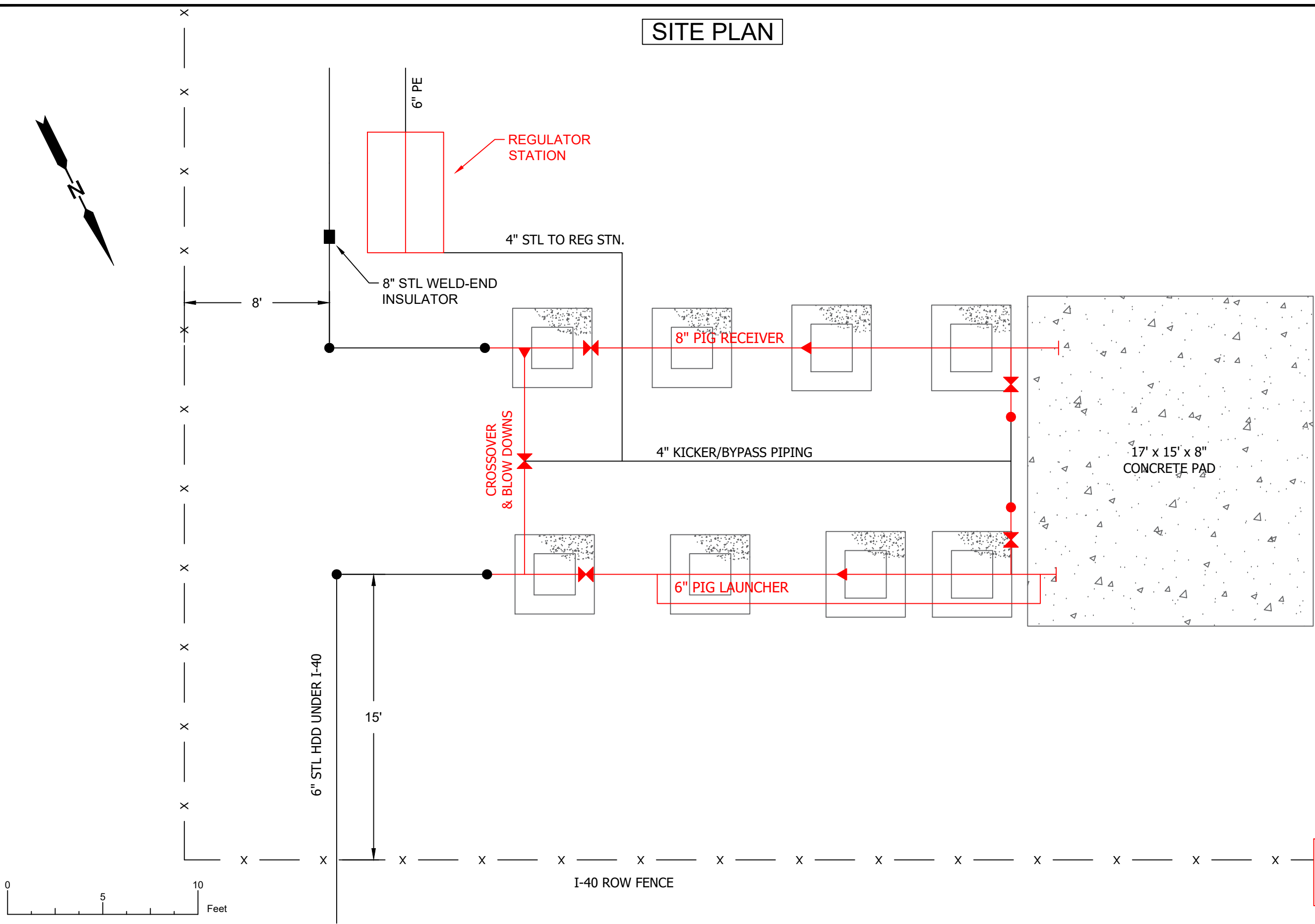


HEATH AND ASSOCIATES, INC.
108 W. WARREN STREET, SUITE 300
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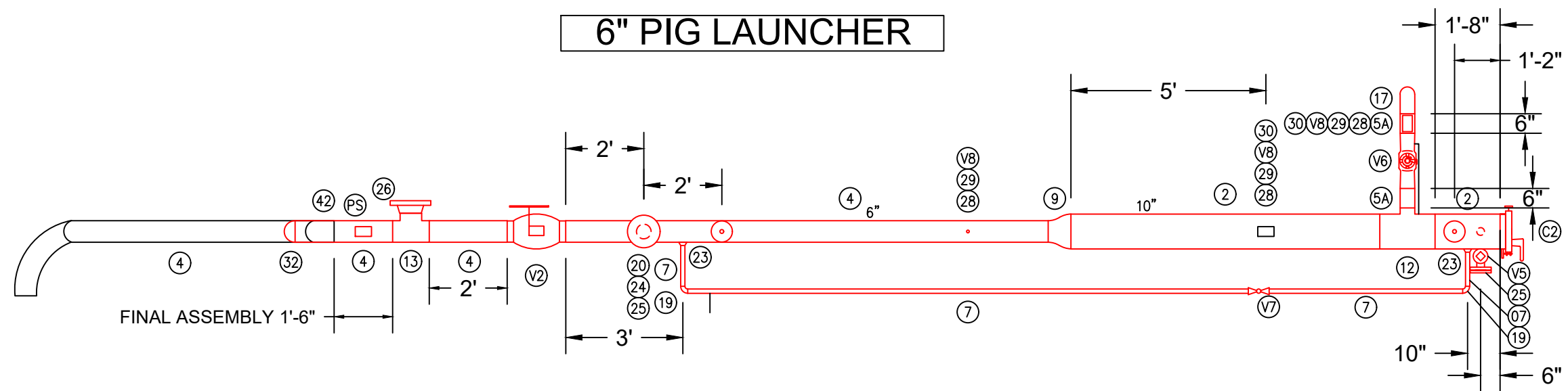
JCCUD TL SOUTH PN: 663	NATURAL GAS SYSTEM IMPROVEMENTS JEFFERSON-COCKE COUNTY UTILITY DISTRICT COCKE COUNTY, TENNESSEE		DRAWN CMD	SCALE AS SHOWN
			DATE DRAWN 06/20/2022	PROJECT NO. 21910.C
			DRAWING NAME STATION NOTES	SHEET PLR-0

SITE PLAN



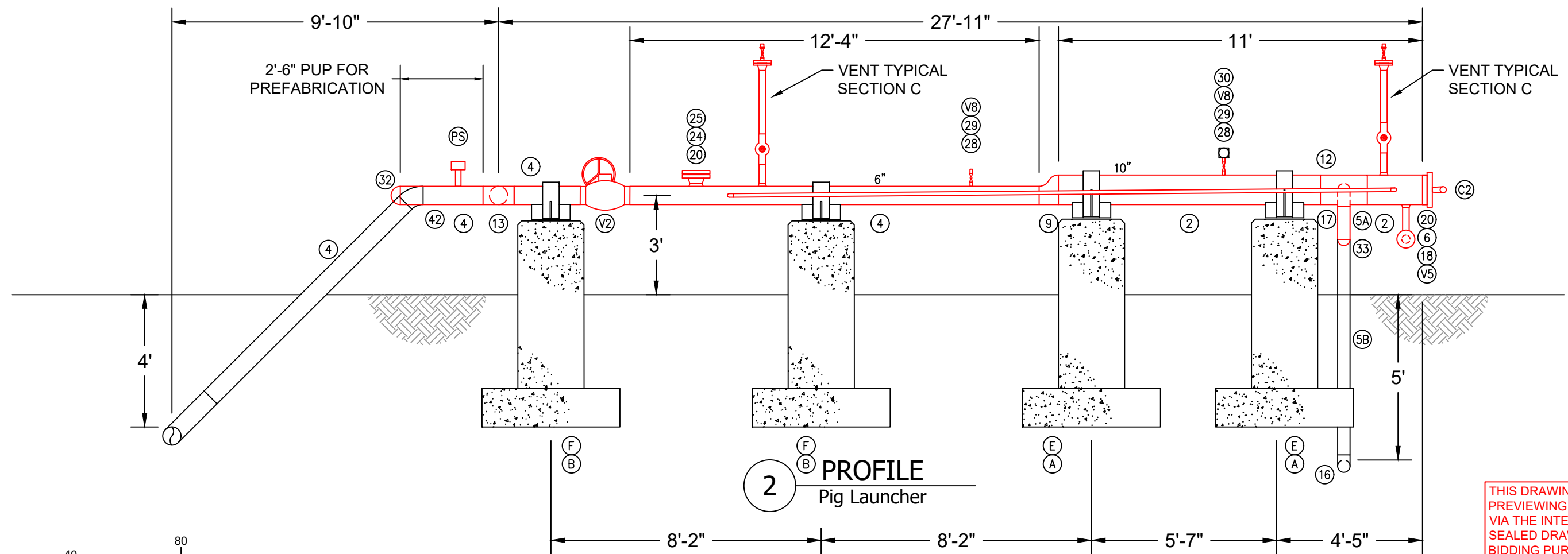
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6" PIG LAUNCHER



