

AC MITIGATION
STATION GRADIENT CONTROL MATS

GPS COORDINATES		
SITE NAME	LATITUDE	LONGITUDE
GREENVILLE CG#2	35.514469°	-77.383206°

*GCS NORTH AMERICAN 1983

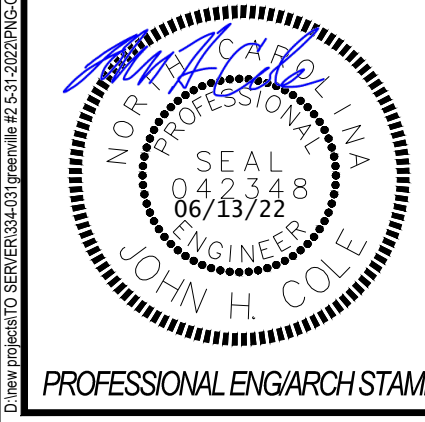
GUC GREENVILLE NO. 2 REPLACEMENT
GREENVILLE, NORTH CAROLINA
DUKE CP# 02751477

DRAWING INDEX			
DRAWING NUMBER	DRAWING TITLE	SHEET NO.	REV.
PNG-G-027-0001087	AC MITIGATION COVER SHEET	1	0
PNG-EX-027-0001000	AC MITIGATION SPECIFICATIONS	2	0
PNG-EX-027-0001001	DETAIL 1 MAT LAYOUT	3	0
PNG-EX-027-0001002	DETAIL 1 MONOLITHIC PROTECTION	4	0
PNG-EX-027-0001003	AC MITIGATION DECOUPLER TABLE	5	0
PNG-EX-027-0001004	AC MITIGATION DETAILS PAGE 1	6	0
PNG-EX-027-0001005	AC MITIGATION DETAILS PAGE 2	7	0
PNG-EX-027-0001006	AC MITIGATION DETAILS PAGE 3	8	0
PNG-EX-027-0001007	AC MITIGATION MATERIAL LIST	9	0



EIU JOB # 334-031

EASTERN ELECTRICAL ENGINEERING, INC.
C-4283



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NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	DATE	INITIALS	APPROVALS
0	5/12/2022	ISSUED FOR CONSTRUCTION	MC	PB	GW	AREA CODE	N/A	N/A	REGIONAL ENGINEER
						ACCOUNT NUMBER			
						PROJECT NUMBER	02751477		MGR TECH REC & STD
						DRAWING BY	MC		
						STATION ID	7-HM-93-TAR-7101		PRINCIPAL ENGINEER
						CHECKER INITIALS	PB		



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GUC GREENVILLE NO. 2 REPLACEMENT
AC MITIGATION COVER SHEET
GREENVILLE, NC.
OPERATIONS CENTER, TARBORO, NC.

CUSTOMER: N/A	
MAP NO. N/A	
SHEET(S) 1 OF 9	DWG SCALE NOT TO SCALE
DWG DATE 1/3/2022	SUPERSEDED
DRAWING NUMBER	REVISION
PNG-G-027-0001087	0
DISCIPLINE / RESOURCE CENTER / LINE NUMBER	

DESIGN SPECIFICATIONS

GENERAL:

- DESIGN DRAWINGS ARE GENERALLY DIAGRAMMATIC IN NATURE. MAKE ADJUSTMENTS AS REQUIRED FOR A COMPLETE, CODE-COMPLIANT INSTALLATION. COOPERATE WITH OTHER TRADES SO THAT INTERFERENCES OF CONDUIT, EQUIPMENT, PIPING, ETC., WILL BE AVOIDED. IF INTERFERENCES DEVELOP, REFER PROMPTLY TO ENGINEER FOR DECISION.
- INSULATED WIRES MUST BE INSULATED WITH THE APPROPRIATE COLORED INSULATION. COLORED TAPE ON BLACK WIRE SHALL NOT BE ACCEPTED.
- ALL HMWPE WIRES SHALL BE #6 AWG WITH APPROPRIATELY COLORED INSULATION UNLESS OTHERWISE NOTED.
- ALL FENCE AND GATE POSTS SURROUNDING PROJECT SITES SHALL BE CONNECTED TO SITE GROUNDING RING. CONNECTIONS SHALL BE MADE BY EXOTHERMIC CONNECTION OR LISTED CLAMP.
- ALL BOLLARDS SHALL BE CONNECTED AT NEAREST POINT TO SITE GROUNDING RING.
- WARNING SIGNS SHALL BE POSTED AS NECESSARY AND AS DELINEATED ON DRAWINGS.
- AFTER INSTALLATION HAS BEEN COMPLETED AND TESTED AT ALL ENCLOSED STATIONS, INSTALL A 6-INCH-DEEP LAYER (NOMINAL) OF CRUSHED ROCK OVER ENTIRE SITE. CRUSHED ROCK COVERING SHALL EXTEND 36 INCHES MEASURED HORIZONTALLY BEYOND ALL PERIMETER FENCES AND ALL GATES AS MEASURED IN THEIR OPEN POSITION.
- UNLESS SPECIFIED OTHERWISE, INSTALL ZINC GROUNDING RING 36 INCHES MEASURED HORIZONTALLY BEYOND PERIMETER FENCING AND 18 INCHES BELOW GRADE.
- ALL HMWPE CABLE LOCATION OUTSIDE OF PERIMETER TO BE BURIED A MINIMUM OF 36" DEEP. INSTALL ELECTRICAL WARNING TAPE 12" ABOVE CABLE.

ANODES:

- ANODES SHALL BE BURIED A MINIMUM OF 36 INCHES MEASURED VERTICALLY BELOW GRADIENT CONTROL MATS.
- ANODES SHALL BE BURIED A MINIMUM OF 36 INCHES MEASURED HORIZONTALLY FROM ANY ABOVE GROUND STRUCTURES.
- ANODE LOCATION IS DIAGRAMMATIC ONLY. ANODES MAY BE FIELD ADJUSTED.

GRADIENT CONTROL MATS:

- GRADIENT CONTROL MATS SHALL BE CONSTRUCTED OF HOT-DIPPED, GALVANIZED, .135 INCH NOMINAL WIRE DIAMETER SOLID STEEL ON A 3 INCH BY 3 INCH GRID PATTERN.
- GRADIENT CONTROL MATS SHALL BE INSTALLED ON TOP OF SOIL AND BENEATH CRUSHED ROCK AND GEOTEXTILE FABRIC. GEOTEXTILE FABRIC SHALL NEVER BE INSTALLED BELOW GRADIENT CONTROL MATS. SEE DETAIL THIS PACKAGE.
- GRADIENT CONTROL MATS SHALL EXTEND A MINIMUM OF 36 INCHES MEASURED HORIZONTALLY BEYOND PIPELINES AND ABOVE GROUND STRUCTURES.
- GRADIENT CONTROL MATS SHALL NOT CONTACT PIPELINES OR OTHER STRUCTURES. GRADIENT CONTROL MATS SHALL BE TRIMMED TO MAINTAIN A SEPARATION OF A MINIMUM OF 3 INCHES AND A MAXIMUM OF 6 INCHES AROUND ALL ABOVE GROUND STRUCTURES, FOOTINGS, AND CONDUITS.
- QUANTITY OF GRADIENT CONTROL MATS SHALL BE DETERMINED BY SITE CONDITIONS AND SITE LAYOUT. QUANTITY OF GRADIENT CONTROL MATS SHALL BE AS NECESSARY TO EFFECT INSTALLATION OF THIS DESIGN.
- GRADIENT CONTROL MATS SHALL BE JOINED BY EXOTHERMIC BOND AT INTERVALS NOT EXCEEDING 18 INCHES MEASURED LINEARLY. (MAT-MAT CONNECTION)

SOLID STATE DECOUPLERS (SSD'S):

- SOLID STATE DECOUPLERS SHALL BE INSTALLED OUTSIDE ALL CLASS 1 DIVISION 1 AREAS. GRADIENT CONTROL MATS SHALL BE ADDED AS NECESSARY TO PREVENT THE INSTALLATION OF SSD'S WITHIN CLASS 1 DIVISION 1 AREAS.
- SOLID STATE DECOUPLERS AND THEIR MOUNTING APPARATUSES (PEDESTALS, POSTS, ET AL) SHALL BE INSTALLED IN A SERVICEABLE LOCATION. COORDINATE EXACT LOCATIONS WITH OWNER.
- SOLID STATE DECOUPLERS AND THEIR MOUNTING APPARATUSES (PEDESTALS, POSTS, ET AL) SHALL BE INSTALLED ABOVE GRADIENT CONTROL MATS. GRADIENT CONTROL MATS SHALL BE ADDED AS NECESSARY SUCH THAT PEDESTALS ARE SURROUNDED BY GRADIENT CONTROL MATS FOR A MINIMUM OF 36 INCHES MEASURED HORIZONTALLY.
- PEDESTAL-MOUNTED SOLID STATE DECOUPLERS SERVING GRADIENT CONTROL MATS SHALL BE INSTALLED SUCH THAT THE SSD IS MOUNTED INSIDE THE PEDESTAL.
- INSTALL SOLID STATE DECOUPLERS AS CLOSE AS POSSIBLE TO PIPING AND PIPING CONNECTIONS TO MINIMIZE WIRE LENGTHS.
- SOLID STATE DECOUPLERS SHALL BE INSTALLED ACROSS ALL MONOLITHIC JOINTS.

- SOLID STATE DECOUPLER WIRING INSULATION TO ABOVE GROUND PIPING SHALL BE POSITIVE (POS+) = WHITE, NEGATIVE (NEG-) = BLACK.
- SOLID STATE DECOUPLER WIRING INSULATION TO GRADIENT CONTROL MATS SHALL BE POSITIVE (POS+) = RED, NEGATIVE (NEG-) = BLACK

EXOTHERMIC CONNECTIONS, BONDS, AND/OR WELDS:

- PIPING SHALL BE FREE FROM SURFACE OR INTERNAL DEFECTS. PERFORM ULTRASONIC TESTING AS NECESSARY TO VERIFY PIPING IS FREE OF DEFECTS.
- ALL TEST LEADS SHALL BE ATTACHED TO PIPING USING EXOTHERMIC CONNECTIONS AND APPROPRIATE COPPER HEAT SLEEVES.
- REFERENCE DECOUPLER TABLE CABLE SIZE, COLOR, QUANTITY AND LOCATION.
- EXOTHERMIC CONNECTIONS SHALL BE MADE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS AND OWNER STANDARDS. STRICTLY ADHERE TO ALL SAFETY REGULATIONS.
- NO EXOTHERMIC CONNECTIONS SHALL BE MADE ON PIPING WHOSE WALL THICKNESS IS LESS THAN .125 INCHES OR ON PIPING WHOSE SPECIFIED MINIMUM YIELD STRENGTH (SYMS) EXCEEDS 80,000 POUNDS PER SQUARE INCH (PSI).
- EXOTHERMIC CONNECTIONS SHALL BE MADE NO CLOSER THAN 12 INCHES BETWEEN CONNECTIONS.
- USE ONLY APPROPRIATE MOLD SIZES AND TYPES FOR THE CONNECTION BEING MADE.
- USE ONLY 15-GRAM WELDING CHARGES. CHARGES EXCEEDING 15 GRAMS SHALL NOT BE MADE.
- PIPING PREPARATION: PREPARE A 3-INCH BY 3-INCH SECTION OF PIPING LOCATED AT 12 O'CLOCK ON THE HORIZONTAL PIPELINE TO A VISIBLY SHINY SURFACE THAT IS FREE OF ANY CONTAMINANTS. CREATE A CROSS-HATCHED PATTERN USING A FILE AT THE AFOREMENTIONED PREPARED AREA. ENSURE BOTH THE PIPING AND WIRE ARE CLEAN AND DRY.
- AFTER EACH EXOTHERMIC CONNECTION HAS BEEN MADE, REMOVE 2 INCHES OF WIRE INSULATION MEASURED FROM END OF WIRE. VERIFY WIRE AND WIRE INSULATION IS FREE FROM DEFECTS AND DAMAGE AND HAS NOT BEEN DEGRADED BY EXOTHERMIC CONNECTION PROCESS. VERIFY NO DAMAGE HAS OCCURRED TO PIPING.
- IF USING A SPRING-LOADED CHAIN CLAMP TO POSITION MOLD AND CRUCIBLE, VERIFY NO DAMAGE HAS OCCURRED TO PIPING OR PIPE COATING FROM CLAMPING.
- REMOVE ANY SLAG PRESENT WITH A SLAG HAMMER AND CLEAN CONNECTION AREA WITH A SUITABLE WIRE BRUSH.
- ALL EXOTHERMIC CONNECTIONS AND EXPOSED WIRING ON GRADIENT CONTROL MATS SEALED WITH DENSO LT TAPE OR APPROVED EQUAL.
- ALL EXOTHERMIC CONNECTIONS AND EXPOSED WIRING ON PIPELINES SHALL BE COATED WITH AN OWNER-APPROVED LIQUID EPOXY COATING. TAPE OR MOLDABLE SEALANTS SHALL NOT BE USEDE.
- APPLY TAPECOAT M65 COATING PATCHES TO ALL BELOW GRADE EXOTHERMIC CABLE CONNECTIONS TO PIPE. APPLY PATCHES AFTER TWO PART EXPOXY COATING REPAIR HAS PROPERLY CURED. REFER TO MANUFACTURERS SPECIFICATIONS.

