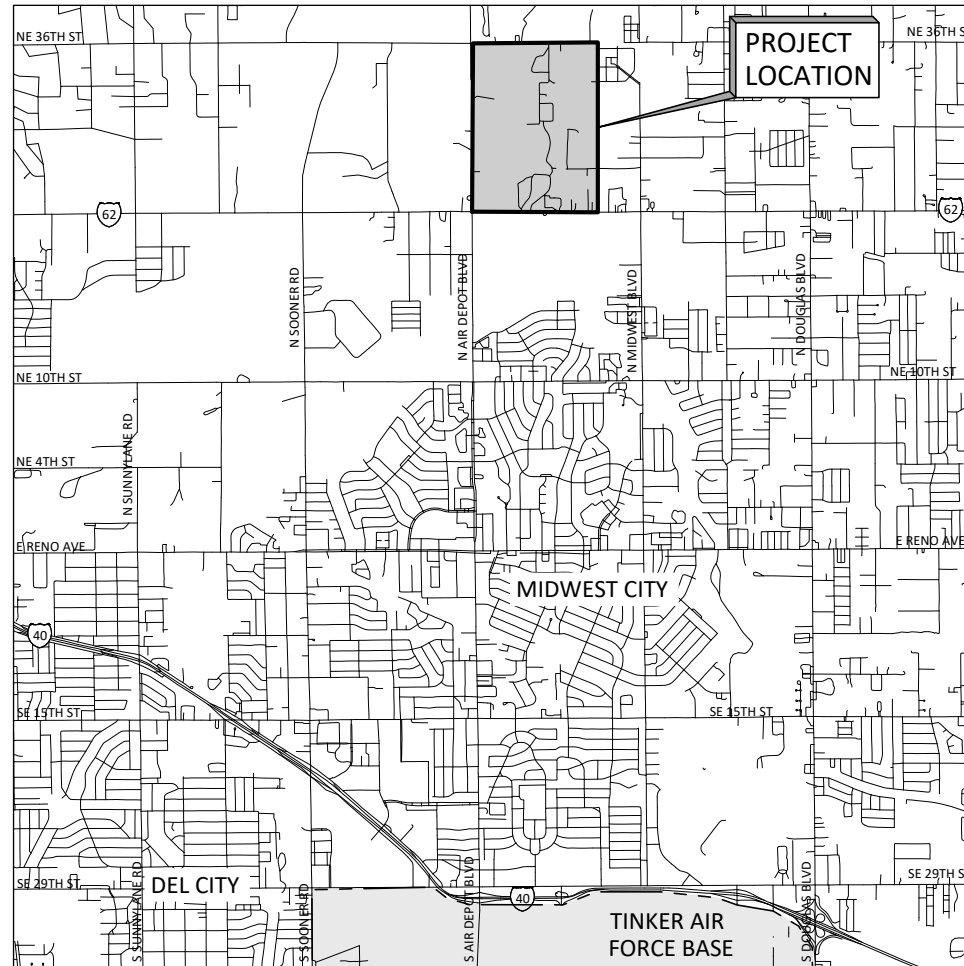


# CITY OF MIDWEST CITY CONSTRUCTION PLANS FOR NORTH SIDE UTILITIES SANITARY SEWER PROJECT



  
**LOCATION MAP**  
 SCALE: 1"=2000'

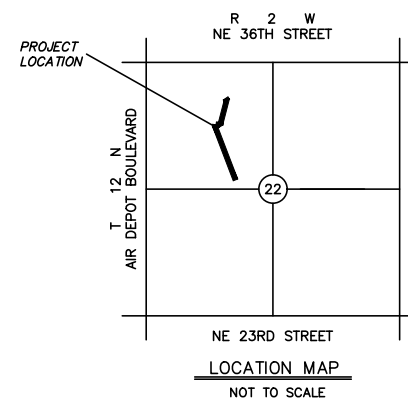
## SEPTEMBER 2023

### BID SET



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

**PLUMMER PROJECT NO. 3435-003-01**



# THE CITY OF MIDWEST CITY

**Matt Dukes**  
Mayor

**Susan Eads**  
Ward 1

**Sean Reed**  
Ward 4

**Pat Byrne**  
Ward 2

**Sara Bana**  
Ward 5

**Rick Dawkins**  
Ward 3

**Rick Favors**  
Ward 6



**Tim Lyon**  
City Manager

**Sara Hancock**  
City Clerk

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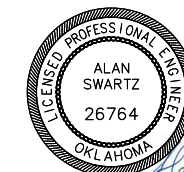
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3	Symbols and Abbreviations
4	City of Midwest City General Notes
5	Additional General Notes I
6	Project Layout, Control Points, and Ownership
7	Bid Quantities
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11	8" Sanitary Gravity Sewer
12-13	Lift Station Civil Site Work
14	Lift Station Mechanical
15-18	Structural
19-28	Electrical
29-36	Standard Details

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



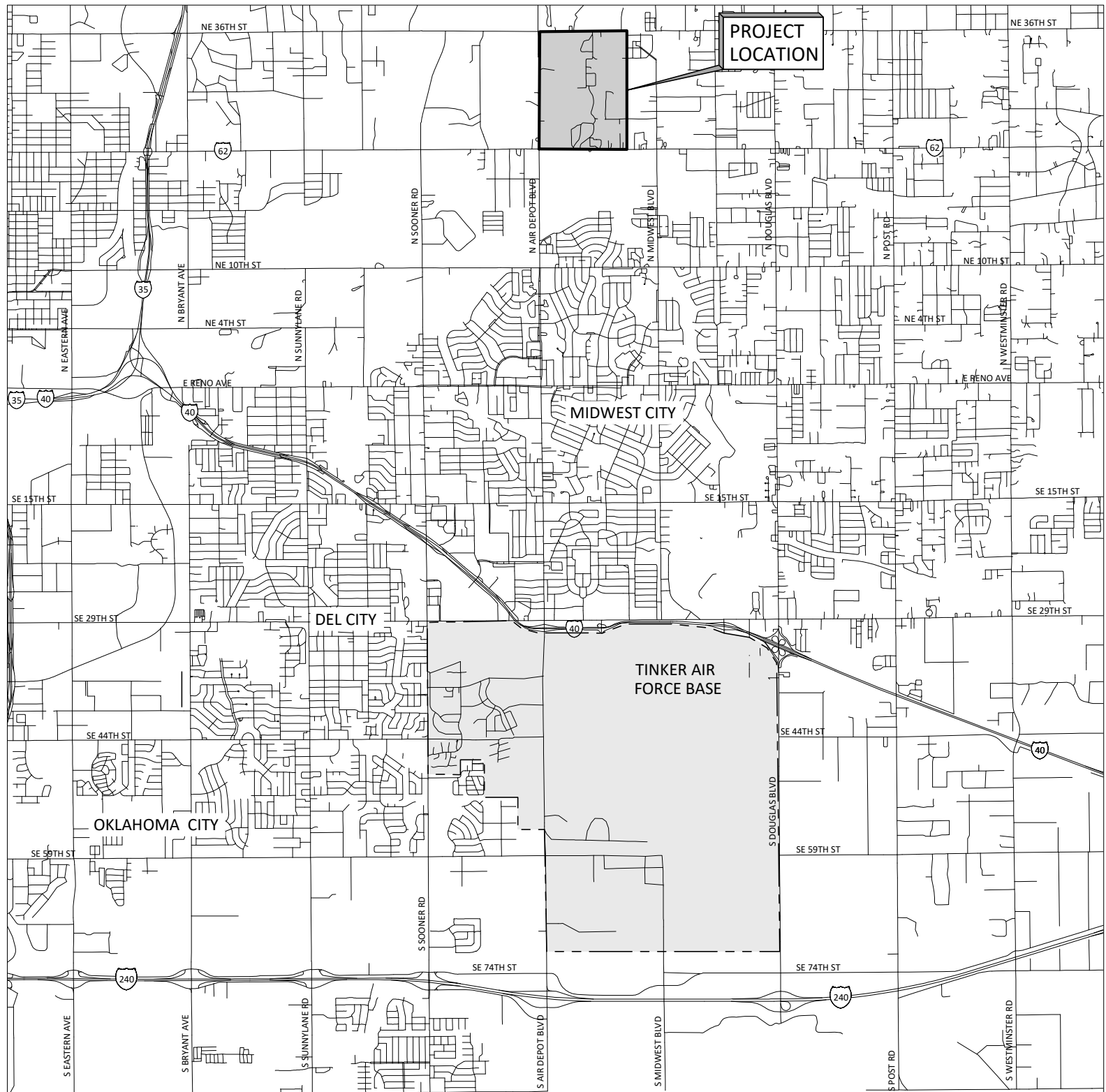
840-5032  
 1-800-522-6543

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'

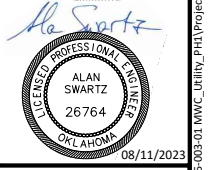
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NO.	DATE	REVISION	BY

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

**CITY OF MIDWEST CITY**  
 NORTH SIDE UTILITIES SANITARY SEWER PROJECT  
 PROJECT LOCATION MAP AND INDEX OF DRAWINGS



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

DESIGNED R. WEINERT  
 DRAWN F. CAVE  
 CHECKED G. FARAH  
 REVIEWED A. SWARTZ

Seq. **2** of **36**  
 Dwg. No. **G-002**

**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 PLANT PROCESS DRAIN
	GEOTECHNICAL BORING		EXISTING STORM DRAIN
	IRON ROD FOUND		EXISTING SANITARY SEWER
	SURVEY CONTROL POINT		CL OF STREET
	TEST HOLE LOCATION		FEMA 100-YEAR FLOODPLAIN
	MONUMENT		TREE
	CLAY COLLAR		BRUSH OR TREELINE
	BORING		SHED/STRUCTURE

**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
		POE	POINT OF ENDING
		POE	POINT OF ENTRY
B-XXX	BORE NUMBER	PROP	PROPOSED
B/L	BUILDING LINE	PRC	POINT OF REVERSE CURVE
BM	BENCHMARK	PSI	POUND PER SQUARE INCH
BOV	BLOW OFF VALVE	PVC	POLYVINYL CHLORIDE
BW	BARBED WIRE	PI	POINT OF INFLECTION
		RCP	REINFORCED CONCRETE PIPE (C-302)
C	HAZEN-WILLIAMS COEFFICIENT	ROW	RIGHT-OF-WAY
CIRF	CAPPED IRON ROD FOUND	RW	RAW WATER
CIRS	CAPPED IRON ROD SURVEY		
CP-XXX	CONTROL POINT NUMBER	SUE	SUBSURFACE UTILITY ENGINEERING
CONC	CONCRETE	SS	SANITARY SEWER/STAINLESS STEEL
CL	CENTER LINE	SSCO	SANITARY SEWER CLEANOUT
CLSM	CONTROLLED LOW STRENGTH MATERIAL	SSMH	SANITARY SEWER MANHOLE
		SPECS	SPECIFICATIONS
DEQ	OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY	STA	STATION
DIA	DIAMETER	STD	STANDARD
DR	DIMENSION RATIO (PIPE)	SDR	STANDARD DIMENSION RATIO
DR	DEED RECORD		
DIP	DUCTILE IRON PIPE	TEMP	TEMPORARY
DIPS	DUCTILE IRON PIPE SIZE	TMK	PERMANENT TELEPHONE MARKER
		T/P	TOP OF PIPE
EX	EXISTING	TYP	TYPICAL
E	EASTING		
EL	ELEVATION	U/E	UTILITY EASEMENT
ESMT	EASEMENT	VPI	VERTICAL POINT OF INFLECTION
		W	POTABLE WATER
FEMA	FEDERAL EMERGENCY MANAGEMENT ASSOCIATION	WL	WATER LINE
FL	FLOW LINE	W/	WITH
FLG	FLANGE	WM	WATER METER
FT	FEET	WRRF	WATER RESOURCES RECOVERY FACILITY
FT/S	FEET PER SECOND		
GPS	GLOBAL POSITIONING SYSTEM		
HDPE	HIGH DENSITY POLYETHYLENE PIPE		
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)
WASTEWATER	4"	FUSIBLE PVC	DR 18	125	188
WASTEWATER	8"	PVC*	SDR 26	N/A	**
WASTEWATER	3"	DUCTILE IRON***	CL 250	125	188
WASTEWATER	4"	DUCTILE IRON***	CL 250	125	188
CASING PIPE	8"	FUSIBLE PVC	DR 18	N/A	N/A

\* GASKETS ON PVC SHALL BE PETROLEUM RESISTANT  
 \*\* PER SPECIFICATION SECTION 40 01 05, FIELD TESTING OF PIPING SYSTEMS  
 \*\*\* CONTRACTOR MAY USE SCHEDULE 40 316 STAINLESS STEEL FLANGED PIPING IN PLACE OF DUCTILE IRON PIPE IN DISCHARGE PIPING



NO.	DATE	REVISION	BY

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

CITY OF MIDWEST CITY  
 NORTH SIDE UTILITIES SANITARY SEWER PROJECT  
 GENERAL  
 SYMBOLS AND ABBREVIATIONS



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DESIGNED	R. WEINERT
DRAWN	F. CAVE
CHECKED	G. FARAH
REVIEWED	A. SWARTZ

PRINTED: 7/13/2023 2:12 PM C:\Users\lcave\OneDrive\Plummer Associates\3435-003-01 MWVC\_Utility\_PHL\Project Files\Plummer\Sheets\General\SS\_G-SYMBOLS\_ABBREVIATIONS.dwg. SAVED: 7/11/2023 9:35 AM. SAVED BY: lcave. USER: lcave.



**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 252:656 WATER POLLUTION CONTROL CONSTRUCTION STANDARDS.
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 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. CONTRACTOR SHALL OBTAIN A LAND DISTURBANCE PERMIT FROM THE MIDWEST CITY STORM WATER QUALITY OFFICE.
A6 CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE MEASURES FOR PREVENTING STORM WATER RUNOFF FROM ENTERING THE TRENCH DURING CONSTRUCTION.
A7 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.
A8 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 CONTRACTOR SHALL NOT INTRODUCE NEW HIGHS OR LOWS INTO THE PROFILE WITHOUT THE APPROVAL OF THE OWNER AND THE ENGINEER.
B4 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 HDD, 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.
B5 NO BLASTING WILL BE ALLOWED.
B6 NO BURNING WILL BE ALLOWED. ALL BRUSH AND CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.
B7 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.
B8 NEW PIPE SHALL BE DESIGNED FOR THE OPERATING PRESSURES INDICATED ON THE PLANS AND SPECIFICATIONS.
B9 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.
B10 ALL ABOVE GROUND METAL SHALL BE PAINTED OR COATED ACCORDING TO THE SPECIFICATIONS. CONTRACTOR SHALL COORDINATE THE COLORS WITH THE OWNER.
B11 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.
B12 CONTRACTOR SHALL COORDINATE HIS PROPOSED CONSTRUCTION WITH OTHER CONTRACTORS WORKING IN THE SAME AREA SIMULTANEOUSLY WITH HIS PROJECT. THIS INCLUDES, BUT IS NOT LIMITED TO, ALL CONNECTION POINTS OR OTHER SPECIAL ITEMS AS REQUIRED FOR TESTING.
B13 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.
B14 CONTRACTOR SHALL MAINTAIN MINIMUM COVER OF 5 FEET ON PIPELINE AT ALL TIMES.
B15 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.
B16 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 AN ODEQ-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 HIS 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-903.
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.

**K. ODEQ NOTES - SEWER (FACILITY NO. S-20541)**

- K1 SANITARY SEWER STANDARDS - MATERIALS - MANHOLES IN ACCORDANCE WITH OAC 252:656-5-3(D), THE USE OF BRICKS AND/OR CONCRETE BLOCKS IN MANHOLE CONSTRUCTION IS PROHIBITED.
K2 SANITARY SEWER STANDARDS - CONSTRUCTION STANDARDS - SEWER IN ACCORDANCE WITH OAC 252:656-5-4(A), INSTALL METAL TRACER WIRE WITH ALL NON-METALLIC PIPE AND COLOR CODE ALL UNDERGROUND INSTALLED PIPE.
K3 SANITARY SEWER STANDARDS - CONSTRUCTION STANDARDS - WATERTIGHT COVERS IN ACCORDANCE WITH OAC 252:656-5-4(G)(5), USE WATERTIGHT COVERS ON MANHOLES WITH RIM ELEVATIONS BELOW THE 100-YEAR FLOOD ELEVATION, OR OTHERWISE SUBJECT TO SURFACE STORM WATER SUBMERGENCE.
K4 SANITARY SEWER STANDARDS - CONSTRUCTION STANDARDS - MANHOLES - LEAKAGE TESTS IN ACCORDANCE WITH OAC 252:656-5-4(G)(7), CONDUCT LEAKAGE TESTS ON ALL NEW MANHOLES IN ACCORDANCE WITH LATEST VERSION OF ASTM C969 OR C1244.
K5 SANITARY SEWER STANDARDS - TESTS - LEAKAGE TEST IN ACCORDANCE WITH OAC 252:656-5-5(B), LEAKAGE TESTS ARE REQUIRED FOR ALL GRAVITY LINES. HYDROSTATIC TESTS MUST BE IN ACCORDANCE WITH THE ASTM STANDARD FOR THE TEST TO BE USED. USE A 2-FOOT TEST HEAD AND LEAKAGE INWARD OR OUTWARD MUST NOT EXCEED 10 GALLONS PER INCH OF PIPE DIAMETER PER MILE PER DAY. THE PROCEDURES LISTED IN THE HANDBOOK OF PVC PIPE, UNI-BELL PVC PIPE ASSOCIATION, 2001 MAY BE USED FOR PVC PIPE.

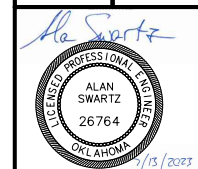
PLUMMER



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

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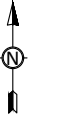
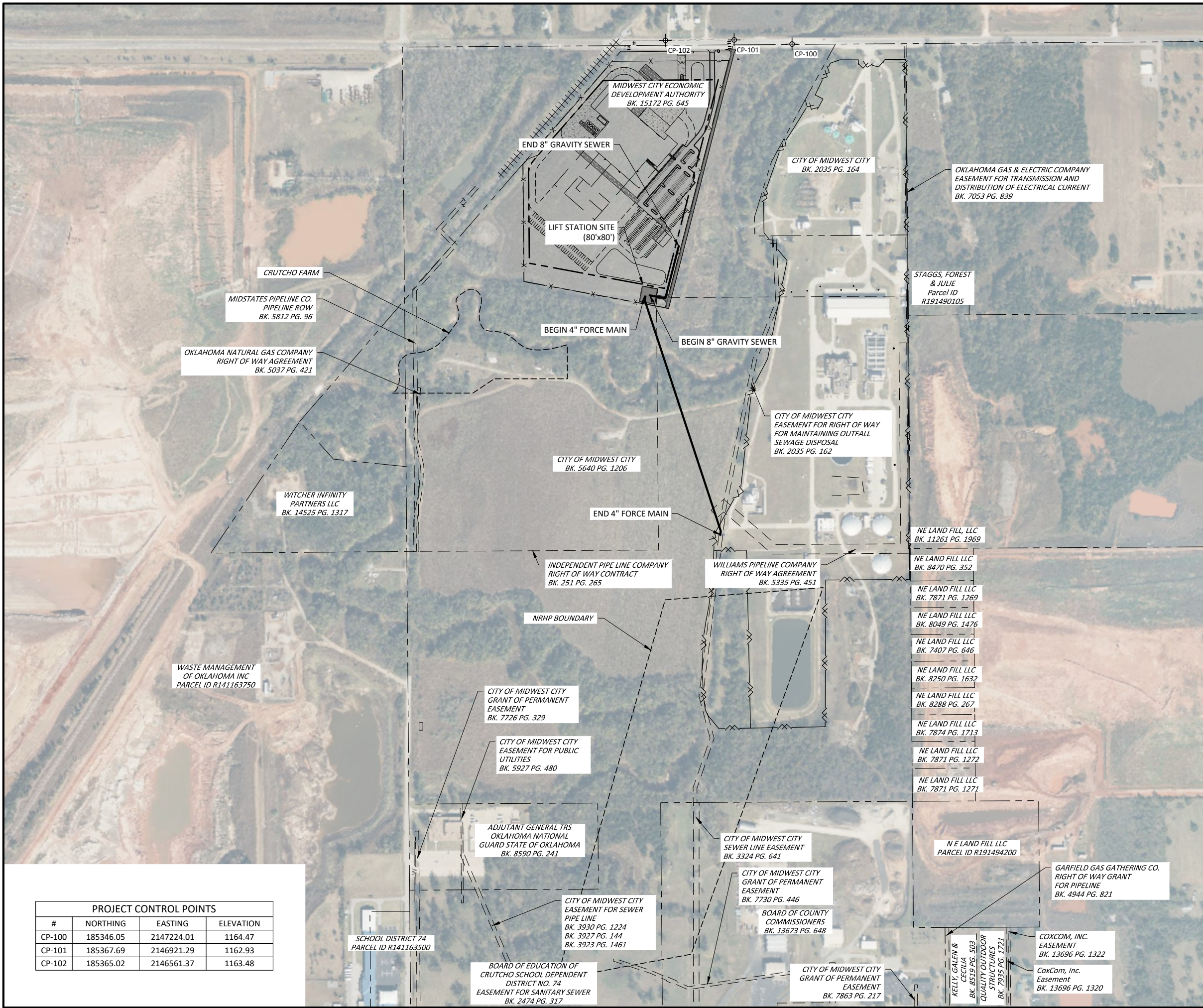
CITY OF MIDWEST CITY
NORTH SIDE UTILITIES SANITARY SEWER PROJECT
GENERAL
ADDITIONAL GENERAL NOTES 1



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

DESIGNED R. WEINERT
DRAWN F. CAVE
CHECKED G. FARAH
REVIEWED A. SWARTZ

Seq. 5 of 36
Dwg. No. G-005
3435-003-01

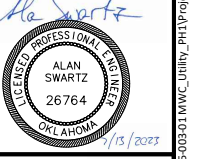


PROJECT CONTROL POINTS			
#	NORTHING	EASTING	ELEVATION
CP-100	185346.05	2147224.01	1164.47
CP-101	185367.69	2146921.29	1162.93
CP-102	185365.02	2146561.37	1163.48

NO.	DATE	REVISION	BY

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

**CITY OF MIDWEST CITY**  
 NORTH SIDE UTILITIES SANITARY SEWER PROJECT  
 PROJECT LAYOUT, CONTROL POINTS, AND OWNERSHIP



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

DESIGNED	R. WEINERT
DRAWN	F. CAVE
CHECKED	G. FARAH
REVIEWED	A. SWARTZ

PRINTED: 7/13/2023 2:13 PM C:\Users\lca\OneDrive\Plummer Associates\3435-003-01 MWWC\_Utilities\_Ph1\Project Files\Plummer\Sheets\General\SS\_G-HRONTI-CONTRL.dwg SAVED: 7/12/2023 9:28 AM SAVED BY: lca USER: lca\lca

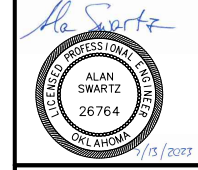
ITEM	DESCRIPTION	QTY	UNIT
1	4-INCH C-900 FUSIBLE PVC (DR 18) SANITARY SEWER FORCE MAIN WITH FITTINGS (OPEN CUT)	631	LF
2	4-INCH C-900 FUSIBLE PVC (DR 18) SANITARY SEWER FORCE MAIN PIPE WITH 8-INCH C-900 FUSIBLE PVC (DR 18) ENCASEMENT (HORIZONTAL DIRECTIONAL DRILL)	620	LF
3	8-INCH PVC (SDR 26) GRAVITY SEWER MAIN (OPEN CUT)	385	LF
4	4' DIA. PRECAST SANITARY SEWER MANHOLE	3	EA
5	CONNECTION TO JB-1	1	LS
6	175 GPM FIRM CAPACITY LIFT STATION (EXCEPT FOR PUMPS) WITH VALVE, METER VAULT, AND SITE WORK	1	LS
7	SUBMERSIBLE PUMPS	3	EA
8	LIFT STATION ELECTRICAL AND INSTRUMENTATION (INCLUDING GENERATOR AND ELECTRICAL BUILDING)	1	LS
9	UTILITY DOME MARKER	4	EA
10	TRACER WIRE AND TRACER WIRE TEST STATIONS	1	LS
11	SEDIMENT AND EROSION CONTROL	1	LS
12	12' WIDE FLEXIBLE BASE ROADWAY WITH LIME STABILIZATION	2,400	SY
13	SEEDING	1	LS
14	UTILITY LOCATION AND SUPPORT	1,700	LF
15	TRENCH SAFETY	1,700	LF
16	TESTING	1	LS
17	CONSTRUCTION SURVEY	1	LS
18	SWPPP	1	LS
19	MOBILIZATION AND DEMOBILIZATION (5%)	1	LS



NO.	DATE	REVISION	BY

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

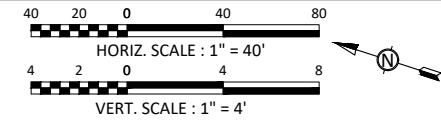
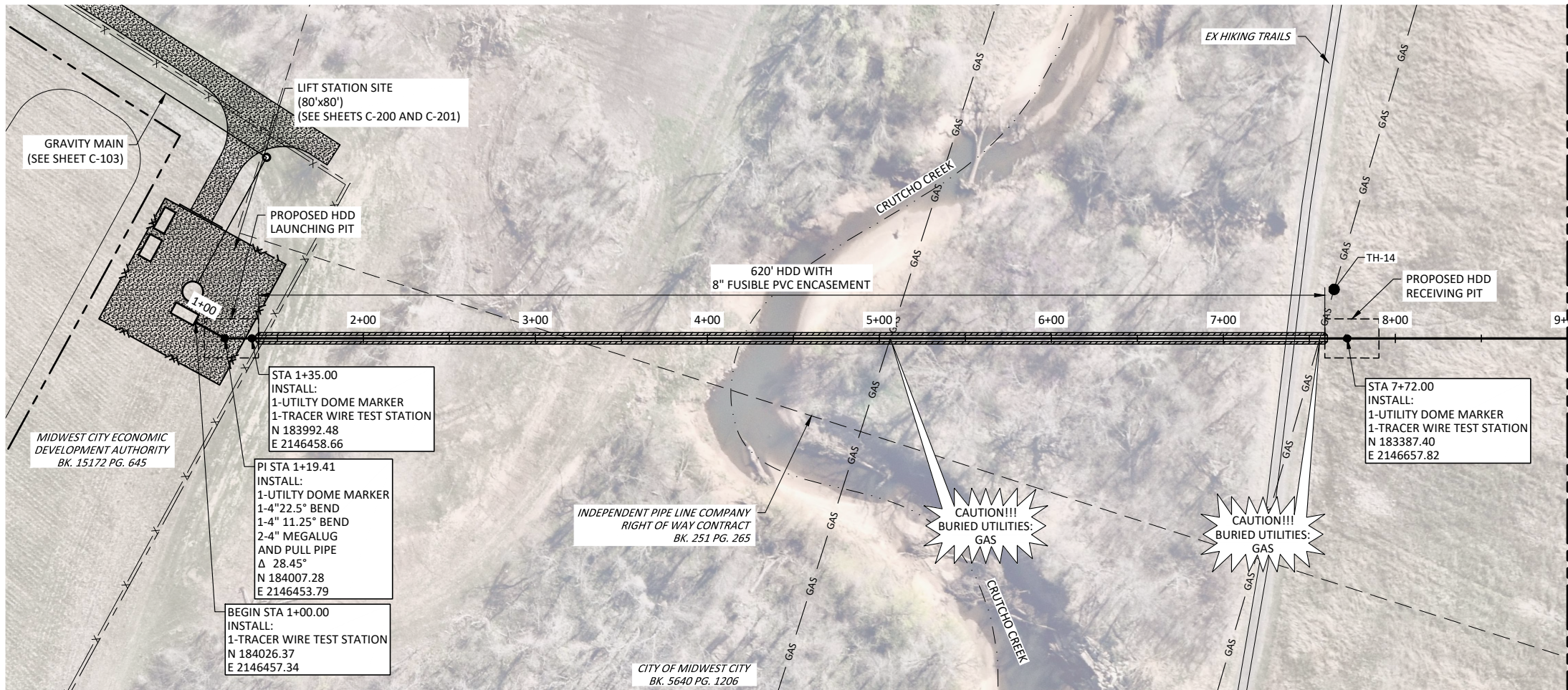
CITY OF MIDWEST CITY  
NORTH SIDE UTILITIES SANITARY SEWER PROJECT  
GENERAL  
BID QUANTITIES



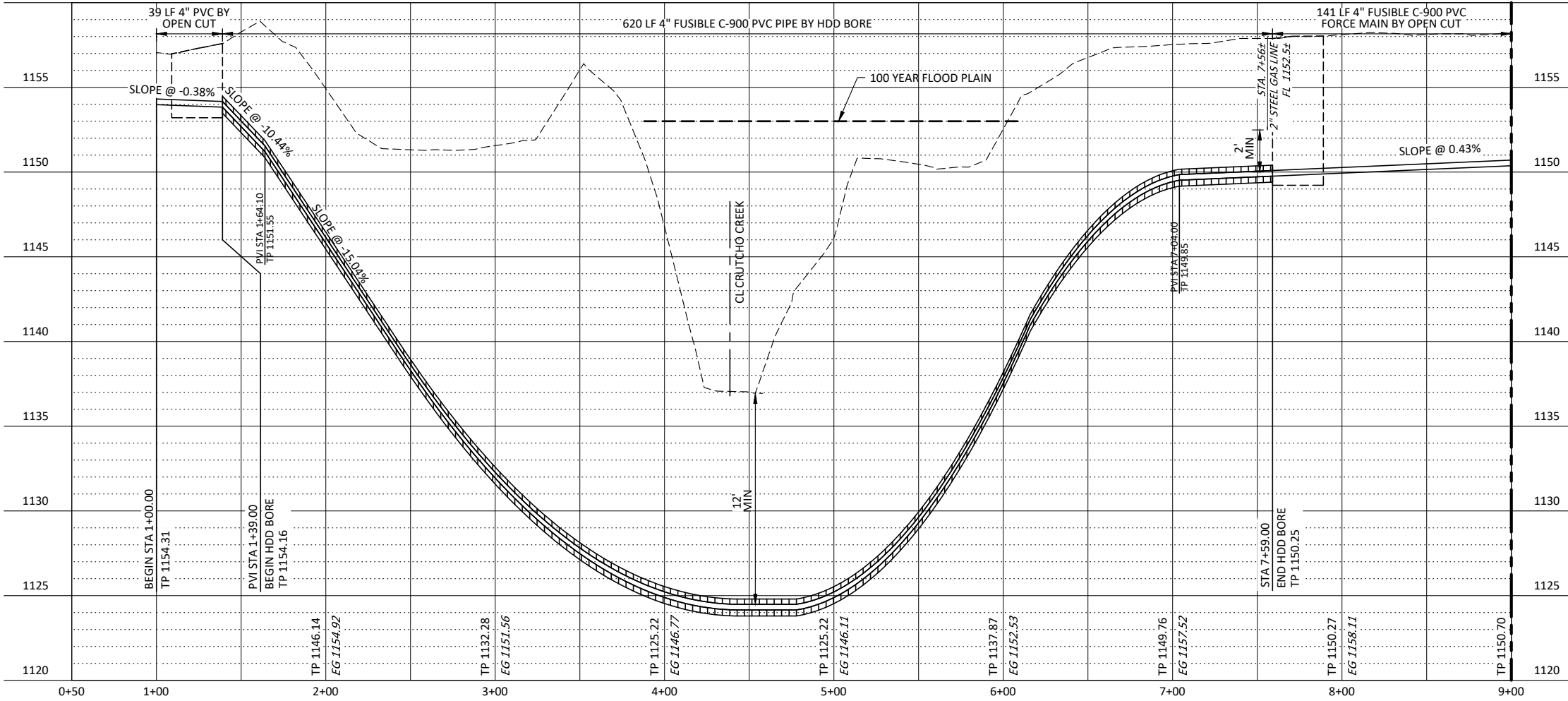
IF THIS BAR DOES NOT  
MEASURE ONE INCH,  
DRAWING IS NOT TO  
LABELLED SCALE

DESIGNED R. WEINERT  
DRAWN F. CAVE  
CHECKED G. FARAH  
REVIEWED A. SWARTZ

Seq. **7** of **36**  
Dwg. No. **G-007**  
3435-003-01



- NOTES:
- REFER TO SHEETS G-004 AND G-005 FOR ALL PROJECT RELATED GENERAL NOTES.
  - 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 INSTALL TRACER WIRE AND TEST STATIONS IN ACCORDANCE WITH GENERAL NOTES SS6 AND SS7. CONTRACTOR SHALL INSTALL TEST STATIONS AT LOCATIONS SHOWN.



