

EL DORADO RURAL PUBLIC WATER AUTHORITY
PARNELL ROAD SEWER FORCE MAIN EXTENSION AND
VALVES FOR MASTER METERS
ARKANSAS NATURAL RESOURCES COMMISSION
PROJECT NO. 23-203

E.J. DAUGHERTY	PRESIDENT
JAMES V. WOOTEN	VICE PRESIDENT
SUSAN DUMAS	SECRETARY
MIKE MEADOWS	BOARD MEMBER
CLYDE STOOKEY	BOARD MEMBER

AUGUST 2024
REV. JUNE 2025
ADDENDUM I - 15 JULY 2025

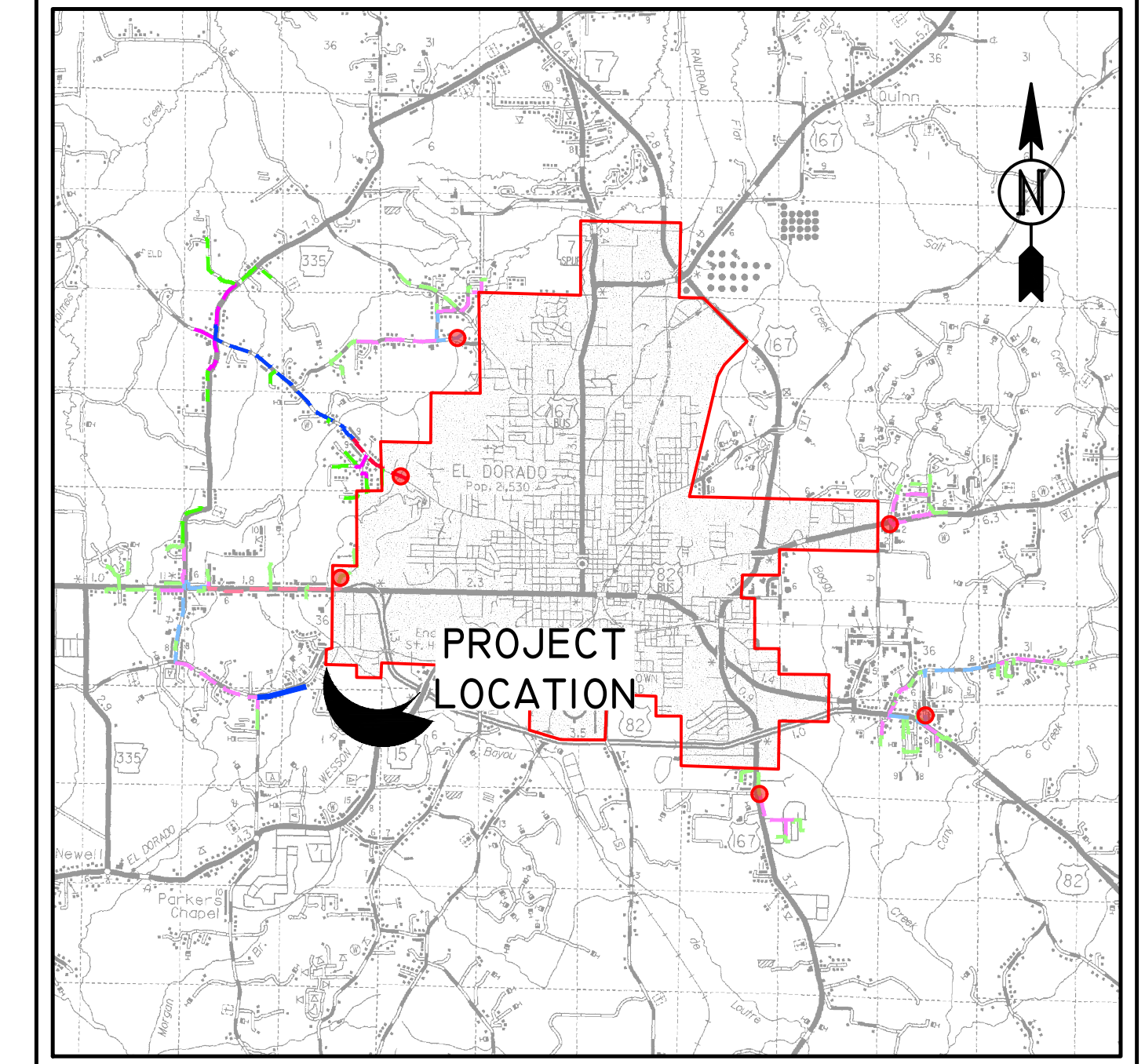
PREPARED BY:

GAUNT ENGINEERS, INC.
ENGINEERS, PLANNERS & SURVEYORS
3256 WEST HILLSBORO
EL DORADO, ARKANSAS 71730

THIS PROJECT IS TO CONFORM TO THE
STATE OF ARKANSAS "RULES AND
REGULATIONS PERTAINING TO PUBLIC
WATER SYSTEMS"



VICINITY MAP



APPROVED BY

PRESIDENT, ERPWA

SIGNATURE

DATE _____

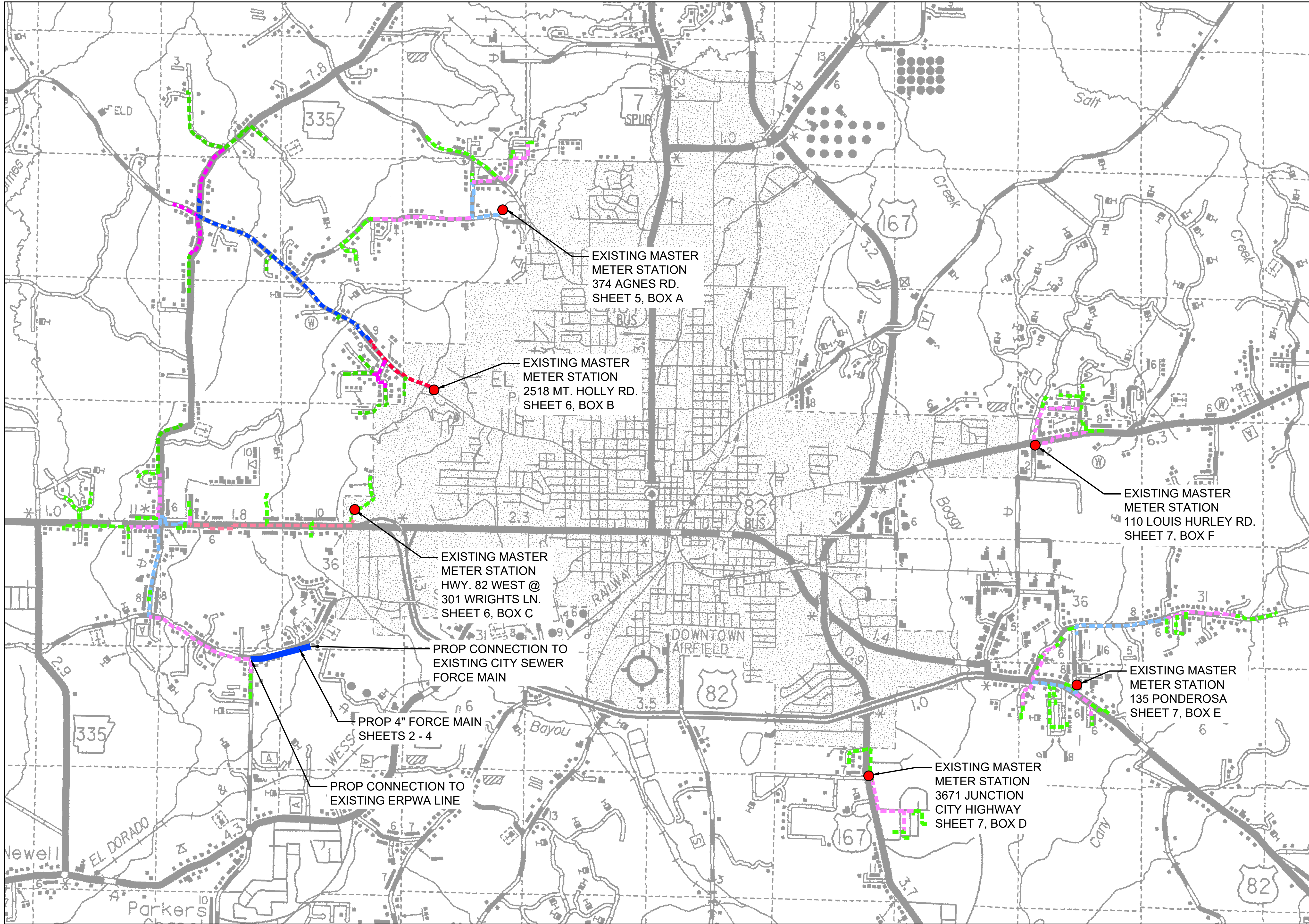
GAUNT ENGINEERS, INC.

SIGNATURE

DATE _____

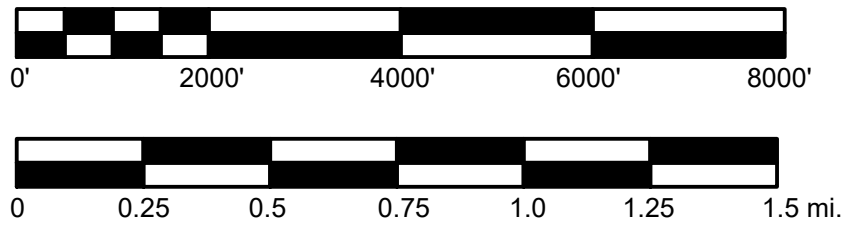
SHEET INDEX


[illegible]



- LEGEND**
- EXISTING PHASE I - 2" PRESSURE SEWER
 - EXISTING PHASE I - 3" PRESSURE SEWER
 - EXISTING PHASE I - 4" PRESSURE SEWER
 - EXISTING PHASE I - 6" PRESSURE SEWER
 - EXISTING PHASE II - 2" PRESSURE SEWER
 - EXISTING PHASE II - 3" PRESSURE SEWER
 - EXISTING PHASE II - 4" PRESSURE SEWER
 - EXISTING PHASE II - 6" PRESSURE SEWER
 - PROPOSED - 4" FORCE MAIN

Service Address	Customer Name
3329 Parnell Rd.	Martha McCurry
3288 Parnell Rd.	Vacant Feb. 2023
3274 Parnell Rd.	Joe McCurry
3275 Parnell Rd.	Not Found
3247 Parnell Rd.	Carroll Gadberry
3279 Parnell Rd.	Randall McCloy
3345 Parnell Rd.	Not Found
3243 Parnell Rd.	Bill McCloy
3226 Parnell Rd.	Robert Bursey
3220 Parnell Rd.	Not Found
3212 Parnell Rd.	Vacant Feb. 2023
3214 Parnell Rd.	Not Found
3162 Parnell Rd.	Mac's General Contractors, Inc.
3110 Parnell Rd.	Brittney Hicks
3105 Parnell Rd.	Reborn Foundation, LLC
3093 Parnell Rd.	Raymond & Minnie Springer
3090 Parnell Rd.	Beulah Grove Baptist Church
3083 Parnell Rd.	Not Found
3065 Parnell Rd.	Vacant Feb. 2023
3058 Parnell Rd.	Essie Richmand
3033 Parnell Rd.	Jimmie Springer
3004 Parnell Rd.	Penny Martin
125 Dawson Lane	Vincent Dawson
2954 Parnell Rd.	Travis Dawson
2953 Parnell Rd.	Donald & Mary Jensen
2926 Parnell Rd.	Leronzo Dawson
2912 Parnell Rd.	Stacy Brock
112 Neal Rd.	Joyce Moody
2888 Parnell Rd.	Not Found





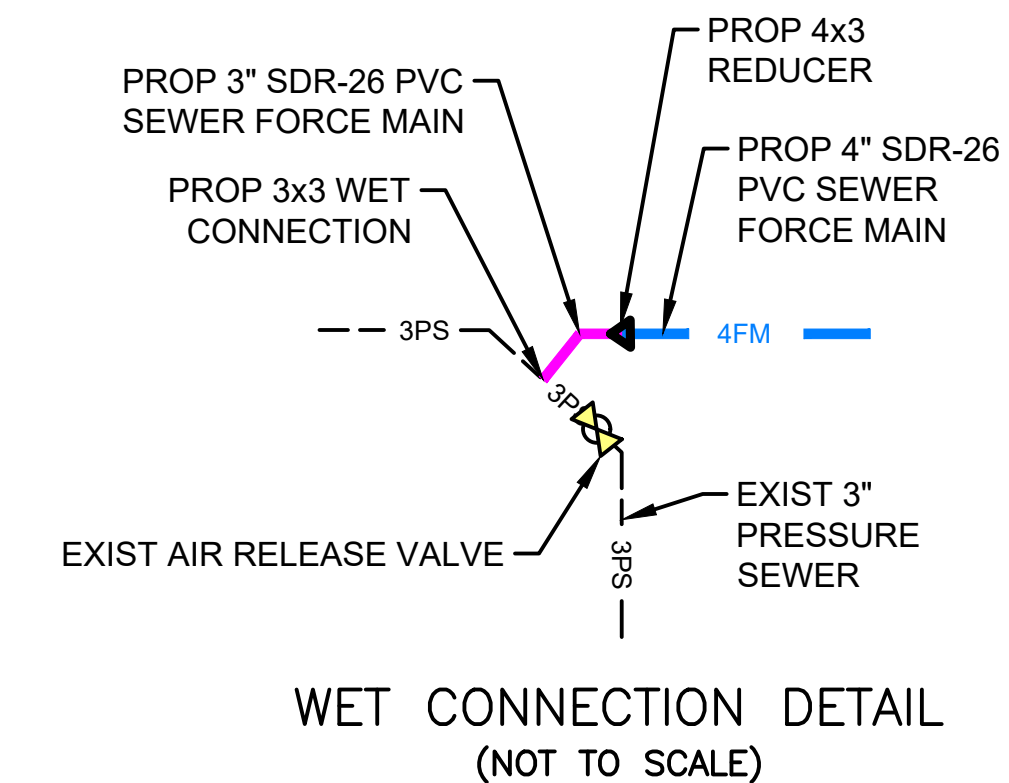
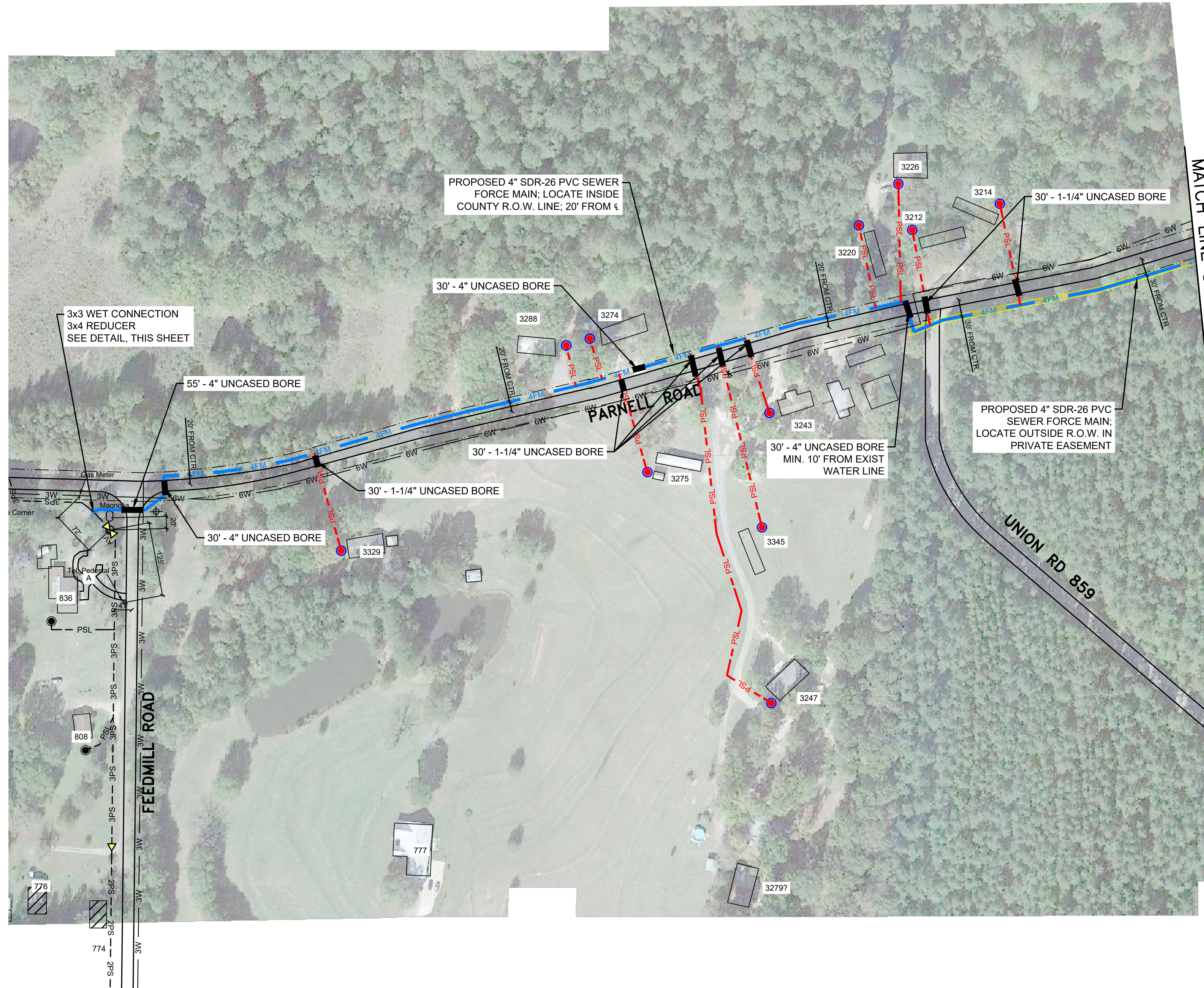
GAUNT ENGINEERS, INC.
ENGINEERS, SURVEYORS AND PLANNERS
3400 W. HILLSBORO, EL DORADO, AR 71730