1 PLAN
Pig Launcher

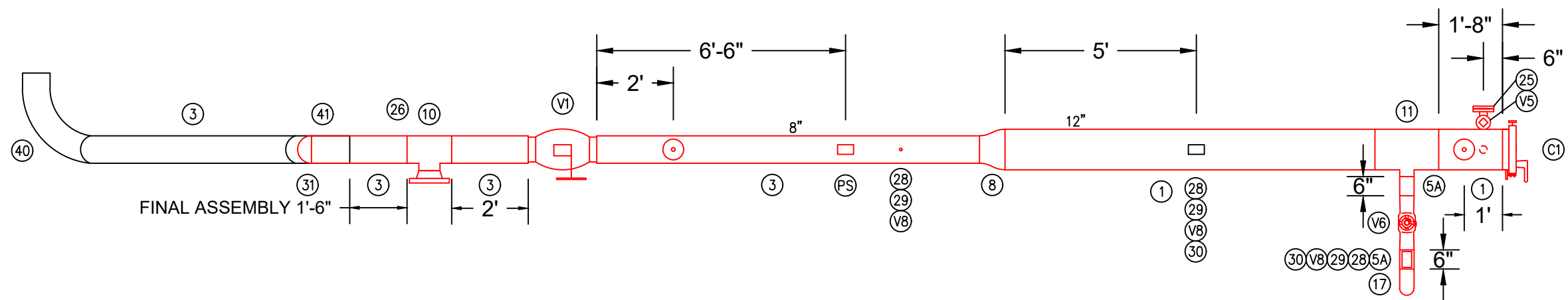
B
PLR-5



2 PROFILE
Pig Launcher

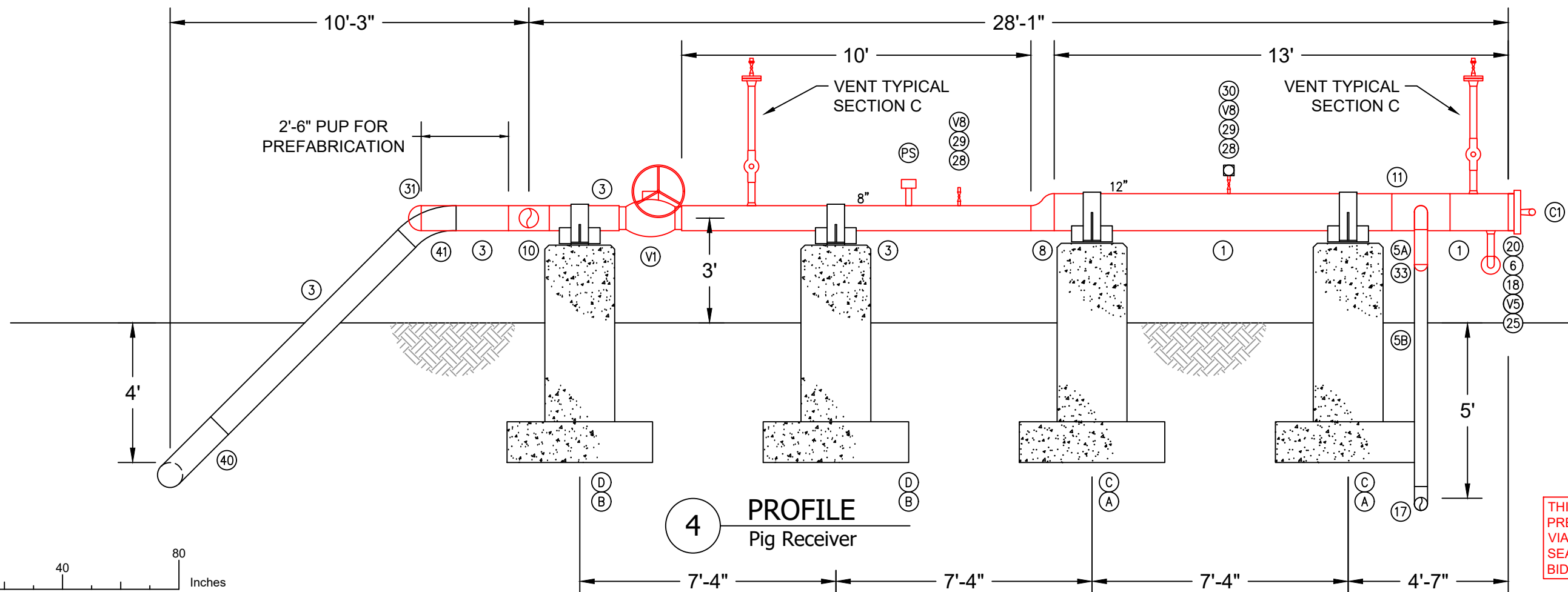
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8" PIG RECEIVER



