

**OLD TAR RD**  
**GREENVILLE, NC 28590**  
 NOTE: LATITUDE/LONGITUDE TO BE VERIFIED BY AS-BUILT SURVEY.

**ISSUED FOR CONSTRUCTION**  
 ISSUE DATE: 05/11/2022

**ISSUED FOR CONSTRUCTION**  
 DATE: 05-11-2022

DRAWING INDEX			
DRAWING NUMBER	DRAWING TITLE	SHEET NO.	REV.
PNG-G-027-0001060	Cover Sheet	1	0
PNG-G-000-0002250	PID Legend and Symbols - Sheet 1	2	0
PNG-G-000-0002250	PID Legend and Symbols - Sheet 2	3	0
PNG-G-000-0002250	PID Legend and Symbols - Sheet 3	4	0
PNG-D-027-0001013	Station P&ID	5	0
PNG-M-027-0001153	Station Piping Plan	6	0
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PNG-C-027-0001153	Foundation Location Plan	8	0
PNG-C-027-0001154	Pipe Support Details	9	0
PNG-C-027-0001156	Structural Notes	10	0
PNG-M-027-0001154	Piping Drawing Index	11	0
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PNG-M-027-0001179	Bill of Materials	22	0
PNG-E-027-0001044	Station Electrical Plan	23	0
PNG-E-027-0001045	HAC Plan	24	0
PNG-E-027-0001046	Grounding Plan	25	0
PNG-E-027-0001047	Electrical Details	26	0
PNG-X-027-0001069	Emergency Schematic	27	0

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NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	APPROVALS		
							DATE	INITIALS	REGIONAL ENGINEER
0	05/11/2022	ISSUED FOR CONSTRUCTION	FGI	RSE	-	AREA CODE			
					-	ACCOUNT NUMBER			
					-	PROJECT NUMBER	2751477		
					-	DRAWING BY			
					-	STATION ID	7-HM-93-TAR-7101		
					-	CHECKER INITIALS	RSE		


  
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**GUC GREENVILLE NO. 2 REPLACEMENT**  
**COVER SHEET**  
**GREENVILLE, NC**  
 RESOURCE CENTER, TARBORO, NC

SHEET(S)	1 OF 27	DWG SCALE	NOT TO SCALE
DWG DATE	00/00/20XX	SUPERSEDED	
DRAWING NUMBER	PNG -G-027-0001060		
REVISION	0		
DISCIPLINE / RESOURCE CENTER / LINE NUMBER			



# SYMBOLS AND LEGEND

FLOW TAG	LINE SERVICE DESIGNATION	VALVES	ACTUATED VALVES	FITTINGS	MISCELLANEOUS
<p>001 LINKED DRAWING NUMBER (EQUIPMENT DESCRIPTION)</p> <p>CORRESPONDING ARROW IDENTIFIER</p>	<p>A AIR</p> <p>BG PILOT GAS (BSD)</p> <p>CA COMBUSTION AIR</p> <p>CO CARBON DIOXIDE</p> <p>D DRAIN</p> <p>DF DIESEL FUEL</p> <p>DW DOMESTIC WATER</p> <p>EA ENGINE AIR</p> <p>EG PILOT GAS (ESD)</p> <p>EX EXHAUST</p> <p>FA FREE AIR</p> <p>FG FUEL GAS</p> <p>FW FIRE WATER</p> <p>G PROCESS GAS</p> <p>GL GYLCOL</p> <p>HD HYDROCARBON DRAIN</p> <p>HQ HYDRAULIC OIL</p> <p>HW HEATED WATER</p> <p>IA INSTRUMENT AIR</p> <p>IG INERT GAS</p> <p>L PROCESS LIQUID</p> <p>LO LUBE OIL</p> <p>M METHANOL</p> <p>N NITROGEN</p> <p>NG NATURAL GAS</p> <p>OW CILY WATER</p> <p>PG POWER GAS</p> <p>PW POTABLE WATER</p> <p>RW RAW WATER</p> <p>SG STARTING GAS</p> <p>SFG SECONDARY POWER GAS</p> <p>UA UTILITY AIR</p> <p>V VENT</p> <p>WW WASTE WATER</p>	<p>NOTE: THE DEFAULT CONFIGURATION FOR VALVE SYMBOLS SHOWN IS WELDED/THREADED/OPEN. FOR FLANGED VALVES OR CLOSED VALVES SEE THE EXAMPLES SHOWN.</p> <p> GATE VALVE (WELDED/THREADED/OPEN)</p> <p> GATE VALVE (WELDED/THREADED/CLOSED)</p> <p> GATE VALVE (FLANGED/OPEN)</p> <p> GATE VALVE (FLANGED/CLOSED)</p> <p> ANGLE VALVE</p> <p> BALL VALVE</p> <p> GLOBE VALVE</p> <p> ORBIT VALVE</p> <p> BUTTERFLY VALVE</p> <p> CHECK VALVE</p> <p> CHECK VALVE PISTON TYPE</p> <p> STOP CHECK VALVE</p> <p> GAUGE VALVE W/BLEEDER</p> <p> NEEDLE VALVE</p> <p> PLUG VALVE</p> <p> FOUR-WAY VALVE</p> <p> THREE-WAY VALVE</p>	<p> PILOT ACTUATED VALVE</p> <p> DIRECT OPERATED VALVE</p> <p> PRESSURE REGULATOR (SELF-CONTAINED)</p> <p> BACK PRESSURE REGULATOR (SELF-CONTAINED)</p> <p> MOTOR ACTUATED VALVE</p> <p> DOUBLE-ACTING PISTON ACTUATED VALVE (HIGH PRESSURE GAS)</p> <p> PISTON ACTUATED VALVE DOUBLE ACTING</p> <p> PISTON ACTUATED VALVE SINGLE ACTING (SPRING OPEN)</p> <p> PISTON ACTUATED VALVE SINGLE ACTING (SPRING CLOSE)</p>	<p> THREADED END OR WELDED CONNECTION</p> <p> FLANGED CONNECTION</p> <p> CHOKE NIPPLE</p> <p> DIELECTRIC UNION</p> <p> UNION</p>	<p> OTHER VENDOR VENDOR SUPPLY LIMIT</p> <p> CLIENT CUSTOMER CUSTOMER SUPPLY LIMIT</p> <p> EXISTING NEW EXISTING SUPPLY LIMIT</p> <p> SLOPE DO NOT POCKET SLOPE</p> <p> CONE FLOW METER</p> <p> PITOT TUBE (AVERAGE)</p> <p> PITOT TUBE (SINGLE PORT)</p> <p> POSITIVE DISPLACEMENT METER</p> <p> STRAIGHTENING VANES</p> <p> TURBINE METER</p> <p> ULTRASONIC FLOWMETER</p> <p> VENTURI METER</p> <p> METER</p> <p> WEDGE METER</p> <p> GRADE PENETRATION</p> <p> THERMOMETER</p>
<p><b>VALVE IDENTIFICATION</b></p> <p>SIZE (INCHES) 12"-VA-1F</p> <p>VALVE TYPE</p> <p>PRESSURE CLASS</p> <p>END CONNECTION</p>	<p><b>ABBREVIATIONS</b></p> <p>ACP INST. AIR COMP. CONTROL PANEL</p> <p>AOV AIR OPERATED VALVE</p> <p>AOY AIR OPERATED SOLENOID</p> <p>A/M AUTOMATIC/MANUAL 2 POSITION SWITCH</p> <p>BSW BASIC SEDIMENT &amp; WATER</p> <p>CSC CAR SEAL CLOSED</p> <p>CSO CAR SEAL OPEN</p> <p>D DRAIN</p> <p>ESD STATION EMERGENCY SHUTDOWN</p> <p>CONTROL PANEL</p> <p>BSD BUILDING EMERGENCY SHUTDOWN</p> <p>CONTROL PANEL</p> <p>E/H ELECTRO-HYDRAULIC ACTUATOR</p> <p>EX EXHAUST</p> <p>FC FAIL CLOSED</p> <p>FLP FAIL IN LAST POSITION</p> <p>FO FAIL OPEN</p> <p>GOV GAS OPERATED VALVE</p> <p>GOY GAS OPERATED SOLENOID</p> <p>HOA HAND-OFF-AUTO STATION</p> <p>IAS INSTRUMENT AIR SUPPLY</p> <p>IGS INSTRUMENT GAS SUPPLY</p> <p>LC LOCK CLOSED</p> <p>LCB LOCAL CONTROL BOARD</p> <p>LHC LOCKING HANDLE VALVE CLOSED</p> <p>LHO LOCKING HANDLE VALVE OPEN</p> <p>LO LOCK OPEN</p> <p>MCC MOTOR CONTROL CENTER</p> <p>MOV MOTOR OPERATED VALVE</p> <p>PD POSITIVE DISPLACEMENT</p> <p>PLC PROGRAMMABLE LOGIC CONTROLLER</p> <p>PP PERSONNEL PROTECTION</p> <p>PV PRESSURE CONTROL VALVE</p> <p>RA REVERSE ACTING</p> <p>RCP REGULATOR STATION CONTROL PANEL</p> <p>RF RAISED FACE</p> <p>RO RESTRICTION ORIFICE</p> <p>RTU REMOTE TERMINAL UNIT</p> <p>SCP STATION CONTROL PANEL</p> <p>SD SHUTDOWN</p> <p>SE SCREWED END</p> <p>SP SET POINT</p> <p>T/C THERMOCOUPLE</p> <p>TDR TIME DELAY RELAY</p> <p>UCP COMPRESSOR CONTROL PANEL</p> <p>V VENT</p> <p>WE WELD END</p>	<p><b>ACTUATED VALVES</b></p> <p>NOTE: VALVE BODIES IN THIS SECTION ARE SHOWN AS SIMPLE GATE, ANGLE OR THREE WAY VALVES. THE ACTUATOR CAN BE SHOWN ON ANY TYPE OF VALVE.</p> <p> THREE WAY SOLENOID VALVE</p> <p> THREE WAY SOLENOID VALVE WITH MANUAL RESET</p> <p> PILOT/DIVERTER VALVE</p> <p> PRESSURE/VACUUM RELIEF VALVE</p> <p> ANGLE SOLENOID VALVE</p> <p> ANGLE SOLENOID VALVE WITH MANUAL RESET</p> <p> ANGLE VALVE WITH PILOT/DIVERTER</p> <p> PILOT RELIEF VALVE</p> <p> PRESSURE OR VACUUM RELIEF VALVE</p> <p> PISTON ACTUATED VALVE</p> <p> DIAPHRAGM ACTUATED VALVE WITH VALVE POSITIONER</p>	<p><b>FITTINGS</b></p> <p> PADDLE BLIND (OPEN)</p> <p> PADDLE BLIND (CLOSED)</p> <p> SPECTACLE BLIND (OPEN)</p> <p> SPECTACLE BLIND (CLOSED)</p> <p> ORIFICE PLATE IN QUICK CHANGE FITTING</p> <p> ORIFICE FLANGE OR RESTRICTION ORIFICE TUBING ADAPTER</p> <p> THREADED PIPET</p> <p> COUPLING (LONG)</p> <p> THERMOWELL (THREADED)</p> <p> PLUG</p> <p> SWAGE</p> <p> REDUCER</p> <p> UNION ORIFICE</p> <p> INSULATED COUPLING OR UNION. (CONDUIT, PIPE OR TUBING)</p> <p> INSULATING FLANGE</p> <p> INSULATING JOINT (MONOLITHIC)</p> <p> RAIN CAP</p> <p> BUG SCREEN</p> <p> HOSE CONNECTION</p> <p> PIPE BREAK</p> <p> PIPE CAP</p>	<p><b>MISCELLANEOUS</b></p> <p> INSULATION WITH THICKNESS (INCHES)</p> <p> PERSONNEL PROTECTION</p> <p> HEAT TRACED WITH INSULATION</p> <p> RUPTURE DISC-PRESSURE RELIEF</p> <p> RUPTURE DISC-VACUUM RELIEF</p> <p> FLAME ARRESTOR</p> <p> FLEXIBLE HOSE</p> <p> OPEN DRAIN</p> <p> CLOSURE</p> <p> TEST OR BLEED RING (W/VENT VALVE)</p> <p> TRAP VALVE</p> <p> STARTER WITH START/STOP PUSHBUTTON SWITCH</p> <p> MANUAL ACTUATOR OR RESET</p> <p> NOZZLE TAG</p> <p> TIE-POINT</p> <p> BOTTLE</p> <p> EXPANSION JOINTS</p> <p> CONE-TYPE STRAINER</p> <p> BASKET STRAINER (S)</p> <p> TEE STRAINER</p> <p> FILTER (F)</p> <p> Y-TYPE STRAINER</p> <p> FILTER OR MIST EXTRACTOR ELEMENT</p> <p> SADDLE BRANCH REINFORCEMENT</p> <p> FLOW ARROW</p> <p> ITEM SUPPLIED BY EQUIPMENT VENDOR</p> <p> SCRAPER BAR RED TEE</p> <p> SPECIALTY ITEM TAG</p>	
<p><b>VALVE TYPE DESIGNATION</b></p> <p>VA GATE VALVE</p> <p>VB BALL VALVE</p> <p>VC CHECK VALVE</p> <p>VF BUTTERFLY VALVE</p> <p>VG GLOBE VALVE</p> <p>VI GAUGE VALVE W/ BLEEDER AND PLUG</p> <p>VN NEEDLE VALVE</p> <p>VP PLUG VALVE</p> <p>V3 3-WAY VALVE</p>	<p><b>PRESSURE CLASS DESIGNATION</b></p> <p>0 ATMOSPHERIC</p> <p>1 CLASS 125</p> <p>1 CLASS 150</p> <p>3 CLASS 300</p> <p>4 CLASS 400</p> <p>6 CLASS 600</p> <p>9 CLASS 900</p> <p>15 CLASS 1500</p> <p>20 2000 PSI CWP</p> <p>30 3000 PSI CWP</p> <p>60 6000 PSI CWP</p> <p>NOTE: SEE PROJECT PIPING MATERIAL SPECIFICATIONS FOR DESIGN PRESSURE AND MAOP FOR SPECIFIC PRESSURE CLASS.</p>	<p><b>END CONNECTION DESIGNATION</b></p> <p>A SOCKET WELD</p> <p>B SCREWED</p> <p>C BUTT WELD</p> <p>E FLAT FACED FLANGED</p> <p>F RAISED FACED FLANGED</p> <p>G BUTT WELD X RAISED FACED FLANGED</p> <p>H BUTT WELD X RING JOINT FLANGED</p> <p>J RING JOINT FLANGED</p>	<p><b>LINE NUMBER IDENTIFICATION</b></p> <p>3"-STD-B(SC-1)0001</p> <p>NOMINAL PIPE SIZE IN INCHES</p> <p>PIPE SCHEDULE</p> <p>MATERIAL GRADE</p> <p>LINE SERVICE</p> <p>PRESSURE CLASS</p> <p>SEQUENTIAL LINE NUMBER</p>	<p><b>MATERIAL GRADE DESIGNATION</b></p> <p>X65 API 5L X65</p> <p>X60 API 5L X60</p> <p>X52 API 5L X52</p> <p>X42 API 5L X42</p> <p>AL ALUMINUM TUBING</p> <p>B API 5L GRADE B OR ASTM GRADE B</p> <p>304L ASTM A312 GRADE TP</p> <p>PVC ASTM D1785 POLYVINYL CHLORIDE</p> <p>SS ASTM 316 SS SEAMLESS ANNEALED TUBING</p>	

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0	05/11/2022	ISSUED FOR CONSTRUCTION	FGI	RSE	-	AREA CODE -			REGIONAL ENGINEER
						ACCOUNT NUMBER -			MGR TECH REC & STD
						PROJECT NUMBER 2751477			PRINCIPAL ENGINEER
						DRAWING BY -			
						STATION ID 7-HM-93-TAR-7101			
						CHECKER INITIALS RSE			

REF. DWG(S) --
SHEET(S) 2 OF 27 DWG SCALE NONE
DWG DATE 00/00/20XX SUPERSEDED
DRAWING NUMBER PNG -G-000-0002250 REVISION 0
DISCIPLINE / RESOURCE CENTER / LINE NUMBER

PROFESSIONAL ENGINEER STAMP

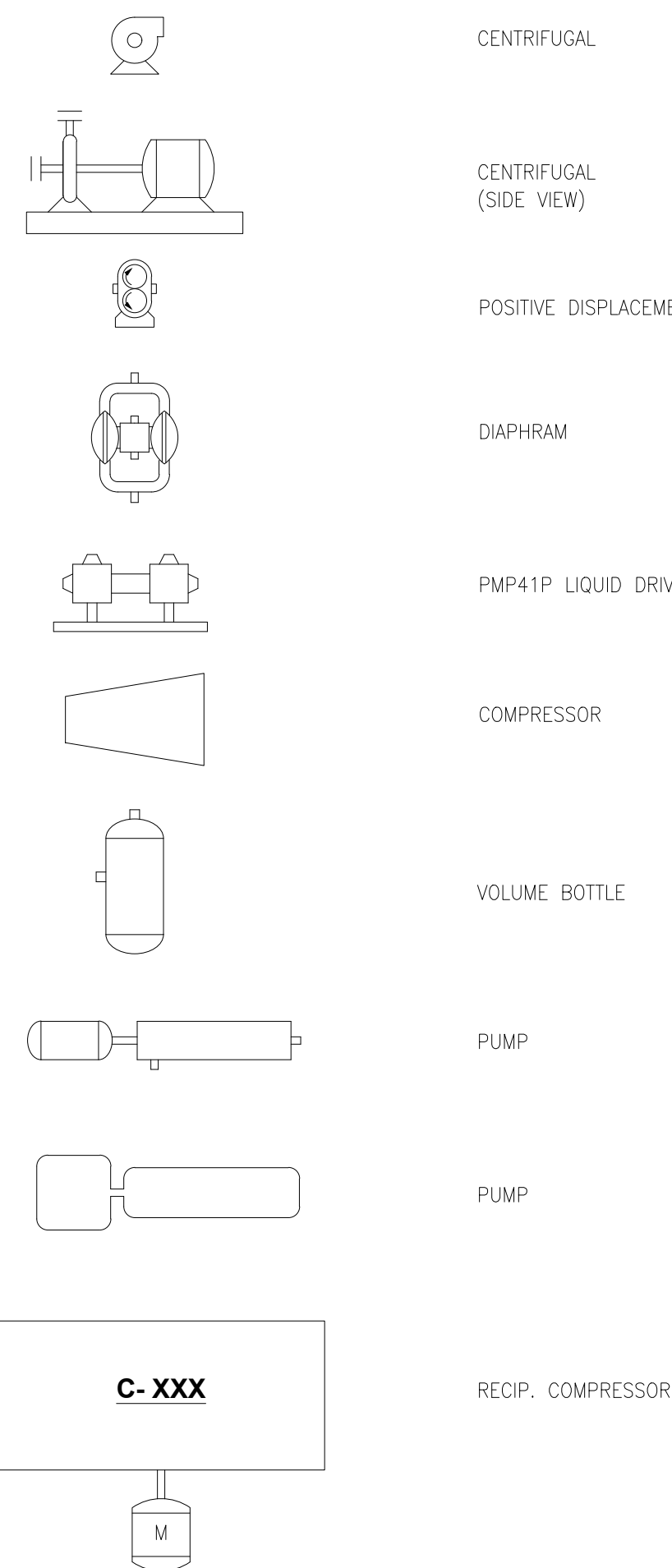


**GUC GREENVILLE NO. 2 REPLACEMENT P&ID LEGEND AND SYMBOLS GREENVILLE, NC**  
RESOURCE CENTER, TARBORO, NC

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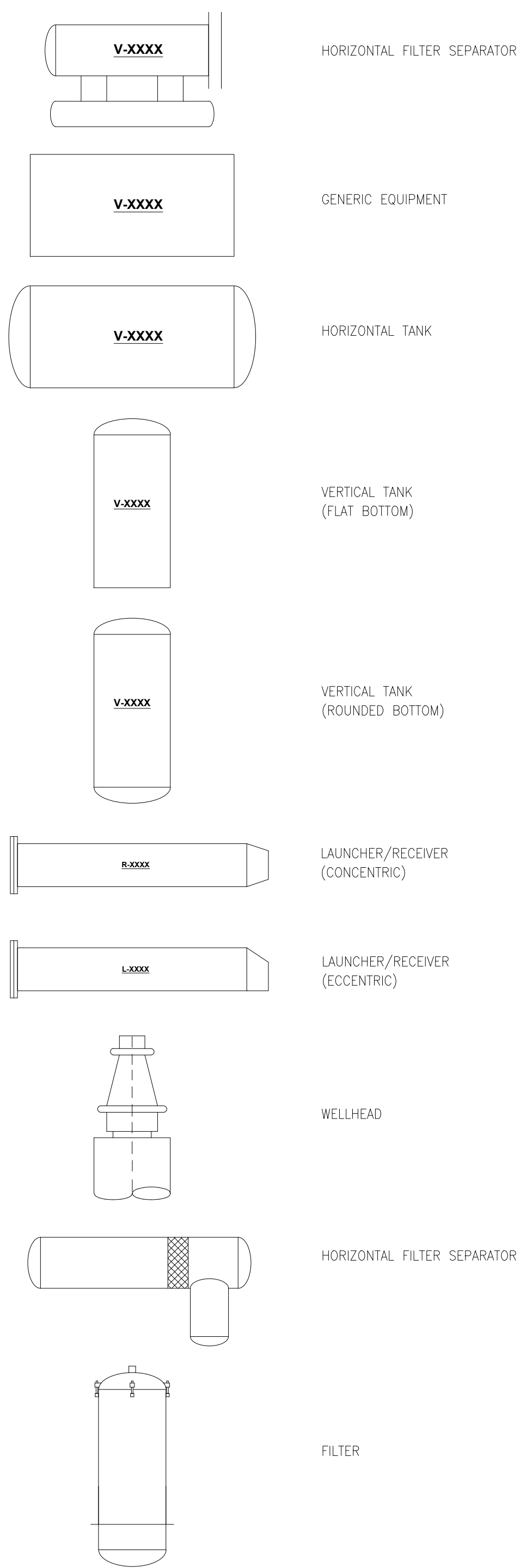
# SYMBOLS AND LEGEND

## PUMPS



CENTRIFUGAL  
CENTRIFUGAL (SIDE VIEW)  
POSITIVE DISPLACEMENT  
DIAPHRAM  
PMP41P LIQUID DRIVE  
COMPRESSOR  
VOLUME BOTTLE  
PUMP  
PUMP  
RECIP. COMPRESSOR

## EQUIPMENT



HORIZONTAL FILTER SEPARATOR  
GENERIC EQUIPMENT  
HORIZONTAL TANK  
VERTICAL TANK (FLAT BOTTOM)  
VERTICAL TANK (ROUNDED BOTTOM)  
LAUNCHER/RECEIVER (CONCENTRIC)  
LAUNCHER/RECEIVER (ECCENTRIC)  
WELLHEAD  
HORIZONTAL FILTER SEPARATOR  
FILTER

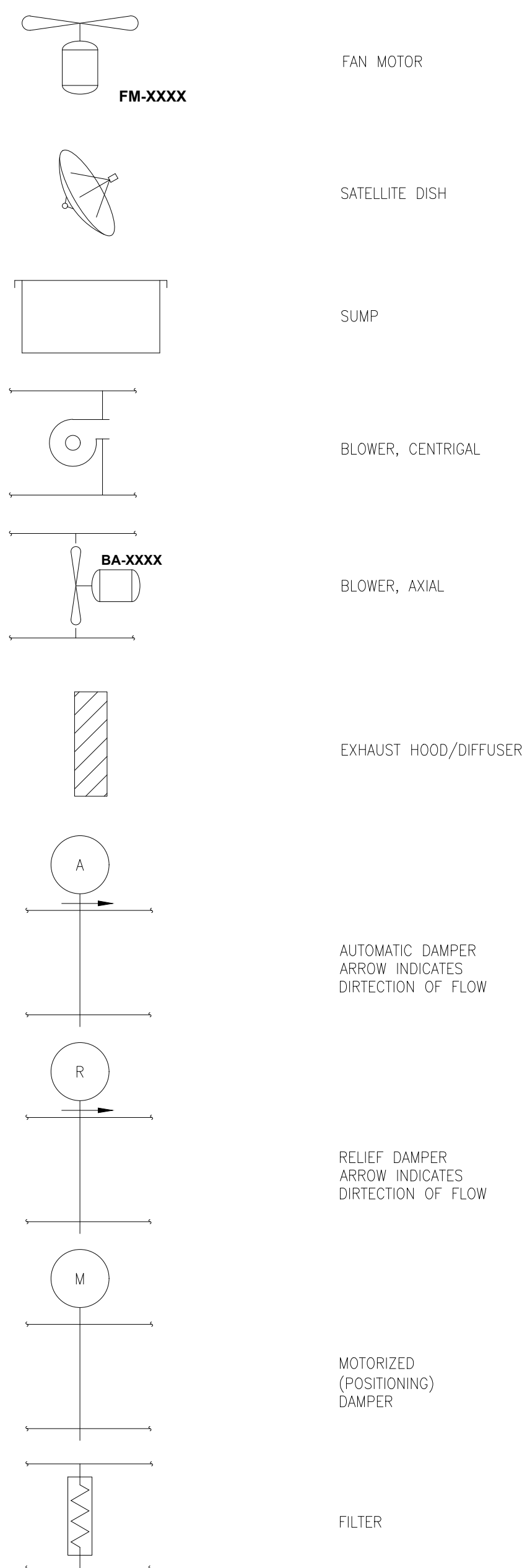


BLOWDOWN SILENCER W/ RAIN HOOD

### EQUIPMENT IDENTIFICATION

AC	GAS COOLER
C	COMPRESSOR
E	HEAT EXCHANGER
F	FILTER
FE	FLOW ELEMENT
G	FUEL GAS SCRUBBER
H	HEATER/REBOILER
L	LACT UNIT
L/R	LAUNCHER/RECEIVER
M	MOTOR
P	PUMP
SCP	STATION CONTROL PANEL
SL	SILENCER
T	CONTACTOR/ACCUMULATOR
TK	TANK
V	VESSEL
W	WELL HEAD

## MISCELLANEOUS



FAN MOTOR  
SATELLITE DISH  
SUMP  
BLOWER, CENTRIFUGAL  
BLOWER, AXIAL  
EXHAUST HOOD/DIFFUSER  
AUTOMATIC DAMPER  
ARROW INDICATES DIRECTION OF FLOW  
RELIEF DAMPER  
ARROW INDICATES DIRECTION OF FLOW  
MOTORIZED (POSITIONING) DAMPER  
FILTER

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					-	DRAWING BY		
						STATION ID	7-HM-93-TAR-7101	
						CHECKER INITIALS	RSE	
						DATE	XX/XX/20XX	
						INITIALS	XXX	



**GUC GREENVILLE NO. 2 REPLACEMENT  
P&ID LEGEND AND SYMBOLS  
GREENVILLE, NC**  
RESOURCE CENTER, TARBORO, NC

SHEET(S)	3 OF 27	DWG SCALE	NONE
DWG DATE	00/00/20XX	SUPERSEDED	---
DRAWING NUMBER	PNG -G-000-0002250		REVISION
			0
DISCIPLINE / RESOURCE CENTER / LINE NUMBER			

# SYMBOLS AND LEGEND

## INSTRUMENTATION IDENTIFICATION LETTERS (USED INSIDE INSTRUMENT BALLOONS)

(FROM ISA "TABLE 2")

FIRST LETTER	MEASURED OR INITIATING VARIABLE	CONTROLLING DEVICES			READOUT DEVICES		SWITCHES & ALARM DEVICES *			TRANSMITTERS		DEVICES		TEST POINT	WELL OR PROBE	VIEWING DEVICE GLASS	SAFETY DEVICE	FINAL ELEMENT		
		RECORDING	INDICATING	BLIND	SELF-ACTUATED CONTROL VALVE	RECORDING	INDICATING	HIGH	LOW	COMBO	RECORDING	INDICATING	BLIND						SOLENOIDS, RELAYS & COMPUTING	PRIMARY ELEMENT
A	ANALYSIS	ARC	AIC	AC		AR	AI	ASH	ASL	ASHL		ART	AIT	AT	AY	AE	AP	AW		AV
B	BURNER/COMBUSTION	BRC	BIC	BC		BR	BI	BSH	BSL	BSHL		BRT	BIT	BT	BY	BE		BW	BG	BZ
C	USER'S CHOICE																			
D	USER'S CHOICE																			
E	VOLTAGE	ERC	EIC	EC		ER	EI	ESH	ESL	ESHL		ERT	EIT	ET	EY	EE				EZ
F	FLOW RATE	FRC	FIC	FC	FCV	FR	FI	FSH	FSL	FSHL		FRT	FIT	FT	FY	FE	FP		FG	FV
FQ	FLOW QUANTITY	FQRC	FQIC			FQR	FQI	FQSH	FQSL			FQIT	FQT	FQY	FQE					FQV
FF	FLOW RATIO	FFRC	FFIC	FFC		FFR	FFI	FFSH	FFSL						FE					FFV
G	USER'S CHOICE																			
H	HAND			HIC	HC					HS										HV
I	CURRENT	IRC	IIC			IR	II	ISH	ISL	ISHL		IRT	IIT	IT	IY	IE				IZ
J	POWER	JRC	JIC			JR	JI	JSH	JSL	JSHL		JRT	JIT	JT	JY	JE				JV
K	TIME	KRC	KIC	KC	KCV	KR	KI	KSH	KSL	KSHL		KRT	KIT	KT	KY	KE				KV
L	LEVEL	LRC	LIC	LC	LCV	LR	LI	LSH	LSL	LSHL		LRT	LIT	LT	LY	LE		LW	LG	LV
M	USER'S CHOICE																			
N	USER'S CHOICE																			
O	USER'S CHOICE																			
P	PRESSURE/VACUUM	PRC	PIC	PC	PCV	PR	PI	PSH	PSL	PSHL		PRT	PIT	PT	PY	PE	PP		PSV	PV
PD	PRESSURE, DIFFERENTIAL	PDRC	PDIC	PDC	PDCV	PDR	PDI	PDSH	POS	PSHL		PDR	PDI	PDT	PDY	PE	PP			PDV
Q	QUANTITY	QRC	QIC			QR	QI	QSH	QSL	QSHL		QRT	QIT	QT	QY	QE				OZ
R	RADIATION	RRC	RIC	RC		RR	RI	RSH	RSL	RSHL		RRT	RIT	RT	RY	RE		RW		RZ
S	SPEED/FREQUENCY	SRC	SIC	SC	SCV	SR	SI	SSH	SSL	SSL		SRT	SIT	ST	SY	SE				SV
T	TEMPERATURE	TRC	TIC	TC	TCV	TR	TI	TSH	TSL	TSHL		TRT	TIT	TT	TY	TE	TP	TW	TSE	TV
TD	TEMPERATURE, DIFFERENTIAL	TDRC	TDIC	TDC	TDCV	TDR	TDI	TDSH	TDSL			TDRT	TDIT	TDY	TE	TP	TW			TDV
U	MULTIVARIABLE					UR	UI								UY					UV
V	VIBRATION/MACHINERY ANALYSIS					VR	VI	VSH	VSL	VSHL		VRT	VIT	VT	VY	VE				VZ
W	WEIGHT/FORCE			WIC	WCV	WR	WI	WSH	WSL	WSHL		WRT	WIT	WT	WY	WE				WZ
WD	WEIGHT/FORCE DIFFERENTIAL	WDRC	WDIC	WDC	WDCV	WDR	WDI	WDSH	WDSL			WDRT	WDIT	WDY	WE					WDZ
X	UNCLASSIFIED																			
Y	EVENT/STATE/PRESENCE		YIC	YC		YR	YI	YSH	YSL				YIT	YY	YE					YZ
Z	POSITION/DIMENSION	ZRC	ZIC	ZC	ZCV	ZR	ZI	ZSH	ZSL	ZSHL		ZRT	ZIT	ZT	ZY	ZE				ZV
ZD	GAUGING/DEVIATION	ZDRC	ZDIC	ZDC	ZDCV	ZDR	ZDI	ZDSH	ZDSL			ZDRT	ZDIT	ZDT	ZDY	ZDE				ZDV

\*NOTE: ADDITIONAL INSTRUMENT ABBREVIATIONS, IF REQUIRED, SHALL USE THIS TABLE AS A GUIDE.

