

CITY OF MIDWEST CITY MIDWEST CITY MUNICIPAL AUTHORITY CONSTRUCTION PLANS FOR NORTH SIDE UTILITIES WATER PROJECT

THE CITY OF MIDWEST CITY

Matt Dukes
Mayor

Susan Eads
Ward 1 / Trustee

Marc Thompson
Ward 4 / Trustee

Pat Byrne
Ward 2 / Trustee

Sara Bana
Ward 5 / Trustee

Rita Maxwell
Ward 3 / Trustee

Rick Favors
Ward 6 / Trustee



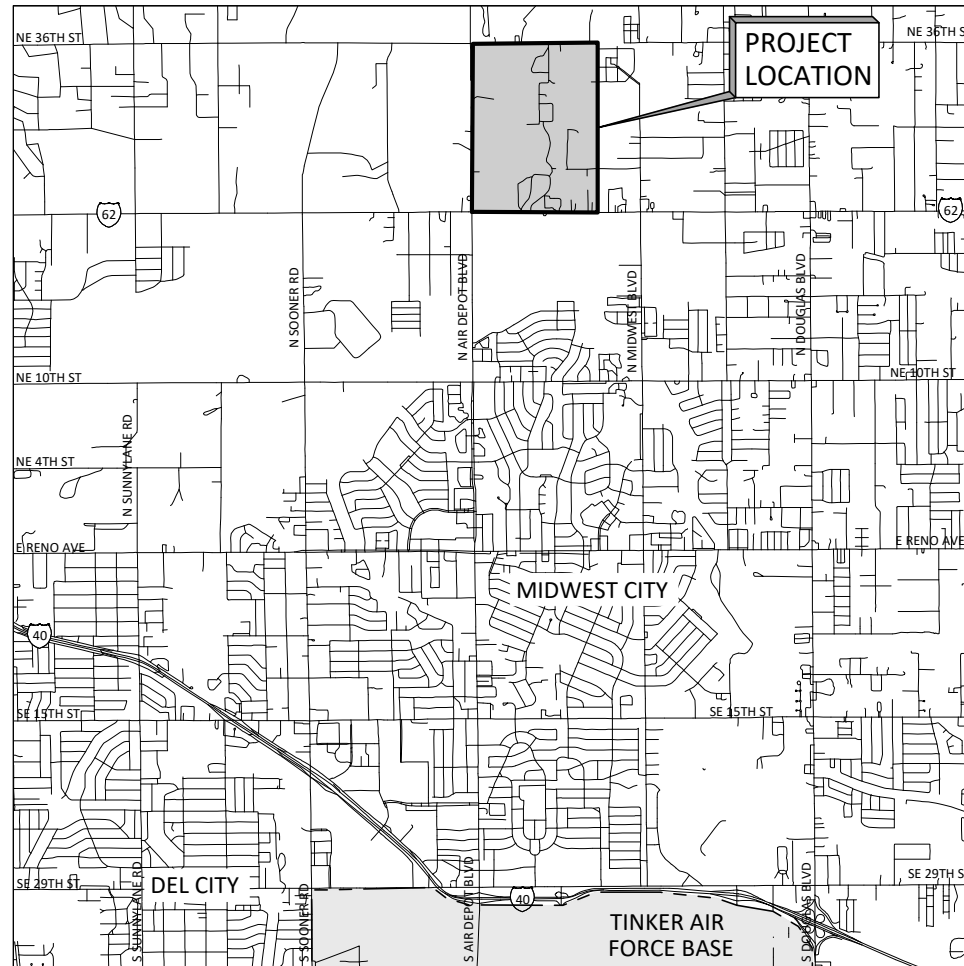
Tim Lyon
City Manager /
General Manager

Sara Hancock
City Clerk / Secretary

TIM LYON
CITY MANAGER / GENERAL MANAGER

PAUL STREETS
PUBLIC WORKS DIRECTOR

CARRIE EVENSON
ASSISTANT PUBLIC WORKS DIRECTOR



LOCATION MAP
SCALE: 1"=2000'

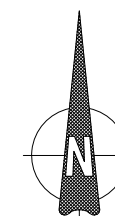
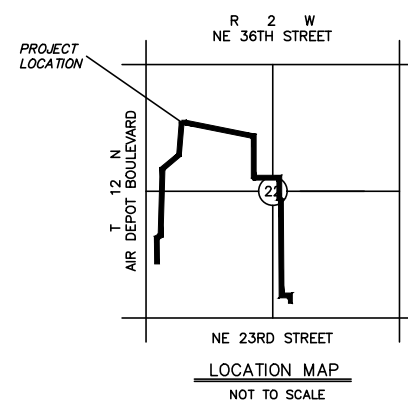
MAY 2024

BID SET



531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102
405.440.2725 | OKLAHOMA FIRM NO. 1097

PLUMMER PROJECT NO. 3435-003-01



INDEX OF SHEETS

SHEET #	DESCRIPTION
1	Title Sheet
2	Project location Map and Index of Drawings
3	Symbols and Abbreviations
4	City of Midwest City General Notes I
5	Additional General Notes I
6	Project Layout, Control Points, and Ownership
7	Bid Quantities
8-12	12" Primary Water Line
13-19	12" Secondary Water Line
20-22	HDD Crossing
23-29	Standard Details

UTILITY LOCATION NUMBER
Contact these numbers and others specified in the plans prior to any and all excavations.



840-5032
1-800-522-6543

This number is for information on the location of most underground utilities.

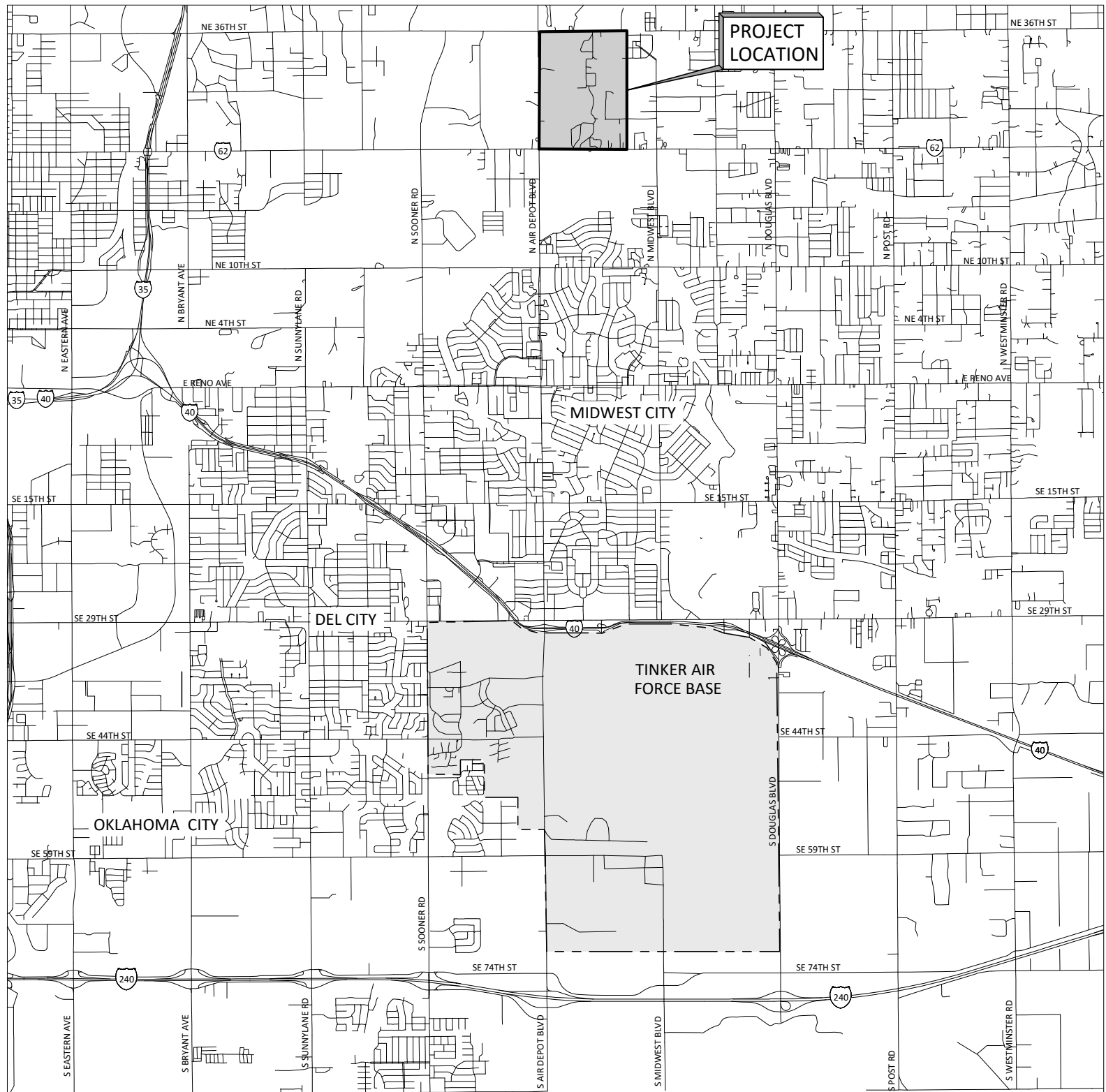


CONSTRUCTION INSPECTOR: _____

CONTRACTOR: _____

RECORD PLANS FILED: ALAN SWARTZ P.E.

ENGINEERING AND CONSTRUCTION
SERVICES DEPARTMENT





LOCATION MAP
 SCALE: 1"=2000'

INDEX OF DRAWINGS

SEQ.	SHEET	TITLE
GENERAL		
1	G-001	COVER SHEET
2	G-002	PROJECT LOCATION MAP AND INDEX OF DRAWINGS
3	G-003	SYMBOLS AND ABBREVIATIONS
4	G-004	CITY OF MIDWEST CITY GENERAL NOTES
5	G-005	ADDITIONAL GENERAL NOTES I
6	G-006	PROJECT LAYOUT, CONTROL POINTS, AND OWNERSHIP
7	G-007	BID QUANTITIES

12" PRIMARY WATER FEED

8	C-100	BEGIN STA 1+00 TO STA 9+00
9	C-101	STA 9+00 TO STA 18+00
10	C-102	STA 18+00 TO STA 25+00
11	C-103	STA 25+00 TO STA 33+50
12	C-104	STA 33+50 TO END STA 36+81.50

12" SECONDARY WATER FEED

13	C-200	BEGIN STA 1+00 TO STA 10+00
14	C-201	STA 10+00 TO STA 19+00
15	C-202	STA 19+00 TO STA 28+50
16	C-203	STA 28+50 TO STA 36+00
17	C-204	STA 36+00 TO STA 43+25
18	C-205	STA 43+25 TO STA 52+00
19	C-206	STA 52+00 TO END STA 58+15.27

HDD CROSSING

20	C-300	12" PRIMARY WATER FEED - WATER LINE HDD CROSSING 1
21	C-301	12" PRIMARY WATER FEED - WATER LINE HDD CROSSING 2
22	C-302	12" SECONDARY WATER FEED - WATER LINE HDD CROSSING 1

STANDARD DETAILS

23	C-900	MIDWEST CITY STANDARD DETAILS I
24	C-901	MIDWEST CITY STANDARD DETAILS II
25	C-902	CIVIL STANDARD DETAILS I
26	C-903	CIVIL STANDARD DETAILS II
27	C-904	CIVIL STANDARD DETAILS III
28	C-905	CIVIL STANDARD DETAILS IV
29	C-906	CIVIL STANDARD DETAILS V



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NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY
 NORTH SIDE UTILITIES PROJECT PHASE I
 GENERAL
 PROJECT LOCATION MAP AND INDEX OF DRAWINGS
 100 N MIDWEST BOULEVARD, MIDWEST CITY,
 OK 73110



IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED C. FERGUSON
 DRAWN F. CAVE
 CHECKED G. FARAH
 REVIEWED A. SWARTZ

Seq. No. **G-002**
 3435-003-01

PRINTED: 5/20/2024 9:50 AM C:\Users\gcbow\OneDrive\Documents\Plummer Associates\3435-003-01\WWC_Utility_Ph1\Project Files\Plummer\Sheets\General\G-INDEX.dwg SAVED: 5/17/2024 4:52 PM SAVED BY: gcbow USER: gcbow, Denver

LEGEND

	CONCRETE HATCH INSIDE		LIGHT POLE
	PROPOSED CONCRETE		ELECTRIC METER
	EXISTING CONCRETE		INLET RIM
	CLSM		EXISTING SAN. SEWER MANHOLE
	ASPHALT / GRAVEL REPLACEMENT - OPEN CUT		POWER POLE
	GRANULAR FILL		GUY WIRE AND ANCHOR
	ARTICULATED CONCRETE BLOCK		CHAIN LINK OR WOOD FENCE
	ROCK RIPRAP		EXISTING BW FENCE
	GRAVEL		PROPOSED BW FENCE
	DEMOLISH		EXISTING IRON FENCE
	BRICK		UNDERGROUND GAS
	JURISDICTIONAL WETLAND		UNDERGROUND WATER
	GAS METER		UNDERGROUND TELEPHONE
	EXISTING WATER METER		OVERHEAD ELECTRIC
	EXISTING BLOW-OFF VALVE (PLAN VIEW)		LIMITS OF PERMANENT EASEMENT
	EXISTING AIR VALVE (PLAN VIEW)		LIMITS OF TEMPORARY EASEMENT
	PROPOSED BLOW-OFF VALVE (PLAN VIEW)		PROPERTY LINE
	PROPOSED AIR VALVE (PLAN VIEW)		SECTION LINE
	AIR VALVE (PROFILE VIEW)		PROPOSED PIPELINE
	BLOW-OFF (PROFILE VIEW)		EXISTING STORM DRAIN
	GEOTECHNICAL BORING		EXISTING SANITARY SEWER
	IRON ROD FOUND		CL OF STREET
	SURVEY CONTROL POINT		FEMA 100-YEAR FLOODPLAIN
	TEST HOLE LOCATION		TREE
	MONUMENT		BRUSH OR TREELINE
	CLAY COLLAR		SHED/STRUCTURE
	BORING		

ABBREVIATIONS (NOT ALL ARE USED)

APPROX. AVG	APPROXIMATE AVERAGE	PC	POINT OF CURVE
AC	ACRES	PE	POLYETHYLENE
AC	ASBESTOS CEMENT	PERM	PERMANENT
ARV	AIR RELEASE VALVE	PT	POINT OF TANGENCY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	POB	POINT OF BEGINNING
B-XXX	BORE NUMBER	POE	POINT OF ENDING
B/L	BUILDING LINE	POE	POINT OF ENTRY
BM	BENCHMARK	PROP	PROPOSED
BOV	BLOW OFF VALVE	PRC	POINT OF REVERSE CURVE
BW	BARBED WIRE	PSI	POUND PER SQUARE INCH
C	HAZEN-WILLIAMS COEFFICIENT	PVC	POLYVINYL CHLORIDE
CIRF	CAPPED IRON ROD FOUND	PI	POINT OF INFLECTION
CIRS	CAPPED IRON ROD SURVEY	RCP	REINFORCED CONCRETE PIPE (C-302)
CP-XXX	CONTROL POINT NUMBER	ROW	RIGHT-OF-WAY
CONC	CONCRETE	RW	RAW WATER
CL	CENTER LINE	SUE	SUBSURFACE UTILITY ENGINEERING
CLSM	CONTROLLED LOW STRENGTH MATERIAL	SS	SANITARY SEWER/STAINLESS STEEL
DEQ	OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY	SSCO	SANITARY SEWER CLEANOUT
DIA	DIAMETER	SSMH	SANITARY SEWER MANHOLE
DR	DIMENSION RATIO (PIPE)	SPECS	SPECIFICATIONS
DR	DEED RECORD	STA	STATION
DIP	DUCTILE IRON PIPE	STD	STANDARD
DIPS	DUCTILE IRON PIPE SIZE	SDR	STANDARD DIMENSION RATIO
EX	EXISTING	TEMP	TEMPORARY
E	EASTING	TMK	PERMANENT TELEPHONE MARKER
EL	ELEVATION	T/P	TOP OF PIPE
ESMT	EASEMENT	TYP	TYPICAL
FEMA	FEDERAL EMERGENCY MANAGEMENT ASSOCIATION	U/E	UTILITY EASEMENT
FL	FLOW LINE	VPI	VERTICAL POINT OF INFLECTION
FLG	FLANGE	W	POTABLE WATER
FT	FEET	WL	WATER LINE
FT/S	FEET PER SECOND	W/	WITH
GPS	GLOBAL POSITIONING SYSTEM	WM	WATER METER
HDPE	HIGH DENSITY POLYETHYLENE PIPE	WRRF	WATER RESOURCES RECOVERY FACILITY
IN	INCHES		
IRF	IRON ROD FOUND		
JB	JUNCTION BOX		
LF	LINEAR FOOT		
MAX	MAXIMUM		
MH	MANHOLE		
MIN	MINIMUM		
MON	MONUMENT		
MGD	MILLIONS OF GALLONS PER DAY		
N	NORTHING OR NORTH		
NO, #	NUMBER		
NTS	NOT TO SCALE		
ODOT	OKLAHOMA DEPARTMENT OF TRANSPORTATION		
OHE	OVERHEAD ELECTRIC		

PIPING SCHEDULE					
USAGE	PIPE SIZE (I.D.)	PIPE MATERIAL	PIPE CLASS	WORKING PRESSURE (PSI)	TEST PRESSURE (PSI)
WATER	12"	PVC*	DR 18	125	188
CASING PIPE	18"	STEEL	1/4" THICKNESS	N/A	N/A

* GASKETS ON PVC SHALL BE PETROLEUM RESISTANT

PLUMMER
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 100 N MIDWEST BOULEVARD, MIDWEST CITY, OK 73110

CITY OF MIDWEST CITY
 NORTH SIDE UTILITIES PROJECT PHASE I
 GENERAL
 SYMBOLS AND ABBREVIATIONS



IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED	C. FERGUSON
DRAWN	F. CAVE
CHECKED	G. FARAH
REVIEWED	A. SWARTZ

Seq. _____
 Dwg. No. **G-003**
 3435-003-01

GENERAL CONSTRUCTION NOTES:

- G1 THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION OF ALL UTILITIES AND MUST HAVE ALL UTILITIES LOCATED PRIOR TO COMMENCING ANY EXCAVATION. THE CONTRACTOR SHALL VERIFY THE INVERT AND FLOWLINE ELEVATIONS OF ALL WATER LINES, SANITARY SEWERS, STORM DRAINS, DRAINAGE STRUCTURES, AND SURFACE DRAINAGE COURSES PRIOR TO LAYING ANY NEW PIPE.
THE CONTRACTOR MUST CALL OKIE AT (405) 840-5032 TO HAVE ALL PUBLIC UTILITIES (WATER AND SANITARY SEWER LINES) AND FRANCHISED UTILITIES (ELECTRIC LINES, TELEPHONE CABLES, FIBER OPTIC LINES, CABLE TELEVISION, GAS LINES AND OIL PIPELINES) LOCATED AT LEAST TWO (2) DAYS PRIOR TO STARTING CONSTRUCTION.
- G2 THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UTILITY LINES AND STRUCTURES, WHETHER SHOWN OR NOT, BOTH PUBLIC AND PRIVATE. ANY DAMAGE TO A UTILITY LINE OR STRUCTURE, BECAUSE OF THE CONTRACTOR'S ACTIONS, SHALL BE REPAIRED SOLELY AT THE CONTRACTOR'S EXPENSE TO A CONDITION AS GOOD OR BETTER THAN THAT PRIOR TO THE DAMAGE.
THE CONTRACTOR MUST CALL 9-1-1 IMMEDIATELY IF A NATURAL GAS PIPELINE IS CUT, DAMAGED OR OTHERWISE DISTURBED. THE MIDWEST CITY FIRE DEPARTMENT AND OKLAHOMA NATURAL GAS CO. MUST INSPECT THE PIPE BEFORE WORK CAN RESUME AT THAT LOCATION.
- G3 THE CONTRACTOR MUST NOTIFY THE FOLLOWING PERSONS AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF PLACING OR REMOVING ANY BARRICADES OR OTHERWISE MODIFYING EXISTING TRAFFIC CONTROL DEVICES OR PLACING ANY TEMPORARY TRAFFIC CONTROL DEVICES:
ENGINEER (405) 739-1215
CONSTRUCTION INSPECTOR- (405) 739-1226
- G4 THE CONTRACTOR MUST NOTIFY ALL AFFECTED CITY UTILITY CUSTOMERS AT LEAST TWO (2) WORKING DAYS PRIOR TO ANTICIPATED SERVICE INTERRUPTION. ALL WORK MUST BE CARRIED OUT CAREFULLY TO MINIMIZE CUSTOMER SERVICE INTERRUPTION DURING CONSTRUCTION. STREETS TEMPORARILY CLOSED TO THROUGH TRAFFIC DURING CONSTRUCTION SHALL REMAIN OPEN TO LOCAL TRAFFIC TO THE MAXIMUM EXTENT PRACTICAL DURING THE WORK. DETOUR ROUTES SHALL BE FURNISHED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH AND ERECT ALL DETOUR SIGNAGE AS DIRECTED.
WHERE WORK IS CARRIED ON, IN OR ADJACENT TO ANY STREET, ALLEY OR PUBLIC PLACE, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, FURNISH AND ERECT SUCH BARRICADES, FENCES, LIGHTS AND/OR OTHER PROTECTIVE BARRIERS, AND TAKE SUCH OTHER PRECAUTIONARY MEASURES FOR THE PROTECTION OF PERSONS OR PROPERTY AND OF THE WORK AS ARE NECESSARY. A SUFFICIENT NUMBER OF BARRICADES SHALL BE ERECTED TO KEEP VEHICLES FROM BEING DRIVEN INTO ANY WORK UNDER CONSTRUCTION. FAILURE TO COMPLY WITH THIS REQUIREMENT WILL RESULT IN THE ENGINEER SHUTTING DOWN WORK UNTIL THE CONTRACTOR HAS PROVIDED THE NECESSARY PROTECTION. ALL SUCH BARRICADES AND SIGNS AND THE USE THEREOF SHALL BE IN STRICT COMPLIANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, PART IV - TRAFFIC CONTROLS FOR STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS.
- G5 ALL CONSTRUCTION MATERIALS AND WORK SHALL CONFORM TO THE APPLICABLE CITY OF MIDWEST CITY AND THE 1996 OKLAHOMA DEPARTMENT OF TRANSPORTATION (ODOT) STANDARDS AND SPECIFICATIONS WITH THE ADDITIONAL SUPPLEMENTS, AS REFERENCED IN THE PROJECT DOCUMENTS.
- G6 ALL ELEVATIONS SHOWN ARE ON THE MEAN SEA LEVEL (M.S.L.) DATUM. ALL DIMENSIONS TO CURB ARE TO THE BACK OF CURB. ALL DIMENSION TO STREET "CENTERLINES" ARE TO THE CENTERLINE OF THE RIGHT-OF-WAY OR SECTION LINE.
- G7 THE CONTRACTOR SHALL DEVELOP AND MAKE ALL DETAIL SURVEYS NEEDED FOR CONSTRUCTION. THE COST OF THE CONSTRUCTION SURVEY AND STAKING SHALL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF WORK.
- G8 ALL FENCES REMOVED AS A RESULT OF THE CONTRACTOR'S ACTIONS SHALL BE REPLACED IN KIND WITH FENCING EQUAL TO OR BETTER THAN THE ORIGINAL FENCE. ALL COSTS FOR FENCE REMOVAL AND REPLACEMENT SHALL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF WORK.
- G9 ALL WORK NOT CLASSIFIED AS A CONTRACT PAY ITEM SHALL BE CONSIDERED INCIDENTAL CONSTRUCTION AND THE COST FOR SUCH SHALL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF WORK.
- G10 SEDIMENT CONTROL FOR UTILITY CONSTRUCTION IS REQUIRED. TRENCHES MUST BE BACKFILLED AT THE END OF EACH DAY'S WORK. NO MORE TRENCH SHALL BE OPENED THAN CAN BE COMPLETED IN THE SAME DAY UNLESS TEMPORARY SILT FENCE IS PLACED IMMEDIATELY DOWNSTREAM OF ANY AREA INTENDED TO REMAIN DISTURBED FOR MORE THAN ONE DAY. EXCAVATED MATERIALS SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH.
- G11 CITY PERSONNEL ARE NOT PERMITTED TO ENTER ANY TRENCH OR EXCAVATION MORE THAN FIVE (5) FEET DEEP, FOR ANY REASON, UNLESS IT IS SLOPED OR SHORED IN ACCORDANCE WITH 29 CFR 1926 OSHA SUBPART P, "EXCAVATIONS AND TRENCHES."
- G12 ALL DISTURBED, UNPAVED AREAS WITHIN EASEMENTS AND RIGHT-OF-WAY SHALL BE SEEDED, FERTILIZED, AND WATERED IN ACCORDANCE WITH ODOT SPECIFICATIONS SECTION 232, "SEEDING", AS REQUIRED UNDER THE "REVEGETATION" PAY ITEM IF PROVIDED OR AS NOTED OTHERWISE IN THE PLANS. SEEDED AREAS SHALL BE REPAIRED AND MAINTAINED UNTIL ALL PORTIONS OF THE PROJECT ARE COMPLETE AND APPROVED FOR FINAL ACCEPTANCE. ALL OTHER AREAS DISTURBED AS A RESULT OF THE CONTRACTOR'S ACTIONS SHALL BE RESTORED IN A MANNER ACCEPTABLE TO THE ENGINEER TO A CONDITION AS GOOD OR BETTER THAN THAT PRIOR TO THE DISTURBANCE AT NO EXPENSE TO THE CITY.
- G13 THE CITY SHALL FURNISH BACTERIOLOGICAL WATER LINE TESTING AT NO EXPENSE TO THE CONTRACTOR FOR MUNICIPALLY FUNDED PROJECTS.
- G14 ALL REMOVED SALVAGEABLE ITEMS SHALL REMAIN PROPERTY OF THE CITY AND SHALL BE STOCKPILED IN AN AREA WITHIN THE PROJECT LIMITS DESIGNATED BY THE ENGINEER FOR COLLECTION BY CITY FORCES.
- G15 ALL DITCHES DISTURBED DURING CONSTRUCTION SHALL BE RESHAPED AND SLOPED TO DRAIN. SOLID SLAB SOD SHALL BE USED IN ALL AREAS WHERE SOIL HAS BEEN EXPOSED AND POSITIVE MEANS OF SOD STABILIZATION SHALL BE USED TO PREVENT DISPLACEMENT OF SOD BY STORM WATERS.
- G16 EROSION CONTROL DEVICES IN THE FORM OF SEDIMENT FENCES ARE REQUIRED AT DRIVEWAY CULVERTS, STREET CULVERTS, DRAINAGE STRUCTURES, STORM SEWER MANHOLES AND SANITARY SEWER MANHOLES LOCATED IN DITCHES WHERE SOIL HAS BEEN DISTURBED. THOSE ITEMS SHALL BE PLACED AS DIRECTED BY THE ENGINEER AND THE COST SHALL BE INCLUDED IN OTHER ITEMS.

WATER LINE MATERIALS AND CONSTRUCTION NOTES:

- W1 WATER LINE SHALL BE POLYVINYL CHLORIDE (PVC) PIPE MANUFACTURED IN ACCORDANCE WITH AWWA C-900. ALL WATER LINE FITTINGS SHALL BE CEMENT MORTAR LINED DUCTILE IRON MANUFACTURED IN ACCORDANCE WITH AWWA C110. ALL WATER LINE SHALL BE THICKNESS DR18 UNLESS NOTED OTHERWISE.
- W2 ALL WATER LINE FITTINGS AND VALVES SHALL BE PHYSICALLY RESTRAINED BY MEANS OF RESTRAINED JOINT FITTINGS THIS WILL BE ACCOMPLISHED BY USE OF "MEGALUG" JOINT RESTRAINT PRODUCTS OR AN APPROVED EQUAL. PIPE JOINTS THAT LIE WITHIN THE "RESTRAINED LENGTH", AS INDICATED IN THE "POLYVINYL CHLORIDE (PVC) PIPE RESTRAINED LENGTH" TABLE OF THE SPECIFICATIONS WILL BE RESTRAINED BY "MEGALUG" PRODUCTS, OR AN APPROVED EQUAL, IF MECHANICAL JOINT PIPE IS AVAILABLE. THE USE OF PIPE MANUFACTURERS' "RESTRAINED JOINT" GASKETS FOR USE IN PUSH-ON DUCTILE IRON PIPE, SUCH AS AMERICAN FAST-GRIP GASKETS, OR AN APPROVED EQUAL, IS ALSO ACCEPTABLE.
- W3 SAND BACKFILL SHALL BE PLACED IN ALL TRENCHES UP TO GROUND LEVEL WHERE WATER LINES CROSS BELOW PROPOSED OR EXISTING PAVEMENTS. PAVEMENT CUTS SHALL BE RESTORED IN ACCORDANCE WITH THE CITY'S STANDARD DETAILS.
- W4 SERVICE LINE SHALL BE 3/4" TYPE K COPPER TUBING MANUFACTURED IN ACCORDANCE WITH AWWA C800. SPLICES IN NEW SERVICE LINES ARE NOT PERMITTED. CORPORATION STOPS SHALL BE 3/4" STRAIGHT BODY BALL TYPE VALVES WITH AN AWWA STANDARD TAPERED THREADED INLET AND TUBE COMPRESSION TYPE OUTLET. CORPORATION STOPS SHALL BE FORD FB1000-3-G (WITH GRIP JOINT OUTLET CONNECTION), A.Y. MCDONALD 4701-BT, MUELLER 300 PART NUMBER B-250008 WITH "CC" INLET AND "110" OUTLET, OR AN APPROVED EQUAL. METER VALVES SHALL BE 3/4" - 90° ANGLE BALL TYPE VALVES HAVING PADLOCK WINGS WITH A TUBE COMPRESSION TYPE INLET AND COUPLING NUT OUTLET FOR CONNECTION TO 5/8"x3/4" OR 3/4" WATER METERS. METER VALVES SHALL BE FORD BA43-332W-G (WITH GRIP JOINT OUTLET CONNECTION), A.Y. MCDONALD 4602-BT, MUELLER 300 PART NUMBER B-24273 WITH "11" INLET, OR AN APPROVED EQUAL.
- W5 METER BOXES SHALL BE CONSTRUCTED OF U.V. STABILIZED HIGH DENSITY POLYETHYLENE AND SHALL CONFORM GENERALLY TO THE MINIMUM REQUIREMENTS PROVIDED IN THE APPENDIX OF THE PROJECT SPECIFICATIONS. METER BOXES SHALL HAVE A MINIMUM TOP OPENING OF 12" AND A LOCKING CAST IRON LID.
- W6 FIRE HYDRANTS SHALL MEET OR EXCEED ALL APPLICABLE REQUIREMENTS OF ANSI/AWWA C502. HYDRANTS SHALL BE DRY BARREL TYPE HAVING ONE PUMPER NOZZLE AND TWO HOSE NOZZLES. FIRE HYDRANTS SHALL BE MUELLER "CENTURION", KENNEDY "GUARDIAN", U.S. PIPE AND FOUNDRY "METROPOLITAN", OR AN APPROVED EQUAL. ALL HYDRANTS PROVIDED FOR FIRE PROTECTION SHALL RECEIVE TWO (2) COATS OF SILVER PAINT. ALL HYDRANTS INSTALLED FOR FLUSHING DEAD END LINES AND NOTED AS SUCH ON THE PLANS SHALL BE INSTALLED WITH THE STEAMER NOZZLE TURNED AWAY FROM THE STREET AND SHALL BE PAINTED RED.
- W7 ALL EXISTING WATER LINES HAVING A DIAMETER LARGER THAN 2" SHALL BE DISCONNECTED FROM THE WATER DISTRIBUTION SYSTEM AND SHALL BE PLUGGED WITH CONCRETE. DISCONNECTED WATER LINES 2" IN DIAMETER AND SMALLER SHALL BE PERMANENTLY CAPPED IN A MANNER ACCEPTABLE TO THE ENGINEER.
- W8 ALL WATER LINES SHALL BE PRESSURE AND LEAKAGE TESTED AND DISINFECTED IN ACCORDANCE WITH THE REQUIREMENTS OF OKLAHOMA ADMINISTRATIVE CODE (OAC) TITLE 252, CHAPTER 625, PUBLIC WATER SUPPLY CONSTRUCTION STANDARDS 252:626-19-2 (5) AND (6). PRESSURE AND LEAKAGE TESTING SHALL BE IN ACCORDANCE WITH AWWA C600. ALL NEW, CLEANED, OR REPAIRED WATERLINES SHALL BE DISINFECTED IN ACCORDANCE WITH OAC 252:630, PUBLIC WATER SUPPLY OPERATION.
- W9 ALL WATER LINE INSTALLED WITHIN A CASING PIPE SHALL BE SUPPORTED BY MEANS OF PERMANENTLY ATTACHED SKIDS OR CASING SPACERS. CASING SPACERS SHALL BE ADVANCED PRODUCTS AND SYSTEMS, INC. (APS), STEEL BAND CASING SPACER MODEL SI OR AN APPROVED EQUAL. CASING SPACERS SHALL BE AT LEAST 11" LONG AND RUNNERS SHALL BE AT LEAST 1" WIDE. SPACERS SHALL BE INSTALLED WITHIN 1 FOOT OF ALL JOINTS ON BOTH SIDES OF THE JOINT AND AT INTERVALS ALONG THE PIPE BARREL NOT EXCEEDING 12 FEET ON CENTER. SPACERS WILL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ALL CASING ENDS WILL BE SEALED UTILIZING A MODULAR MECHANICAL SEAL AND ALL CASINGS WILL HAVE AT LEAST ONE (1) 2" VENT PIPE. ALL PIPE JOINTS WITHIN THE CASING PIPE MUST BE RESTRAINED.