3 PLAN
Pig Receiver

A
PLR-5



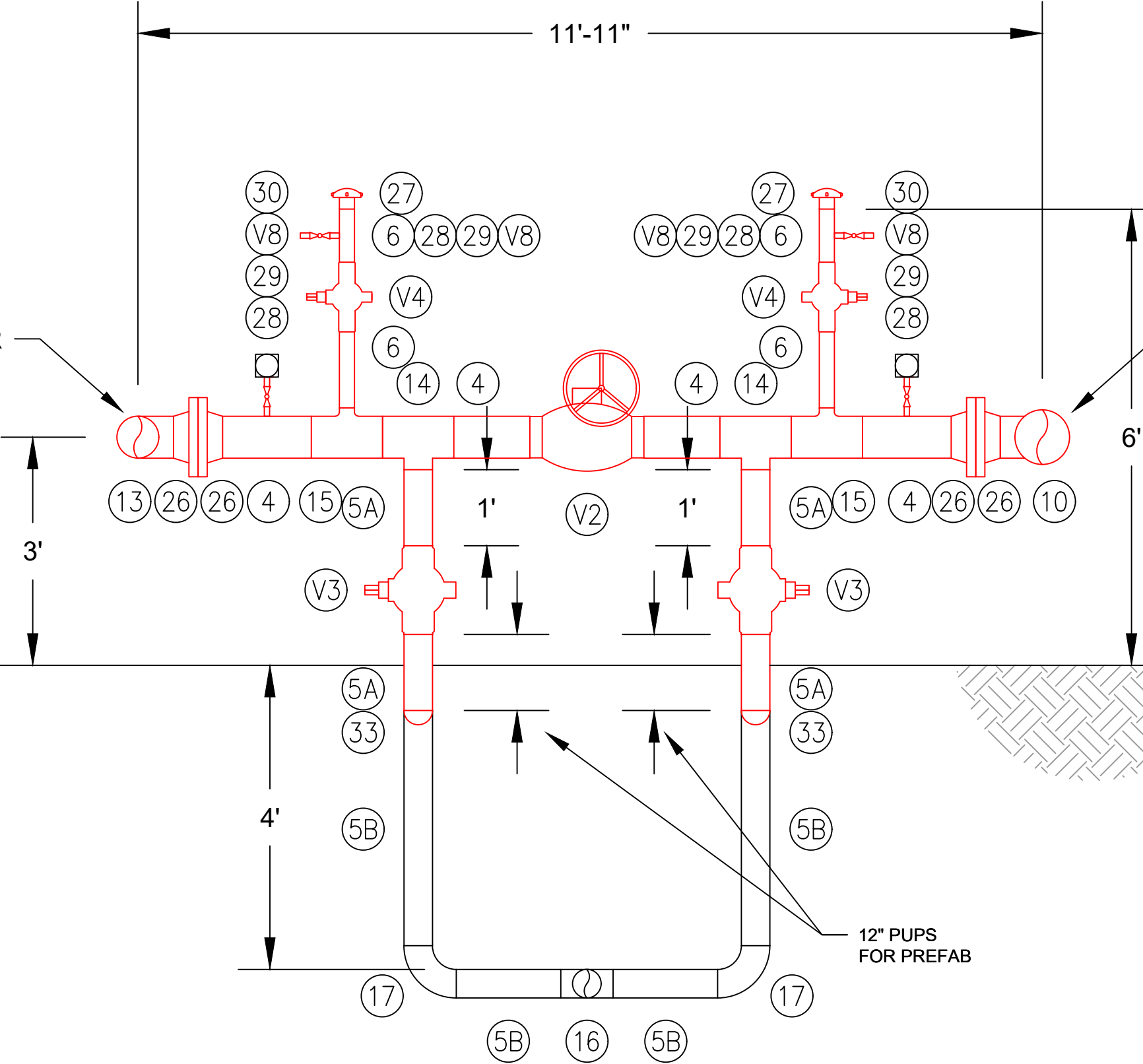
4 PROFILE
Pig Receiver

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CROSS OVER

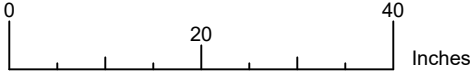
6" PIG LAUNCHER

8" PIG RECEIVER



12" PUPS
FOR PREFAB

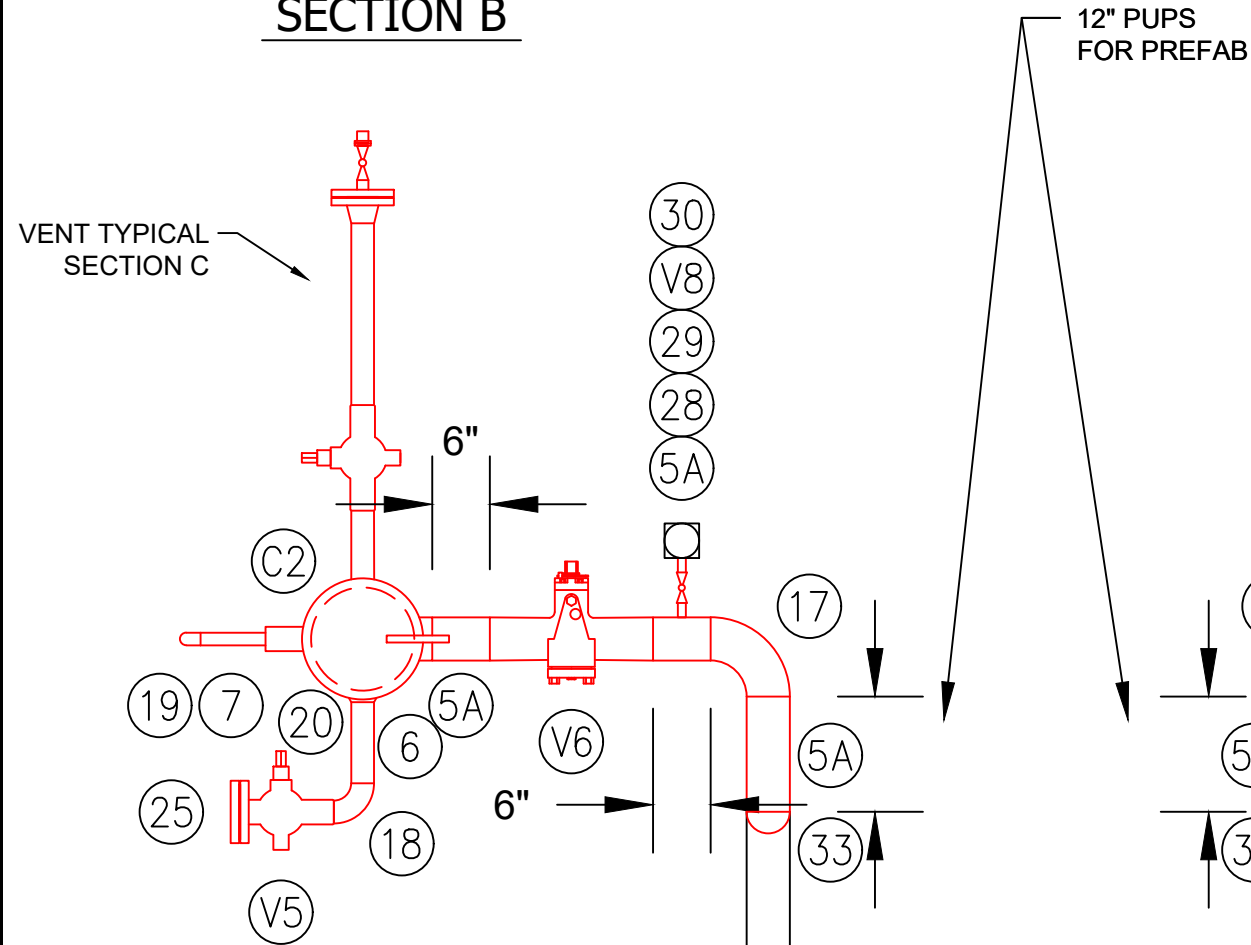
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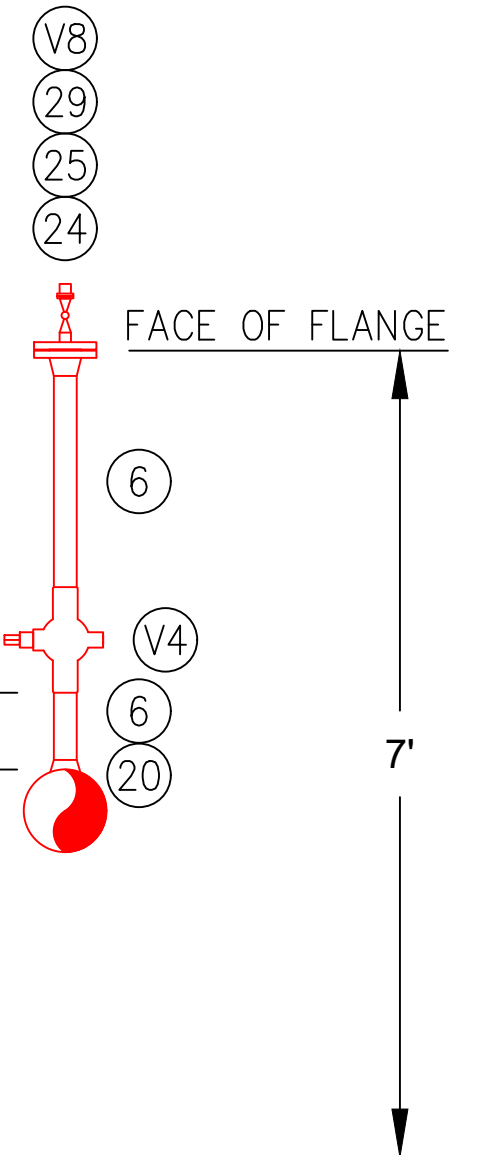
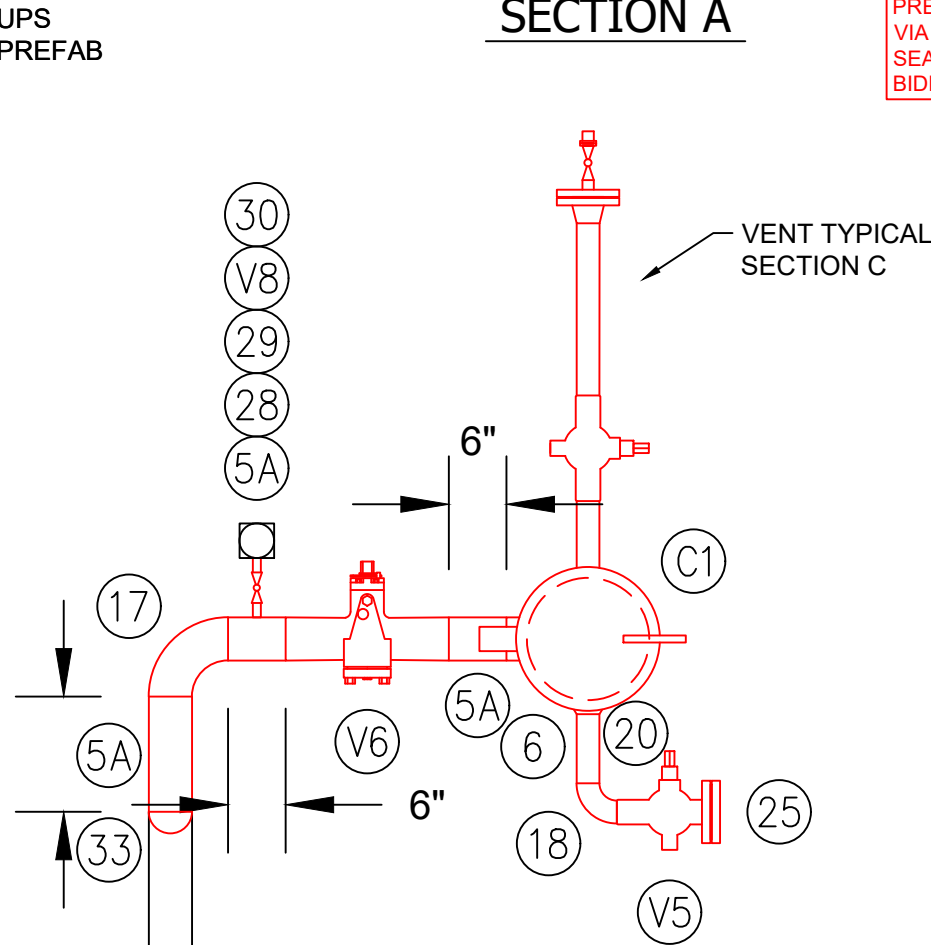
SECTIONS

