

STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS

1. ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, BEFORE BEGINNING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC).
3. CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOILS AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:

A. EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)

B. CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2

C. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION

D. CDOT M & S STANDARDS
4. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING. ANY MODIFICATIONS NECESSARY TO MEET CRITERIA AFTER-THE-FACT WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
5. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ONSITE AND OFFSITE, ON THE CONSTRUCTION PLANS. ANY MODIFICATIONS NECESSARY DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
6. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT (PCD) - INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES AND TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY CORPS OF ENGINEERS-ISSUED 401 AND/OR 404 PERMITS, AND COUNTY AND STATE FUGITIVE DUST PERMITS.
8. CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND PCD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
9. ALL STORM DRAIN PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY PCD.
10. CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCD PRIOR TO PLACEMENT OF CURB AND GUTTER AND PAVEMENT.
11. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
12. SIGHT VISIBILITY TRIANGLES AS IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED WITHIN SIGHT TRIANGLES.
13. SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DPW AND MUTCD CRITERIA.
14. CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DPW, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
15. THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED. THE OWNER/DEVELOPER SHALL OBTAIN WRITTEN PERMISSION AND EASEMENTS, WHERE REQUIRED, FROM ADJOINING PROPERTY OWNER(S) PRIOR TO ANY OFF-SITE DISTURBANCE, GRADING, OR CONSTRUCTION.

CONTACT:  
RYAN KURTZ  
719-469-2216

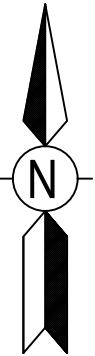
ENGINEER:  
BLACK HILLS ENERGY  
SEAN BROWN

BLACK HILLS ENERGY  
SQUIRREL CREEK  
8" STEEL PIPELINE  
FOUNTAIN, CO  
DECEMBER 2023  
PERMIT PLANS



VICINITY MAP  
NOT TO SCALE

IMAGERY PROVIDED BY: GOOGLE EARTH  
IMAGERY DATE: 10/6/2019



SHEET INDEX		
SHEET	DRAWING#	TITLE
1	3000	COVERSHEET
2	3010	KEY MAP
3	3001	ALIGNMENT 0+00 TO 13+00
4	3002	ALIGNMENT 13+00 TO 28+00
5	3003	ALIGNMENT 28+00 TO 42+00
6	3004	ALIGNMENT 42+00 TO 56+00
7	3004A	ALIGNMENT 56+00 TO 67+00
8	3005	ALIGNMENT 67+00 TO 82+00
9	3006	ALIGNMENT 82+00 TO 97+00
10	3007	ALIGNMENT 97+00 TO 112+00
11	3008	ALIGNMENT 112+00 TO 122+40
12	3201	FMIC DITCH HDD
13	3202	WETLANDS HDD
14	3203	CHILCOTT CANAL OPEN CUT DETAIL
15	3204	JIMMY CAMP ROAD HDD
16	3205	JIMMY CAMP CREEK HDD
17	3206	TYPICAL JACK & BORE DETAIL
18	5990	CP TEST STATION DETAIL 1
19	5991	CP TEST STATION DETAIL 2
20	5992	CP TEST STATION EXOTHERMIC WELD DETAILS
21	5993	CP TEST STATION MATERIALS

OWNER/DEVELOPER'S STATEMENT:

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN AND ALL OF THE REQUIREMENTS SPECIFIED IN THESE DETAILED PLANS AND SPECIFICATIONS.

*Chris Downey*

CHRIS DOWNEY, GENERAL MANAGER  
DATE: 2/7/2024  
BLACK HILLS ENERGY  
7060 ALEGRE, ST. FOUNTAIN CO. 80817

DESIGN ENGINEER'S STATEMENT:

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED ROADWAY, DRAINAGE, GRADING AND EROSION CONTROL PLANS AND SPECIFICATIONS, AND SAID PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH APPLICABLE MASTER DRAINAGE PLANS AND MASTER TRANSPORTATION PLANS. SAID PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR ROADWAY AND DRAINAGE FACILITIES ARE DESIGNED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARATION OF THESE DETAILED PLANS AND SPECIFICATIONS.

*Sean P. Brown*

SEAN BROWN, P.E. #56126  
DATE: 2/7/2024

EL PASO COUNTY:

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL AS AMENDED.

IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTORS DISCRETION.

JOSHUA PALMER  
DATE  
COUNTY ENGINEER / ECM ADMINISTRATOR

\* COUNTY APPROVAL IS FOR UTILITY CROSSINGS WITHIN COUNTY ROW ONLY.

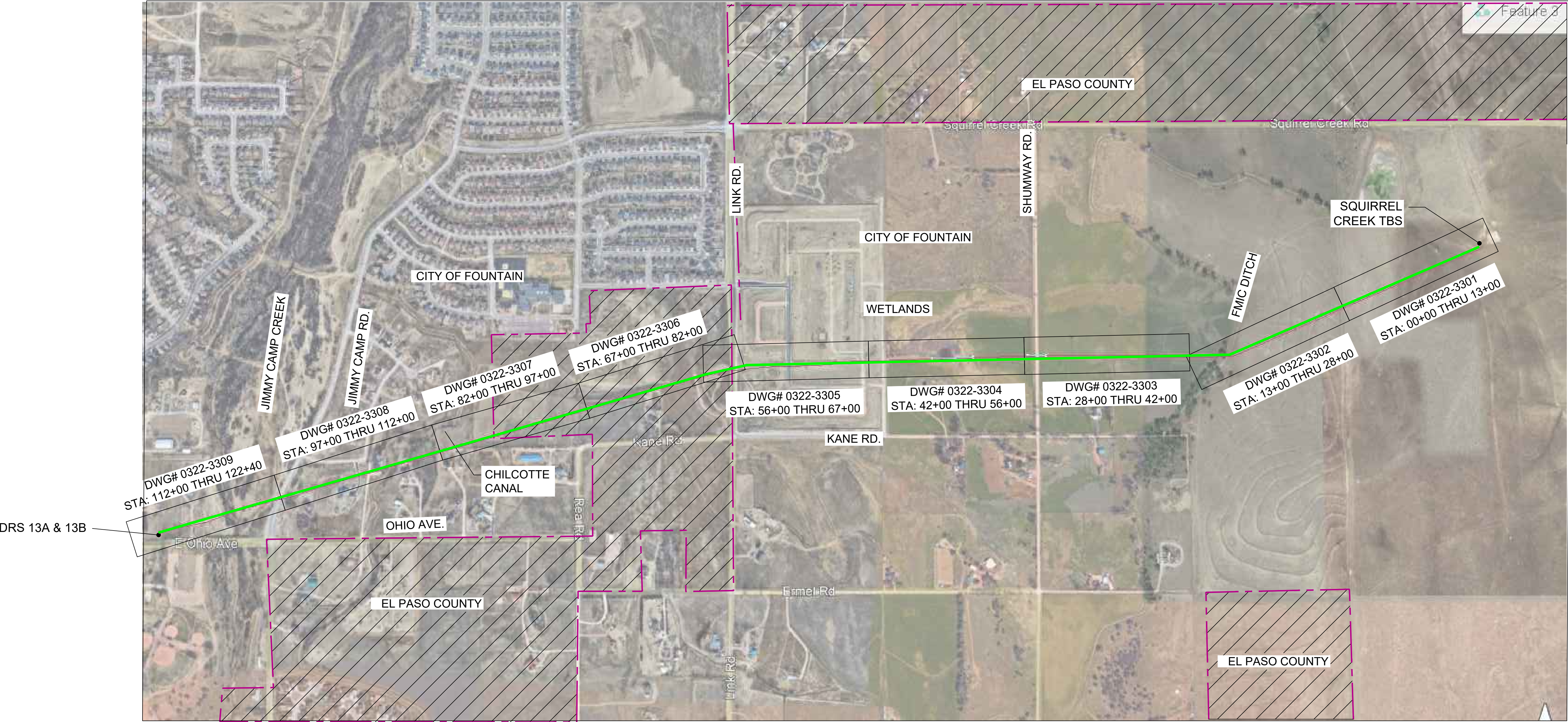
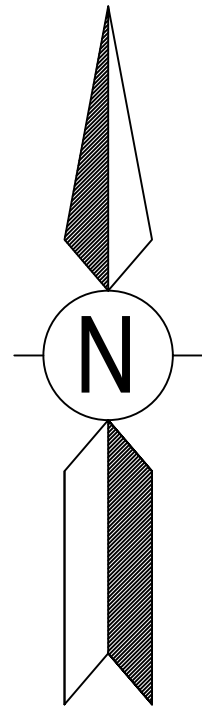
BILL OF MATERIALS		

REVISIONS						
NO.	DESCRIPTION	DATE	BY	CHK.	APPROVED	
A	FOR REVIEW	9/21/23	SKS	DJ	CD	
B	FOR REVIEW (REVISED)	10/24/23	SKS	DJ	CD	
C	ISSUED FOR BID	12/1/23	SKS	DJ	CD	
D	ISSUED FOR CONSTRUCTION	12/14/23	SKS	SB	CD	

2024 CONSTRUCTION		ENGINEERING DESIGN		SQUIRREL CREEK	
WQ: 10083285		760 ALEGRE DR.		COVER SHEET	
FOUNTAIN, CO 80817		ELPASO COUNTY		COLORADO	
DRA. TYPE		DRA. NO.		SHEET NO.	
PRELIM. BID FINAL		SKS		9/9/2023	
DESIGNED IN ACCORDANCE WITH TITLE 49-PART 192 OF MINIMUM FEDERAL SAFETY STANDARDS AND GPTC GUIDE FOR GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS, LATEST EDITION.		DRAINING NUMBER:		1 of 21	
0322-3000		0322-3000			




BLACK HILLS ENERGY  
SQUIRREL CREEK  
8" STEEL PIPELINE  
FOUNTAIN, CO



KEY MAP  
NOT TO SCALE



BILL OF MATERIALS				REVISIONS							 ENGINEERING DESIGN 760 ALEGRE DR. FOUNTAIN, CO 80817		SQUIRREL CREEK KEY MAP				
				NO.	DESCRIPTION	DATE	BY	CHK.	APPR'D	2024 CONSTRUCTION	WO: 10083285	EL PASO COUNTY		COLORADO			
				A	FOR REVIEW	9/21/23	SKS	DJ	CD		DRAWN SKS	CHK. DR. DJ	SCALE AS SHOWN	DATE 9/9/2023			
				B	FOR REVIEW (REVISED)	10/24/23	SKS	DJ	CD								
				C	ISSUED FOR BID	12/1/23	SKS	DJ	CD		DRAWING NUMBER: 0322-3000						
				D	ISSUED FOR CONSTRUCTION	12/14/23	SKS	SB	CD		DESIGNED IN ACCORDANCE WITH TITLE 49-PART 192 OF MINIMUM FEDERAL SAFETY STANDARDS AND OPTC GUIDE FOR GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS, LATEST EDITION.						
										DWG. TYPE PRELIM.    BID    FINAL ✓		SHEET NO. 2 of 21					







811

Know what's below.  
Call before you dig.

OWNERSHIP

CITY OF FOUNTAIN

ENVIRONMENTAL

--

JURISDICTION

--

DEPTH OF COVER

4 FT MIN.

MAOP

900 PSIG

CLASS LOCATION

CLASS 3 / DF = 0.5

TEST PRESSURE

1350 PSIG (MIN.) / 1658 PSIG (MAX)

OPERATING PRESSURE

465 PSIG

LEGEND:

G

GAS PIPELINE  
(EXISTING)

G

GAS PIPELINE  
(PROPOSED)

SS

SEWER

C

COMMUNICATION LINE

OH

OVERHEAD ELECTRIC LINE

E

ELECTRIC LINE

R.O.W.

PIPELINE

W

WATER LINE

G

GAS PIPELINE--BORE  
(PROPOSED)

HORIZONTAL STATIONING

MATCH LINE  
STA: 28+00  
E:3240285.1332  
N:1312594.3242  
SEE DWG.  
0322-3303

FMIC DITCH  
HDD  
STA: 26+75

FVIC DITCH  
HDD  
STA: 23+50

MATCH LINE  
STA: 13+00  
E:3241201.3471  
N:1312994.9304  
SEE DWG.  
0322-3301

ALIGNMENT  
SCALE: 1" = 100'

N

0 100 200 Feet

PROPOSED 8" PIPE

PROPOSED 50' EASEMENT

5'

EXISTING 4" PIPE  
EXISTING 2" PIPE  
TO BE ABANDONED

FMIC DITCH

28+00 27+00 26+00 25+00 24+00 23+00 22+00 21+00 20+00 19+00 18+00 17+00 16+00 15+00 14+00 13+00

MATERIAL

STA. 28+00 450' ② STA. 23+50 1050' ① STA. 13+00

PROFILE  
SCALE:NONE

28+00 27+00 26+00 25+00 24+00 23+00 22+00 21+00 20+00 19+00 18+00 17+00 16+00 15+00 14+00 13+00

5840 5820 5800 5780 5760 5740 5720 5700 5680 5660 5640 5620

GRADE

FMIC DITCH HDD STA: 26+75

PROPOSED FMIC DITCH HDD (SEE 0322-3201)

FMIC DITCH HDD STA: 23+50

PROPOSED 8" PIPE

4'

NOTES

1. STATIONING IS BASED ON HORIZONTAL DISTANCES.

2. ALL GAS, WATER AND UTILITY LINES SHALL BE LOCATED PRIOR TO ANY EXCAVATING, DIGGING, OR TRENCHING ANYWHERE ON OR NEAR THIS SITE.

3. BHE ASSUMES NO RESPONSIBILITY FOR THE SPECIFIC LOCATION OF ANY BURIED GAS, WATER, OR UTILITY LINES THAT MAY BE PRESENT ON OR NEAR THIS SITE. NOR IS ANY LIABILITY ASSUMED FOR ANY LEGAL ACTION WHICH RESULTS FROM A DISCOVERY OF A GAS, WATER, OR UTILITY LINE IN ADDITION TO OR IN A DIFFERENT LOCATION THAN SHOWN ON THIS PLAN.

4. GROUND SURVEY PROVIDED BY ENCOMPASS SERVICES, OCTOBER, 2023.

5. HORIZONTAL CONTROL IS BASED ON NAD83 COLORADO STATE PLANE CENTRAL ZONE.

BILL OF MATERIALS

NO.

DESCRIPTION

DATE

BY

CK.

APPR'D

A

FOR REVIEW

9/21/23

SKS

DJ

CD

B

FOR REVIEW (REVISED)

10/24/23

SKS

DJ

CD

C

ISSUED FOR BID

12/1/23

SKS

DJ

CD

D

ISSUED FOR CONSTRUCTION

12/14/23

SKS

SB

CD

2024 CONSTRUCTION

WO:10083285

ELPASO COUNTY

COLORADO

ENGINEERING DESIGN  
760 ALEGRE DR.  
FOUNTAIN, CO 80817

SQUIRREL CREEK  
ALIGNMENT & BORE PROFILE SHEET  
13+00 TO 28+00

DWG. TYPE  
PRELIM. BID FINAL ✓

DESIGNED IN ACCORDANCE WITH TITLE 49-PART 192 OF MINIMUM FEDERAL SAFETY STANDARDS AND OPTC GUIDE FOR GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS, LATEST EDITION.