MODEL ID: _____

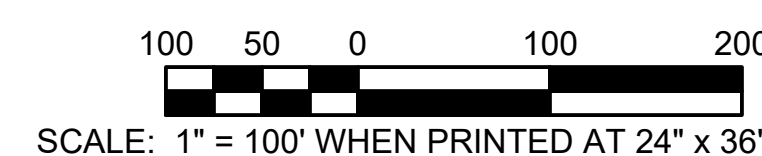
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**RURAL PRESSURE SEWER SYSTEM
PARNELL ROAD FORCE MAIN
AND MISC. IMPROVEMENTS
PROJECT LAYOUT**

DESIGNED BY	PSE	CHECKED BY	6-14-10
DRAWN BY	2.12	APPROVED BY	02/2024
PLOT AT 1:	2.12	GE JOB NO:	GE ITEM NO:
SCALE	DRAWING NUMBER	REV.	1
1" = 2000'	1		



LEGEND	
4FM	PROPOSED 4" FORCE MAIN
PSL	PROPOSED 1.25" PRESSURE SERVICE LATERAL
CT	PROPOSED CUSTOMER TANK
E	PROPOSED EASEMENT
6FM	EXISTING 6" FORCE MAIN
3PS	EXISTING 3" PRESSURE SEWER
2PS	EXISTING 2" PRESSURE SEWER
1.25PSL	EXISTING 1.25" PRESSURE SERVICE LATERAL
CT	EXISTING CUSTOMER TANK
AV	EXISTING AIR AND VACUUM VALVE
R	EXISTING REDUCER
W	EXISTING WATER LINE
GS	EXISTING GRAVITY SEWER

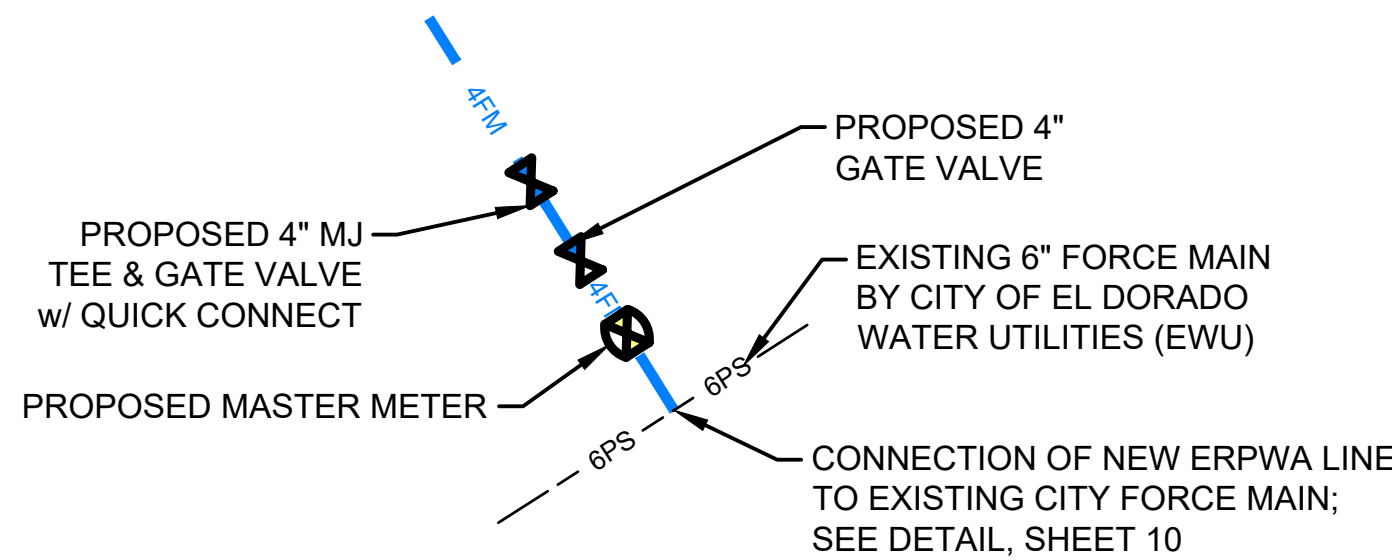
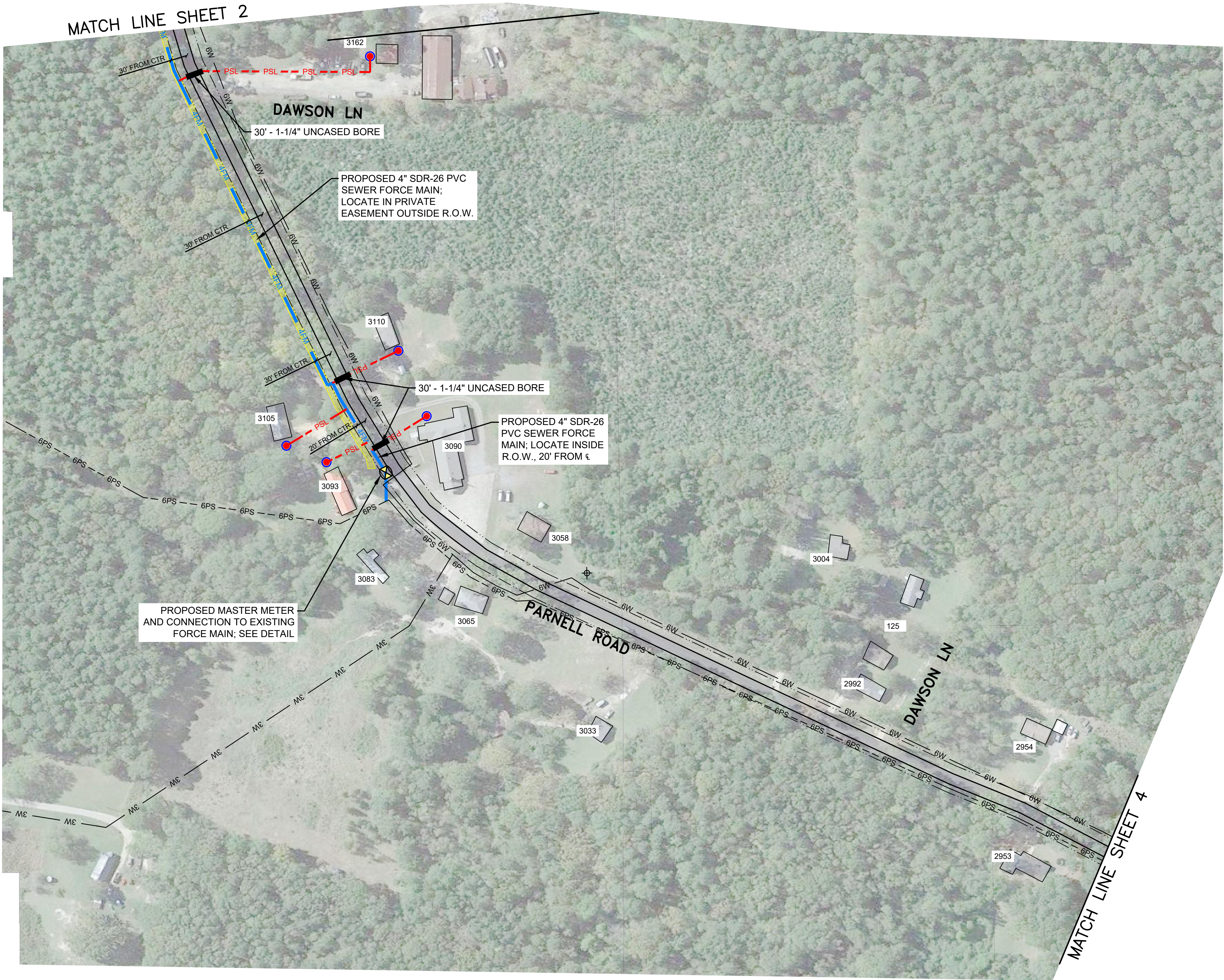


A-1		ADDENDUM 1 - REVISE DESC. OF EXIST VALVE	07-2025			DESIGNED BY		CHECKED BY	
		MOVE PORTION OF LINE TO PRIVATE EASEMENT	06-2025			DRAWN BY	JKD	APPROVED BY	
		MOVE LINE INSIDE R.O.W.	02-2025			PLOT AT 1:	2.12	DATE:	
REV.		DESCRIPTION	CHK.	DATE	APP.	DATE	SCALE	DRAWING NUMBER	REV.
							1"=100'	2	

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ENGINEERS, SURVEYORS AND PLANNERS
3256 W. HILLSBORO, EL DORADO, AR 71730

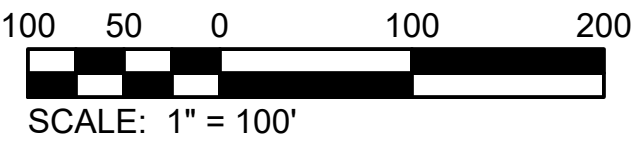
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**EL DORADO RURAL PUBLIC
WATER AUTHORITY
PARNELL ROAD EXTENSION
PLANS**

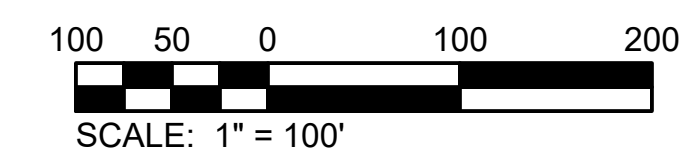
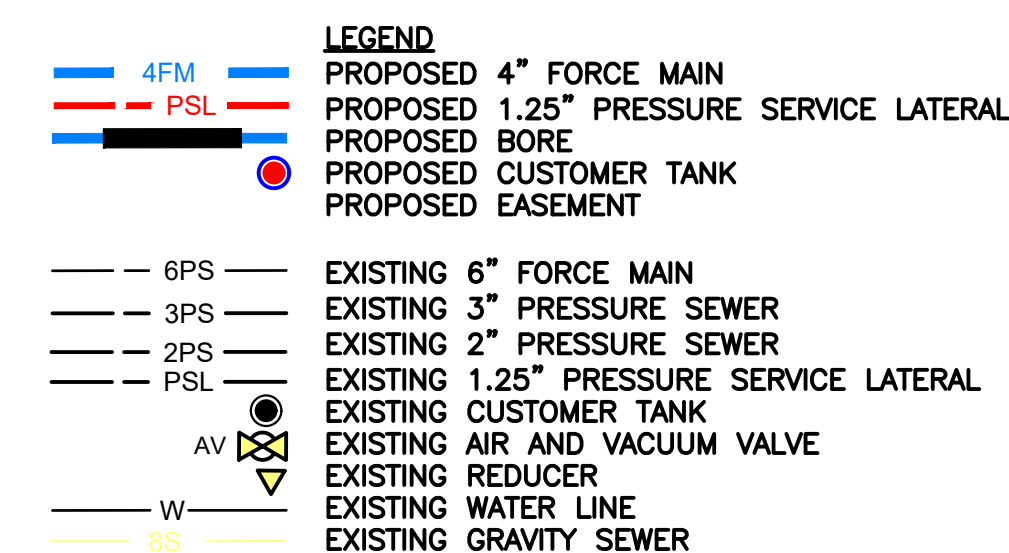
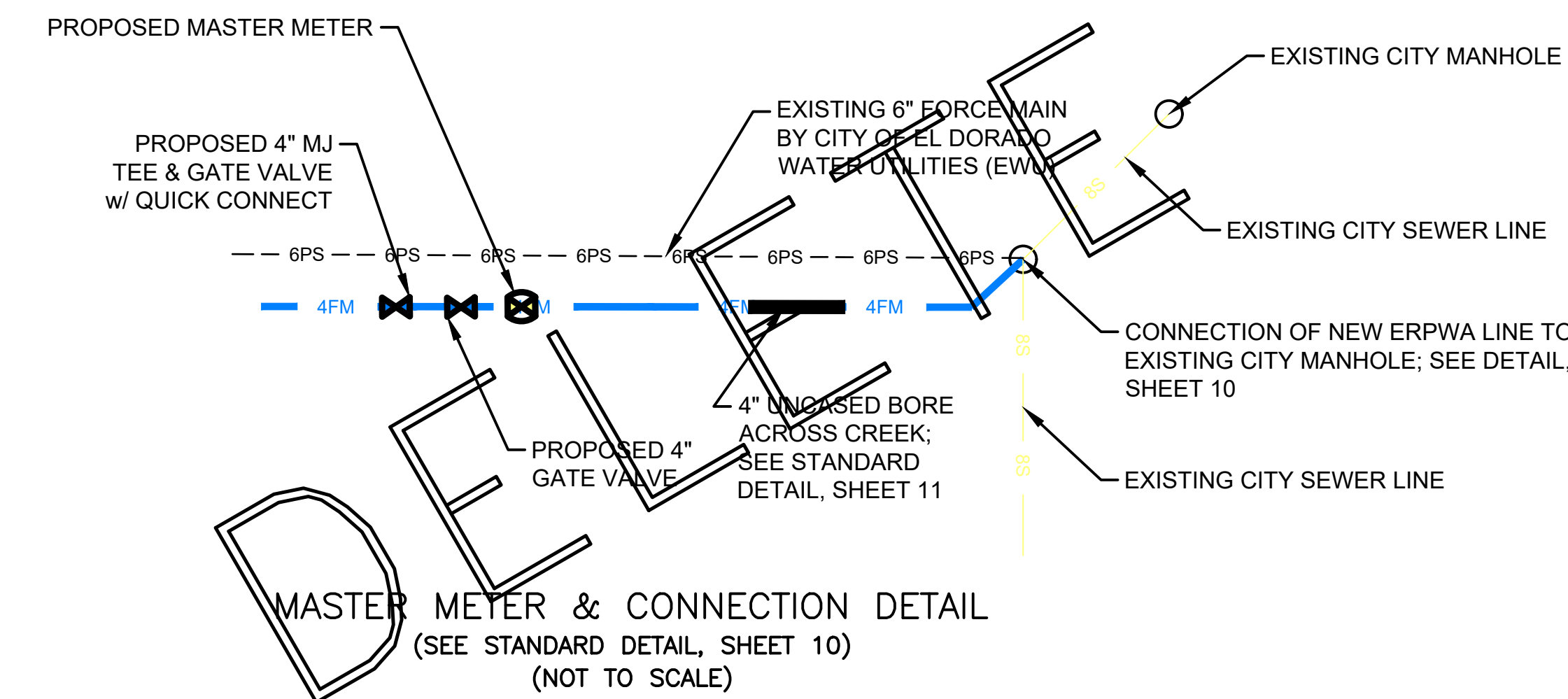


MASTER METER & CONNECTION DETAIL
(SEE STANDARD DETAIL, SHEET 10)
(NOT TO SCALE)

- LEGEND**
- 4FM PROPOSED 4" FORCE MAIN
 - PSL PROPOSED 1.25" PRESSURE SERVICE LATERAL
 - PROPOSED BORE
 - PROPOSED CUSTOMER TANK
 - PROPOSED EASEMENT
 - 6PS EXISTING 6" FORCE MAIN
 - 3PS EXISTING 3" PRESSURE SEWER
 - 2PS EXISTING 2" PRESSURE SEWER
 - PSL EXISTING 1.25" PRESSURE SERVICE LATERAL
 - AV EXISTING AIR AND VACUUM VALVE
 - W EXISTING WATER LINE
 - GS EXISTING GRAVITY SEWER



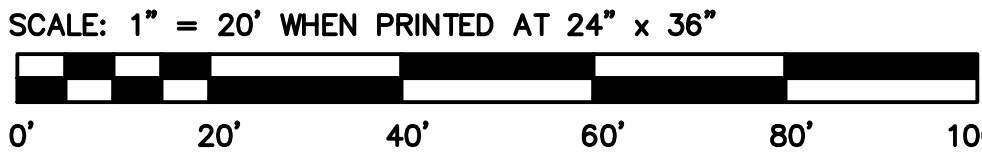
																PLANS																															
																DESIGNED BY								CHECKED BY																							
																DRAWN BY				JKD								APPROVED BY																			
				MOVE PORTION OF LINE TO PRIVATE EASEMENT				06-2025								PLOT AT 1: 2.12				DATE:								GE JOB NO:								GE ITEM NO:											
				END AT EXISTING FORCE MAIN				02-2025																				SCALE								DRAWING NUMBER								REV.			
REV.				DESCRIPTION				CHK.				DATE				APP.				DATE								1"=100'				3															