TEST HOLE INFORMATION			
NAME	SIZE/TYPE	MATERIAL	DEPTH (FT)
TH-14	2/GAS	STEEL	4.3

**PLUMMER**

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

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

CITY OF MIDWEST CITY  
NORTH SIDE UTILITIES SANITARY SEWER PROJECT

CIVIL  
4" FORCE MAIN PLAN AND PROFILE  
BEGIN STA 1+00 TO STA 9+00

ALAN SWARTZ  
26764  
OKLAHOMA  
2/15/2023

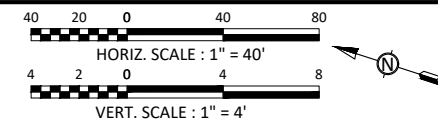
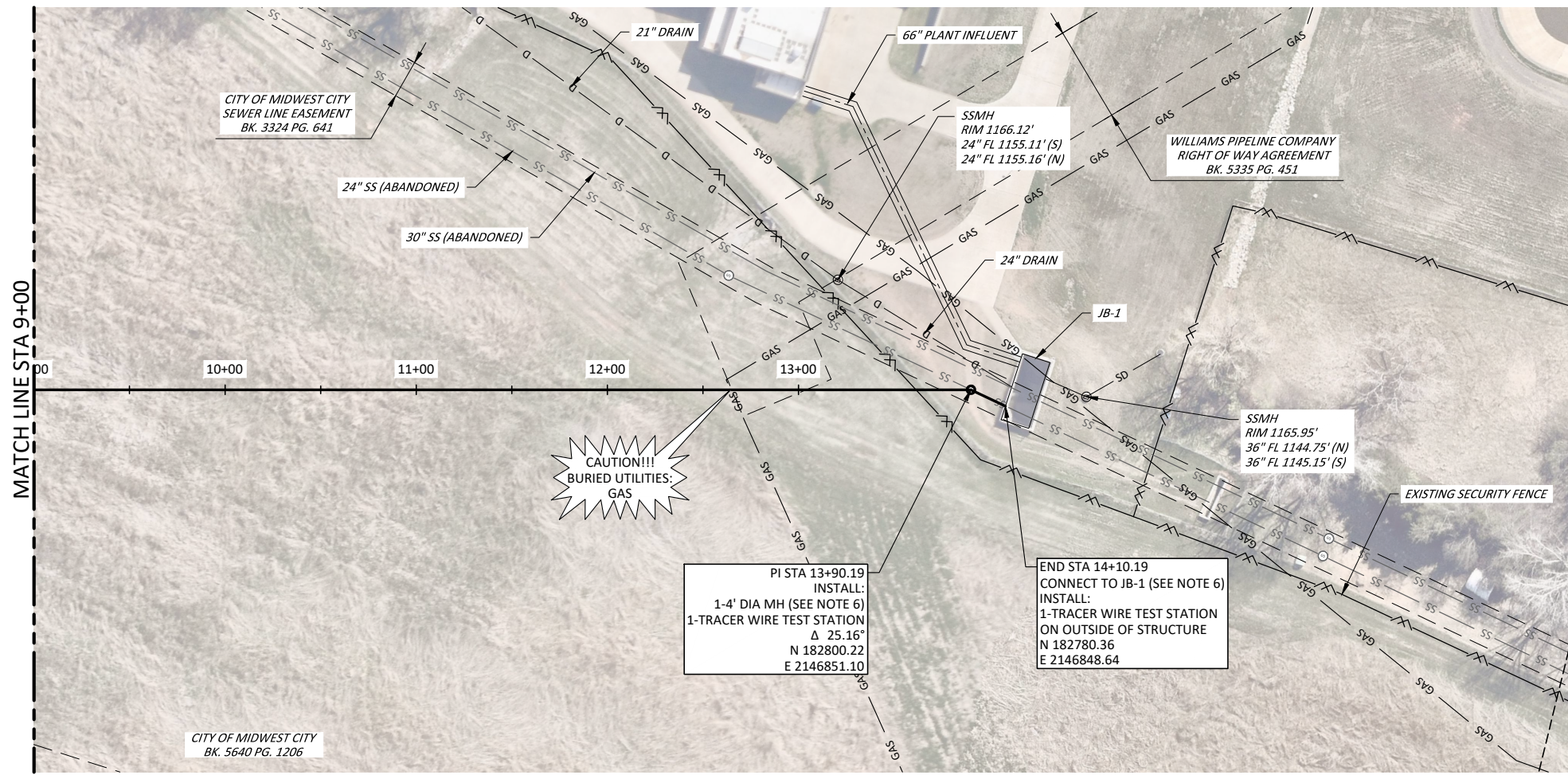
IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED R. WEINERT  
DRAWN F. CAVE  
CHECKED G. FARAH  
REVIEWED A. SWARTZ

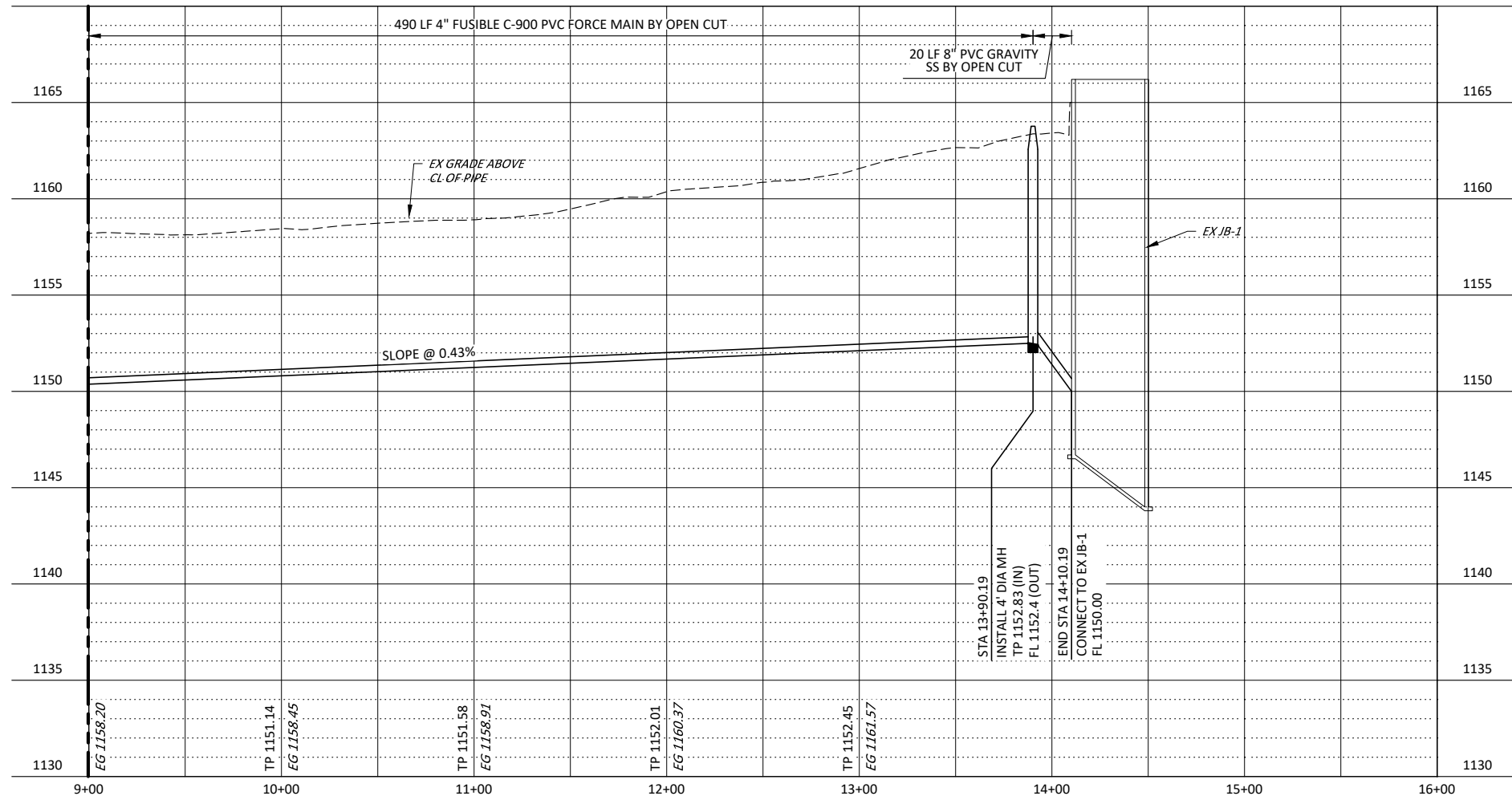
Seq. 8 of 36  
Dwg. No. C-100  
3435-003-01

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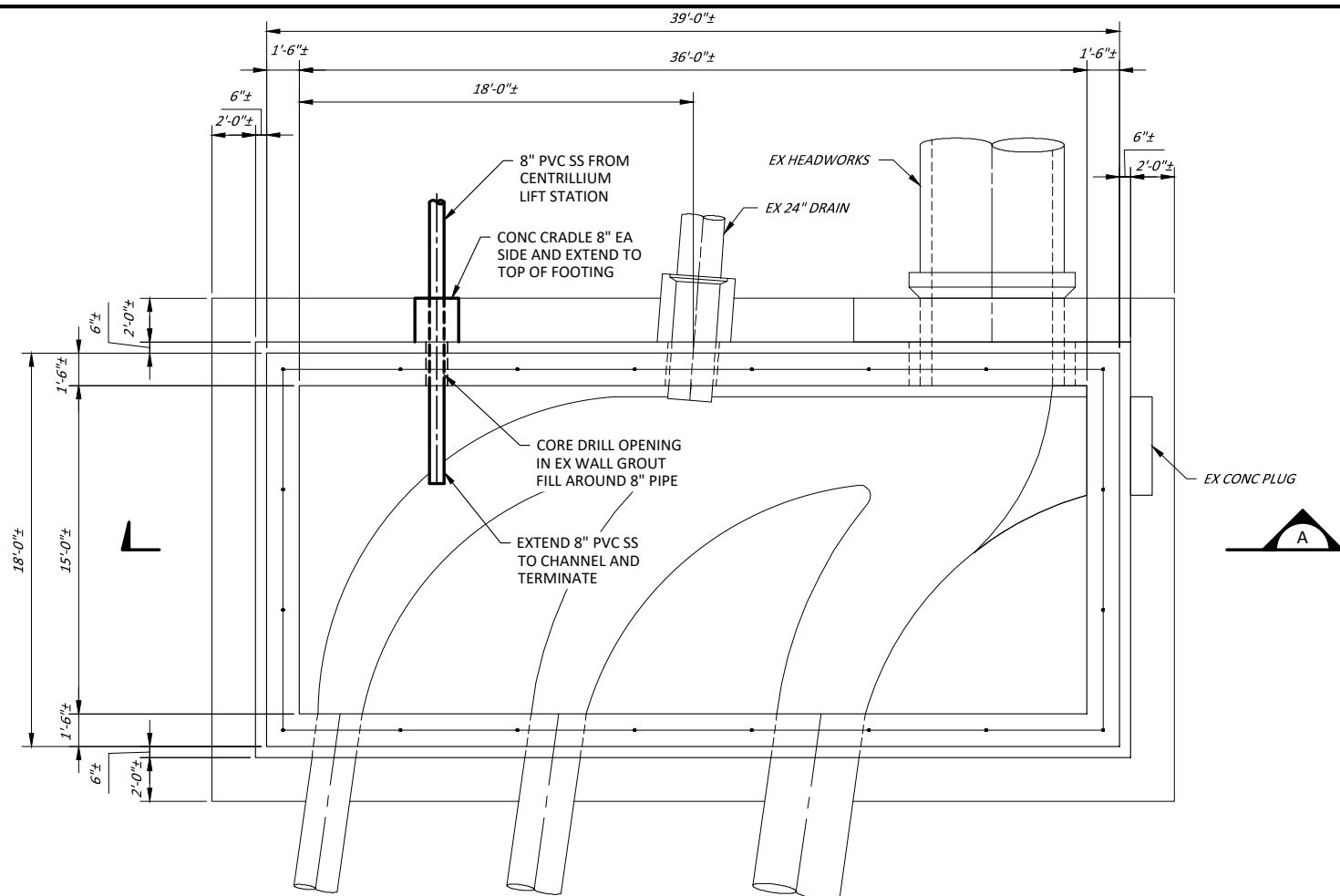


- NOTES:
- REFER TO SHEETS G-004 AND G-005 FOR ALL PROJECT RELATED GENERAL NOTES.
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  - CONTRACTOR SHALL INSTALL TRACER WIRE AND TEST STATIONS IN ACCORDANCE WITH GENERAL NOTES SS6 AND SS7. CONTRACTOR SHALL INSTALL TEST STATIONS AT LOCATIONS SHOWN.
  - CONTRACTOR SHALL REMOVE APPROX 20 LF OF EXISTING ABANDONED 24" SS PIPING, INSTALL 4" DIA MANHOLE, AND ROUTE 8" PVC SS INTO JB-1. SEE SHEET C-102 FOR CONNECTION DETAILS.



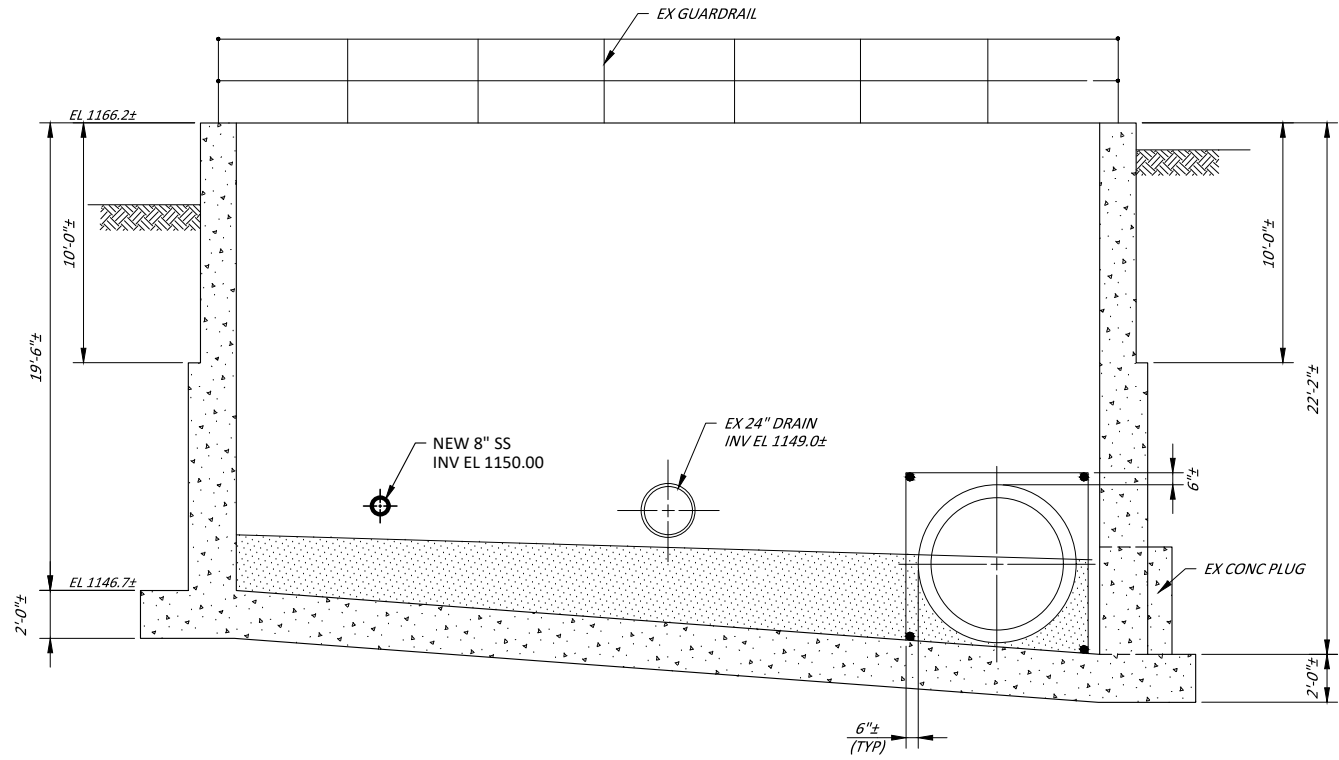
<b>PLUMMER</b>		531 COUCH DR, STE 200   OKLAHOMA CITY, OK 73102 405.440.2725   OKLAHOMA FIRM NO. 1097
<b>CITY OF MIDWEST CITY          NORTH SIDE UTILITIES SANITARY SEWER PROJECT</b>		100 N MIDWEST BOULEVARD, MIDWEST CITY, OK 73110
NO. _____ DATE _____	REVISION _____ BY _____	CIVIL <b>4" FORCE MAIN PLAN AND PROFILE          STA 9+00 TO END STA 13+21.87</b>
		IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE
DESIGNED <u>R. WEINERT</u> DRAWN <u>F. CAVE</u> CHECKED <u>G. FARAH</u> REVIEWED <u>A. SWARTZ</u>		
Seq. 9 of 36 Dwg. No. C-101		3435-003-01

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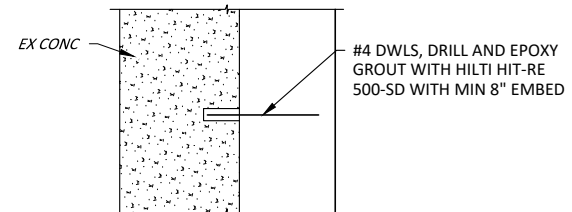
**PLAN-JUNCTION BOX NO 1**

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



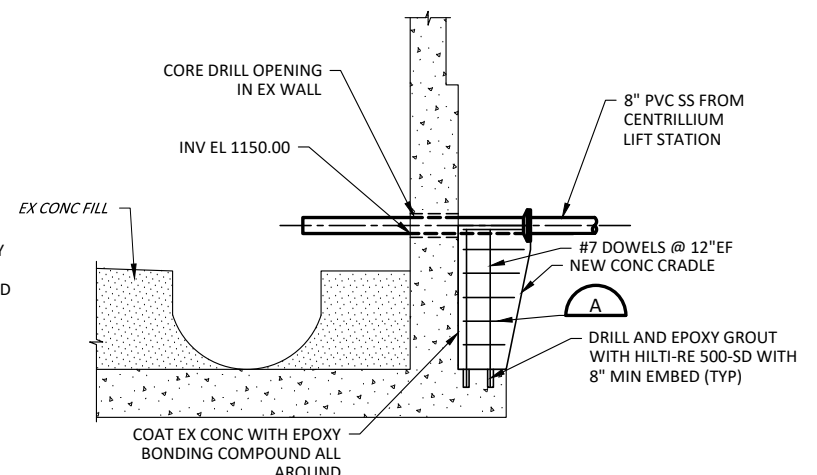
**SECTION A**

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



**DETAIL A**

SCALE: 1/2"=1'-0"



**SECTION B**

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

NO.	DATE	REVISION	BY

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

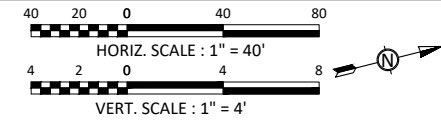
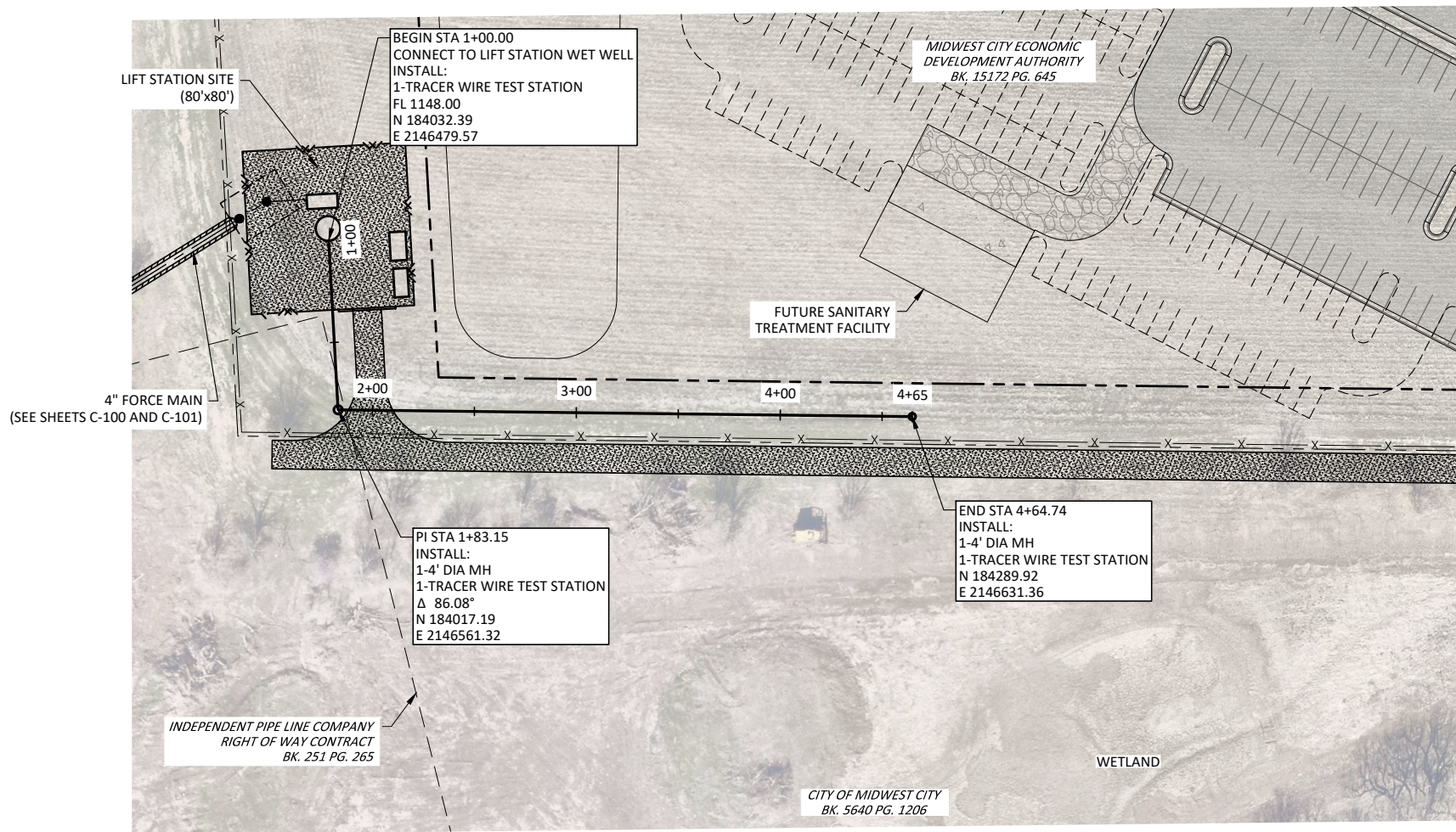
CITY OF MIDWEST CITY  
 NORTH SIDE UTILITIES SANITARY SEWER PROJECT  
 CIVIL  
 JB-1 CONNECTION



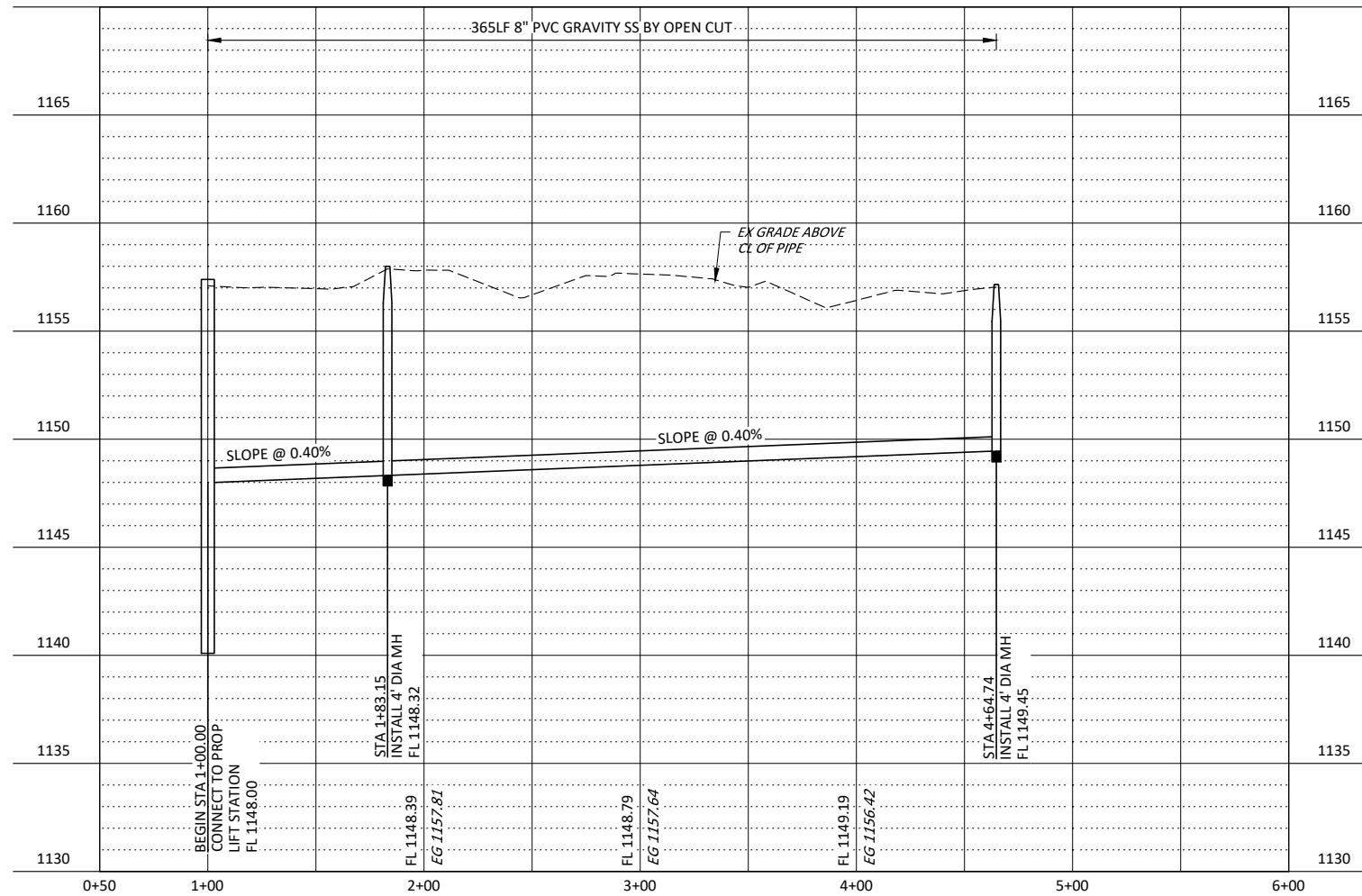
IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED: R. WEINERT  
 DRAWN: F. CAVE  
 CHECKED: G. FARAH  
 REVIEWED: A. SWARTZ

PRINTED: 7/13/2023 2:14 PM C:\Users\fcave\OneDrive\Documents\Plummer\Associates\3435-003-01 MWVC\_UTILITY\_PHEL\Project Files\Plummer\Sheets\CIVIL\JB-1\JB-1.dwg. SAIVED: 7/13/2023 1:51 PM. SAIVED BY: fcave USEFC Cave, Forrest



- NOTES:
- REFER TO SHEETS G-004 AND G-005 FOR ALL PROJECT RELATED GENERAL NOTES.
  - 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.
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  - CONTRACTOR SHALL INSTALL TRACER WIRE AND TEST STATIONS IN ACCORDANCE WITH GENERAL NOTES SS6 AND SS7. CONTRACTOR SHALL INSTALL TEST STATIONS AT LOCATIONS SHOWN.
  - ALL MANHOLES SHALL HAVE BOLT DOWN MANHOLE LIDS.