POLYVINYL CHLORIDE (PVC) PIPE RESTRAIN LENGTH (FT.)

PIPE SIZE	HORIZONTAL BEND				VERTICAL BEND				TEE	PLUG	REDUCER				
	11.25°	22.5°	45°	90°	11.25°	22.5°	45°	U			L	x6"	x8"	x12"	x18"
6"	20	20	20	20	20	20	20	20	20	40	N	20	40	60	80
8"	20	20	20	20	20	20	20	20	20	40	20	N	40	60	80
12"	20	20	30	40	20	20	20	20	20	40	40	40	N	40	60
18"	20	20	20	40	20	20	20	20	20	60	60	60	40	N	40
20"	20	20	20	60	20	20	20	60	20	60	80	80	60	40	N

CASING SIZE TABLE

NOMINAL INSIDE PIPE DIA.	CASING SIZE INSIDE DIA.
4"	8" TO 10"
6"	10" TO 12"
8"	14" TO 16"
10"	16" TO 18"
12"	18" TO 20"
15"	20" TO 22"
18"	24" TO 26"
24"	31" TO 33"

PAVING CONSTRUCTION NOTES:

- P1 ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF PUBLIC IMPROVEMENTS" MIDWEST CITY, OKLAHOMA AND SHALL BE UNDER THE SUPERVISION OF THE DEVELOPMENT SERVICES DEPARTMENT.
- P2 ANY CONSTRUCTION ITEMS THAT ARE NOT LISTED IN THE SUMMARY OF QUANTITIES SHALL BE CONSIDERED INCIDENTAL CONSTRUCTION ITEMS. THE COST OF INCIDENTAL CONSTRUCTION SHALL BE INCLUDED IN THE COST OF OTHER BID ITEMS.
- P3 PAVING SUBGRADE SHALL BE COMPACTED TO A DENSITY OF AT LEAST 95% OF THE MINIMUM DRY DENSITY OBTAINED BY THE STANDARD COMPACTION TEST (ASTM D-698). TEST REPORTS SHALL BE SUBMITTED TO THE MIDWEST CITY ENGINEER'S OFFICE.
- P4 REFER TO THE STANDARD TYPICAL SECTIONS FOR CONCRETE PAVING DESIGN STANDARDS SHEET FOR RESIDENTIAL COLLECTOR STREET PAVING.
- P5 THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND COORDINATING WITH ALL PUBLIC OR PRIVATE UTILITY COMPANIES IN THE VICINITY OF CONSTRUCTION.
- P6 THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND MAINTAINING CONSTRUCTION TRAFFIC CONTROL SIGNS AND DEVICES AS REQUIRED BY THE CITY OF MIDWEST CITY AND THE LATEST EDITION OF PART VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.).
- P7 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OR REPAIR OF TRAFFIC CONTROL DEVICES DAMAGED DUE TO CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE ALL WORK THROUGH THE CITY OF MIDWEST CITY ENGINEER. NEW MATERIALS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO USE.
- P8 UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN CONSTRUCTION STAKING.
- P9 ALL PAVEMENT REMOVAL CONTIGUOUS TO THE PAVEMENT REMAINING SHALL BE SAWED IN STRAIGHT LINES TO THE FULL DEPTH OF THE EXISTING PAVEMENT. ALL DEBRIS FORM THE REMOVAL OPERATIONS SHALL BE REMOVED FROM THE SITE AT THE TIME OF EXCAVATION. STOCKPIILING OF DEBRIS WILL NOT BE PERMITTED.
- P10 IN AREAS OF EXCAVATION, THE SUBGRADE SHALL BE SCARIFIED TO THE DEPTH SHOWN ON THE DETAIL, AND RECOMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MAXIMUM DRY DENSITY OBTAINED BY THE STANDARD COMPACTION TEST (ASTM D-698) AT A WATER CONTENT WITHIN 3% OF THE OPTIMUM.
- P11 UNLESS OTHERWISE STATED IN THE GENERAL CONDITIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TESTING. THE RESULTS OF THE TEST SHALL BE FORWARDED TO THE ENGINEER FOR HIS REVIEW AND APPROVAL. THE SOILS LABORATORY SHALL DETERMINE THE SUITABILITY OF EXISTING ON SITE MATERIAL PRIOR TO BEGINNING ANY FILL OPERATIONS.
- P12 SOD SHALL BE PLACED 18" BEHIND THE CURB FOR EROSION PROTECTION.



531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102
405.440.2725 | OKLAHOMA FIRM NO. 1097

NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY
NORTH SIDE UTILITIES PROJECT PHASE I
GENERAL
CITY OF MIDWEST CITY GENERAL NOTES
100 N MIDWEST BOULEVARD, MIDWEST CITY, OK 73110



DESIGNED C. FERGUSON
DRAWN F. CAVE
CHECKED G. FARAH
REVIEWED A. SWARTZ

IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

Seq. _____
Dwg. No. **G-004**
3435-003-01

GENERAL NOTES

(NO SEPARATE PAY ITEMS ARE PROVIDED FOR THE REQUIREMENTS IN THESE GENERAL NOTES, WHICH SHALL BE INCIDENTAL TO CONSTRUCTION)

A. REGULATORY, PERMITTING AND SAFETY

- A1 CONTRACTOR SHALL ABIDE BY ALL APPLICABLE GOVERNMENTAL AND REGULATORY STANDARDS AND REQUIREMENTS AND OBTAIN ALL NECESSARY PERMITS AND APPROVALS FOR CONSTRUCTION OF THE PIPELINE FACILITIES SHOWN IN THE PLANS.
A2 CONTRACTOR SHALL ABIDE BY OAC 252:626 PUBLIC WATER SUPPLY CONSTRUCTION STANDARDS, OAC 252:631 PUBLIC WATER SUPPLY OPERATION, AND OAC 252:633 DRINKING WATER STATE REVOLVING FUND.
A3 CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING GENERAL SAFETY AT AND ADJACENT TO THE PROJECT AREA, INCLUDING THE PERSONAL SAFETY OF THE CONSTRUCTION STAFF AND THE GENERAL PUBLIC, AND FOR THE SAFETY OF PUBLIC AND PRIVATE PROPERTY.
A4 CONTRACTOR IS RESPONSIBLE FOR ALL TRENCH SAFETY. THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED WORK UTILIZING A TRENCH SAFETY PLAN PREPARED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF OKLAHOMA, FOR THIS PROJECT. THIS TRENCH SAFETY PLAN SHALL BE SUBMITTED TO THE ENGINEER AND OWNER PRIOR TO ANY WORK ACTIVITIES.
A5 CONTRACTOR SHALL OBTAIN COVERAGE UNDER GENERAL PERMIT OKR10 FOR CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL FILE A NOTICE OF INTENT (NOI) WITH THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ) AT THE START OF CONSTRUCTION AND A NOTICE OF TERMINATION (NOT) WITH THE ODEQ AT THE END OF CONSTRUCTION.
A6 CONTRACTOR SHALL EMPLOY ADEQUATE METHODS TO PROTECT WATERWAYS DURING ALL PHASES OF THE PROJECT. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS CONCERNING WATER POLLUTION PREVENTION.
A7 CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE MEASURES FOR PREVENTING STORM WATER RUNOFF FROM ENTERING THE TRENCH DURING CONSTRUCTION.
A8 CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING INSTALLED EROSION AND STORM WATER CONTROL DEVICES AND SHALL REPAIR OR REPLACE ANY SUCH DEVICES AT HIS EXPENSE THROUGHOUT CONSTRUCTION.
A9 CONTRACTOR IS RESPONSIBLE FOR KEEPING ROADWAYS AND SIDEWALKS ADJACENT TO THE PROJECT FREE OF MUD, TRASH, AND CONSTRUCTION DEBRIS.

B. GENERAL AND CONSTRUCTION

- B1 CONSTRUCTION SURVEYING IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR INCLUDING BUT NOT LIMITED TO LIMITS OF PERMANENT EASEMENT, TEMPORARY EASEMENT, CENTERLINE, ETC. THE CONTRACTOR SHALL VERIFY ALL CONTROL MONUMENTATION PRIOR TO BEGINNING CONSTRUCTION.
B2 BLOW-OFF AND AIR RELEASE VALVE STRUCTURES SHALL BE INSTALLED PER STANDARD DETAILS.
B3 AIR-RELEASE VALVES SHALL BE INSTALLED AT HIGH POINTS ALONG THE PIPELINE AS SHOWN IN THE PLANS. MINOR STATION LOCATION ADJUSTMENTS MAY BE MADE WITH PRIOR APPROVAL OF THE OWNER AND ENGINEER.
B4 CONTRACTOR SHALL NOT INTRODUCE NEW HIGHS OR LOWS INTO THE PROFILE WITHOUT THE APPROVAL OF THE OWNER AND THE ENGINEER.
B5 BLOW-OFF VALVE DISCHARGE PIPING IS SHOWN IN THE PLANS AS A GENERAL LOCATION AND ORIENTATION OF THE DISCHARGE PIPING AND VALVE. FINAL LOCATION AND DIRECTION OF BLOW-OFF VALVE DISCHARGE SHALL BE DETERMINED PRIOR TO INSTALLATION BY THE OWNER'S ON-SITE INSPECTOR. CONTRACTOR SHALL COORDINATE WITH THE OWNER'S INSPECTOR PRIOR TO INSTALLATION OF THE DISCHARGE PIPING.
B6 CONTRACTOR SHALL SURVEY AND PROVIDE THE OWNER AS-BUILT LOCATIONS AND ELEVATIONS OF APPURTENANCES, INCLUDING BUT NOT LIMITED TO AIR RELEASE, AIR/VACUUM, AND BLOW OFF VALVES, MANHOLE COVERS, IN-LINE VALVES, CONNECTIONS AND OUTLETS. CONTRACTOR SHALL ALSO PROVIDE AS-BUILT TOP-OF-PIPE SURVEY FOR EACH JOINT AND FITTING OF PIPE AS IT IS BEING INSTALLED BY OPEN CUT, INCLUDING STATION AND ELEVATION INFORMATION. FOR PIPE BEING INSTALLED BY COMPRESSED FIT LINER, CONTRACTOR SHALL PROVIDE PIT LOCATION AND DIMENSIONS, BACKFILL MATERIAL, TOP-OF-PIPE ELEVATION, AND APPURTENANCE ELEVATIONS IN THE AS-BUILT PLANS. AS-BUILT DATA SHALL BE SUBMITTED WITH THE REQUEST FOR PAYMENT FOR THESE ITEMS. ALL AS-BUILT SURVEY SHALL BE PERFORMED BY A RPLS REGISTERED IN THE STATE OF OKLAHOMA.
B7 NO BLASTING WILL BE ALLOWED.
B8 NO BURNING WILL BE ALLOWED. ALL BRUSH AND CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.
B9 CLEARING AND GRUBBING MAY NOT BEGIN SOONER THAN TWO WEEKS PRIOR TO PIPE INSTALLATION OPERATIONS. EROSION CONTROL IN ACCORDANCE WITH THE CONTRACTOR'S STORM WATER POLLUTION PREVENTION PLAN SHALL BE INSTALLED PRIOR TO CLEARING. PIPE STRINGING SHALL BE NO MORE THAN TWO WEEKS PRIOR TO PIPE LAYING. BACKFILL, CLEANUP, AND SURFACE RESTORATION SHALL BE COMPLETED NO MORE THAN TWO WEEKS AFTER PIPE LAYING AND NO MORE THAN 2,000 FEET FROM PIPE LAYING OPERATIONS. THE SITE SHALL BE KEPT CLEAN OF TRASH AT ALL TIMES. FAILURE TO COMPLY WITH THESE REQUIREMENTS MAY RESULT IN WITHHOLDING SOME OR ALL PAYMENT TO THE CONTRACTOR.
B10 NEW PIPE SHALL BE DESIGNED FOR THE OPERATING PRESSURES INDICATED ON THE PLANS AND SPECIFICATIONS.
B11 CONTRACTOR SHALL BE REQUIRED TO INSTALL TEMPORARY TEST PLUGS OR BLIND FLANGES FOR HYDROSTATIC TESTING AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER. HYDROSTATIC TESTING AGAINST VALVES WILL NOT BE ALLOWED.
B12 ALL ABOVE GROUND METAL SHALL BE PAINTED OR COATED ACCORDING TO THE SPECIFICATIONS. CONTRACTOR SHALL COORDINATE THE COLORS WITH THE OWNER.
B13 VARIOUS PROJECT LOCATIONS ARE SUBJECT TO FLOODING OR STANDING WATER DURING WET WEATHER PERIODS. CONTRACTOR SHALL PLAN THIS WORK FOR DRY WEATHER PERIODS OR PROVIDE DEWATERING AND OTHER WET WEATHER PROVISIONS. ALL NECESSARY DEWATERING SHALL BE CONSIDERED SUBSIDIARY TO OTHER BID ITEMS AND WILL NOT BE PAID FOR SEPARATELY.

B. GENERAL AND CONSTRUCTION (CONT.)

- B14 CONTRACTOR SHALL COORDINATE HIS PROPOSED CONSTRUCTION WITH OTHER CONTRACTORS WORKING IN THE SAME AREA SIMULTANEOUSLY WITH THEIR PROJECT. THIS INCLUDES, BUT IS NOT LIMITED TO, ALL CONNECTION POINTS OR OTHER SPECIAL ITEMS AS REQUIRED FOR TESTING.
B15 THIS PROJECT IMPACTS WATER SUPPLY ENTITIES WHO MAY HAVE FACILITIES LOCATED IN THE PROJECT'S TEMPORARY AND PERMANENT EASEMENTS. PRIOR TO RECEIVING FINAL PAYMENT FROM OWNER, THE CONTRACTOR SHALL PROVIDE A RELEASE TO OWNER ON BEHALF OF EACH WATER SUPPLY ENTITY.
B16 CONTRACTOR MAY USE EXISTING PUBLIC ROADS FOR TRANSPORTING PIPE AND EQUIPMENT. THE CONTRACTOR SHALL ABIDE BY THE LAWS FOR ROAD WEIGHT RESTRICTIONS AND BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS. REPAIR OF DAMAGE CAUSED BY CONSTRUCTION VEHICLES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
B17 CONTRACTOR SHALL MAINTAIN MINIMUM COVER OF 5 FEET ON PIPELINE AT ALL TIMES.
B18 THE CONTRACTOR SHALL PROVIDE RESTRAINED JOINT LENGTHS AS SHOWN ON THE PLANS FOR ALL BENDS. THE COST OF JOINT RESTRAINTS SHALL BE PAID FOR UNDER THE PIPE INSTALLATION BID ITEMS AND WILL NOT BE PAID FOR SEPARATELY. CONTRACTOR MAY DEFLECT PIPE UP TO 50% OF THE MANUFACTURER'S RECOMMENDED LIMIT TO ELIMINATE VERTICAL FITTINGS AND REDUCE THE REQUIREMENT TO RESTRAIN ADJACENT JOINTS.
B19 CONTRACTOR SHALL INSTALL LOW PERMEABILITY GROUND WATER BARRIERS TO INTERRUPT CONTINUITY OF PIPE EMBEDMENT MATERIAL AND IMPEDE PASSAGE OF WATER THROUGH EMBEDMENT. GROUND WATER BARRIER LOCATIONS ARE SHOWN IN THE PROFILE. CONTRACTOR MAY RELOCATE THE BARRIERS AS NECESSARY BUT AT NO POINT SHALL THEY BE SPACED MORE THAN 400 FEET APART. GROUND WATER BARRIERS SHALL BE CONSIDERED INCIDENTAL TO OTHER BID ITEMS AND WILL NOT BE PAID FOR SEPARATELY.

C. ACCESS AND EASEMENT REQUIREMENTS

- C1 CONTRACTOR'S OPERATIONS MUST STAY WITHIN THE PERMANENT AND TEMPORARY EASEMENTS DESIGNATED ON THE PLAN SHEETS. CONTRACTOR SHALL STAKE THE LIMITS OF THE PERMANENT AND TEMPORARY EASEMENT PRIOR TO BEGINNING WORK. CONTRACTOR SHALL MAINTAIN STAKES UNTIL WORK IS COMPLETE, INCLUDING PROPERTY RESTORATION. ACCESS ROUTES OR OPERATIONS WHICH FALL OUTSIDE THE DESIGNATED AREAS WILL ONLY BE ALLOWED WITH PRIOR WRITTEN LAND OWNER CONSENT. CONTRACTOR SHALL ALSO PROVIDE A COPY OF ALL EXECUTED AGREEMENTS PRIOR TO WORK OR ACTION TAKING PLACE ON SUCH AGREEMENTS AND SHALL EXECUTE A SIGNED RELEASE FROM ALL LANDOWNERS UPON COMPLETION OF ACTION ON THE AGREEMENT. PROVIDE RELEASE TO OWNER PRIOR TO RECEIVING FINAL PAYMENT.
C2 ALL GATES SHALL BE KEPT CLOSED TO CONTROL ACCESS TO THE PROJECT SITE. CONTRACTOR IS SOLELY RESPONSIBLE FOR SITE SECURITY AND ACCESS CONTROL AND SHALL PROVIDE APPROPRIATE STAFFING AND ACCESS CONTROLS INCLUDING GATES AND LOCKS AS REQUIRED.
C3 CONTRACTOR SHALL NOTIFY ALL PROPERTY OWNERS AT LEAST 48 HOURS PRIOR TO PERFORMING ANY WORK ON THEIR PROPERTY. CONTRACTOR SHALL ALSO DISTRIBUTE A LETTER TO ALL AFFECTED PROPERTY OWNERS THAT INCLUDES NAMES AND TELEPHONE NUMBERS OF CONTRACTOR'S CONTACTS, A DESCRIPTION OF WORK TO BE DONE, AND THE TIME FRAME FOR DOING THE WORK. A COPY OF THE NOTICE LETTERS SHALL BE FORWARDED TO THE OWNER'S REPRESENTATIVE.
C4 CONTRACTOR SHALL NOT DISTURB PONDS, CREEKS OR OTHER WATERWAYS OUTSIDE OF PERMANENT OR TEMPORARY CONSTRUCTION EASEMENTS.

D. EXCAVATION AND BACKFILL

- D1 THE TOP 12 INCHES OF TRENCH BACKFILL MATERIAL SHALL BE NATIVE TOPSOIL OR HAVE GRADATION SIMILAR TO EXISTING GROUND ADJACENT TO THE TRENCH. MAXIMUM ROCK SIZE WITHIN THE 12 INCH TOP LAYER SHALL NOT EXCEED THAT OF THE SURROUNDING TOPSOIL. PLACE 24 INCHES OF TOP SOIL IN CULTIVATED FIELDS.
D2 CLSM EMBEDMENT REQUIRED FOR CROSSING FLEXIBLE BASE ROADS, DRIVES, CONCRETE PAVEMENT, ASPHALT PAVEMENT, AND CREEK CROSSING AREAS IS SHOWN ON THE PLAN AND PROFILE SHEETS FOR REFERENCE.
D3 CONTRACTOR SHALL REMOVE ALL SURPLUS MATERIAL FROM THE PROJECT AREA INCLUDING EXCAVATED MATERIAL, SOIL, RUBBLE, TRASH, ETC, AND DISPOSE APPROPRIATELY AT A DEQ-PERMITTED LANDFILL FACILITY. NO EXCAVATED MATERIAL SHALL BE DEPOSITED IN LOW AREAS OR ALONG NATURAL DRAINAGE WAYS. IF THE CONTRACTOR PLACES EXCESS MATERIAL IN AREAS WITHOUT WRITTEN PERMISSION, HE WILL BE RESPONSIBLE FOR ALL DAMAGES RESULTING FROM SUCH FILL AND HE SHALL REMOVE THE MATERIAL AT HIS OWN COST.
D4 IF CULTURAL RESOURCES ARE LOCATED DURING CONSTRUCTION (ARCHEOLOGICAL FINDINGS UNEARTHED), WORK SHALL STOP IN THE AREA AND THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE OWNER AND ENGINEER.

E. EASEMENT RESTORATION

- E1 THE CONTRACTOR SHALL PROVIDE HIGH DEFINITION VIDEO FILES TO THE OWNER DOCUMENTING THE EXISTING CONDITION OF THE PIPELINE ROUTE, INCLUDING THE PERMANENT EASEMENT, TEMPORARY EASEMENT, SURROUNDING AREA AND CONSTRUCTION STAKES AND STATIONING. CONTRACTOR SHALL REVIEW THE VIDEO FILES PRIOR TO THE START OF ANY CONSTRUCTION.
E2 RESTORE GROUND TO ORIGINAL GRADE AND PREVENT PONDING OF STORM WATER RUNOFF ON ALL GROUND DISTURBED BY CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL RESTORE GROUND THROUGHOUT THE WARRANTY PERIOD WHERE SETTLEMENT HAS CREATED STORM WATER PONDING.
E3 FOLLOWING INSTALLATION OF PIPELINE ACROSS WATERWAYS, THE WATERWAY BANK SLOPE SHALL BE RESTORED IN ACCORDANCE WITH PLANS, SPECIFICATIONS, AND PROJECT DETAILS.
E4 IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REBUILD THE CONCRETE, ASPHALT OR FLEXBASE PAVEMENT REPLACEMENT SECTIONS TO THE SAME LINE AND GRADE THAT EXISTED PRIOR TO PIPELINE CONSTRUCTION.
E5 THE CONTRACTOR SHALL RESTORE, AT HIS OWN EXPENSE, TEMPORARY ROADS AND CONSTRUCTION WORK AREAS TO PRE-CONSTRUCTION CONDITIONS.
E6 CONTRACTOR SHALL RESEED ALL DISTURBED AREAS WITHIN ODOT RIGHT-OF-WAY AND ALL EASEMENTS. CONTRACTOR SHALL SOD DISTURBED AREAS A MINIMUM OF FIVE FEET AROUND ALL NEW AND EXISTING STRUCTURES.

F. TREES

- F1 CONTRACTOR SHALL OBTAIN A TREE REMOVAL PERMIT AS MAY BE REQUIRED BY CITY ORDINANCE OR OTHER AUTHORITY.
F2 CONTRACTOR SHALL REPLACE ANY TREES LOCATED OUTSIDE THE EASEMENT WHICH ARE REMOVED OR DESTROYED WITHOUT THE OWNER'S PERMISSION.
F3 TRIMMING OF TREES SHALL BE ACCOMPLISHED USING A SAW OR PRUNING SHEARS OR OTHER EQUIPMENT SPECIFICALLY DESIGNED TO TRIM BRANCHES RESULTING IN A CLEAN CUT. ALL CUT LIMBS OVER 1 INCH IN DIAMETER SHALL BE PAINTED WITH TREE WOUND PAINT IMMEDIATELY AFTER TREE TRIMMING.

G. FENCES AND GATES

- G1 CONTRACTOR SHALL INSTALL TEMPORARY FENCING DURING PERIOD THAT PERMANENT FENCE IS REMOVED. PERMANENT FENCING SHALL BE REPLACED IN EQUAL OR BETTER CONDITION.
G2 ANY NECESSARY REPAIRS TO PRIVATE PROPERTY DUE TO DAMAGES RESULTING FROM GATES OR FENCING LEFT OPEN SHALL BE AT THE CONTRACTOR'S EXPENSE.

H. UTILITIES

- H1 THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE ONLY AND SHALL BE VERIFIED BY THE CONTRACTOR BEFORE COMMENCING WORK. NOT ALL EXISTING UTILITIES ARE SHOWN IN THE PLANS. CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES RESULTING FROM FAILURE TO EXACTLY LOCATE AND PROTECT ALL EXISTING UNDERGROUND UTILITIES.
H2 CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO MANUFACTURING OF PIPE AND SUFFICIENTLY IN ADVANCE OF THE CONSTRUCTION SO THAT IF IT IS NECESSARY TO CHANGE OR MOVE THE UTILITY, THE PROGRESS OF THE WORK WILL NOT BE DELAYED. ANY EXISTING UTILITY DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS WITH LIKE OR BETTER MATERIALS.
H3 CONTRACTOR SHALL PROTECT ALL UNDERGROUND IRRIGATION SYSTEMS ENCOUNTERED WITHIN THE CONSTRUCTION AREA. ALL DAMAGE SHALL BE REPAIRED BY IRRIGATOR LICENSED IN THE STATE OF OKLAHOMA.
H4 CONTRACTOR, AT THEIR DISCRETION, MAY TUNNEL UNDER EXISTING UTILITIES OR ROADWAYS OTHER THAN THOSE CROSSINGS SPECIFICALLY SHOWN ON THE DRAWINGS, AT NO ADDITIONAL COST TO THE OWNER.
H5 WHEN NEW WATERLINE CONSTRUCTION CROSSES UNDER EXISTING PIPELINES, CONTRACTOR SHALL BACKFILL EXISTING PIPELINE WITH CLSM EMBEDMENT PER DETAIL 104 ON SHEET C-902.
H6 CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT OF ALL POWER AND TELEPHONE POLES AND GUY WIRES WITHIN 15 FEET OF PROPOSED WATER LINE AND SHALL REPAIR DAMAGED POLES AND GUY WIRES OR RELOCATE POLES AND GUY WIRES AS REQUIRED BY THE UTILITY OWNER AT NO ADDITIONAL COST TO THE OWNER.
H7 CONTRACTOR SHALL ABIDE BY THE FOLLOWING REQUIREMENTS FOR ALL PETROLEUM OR NATURAL GAS LINE CROSSING INVOLVING OPEN CUTTING: PROPOSED WATERLINE SHALL CROSS BELOW EXISTING UTILITY WITH A MINIMUM OF 2-FEET OF VERTICAL SEPARATION, CROSSING ANGLE SHALL BE AS CLOSE TO 90 DEGREES AS POSSIBLE, PROPOSED WATERLINE SHALL MAINTAIN A CONSTANT GRADE ACROSS UTILITY EASEMENT, AND NO CONNECTION SHALL BE ON THE PROPOSED WATERLINE WITH IN 10-FEET OF UTILITY EASEMENT. THE CONTRACTOR SHALL ABIDE BY ANY ADDITIONAL UTILITY CROSSING REQUIREMENTS SPECIFIED BY INDIVIDUAL UTILITY COMPANIES.
H8 THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES WITH FACILITIES IN PROJECT AREA 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO BRACE AND SUPPORT ANY UTILITY IN CONFLICT WITH THE PROPOSED PIPELINE. CONTRACTOR SHALL NOTIFY ENGINEER UPON DISCOVERY IF PROPOSED PIPE CONFLICTS WITH ANY EXISTING UTILITY. ALL ASSOCIATED WORK SHALL BE CONSIDERED SUBSIDIARY TO ALL OTHER BID ITEMS. ANY REPAIR TO THE DAMAGED EXISTING UTILITY SHALL BE THE COST OF CONTRACTOR.

J. SURVEY AND SUBSURFACE UTILITY ENGINEERING

- J1 THE SURVEY INFORMATION CONTAINED ON THESE DRAWINGS WAS PROVIDED BY CEC FROM NOVEMBER OF 2022 TO FEBRUARY OF 2023. THESE PLANS MAY NOT SHOW ALL CURRENTLY EXISTING STRUCTURES AND UTILITIES ABOVE OR BELOW THE GROUND IN THE PROJECT CONSTRUCTION AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE ENTIRE PROJECT SITE AND ACQUAINTING HIMSELF WITH THOSE FEATURES IN THE PROJECT AREA PRIOR TO SUBMITTING A BID.
J2 CONTROL POINTS FOR THIS PROJECT ARE SHOWN IN THE PLANS. CONTRACTOR SHALL FIELD LOCATE NECESSARY CONTROL POINTS AT COMMENCEMENT OF CONSTRUCTION. THOSE CONTROL POINTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE OFFSET AND PRESERVED FOR USE DURING CONSTRUCTION.
J3 PIPELINE STATIONING IS ALONG THE CENTERLINE OF THE PIPELINE.
J4 THE SURVEY INFORMATION CONTAINED ON THESE DRAWINGS DOES NOT SHOW OR INCLUDE LOCATION OF ALL EXISTING TREES.
J5 CONSTRUCTION SURVEYING IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR INCLUDING BUT NOT LIMITED TO LIMITS OF PERMANENT EASEMENT, TEMPORARY EASEMENT, CENTERLINE, ETC. THE CONTRACTOR SHALL VERIFY ALL CONTROL MONUMENTATION PRIOR TO BEGINNING CONSTRUCTION.
J6 PROJECT HORIZONTAL CONTROL IS NAD83 OKLAHOMA STATE PLANE COORDINATES, OKLAHOMA NORTH CENTRAL ZONE, SCALED FROM GRID TO SURFACE FROM N. 413334.371, E. 1756872.251 USING AN ADJUSTMENT SCALE FACTOR OF 1.000054. HORIZONTAL CONTROL WAS ESTABLISHED USING POST-PROCESSED STATIC GPS METHODS. VERTICAL DATUM IS NAVD88 ESTABLISHED USING POST-PROCESS STATIC GPS METHODS.

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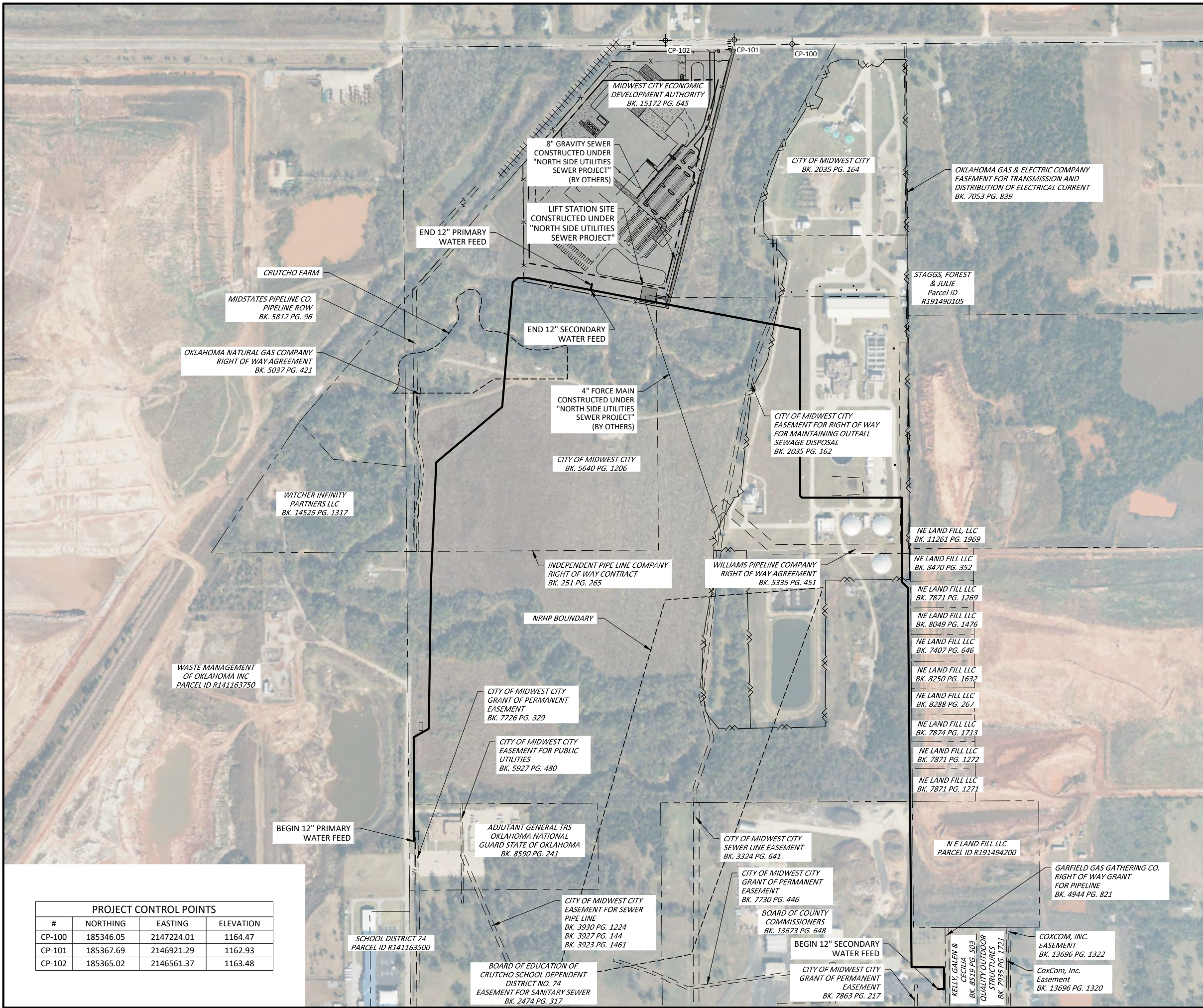
Table with 4 columns: NO., DATE, REVISION, BY. Includes project address: CITY OF MIDWEST CITY, 100 N MIDWEST BOULEVARD, MIDWEST CITY, OK 73110.