"H", "L", "HH", OR "LL" SUFFIXED TO TAGS FOR SWITCHES AND RELATED DEVICES INDICATE ALARM OR SHUTDOWN AS FOLLOWS:

H = HIGH } ALARM  
L = LOW }  
HH = HIGH HIGH } SHUTDOWN  
LL = LOW LOW }

ZSC = LIMIT SWITCH CLOSE  
ZSO = LIMIT SWITCH OPEN  
SVO = SOLENOID VALVE OPEN  
SVC = SOLENOID VALVE CLOSE  
IR = FIRE DETECTOR  
RO = RESTRICTION ORIFICE  
CGE = GAS DETECTOR

### INSTRUMENT BALLOONS

PLC I/O	AI=ANALOG INPUT AO=ANALOG OUTPUT DI=DIGITAL INPUT DO=DIGITAL OUTPUT
XXXX	LOCAL MOUNTED INSTRUMENT
	REMOTE PANEL MOUNTED INSTRUMENT (FRONT OF PANEL) (PRIMARY)
	LOCAL PANEL MOUNTED INSTRUMENT (FRONT OF PANEL) (AUXILIARY)
	REMOTE PANEL MOUNTED INSTRUMENT (REAR OF PANEL) (PRIMARY)
	LOCAL PANEL MOUNTED INSTRUMENT (REAR OF PANEL) (AUXILIARY)
	INSTRUMENT FOR TWO MEASURED VARIABLES OR FUNCTIONS (COMMON ENCLOSURE)
	PNEUMATIC SUPPLY TO INSTRUMENT
	ELECTRICAL SUPPLY TO INSTRUMENT
	STATION CONTROL SYSTEM INSTRUMENT WITH COMMON (SHARED) DISPLAY (CRT)
	LOCAL PANEL MOUNTED INSTRUMENT WITH COMMON (SHARED) DISPLAY (CRT)
XXXX	STATION PLC FUNCTION OR STATION ESD (PROGRAMMABLE LOGIC CONTROLLER)
XXXX	LOCAL PLC FUNCTION OR UNIT CONTROL PANEL
	EMERGENCY SHUTDOWN (HARDWIRED)
	EMERGENCY BLOWDOWN (HARDWIRED)
	MOTOR CONTROL CENTER
	VARIABLE FREQUENCY DRIVE

### MISCELLANEOUS

### MISCELLANEOUS

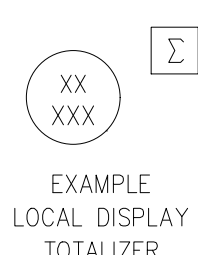
### RELAY FUNCTION DESIGNATIONS (ADJACENT TO INSTRUMENT BALLOON)

### LINE SYMBOLS

### LOGIC

### MISCELLANEOUS

	CHARACTERIZE
	SUMMING
	SQUARE ROOT
	TOTALIZE
	HIGH SIGNAL SELECT
	LOW SIGNAL SELECT
	CURRENT REPEATER
	CURRENT TO PRESSURE TRANSDUCER
	PNEUMATIC TO CURRENT TRANSDUCER
	RESISTANCE TO CURRENT CONVERTER
	VOLTAGE TO ELECTROMAGNETIC
	VOLTAGE TO CURRENT



	CAPILLARY TUBING
	COMPUTER CONNECTION
	ELECTRICAL LEAD
	FIBER OPTIC/ELECTROMAGNETIC SIGNAL
	HYDRAULIC LINE
	SIGNAL PNEUMATIC LINE
	SKID LIMITS

	GENERALIZED FOR UNDEFINED OR COMPLEX INTERLOCK LOGIC
	INTERLOCK IS EFFECTIVE ONLY IF ALL INPUTS EXIST
	INTERLOCK IS EFFECTIVE IF ANY ONE OR MORE INPUTS EXIST
	PURGE LINE - AIR, GAS, LIQUID
	UNDEFINED CONTROL LOGIC (USUALLY HIGH PRESSURE GAS OR GAS/HYD. VALVE ACTUATORS)

	RUNNING LIGHT ON (GREEN)
	RUNNING LIGHT OFF (RED)
	RUNNING LIGHT READY (AMBER)
	STARTER WITH START/STOP PUSHBUTTON SWITCH

**ISSUED FOR CONSTRUCTION**  
DATE: 05-11-2022

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REF. DWG(S)

NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	DATE	INITIALS	APPROVALS
0	05/11/2022	ISSUED FOR CONSTRUCTION	FGI	RSE	-	AREA CODE -			REGIONAL ENGINEER
						ACCOUNT NUMBER -			MGR TECH REC & STD
						PROJECT NUMBER 2751477			PRINCIPAL ENGINEER
						DRAWING BY			
						STATION ID 7-HM-93-TAR-7101			
						CHECKER INITIALS RSE	DATE XX/XX/20XX	INITIALS XXX	

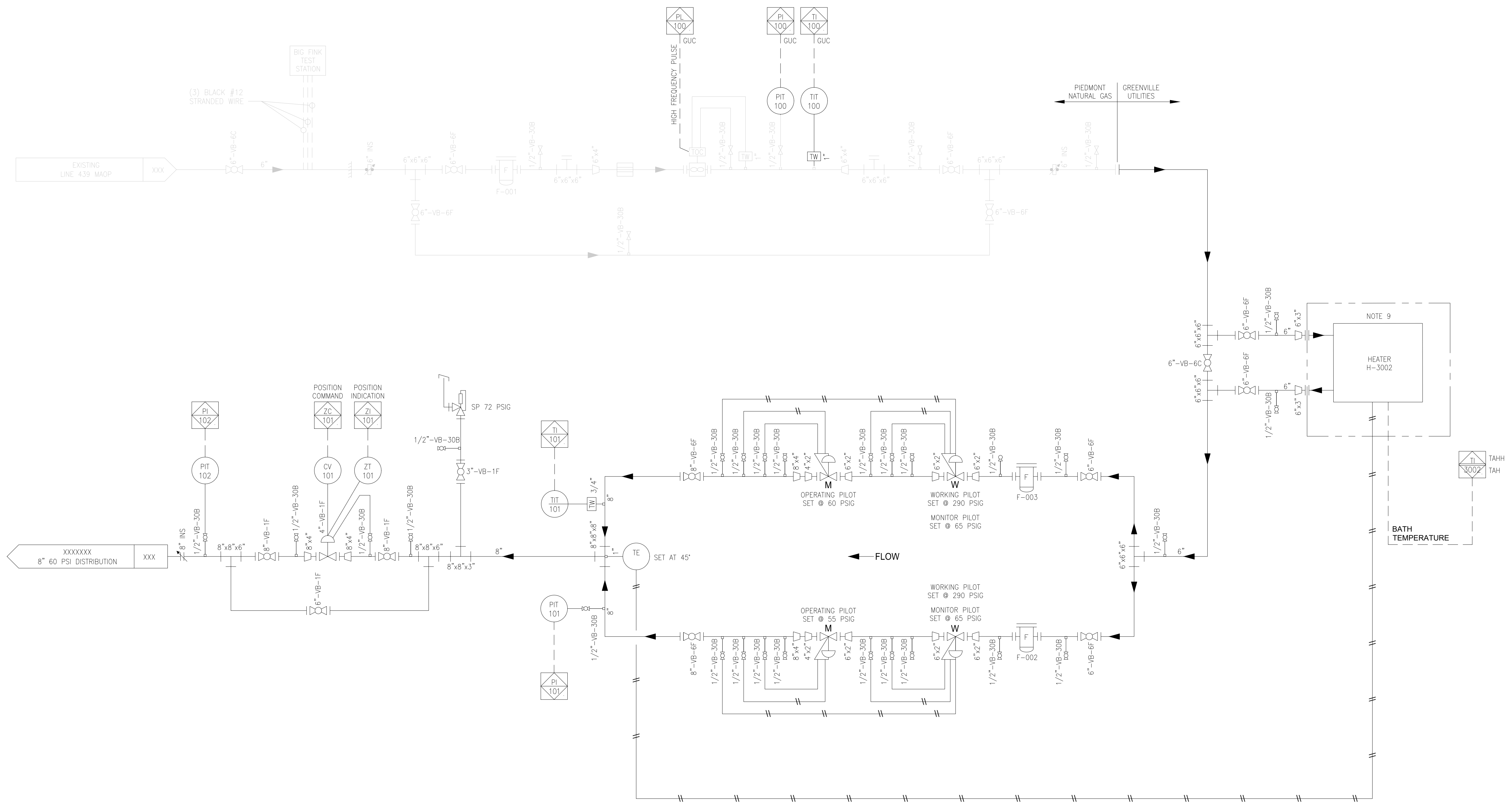
**GUC GREENVILLE NO. 2 REPLACEMENT  
P&ID LEGEND AND SYMBOLS  
GREENVILLE, NC**  
RESOURCE CENTER, TARBORO, NC

SHEET(S) 4 OF 27	DWG SCALE NONE
DWG DATE 00/00/20XX	SUPERSEDED
DRAWING NUMBER	REVISION
<b>PNG -G-000-0002250</b>	<b>0</b>
DISCIPLINE / RESOURCE CENTER / LINE NUMBER	

10/17/2018 10:45 AM P:\MS-Office\GUC\GUC-104-DWG\SYMBOLS AND LEGEND.dwg 10/17/2018 10:45 AM

PROFESSIONAL ENGINEER STAMP





DESIGN INFORMATION			
1000 PSIG	DESIGN PRESSURE		
1000 PSIG	MAXIMUM ALLOWABLE OPERATING PRESSURE		
735 PSIG	MAXIMUM ACTUAL WORKING PRESSURE OF MAIN		
400 PSIG	MIN EXPECTED OPERATING PRESSURE OF MAIN		
1000 PSIG	DOWNSTREAM MAOP		
60 PSIG	REQUIRED DELIVERY PRESSURE		
600,000 CFH	ANTICIPATED LOAD		
N/A	RATE SCHEDULE		
METER:	811,000	CFH CAPACITY @	400 PSIG INLET
FIRST CUT REGULATOR:			
2,579,000	CFH CAPACITY @	1000	INLET 290 OUTLET
764,000	CFH CAPACITY @	400	INLET 290 OUTLET
MONITOR PILOT SET PRESSURE:		65 PSIG	
AUTOMATIC SHUT-OFF SETTING:		N/A	
FIRST CUT RELIEF SET PRESSURE:		N/A	
RELIEF:	N/A	CFH CAPACITY @	N/A PSIG INLET
SECOND CUT REGULATOR:			
800,000	CFH CAPACITY @	290	INLET 60 OUTLET
2,579,000	CFH CAPACITY @	1000	INLET 55 OUTLET
AUTOMATIC SHUT-OFF SETTING:		N/A	
SECOND CUT RELIEF SET PRESSURE:		72 PSIG	
RELIEF:	719,278	CFH Capacity @	72 PSIG INLET

- NOTES:**
- ANY CHANGES REQUIRED DUE TO FIELD CONDITIONS MUST BE APPROVED BY THE ENGINEERING DEPARTMENT.
  - ABOVE GROUND INSTALLATION NOT TO BE LOCATED NEAR INTAKE VENTS.
  - PIPE TO BE WRAPPED WITH A DOUBLE LAYER OF TAPECOAT 20 OR ENGINEERING APPROVED EQUIVALENT AT GROUND TRANSITION. THE COATING SHOULD EXTEND A MINIMUM OF 1" ABOVE AND BELOW THE GROUND TRANSITION.
  - TAPS FOR SENSING LINES SHALL BE DRILLED, NOT CUT WITH TORCH.
  - THE WELDING PROCEDURE FOR THE HIGHEST YIELD STRENGTH MUST BE USED WHEN WELDING PIPE AND/OR FITTINGS WITH DIFFERENT YIELD STRENGTHS.
  - ALL ABOVE GROUND PIPING SHALL BE PAINTED ANSI 49 GREY.
  - CONTRACTOR RESPONSIBLE FOR GEOTECH FABRIC AND STONE
  - FLOW CONDITIONER PLACED BETWEEN FILTER AND FLOW METER WITH 5 I.D. DIAMETERS SPACE BEFORE FLOW METER.
  - HEATER AND ALL ASSOCIATED PIPING & INSTRUMENTATION INSIDE OF THE BOUNDARY LIMITS.

**ISSUED FOR CONSTRUCTION**  
DATE: 05-11-2022

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NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	DATE	INITIALS	APPROVALS
0	05/11/2022	ISSUED FOR CONSTRUCTION	FGI	RSE		AREA CODE	-	-	REGIONAL ENGINEER
						ACCOUNT NUMBER	-	-	MGR TECH REC & STD
						PROJECT NUMBER	-	-	PRINCIPAL ENGINEER
						DRAWING BY	-	-	
						STATION ID	-	-	
						CHECKER INITIALS	-	-	



**GUC GREENVILLE NO. 2 REPLACEMENT STATION P&ID GREENVILLE, NC**  
RESOURCE CENTER TARBORO, NC

REF. DWG(S) -	SHEET(S) 5 OF 27	DWG SCALE	N.T.S.
	DWG DATE 02/24/2021	SUPERSEDED	
	DRAWING NUMBER	REVISION	
	<b>PNG D-027-0001013</b>	<b>0</b>	
DISCIPLINE / RESOURCE CENTER / LINE NUMBER			

10/17/2019 11:01:00 AM - PNG Greenville, NC - Station 104 - Drawing: L:\MSP\PNG-027-0001013.rvt Date: 05/11/2022 10:38 AM  
 FARNSWORTH GROUP  
 STATE LICENSE # .....





**GENERAL NOTES**

1. INSTALLER SHALL FURNISH ALL MATERIALS NOT PROVIDED BY THE COMPANY (UNLESS OTHERWISE NOTED ON DRAWINGS OR SPECIFICATIONS) INCLUDING EQUIPMENT TRANSPORTATION AND SERVICES, AND PERFORM ALL NECESSARY WORK AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREINAFTER.
2. IT SHALL BE THE RESPONSIBILITY OF THE INSTALLER TO VERIFY ALL DIMENSIONS GIVEN ON THE DRAWINGS. ANY ITEM IN QUESTION SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER PRIOR TO PROCEEDING WITH THE WORK.
3. INSTALLER SHALL BE RESPONSIBLE FOR PROTECTION OF ALL SURROUNDING AREAS.
4. ALL BELOWGROUND WELDS SHALL BE COATED WITH HBE-95 OR SP-2888 PER PERTINENT DUKE NATURAL GAS BUSINESS UNIT (NGBU) DESIGN AND CONSTRUCTION STANDARDS.
5. ALL ABOVEGROUND PIPING TO BE BLASTED TO CORRECT SPECIFICATION FOR PROTECTIVE COATINGS (SSPC) SURFACE PROFILE. PAINT SYSTEM TO BE UTILIZED SHALL BE PER PERTINENT DUKE NGBU DESIGN AND CONSTRUCTION STANDARDS.
6. UPON BACKFILLING IN AREAS OF ROCK, BURIED PIPE SHALL HAVE 6" OF SAND PAD FILL PLACED AROUND THE PIPE'S CIRCUMFERENCE.
7. PRESSURE TESTING SHALL MEET THE REQUIREMENTS OF THE DUKE NGBU'S PRESSURE TESTING STANDARD, PER PERTINENT DUKE NGBU DESIGN AND CONSTRUCTION STANDARDS.
8. INSTALLER SHALL DEWATER ALL HYDROSTATICALLY TESTED PIPING, USING CLEANING PIGS AS REQUIRED, AND DRY TO A DEWPOINT OF -40 °F PER PERTINENT DUKE NGBU DESIGN AND CONSTRUCTION STANDARDS.

14. MINIMUM DEPTH OF BURIAL SHALL BE PER PERTINENT DUKE NGBU DESIGN AND CONSTRUCTION STANDARDS.
15. ALL PIPELINES BEING CROSSED ARE TO BE PROTECTED WITH A MINIMUM OF (3) 4 FEET X 18 FEET WOODEN MATS.
16. PER PERTINENT DUKE NGBU DESIGN AND CONSTRUCTION STANDARDS, FOR OPEN DITCH EXCAVATION, A MINIMUM OF TWO FEET OF SEPARATION SHALL BE MAINTAINED BETWEEN ALL CROSSING STRUCTURES. SEPARATION BETWEEN CROSSING STRUCTURES AND PIPELINES THAT ARE INSTALLED VIA DIRECTIONAL DRILLING METHODS IS AT THE DISCRETION OF ENGINEERING.
17. DURING BACKFILLING, A SIX INCH CROWN SHALL BE PLACED ON ALL DISTURBED AREAS. COMPACTION REQUIREMENTS SHALL BE PER PERTINENT DUKE NGBU DESIGN AND CONSTRUCTION STANDARDS.
18. BOLTS FOR FLANGES TO BE TORQUED PER PERTINENT DUKE NGBU DESIGN AND CONSTRUCTION STANDARDS.

**CIVIL AND STRUCTURAL NOTES**

1. ADDITIONAL EXCAVATIONS BELOW FOOTINGS MAY BE NECESSARY TO REACH UNDISTURBED SOIL. SHOULD THIS OCCUR, THE EXCAVATION SHALL BE BROUGHT TO THE BOTTOM OF THE FOOTING ELEVATION WITH COMPACTED SAND FILL MEETING THE REQUIREMENTS OF MODIFIED PROCTOR COMPACTION TEST (ASTM D1557) TO 95% IN SIX INCH LIFTS.
2. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 3/4" X 3/4" 45° CHAMFER.
3. CONCRETE SHALL BE MIXED AND POURED PER PERTINENT DUKE NGBU DESIGN AND CONSTRUCTION STANDARDS. TESTING SHALL CONFORM TO ACI 318. INSTALLER TO SUPPLY ALL CONCRETE AND TESTING.
4. ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 SPECIFICATION. STEEL REINFORCING BAR SHALL CONFORM TO ASTM A615 GRADE 60 AND WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. TIE WIRE SHALL CONFORM TO ASTM A82.
5. UNSUITABLE OR EXCESS EARTH SPOIL SHALL BE DISPOSED OF AT AN APPROVED WASTE LOCATION. SOIL BEING TRANSPORTED ONTO THE JOB SITE SHALL BE APPROVED BY EITHER THE PROJECT MANAGER OR CONSTRUCTION MANAGER.
6. ROCKSHIELD OR SIMILAR COMPANY APPROVED PRODUCT MUST BE INSTALLED BETWEEN ALL PIPE AND FITTINGS THAT COME INTO CONTACT WITH CONCRETE. A LAYER OF NON ABRASIVE MATERIAL SUCH AS FRP SHALL BE INSTALLED BETWEEN ALL PIPE SUPPORTS AND PIPING.
7. ALL FIELD BENDING OF REBAR SHALL BE DONE COLD.

**SOIL EROSION AND SEDIMENT CONTROL NOTES**

1. INSTALLER IS TO CONSTRUCT ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AT THE COMMENCEMENT OF THE PROJECT, PROVIDE MAINTENANCE AND ASSURE EFFECTIVENESS THROUGHOUT THE DURATION OF THE PROJECT.
2. CARE SHALL BE TAKEN TO MINIMIZE DOWNSTREAM SILTATION. RAW BANKS MAY BE SEEDED AND MULCHED TO PREVENT EROSION.
3. ALL SPOILS INCLUDING ORGANIC SOILS, VEGETATION AND DEBRIS SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF IN SUCH A MANNER AS TO NOT ERODE INTO ANY BODY OF WATER OR WETLAND.
4. SILT FENCING SHALL BE PLACED WHERE NECESSARY TO PREVENT SEDIMENT FROM LEAVING THE WORK AREA.
5. CATCH ALL INLET FILTERS ARE REQUIRED AT ALL SEWER INLETS, GRATES AND MANHOLES FOR SEDIMENT CONTROL.
6. WETLAND AREAS SHALL HAVE SILT FENCING AND ONE LAYER OF STRAW LOG INSTALLED NO CLOSER THAN 50 FEET FROM POINT OF WETLAND DELINEATION.
7. TOPSOIL STOCKPILES SHALL BE LOCATED TO AVOID EROSION OF SAID STOCKPILE ONTO OFFSITE AREAS.
8. ALL ENVIRONMENTAL MEASURES SHALL BE PER PERTINENT DUKE NGBU DESIGN AND CONSTRUCTION STANDARDS.

**CONSTRUCTION NOTES**

1. EXISTING OVERHEAD AND BELOWGROUND FACILITIES MAY BE IN THE WORK AREA VICINITY. INSTALLER IS RESPONSIBLE FOR HAVING SUCH FACILITIES LOCATED AND IS RESPONSIBLE FOR MAINTENANCE AND PRESERVATION OF THESE FACILITIES.
2. PER PERTINENT DUKE NGBU DESIGN AND CONSTRUCTION STANDARDS, INSTALLER IS REQUIRED TO CALL 811 FOR UTILITY LOCATES A MINIMUM OF 72 HOURS PRIOR TO COMMENCEMENT OF WORK. NO EXTRA COMPENSATION WILL BE ALLOWED FOR DELAYS FROM ANY WORK PROVIDED BY OTHER UTILITIES.
3. IF EXISTING UTILITIES OF ANY TYPE ARE ENCOUNTERED IN THE FIELD AND DEEMED TO BE IN CONFLICT WITH INSTALLATION OF FACILITIES, INSTALLER SHALL NOTIFY THE PROJECT MANAGER IMMEDIATELY SO THE CONFLICT MAY BE RESOLVED.
4. WHEN EXISTING DRAINAGE FACILITIES ARE DISTURBED, INSTALLER SHALL PROVIDE AND MAINTAIN TEMPORARY OUTLETS AND CONNECTIONS FOR PRIVATE DRAINS OR SEWERS. RESTORATION OF THESE FACILITIES IS TO BE PERFORMED ONCE CONSTRUCTION IS COMPLETE AND ARE CONSIDERED INCIDENTAL COSTS OF THE PROJECT.
5. ALL DRAWING MEASUREMENTS ARE TO BE TAKEN FROM EXISTING GRADE. FINAL GRADE SHALL BE MATCHED TO SURROUNDING GRADE AS PER PERTINENT DUKE NGBU DESIGN AND CONSTRUCTION STANDARDS.
6. INSTALLER IS TO REMAIN WITHIN CONSTRUCTION WORKING LIMITS. ACCESS TO AREAS OUTSIDE WORKING LIMITS MUST BE COORDINATED WITH THE OWNER OR DUKE NGBU PROJECT MANAGER.
7. ALL EXCESS EXCAVATION, CONSTRUCTION DEMOLITION DEBRIS AND UNSUITABLE MATERIALS THAT DO NOT CONTAIN ASBESTOS SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED.
8. STANDARD SPECIFICATIONS REFERENCED ON THIS SHEET AND CONSTRUCTION PLANS ARE CONSIDERED AS PART OF THE CONTRACT DOCUMENTS. INCIDENTAL ITEMS OR ACCESSORIES NECESSARY TO COMPLETE THIS WORK MAY NOT BE SPECIFICALLY NOTED, BUT ARE CONSIDERED TO BE A PART OF THIS CONTRACT.
9. BEFORE ACCEPTANCE BY THE OWNER AND FINAL PAYMENT, ALL WORK SHALL BE INSPECTED AND APPROVED BY DUKE NGBU OR COMPANY REPRESENTATIVE. FINAL PAYMENT SHALL BE MADE AFTER ALL OF THE INSTALLER'S WORK HAS BEEN ACCEPTED AND APPROVED AND IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
10. DURING CONSTRUCTION, ALL LOOSE MATERIAL THAT ARE DEPOSITED IN THE FLOW LINE OF GUTTERS, DRAINAGE STRUCTURES, DITCHES, ETC. SUCH THAT THE NATURAL FLOW LINE OF WATER IS OBSTRUCTED, SHALL BE REMOVED AT THE END OF EACH WORK DAY.
11. ALL FIELD TILE ENCOUNTERED DURING CONSTRUCTION SHALL BE EXTENDED TO OUTLET INTO AN EXISTING DRAINAGE WAY. A RECORD OF ALL FIELD TILE FOR ONSITE DRAIN PIPE ENCOUNTERED SHALL BE KEPT BY THE INSTALLER AND TURNED OVER TO THE PROJECT MANAGER UPON COMPLETION OF THE PROJECT.
12. INSTALLER IS REQUIRED TO MAINTAIN A SET OF ISSUED FOR CONSTRUCTION DRAWINGS AND ALL PERMITS AT THE JOB SITE. ANY MODIFICATIONS OR ALTERATIONS TO THE PLANS OR SPECIFICATIONS SHALL BE APPROVED BY THE PROJECT MANAGER.
13. INSTALLER IS SOLELY RESPONSIBLE FOR EXECUTION OF HIS/HER WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS. INSTALLER IS RESPONSIBLE FOR THE CONSTRUCTION METHODS AND TECHNIQUES, SEQUENCES, TIME OF PERFORMANCE ALL SAFETY PRECAUTIONS.