**PLUMMER**



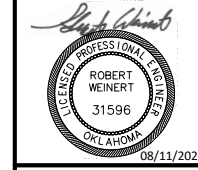
531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102  
405.440.2725 | OKLAHOMA FIRM NO. 1097

NO.	DATE	REVISION	BY

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

**CITY OF MIDWEST CITY**  
NORTH SIDE UTILITIES SANITARY SEWER PROJECT

**CIVIL**  
GRAVITY MAIN PLAN AND PROFILE  
BEGIN STA 1+00 TO END STA 4+64.74



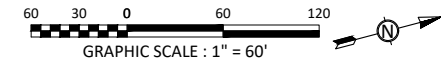
08/11/2023

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

DESIGNED R. WEINERT  
DRAWN F. CAVE  
CHECKED G. FARAH  
REVIEWED A. SWARTZ

Seq. **11** of **36**  
Dwg. No. **C-103**  
3435-003-01

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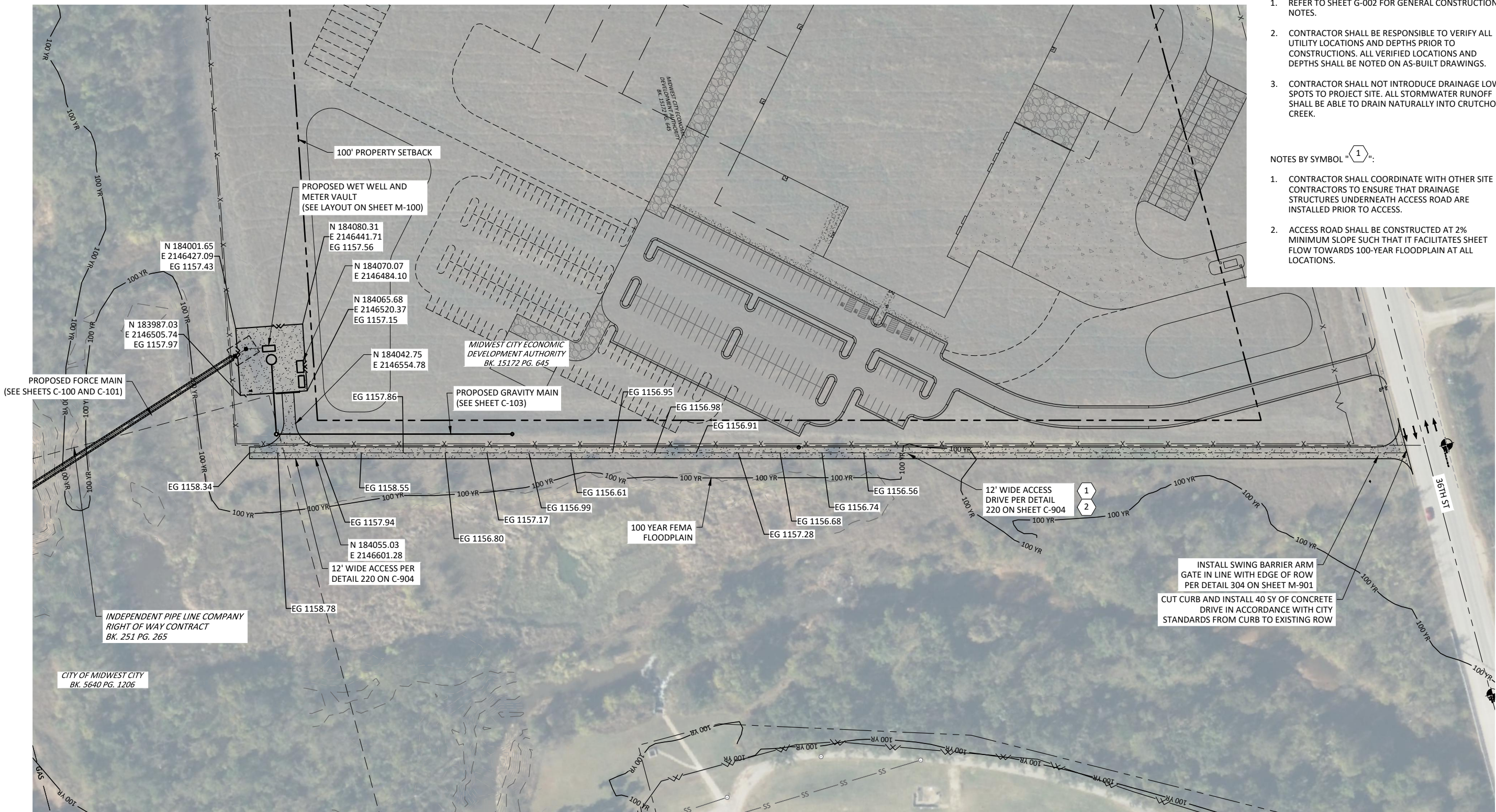


NOTES:

1. REFER TO SHEET G-002 FOR GENERAL CONSTRUCTION NOTES.
2. CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL UTILITY LOCATIONS AND DEPTHS PRIOR TO CONSTRUCTIONS. ALL VERIFIED LOCATIONS AND DEPTHS SHALL BE NOTED ON AS-BUILT DRAWINGS.
3. CONTRACTOR SHALL NOT INTRODUCE DRAINAGE LOW SPOTS TO PROJECT SITE. ALL STORMWATER RUNOFF SHALL BE ABLE TO DRAIN NATURALLY INTO CRUTCHO CREEK.

NOTES BY SYMBOL "1":

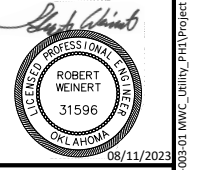
1. CONTRACTOR SHALL COORDINATE WITH OTHER SITE CONTRACTORS TO ENSURE THAT DRAINAGE STRUCTURES UNDERNEATH ACCESS ROAD ARE INSTALLED PRIOR TO ACCESS.
2. ACCESS ROAD SHALL BE CONSTRUCTED AT 2% MINIMUM SLOPE SUCH THAT IT FACILITATES SHEET FLOW TOWARDS 100-YEAR FLOODPLAIN AT ALL LOCATIONS.



NO.	DATE	REVISION	BY

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

**CITY OF MIDWEST CITY**  
 NORTH SIDE UTILITIES SANITARY SEWER PROJECT  
 CIVIL  
 LIFT STATION CIVIL SITE WORK  
 PROPOSED ACCESS ROAD



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

DESIGNED	R. WEINERT
DRAWN	F. CAVE
CHECKED	G. FARAH
REVIEWED	A. SWARTZ

PRINTED: 8/9/2023 8:49 AM C:\Users\jave\OneDrive\Documents\Plummer Associates\3435-003-01\MMW\_C\_Utility\_DPH\Project Files\Plummer\Sheets\CIVIL\CC-LS SITE\_ACCESS ROAD.dwg SAVED: 8/9/2023 8:48 AM SAVED BY: Fcave User: Fcave



**PLUMMER**



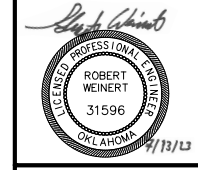
531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102  
405.440.2725 | OKLAHOMA FIRM NO. 1097

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- NOTES BY SYMBOL "1":
- CONTRACTOR SHALL COORDINATE WITH OTHER SITE CONTRACTORS TO ENSURE THAT DRAINAGE STRUCTURES UNDERNEATH ACCESS ROAD ARE INSTALLED PRIOR TO ACCESS ROAD.
  - ACCESS ROAD SHALL BE CONSTRUCTED AT 2% MINIMUM SLOPE SUCH THAT IT FACILITATES SHEET FLOW TOWARDS 100-YEAR FLOODPLAIN AT ALL LOCATIONS.

NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY  
NORTH SIDE UTILITIES SANITARY SEWER PROJECT  
CIVIL  
LIFT STATION CIVIL SITE WORK  
SITE AND YARD PIPING PLAN



DESIGNED: R. WEINERT  
DRAWN: F. CAVE  
CHECKED: G. FARAH  
REVIEWED: A. SWARTZ

Seq. 13 of 36  
Dwg. No. C-201  
3435-003-01

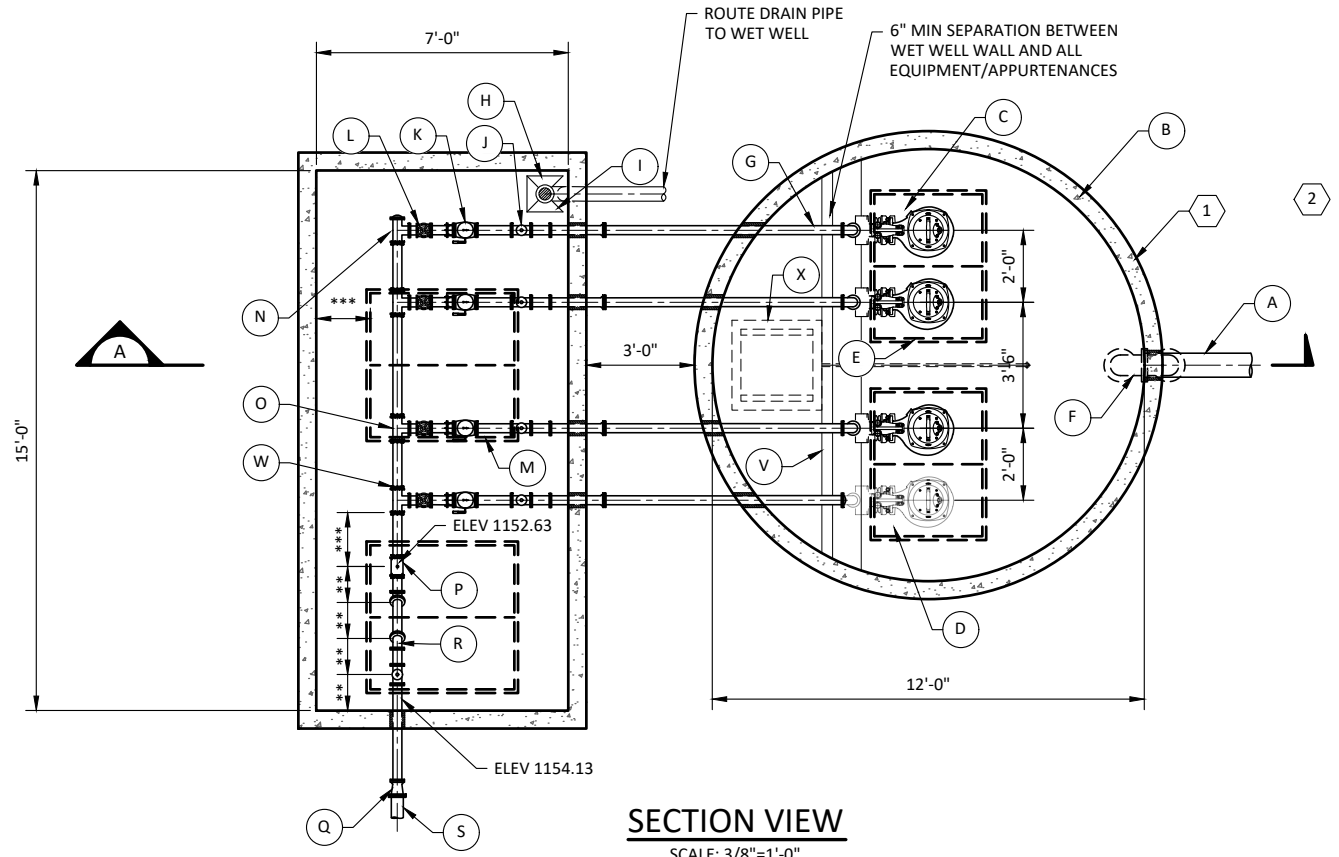


MIDWEST CITY ECONOMIC DEVELOPMENT AUTHORITY  
BK. 15172 PG. 645

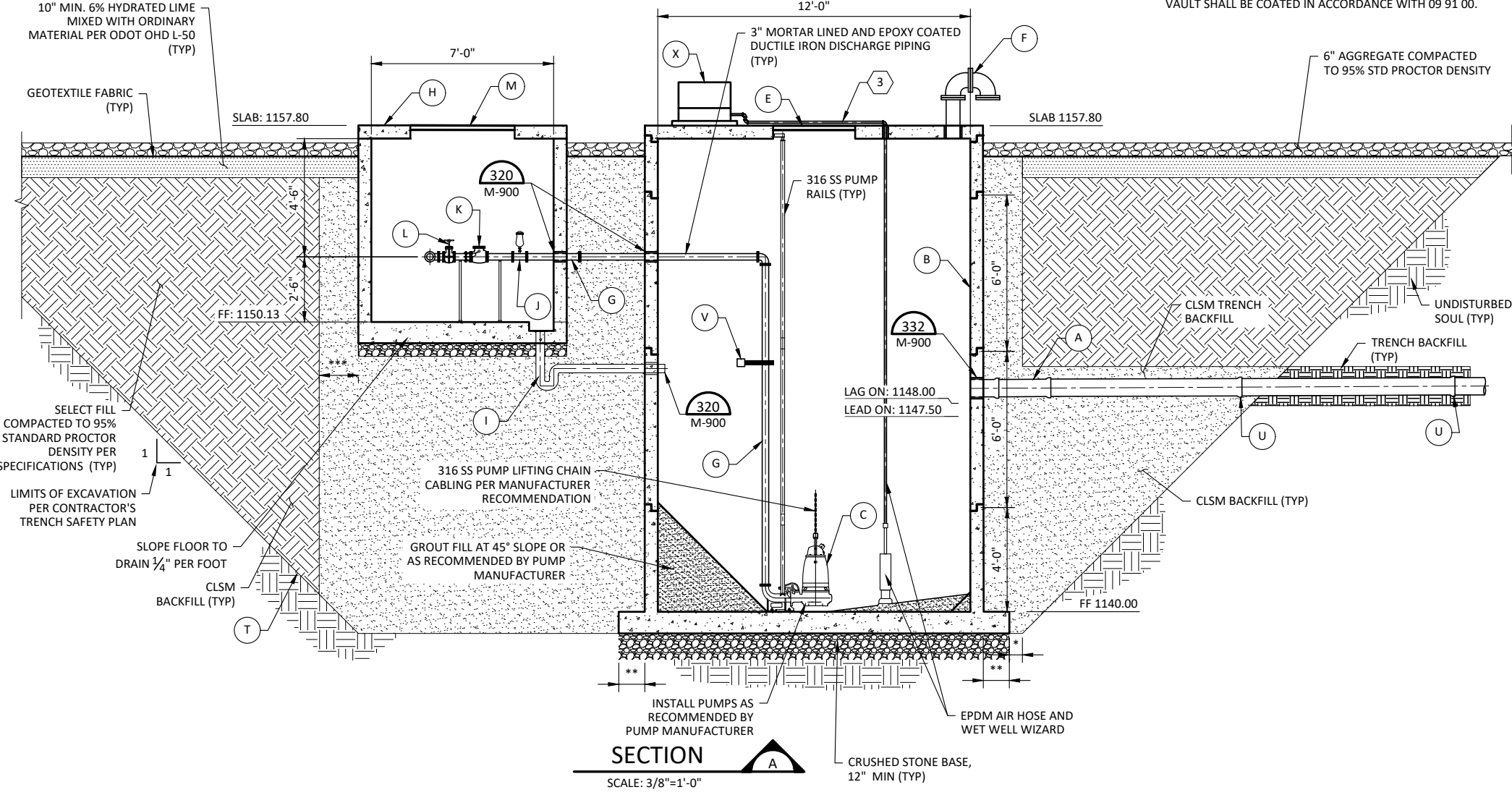
CITY OF MIDWEST CITY  
BK. 5640 PG. 1206

INDEPENDENT PIPE LINE COMPANY  
RIGHT OF WAY CONTRACT  
BK. 251 PG. 265

PRINTED: 7/13/2023 2:14 PM C:\Users\stcave\OneDrive\Plummer\Associates\3435-003-01\MWV\_Utility\_PHL\Project\Files\Plummer\Sheets\CIVIL\LS-SITE\_YARD\_PIPING\_PLAN.dwg. SAVED: 7/13/2023 3:43 PM. SAVED BY: Fcave. USER: Fcave.



**SECTION VIEW**  
SCALE: 3/8"=1'-0"



**SECTION**  
SCALE: 3/8"=1'-0"

**DISTANCE MEASUREMENTS:**

- \* 0.5 FEET
- \*\* 1.0 FEET
- \*\*\* 1.5 FEET

**NOTES BY SYMBOL "1":**

1. SEE SERIES E-100 SHEETS FOR ELECTRICAL PENETRATIONS AND JUNCTIONS BOXES.
2. SELECT FILL, AGGREGATE, CLSM, AND GEOTEXTILE FABRIC NOT SHOWN IN TOP VIEW FOR CLARITY.
3. CONTRACTOR SHALL ROUTE 304 SS WET WELL WIZARD PIPING BETWEEN HATCHES. PIPING SIZE SHALL BE PER WET WELL WIZARD MANUFACTURER. SECURE PIPING TO THE WET WELL LID WITH STAINLESS STEEL STRAPS. CORE DRILL WET WELL LID AND ROUTE PIPING THROUGH HOLE. SECURE PIPING IN HOLE WITH LINK SEAL PER DETAIL 326 ON SHEET M-900. TRANSITION TO EPDM AIR HOSE.
4. ALL DI DISCHARGE PIPING SHALL BE FLANGED UNLESS NOTED OTHERWISE.
5. CONTRACTOR MAY SUBSTITUTE DI LIFT STATION DISCHARGE PIPING WITH FLANGED 316 SCH 80 S.S. PIPING AT NO ADDITIONAL COST.
6. ALL FERROUS METAL IN THE LIFT STATION AND VALVE VAULT SHALL BE COATED IN ACCORDANCE WITH 09 91 00.

**NOTES:**

1. REFER TO SPECIFICATIONS FOR BACKFILL REQUIREMENTS.
2. CONTRACTOR SHALL COORDINATE FINAL HATCH SIZE AND LOCATION WITH PUMP MANUFACTURER PRIOR TO CONSTRUCTION OF TOP SLAB ON WET WELL.
3. TOP SLAB ELEVATION FOR BOTH STRUCTURES SHALL BE AT LEAST 8" AND NO MORE THAN 12" ABOVE FINISHED GRADE, WITH THE SEAMS BETWEEN THE VAULT LIDS AND WALLS ENTIRELY ABOVE FINISHED GRADE.
4. ALL DI DISCHARGE PIPING SHALL BE FLANGED UNLESS NOTED OTHERWISE.
5. CONTRACTOR MAY SUBSTITUTE DI LIFT STATION DISCHARGE PIPING WITH FLANGED 316 SCH 80 S.S. PIPING AT NO ADDITIONAL COST.
6. ALL FERROUS METAL IN THE LIFT STATION AND VALVE VAULT SHALL BE COATED IN ACCORDANCE WITH 09 91 00.

**PROPOSED LIFT STATION COMPONENTS**

COMPONENT	QUANTITY
(A) PROPOSED 8" PVC GRAVITY SEWER (SEE SHEET C-102)	1
(B) 12' DIA PRECAST POLYMER CONCRETE WET WELL WITH CAST-IN-PLACE TOP AND BOTTOM SLABS (SEE SERIES "S" SHEETS FOR REFERENCE)	1
(C) SUBMERSIBLE PUMP	3
(D) FUTURE SUBMERSIBLE PUMP AND APPURTENANCES	1
(E) DOUBLE LEAF 36"x48" EJCO HATCH (OR APPROVED EQUAL) WITH FALL PROTECTION	2
(F) 4" STAINLESS STEEL VENT	1
(G) 3" DI FLANGED DISCHARGE PIPING AND FITTINGS	4
(H) 15'x7' PRECAST PORTLAND CEMENT VAULT WITH CAST-IN-PLACE TOP AND BOTTOM SLABS (SEE SERIES "S" SHEETS FOR REFERENCE)	1
(I) 12" FLOOR DRAIN AND 6" DUCTILE IRON DRAIN PIPE PER DETAIL 368 ON SHEET M-901	1
(J) 1" COMBINATION AIR/VACUUM VALVE AND DI PIPING	5
(K) 3" CUSHIONED SWING TYPE CHECK VALVE WITH DI SPOOL PIECE	4
(L) 3" PLUG VALVE, WITH FLANGED JOINTS	5
(M) DOUBLE LEAF 48"x48" EJCO ACCESS HATCH (OR APPROVED EQUAL) WITH FALL PROTECTION	2
(N) 4" DI BLIND FLANGE	2
(O) 3"x3" DI FLANGED TEE	4
(P) 3" FLANGED MAGNETIC FLOW METER	1
(Q) 3"x4" DI FLANGED REDUCER	1
(R) 3" FLANGED DI 45° BEND	2
(S) PROPOSED 4" FORCE MAIN (SEE SHEETS C-100 AND C-101)	1
(T) GEOTEXTILE FABRIC AT LIMITS OF EXCAVATION	1
(U) PIPE JOINT AT EACH CHANGE IN PIPE EMBEDMENT	4
(V) PRECAST 316 STAINLESS STEEL SUPPORT INSTALLED PER WET WELL SUPPLIER AND IN ACCORDANCE WITH SPECIFICATION SECTION 40 05 07	2
(W) 3" FLANGED COUPLING ADAPTER	9
(X) WET WELL WIZARD BLOWER, PIPING, AND PROTECTION COVER	1

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 SANITARY SEWER PROJECT  
LIFT STATION MECHANICAL  
WET WELL AND METER VAULT  
PLAN AND SECTION

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

DESIGNED	R. WEINERT
DRAWN	F. CAVE
CHECKED	G. FARAH
REVIEWED	A. SWARTZ

Seq. 14 of 36  
Dwg. No. M-100  
3435-003-01

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**STRUCTURAL SPECIAL INSPECTION REQUIREMENTS**

INTERNATIONAL BUILDING CODE (IBC) SECTION 1704 REQUIRES A SPECIAL INSPECTOR TO REPORT RESULTS OF OBSERVATION AND/OR TESTING OF THE WORK ASSIGNED FOR CONFORMANCE TO THE APPROVED DESIGN DRAWINGS AND SPECIFICATIONS. THE FOLLOWING INSPECTION REQUIREMENTS SHALL COMPLEMENT INSPECTIONS SPECIFIED ELSEWHERE:

- THE OWNER SHALL RETAIN THE SERVICES OF AN APPROVED AGENCY TO MAKE AVAILABLE A SPECIAL INSPECTOR WHO SHALL PROVIDE INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK INDICATED IN THE FOLLOWING SPECIAL INSPECTION TABLES. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
- THE SPECIAL INSPECTOR SHALL KEEP RECORDS OF INSPECTIONS PER SECTION 1704 REQUIREMENTS AND SHALL SUBMIT COPIES OF INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE OWNER, AND THE STRUCTURAL ENGINEER-OF-RECORD.
- IN ACCORDANCE WITH SECTION 1704.2, THESE SPECIAL INSPECTION REQUIREMENTS ALSO APPLY TO STRUCTURAL LOAD BEARING MEMBERS OR ASSEMBLIES WHERE FABRICATION IS BEING PERFORMED ON THE PREMISES OF A FABRICATOR'S SHOP.
- REFER TO THE "GENERAL NOTES" FOR DETAILED REQUIREMENTS PERTAINING TO THE TYPES OF WORK INDICATED IN THE FOLLOWING SPECIAL INSPECTION TABLES.

**REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS  
(IBC 2015 TABLE 1705.6)**

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	-	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	-	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	-	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	-
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	-	X

**REQUIRED SPECIAL INSPECTIONS AND TESTS OF  
CONCRETE CONSTRUCTION (IBC 2015 TABLE 1705.3)**

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD #	IBC REFERENCE
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	-	X	ACI 318: CH. 20, 25.2, 25.3, 26.5.1-26.5.3	1908.4
2. REINFORCING BAR WELDING: A. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706; B. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; AND C. INSPECT ALL OTHER WELDS.	-	X	AWS D1.4 ACI 318: 26.5.4	-
3. INSPECT ANCHORS CAST IN CONCRETE.	-	X	ACI 318: 17.8.2	-
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS. A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A.	X	-	ACI 318: 17.8.2.4	-
5. VERIFY USE OF REQUIRED DESIGN MIX.	-	X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	-	ASTM C172 ASTM C31 ACI 318: 26.4.5, 26.12	1908.10
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	-	ACI 318: 26.4.5	1908.6, 1908.7, 1908.8
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	-	X	ACI 318: 26.4.7-26.4.9	1908.9
9. INSPECT PRESTRESSED CONCRETE FOR: A. APPLICATION OF PRESTRESSING FORCES; AND B. GROUTING OF BONDED PRESTRESSING TENDONS.	X	-	ACI 318: 26.9.2.1 ACI 318: 26.9.2.3	-
10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	-	X	ACI 318: CH. 26.8	-
11. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	-	X	ACI 318: 26.10.2	-
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	-	X	ACI 318: 26.10.1(B)	-

- a. WHERE APPLICABLE, SEE ALSO SECTION 1705.12, SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE.
- b. SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH 17.8.2 IN ACI 318, OR OTHER QUALIFICATION PROCEDURES. WHERE SPECIFIC REQUIREMENTS ARE NOT PROVIDED, SPECIAL INSPECTION REQUIREMENTS SHALL BE SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL AND SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF THE WORK.

**STRUCTURAL ABBREVIATIONS**

Ø	- DIAMETER	IBC	- INTERNATIONAL BUILDING CODE
°	- DEGREE	IN-K	- INCH KIPS
&	- AND	INT	- INTERIOR
@	- AT	J.B.	- JOIST BEARING
±	- PLUS OR MINUS	JST	- JOIST
A.B.	- ANCHOR BOLT(S)	KIP	- 1000 POUNDS
ACI	- AMERICAN CONCRETE INSTITUTE	KSF	- KIPS PER SQUARE FOOT
ADJ	- ADJACENT	LB	- POUND
AISC	- AMERICAN INSTITUTE OF STEEL CONSTRUCTION	LLH	- LONG LEG HORIZONTAL
AISI	- AMERICAN INSTITUTE OF STEEL CONSTRUCTION	LLV	- LONG LEG VERTICAL
ARCH'L	- ARCHITECTURAL	LO	- LOW
ASCE	- AMERICAN SOCIETY OF CIVIL ENGINEERS	MANUF	- MANUFACTURER
ASTM	- AMERICAN SOCIETY OF TESTING AND MATERIALS	MAX	- MAXIMUM
AWS	- AMERICAN WELDING SOCIETY	MECH'L	- MECHANICAL
BAL	- BALANCE	MIN	- MINIMUM
BLDG	- BUILDING	MPII	- MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS
BM	- BEAM	N.E.	- NORTHEAST
B.O.	- BOTTOM OF	N.W.	- NORTHWEST
BOTT	- BOTTOM	NO.	- NUMBER
BRG	- BEARING	O.C.	- ON-CENTER
BTWN	- BETWEEN	O.H.	- OPPOSITE HAND (REVERSED)
CANT	- CANTILEVER	O. TO O.	- OUT-TO-OUT
C.J.	- CONSTRUCTION JOINT	P/C	- PRECAST
C. TO C.	- CENTER-TO-CENTER	PEMB	- PRE-ENGINEERED METAL BUILDING
CTR	- CENTER	PL	- PLATE
C	- CENTERLINE	PSF	- POUNDS PER SQUARE FOOT
CLR	- CLEAR	PSI	- POUNDS PER SQUARE INCH
COL	- COLUMN	REINF	- REINFORCING
CONC	- CONCRETE	REQ'D	- REQUIRED
CONN	- CONNECTION	S.E.	- SOUTHEAST
CONT	- CONTINUOUS	S.J.	- SAWED JOINT
DBL	- DOUBLE	SHT	- SHEET
D.B.A.	- DEFORMED BAR ANCHOR	SIM	- SIMILAR
DN	- DOWN	S.O.G.	- SLAB-ON-GRADE
DTL	- DETAIL	SP	- SPACE(S) OR SPACING
DWG	- DRAWING	STD	- STANDARD
DWL	- DOWEL	STL	- STEEL
EA	- EACH	STR'L	- STRUCTURAL
E.J.	- EXPANSION JOINT	S.W.	- SOUTHWEST
ELEV.	- ELEVATION	T.O.	- TOP OF
ELEC'L	- ELECTRICAL	THRU	- THROUGH
EOS	- EDGE OF SLAB	TYP	- TYPICAL
EQ	- EQUAL	USGS	- UNITED STATES GEOLOGICAL SURVEY
E.W.	- EACH WAY	U.N.O.	- UNLESS NOTED OTHERWISE
EXT	- EXTERIOR	VERT	- VERTICAL
FIN. FLR.	- FINISHED FLOOR	W/	- WITH
FT	- FOOT (OR FEET)	W/C	- WATER/CEMENT
GA	- GAGE	W/O	- WITHOUT
GALV	- GALVANIZED	W.P.	- WORKING POINT
G.B.	- GRADE BEAM	WWR	- WELDED WIRE REINFORCEMENT
H.S.	- HIGH STRENGTH		
HI	- HIGH		
HK	- HOOK		
HORZ	- HORIZONTAL		

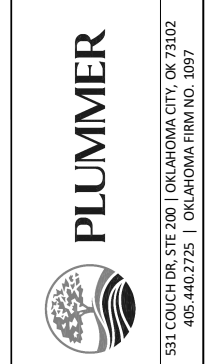
**SYMBOLS LEGEND**

Fxx	- FOUNDATION CALLOUT	(xx)	- STEP DOWN
xx" x'-x"	- DRILLED PIER DIAMETER - DRILLED PIER DEPTH INTO BEARING MATERIAL	(xx')	- STEP DOWN W/ SLOPE
SWxx	- SHEARWALL CALLOUT	(xx')	- TRENCH
Hxx	- HEADER CALLOUT	(xx')	- VALLEY
T.O. GB XX'-XX" T.O. GB XX'-XX"	- FOUNDATION STEP	← →	- DECK SPAN DIRECTION
(xx')	- CURB STEP	▶	- MOMENT CONNECTION
(xx')	- DOUBLE STEP	▲	- REVISIONS/ADDENDUMS
///	- SLOPE DOWN	x'   x"	- ROOF SLOPE CALLOUT
///	- SLOPE UP		

**CONCRETE REINFORCEMENT DEVELOPMENT LENGTH TABLE**

BAR SIZE	f'c = 3,000 psi			f'c = 3,500 psi			f'c = 4,000 psi			f'c = 4,500 psi			f'c = 5,000 psi		
	DEVELOPMENT LENGTH (IN.)	CLASS "B" LAP SPlice (IN.)	HOOKEDEVELOPMENT LENGTH (IN.)	DEVELOPMENT LENGTH (IN.)	CLASS "B" LAP SPlice (IN.)	HOOKEDEVELOPMENT LENGTH (IN.)	DEVELOPMENT LENGTH (IN.)	CLASS "B" LAP SPlice (IN.)	HOOKEDEVELOPMENT LENGTH (IN.)	DEVELOPMENT LENGTH (IN.)	CLASS "B" LAP SPlice (IN.)	HOOKEDEVELOPMENT LENGTH (IN.)	DEVELOPMENT LENGTH (IN.)	CLASS "B" LAP SPlice (IN.)	HOOKEDEVELOPMENT LENGTH (IN.)
#3	17	23	9	16	21	8	15	20	8	14	19	7	13	17	7
#4	22	29	11	21	28	11	19	25	10	18	24	9	17	23	9
#5	28	37	14	26	34	13	24	32	12	23	30	12	22	29	11
#6	33	43	17	31	41	16	29	38	15	27	36	14	26	34	13
#7	48	63	20	45	59	18	42	55	17	40	52	16	38	50	15
#8	55	72	22	51	67	21	48	63	19	45	59	18	43	56	17
#9	62	81	25	58	76	23	54	71	22	51	67	21	48	63	20
#10	70	91	28	65	85	26	61	80	25	57	75	23	54	71	22
#11	78	102	31	72	94	29	67	88	27	64	84	26	60	78	24

- TABLE NOTES:**
- DEVELOPMENT LENGTH = STRAIGHT DEFORMED BAR DEVELOPMENT LENGTH IN TENSION AND IS EQUAL TO A CLASS "A" LAP SPlice.
  - CLASS "B" LAP SPlice = SPlice LENGTH FOR LAPPED DEFORMED BARS IN TENSION.
  - HOOKEDEVELOPMENT LENGTH = DEVELOPMENT LENGTH FOR DEFORMED BARS WITH STANDARD 90° HOOKS IN TENSION.
  - WHEN BARS OF DIFFERENT SIZES ARE LAPPED, SPlice LENGTH SHALL BE THE GREATER OF A CLASS "A" LAP OF THE LARGER BAR OR A CLASS "B" LAP OF THE SMALLER BAR.
  - MULTIPLY BY 1.3 FOR TOP BARS, WHICH INCLUDE BARS CAST WITH MORE THAN 12" OF FRESH CONCRETE BELOW THE DEVELOPMENT LENGTH OR SPlice.
  - MULTIPLY BY 1.5 FOR EPOXY-COATED BARS.
  - MULTIPLY BY 1.3 FOR LIGHT-WEIGHT CONCRETE.