SCALE: 1"=100'										PLANS																			
										DESIGNED BY								CHECKED BY											
										DRAWN BY				JKD				APPROVED BY											
DELETE SECTION OF LINE										02/2025				PLOT AT 1: 212				DATE:				GE JOB NO:				GE ITEM NO:			
REVISED MASTER METER DETAIL										01/2025				SCALE				DRAWING NUMBER				REV.							
REV.		DESCRIPTION								CHK.		DATE		APP.		DATE		1"=100'				4							



- LEGEND**
- 3PS --- PROPOSED 3" PRESSURE SEWER LINE
 - 4PS --- PROPOSED 4" PRESSURE SEWER LINE
 - 2PS --- EXISTING 2" PRESSURE SEWER LINE
 - 3PS --- EXISTING 3" PRESSURE SEWER LINE
 - 4PS --- EXISTING 4" PRESSURE SEWER LINE
 - 6PS --- EXISTING 6" PRESSURE SEWER LINE
 - 4W --- EXISTING WATER LINE
 - 8S --- EXISTING GRAVITY SEWER LINE
 - 4FM --- EXISTING SEWER FORCE MAIN
 - X --- PROPOSED GATE VALVE
 - X --- EXISTING GATE VALVE
 - X --- EXISTING MASTER METER STATION



DESIGNED BY		CHECKED BY	
DRAWN BY	JKD	APPROVED BY	
PLOT AT 1:	DATE: 09-12-12	GE JOB NO:	GE ITEM NO:
SCALE	DRAWING NUMBER	REV.	
NONE	5	0	



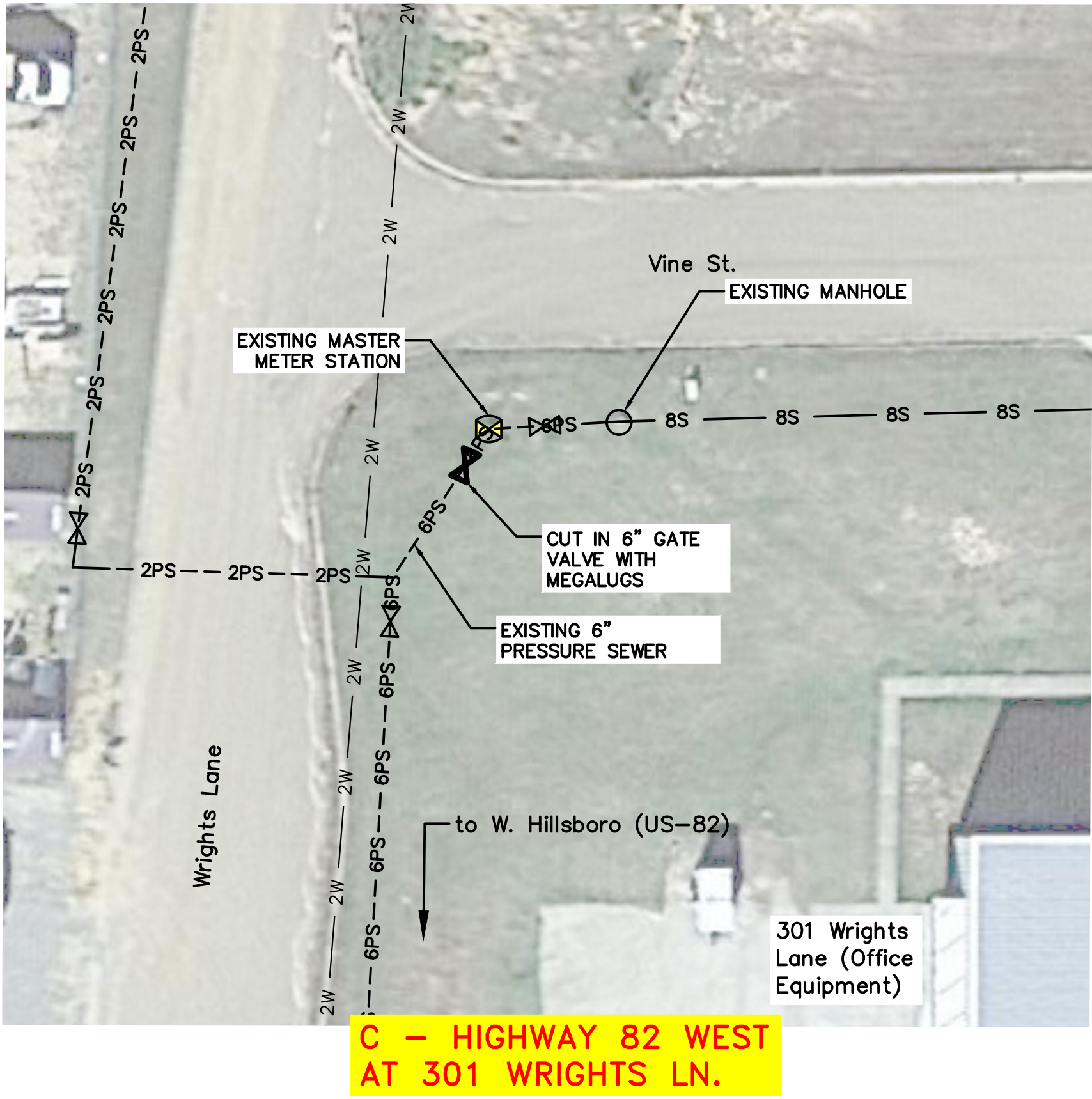
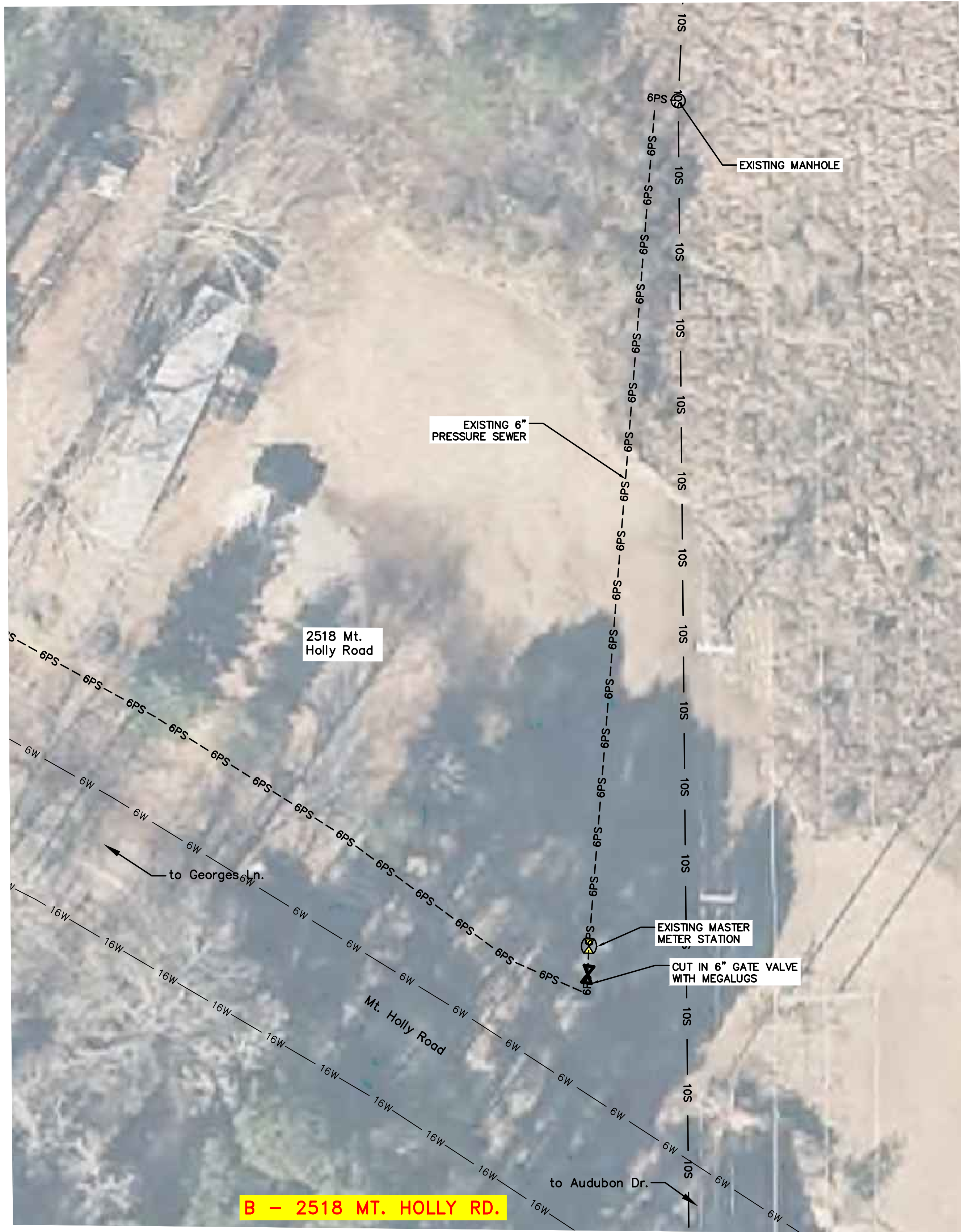
GAUNT ENGINEERS, INC.
ENGINEERS, SURVEYORS AND PLANNERS
3256 W. HILLSBORO, EL DORADO, AR 71730

MODEL ID:

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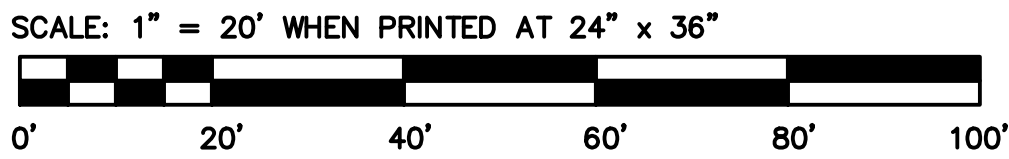
**EL DORADO RURAL PUBLIC
WATER AUTHORITY
BYPASS LINES AROUND
MASTER METERS**

DESIGNED BY		CHECKED BY	
DRAWN BY	JKD	APPROVED BY	
PLOT AT 1:	DATE: 09-12-12	GE JOB NO:	GE ITEM NO:
SCALE	DRAWING NUMBER	REV.	
NONE	5	0	




SEE SHEET 1 FOR LOCATIONS
WITHIN OVERALL SYSTEM

LEGEND	
--- 3PS	PROPOSED 3" PRESSURE SEWER LINE
--- 4PS	PROPOSED 4" PRESSURE SEWER LINE
	PROPOSED GATE VALVE
--- 2PS	EXISTING 2" PRESSURE SEWER LINE
--- 3PS	EXISTING 3" PRESSURE SEWER LINE
--- 4PS	EXISTING 4" PRESSURE SEWER LINE
--- 6PS	EXISTING 6" PRESSURE SEWER LINE
	EXISTING GATE VALVE
	EXISTING MASTER METER STATION
--- 4W	EXISTING WATER LINE
--- 8S	EXISTING GRAVITY SEWER LINE
--- 4FM	EXISTING SEWER FORCE MAIN



DESIGNED BY		CHECKED BY	
DRAWN BY	JKD	APPROVED BY	
PLOT AT 1:	2.12	DATE: 02/2024	GE JOB NO:
SCALE	NONE	DRAWING NUMBER	6
REV.	0		

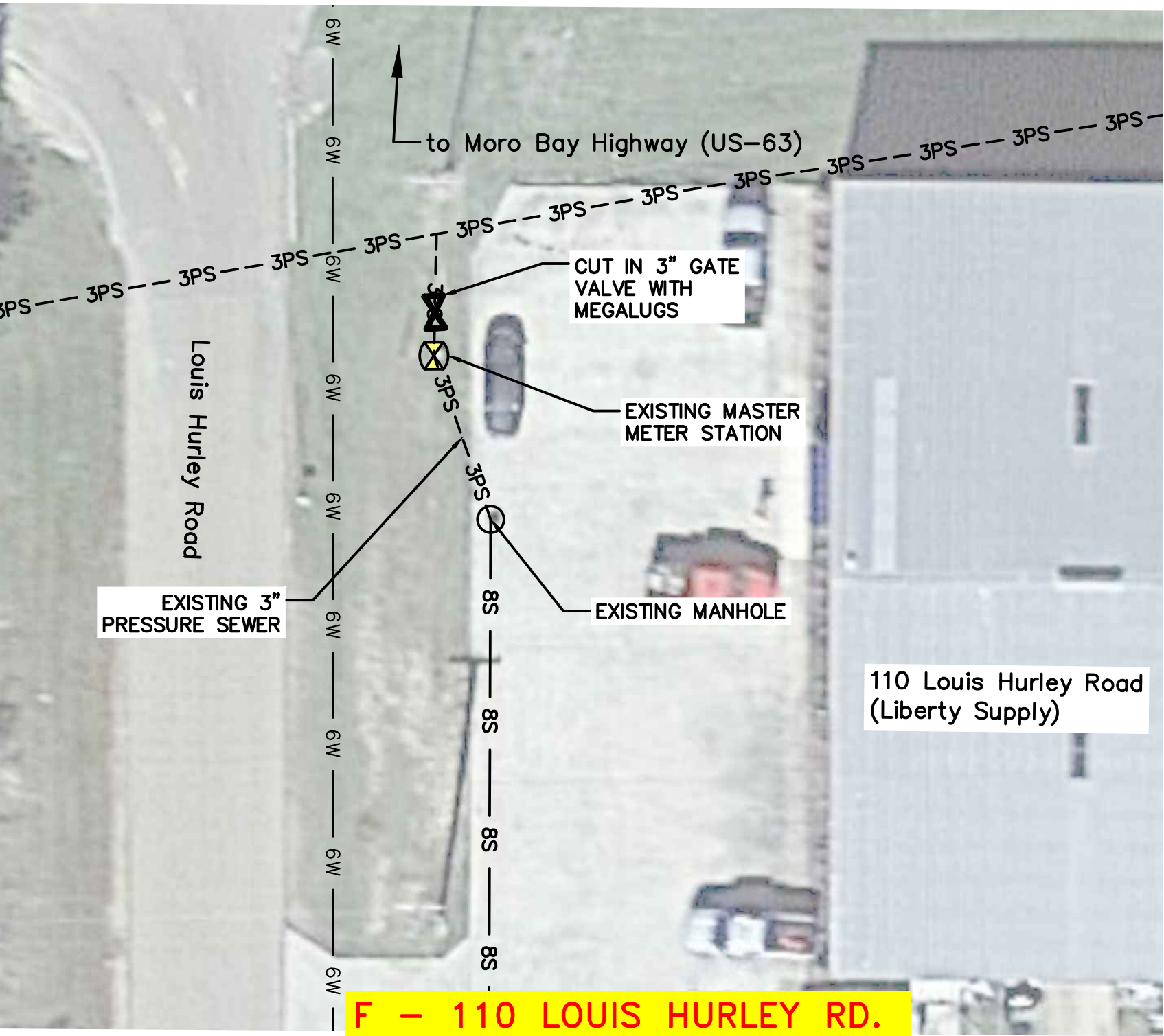
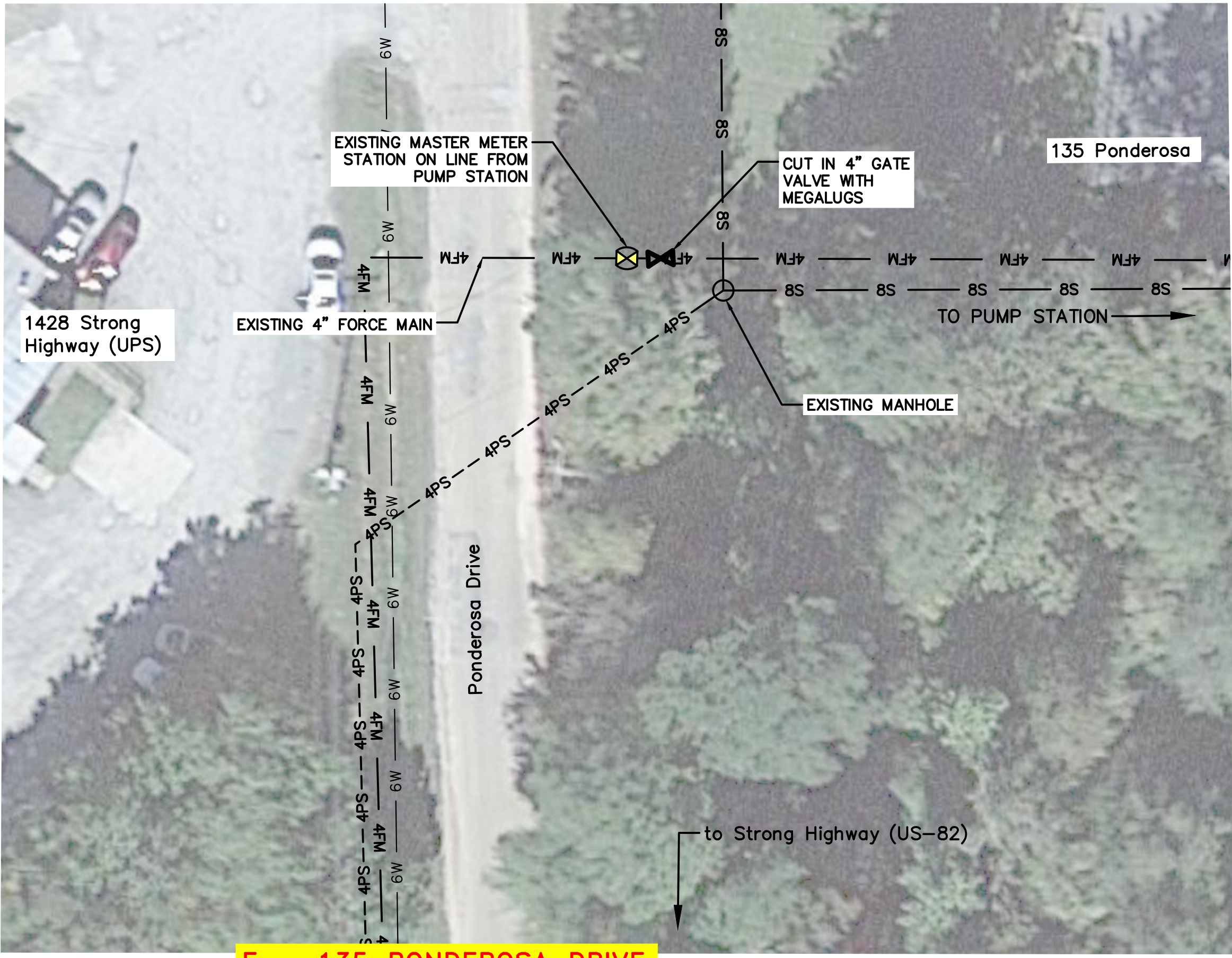