**ISSUED FOR CONSTRUCTION**  
DATE: 05-11-2022

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NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	APPROVALS		
0	05/11/2022	ISSUED FOR CONSTRUCTION	FGI	RSE	-	AREA CODE	DATE	INITIALS	REGIONAL ENGINEER
						ACCOUNT NUMBER			
						PROJECT NUMBER	2751477		MGR TECH REC & STD
						DRAWING BY			
						STATION ID	7-HM-93-TAR-7101	DATE	INITIALS
						CHECKER INITIALS	RSE	XXXX/20XX	XXX



**GUC GREENVILLE NO. 2 REPLACEMENT  
GENERAL CONSTRUCTION NOTES  
GREENVILLE, NC**  
RESOURCE CENTER, TARBORO, NC

SHEET(S)	7 OF 27	DWG SCALE	NOT TO SCALE
DWG DATE	00/00/20XX	SUPERSEDED	---
DRAWING NUMBER	REVISION		
<b>PNG -G-027-0001061</b>	<b>0</b>		
DISCIPLINE / RESOURCE CENTER / LINE NUMBER			

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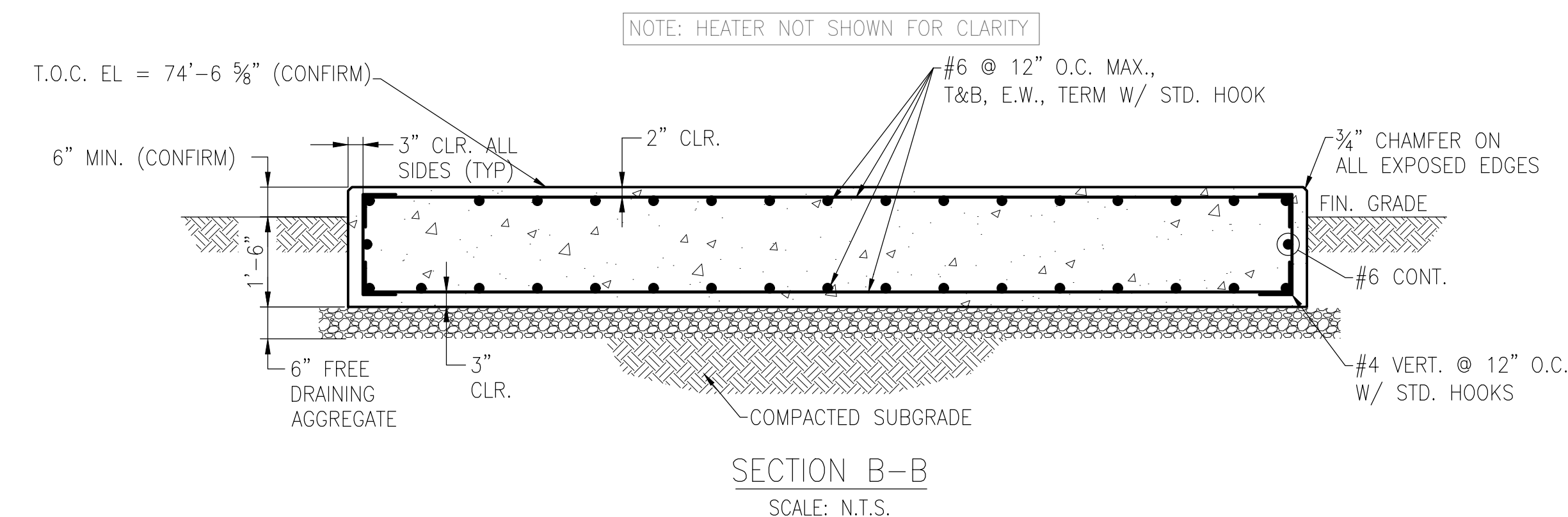
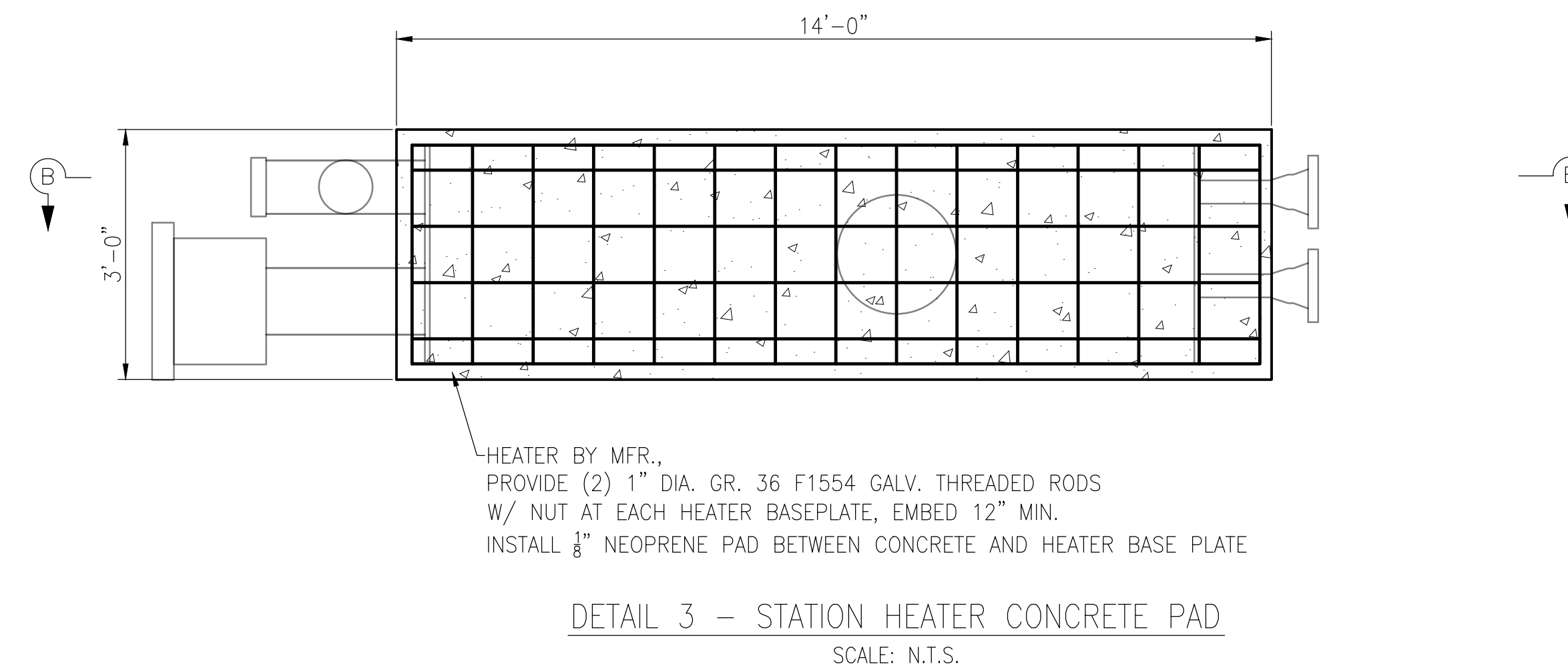
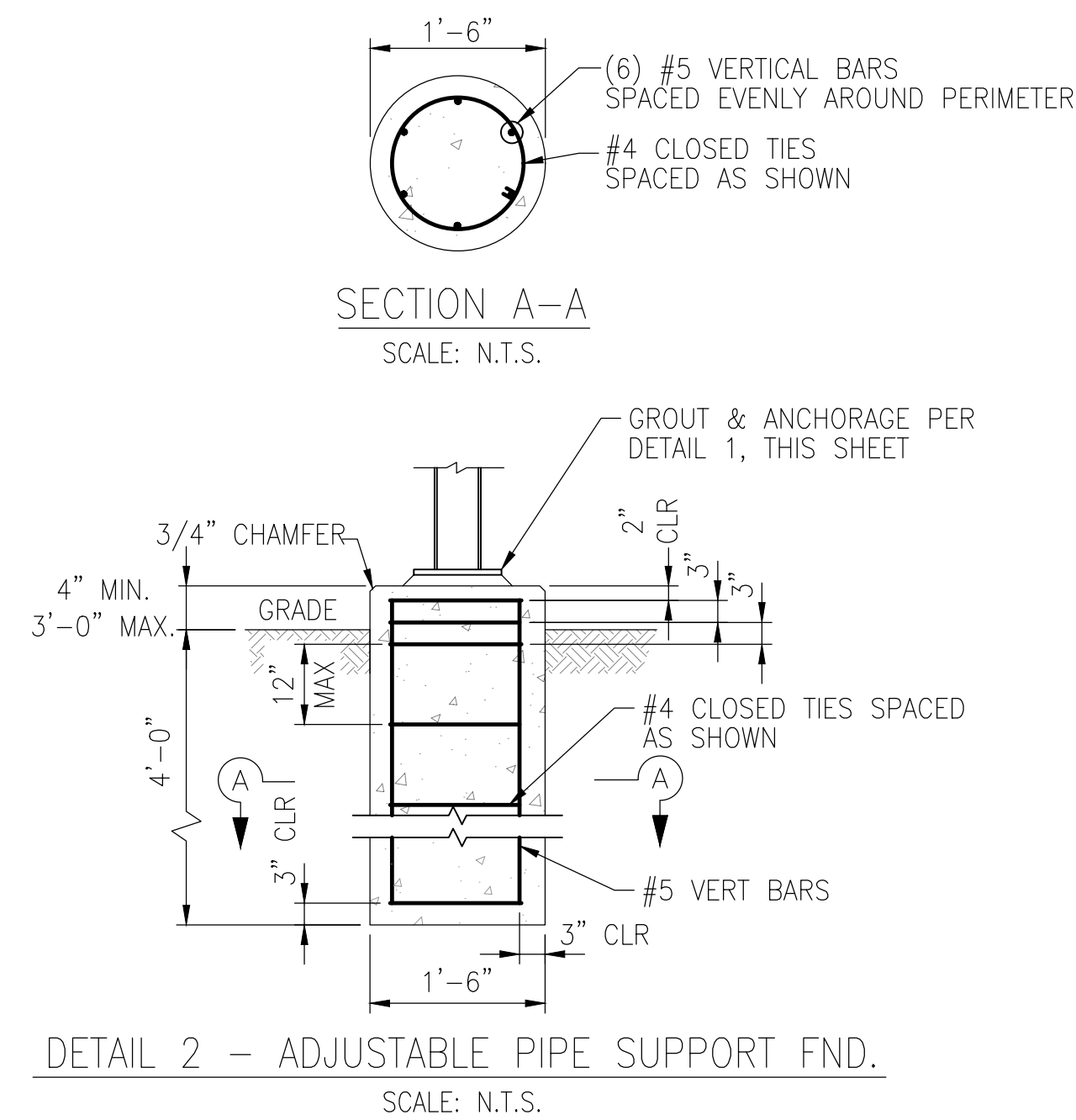
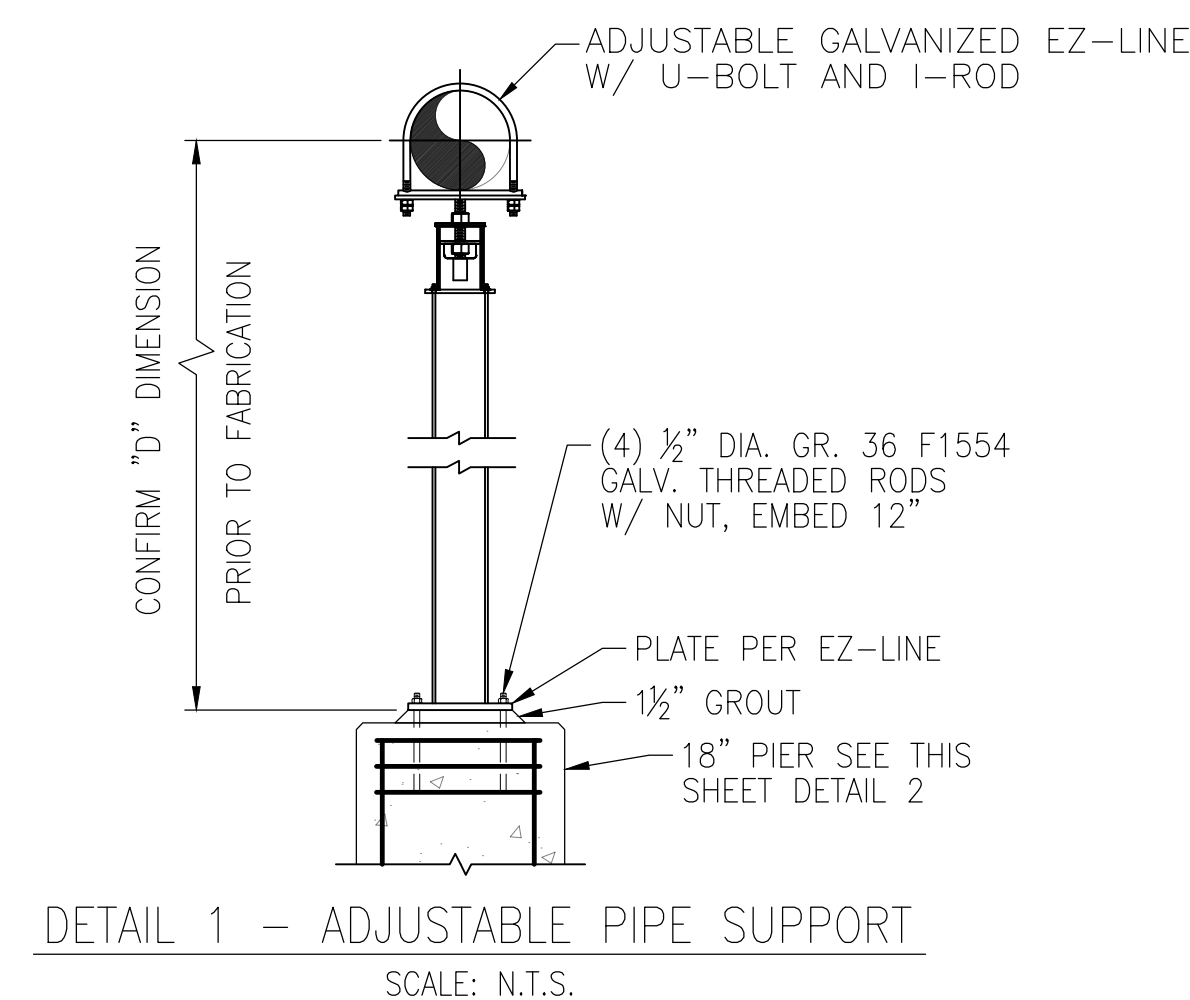
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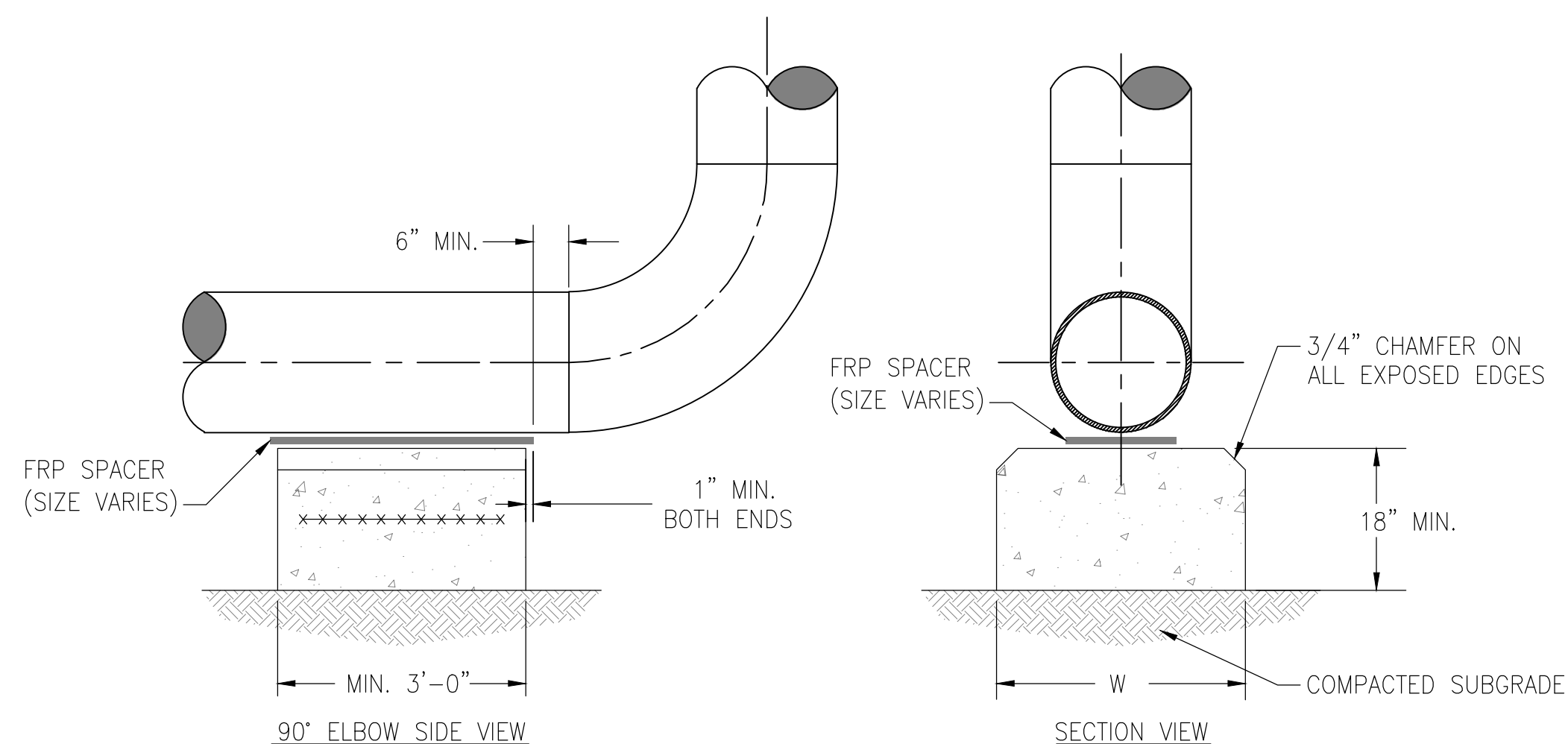
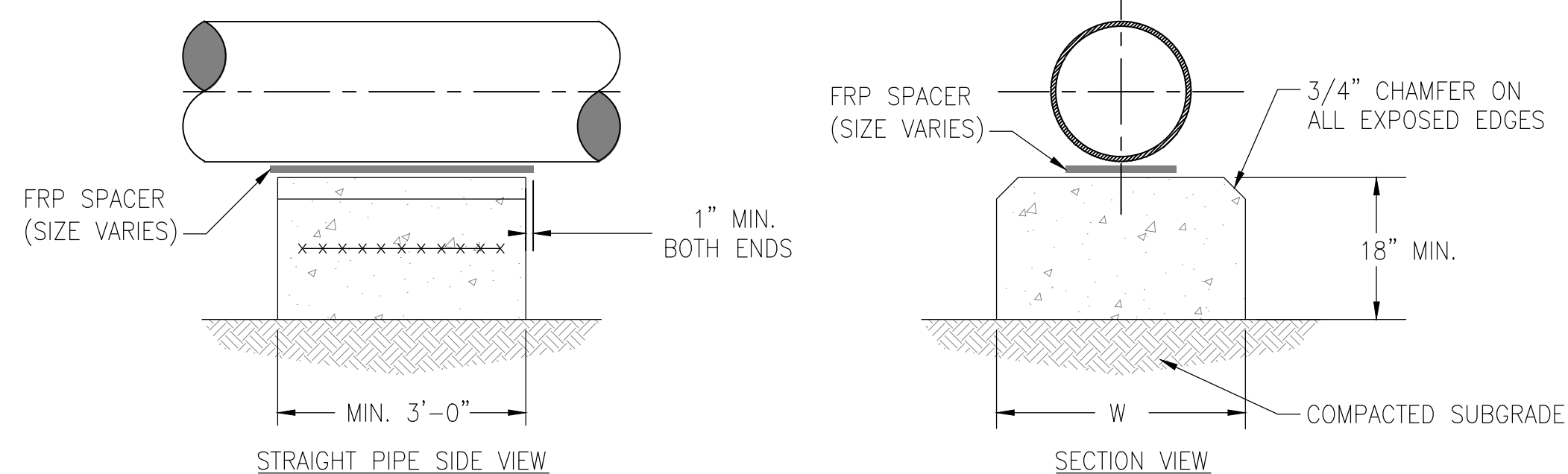




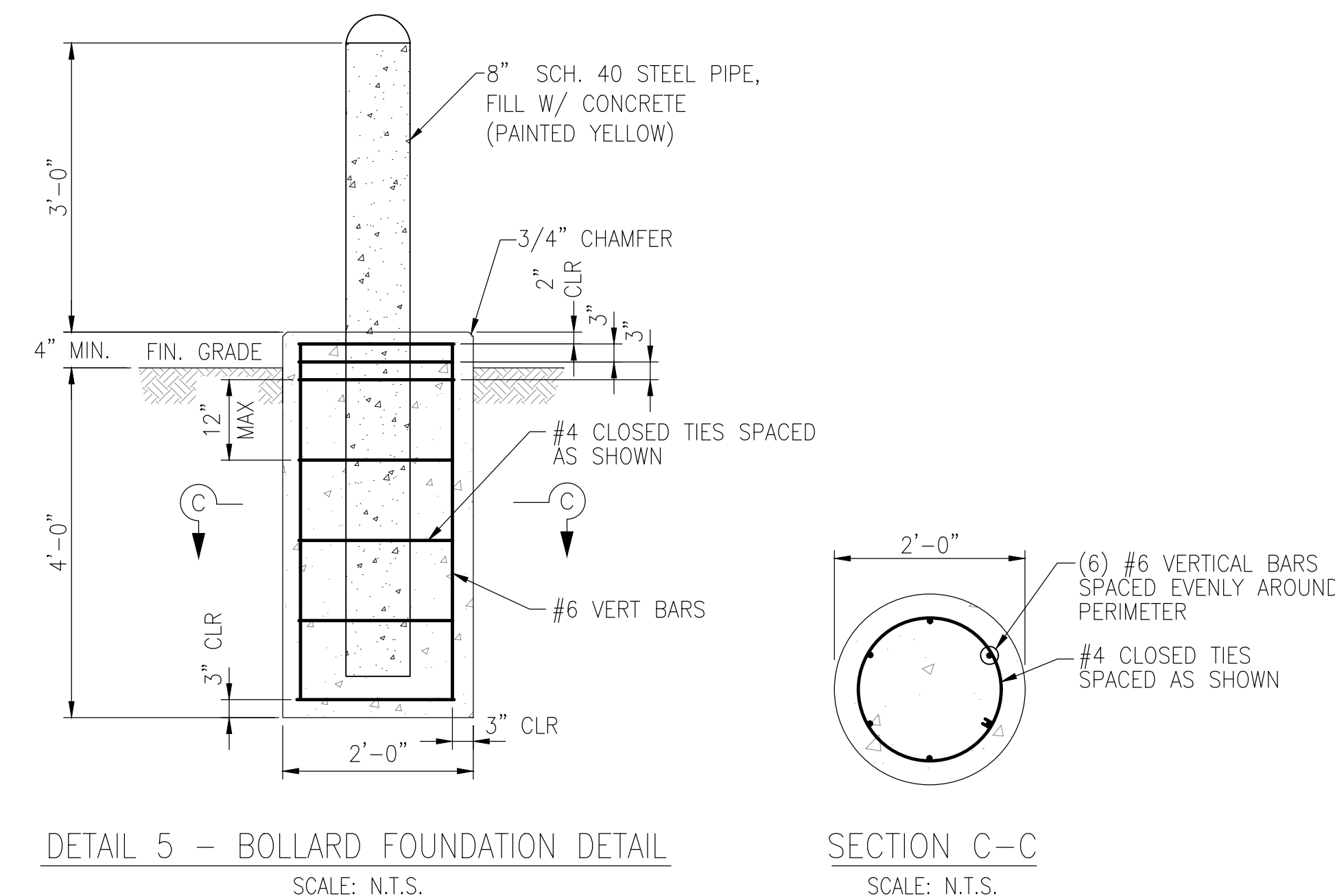




PIPE SIZE	W
4"	18"
6"	20"
8"	20"



DETAIL 4 - CONCRETE SUPPORTS  
SCALE: N.T.S.



SECTION C-C  
SCALE: N.T.S.

- NOTES:
- USE 4x4 W2.1 WELDED WIRE FABRIC FOR REINFORCEMENT. WIRE TO MEET ASTM A82 SPECIFICATIONS.
  - FRP SPACER FOR BEND FITTINGS CAN BE SPECIAL ORDERED FROM GLAS-MESH COMPANY. WHEN ORDERING CONTRACTOR WILL NEED TO SPECIFY LENGTH OF SPACER, PIPE SIZE, AND ELBOW TYPE (I.E. 3R, 5R, LR, ETC.)
  - LENGTH OF BURIED PIPE SUPPORT MUST BE AT LEAST EQUAL TO THE WIDTH, BUT CAN VARY AS NECESSARY.

**ISSUED FOR CONSTRUCTION**  
DATE: 05-11-2022

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0	05/11/2022	ISSUED FOR CONSTRUCTION	FGI	TAE	-	AREA CODE	DATE INITIALS
						ACCOUNT NUMBER	DATE INITIALS
						PROJECT NUMBER	DATE INITIALS
						DRAWING BY	DATE INITIALS
						STATION ID	DATE INITIALS
						CHECKER INITIALS	DATE INITIALS

REGIONAL ENGINEER  
MGR TECH REC & STD  
PRINCIPAL ENGINEER

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**GUC GREENVILLE NO. 2 REPLACEMENT PIPE SUPPORT DETAILS GREENVILLE, NC**  
RESOURCE CENTER TARBORO, NC

REF. DWG(S) -	SHEET(S) 9 OF 27	DWG SCALE N.T.S.
	DWG DATE 02/24/2021	SUPERSEDED
	DRAWING NUMBER	REVISION
	<b>PNG C-027-0001154</b>	<b>0</b>
DISCIPLINE / RESOURCE CENTER / LINE NUMBER		

1:00 PM 05/11/2022 10:17 AM



GENERAL NOTES:

- ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO SIMILAR CONDITIONS ELSEWHERE.
- THESE NOTES SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATIONS AND THE DRAWINGS. IN THE EVENT OF A CONFLICT, NOTIFY THE ENGINEER FOR CLARIFICATION.
- THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR DETERMINING THE MEANS, METHODS, SEQUENCES, AND SAFETY PROCEDURES USED IN PERFORMING THE WORK. SHOULD THE ENGINEER VISIT THE SITE, IT IS IN THE CAPACITY AS ENGINEER AND NOT IN THE CAPACITY OF A CONTRACTOR.
- REQUESTS FOR INFORMATION SHALL BE SUBMITTED TO THE ENGINEER UNLESS OTHERWISE NOTED.
- THE CONTRACTOR IS TO ASSUME FULL RESPONSIBILITY, FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES BETWEEN CONSTRUCTION DOCUMENTS AND ACTUAL FIELD CONDITIONS.
- GROUT BELOW BEAM BEARING AND COLUMN BASE PLATES SHALL BE IN PLACE AND PROPERLY CURED PRIOR TO ANY APPLICATION OF LOAD TO THE SUPPORTED MEMBER.
- FOUNDATIONS SHALL BEAR MINIMUM 2 FEET BELOW BOTTOM OF TRENCH EXCAVATION IN ORDER TO BEAR ON UNDISTURBED SOIL. ALL FOUNDATION ELEMENTS SHALL BE ADEQUATELY BRACED PRIOR TO BACKFILL, AND BACKFILL SHALL BE PLACED EVENLY ON ALL SIDES TO AVOID INTRODUCING DIFFERENTIAL LATERAL PRESSURE DUE TO SOIL.
- INSTALL ALL ANCHORS PER MANUFACTURER'S RECOMMENDATIONS.
- ALL GROUT BELOW BASE PLATES SHALL BE NON-SHRINK NON-METALLIC GROUT UNLESS OTHERWISE SHOWN OR NOTED.

ANCHOR BOLT NOTES:

- ALL MATERIAL FOR ANCHOR BOLTS SHALL CONFORM TO ASTM-F1554, GRADE 36, CLASS 2A STRAIGHT BOLT THREADED ON EACH END. (EXCEPT TYPE A ANCHOR BOLT MAY BE A307) UNLESS OTHERWISE NOTED. PLATES SHALL CONFORM TO ASTM-A36.
- GALVANIZING OF ANCHOR BOLT ASSEMBLIES SHALL CONFORM TO ASTM A153.
- ANCHOR BOLTS SHALL BE FURNISHED WITH HEAVY HEX NUTS AND CUT WASHERS OF SPECIFICATIONS COMPATIBLE WITH THOSE OF THE THREADED SHANKS UNLESS OTHERWISE NOTED.