CITY OF MIDWEST CITY
NORTH SIDE UTILITIES PROJECT PHASE I
GENERAL
ADDITIONAL GENERAL NOTES I



DESIGNED C. FERGUSON
DRAWN F. CAVE
CHECKED G. FARAH
REVIEWED A. SWARTZ

Seq.
Dwg. No. G-005



PROJECT CONTROL POINTS			
#	NORTHING	EASTING	ELEVATION
CP-100	185346.05	2147224.01	1164.47
CP-101	185367.69	2146921.29	1162.93
CP-102	185365.02	2146561.37	1163.48

531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102
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NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY
 100 N MIDWEST BOULEVARD, MIDWEST CITY,
 OK 73110

CITY OF MIDWEST CITY
 NORTH SIDE UTILITIES PROJECT PHASE I

PROJECT LAYOUT, CONTROL POINTS, AND OWNERSHIP

LICENSED PROFESSIONAL ENGINEER
 CHRISTOPHER FERGUSON
 25576
 OKLAHOMA

IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED C. FERGUSON
 DRAWN F. CAVE
 CHECKED G. FARAH
 REVIEWED A. SWARTZ

Seq. No.

G-006

DWG. No.

G-006

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SAVED: 5/20/2024 9:41 AM SAVED BY: Dstrow USER: Sctow, Denver

3435-003-01

ITEM	DESCRIPTION	QTY	UNIT
1	12-INCH C-900 PVC (DR 18) WATER PIPE (OPEN CUT)	7130	LF
2	12-INCH FUSIBLE C-900 PVC (DR 18) WATER PIPE (HORIZONTAL DIRECTION DRILL)	1680	LF
3	12-INCH FUSIBLE C-900 PVC (DR18) WATER PIPE WITH 18-INCH STEEL ENCASEMENT (BORE)	60	LF
4	12-INCH C-900 (DR18) WATER PIPE WITH 18-INCH STEEL ENCASEMENT (OPEN CUT)	80	LF
5	12-INCH 11.25° DUCTILE IRON BEND (MJ)	2	EA
6	12-INCH 22.5° DUCTILE IRON BEND (MJ)	2	EA
7	12-INCH 45° DUCTILE IRON BEND (MJ)	21	EA
8	12-INCH 90° DUCTILE IRON BEND (MJ)	4	EA
9	6-INCH X 6-INCH TEE (MJ)	1	EA
10	12-INCH X 6-INCH TEE (MJ)	15	EA
11	12-INCH X 12-INCH TEE (MJ)	1	EA
12	12-INCH X 4-INCH REDUCER (MJ)	1	EA
13	12-INCH X 6-INCH REDUCER (MJ)	1	EA
14	8-INCH X 4-INCH REDUCER (MJ)	1	EA
15	12-INCH X 8-INCH REDUCER (MJ)	1	EA
16	8-INCH X 8-INCH TAPPING SLEEVE (MJ)	1	EA
17	12-INCH SOLID SLEEVE (MJ)	2	EA
18	8-INCH TAPPING VALVE AND VALVE BOX (MJ)	1	EA
19	6-INCH GATE VALVE AND VALVE BOX (MJ)	15	EA
20	12-INCH GATE VALVE AND VALVE BOX (MJ)	6	EA
21	12-INCH GATE VALVE (MJ) IN MANHOLE (4')	3	EA
22	FIRE HYDRANT ASSEMBLY	15	EA
23	12-INCH FIRE HYDRANT RISER	15	EA
24	2-INCH COMBINATION AIR RELEASE VALVE AND VAULT	6	EA
25	PROPOSED 4-INCH WATER METER VAULT	1	EA
26	PROPOSED 6-INCH WATER METER VAULT	1	EA
27	CONNECTION TO EXISTING 8-INCH WATER LINE ON SECONDARY FEED AT STA 1+00	1	EA
28	CONNECTION TO EXISTING 12-INCH WATER LINE ON PRIMARY FEED AT STA 1+00	1	EA
29	CONNECTION TO EXISTING 12-INCH WATER LINE ON PRIMARY FEED AT STA 36+87.40	1	EA
30	CONNECTION TO EXISTING 8-INCH WATER LINE ON SECONDARY FEED AT STA 32+75	1	EA
31	UTILITY DOME MARKER	22	EA
32	SEDIMENT AND EROSION CONTROL	1	LS
33	TRENCH SAFETY	7500	LF
34	UTILITY LOCATION AND SUPPORT	7270	LF
33	SEEDING	1	LS
34	PAVEMENT CUT AND PERMANENT REPAIR	220	SY
35	PRESSURE TESTING OF PIPELINES	1	LS
36	DISINFECTION OF PIPELINES	1	LS
37	STORMWATER POLLUTION PREVENTION PLAN DOCUMENTATION AND MANAGEMENT	1	LS
38	MOBILIZATION AND DEMOBILIZATION	1	LS

PLUMMER



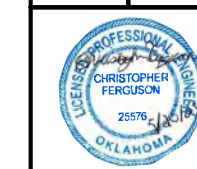
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405-440-2725 | OKLAHOMA FIRM NO. 1097

NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY
NORTH SIDE UTILITIES PROJECT PHASE I

GENERAL
BID QUANTITIES

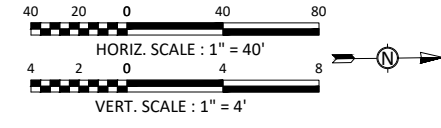
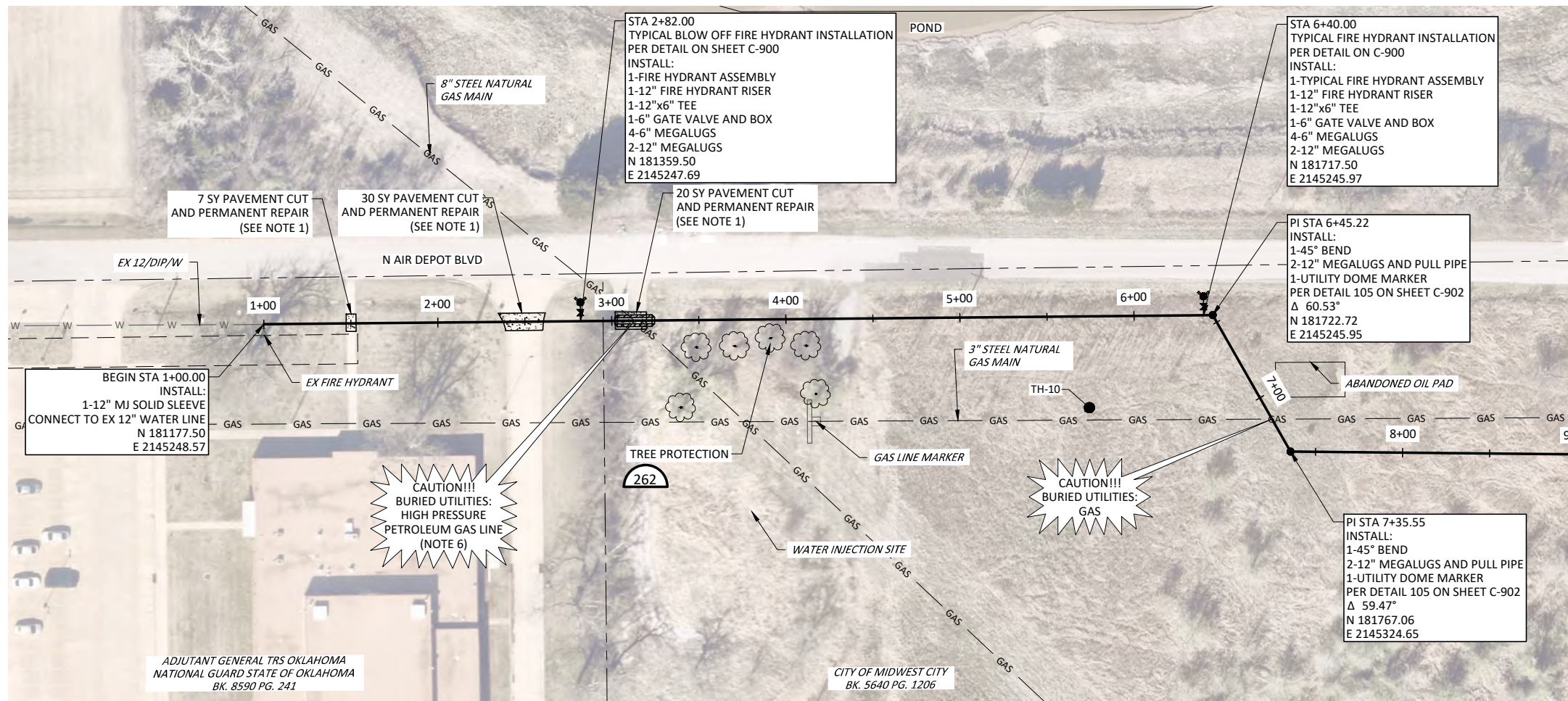
100 N MIDWEST BOULEVARD, MIDWEST CITY,
OK 73110



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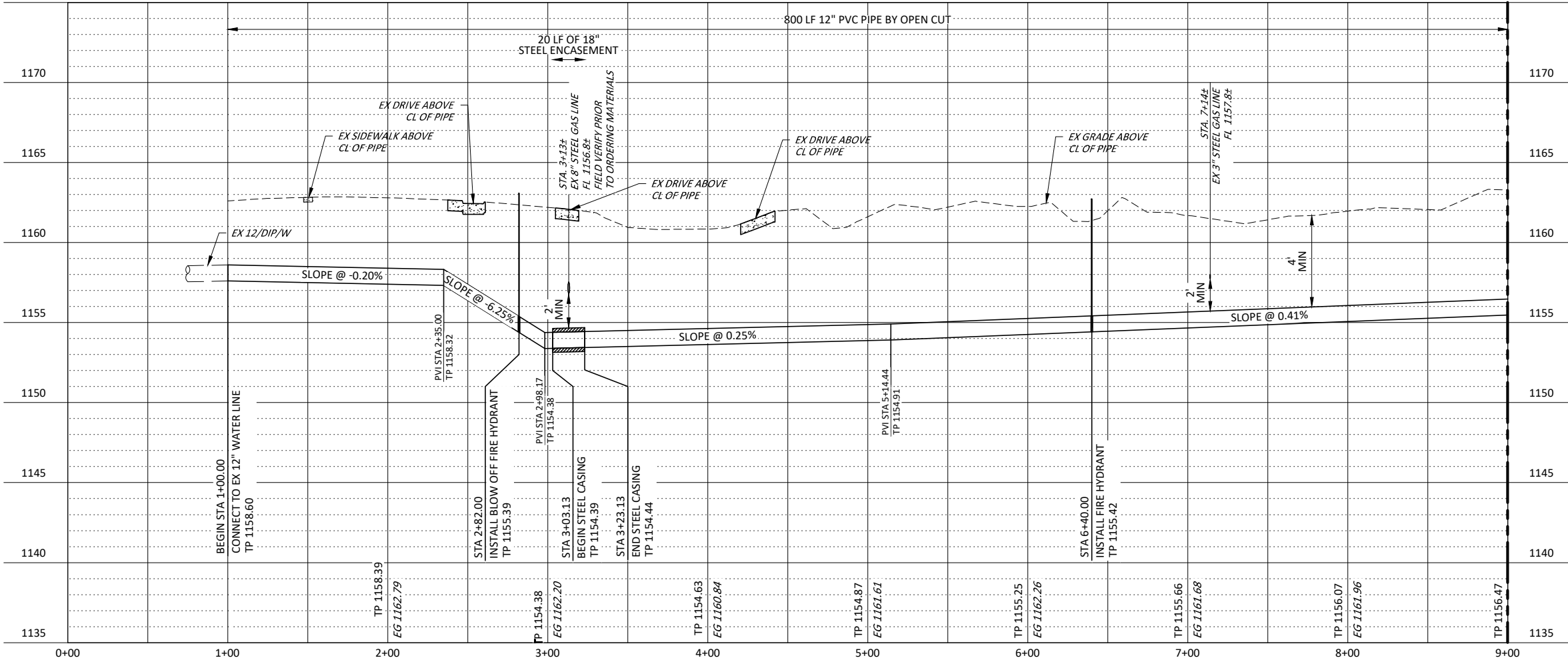
DESIGNED C. FERGUSON
DRAWN F. CAVE
CHECKED G. FARAH
REVIEWED A. SWARTZ

Seq.
Dwg. No. **G-007**
3435-003-01



- NOTES:
- FULL PANEL CONCRETE REPLACEMENT IS REQUIRED.
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 - NO EXCAVATION WITHIN TWENTY FEET OF THE PETROLEUM MAIN ROW UNTIL PROPER TELEPHONE NOTIFICATION HAS BEEN MADE TO 811 AND MEGELAN REPRESENTATIVE IS ON-SITE TO MONITOR EXCAVATION ACTIVITIES.

WARNING
HIGH-PRESSURE PIPELINE(S)
 EXCAVATION AND/OR CONSTRUCTION PROHIBITED WITHOUT COMPLIANCE WITH STATE ONE-CALL, AND WITHOUT WRITTEN PERMISSION FROM MAGELLAN PIPELINE COMPANY, L.P.



TEST HOLE INFORMATION			
NAME	SIZE/TYPE	MATERIAL	DEPTH (FT)
TH-10	3\"/>		

PLUMMER

531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102
 405.440.2725 | OKLAHOMA FIRM NO. 1097

NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY
 100 N MIDWEST BOULEVARD, MIDWEST CITY, OK 73110

CITY OF MIDWEST CITY
 NORTH SIDE UTILITIES PROJECT PHASE I

12" PRIMARY WATER FEED
 PLAN AND PROFILE
 BEGIN STA 1+00 TO STA 9+00

CIVIL
 CHRISTOPHER FERGUSON
 LICENSED PROFESSIONAL ENGINEER
 OKLAHOMA
 25576

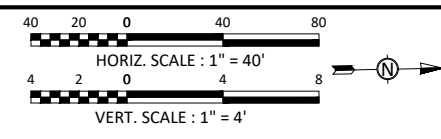
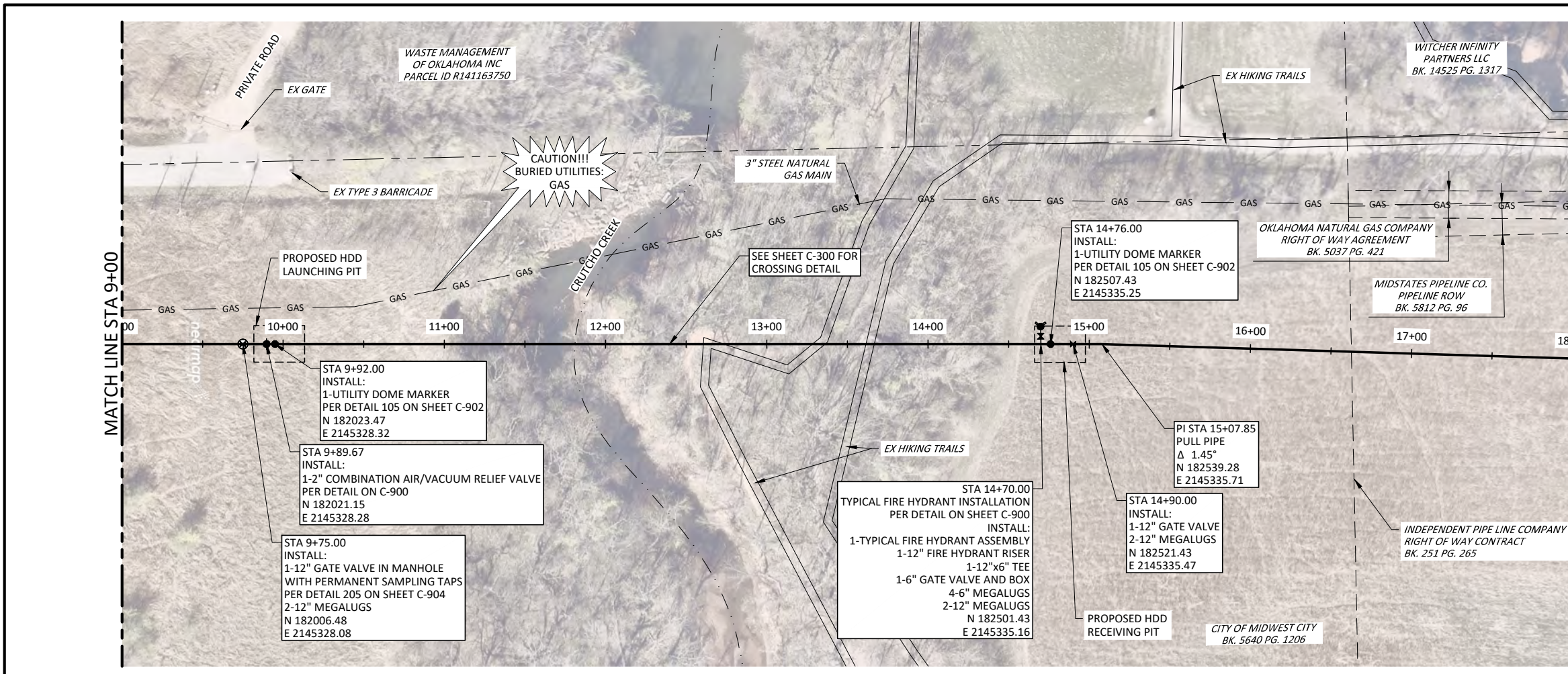
IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED: C. FERGUSON
 DRAWN: F. CAVE
 CHECKED: G. FARAH
 REVIEWED: A. SWARTZ

Seq. No. **C-100**

3435-003-01

PRINTED: 5/20/2024 9:51 AM C:\Users\gcbow\OneDrive\Documents\Plummer\Associates\3435-003-01\WWC_Utility_12\"/>



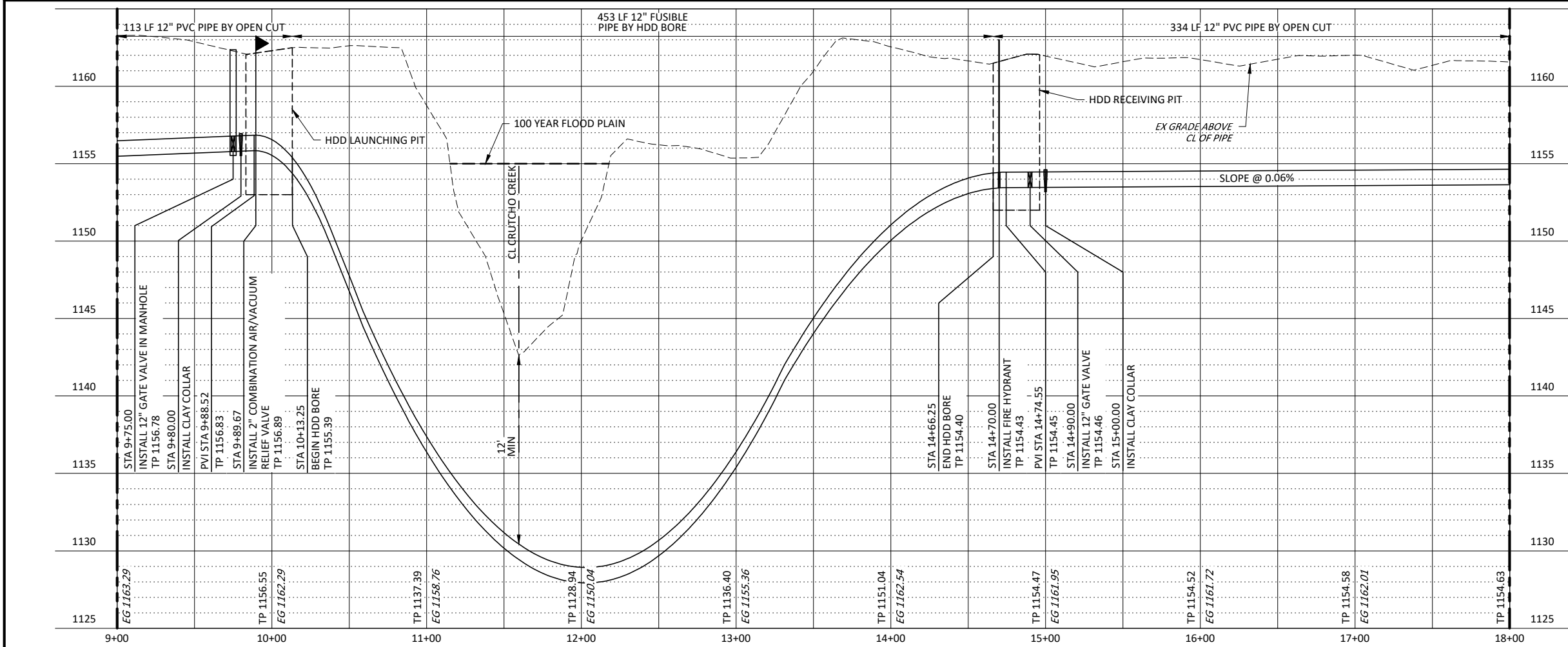
- NOTES:
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PLUMMER

531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102
405-440-2725 | OKLAHOMA FIRM NO. 1097

NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY
100 N MIDWEST BOULEVARD, MIDWEST CITY, OK 73110



CITY OF MIDWEST CITY
NORTH SIDE UTILITIES PROJECT PHASE I

CIVIL
12" PRIMARY WATER FEED
PLAN AND PROFILE
STA 9+00 TO STA 18+00



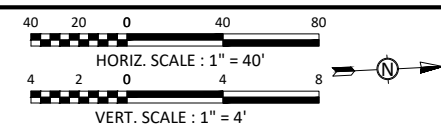
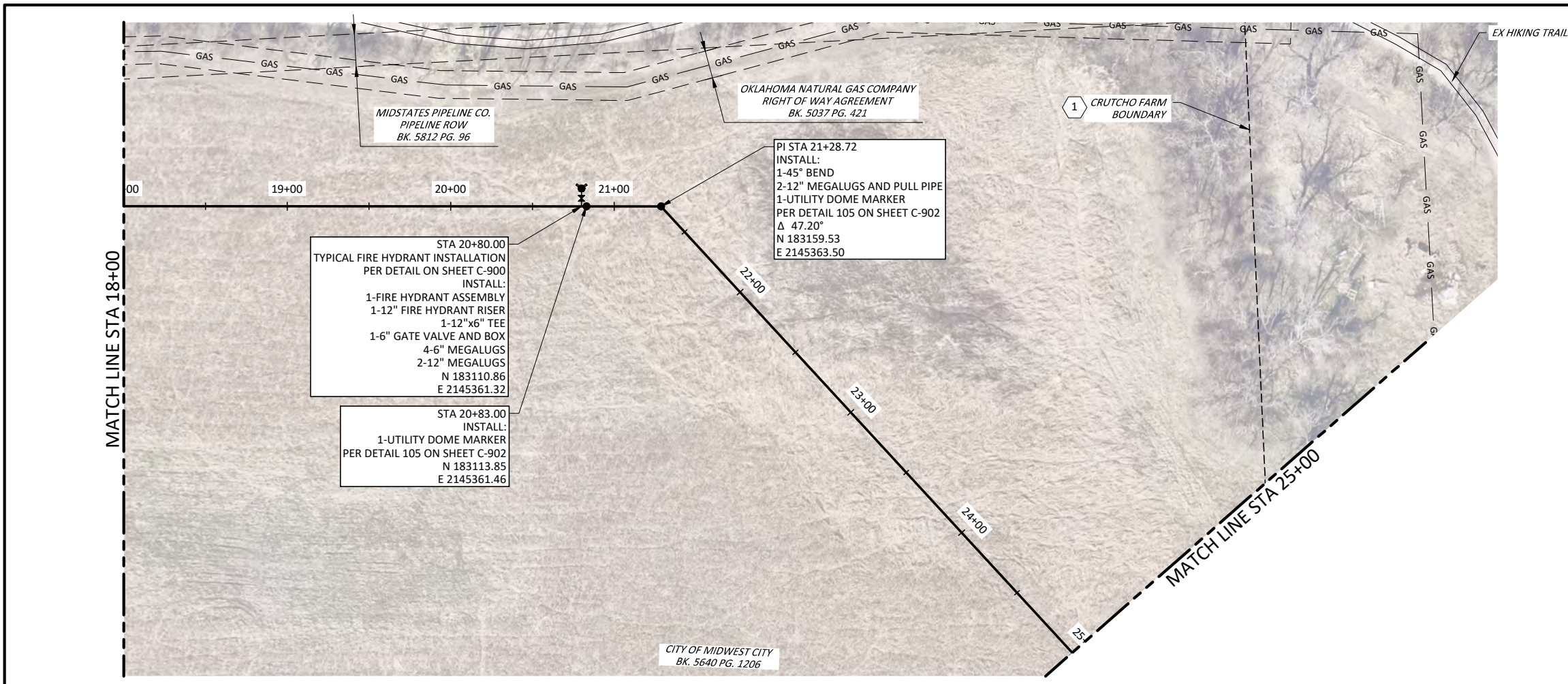
IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED C. FERGUSON
DRAWN F. CAVE
CHECKED G. FARAH
REVIEWED A. SWARTZ

Seq. No. **C-101**

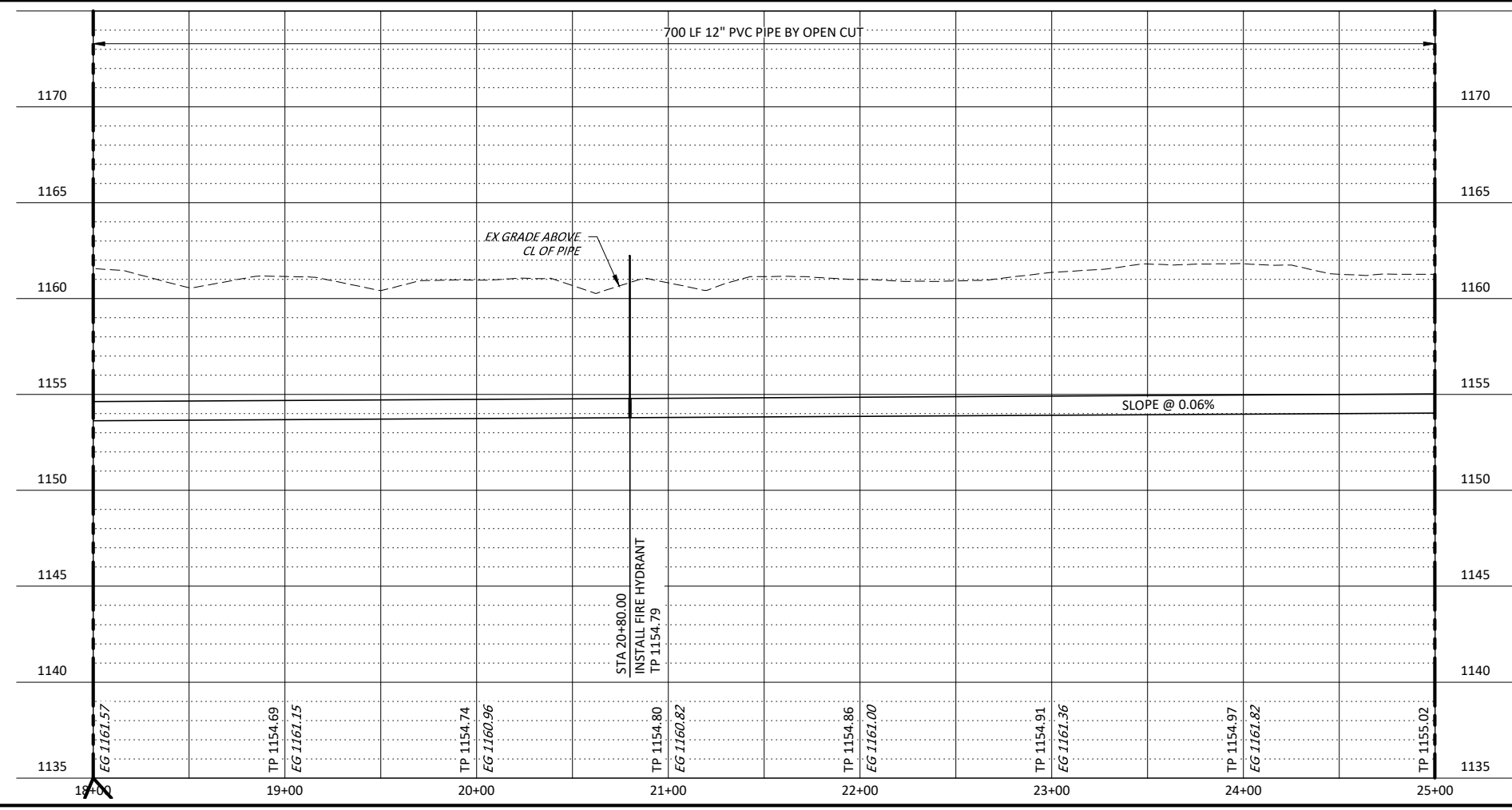
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- NOTES BY SYMBOL " " "
- CONTRACTOR SHALL NOT DISTURB OR TRESPASS ON LAND WITHIN CRUTCHO FARM BOUNDARIES (AREA TO NORTH AND WEST OF BOUNDARY) AT ANY TIME BEFORE, DURING, OR AFTER CONSTRUCTION.