DRAWN:  
SKS

CHK. DR.  
DJ

SCALE AS SHOWN

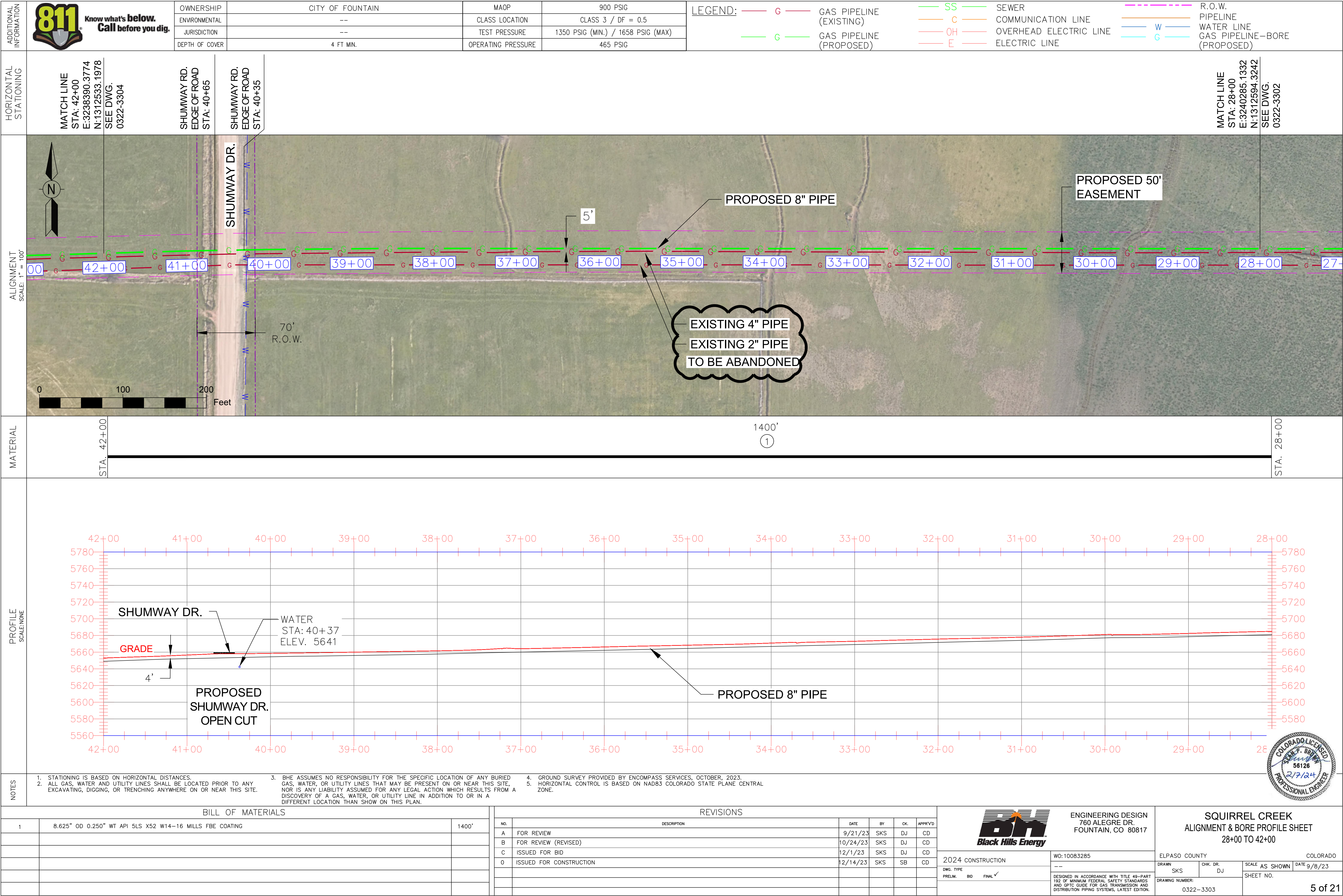
SHEET NO.

DATE 9/8/23


0322-3302

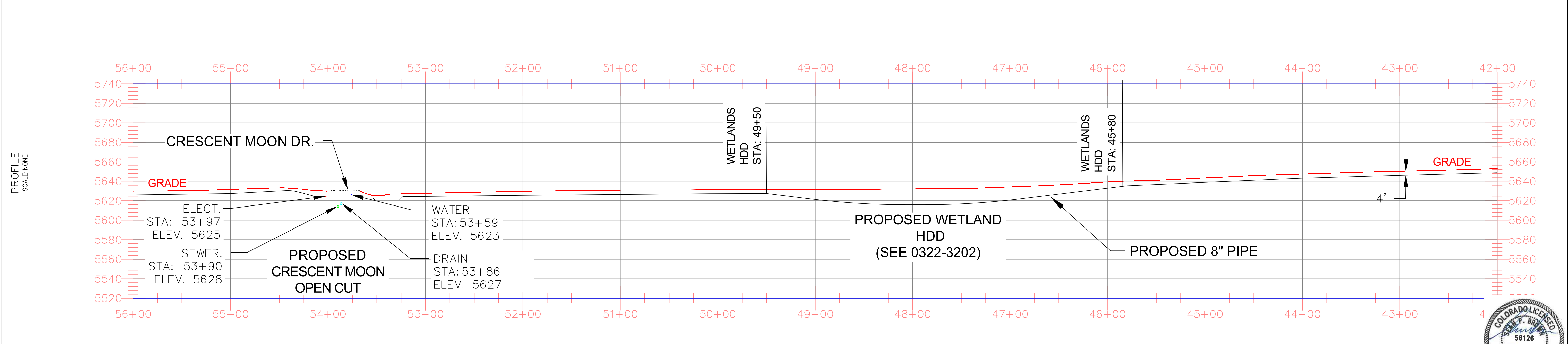
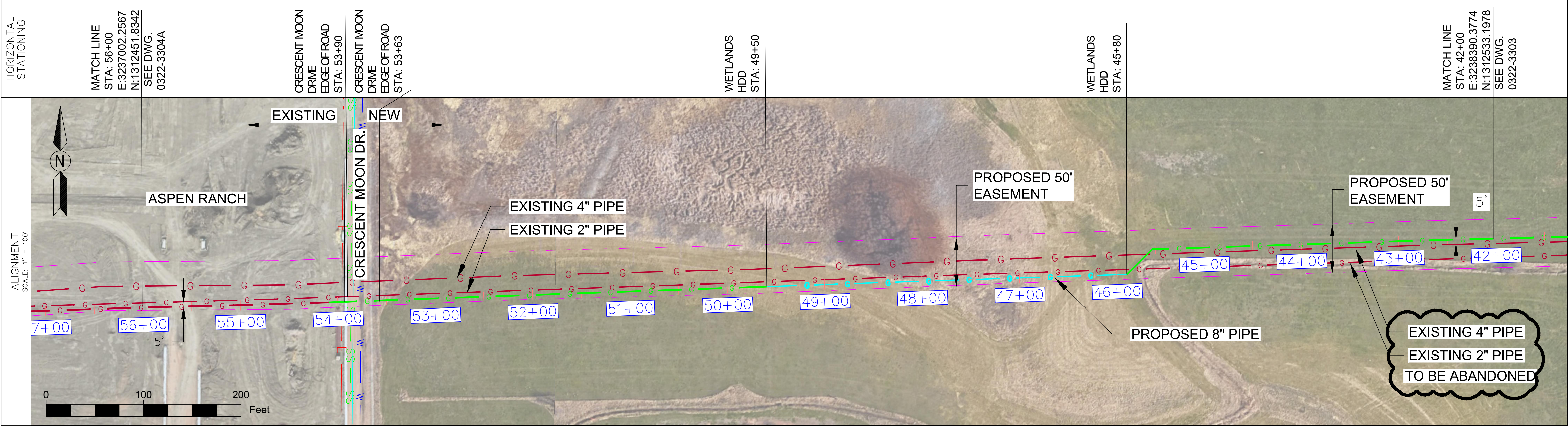
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ADDITIONAL INFORMATION		OWNERSHIP	CITY OF FOUNTAIN	MAOP	900 PSIG	LEGEND:	<div><div><div><div><div></div><div>G</div></div><div><div></div><div>G</div></div></div><div><div><div><div></div><div>GAS PIPELINE (EXISTING)</div></div><div><div></div><div>GAS PIPELINE (PROPOSED)</div></div></div><div><div><div><div></div><div>SS</div></div><div><div></div><div>C</div></div><div><div></div><div>OH</div></div><div><div></div><div>E</div></div></div><div><div><div><div></div><div>SEWER</div></div><div><div></div><div>COMMUNICATION LINE</div></div><div><div></div><div>OVERHEAD ELECTRIC LINE</div></div><div><div></div><div>ELECTRIC LINE</div></div></div><div><div><div><div></div><div>R.O.W. PIPELINE</div></div><div><div></div><div>W</div></div><div><div></div><div>G</div></div></div><div><div><div><div></div><div>PIPELINE</div></div><div><div></div><div>WATER LINE</div></div><div><div></div><div>GAS PIPELINE--BORE (PROPOSED)</div></div></div></div></div></div></div></div></div></div>
		ENVIRONMENTAL	--	CLASS LOCATION	CLASS 3 / DF = 0.5		
		JURISDICTION	--	TEST PRESSURE	1350 PSIG (MIN.) / 1658 PSIG (MAX)		
		DEPTH OF COVER	4 FT MIN.	OPERATING PRESSURE	465 PSIG		



- NOTES
- STATIONING IS BASED ON HORIZONTAL DISTANCES.
  - ALL GAS, WATER AND UTILITY LINES SHALL BE LOCATED PRIOR TO ANY EXCAVATING, DIGGING, OR TRENCHING ANYWHERE ON OR NEAR THIS SITE.
  - BHE ASSUMES NO RESPONSIBILITY FOR THE SPECIFIC LOCATION OF ANY BURIED GAS, WATER, OR UTILITY LINES THAT MAY BE PRESENT ON OR NEAR THIS SITE, NOR IS ANY LIABILITY ASSUMED FOR ANY LEGAL ACTION WHICH RESULTS FROM A DISCOVERY OF A GAS, WATER, OR UTILITY LINE IN ADDITION TO OR IN A DIFFERENT LOCATION THAN SHOW ON THIS PLAN.
  - GROUND SURVEY PROVIDED BY ENCOMPASS SERVICES, OCTOBER, 2023.
  - HORIZONTAL CONTROL IS BASED ON NAD83 COLORADO STATE PLANE CENTRAL ZONE.

BILL OF MATERIALS			REVISIONS							<div><div>ENGINEERING DESIGN 760 ALEGRE DR. FOUNTAIN, CO 80817</div></div> <div>SQUIRREL CREEK ALIGNMENT &amp; BORE PROFILE SHEET 42+00 TO 56+00</div>								
1	8.625" OD 0.250" WT API 5LS X52 W14-16 MILLS FBE COATING	843'	NO.	DESCRIPTION	DATE	BY	CK.	APPR'D	2024 CONSTRUCTION			WO: 10083285	ELPASO COUNTY		COLORADO			
2	8.625" OD 0.250" WT API 5LS X52 W14-16 MILLS FBE COATING AND 40 MILS ARO	370'	A	FOR REVIEW	9/21/23	SKS	DJ	CD					DRAWN	CHK. DR.	SCALE	AS SHOWN	DATE	9/8/23
			B	FOR REVIEW (REVISED)	10/24/23	SKS	DJ	CD					SKS	DJ	SHEET NO.			
			C	ISSUED FOR BID	12/1/23	SKS	DJ	CD		DRAWING NUMBER: 0322-3304					6 of 21			
			D	ISSUED FOR CONSTRUCTION	12/14/23	SKS	SB	CD										



BILL OF MATERIALS				REVISONS						<div><div>ENGINEERING DESIGN 760 ALEGRE DR. FOUNTAIN, CO 80817</div></div>		SQUIRREL CREEK ALIGNMENT & BORE PROFILE SHEET 56+00 TO 67+00				
				NO.	DESCRIPTION	DATE	BY	CHK.	APPR'D	<div>2024 CONSTRUCTION</div> <div>DWG. TYPE PRELIM.    BID    FINAL <input checked="" type="checkbox"/></div>	WO: 10083285		ELPASO COUNTY		COLORADO	
				A	FOR REVIEW	9/21/23	SKS	DJ	CD		DRAWN	CHK. DR.	SCALE	AS SHOWN	DATE	9/8/23
				B	FOR REVIEW (REVISED)	10/24/23	SKS	DJ	CD		SKS	DJ				
				C	ISSUED FOR BID	12/1/23	SKS	DJ	CD		DESIGNED IN ACCORDANCE WITH TITLE 48—PART 192 OF MINIMUM FEDERAL SAFETY STANDARDS AND GPTC GUIDE FOR GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS, LATEST EDITION.					
				O	ISSUED FOR CONSTRUCTION	12/14/23	SKS	SB	CD		DRAWING NUMBER: 0322—3304A					
															7 of 21	




**LEGEND:**

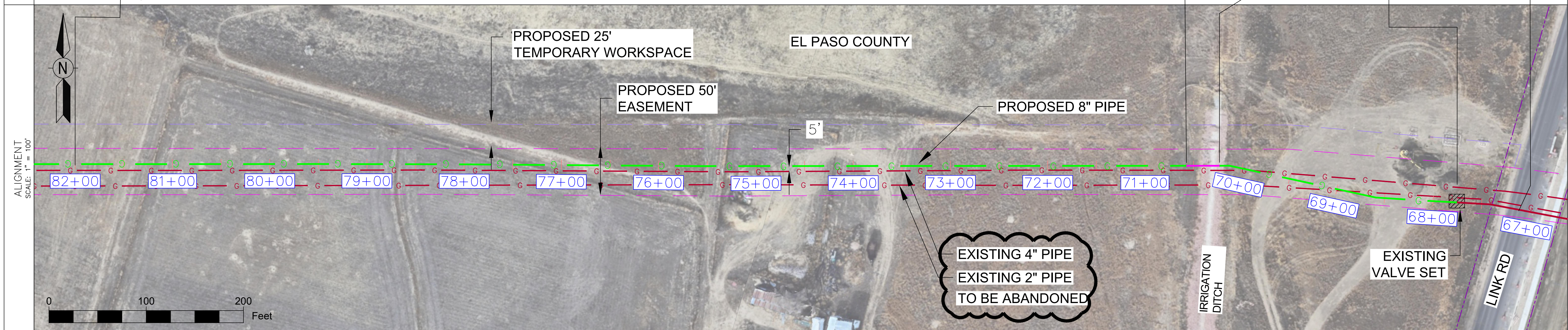
	G	GAS PIPELINE (EXISTING)		SS	SEWER		R.O.W.
	C	COMMUNICATION LINE		OH	OVERHEAD ELECTRIC LINE		PIPELINE
	G	GAS PIPELINE (PROPOSED)		E	ELECTRIC LINE		WATER LINE
							GAS PIPELINE—BORE (PROPOSED)