STRUCTURAL CONCRETE:

- REINFORCED CONCRETE DESIGNED IN ACCORDANCE WITH THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318) BY THE AMERICAN CONCRETE INSTITUTE.
- REINFORCING BAR DETAILING, FABRICATING, AND PLACING SHALL CONFORM TO THE CONCRETE REINFORCING STEEL INSTITUTE'S "REINFORCING BAR DETAILING" AND "PLACING REINFORCING BARS".
- MINIMUM CONCRETE COMPRESSIVE STRENGTH (F'C) AT 28 DAYS:
 

FOOTINGS . . . . .	4000 PSI
SLABS ON GRADE . . . . .	4000 PSI
- PORTLAND CEMENT SHALL CONFORM TO ASTM C-150, TYPE I/II, UNLESS OTHERWISE NOTED.
- CONCRETE REINFORCEMENT:
  - DEFORMED BARS - NEW BILLET STEEL COMPLYING WITH ASTM A615 AND HAVING A MINIMUM YIELD STRENGTH OF 60000 PSI.
  - WELDED WIRE FABRIC - SMOOTH WIRE FABRIC COMPLYING WITH ASTM A185
- CONCRETE PROTECTION FOR REINFORCEMENT: UNLESS OTHERWISE SHOWN THE CLEAR DISTANCE FROM THE FACE OF CONCRETE TO THE REINFORCING STEEL SHALL BE:
 

CONCRETE POURED AGAINST GROUND (NOTE A) . . . . .	3"
CONCRETE POURED AGAINST FORMS (NOTE A, B, C):	
#6 BARS OR LARGER . . . . .	2"
SMALLER THAN #6 BARS . . . . .	1 1/2"
SLABS POURED TO FORMS:	
FORMED SURFACE (NOTE B) . . . . .	3/4"
TROWELED SURFACE (NOTE B) . . . . .	3/4"
SCREEDDED SURFACE FOR APPLIED TOPPING . . . . .	1"
SLABS POURED ON GRADE:	
FROM BOTTOM SURFACE . . . . .	2"
TROWELED SURFACE (NOTE B) . . . . .	1"
SCREEDDED SURFACE FOR APPLIED TOPPING . . . . .	3/4"

(NOTE A) EXCLUDING SLABS POURED ON GRADE.  
 (NOTE B) INCREASE BY 1/2" IF SURFACE IS TO BE IN PERMANENT CONTACT WITH GROUND OR WATER.  
 (NOTE C) USE ONE HALF THE CLEAR DISTANCE SHOWN FOR WEBS OF CONCRETE JOISTS.
- UNLESS OTHERWISE SHOWN OR NOTED, SPLICING OF REINFORCING BARS OR WELDED WIRE FABRIC SHALL CONFORM TO THE REQUIREMENTS OF ACI 318.
- ARRANGE, SPACE, AND SECURELY TIE BARS AND BAR SUPPORTS TO HOLD REINFORCEMENT IN POSITION DURING CONCRETE PLACEMENT OPERATIONS. SET WIRE TIES SO ENDS ARE DIRECTED INTO CONCRETE.
- PROVIDE SUPPORT FOR REINFORCEMENT INCLUDING BOLSTERS, CHAIRS, AND SPACERS WITH SAND PLATES FOR SUPPORTING AND FASTENING REINFORCING BARS TO PROVIDE THE CONCRETE COVER INDICATED.
- ALTERNATE LOCATION OF LAP SPLICE IN WALLS AND SLABS.
- ALL KEYS FOR CONSTRUCTION JOINTS SHALL BE 2" X 4" (NOMINAL) UNLESS OTHERWISE SHOWN OR NOTED ON THE DRAWINGS.
- PROVIDE EQUIPMENT BASES AND SUPPORTS AS REQUIRED, COMPLYING WITH APPROVED MANUFACTURER'S CERTIFIED SHOP DRAWINGS OR AS DETAILED.

CONCRETE MIX DESIGN:

- REINFORCED CONCRETE IS DESIGNED IN ACCORDANCE WITH AND SHALL BE PLACED IN COMPLIANCE WITH PROVISIONS OF THE FOLLOWING CODES, SPECIFICATIONS, AND STANDARDS:
  - ACI 304- RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING, AND PLACING OF CONCRETE.
  - ACI 318- BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE
  - CONCRETE REINFORCING STEEL INSTITUTE (CRSI) "MANUAL OF STANDARD PRACTICE"
- SUBMITTALS: INCLUDE SUBMITTALS AS REQUIRED BY SECTION 4 OF THE ACI 301.
- FORM MATERIALS:
  - SHALL BE STEEL, DRESSED LUMBER FREE OF LOOSE KNOTS, OR EXTERIOR GRADE PLYWOOD 5/8" THICK.
  - TREAT FORMS WITH OIL OR LACQUER PRIOR TO PLACING REINFORCEMENT.
  - ADEQUATELY BRACE AND STIFFEN FORMS TO PREVENT DEFLECTION AND SETTLEMENT.
- CONCRETE MATERIALS:
  - PORTLAND CEMENT SHALL CONFORM TO ASTM C150, TYPE I/II, OR ASTM C595, TYPE IP.
  - NORMAL WEIGHT AGGREGATES SHALL CONFORM TO ASTM C33.
  - PROVIDE AGGREGATE FROM SINGLE SOURCE.
  - WATER: ANY POTABLE DRINKING WATER.
- ADMIXTURES:
  - AIR ENTRAINING ADMIXTURE SHALL CONFORM TO ASTM C260.
  - WATER REDUCING ADMIXTURE SHALL CONFORM TO ASTM C494, TYPE A.
- CONCRETE MIX DESIGNS: CLASS A CONCRETE- AIR ENTRAINED MEETING THE FOLLOWING REQUIREMENTS:
  - MINIMUM CEMENT CONTENT: 552 LBS/PER CUBIC YARD
  - SLUMP: 4" ± 1
  - MAXIMUM AGGREGATE SIZE: 3/4"
  - MAXIMUM W/C RATIO: 0.5
  - AIR CONTENT: 5.5% ± 1.5%
- CURING MATERIALS:
  - LIQUID MEMBRANE-FORMING CURING COMPOUND SHALL CONFORM TO ASTM C309, CLASS A OR B, TYPE I.
- RELATED MATERIALS:
  - NONSHRINK GROUT SHALL BE NONMETALLIC.
  - BOND BREAKER SHALL BE 15 LB FELT PAPER CONFORMING TO ASTM D227.
  - PROVIDE MOISTURE INTENSIVE, EPOXY-RESIN BONDING AGENT EQUAL TO EUCCO EPOXY BY EUCLID CHEMICAL COMPANY.
  - PROVIDE EXPANSION JOINT FILLER OF PREMOLDED CORK OF THICKNESS INDICATED AND CONFORMING TO ASTM D1752, TYPE II CORK WITH A POLYETHYLENE STRIP BOND BREAKER.
  - EXPANSION JOINT SEALANT SHALL BE A TWO COMPONENT POLYSULFIDE SYSTEM EQUAL TO SIKAFLEX POLYSULFIDE SEALANT BY SIKA CHEMICAL COPORATION.
  - WATERSTOPS SHALL BE INSTALLED IN CONSTRUCTION JOINTS WHERE INDICATED.
    - USE BENTONITE WATERSTOP TAPE OR EQUIV.
    - ROUGHEN CONCRETE SURFACE AND DRY PRIOR TO PLACING WATERSTOP TAPE.
    - INSTALL WATERSTOP TAPE CONFORMING TO MANUFACTURER'S PRINTED INSTRUCTIONS.
    - AFTER WATERSTOP TAPE INSTALLATION, PRE-WET SURFACE CONTACT AREA OF ADJACENT CONCRETE CONSTRUCTION.

CONCRETE TESTING:

- FIELD QUALITY CONTROL: THE CONTRACTOR SHALL EMPLOY AN INDEPENDENT TESTING AGENCY TO PERFORM TESTS AND TO SUBMIT TEST REPORTS. SAMPLING AND TESTING FOR QUALITY CONTROL DURING CONCRETE PLACEMENT. TESTING SHALL INCLUDE THE FOLLOWING, AS DIRECTED BY THE STRUCTURAL ENGINEER.
  - SAMPLING FRESH CONCRETE: ASTM C 172, EXCEPT MODIFIED FOR SLUMP, TO COMPLY WITH ASTM 94.
  - SLUMP: ASTM C 143, ONE TEST AT POINT OF DISCHARGE FOR EACH DAY'S POUR OF EACH TYPE OF CONCRETE; ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY SEEMS TO HAVE CHANGED.
  - AIR CONTENT: ASTM C 173, VOLUMETRIC METHOD FOR LIGHTWEIGHT OR, NORMAL WEIGHT CONCRETE; ASTM C 231, PRESSURE METHOD FOR NORMAL WEIGHT CONCRETE; ONE FOR EACH DAY'S POUR OF EACH TYPE OF AIRENTRAINED CONCRETE.
  - CONCRETE TEMPERATURE: ASTM C 1064; ONE TEST HOURLY WHEN AIR TEMPERATURE IS 40 DEGREES F AND BELOW, WHEN 80 DEGREES F AND ABOVE, AND ONE TEST FOR EACH SET OF COMPRESSIVE STRENGTH SPECIMENS.
  - COMPRESSION TEST SPECIMEN: ASTM C 31; ONE SET OF FOUR STANDARDS CYLINDERS FOR LABORATORY CURED TEST SPECIMENS EXCEPT WHEN FIELD-CURED TEST SPECIMENS ARE REQUIRED.
  - COMPRESSIVE-STRENGTH TESTS: ASTM C 39; ONE SET FOR EACH DAY'S POUR EXCEEDING 50 CU. YD. PLUS ADDITIONAL SETS FOR EACH 100 CU. YD. MORE THAN THE FIRST 35 CU. YD. OF EACH CONCRETE PLACED IN ANY ONE DAY; ONE SPECIMEN RETAINED IN RESERVE FOR LATER TESTING IF REQUIRED.
- WHEN FREQUENCY OF TESTING WILL PROVIDE FEWER THAN FIVE STRENGTH TESTS FOR A GIVEN CLASS OF CONCRETE, CONDUCT TESTING FROM AT LEAST FIVE RANDOMLY SELECTED BATCHES OR FROM EACH BATCH IF FEWER THAN FIVE ARE USED.
- WHEN STRENGTH OF FIELD-CURED CYLINDERS IS LESS THAN 85 PERCENT OF COMPANION LABORATORY-CURED CYLINDERS, EVALUATE CURRENT OPERATIONS AND PROVIDE CORRECTIVE PROCEDURES FOR PROTECTING AND CURING THE IN-PLACE CONCRETE.
- STRENGTH LEVEL OF CONCRETE WILL BE CONSIDERED SATISFACTORY IF AVERAGES OF ALL SETS OF THREE CONSECUTIVE STRENGTH TEST RESULTS EQUAL OR EXCEED SPECIFIED COMPRESSIVE STRENGTH AND NO INDIVIDUAL STRENGTH TEST RESULT FALLS BELOW SPECIFIED COMPRESSIVE STRENGTH BY MORE THAN 500 PSI.
- TEST RESULTS WILL BE REPORTED IN WRITING TO STRUCTURAL ENGINEER, THE CLIENT, READY-MIX PRODUCER, AND CONTRACTOR WITHIN 24 HOURS AFTER TEST REPORTS OF COMPRESSIVE STRENGTH TESTS. REPORTS OF COMPRESSIVE STRENGTH TESTS SHALL CONTAIN THE PROJECT IDENTIFICATION NAME, DATE OF CONCRETE PLACEMENT, NAME OF CONCRETE TESTING SERVICE, CONCRETE TYPE AND CLASS, LOCATION OF CONCRETE BATCH IN STRUCTURE, DESIGN COMPRESSIVE STRENGTH AT 28 DAYS, CONCRETE MIX PROPORTIONS AND MATERIALS, COMPRESSIVE BREAKING STRENGTH, AND TYPE OF BREAK FOR BOTH 7-DAY TESTS AND 28-DAY TESTS.
- NONDESTRUCTIVE TESTING: IMPACT HAMMER, SONOSCOPE, OR OTHER NONDESTRUCTIVE DEVICE MAY BE PERMITTED BUT SHALL NOT BE USED AS THE SOLE BASIS FOR ACCEPTANCE.

FOUNDATIONS:

- FOOTING DESIGN CRITERIA:
 

ALLOWABLE BEARING CAPACITY	= 1500 PSF
ASSUMED ANGLE OF FRICTION	= 30 DEGREES
COEFFICIENT OF FRICTION	= 0.25
FROST DEPTH	= 1'-6"
- COMPACTED FILL FOR THE PURPOSE OF UNDERLYING BUILDING OR SITE STRUCTURES SHALL ACHIEVE MINIMUM ALLOWABLE BEARING CAPACITY LISTED ABOVE.
- BOTTOM DEPTHS OF EXCAVATION AS WELL AS ALL PLACEMENT AND COMPACTION OF FILL SHALL BE OBSERVED AND TESTED BY A NORTH CAROLINA LICENSED GEOTECHNICAL ENGINEER.
- ALL FOOTINGS SHALL REST ON UNDISTURBED SOIL OR COMPACTED FILL WHICH HAS A MINIMUM ALLOWABLE BEARING CAPACITY EQUAL TO OR GREATER THAN THAT SHOWN ABOVE.
- ALL FOOTING ELEVATIONS SHOWN ON THE DRAWINGS MEET THE REQUIRED DEPTHS FOR BEARING AND/OR FROST PROTECTION. ACTUAL FIELD CONDITIONS MAY REQUIRE ADDITIONAL EXCAVATION AND/OR COMPACTED FILL.
- BACKFILL SHALL BE PLACED EVENLY AGAINST EACH SIDE OF SUBGRADE STRUCTURAL ELEMENTS TO PRODUCE APPROXIMATELY EQUAL AND OPPOSITE LATERAL PRESSURES.
- SUBGRADE STRUCTURAL ELEMENTS SUBJECTED TO DIFFERENTIAL LATERAL SOIL PRESSURE SHALL BE ADEQUATELY BRACED UNTIL THE STRUCTURAL SLABS WHICH PROVIDE LATERAL RESTRAINT HAVE BEEN PLACED AND ALLOWED TO CURE FOR A MINIMUM OF 7 DAYS. ALL FOOTINGS SHALL BE CURED FOR A MINIMUM OF 7 DAYS PRIOR TO APPLICATION OF LOAD.

**ISSUED FOR CONSTRUCTION**  
DATE: 05-11-2022

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						PROJECT NUMBER	DATE	INITIALS	PRINCIPAL ENGINEER
						DRAWING BY	DATE	INITIALS	
						STATION ID	DATE	INITIALS	
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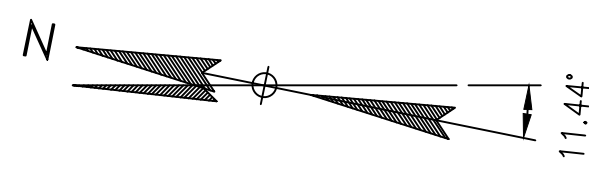
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**GUC GREENVILLE NO. 2 REPLACEMENT**  
**STRUCTURAL NOTES**  
**GREENVILLE, NC**  
 RESOURCE CENTER TARBORO, NC

REF. DWG(S) -		
SHEET(S) 10 OF 27	DWG SCALE	N.T.S.
DWG DATE 02/24/2021   SUPERSEDED		
DRAWING NUMBER	REVISION	
<b>PNG C-027-0001156</b>	<b>0</b>	
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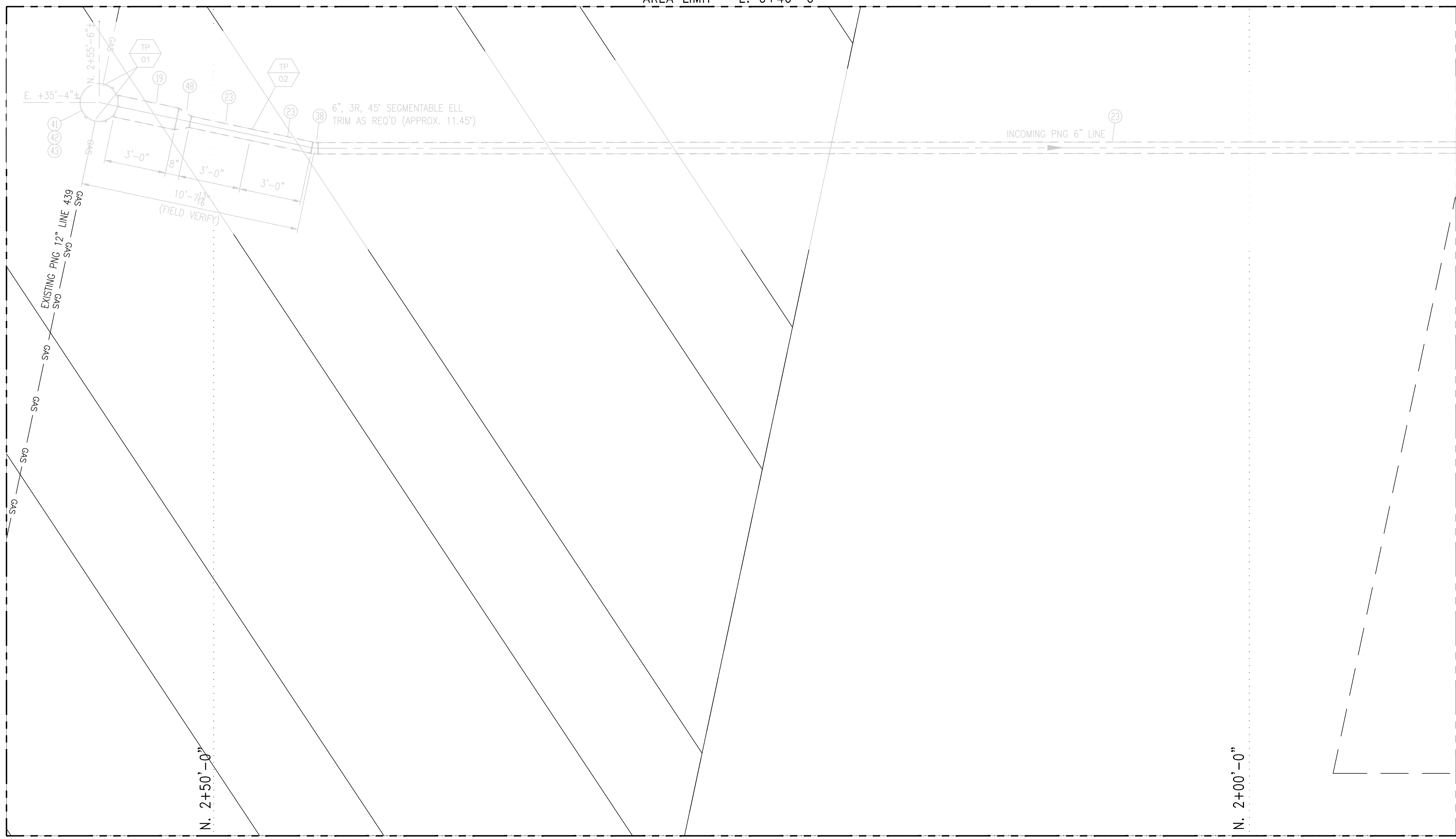






AREA LIMIT - E. 0+40'-0"

AREA LIMIT - N. 2+60'-00"



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N. 2+50'-0"

N. 2+00'-0"

AREA LIMIT - E. 0+00'-0"

- NOTES:
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  2. ABOVE GROUND INSTALLATION NOT TO BE LOCATED NEAR INTAKE VENTS.
  3. PIPE TO BE WRAPPED WITH A DOUBLE LAYER OF H35 GREY TAPE OR ENGINEERING APPROVED EQUIVALENT AT GROUND TRANSITION. THE COATING SHOULD EXTEND A MINIMUM OF 12" ABOVE AND BELOW THE GROUND TRANSITION.
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  5. THE WELDING PROCEDURE FOR THE HIGHEST YIELD STRENGTH MUST BE USED WHEN WELDING PIPE AND/OR FITTINGS WITH DIFFERENT YIELD STRENGTHS.
  6. ALL ABOVE GROUND PIPING SHALL BE PAINTED ANSI 49 GREY.
  7. CONTRACTOR RESPONSIBLE FOR GEOTECH FABRIC AND STONE.
  8. FLOW CONDITIONER PLACED BETWEEN FILTER AND FLOW METER WITH 5 I.D. DIAMETERS SPACE BEFORE FLOW METER.
  9. HEATER AND ALL ASSOCIATED PIPING & INSTRUMENTATION INSIDE OF THE BOUNDARY LIMITS.

**ISSUED FOR CONSTRUCTION**  
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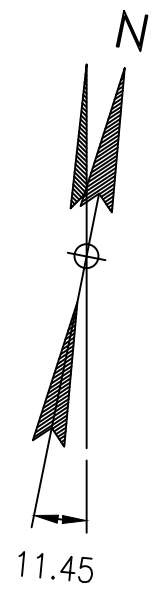
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						PROJECT NUMBER	2751477		PRINCIPAL ENGINEER
						DRAWING BY	FGI		
						STATION ID	7-HM-93-TAR-7101		
						CHECKER INITIALS	RSE		



**GUC GREENVILLE NO. 2 REPLACEMENT PIPING PLAN GREENVILLE, NC**  
RESOURCE CENTER TARBORO, NC

REF. DWG(S) -	
SHEET(S) 12 OF 27	DWG SCALE 3/8"=1'-0"
DWG DATE 03/26/2021	SUPERSEDED
DRAWING NUMBER	REVISION
<b>PNG -M-027-0001155</b>	<b>0</b>
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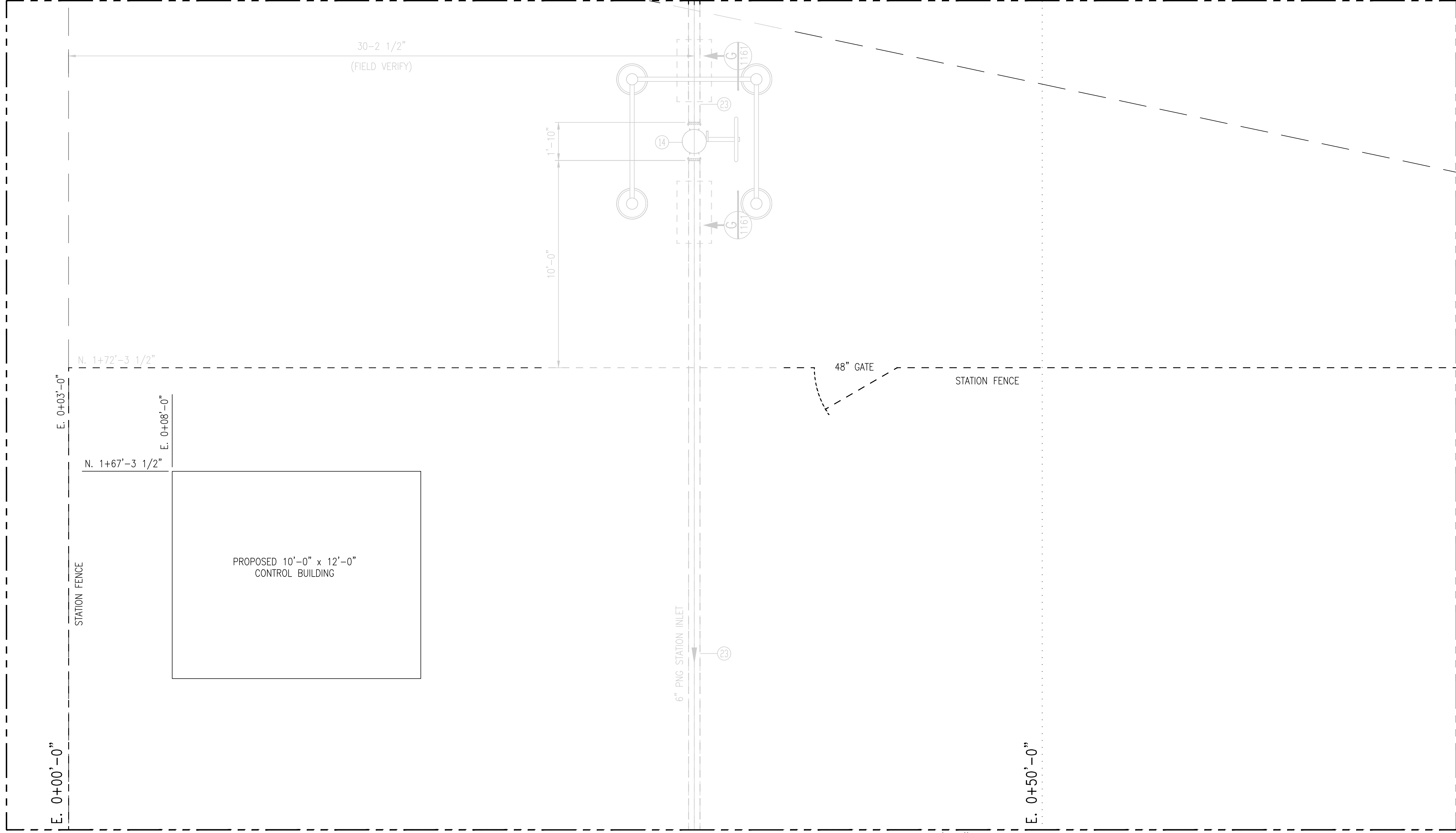


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MATCHLINE, FOR CONT. SEE DWG PNG-M-027-0001157 - N. 1+50'-0"

AREA LIMIT - E. 0+00'-00"

AREA LIMIT - E. 0+70'-00"



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  8. FLOW CONDITIONER PLACED BETWEEN FILTER AND FLOW METER WITH 5 I.D. DIAMETERS SPACE BEFORE FLOW METER.
  9. HEATER AND ALL ASSOCIATED PIPING & INSTRUMENTATION INSIDE OF THE BOUNDARY LIMITS.