LEGEND

- ZINC GROUND RING
- #6 AWG RED HMWPE
- #6 AWG BLACK HMWPE
- #6 AWG WHITE HMWPE
- 32LB MAG ANODE
- EXOTHERMIC WELD
- 3/4" X 10' ZINC GROUND ROD
- SSD FOR MATS
- SSD FOR MONOLITHIC PROTECTION
- TEST WELL
- FENCE

EIU JOB # 334-031

EASTERN ELECTRICAL ENGINEERING, INC. C-4283

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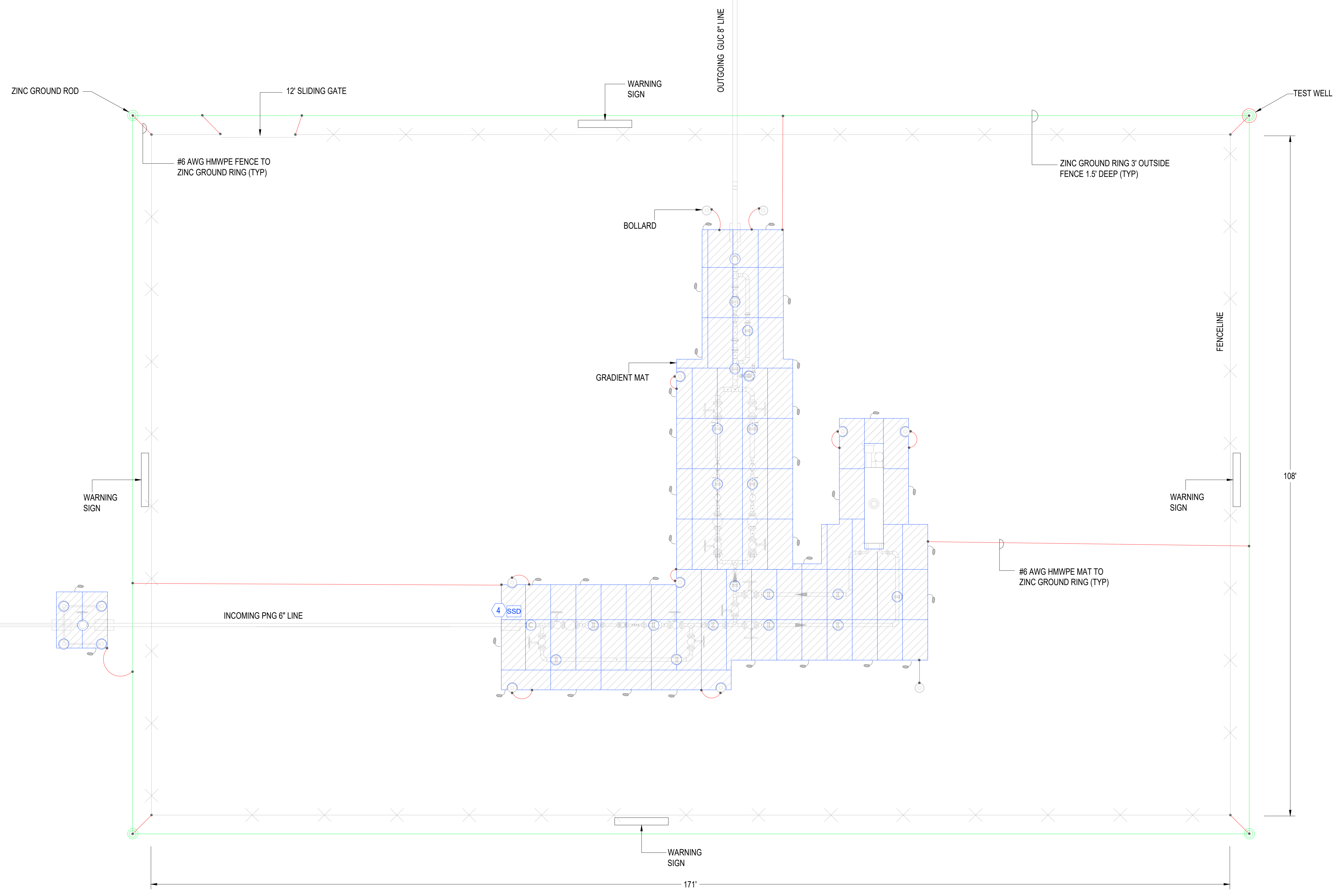


NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	DATE	INITIALS	APPROVALS
0	5/12/2022	ISSUED FOR CONSTRUCTION	MC	PB	GW	AREA CODE			REGIONAL ENGINEER
						ACCOUNT NUMBER			
						PROJECT NUMBER	02751477		MGR TECH REC & STD
						DRAWING BY	MC		
						STATION ID	7-HM-93-TAR-7101		PRINCIPAL ENGINEER
						CHECKER INITIALS	PB		



**GUC GREENVILLE NO. 2 REPLACEMENT
AC MITIGATION SPECIFICATIONS
GREENVILLE, NC.**
OPERATIONS CENTER, TARBORO, NC.

REF. DWG(S)	PNG-G-027-0001087		
SHEET(S)	2 OF 9	DWG SCALE	NTS
DWG DATE	1/3/2022	SUPERSEDED	---
DRAWING NUMBER		REVISION	
PNG -EX-027-0001000		0	
DISCIPLINE / RESOURCE CENTER / LINE NUMBER			



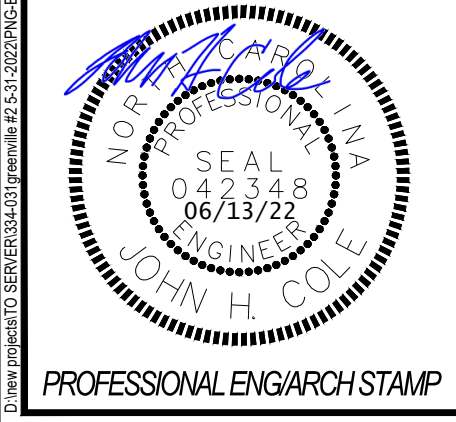
- NOTES:**
1. INSTALL 6" LAYER OF CRUSHED ROCK EXTENDING AT LEAST 3 FT. BEYOND FENCE.
 2. REFERENCE ELECTRICAL GROUNDING PLAN FOR ADDITIONAL EQUIPMENT GROUNDING CONNECTIONS TO ZINC GROUND RING.
 3. SEE DECOUPLER TABLE FOR SPECIFICS. REFERENCE DWG. PNG-EX-027-0001003.

- LEGEND**
- ZINC GROUND RING
 - #6 AWG RED HMWPE
 - #6 AWG BLACK HMWPE
 - #6 AWG WHITE HMWPE
 - 32LB MAG ANODE
 - EXOTHERMIC WELD
 - ZINC GROUND ROD
 - SSD SSD FOR MATS
 - SSD SSD FOR MONOLITHIC PROTECTION
 - XX SSD NUMBER FOR MATS
 - CLASS 1 DIVISION 1
 - TEST WELL
 - x FENCE
- EIU JOB # 334-031

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REF. DWG(S) PNG-G-027-0001087



NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD
0	5/12/2022	ISSUED FOR CONSTRUCTION	MC	PB	GW

DESCRIPTION		APPROVALS	
AREA CODE		DATE	INITIALS
ACCOUNT NUMBER		DATE	INITIALS
PROJECT NUMBER	02751477	DATE	INITIALS
DRAWING BY	MC	DATE	INITIALS
STATION ID	7-HM-93-TAR-7101	DATE	INITIALS
CHECKER INITIALS	PB	DATE	INITIALS

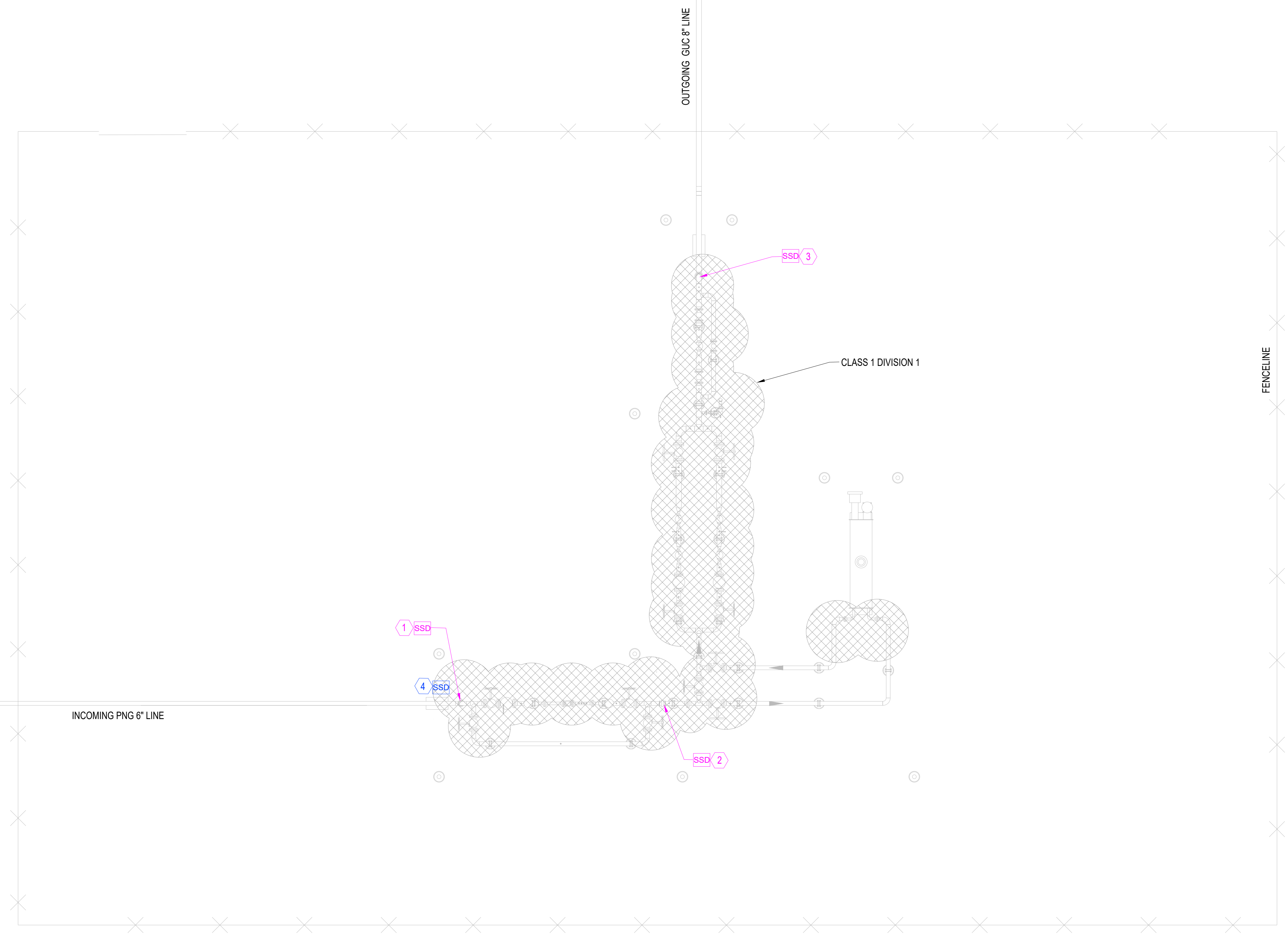
APPROVALS

REGIONAL ENGINEER	
MGR TECH REC & STD	
PRINCIPAL ENGINEER	

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**GUC GREENVILLE NO. 2 REPLACEMENT
DETAIL 1 MAT LAYOUT
GREENVILLE, NC.**
OPERATIONS CENTER, TARBORO, NC.

SHEET(S)	3 OF 9	DWG SCALE	1" = 8'
DWG DATE	1/3/2022	SUPERSEDED	—
DRAWING NUMBER	PNG-EX-027-0001001		
REVISION	0		
DISCIPLINE / RESOURCE CENTER / LINE NUMBER			



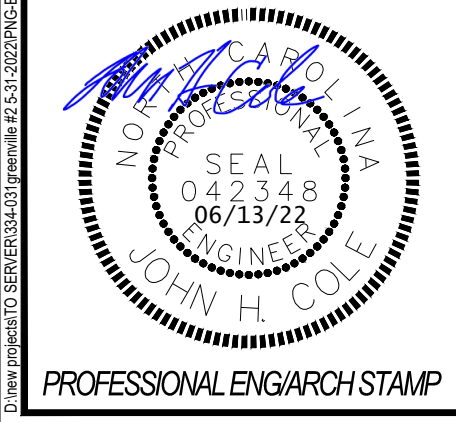
- NOTES:**
1. INSTALL 6" LAYER OF CRUSHED ROCK EXTENDING AT LEAST 3 FT. BEYOND FENCE.
 2. REFERENCE ELECTRICAL GROUNDING PLAN FOR ADDITIONAL EQUIPMENT GROUNDING CONNECTIONS TO ZINC GROUND RING.
 3. SEE DECOUPLER TABLE FOR SPECIFICS. REFERENCE DWG. PNG-EX-027-0001003.

- LEGEND**
- ZINC GROUND RING
 - #6 AWG RED HMWPE
 - #6 AWG BLACK HMWPE
 - #6 AWG WHITE HMWPE
 - 32LB MAG ANODE
 - EXOTHERMIC WELD
 - ZINC GROUND ROD
 - SSD FOR MATS
 - SSD FOR MONOLITHIC PROTECTION
 - SSD NUMBER FOR MATS
 - CLASS 1 DIVISION 1
 - TEST WELL
 - FENCE
- EIU JOB # 334-031

EASTERN ELECTRICAL ENGINEERING, INC.
C-4283

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0	5/12/2022	ISSUED FOR CONSTRUCTION	MC	PB	GW

DESCRIPTION		APPROVALS	
AREA CODE		DATE	INITIALS
ACCOUNT NUMBER			
PROJECT NUMBER	02751477	DATE	INITIALS
DRAWING BY	MC		
STATION ID	7-HM-93-TAR-7101	DATE	INITIALS
CHECKER INITIALS	PB		

APPROVALS

REGIONAL ENGINEER	
MGR TECH REC & STD	
PRINCIPAL ENGINEER	

DUKE ENERGY | Piedmont Natural Gas

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**GUC GREENVILLE NO. 2 REPLACEMENT
DETAIL 1 MONOLITHIC PROTECTION
GREENVILLE, NC.**

OPERATIONS CENTER, TARBORO, NC.