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NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY  
NORTH SIDE UTILITIES SANITARY SEWER PROJECT  
CITY OF MIDWEST CITY  
100 N MIDWEST BOULEVARD, MIDWEST CITY,  
OK 73110  
SPECIAL INSPECTIONS AND ABBREVIATIONS



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

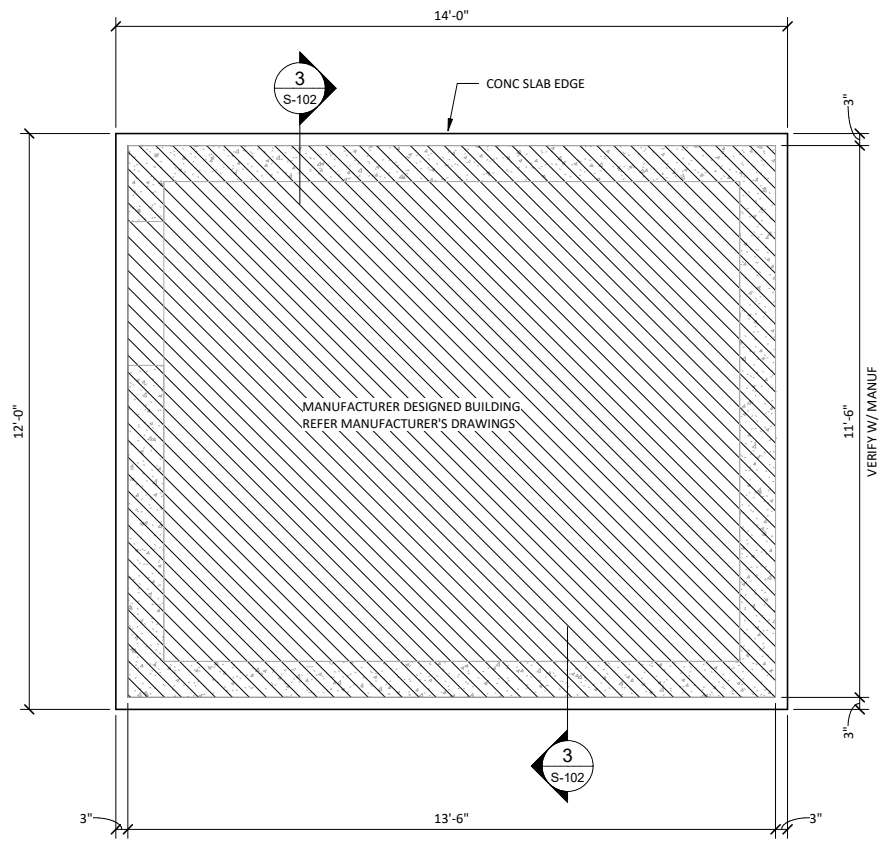
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Seq. 16 of 36

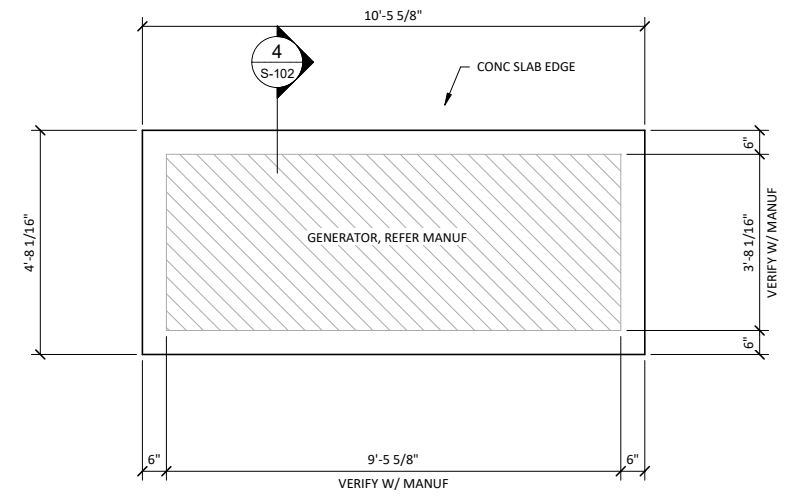
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3435-003-01

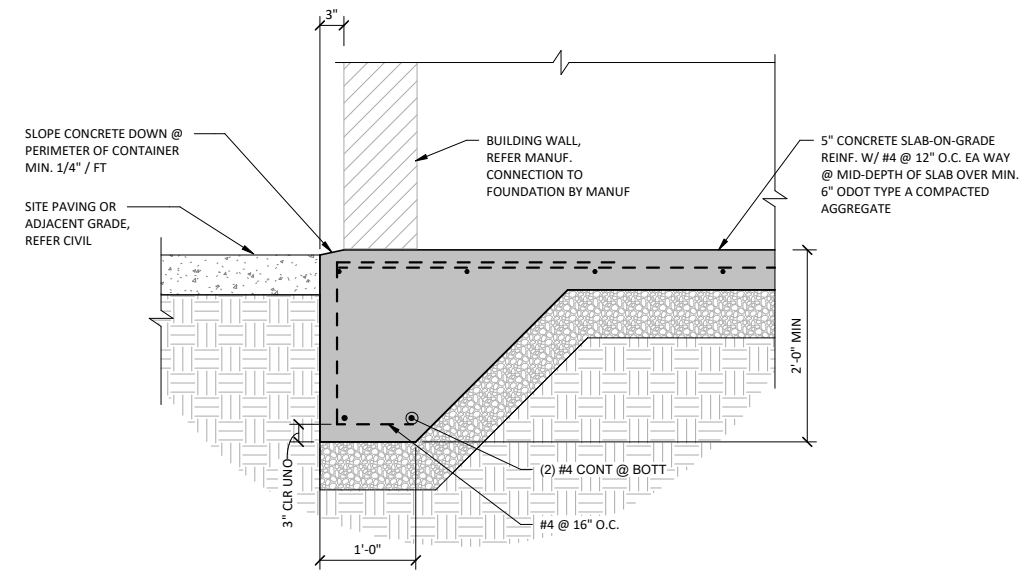




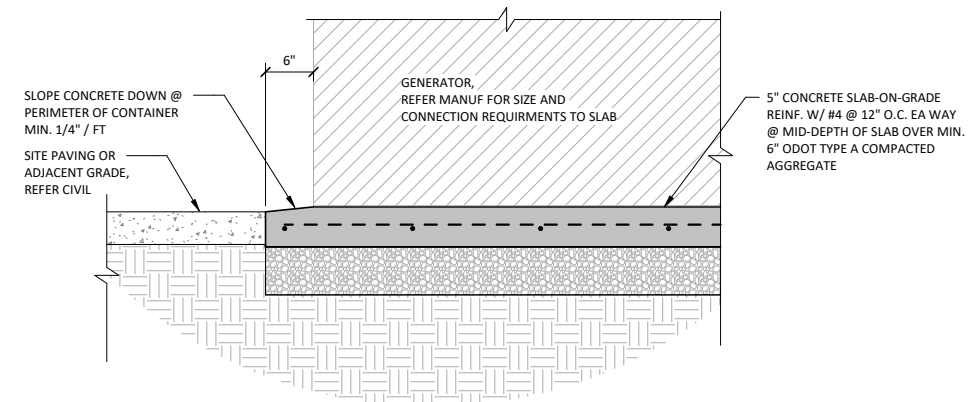
1 BUILDING FOUNDATION PLAN  
SCALE: 1/2" = 1'-0"  
REFER CIVIL FOR NORTH ORIENTATION



2 GENERATOR PAD FOUNDATION PLAN  
SCALE: 1/2" = 1'-0"  
REFER CIVIL FOR NORTH ORIENTATION



3 PERIMETER FOUNDATION DETAIL  
SCALE: 1" = 1'-0"  
1/ S-102



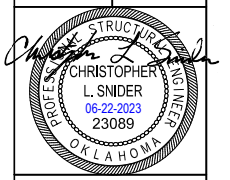
4 GENERATOR PAD FOUNDATION DETAIL  
SCALE: 1" = 1'-0"  
2/ S-102

NO.	DATE	REVISION	BY

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

CITY OF MIDWEST CITY  
NORTH SIDE UTILITIES SANITARY SEWER PROJECT

FOUNDATION PLAN & DETAILS



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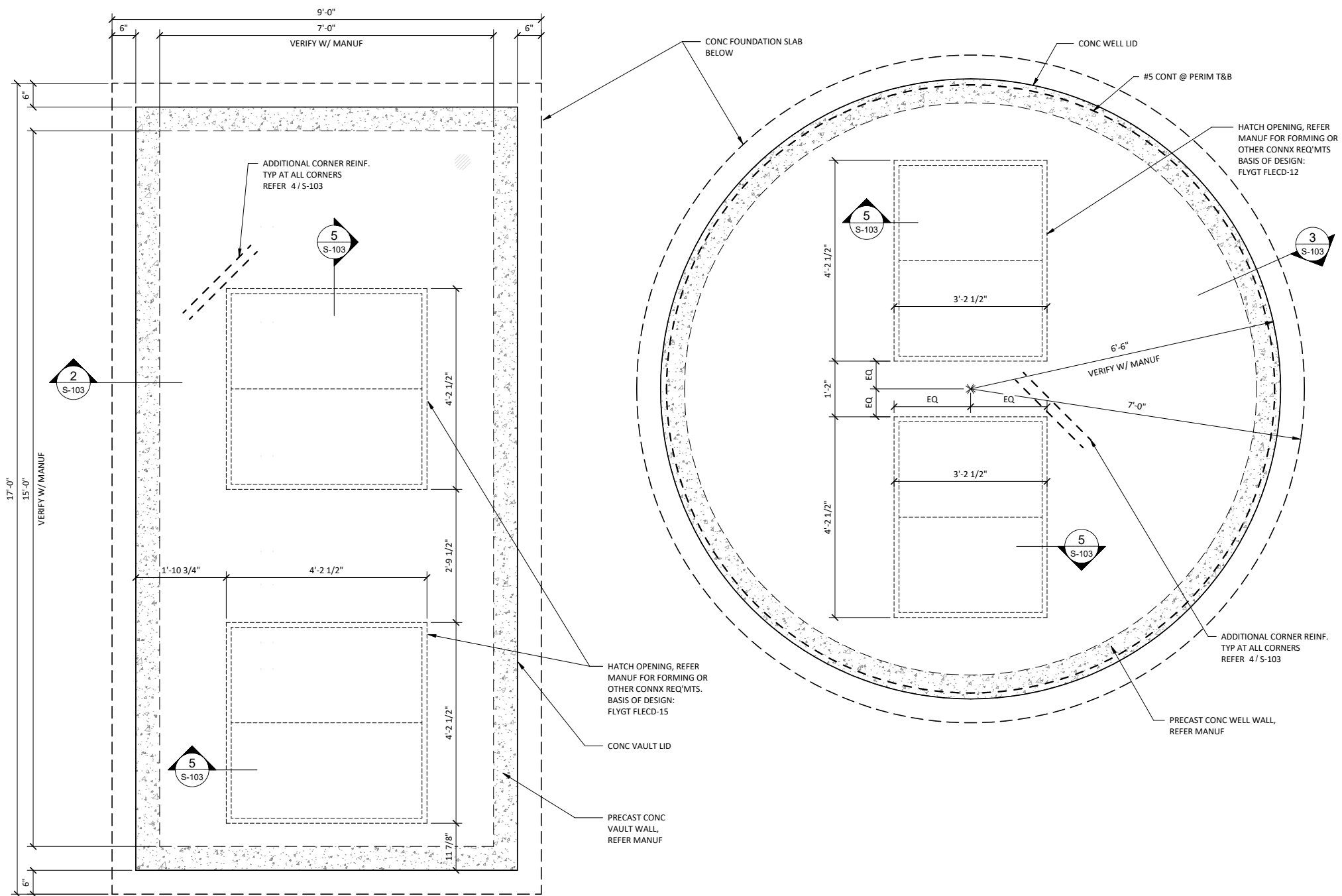
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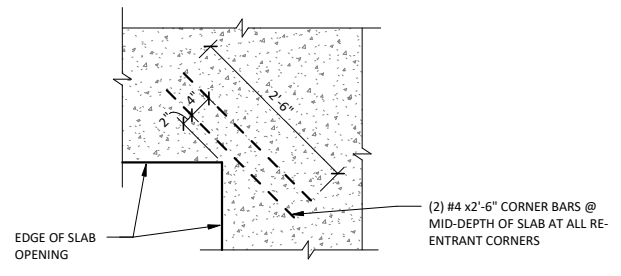
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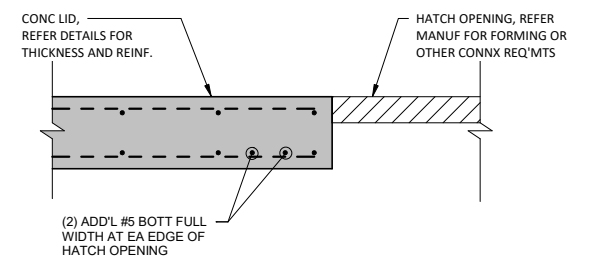




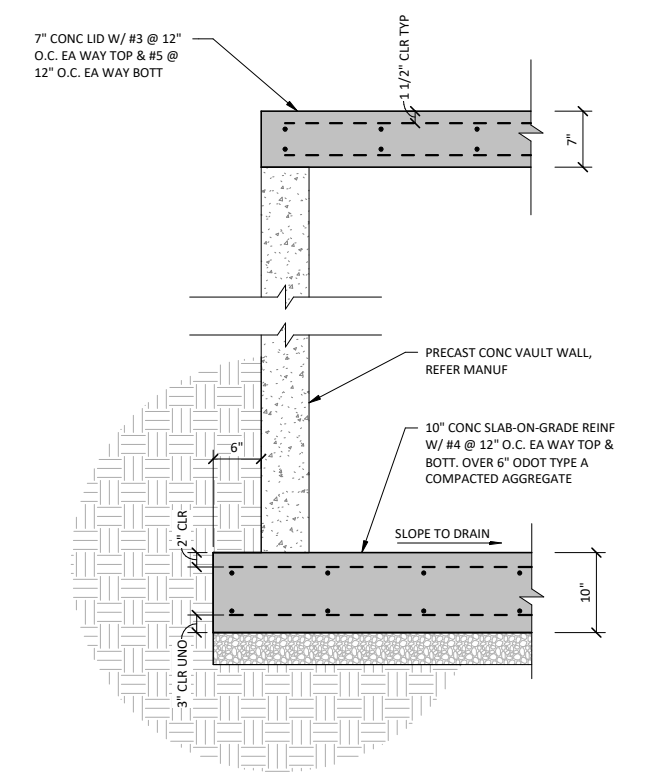
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**1 WET WELL AND VAULT FOUNDATION PLAN**  
SCALE: 3/4" = 1'-0"



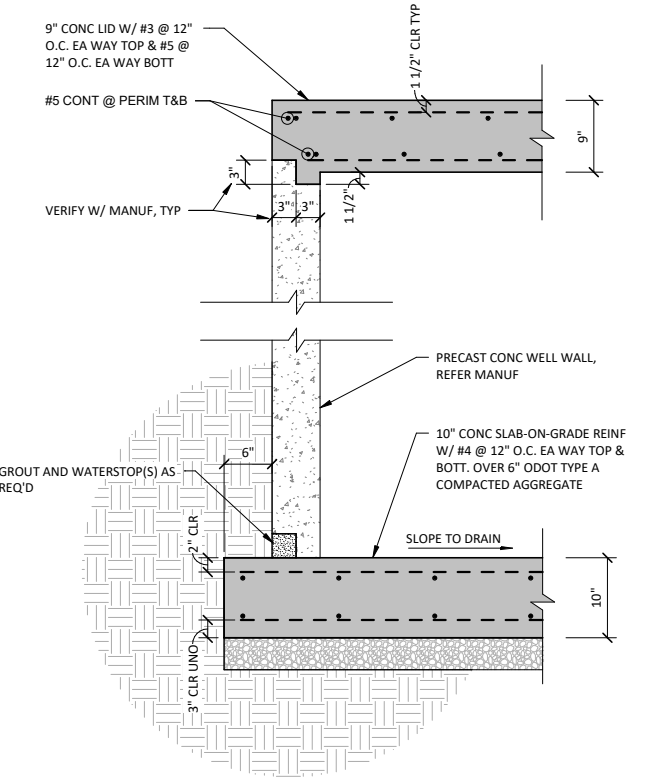
**4 TYPICAL DETAIL FOR ADDITIONAL REINFORCEMENT**  
SCALE: N.T.S.



**5 HATCH OPENING IN CONC LID DETAIL**  
SCALE: 1" = 1'-0"



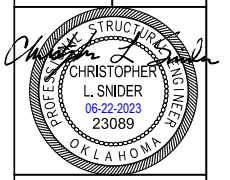
**2 VAULT FOUNDATION DETAIL**  
SCALE: 1" = 1'-0" 1/5-103



**3 WET WELL FOUNDATION DETAIL**  
SCALE: 1" = 1'-0" 1/5-103



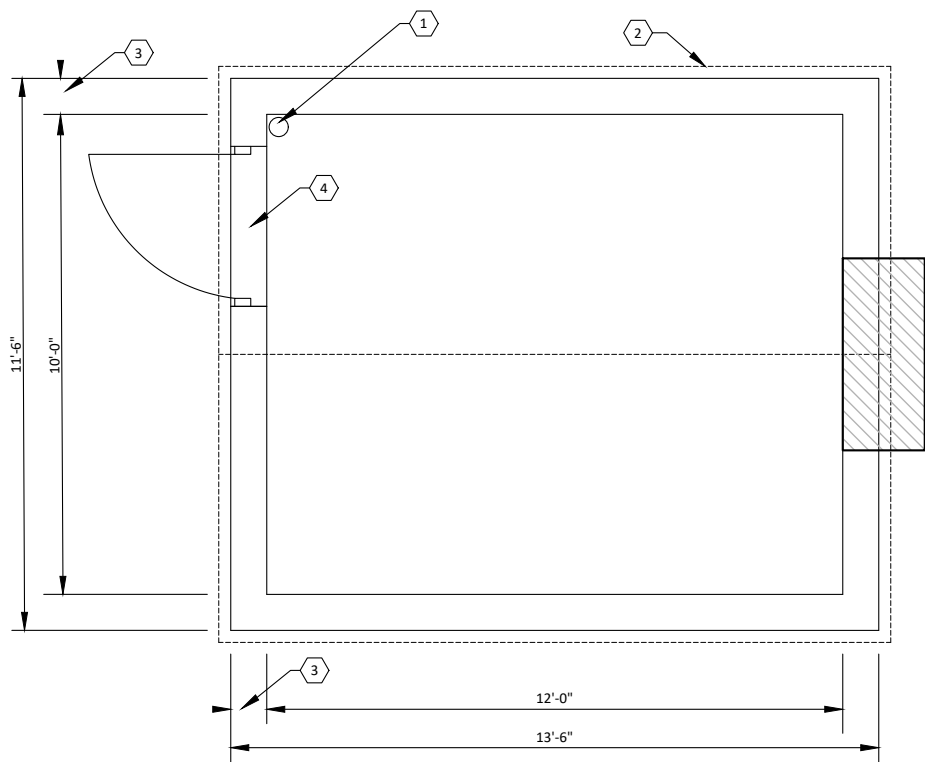
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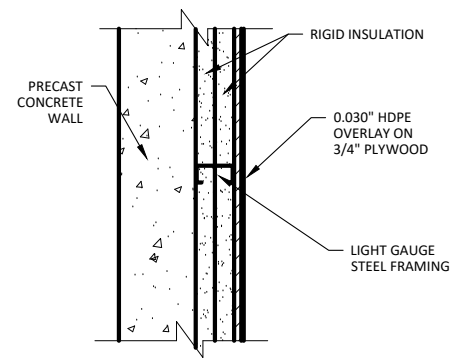
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REVIEWED

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Dwg. No. S-103  
3435-003-01



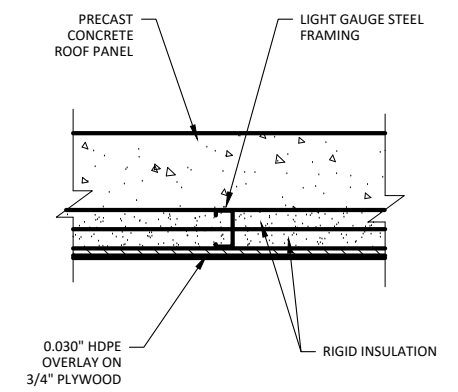
**PLAN**

SCALE: 1/2" = 1'-0"



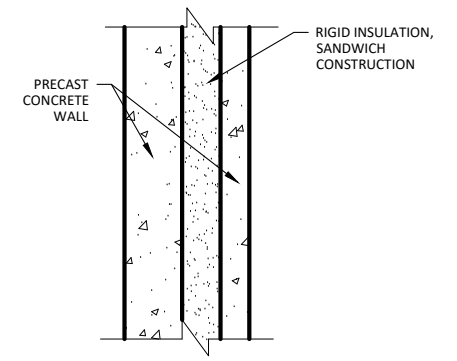
**TYPE "A" WALL SECTION**

NTS



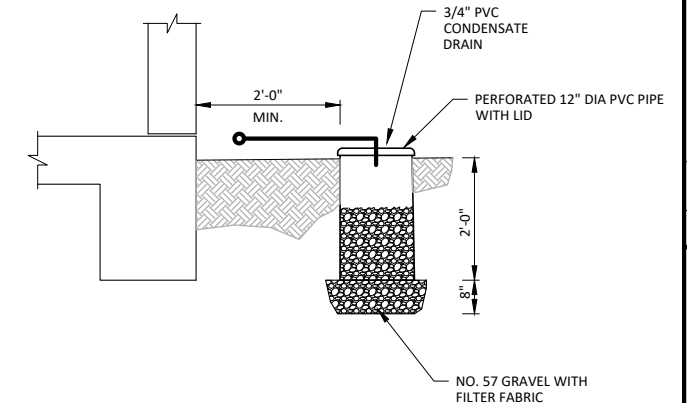
**ROOF/CEILING SECTION**

NTS



**TYPE "B" WALL SECTION**

NTS

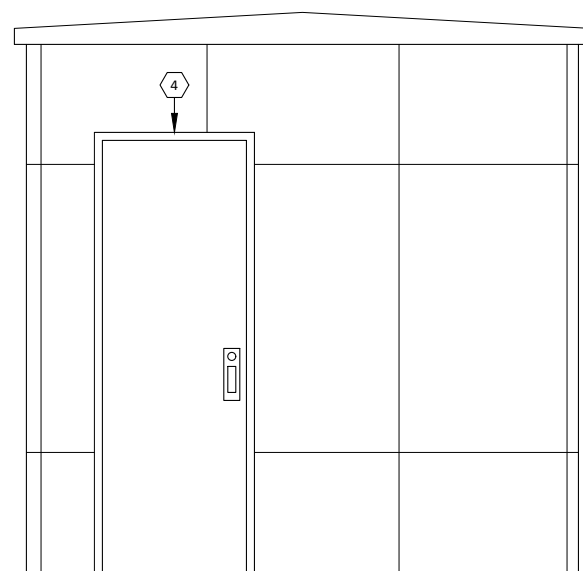


**CONDENSATE DRYWELL**

901

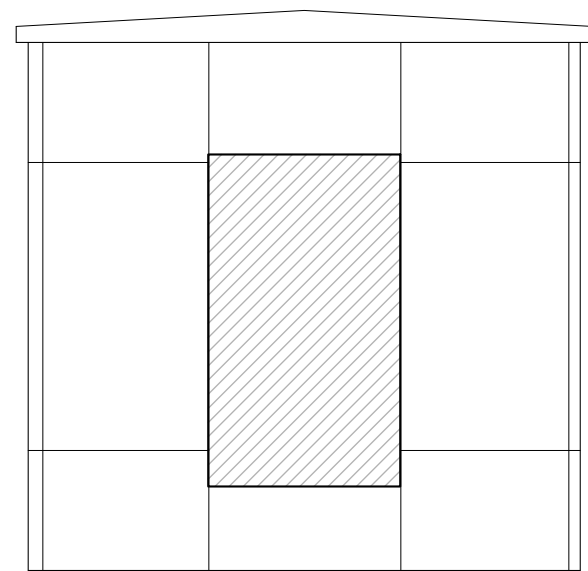
NOTES BY SYMBOL

- 1. FIRE EXTINGUISHER ON BRACKET MOUNTED AT 3'-6" ABOVE FINISH FLOOR TO HANDLE.
- 2. PRECAST BUILDING ROOF LINE ABOVE, EXTENDS 3" BEYOND WALLS.
- 3. PRECAST BUILDING WALLS, MANUFACTURERS' STANDARD WALL THICKNESS TO PROVIDE STRUCTURAL STRENGTH AND SPECIFIED THERMAL VALUE. SHOWN AND DIMENSIONED AS 9" FOR REFERENCE PURPOSES. EXTERIOR DIMENSIONS SHALL REMAIN FIRM.
- 4. DOOR SHALL BE 8'-0" TALL, 3'-0" WIDE, WITH STAINLESS STEEL HARDWARE, INSULATED DOORS AND FRAME, POWDER COATED PAINT AT FACTORY, WITH LOCKABLE HARDWARE AND EMERGENCY PANIC BAR, WITH DRIP LEDGE. REFER TO SPECIFICATIONS



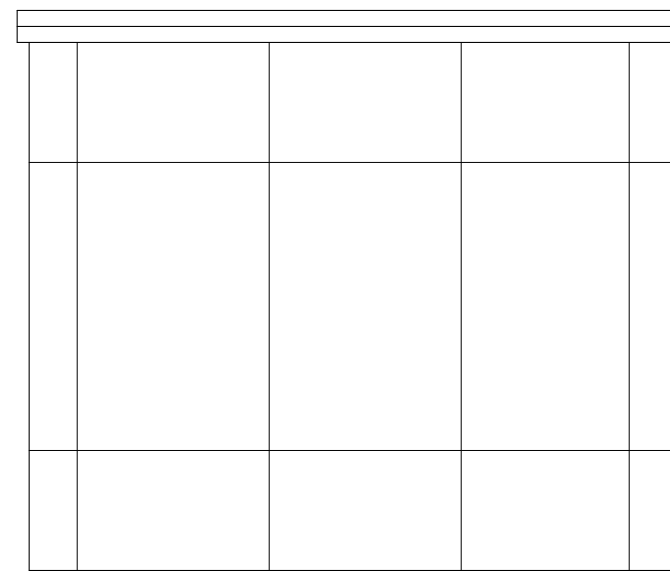
**ELEVATION 1**

SCALE: 1/2" = 1'-0"



**ELEVATION 2**

SCALE: 1/2" = 1'-0"

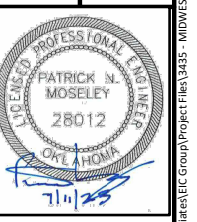


**ELEVATION 3 AND 4**

SCALE: 1/2" = 1'-0"

NO.	DATE	REVISION	BY

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



DESIGNED	P. MOSELEY
DRAWN	-
CHECKED	N. TOUSSAINT
REVIEWED	P. MOSELEY

Seq. 19 of 36  
 Dwg. No. B-100  
 3435-003-01

ONE-LINE DIAGRAM SYMBOLS

Table of one-line diagram symbols including Electric Service Meter, Weatherhead, Fuse, Transfer Switch, Instrument Class Current Transformer, Voltage Transformer, Zero Sequence Instrument Class Current Transformer, Low Voltage Thermal Magnetic Circuit Breaker, Full Voltage Non-Reversing Motor Starter, Full Voltage Non-Reversing Combination Motor Starter, Full Voltage Two Speed Motor Starter, and Full Voltage Reversing Motor Starter.

Table of one-line diagram symbols including Motor, Motor Winding Heater, Motor or Starter Enclosure Space Heater, Moisture/Leakage Sensor, Thermistors, Resistance Temperature Detectors (RTD's) and Thermistors, Resistance Temperature Detectors (RTD's), Fused Disconnect Switch, Nonfused Disconnect Switch, Vibration Switch, Level Switch, Pressure Switch, Flow Switch, Thermostat, and Electrical Connection.

Table of one-line diagram symbols including Push Button Control Station, Selector Switch Control Station, Solenoid Operated Valve, Transformer, Drawout Type Vacuum Breaker, Medium Voltage Fused Motor Controller, Drawout Type Equipment of Device, Medium Voltage Cable Termination, Medium Voltage Air Interrupter Switch, Medium Voltage Fused Air Interrupter Switch, Mechanical Key Interlock, Lightning Arrester, and Junction Box.

Table of one-line diagram symbols including Special Capacitor, Three Phase Delta Connection, Three Phase Grounded Wye Connection, Three Phase Ungrounded Wye Connection, Conduit Sealoff, Circuit Breaker, Circuit Breaker with Current Limiting Fuses, Fused Switch, Switch, and Drawout Air Circuit Breaker.

MISCELLANEOUS

Table of miscellaneous symbols including PLC Power Wire Callout, PLC Control Wire Callout, Power Panel Wire Callout, Lighting Panel Wire Callout, MCC Wire Callout, Equipment Callout, Double Callout, Triple Wire Callout, Electrical Equipment, and Symbols.

ELECTRICAL SYMBOLS

Table of electrical symbols including Ground Rod, Ground Test Well, Exothermic Weld, Telephone Outlet, Communications Outlet, Structured Wire Outlet, Convenience Receptacle, Receptacle, Welding Receptacle, Motor, Field Instrument or Device, Push Button Control Station, NEMA 4X Stainless Steel Junction Box, Ground, Power or Service Pole, Conduit Marker, and Conduit Expansion Joint.

Table of electrical symbols including Ceiling Mounted Fixture, Wall Mounted Light, Pole Mounted Light, Fluorescent Strip Light, Unswitched Light, Emergency Exit Sign, Emergency Fixture, Emergency Remote Lamp Heads, Wall Pack, 3-Pole Light Switch, Single Light Switch, Conduit Turning Up, Conduit Turning Down, Conduit End, Underground Conduit, Underground Ductbank, Exposed Conduit, Concealed Conduit, Ground Wire, Conduit Home Run, Flexible Conduit or Cable, Detector, Solid State Device, and Alarm Indicating Device.

ELECTRICAL ABBREVIATIONS

Table of electrical abbreviations including AMP, ABOVE FINISH FLOOR, ALUMINUM, AUTOMATIC, AXIAL, AMERICAN WIRE GAUGE, BREAKER, BUILDING, CONDUCTORS, CENTER TO CENTER, CIRCUIT BREAKER, CIRCUIT, CONDUIT MARKER, COMMUNICATION MANHOLE, CONDUIT, CONTROL POWER TRANSFORMER, CURRENT TRANSFORMER, COPPER, DISCONNECT, DRAWING, ELECTRIC UNIT HEATER, ELEVATION, ELECTRICAL MANHOLE, ELECTRICAL METALLIC TUBING, ENCLOSURE, EXPLOSION PROOF, ELAPSED TIME METER, EXISTING, FEEDER, FLEXIBLE CONDUIT, FLOOR, FIBER OPTIC, FEET, FUTURE, FORWARD, GROUND, GALVANIZED, GENERATOR, GROUND FAULT INTERRUPTER, GROUND, HIGH INTENSITY DISCHARGE, HANDHOLE, HORSEPOWER, HIGH PRESSURE SODIUM, HERTZ, INPUT OUTPUT, INSTANTANEOUS, INSTRUMENT, JUNCTION BOX, JUNCTION BOX, KILOVOLT AMPERES, KILOWATTS, KILOWATT HOUR, LOCKOUT, LOCAL, LOCKOUT STOP, LIGHTING, LIGHTS, MOTOR, MILLIAMP, MANUAL, MOTOR CONTROL CENTER, MOTOR CIRCUIT PROTECTOR, MANUFACTURER, MAIN LUGS ONLY, MOUNTED, MOTOR, NEUTRAL, NORMALLY CLOSED, NEUTRAL, NOT IN CONTRACT, NORMALLY OPEN, NOT TO SCALE, OVERHEAD, PULL BOX, PUSHBUTTON, PHOTO CELL, POWER FACTOR, PHASE, PROGRAMMABLE LOGIC CONTROLLER, PANEL, POTENTIOMETER, POWER POLE, POWER QUALITY METER, PAIR, PRIMARY, POTENTIAL TRANSFORMER, PUSH TO TEST, POLYVINYL CHLORIDE, RECEPTACLE, RECEPTACLE, REQUIRED, REVERSE, RIGID GALVANIZED STEEL, RESISTANCE TEMPERATURE DETECTORS, REMOTE TERMINAL UNIT, SCHEDULE, SECOND, SECONDARY, SHIELD, SHIELDED, SHEET, SOLENOID VALVE, SPARE, STAINLESS STEEL, SOLID STATE STARTER, STATION, STANDARD, STARTER, SWITCH, TERMINAL BLOCK, TIME DELAY DE-ENERGIZED, TIME DELAY ENERGIZED, TERMINAL, TWISTED PAIR, TWISTED SHIELDED PAIR, THERMOSTAT, TYPICAL, UNDERGROUND, VOLTAGE, VOLTAGE ALTERNATING CURRENT, VARIABLE FREQUENCY DRIVE, WATTS, WIRE, WATTHOUR DEMAND METER, WATTHOUR METER, WEATHERPROOF, TRANSFORMER, TRANSMITTER.