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SECTION B



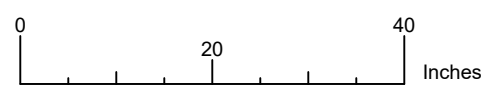
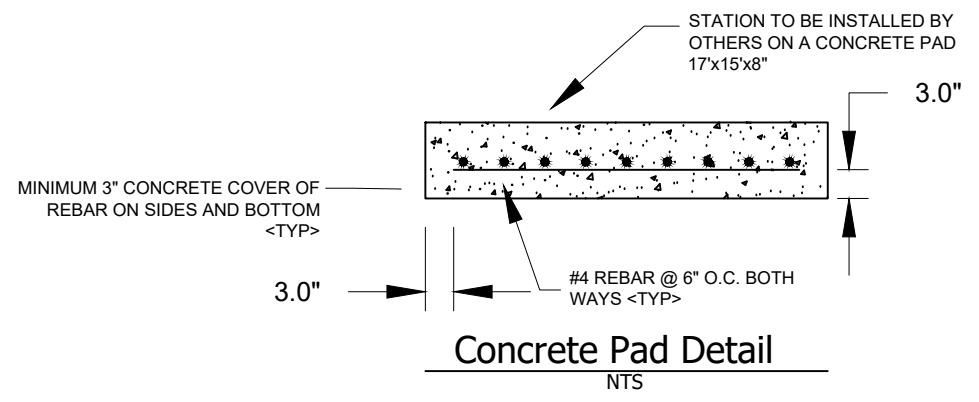
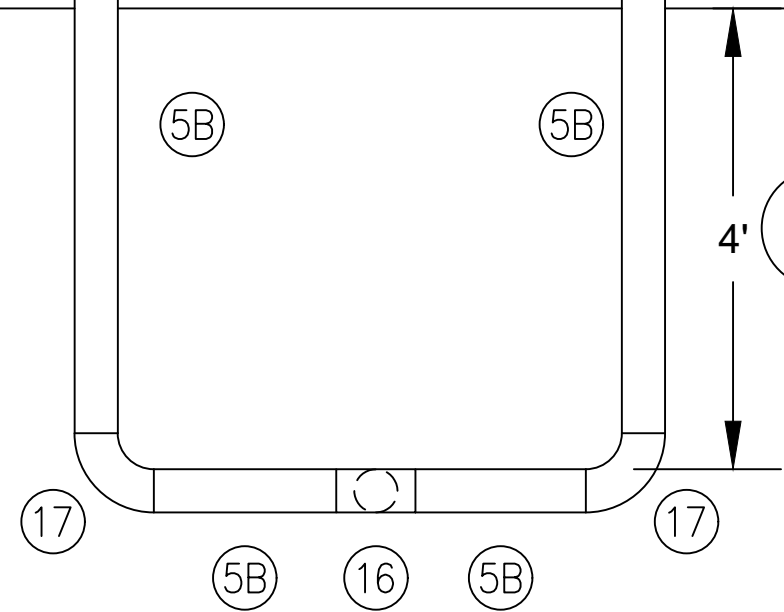
SECTION A



SECTION C TYP. Vent Stack

B SECTION Pig Launcher

A SECTION Pig Receiver



7/6/2022 8:58:19 AM

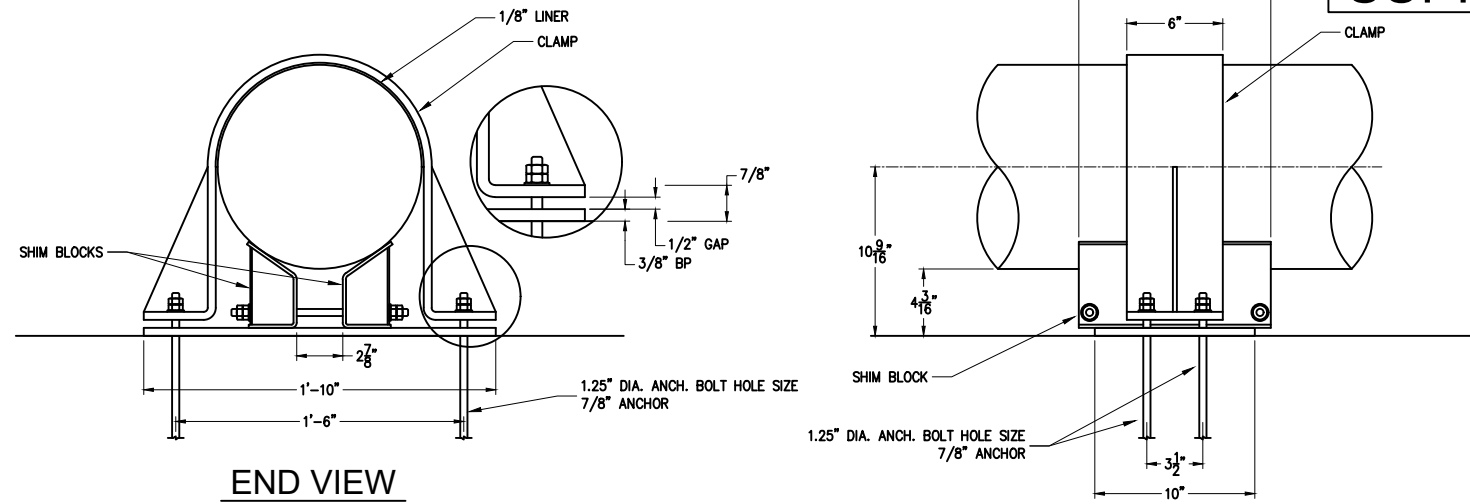
HEATH
HEATH AND ASSOCIATES, INC.
108 W. WARREN ST., SUITE 300
SHELBY, NORTH CAROLINA 28150
NC LICENSE NO. F-1035

JCCUD
TL SOUTH
PN: 663

NATURAL GAS SYSTEM IMPROVEMENTS
JEFFERSON-COCKE COUNTY UTILITY DISTRICT
COCKE COUNTY, TENNESSEE

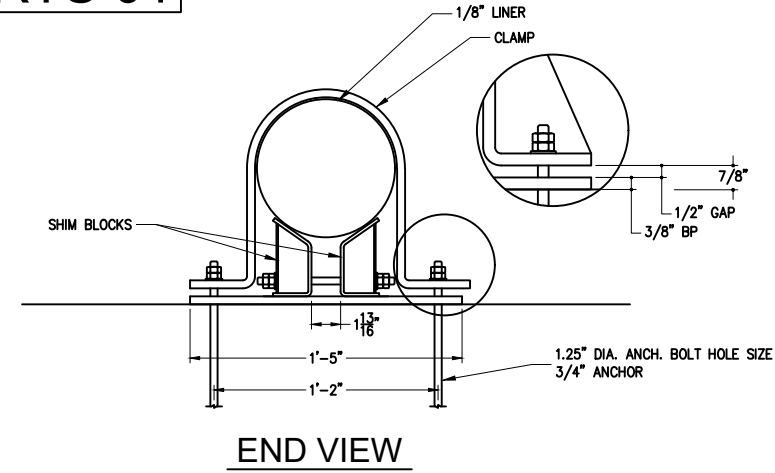
DRAWN	CMD	SCALE	AS SHOWN
DATE DRAWN	06/20/2022	PROJECT NO.	21910.C
DRAWING NAME	Sections	SHEET	PLR-5