MATCH LINE  
STA: 82+00  
E: 3234457.8599  
N: 1311999.9685  
SEE DWG.  
0322-3306

IRRIGATION DITCH  
WEST SHOULDER  
STA: 53+90

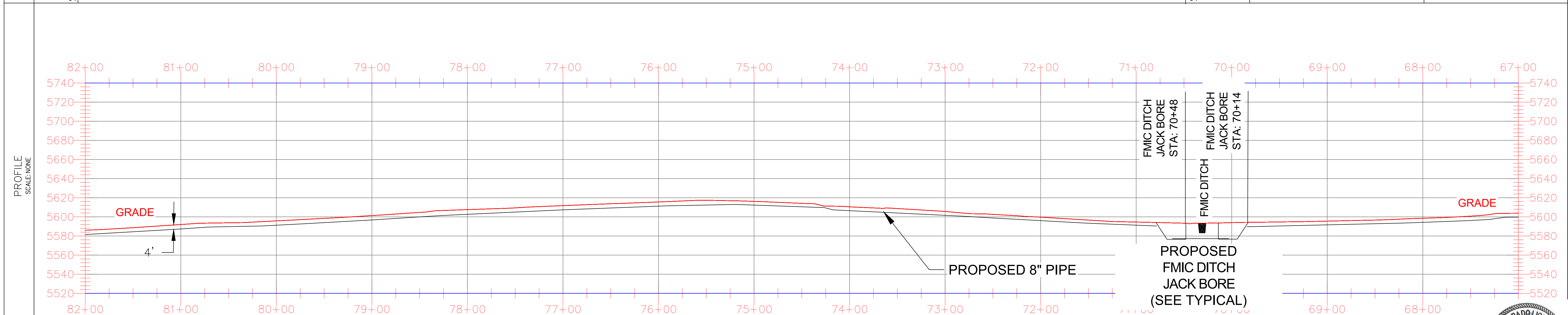
NEW	EXISTING
	

MATCH LINE  
 STA: 67+00  
 E: 3235905.0715  
 N: 1312380.1100  
 SEE DWG.  
 0322-3304A




MATERIAL

STA. 82+00	1152' ①	STA. 70+48 34' ②	STA. 70+14 214' ①	STA. 68+00
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1. STATIONING IS BASED ON HORIZONTAL DISTANCES.	3. BHE ASSUMES NO RESPONSIBILITY FOR THE SPECIFIC LOCATION OF ANY BURIED GAS, WATER, OR UTILITY LINES THAT MAY BE PRESENT ON OR NEAR THIS SITE, NOR IS ANY LIABILITY ASSUMED FOR ANY LEGAL ACTION WHICH RESULTS FROM A DISCOVERY OF A GAS, WATER, OR UTILITY LINE IN ADDITION TO OR IN A DIFFERENT LOCATION THAN SHOWN ON THIS PLAN.	4. GROUND SURVEY PROVIDED BY ENCOMPASS SERVICES, OCTOBER, 2023.
2. ALL GAS, WATER AND UTILITY LINES SHALL BE LOCATED PRIOR TO ANY EXCAVATING, DIGGING, OR TRENCHING ANYWHERE ON OR NEAR THIS SITE.		5. HORIZONTAL CONTROL IS BASED ON NAD83 COLORADO STATE PLANE CENTRAL ZONE.



BILL OF MATERIALS			REVISIONS						<div><div>ENGINEERING DESIGN 760 ALEGRE DR. FOUNTAIN, CO 80817</div></div>		SQUIRREL CREEK ALIGNMENT & BORE PROFILE SHEET 67+00 TO 82+00			
1	8.625" OD 0.250" WT API 5LS X52 W14-16 MILLS FBE COATING	1366'	A	FOR REVIEW	9/21/23	SKS	DJ	CD	2024 CONSTRUCTION	WO:10083285	ELPASO COUNTY		COLORADO	
2	8.625" OD 0.250" WT API 5LS X52 W14-16 MILLS FBE COATING AND 40 MILS ARO	34'	B	FOR REVIEW (REVISED)	10/24/23	SKS	DJ	CD		---	DRAWN SKS CHK. DR. DJ SCALE AS SHOWN DATE 9/8/23	SHEET NO.	8 of 21	
			C	ISSUED FOR BID	12/1/23	SKS	DJ	CD						
			D	ISSUED FOR CONSTRUCTION	12/14/23	SKS	SB	CD						
									DWG. TYPE					
									PRELIM.	BID	FINAL ✓	DESIGNED IN ACCORDANCE WITH TITLE 49-PART 192 OF MINIMUM FEDERAL SAFETY STANDARDS AND GPTC GUIDE FOR GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS, LATEST EDITION.		



811

Know what's below.  
Call before you dig.

OWNERSHIP	CITY OF FOUNTAIN/EL PASO COUNTY	MAOP	900 PSIG
ENVIRONMENTAL	--	CLASS LOCATION	CLASS 3 / DF = 0.5
JURISDICTION	--	TEST PRESSURE	1350 PSIG (MIN.) / 1658 PSIG (MAX)
DEPTH OF COVER	4 FT MIN.	OPERATING PRESSURE	465 PSIG

LEGEND:

G

GAS PIPELINE (EXISTING)

G

GAS PIPELINE (PROPOSED)

SS

SEWER PIPELINE

C

COMMUNICATION LINE

OH

OVERHEAD ELECTRIC LINE

E

ELECTRIC LINE

---

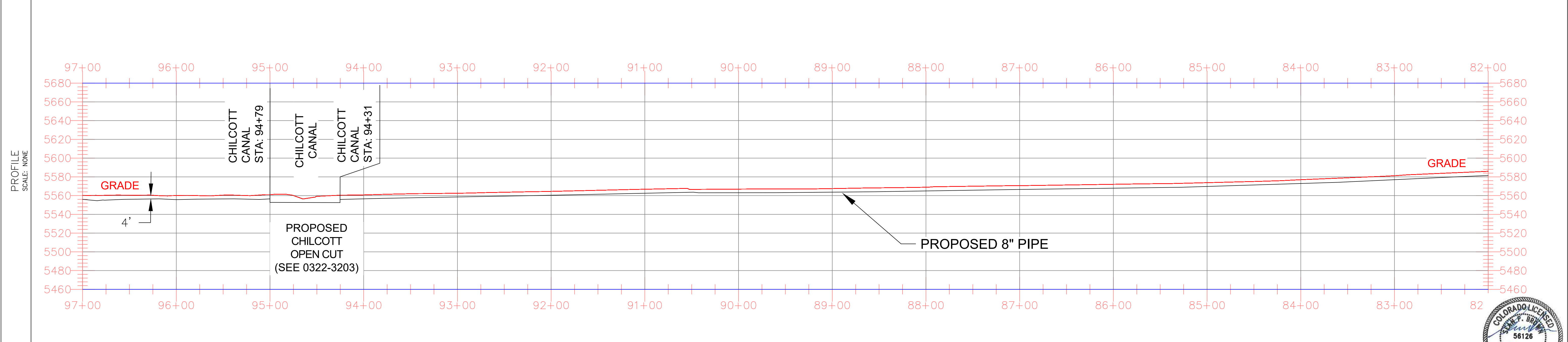
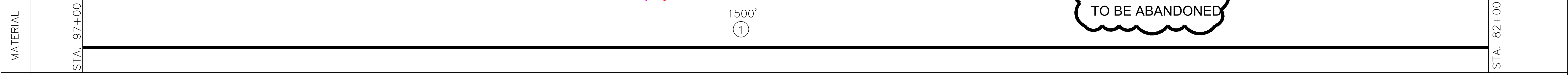
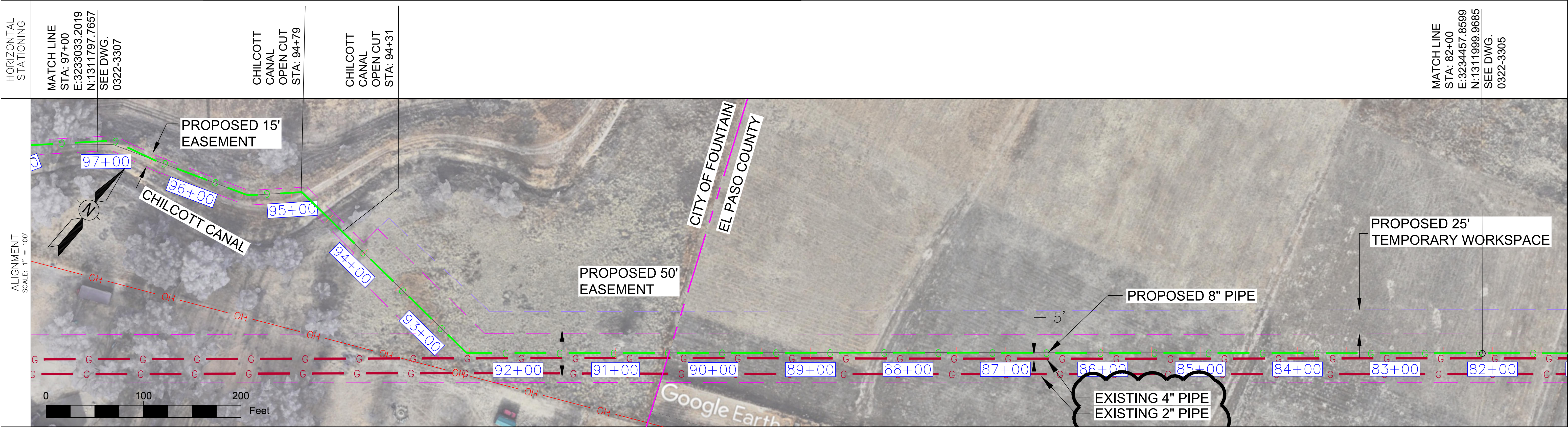
R.O.W. PIPELINE

W

WATER LINE

G

GAS PIPELINE--BORE (PROPOSED)



NOTES

1. STATIONING IS BASED ON HORIZONTAL DISTANCES.

2. ALL GAS, WATER AND UTILITY LINES SHALL BE LOCATED PRIOR TO ANY EXCAVATING, DIGGING, OR TRENCHING ANYWHERE ON OR NEAR THIS SITE.

3. BHE ASSUMES NO RESPONSIBILITY FOR THE SPECIFIC LOCATION OF ANY BURIED GAS, WATER, OR UTILITY LINES THAT MAY BE PRESENT ON OR NEAR THIS SITE, NOR IS ANY LIABILITY ASSUMED FOR ANY LEGAL ACTION WHICH RESULTS FROM A DISCOVERY OF A GAS, WATER, OR UTILITY LINE IN ADDITION TO OR IN A DIFFERENT LOCATION THAN SHOW ON THIS PLAN.

4. GROUND SURVEY PROVIDED BY ENCOMPASS SERVICES, OCTOBER, 2023.

5. HORIZONTAL CONTROL IS BASED ON NAD83 COLORADO STATE PLANE CENTRAL ZONE.

COLORADO LICENSED PROFESSIONAL ENGINEER

58126

2/7/24

BILL OF MATERIALS			REVISIONS						<div><div><div></div><div>Black Hills Energy</div></div></div> <div>ENGINEERING DESIGN 760 ALEGRE DR. FOUNTAIN, CO 80817</div>		SQUIRREL CREEK ALIGNMENT & BORE PROFILE SHEET 82+00 TO 97+00						
1	8.625" OD 0.250" WT API 5LS X52 W14-16 MILLS FBE COATING	1500'	NO.	DESCRIPTION	DATE	BY	CK.	APPR'VD			2024 CONSTRUCTION	WO: 10083285	ELPASO COUNTY		COLORADO		
			A	FOR REVIEW	9/21/23	SKS	DJ	CD				DRAWN	CHK. DR.	SCALE	AS SHOWN	DATE	9/8/23
			B	FOR REVIEW (REVISED)	10/24/23	SKS	DJ	CD				SKS	DJ			SHEET NO.	
			C	ISSUED FOR BID	12/1/23	SKS	DJ	CD	DESIGNED IN ACCORDANCE WITH TITLE 49-PART 192 OF MINIMUM FEDERAL SAFETY STANDARDS AND OPTC GUIDE FOR GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS, LATEST EDITION.			DRAWING NUMBER: 0322-3306		9 of 21			
			O	ISSUED FOR CONSTRUCTION	12/14/23	SKS	SB	CD	DWG. TYPE	PRELIM.	BID	FINAL ✓					



811

Know what's below.  
Call before you dig.