Table with columns for NO., DATE, REVISION, and BY. City of Midwest City, 100 N MIDWEST BOULEVARD, MIDWEST CITY, OK 73110.

CITY OF MIDWEST CITY  
NORTH SIDE UTILITIES PROJECT PHASE I  
ELECTRICAL  
LEGEND

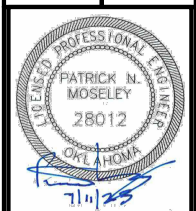


Table with project details: DESIGNED P. MOSELEY, DRAWN -, CHECKED N. TOUSSAINT, REVIEWED P. MOSELEY. Seq. 20 of 36, Dwg. No. E-001, 3435-003-01.

**ELECTRICAL GENERAL PROVISIONS**

- 1. THE NOTES CONTAINED ON THIS SHEET ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR WHEN WORKING IN THE FIELD AND CONTAIN EXCERPTS FROM THE SPECIFICATION SECTIONS. HOWEVER, THE CONTRACTOR IS HEREBY ADVISED THAT THE CONTRACT DOCUMENTS CONSIST OF BOTH THE DRAWINGS AND THE SPECIFICATIONS, AND THAT THE CONTRACTOR MUST COMPLY FULLY WITH BOTH THE BOUND DRAWINGS AND THE BOUND SPECIFICATIONS.
2. THE TERM "PROVIDE" USED IN THE DRAWINGS AND SPECIFICATIONS IMPLIES THE CONTRACTOR IS TO FURNISH, TRANSPORT, INSTALL, CONNECT, WARRANT AND START-UP, INCLUSIVELY.
3. WHERE NOTES ON THE DRAWING INDICATE THAT THE CONTRACTOR SHALL FIELD-VERIFY, THE INTENT IS FOR THE CONTRACTOR TO INVESTIGATE TO THE EXTENT NECESSARY TO PROVIDE THE WORK AND MATERIALS PRIOR TO BIDDING AND INCLUDE ALL COSTS IN THE BID PRICE. THE CONTRACT PRICE SHALL NOT BE INCREASED WHEN THE CONTRACTOR HAS NOT INVESTIGATED PER THE NOTES DIRECTING THAT BE DONE.
4. CODES
4.1. ENTIRE INSTALLATION SHALL BE ACCORDANCE WITH THE FOLLOWING CODES AND STANDARDS
4.1.1. NFPA 70, NATIONAL ELECTRICAL CODE, 2020 EDITION.
4.1.2. NFPA 101, LIFE SAFETY CODE, 2021 EDITION.
4.1.3. NFPA 820, STANDARD FOR FIRE PROTECTION IN WASTEWATER TREATMENT AND COLLECTION FACILITIES, 2020 EDITION.
4.1.4. NFPA 780, LIGHTNING PROTECTION, 2020 EDITION.
4.1.5. NESC/IEEE C2: NATIONAL ELECTRIC SAFETY CODE, 2017 EDITION.
5. AREA CLASSIFICATION
5.1. THE FOLLOWING AREAS ARE RATED FOR THE FOLLOWING HAZARD CLASSIFICATION;
5.1.1. WASTEWATER PUMPING STATION WETWELL, CLASS 1, DIVISION 1 - ENTIRE ROOM OR SPACE.
5.1.2. WASTEWATER PUMPING STATION DRYWELL, CLASS 1, DIVISION 2 - ENTIRE ROOM OR SPACE.
5.1.3. COURSE AND FINE SCREEN FACILITIES, CLASS 1, DIVISION 2 - WITHIN 10 FT ENVELOPE AROUND EQUIPMENT AND OPEN CHANNEL.
6. ENVIRONMENTAL RATINGS
6.1. THE FOLLOWING AREAS SHALL HAVE THE FOLLOWING ENVIRONMENTAL RATINGS;
6.1.1. ELECTRICAL ROOM - AIR-CONDITIONED
6.1.2. PLANT TREATMENT AREAS - DAMP, VENTILATED, AND HEATED
7. ENCLOSURE RATINGS
7.1. PROVIDE ENCLOSURE FOR EQUIPMENT BASED UPON THE FOLLOWING CONDITIONS;
7.1.1. AIR-CONDITIONED AREAS, NEMA 12.
7.1.2. DRY, VENTILATED, AND HEATED AREAS, NEMA 12.
7.1.3. DAMP, VENTILATED, AND HEATED AREAS, NEMA 4 PAINTED STEEL.
7.1.4. WET, VENTILATED, AND HEATED AREAS, NEMA 4X 316 STAINLESS STEEL.
7.1.5. OUTDOORS, NEMA 4X 316 STAINLESS STEEL.
7.1.6. INDOOR CHEMICAL AREAS, NEMA 4X POLYCARBONATE.
7.1.7. OUTDOOR CHEMICAL AREAS, NEMA 4X 316 STAINLESS STEEL.
8. WORKMANSHIP
8.1. MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE CONTRACT DOCUMENTS, (INCLUDING BOTH DRAWINGS AND SPECIFICATIONS), INDUSTRY STANDARDS, AND ALL APPLICABLE CODES.
8.2. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A PROFESSIONAL WORKMANLIKE MATTER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND ACCEPTED BY ENGINEER/OWNER.
8.3. CORRECTION OF ANY DEFECTS SHALL BE COMPLETE WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MANY HAVE BEEN DAMAGED.
8.4. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED RECOMMENDATIONS FOR SERVICE INTENDED AS INTERPRETED BY THE ENGINEER. THE INSTALLATION OF ALL EQUIPMENT SHALL BE MADE BY EXPERIENCED CRAFTSMAN IN A NEAT WORKMANLIKE MANNER. ALL MATERIALS, TOOLS, COSTS AND SERVICES NECESSARY TO COMPLETELY INSTALL ALL ELECTRICAL WORK SHALL BE FURNISHED BY THE CONTRACTOR.
9. DOCUMENTATION
9.1. CONTRACTOR SHALL MAINTAIN A SET OF PRINTS AND MARK-UP DURING CONSTRUCTION TO REFLECT "AS-BUILT" CONDITIONS. PRINTS SHALL BE DELIVERED TO THE ENGINEER UPON COMPLETION OF THE PROJECT AS A COMPLETE SET OF REQUIRED DRAWINGS.

**EXISTING CONDITIONS**

- 1. THE CONTRACTOR SHALL INSPECT THE SITE PRIOR TO BID TO EVALUATE EXISTING CONDITIONS. INSTALLATION OF THE NEW FACILITIES WILL REQUIRE FIELD COORDINATION WITH PLANT OPERATIONS TO PERMIT MAINTENANCE OR OPERATION DURING CONSTRUCTION. DURATION OF POWER OUTAGES SHALL BE MINIMUM REQUIRED FOR SAFE INSTALLATION AND SHALL BE SCHEDULED WITH AND APPROVED BY THE OWNER.
2. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID EXISTING UNDERGROUND UTILITIES INCLUDING PROCESS PIPING, WATER LINES, CHEMICAL FEED PIPING, ELECTRICAL CONDUITS, HAND EXCAVATION SHALL BE REQUIRED IN CONGESTED AREAS WHERE THE EXACT LOCATIONS OF ALL UTILITIES IN UNKNOWN. LOCATIONS SHOWN FOR THE EXISTING UNDERGROUND UTILIZES ARE APPROXIMATE ONLY. NOT ALL THE EXISTING UNDERGROUND UTILITIES ARE SHOWN. FIELD ADJUST LOCATIONS OF THE NEW FACILITIES TO ACCOMMODATE THE EXISTING SITE CONDITIONS AND UNDERGROUND UTILITIES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE ALL UNDERGROUND UTILITIES BEFORE DIGGING. CONTRACTOR SHALL COORDINATE THE EFFORT WITH THE OWNER.

**SEQUENCING**

- 1. EXISTING FACILITIES TO REMAIN IN OPERATION AT ALL TIMES. SEQUENCE WORK AND PROVIDE TEMPORARY SYSTEMS AS REQUIRED TO MAINTAIN OPERATIONS.
2. PROVIDE TEMPORARY WIRING AND CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. WHEN WORK MUST BE PERFORMED ON ENERGIZED EQUIPMENT OR CIRCUITS, USE PERSONNEL EXPERIENCED IN SUCH OPERATIONS.

**DEMOLITION**

- 1. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL, STRUCTURAL, CIVIL, MECHANICAL AND PLUMBING DEMOLITION WORK DRAWINGS TO DETERMINE AND COORDINATE THE EXTENT OF THE DEMOLITION WORK REQUIRED FOR THE PROJECT.
2. REMOVE ALL EXISTING BRANCH CIRCUITING AND EQUIPMENT (STARTERS, DISCONNECTS, DEVICES, WIRING, CABLES, AND CONDUIT), TO ALL LOADS THAT ARE BEING REMOVED BACK TO THE SOURCE OF SUPPLY UNLESS NOTED OTHERWISE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE TO CHECK THE FUNCTION OF EACH CONDUCTOR BEFORE REMOVING OR DISCONNECTING.
4. GRIND ALL ANCHOR BOLTS FLUSH WITH SURFACE AND PATCH/FILL ALL CONDUIT OPENS IN SLAB AND/OR WALL.

**MATERIALS**

- 1. ALL MATERIALS SHALL BE NEW AND BEAR UNDERWRITERS LABELS WHERE APPLICABLE.
2. POWER CONDUCTORS AND CABLES
2.1. UNLESS NOTED OTHERWISE, CONDUCTOR SIZES INDICATED ARE BASED ON COPPER CONDUCTORS. DO NOT PROVIDE CONDUCTORS SMALLER THAN THOSE INDICATED.
2.2. SMALLEST POWER WIRING SHALL BE 12 AWG.
2.3. SINGLE CONDUCTORS CONSTRUCTION:
2.3.1. UNLESS OTHERWISE INDICATED, ALL CONDUCTORS SHALL BE COPPER AND SHALL BE STRANDED. SOLID CONDUCTORS SHALL BE ALLOWED ON 120-V LIGHTING AND RECEPTACLE CIRCUITS.
2.4. INSULATION REQUIREMENTS:
2.4.1. CONDUCTOR SIZES NO. 6 AND LARGER PROVIDE CONDUCTORS WITH TYPE RHH OR RHW.
2.4.2. CONDUCTOR SIZES SMALLER THAN NO. 6 PROVIDE CONDUCTORS WITH XHHW.
2.4.3. FOR LIGHTING AND RECEPTACLES, PROVIDE CONDUCTORS WITH THHN OR THWN.
2.5. WHERE FLEXIBLE CORDS AND CABLES ARE SPECIFIED, PROVIDE TYPE SO, 600 V WITH THE NUMBER AND SIZE OF COPPER CONDUCTORS INDICATED.
2.6. WHERE MULTIPLE CONDUCTOR CABLES ARE SPECIFIED, PROVIDED CABLES THAT ARE UL CABLE TRAY RATED.
3. GROUNDING AND BONDING
3.1. CONTRACTOR SHALL PROVIDE A GROUNDING SYSTEM AS REQUIRED BY THE NEC AND IEEE GREEN BOOK. THE INSTALLED GROUNDING SYSTEM SHALL HAVE A RESISTANCE OF LESS THAN 5 OHMS TO GROUND. PROVIDE CONTINUOUS #4/0 TINNED COPPER GROUNDING SYSTEM. GROUND RODS SHALL BE COPPER CLAD STEEL 3/4" DIAMETER X 10' LENGTH. CONNECTIONS SHALL BE EXOTHERMIC WELDS.
4. HANGERS AND SUPPORTS
4.1. ALL STRUT, SUPPORTING AND FASTENING DEVICES SHALL BE 316 STAINLESS STEEL.
4.2. PROVIDE LEVELING NUTS AND 3/4" GROUT UNDER ALL FLOOR MOUNTED BASE PLATES.
4.3. PROVIDE GROUNDING AT ALL OUTDOOR STRUT SWITCHRACKS.
5. RACEWAYS AND BOXES
5.1. ALL RACEWAY INSTALLATIONS SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT AND STRUCTURAL COMPONENTS. ALL EXPOSED RACEWAY SHALL BE INSTALLED PARALLEL TO BEAMS, CEILINGS, FLOORS AND WALLS. SEE RACEWAY SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
5.2. ALL CONDUITS SHALL BE INSTALLED PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURE.
5.3. ALL RACEWAY INSTALLATIONS, CROSSING EXPANSION JOINTS OR TRANSITIONS FROM BELOW GRADE TO EXPOSED ABOVE GRADE, SHALL HAVE EXPANSION OR EXPANSION/DEFLECTION TYPE FITTINGS AS SPECIFIED FOR THE APPLICATION
5.4. THREADED, INSULATED, AND GASKETED ALUMINUM HUBS RATED AS A RAIN-TIGHT CONNECTION SHALL BE USED FOR ALL CONDUITS PENETRATING ALL ENCLOSURES, PANELBOARDS, STARTERS, TERMINATION BOXES, MCC, PLC CABINETS, ETC. BUSHING SHALL BE GROUNDING OR NON-GROUNDING TYPE PER NFPA 70.
5.5. ALUMINUM CONDUIT SHALL NOT BE IN DIRECT CONTACT WITH CONCRETE OR GROUT.
5.6. FLEXIBLE CONDUIT SHALL BE TYPE LFNC FLEXIBLE SEAL TIGHT CONDUIT FOR 3/4" AND 1" SIZES, CONNECTORS SHALL BE UL LISTED (1/2" LFNC FLEX SHALL BE ALLOWED FOR INSTRUMENTS WITH 1/2" THREADED HUB ENTRIES). USE ALUMINUM CORE LIGHT TIGHT FLEXIBLE METAL CONDUIT FOR SIZED 1 1/4" AND LARGER, CONNECTORS SHALL BE ALUMINUM. MAXIMUM LENGTH OF FLEX CONDUIT SHALL BE 18".
5.7. CONDUIT APPLICATION
5.7.1. CHEMICAL AREAS, PVC SCHEDULE 80-EB
5.7.2. INDOORS-EXPOSED, ALUMINUM RIGID CONDUIT
5.7.3. OUTDOORS-EXPOSED, ALUMINUM RIGID CONDUIT
5.7.4. CONDUIT STUBS-UPS THROUGH CONCRETE, PVC COATED ALUMINUM RIGID CONDUIT
5.7.5. CONDUIT CONCEALED IN CONCRETE SLABS OR WALLS, PVC SCHEDULE 80-EB
6. UNDERGROUND DUCTS AND RACEWAYS
6.1. THE DUCTBANK ROUTING SHOWN ON THE DRAWING(S) IS APPROXIMATE. THE EXACT DUCTBANK ROUTING, CABLE LENGTH, AND CONDUIT LENGTH SHALL BE VERIFIED IN THE FIELD.
6.2. ALL UNDERGROUND SINGLE CONDUITS, AND DUCTBANKS OF MULTIPLE CONDUITS, SHALL BE PVC SCHEDULE 40-EB CONDUIT, ENCASED IN REINFORCED RED CONCRETE, AND THE CONCRETE DYED RED BEFORE PLACEMENT, AS SPECIFIED. MINIMUM CONDUIT SIZE SHALL BE 1 INCH.
6.3. BENDS 2" AND SMALLER SCHEDULE 40-EB. LARGER THAN 2" SHALL BE PVC COATED ALUMINUM CONDUIT.
7. IDENTIFICATIONS
7.1. ELECTRICAL EQUIPMENT AND DEVICES SHALL BE PROVIDED WITH WHITE WITH ENGRAVED BLACK LETTERING

- PHENOLIC NAMEPLATES, MECHANICALLY FASTENED WITH SS SCREWS OR RIVETS.
7.2. NAMEPLATES SHALL HAVE EQUIPMENT TAG NUMBER AS WELL AS DESCRIPTION AND SERVED FROM LOCATION INCLUDED.
8. PANELBOARDS
8.1. ALL PANEL SCHEDULES SHALL BE RETYPED AND LAMINATED TO REFLECT UP TO DATE CONDITIONS. TRACE EXISTING CIRCUITS.
8.2. CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING CONDUCTORS AND CONDUITS PER THE NEC.
8.3. CIRCUIT BREAKERS FOR INSTALLATION IN EXISTING PANELBOARDS SHALL BE BY THE MANUFACTURER OF THAT PANELBOARD. CIRCUIT BREAKERS SHALL MATCH THE SHORT CIRCUIT RATINGS. NEW EQUIPMENT FOR DISTRIBUTION SHALL MATCH EXISTING EQUIPMENT.
8.4. ALL RECEPTACLES BRANCH CIRCUITS OVER 75' IN LENGTH SHALL USE #10 AWG CONDUCTORS (FOR VOLTAGE DROP).
8.5. CONTRACTOR MAY COMBINE HOMERUNS TO 120V PANELBOARD CIRCUIT PER NEC. COMBINING MORE THAN THREE 120V CIRCUITS WILL NOT BE ALLOWED.
8.6. UNLESS OTHER SPECIFIED, PANELBOARD ENCLOSURES SHALL BE NEMA 3R, EXCEPT THOSE IN CORROSIVE ARES OR OUTSIDE SHALL BE NEMA 4X STAINLESS STEEL.
9. WIRING DEVICES
9.1. PROVIDE WEATHERPROOF ALUMINUM TOGGLE SWITCH COVERS FOR WET LOCATIONS, CHEMICAL AREAS AND OUTSIDE MOUNTED SWITCHES.
9.2. PROVIDE ALUMINUM SELF CLOSING WEATHERPROOF RECEPTACLE COVERS FOR WET, DAMP AND CHEMICAL AREAS.
9.3. PROVIDE DIE-CAST ALUMINUM WEATHERPROOF IN USE COVERS FOR RECEPTACLES MOUNTED OUTSIDE AND THOSE LOCATION IN WET, DAMP AND CHEMICAL AREAS FEEDING EQUIPMENT.
10. LIGHTNING PROTECTION
10.1. CONTRACTOR SHALL PROVIDE A UL 96A MASTER LABEL LIGHTNING PROTECTION SYSTEM INCLUDING GROUND RODS AT LIGHTING PROTECTION SYSTEM DOWN CONDUCTOR. INTERCONNECT EACH SYSTEM GROUNDS WITH A CONTINUOUS #4/0 COPPER TINNED COPPER GROUNDING SYSTEM.
10.2. THE FOLLOWING FACILITIES AND/OR BUILDINGS SHALL BE PROVIDED WITH A LIGHTNING PROTECTION SYSTEM.
10.2.1. ELECTRICAL BUILDING
11. CONCRETE PADS
11.1. PROVIDE 4" CONCRETE HOUSEKEEPING PADS ON ALL FREE STANDING EQUIPMENT AND PANELS.
11.2. UNLESS OTHERWISE SHOWN ON DRAWINGS, PROVIDE A 6" CONCRETE PAD FOR ALL OUTDOOR SWITCHRACKS, PADS SHALL EXTEND 1'-0" ON SIDES AND BACK, AND 3'-0" FROM THE FRONT OF THE EQUIPMENT.

**INSTALLATION**

- 1. REFER TO MECHANICAL DRAWINGS AND APPROVED MANUFACTURER'S SHOPS DRAWINGS FOR THE EXACT LOCATION OF ALL EQUIPMENT. COORDINATE EXACT EQUIPMENT STUB-UP LOCATIONS WITH EQUIPMENT MANUFACTURER, PRIOR TO ROUGH-IN.
2. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS NECESSARY FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED OF THEIR WORK.
4. CORING OF AN EXISTING STRUCTURE SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER/ENGINEER. CORING THROUGH STRUCTURAL BEAMS IS STRICTLY PROHIBITED WITHOUT PRIOR WRITTEN APPROVAL FROM THE OWNER/ENGINEER.
5. CONDUIT AND DEVICE LOCATIONS ARE SHOWN DIAGRAMMATICALLY ONLY. CONTRACTOR SHALL FIELD LOCATE OR ROUTE AS REQUIRED.
6. MAINTAIN MAXIMUM PRACTICAL OPEN FLOOR SPACE AND WORKING SPACE AROUND EQUIPMENT. ROUTE CONDUITS SO NOT TO CREATE A TRIPPING HAZARD OR INTERFERE WITH OPERATING EQUIPMENT.
7. CONDUITS SHALL BE CONCEALED TO GREATEST EXTENT POSSIBLE, UNLESS OTHERWISE APPROVED BY OWNER.

**COORDINATION**

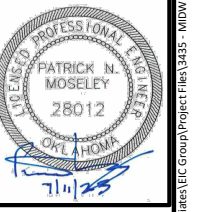
- 1. CONTRACTOR SHALL COORDINATE ALL WORK WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND SPECIAL SYSTEMS DRAWINGS. COORDINATE MECHANICAL AND PLUMBING EQUIPMENT SIZES AND LOCATIONS WITH MECHANICAL AND PLUMBING DRAWINGS, SCHEDULES AND SPECIFICATIONS. PROVIDE REQUIRED ELECTRICAL DISCONNECT SWITCHES, FUSES, CIRCUIT BREAKERS, STARTERS AND CONTROLS, BRANCH CIRCUITS, FEEDERS, ELECTRICAL EQUIPMENT AND DEVICES, AND WIRING REQUIRED FOR A COMPLETE FUNCTIONAL SYSTEM.
2. HEAT TRACE: THE LOCATION AND NUMBER OF CIRCUITS FOR HEAT TRACE IS APPROXIMATE. FINAL LOCATION AND NUMBER OF CIRCUITS TO BE COORDINATED WITH THE HEAT TRACE SUBCONTRACTOR.
3. HVAC: WHEN NOT IDENTIFIED ON DRAWINGS, CONDUIT AND WIRING FOR THERMOSTATS SHALL BE 3#14, 3/4" CONDUIT. CONDUIT AND WIRING FOR MOTORIZED DAMPER SHALL BE 3#14, 3/4" CONDUIT



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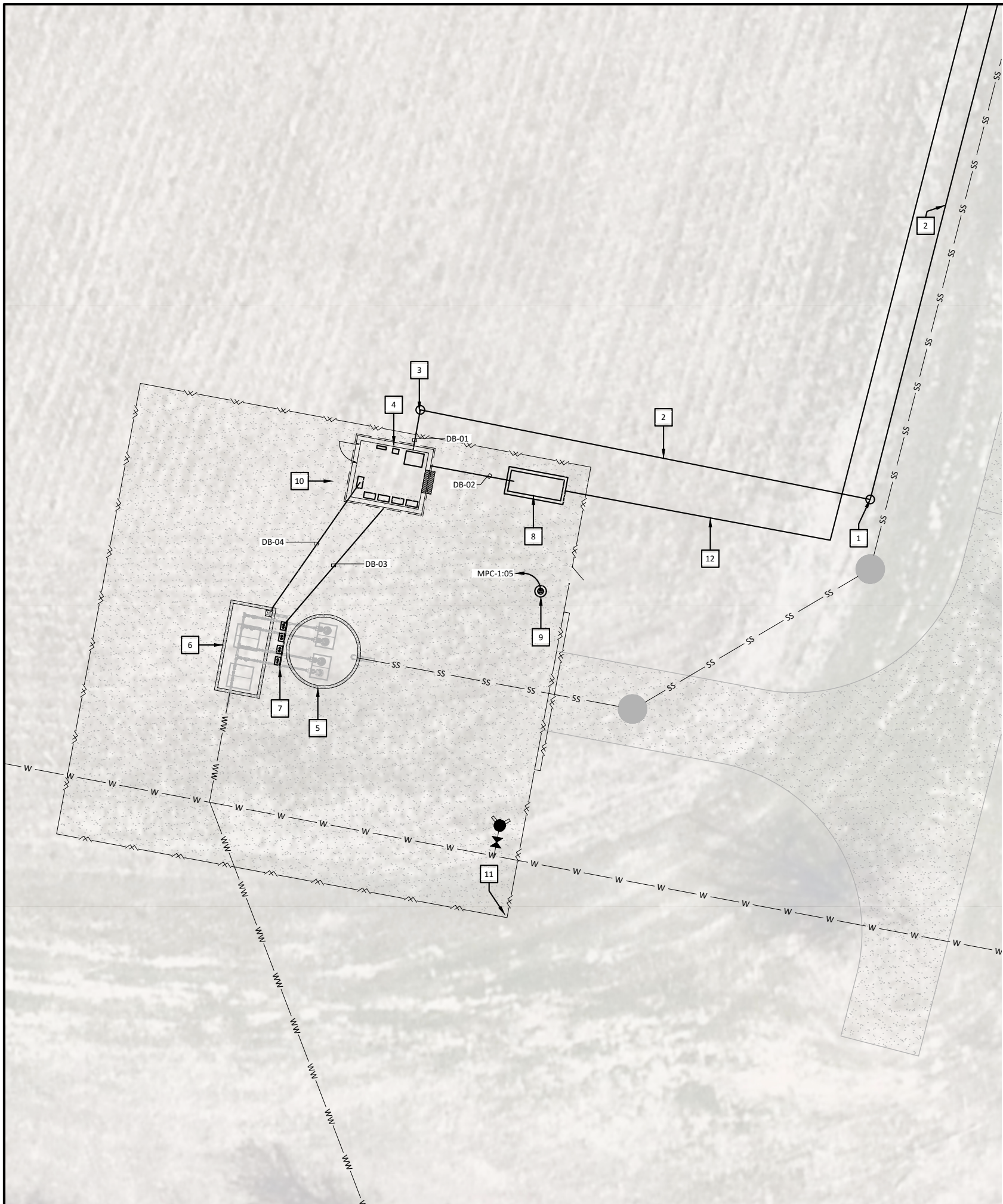
CITY OF MIDWEST CITY  
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CITY OF MIDWEST CITY  
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GENERAL NOTES



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DRAWN	-
CHECKED	N. TOUSSAINT
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Seq. 21 of 36  
Dwg. No. E-002  
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- NOTES INDICATED BY #
- UTILITY SERVICE POLE BY POWER UTILITY COMPANY.
  - OVERHEAD UTILITY SERVICE CONDUCTORS BY UTILITY.
  - POLE MOUNTED TRANSFORMERS AND SERVICE POLE BY UTILITY COMPANY. SECONDARY CONDUCTORS, RISER CONDUIT, METER AND DISCONNECT SWITCH BY CONTRACTOR. REF DETAIL 785, E-901.
  - ELECTRICAL BUILDING.
  - LIFT STATION WET WELL.
  - LIFT STATION VALVE VAULT.
  - LIFT STATION PUMP CABLE TERMINATION ENCLOSURE WITH CONCRETE EQUIPMENT PAD, TYP. 4. REF E-102.
  - 60KW GENERATOR (GEN-101). PAD MOUNTED WITH SOUNDPROOF ENCLOSURE. REF SECTION 26 32 13.16.
  - AREA LIGHTING WITH POLE MOUNTED FIXTURE TYPE P1. REFER TO FIXTURE SCHEDULE E-101. REF DETAIL 743 ON E-901.
  - PULLBOX DETAIL 770 E-901.
  - SITE FENCING, REFER TO CIVIL SHEETS. FENCE GROUNDING REF DETAILS 711 AND 712 E-902.
  - NATURAL GAS UTILITY LINE TO GENERATOR. PIPELINE AND METER SIZE AND FINAL LOCATION TO BE DETERMINED BY UTILITY.