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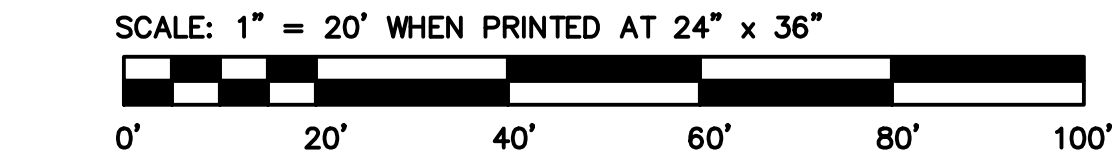
EL DORADO RURAL PUBLIC
WATER AUTHORITY
BYPASS LINES AROUND
MASTER METERS

DESIGNED BY		CHECKED BY	
DRAWN BY	JKD	APPROVED BY	
PLOT AT 1:	2.12	DATE: 02/2024	GE JOB NO:
SCALE	NONE	DRAWING NUMBER	6
REV.	0		




SEE SHEET 1 FOR LOCATIONS
WITHIN OVERALL SYSTEM

LEGEND	
--- 3PS	PROPOSED 3" PRESSURE SEWER LINE
--- 4PS	PROPOSED 4" PRESSURE SEWER LINE
	PROPOSED GATE VALVE
--- 2PS	EXISTING 2" PRESSURE SEWER LINE
--- 3PS	EXISTING 3" PRESSURE SEWER LINE
--- 4PS	EXISTING 4" PRESSURE SEWER LINE
--- 6PS	EXISTING 6" PRESSURE SEWER LINE
	EXISTING GATE VALVE
	EXISTING MASTER METER STATION
--- 4W	EXISTING WATER LINE
--- 8S	EXISTING GRAVITY SEWER LINE
--- 4FM	EXISTING SEWER FORCE MAIN



REV.	CORRECTED LINE SIZE IN CALLOUT	DESCRIPTION	CHK.	DATE	APP.	DATE

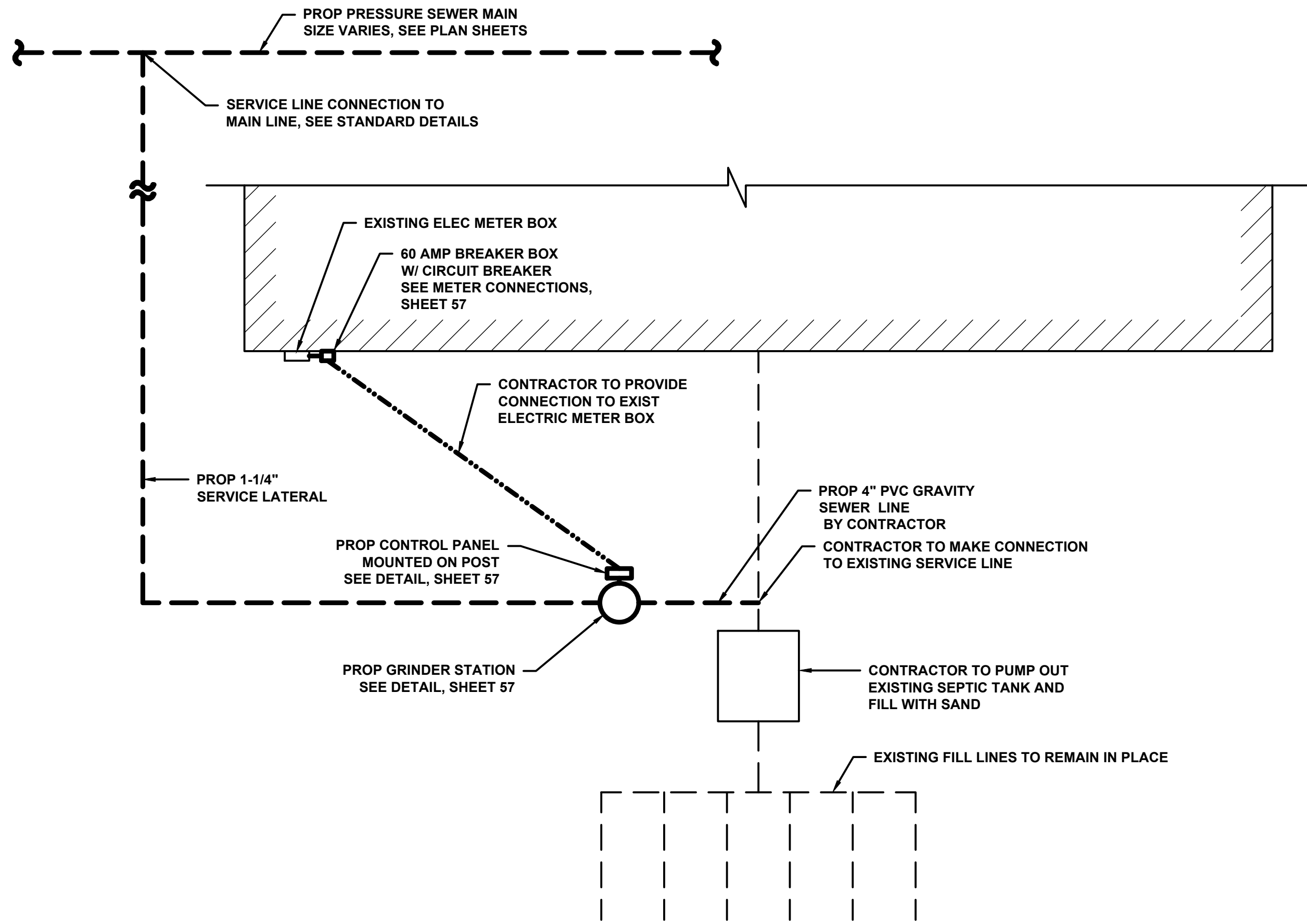


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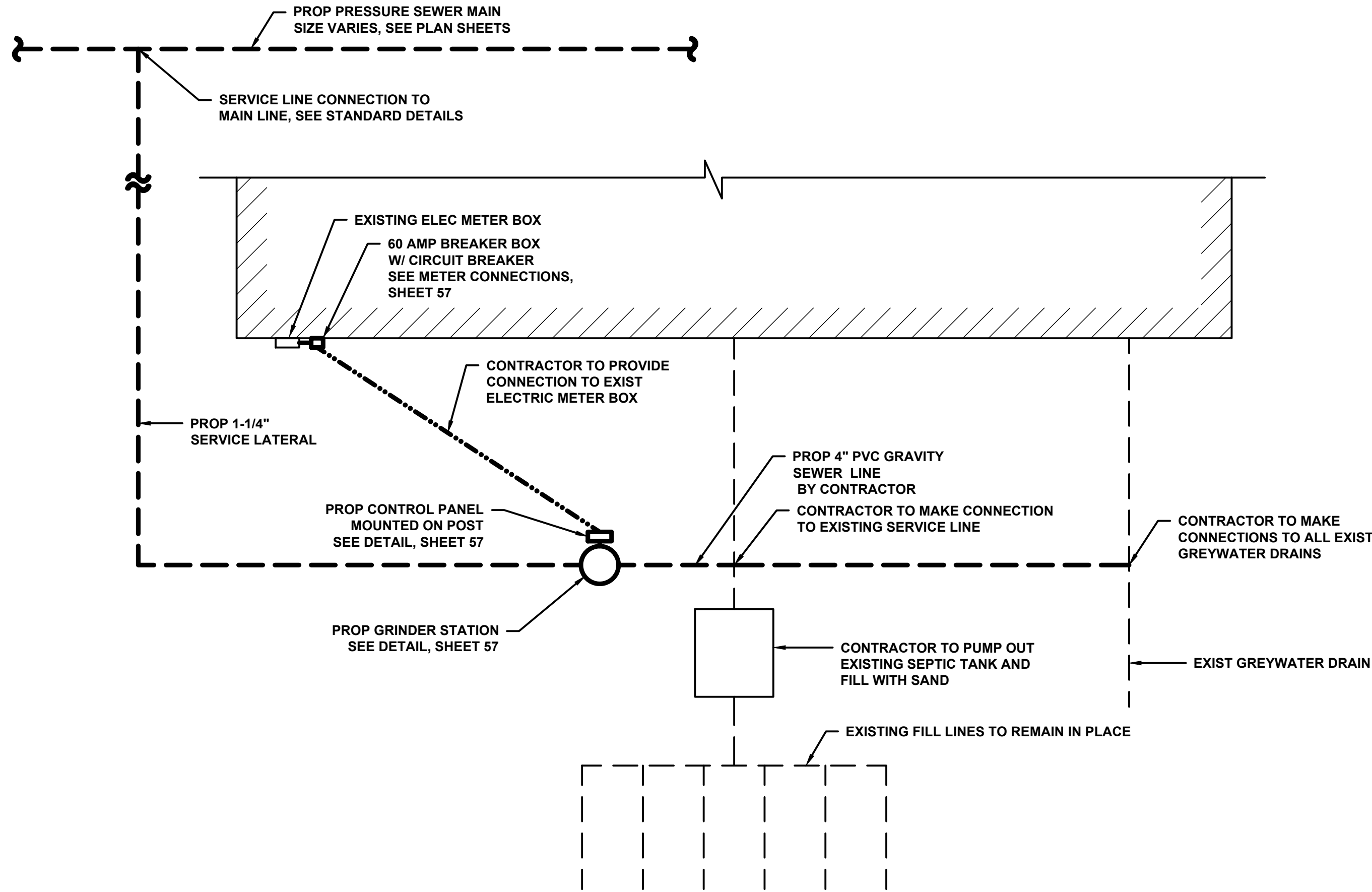
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**EL DORADO RURAL PUBLIC
WATER AUTHORITY
BYPASS LINES AROUND
MASTER METERS**

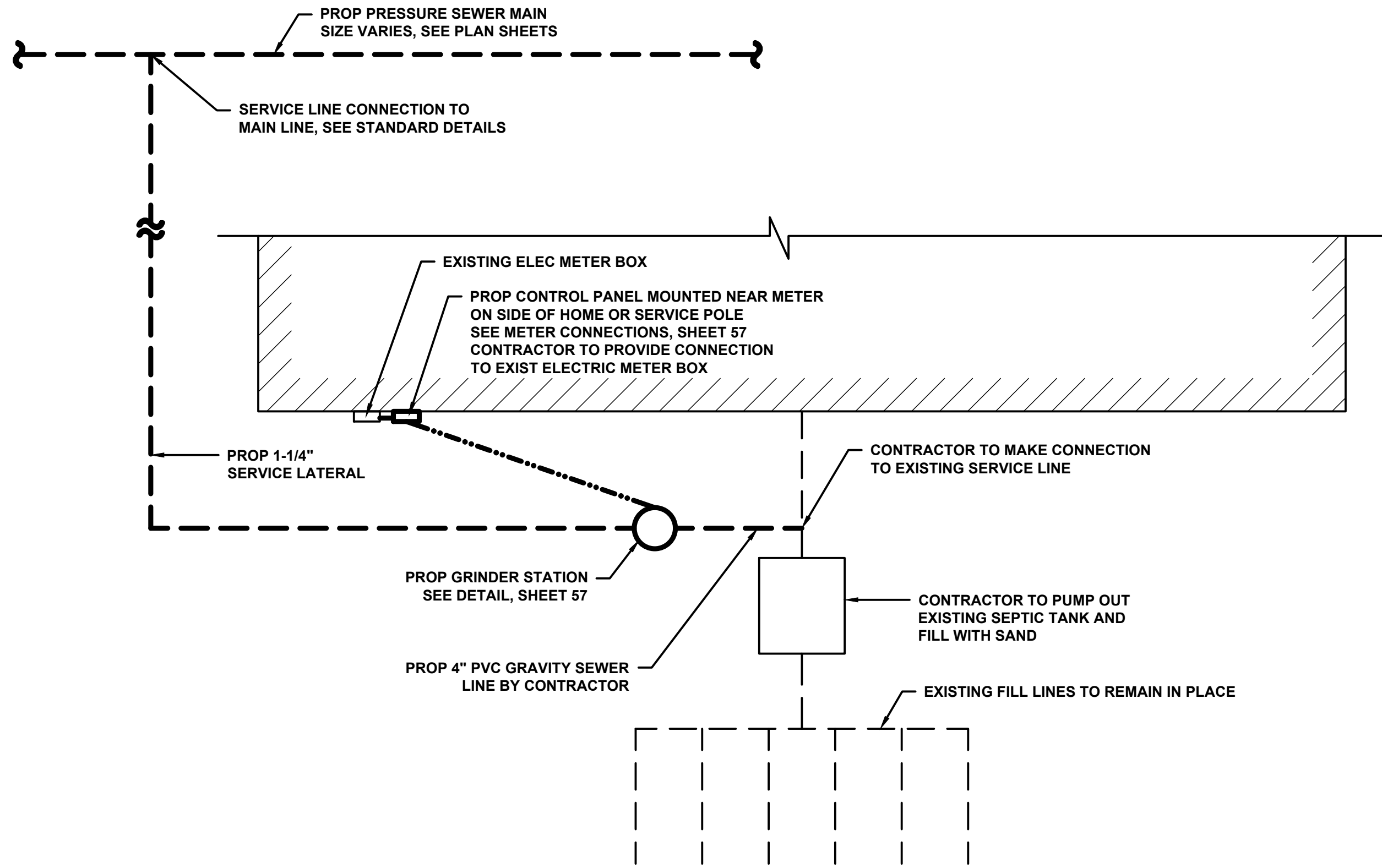
DESIGNED BY		CHECKED BY	
DRAWN BY	JKD	APPROVED BY	
PLOT AT 1: 2.12	DATE: 02/2024	GE JOB NO:	
SCALE	DRAWING NUMBER	REV.	
NONE	7	0	