OWNERSHIP	CITY OF FOUNTAIN	MAOP	900 PSIG
ENVIRONMENTAL	--	CLASS LOCATION	CLASS 3 / DF = 0.5
JURISDICTION	--	TEST PRESSURE	1350 PSIG (MIN.) / 1658 PSIG (MAX)
DEPTH OF COVER	4 FT MIN.	OPERATING PRESSURE	465 PSIG

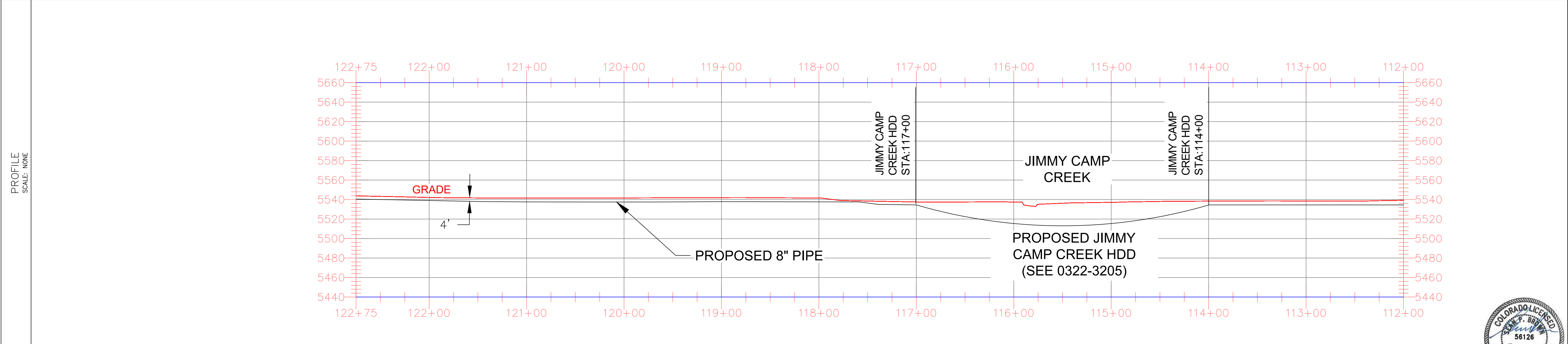
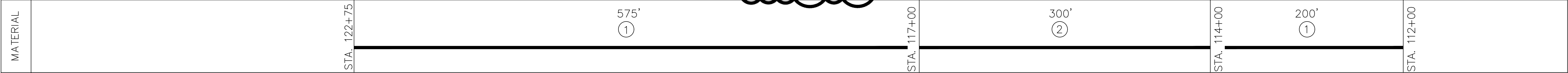
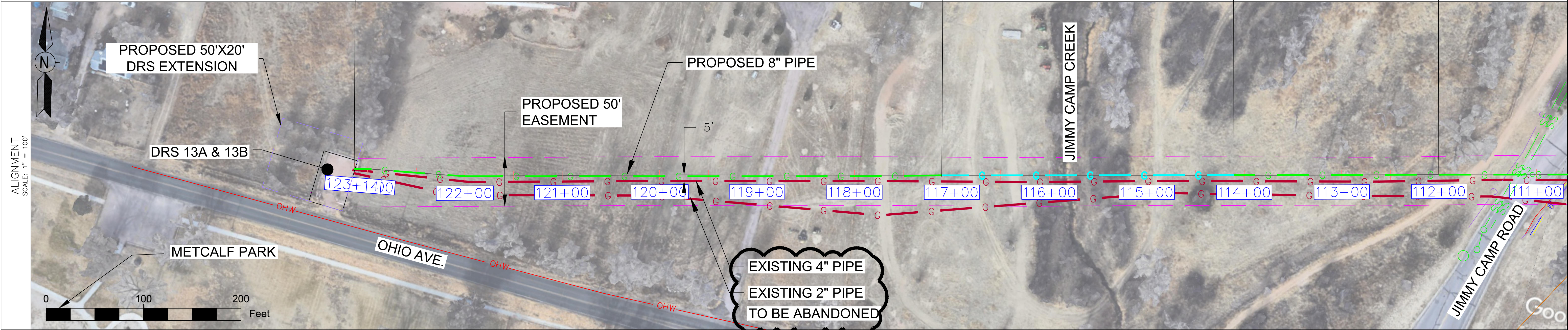
LEGEND:  

G GAS PIPELINE  
(EXISTING)  
G GAS PIPELINE  
(PROPOSED)  
SS SEWER  
C COMMUNICATION LINE  
OH OVERHEAD ELECTRIC LINE  
E ELECTRIC LINE  
PIPELINE  
W WATER LINE  
G GAS PIPELINE-BORE  
(PROPOSED)  
R.O.W.

HORIZONTAL STATIONING	MATCH LINE STA: 112+00 E:3231874.3885 N:1311229.6015 SEE DWG. 0322-3308 JIMMY CAMP RD HDD STA: 111+74 JIMMY CAMP RD HDD STA: 109+07 PRIVATE DRWY STA: 107+35 PRIVATE DRWY STA: 107+18 PRIVATE PROP JACK BORE STA: 103+98 PRIVATE PROP JACK BORE STA: 103+68 MATCH LINE STA: 97+00 E:3233033.2019 N:1311797.7657 SEE DWG. 0322-3306						
ALIGNMENT SCALE: 1" = 100'							
MATERIAL	STA. 112+00 ① 26' STA. 111+74 267' ② STA. 109+07 509' ① STA. 103+98 10' ② STA. 103+88 688' ① STA. 97+00						
PROFILE SCALE: NONE							
NOTES	<div><div>1. STATIONING IS BASED ON HORIZONTAL DISTANCES.</div><div>2. ALL GAS, WATER AND UTILITY LINES SHALL BE LOCATED PRIOR TO ANY EXCAVATING, DIGGING, OR TRENCHING ANYWHERE ON OR NEAR THIS SITE.</div><div>3. BHE ASSUMES NO RESPONSIBILITY FOR THE SPECIFIC LOCATION OF ANY BURIED GAS, WATER, OR UTILITY LINES THAT MAY BE PRESENT ON OR NEAR THIS SITE. NOR IS ANY LIABILITY ASSUMED FOR ANY LEGAL ACTION WHICH RESULTS FROM A DISCOVERY OF A GAS, WATER, OR UTILITY LINE IN ADDITION TO OR IN A DIFFERENT LOCATION THAN SHOWN ON THIS PLAN.</div><div>4. GROUND SURVEY PROVIDED BY ENCOMPASS SERVICES, OCTOBER, 2023.</div><div>5. HORIZONTAL CONTROL IS BASED ON NAD83 COLORADO STATE PLANE CENTRAL ZONE.</div></div>						
BILL OF MATERIALS	REVISEMENTS						
<table><tr><td>1</td><td>8.625" OD 0.250" WT API 5LS X52 W14-16 MILLS FBE COATING</td><td>1223'</td></tr><tr><td>2</td><td>8.625" OD 0.250" WT API 5LS X52 W14-16 MILLS FBE COATING AND 40 MILS ARO</td><td>277'</td></tr></table>	1	8.625" OD 0.250" WT API 5LS X52 W14-16 MILLS FBE COATING	1223'	2	8.625" OD 0.250" WT API 5LS X52 W14-16 MILLS FBE COATING AND 40 MILS ARO	277'	<div><div></div><div>ENGINEERING DESIGN 760 ALLEGRO DR. FOUNTAIN, CO 80817</div><div>SQUIRREL CREEK ALIGNMENT SHEET 97+00 TO 112+00</div><div>EL PASO COUNTY COLORADO DRAWN SKS CHK. DJ DATE 9/8/23 SCALE AS SHOWN SHEET NO. DESIGNED IN ACCORDANCE WITH TITLE 49-PART 132 OF MINIMUM FEDERAL SAFETY STANDARDS AND GPIC GUIDE FOR GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS, LATEST EDITION.</div></div>
1	8.625" OD 0.250" WT API 5LS X52 W14-16 MILLS FBE COATING	1223'					
2	8.625" OD 0.250" WT API 5LS X52 W14-16 MILLS FBE COATING AND 40 MILS ARO	277'					



HORIZONTAL STATIONING	LINE END STA: 122+75 E:3230805.3346 N:1310918.1468	JIMMY CAMP CREEK HDD STA: 117+00	JIMMY CAMP CREEK HDD STA: 114+00	MATCH LINE STA: 112+00 E:3231874.3885 N:1311229.6015 SEE DWG. 0322-3307
-----------------------	---	-------------------------------------	-------------------------------------	---





NOTES

1. STATIONING IS BASED ON HORIZONTAL DISTANCES.  
2. ALL GAS, WATER AND UTILITY LINES SHALL BE LOCATED PRIOR TO ANY EXCAVATING, DIGGING, OR TRENCHING ANYWHERE ON OR NEAR THIS SITE.

3. BHE ASSUMES NO RESPONSIBILITY FOR THE SPECIFIC LOCATION OF ANY BURIED GAS, WATER, OR UTILITY LINES THAT MAY BE PRESENT ON OR NEAR THIS SITE, NOR IS ANY LIABILITY ASSUMED FOR ANY LEGAL ACTION WHICH RESULTS FROM A DISCOVERY OF A GAS, WATER, OR UTILITY LINE IN ADDITION TO OR IN A DIFFERENT LOCATION THAN SHOW ON THIS PLAN.

4. GROUND SURVEY PROVIDED BY ENCOMPASS SERVICES, OCTOBER, 2023.  
5. HORIZONTAL CONTROL IS BASED ON NAD83 COLORADO STATE PLANE CENTRAL ZONE.



BILL OF MATERIALS			REVISIONS							<div><div>ENGINEERING DESIGN 760 ALEGRE DR. FOUNTAIN, CO 80817</div></div> <div>2024 CONSTRUCTION</div> <div>DWG. TYPE PRELIM.    BID    FINAL ✓</div>		<div>ELPASO COUNTY</div> <div>DRAWN    CHK. DR.    SCALE AS SHOWN    DATE 9/8/23</div> <div>DRAWING NUMBER: 0322-3308</div> <div>SHEET NO. 11 of 21</div>			
1	8.625" OD 0.250" WT API 5LS X52 W14-16 MILLS FBE COATING	775'	NO.	DESCRIPTION	DATE	BY	CK.	APPR'D							
2	8.625" OD 0.250" WT API 5LS X52 W14-16 MILLS FBE COATING AND 40 MILS ARO	300'	A	FOR REVIEW	9/21/23	SKS	DJ	CD							
			B	FOR REVIEW (REVISED)	10/24/23	SKS	DJ	CD							
			C	ISSUED FOR BID	12/1/23	SKS	DJ	CD							
			O	ISSUED FOR CONSTRUCTION	12/14/23	SKS	SB	CD							



FMIC DITCH  
HDD  
STA: 26+75

FMIC DITCH  
HDD  
STA: 23+50




## MATERIAL



1. STATIONING IS BASED ON HORIZONTAL DISTANCES.
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REVISIONS						
NO.	DESCRIPTION	DATE	BY	CHK.	APPR'VD	
A	FOR REVIEW	9/21/23	SKS	DJ	CD	
B	FOR REVIEW (REVISED)	10/24/23	SKS	DJ	CD	
C	ISSUED FOR BID	12/1/23	SKS	DJ	CD	
O	ISSUED FOR CONSTRUCTION	12/14/23	SKS	SB	CD	

			ENGINEERING DESIGN 760 ALEGRE DR. FOUNTAIN, CO 80817			SQUIRREL CREEK BORE PROFILE SHEET FMIC DITCH		
2024 CONSTRUCTION			WO: 10083285			ELPASO COUNTY		
DWG. TYPE PRELIM. BID FINAL ✓			---			DRAWN SKS		CHK. DR. DJ
DESIGNED IN ACCORDANCE WITH TITLE 49—PART 192 OF MINIMUM FEDERAL SAFETY STANDARDS AND GPTC GUIDE FOR GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS, LATEST EDITION.						SCALE AS SHOWN SHEET NO.		DATE 9/8/23
						DRAWING NUMBER: 0322—3201		12 of 21



811

Know what's below.  
Call before you dig.

OWNERSHIP	CITY OF FOUNTAIN	MAOP	900 PSIG
ENVIRONMENTAL	--	CLASS LOCATION	CLASS 3 / DF = 0.5
JURISDICTION	--	TEST PRESSURE	1350 PSIG (MIN.) / 1658 PSIG (MAX)
DEPTH OF COVER	4 FT MIN.	OPERATING PRESSURE	465 PSIG

LEGEND:

G

GAS PIPELINE (EXISTING)

G

GAS PIPELINE (PROPOSED)

SS

SEWER

C

COMMUNICATION LINE

OH

OVERHEAD ELECTRIC LINE

E

ELECTRIC LINE

---

R.O.W. PIPELINE

W

WATER LINE

G

GAS PIPELINE--BORE (PROPOSED)

TEST STATION

HORIZONTAL STATIONING

ALIGNMENT SCALE: 1" = 60'

MATERIAL

PROFILE SCALE: HORIZONTAL 1"=100' VERTICAL 1"=60'

NOTES

1. STATIONING IS BASED ON HORIZONTAL DISTANCES.  
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4. GROUND SURVEY PROVIDED BY ENCOMPASS SERVICES, OCTOBER, 2023.  
5. HORIZONTAL CONTROL IS BASED ON NAD83 COLORADO STATE PLANE CENTRAL ZONE.  
6. FOR BORE DEPTH OF COVER PLEASE SEE DWG#0322-3601

BILL OF MATERIALS

1	8.625" OD 0.250" WT API 5LS X52 W14-16 MILLS FBE COATING AND 40 MILS ARO	600'
---	--	------

REVISIONS

NO.	DESCRIPTION	DATE	BY	CK.	APPR'D
A	FOR REVIEW	9/21/23	SKS	DJ	CD
B	FOR REVIEW (REVISED)	10/24/23	SKS	DJ	CD
C	ISSUED FOR BID	12/1/23	SKS	DJ	CD
D	ISSUED FOR CONSTRUCTION	12/14/23	SKS	SB	CD

2024 CONSTRUCTION

DWG. TYPE PRELIM BID FINAL

WO: 10083285

DESIGNED IN ACCORDANCE WITH TITLE 49-PART 192 OF MINIMUM FEDERAL SAFETY STANDARDS AND GPTC GUIDE FOR GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS, LATEST EDITION.

ENGINEERING DESIGN

760 ALEGRE DR.

FOUNTAIN, CO 80817

ELPASO COUNTY

COLORADO

DRAWN SKS

CHK. DR. DJ

DRAWING NUMBER: 0322-3202

SCALE AS SHOWN

DATE 9/8/23

SHEET NO.


SQUIRREL CREEK

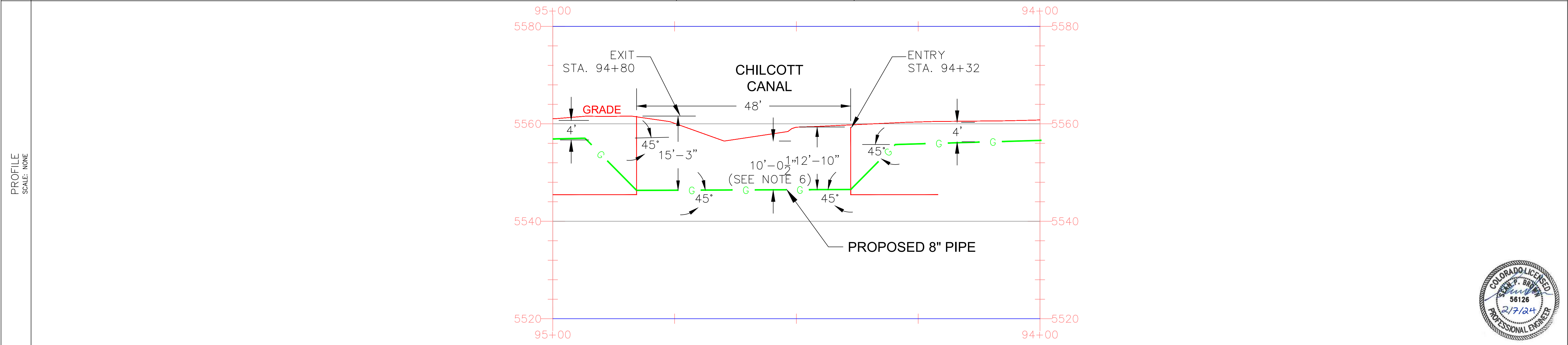
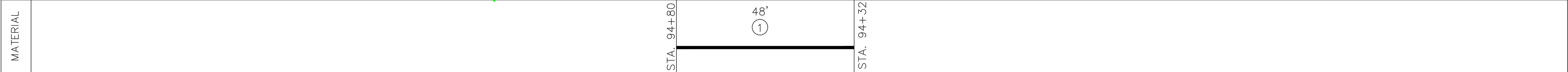
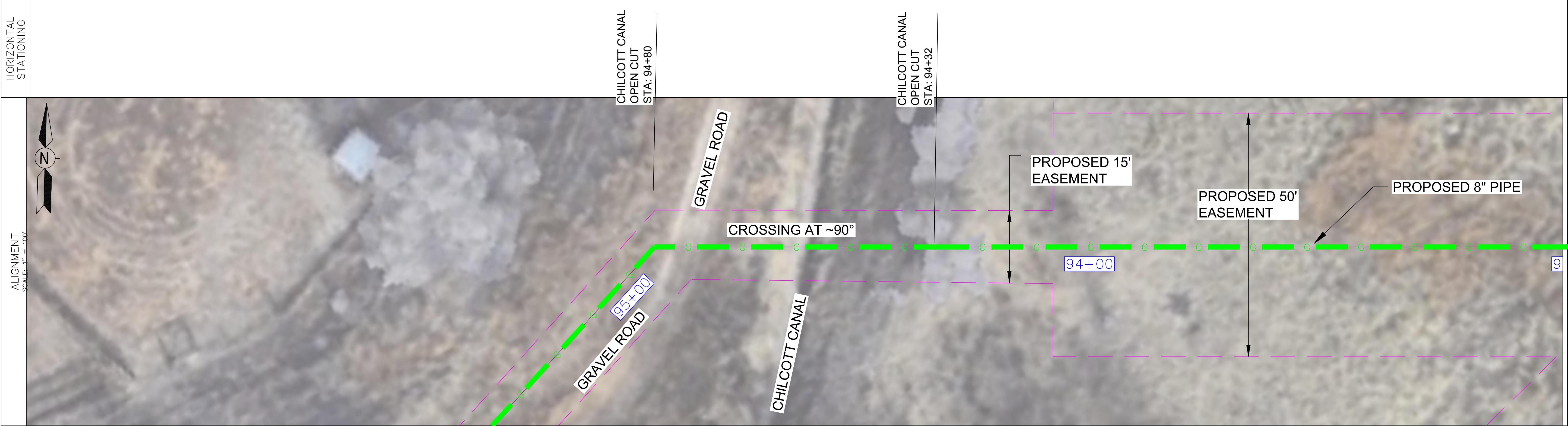
BORE PROFILE SHEET