SHEET(S)	4 OF 9	DWG SCALE	1" = 8'
DWG DATE	1/3/2022	SUPERSEDED	
DRAWING NUMBER		REVISION	
PNG-EX-027-0001002		0	
DISCIPLINE / RESOURCE CENTER / LINE NUMBER			

DECOUPLER TABLE

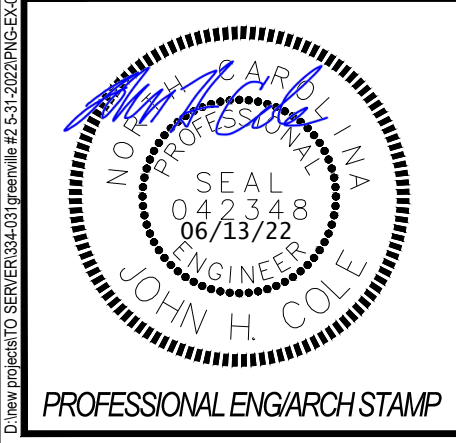
LABEL	SITE	LOCATION DESCRIPTION	SSD TYPE	SSD MODEL	COMMENT	PIPE DIAMETER	MOUNTING TYPE	MOUNTING PROXIMITY (CLASS1/DIV1)	NEGATIVE	WELD POSITION	ROUTING	POSITIVE	WELD POSITION	ROUTING
1	GUC GREENVILLE NO.2 REPLACEMENT	METER RUN INLET	MONOLITHIC	SSD-2/2-2.0-100-R	VERTICAL	6"	DECOUPLER MOUNTING POST	REMOTE (SEE AREA CLASSIFICATION); WITHIN MATS	2 #6 BLACK	BELOW GRADE 6" VERTICAL OR HORIZONTAL PIPE	BURIED - DIRECT TO MOUNTING POST	2 #6 WHITE	6" VERTICAL PUP	RIGID PIPE RISER TO REMOTE DECOUPLER POST
2	GUC GREENVILLE NO.2 REPLACEMENT	METER RUN OUTLET	MONOLITHIC	SSD-2/2-2.0-100-R	HORIZONTAL	6"	DECOUPLER MOUNTING POST	REMOTE (SEE AREA CLASSIFICATION); WITHIN MATS	2 #6 BLACK	BELOW GRADE 6" VERTICAL OR HORIZONTAL PIPE	BURIED - DIRECT TO MOUNTING POST	2 #6 WHITE	6" VERTICAL PUP	RIGID PIPE RISER TO REMOTE DECOUPLER POST
3	GUC GREENVILLE NO.2 REPLACEMENT	GUC STATION OUTLET	MONOLITHIC	SSD-2/2-2.0-100-R	HORIZONTAL	8"	DECOUPLER MOUNTING POST	REMOTE (SEE AREA CLASSIFICATION); WITHIN MATS	2 #6 BLACK	BELOW GRADE 8" VERTICAL OR HORIZONTAL PIPE	BURIED - DIRECT TO MOUNTING POST	2 #6 WHITE	8" VERTICAL PUP	RIGID PIPE RISER TO REMOTE DECOUPLER POST
4	GUC GREENVILLE NO.2 REPLACEMENT	MATS @ HEATER	MAT	SSD-2/2-2.0-100-R	--	6"	PEDESTAL	AS CLOSE AS POSSIBLE TO MONOLITHIC; WITHIN MATS	2 #6 BLACK	BELOW GRADE 6" VERTICAL OR HORIZONTAL PIPE	BURIED - DIRECT TO PEDESTAL	1 #6 RED	MAT	BURIED - DIRECT TO PEDESTAL

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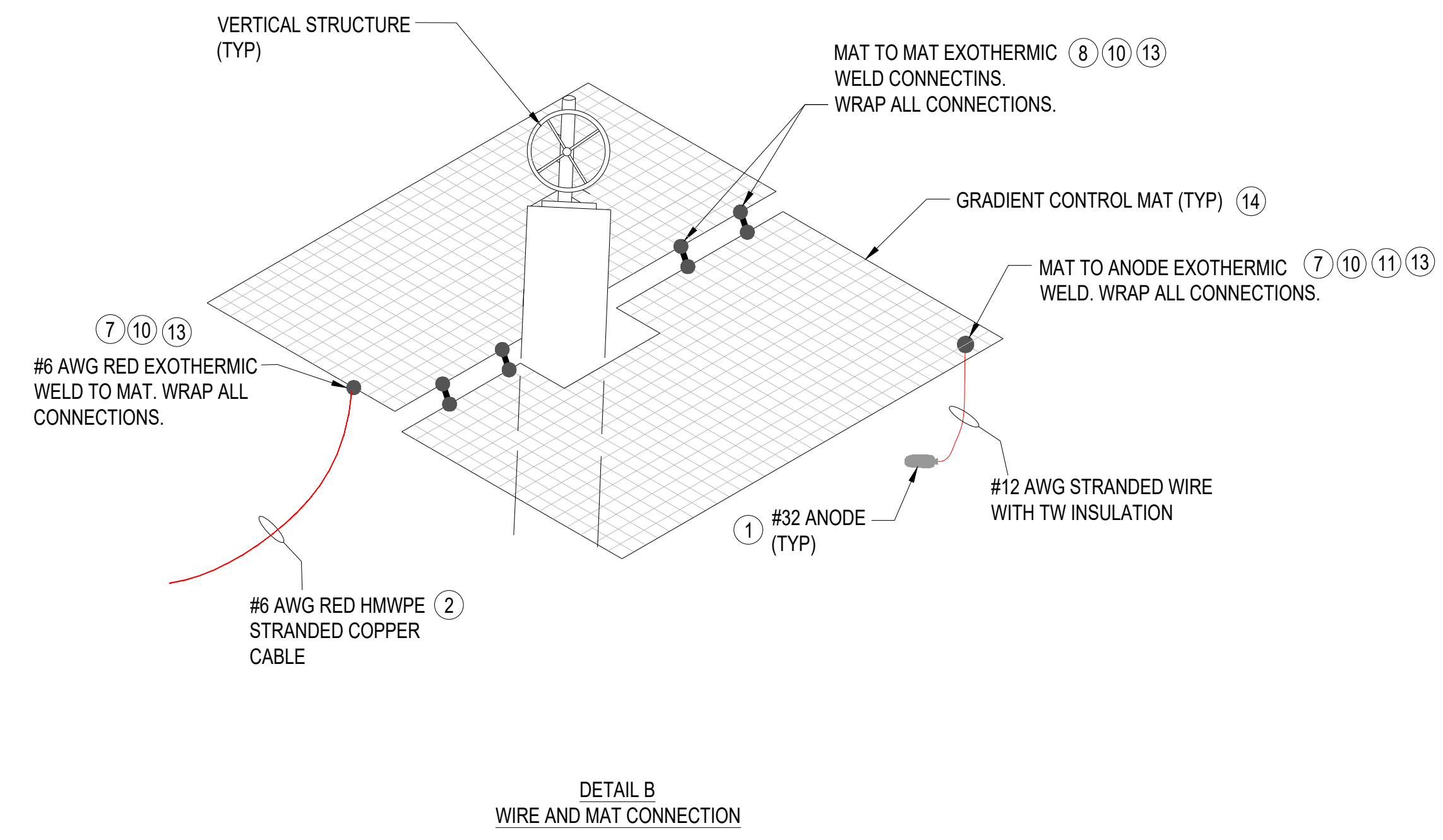
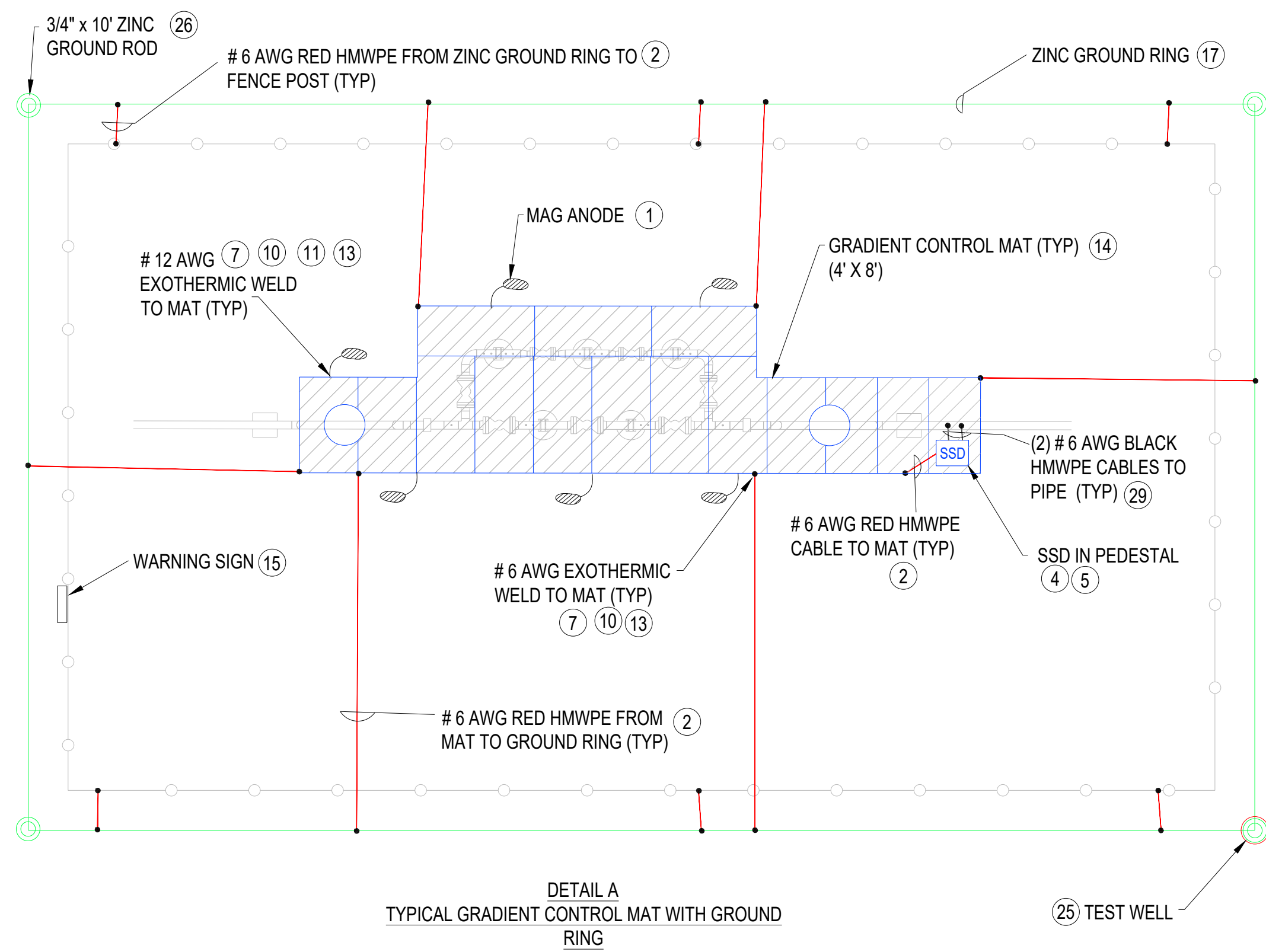


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						PROJECT NUMBER	02751477		MGR TECH REC & STD
						DRAWING BY	MC		
						STATION ID	7-HM-93-TAR-7101		PRINCIPAL ENGINEER
						CHECKER INITIALS	PB		

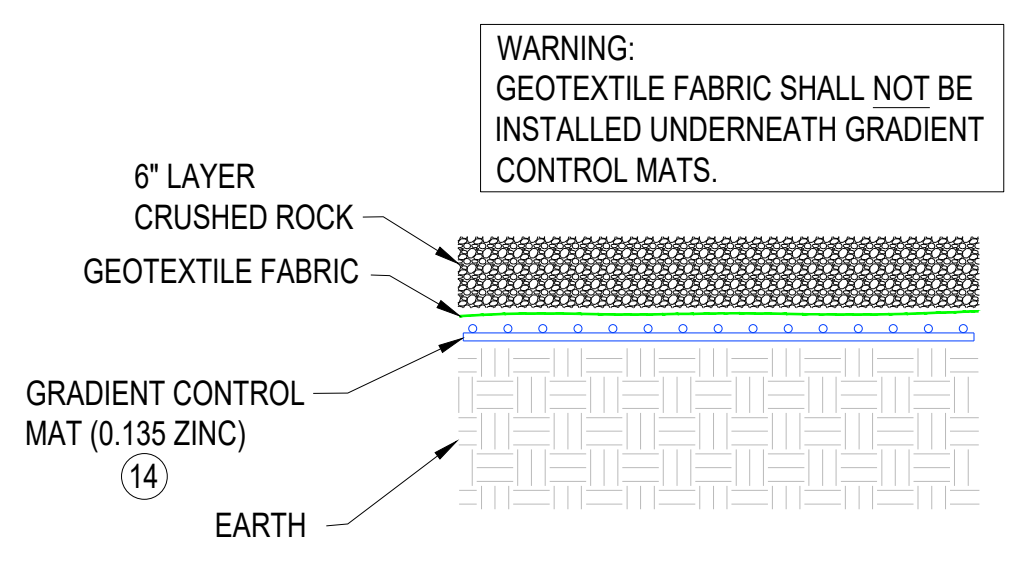
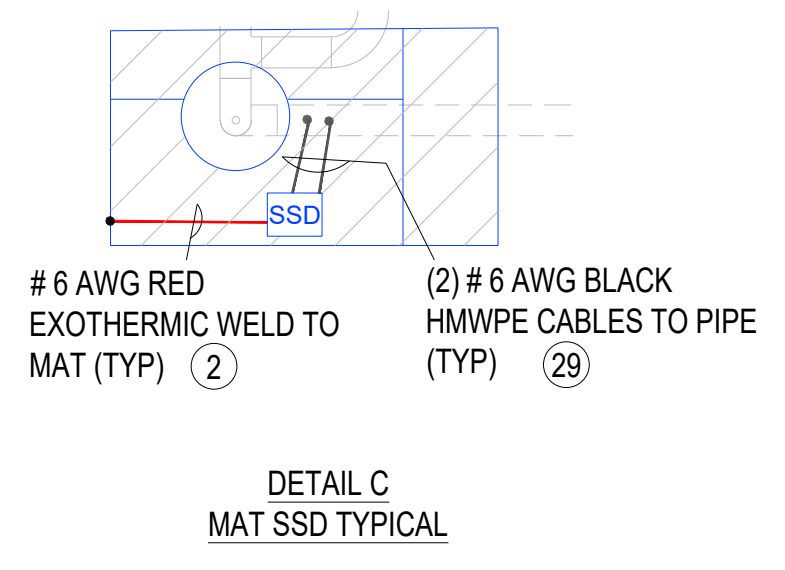


**GUC GREENVILLE NO. 2 REPLACEMENT
AC MITIGATION DECOUPLER TABLE
GREENVILLE, NC.**
OPERATIONS CENTER, TARBORO, NC.

SHEET(S)	5 OF 9	DWG SCALE	NTS
DWG DATE	1/3/2022	SUPERSEDED	---
DRAWING NUMBER	PNG-EX-027-0001003		
REVISION	0		
DISCIPLINE / RESOURCE CENTER / LINE NUMBER			