PLUMMER

531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102
405.440.2725 | OKLAHOMA FIRM NO. 1097

NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY
100 N MIDWEST BOULEVARD, MIDWEST CITY, OK 73110

CITY OF MIDWEST CITY
NORTH SIDE UTILITIES PROJECT PHASE I

CIVIL
12" PRIMARY WATER FEED
PLAN AND PROFILE
STA 18+00 TO STA 25+00

3435-003-01

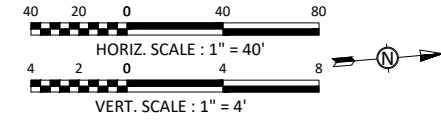
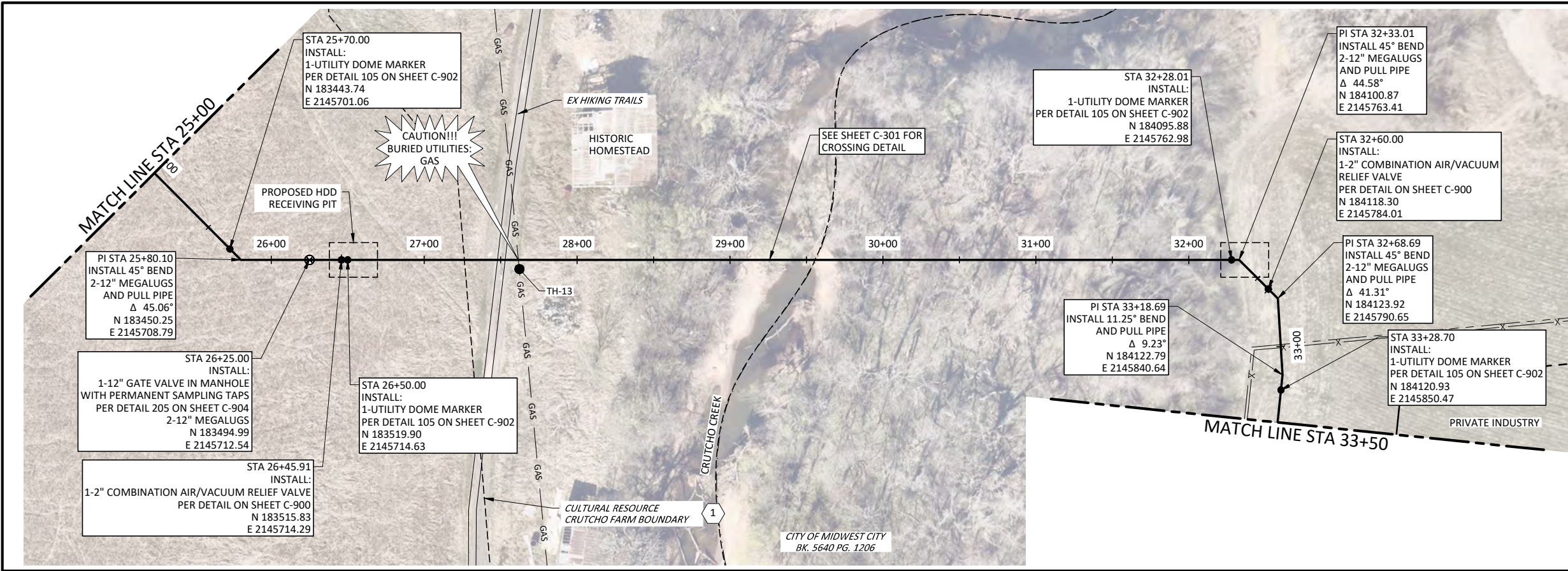
IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED C. FERGUSON
DRAWN F. CAVE
CHECKED G. FARAH
REVIEWED A. SWARTZ

Seq. No. **C-102**

3435-003-01

PRINTED: 5/20/2024 9:52 AM C:\Users\gcbow\OneDrive\Documents\Plummer Associates\3435-003-01\MW-C_Utility_Phase I\Project Files\Plummer\Sheets\Civil\12" Primary Water Feed\12" Primary Water Feed Plan and Profile STA 18+00 to STA 25+00.dwg SAVE: 5/20/2024 9:52 AM SAVED BY: gcbow USER: gcbow, Denver



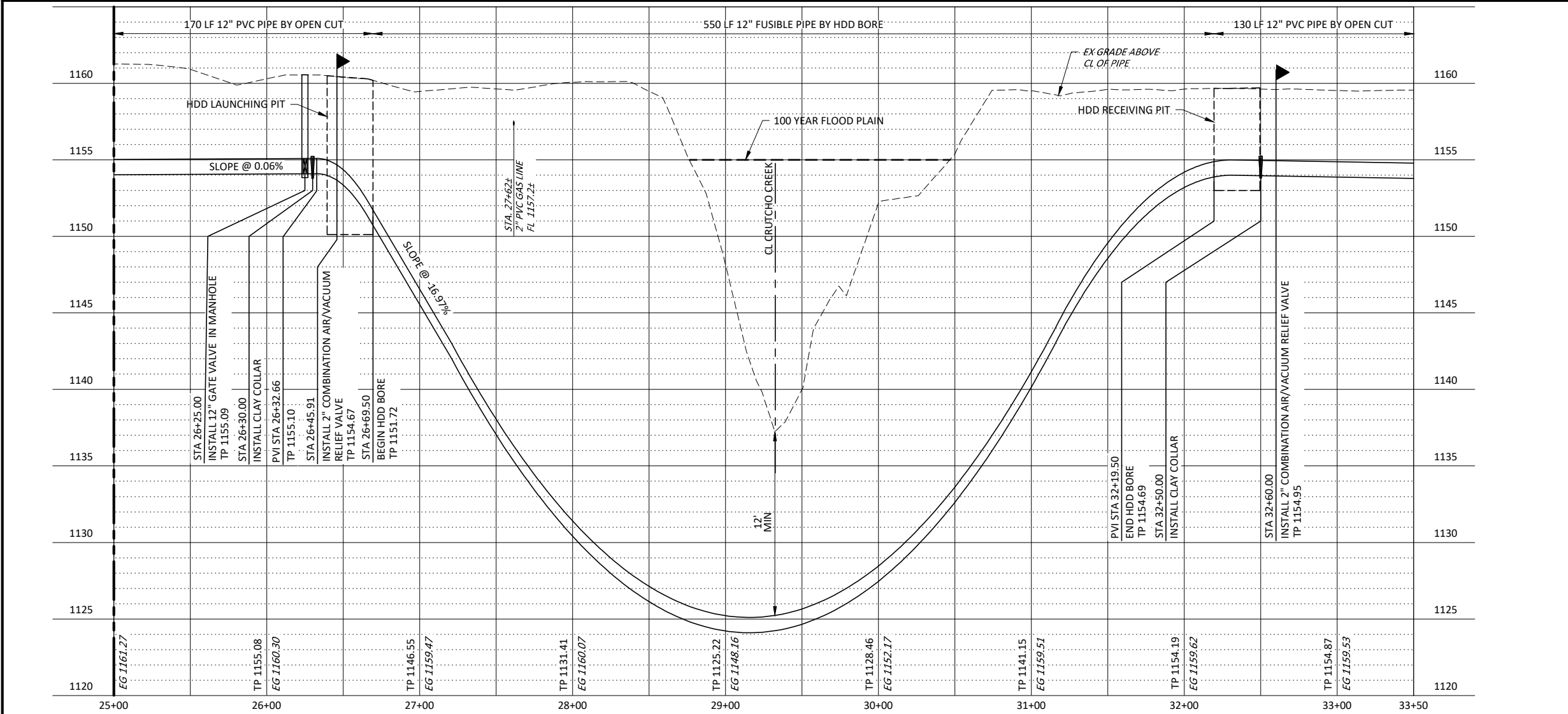
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- CONTRACTOR SHALL NOT DISTURB OR TRESPASS ON LAND WITHIN CRUTCHO FARM BOUNDARIES (AREA TO NORTH AND WEST OF BOUNDARY) AT ANY TIME BEFORE, DURING, OR AFTER CONSTRUCTION.

PLUMMER
531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102
405-440-2725 | OKLAHOMA FIRM NO. 1097

NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY
100 N MIDWEST BOULEVARD, MIDWEST CITY, OK 73110



TEST HOLE INFORMATION			
NAME	SIZE/TYPE	MATERIAL	DEPTH (FT)
TH-13	2"/NG	PVC	3.08

CITY OF MIDWEST CITY
NORTH SIDE UTILITIES PROJECT PHASE I

CIVIL

12" PRIMARY WATER FEED
PLAN AND PROFILE
STA 25+00 TO END STA 33+50

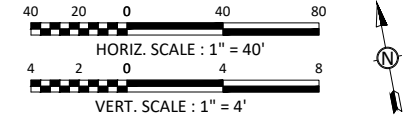
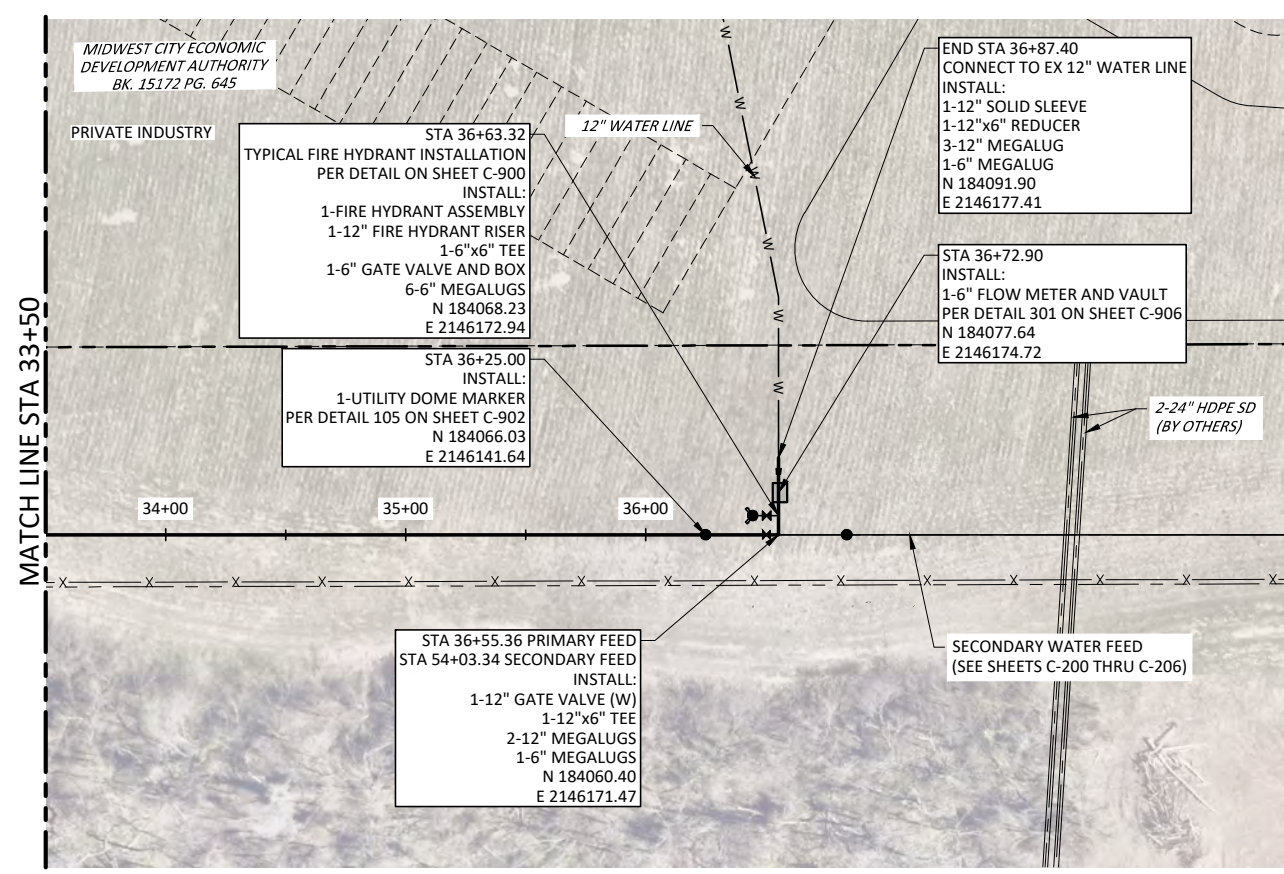
IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED C. FERGUSON
DRAWN F. CAVE
CHECKED G. FARAH
REVIEWED A. SWARTZ

Seq. No. **C-103**

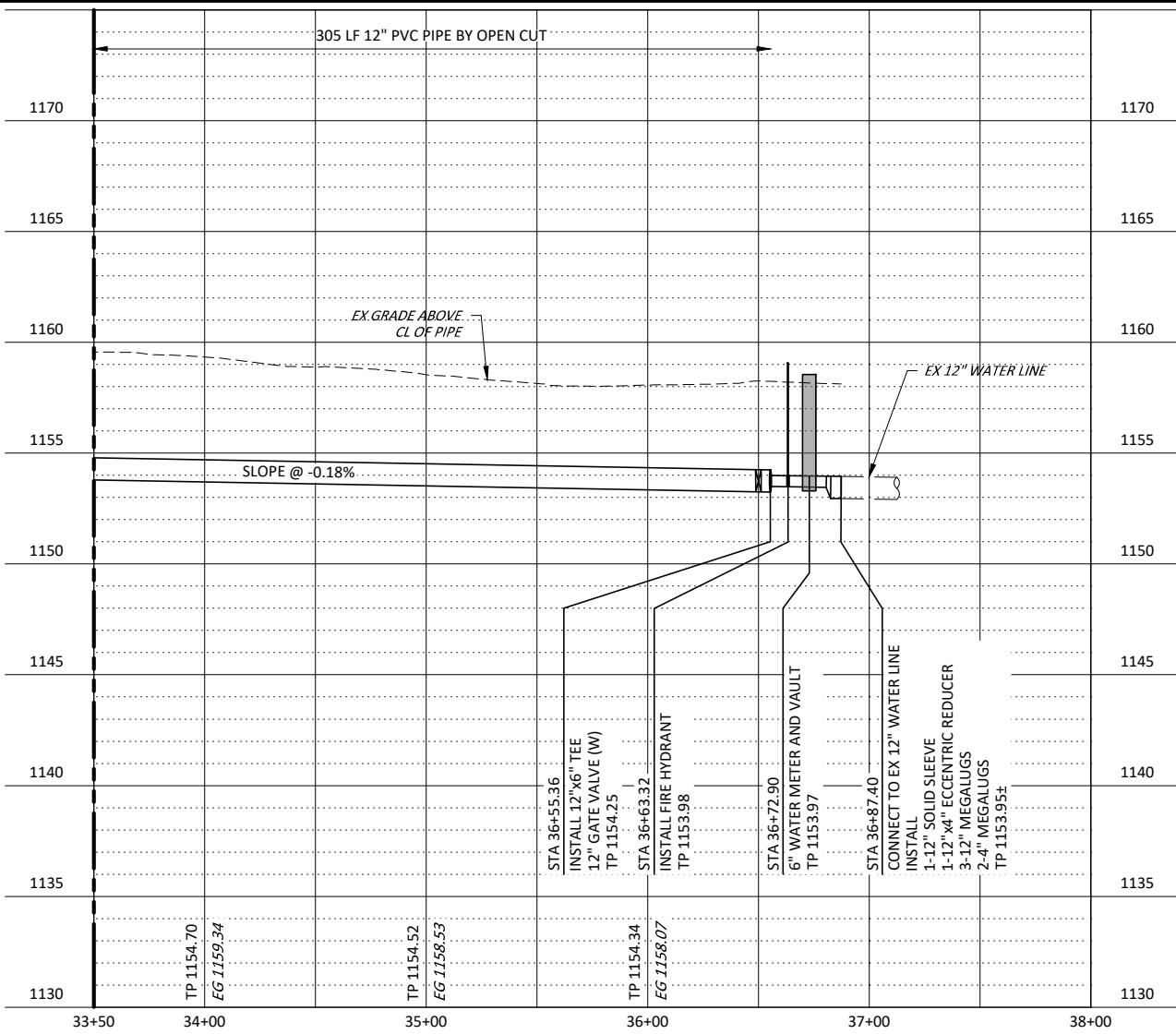
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531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102
 405.440.2725 | OKLAHOMA FIRM NO. 1097

NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY
100 N MIDWEST BOULEVARD, MIDWEST CITY,
OK 73110

CIVIL
 12" PRIMARY WATER FEED
 PLAN AND PROFILE
 STA 33+50 TO END STA 36+81.50

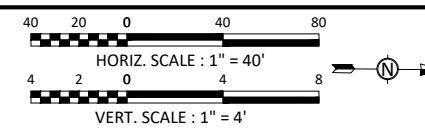
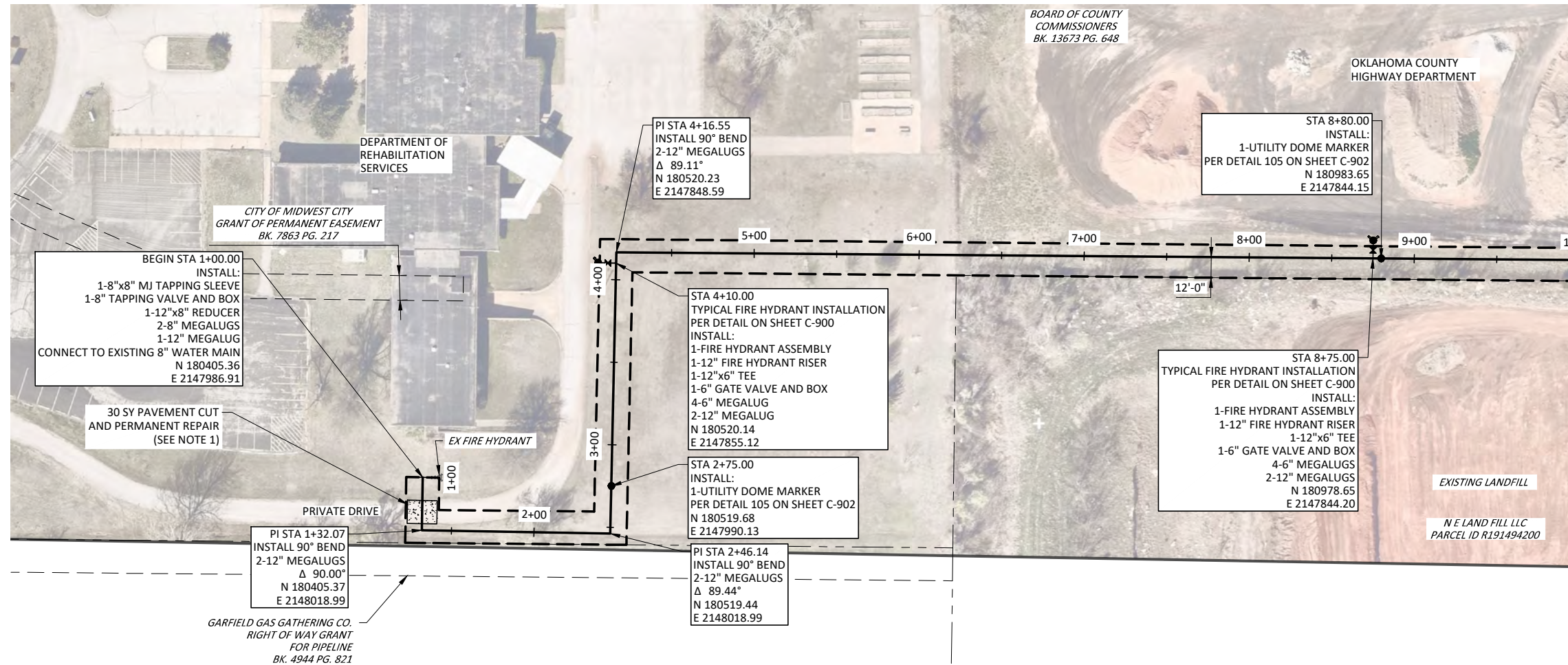
IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED	C. FERGUSON
DRAWN	F. CAVE
CHECKED	G. FARAH
REVIEWED	A. SWARTZ

Seq. _____
 Dwg. No. **C-104**

3435-003-01

PRINTED: 5/20/2024 9:52 AM C:\Users\gcbow\OneDrive\Documents\Plummer Associates\3435-003-01\WWC_Utility_Ph1\Project Files\Plummer\Sheets\Civil\12" Primary Water Feed\12" Primary Water Feed Plan and Profile.dwg
 USER: Schow, Danner



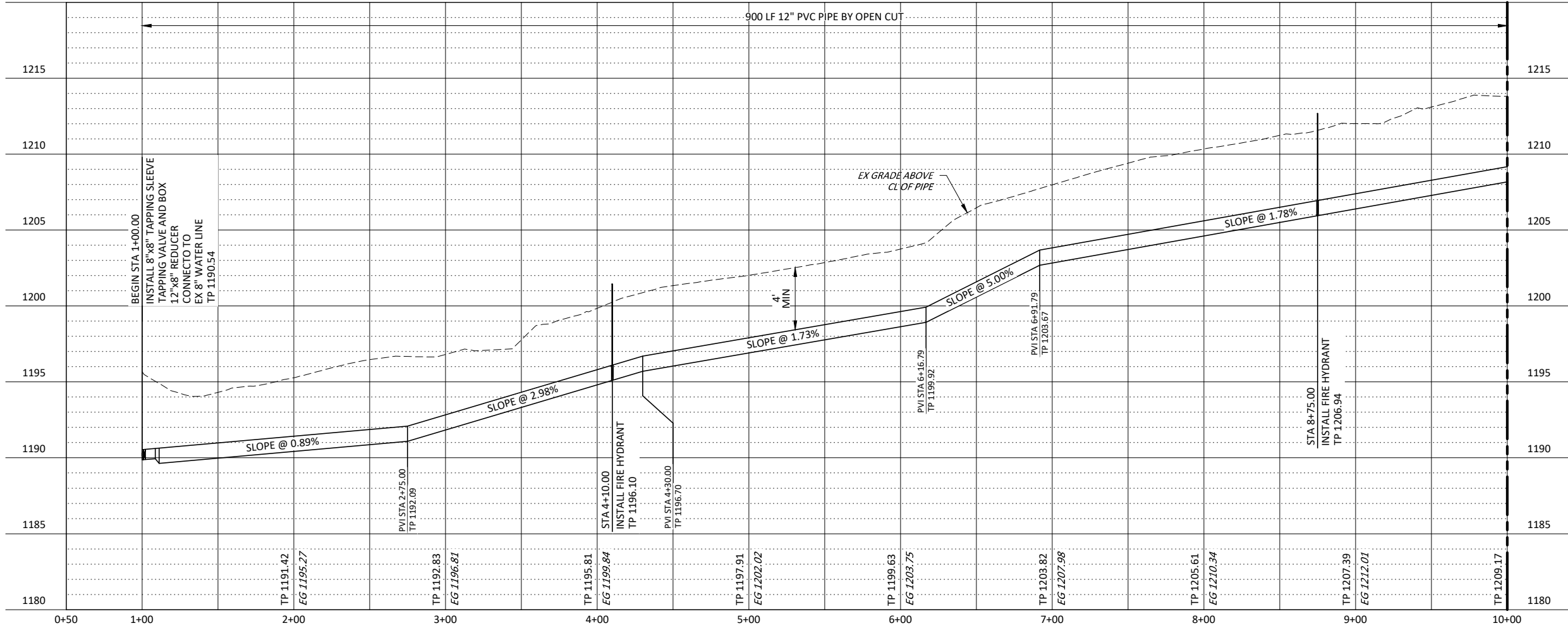
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PLUMMER

531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102
405-440-2725 | OKLAHOMA FIRM NO. 1097

NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY
100 N MIDWEST BOULEVARD, MIDWEST CITY, OK 73110



CITY OF MIDWEST CITY
NORTH SIDE UTILITIES PROJECT PHASE I

CIVIL
12" SECONDARY WATER FEED
PLAN AND PROFILE
BEGIN STA 1+00 TO STA 10+00



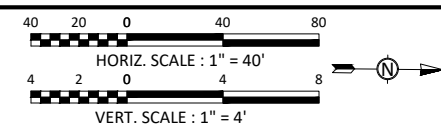
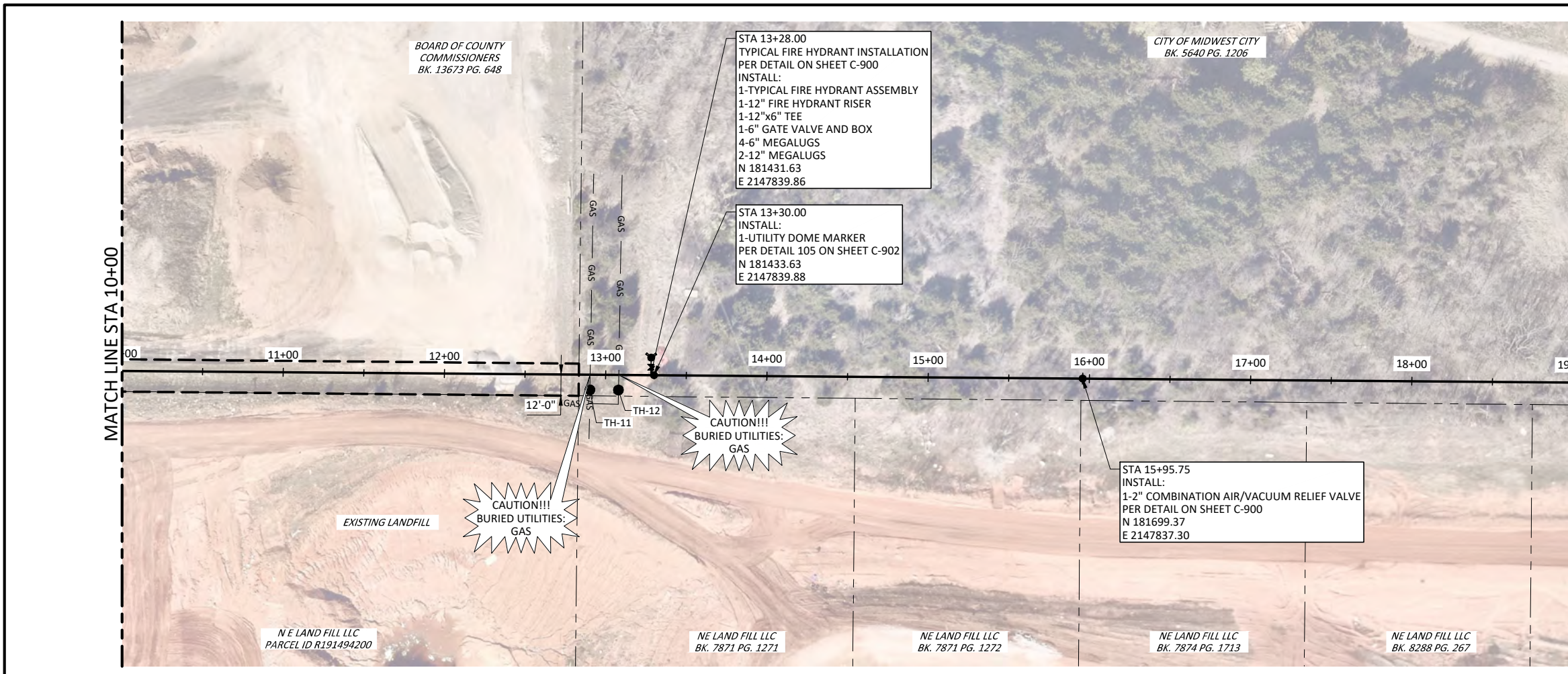
IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED C. FERGUSON
DRAWN F. CAVE
CHECKED G. FARAH
REVIEWED A. SWARTZ

Seq. No. **C-200**

3435-003-01

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PLUMMER

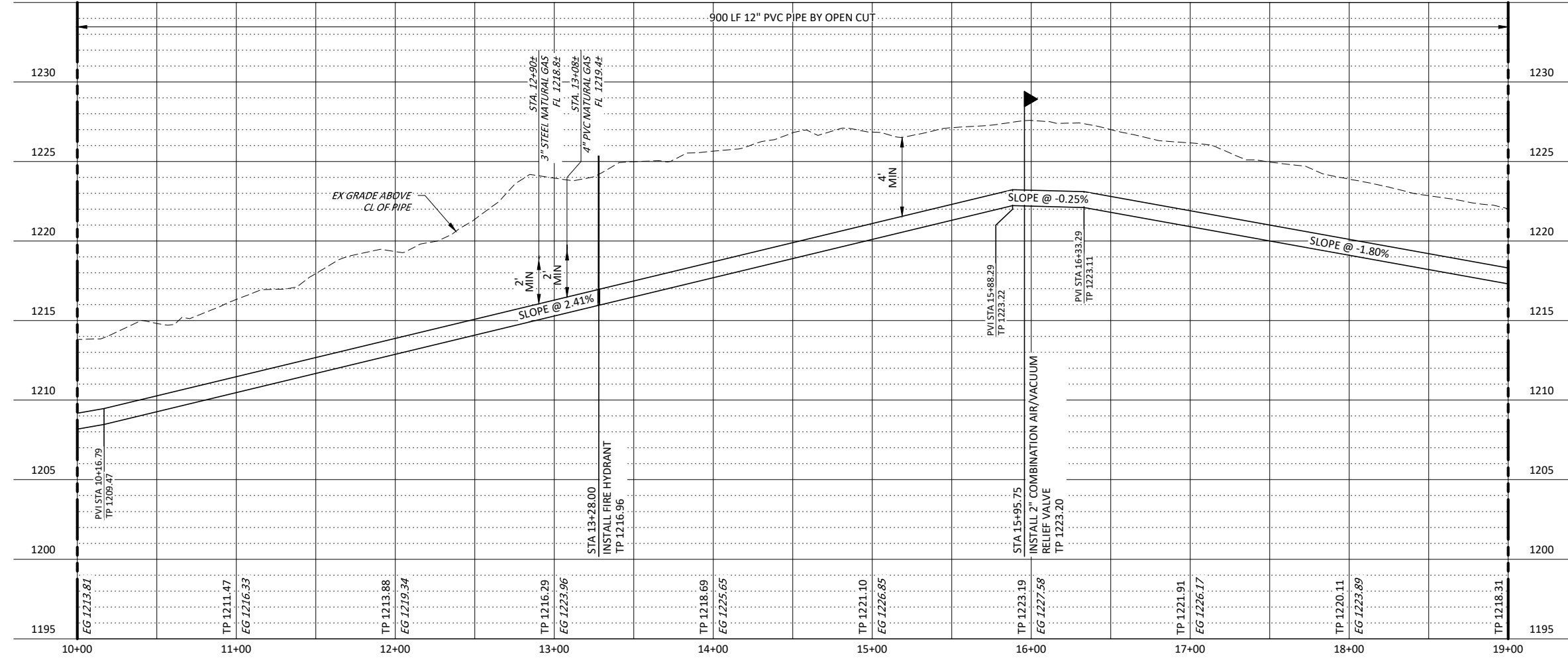
531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102
405-440-2725 | OKLAHOMA FIRM NO. 1097

NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY
100 N MIDWEST BOULEVARD, MIDWEST CITY, OK 73110

CITY OF MIDWEST CITY
NORTH SIDE UTILITIES PROJECT PHASE I

CIVIL
12" SECONDARY WATER FEED
PLAN AND PROFILE
STA 10+00 TO STA 19+00



TEST HOLE INFORMATION			
NAME	SIZE/TYPE	MATERIAL	DEPTH (FT)
TH-11	3"/NG	STEEL	UNK
TH-12	4"/NG	PE	2.17



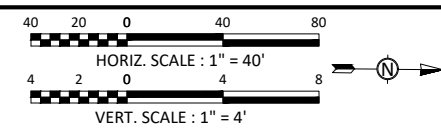
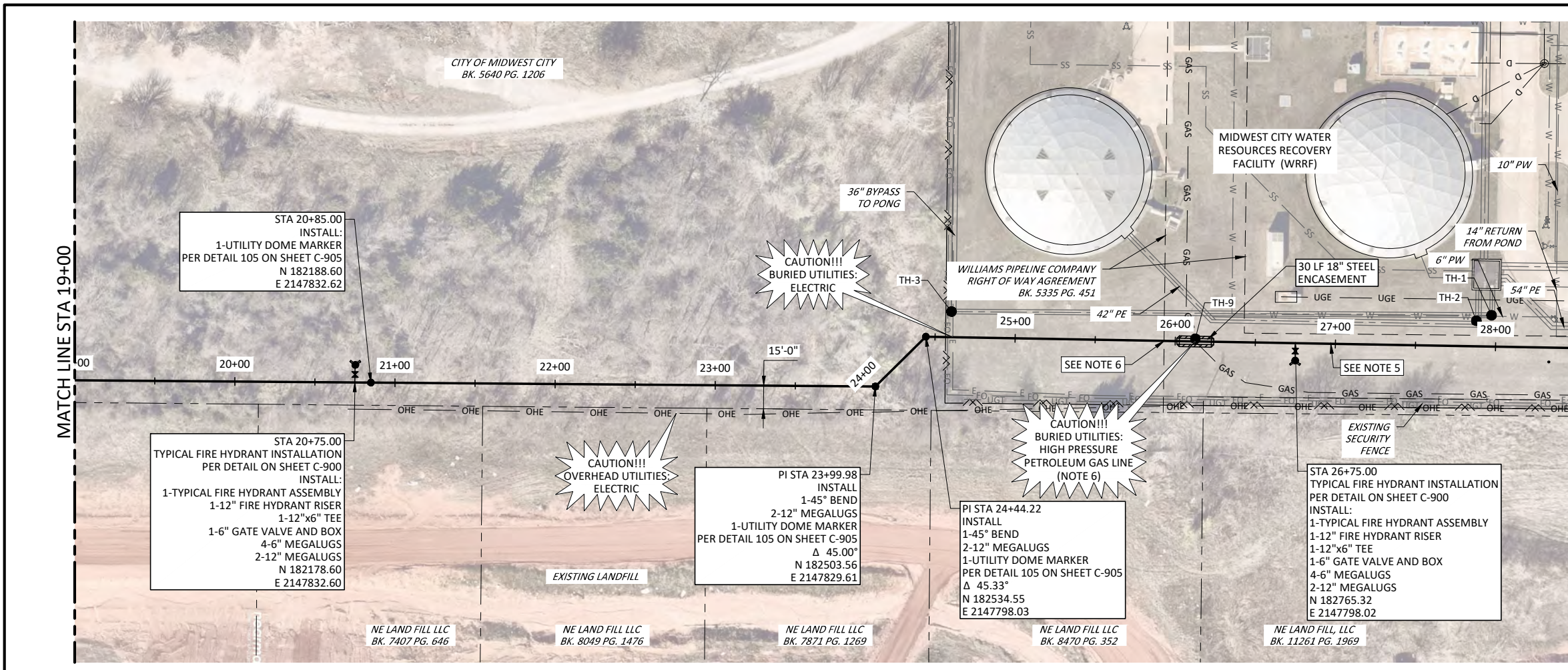
IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED: C. FERGUSON
DRAWN: F. CAVE
CHECKED: G. FARAH
REVIEWED: A. SWARTZ

Seq. No. **C-201**

3435-003-01

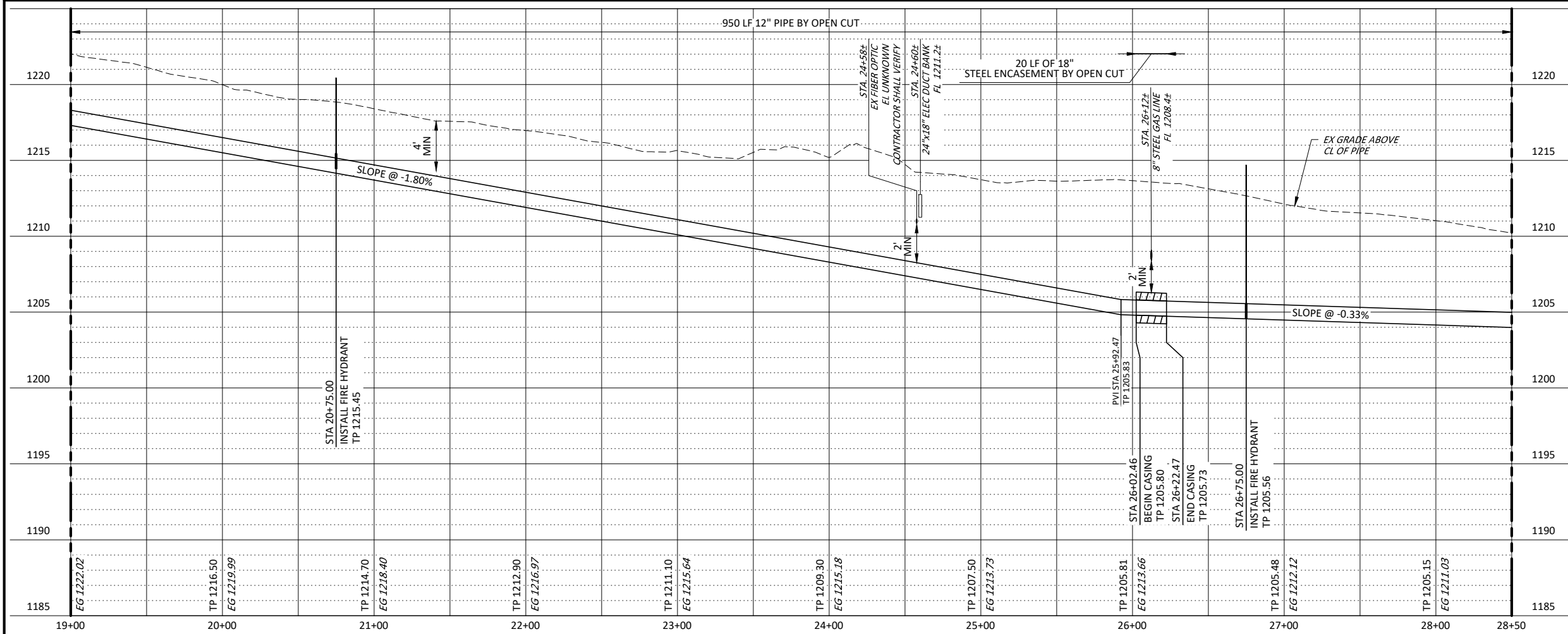
PRINTED: 5/20/2024 9:53 AM C:\Users\gcbow\OneDrive\Documents\Plummer\Projects\Files\Plummer\Sheets\Civil\12\"/>



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 - WARNING TAPE MINIMUM 15" ABOVE WATER LINE DIRECTLY OVER THE WATER PIPELINE FOR THE ENTIRE DISTANCE THAT IT IS ON THE GAS COMPANY ROW.
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**WARNING
HIGH-PRESSURE PIPELINE(S)**

EXCAVATION AND/OR CONSTRUCTION PROHIBITED WITHOUT COMPLIANCE WITH STATE ONE-CALL, AND WITHOUT WRITTEN PERMISSION FROM MAGELLAN PIPELINE COMPANY, L.P.