CONDUIT ID	CIRCUIT ID	CONDUIT SIZE	TERMINATIONS	
			FROM	TO
P1	INCSRV-02	3"	POWER COMPANY TRANSFORMER SECONDARY	SERVICE-ENTRANCE RATED XFER SWITCH ATS-101

### DUCTBANK DB-01

CONDUIT ID	CIRCUIT ID	CONDUIT SIZE	TERMINATIONS	
			FROM	TO
P2	ATS-101-02	3"	SERVICE ENTRANCE RATED XFER SWITCH ATS-101	EMERGENCY GENERATOR GEN-101
P3	MPC-101-06,08	1"	SINGLE PHASE MINI POWER CENTER MPC-101	EMERGENCY GENERATOR GEN-101
C1	ATS-101-03	3"	SERVICE ENTRANCE RATED XFER SWITCH ATS-101	EMERGENCY GENERATOR GEN-101

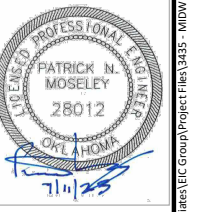
### DUCTBANK DB-02

CONDUIT ID	CIRCUIT ID	CONDUIT SIZE	TERMINATIONS	
			FROM	TO
P4	PP-101-2,4,6B	2"	LIFT STATION PUMP 1 VFD	LIFT STATION PUMP 1 TERMINATION BOX
P5	PP-101-7,9,11B	2"	LIFT STATION PUMP 2 VFD	LIFT STATION PUMP 2 TERMINATION BOX
P6	PP-101-8,10,12B	2"	LIFT STATION PUMP 3 VFD	LIFT STATION PUMP 3 TERMINATION BOX
P7	PP-101-13,15,17B	2"	LIFT STATION PUMP 4 VFD	LIFT STATION PUMP 4 TERMINATION BOX

### DUCTBANK DB-03

CONDUIT ID	CIRCUIT ID	CONDUIT SIZE	TERMINATIONS	
			FROM	TO
C2	PLC-101-09	1"	PLC PANEL PLC-101	WET WELL #1 LEVEL INDICATING TRANSMITTER
C3	PLC-101-10	1"	PLC PANEL PLC-101	WET WELL #1 LEVEL SWITCHES
C4	PLC-101-11	1"	PLC PANEL PLC-101	LIFT STATION DISCHARGE FLOW TRANSMITTER
C5	PLC-101-12	1"	PLC PANEL PLC-101	VALVE VAULT WATER ON FLOOR SWITCH

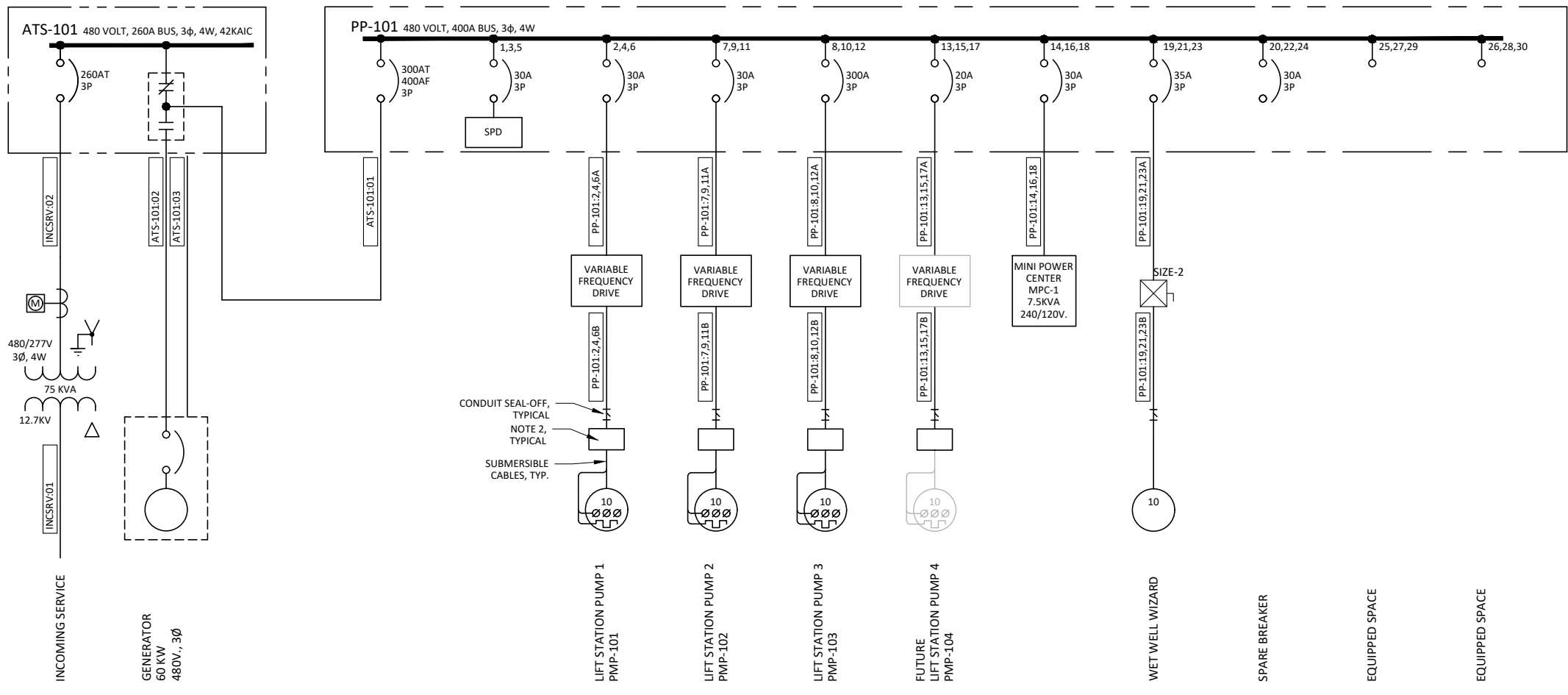
### DUCTBANK DB-04



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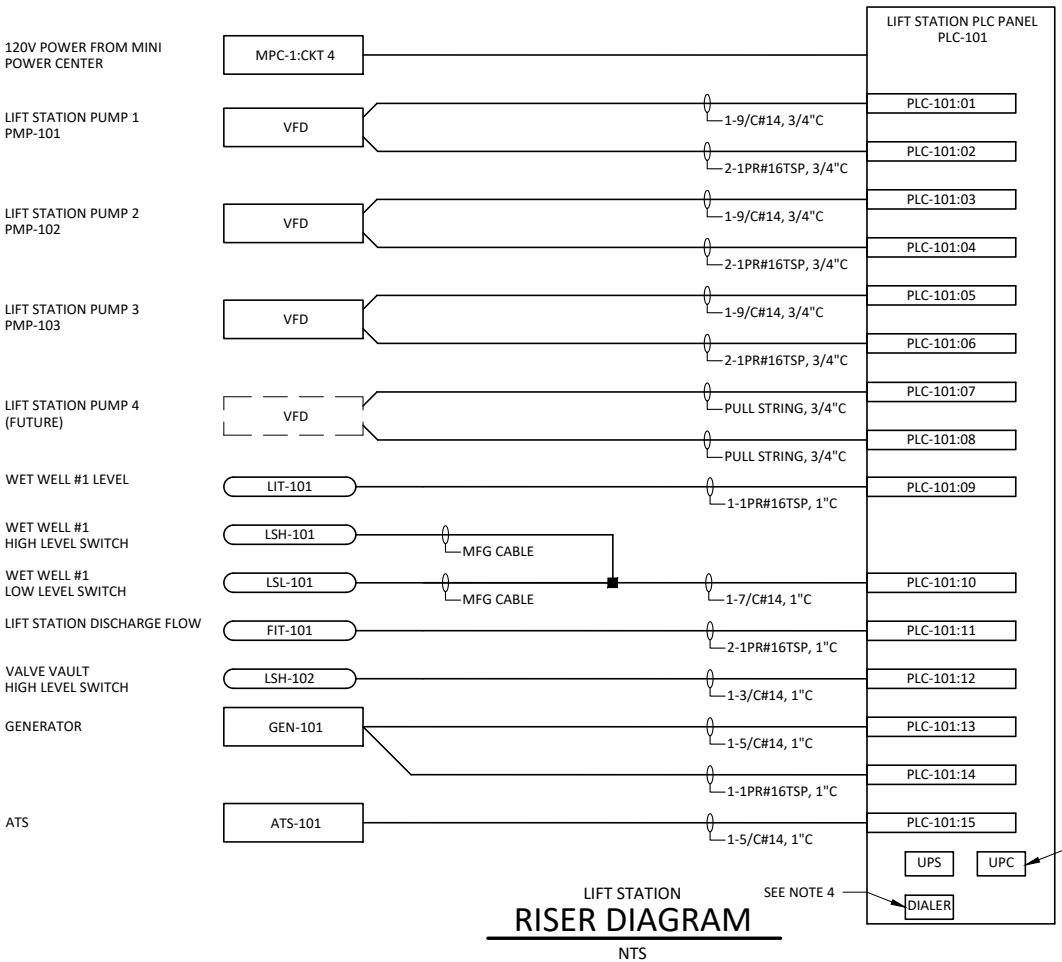
DESIGNED P. MOSELEY  
 DRAWN -  
 CHECKED N. TOUSSAINT  
 REVIEWED P. MOSELEY

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- GENERAL NOTES:
1. REFER TO SHEET E-001 FOR ADDITIONAL NOTES.
  2. NEMA 4X 316 STAINLESS ENCLOSURE, WITH TERMINAL LUGS, DUCT SEAL CONDUITS TO WET WELL.
  3. UNIVERSAL PUMP CONTROLLER IS A COMBINATION PROGRAMMABLE CONTROLLER AND HMI UNIT. REFER TO SECTION 40 05 92.
  4. CELLULAR ALARM DIALER FOR REMOTE MONITORING AND ALARMING. REFER TO SECTION 40 63 93.

### ONE-LINE DIAGRAM



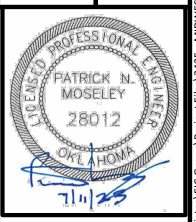
CIRCUIT ID	CONDUIT SIZE	WIRE	TERMINATIONS	
			FROM	TO
			INCSRV:01	2"
INCSRV:02	3"	4-#2/0	POWER COMPANY TRANSFORMER	AUTOMATIC TRANSFER SWITCH
ATS-101:01	3"	4-#2/0, #2	AUTOMATIC TRANSFER SWITCH	POWER PANEL PP-101
ATS-101:02	2"	4-#8	AUTOMATIC TRANSFER SWITCH	GENERATOR
ATS-101:03	1"	5#14	AUTOMATIC TRANSFER SWITCH	GENERATOR
PP-101:2,4,6A	1 1/2"	3#10, #12G.	POWER PANEL PP-101, CIRCUIT 2,4,6	LIFT STATION PUMP 1, VFD
PP-101:2,4,6B	2"	1-3/C#10+G (VFD), 1-2PR#16	LIFT STATION PUMP 1, VFD	LIFT STATION PUMP 1 TERMINATION BOX
PP-101:7,9,11A	1 1/2"	3#10, #12G.	POWER PANEL PP-101, CIRCUIT 7,9,11	LIFT STATION PUMP 2, VFD
PP-101:7,9,11B	2"	1-3/C#10+G (VFD), 1-2PR#16	LIFT STATION PUMP 1, VFD	LIFT STATION PUMP 2 TERMINATION BOX
PP-101:8,10,12A	1 1/2"	3#10, #12G.	POWER PANEL PP-101, CIRCUIT 8,10,12	LIFT STATION PUMP 3, VFD
PP-101:8,10,12B	2"	1-3/C#10+G (VFD), 1-2PR#16	LIFT STATION PUMP 3, VFD	LIFT STATION PUMP 3 TERMINATION BOX
PP-101:13,15,17A	1 1/2"	3#10, #12G.	POWER PANEL PP-101, CIRCUIT 13,15,17	FUTURE LIFT STATION PUMP 4, VFD
PP-101:13,15,17B	2"	PULL STRING	FUTURE LIFT STATION PUMP 4, VFD	LIFT STATION PUMP 3 TERMINATION BOX
PP-101:14,16,18	1"	3#12, #12G.	POWER PANEL PP-101, CIRCUIT 14,16,18	MINI POWER CENTER MPC-1
PP-101:19,21,23A	1"	3#10, #10G.	POWER PANEL PP-101, CIRCUIT 19,21,23	WET WELL WIZARD COMBINATION MOTOR STARTER
PP-101:19,21,23B	1"	3#10, #10G.	WET WELL WIZARD COMBINATION MOTOR STARTER	WET WELL WIZARD COMPRESSOR MOTOR



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  
ELECTRICAL  
LIFT STATION  
ONE-LINE DIAGRAM

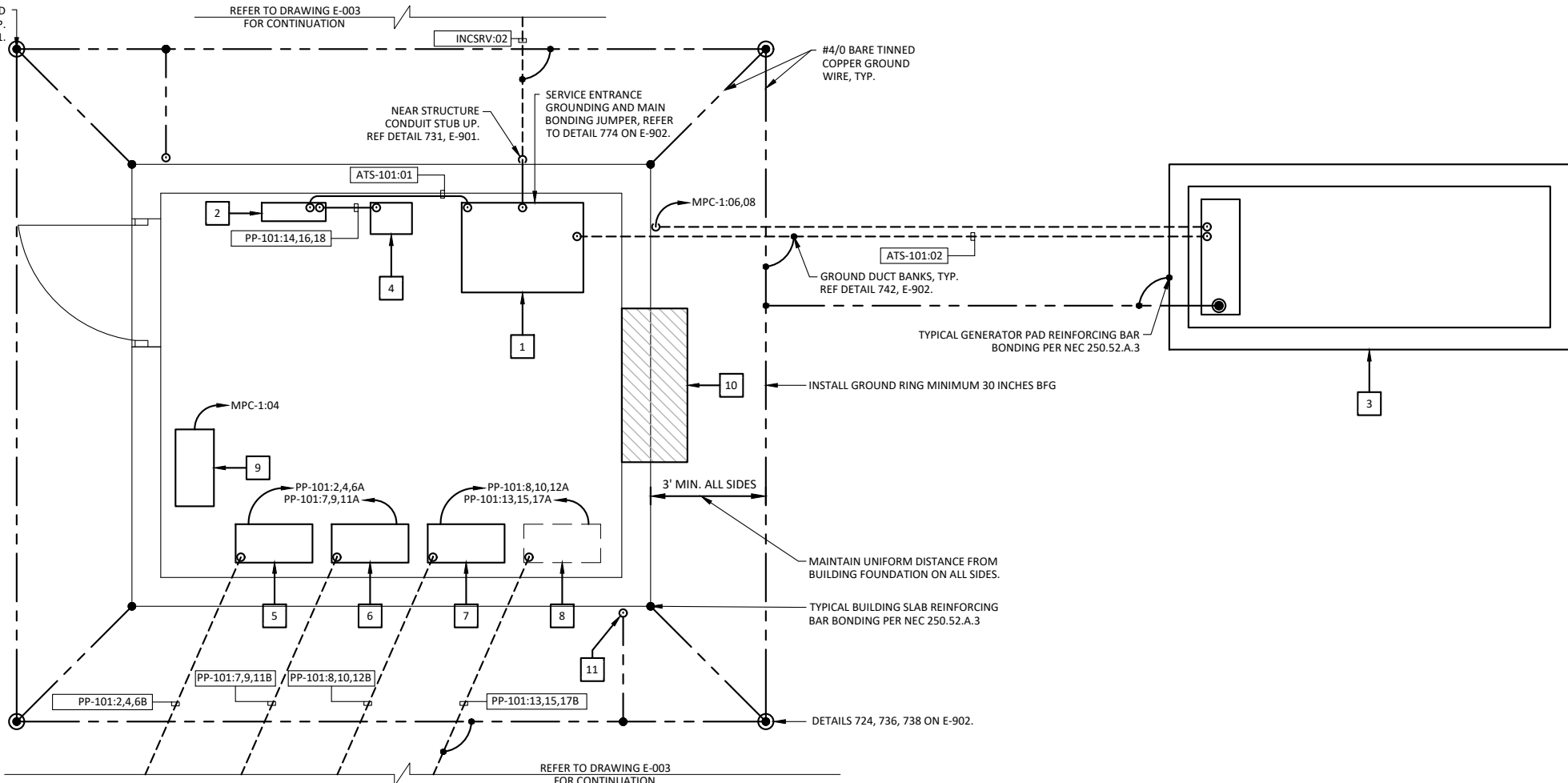


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DESIGNED	P. MOSELEY
DRAWN	-
CHECKED	N. TOUSSAINT
REVIEWED	P. MOSELEY

Seq. **23** of **36**  
Dwg. No. **E-100**  
3435-003-01

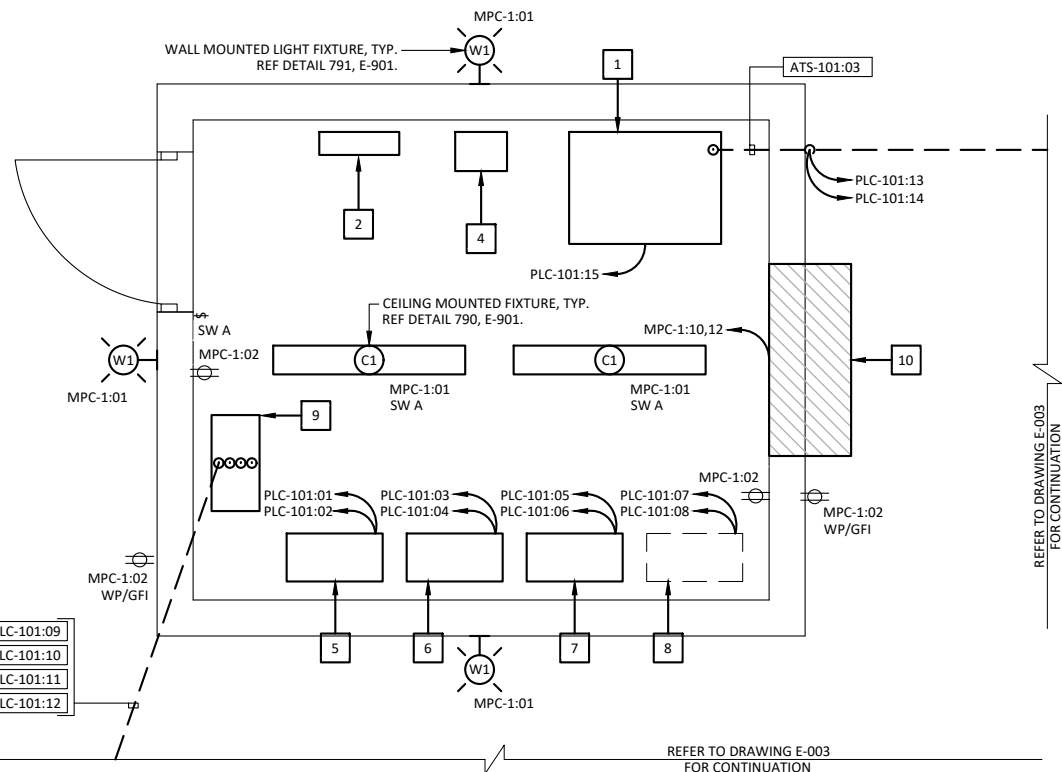
3/4"Ø X 10' COPPER CLAD GROUND ROD, TYP. REF DETAIL 709 ON E-901.



**ELECTRICAL BUILDING POWER PLAN**

SCALE: 1/2" = 1'-0"

- NOTES INDICATED BY #
- SERVICE ENTRANCE RATED AUTOMATIC TRANSFER SWITCH (ATS-101). FLOOR MOUNT. REF SECTION 26 36 13.11.
  - POWER PANEL (PP-101), SURFACE MOUNT 4' AFF. REF DETAIL 701 ON E-901.
  - STANDBY GENERATOR AND EQUIPMENT PAD. REF SECTION 26 32 13.13.
  - SINGLE PHASE MINI POWER CENTER (MPC-1). SURFACE MOUNT 4' AFF. REF DETAIL 701 ON E-901.
  - LIFT STATION PUMP 1 VFD (PMP-101).
  - LIFT STATION PUMP 2 VFD (PMP-102).
  - LIFT STATION PUMP 3 VFD (PMP-103).
  - LIFT STATION PUMP 4 VFD (PMP-104).
  - PLC PANEL (PLC-101), SURFACE MOUNT 4' AFF. REF DETAIL 701 ON E-901.
  - ELECTRICAL BUILDING HVAC UNIT.
  - LIGHTNING PROTECTION DOWNLEADER. REF DETAIL 720 ON E-902.



**ELECTRICAL BUILDING CONTROL AND LIGHTING PLAN**

SCALE: 1/2" = 1'-0"

PANEL SCHEDULE											
PANEL: MPC-1					LOCATION: LIFT STATION ELECTRICAL BUILDING						
VOLTAGE: 240/120 VAC, 1 PHASE, 3 WIRE					MOUNTING: SURFACE						
XFRM: 7.5 KVA					FED FROM: POWER PANEL PP-101						
MAIN SIZE: 30A					MAIN TYPE: CIRCUIT BREAKER						
SCCR: 10 KAIC					NOTES: NEMA 1, MOUNT 4' AFF						
CIRCUIT TITLE	BREAKER			LOAD VA		LOAD VA		BREAKER		CIRCUIT TITLE	
	CKT NO.	AMP	POLE	PHASE A	PHASE B	PHASE A	PHASE B	POLE	AMP		CKT NO.
BUILDING LIGHTS	1	20	1	200				1	20	2	SPARE
BUILDING RECEPTACLE	3	20	1		1200		1000	1	20	4	CONTROL PANEL
AREA LIGHTING	5	20	1	200		1800		2	20	6	GENERATOR
SPARE	7	20	1				1800			8	
SPARE	9	20	1			2750				10	AC UNIT
SPARE	11	20	1				2750	2	30	12	
TOTAL LOAD				400	1200	4550	5550				
				PHASE A LOAD (VA) = 4950		PHASE B LOAD (VA) = 6750		TOTAL LOAD (VA) = 11700			
NOTE: ALL HEAT TRACE CIRCUITS SHALL HAVE GFPE BREAKER											

LIGHT FIXTURE SCHEDULE			
ID	FIXTURE TYPE	MANUFACTURER AND MODEL	DESCRIPTION
C1	4' ENCLOSED AND GASKETED LED	HOLOPHANE, EVT4 LED	8,000 LUMENS, FROSTED POLYCARBONATE LENS, WIDE DISTRIBUTION, MVOLT, GZ10 0-10V DIMMING, 4000K COLOR TEMP, 90 CRI
P1	POLE LIGHT, 20' HIGH LOW CUTOFF	HOLOPHANE, MGL5DM	38,000 LUMENS, 50K, 480V. UPRIGHT SKIRT, REFRACTOR, MOUNTED ON 20' SQUARE ALUMINUM POLE
W1	POLE, WALL, AND CANOPY	HOLOPHANE, HLWPC2	LED WALL PACK, 4000 LUENS, 120v, 5000K, AUTOSENSING VOLTAGE, 80CRI, EMERGENCY BATTERY



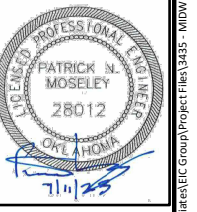
CITY OF MIDWEST CITY  
NORTH SIDE UTILITIES PROJECT PHASE I

ELECTRICAL  
LIFT STATION  
ELECTRICAL BUILDING PLANS

DESIGNED BY: P. MOSELEY  
DRAWN BY: N. TOUSSAINT  
CHECKED BY: P. MOSELEY  
REVIEWED BY: P. MOSELEY

Seq. 24 of 36  
Dwg. No. E-101

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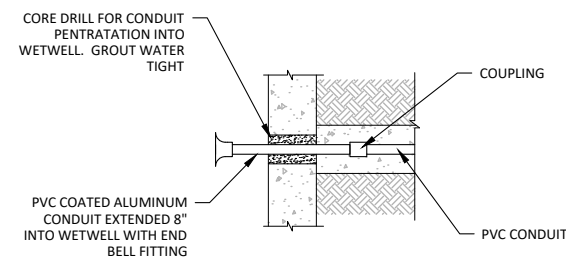
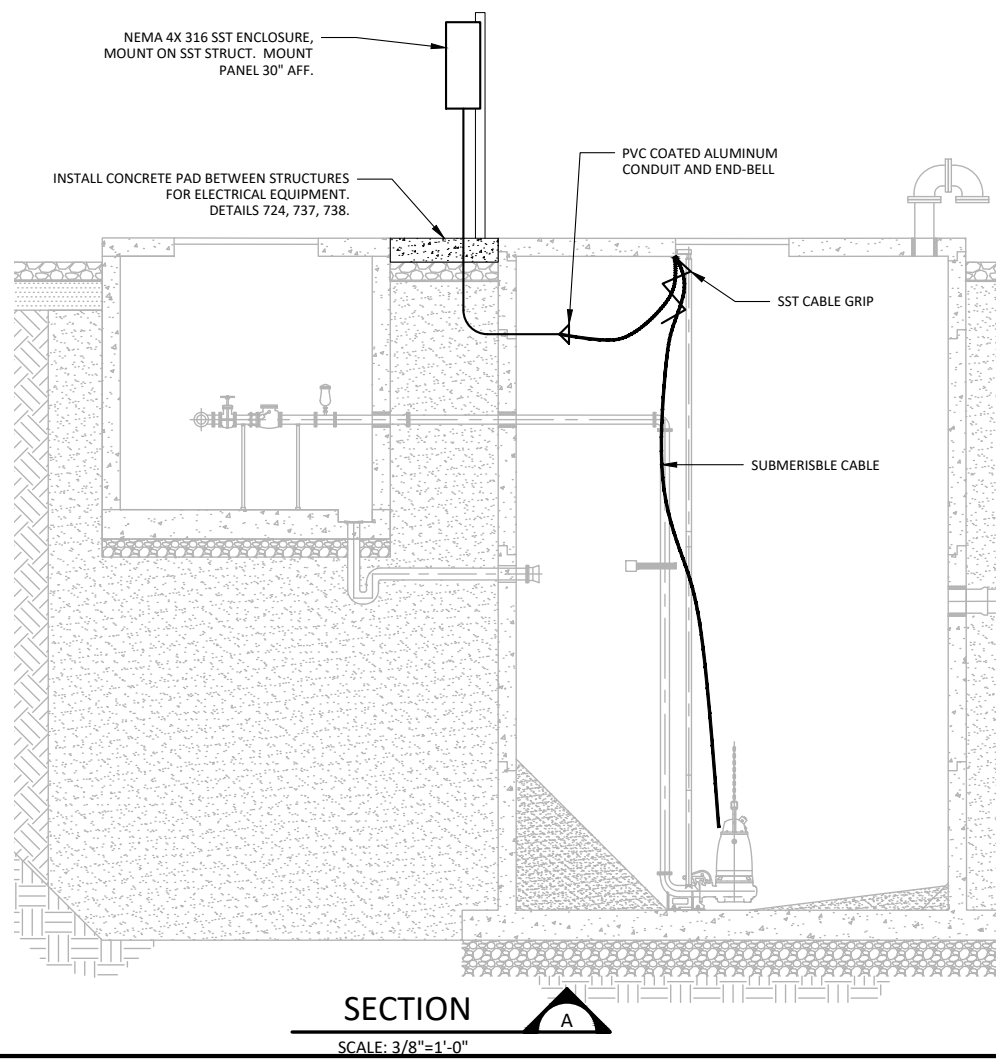
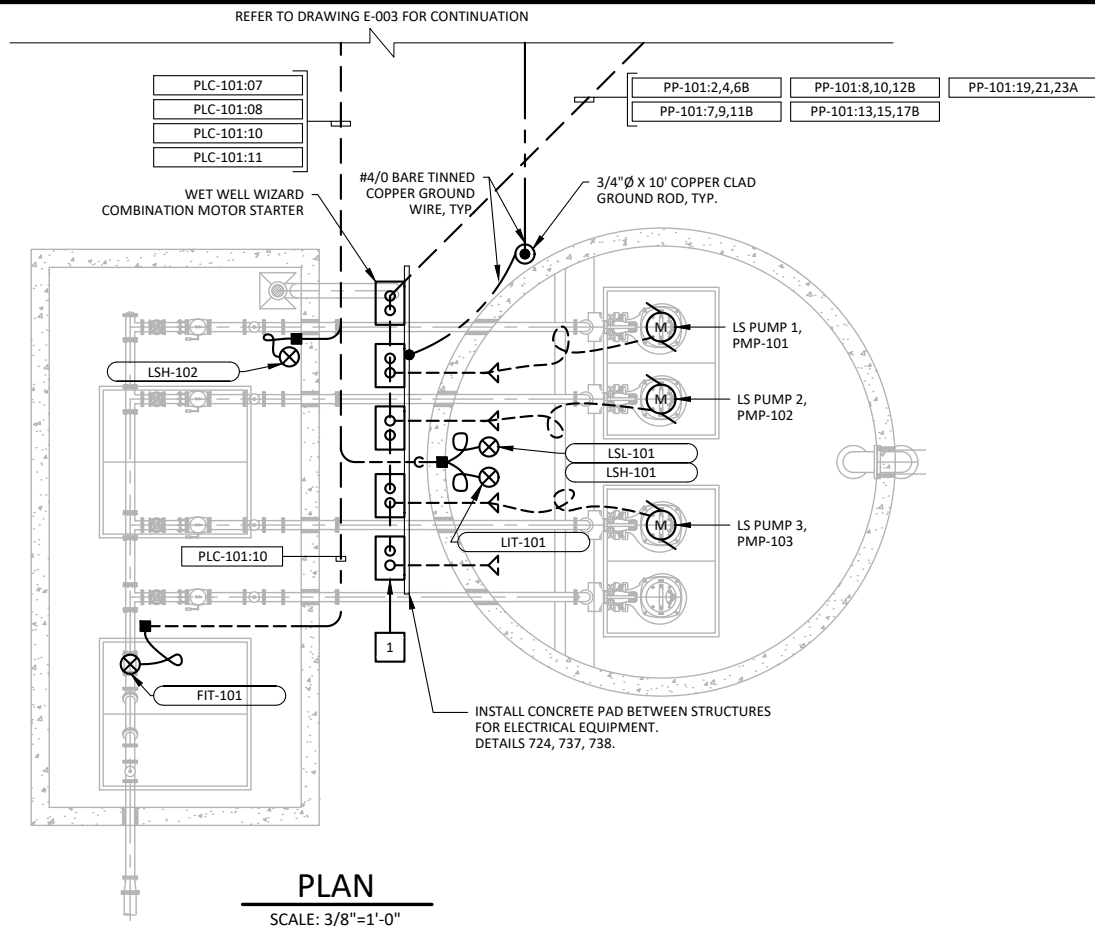
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DRAWN BY: N. TOUSSAINT  
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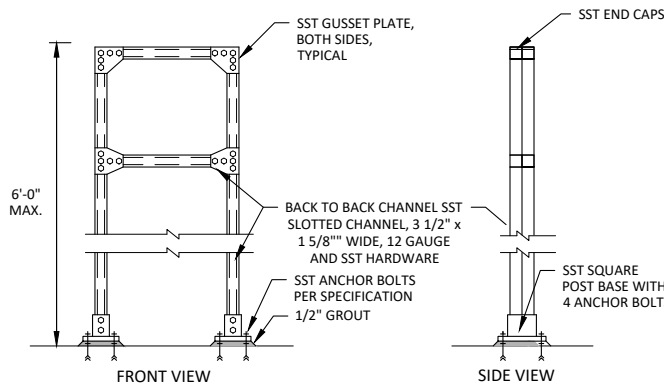
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3435-003-01

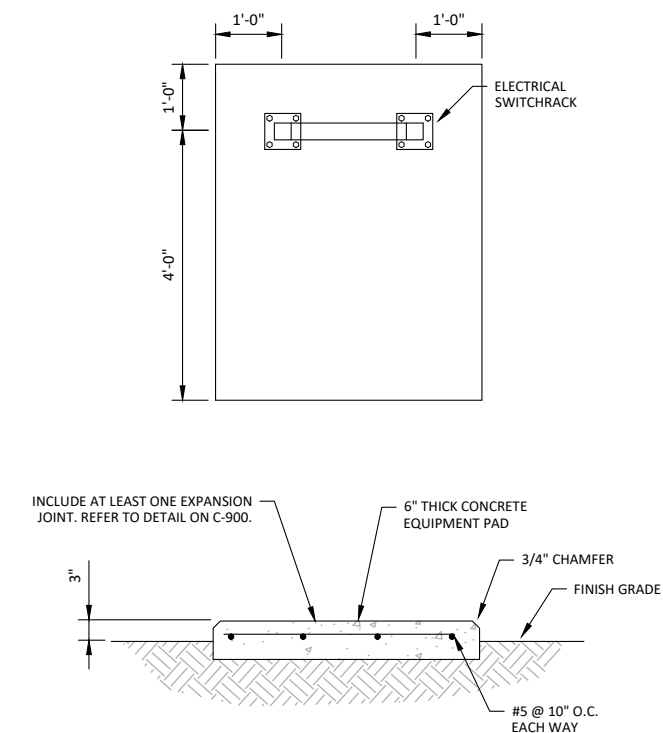




**CONDUIT ENTRY  
PRECAST CONCRETE WETWELL** 737  
NTS



**BETWEEN 4' AND 8' WIDTH/DOUBLE SIDED  
ELECTRICAL SWITCHRACK** 738  
NTS

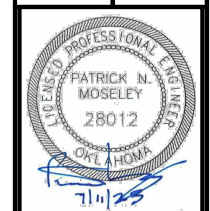


**OUTDOOR EQUIPMENT PAD** 724  
NTS

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OK 73110

CITY OF MIDWEST CITY  
NORTH SIDE UTILITIES PROJECT PHASE I  
ELECTRICAL  
LIFT STATION  
LIFT STATION PLAN AND SECTION



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LABELED SCALE

DESIGNED P. MOSELEY  
DRAWN -  
CHECKED N. TOUSSAINT  
REVIEWED P. MOSELEY

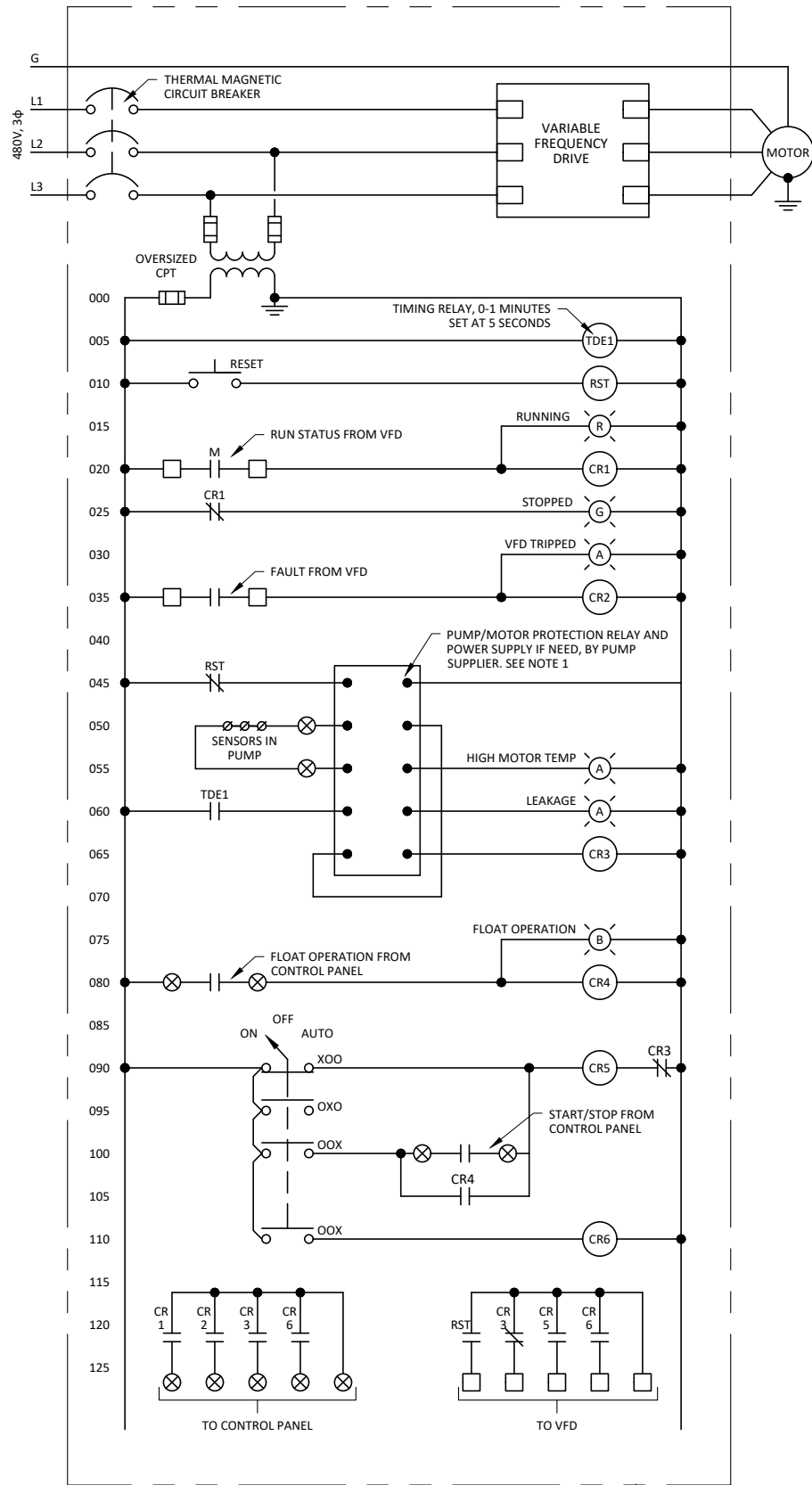
Seq. 25 of 36  
Dwg. No. E-102  
3435-003-01