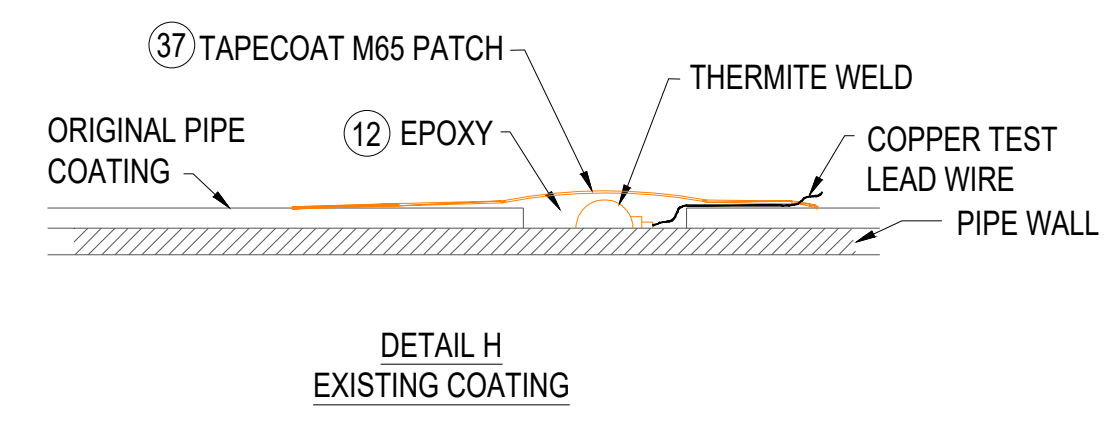
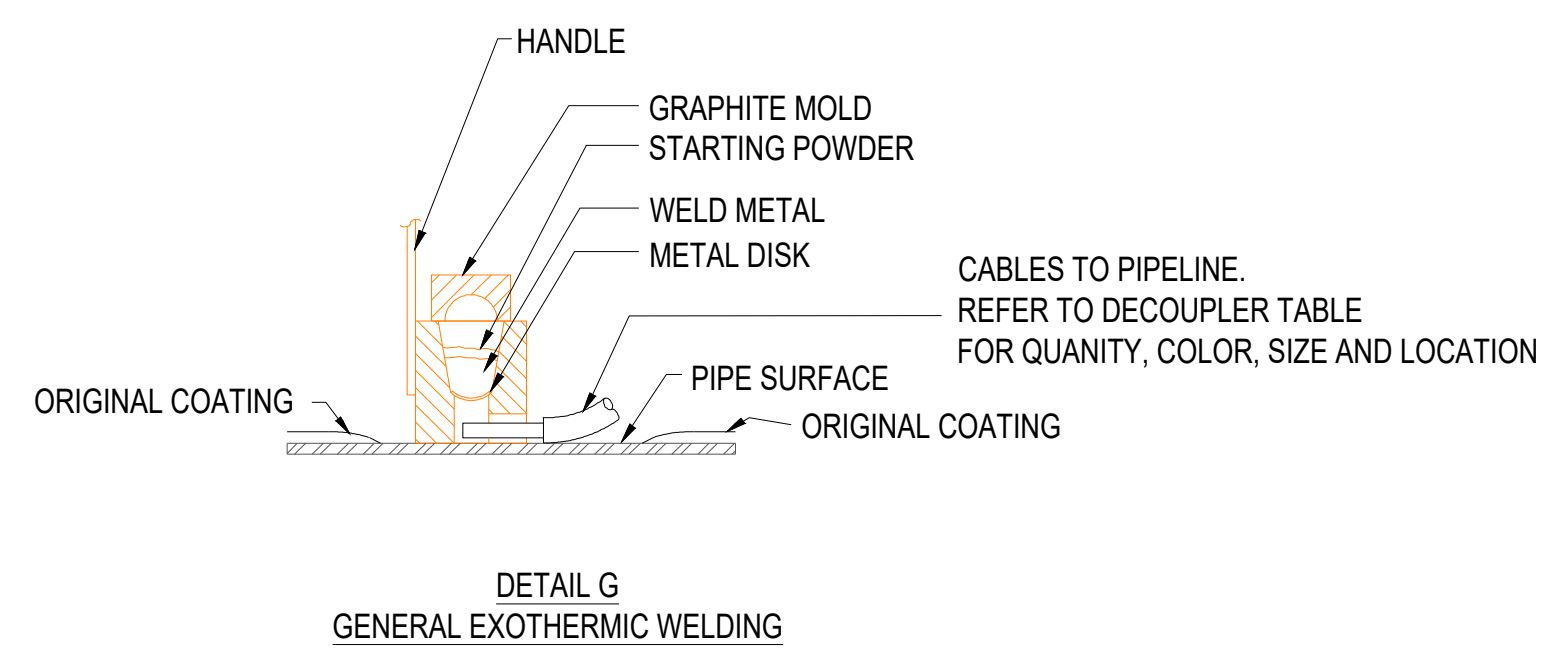
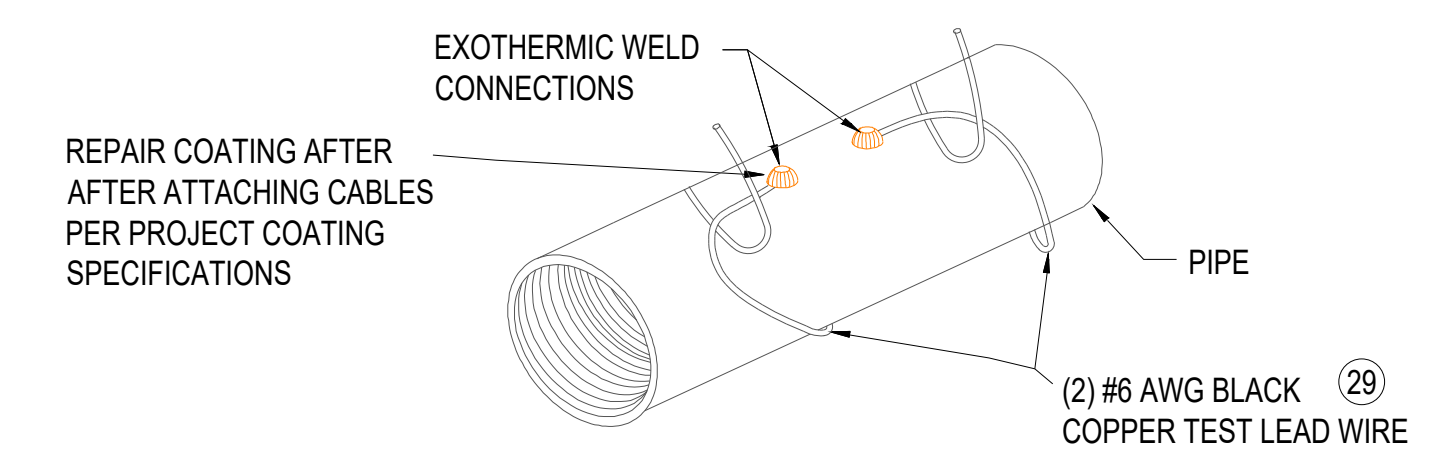
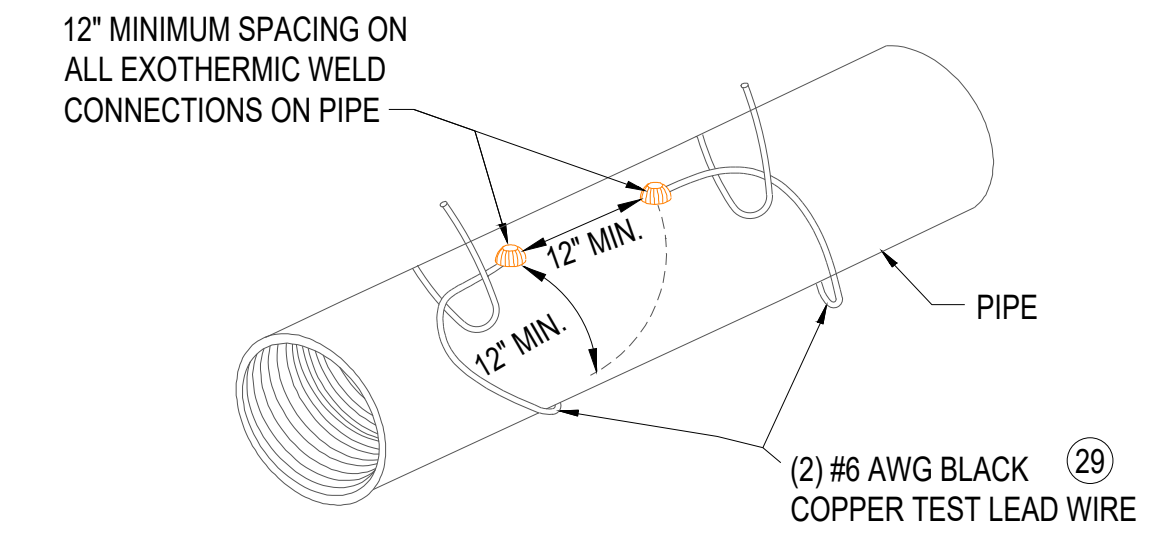


NOTES:
1. SEE MATERIAL LIST FOR ITEM DESCRIPTIONS AND QUANTITY ON DRAWING PNG-EX-027-0001007.



WARNING: GEOTEXTILE FABRIC SHALL NOT BE INSTALLED UNDERNEATH GRADIENT CONTROL MATS.

- GEOTEXTILE FABRIC NOTES:
1. INSTALL GRADIENT CONTROL MATS ON TOP OF SOIL.
 2. GEOTEXTILE FABRIC TO BE INSTALLED DIRECTLY ON TOP OF GRADIENT CONTROL MATS.



LEGEND

- ZINC GROUND RING
- #6 AWG RED HMWPE
- #6 AWG BLACK HMWPE
- #6 AWG WHITE HMWPE
- 32LB MAG ANODE
- EXOTHERMIC WELD
- 3/4\"/>

EIU JOB # 334-031

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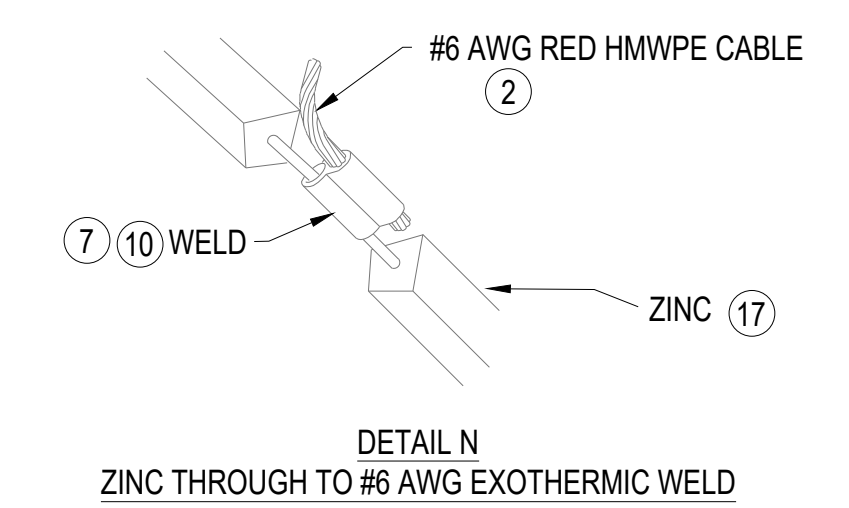
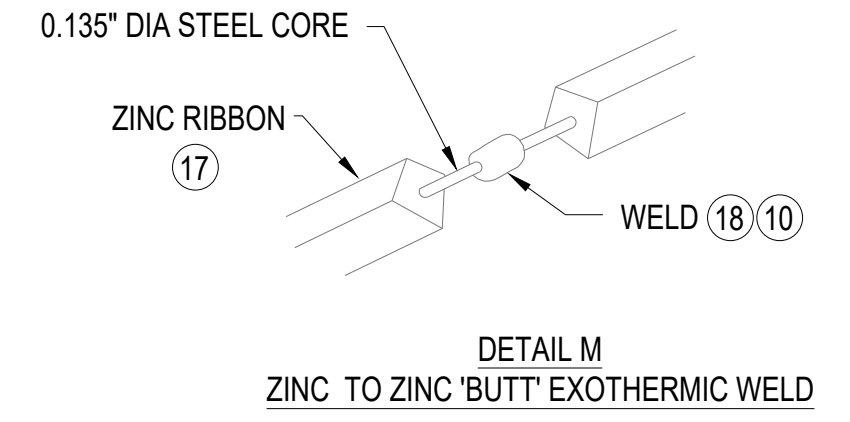
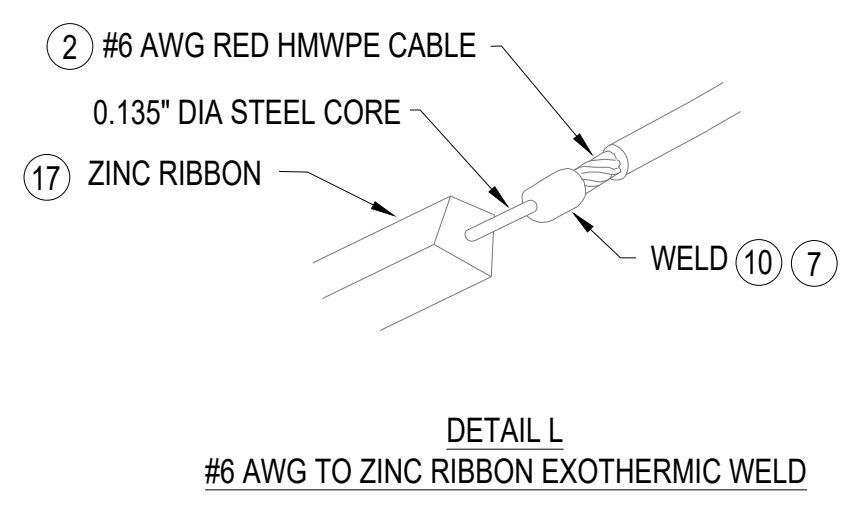
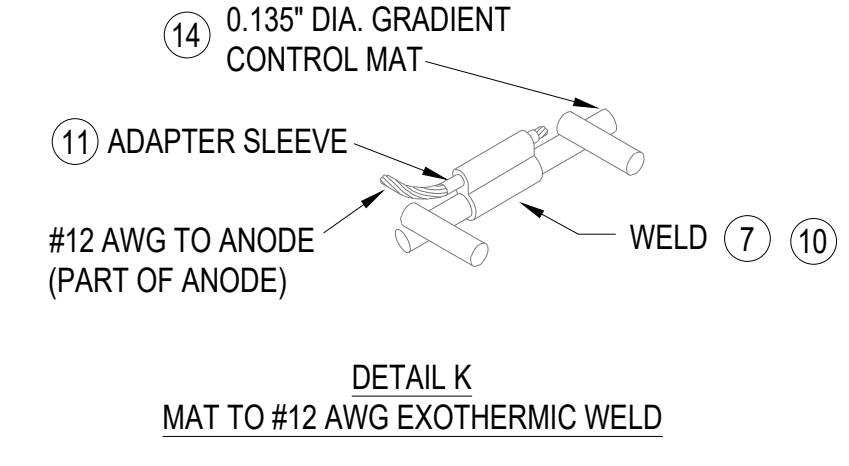
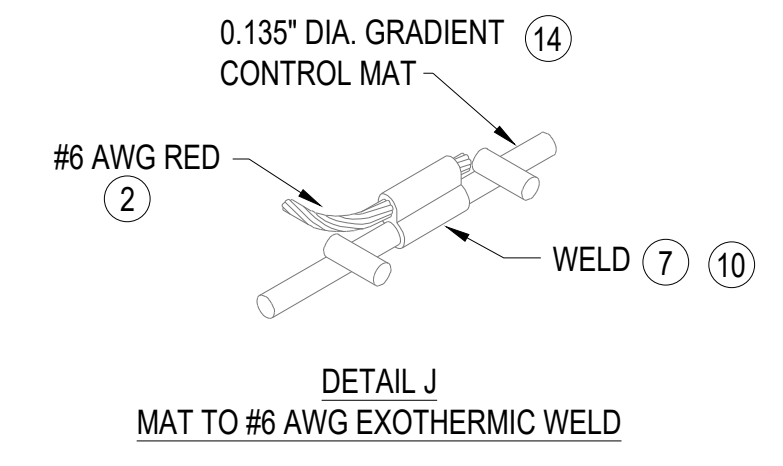
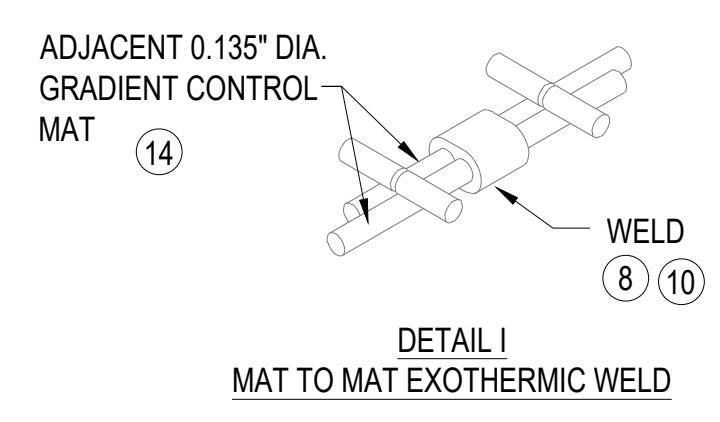


NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	DATE	INITIALS	APPROVALS
0	5/12/2022	ISSUED FOR CONSTRUCTION	MC	PB	GW	AREA CODE	N/A	N/A	REGIONAL ENGINEER
						ACCOUNT NUMBER			
						PROJECT NUMBER	02751477		MGR TECH REC & STD
						DRAWING BY	MC		
						STATION ID	7-HM-93-TAR-7101		PRINCIPAL ENGINEER
						CHECKER INITIALS	PB		



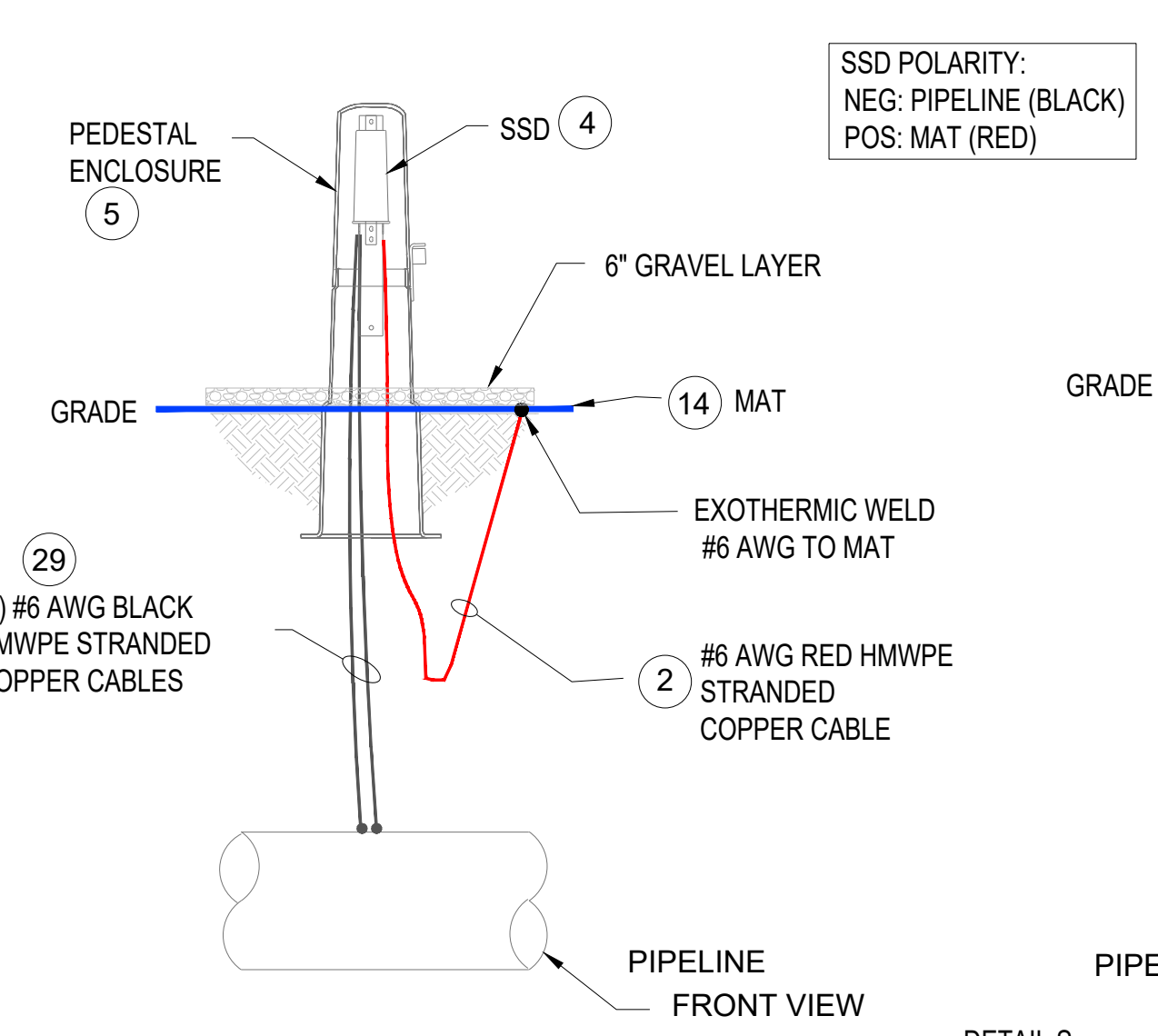
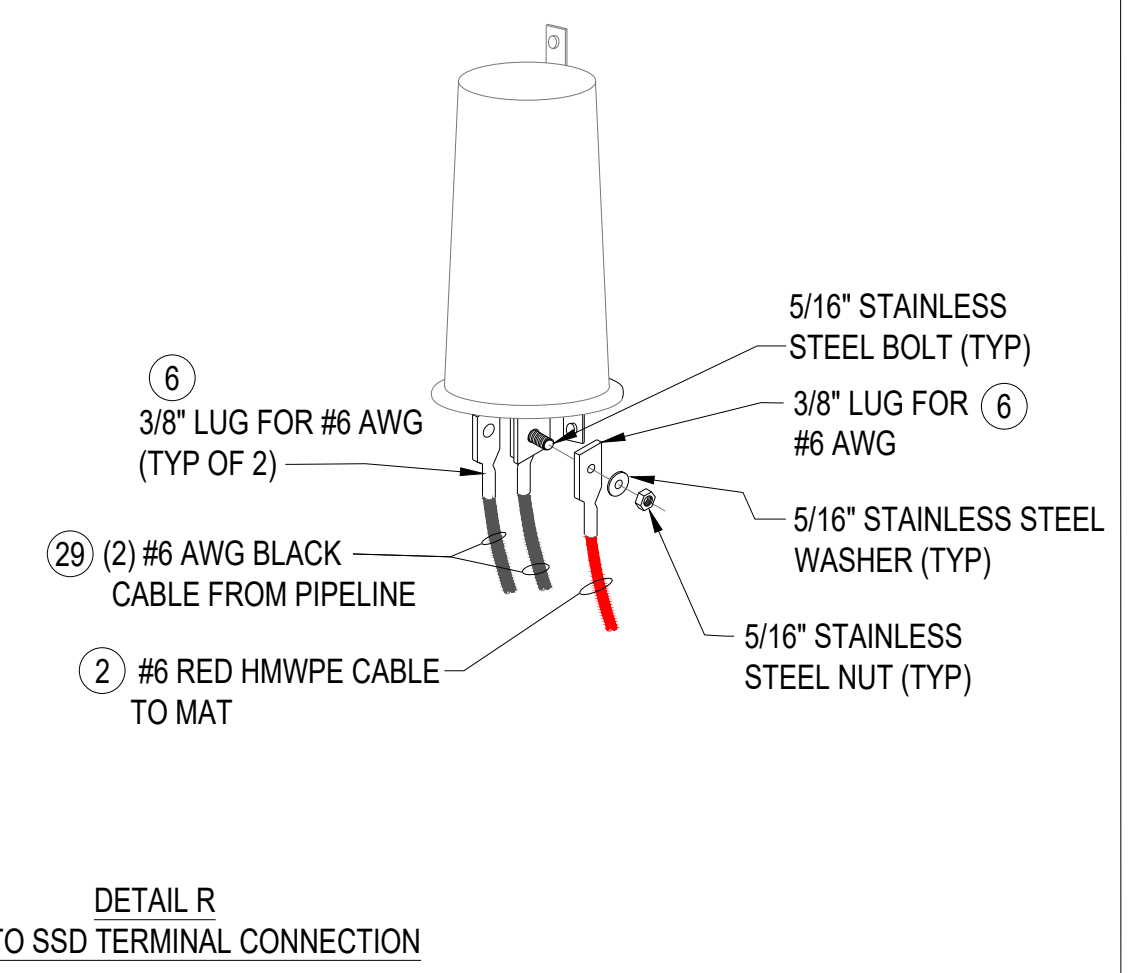
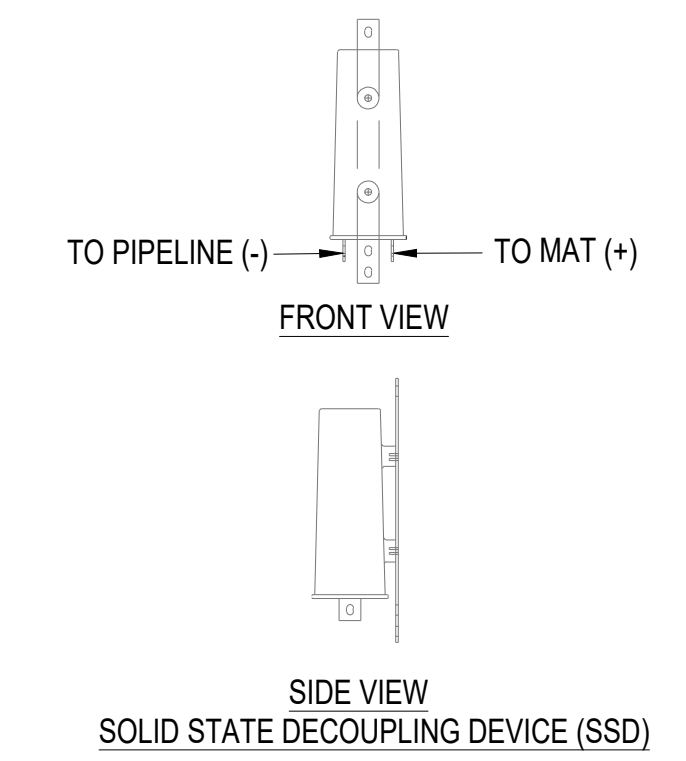
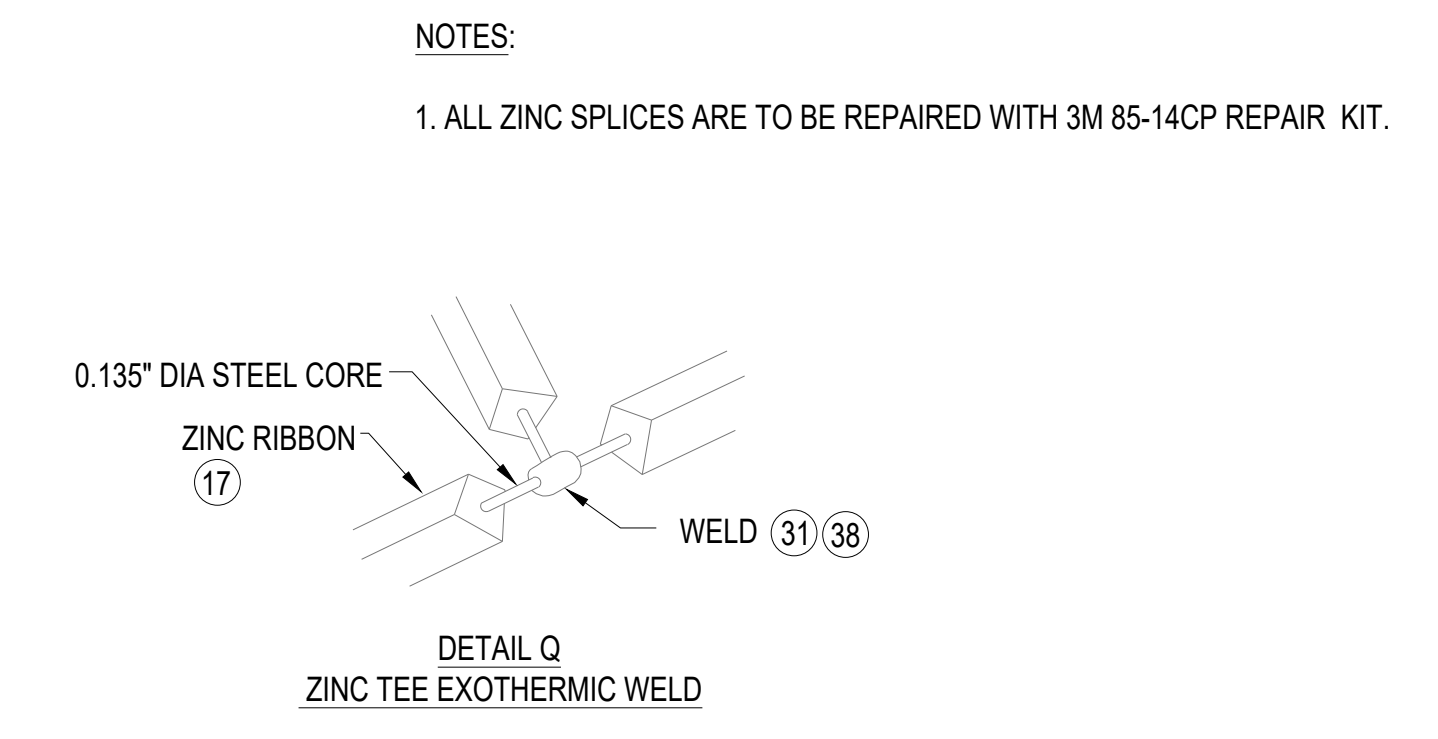
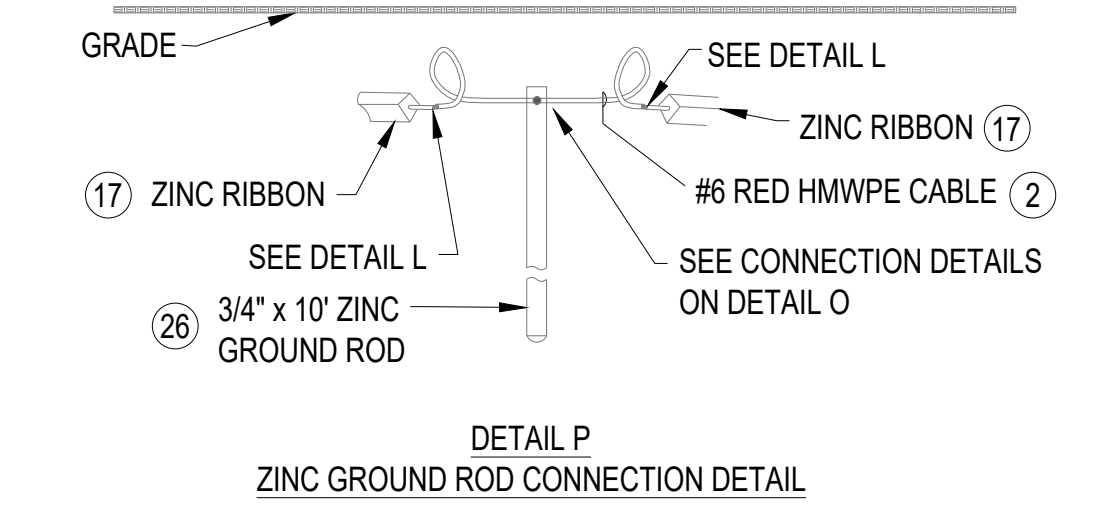
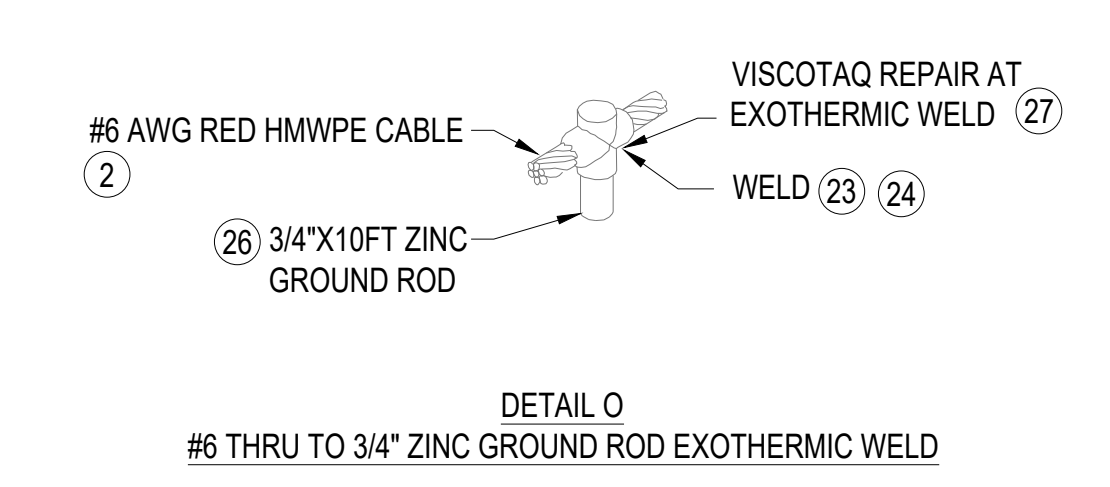
**GUC GREENVILLE NO. 2 REPLACEMENT
AC MITIGATION DETAILS PAGE 1
GREENVILLE, NC.**
OPERATIONS CENTER, TARBORO, NC.