SUPPORTS 01



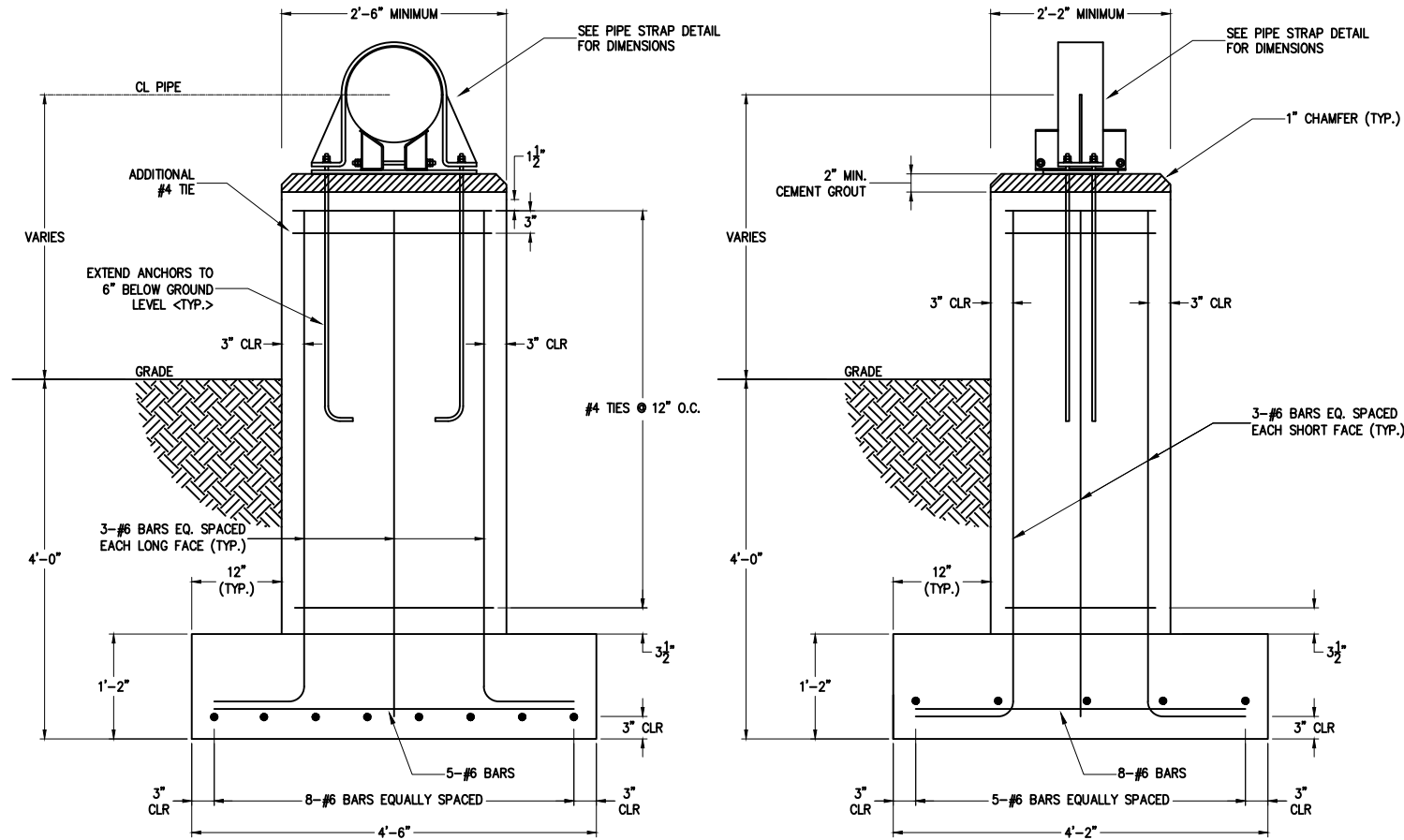
C 12" PIPE STRAP
NTS

FRONT VIEW

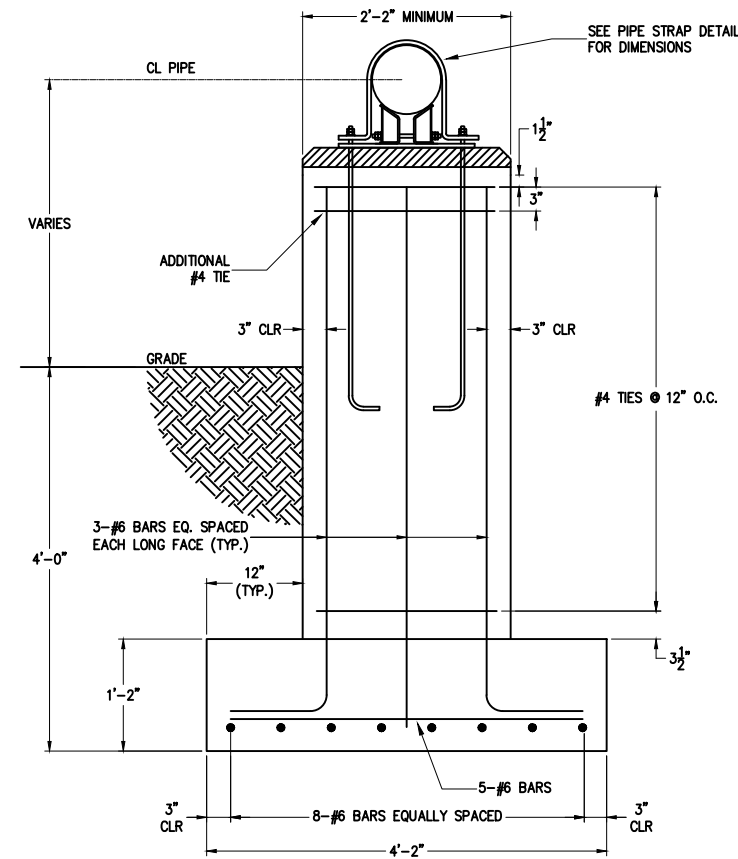


D 8" PIPE STRAP
NTS

FRONT VIEW



A 12" & 10" PIPE SUPPORT
NTS



B 8" & 6" PIPE SUPPORT
NTS

ALL PIPE CLAMP W/ SHIM BLOCKS ARE TO BE EZ LINE CSB-01

12" AND 8" PIPE ARE TO BE JOINED BY ECCENTRIC REDUCER.
TOP ELEVATION OF ALL PEDESTALS SHOULD RESULT IN A LEVEL
PIPE WITH BOTTOM OF PIPE 32" ABOVE GROUND LEVEL.

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Technical drawing of a 10" PIPE STRAP, showing END VIEW and FRONT VIEW.