NOTES INDICATED BY #

1. NEMA 4X 316 SST ENCLOSURE. MOUNT PANEL 30" AFF ON SST STRUCTURE, TYP.

GENERAL NOTES:

1. REFER TO E-002 FOR ADDITIONAL NOTES.



### RAW WASTEWATER PUMP

FOR PUMPS: 200-RWP-111  
200-RWP-121  
200-RWP-131  
200-RWP-141

1

NEMA 12

### LIFT STATION INPUT/OUTPUT LIST

POINT	POINT NO.	EQUIPMENT TAG	EQUIPMENT NAME	FUNCTION
AI	1	LIT-101	LIFT STATION LEVEL	LEVEL INDICATION
AI	2	PIT-101	LIFT STATION DISCHARGE PRESSURE	PRESSURE INDICATION
AI	3	PMP-101	LIFT STATION PUMP 1 VFD	SPEED INDICATION FEEDBACK
AI	4	PMP-102	LIFT STATION PUMP 2 VFD	SPEED INDICATION FEEDBACK
AI	5	PMP-103	LIFT STATION PUMP 3 VFD	SPEED INDICATION FEEDBACK
AI	6	PMP-104 - FUTURE	LIFT STATION PUMP 4 VFD - FUTURE	SPEED INDICATION - FUTURE
AI	7	GEN-101	GENERATOR	FUEL LEVEL INDICATION
AI	8		WIRED SPARE	
AO	1	PMP-101	LIFT STATION PUMP 1 VFD	SPEED CONTROL
AO	2	PMP-102	LIFT STATION PUMP 2 VFD	SPEED CONTROL
AO	3		WIRED SPARE	
AO	4		WIRED SPARE	
AO	5	PMP-103	LIFT STATION PUMP 3 VFD	SPEED CONTROL
AO	6	PMP-104 - FUTURE	LIFT STATION PUMP 4 VFD - FUTURE	SPEED CONTROL - FUTURE
AO	7		WIRED SPARE	
AO	8		WIRED SPARE	
DI	1	PMP-101	LIFT STATION PUMP 1	HOA SWITCH POSITION
DI	2	PMP-101	LIFT STATION PUMP 1	RUN STATUS
DI	3	PMP-101	LIFT STATION PUMP 1	FAIL STATUS
DI	4	PMP-102	LIFT STATION PUMP 2	HOA SWITCH POSITION
DI	5	PMP-102	LIFT STATION PUMP 2	RUN STATUS
DI	6	PMP-102	LIFT STATION PUMP 2	FAIL STATUS
DI	7	PMP-103	LIFT STATION PUMP 3	HOA SWITCH POSITION
DI	8	PMP-103	LIFT STATION PUMP 3	RUN STATUS
DI	9	PMP-103	LIFT STATION PUMP 3	FAIL STATUS
DI	10	GEN-101	GENERATOR	RUN STATUS
DI	11	GEN-101	GENERATOR	FAIL STATUS
DI	12	GEN-101	GENERATOR	READY STATUS
DI	13	GEN-101	GENERATOR	COOL DOWN STATUS
DI	14	ATS-101	ATS	UTILITY POWER AVAILABLE
DI	15	ATS-101	ATS	ATS UTILITY POSITION
DI	16	ATS-101	ATS	ATS GENERATOR POSITION
DI	17	UPS-101	PUMP CONTROLLER UPS	UPS OK
DI	18	UPS-101	PUMP CONTROLLER UPS	UPS LOW BATTERY
DI	19	QA-101	PUMP CONTROLLER 24VDC POWER SUPPLY	POWER SUPPLY FAIL
DI	20	LSH-101	WET WELL HIGH LEVEL SWITCH	CONTROL AND ALARM STATUS
DI	21	LSH-102	VALVE VAULT WATER ON FLOOR SWITCH	ALARM STATUS
DI	22	LSL-101	WET WELL LOW LEVEL SWITCH	CONTROL AND ALARM STATUS
DI	23		WIRED SPARE	
DI	24		WIRED SPARE	
DI	25		WIRED SPARE	
DI	26		WIRED SPARE	
DI	27		WIRED SPARE	
DI	28		WIRED SPARE	
DI	29		WIRED SPARE	
DI	30		WIRED SPARE	
DI	31		WIRED SPARE	
DI	32		WIRED SPARE	
DO	1	PMP-101	LIFT STATION PUMP 1	START-STOP COMMAND
DO	2	PMP-102	LIFT STATION PUMP 2	START-STOP COMMAND
DO	3	PMP-103	LIFT STATION PUMP 3	START-STOP COMMAND
DO	4	PMP-104 - FUTURE	LIFT STATION PUMP 4 VFD - FUTURE	START-STOP COMMAND - FUTURE
DO	5		WIRED SPARE	
DO	6		WIRED SPARE	
DO	7		WIRED SPARE	
DO	8		WIRED SPARE	

**PLUMMER**

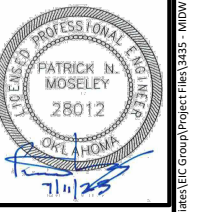


531 COUCH DR, STE 200 | OKLAHOMA CITY, OK 73102  
405.440.2725 | OKLAHOMA FIRM NO. 1097

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CITY OF MIDWEST CITY  
NORTH SIDE UTILITIES PROJECT PHASE I  
ELECTRICAL  
CONTROL SCHEMATICS I

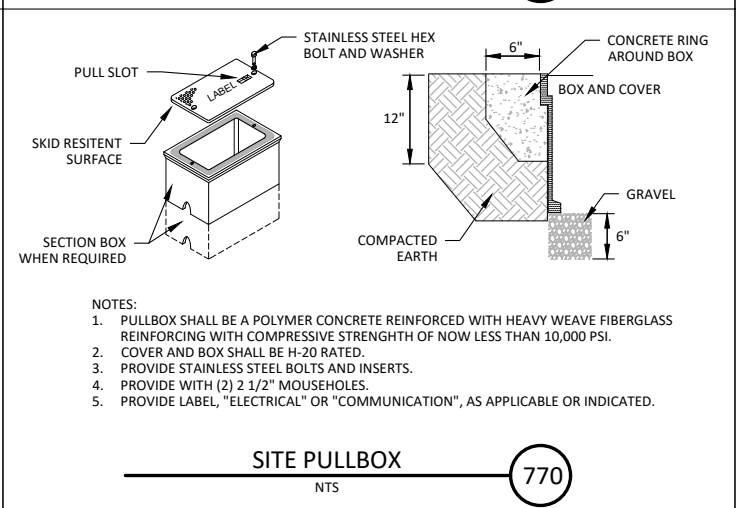
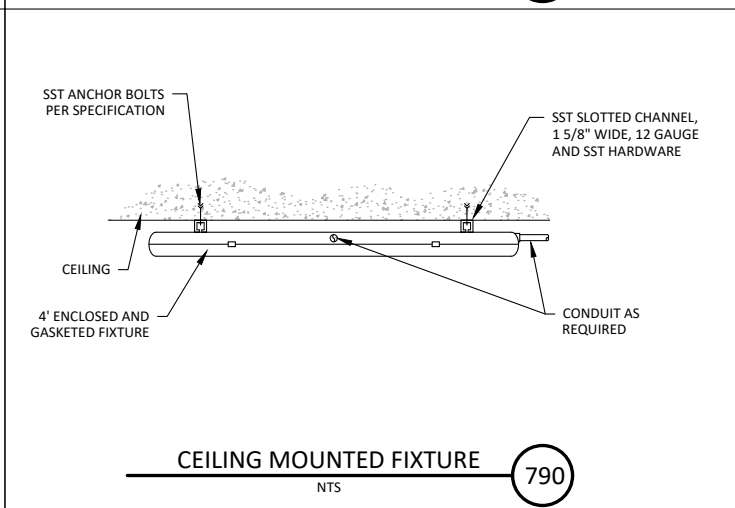
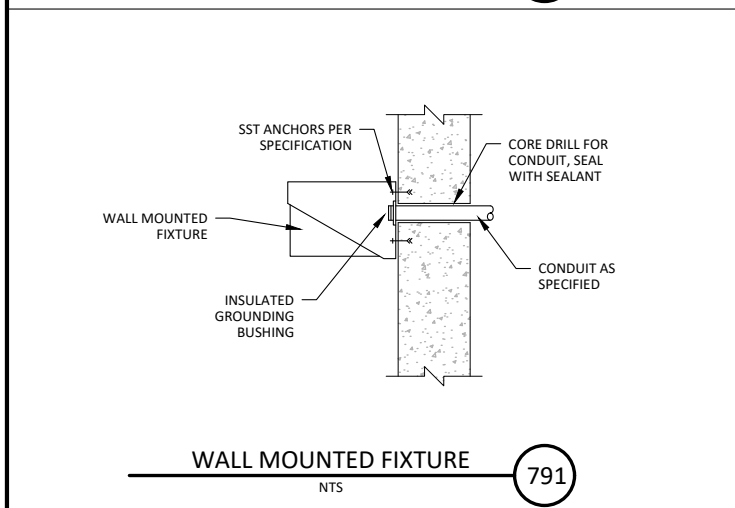
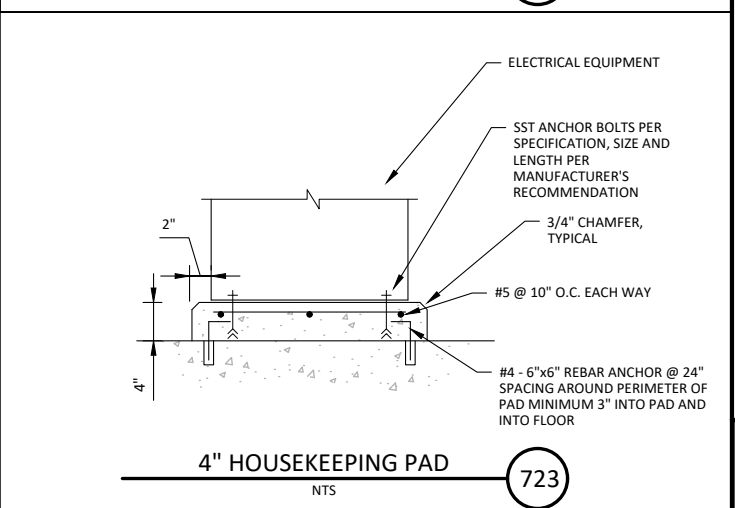
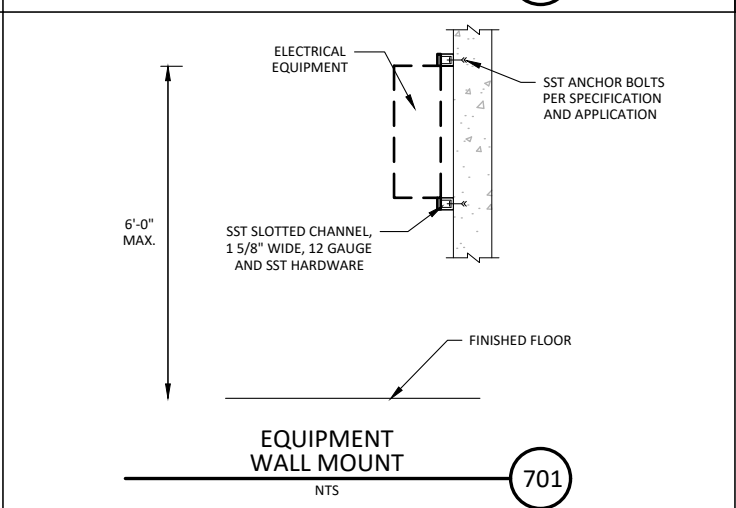
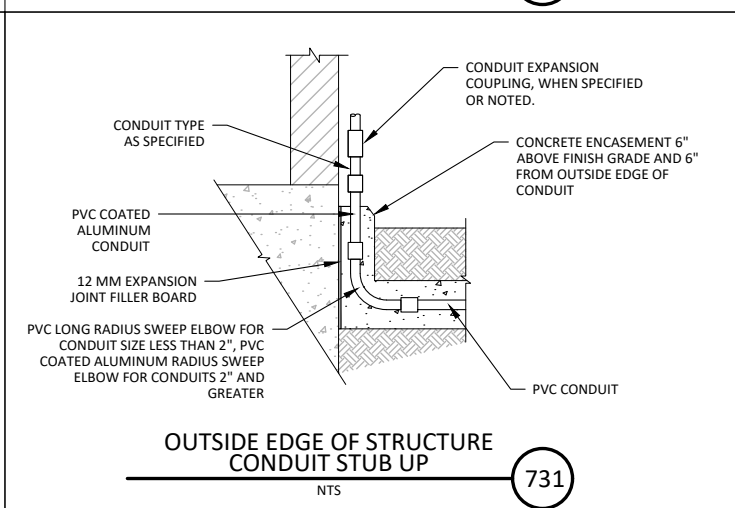
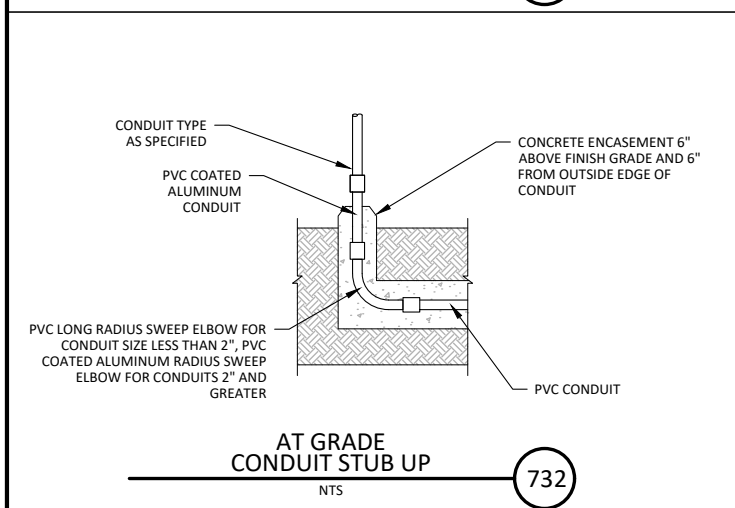
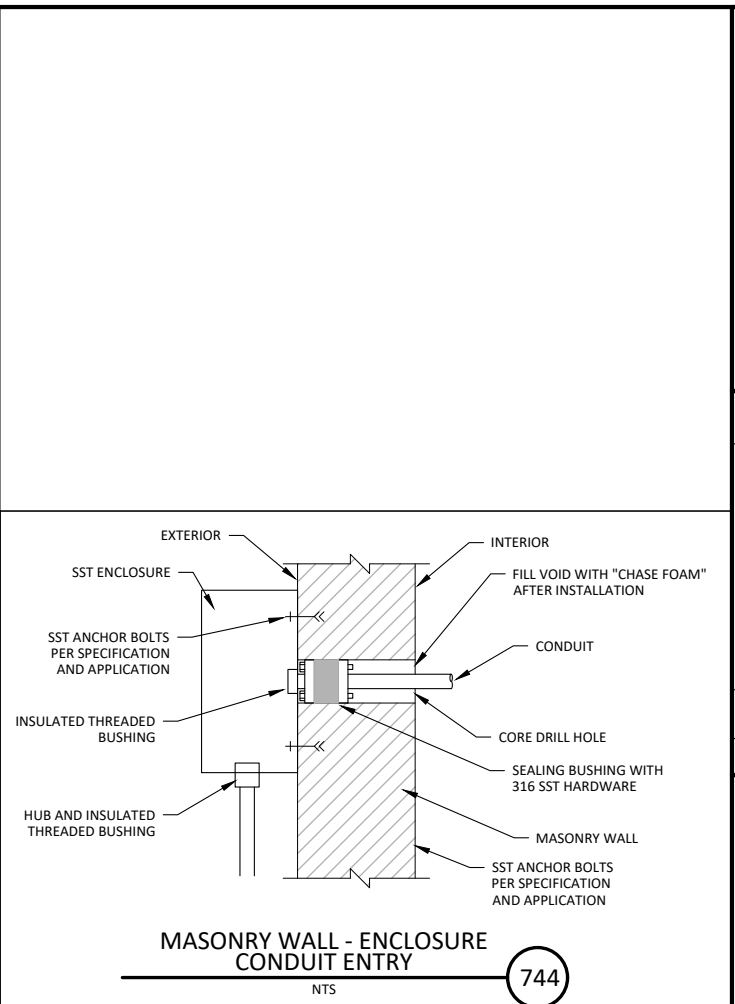
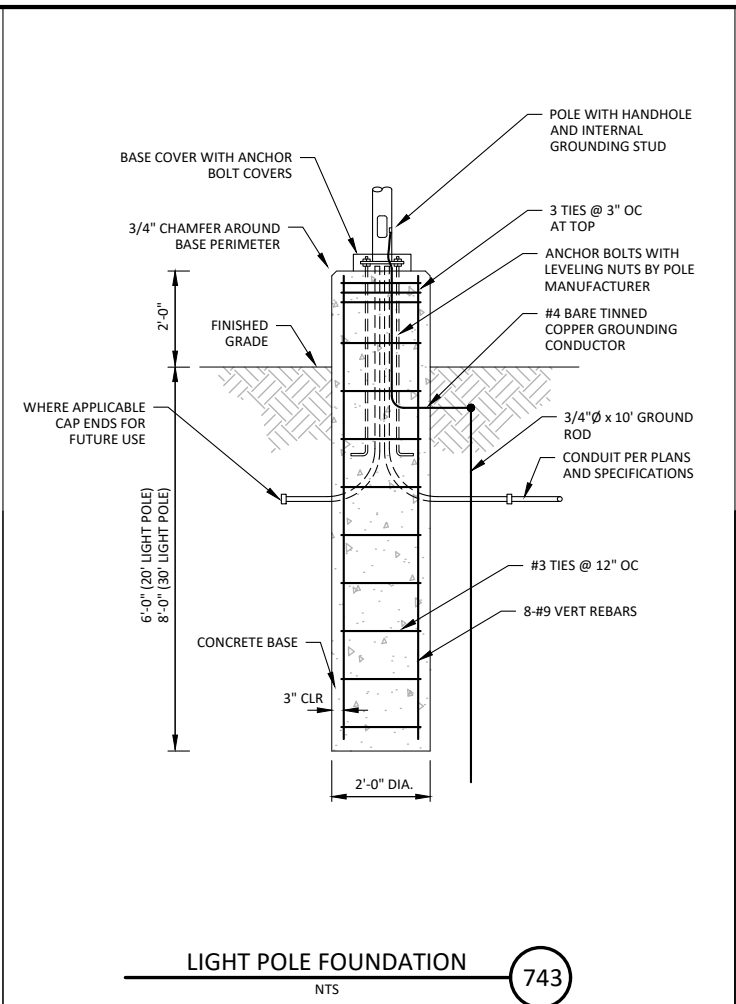
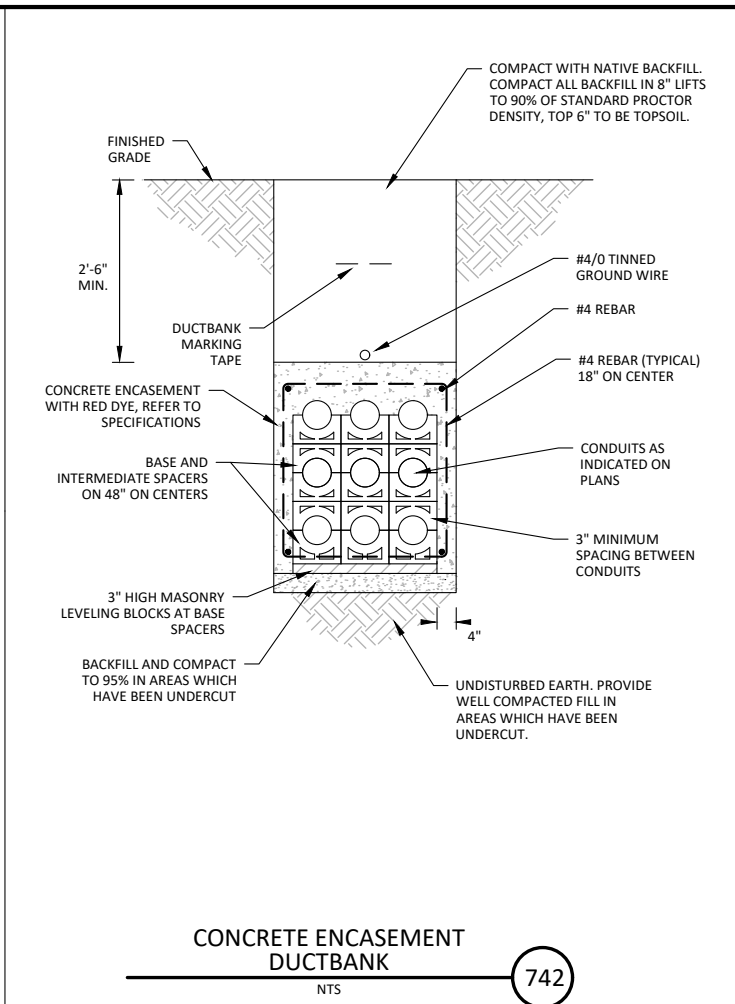
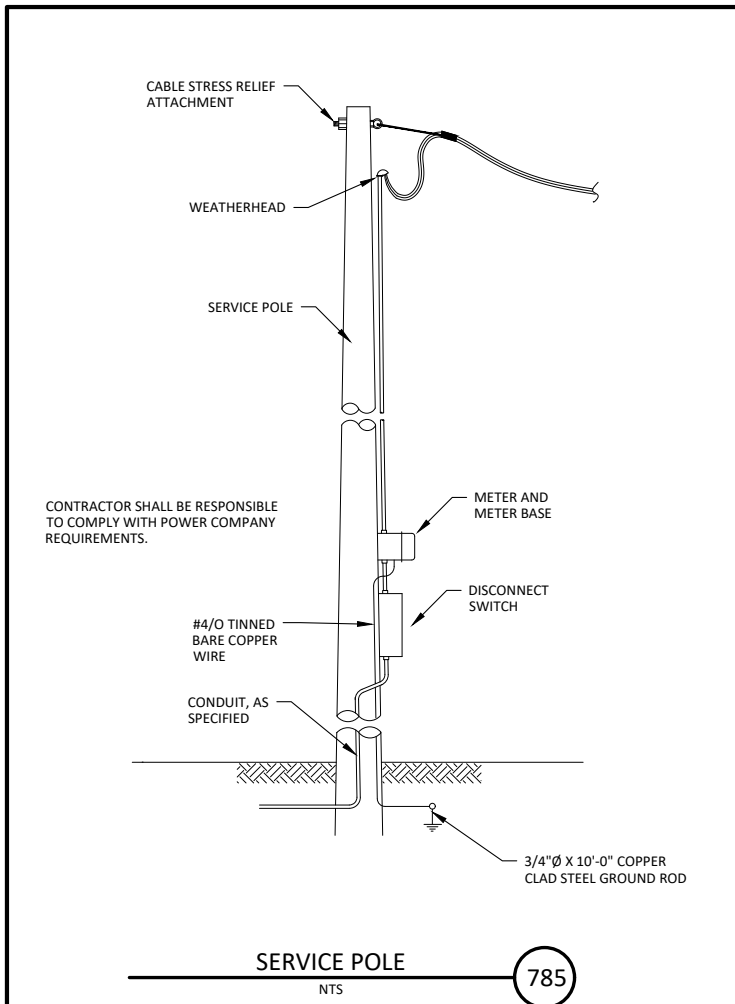


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DESIGNED P. MOSELEY  
DRAWN -  
CHECKED N. TOUSSAINT  
REVIEWED P. MOSELEY

Seq. 26 of 36  
Dwg. No. E-900  
3435-003-01

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405.440.2725 | OKLAHOMA FIRM NO. 1097

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100 N MIDWEST BOULEVARD, MIDWEST CITY, OK 73110

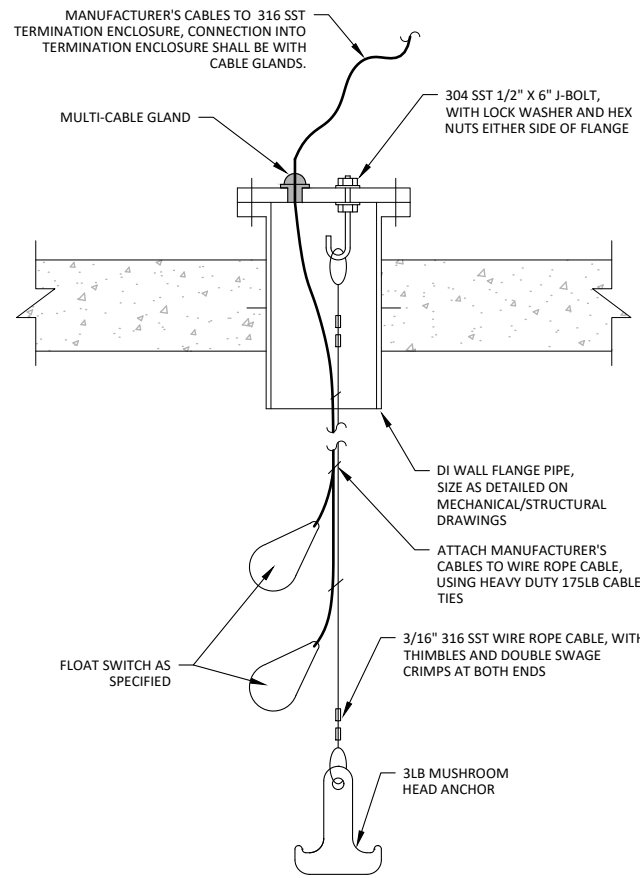
CITY OF MIDWEST CITY  
NORTH SIDE UTILITIES PROJECT PHASE I  
ELECTRICAL  
STANDARD DETAILS I

DESIGNED P. MOSELEY  
DRAWN  
CHECKED N. TOUSSAINT  
REVIEWED P. MOSELEY

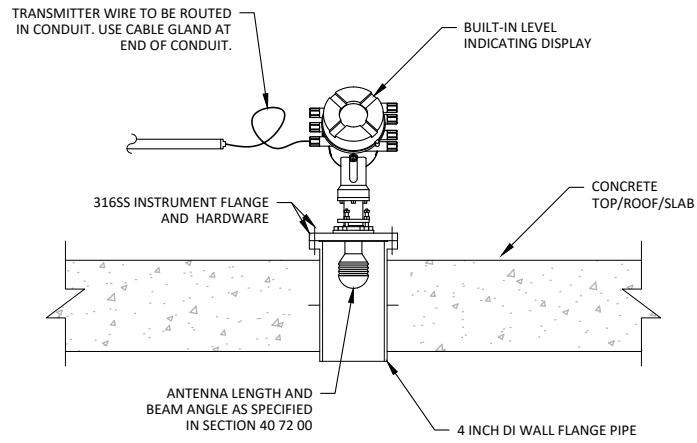
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3435-003-01

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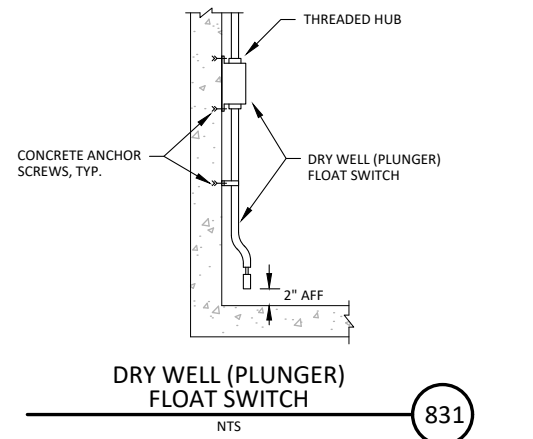
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USER: Gudal, Andrew



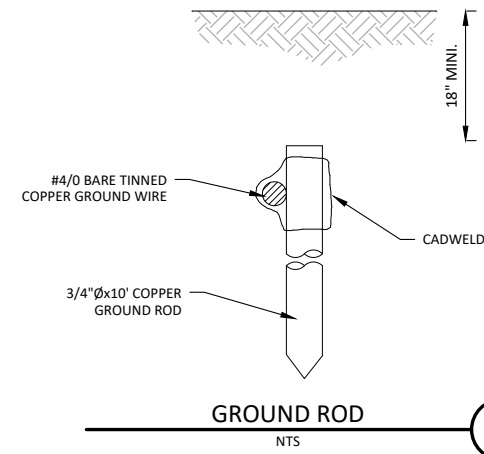
**EXTERNAL WEIGHTED FLOAT SWITCH WALL FLANGE MOUNT**  
NTS (802)



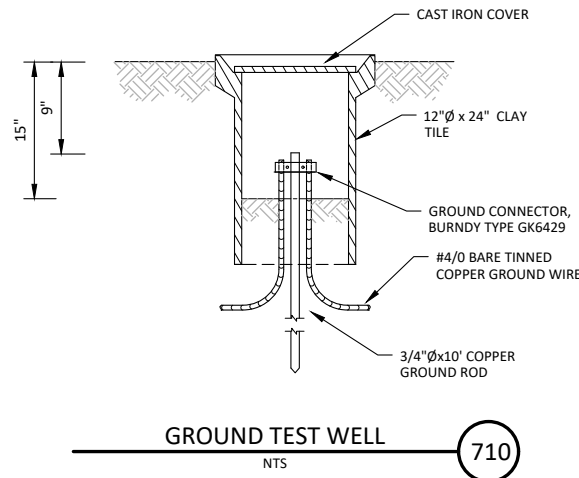
**LEVEL TRANSDUCER WALL FLANGE MOUNT**  
NTS (836)