WETLANDS HDD


13 of 21



ADDITIONAL INFORMATION		OWNERSHIP	CITY OF FOUNTAIN	MAOP	900 PSIG	LEGEND: <div><div><div>— G —</div><div>GAS PIPELINE (EXISTING)</div></div><div><div>— G —</div><div>GAS PIPELINE (PROPOSED)</div></div><div><div>— SS —</div><div>SEWER</div></div><div><div>— C —</div><div>COMMUNICATION LINE</div></div><div><div>— OH —</div><div>OVERHEAD ELECTRIC LINE</div></div><div><div>— E —</div><div>ELECTRIC LINE</div></div><div><div>---</div><div>R.O.W. PIPELINE</div></div><div><div>— W —</div><div>WATER LINE</div></div><div><div>— G —</div><div>GAS PIPELINE—BORE (PROPOSED)</div></div><div><div>●</div><div>TEST STATION</div></div></div>
		ENVIRONMENTAL	--	CLASS LOCATION	CLASS 3 / DF = 0.5	
		JURISDICTION	--	TEST PRESSURE	1350 PSIG (MIN.) / 1658 PSIG (MAX)	
		DEPTH OF COVER	6 FT MIN.	OPERATING PRESSURE	465 PSIG	



NOTES	1. STATIONING IS BASED ON HORIZONTAL DISTANCES.	3. BHE ASSUMES NO RESPONSIBILITY FOR THE SPECIFIC LOCATION OF ANY BURIED GAS, WATER, OR UTILITY LINES THAT MAY BE PRESENT ON OR NEAR THIS SITE, NOR IS ANY LIABILITY ASSUMED FOR ANY LEGAL ACTION WHICH RESULTS FROM A DISCOVERY OF A GAS, WATER, OR UTILITY LINE IN ADDITION TO OR IN A DIFFERENT LOCATION THAN SHOW ON THIS PLAN.	4. GROUND SURVEY PROVIDED BY ENCOMPASS SERVICES, OCTOBER, 2023.	6. FLOW-FILL SHALL BE USED TO BACKFILL THE TRENCH AT THE DITCH CROSSING.
	2. ALL GAS, WATER AND UTILITY LINES SHALL BE LOCATED PRIOR TO ANY EXCAVATING, DIGGING, OR TRENCHING ANYWHERE ON OR NEAR THIS SITE.		5. HORIZONTAL CONTROL IS BASED ON NAD83 COLORADO STATE PLANE CENTRAL ZONE.	

BILL OF MATERIALS			REVISIONS							<div><div>ENGINEERING DESIGN 760 ALEGRE DR. FOUNTAIN, CO 80817</div></div>	SQUIRREL CREEK DETAIL PROFILE SHEET CHILCOTT CANAL OPEN CUT					
1	8.625" OD 0.250" WT API 5LS X52 W14-16 MILLS FBE COATING	48'	NO.	DESCRIPTION	DATE	BY	CK.	APPR'D								
			A	FOR REVIEW	9/21/23	SKS	DJ	CD								
			B	FOR REVIEW (REVISED)	10/24/23	SKS	DJ	CD								
			C	FOR BID	12/1/23	SKS	DJ	CD								
			O	ISSUED FOR CONSTRUCTION	12/14/23	SKS	SB	CD								
									2024 CONSTRUCTION		WO:10083285		ELPASO COUNTY		COLORADO	
									DWG. TYPE	--		DESIGNED IN ACCORDANCE WITH TITLE 49--PART 192 OF MINIMUM FEDERAL SAFETY STANDARDS AND GPTC GUIDE FOR GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS, LATEST EDITION.	DRAWING NUMBER: 0322-3203	SHEET NO.	14 of 21	
									PRELIM. BID FINAL ✓							



811

Know what's below.  
Call before you dig.

OWNERSHIP	CITY OF FOUNTAIN	MAOP	900 PSIG
ENVIRONMENTAL	--	CLASS LOCATION	CLASS 3 / DF = 0.5
JURISDICTION	--	TEST PRESSURE	1350 PSIG (MIN.) / 1658 PSIG (MAX)
DEPTH OF COVER	4 FT MIN.	OPERATING PRESSURE	465 PSIG

LEGEND:

G

GAS PIPELINE (EXISTING)

G

GAS PIPELINE (PROPOSED)

SS

SEWER

C

COMMUNICATION LINE

OH

OVERHEAD ELECTRIC LINE

E

ELECTRIC LINE

---

R.O.W. PIPELINE

W

WATER LINE

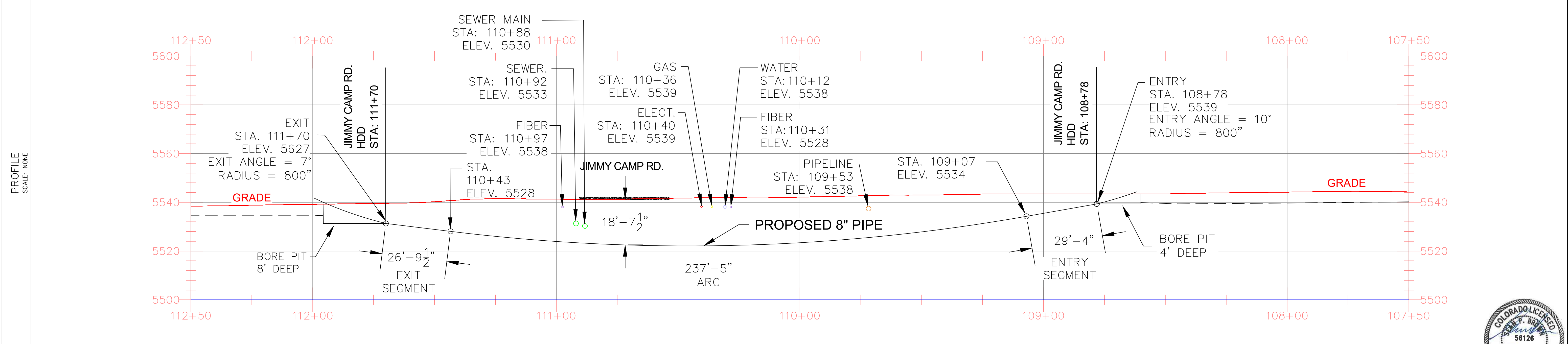
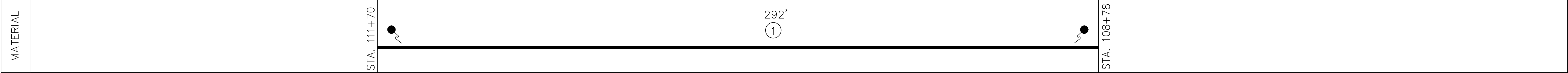
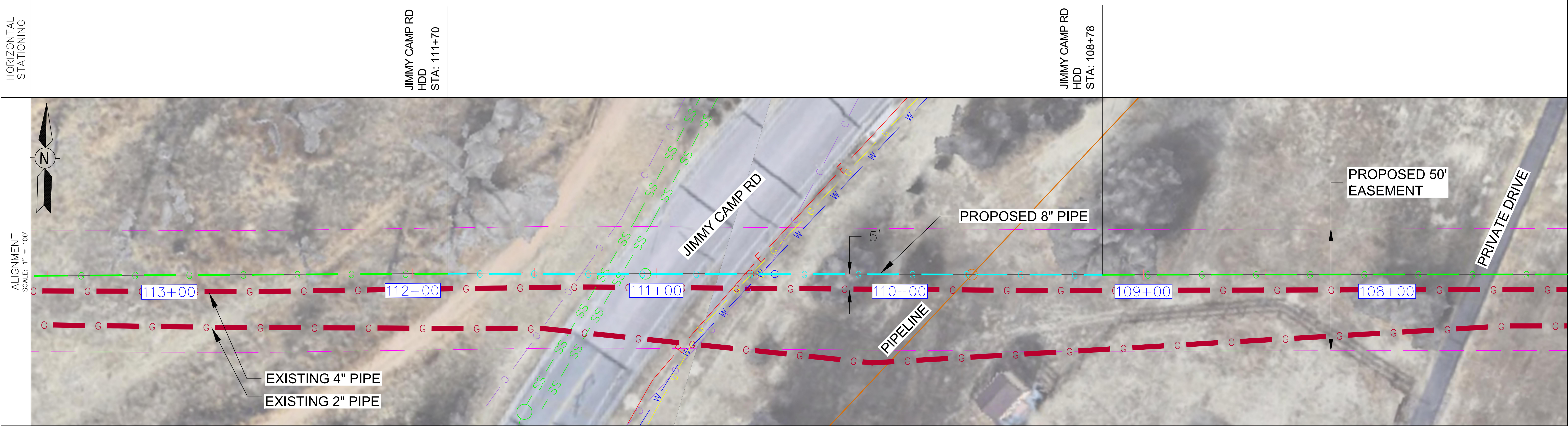
G

GAS PIPELINE--BORE (PROPOSED)

TEST STATION

ADDITIONAL INFORMATION

HORIZONTAL STATIONING



NOTES

1. STATIONING IS BASED ON HORIZONTAL DISTANCES.

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4. GROUND SURVEY PROVIDED BY ENCOMPASS SERVICES, OCTOBER, 2023.

5. HORIZONTAL CONTROL IS BASED ON NAD83 COLORADO STATE PLANE CENTRAL ZONE.

6. FOR BORE DEPTH OF COVER PLEASE SEE DWG#0322-3601

BILL OF MATERIALS

1	8.625" OD 0.250" WT API 5LS X52 W14-16 MILLS FBE COATING AND 40 MILS ARO	292'
---	--	------

REVISIONS

NO.	DESCRIPTION	DATE	BY	CK.	APPR'D
A	FOR REVIEW	9/21/23	SKS	DJ	CD
B	FOR REVIEW (REVISED)	10/24/23	SKS	DJ	CD
C	ISSUED FOR BID	12/1/23	SKS	DJ	CD
D	ISSUED FOR CONSTRUCTION	12/14/23	SKS	SB	CD

2024 CONSTRUCTION

DWG. TYPE

PRELIM

BID

FINAL

W.O: 10083285

DESIGNED IN ACCORDANCE WITH TITLE 49--PART 192 OF MINIMUM FEDERAL SAFETY STANDARDS AND GPTC GUIDE FOR GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS, LATEST EDITION.

ENGINEERING DESIGN

760 ALEGRE DR.

FOUNTAIN, CO 80817

SQUIRREL CREEK

BORE PROFILE

JIMMY CAMP ROAD

ELPASO COUNTY

COLORADO

DRAWN

SKS

CHK. DR.

DJ

SCALE

AS SHOWN

DATE

9/8/23

SHEET NO.

0322-3204

15 of 21







# DATA TABLE

DESCRIPTION	SHEET	LENGTH "A"	DEPTH "B"	DEPTH "C"	DEPTH BELOW OBSTACLE
FMIC DITCH	7	34'-0"	16'-3"	16'-3"	6'-0"
PRIVATE PROP	9	30'-0"	4'-4"	4'-5"	4'-0"

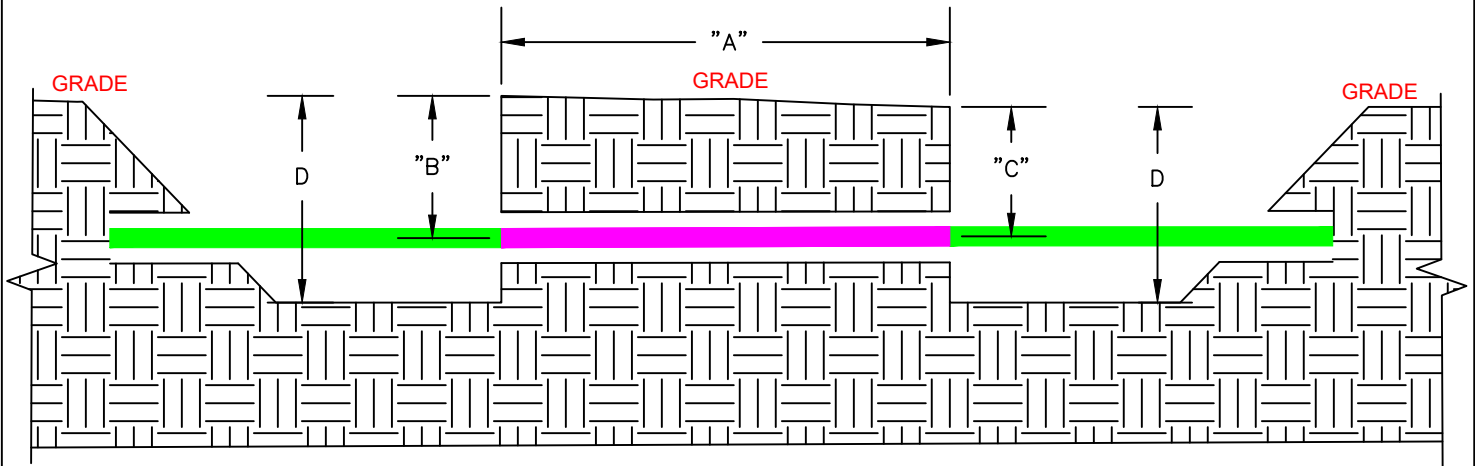
\* DIMENSION "D" IS TO BE DETERMINED BY CONTRACTOR.