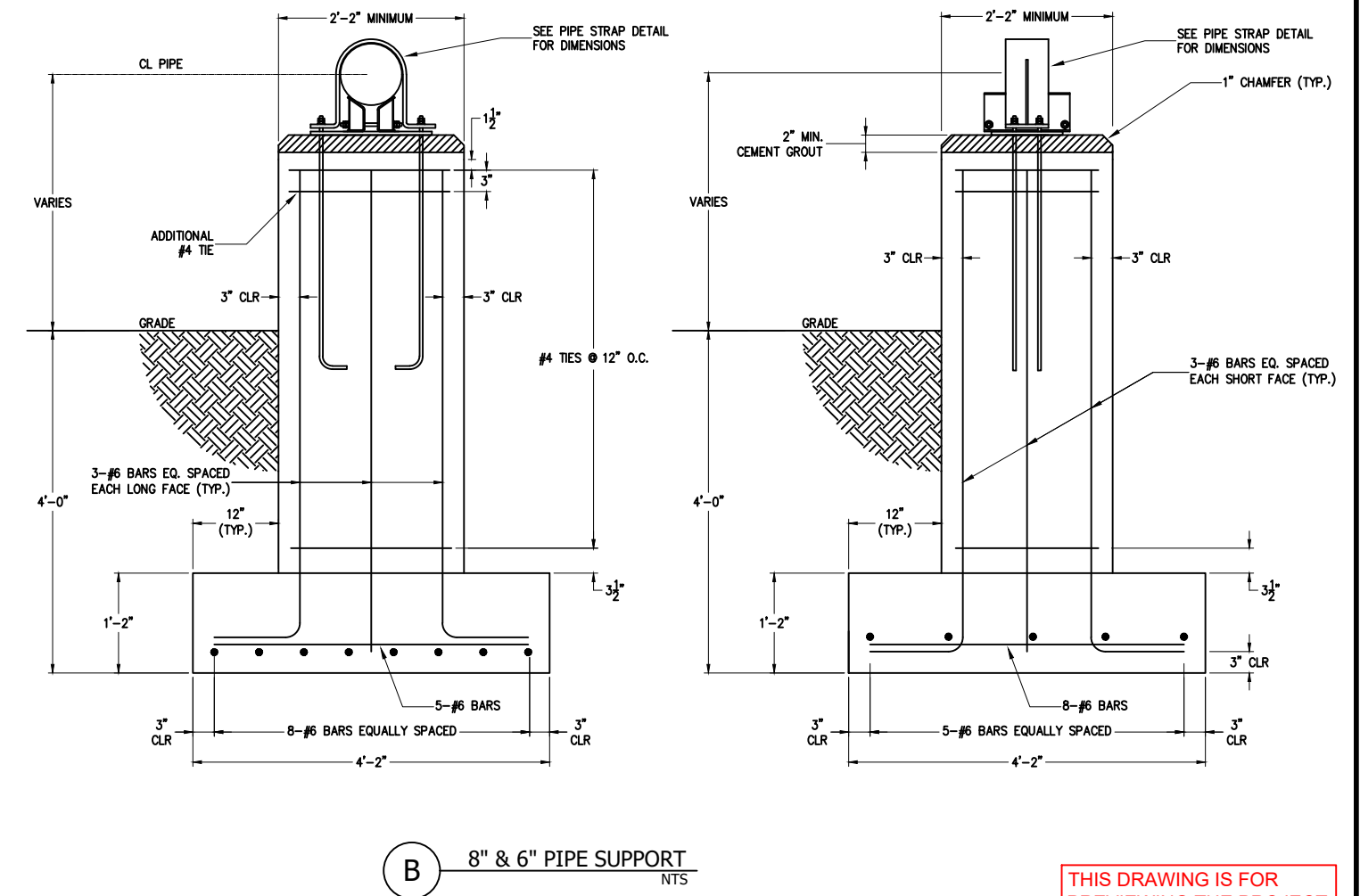
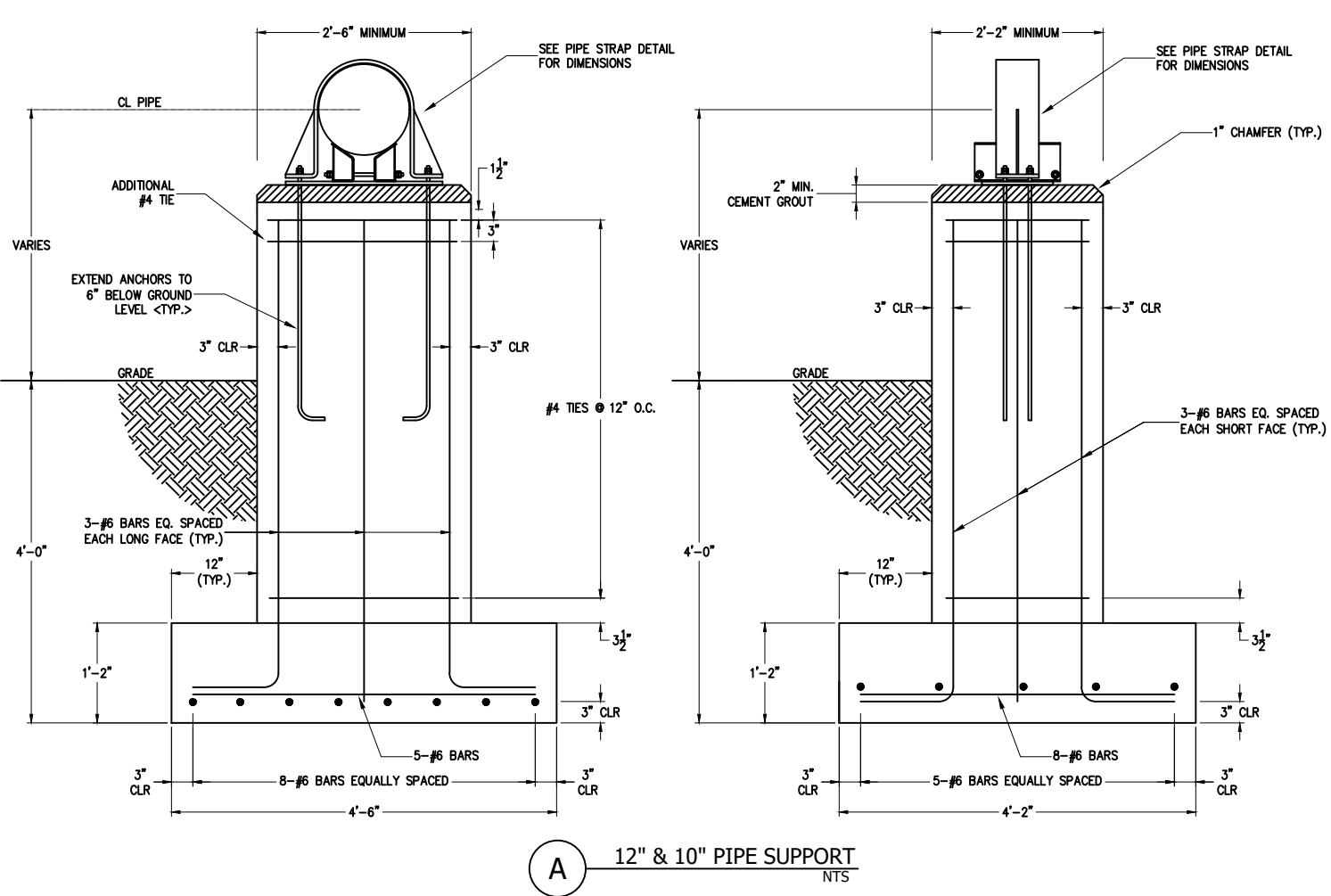
END VIEW:

- 1/8" LINER CLAMP
- SHIM BLOCKS
- 2 11/16"
- 1' - 7"
- 1' - 4"
- 1.25" DIA. ANCH. BOLT HOLE SIZE
- 7/8" ANCHOR
- 7/8"
- 1/2" GAP
- 3/8" BP

FRONT VIEW:

- SUPP
- CLAMP
- 6"
- 1'
- 9 1/2"
- 4 7/8"
- SHIM BLOCK
- 1.25" DIA. ANCH. BOLT HOLE SIZE
- 7/8" ANCHOR
- 3 1/2"
- 10"

10" PIPE STRAP
NTS



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PIG LAUNCHER AND RECEIVER MATERIALS

PREFABRICATION CONTRACTOR

ITEM	QUANTITY	DESCRIPTION
PREFABRICATION SECTION		
C1	1	12" T.D. WILLIAMSON D-2000 LEVER TYPE QUICK OPENING CLAMP RING CLOSURE FOR WELD ON TO STANDARD WALL PIPE, PART # 12 12342292 RH, WITH STANDARD PRESSURE WARNING LOCK AND NITRILE O-RING # 19-3700-1224-23. INCLUDE MATERIAL CERTIFICATION.
C2	1	10" T.D. WILLIAMSON D-2000 LEVER TYPE QUICK OPENING CLAMP RING CLOSURE FOR WELD ON TO STANDARD WALL PIPE, PART # 10 12342267 RH, WITH STANDARD PRESSURE WARNING LOCK AND NITRILE O-RING # 19-3700-1042-20. INCLUDE MATERIAL CERTIFICATION.
V1	1	8" CLASS 300 CAMERON FULL BORE FULLY WELDED BALL VALVE - WxW, #800302-2-1, FOR USE ABOVE GROUND
V2	2	6" CLASS 300 CAMERON FULL BORE FULLY WELDED BALL VALVE - WxW, #800302-2-1, FOR USE ABOVE GROUND
V3	2	4" CLASS 300 CAMERON FULL BORE FULLY WELDED BALL VALVE - WxW, #800302-1-1, FOR USE ABOVE GROUND
V4	6	2" CLASS 300 CAMERON FULL BORE FULLY WELDED BALL VALVE - WxW, #800302-1-1, FOR USE ABOVE GROUND
V5	2	2" CLASS 300 CAMERON FULL BORE FULLY WELDED BALL VALVE - WxF, #800303-1-1, FOR USE ABOVE GROUND
V6	2	4" ROCKWELL NORDSTROM DYNAMIC BALANCE PLUG VALVE , CLASS 300 WxW, FIG. 2045 1/2
V7	1	1" BALON SERIES F BALL VALVE, 2500 PSIG, THREADED END CONNECTION FIG. 1F-F93-SE
V8	14	1/2"x 3/8"x 1/2" LEVER OPERATED BALL VALVES, 2000 PSI WP, 316 STAINLESS STEEL STEM AND BODY, FxF THREADS, BALON CATALOG # LS-05561. PROVIDE PLUG IF NECESSARY.
PS	2	T.D. WILLIAMSON PART # 04-7778-0053-51, PIG-SIG IV SCRAPER PASSAGE INDICATOR FOR WELDING TO 8" 0.322 or 6" .280 WALL PIPE, FLAG INDICATOR, BI-DIRECTIONAL, NON-EXTENDED SHAFT, WITH VITON O-RING.
1	15	12" API 5L X-42 STANDARD WALL PIPE , .375 WALL, BARE (feet)
2	15	10" API 5L X-42 STANDARD WALL PIPE , .365 WALL, BARE (feet)
3	25	8" API 5L X-42 STANDARD WALL PIPE , .322 WALL, BARE (feet)
4	35	6" API 5L X-42 STANDARD WALL PIPE , .280 WALL, BARE (feet)
5a	12	4" API 5L X-42 STANDARD WALL PIPE , .237 WALL, BARE (feet)
6	20	2" API 5L X-42 STANDARD WALL PIPE , .154 WALL, BARE (feet)
7	24	1" API 5L X-42 STANDARD WALL PIPE , .133 WALL, BARE (feet)