SHEET(S)	6 OF 9	DWG SCALE	NTS
DWG DATE	1/3/2022	SUPERSEDED	—
DRAWING NUMBER	PNG-EX-027-0001004		
REVISION	0		
DISCIPLINE / RESOURCE CENTER / LINE NUMBER			

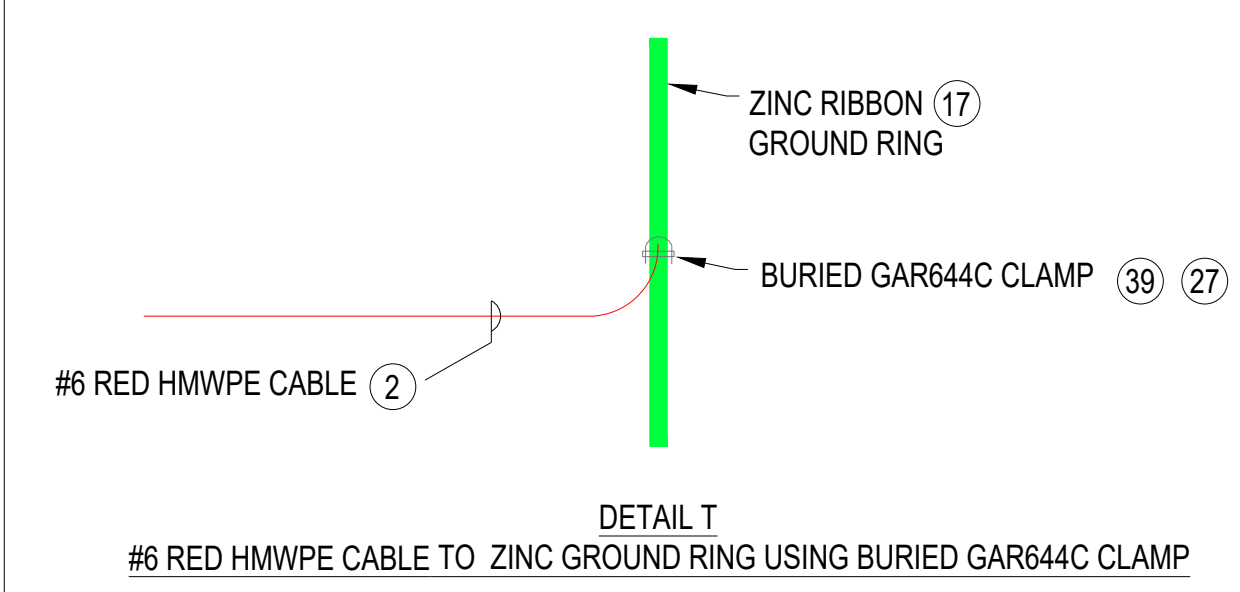
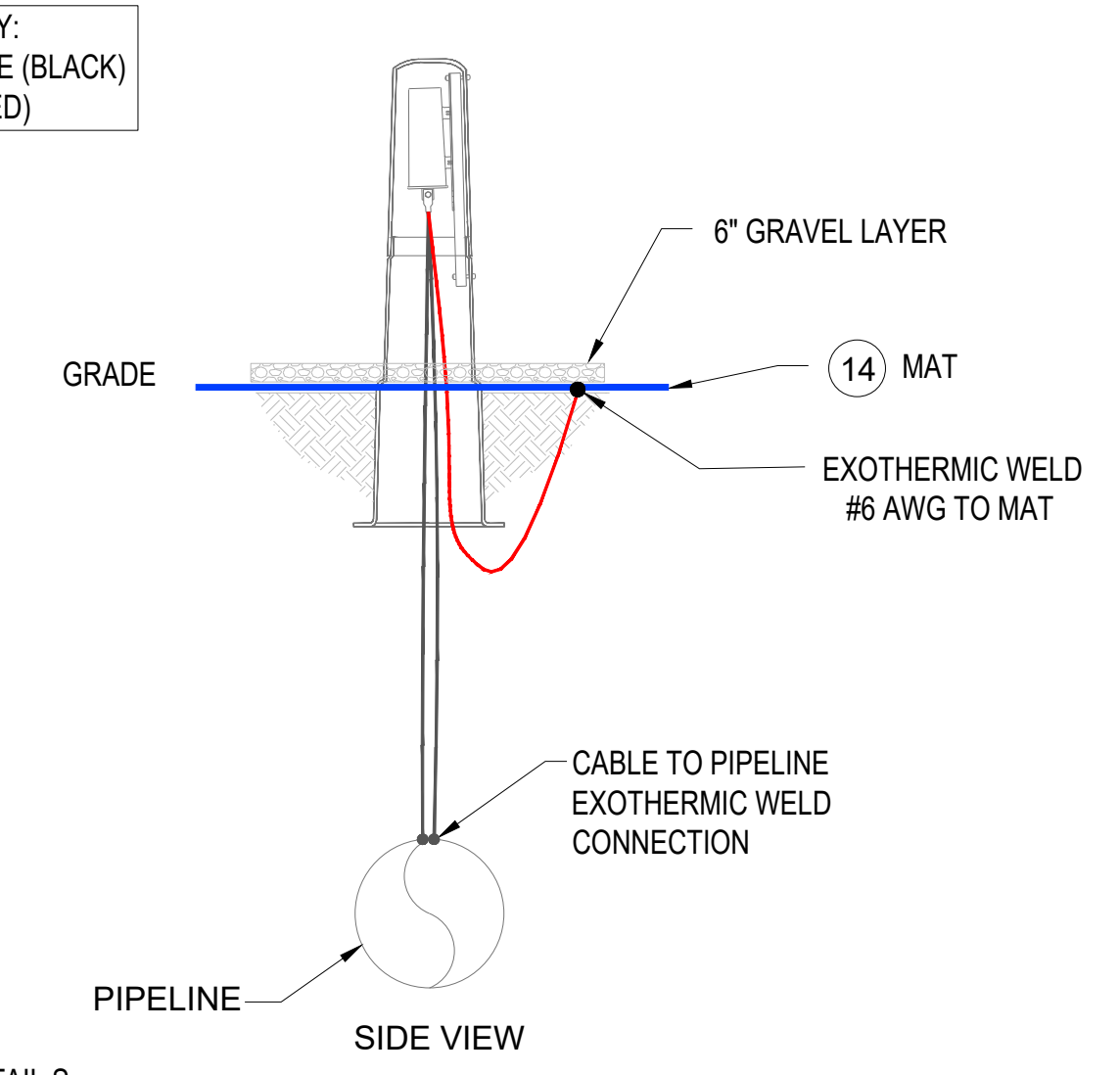


DETAIL	MOLD	WELD METAL	REPAIR PART	ADAPTER SLEEVE
I	THERMOWELD P/N M-8578	#15 CP	DENSO TAPE	NO
J	THERMOWELD P/N M-8579	#15 CP	DENSO TAPE	NO
K	THERMOWELD P/N M-8579	#15 CP	DENSO TAPE	YES
L	THERMOWELD P/N M-8579	#15 CP	85-14CP	NO
M	THERMOWELD P/N M-7233	#15 CP	85-14CP	NO
N	THERMOWELD P/N M-8579	#15 CP	85-14CP	NO
O	THERMOWELD P/N M-5787-N	#65	VISCOTAQ	NO
P	SEE DETAILS L & O	N/A	N/A	N/A
Q	THERMOWELD P/N M-12419	#32	85-14CP	NO

NOTES:
1. SEE MATERIAL LIST FOR ITEM DESCRIPTIONS AND QUANTITY ON DRAWING PNG-EX-027-0001005.