BORE PIPE



INTERCONNECTION PIPE



JACK AND BORE TYPICAL DETAIL  
SCALE=NONE



Know what's below.  
Call before you dig.

## DRAWING REVISIONS

NO.	DESCRIPTION	DATE	BY	CHK.	APPR'D
0	ISSUED FOR CONSTRUCTION	12/14	SKS	SB	CD
B	REVISED	12/10	SKS	DJ	CD
A	FOR REVIEW	11/10	SKS	DJ	CD

## DRAWING APPROVALS

TYPE	DATE	BY
MECHANICAL		
ELECTRICAL		
PROJECT	11/10/2023	DEZMOND JEANS
PIPELINE		
DRAFTING	11/10/2023	SCOTT SHEPERD
MEASUREMENT		
FIELD		



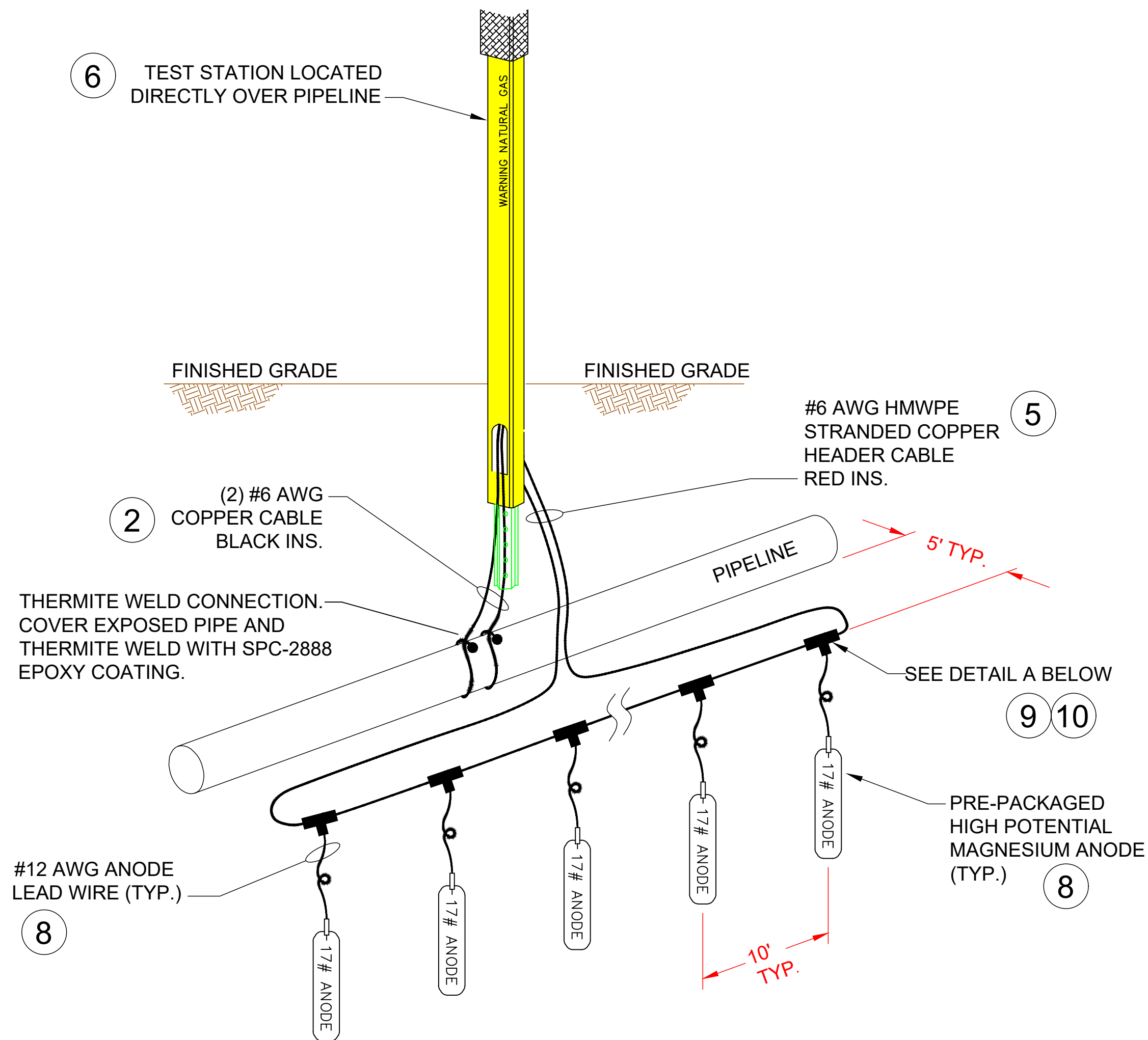
Natural Gas  
Engineering Services  
1102 E 1st Street  
Papillion, NE 68046

JACK AND BORE TYPICAL

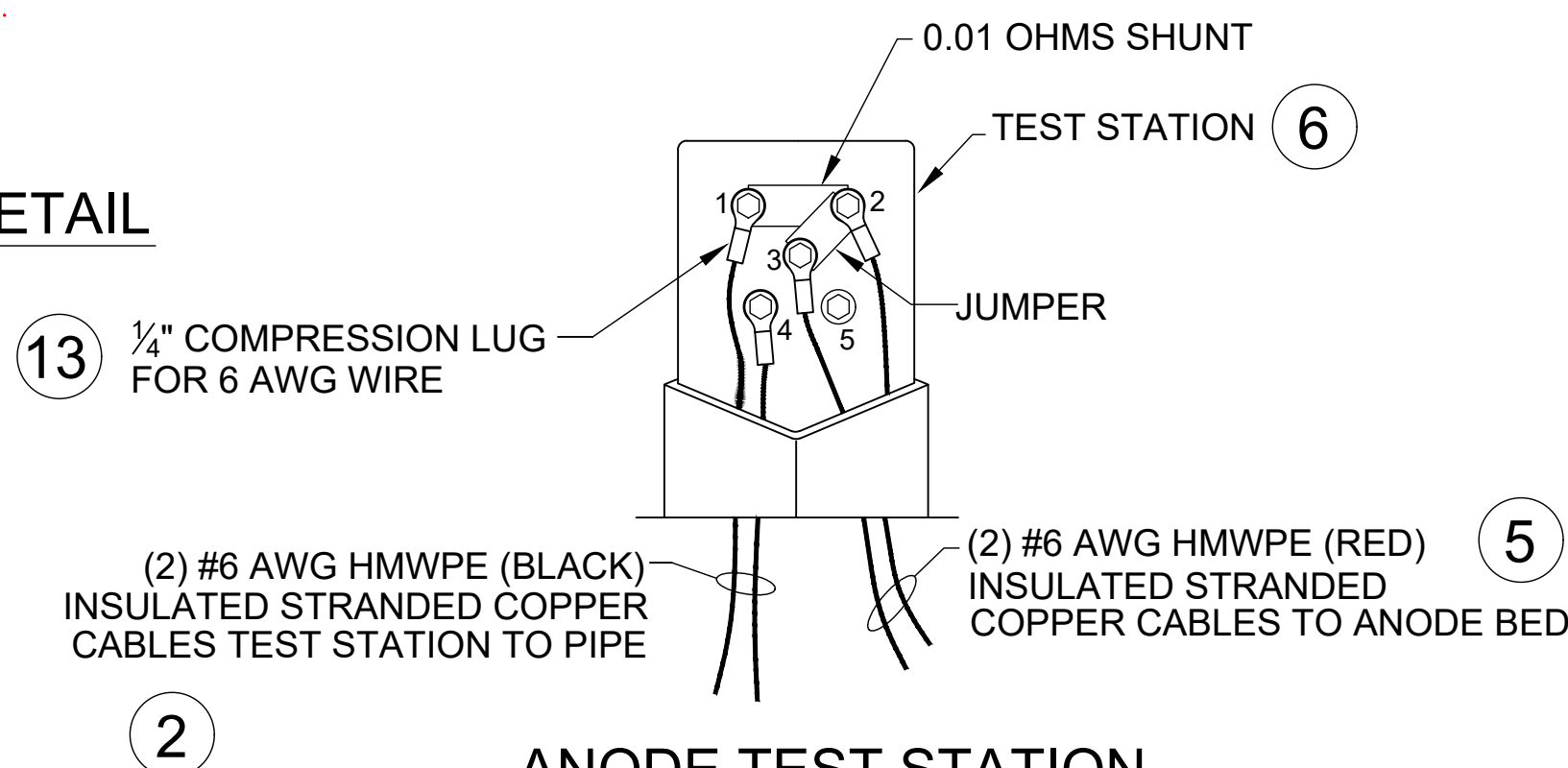
-----  
PIPING  
STANDARDS

DRAWN BY SKS	DATE 11/10/2023	STANDRAD DRAWING
SCALE AS-NOTED	CHECKED DJ	DWG. TYPE PRELIM. BID FINAL X
CADD FILE TBD		W.O. NO. 10083285
P.N. TBD		SHEET NO. 17 of 21





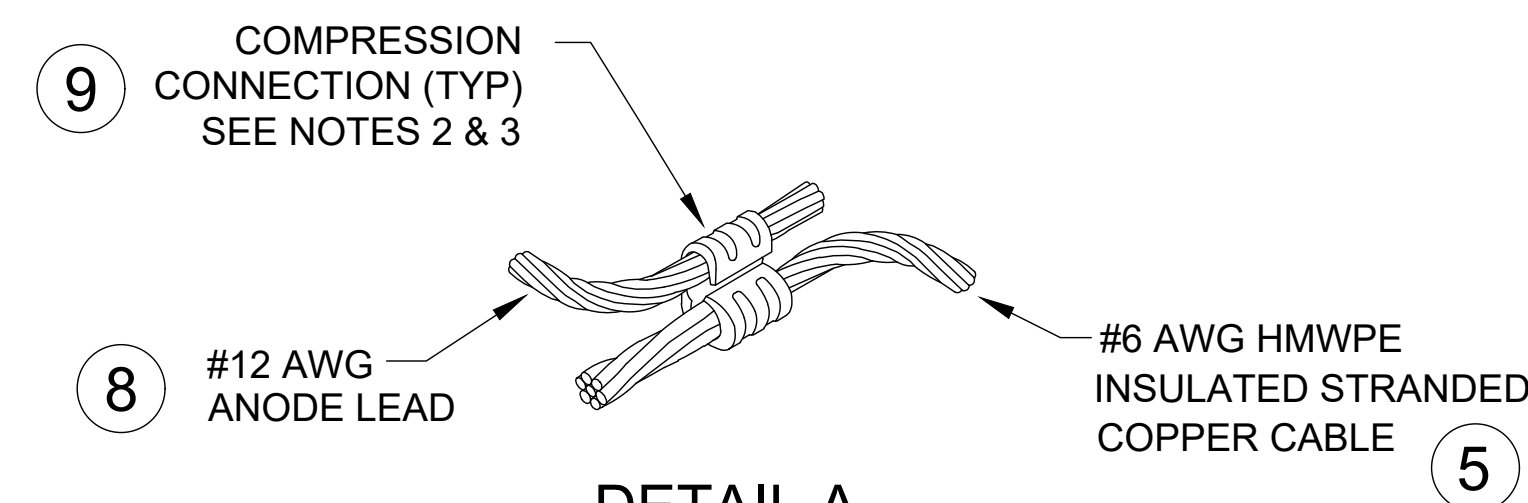
MAGNESIUM ANODE INSTALLATION DETAIL



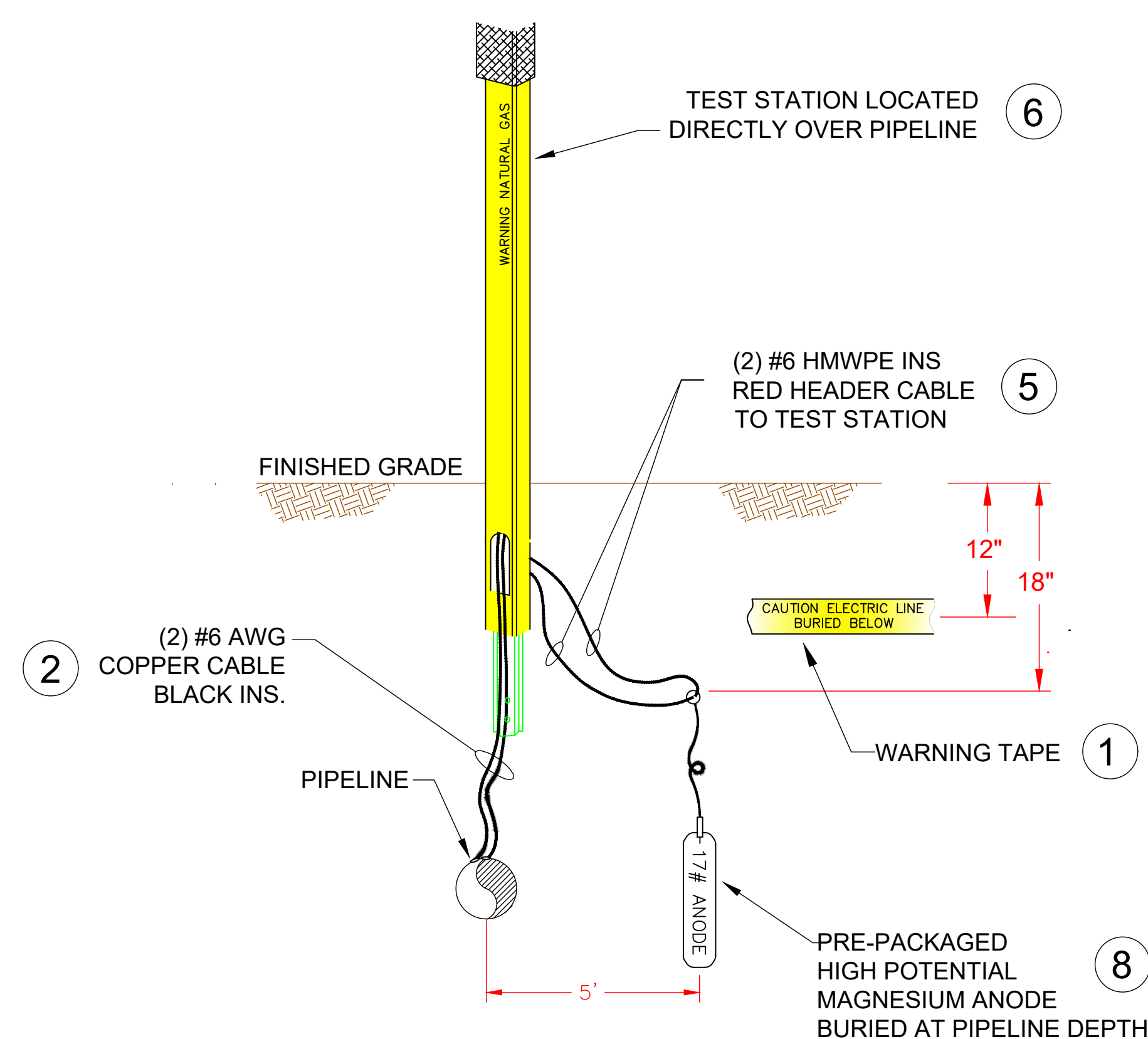
ANODE TEST STATION  
WIRING DETAIL  
(SHOWN WITHOUT COVER)