8	1	12"x 8" ECCENTRIC REDUCER, STANDARD WEIGHT STEEL, MSS-SP-75 WPHY 42
9	1	10"x 6" ECCENTRIC REDUCER, STANDARD WEIGHT STEEL, MSS-SP-75 WPHY 42
10	1	8"x6"x8" BARRED TEE, STANDARD WEIGHT STEEL, MSS-SP-75 WPHY 42
11	1	12"x4"x12" TEE, STANDARD WEIGHT STEEL, MSS-SP-75 WPHY 42
12	1	10"x4"x10" TEE, STANDARD WEIGHT STEEL, MSS-SP-75 WPHY 42
13	1	6"x6"x6" BARRED TEE, STANDARD WEIGHT STEEL, MSS-SP-75 WPHY 42
14	2	6"x4"x6" TEE, STANDARD WEIGHT STEEL, MSS-SP-75 WPHY 42
15	2	6"x2"x6" TEE, STANDARD WEIGHT STEEL, MSS-SP-75 WPHY 42
16		4"x4"x4" TEE, STANDARD WEIGHT STEEL, MSS-SP-75 WPHY 42
17	2	4" 90 DEG ELL TEE, STANDARD WEIGHT STEEL, MSS-SP-75 WPHY 42
18	2	2" 90 DEG ELL, STANDARD WEIGHT STEEL, MSS-SP-75 WPHY 42
19	2	1" 90 DEG ELL, STANDARD WEIGHT STEEL, MSS-SP-75 WPHY 42
20	7	2" WELDOLET, STANDARD WEIGHT, WPB
23	2	1" WELDOLET, STANDARD WEIGHT, WPB
24	5	2" CLASS 300 WELDNECK RF FLANGE w/BOLTS, NUTS, AND GASKETS
25	7	2" RF FLANGE BLIND, CLASS 300,CS,ASTM A105,CDT 1/2" NPT
26	4	6" CLASS 300 WELDNECK RF FLANGE w/BOLTS, NUTS, AND GASKETS
27	2	2" CLOSURE QUICK OPENING YALE FIG. 500 GRADE B, ANSI CLASS 300, VERTICAL, WELDEND
28	10	1/2" THREDOLET, 3000#
29	14	1/2" EXTRA HEAVY NIPPLE, 3", SCHEDULE 160,A-106, GR B
30	6	PRESSURE GAUGES FURNISHED AND INSTALLED BY JCCUD. WIKA GAUGE 232.34 INSIGHT GLOW DIAL 4.5" POLYCARBONATE DRY FILLABLE CASE, 1000PSI 1/2 NPT LM,SST INTERNALS, 9834893
31	1	8" CAP, STANDARD WEIGHT
32	1	6" CAP, STANDARD WEIGHT
33	4	4" CAP, STANDARD WEIGHT
34-37		Not Used

PIPELINE CONTRACTOR

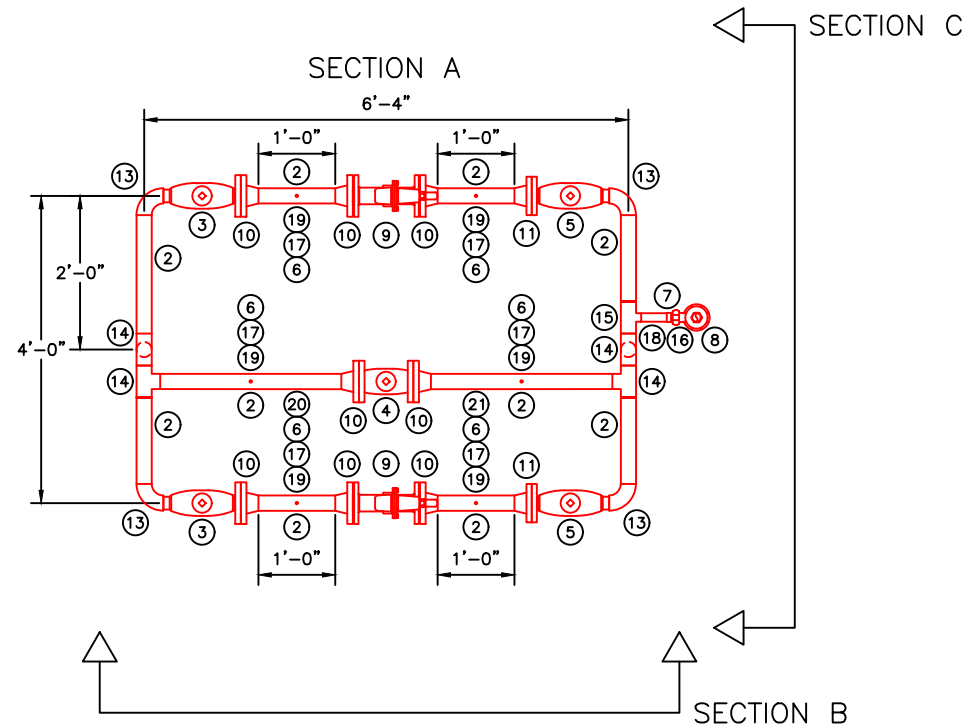
		SUPPORTS AND CONCRETE WORK
A	4	FORMED AND REINFORCED CONCRETE PIER TO SUPPORT 12"AND 10" PIPE
B	4	FORMED AND REINFORCED CONCRETE PIER TO SUPPORT 8"AND 6" PIPE
C	2	12" PIPE CLAMP WITH STEEL SHIM BLOCKS, EZ-LINE FIGURE CSB-01 TYPE A, 1/2" ADJUSTMENT GAP, 1/8" THICK LINING INSIDE CLAMP AND TOP OF SHIM BLOCKS.
D	2	8" PIPE CLAMP WITH STEEL SHIM BLOCKS, EZ-LINE FIGURE CSB-01 TYPE A, 1/2" ADJUSTMENT GAP, 1/8" THICK LINING INSIDE CLAMP AND TOP OF SHIM BLOCKS.
E	2	10" PIPE CLAMP WITH STEEL SHIM BLOCKS, EZ-LINE FIGURE CSB-01 TYPE A, 1/2" ADJUSTMENT GAP, 1/8" THICK LINING INSIDE CLAMP AND TOP OF SHIM BLOCKS.
F	2	6" PIPE CLAMP WITH STEEL SHIM BLOCKS, EZ-LINE FIGURE CSB-01 TYPE A, 1/2" ADJUSTMENT GAP, 1/8" THICK LINING INSIDE CLAMP AND TOP OF SHIM BLOCKS.
G	1	CONCRETE PAD 17'X15'X8" WITH REBAR

* ALL MATERIALS FOR STATION TO BE PROVIDED BY OWNER EXCEPT FOR ITEMS A, B, AND G

		ONSITE FABRICATION
38	1	8" KEROTEST ZUNT MONOLITHIC ANSI 300 WELDEND INSULATOR
39	1	6" SEGMENTABLE SWEEP ELL, MINIMUM RADIUS 24", STANDARD WEIGHT STEEL,Y52, 90 DEGREES
40	1	8" SEGMENTABLE SWEEP ELL, MINIMUM RADIUS 24", STANDARD WEIGHT STEEL,Y52, 90 DEGREES
41	1	8" SEGMENTABLE SWEEP ELL, MINIMUM RADIUS 24", STANDARD WEIGHT STEEL,Y52, 45 DEGREES
42	1	6" SEGMENTABLE SWEEP ELL, MINIMUM RADIUS 18", STANDARD WEIGHT STEEL, Y52, 45 DEGREES
5B*	90'	4" API 5L X-52 STANDARD WALL PIPE , .237 WALL, COATED 14-16 MILS FBE (feet)
16	3	4"x4"x4" TEE, STANDARD WEIGHT STEEL, MSS-SP-75 WPHY 42
17	6	4" 90 DEG ELL, STANDARD WEIGHT STEEL, MSS-SP-75 WPHY 42