TEST HOLE INFORMATION			
NAME	SIZE/TYPE	MATERIAL	DEPTH (FT)
TH-1A	36"/SEWER	DIP	6.0
TH-1B	2"/IRR WATER	PVC	1.0
TH-2A	36"/SEWER	DIP	6.92
TH-2B	24"x18"/ELEC	CONC	1.25
TH-3	36"/SEWER	DIP	13.92
TH-9	8"/PETROLEUM	STEEL	4.42

531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102
 405-440-2725 | OKLAHOMA FIRM NO. 1097

NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY
 100 N MIDWEST BOULEVARD, MIDWEST CITY,
 OK 73110

CITY OF MIDWEST CITY
 NORTH SIDE UTILITIES PROJECT PHASE I

CIVIL
 12" SECONDARY WATER FEED
 PLAN AND PROFILE
 STA 19+00 TO STA 28+50

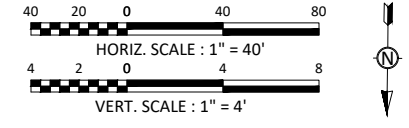
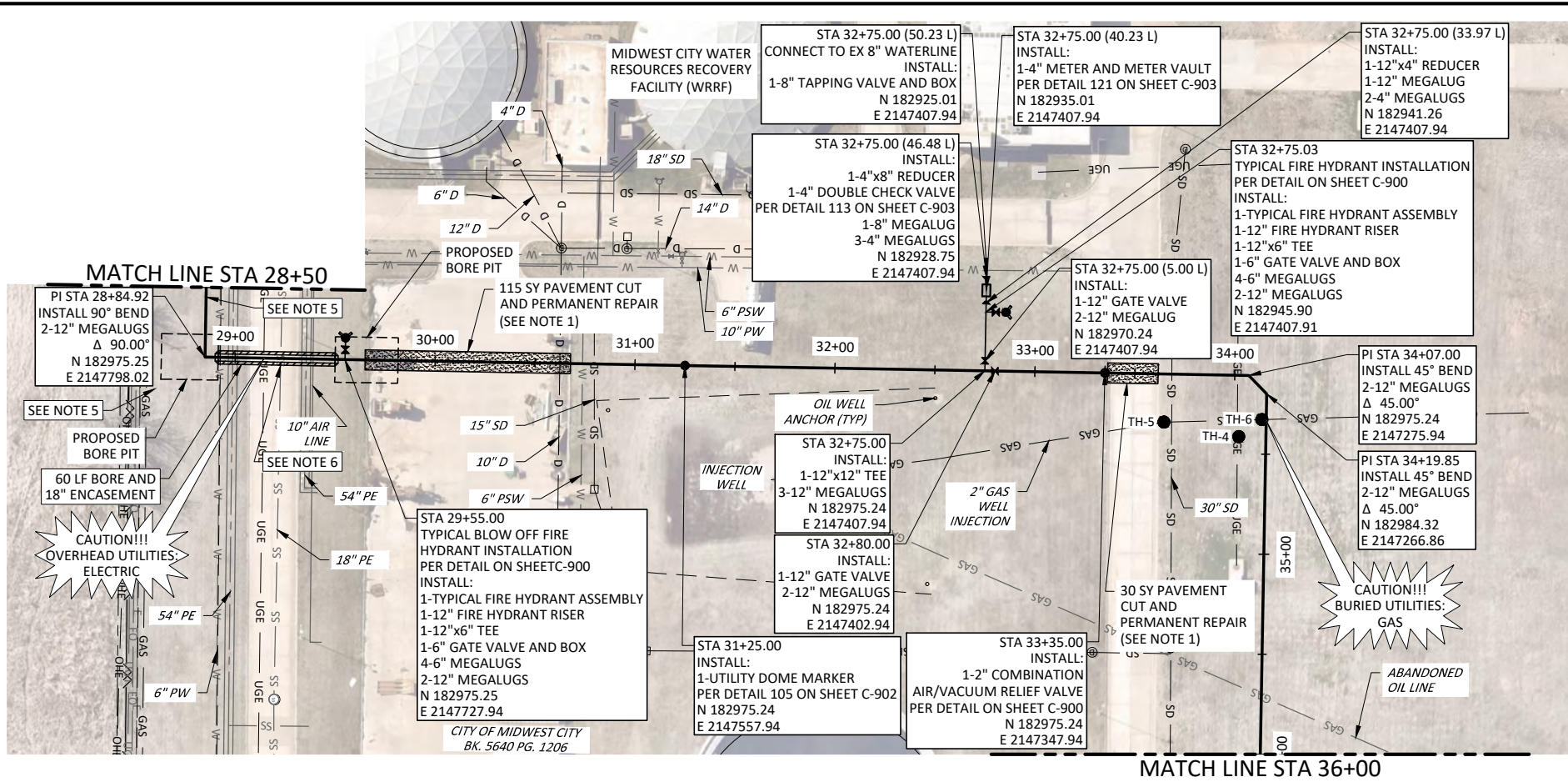
IF THIS BAR DOES NOT
 MEASURE ONE INCH,
 DRAWING IS NOT TO
 LABELED SCALE

DESIGNED	C. FERGUSON
DRAWN	F. CAVE
CHECKED	G. FARAH
REVIEWED	A. SWARTZ

Seq.
 Dwg. No.

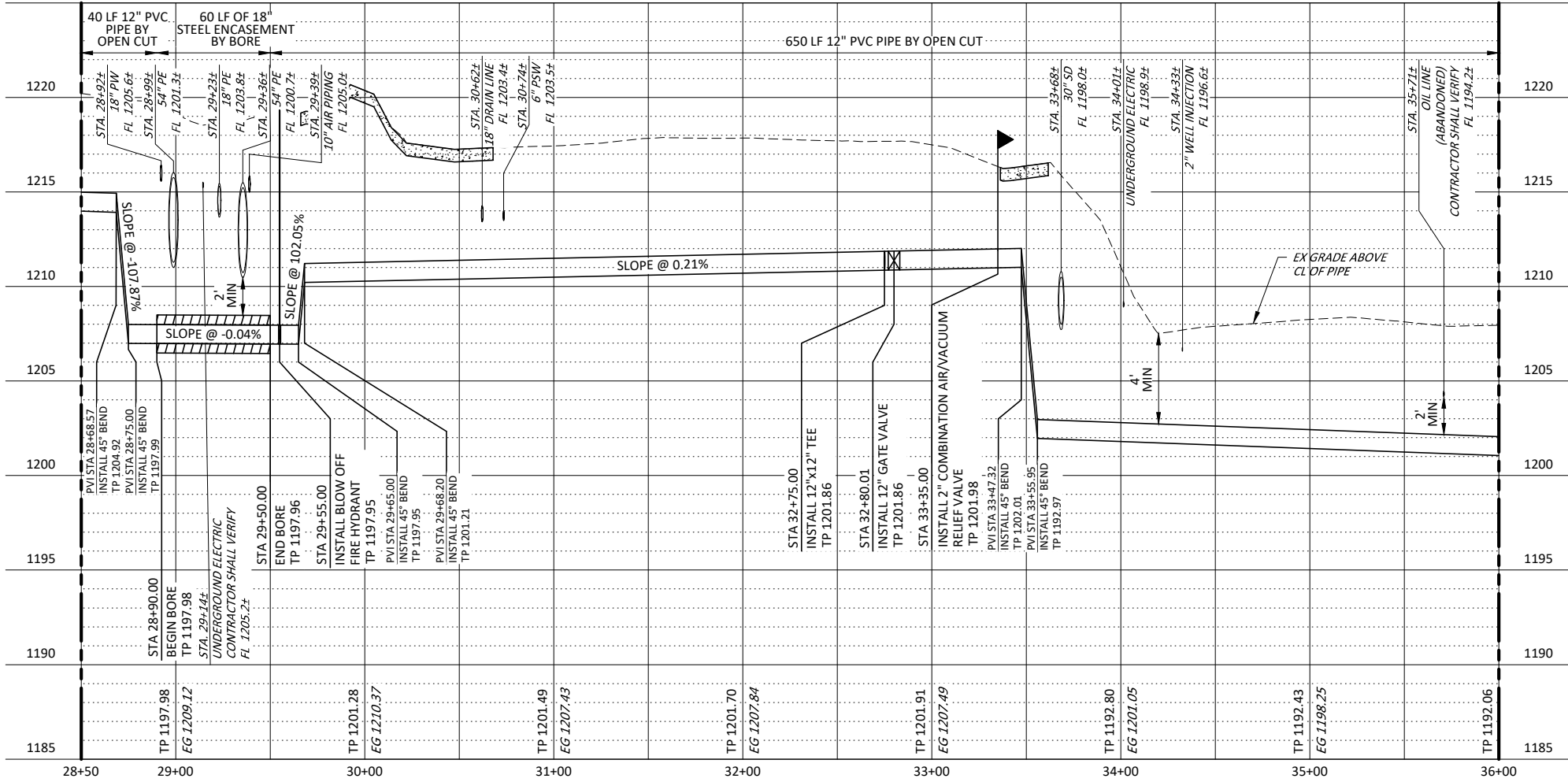
C-202

3435-003-01



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WARNING
HIGH-PRESSURE PIPELINE(S)
 EXCAVATION AND/OR CONSTRUCTION PROHIBITED WITHOUT COMPLIANCE WITH STATE ONE-CALL, AND WITHOUT WRITTEN PERMISSION FROM MAGELLAN PIPELINE COMPANY, L.P.



TEST HOLE INFORMATION			
NAME	SIZE/TYPE	MATERIAL	DEPTH (FT)
TH-4	4"/W/ELEC	CONC	1.75
TH-5	2"/GAS	STEEL	3.58
TH-6	2"/GAS	STEEL	1.17

531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102
 405.440.2725 | OKLAHOMA FIRM NO. 1097

CITY OF MIDWEST CITY
 NORTH SIDE UTILITIES PROJECT PHASE I

100 N MIDWEST BOULEVARD, MIDWEST CITY,
 OK 73110

CIVIL

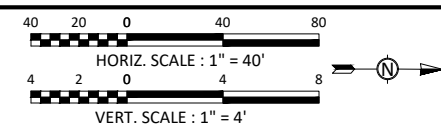
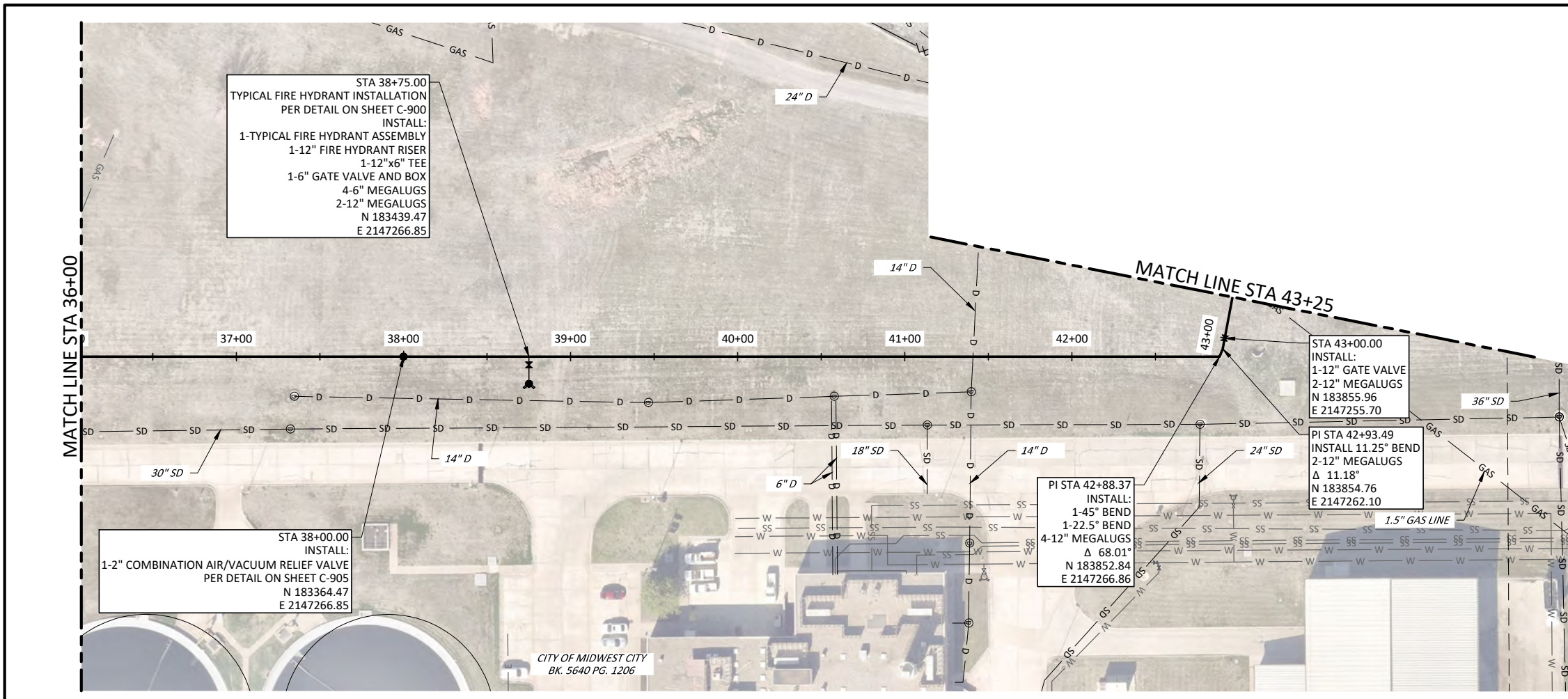
12" SECONDARY WATER FEED
 PLAN AND PROFILE
 STA 28+50 TO STA 36+00

IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED C. FERGUSON
 DRAWN F. CAVE
 CHECKED G. FARAH
 REVIEWED A. SWARTZ

Dwg. No. **C-203**

3435-003-01



- NOTES:
- CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO ORDERING PIPE. OKLAHOMA NATURAL GAS PIPE SHALL ONLY BE LOCATED BY HYDROVAC EXCAVATION. CONTRACTOR SHALL CONTACT THE OWNER AND THE ENGINEER IF ANY POTENTIAL CONFLICTS ARE IDENTIFIED.
 - CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORT FOR EXISTING OVERHEAD UTILITIES AND FOR UNDERGROUND UTILITIES THAT WILL BE CROSSED DURING AN OPEN CUT INSTALLATION.
 - CONTRACTOR SHALL CONTACT FRANCHISE UTILITIES OR CALL 811 PRIOR TO CROSSING. REFER TO UTILITY SPECIFICATION SECTION 01 12 16, SEQUENCE OF CONSTRUCTION. REFER TO THE GENERAL NOTES FOR FRANCHISE UTILITY CONTACT INFORMATION.
 - CONTRACTOR SHALL PROTECT EXISTING SIGNS/MARKERS IN THE PROJECT AREA. IF THE CONTRACTOR SIGNS/MARKERS BECOME DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE THE SIGNS/MARKERS AT THEIR EXPENSE.

PLUMMER

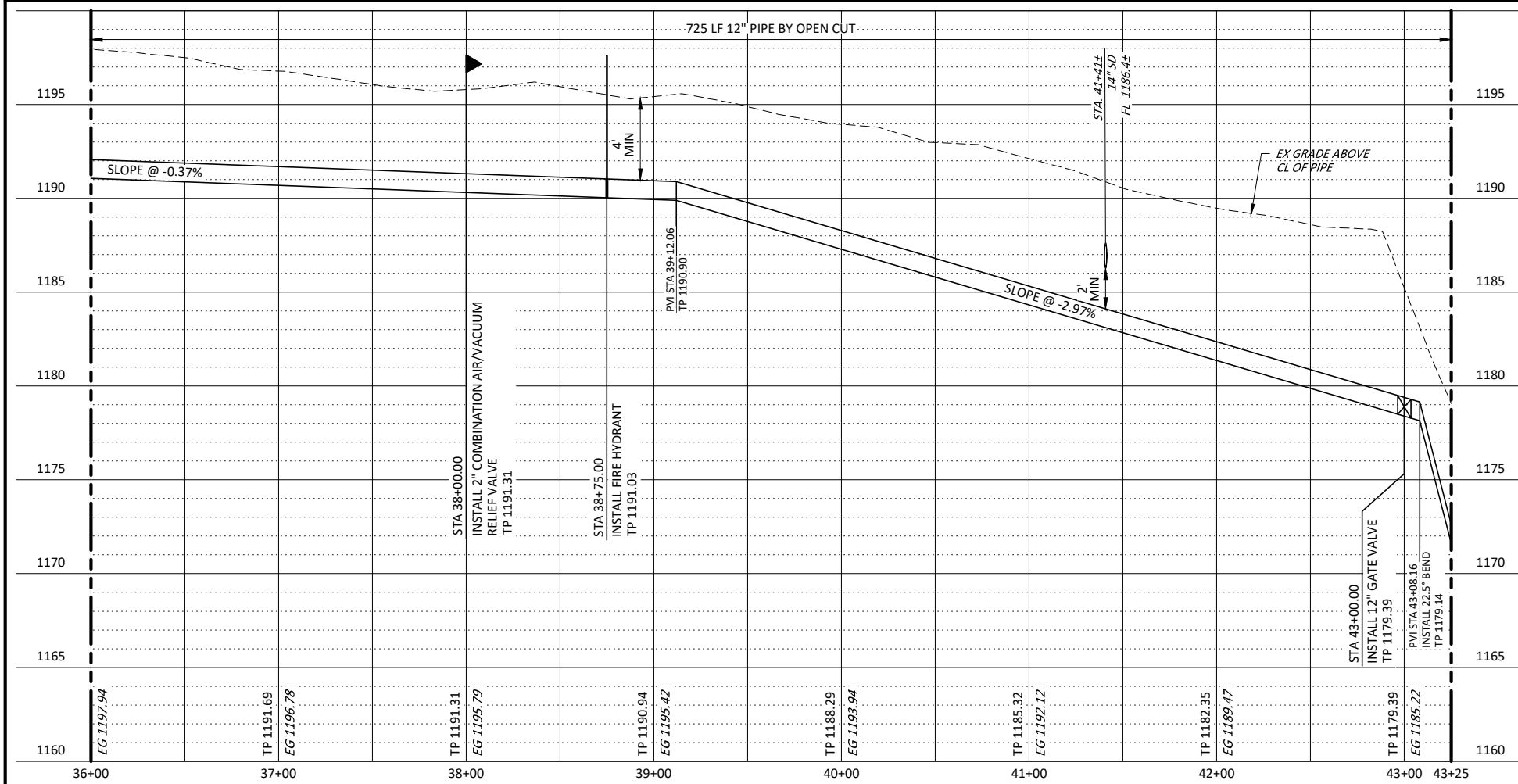
531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102
405-440-2725 | OKLAHOMA FIRM NO. 1097

NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY
NORTH SIDE UTILITIES PROJECT PHASE I

CIVIL
12" SECONDARY WATER FEED
PLAN AND PROFILE
STA 36+00 TO STA 43+25

100 N MIDWEST BOULEVARD, MIDWEST CITY,
OK 73110

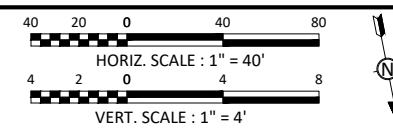
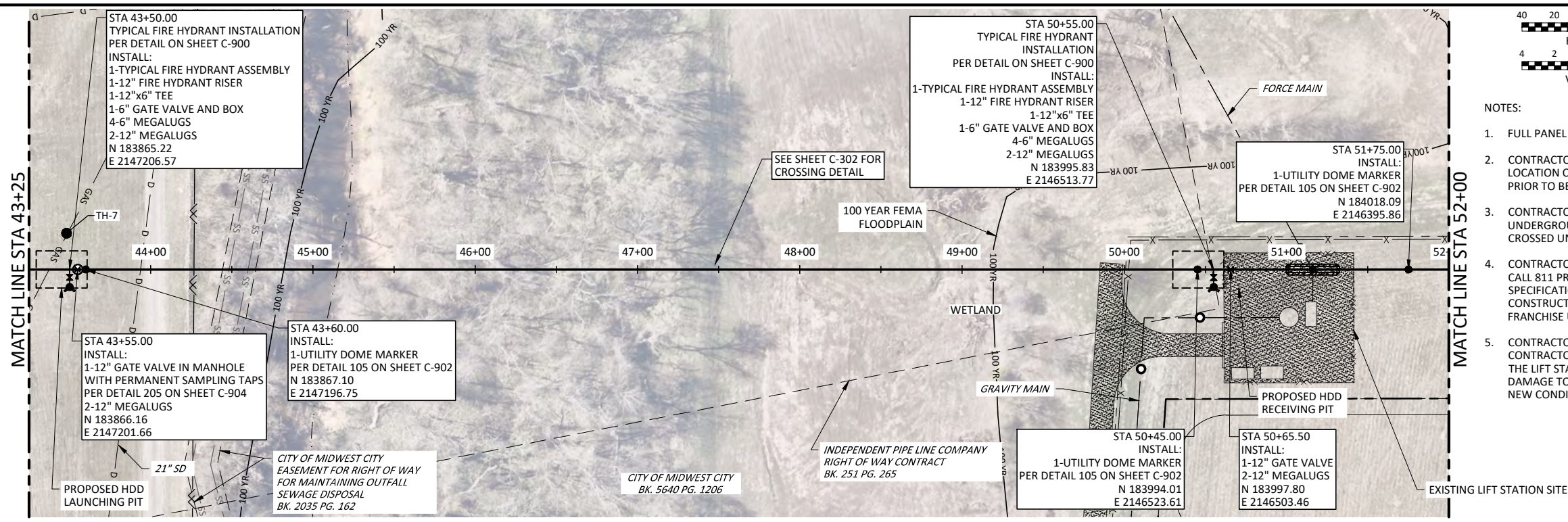


IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED C. FERGUSON
DRAWN F. CAVE
CHECKED G. FARAH
REVIEWED A. SWARTZ

Seq. No. **C-204**

3435-003-01



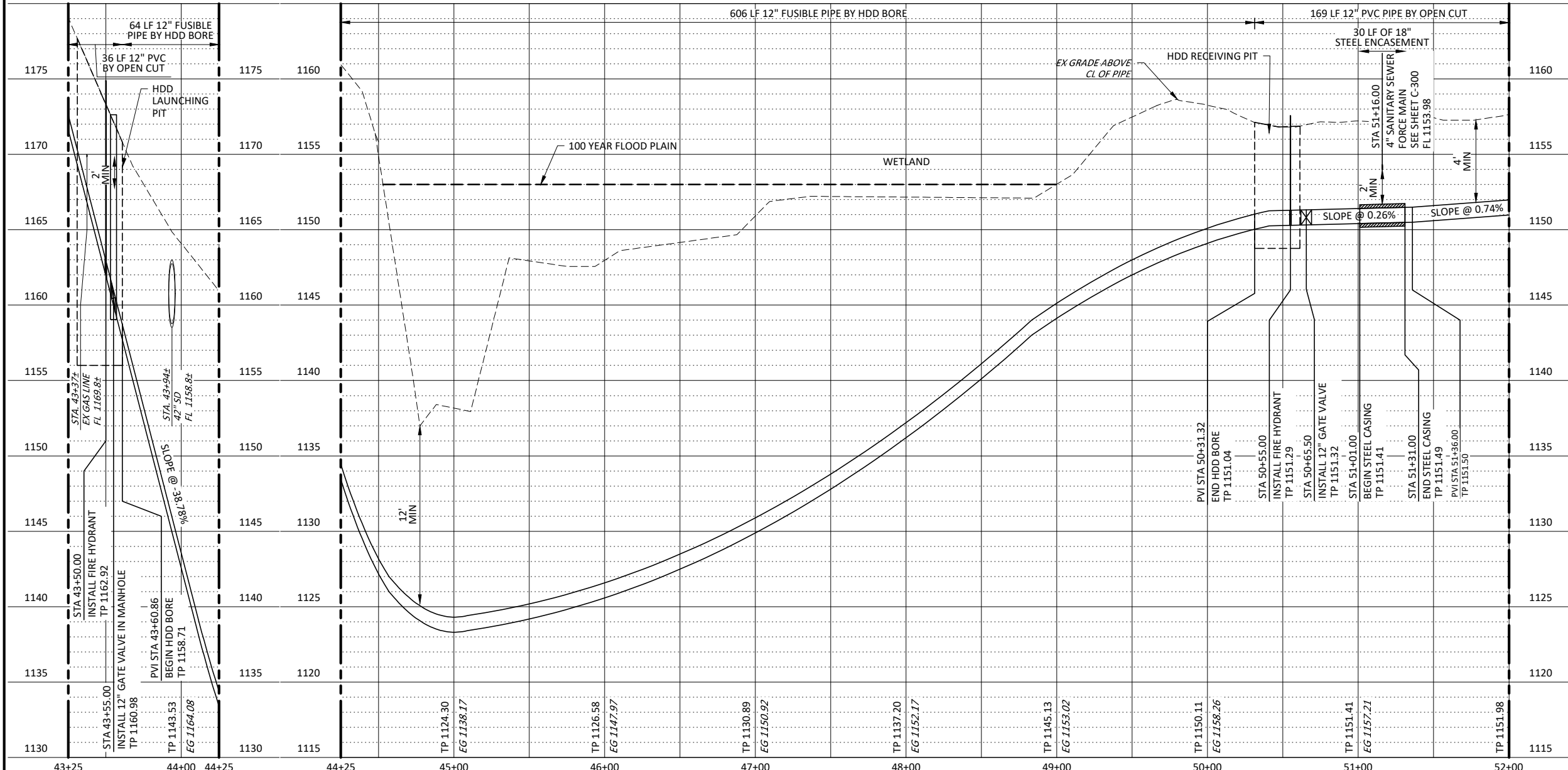
- NOTES:
- FULL PANEL CONCRETE REPLACEMENT IS REQUIRED.
 - CONTRACTOR SHALL VERIFY VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UTILITIES AND STRUCTURES PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
 - CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORT FOR UNDERGROUND UTILITIES THAT WILL BE PARALLELED OR CROSSED UNDER AN OPEN CUT.
 - CONTRACTOR SHALL CONTACT FRANCHISE UTILITIES OR CALL 811 PRIOR TO CROSSING. REFER TO UTILITY SPECIFICATION SECTION 01 12 16, SEQUENCE OF CONSTRUCTION. REFER TO THE GENERAL NOTES FOR FRANCHISE UTILITY CONTACT INFORMATION.
 - CONTRACTOR SHALL COORDINATE WITH LIFT STATION CONTRACTOR FOR INSTALLATION OF WATER LINE ACROSS THE LIFT STATION SITE. CONTRACTOR SHALL REPAIR DAMAGE TO ROAD, FENCING, AND LIFT STATION SITE TO NEW CONDITION.

PLUMMER

531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102
405-440-2725 | OKLAHOMA FIRM NO. 1097

NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY
100 N MIDWEST BOULEVARD, MIDWEST CITY, OK 73110



TEST HOLE INFORMATION			
NAME	SIZE/TYPE	MATERIAL	DEPTH (FT)
TH-7	1.5" GAS	PE	6.5

CITY OF MIDWEST CITY
NORTH SIDE UTILITIES PROJECT PHASE I

CIVIL

12" SECONDARY WATER FEED
PLAN AND PROFILE
STA 43+25 TO STA 52+00

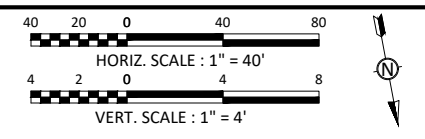
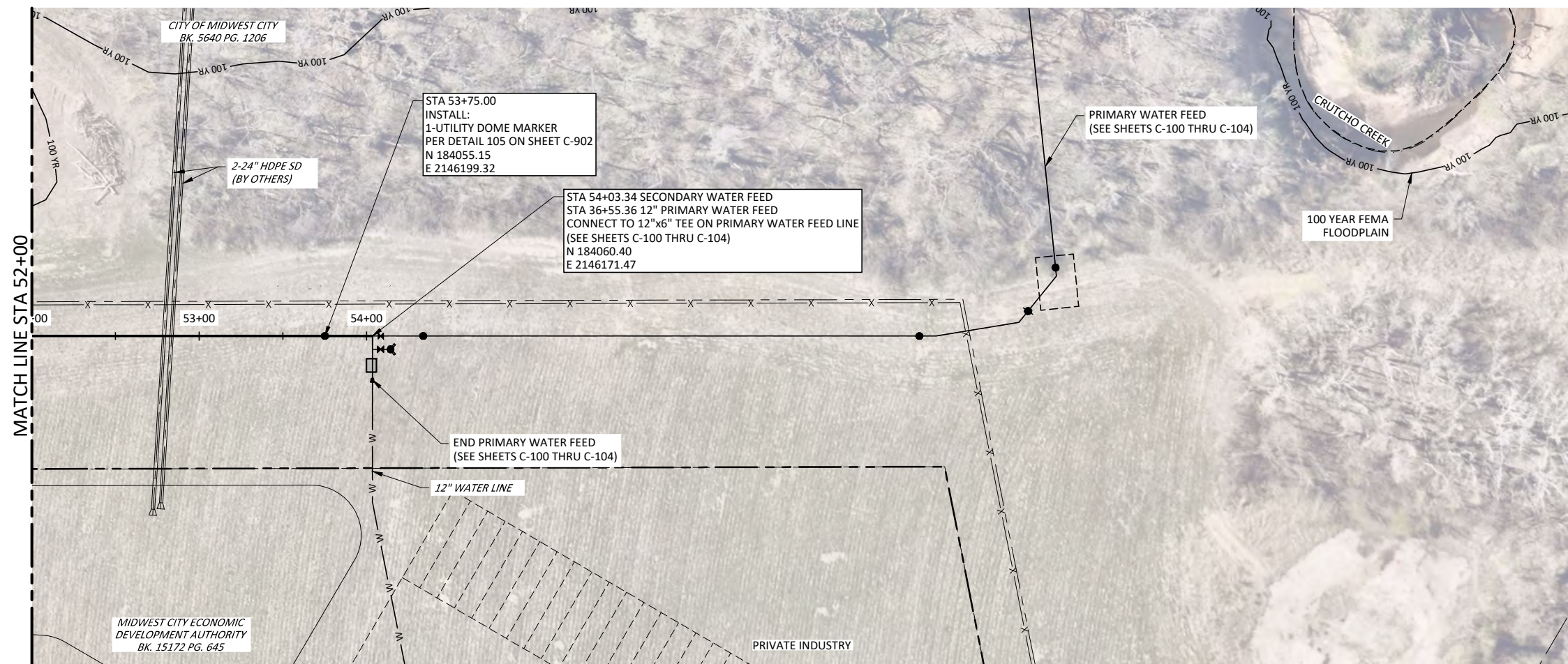


IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE


DESIGNED C. FERGUSON
DRAWN F. CAVE
CHECKED G. FARAH
REVIEWED A. SWARTZ

Seq. No. **C-205**

3435-003-01



- NOTES:
- CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO ORDERING PIPE. OKLAHOMA NATURAL GAS PIPE SHALL ONLY BE LOCATED BY HYDROVAC EXCAVATION. CONTRACTOR SHALL CONTACT THE OWNER AND THE ENGINEER IF ANY POTENTIAL CONFLICTS ARE IDENTIFIED.
 - CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORT FOR EXISTING OVERHEAD UTILITIES AND FOR UNDERGROUND UTILITIES THAT WILL BE CROSSED DURING AN OPEN CUT INSTALLATION.
 - CONTRACTOR SHALL CONTACT FRANCHISE UTILITIES OR CALL 811 PRIOR TO CROSSING. REFER TO UTILITY SPECIFICATION SECTION 01 12 16, SEQUENCE OF CONSTRUCTION. REFER TO THE GENERAL NOTES FOR FRANCHISE UTILITY CONTACT INFORMATION.
 - CONTRACTOR SHALL PROTECT EXISTING SIGNS/MARKERS IN THE PROJECT AREA. IF THE CONTRACTOR SIGNS/MARKERS BECOME DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE THE SIGNS/MARKERS AT THEIR EXPENSE.