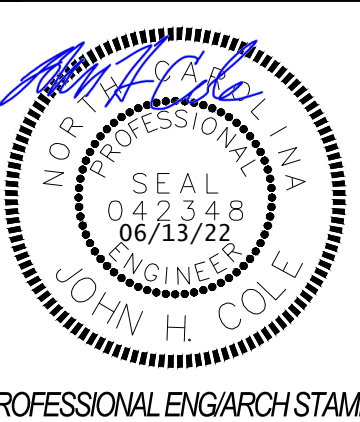
SSD POLARITY:
NEG: PIPELINE (BLACK)
POS: MAT (RED)



- LEGEND
- ZINC GROUND RING
 - #6 AWG RED HMWPE
 - #6 AWG BLACK HMWPE
 - #6 AWG WHITE HMWPE
 - 32LB MAG ANODE
 - EXOTHERMIC WELD
 - 3/4" x 10' ZINC GROUND ROD
 - SSD FOR MATS
 - SSD FOR MONOLITHIC PROTECTION
 - TEST WELL
 - FENCE

EIU JOB # 334-031

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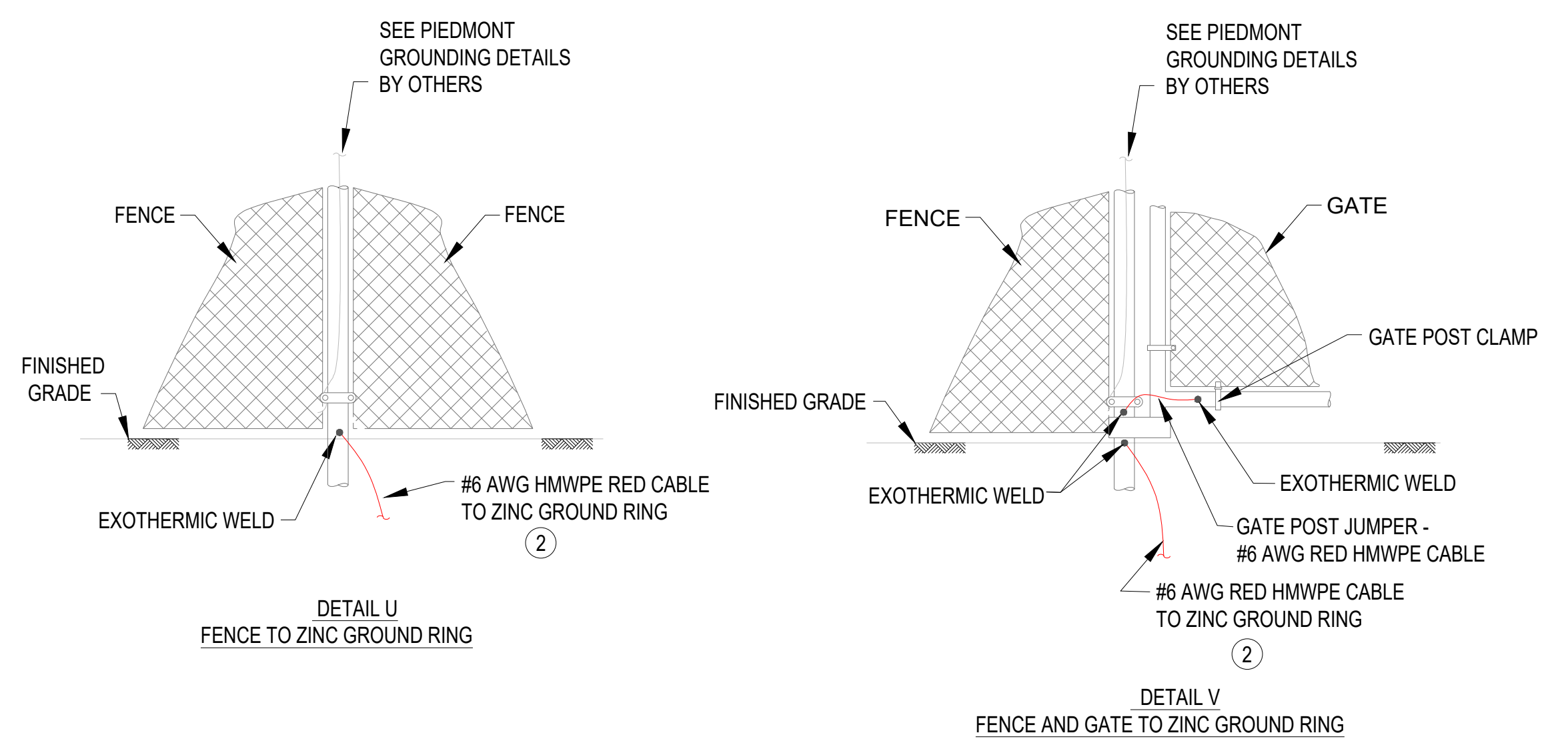
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						ACCOUNT NUMBER			
						PROJECT NUMBER	02751477		MGR TECH REC & STD
						DRAWING BY	MC		
						STATION ID	7-HM-93-TAR-7101		PRINCIPAL ENGINEER
						CHECKER INITIALS	PB		



**GUC GREENVILLE NO. 2 REPLACEMENT
AC MITIGATION DETAILS PAGE 2
GREENVILLE, NC.**
OPERATIONS CENTER, TARBORO, NC.

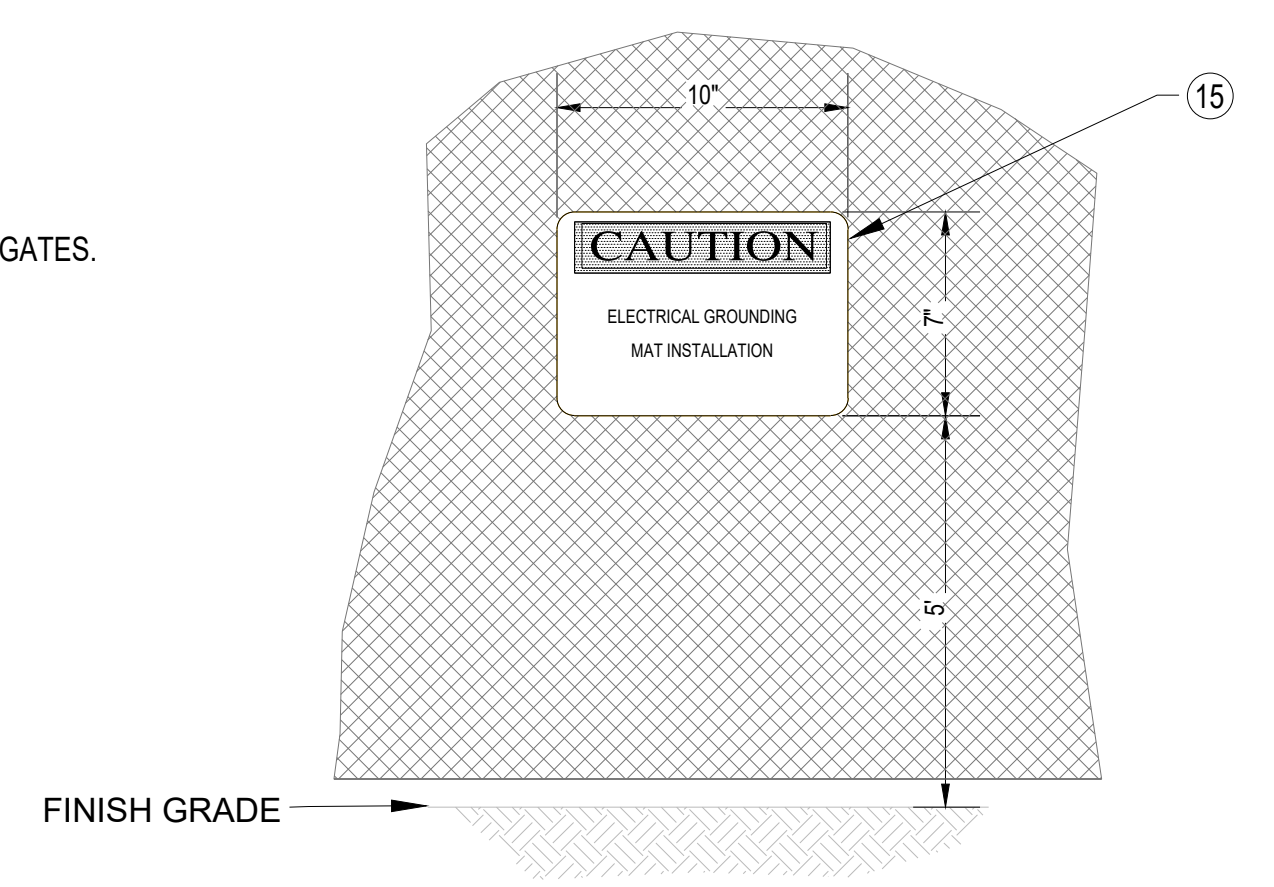
REF. DWG(S) PNG-G-027-0001087

SHEET(S)	7 OF 9	DWG SCALE	NTS
DWG DATE	1/3/2022	SUPERSEDED	
DRAWING NUMBER		REVISION	
PNG-EX-027-0001005		0	
DISCIPLINE / RESOURCE CENTER / LINE NUMBER			

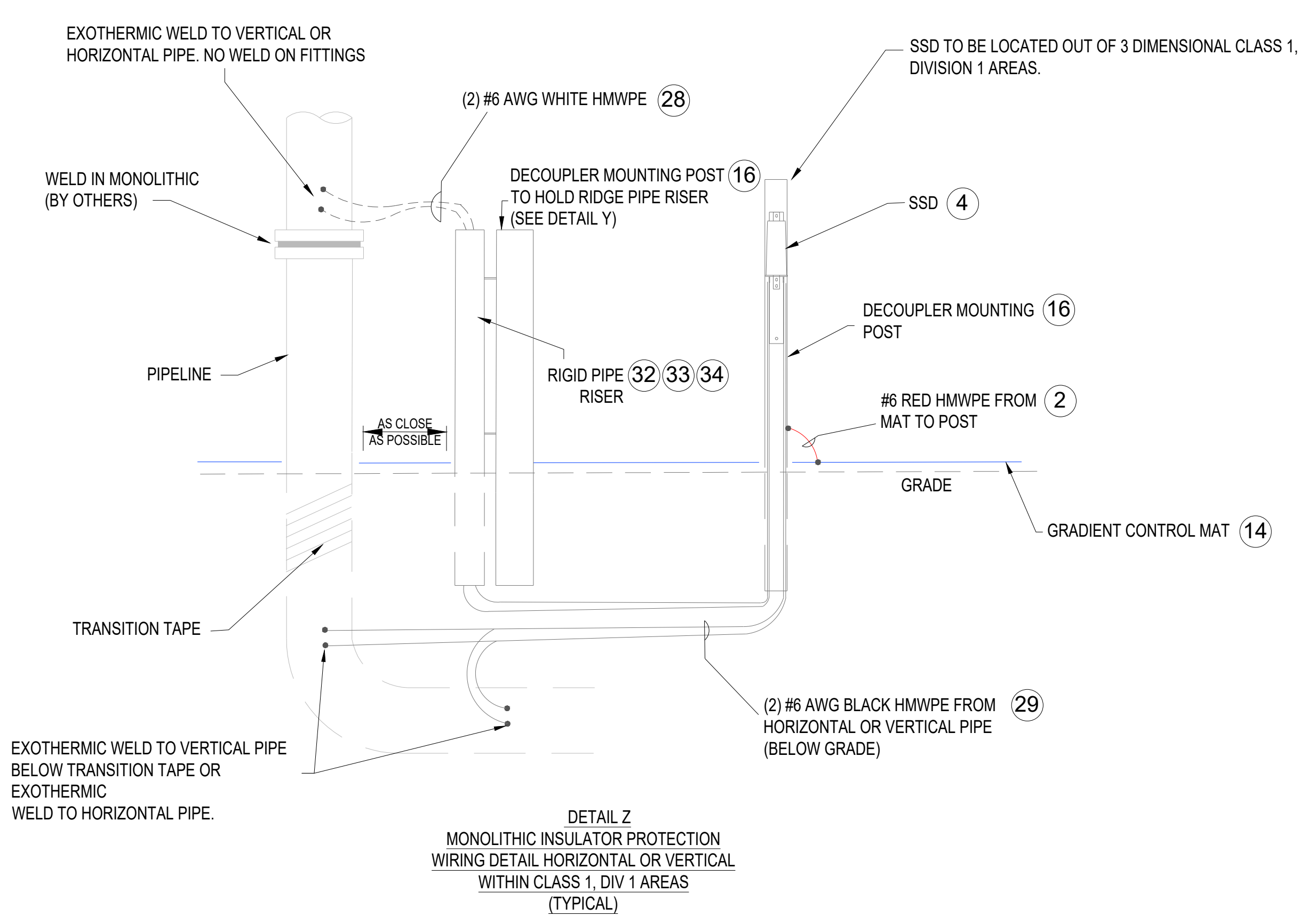
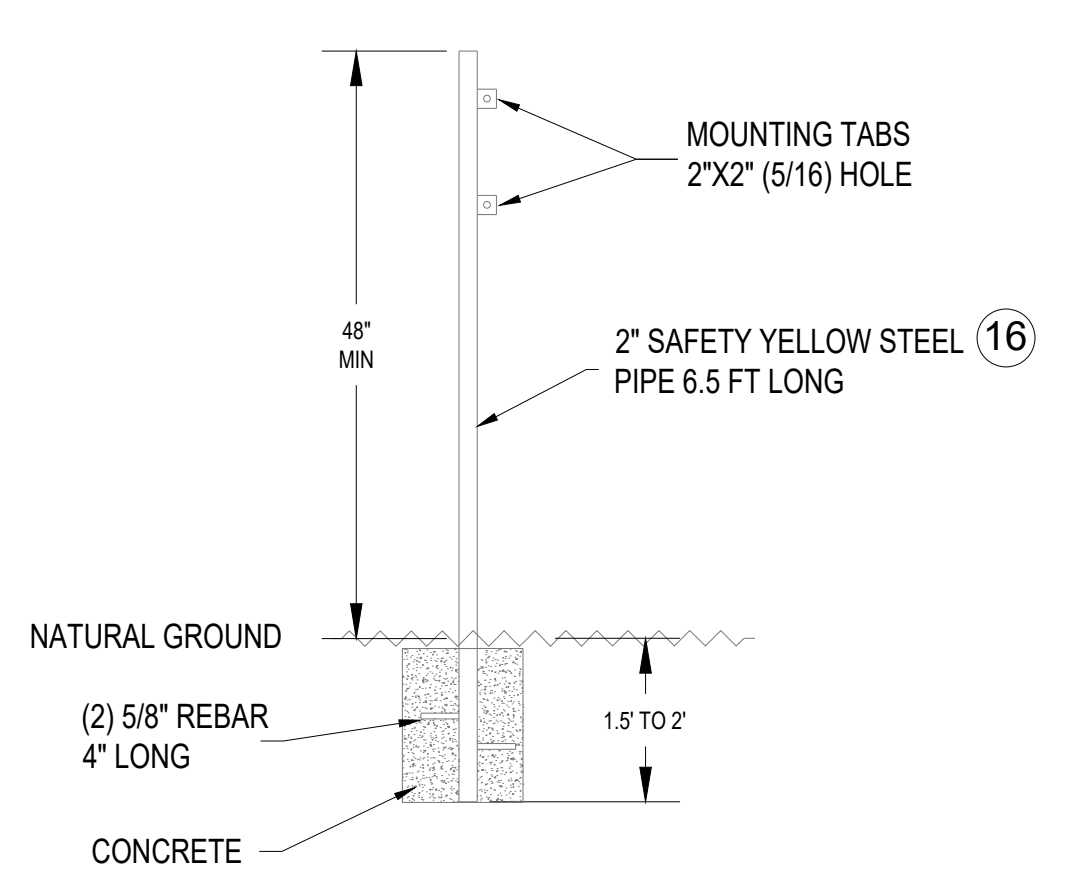
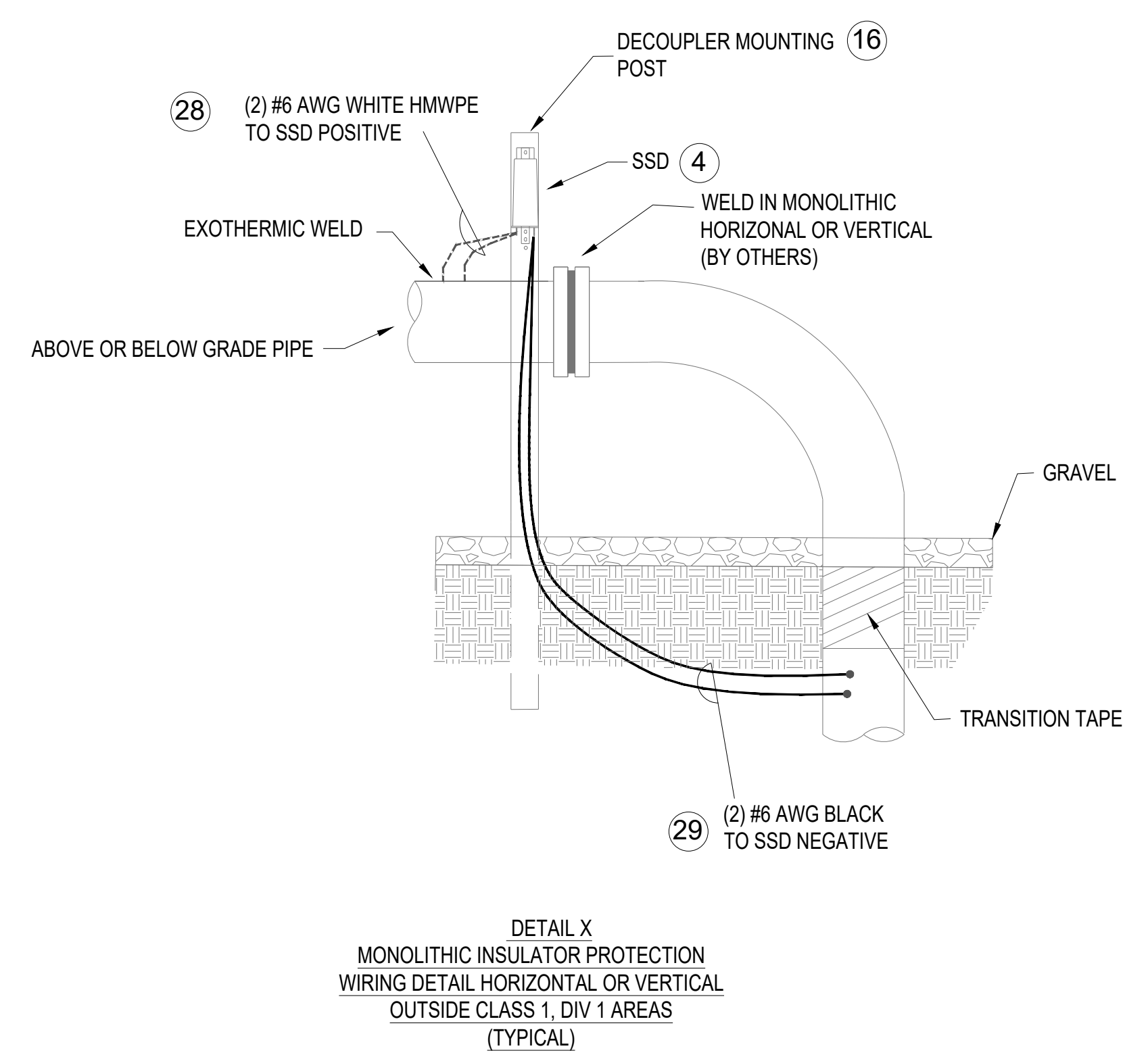