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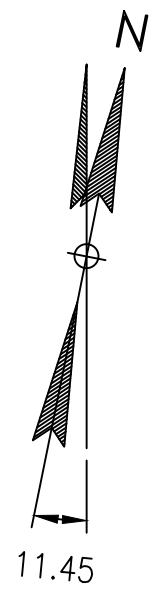
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						PROJECT NUMBER	DATE	INITIALS	PRINCIPAL ENGINEER
						DRAWING BY	DATE	INITIALS	
						STATION ID	DATE	INITIALS	
						CHECKER INITIALS	DATE	INITIALS	



**GUC GREENVILLE NO. 2 REPLACEMENT PIPING PLAN GREENVILLE, NC**  
RESOURCE CENTER TARBORO, NC

REF. DWG(S) -	SHEET(S) 13 OF 27	DWG SCALE	3/8"=1'-0"
	DWG DATE 03/26/2021	SUPERSEDED	
	DRAWING NUMBER		REVISION
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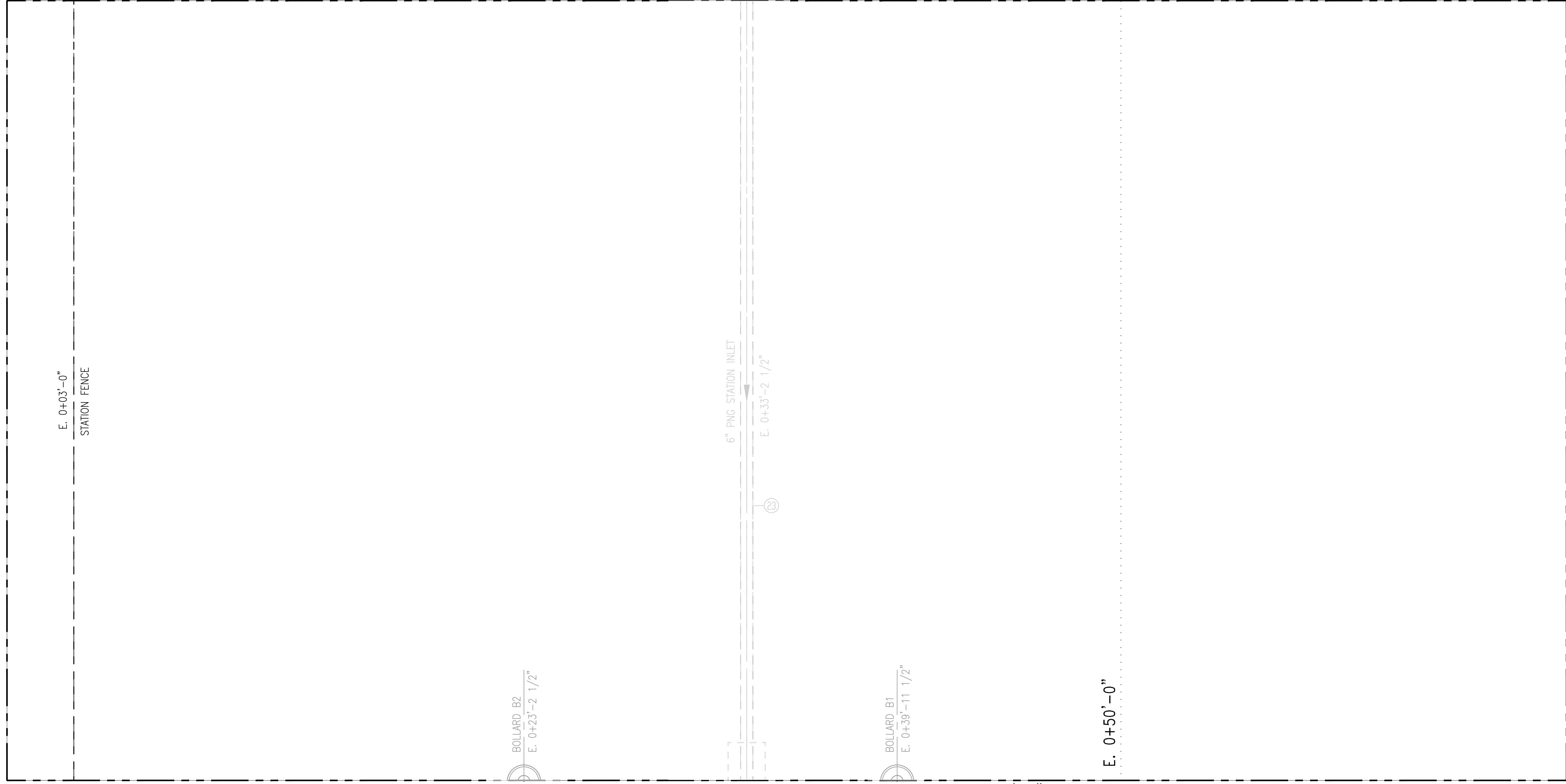


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AREA LIMIT - E. 0+00'-00"

E. 0+03'-0"  
STATION FENCE

AREA LIMIT - E. 0+70'-0"



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- NOTES:
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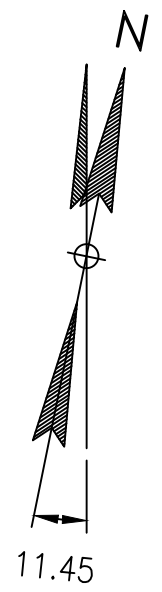
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						DRAWING BY	FGI		
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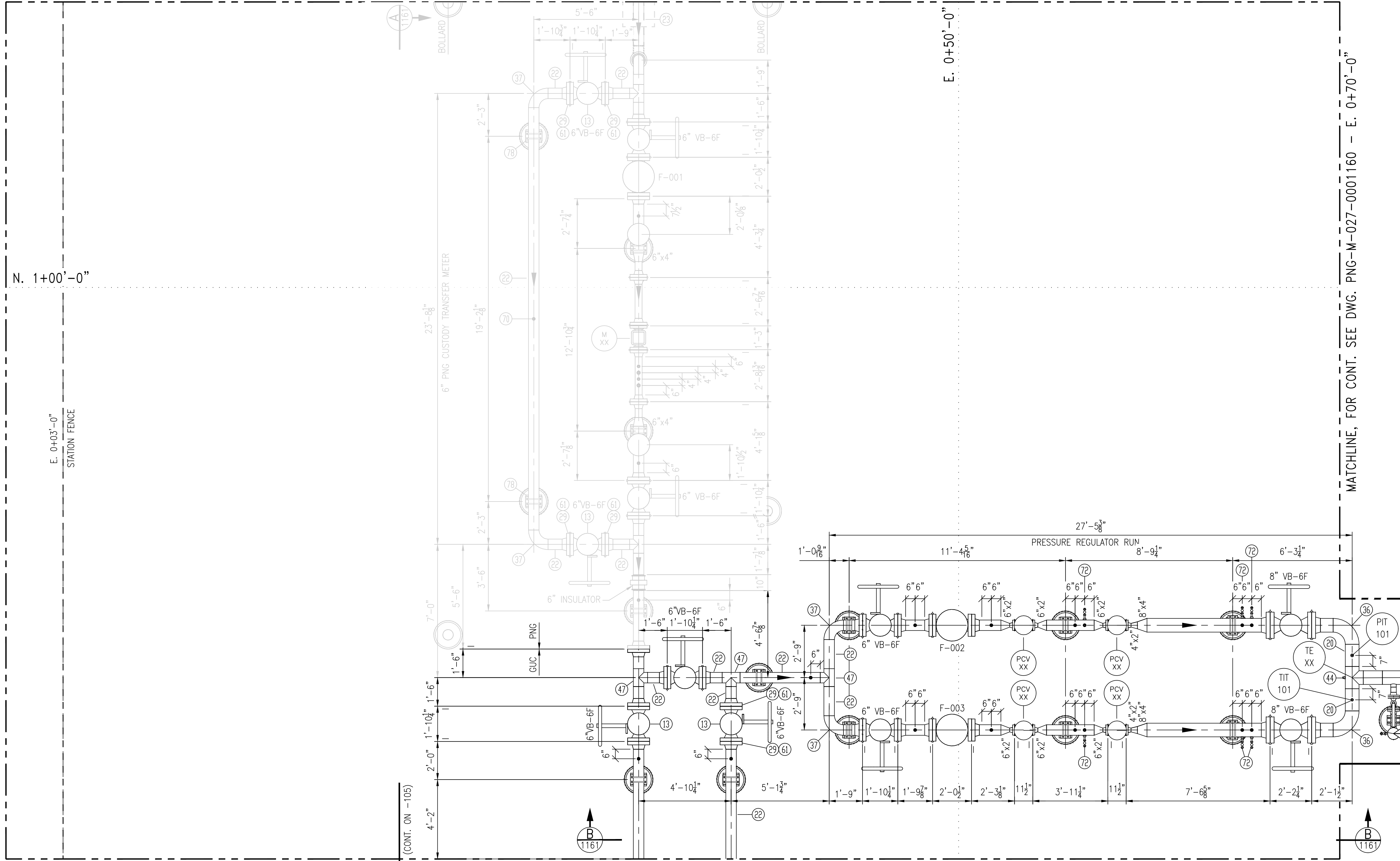
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RESOURCE CENTER TARBORO, NC

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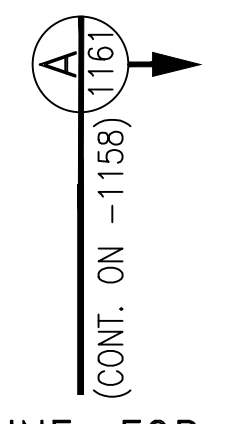
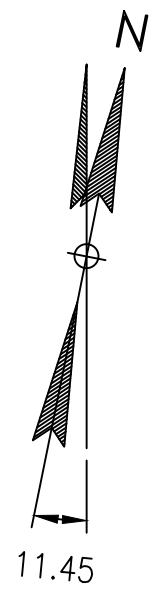
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						ACCOUNT NUMBER			MGR TECH REC & STD
						PROJECT NUMBER	2751477		PRINCIPAL ENGINEER
						DRAWING BY	FGI		
						STATION ID	7-HM-93-TAR-7101		
						CHECKER INITIALS	RSE		

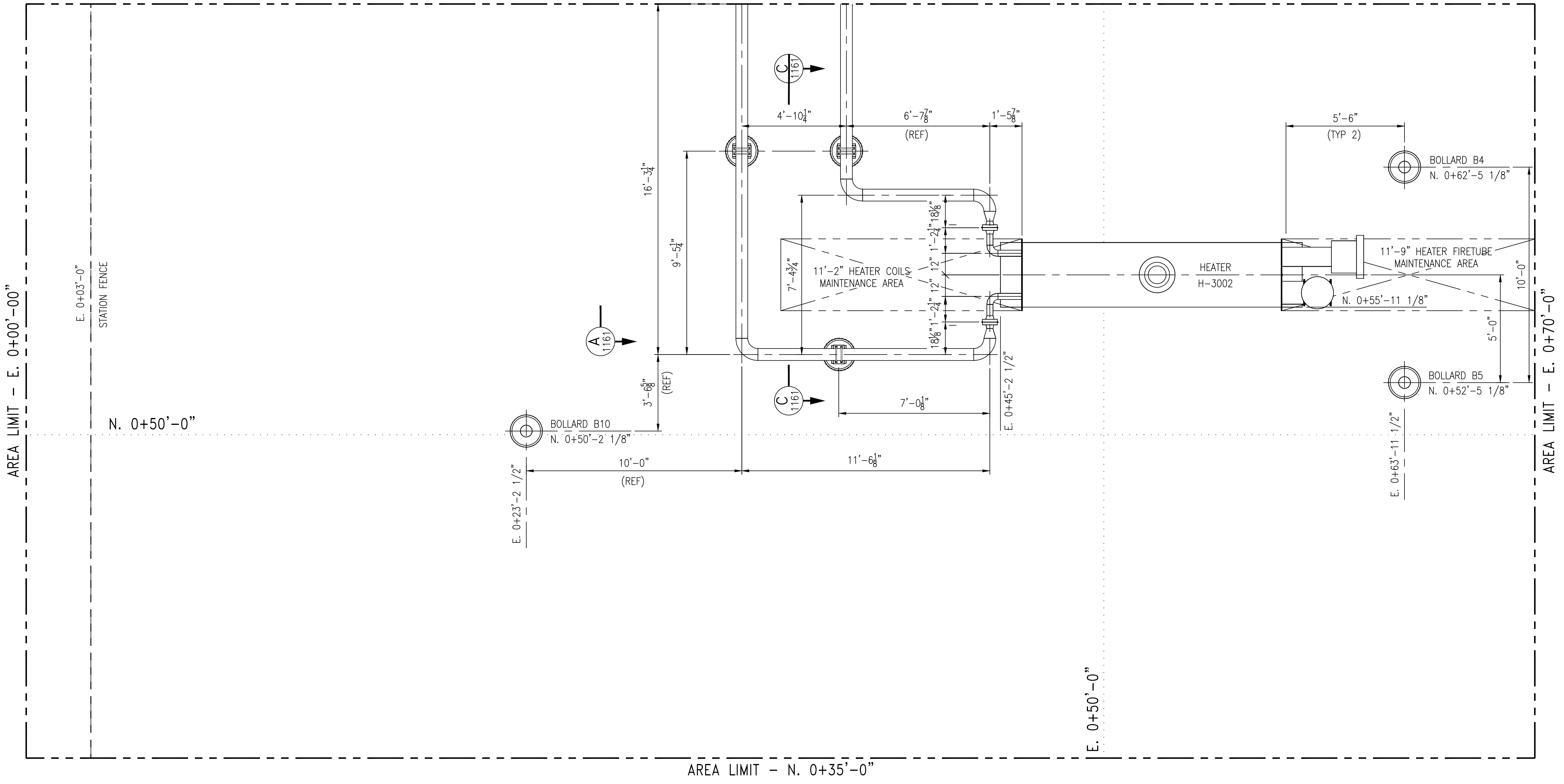


**GUC GREENVILLE NO.2 REPLACEMENT  
 PIPING PLAN  
 GREENVILLE, NC**  
 RESOURCE CENTER TARBORO, NC

REF. DWG(S) -	SHEET(S) 15 OF 27	DWG SCALE 3/8"=1'-0"
	DWG DATE 03/26/2021	SUPERSEDED
	DRAWING NUMBER	REVISION
	<b>PNG -M-027-0001158</b>	<b>0</b>
DISCIPLINE / RESOURCE CENTER / LINE NUMBER		



MATCHLINE, FOR CONT. SEE DWG PNG-M-027-0001158 - N. 0+70'-00"



- NOTES:
- ANY CHANGES REQUIRED DUE TO FIELD CONDITIONS MUST BE APPROVED BY THE ENGINEERING DEPARTMENT.
  - ABOVE GROUND INSTALLATION NOT TO BE LOCATED NEAR INTAKE VENTS.
  - PIPE TO BE WRAPPED WITH A DOUBLE LAYER OF H35 GREY TAPE OR ENGINEERING APPROVED EQUIVALENT AT GROUND TRANSITION. THE COATING SHOULD EXTEND A MINIMUM OF 12" ABOVE AND BELOW THE GROUND TRANSITION.
  - TAPS FOR SENSING LINES SHALL BE DRILLED, NOT CUT WITH TORCH.
  - THE WELDING PROCEDURE FOR THE HIGHEST YIELD STRENGTH MUST BE USED WHEN WELDING PIPE AND/OR FITTINGS WITH DIFFERENT YIELD STRENGTHS.
  - ALL ABOVE GROUND PIPING SHALL BE PAINTED ANSI 49 GREY.
  - CONTRACTOR RESPONSIBLE FOR GEOTECH FABRIC AND STONE.
  - FLOW CONDITIONER PLACED BETWEEN FILTER AND FLOW METER WITH 5 I.D. DIAMETERS SPACE BEFORE FLOW METER.
  - HEATER AND ALL ASSOCIATED PIPING & INSTRUMENTATION INSIDE OF THE BOUNDARY LIMITS.

**ISSUED FOR CONSTRUCTION**  
DATE: 05/11/2022

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NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	DATE	INITIALS	APPROVALS
0	05/11/2022	ISSUED FOR CONSTRUCTION	FGI	RSE		AREA CODE			REGIONAL ENGINEER
						ACCOUNT NUMBER			MGR TECH REC & STD
						PROJECT NUMBER	2751477		PRINCIPAL ENGINEER
						DRAWING BY	FGI		
						STATION ID	7-HM-93-TAR-7101		
						CHECKER INITIALS	RSE		

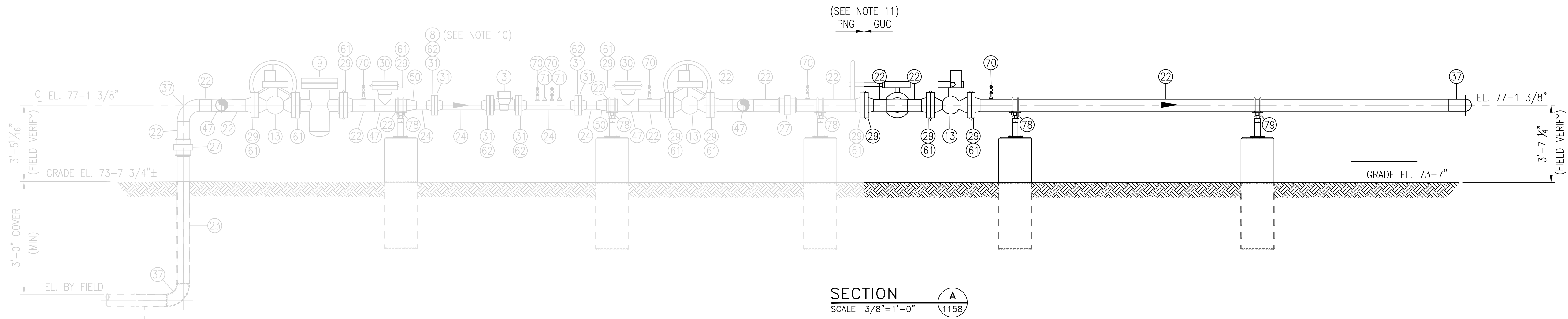


**GUC GREENVILLE NO.2 REPLACEMENT PIPING PLAN GREENVILLE, NC**  
RESOURCE CENTER TARBORO, NC

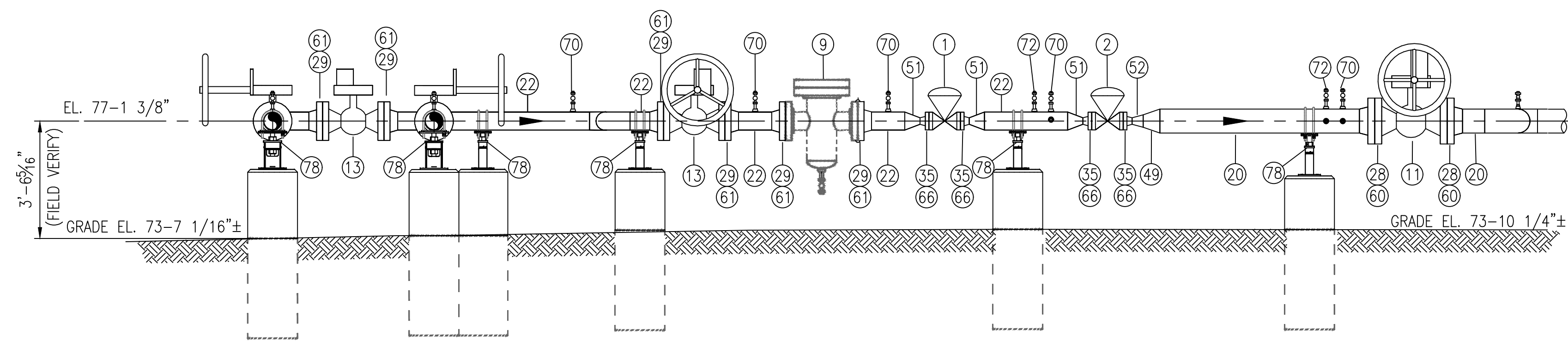
REF. DWG(S) -	SHEET(S) 16 OF 27	DWG SCALE 3/8"=1'-0"
	DWG DATE 04/15/2021	SUPERSEDED
	DRAWING NUMBER	REVISION
	<b>PNG -M-027-0001159</b>	<b>0</b>
DISCIPLINE / RESOURCE CENTER / LINE NUMBER		



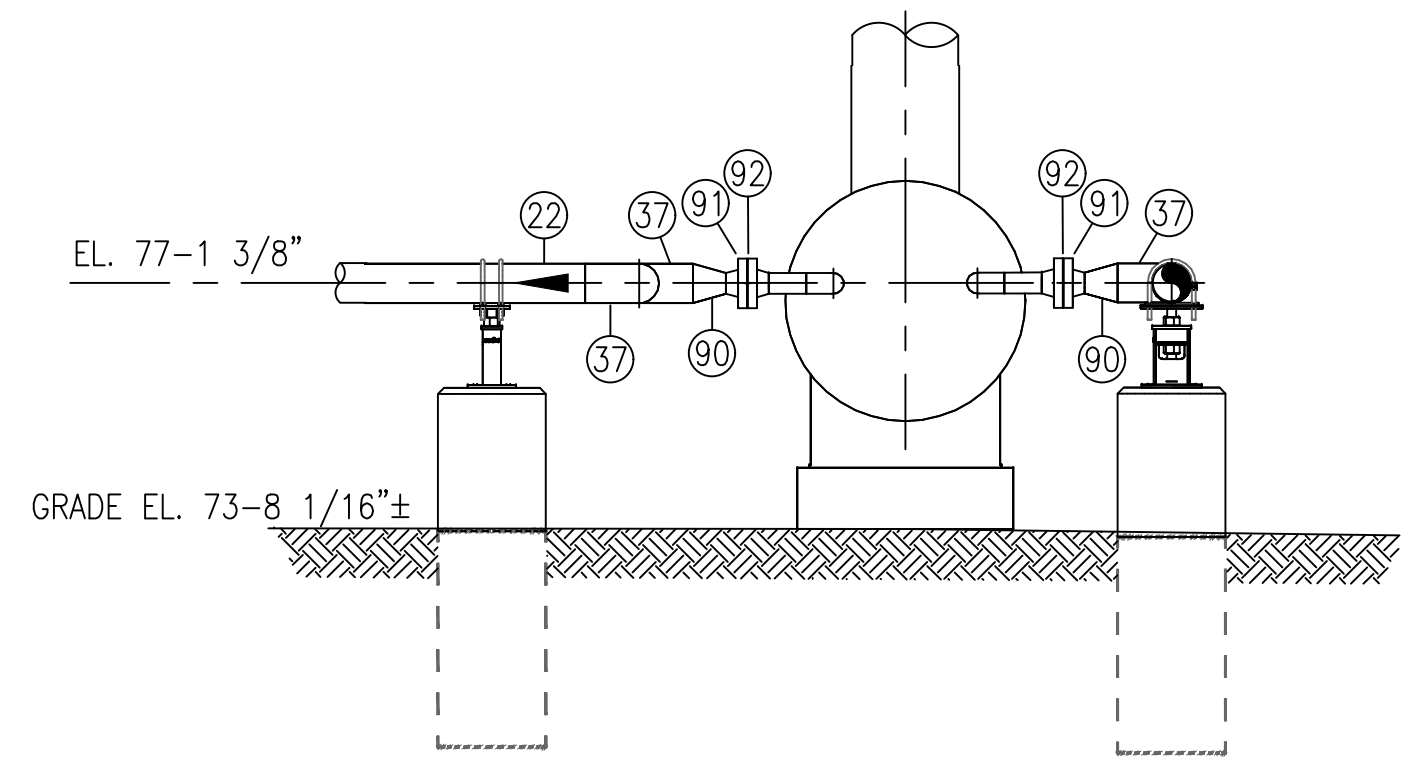




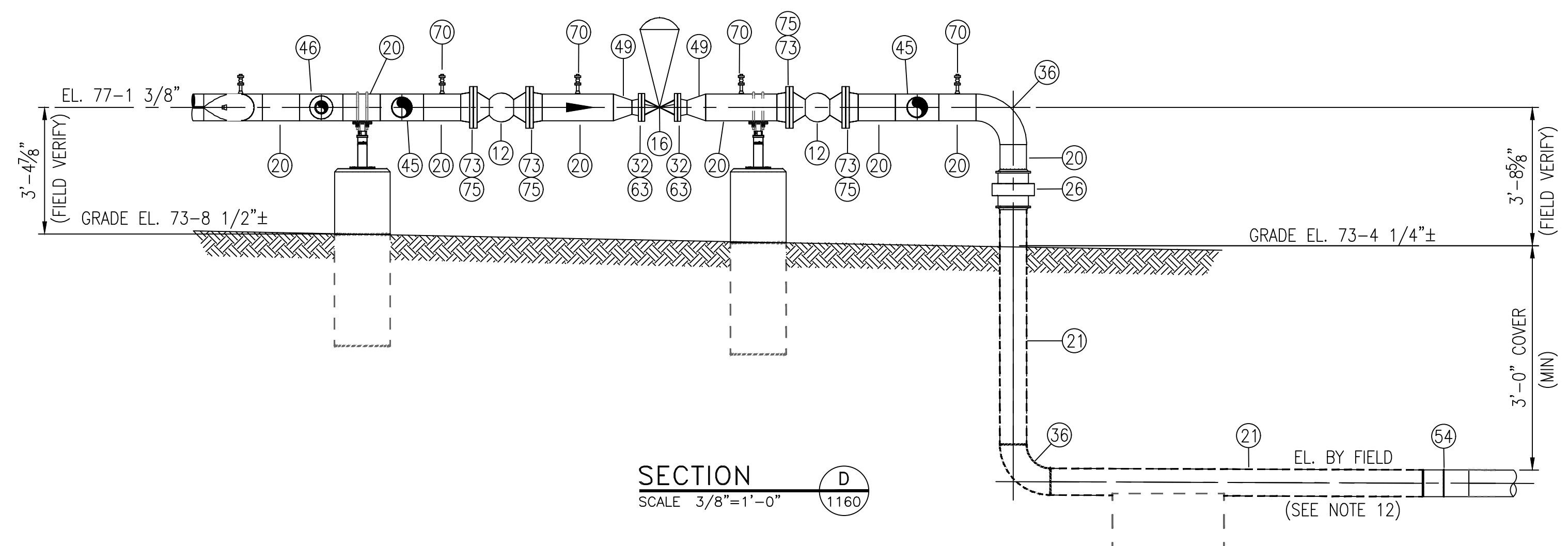
SECTION A  
SCALE 3/8"=1'-0" 1158



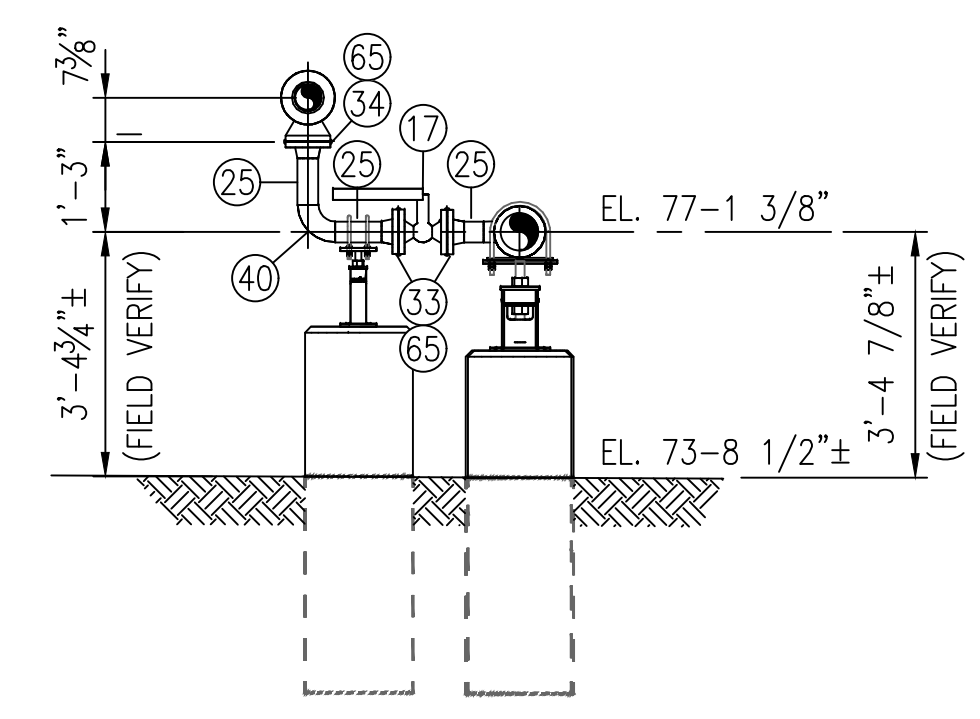
SECTION B  
SCALE 3/8"=1'-0" (TYP 2 PLC'S) 1158



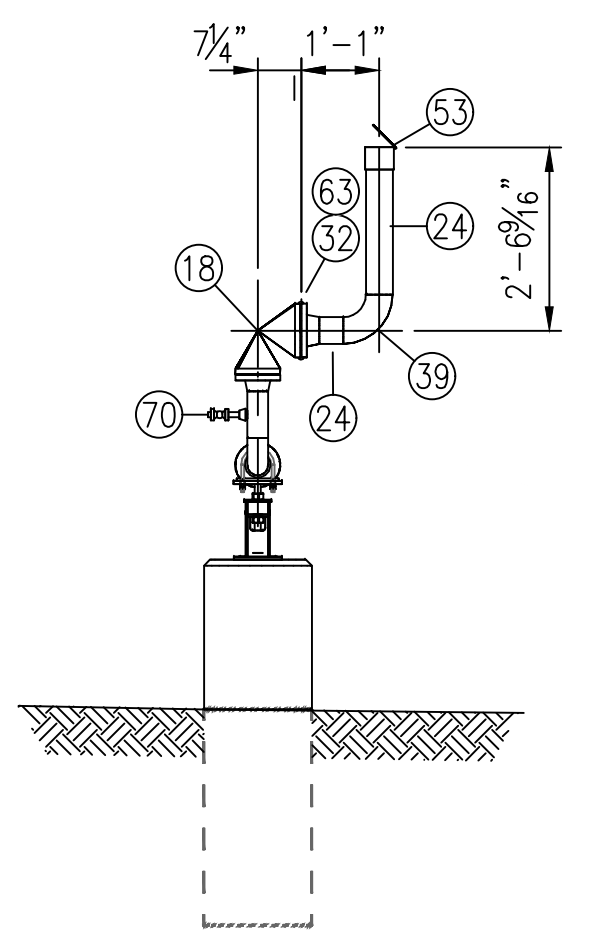
SECTION C  
SCALE 3/8"=1'-0" 1159



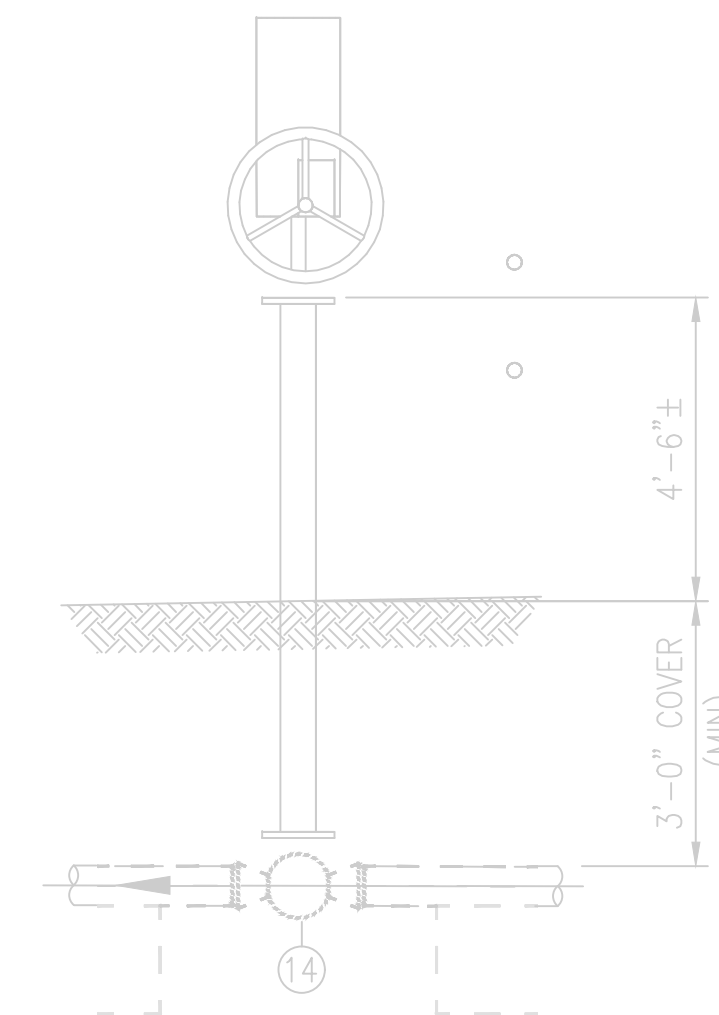
SECTION D  
SCALE 3/8"=1'-0" 1160



SECTION E  
SCALE 3/8"=1'-0" 1160



SECTION F  
SCALE 3/8"=1'-0" 1160



SECTION G  
SCALE 3/8"=1'-0" 1156

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  - TAPS FOR SENSING LINES SHALL BE DRILLED, NOT CUT WITH TORCH.
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  - ALL ABOVE GROUND PIPING SHALL BE PAINTED ANSI 49 GREY.
  - CONTRACTOR RESPONSIBLE FOR GEOTECH FABRIC AND STONE.
  - FLOW CONDITIONER PLACED BETWEEN FILTER AND FLOW METER WITH 5 I.D. DIAMETERS SPACE BEFORE FLOW METER.
  - HEATER AND ALL ASSOCIATED PIPING & INSTRUMENTATION INSIDE OF THE BOUNDARY LIMITS.
  - ADD EXTRA GASKET AND USE LONGER STUD BOLTS FOR INSTALLATION OF FLOW CONDITIONER.
  - BLIND FLANGE TO BE INSTALLED AT DEMARCATION SHOULD CONSTRUCTION SCHEDULES NOT COINCIDE.
  - 17 LB ANODE TO BE INSTALLED ON UNDERGROUND STEEL PIPING DOWNSTREAM OF CONTROL VALVE.