531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102
405-440-2725 | OKLAHOMA FIRM NO. 1097

NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY
100 N MIDWEST BOULEVARD, MIDWEST CITY, OK 73110

CITY OF MIDWEST CITY
NORTH SIDE UTILITIES PROJECT PHASE I

CIVIL
12" SECONDARY WATER FEED
PLAN AND PROFILE
STA 52+00 TO END STA 58+15.27

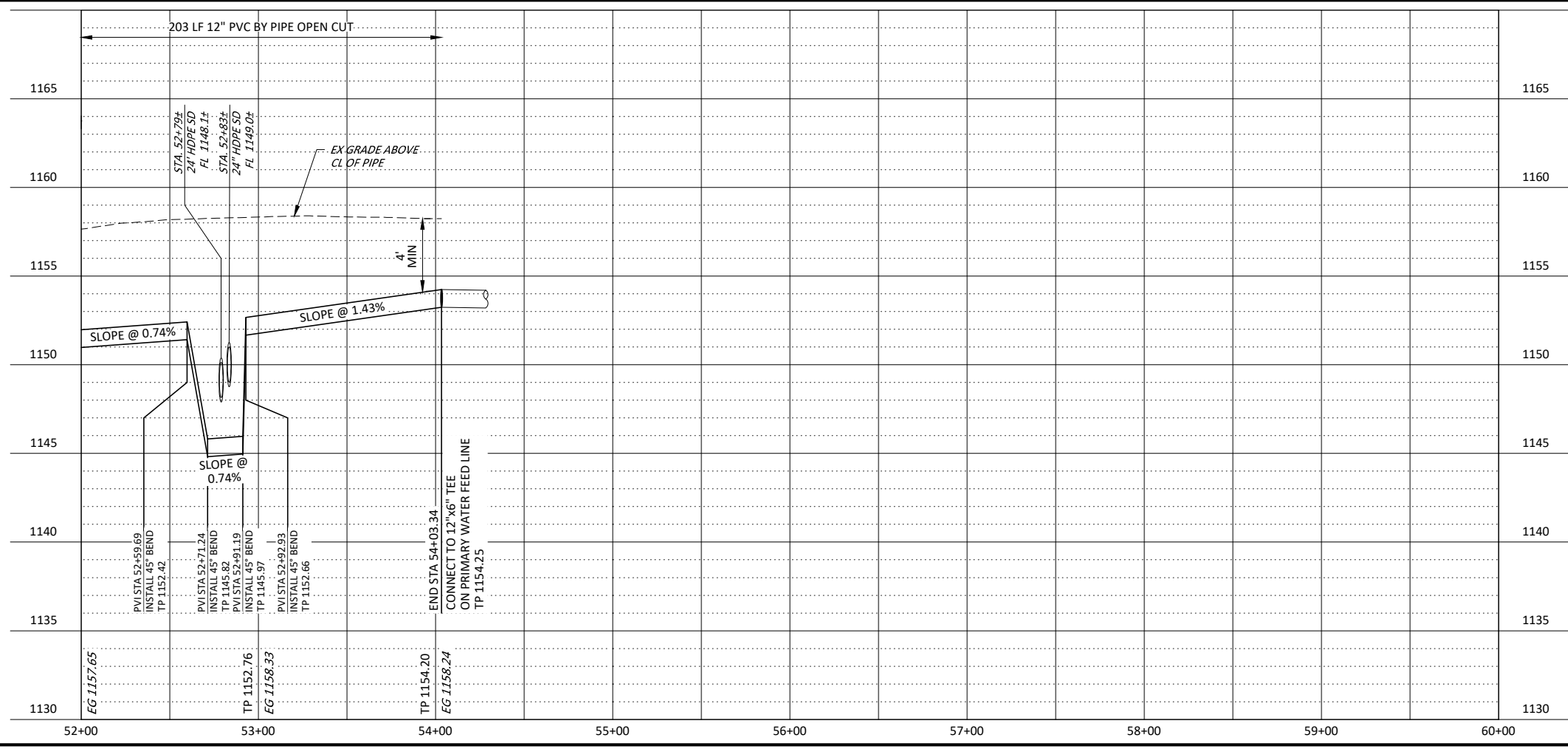


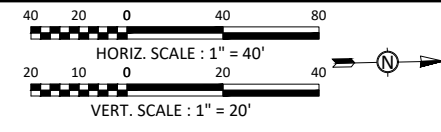
IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED C. FERGUSON
 DRAWN F. CAVE
 CHECKED G. FARAH
 REVIEWED A. SWARTZ

Seq. No. **C-206**
3435-003-01

PRINTED: 5/20/2024 9:54 AM C:\Users\gcbow\OneDrive\Documents\Plummer Associates\3435-003-01 MW-C_Utility_Phase I\Project Files\Plummer\Sheets\Civil\C-SEC-WTR-FD07.dwg SAVED: 5/20/2024 9:54 AM SAVED BY: gcbow USER: Denver





- NOTES:
- CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO ORDERING PIPE. OKLAHOMA NATURAL GAS PIPE SHALL ONLY BE LOCATED BY HYDROVAC EXCAVATION. CONTRACTOR SHALL CONTACT THE OWNER AND THE ENGINEER IF ANY POTENTIAL CONFLICTS ARE IDENTIFIED.
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PLUMMER

531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102
405-440-2725 | OKLAHOMA FIRM NO. 1097

NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY
100 N MIDWEST BOULEVARD, MIDWEST CITY, OK 73110

CITY OF MIDWEST CITY
NORTH SIDE UTILITIES PROJECT PHASE I

CIVIL

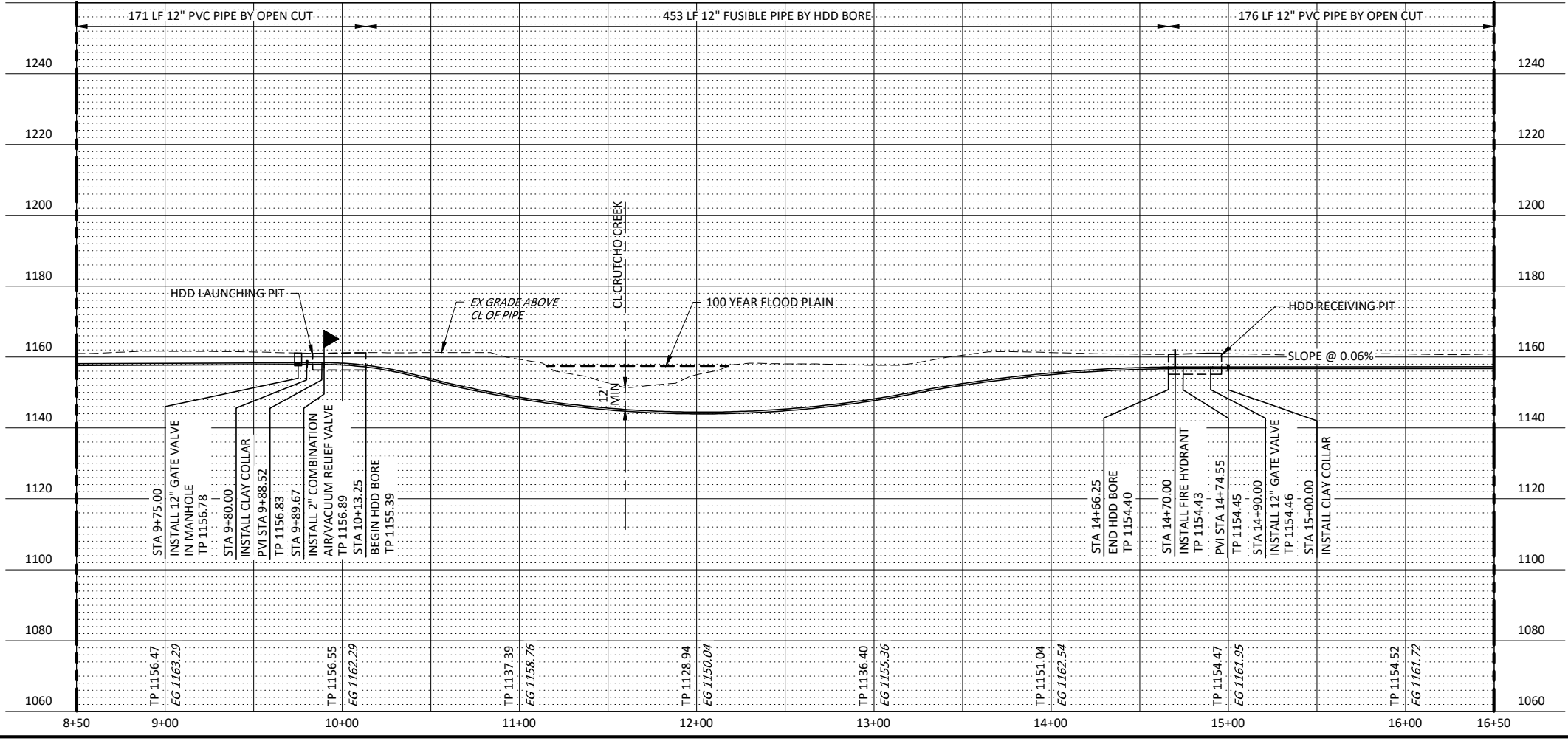
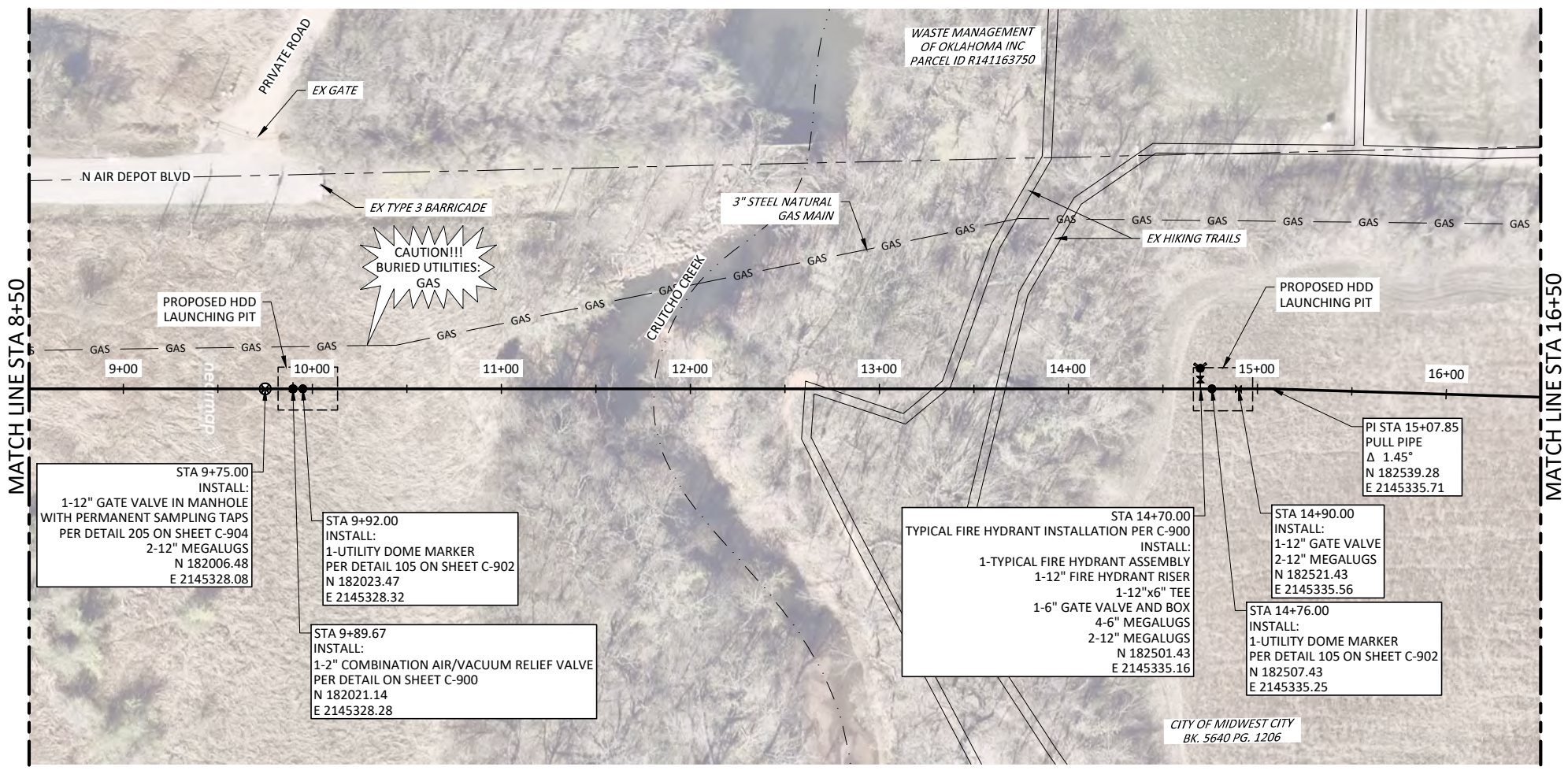
12" PRIMARY WATER FEED
WATER LINE HDD CROSSING 1



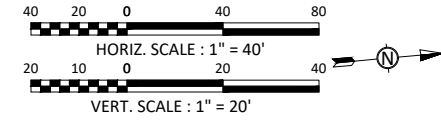
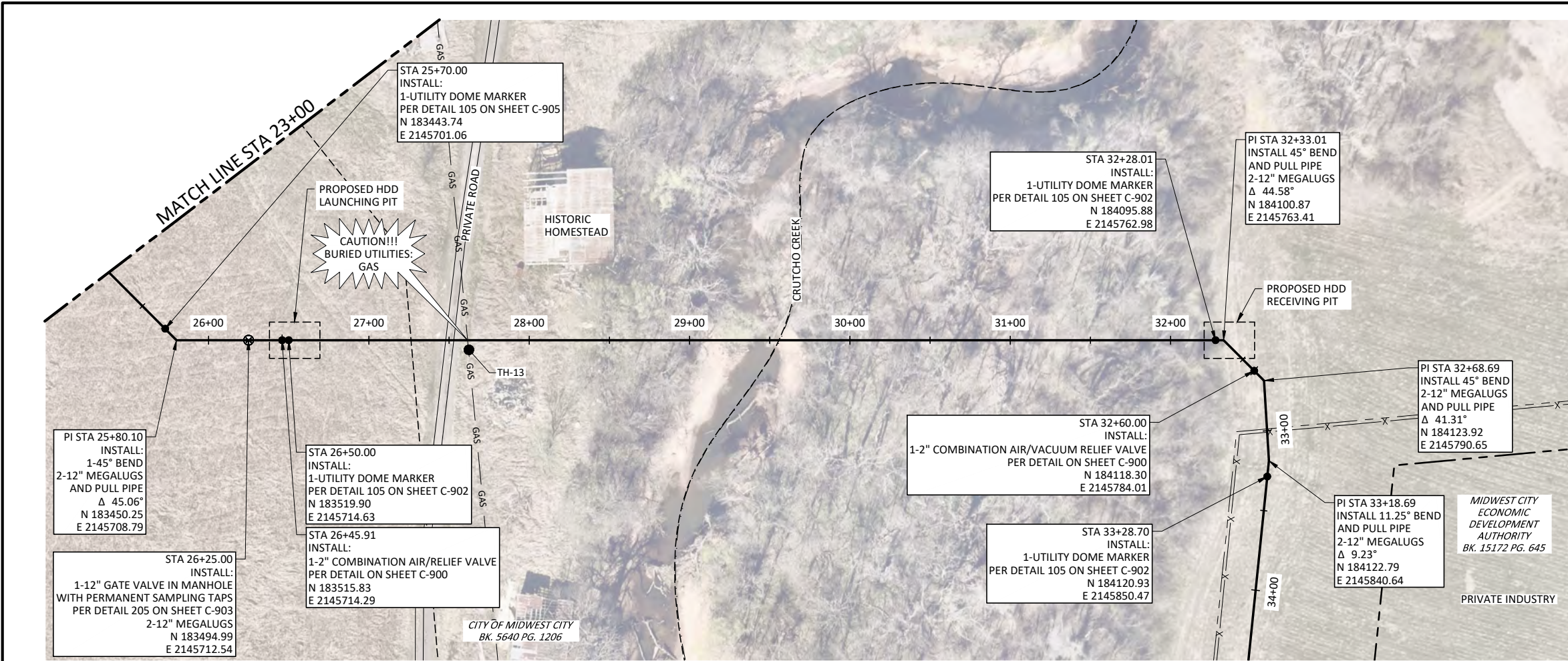
IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED C. FERGUSON
DRAWN F. CAVE
CHECKED G. FARAH
REVIEWED A. SWARTZ

Seq. No. **C-300**
3435-003-01



PRINTED: 5/20/2024 9:54 AM C:\Users\gcbow\OneDrive\Documents\Plummer Associates\3435-003-01\TWC_Civil\Utility_PhaseI\Project Files\Plummer\Sheets\Civil\12" Primary Water Feed\12" Primary Water Feed HDD Crossing 1.dwg SAVED: 5/20/2024 9:15 AM SAVED BY: Dcbow USER: Schow, Denver



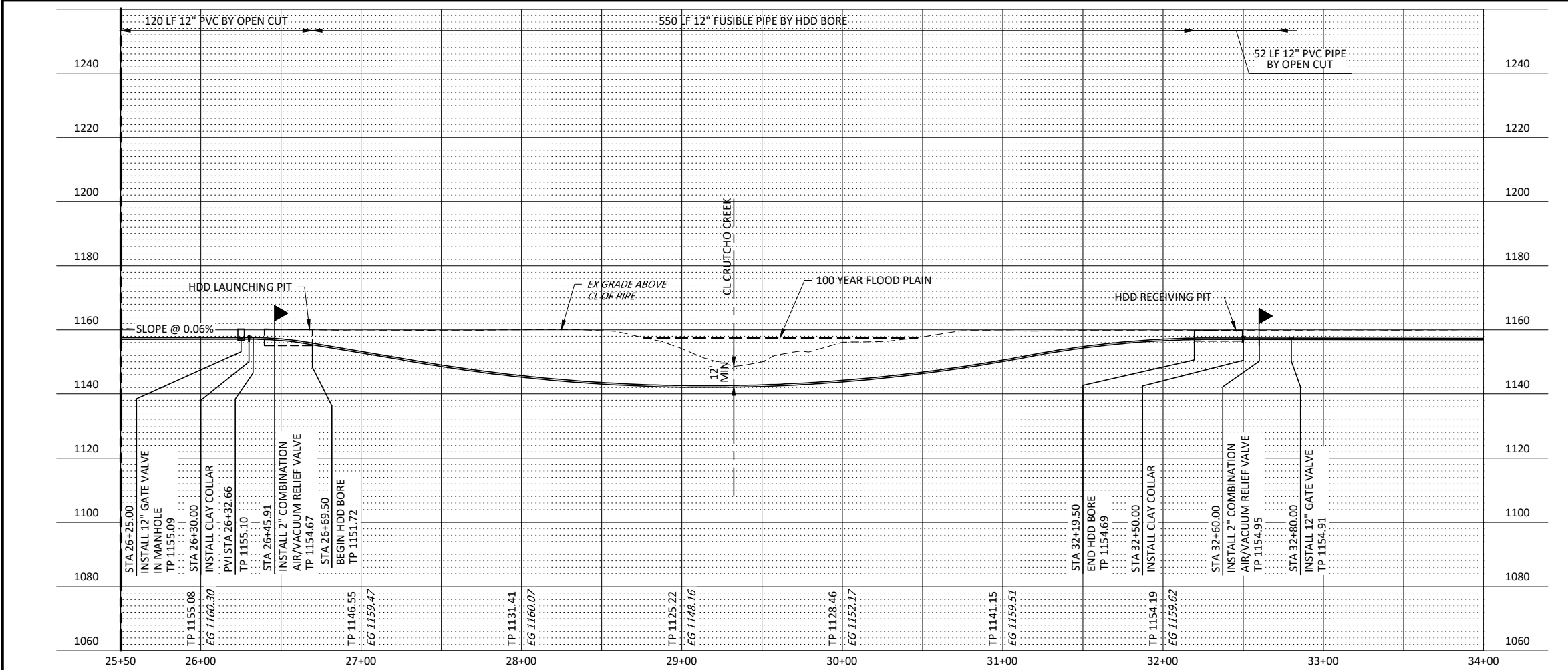
- NOTES:
- CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO ORDERING PIPE. OKLAHOMA NATURAL GAS PIPE SHALL ONLY BE LOCATED BY HYDROVAC EXCAVATION. CONTRACTOR SHALL CONTACT THE OWNER AND THE ENGINEER IF ANY POTENTIAL CONFLICTS ARE IDENTIFIED.
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PLUMMER

531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102
405.440.2725 | OKLAHOMA FIRM NO. 1097

NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY
100 N MIDWEST BOULEVARD, MIDWEST CITY, OK 73110



NAME	SIZE/TYPE	MATERIAL	DEPTH (FT)
TH-13	2"/NG	PE	3.08

CITY OF MIDWEST CITY
NORTH SIDE UTILITIES PROJECT PHASE I

CIVIL

12" PRIMARY WATER FEED
WATER LINE HDD CROSSING 2



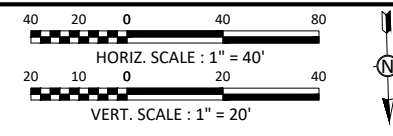
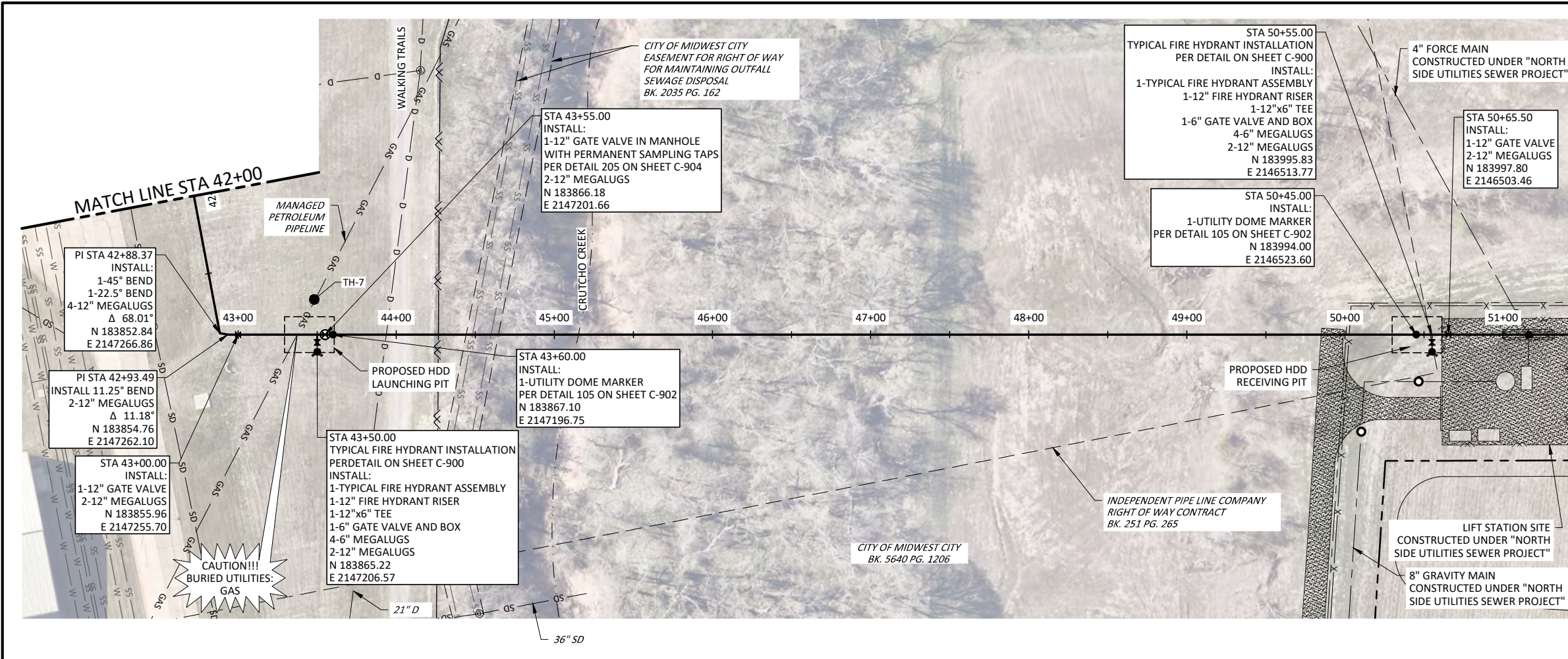
IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED: C. FERGUSON
DRAWN: F. CAVE
CHECKED: G. FARAH
REVIEWED: A. SWARTZ

Seq. No. **C-301**

3435-003-01

PRINTED: 5/20/2024 9:54 AM C:\Users\cfshaw\OneDrive\Documents\Plummer\Projects\3435-003-01\TWC_City_Utility_12\"/>



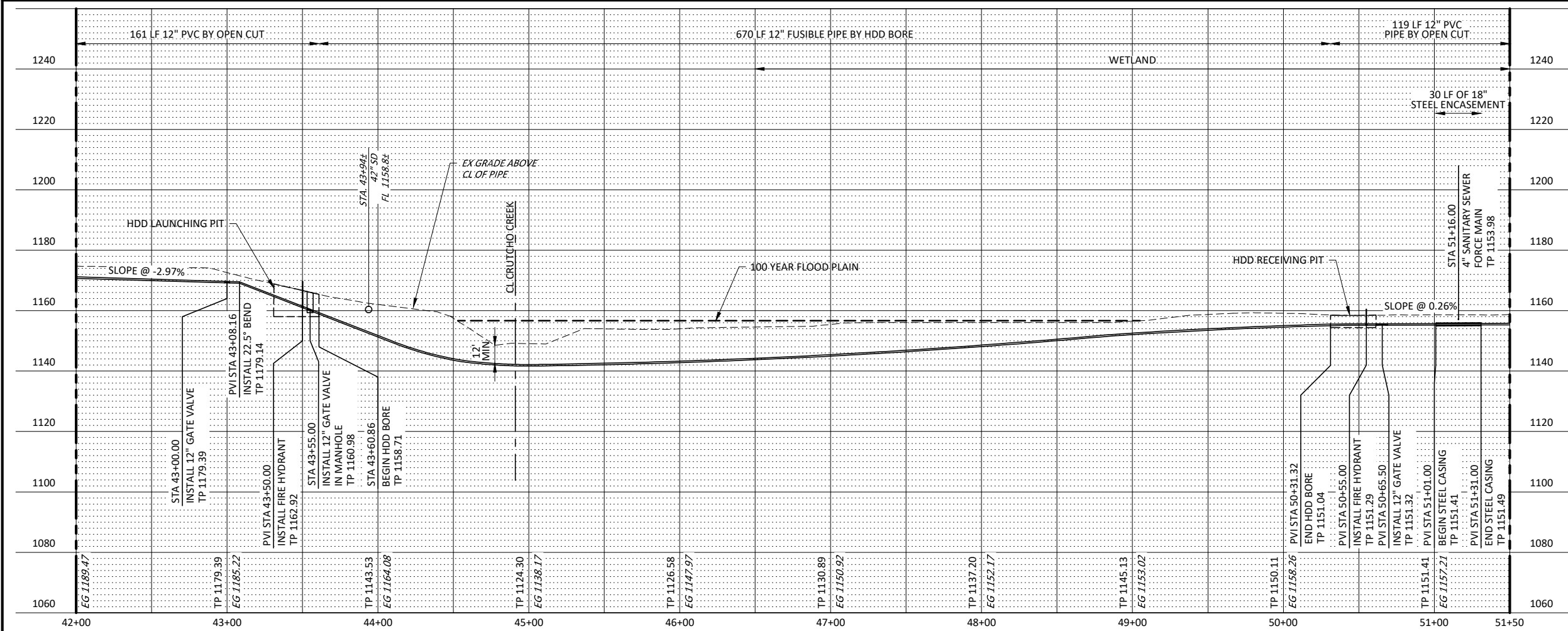
- NOTES:
- CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO ORDERING PIPE. OKLAHOMA NATURAL GAS PIPE SHALL ONLY BE LOCATED BY HYDROVAC EXCAVATION. CONTRACTOR SHALL CONTACT THE OWNER AND THE ENGINEER IF ANY POTENTIAL CONFLICTS ARE IDENTIFIED.
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PLUMMER

531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102
405.440.2725 | OKLAHOMA FIRM NO. 1097

NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY
100 N MIDWEST BOULEVARD, MIDWEST CITY, OK 73110



TEST HOLE INFORMATION			
NAME	SIZE/TYPE	MATERIAL	DEPTH (FT)
TH-8	N/A	N/A	14.0

CITY OF MIDWEST CITY
NORTH SIDE UTILITIES PROJECT PHASE I

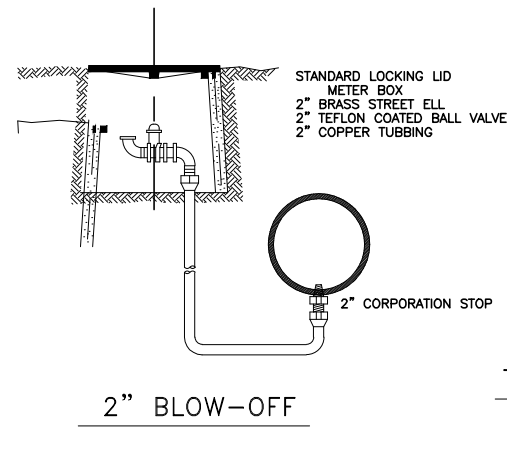
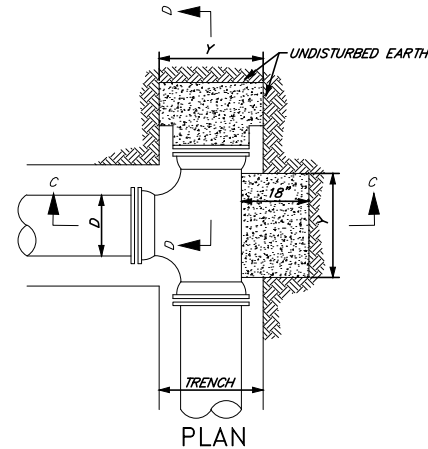
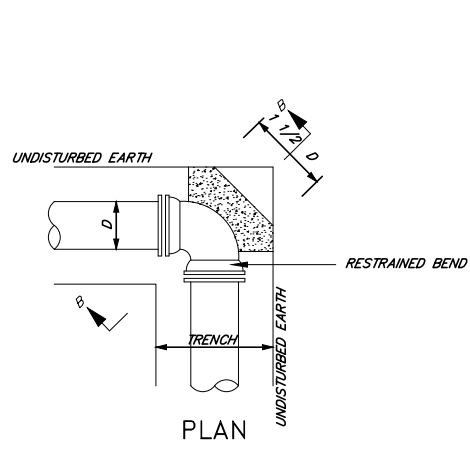
CIVIL
12" SECONDARY WATER FEED
WATER LINE HDD CROSSING 1

IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

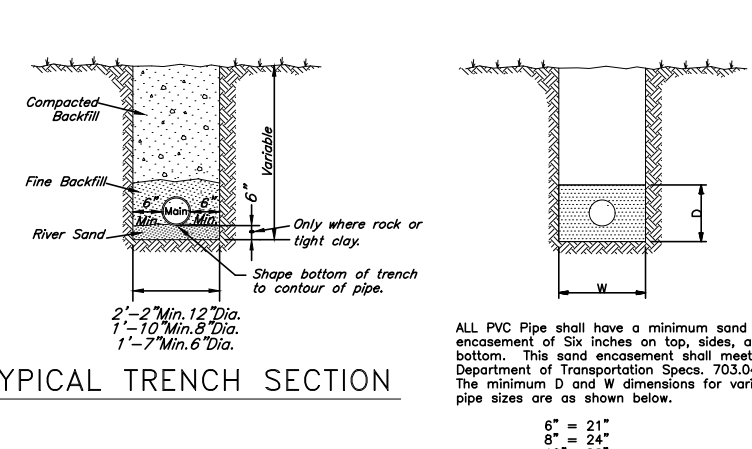
DESIGNED: C. FERGUSON
DRAWN: F. CAVE
CHECKED: G. FARAH
REVIEWED: A. SWARTZ

Seq. No. **C-302**
3435-003-01

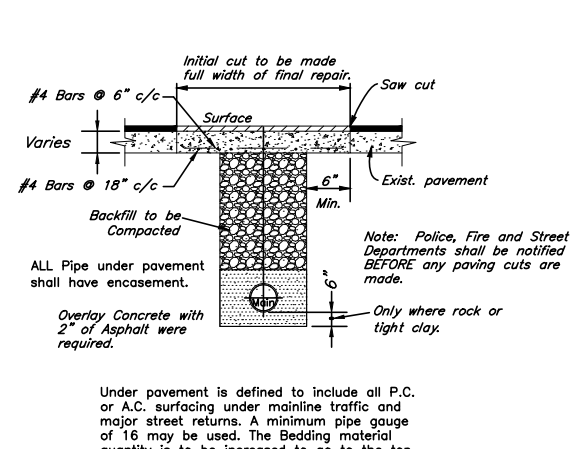
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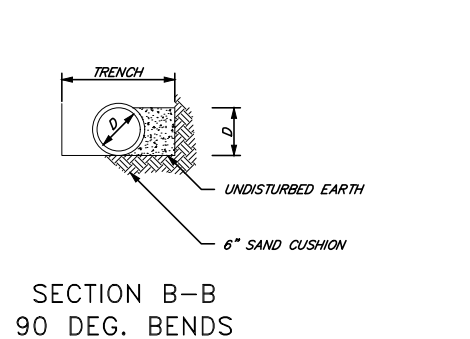
TYPICAL TRENCH SECTION



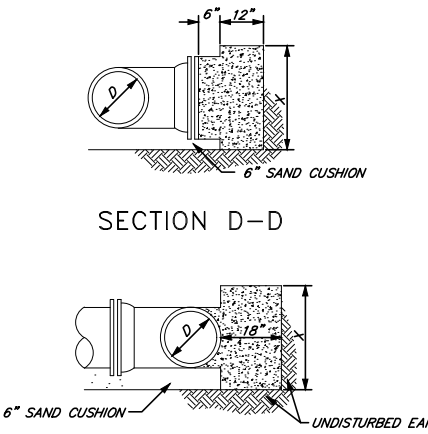
SAND BEDDING DETAIL FOR PVC PIPE



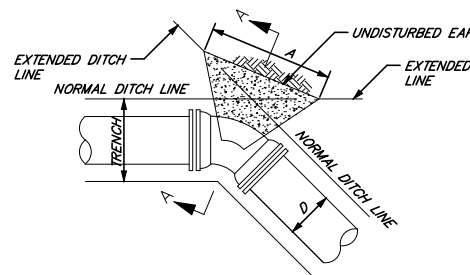
STREET CROSSING



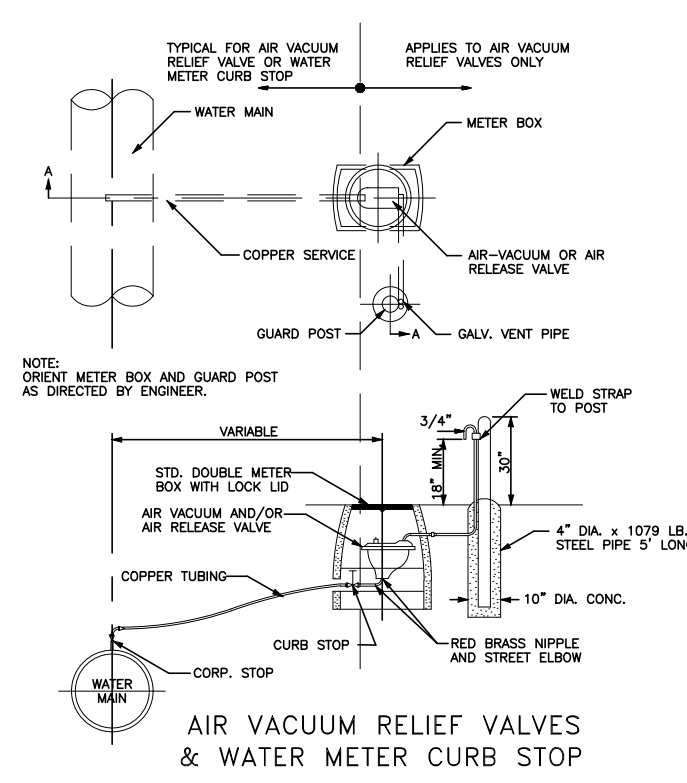
SECTION B-B
90 DEG. BENDS



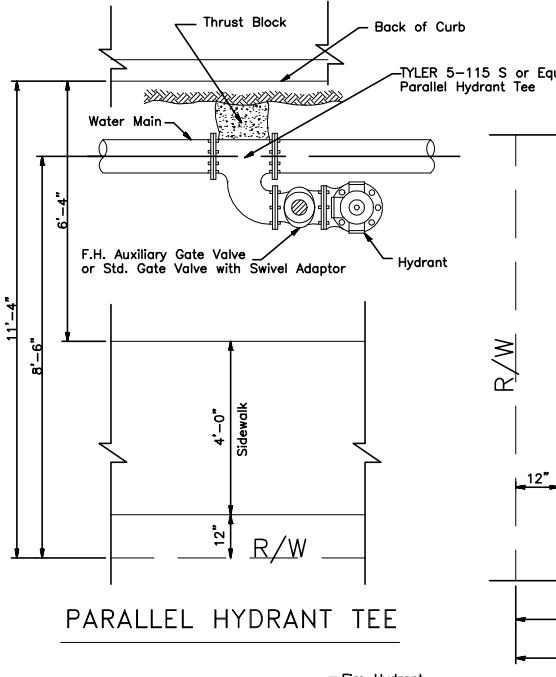
SECTION D-D
SECTION C-C



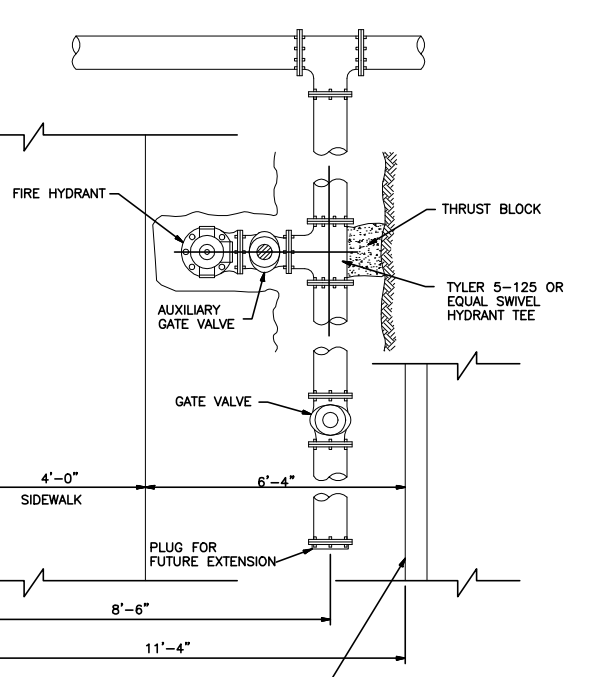
SECTION A-A
TEES & PLUGS



AIR VACUUM RELIEF VALVES & WATER METER CURB STOP



PARALLEL HYDRANT TEE



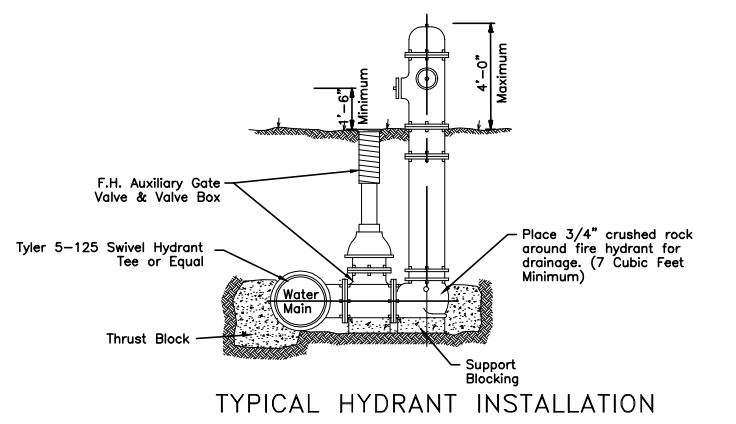
SWIVEL HYDRANT TEE

CASING SIZE TABLE

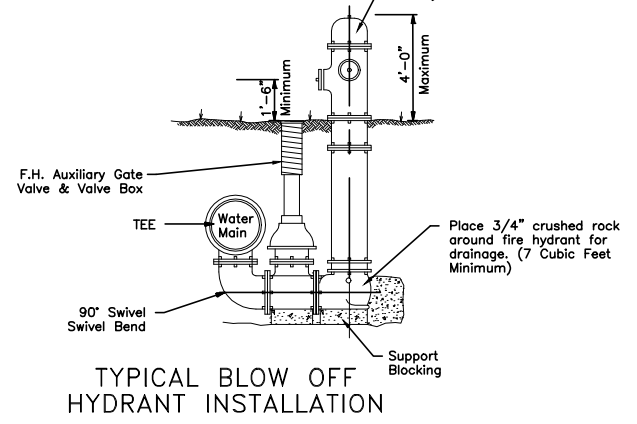
NOMINAL INSIDE PIPE DIA.	CASING SIZE INSIDE DIA.	NOMINAL PIPE DIA.	CASING SIZE INSIDE DIA.
4"	8" TO 10"	12"	18" TO 20"
6"	10" TO 12"	15"	20" TO 22"
8"	14" TO 16"	18"	24" TO 26"
10"	16" TO 18"	24"	31" TO 33"

DUCTILE IRON PIPE RESTRAIN LENGTH (FT.)

Pipe Size	Horizontal Bend				Vertical Bend				Tee	Plug	Reducer					
	11.25'	22.5'	45'	90'	11.25'	22.5'	45'	90'			x6"	x8"	x12"	x18"	x24"	
6"	20	20	20	20	20	20	20	20	20	40	N	20	40	60	80	
8"	20	20	20	20	20	20	20	20	20	40	20	N	40	60	80	
12"	20	20	20	40	20	20	20	20	20	40	40	40	N	40	60	
18"	20	20	20	40	20	20	20	20	40	20	40	60	60	40	N	40
24"	20	20	20	60	20	20	20	20	60	20	60	80	80	60	40	N



TYPICAL HYDRANT INSTALLATION



TYPICAL BLOW OFF HYDRANT INSTALLATION

INSTALL MECHANICAL RESTRAINT IN LIEU OF CONCRETE BLOCKING.
ALL HORIZONTAL THRUST AND SUPPORT BLOCKING SHALL BE PRE CAST.

MIDWEST CITY ENGINEERING DEPARTMENT

DATE: April 24, 2017	DRAWN: D.C.B.
CHECKED: D.B.D.	APPROVED:
SCALE: NO SCALE	
ENGR: P.M.	PROJECT NO. SHEET NO.

STANDARD WATER LINE DETAILS

531 COUCH DR. STE 200 | OKLAHOMA CITY, OK 73102
405.440.2725 | OKLAHOMA FIRM NO. 1097

NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY
NORTH SIDE UTILITIES PROJECT PHASE I

100 N MIDWEST BOULEVARD, MIDWEST CITY,
OK 73110

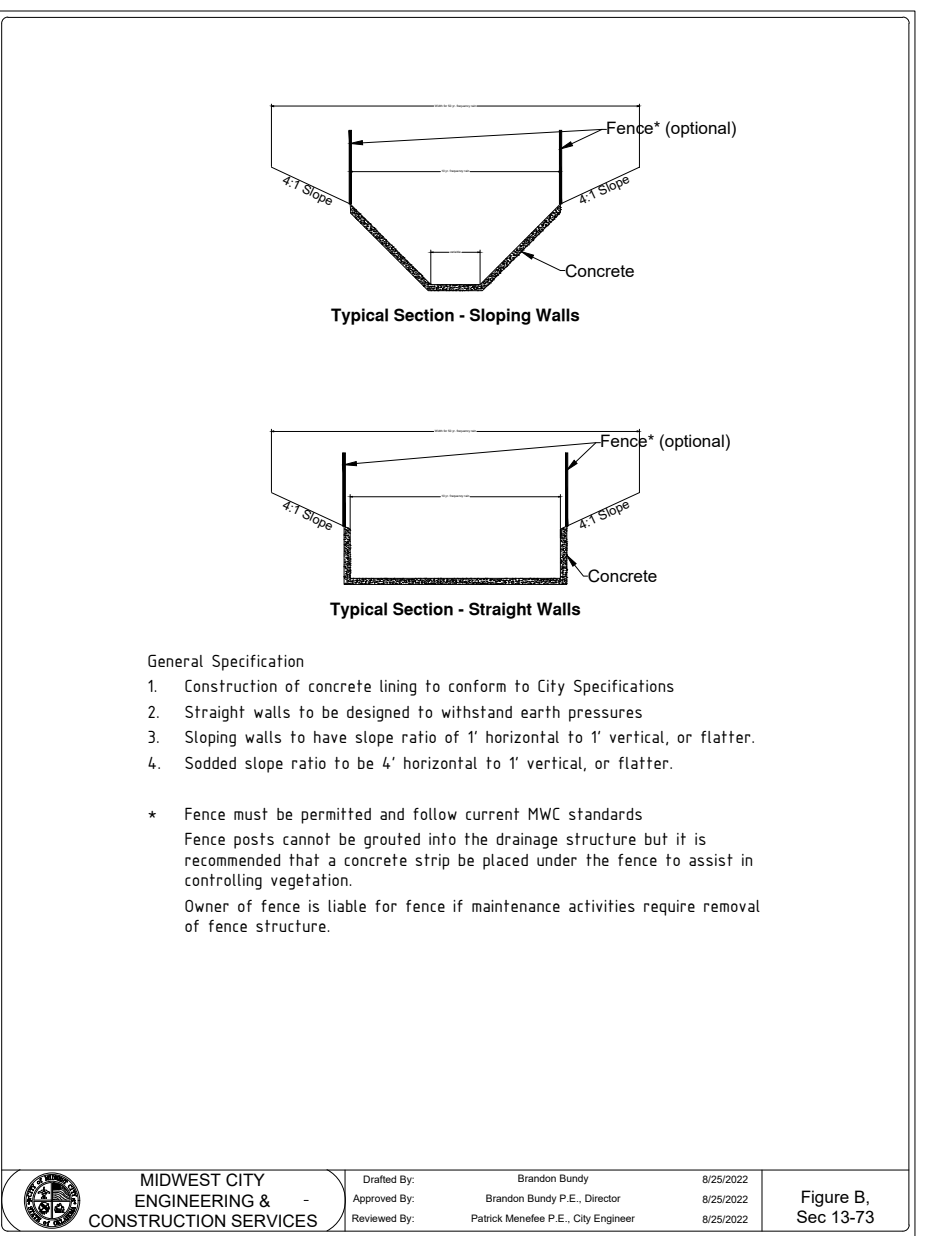
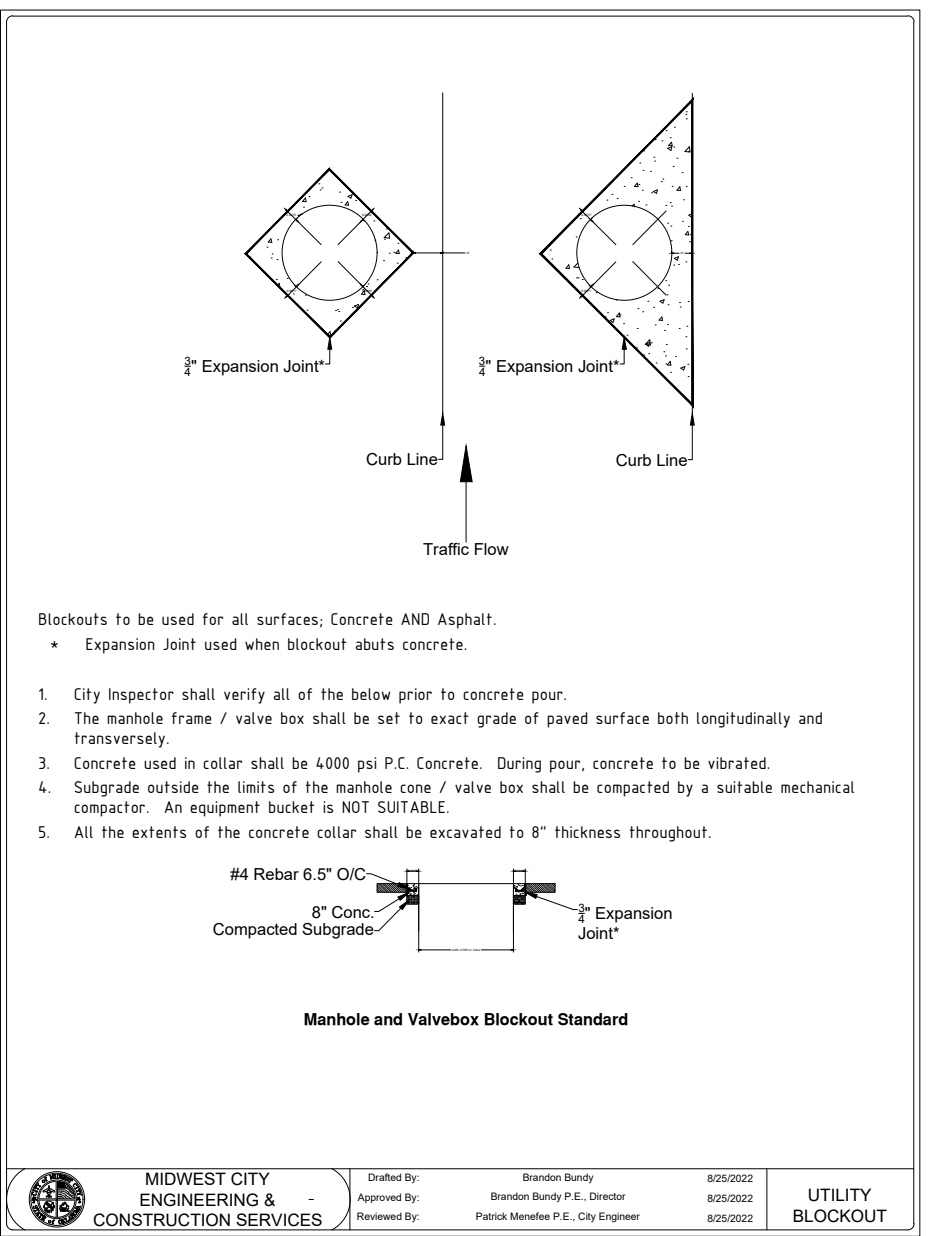
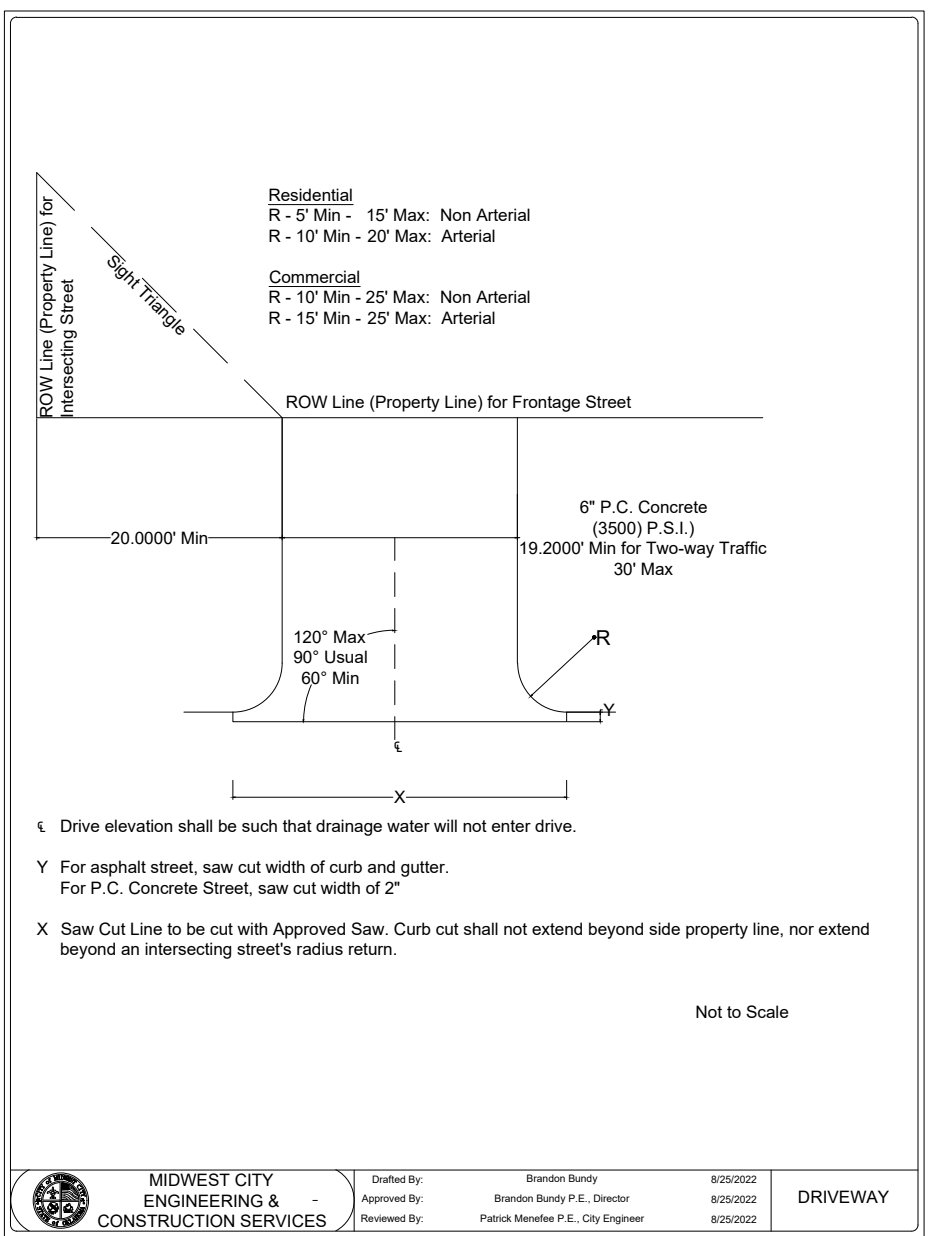
CITY OF MIDWEST CITY
STANDARD DETAILS

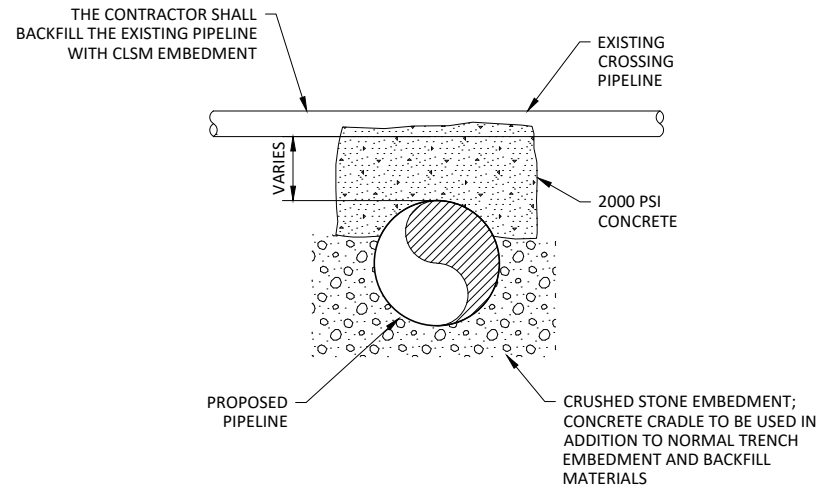
MIDWEST CITY STANDARD DETAILS I

DESIGNED: C. FERGUSON
DRAWN: F. CAVE
CHECKED: G. FARAH
REVIEWED: A. SWARTZ

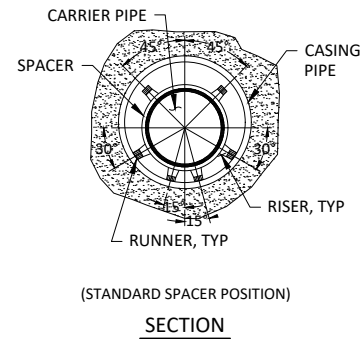
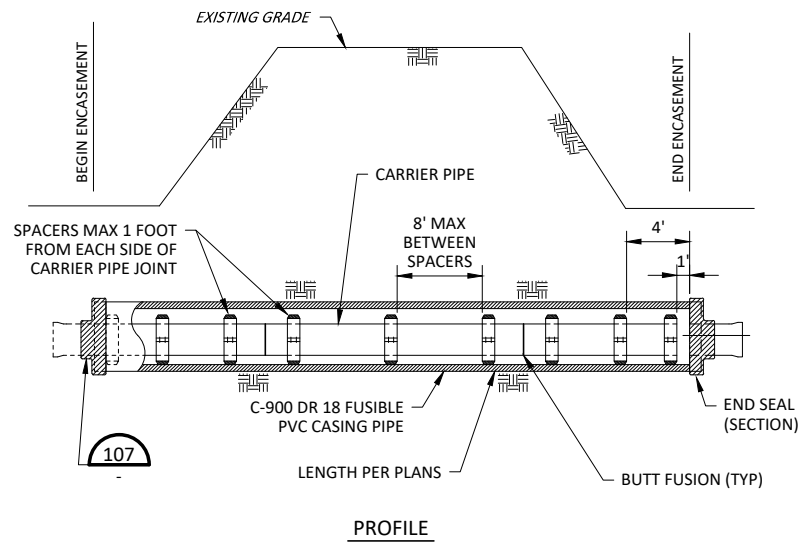
Seq. No. **C-900**

3435-003-01



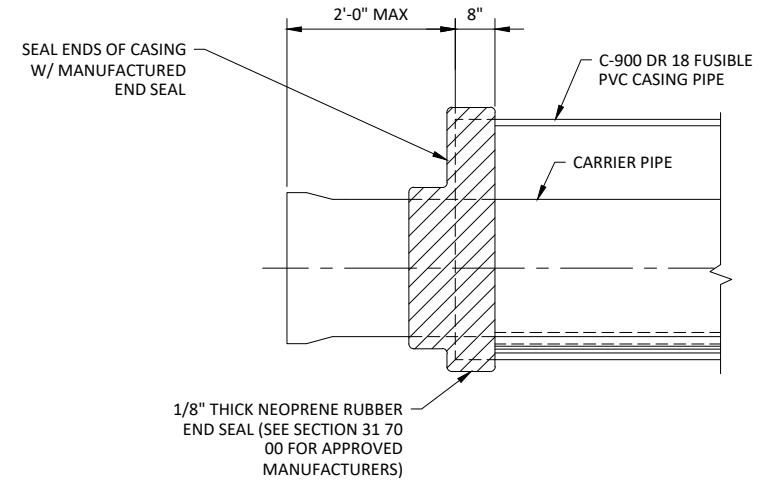


CONCRETE CRADLE 104
NOT TO SCALE

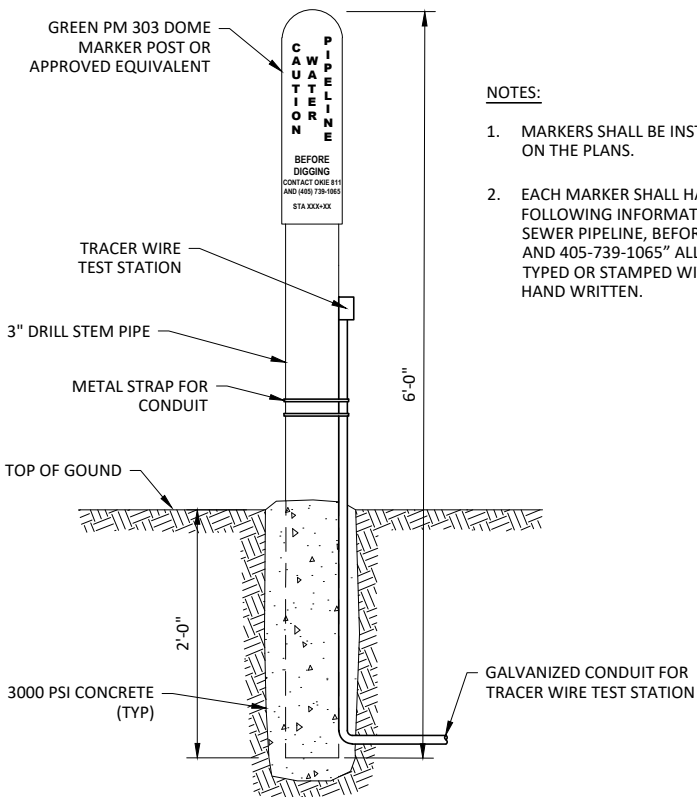


- NOTES:**
- REFER TO SECTION 31 70 00 FOR MATERIALS.
 - ALL CARRIER PIPE JOINTS WITHIN CASING PIPE SHALL BE RESTRAINED.
 - SPACER HEIGHT SHALL BE SIZED TO PREVENT THE CARRIER PIPE BELL AND PIPE RESTRAINT FROM COMING INTO CONTACT WITH THE CASING PIPE.
 - CASING SIZE MAY BE INCREASED FOR EASE OF CONSTRUCTION AT CONTRACTOR'S EXPENSE.
 - GROUT ANNULAR SPACE BETWEEN CASING PIPE AND CARRIER PIPE.

BORE/TUNNEL WITH CASING FOR FUSIBLE PVC PIPE 106
NOT TO SCALE



TYPICAL END SEAL DETAIL 107
NOT TO SCALE



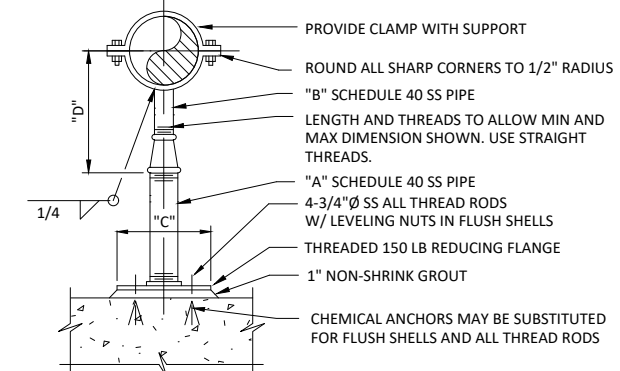
- NOTES:**
- MARKERS SHALL BE INSTALLED AT LOCATIONS SHOWN ON THE PLANS.
 - EACH MARKER SHALL HAVE A STICKER WITH THE FOLLOWING INFORMATION "CAUTION SANITARY SEWER PIPELINE, BEFORE DIGGING CONTACT OKIE 811 AND 405-739-1065" ALL INFORMATION MUST BE TYPED OR STAMPED WITH NON-FADING INK, NOT HAND WRITTEN.

UTILITY DOME MARKER DETAIL 105
NOT TO SCALE

ADJUSTABLE PIPE SADDLE SUPPORT SCHEDULE
DIMENSIONS IN INCHES

SIZE OF SUPPORTED PIPE	PIPE SIZE "A"	PIPE SIZE "B"	"C"	"D"	
				MINIMUM	MAXIMUM
* 2 1/2	2 1/2	1 1/2	9	8	13
3	2 1/2	1 1/2	9	8 1/2	13 1/2
3 1/2	2 1/2	1 1/2	9	8 1/2	13 1/2
4	3	2 1/2	9	9 1/2	14
6	3	2 1/2	9	10 1/2	15 1/2
8	3	2 1/2	9	11 1/2	16 1/2
10	3	2 1/2	9	13 1/2	18 1/2
12	3	2 1/2	9	15	19 1/2
14	4	3	11	16 1/2	20 1/2
16	4	3	11	17 1/2	22 1/2
18	6	3 1/2	13 1/2	19 1/2	24
20	6	3 1/2	13 1/2	21	25 1/2
24	6	4	13 1/2	23 1/2	28 1/2
30	6	4	13 1/2	27	31 1/2
32	6	4	13 1/2	28 1/2	32 1/2
36	6	4	13 1/2	30 1/2	34 1/2

* USE 2 1/2" SUPPORTS FOR PIPES LESS THAN 2 1/2" Ø



- NOTE:**
- ALL MATERIALS 316 SS.