ANODE TEST STATION WIRING DETAIL

ANODE TEST STATION WIRING			
CONNECTIONS TO:		QUANTITY	TAPE OR WIRE COLOR
TERMINAL	PIPE/DEVICE		
1	PIPELINE	1	#6 AWG (BLACK)
2	ANODE BED	1	#6 AWG (RED)
3	ANODE BED	1	#6 AWG (RED)
4	PIPELINE	1	#6 AWG (BLACK)
5	UNUSED	-	-



DETAIL A  
ANODE TO ANODE HEADER  
#12 AWG TO #6 AWG HMWPE  
CRIMP CONNECTION



SIDE VIEW  
MAGNESIUM ANODE  
INSTALLATION

NOTES:

1. INSTALL MAGNESIUM ANODE BEDS AT LOCATIONS ALONG PIPELINE ACCORDING TO CP TECHNICIAN INSTRUCTIONS.
2. INSTALL MAGNESIUM ANODE A MINIMUM OF 5' AWAY FROM PIPELINE.
3. ANODE CAN BE INSTALLED IN HORIZONTAL OR VERTICAL CONFIGURATIONS.
4. ANODE BED TO BE CENTERED AT LOCATION INDICATED BY CP TECHNICIAN .
5. INSTALL WARNING TAPE (ITEM 1) APPROXIMATELY 1 FT BELOW GRADE OVERALL ANODE BED.
6. THE MAGNESIUM ANODES WILL BE INSTALLED AT LEAST AS DEEP AS THE BOTTOM OF THE PIPE.
7. USE RESIN SPLICE KIT TO SEAL CRIMP CONNECTIONS.
8. COMPRESS CRIMP CONNECTOR USING CORRECT HAND OPERATED OR HYDRAULIC CRIMPING TOOL WITH CORRECT DIE FOR THE GIVEN CRIMP CONNECTOR.

NOTES

1. STATIONING IS BASED ON HORIZONTAL DISTANCES.
2. ALL GAS, WATER AND UTILITY LINES SHALL BE LOCATED PRIOR TO ANY EXCAVATING, DIGGING, OR TRENCHING ANYWHERE ON OR NEAR THIS SITE.
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4. GROUND SURVEY PROVIDED BY (SURVEYOR), (MONTH), 20XX.
5. HORIZONTAL CONTROL IS BASED ON NAD83 COLORADO STATE PLANE SOUTH ZONE (0503). VERTICAL DATUM IS NAVD88 AND BASED ON AN OPUS SOLUTION UTILIZING GEOID 12B.

BILL OF MATERIALS

REVISIONS

NO.	DESCRIPTION	DATE	BY	CHK.	APPR'D
A	FOR REVIEW	9/21/23	SKS	DJ	CD
B	FOR REVIEW (REVISED)	10/24/23	SKS	DJ	CD
C	ISSUED FOR BID	12/1/23	SKS	DJ	CD
D	ISSUED FOR CONSTRUCTION	12/14/23	SKS	SB	CD

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ENGINEERING DESIGN  
760 ALEGRE DR.  
FOUNTAIN, CO 80817

SQUIRREL CREEK  
CATHODIC PROTECTION TEST STATION  
DETAILS 1

ELPASO COUNTY		COLORADO	
DRAWN	CHK. DR.	SCALE	DATE
SKS	DJ	AS SHOWN	9/8/23
DRAWING NUMBER:		SHEET NO.	
0322-5990		18 of 21	

2024 CONSTRUCTION

WO: 10083285

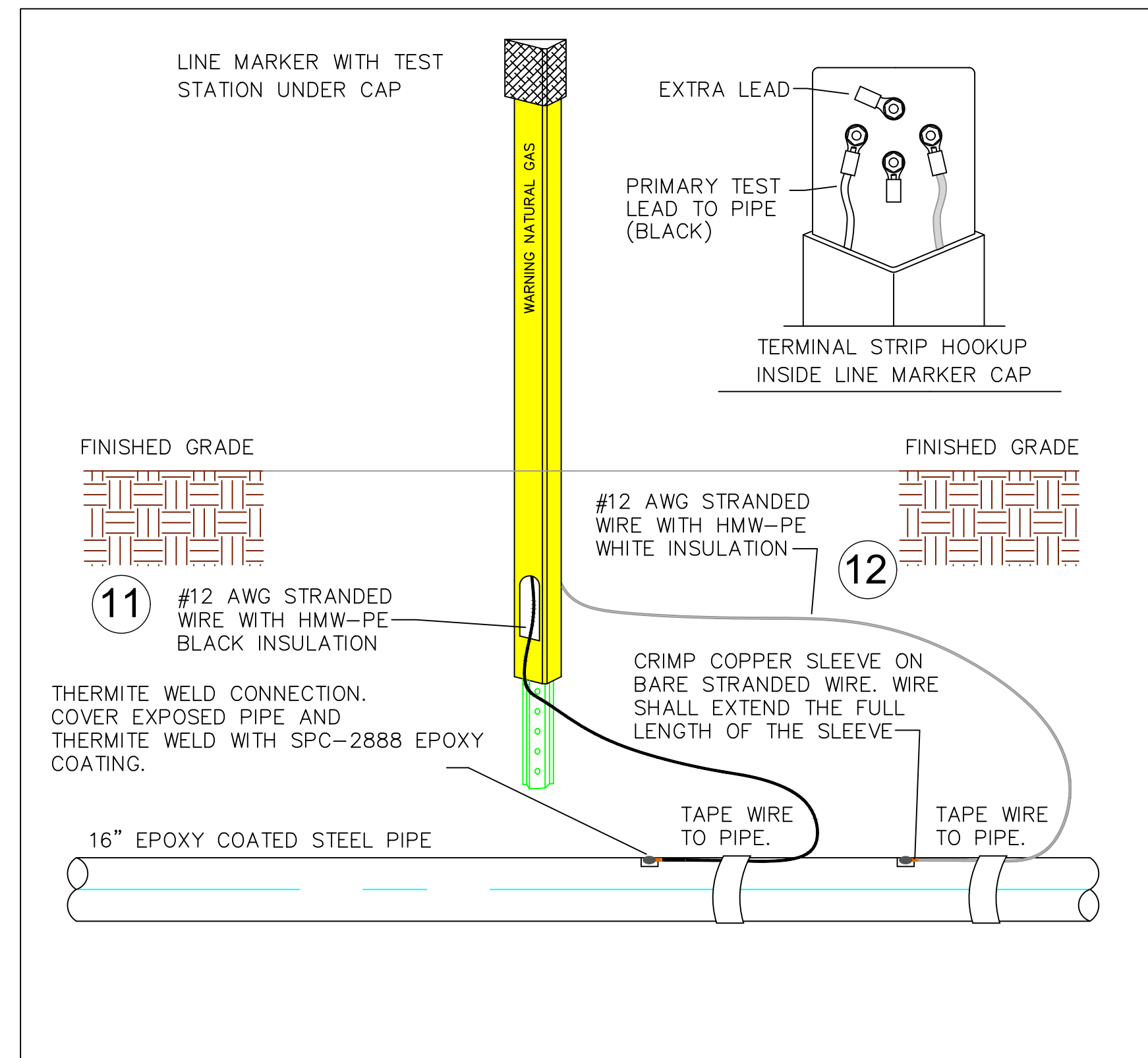
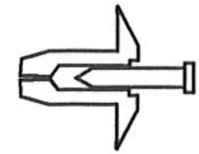
DWG. TYPE

DESIGNED IN ACCORDANCE WITH TITLE 49-PART 192 OF MINIMUM FEDERAL SAFETY STANDARDS AND GPTC GUIDE FOR GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS, LATEST EDITION.

PRELIM. BID FINAL



- TriView fasteners.*  
One hit with a  
hammer locks the  
TriView onto a 1.12  
lb. u-channel post.



PART	QUANTITY	UNIT	SIZE	ITEM DESCRIPTION	M.S. No.	CLASS	ITEM
11	TBD	FT	#12 AWG	HMWPE (BLACK) INSULATED STRANDED COPPER CABLE, SOFT-DRAWN, COMMERCIALY PURE COPPER, ASTM B8, CLASS B STD.		N/A	
12	TBD	FT	#12 AWG	HMWPE (WHITE) INSULATED STRANDED COPPER CABLE, SOFT-DRAWN, COMMERCIALY PURE COPPER, ASTM B8, CLASS B STD.		N/A	

NO SCALE

1. STATIONING IS BASED ON HORIZONTAL DISTANCES.	3. BHE ASSUMES NO RESPONSIBILITY FOR THE SPECIFIC LOCATION OF ANY BURIED GAS, WATER, OR UTILITY LINES THAT MAY BE PRESENT ON OR NEAR THIS SITE, NOR IS ANY LIABILITY ASSUMED FOR ANY LEGAL ACTION WHICH RESULTS FROM A DISCOVERY OF A GAS, WATER, OR UTILITY LINE IN ADDITION TO OR IN A DIFFERENT LOCATION THAN SHOWN ON THIS PLAN.
2. ALL GAS, WATER AND UTILITY LINES SHALL BE LOCATED PRIOR TO ANY EXCAVATING, DIGGING, OR TRENCHING ANYWHERE ON OR NEAR THIS SITE.	

1	8" API 5LS X52 W/14-16 MILLS FBE COATING AND 40 MILS ARO
2	8" API 5LS X52 W/14-16 MILLS FBE COATING AND 40 MILS ARO, WT-0.250"

NO.	DESCRIPTION	DATE	BY	CHK.	APPR'D
A	FOR REVIEW	9/21/23	SKS	DJ	CD
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C	ISSUED FOR BID	12/1/23	SKS	DJ	CD
O	ISSUED FOR CONSTRUCTION	12/14/23	SKS	SB	CD



2024 CONSTRUCTION

WO:10083285

DWG. TYPE

DESIGNED IN ACCORDANCE WITH TITLE 49-PAR  
192 OF MINIMUM FEDERAL SAFETY STANDARDS  
AND GPTC GUIDE FOR GAS TRANSMISSION AND  
DISTRIBUTION PIPING SYSTEMS, LATEST EDITION.

ELPASO COUNTY

OLORADO

DRAWN	CHK. DR.	SCALE AS SHOWN	DATE 9/8/23
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383

19 of 21

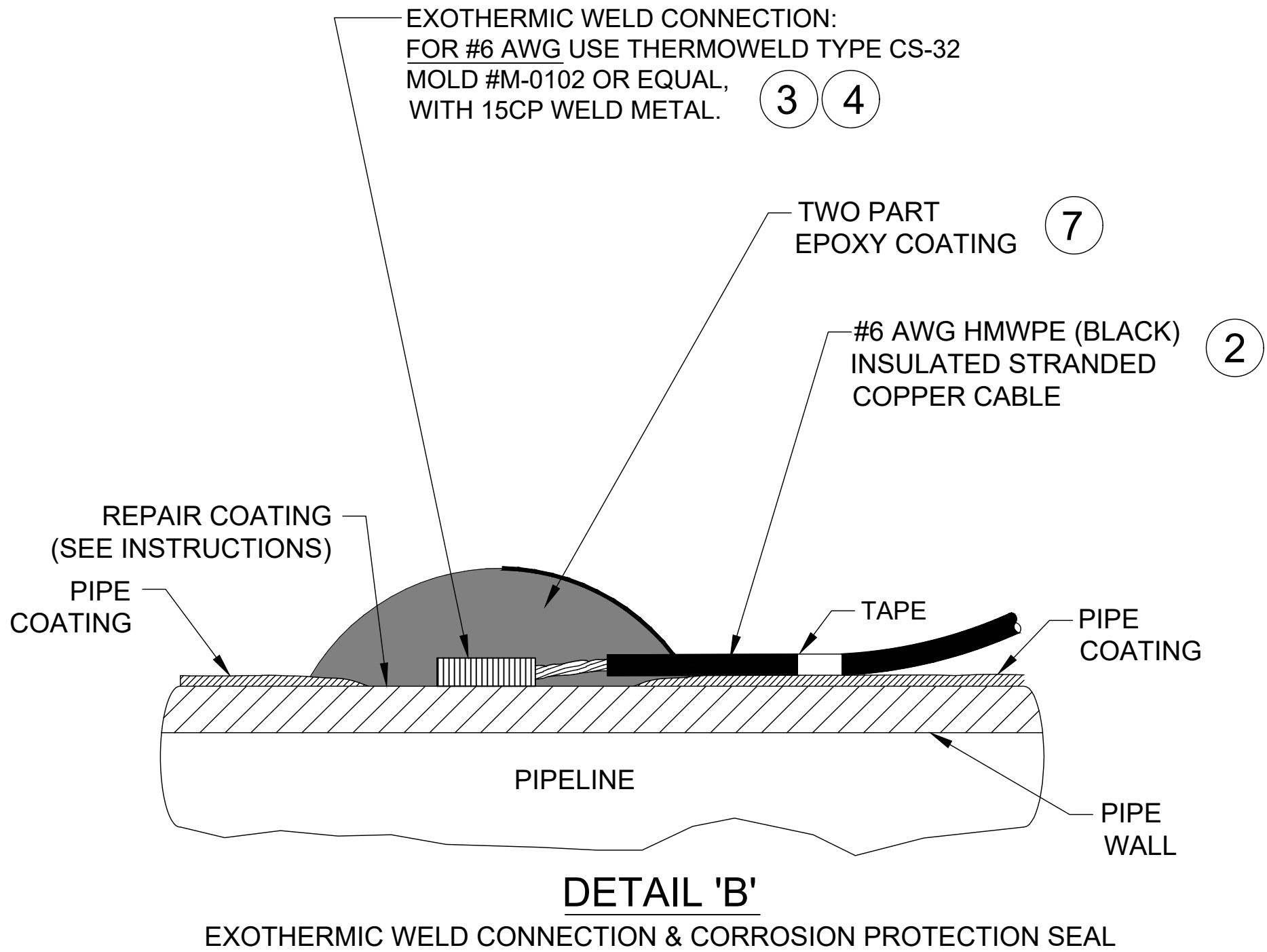
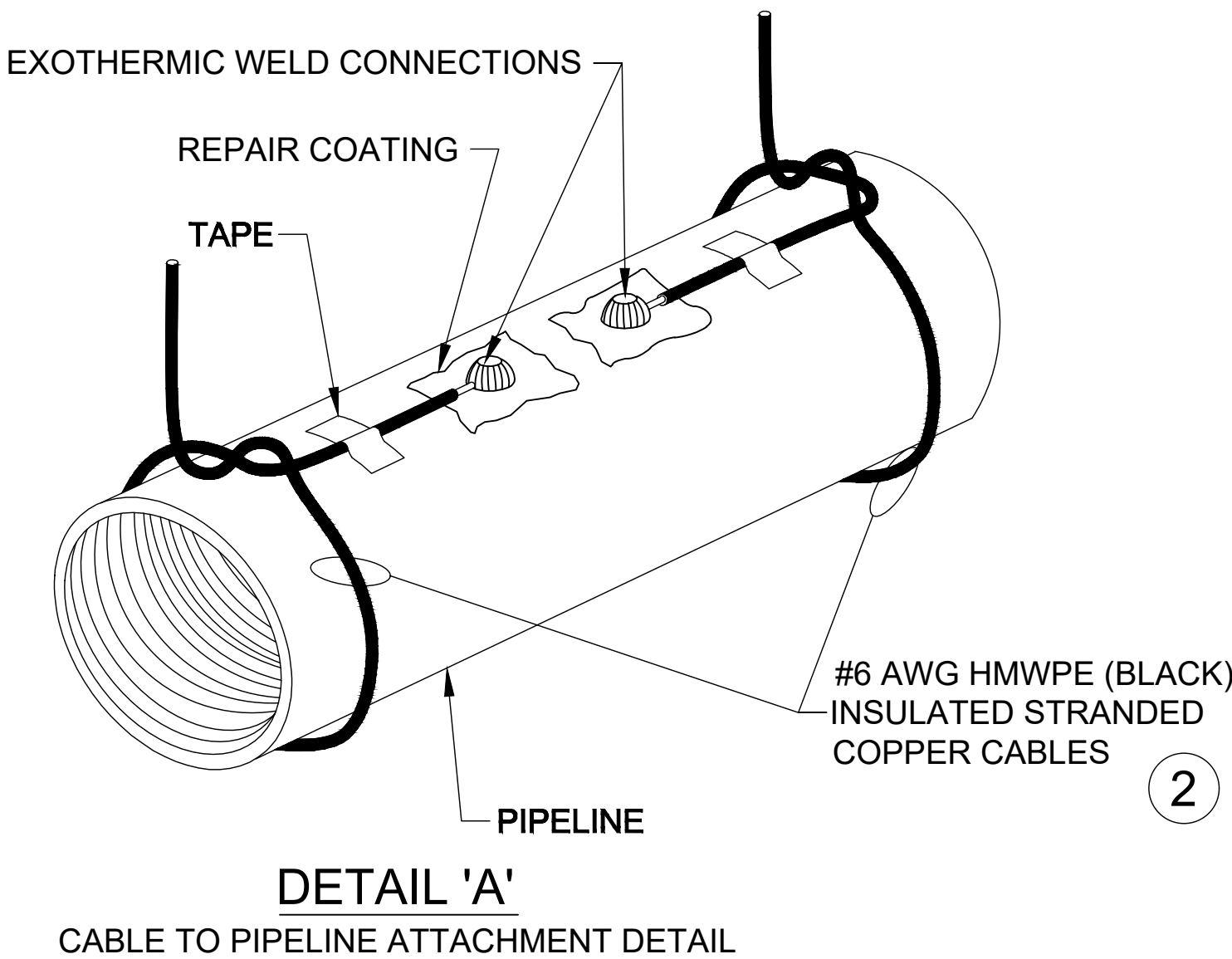