NOTES:
1. ALL GATE POSTS TO BE CONNECTED TO ZINC GROUND RINGS.

NOTES:
1. WARNING SIGNS TO BE INSTALLED ON GATES.



NOTES:
1. SEE MATERIAL LIST FOR ITEM DESCRIPTIONS AND QUANTITY ON DRAWING PNG-EX-027-0001007.



LEGEND

- ZINC GROUND RING
- #6 AWG RED HMWPE
- #6 AWG BLACK HMWPE
- #6 AWG WHITE HMWPE
- 32LB MAG ANODE
- EXOTHERMIC WELD
- 3/4" X 10' ZINC GROUND ROD
- SSD SSD FOR MATS
- SSD SSD FOR MONOLITHIC PROTECTION
- TEST WELL
- FENCE

EIU JOB # 334-031

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NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	DATE	INITIALS	APPROVALS
0	5/12/2022	ISSUED FOR CONSTRUCTION	MC	PB	GW	AREA CODE	N/A	N/A	REGIONAL ENGINEER
						ACCOUNT NUMBER			
						PROJECT NUMBER	02751477		MGR TECH REC & STD
						DRAWING BY	MC		
						STATION ID	7-HM-93-TAR-7101		PRINCIPAL ENGINEER
						CHECKER INITIALS	PB		



**GUC GREENVILLE NO. 2 REPLACEMENT
AC MITIGATION DETAILS PAGE 3
GREENVILLE, NC.**
OPERATIONS CENTER, TARBORO, NC.

REF. DWG(S)	PNG-EX-027-0001087		
SHEET(S)	8 OF 9	DWG SCALE	NTS
DWG DATE	1/3/2022	SUPERSEDED	—
DRAWING NUMBER		REVISION	
PNG-EX-027-0001006		0	
DISCIPLINE / RESOURCE CENTER / LINE NUMBER			

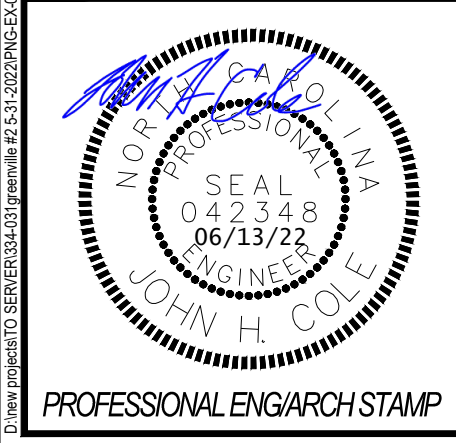
ITEM	LAUNCHER	MATERIALS DESCRIPTION
1	29	32 POUND HIGH POTENTIAL CAST MAGNESIUM ANODE. PREPACKAGED WITH 20 FT OF #12 SOLID CABLE.
2	500FT	#6 AWG STRANDED RED HMWPE INSULATED CATHODIC PROTECTION WIRE. ASTM-B8 CLASS B STD SOFT DRAWN COMMERCIAL PURE COPPER.
3	A/R	FENCE CLAMP. SIZE AND QUANTITY TO BE FIELD DETERMINED.
4	4	SSD, 2 VOLTS DC SYMETRICAL BLOCKING VOLTAGE FOR INSTALLATION BETWEEN GRADIENT CONTROL MAT OR GROUND LOOP AND PIPELINE. 2KA RATING @30CYCLES 50/60HZ. 100KA LIGHTNING RATING. DEI P/N: SSD-2/2-2.0-100-R.
5	1	SSD PEDESTAL, FIBERGLASS CASE 22" x 17" x 36" - PEDESTAL 36"
6	17	SINGLE HOLE COMPRESSION LUG, FITS #6 AWG, 5/16" STUD TO CONNECT #6 WIRE TO SSD. BURNDY P/N: YAZ6C-TC38.
7	1	EXOTHERMIC WELD MOLD FOR #6 & #12 AWG TO GRADIENT CONTROL MAT. THERMOWELD P/N: M8579. USE ONLY #15CP WELD METAL.
8	9	EXOTHERMIC WELD MOLD FOR 0.135 MAT TO 0.135 MAT. THERMOWELD P/N: M8578. USE ONLY #15CP WELD METAL.
9	1	EXOTHERMIC WELD MOLD FOR #6 AWG TO HORIZONTAL PIPE (4" & LARGER). THERMOWELD P/N M102. USE ONLY #15CP WELD METAL.
10	25 BOXES	EXOTHERMIC WELD METAL, #15CP. 20 PER BOX. USED FOR CONNECTION OF CABLE TO PIPE AND FOR MAT TO MAT.
11	29	EXOTHERMIC WELD ADAPTER SLEEVE, THERMOWELD P/N: 38-0200-00. USED TO INCREASE #12 AWG CABLE DIAMETER TO #6 AWG DIAMETER.
12	3 TUBES	TWO PART EPOXY FOR PIPE COATING REPAIR. CANUSA HBE-95. 400ML TUBE, APPLY 20 MIL THICK
13	5 ROLLS	DENSO LT TAPE, USED FOR COATING EXOTHERMIC WELD CONNECTIONS TO GRADIENT CONTROL MATS.
14	73	GRADIENT CONTROL MAT. 3"X3" GRID SPACING, 0.135" DIAMETER HOT DIP GALVANIZED, 4'X8'. MATS MUST EXTEND 3' BEYOND ANY ABOVE GRADE PIPING.
15	4	WARNING UNDERGROUND MAT INSTALLATION SIGN.
16	6	DECOUPLER MOUNTING POST FOR MOUNTING SSD. EIU P/N Y078 DEFAULT LENGTH. SAFETY YELLOW POWDER COATED.
17	600FT	ZINC RIBBON TYPE II, PLUS 5/8"X7/8", FOR GROUNDLOOP
18	1	EXOTHERMIC WELD MOLD FOR ZINC TO ZINC 'BUTT' THERMOWELD P/N: M-7233. USE ONLY 15 CP WELD METAL.
19	26	REPAIR KIT, 3M P/N 85-14CP
20	2	EXOTHERMIC WELD MOLD FOR #6 AWG TO VERTICAL (3/4" TO 3.5") PIPE. THERMOWELD P/N M-0174. USE ONLY #15CP WELD METAL.
22	1	EXOTHERMIC WELD MOLD FOR #6 AWG TO VERTICAL (4" TO 10") PIPE. THERMOWELD P/N M-0176. USE ONLY #15CP WELD METAL.
23	1 BOX	EXOTHERMIC WELD METAL, #65CP. 20 PER BOX.
24	1	EXOTHERMIC WELD MOLD FOR #6 TO 3/4" GROUND ROD THERMOWELD. P/N: M-5787-N ONLY USE 65 CP WELD METAL.
25	1	GROUND TEST WELL. 8: X 1'6". VITRIFIED CLAY PIPE.
26	4	3/4" X 10' ZINC GROUNDROD. GALVAN INDUSTRIES P/N: GR7510F
27	1 ROLL	VISCOTAQ EXOTHERMIC WELD COATING REPAIR AT GROUND RODS. 2" WIDE X 33' LONG ROLL.
28	100FT	#6 AWG STRANDED WHITE HMWPE INSULATED CATHODIC PROTECTION WIRE. ASTM-B8 CLASS B STD SOFT DRAWN COMMERCIAL PURE COPPER.
29	200FT	#6 AWG STRANDED BLACK HMWPE INSULATED CATHODIC PROTECTION WIRE. ASTM-B8 CLASS B STD SOFT DRAWN COMMERCIAL PURE COPPER.
32	3	RIGID PIPE RISER
33	3	CGB NON ARMORED CABLE GLAND FOR USE ON RIDGID PIPE RISER. 1-1/2" EATON P/N CGB598
34	6	PARAKEET CLAMP USED FOR MOUNTING RIGID PIPE RISER. 1-1/2 PAR COND CLMP GALV. P/N: PARC150HD
35	2	MECHANICAL GROUND ROD CLAMP. BURNDY P/N: GRC34
36	8	SERVIT POST FOR BOLLARD GROUNDING. STUD / BOLT SIZE: 3/8" BURNDY P/N: KC23
37	2 PACKS	PIPE COATING REPAIR. USED OVER CURED 2-PART EPOXY BURIED EXOTHERMIC WELD CABLE CONNECTIONS. TAPECOAT M65 / GRAY PADS P/N: M65RCG. 25 PER PACK.
39	10	BURNDY GAR644C CLAMP. USED TO ATTACH #6 AWG RED HMWPE TO ZINC GROUND RING
40	A/R	BURNDY GAR644C CLAMP. USED FOR FENCE GROUNDING.
41	A/R	BURNDY KS26 COPPER SPLIT BOLT CLAMP. USED FOR FENCE GROUNDING.
42	A/R	2/0 AWG STRANDED COPPER THHN WIRE. USED FOR FENCE GROUNDING.

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NO.	DATE	REVISION(S) DESCRIPTION	BY	CHK	APPD	DESCRIPTION	DATE	INITIALS	APPROVALS
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						ACCOUNT NUMBER			
						PROJECT NUMBER	02751477		MGR TECH REC & STD
						DRAWING BY	MC		
						STATION ID	7-HM-93-TAR-7101		PRINCIPAL ENGINEER
						CHECKER INITIALS	PB		



**GUC GREENVILLE NO. 2 REPLACEMENT
AC MITIGATION MATERIALS
GREENVILLE, NC.**
OPERATIONS CENTER, TARBORO, NC.

SHEET(S)	9 OF 9	DWG SCALE	NTS
DWG DATE	1/3/2022	SUPERSEDED	---
DRAWING NUMBER		REVISION	
PNG -EX-027-0001007		0	
DISCIPLINE / RESOURCE CENTER / LINE NUMBER			