**ISSUED FOR CONSTRUCTION**  
DATE: 05/11/2022

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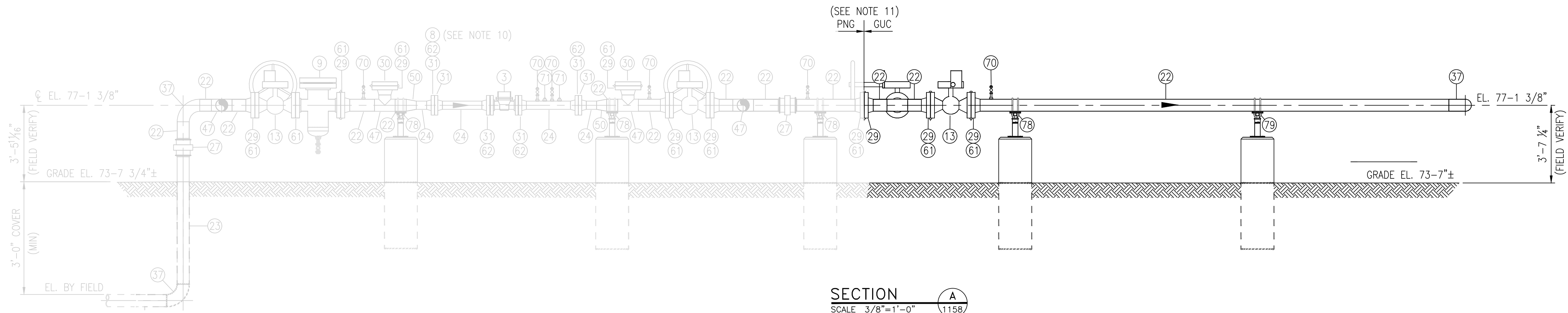
NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	DATE	INITIALS	APPROVALS
0	05/11/2021	ISSUED FOR CONSTRUCTION	FGI	RSE		AREA CODE			REGIONAL ENGINEER
						ACCOUNT NUMBER			MGR TECH REC & STD
						PROJECT NUMBER	2751477		PRINCIPAL ENGINEER
						DRAWING BY	FGI		
						STATION ID	7-HM-93-TAR-7101		
						CHECKER INITIALS	RSE		



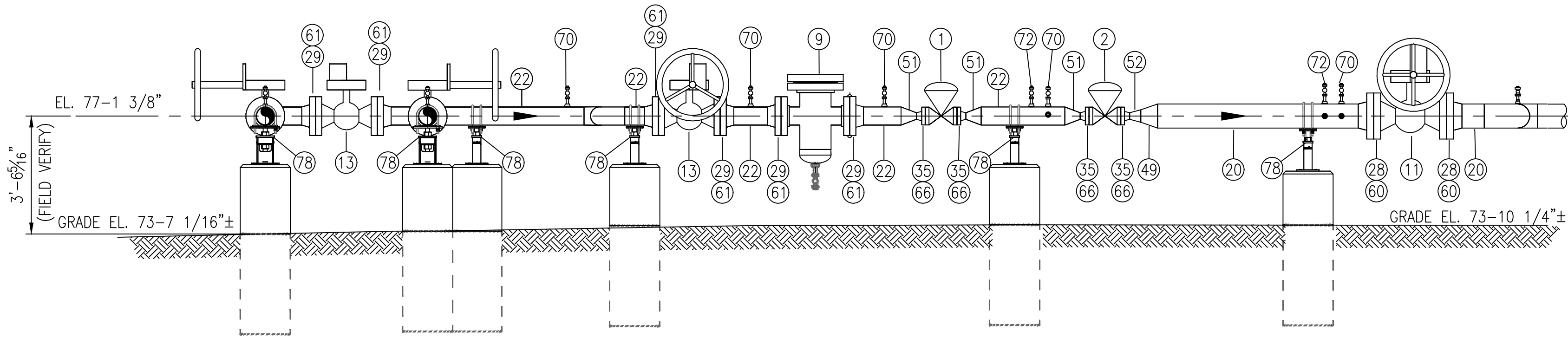
**GUC GREENVILLE NO. 2 REPLACEMENT PIPING SECTIONS GREENVILLE, NC**  
RESOURCE CENTER TARBORO, NC

REF. DWG(S) -	SHEET(S) 18 OF 27	DWG SCALE 3/8"=1'-0"
	DWG DATE 03/26/2021	SUPERSEDED
	DRAWING NUMBER	REVISION
	<b>PNG -M-027-0001161</b>	<b>0</b>
DISCIPLINE / RESOURCE CENTER / LINE NUMBER		

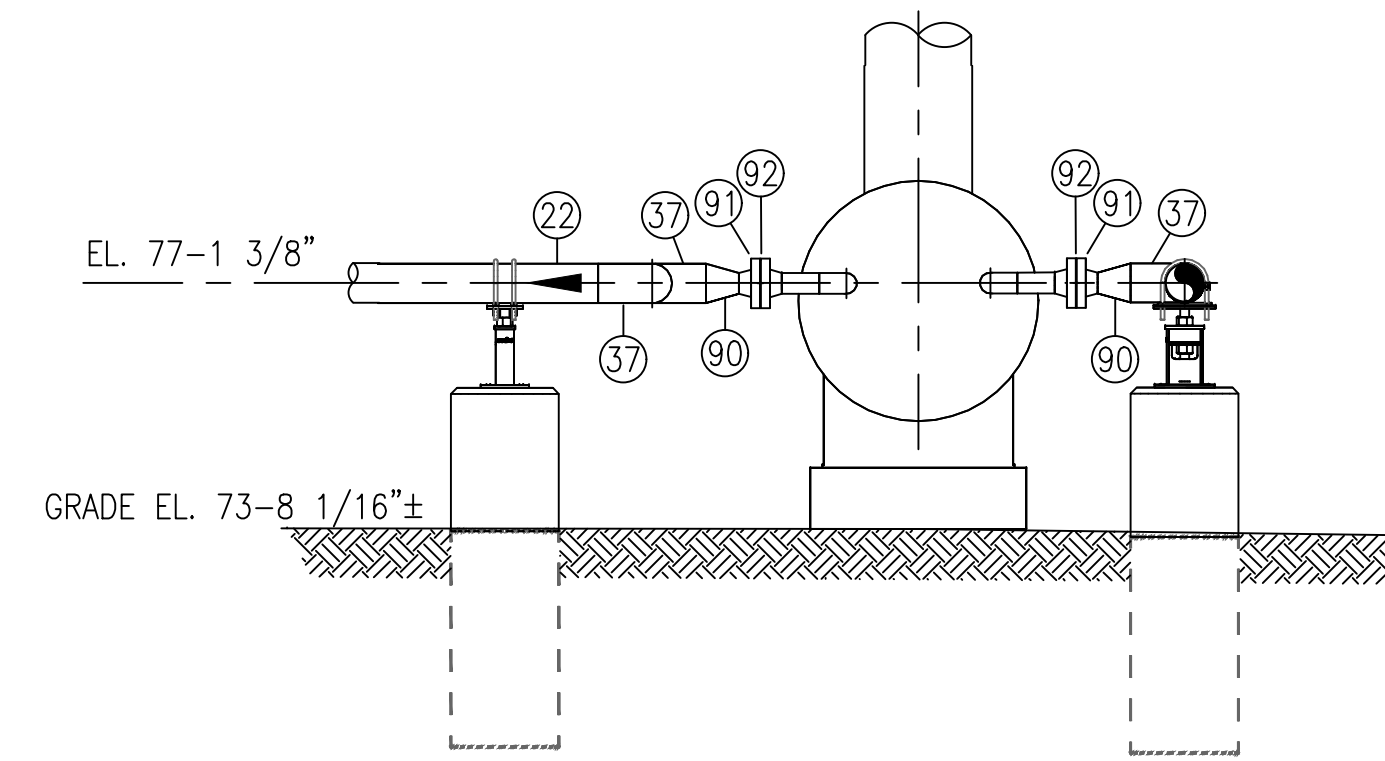




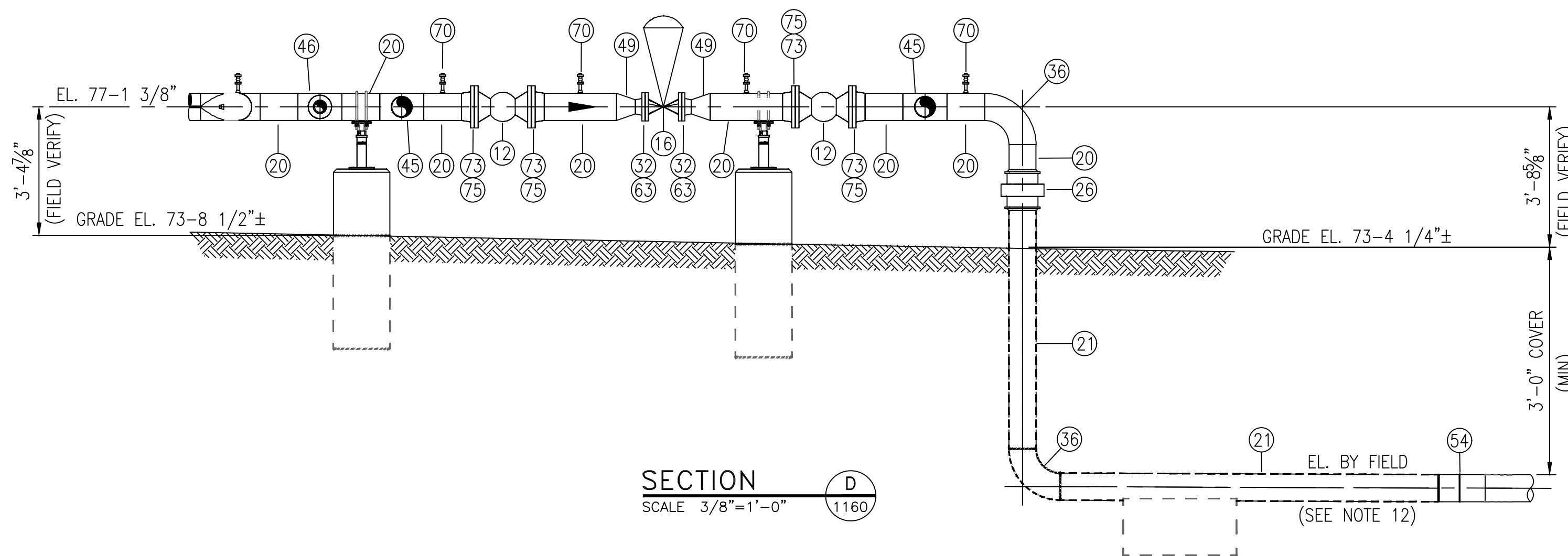
SECTION A  
SCALE 3/8"=1'-0" 1158



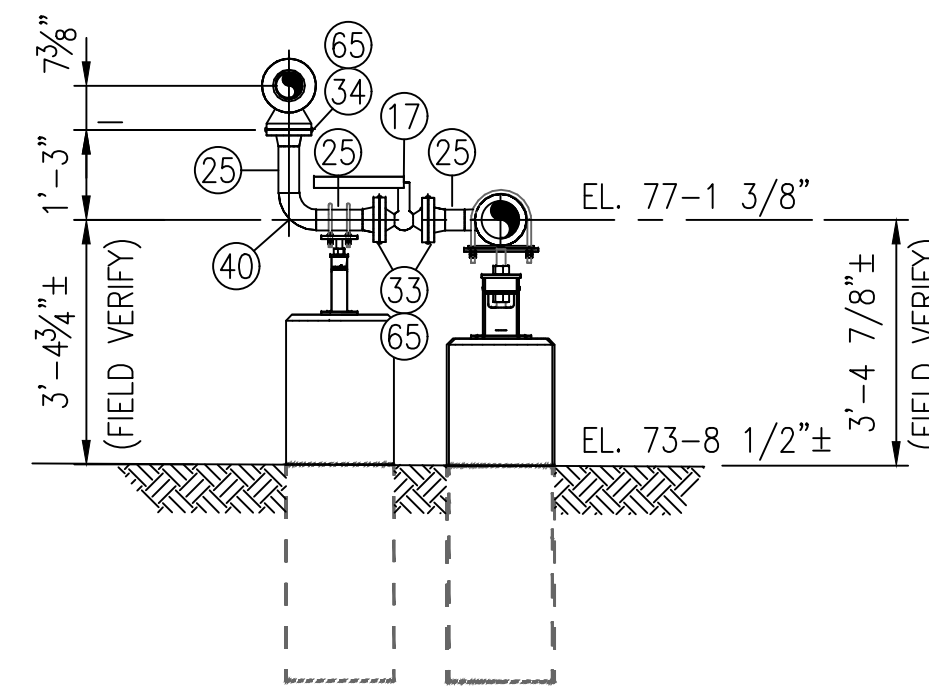
SECTION B  
SCALE 3/8"=1'-0" (TP 2 PLC'S) 1158



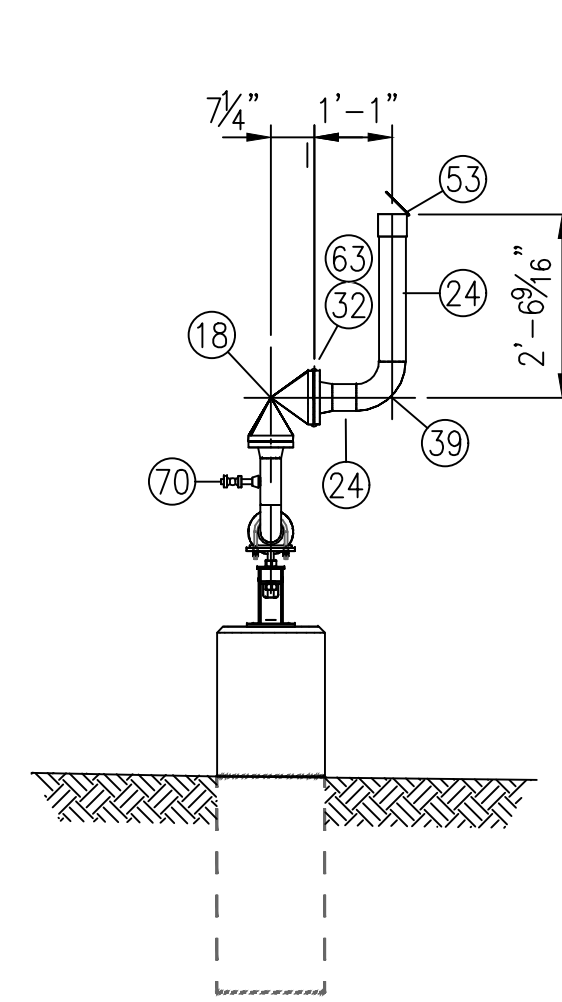
SECTION C  
SCALE 3/8"=1'-0" 1159



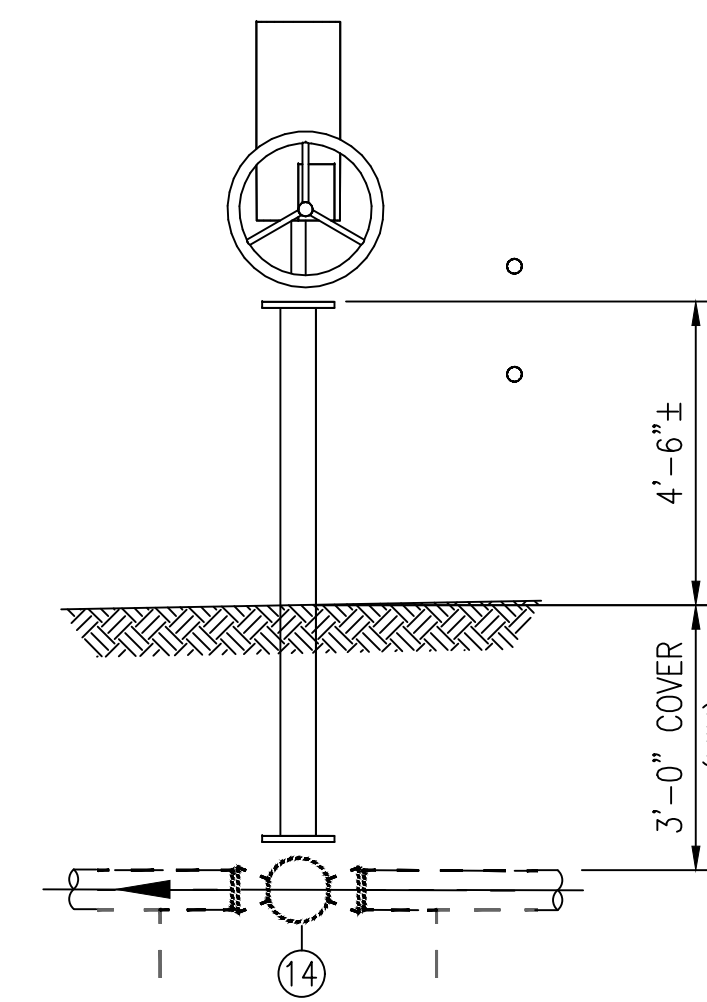
SECTION D  
SCALE 3/8"=1'-0" 1160



SECTION E  
SCALE 3/8"=1'-0" 1160



SECTION F  
SCALE 3/8"=1'-0" 1160



SECTION G  
SCALE 3/8"=1'-0" 1156

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**ISSUED FOR CONSTRUCTION**  
DATE: 05/11/2022

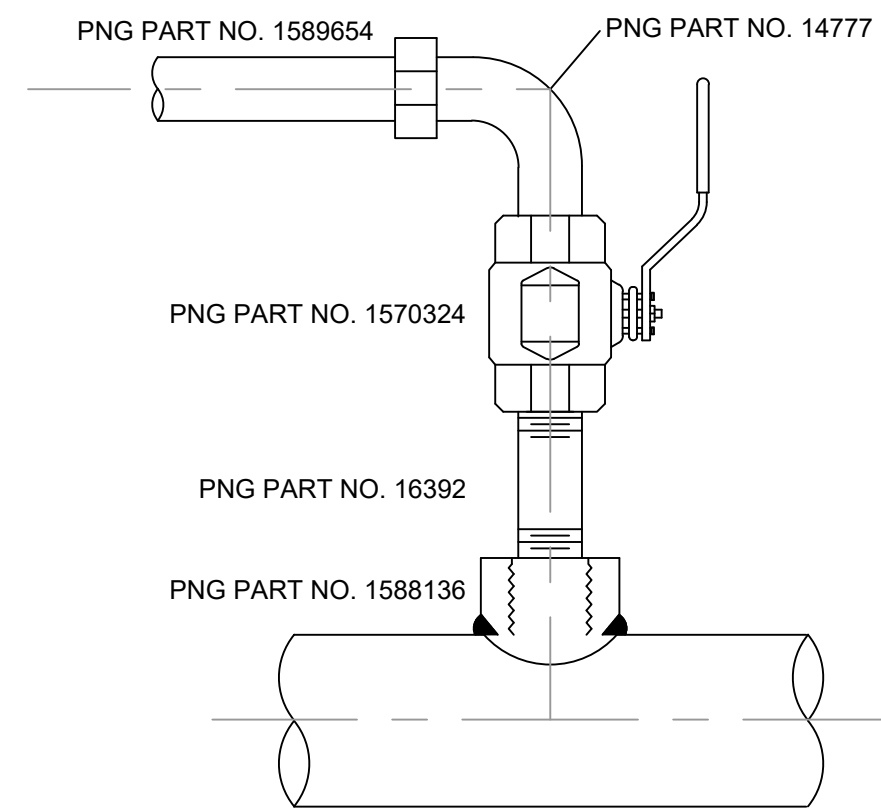
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0	05/11/2021	ISSUED FOR CONSTRUCTION	FGI	RSE		AREA CODE			REGIONAL ENGINEER
						ACCOUNT NUMBER			MGR TECH REC & STD
						PROJECT NUMBER	2751477		PRINCIPAL ENGINEER
						DRAWING BY	FGI		
						STATION ID	7-HM-93-TAR-7101		
						CHECKER INITIALS	RSE		

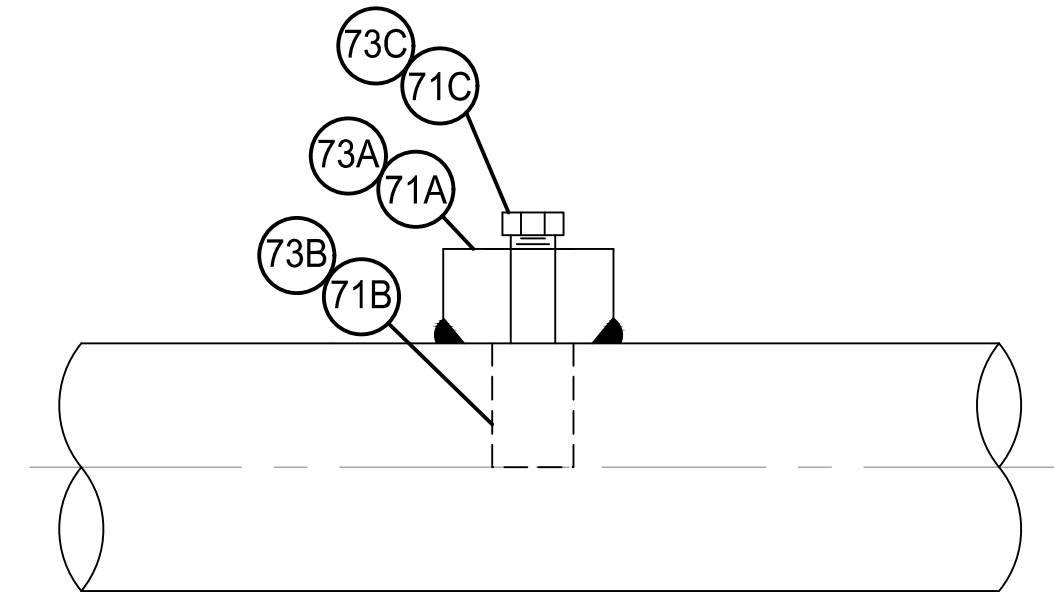


**GUC GREENVILLE NO. 2 REPLACEMENT PIPING SECTIONS GREENVILLE, NC**  
 RESOURCE CENTER TARBORO, NC

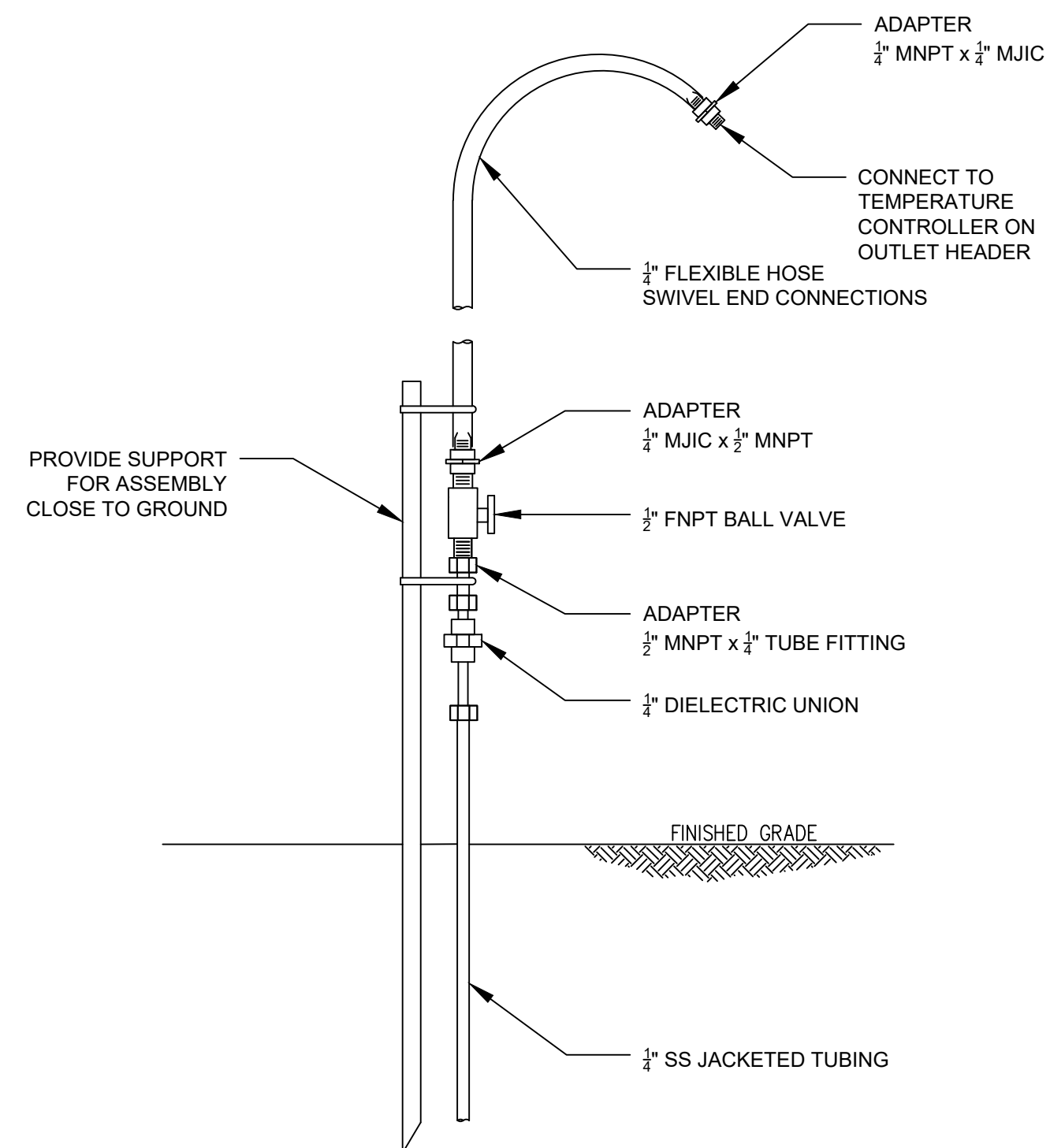
REF. DWG(S) -	SHEET(S) 19 OF 27	DWG SCALE 3/8"=1'-0"
	DWG DATE 03/26/2021	SUPERSEDED
	DRAWING NUMBER	REVISION
	<b>PNG -M-027-0001161</b>	<b>0</b>
DISCIPLINE / RESOURCE CENTER / LINE NUMBER		