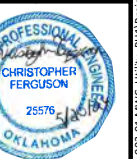
ADJUSTABLE STANCHION PIPE SUPPORT 108
NOT TO SCALE



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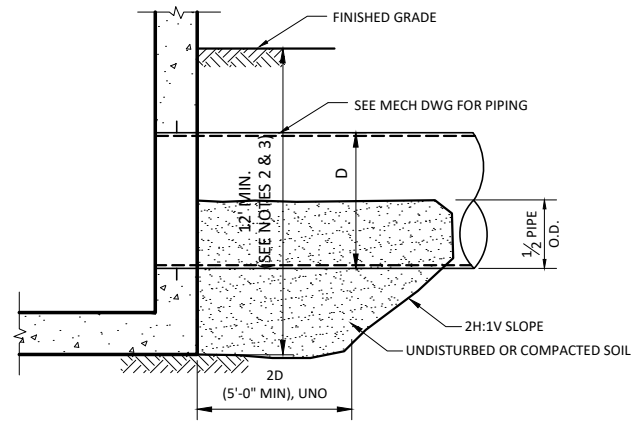
CITY OF MIDWEST CITY
NORTH SIDE UTILITIES PROJECT PHASE I
STANDARD DETAILS
CIVIL STANDARD DETAILS I



IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

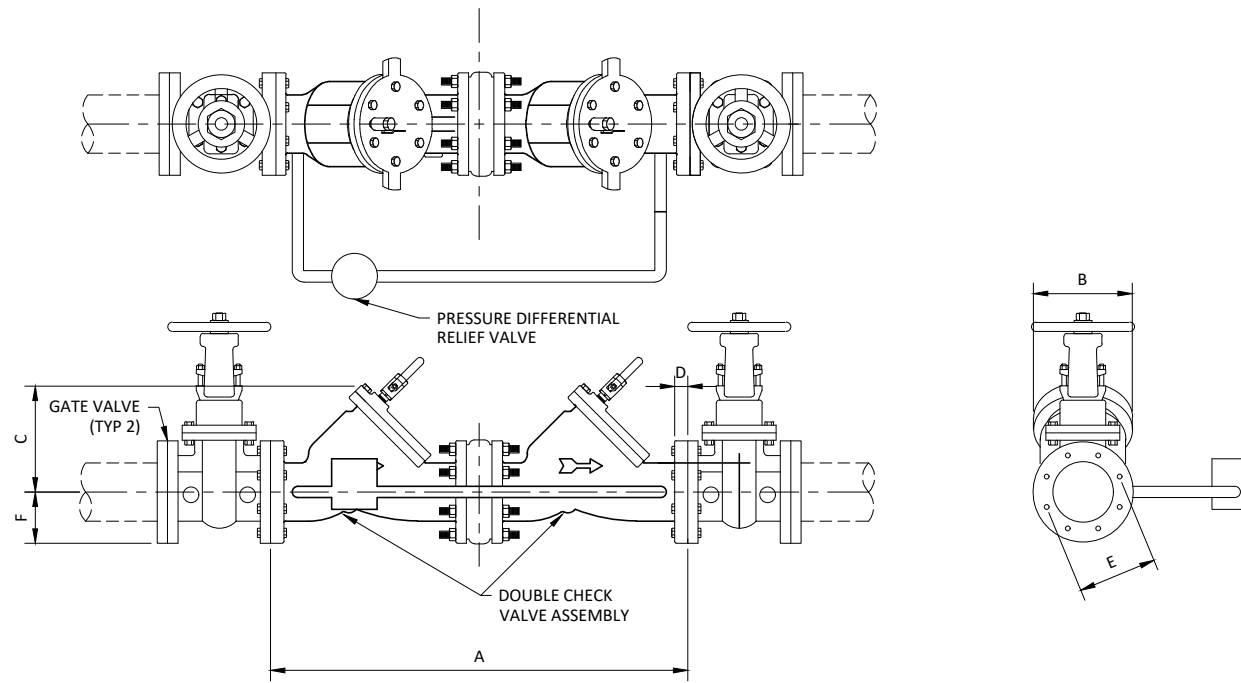
DESIGNED C. FERGUSON
DRAWN F. CAVE
CHECKED G. FARAH
REVIEWED A. SWARTZ

Seq. _____
Dwg. No. **C-902**
3435-003-01



- NOTES:
1. UNLESS OTHERWISE INDICATED ON THE PLANS, LEAN CONCRETE OR FLOWABLE FILL SHALL BE PLACED TO THE PIPES ADJACENT TO THE STRUCTURE CONFORMING TO THIS DETAIL.
 2. WHERE THE PIPELINE BASE IS SHALLOWER THAN 12', THE SUBGRADE SHALL BE UNDERCUT AND REPLACED WITH FLOWABLE FILL OR LEAN CONCRETE FILL TO A DEPTH OF AT LEAST 12' BELOW THE SURFACE GRADE.
 3. WHERE THE PIPELINE BASE IS DEEPER THAN 12', A MINIMUM OF 1' FLOWABLE FILL OR LEAN CONCRETE FILL SHALL BE PLACED BELOW THE BASE OF THE PIPELINE.

LEAN CONCRETE SUPPORT AT PIPE PENETRATION 109
NOT TO SCALE



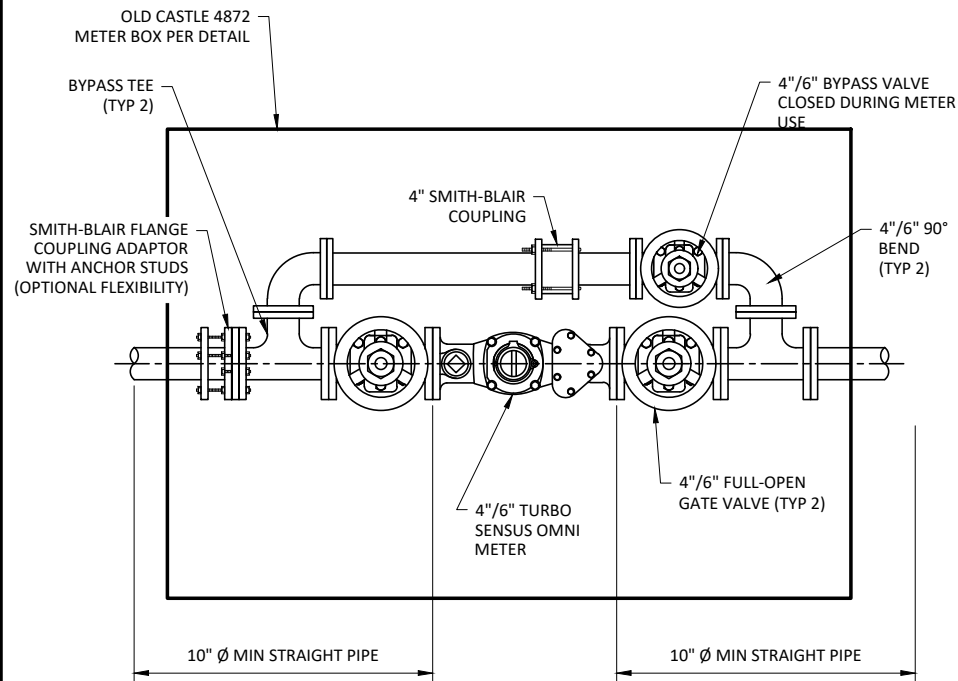
- NOTES:
1. THE BACKFLOW PREVENTER ASSEMBLY SHALL COMPLY WITH ALL ODEQ REQUIREMENTS.

4-INCH DOUBLE CHECK VALVE DETAIL 113
NOT TO SCALE

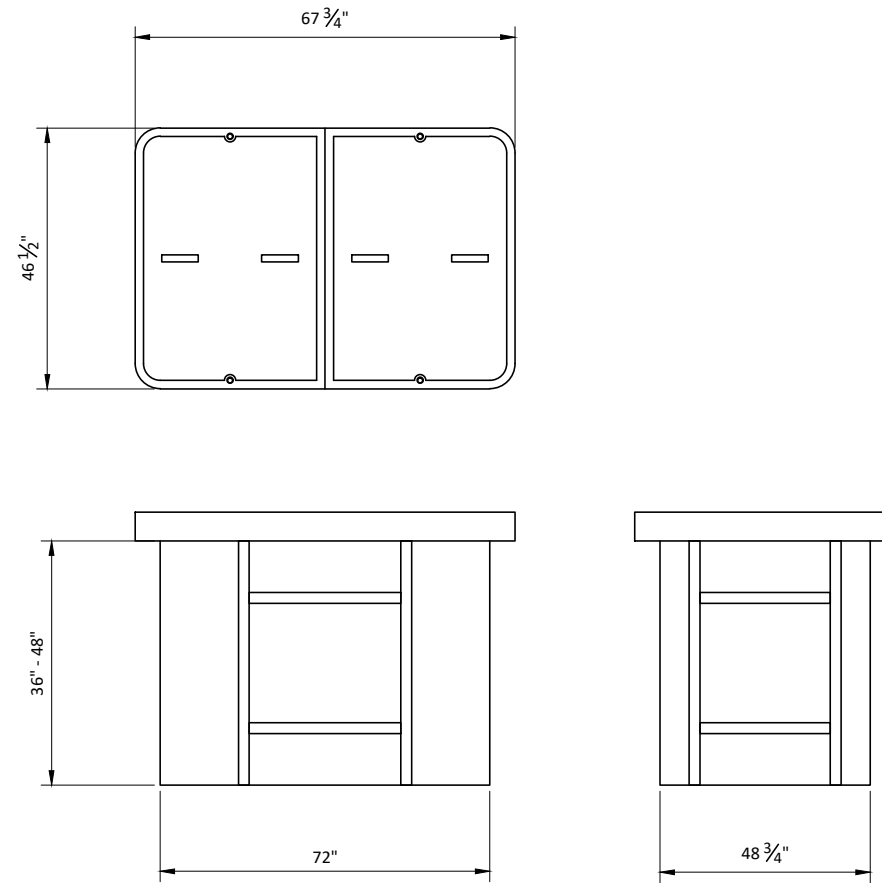
PHYSICAL DIMENSIONS	
METER & PIPE SIZE	4-INCH (100 MM)
NET WEIGHT	85 LB (38 KG)
SHIPPING WEIGHT	120 LB (54 KG)
LENGTH (A)	20-INCH (508 MM)*
WIDTH (B)	9 1/8-INCH (232 MM)
HEIGHT (C)	7 1/4-INCH (184 MM)
FLANGE (D)	7/8-INCH (22 MM)
BOLT CIRCLE (E)	7 1/2-INCH (191 MM)
CENTERLINE (C) TO BASE (F)	4 1/4-INCH (108 MM)
NUMBER OF BOLTS	8

* ADAPTER AVAILABLE TO INCREASE TOTAL LENGTH TO 24-INCH (610 MM)

- NOTE:
1. CHECK VALVE SHALL BE INSTALLED IN OLD CASTLE 4872 METER BOX (NOT SHOWN PER DETAIL 170)



4-INCH/6-INCH FLOW METER AND BOX 114
NOT TO SCALE



OLDCASTLE FRP 4872 METER BOX 170
NOT TO SCALE



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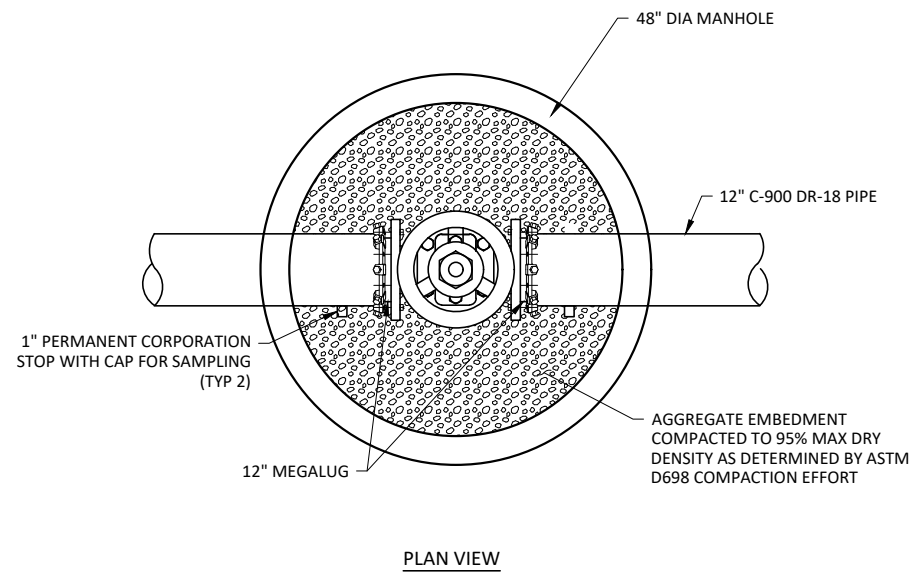
STANDARD DETAILS
CIVIL STANDARD DETAILS II



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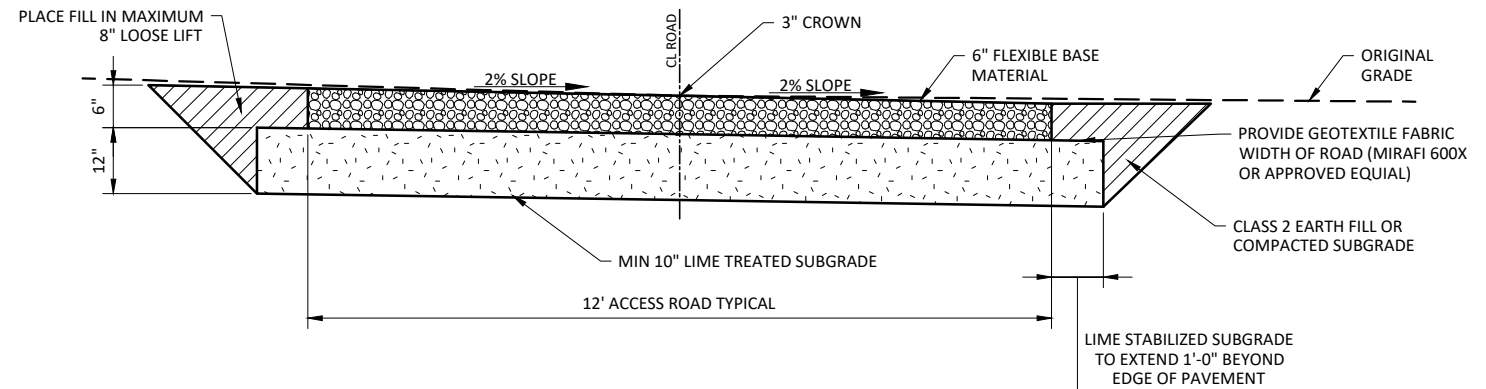
DESIGNED C. FERGUSON
DRAWN F. CAVE
CHECKED G. FARAH
REVIEWED A. SWARTZ

Seq. _____
Dwg. No. **C-903**
3435-003-01

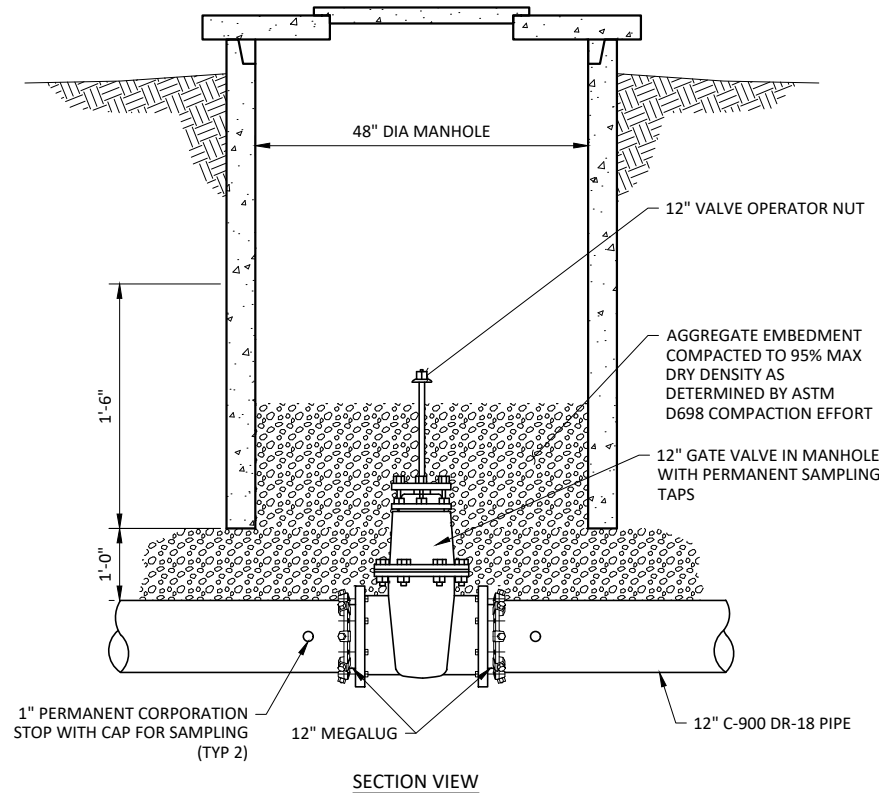


NOTES:

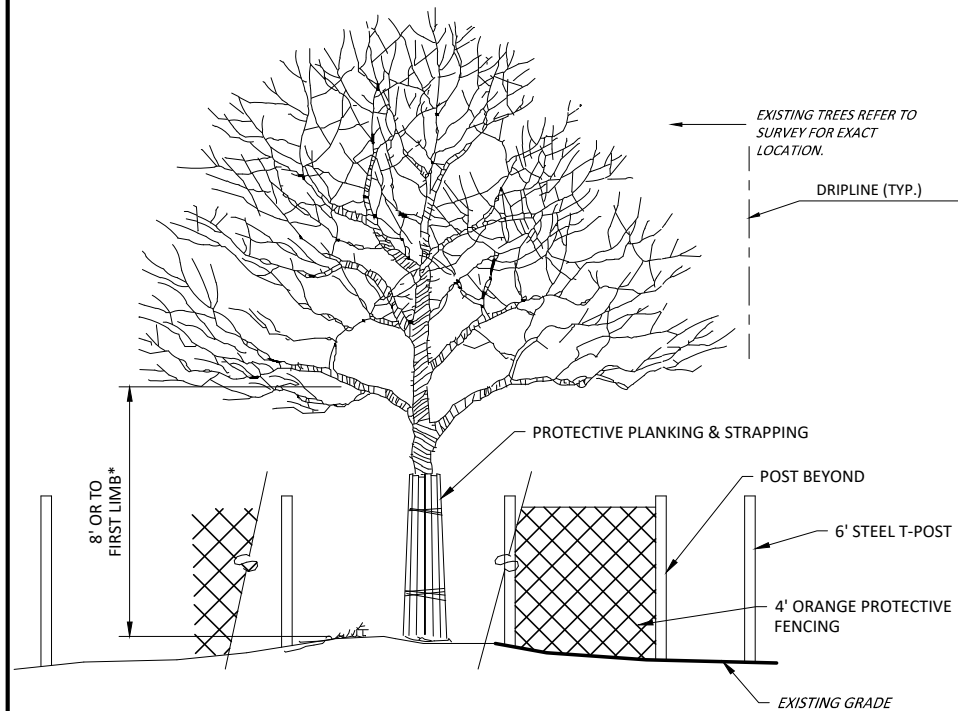
1. STRIP ALL TOPSOIL AND ORGANIC MATTER (AT A MINIMUM THE TOP 7 INCHES) AND STOCKPILE SEPARATELY. EXCAVATE AS NEEDED TO MINIMUM 18" BELOW FINAL PAVEMENT SURFACE ELEVATION.
2. PROOF ROLL THE SUBGRADE WITH A MINIMUM OF THREE PASSES OF HEAVY EQUIPMENT AND DETERMINE IF ANY SOFT OR LOOSE MATERIAL IS PRESENT. ANY SOFT OR LOOSE MATERIAL SHALL BE REMOVED AND REWORK. FILL AS NECESSARY TO 18" BELOW FINAL PAVEMENT SURFACE ELEVATION.
3. PRIOR TO LIME STABILIZATION, SCARIFY THE SUBGRADE, ADJUST THE WATER CONTENT TO WITHIN ZERO TO THREE PERCENT ABOVE OPTIMUM AND COMPACT TO AT LEAST 95% OF MAXIMUM DENSITY DETERMINED USING THE ASTM D-698 TEST METHOD.
4. SUBGRADE SHALL BE LIME STABILIZED TO A 12" DEPTH. THE AMOUNT OF LIME NECESSARY FOR SOIL STABILIZATION SHALL BE CALCULATED USING "OHD L-50" "SOIL STABILIZATION MIX DESIGN PROCEDURE" BUT NOT LESS THAN 6% BY WEIGHT.
5. CONTRACTOR SHALL INSTALL A GEOTEXTILE FABRIC (MIRAFI 600X OR APPROVED EQUIVALENT) THE WIDTH OF THE ROAD BETWEEN THE STABILIZED SUBGRADE AND THE 6" FLEXBASE ROADWAY.



TYPICAL FLEXBASE ROADWAY 220
NOT TO SCALE



GATE VALVE WITH MANHOLE 205
NOT TO SCALE



NOTE:
ANY TREE PRUNING MUST BE PRIOR APPROVED BY LANDSCAPE ARCHITECT. REFER TO PLANTING PLAN FOR PLANT DEMO

TREE PROTECTION DETAIL 262
NOT TO SCALE



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STANDARD DETAILS
CIVIL STANDARD DETAILS III



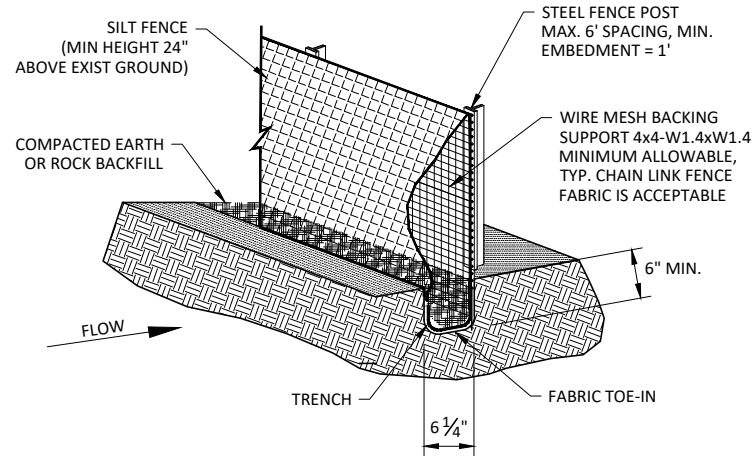
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DESIGNED C. FERGUSON
DRAWN F. CAVE
CHECKED G. FARAH
REVIEWED A. SWARTZ

Seq.
Dwg. No. C-904



WARNING SIGN 270
NOT TO SCALE



SILT FENCE 280
NOT TO SCALE



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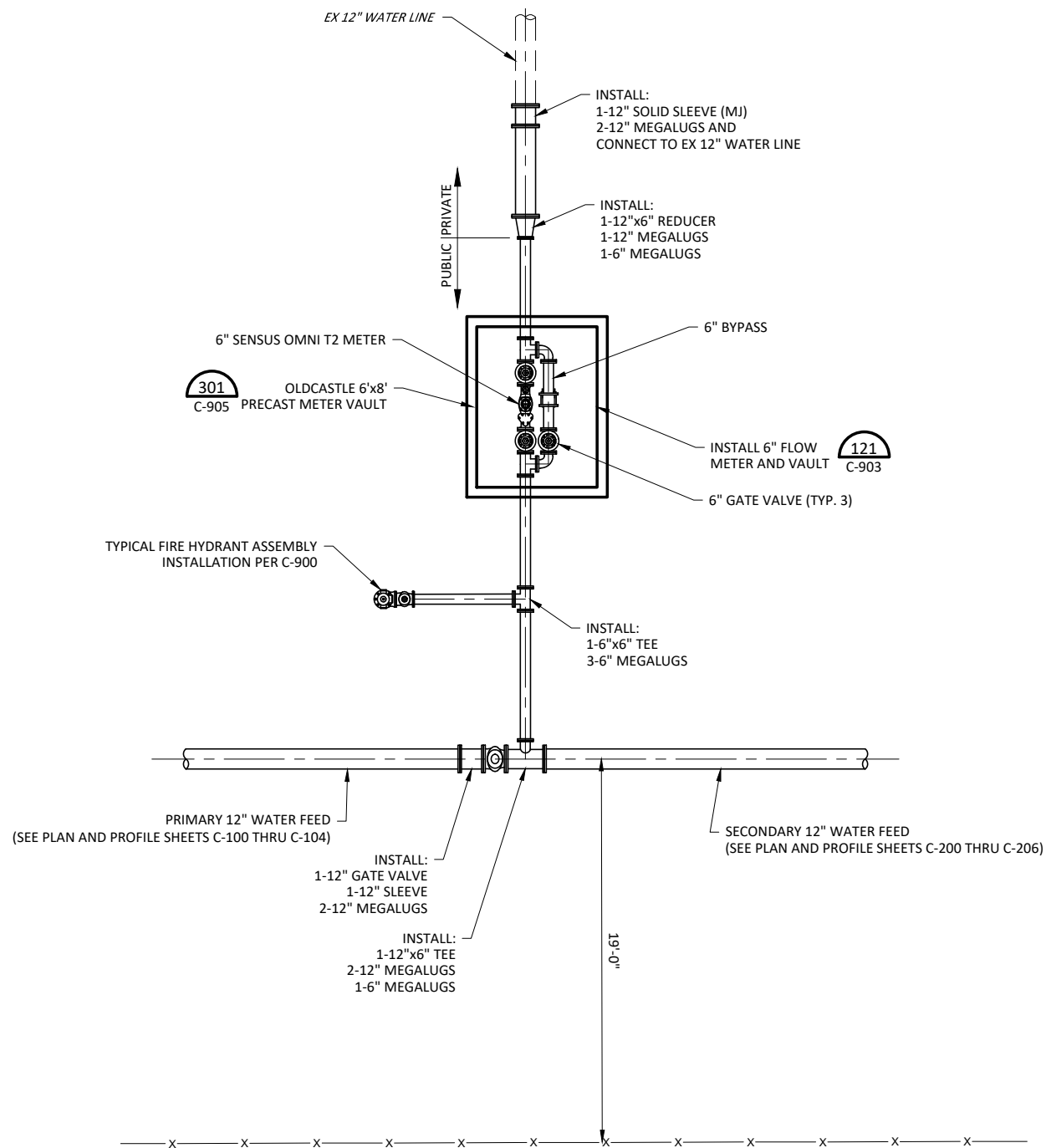
STANDARD DETAILS
CIVIL STANDARD DETAILS IV



IF THIS BAR DOES NOT
MEASURE ONE INCH,
DRAWING IS NOT TO
LABELLED SCALE

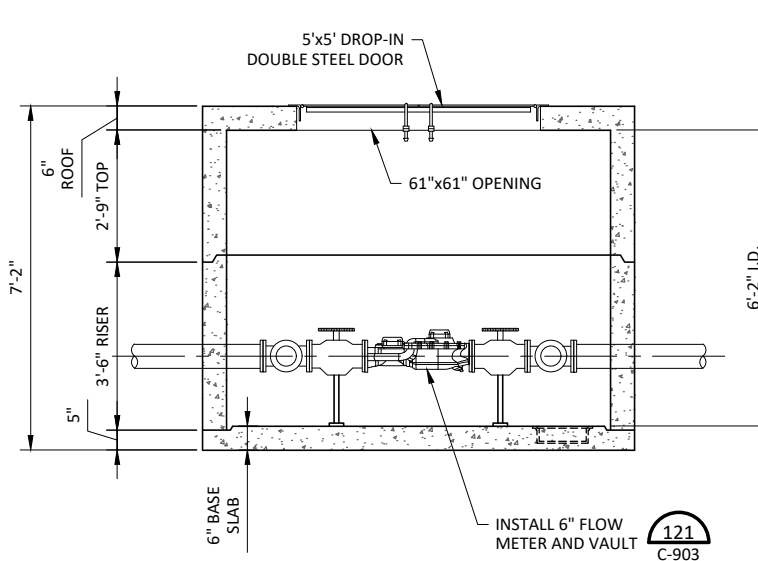
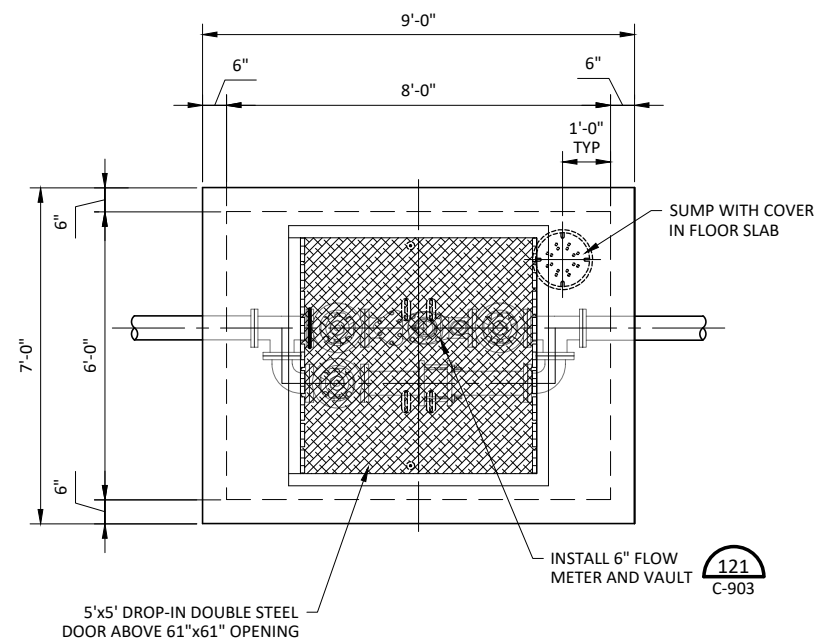
DESIGNED C. FERGUSON
DRAWN F. CAVE
CHECKED G. FARAH
REVIEWED A. SWARTZ

Seq. _____
Dwg. No. **C-905**
3435-003-01



CIVIL DETAIL FOR 6" WATER MAIN AND VAULT 300

SCALE: 1/4"=1'-0"

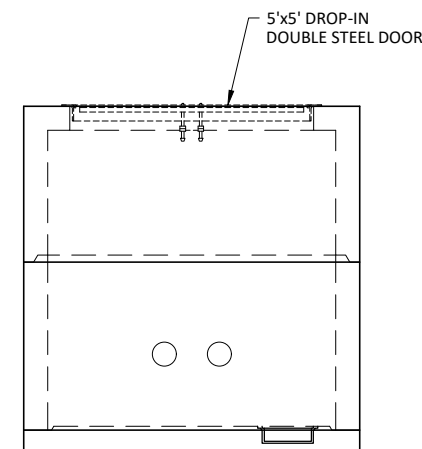


OLDCASTLE 6'x8' PRECAST METER VAULT 301

SCALE: 1/5"=1'-0"

GENERAL NOTES:

1. STRENGTH DESIGN METHOD I.A.W. ACI 318.
2. APPLICABLE DESIGN CODES:
 - ACI 318 (MAIN DESIGN SPECIFICATION)
 - ASTM C913 (PRODUCT SPECIFICATION)
3. PRECAST RATED FOR HS20 LIVE LOAD WITH IMPACT I.A.W. AASHTO SPECIFICATION.
4. DESIGN FILL RANGE = 0' (MIN) TO 2' (MAX)
5. GROUND WATER TABLE ASSUMED AT 5' BELOW GRADE. IF DESIGN (OR ACTUAL) WATER TABLE IS LESS THAN ASSUMED, REVIEWING ENGINEER TO NOTIFY OLDCASTLE PRECAST UPON REVIEW OF THIS SUBMITTAL.
6. LATERAL DESIGN PRESSURES:
 - EQUIV DRY SOIL FLUID PRESSURE = 47 PCF
 - EQUIV SATURATED SOIL FLUID PRESSURE = 80 PSF
 - LIVE LOAD SURCHARGE PRESSURE = 2'
7. CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS = 5,000 PSI.
8. REINFORCEMENT: ASTM A615, GRADE 60.
9. JOINT SEALANT: BUTYL RUBBER, SS-0100210.
10. THIS DESIGN DOES NOT INCLUDE ANY LATERAL OR SURCHARGE LOADS PRODUCES BY OTHER FOOTINGS OR FOUNDATIONS ADJACENT TO THIS STRUCTURE. THIS STRUCTURE SHALL BE KEPT A MINIMUM OF 1:1 RATIO AWAY FROM OTHER FOOTINGS OR FOUNDATIONS.



PLUMMER

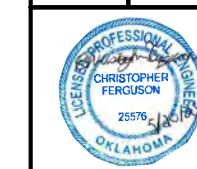


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CIVIL STANDARD DETAILS V



IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED C. FERGUSON
DRAWN F. CAVE
CHECKED G. FARAH
REVIEWED A. SWARTZ

Seq. No. C-906
3435-003-01

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