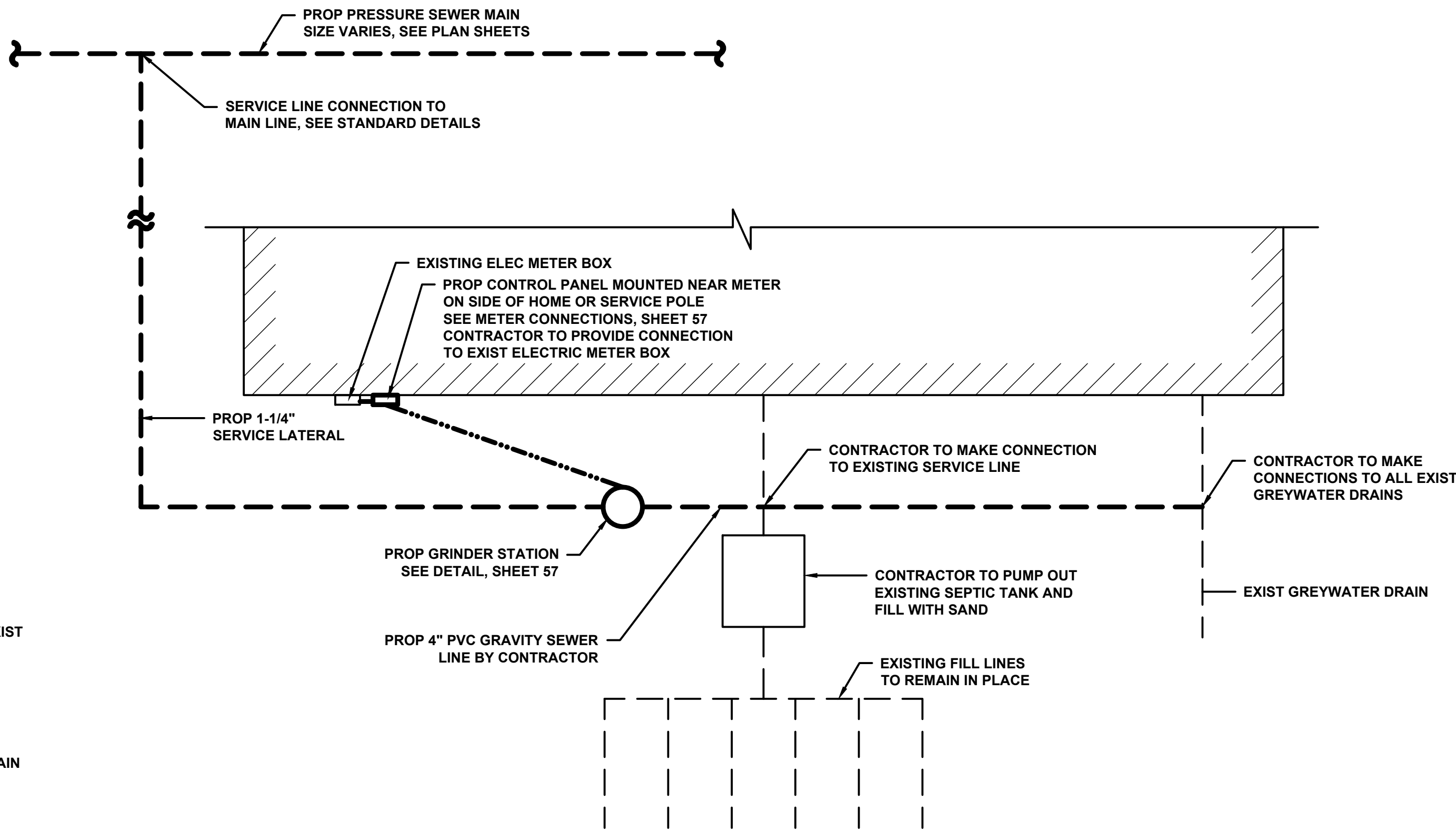
TYP GRINDER PUMP STATION LAYOUT TYPE A



TYP GRINDER PUMP STATION LAYOUT TYPE C



TYP GRINDER PUMP STATION LAYOUT TYPE B



TYP GRINDER PUMP STATION LAYOUT TYPE D

- NOTES:
- LUMP SUM BID INCLUDES 50 FT OF ELECTRICAL CABLE & 50 FT OF 4-INCH PVC SERVICE LINE AND REQUIRED CLEANOUTS.
 - CONCRETE DRIVEWAY AND SIDEWALK BORES PAID FOR SEPARATELY.
 - 4-INCH PVC SERVICE LINE OVER 50 FT TO BE PAID FOR AS A SEPARATE BID ITEM BY THE LINEAR FOOT.
 - ELECTRICAL CABLE OVER 50 FT TO BE PAID FOR AS A SEPARATE BID ITEM BY THE LINEAR FOOT.
 - RETURN DISTURBED AREAS TO ORIGINAL CONDITIONS. NEW SODDING IS NOT REQUIRED.
 - GRINDER PUMP CONTROL PANEL TO COME EQUIPPED WITH A DISCONNECT SWITCH AND TIME CLOCK.



GAUNT ENGINEERS, INC.
ENGINEERS, SURVEYORS AND PLANNERS
3256 W. HILLSBORO, EL DORADO, AR 71730

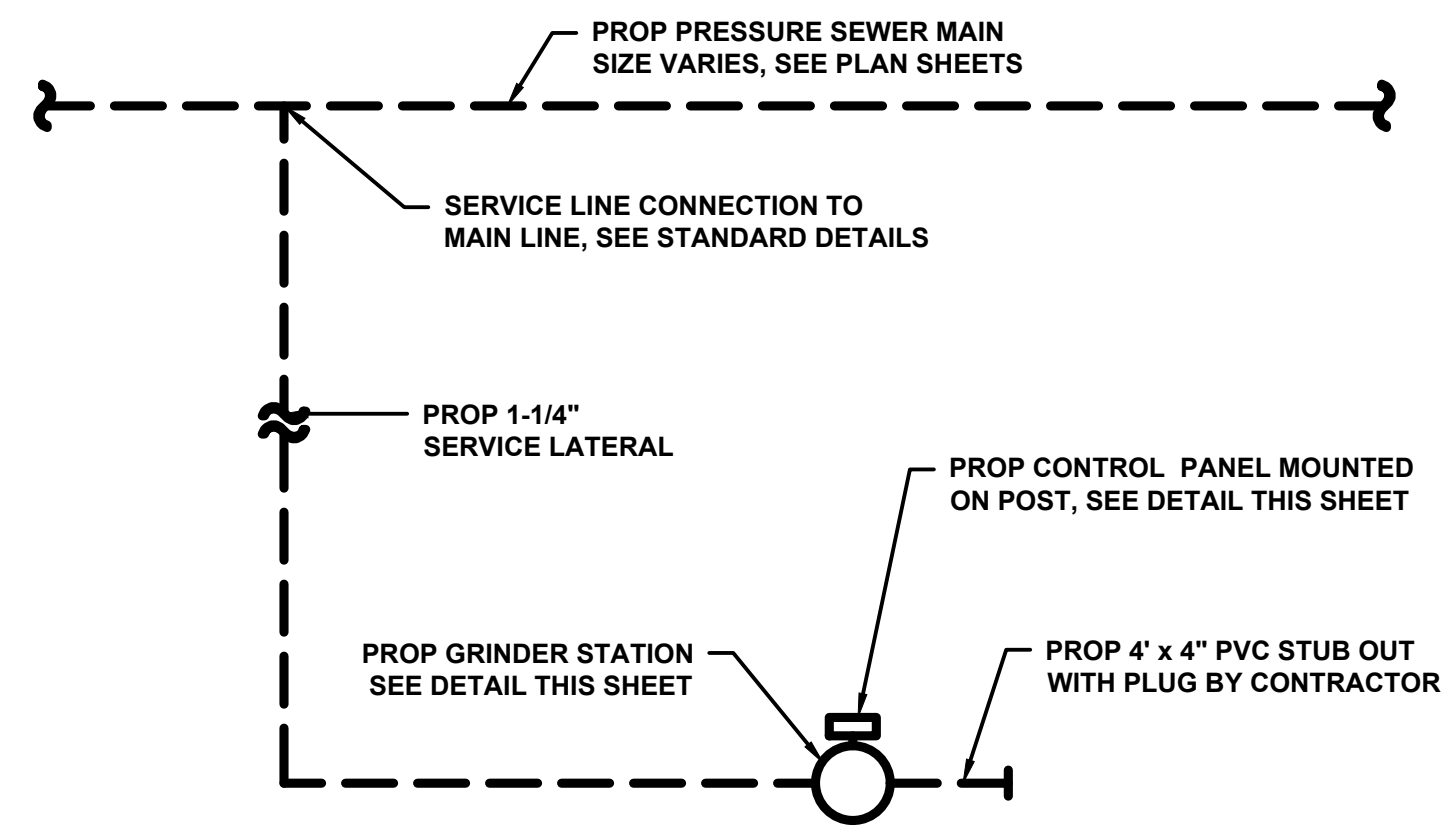
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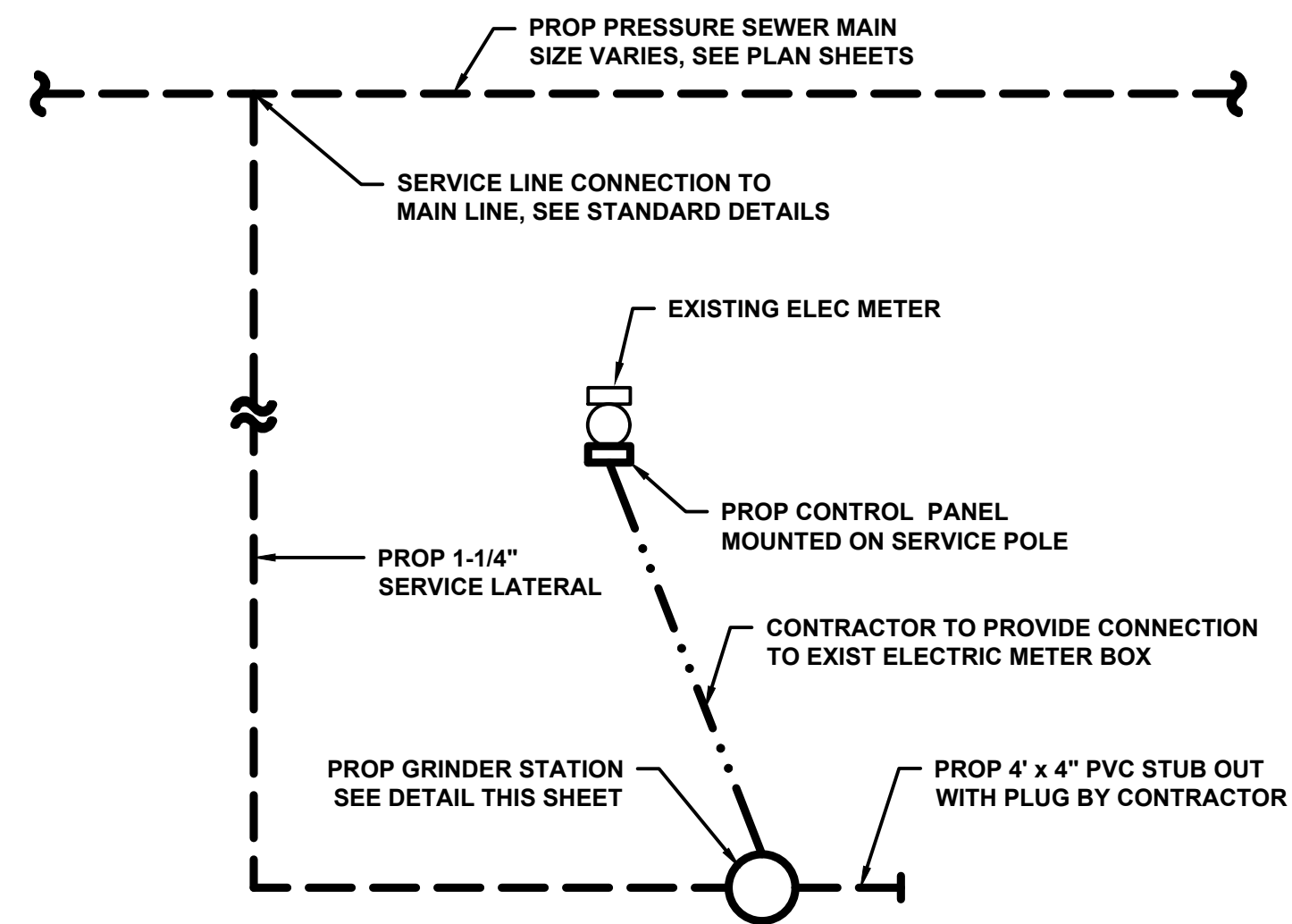
EL DORADO RURAL PUBLIC
WATER AUTHORITY
GRINDER PUMP STATION
TYPICAL INSTALLATION LAYOUTS

DESIGNED BY		CHECKED BY	
DRAWN BY	PSE	APPROVED BY	
PLOT AT 1:	DATE: 02/2024	GE JOB NO:	GE ITEM NO:
SCALE	DRAWING NUMBER	REV.	
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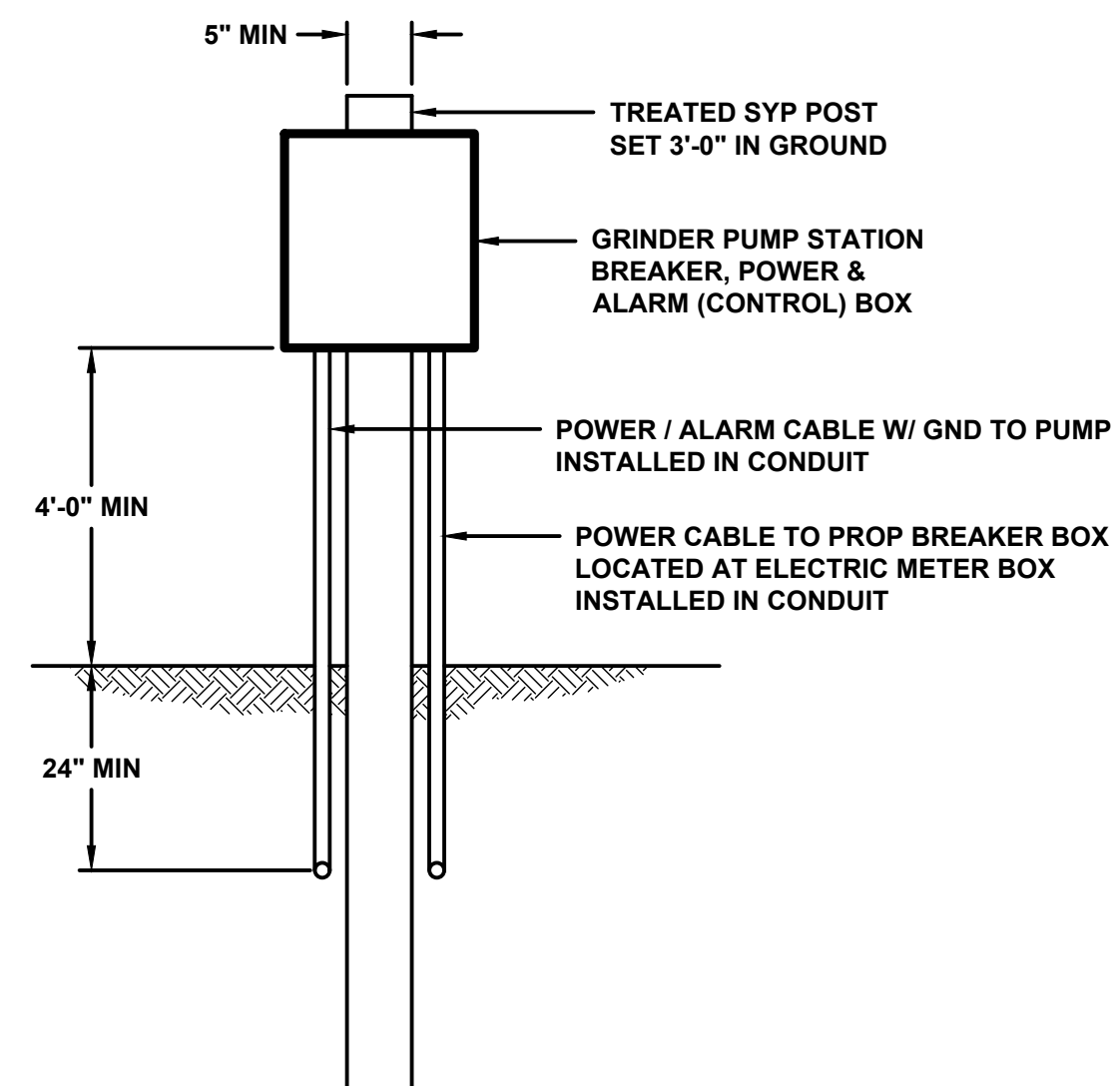
REV.	DESCRIPTION	CHK.	DATE	APP.	DATE
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TYP GRINDER PUMP STATION LAYOUT TYPE E