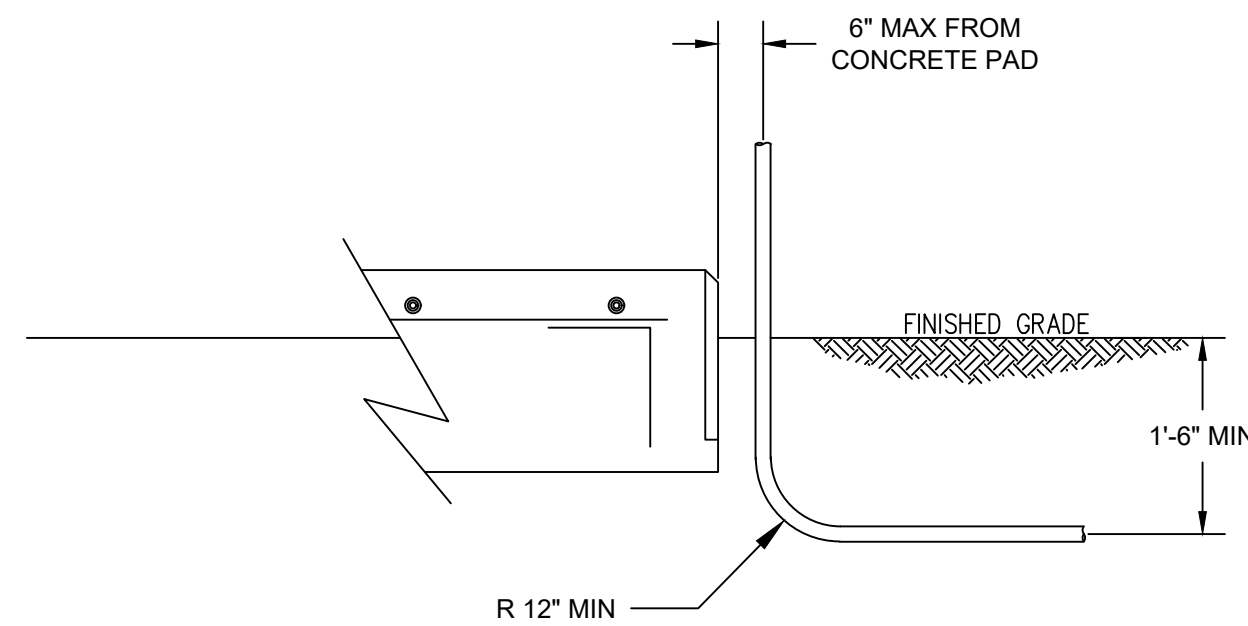
**DETAIL** 1  
1/2" GAUGE TAP FOR SENSING LINE  
NOT TO SCALE



**DETAIL** 2  
THERMOWELL CONNECTION  
NOT TO SCALE



**DETAIL** 3  
TEMPERATURE CONTROL ASSEMBLY  
NOT TO SCALE



**DETAIL** 4  
HEATER TEMPERATURE CONTROLLER  
NOT TO SCALE

**ISSUED FOR CONSTRUCTION**  
DATE: 05-11-2022

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REF. DWG(S) -

NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	DATE	INITIALS	APPROVALS
0	05/11/2022	ISSUED FOR CONSTRUCTION	FGI	RSE		AREA CODE	-	-	REGIONAL ENGINEER
						ACCOUNT NUMBER	-	-	MGR TECH REC & STD
						PROJECT NUMBER	-	-	PRINCIPAL ENGINEER
						DRAWING BY	-	-	
						STATION ID	-	-	
						CHECKER INITIALS	-	-	



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**GUC GREENVILLE NO. 2 REPLACEMENT  
MECHANICAL DETAILS  
GREENVILLE, NC**  
RESOURCE CENTER TARBORO, NC

SHEET(S) 20 OF 27	DWG SCALE	N.T.S
DWG DATE 03/26/2021	SUPERSEDED	-
DRAWING NUMBER	REVISION	
<b>PNG -M-027-0001256</b>	<b>0</b>	
DISCIPLINE / RESOURCE CENTER / LINE NUMBER		

1:00:10 PM 05/11/2022 - PNG Greenville, NC - Greenville, NC - Drawing: GUC-027-0001256 - Mechanical Details - Rev: 05/11/2022 4:51 PM  
 FARNSWORTH GROUP  
 STATE LICENSE # C3363





BOM #	QTY	GUC	Description	Ordering Instructions	Ordering Specifications	Manuf	Model	Manuf Part #
<b>APPURTENANCES</b>								
1	2		2 IN EZR, STEEL, CL600RF, 100 PCT. CAP, 17E97 DIAPH, TRVL IND, 252 FILTER, PRXV120 PILOT 203-334 PSIG, PRXV125 PILOT 41-80 PSIG	CONTROL PILOT SET @ 290 PSIG MONITOR PILOT SET @ 65 PSIG	CONTROL PILOT SPRING RANGE 203-334 (Gold Spring), TYPE PRXV120 MONITOR PILOT SPRING RANGE 41-80 PSIG (Blue Spring), TYPE PRXV125 Order per attached quote 033-JM-210316-0164805 dated 05/10/2021 from RE MASON	FISHERCONTROL,		EZR, UNKNOWN
2	2		2 IN EZR, STEEL, CL600RF, 100 PCT. CAP, 17E97 DIAPH, TRVL IND, 252 FILTER, PRXV120 PILOT 41-80 PSIG	ONE REGULATOR SET @ 60 PSIG ONE REGULATOR SET @ 55 PSIG	PILOT SPRING RANGE 41-80 PSIG (Blue Spring), TYPE PRXV120 Order per attached quote 033-JM-210316-0164805 dated 05/10/2021 from RE MASON	FISHERCONTROL,		EZR, UNKNOWN
9	2		FILTER, FILTER ASSEMBLY, 6" NPS, 10 MICRON, STL HOUSING, RF, CLASS 600, 98% OF PARTICLES, ASME SECTION VIII, **** PERRY EQUIPMENT CORPORATION	PROVIDE INDIVIDUALIZED QUOTE FROM THE MANUFACTURER FOR EACH ORDER.	Order per attached quote No. 13085-21 dated 03/16/21 from The Blythe Company	PECOINC,		30F-1-819-10-1480-6
10	1		HEATER, WATER BATH		Order per attached quote No. 14011-21 Rev. 2 dated 05/10/21 from The Blythe Company	UNKNOWN,		1552946
11	2		VALVE,BALL, TRUNNION, 8" NPS, CLASS 600, FULL PORT, RF, HANDWHEEL, GEAR OPERATED, CS BODY, STD TRIM, API 6D			CAMERON,	T31	8" NPS T31 800101-2-1
12	2		VALVE,BALL, TRUNNION, 8" NPS, CLASS 150, FULL PORT, RF, HANDWHEEL, GEAR OPERATED, CS BODY, STD TRIM, API 6D			CAMERON,	T31	8" NPS T31 800101-2-1
13	5		VALVE,BALL, TRUNNION, 8" NPS, CLASS 600, FULL PORT, RF, HANDWHEEL, GEAR OPERATED, CS BODY, STD TRIM, API 6D			CAMERON,	T31	8" NPS T31 800101-2-1
15	1		VALVE,BALL, TRUNNION, 6" NPS, CLASS 150, FULL PORT, RF, HANDWHEEL, GEAR OPERATED, CS BODY, STD TRIM, API 6D			CAMERON,	T31	6" NPS T31 800101-2-1
16	1		VALVE, CONTROL, 4" V150, 252 SIZE 2 ACTUATOR, DVC6200-AD, FACTORY MTGS DVC6200/DVC2000		Order per attached quote 033-JM-210316-0164805 dated 05/10/2021 from RE MASON			
17	1		VALVE,BALL, TRUNNION, 3" NPS, CLASS 150, FULL PORT, RF, LEVER, CS BODY, STD TRIM, API 6D			CAMERON,	T31	3" NPS T31 800101-1-1
18	1		Flowsafe Modulating Pilot Operated Relief Valve, Carbon Steel Body, SS Trim, Buna Seat, Pilot Filter, 3" 150# RF Inlet, 4" 150# RF Outlet, Full Bore Orifice, Set Pressure: 72 PSIG		Setpoint Operating Range: M1 Setpoint: 72 psig Order per attached quote No. 15093-21 dated 05/12/2021 from The Blythe Company	FLOWSAFEINC,		
80	1		ANODE, MAGNESIUM, 17 LB, HIGH POTENTIAL ANODE, WITH 10' LONG #12 TW SOLID COPPER WIRE, BLACK			CORRPROCOMP/MESAPRODUCTS,		KMAG17, UNKNOWN
<b>PIPING</b>								
20	30		PIPE, 8" NPS X 0.322 W.T., DBL, RANDOM LG, BEVELED ENDS, ELECTRIC RESISTANCE WELD, BARE, STL, API 5L PSL-2, GR X52, NO JOINTERS			UNKNOWN,		1552817
21	62		PIPE, 8" NPS X 0.322 WALL THK, DBL, RANDOM LG, BEVELED ENDS, ELECTRIC RESISTANCE WELD, SCH 40, STL, API 5L PSL-2, GR X52, NO JOINTERS, FUSION BONDED EPOXY COATED			AXISPIPE/UBE		6-ERW-322-X52-FBE
22	120		PIPE, 8" NPS X 0.280 W.T., DBL, RANDOM LG, BEVELED ENDS, ELECTRIC RESISTANCE WELD, BARE, STL, API 5L PSL-2, GR X52, NO JOINTERS			UNKNOWN,		1552810
24	2		PIPE, 4" NPS X 0.237 W.T., DBL, RANDOM LG, BEVELED ENDS, ELECTRIC RESISTANCE WELD, BARE, STL, API 5L PSL-2, GR X52, NO JOINTERS			UNKNOWN,		1552805
25	3		PIPE, 3" NPS X 0.216 W.T., DBL, RANDOM LG, BEVELED ENDS, ELECTRIC RESISTANCE WELD, BARE, STL, API 5L PSL-2, GR X52, NO JOINTERS			UNKNOWN,		1552788
<b>FITTINGS &amp; FLANGES</b>								
26	1		INSULATOR, MONOLITHIC, WELD, 8" NPS, FORGED STL, ASTM A105, CLASS 600, ASME B16.11, W STYLE, MACHINED TO MATCH API 5L PSL-2, X52, PIPE WITH 0.322" W.T. BEVEL ENDS 30 - 35 DEG WITH 1/16" LANDING			SYPRISTECHOL,		1000114067
28	4		FLANGE,PIPE, WN, RF, 8" NPS, CLASS 600, FORGED STL, ASTM A694, ASME B16.5, GR F52, MSS SP-44, 125-250 MICRO INCHES AARH			UNKNOWN,		1551480
73	4		FLANGE,PIPE, WN, RF, 8" NPS, CLASS 150, FORGED STL, MSS SP-44, ASTM A694 GR F52, ASSME B16.5, 125 - 250 MICRO INCHES AARH					
29	17		FLANGE,PIPE, WN, RF, 8" NPS, CLASS 600, FORGED STL, ASTM A694, ASME B16.5, GR F52, MSS SP-44, 125-250 MICRO INCHES AARH			UNKNOWN,		1551475
74	2		FLANGE,PIPE, WN, RF, 8" NPS, CLASS 150, CS, MSS SP-44, ASTM A694 GR F52, 11" OD, 125 - 250 MICRO INCHES AARH					
32	3		FLANGE,PIPE, WN, RF, 4" NPS, CLASS 150, FORGED STL, MSS SP-44, ASTM A694 GR F52, ASSME B16.5, 125 - 250 MICRO INCHES AARH					
34	3		FLANGE,PIPE, WN, RF, 3" NPS, CLASS 150, CS, MSS SP-44, ASTM A694 GR F52, DIMENSIONAL STD ANSI B16.5, 125 - 250 MICRO INCHES AARH					
35	8		FLANGE,PIPE, WN, RF, 2" NPS, CLASS 600, ASTM A694, GR F52, XS 0.216" WALL THK, MSS SP-44, 1.939" BORE NO INTERNAL TAPER, 125-250 MICRO INCHES AARH					
36	4		ELBOW,PIPE, 8" NPS X 0.322 W.T., BW, 90 DEG, 1.5D RADIUS, STL, MSS SP-75, GR Y52, FULLY SEGMENTABLE, PAINTED PREFERRED, BARE ACCEPTABLE, MACHINE BEVEL ENDS PER ASME B31.8 APPENDIX I, FIG 14			HACKNEYLADIS,		1552864
37	8		ELBOW,PIPE, 8" NPS X 0.28 W.T., BW, 90 DEG, 1.5D RADIUS, STL, MSS SP-75, GR Y52, FULLY SEGMENTABLE, PAINTED PREFERRED, BARE ACCEPTABLE, MACHINE BEVEL ENDS PER ASME B31.8 APPENDIX I, FIG 14			HACKNEYLADIS,		1551327
39	1		ELBOW,PIPE, 4" NPS X 0.237 W.T., BW, 90 DEG, 1.5D RADIUS, STL, MSS SP-75, GR Y52, FULLY SEGMENTABLE, PAINTED PREFERRED, BARE ACCEPTABLE, MACHINE BEVEL ENDS PER ASME B31.8 APPENDIX I, FIG 14			HACKNEYLADIS,		1571439
40	1		ELBOW,PIPE, 3" NPS X 0.216 W.T., BW, 90 DEG, 1.5D RADIUS, STL, MSS SP-75, GR Y52, NON SEGMENTABLE, PAINTED PREFERRED, BARE ACCEPTABLE, MACHINE BEVEL ENDS PER ASME B31.8 APPENDIX I, FIG 14			HACKNEYLADIS,		1569170
44	1		TEE,PIPE, 8" NPS X 8" NPS X 8" NPS X 0.322" W.T., WELD, STL, MSS SP-75, GR Y52, PAINTED PREFERRED, BARE ACCEPTABLE, MACHINE BEVEL ENDS PER ASME B31.8 APPENDIX I, FIG 14					
45	2		TEE,PIPE REDUCING, 8" NPS X 8" NPS RUN, 6" NPS BRANCH, WELD, STL, MSS SP-75, GR Y52, PAINTED PREFERRED, BARE ACCEPTABLE, MACHINE BEVEL ENDS PER ASME B31.8 APPENDIX I, FIG 14					
46	1		TEE,PIPE REDUCING, 8" NPS X 8" NPS RUN, 3" NPS BRANCH, WELD, STL, MSS SP-75, GR Y52, BBT, PAINTED PREFERRED, BARE ACCEPTABLE, MACHINE BEVEL ENDS PER ASME B31.8 APPENDIX I, FIG 14					
47	3		TEE,PIPE, 8" NPS X 8" NPS X 8" NPS X 0.28" W.T., WELD, STL, MSS SP-75, GR Y52, PAINTED PREFERRED, BARE ACCEPTABLE, MACHINE BEVEL ENDS PER ASME B31.8 APPENDIX I, FIG 14					
49	4		REDUCER,PIPE, CONCENTRIC, 8" NPS X 0.322 W.T. X 4" NPS X 0.237 W.T., WELD, STL, MSS SP-75, GR Y52, PAINTED PREFERRED, BARE ACCEPTABLE, MACHINE BEVEL ENDS PER ASME B31.8 APPENDIX I, FIG 14					
51	6		REDUCER,PIPE, CONCENTRIC, 8" NPS X 0.280 W.T. X 2" NPS X 0.216 W.T., WELD, CS, MSS SP-75, GR Y52, IN ACCORDANCE W ANSI B16.9					
52	2		REDUCER,PIPE, CONCENTRIC, 4" NPS X 0.237 W.T. X 2" NPS X 0.216 W.T., WELD, STL, MSS SP-75, GR Y52, PAINTED PREFERRED, BARE ACCEPTABLE, MACHINE BEVEL ENDS PER ASME B31.8 APPENDIX I, FIG 14					
53	1		CAP, WEATHER RELIEF VALVE, FOR NPS 4-1/2 PIPE, WITH RED STEEL SIGNAL FLAG					
54	1		FITTING, TRANSITION, 8" NPS X 8" NPS, STL X MDPE, NPS 8" WELD END X 8" BW, (STD X SDR 11.5 WALL THK), PE 2708 PIPE, API 5L GR B ELECTRIC RESISTANCE WELDED NIPPLE			RAINCAPINDUS,		1556615
90	2		REDUCER,PIPE, CONCENTRIC, 8" NPS X 0.280 W.T. X 3" NPS X 0.216 W.T., WELD, STL, MSS SP-75, GR Y52, PAINTED PREFERRED, BARE ACCEPTABLE, MACHINE BEVEL ENDS PER ASME B31.8 APPENDIX I, FIG 14			GEORGEFISHER,		360003399
91	2		FLANGE, PIPE, WN, RF, 3" NPS, CLASS 60, FORGED STL, MSS SP-44, ASTM A694 GR F52, ASSME B16.5, 125 - 250 MICRO INCHES AARH					
<b>FLANGE HARDWARE</b>								
60	4		GASKET, SPIRAL WOUND, 8" NPS, CLASS 600, 1/8" THK, SS INNER RING, CS OUTER RING, ASME B16.20, TYPE E, MSS SP-44, SPIRAL WOUND GRAPHITE WITH 304 SS RIBBON AND 304 SS BACKING RING			FLEXITALLICI,		1557056
48			BOLT, STUD, 1-1/8" DIA, 8-1/2" LG, STL, ASTM A193 GR B7			UNKNOWN,		1553073
96			NUT, HEX, 1-1/8" DIA, STL, ASTM A194 GR 2H			UNKNOWN,		1553433
75	4		GASKET, SPIRAL WOUND, 8" NPS, CLASS 150, 1/8" THK, SS INNER RING, CS OUTER RING, ASME B16.20, TYPE E, MSS SP-44, SPIRAL WOUND GRAPHITE WITH 304 SS RIBBON AND 304 SS BACKING RING			FLEXITALLICI,		
32			BOLT, STUD, 3/4" DIA, 4-1/2" LG, STL, ASTM A193 GR B7					
64			NUT, HEX, 3/4" DIA, STL, ASTM A194 GR 2H					
61	16		GASKET, SPIRAL WOUND, 6" NPS, CLASS 600, 1/8" THK, 304 SS RIBBON WITH GRAPHITE FILLER, SS INNER RING, CS OUTER RING, ASME B16.20, TYPE F, TO SUIT MSS SP-44 FLANGE			FLEXITALLICI,		1557080
192			BOLT, STUD, 1" DIA, 7" LG, STL, ASTM A193 GR B7			UNKNOWN,		1553045
384			NUT, HEX, 1" DIA, STL, ASTM A194 GR 2H			ANVILINTLINC,		1553383
76	2		GASKET, SPIRAL WOUND, 6" NPS, CLASS 150, 1/8" THK, SS INNER RING, CS OUTER RING, ASME B16.20, TYPE E, MSS SP-44, SPIRAL WOUND GRAPHITE WITH 304 SS RIBBON AND 304 SS BACKING RING			FLEXITALLICI,		
16			BOLT, STUD, 3/4" DIA, 4" LG, STL, ASTM A193 GR B7					
32			NUT, HEX, 3/4" DIA, STL, ASTM A194 GR 2H					
63	3		GASKET, SPIRAL WOUND, 4" NPS, CLASS 150, 1/8" THK, 304 SS WINDING, GRAPHITE FILLER, FLEXITALLIC GCL, SS INNER RING, CS OUTER RING, ASME B16.20, TYPE F, TO SUIT MSS SP-44 FLG			FLEXITALLICI,		4"-150-CGI-SS-CS-ASMEB16.20
32			BOLT, STUD, 5/8" DIA, 3-1/2" LG, STL, ASTM A193, GR B7, TEFLON COATED			HIGHLANDTHRE,		1602345
65			NUT, HEX, 5/8" DIA, STL, ASTM A194 GR 2H			UNKNOWN,		1553473
65	3		GASKET, SPIRAL WOUND, 3" NPS, CLASS 150, 1/8" THK, SS INNER RING, CS OUTER RING, ASME B16.20, TYPE E, MSS SP-44, SPIRAL WOUND GRAPHITE WITH 304 SS RIBBON AND 304 SS BACKING RING			FLEXITALLICI,		1557070
12			BOLT, STUD, 5/8" DIA, 3-1/2" LG, STL, ASTM A193, GR B7, TEFLON COATED			HIGHLANDTHRE,		1602345
24			NUT, HEX, 5/8" DIA, STL, ASTM A194 GR 2H			UNKNOWN,		1553473
66	8		GASKET, SPIRAL WOUND, 2" NPS, CLASS 600, 1/8" THK, 304 SS RIBBON W/ GRAPHITE FILLER, FLEXITALLIC GCL, SS INNER RING, CS OUTER RING, ASME B16.20, TYPE F, TO SUIT MSS SP-44 FLG			FLEXITALLICI,		2"-600-CGI-SS-CS-ASMEB16.20
64			BOLT, STUD, 5/8" DIA, 4-1/2" LG, STL, ASTM A193 GR B7, HARD STEEL STUD			HIGHLANDTHRE,		1552875
128			NUT, HEX, 5/8" DIA, STL, ASTM A194 GR 2H			UNKNOWN,		1553473
92	2		GASKET, SPIRAL WOUND, 3" NPS, CLASS 600, 1/8" THK, SS INNER RING, CS OUTER RING, ASME B16.20, TYPE E, MSS SP-44, SPIRAL WOUND GRAPHITE WITH 304 SS RIBBON AND 304 SS BACKING RING					
16			STUD, 3/4" DIA, 5-1/2" LG, ASTM A193, GR B7, TEFLON COATED					
32			NUT, HEX, 3/4" DIA, HARD STL, ASTM A194, GR 2H					

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0	05/11/2022	ISSUED FOR CONSTRUCTION	FGI	RSE		AREA CODE	----		
						ACCOUNT NUMBER	-----		
						PROJECT NUMBER	2751477		
						DRAWING BY	FGI		
						STATION ID	7-HM-93-TAR-7101		
						CHECKER INITIALS	RSE		

**GUC GREENVILLE NO. 2 REPLACEMENT  
BILL OF MATERIAL - GUC  
GREENVILLE, NC**

RESOURCE CENTER TARBORO, NC

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GUC GREENVILLE NO. 2 REPLACEMENT  
BILL OF MATERIAL - GUC  
GREENVILLE, NC

RESOURCE CENTER TARBORO, NC

REF. DWG(S) -	
SHEET(S) 22 OF 27	DWG SCALE NONE
DWG DATE 03/26/2021	SUPERSEDED
DRAWING NUMBER	
PNG -M-027-0001178	REVISION 0
DISCIPLINE / RESOURCE CENTER / LINE NUMBER	



BOM #	QTY	GUC	Description	Ordering Instructions	Ordering Specifications	Manuf	Model	Manuf Part #
<b>APPURTENANCES</b>								
<b>1/2" TEST CONNECTIONS</b>								
70A	17		OUTLET PIPE, THREDOLET, 8-3/4" RUN, 1/2" BRANCH, THD, CS, 3000 LB ATSM A-694, FITTING, DESIGNED TO BE WELDED ON API 5L X52 NPS 4, 6 & 8 LINE PIPE, CMTR REQUIRED			Bonney Forge	THREDOLET	Q1900114-2
70B	17		NIPPLE PIPE, 1/2" NPS X 0.147 W.T., THD BOTH END, 2" LG, STL, ASTM A733 A106 GR B, SMLS			UNKNOWN		1551461
70C	17		VALVE, BALL, FLOATING, 1/2", 2-WAY, 2000 PSIG, REDUCED PORT, FTT, LOCKING LEVER OPERATED, CS BODY, 316 SS BALL & STEM, ASME B16.34 OR MSS SP-110, API 607, FI NATURAL GAS USE			CONBRACONDU.		73A-143-24-27A
70D	17		PLUG PIPE, 1/2" NPS, SQ HEAD, NPT, FORGED STL, ASME B16.11, ASTM A105			BONNEYFORGEC.		1553205
<b>REGULATOR SENSING LINE CONNECTIONS</b>								
72A	10		OUTLET PIPE, THREDOLET, 8-3/4" RUN, 1/2" BRANCH, THD, CS, 3000 LB ATSM A-694, FITTING, DESIGNED TO BE WELDED ON API 5L X52 NPS 4, 6 & 8 LINE PIPE, CMTR REQUIRED					
72B	10		NIPPLE PIPE, 1/2" NPS X 0.147 W.T., THD BOTH END, 2" LG, STL, ASTM A733 A106 GR B, SMLS					
72C	10		VALVE, BALL, 1/2", CHEM OIL SERIES 3000 WC					
72D	10		ELBOW, TUBE, 3/8" NPS, THD, SS, 90 DEG, COMPRESSION, TUBE X NPT, 316 SS					
72E	10		COUPLING, TUBING, 3/8" NPS TUBE X 1/2" NPS NPT, SS, COMPRESSION					
72F	5		TUBING, METALLIC, SEAMLESS, 3/8" OD, 20' LG, 0.065" WALL, 316 SS, ASTM A269, BRIGHT ANNEALED, Note this is the preferred WT FIPNG					
<b>1" THERMOWELL</b>								
93A	1		OUTLET PIPE, THREDOLET, NPS 8" TO 3" RUN, 1" NPS BRANCH, THD, FORGED STL, CLASS 3000, MSS SP-97, ASTM A105					
93B	1		SEPERABLE SOCKET THERMOWELL, KIMRAY, MODEL HCC, 1" MNPT, 12" LENGTH					
93C	1		PLUG PIPE, 1" NPS, SQ HEAD, THD, CLASS 3000, FORGED STL, ASME B16.11, ASTM A105, GR 55					
<b>3/4" THERMOWELL</b>								
73A	1		OUTLET PIPE, THREDOLET, 12-6" RUN, 3/4" BRANCH, THD, CS, 3000 LB ATSM A-694, FITTING, DESIGNED TO BE WELDED ON API 5L X52 NPS 6, 8 & 12 LINE PIPE, CMTR REQUIRED			Bonney Forge	THREDOLET	Q1900114-9
73B	1		THERMOWELL, 3/4" MNPT, 4" STEM LG, 304 SS, 4" LONG, WELL			MERCURYINSTR.		20-1248
73C	1		PLUG PIPE, 3/4" NPS, HEX HEAD, NPT, CLASS 3000, STL, ASME B16.11, ASTM A105			UNKNOWN		1553224
<b>PIPE SUPPORTS</b>								
77	1		SUPPORT PIPE, 3" NPS, STL, STEEL BASE PLATE WITH 4 SLOTTED 5/8" HOLES FOR MOUNTING TO CONCRETE PAD-I-BEAM UPRIGHT WELDED TO BASE PLATE THREADED ADJUSTMENT ASSEMBLY WELDED TOTOP OF I-BEAM TO HAVE A 4" ADJUSTMENT RANGE, AND BE SIZED TO PREVENT BOTH LATERAL AND VERTICAL PIPE MOVEMENT PIPE TO REST IN A 1/4" NEOPRENE LINED CRADLE CONTOURED FOR 3" PIPE AND BE CLAMPED INTO PLACE WITH 2 POLY SHRINKCOATED U-BOLTS ENTIRE ASSEMBLY TO BE GALVANIZED COATED, OVERALL HEIGHT TO BE SPECIFIED BY "D" DIMENSION FROM BOTTOM OF BASE PLATE TO CENTERLINE OF PIPE E-Z LINE PIPE SUPPORT FIG 204F	SPECIFY D DIMENSION (BOTTOM OF BASE PLATE TO CENTER OF PIPE)	D = 32"	EZLINEPIPESU.		204-F
78	11		SUPPORT PIPE, 6" NPS, STL, STEEL BASE PLATE WITH 4 SLOTTED 5/8" HOLES FOR MOUNTING TO CONCRETE PAD-I-BEAM UPRIGHT WELDED TO BASE PLATE THREADED ADJUSTMENT ASSEMBLY WELDED TOTOP OF I-BEAM TO HAVE A 4" ADJUSTMENT RANGE, AND BE SIZED TO PREVENT BOTH LATERAL AND VERTICAL PIPE MOVEMENT PIPE TO REST IN A 1/4" NEOPRENE LINED CRADLE CONTOURED FOR 6" PIPE AND BE CLAMPED INTO PLACE WITH 2 POLY SHRINKCOATED U-BOLTS ENTIRE ASSEMBLY TO BE GALVANIZED COATED, OVERALL HEIGHT TO BE SPECIFIED BY "D" DIMENSION FROM BOTTOM OF BASE PLATE TO CENTERLINE OF PIPE E-Z LINE PIPE SUPPORT FIG 510F	SPECIFY D DIMENSION (BOTTOM OF BASE PLATE TO CENTER OF PIPE)	D = 32"	EZLINEPIPESU.		510-F
79	4		SUPPORT PIPE, 8" NPS, STL, STEEL BASE PLATE WITH 4 SLOTTED 5/8" HOLES FOR MOUNTING TO CONCRETE PAD-I-BEAM UPRIGHT WELDED TO BASE PLATE THREADED ADJUSTMENT ASSEMBLY WELDED TOTOP OF I-BEAM TO HAVE A 4" ADJUSTMENT RANGE, AND BE SIZED TO PREVENT BOTH LATERAL AND VERTICAL PIPE MOVEMENT PIPE TO REST IN A 1/4" NEOPRENE LINED CRADLE CONTOURED FOR 8" PIPE AND BE CLAMPED INTO PLACE WITH 2 POLY SHRINKCOATED U-BOLTS ENTIRE ASSEMBLY TO BE GALVANIZED COATED, OVERALL HEIGHT TO BE SPECIFIED BY "D" DIMENSION FROM BOTTOM OF BASE PLATE TO CENTERLINE OF PIPE E-Z LINE PIPE SUPPORT FIG 510F	SPECIFY D DIMENSION (BOTTOM OF BASE PLATE TO CENTER OF PIPE)	D = 32"	EZLINEPIPESU.		510-F