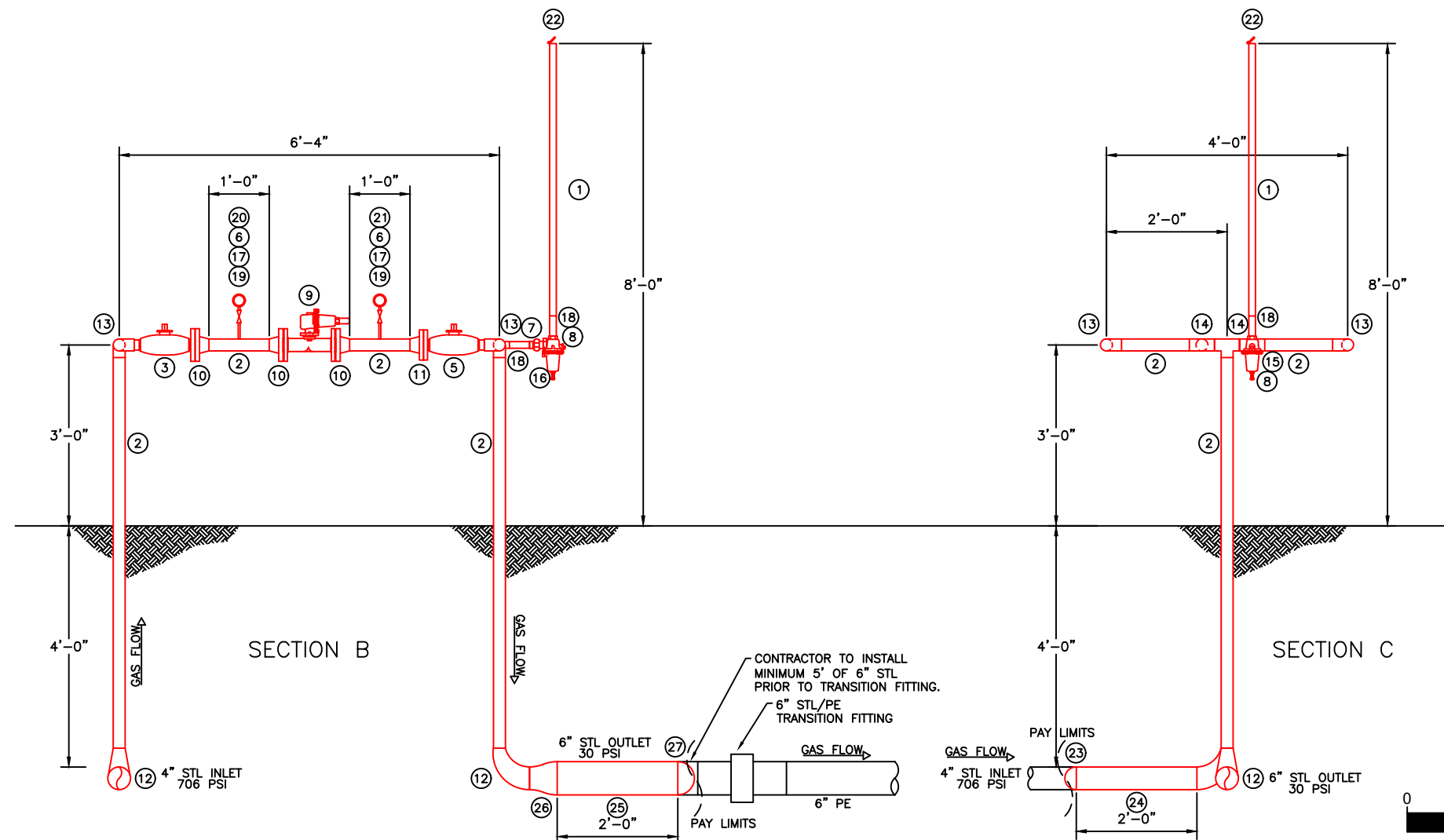
* INSTALLATION COST FOR THE 90' OF 4" STL PIPE TO BE USED WITHIN THE FENCED AREA FOR THE PIG LAUNCHER AND RECEIVER TO BE INCLUDED IN THE UNITS FOR BID Item # 1.3.

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REGULATOR STATION FLOW CALCULATIONS					
P1 INLET MAOP	=	706 PSIG	=	720.7 PSIA	
DESIGN LOAD	=	20,000 CFH	=	20 MCFH	
P2 OUTLET PRESSURE	=	30 PSIG	=	44.7 PSIA	
DOWNSTREAM MAOP	=	60 PSIG	=	74.7 PSIA	
2" FISHER 627 REGULATOR - 3/16" ORIFICE					
Cg (Table 16)	=	29	(WIDE OPEN)		
Q(wide open)	=	1.29*P1*Cg			
Q(wide open)	=	26,961 CFH @ INLET MAOP & OUTLET PRESSURE			
1" FISHER 289HH RELIEF VALVE (SET PRESSURE: 50 PSIG)					
AT MAOP:					
Capacity (Figure 3)	=	42,000 CFH			
42,000	>	26,961	RELIEF OK AT MAOP		

NO.	QUANTITY	MATERIAL DESCRIPTION
1	5'	1" STEEL PIPE, STD WALL, API 5L GRADE A
2	31'	2" STEEL PIPE, STD WALL, API 5L X-52
3	2	2" KEROTEST FULL PORT WXF BALL VALVE ANSI 300, 2/WB-740/WF (ALL VALVES TO HAVE LOCKING DEVICE)
4	1	2" KEROTEST FULL PORT FFX BALL VALVE ANSI 300, 2/WB-740/FF (ALL VALVES TO HAVE LOCKING DEVICE)
5	2	2" KEROTEST FULL PORT WXF BALL VALVE ANSI 150, 2/WB-285/WF (ALL VALVES TO HAVE LOCKING DEVICE)
6	6	1/2" KEROTEST NEEDLE VALVE (1000#)
7	1	BALON SERIES 'S', 1" THREADED BALL VALVE, VALVE No. 1F S42-SE
8	1	1" FISHER 289HH, VALVE SET AT 50 PSIG, NITRILE DIAPHRAGM AND O-RING SEAT, SPRING: RANGE 45-75 PSIG, PART NO. 1D7455T0012 (GREEN)
9	2	2" FISHER 627 WCC STEEL BODY ANSI 300 RF REGULATOR, STEEL SPRING AND DIAPHRAGM CASE, STAINLESS STEEL TRIM, NITRILE VALVE DISK, 3/16" ORIFICE, STANDARD BODY POSITION, SCREEN VENT ELBOWED DOWNWARD, SPRING: RANGE 15-40 PSIG, PART NO. 10B3077X012 (GREEN)
10	8	2" WELDNECK RAISED FACE FLANGE, ANSI 300
11	2	2" WELDNECK RAISED FACE FLANGE, ANSI 150
12	2	4"x2" STD REDUCING 90° ELL
13	4	2" STD LRW 90° ELL
14	4	2" STEEL TEE, SCHEDULE 40
15	1	2"x2"x1" SCHEDULE 40 REDUCING TEE
16	1	1"x3" SCHEDULE 40 NIPPLE
17	6	1/2"x3" EXTRA HEAVY NIPPLE
18	2	1"x4" T.O.E. SCHEDULE 40 NIPPLE
19	6	1/2" THREADOLET, 3000#
20	1	WIKA GAUGE 232.34 INSIGHT GLOW DIAL 4.5" POLYCARBONATE DRY FILLABLE CASE, 1000PSI 1/2 NPT LM, SST INTERNALS (PROVIDED BY OWNER)
21	1	WIKA GAUGE 232.34 INSIGHT GLOW DIAL 4.5" POLYCARBONATE DRY FILLABLE CASE, 100PSI 1/2 NPT LM, SST INTERNALS (PROVIDED BY OWNER)
22	1	1" RAIN CAP
23	1	4" STD WALL CAP (FOR PREFAB)
24	2'	4" STEEL PIPE, STD WALL, API 5L X-52
25	2'	6" STEEL PIPE, STD WALL, API 5L X-52
26	1	6" x 4" CONCENTRIC REDUCER, STD WALL
27	1	6" STD WALL CAP (FOR PREFAB)



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