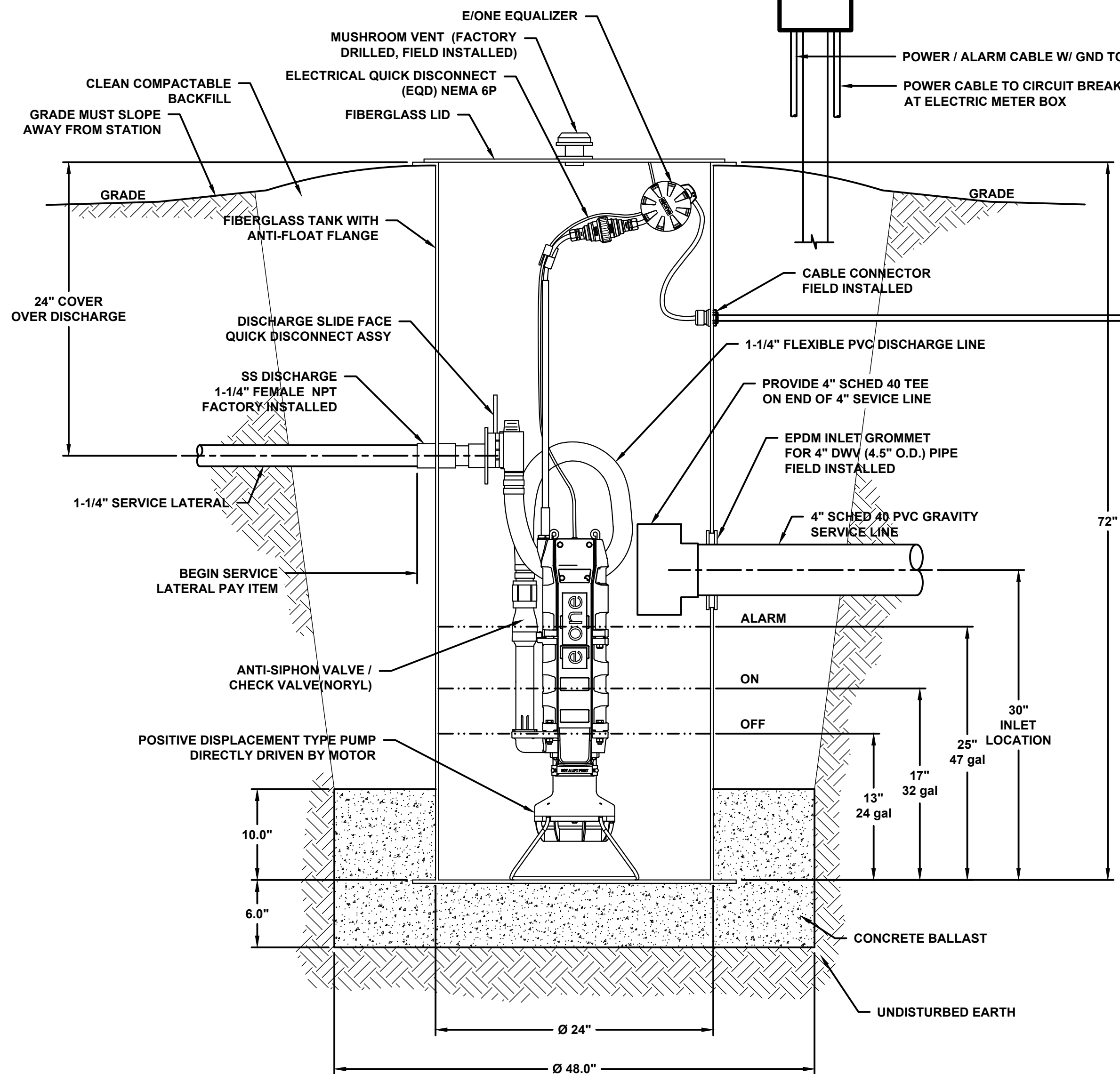
TYP GRINDER PUMP STATION LAYOUT TYPE F



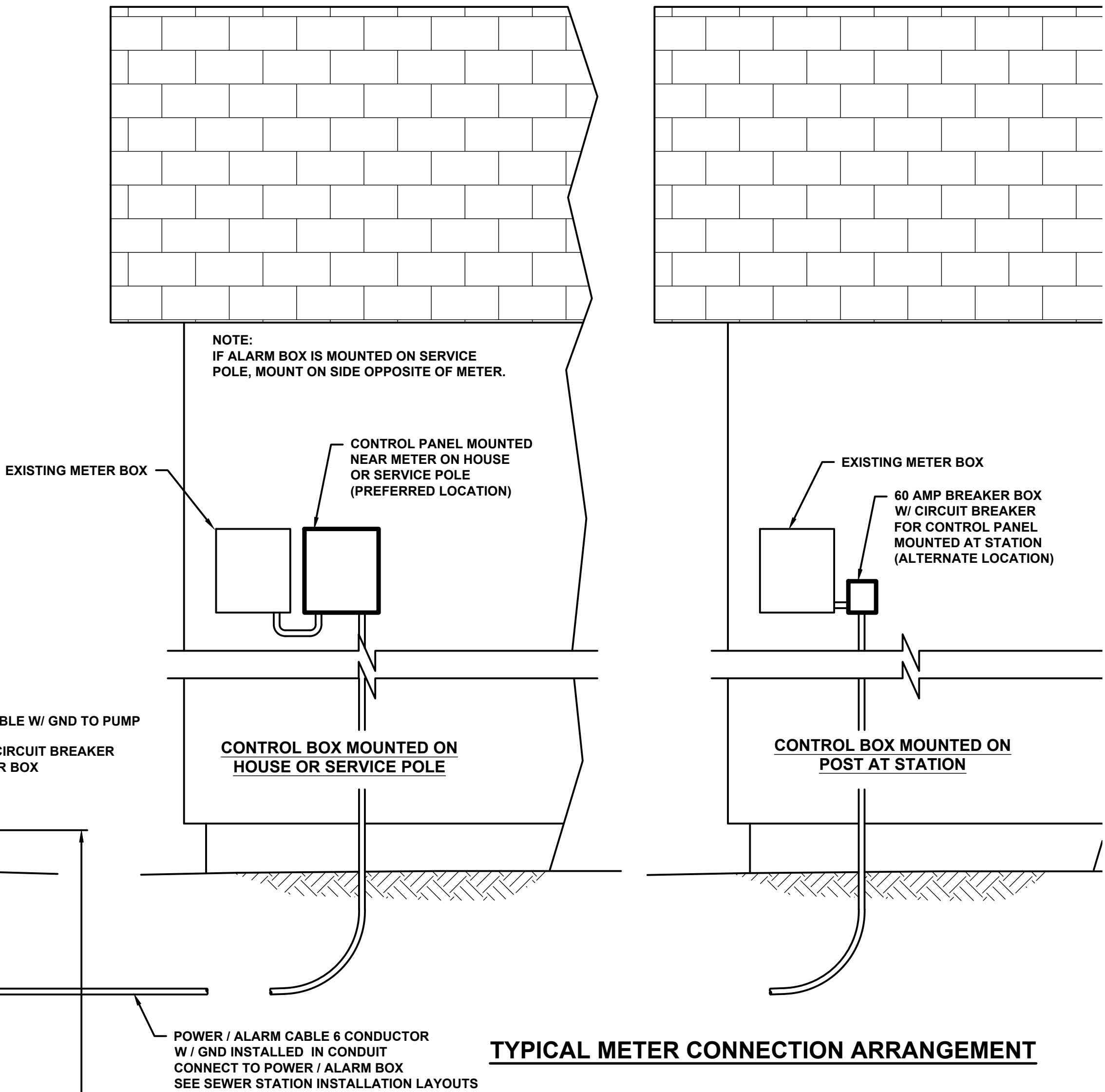
POST MOUNTED STATION CONTROL BOX

NOTES:


1. LUMP SUM BID INCLUDES 50 FT OF ELECTRICAL CABLE & 50 FT OF 4-INCH PVC SERVICE LINE AND REQUIRED CLEANOUTS.
2. CONCRETE DRIVEWAY AND SIDEWALK BORES PAID FOR SEPARATELY.
3. 4-INCH PVC SERVICE LINE OVER 50 FT TO BE PAID FOR AS A SEPARATE BID ITEM BY THE LINEAR FOOT.
4. ELECTRICAL CABLE OVER 50 FT TO BE PAID FOR AS A SEPARATE BID ITEM BY THE LINEAR FOOT.
5. RETURN DISTURBED AREAS TO ORIGINAL CONDITIONS. NEW SODDING IS NOT REQUIRED.
6. GRINDER PUMP CONTROL PANEL TO COME EQUIPPED WITH A DISCONNECT SWITCH AND TIME CLOCK.
7. FIELD ADJUST GRINDER STATION AS REQUIRED TO ENABLE CONNECTION TO EXISTING GRAVITY LINE FROM RESIDENCE. ADJUST IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.



GRINDER PUMP STATION DETAIL



TYPICAL METER CONNECTION ARRANGEMENT



GAUNT ENGINEERS, INC.
ENGINEERS, SURVEYORS AND PLANNERS
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EL DORADO RURAL PWA
GRINDER PUMP STATION
TYPICAL INSTALLATION LAYOUTS
& STATION DETAILS

DESIGNED BY	PSE	CHECKED BY	
DRAWN BY		APPROVED BY	
PLOT AT 1:	DATE:	GE JOB NO:	GE ITEM NO:
SCALE	DRAWING NUMBER	REV.	0
NONE	9		

REV.	DESCRIPTION	CHK.	DATE	APP.	DATE



1. PROVIDE CAST IRON MECHANICAL JOINT VALVES WITH MEGALUG RESTRAINTS FOR ALL VALVES 3" AND LARGER.
2. PROVIDE CAST IRON FEMALE NPT VALVES, SCHEDULE 80 S x M.P.T. ADAPTOR AND THRUST RESTRAINT FOR ALL 2" VALVES.
3. CONTRACTOR TO PROVIDE DETAILS OF CONCRETE RING DURING SHOP DRAWING SUBMISSION.


VALVE & VALVE BOX

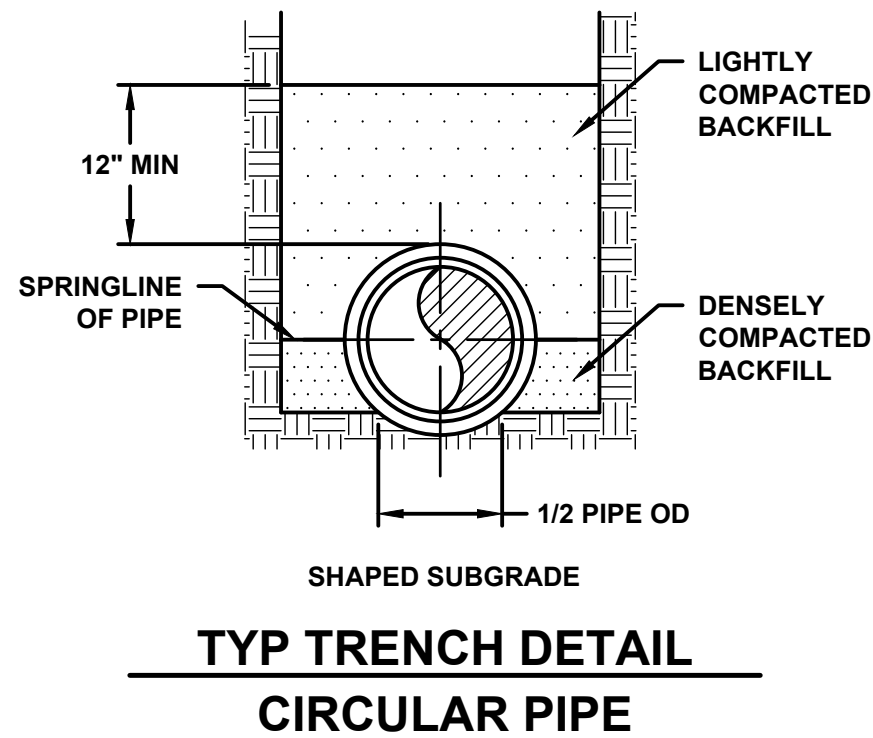


SERVICE LINE TO MAIN LINE CONNECTION

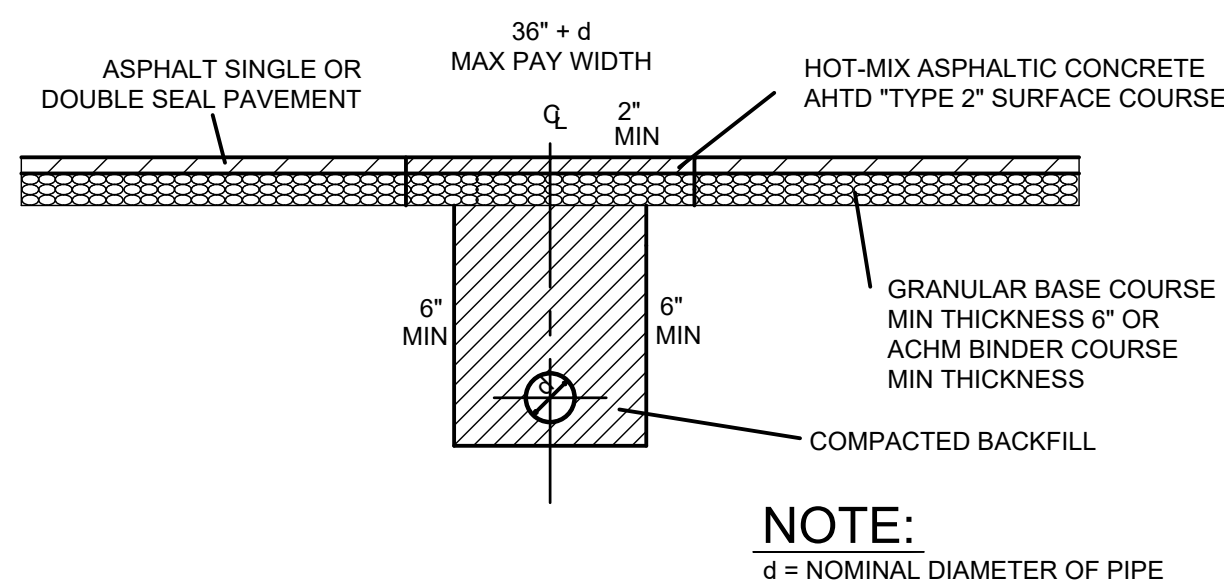
- SERVICE CONNECTION NOTES:**
1. CONTRACTOR TO PROVIDE THE FOLLOWING FOR CONNECTING SERVICE LINE TO MAIN LINE:
FOR 2" MAIN LINE, PROVIDE 2"x2"x1-1/4" C.I. M.I.P. TEE (NOT SHOWN)
FOR 3" MAIN LINE, PROVIDE 3"x3"x1-1/4" C.I. M.I.P. TEE (NOT SHOWN)
FOR 4" MAIN LINE, PROVIDE I.P.S. PIPE SADDLE WITH 1-1/4" TAP (AS SHOWN)
FOR 6" MAIN LINE, PROVIDE I.P.S. PIPE SADDLE WITH 1-1/4" TAP (AS SHOWN)
 2. CONTRACTOR TO PROVIDE TWO (2) CURB VALVE SHUT-OFF RODS, MUELLER NO. H-10321 x 4' L, OR APPROVED EQUAL.
 3. CONTRACTOR TO BACKFILL VALVE INSTALLATION WITH SAND, COMPACTED TO 85% STANDARD PROCTOR DENSITY.
 4. CONTRACTOR TO PROVIDE CURB BOX SLEEVE WHEN CURB BOX IS INSTALLED IN ASPHALT OR CONCRETE. MUELLER NO. H-10342 OR APPROVED EQUAL.
 5. COST OF SERVICE LINE CONNECTION (INCLUDING VALVE, SADDLE, ETC. AS SHOWN) TO BE INCLUDED IN THE UNIT PRICE FOR INDIVIDUAL PUMP STATIONS (GRINDER OR EFFLUENT).

[illegible]

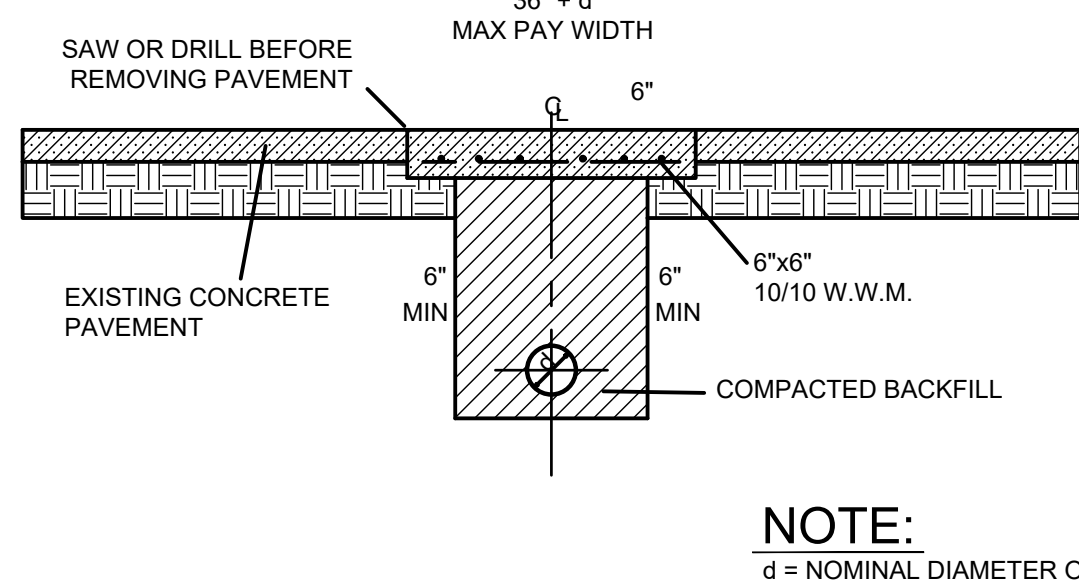
	<p>GAUNT ENGINEERS, INC. ENGINEERS, SURVEYORS AND PLANNERS 3256 W. HILLSBORO, EL DORADO, AR 71730</p>
<p style="text-align: center;">CONFIDENTIAL</p> <p>THESE DESIGNS AND DRAWINGS ARE THE EXCLUSIVE PROPERTY OF: EL DORADO RURAL PUBLIC WATER AUTHORITY NO COPY OR REPRODUCTION MAY BE MADE WITHOUT WRITTEN APPROVAL</p>	
<p style="text-align: center;">EL DORADO RURAL PUBLIC WATER AUTHORITY STANDARD DETAILS</p>	