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DATE: 05/11/2022

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REF. DWG(S) -  
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NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	DATE	INITIALS	APPROVALS
0	05/11/2022	ISSUED FOR CONSTRUCTION	FGI	RSE		AREA CODE	----		REGIONAL ENGINEER
						ACCOUNT NUMBER	-----		MGR TECH REC & STD
						PROJECT NUMBER	2751477		PRINCIPAL ENGINEER
						DRAWING BY	FGI		
						STATION ID	7-HM-93-TAR-7101		
						CHECKER INITIALS	RSE		

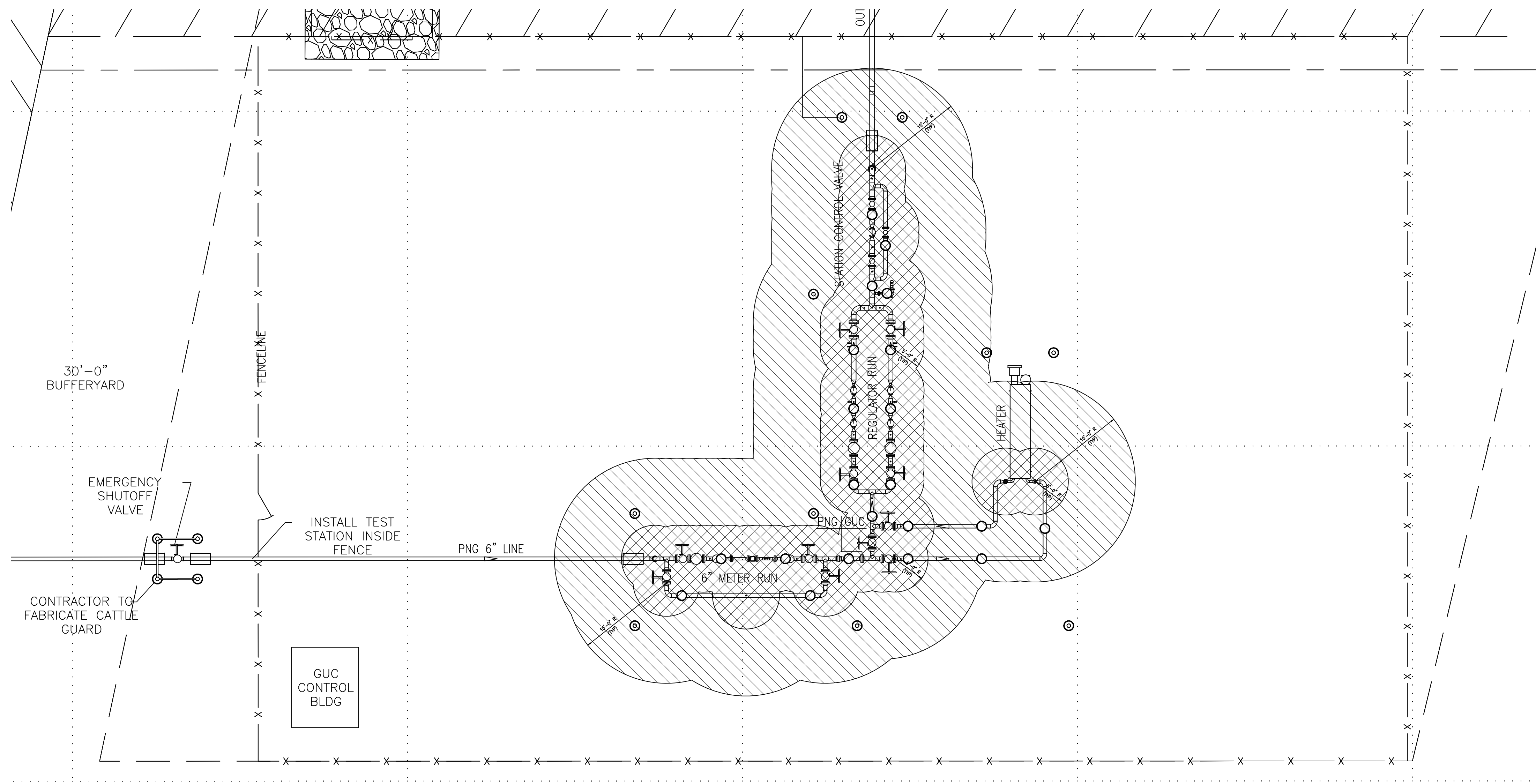
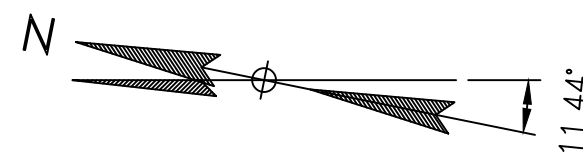
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**GUC GREENVILLE NO. 2 REPLACEMENT  
 BILL OF MATERIAL - GUC  
 GREENVILLE, NC**  
 RESOURCE CENTER TARBORO, NC

SHEET(S) 23 OF 27	DWG SCALE NONE
DWG DATE 03/26/2021	SUPERSEDED
DRAWING NUMBER	REVISION
<b>PNG -M-027-0001179</b>	<b>0</b>
DISCIPLINE / RESOURCE CENTER / LINE NUMBER	







**LEGEND**

	CLASS 1, DIVISION 1, GROUP D AREA
	CLASS 1, DIVISION 2, GROUP D AREA
	UNCLASSIFIED AREA

- NOTES:**
1. ALL AREA CLASSIFICATION IS IN ACCORDANCE WITH AMERICAN PETROLEUM INSTITUTE (API), RECOMMENDED PRACTICE RP500, SECTION 9, "RECOMMENDATIONS FOR DETERMINING DEGREE AND EXTENT OF CLASSIFIED LOCATIONS IN PETROLEUM REFINERIES."
  2. REFER TO AGA XL1001 SECTIONS 2, 5 AND 6 FOR RECOMMENDED PRACTICES FOR INSTALLATION OF ELECTRICAL DEVICES IN HAZARDOUS AREAS.

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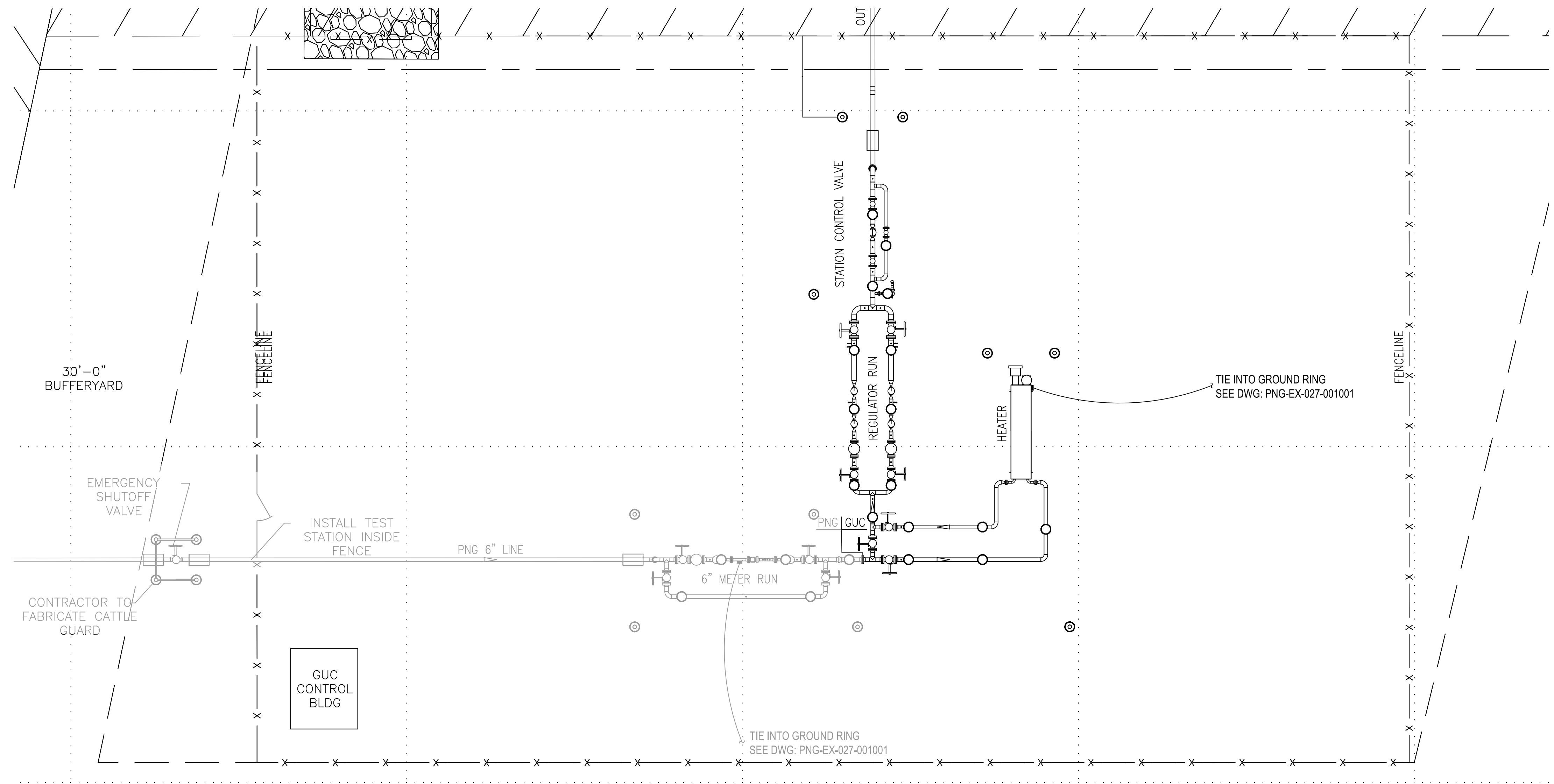
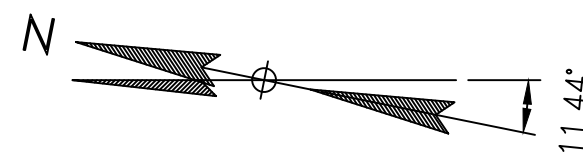
NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	DATE	INITIALS
0	05/11/2022	ISSUED FOR CONSTRUCTION	TMT	IM		AREA CODE		
						ACCOUNT NUMBER		
						PROJECT NUMBER	2751477	
						DRAWING BY	TMT	
						STATION ID	7-HM-93-TAR-7101	
						CHECKER INITIALS	IM	

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GUC GREENVILLE NO. 2 REPLACEMENT  
 HAZARDOUS ARE CLASSIFICATION  
 GREENVILLE, NC

RESOURCE CENTER TARBORO, NC

REF. DWG(S) -	
SHEET(S) 25 OF 27	DWG SCALE 1"=10'-0"
DWG DATE 07/23/2021	SUPERSEDED
DRAWING NUMBER	REVISION
PNG -E-027-0001045	0
DISCIPLINE / RESOURCE CENTER / LINE NUMBER	



- NOTES:**
1. THE PIPING LAYOUT SHOWN IN THIS DRAWING ILLUSTRATES THE FINAL CONDITION OF THE SITE (POST CONSTRUCTION).
  2. REFER TO EIU DRAWINGS FOR GROUND RING, FENCE GROUNDING AND AC MITIGATION. DWG: PNG-EX-027-001000 THRU PNG-EX-027-001007.
  3. ALL CONNECTION TO THE MAIN GROUND RING MUST BE INSULATED (THROUGH HMWPE COPPER WIRE OR SOLID-STATE DECOUPLER).

**GROUNDING LEGEND:**

— #6 AWG STRANDED HMWPE WIRE

● EXOTHERMIC CONNECTION

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0	05/11/2022	ISSUED FOR CONSTRUCTION	TMT	IM		AREA CODE	----		REGIONAL ENGINEER
						ACCOUNT NUMBER	----		MGR TECH REC & STD
						PROJECT NUMBER	2751477		PRINCIPAL ENGINEER
						DRAWING BY	TMT		
						STATION ID	7-HM-93-TAR-7101		
						CHECKER INITIALS	IM		

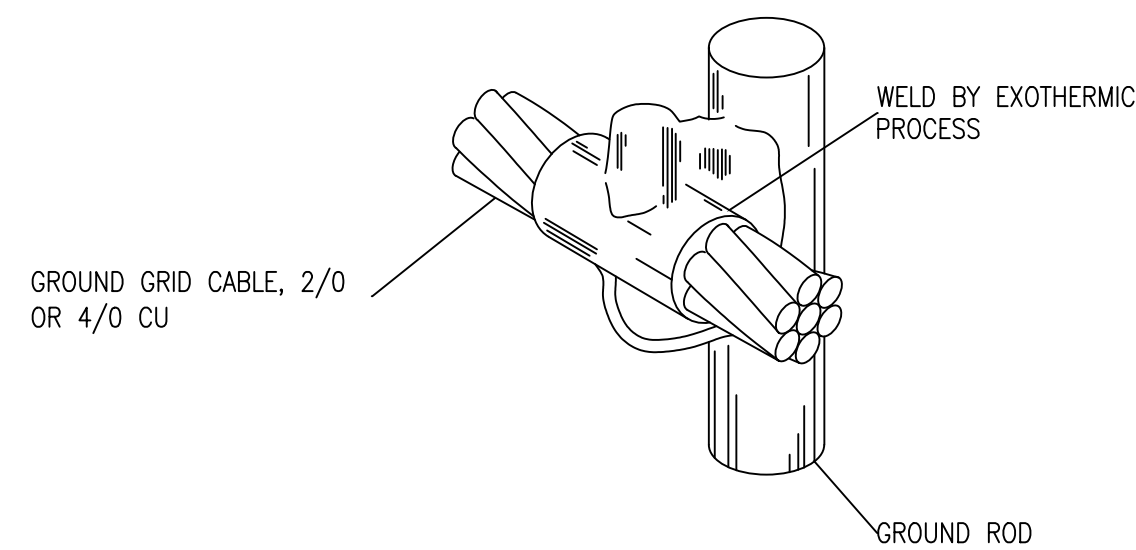


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 GROUNDING PLAN  
 GREENVILLE, NC**  
 RESOURCE CENTER TARBORO, NC

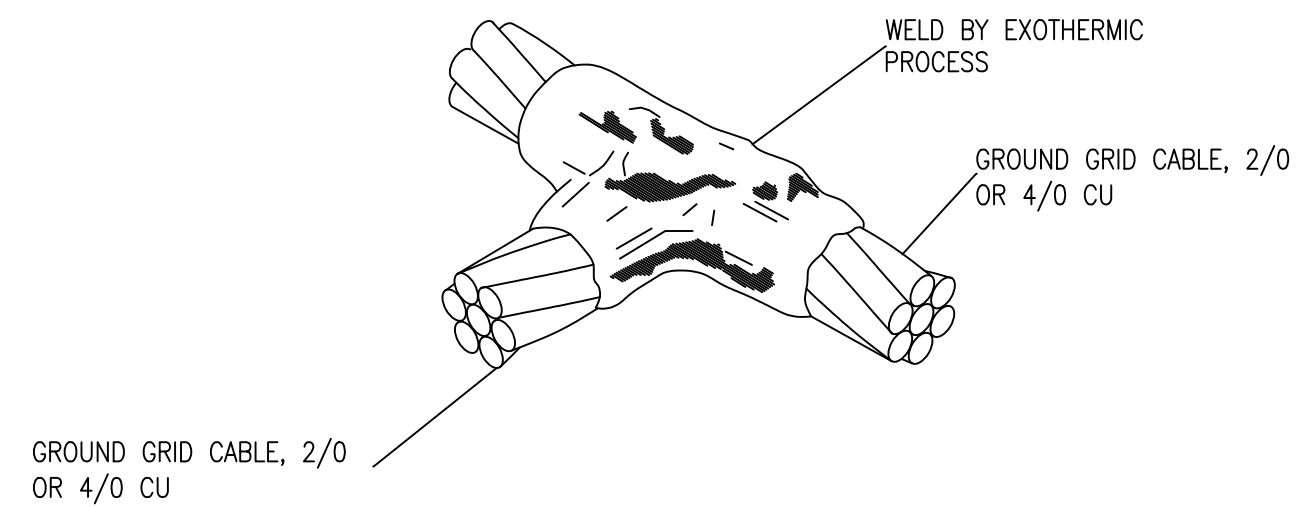
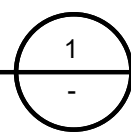
REF. DWG(S) -	SHEET(S) 26 OF 27	DWG SCALE 1"=10'-0"
	DWG DATE 07/23/2021	SUPERSEDED
	DRAWING NUMBER	REVISION
	<b>PNG -E-027-0001046</b>	<b>0</b>
DISCIPLINE / RESOURCE CENTER / LINE NUMBER		

FARNSWORTH GROUP  
 STATE LICENSE # .....  
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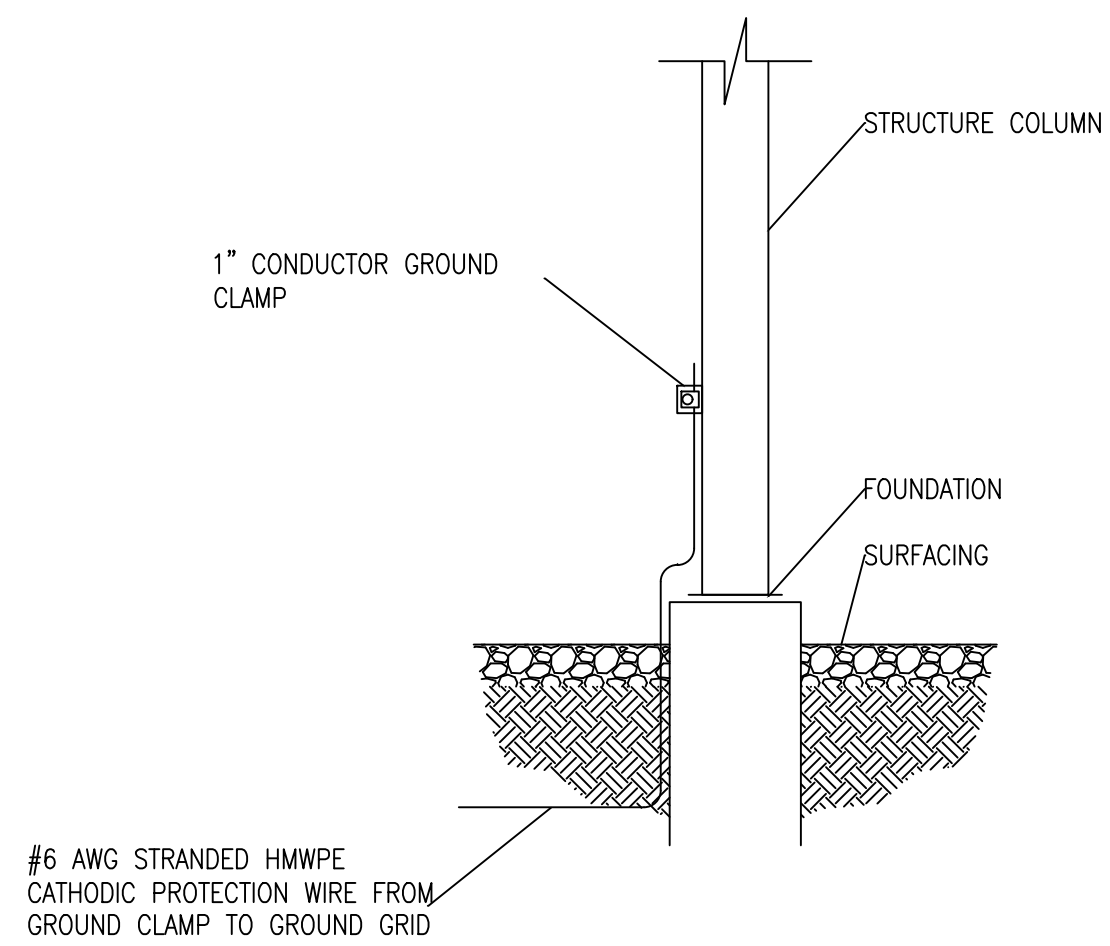
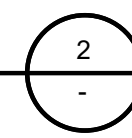




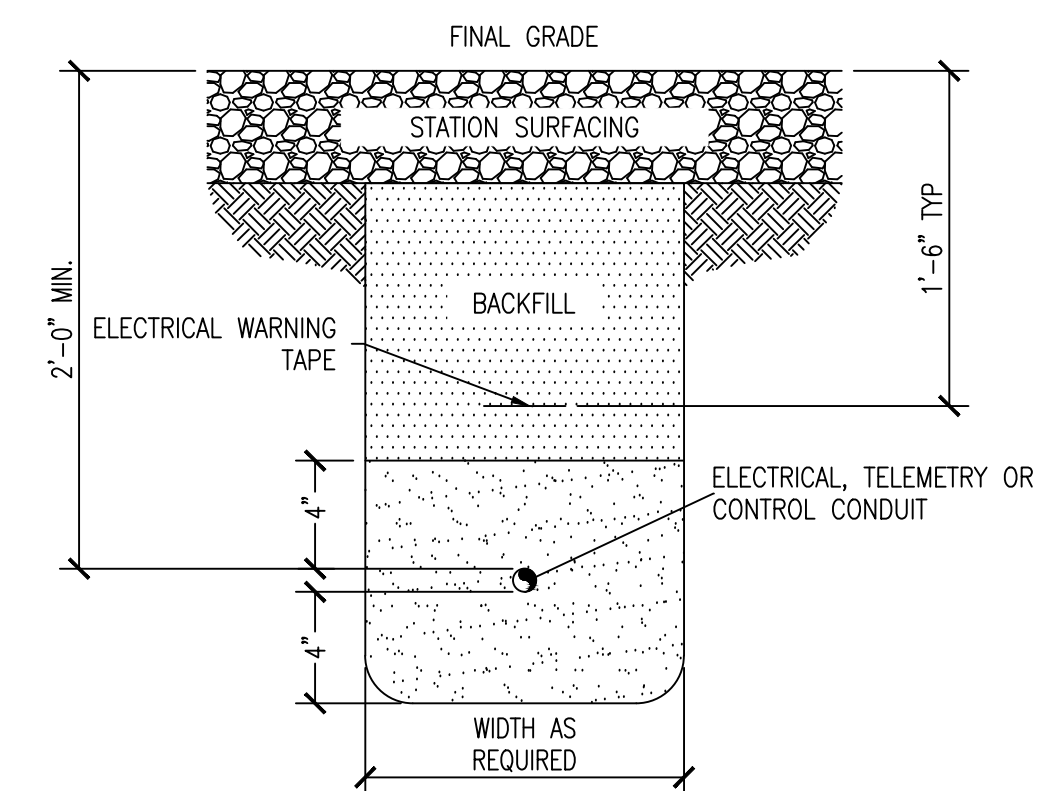
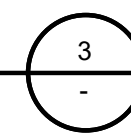
**DETAIL**  
GROUND ROD CONNECTION  
NOT TO SCALE



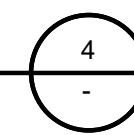
**DETAIL**  
GROUND TEE CONNECTION  
NOT TO SCALE



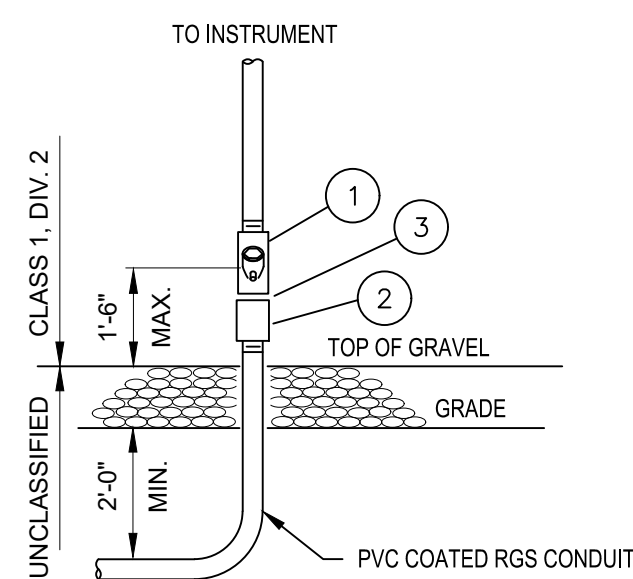
**DETAIL**  
SUPPORT STRUCTURE GROUND CONNECTION  
NOT TO SCALE



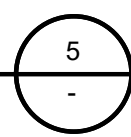
**DETAIL**  
TYPICAL SINGLE CONDUIT TRENCH  
NOT TO SCALE



ITEM	QTY	DESCRIPTION (QUANTITY FOR ONE INSTALLATION)
1	1	DRAIN SEAL FITTING, M.F. SIZE AIR, CROUSE-HINDS TYPE EYD
2	1	CONDUIT COUPLING, R.G.S., SIZE AS REQD
3	1	REDUCING BUSHING, 1" X 3/4" (ONLY WHEN 3/4" CONDUIT IS USED ABOVE GRADE)



**DETAIL**  
TYPICAL CONDUIT STUB-UP  
NOT TO SCALE



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NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	DATE	INITIALS	APPROVALS
0	05/11/2022	ISSUED FOR CONSTRUCTION	TMT	IM		AREA CODE	----	-	REGIONAL ENGINEER
						ACCOUNT NUMBER	----	-	MGR TECH REC & STD
						PROJECT NUMBER	2751477	-	PRINCIPAL ENGINEER
						DRAWING BY	TMT	-	
						STATION ID	7-HM-93-TAR-7101	-	
						CHECKER INITIALS	IM	-	



**GUC GREENVILLE NO. 2 REPLACEMENT ELECTRICAL DETAILS GREENVILLE, NC**  
 RESOURCE CENTER TARBORO, NC

REF. DWG(S) -	SHEET(S) 27 OF 27	DWG SCALE 1"=10'-0"
	DWG DATE 07/23/2021	SUPERSEDED
	DRAWING NUMBER	REVISION
	<b>PNG -E-027-0001047</b>	<b>0</b>
DISCIPLINE / RESOURCE CENTER / LINE NUMBER		

10/20/2016 10:50 AM - PNG Greenville, SC - 1050 - Drawing: GUC GREENVILLE NO. 2 REPLACEMENT ELECTRICAL DETAILS GREENVILLE, NC - 05/11/2022 11:56 AM