EXOTHERMIC WELD INSTRUCTIONS:

1. FIRST DETERMINE IF THE PIPELINE IS SUITABLE FOR EXOTHERMIC WELDING BY CONDUCTING THE FOLLOWING TESTS:  
  
A) DETERMINE THAT THE PIPELINE SMYS (SPECIFIED MINIMUM YIELD STRENGTH) IS <80,000 PSI.  
B) DETERMINE THAT PIPELINE WALL THICKNESS IS 1⁄8" (0.125") OR GREATER.  
C) PERFORM ULTRASONIC TESTING TO PIPELINE TO DETERMINE THAT NO SURFACE OR INTERNAL DEFECTS EXIST.
2. FOR EACH CABLE TO PIPELINE CONNECTION (EXOTHERMIC WELD), REMOVE A 3"x3" MAX AREA OF PIPELINE COATING AT THE 12:00 O'CLOCK POSITION ON THE PIPELINE AND BRUSH UNTIL BRIGHT-CLEAN. ANY ADJACENT CABLE CONNECTIONS SHALL BE A MINIMUM OF 12" APART.
3. PREPARE PIPELINE SURFACE AS SPECIFIED BY COATING MANUFACTURER.
4. DETAIL 'A' SHOWS POSSIBLE METHOD OF CABLE STRAIN RELIEF FOR NEW PIPELINE INSTALLATIONS. THIS METHOD IS NOT A REQUIREMENT. OTHER MEANS OF STRAIN RELIEF MAY BE USED.
5. STRIP BACK ANY CABLE INSULATION 1"-2" AND TAPE CABLE TO PIPE. CRUCIBLE TIGHT TO PIPELINE.

6. ENSURE THAT THE PIPELINE WELD AREA AND CABLE ARE CLEAN AND DRY PRIOR TO WELDING.
7. USE SPECIFIC WELD MOLD AND WELD METAL AS INDICATED IN DRAWING MATERIAL LIST.
8. IF INDICATED, USE COPPER HEAT SLEEVE ON CABLE END TO BE WELDED.
- 9.USE ONLY A 15 GRAM WELDING CHARGE. DO NOT EXCEED.
10. PLACE THE METAL RETAINER DISK IN THE SPECIFIED WELD MOLD AND DUMP (DO NOT POUR) WELD METAL POWDER ONTO THE DISK. MAKE SURE THAT ALL OF THE FINE STARTING POWDER IS IN THE MOLD. IF ANY POWDER REMAINS IN THE CARTRIDGE BOTTOM, SQUEEZE OUT INTO MOLD AND BREAK UP.
11. CLOSE MOLD LID.
12. REPLACE CAP ON EMPTY WELD METAL CARTRIDGE AND PLACE BACK INTO CARTRIDGE PACK BOX UPSIDE DOWN TO KEEP THE REMAINING CARTRIDGES UPRIGHT.
13. LAY THE CABLE END ON THE PREPARED PIPE HOLDING

14. USING EYE AND HAND PROTECTION, STAND ON THE OPPOSITE SIDE OF THE CRUCIBLE FROM THE TOUCH HOLE AND IGNITE POWDER WITH SPARK FROM FLINT GUN. \*CAUTION: POWDER WILL FLASH WHEN IGNITED\*
15. WHEN WELD HAS SET, REMOVE WELD MOLD AND TEST CONNECTION BY RAPPING SHARPLY WITH A SLAG HAMMER. IF THERE IS ANY INDICATION THAT A COMPLETE WELD HAS NOT BEEN ACHIEVED, REMOVE THE WELD AND RE-APPLY.
16. IF WELD IS GOOD, REMOVE ANY SLAG WITH HAMMER AND CLEAN USING A WIRE BRUSH.
17. ONCE THE WELD CONNECTION AND AREA HAVE BEEN CLEANED, REPAIR COATING USING TWO-PART EPOXY COATING REPAIR KIT AS SPECIFIED IN THE DRAWING MATERIALS LIST (OR APPROVED COATING AS SPECIFIED BY BLACK HILLS ENERGY).
18. REFER TO BLACK HILLS ENERGY REPAIR SPECIFICATIONS AND PRODUCT DATA SHEET TO DETERMINE IF REPAIR IS ACCEPTABLE.
19. AFTER REPAIR COATING HAS CURED ACCORDING TO MANUFACTURER'S SPECIFICATIONS, HOLIDAY DETECTION MUST BE PERFORMED.




PART	QUANTITY	UNIT	SIZE	ITEM DESCRIPTION	M.S. No.	CLASS	ITEM
2	TBD FT		#6 AWG	HMWPE (BLACK) INSULATED STRANDED COPPER CABLE, SOFT-DRAWN, COMMERCIALLY PURE COPPER, ASTM B8, CLASS B STD. (ANODE TEST STATIONS		N/A	
3	1 EA			EXOTHERMIC WELD MOLD, THERMOWELD P/N M-0102 OR EQUAL W/ HANDLE & FLINT IGNITOR		N/A	
4	1 BOX			EXOTHERMIC WELD METAL, THERMOWELD P/N 15CP OR EQUAL		N/A	
7	TBD TUBE(S)			SPC-2888 TWO PART EPOXY (APPLY 20 MILS THICKNESS MIN. 50 ML TUBE WILL REPAIR TWO CONNECTIONS TO PIPE)		N/A	

EXOTHERMIC WELD—CATHODIC TEST STATION DETAIL

NO. SCALE

NOTES

1. STATIONING IS BASED ON HORIZONTAL DISTANCES.  
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4. GROUND SURVEY PROVIDED BY (SURVEYOR), (MONTH), 20XX.  
5. HORIZONTAL CONTROL IS BASED ON NAD83 COLORADO STATE PLANE SOUTH ZONE (0503). VERTICAL DATUM IS NAVD88 AND BASED ON AN OPUS SOLUTION UTILIZING GEOID 12B.

BILL OF MATERIALS			REVISIONS						<div>ENGINEERING DESIGN 760 ALEGRE DR. FOUNTAIN, CO 80817</div> <div>SQUIRREL CREEK CATHODIC PROTECTION TEST STATION EXOTHERMIC WELD DETAILS</div>															
	SEE ABOVE	750'	NO.	DESCRIPTION	DATE	BY	CHK.	APPR'D																
		225'	A	FOR REVIEW	9/21/23	SKS	DJ	CD																
			B	FOR REVIEW (REVISED)	10/24/23	SKS	DJ	CD																
			C	ISSUED FOR BID	12/1/23	SKS	DJ	CD	2024 CONSTRUCTION		WO: 10083285	EL PASO COUNTY		COLORADO										
			D	ISSUED FOR CONSTRUCTION	12/14/23	SKS	SB	CD	DWG. TYPE	PRELIM.		BID		FINAL ✓		DESIGNED IN ACCORDANCE WITH TITLE 49—PART 192 OF MINIMUM FEDERAL SAFETY STANDARDS AND GPTC GUIDE FOR GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS, LATEST EDITION.	DRAWN	SKS	CHK. DR.	DJ	SCALE	AS SHOWN	DATE	9/8/23
														DRAWING NUMBER:		0322—5992		SHEET NO.				20 of 21		




PART	QUANTITY	UNIT	SIZE	ITEM DESCRIPTION	M.S. No.	CLASS	ITEM
1	1	ROLL	3" WIDE	PANDUIT CORP., UNDERGROUND WARNING TAPE, PART #HTU3Y-E, YELLOW TAPE WITH BLACK LETTERS, READS "CAUTION ELECTRICAL LINE BURIED BELOW", 1 ROLL = 1000 FEET, GRAYBAR ELECTRICAL COMPANY, OMAHA, NE,   PHONE 402-592-7676		N/A	
2	TBD	FT	#6 AWG	HMWPE (BLACK) INSULATED STRANDED COPPER CABLE, SOFT-DRAWN, COMMERCIALLY PURE COPPER, ASTM B8, CLASS B STD. (ANODE TEST STATIONS		N/A	
3	1	EA		EXOTHERMIC WELD MOLD, THERMOWELD P/N M-0102 OR EQUAL W/ HANDLE & FLINT IGNITOR		N/A	
4	1	BOX		EXOTHERMIC WELD METAL, THERMOWELD P/N 15CP OR EQUAL		N/A	
5	TBD	FT	#6 AWG	HMWPE (RED) INSULATED STRANDED COPPER CABLE, SOFT-DRAWN, COMMERCIALLY PURE COPPER, ASTM B8, CLASS B STD. (ANODE TEST STATIONS CONNECTIONS TO		N/A	
6	TBD	EA	6'	RHINO TRVIEW TEST STATION, YELLOW POST WITH WHITE CAP & LOCK, 72" LENGTH, 5 - 1/4" BRASS TERMINALS, TO INCLUDE (1 EA.) 0.01 OHM SHUNT & (1 EA.) JUMPER		N/A	
7	TBD	TUBE(S)		SPC-2888 TWO PART EPOXY (APPLY 20 MILS THICKNESS   MIN. 50 ML TUBE WILL REPAIR TWO CONNECTIONS TO PIPE)		N/A	
8	TBD	EA	17#	MAGNESIUM ANODE, 17 LB SIZE, PREPACKAGED WITH LEAD WIRE	44.01	044	0143
9	TBD	EA		CRIMP CONNECTOR, COPPER, #6 AWG STRANDED RUN, #12 AWG TAP, BURNDY P/N YC6L12		N/A	
10	TBD	EA		RESIN SPLICE KIT, 3M SCOTCHCAST 90-B1 (FOR PROTECTION OF CRIMPED CABLE		N/A	
11	TBD	FT	#12 AWG	HMWPE (BLACK) INSULATED STRANDED COPPER CABLE, SOFT-DRAWN, COMMERCIALLY PURE COPPER, ASTM B8, CLASS B STD.		N/A	
12	TBD	FT	#12 AWG	HMWPE (WHITE) INSULATED STRANDED COPPER CABLE, SOFT-DRAWN, COMMERCIALLY PURE COPPER, ASTM B8, CLASS B STD.		N/A	
13	4 PER POST	#6		COMPRESSION LUG - 1/4" STUD HOLE, BURNDY PT. #YA6C OR EQUAL		N/A	

MATERIAL LIST–CATHODIC TEST STATION

NO SCALE

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			REVISIONS							ENGINEERING DESIGN 760 ALEGRE DR. FOUNTAIN, CO 80817	SQUIRREL CREEK CATHODIC PROTECTION TEST STATION DETAILS 4					
			NO.	DESCRIPTION	DATE	BY	CHK.	APPR'Y'D			ELPASO COUNTY		COLORADO			
			A	FOR REVIEW	9/21/23	SKS	DJ	CD			2024 CONSTRUCTION	WO: 10083285	DRAWN	CHK. DR.	SCALE AS SHOWN	DATE 9/8/23
			B	FOR REVIEW (REVISED)	10/24/23	SKS	DJ	CD				SKS	DJ	SHEET NO.		
			C	ISSUED FOR BID	12/1/23	SKS	DJ	CD				DESIGNED IN ACCORDANCE WITH TITLE 49--PART 192 OF MINIMUM FEDERAL SAFETY STANDARDS AND GPTC GUIDE FOR GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS, LATEST EDITION.				
			D	ISSUED FOR CONSTRUCTION	12/14/23	SKS	SB	CD								
											DRAWING NUMBER: 0322--5993		21 of 21			