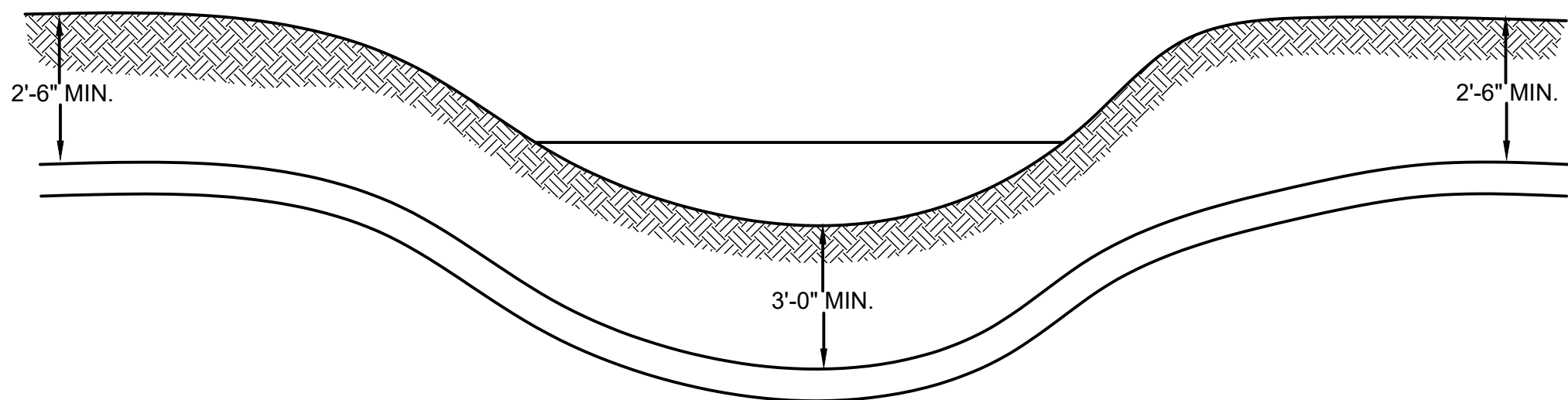
TYP TRENCH DETAIL
CIRCULAR PIPE



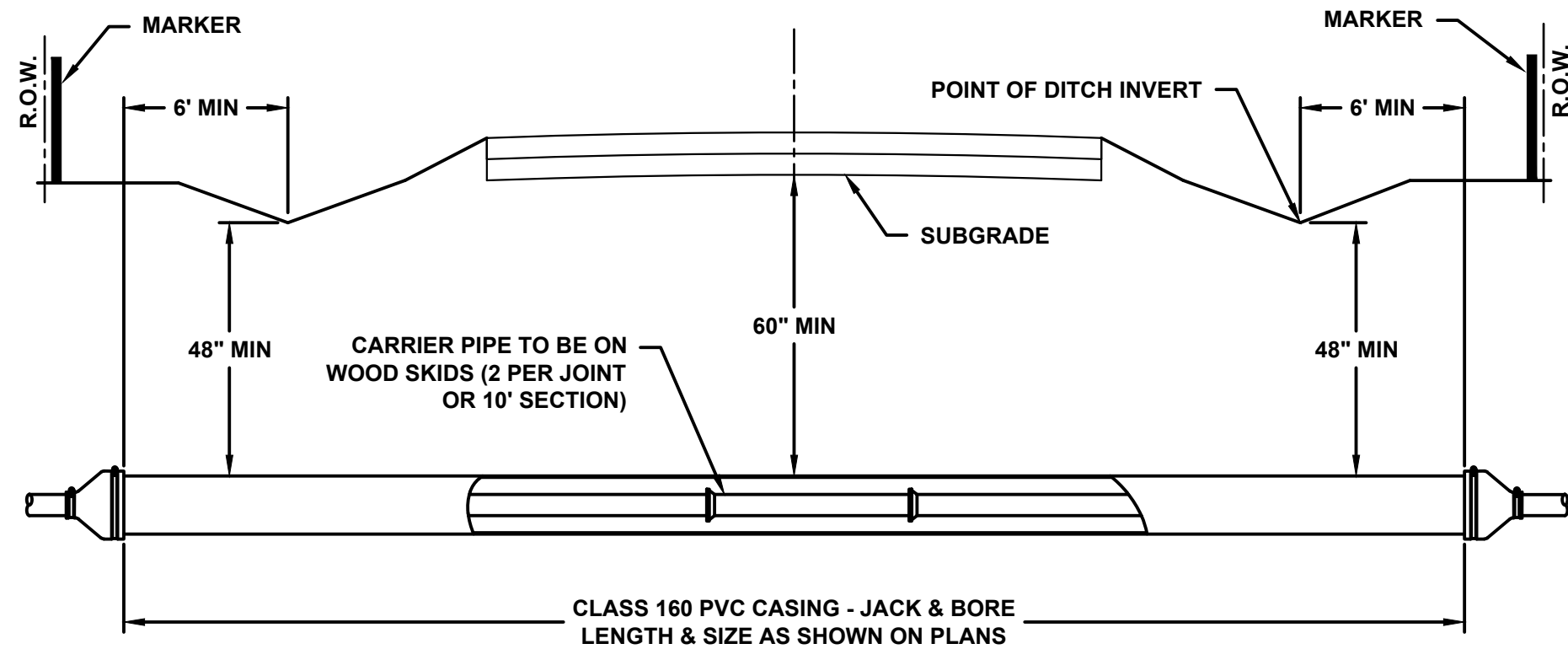
ASPHALT OR SEAL STREET REPAIR



CONCRETE STREET REPAIR

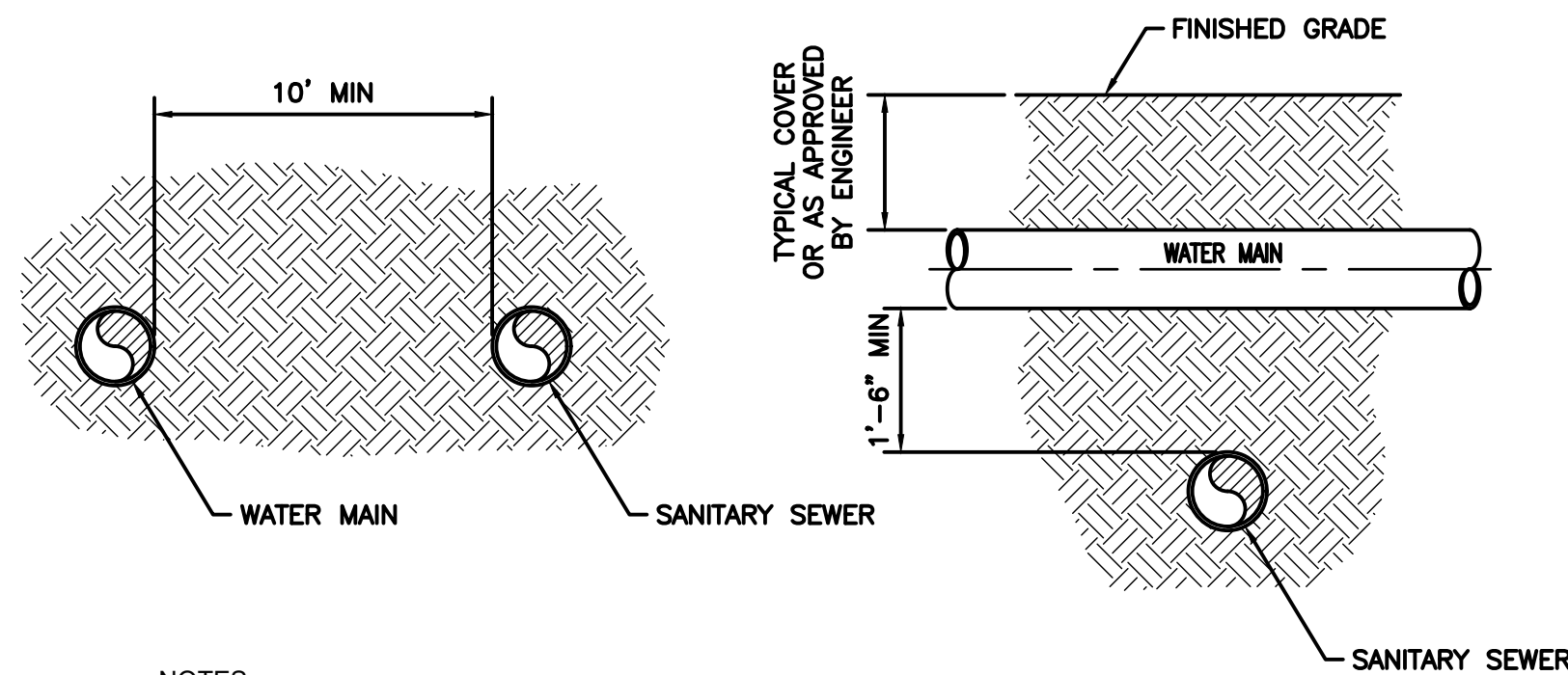


TYPICAL CREEK CROSSING



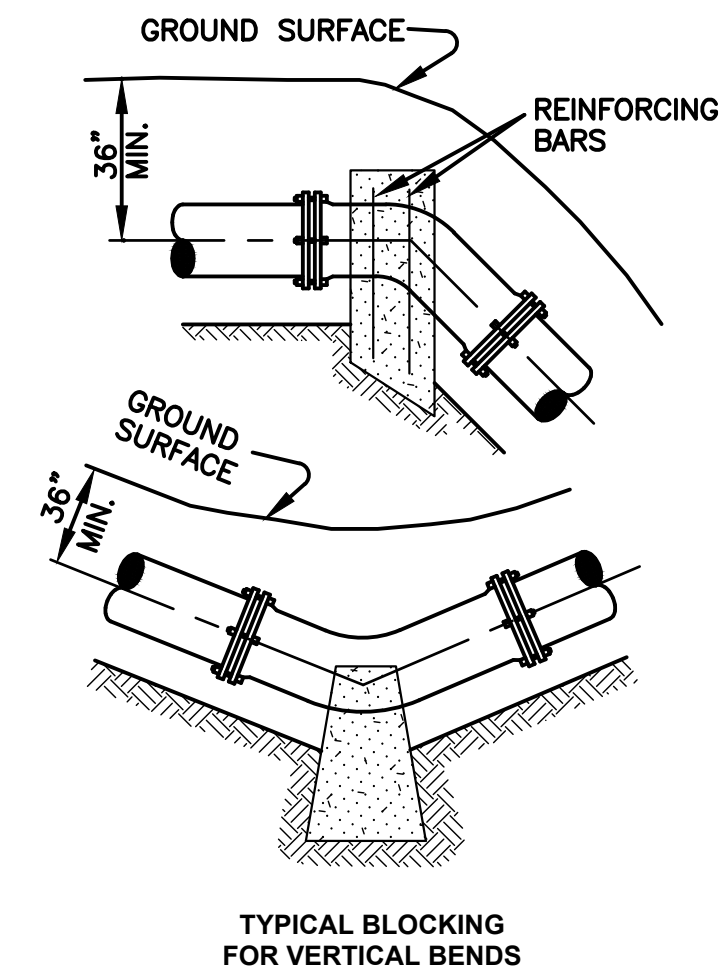
- NOTES:
1. MARKER: A MARKER BEARING THE UTILITY OWNERS NAME SHALL BE PLACED AT EACH RIGHT OF WAY LINE WHERE CROSSED. (NOT REQUIRED FOR SERVICE LINES)
 2. CASING PIPE SHALL BE SEALED AT THE ENDS WITH A FLEXIBLE MATERIAL.

TYPICAL HIGHWAY CROSSING BORE

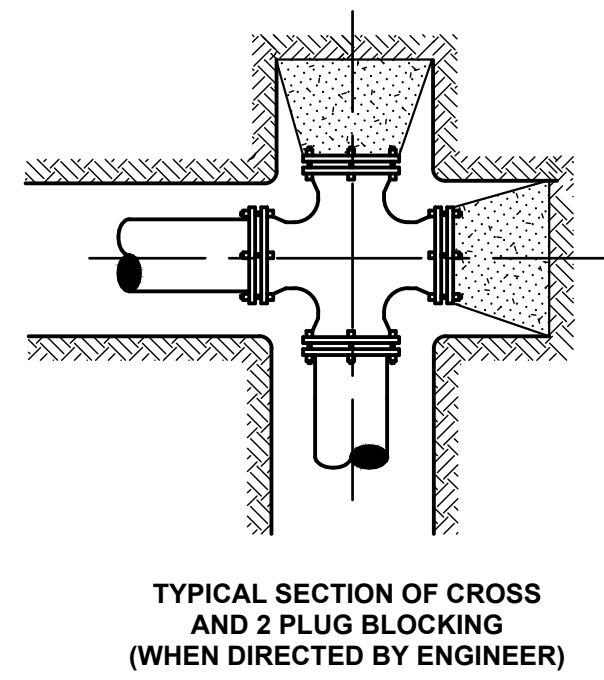


- NOTES:
1. WATER MAINS AND SANITARY SEWER SHALL BE CONSTRUCTED AS FAR APART AS PRACTICABLE, AND SHALL BE SEPARATED BY UNDISTURBED AND COMPACTED EARTH.
 2. A MINIMUM HORIZONTAL DISTANCE OF 10 FEET SHALL BE MAINTAINED BETWEEN WATER LINES AND SEWER LINES OR OTHER SOURCES OF CONTAMINATION.
 3. WATER LINES AND SEWER LINES SHALL NOT BE LAID IN THE SAME TRENCH EXCEPT ON THE WRITTEN APPROVAL OF THE ARKANSAS DEPARTMENT OF HEALTH.
 4. WATER MAINS NECESSARILY IN CLOSE PROXIMITY TO SEWER MUST BE PLACED SO THAT THE BOTTOM OF THE WATER LINE WILL BE AT LEAST 18" ABOVE THE TOP OF THE SEWER LINE AT ITS HIGHEST POINT. IF THIS DISTANCE MUST UNAVOIDABLY BE REDUCED, THE WATER LINE OR SEWER LINE MUST BE ENCASED IN WATER TIGHT PIPE WITH SEALED WATERTIGHT ENDS EXTENDING AT LEAST TEN FEET EITHER SIDE OF THE CROSSING. ANY JOINT IN THE ENCASEMENT PIPE IS TO BE MECHANICALLY RESTRAINED.
 5. WHERE A WATER LINE MUST UNAVOIDABLY PASS BENEATH THE SEWER LINE, AT LEAST 18 INCHES OF SEPARATION MUST BE MAINTAINED BETWEEN THE OUTSIDE OF THE TWO PIPES IN THE PRECEDING ENCASEMENT REQUIREMENTS.

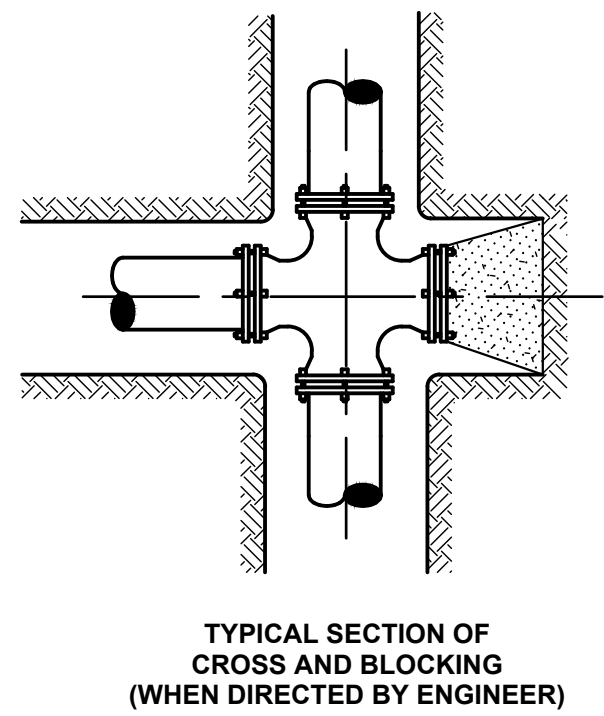
MINIMUM WATER / SEWER LINE SEPARATION



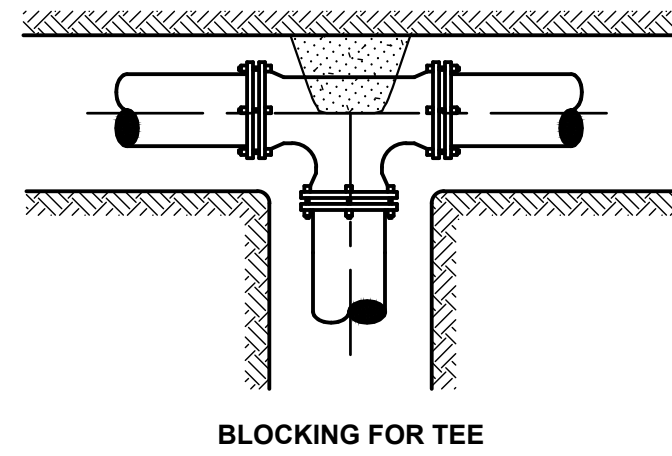
TYPICAL BLOCKING
FOR VERTICAL BENDS



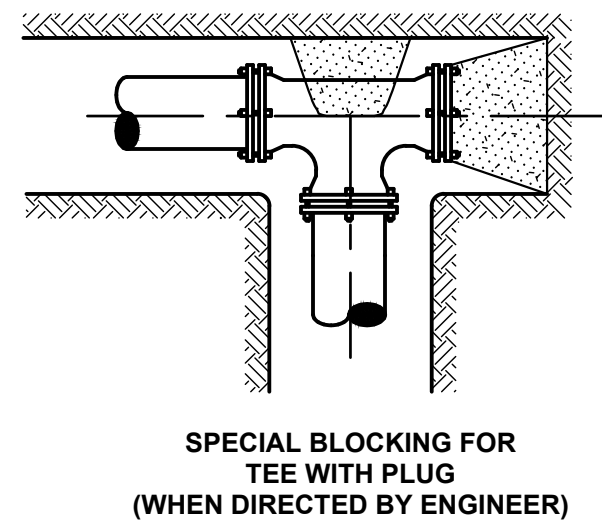
TYPICAL SECTION OF CROSS
AND 2 PLUG BLOCKING
(WHEN DIRECTED BY ENGINEER)



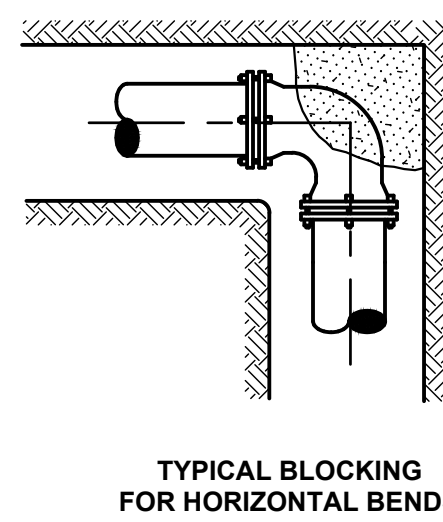
TYPICAL SECTION OF CROSS
AND BLOCKING
(WHEN DIRECTED BY ENGINEER)



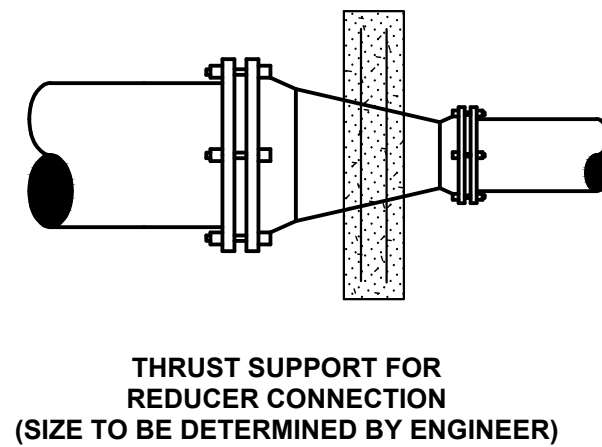
BLOCKING FOR TEE



SPECIAL BLOCKING FOR
TEE WITH PLUG
(WHEN DIRECTED BY ENGINEER)



TYPICAL BLOCKING
FOR HORIZONTAL BENDS



THRUST SUPPORT FOR
REDUCER CONNECTION
(SIZE TO BE DETERMINED BY ENGINEER)

- NOTES:
1. ALL BLOCKING SHALL BE AGAINST UNDISTURBED HAND DUG SOIL.
 2. WHERE SOIL CONDITIONS MAKE IT NECESSARY TO POUR CONCRETE BLOCKING OVER JOINTS, THE ENDS OF THE ADJACENT PIPES MUST HAVE A KICKER BLOCK TO RESIST MOVEMENT OF THESE JOINTS.
 3. WEIGHT CALCULATIONS TO BE BASED ON THRUST DUE TO STATIC PRESSURE +50% THRUST = 2 AP SIN 1/2 ∠. WHERE A = AREA OF PIPE AND P= WATER PRESSURE.
 4. WHERE BLOCKING OVER PLUG, PLUG SHOULD BE COVERED WITH PAPER TO PREVENT BINDING OF CONCRETE.
 5. WHERE SHEAR BECOMES A PROBLEM, PROPER REINFORCING MUST BE INSTALLED INTO THE BLOCKING.
 6. CLEARANCE SHALL BE A MINIMUM OF 6" BETWEEN PIPE AND OBSTRUCTION.
 7. CLEARANCE ON PIPES BELONGING TO OIL & GAS COMPANIES SHALL BE 18" UNLESS SPECIAL PERMISSION IS GIVEN BY THESE COMPANIES.

THRUST BLOCKING

DESIGNED BY		CHECKED BY	
DRAWN BY	PSE	APPROVED BY	
PLOT AT 1:	DATE: 02-2024	GE JOB NO:	GE ITEM NO:
SCALE	DRAWING NUMBER	REV.	
NONE	11		

1. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES, AFFECTING THIS WORK, PRIOR TO CONSTRUCTION.
2. PRIOR TO THE INITIATION OF SITE CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ANY EXISTING UTILITIES INCLUDING GAS, WATER, ELECTRIC, COMMUNICATIONS, CABLE TV, SANITARY, AND STORM SEWERS ON AND/OR ADJACENT TO THE SITE.
3. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN AREAS OF BURIED UTILITIES AND SHALL CALL "ONE CALL" OR UTILITY COMPANY AT LEAST 48 HOURS PRIOR TO CONSTRUCTION TO ARRANGE FOR FIELD LOCATIONS OF BURIED UTILITIES.
4. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, ABOVE OR BELOW GROUND THAT MAY OCCUR AS A RESULT OF THE WORK PERFORMED BY THE CONTRACTOR OR SUBCONTRACTORS.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH THE PERMIT AND INSPECTION REQUIREMENTS SPECIFIED BY THE VARIOUS GOVERNMENTAL AGENCIES AND THE ENGINEER. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION AND SCHEDULE INSPECTIONS ACCORDING TO AGENCY INSTRUCTION/REGULATIONS. IF THESE PLANS, AND ANY SUBSEQUENT REVISIONS TO THESE PLANS, THAT ARE ISSUED BY THE ENGINEER, WILL BE SUBJECT TO THE APPROVAL CONDITIONS OF THESE PERMITS.
6. SAFETY:
 - 6.1. DURING THE CONSTRUCTION AND/OR MAINTENANCE OF THIS PROJECT, ALL SAFETY REGULATIONS ARE TO BE ENFORCED. THE CONTRACTOR, OR HIS REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE CONTROL AND SAFETY OF THE TRAVELING PUBLIC AND THE SAFETY OF HIS/HER PERSONNEL.
 - 6.2. LABOR SAFETY REGULATIONS SHALL CONFORM TO THE PROVISIONS SET FORTH BY OSHA IN THE FEDERAL REGISTER OF THE DEPARTMENT OF TRANSPORTATION.
 - 6.3. THE MINIMUM STANDARDS AS SET FOR THE STATE HIGHWAY DEPARTMENT SHALL BE FOLLOWED IN THE DESIGN, APPLICATION, INSTALLATION, MAINTENANCE, AND REMOVAL OF ALL TRAFFIC CONTROL DEVICES, WARNING DEVICES, AND BARRIERS NECESSARY TO PROTECT THE PUBLIC AND CONSTRUCTION PERSONNEL FROM HAZARDS WITHIN THE PROJECT LIMITS.
 - 6.4. ALL TRAFFIC CONTROL MARKINGS AND DEVICES SHALL CONFORM TO THE PROVISIONS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES PREPARED BY THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION.
 - 6.5. ALL SUBSURFACE CONSTRUCTION SHALL COMPLY WITH THE "TRENCH SAFETY ACT", THE CONTRACTOR SHALL INSURE THAT THE METHOD OF TRENCH PROTECTION AND CONSTRUCTION IS IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS.
7. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH AND ENFORCE ALL APPLICABLE SAFETY REGULATIONS. THE ABOVE INFORMATION HAS BEEN PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY AND DOES NOT IMPLY THAT THE OWNER OR ENGINEER WILL INSPECT AND/OR ENFORCE SAFETY REGULATIONS.
8. TO REITERATE: CONTRACTOR TO UNCOVER & VERIFY SIZE AND TYPE OF EXISTING LINE AT TIE INS BEFORE LAYING ANY LINES.

1. EXISTING BUILDINGS AND ASSOCIATED STRUCTURES SHALL BE DEMOLISHED AS INDICATED ON THE DRAWINGS AND REMOVED FROM THE SITE. WHERE REQUIRED, ASPHALT OR CONCRETE SHALL BE SAW-CUT TO LEAVE A CLEAN LINE.
2. CONTRACTOR SHALL CONFORM TO ALL APPLICABLE CODES (LOCAL, STATE & FEDERAL) FOR DEMOLITION OF STRUCTURES, DUST CONTROL, SOIL EROSION CONTROL, AND DISPOSAL OF DEMOLITION MATERIAL.
3. IF REQUIRED BY CITY, CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A SEPARATE DEMOLITION PERMIT FROM THE CITY PRIOR TO DEMOLISHING THE STRUCTURES. CONTRACTOR SHALL PAY FOR ALL COSTS ASSOCIATED WITH DEMOLITION PERMIT.
4. ALL EXISTING UNDERGROUND DRAINAGE PIPES AND STRUCTURES TO REMAIN SHALL BE UNDISTURBED UNLESS NOTED OTHERWISE.
5. ALL MATERIAL SHALL BE DISPOSED OF IN A PROPER MANNER AT A LOCATION APPROVED BY ENGINEER WHEN DIRECTED BY OWNER.
6. ALL EQUIPMENT SHALL BE DELIVERED TO CITY SHOP UNLESS NOT WANTED BY CITY..

1. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSTALLATION AND MAINTENANCE OF EROSION CONTROL DEVICES TO PROTECT ADJACENT PROPERTY AND TO ENSURE THAT SEDIMENT IS CONFINED TO THE SITE. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF WORK.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF MUD TRACKED ONTO PUBLIC RIGHT-OF-WAY ON A TIMELY BASIS.
3. IF SOIL STOCKPIILING IS USED ON THE SITE, SILT FENCES SHALL BE USED TO CONTROL AND CONTAIN THE SEDIMENT.
4. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AND DISPOSED OF WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION HAS OCCURRED WHEN ALL SOIL DESTABILIZING ACTIVITIES ARE COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES HAS BEEN ESTABLISHED.

- CONTRACTOR SHALL NOTIFY ENGINEER, OWNER AND CITY WATER & SEWER DEPARTMENT 48 HOURS PRIOR TO BEGINNING WORK ON ANY NEW SANITARY SEWER OR WATER FACILITIES TO SCHEDULE INSPECTION OF THE WORK.
2. CONTRACTOR TO PROVIDE SAFE WORKING CONDITIONS, INCLUDING AIR CIRCULATION/VENTILATION WHEN CONTRACTOR'S PERSONNEL ARE WORKING IN MANHOLES OR OTHER STRUCTURES CONTAINING RAW SEWAGE OR HAZARDOUS MATERIALS.
3. SANITARY SEWERS SHOULD ALWAYS CROSS UNDERNEATH WATER MAINS. INSTALLATION OF SANITARY SEWERS AT CROSSINGS OF WATER MAINS SHALL BE PERFORMED SO AS TO PROVIDE A MINIMUM VERTICAL DISTANCE OF EIGHTEEN (18) INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE, WHENEVER POSSIBLE. THE CROSSING SHALL BE INVERTED SO THAT THE SEWER JOINTS AND WATER JOINTS SHALL BE EQUIDISTANT FROM THE POINT OF CROSSING WITH NO LESS THAN 10 FEET BETWEEN ANY TWO JOINTS. WHERE SANITARY SEWERS, FORCE MAINS AND STORM SEWERS MUST CROSS A WATER MAIN WITH LESS THAN 18 INCHES VERTICAL CLEARANCE, THE WATER MAIN SHALL BE ENCASED IN CONCRETE. A MINIMUM VERTICAL CLEARANCE OF 6 INCHES MUST BE MAINTAINED IN THE CROSSING.
4. A MINIMUM 10 FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN ANY TYPE OF SEWER (INCLUDING FORCE MAINS) AND EXISTING OR PROPOSED WATER MAINS, IN PARALLEL INSTALLATIONS WHENEVER POSSIBLE. THE DISTANCE FOR SEPARATION SHALL BE MEASURED EDGE TO EDGE.
5. ALL PVC SEWER PIPE SHALL BE SOLID WALL POLYVINYL CHLORIDE PIPE AND COMPLY WITH ASTM D-3034 AND ALL APPLICABLE ASTM DOCUMENTS AS COVERED IN SECTION NO. 2 OF ASTM D-3034.
6. ALL GRAVITY SEWERS MUST BE SDR 35 PVC EXCEPT FOR PIPE DEEPER THAN 14 FEET, IN WHICH CASE SDR 26 PIPE SHALL BE USED. ELASTOMERIC GASKET JOINTS SHALL BE UTILIZED FOR PVC PIPE AND SHALL COMPLY WITH ASTM F-477, ASTM D-3034 & ASTM F-679. JOINTS SHALL COMPLY WITH ASTM D-3212.
7. ALL SANITARY MANHOLES SHALL CONFORM TO THE DETAILS CONTAINED HEREIN, AS WELL AS WITH ASTM C-478.
8. PRIOR TO COMMENCING WORK WHICH REQUIRES CONNECTING PROPOSED FACILITIES TO EXISTING LINES OR APPURTENANCES, THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION(S) OF EXISTING CONNECTION POINT(S) AND NOTIFY THE OWNER'S ENGINEER OF ANY CONFLICTS OR DISCREPANCIES.
9. ALL GRAVITY SEWER PIPING SHALL BE SUBJECT TO A VISUAL INSPECTION BY THE OWNER'S ENGINEER. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 48 HOURS IN ADVANCE TO SCHEDULE INSPECTION(S).
10. THE CONTRACTOR SHALL PERFORM AN INFILTRATION/EXFILTRATION TEST (LOW PRESSURE AIR) ON THE GRAVITY SEWERS IN ACCORDANCE WITH THE UTILITIES REQUIREMENTS.
11. PRESSURE LINES SHALL BE INSTALLED WITH A MINIMUM OF 3" COVER OVER THE TOP OF PIPE. LINES INSTALLED BENEATH ROAD SURFACES SHALL BE A MINIMUM OF 48" BENEATH THE SURFACE OF THE ROAD AND SHALL HAVE NO JOINTS BENEATH THE DRIVING SURFACE.
12. ALL PRESSURE LINES (INCLUDING SERVICE TUBING) SHALL BE INSTALLED WITH 10 GA. TYPE TW STRANDED COPPER LOCATOR WIRE. ALL SPLICES IN LOCATOR WIRE SHALL BE MADE WITH COPPER '3M' BRAND DIRECT BURY SPLICE KIT MODEL DBR.
13. NEW PRESSURE MAINS SHALL BE PRESSURE TESTED PRIOR TO THE TIE-IN OPERATIONS. ALL REPAIRS AND RE-TESTING SHALL BE MADE PRIOR TO TIE-IN. PRESSURE TEST SHALL BE IN ACCORDANCE WITH AWWA C605. THE TEST PRESSURE SHALL BE 150 PSI AT THE LOW POINT AND SHALL BE MAINTAINED FOR A MINIMUM OF 4 HOURS. THE CONTRACTOR SHALL FURNISH GAUGES, METERS, WATER, TOOLS, LABOR, EQUIPMENT AND OTHER MATERIALS NECESSARY TO CONDUCT THE TESTS. THE ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF TESTS.
14. WATER AND SEWER UTILITY CONSTRUCTION TO BEGIN ONLY AFTER APPROVAL BY THE DEPARTMENT OF HEALTH.
15. FOLLOWING THE ACCEPTANCE OF THE HYDROSTATIC TEST, ALL NEW WATER LINES INCLUDING APPURTENANCES SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C651 (LATEST REVISION) AND ANY OTHER STATE REQUIREMENT.
16. ALL NEW WATER MAINS AND REPAIRED PORTIONS OF, OR EXTENSIONS TO, EXISTING MAINS SHALL BE CHLORINATED SO THAT A CHLORINE RESIDUAL OF NOT LESS THAN 25 PPM REMAINS IN THE WATER AFTER 24 HOURS STANDING IN THE PIPE. USUALLY, AN APPLICATION RATE OF 50 PPM IS REQUIRED. MAINS SHALL BE THOROUGHLY FLUSHED BEFORE INTRODUCTION OF THE DISINFECTANT.
17. WHILE THE DISINFECTANT IS BEING APPLIED TO ANY SECTION OF THE SYSTEM, THE WATER SHALL BE ALLOWED TO ESCAPE AT ALL EXTREMITIES OF THE SECTION UNTIL THE PRESENCE OF CHLORINE IS EVIDENT BY MEASURING WITH AN ORTHOTOLUIDIN TEST KIT FURNISHED BY THE CONTRACTOR.
18. BACTERIOLOGICAL TESTS SHALL BE CONDUCTED BY A STATE CERTIFIED LABORATORY AND MUST INDICATE NEGATIVE FOR COLIFORM BACTERIA PRIOR TO USE OF THE WATER MAINS TO CONVEY WATER TO THE PUBLIC. IF BACTERIOLOGICAL TESTS INDICATE INSUFFICIENT DISINFECTION AT THE COMPLETION OF THE TESTING AND FLUSHING OF THE SYSTEM, THE PROCEDURE SHALL BE REPEATED UNTIL PROPER DISINFECTION IS ACHIEVED.



- ## MINIMUM WATER/SEWER LINE SEPARATION

NOTES:

1. PIPELINES PLACED UNDER RAILROAD TRACKS SHALL BE AT LEAST 5'-6" FROM BASE OF RAIL TO TOP OF PIPE.
2. PIPELINE CROSSINGS OF RAILROAD R.O.W. SHALL BE A MINIMUM OF 3' IN DEPTH FROM TOP OF PIPE TO BOTTOM OF DITCH.
3. WATER PIPELINES LAID LONGITUDINALLY ACROSS RAILROAD R.O.W. SHALL BE PLACED AT MINIMUM 4' DEPTH FROM TOP OF PIPE TO GROUND SURFACE.
4. BORES FOR RAILROAD CROSSINGS SHALL EXTEND 3' BEYOND R.O.W. IN BOTH DIRECTIONS

						GENERAL NOTES							
						DESIGNED BY				CHECKED BY			
						DRAWN BY				APPROVED BY			
						DATE:		JOB NO:		ITEM NO:			
						SCALE N/A		DRAWING NUMBER 12				REV. 0	
REV.	DESCRIPTION					CHK.	DATE	APP.	DATE				