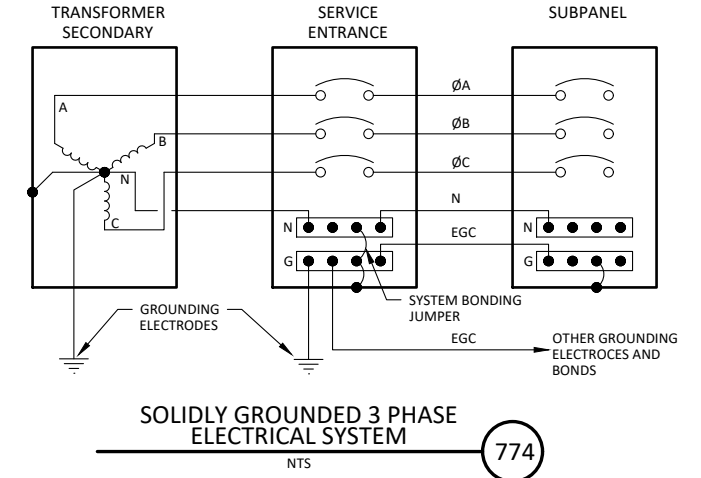
**DRY WELL (PLUNGER) FLOAT SWITCH**  
NTS (831)



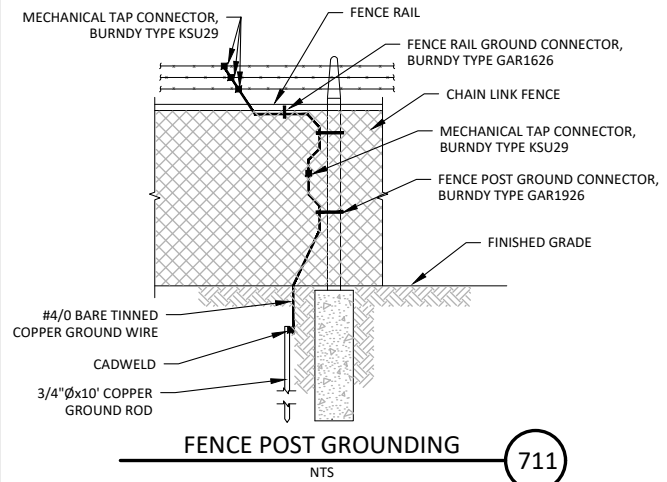
**GROUND ROD**  
NTS (709)



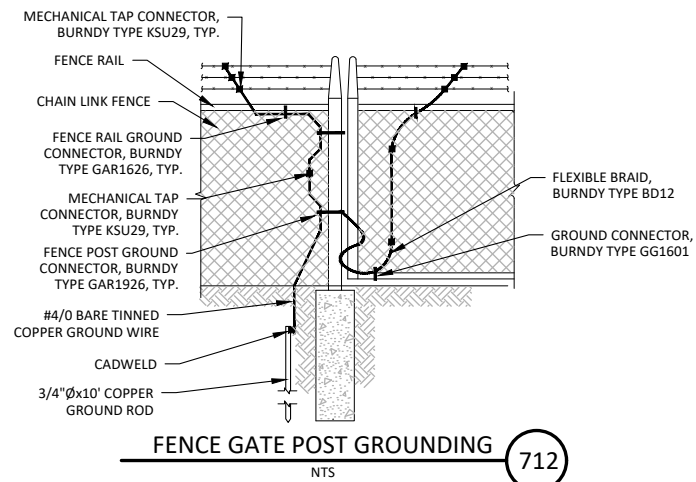
**GROUND TEST WELL**  
NTS (710)



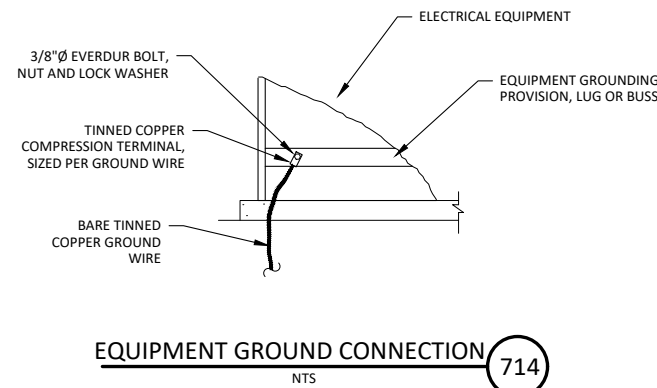
**SOLIDLY GROUND 3 PHASE ELECTRICAL SYSTEM**  
NTS (774)



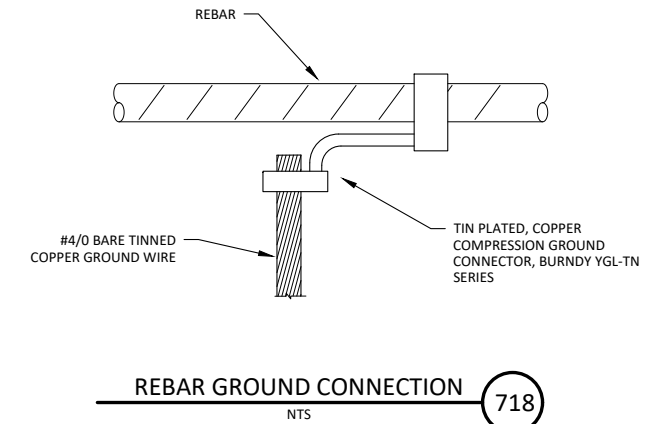
**FENCE POST GROUNDING**  
NTS (711)



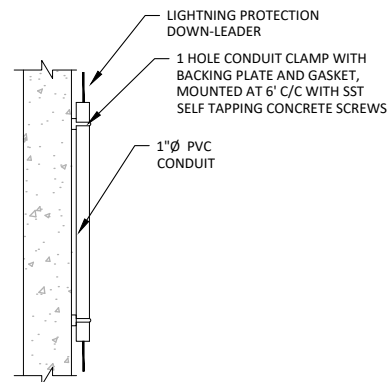
**FENCE GATE POST GROUNDING**  
NTS (712)



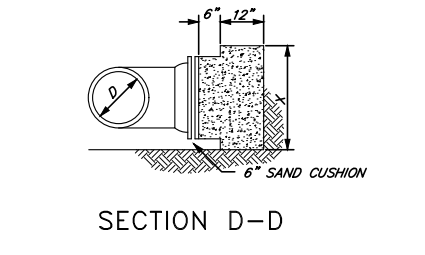
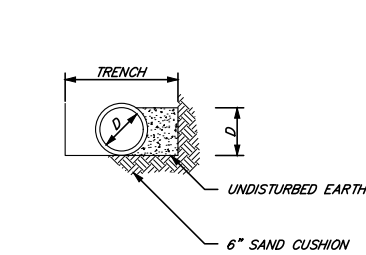
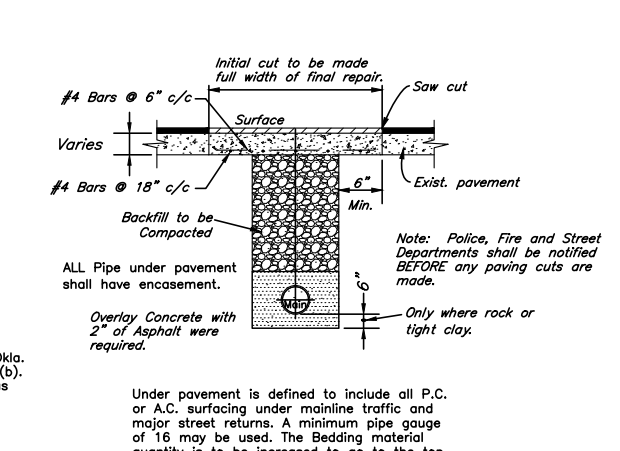
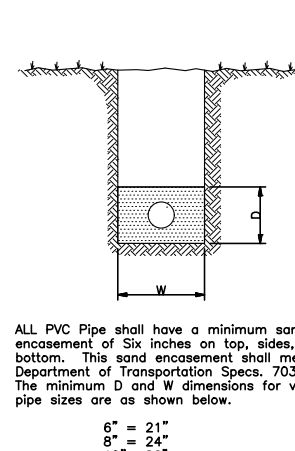
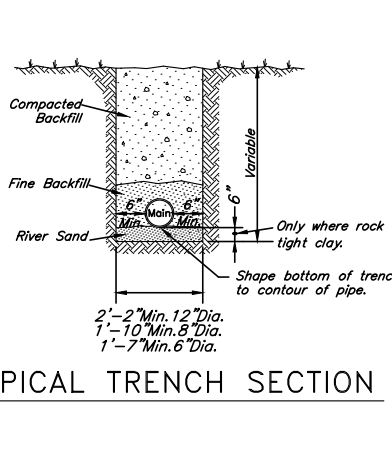
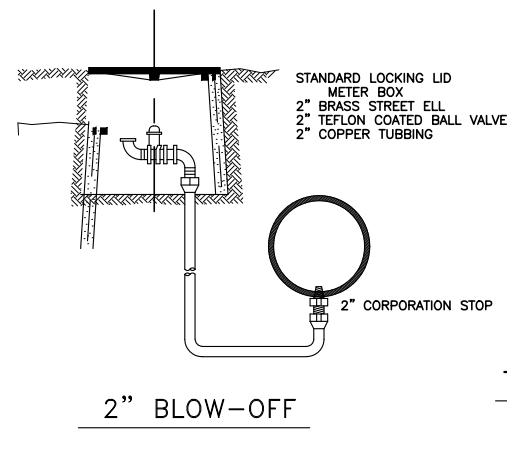
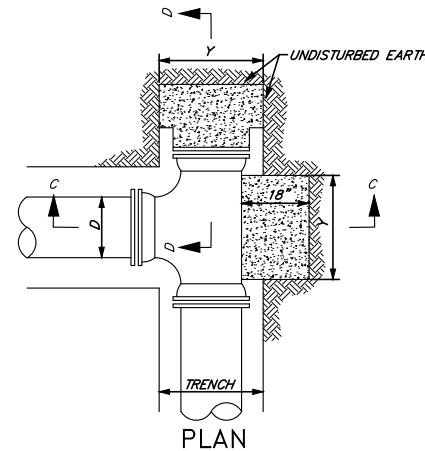
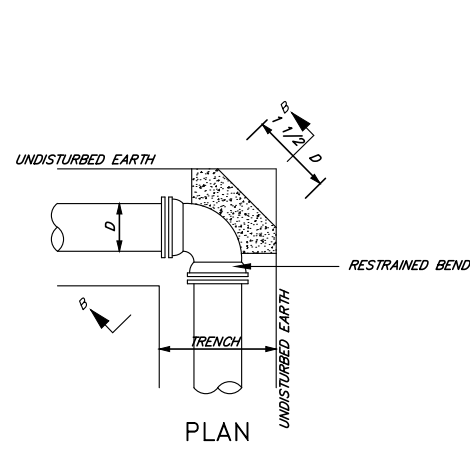
**EQUIPMENT GROUND CONNECTION**  
NTS (714)



**REBAR GROUND CONNECTION**  
NTS (718)

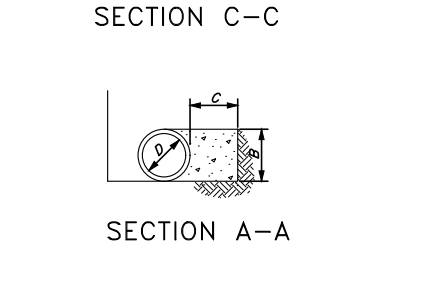
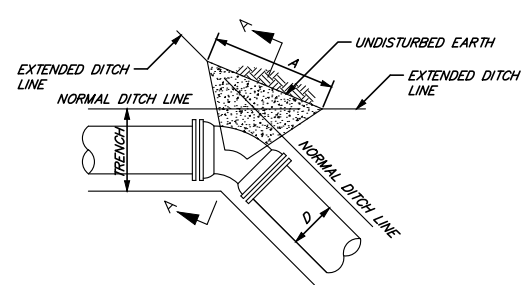


**LIGHTNING PROTECTION DOWN-LEADER SLEEVE**  
NTS (720)



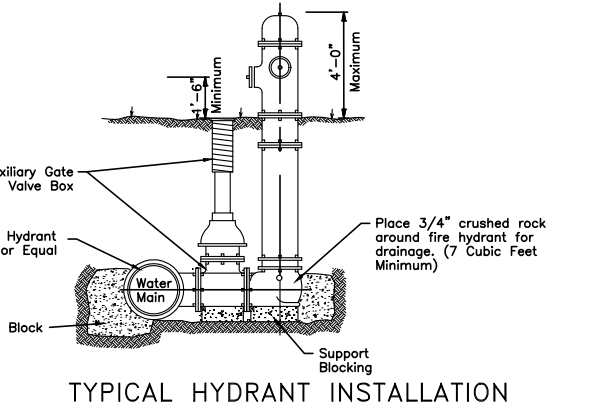
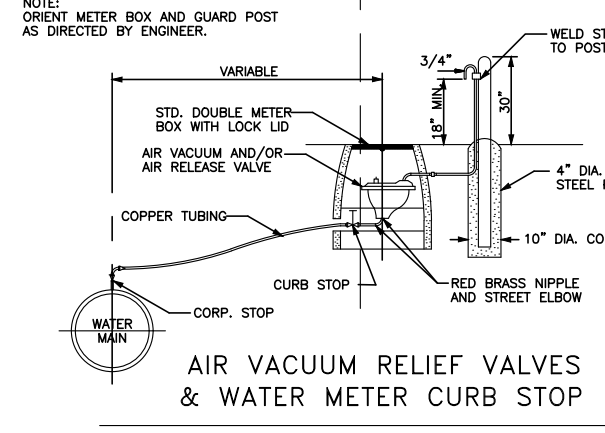
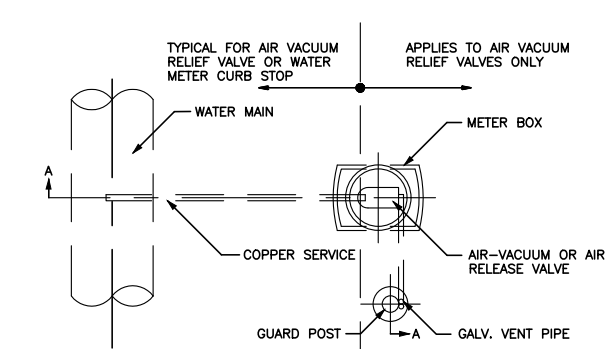
SECTION B-B  
90 DEG. BENDS

SECTION D-D

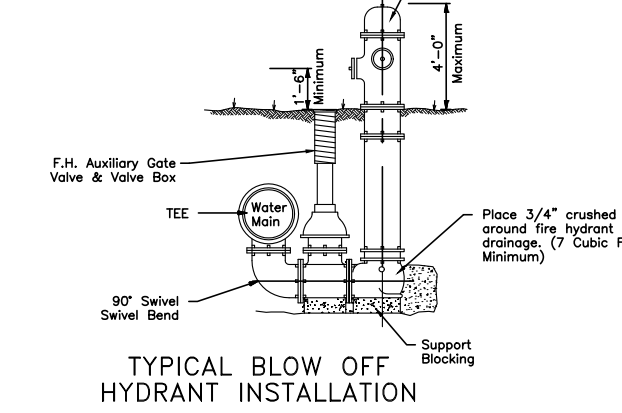
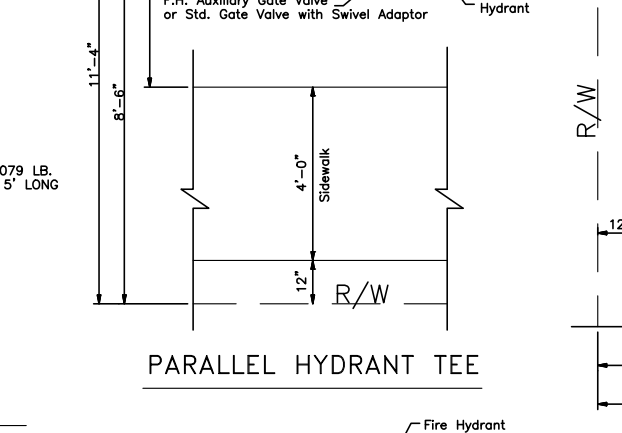
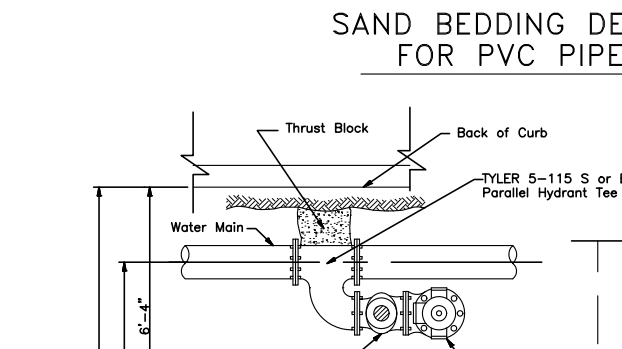


SECTION A-A  
TEES & PLUGS

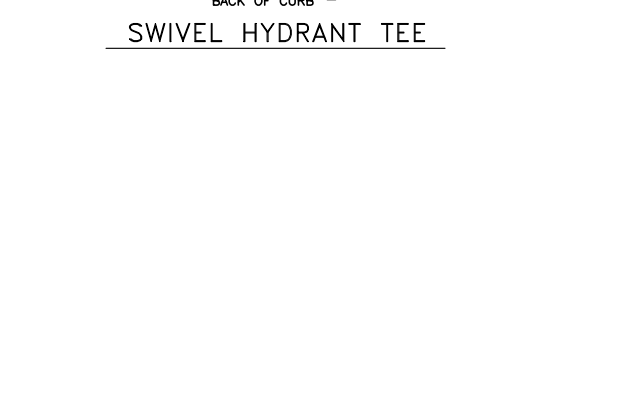
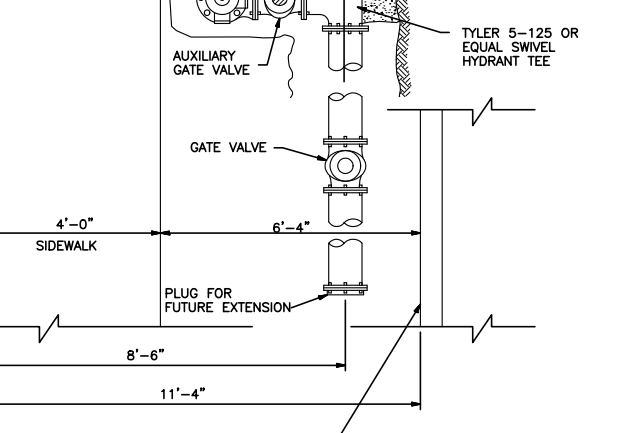
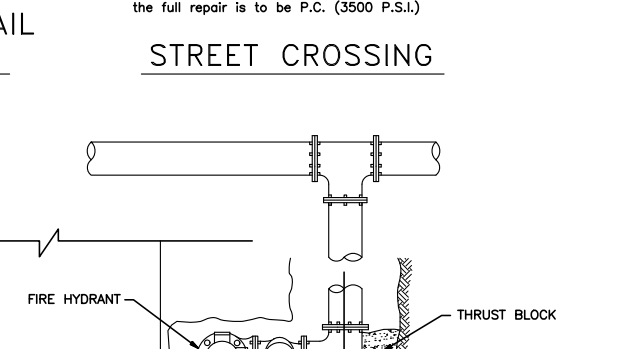
SECTION C-C



TYPICAL HYDRANT INSTALLATION



TYPICAL BLOW OFF HYDRANT INSTALLATION



SWIVEL HYDRANT TEE

CASING SIZE TABLE

NOMINAL INSIDE PIPE DIA.	CASING SIZE INSIDE DIA.	NOMINAL INSIDE 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	20	40	N	20	40	60	80
8"	20	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	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

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.D.D. APPROVED: [Signature]  
SCALE: NO SCALE

STANDARD WATER LINE DETAILS

ENGR: P.M. PROJECT NO. SHEET NO.

**PLUMMER**

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

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

CITY OF MIDWEST CITY  
NORTH SIDE UTILITIES SANITARY SEWER PROJECT  
STANDARD DETAILS  
MIDWEST CITY STANDARD DETAILS I

ALAN SWARTZ  
LICENSED PROFESSIONAL ENGINEER  
26764  
OKLAHOMA  
4/15/2018

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

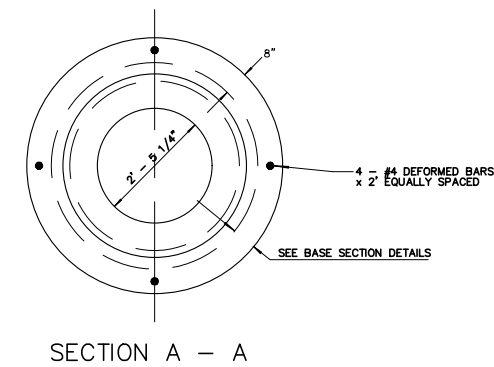
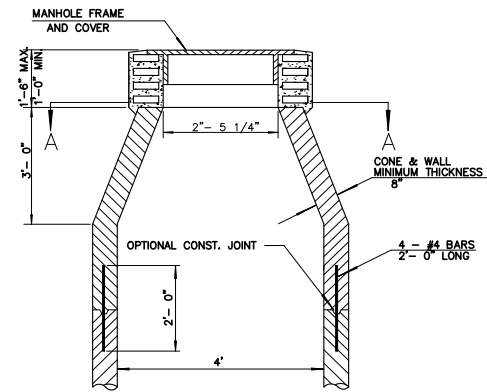
DESIGNED: R. WEINERT  
DRAWN: F. CAVE  
CHECKED: G. FARAH  
REVIEWED: A. SWARTZ

Seq. 29 of 36  
Dwg. No. C-900  
3435-003-01

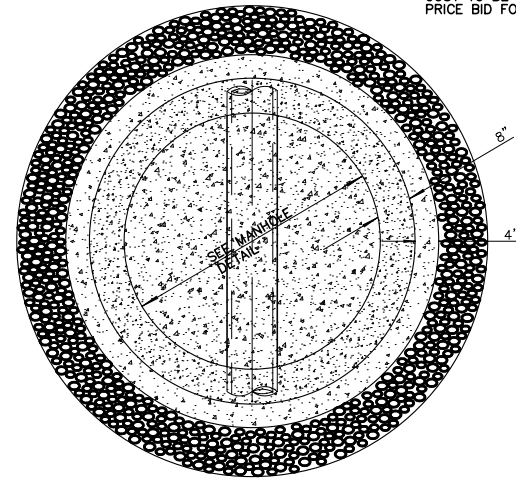
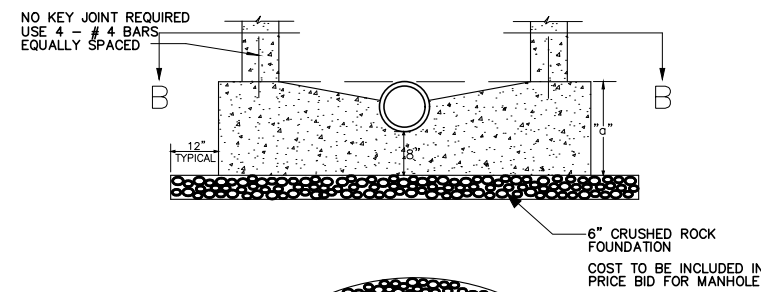


**GENERAL NOTES**

1. Castings shall conform to the A.S.T.M. Specifications for Gray-Iron Castings, Serial Designation A 48-29
2. When each cover is placed in any position in its associated frame, the side play in any direction shall not exceed one-eighth (1/8") inch.
3. No wording or marking of any kind, other than those shown on the plan, will be permitted on these castings.



**MANHOLE DETAIL**



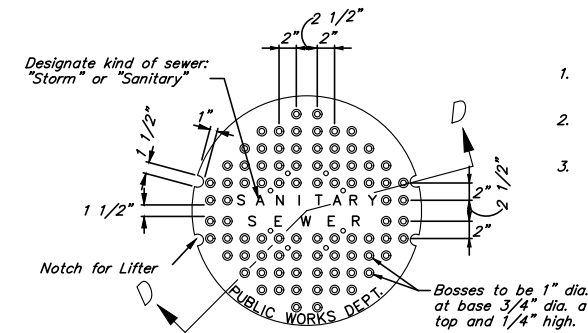
**STANDARD DETAIL FOR MANHOLE BASE SECTION**

**SCHEDULE OF THICKNESS**

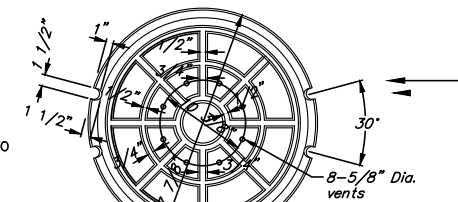
Pipe Dia.	a
8"	1'-8"
10"	1'-10"
12"	2'-4"
15"	2'-4"
18"	2'-8"
21"	3'-0"
24"	3'-3"

**CASING SIZE TABLE**

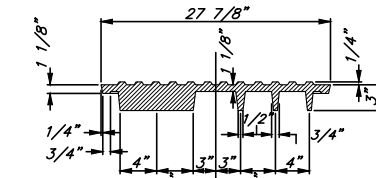
Inside Pipe Dia.	Casing Size Inside Dia.
4"	8"-10"
6"	10"-12"
8"	14"-16"
10"	16"-18"
12"	18"-20"
15"	20"-22"
18"	24"-26"
24"	31"-33"



**PLAN OF TOP**

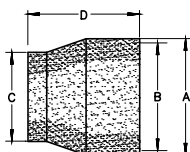


**PLAN OF UNDERSIDE**



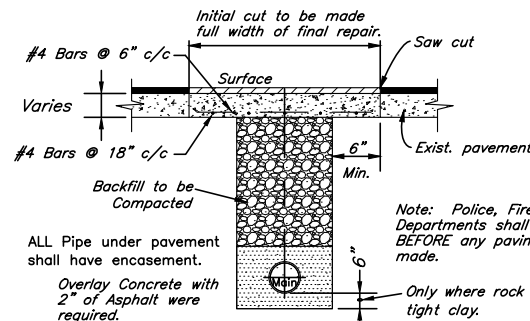
**SECTION D-D STANDARD COVER**

- NOTE:
1. ALL PIPE SHALL BE STAINLESS STEEL
  2. NEOPRENE-EPDM BLENDED COMPOUND BOOT SHALL MEET ASTM C-923

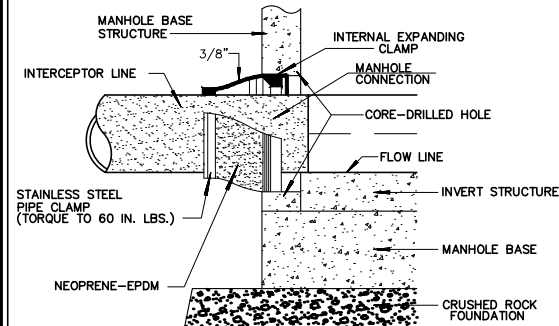


**SUGGESTED PIPE O.D. RANGE (IN.)**

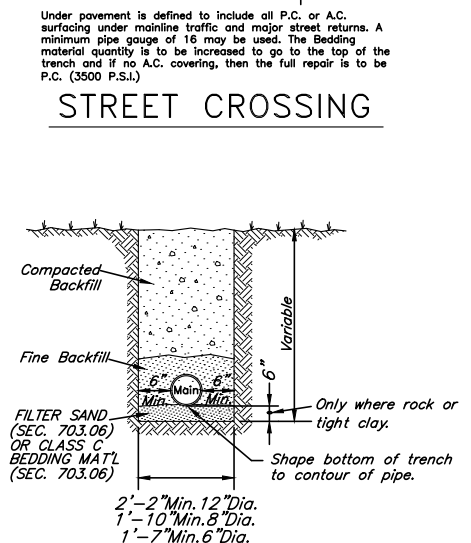
PIPE O.D. RANGE (IN.)	A	B	C	D
3 1/2" - 4 1/2"	7"	6 1/8"	4 1/4"	6"
5 3/8" - 7"	12"	10 7/8"	6 1/2"	8"
7" - 8 1/2"	12"	10 7/8"	8"	8"
8 3/16" - 9 3/4"	12"	10 7/8"	9 1/4"	8"
9 1/4" - 11"	16"	14 7/8"	10 1/2"	8"
10 3/4" - 12 1/2"	16"	14 7/8"	12"	8"
12" - 13 3/4"	16"	14 7/8"	13 1/4"	8"
14 1/2" - 16 1/4"	20"	18 7/8"	15 3/4"	8"
15 3/4" - 17 1/2"	20"	18 7/8"	17"	8"
19 1/2" - 21 1/4"	24"	22 7/8"	20 3/4"	8"



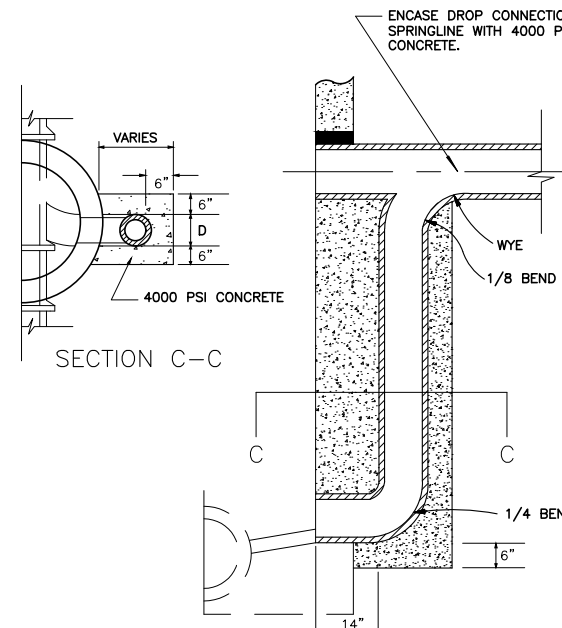
**STREET CROSSING**



**MANHOLE-PIPE CONNECTION**

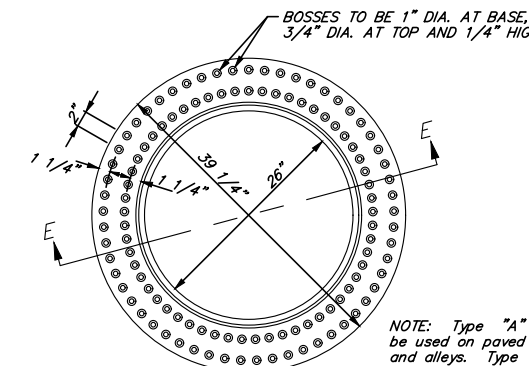


**TYPICAL TRENCH SECTION**



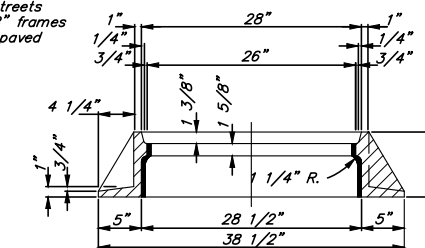
**MANHOLE DROP CONNECTION**

NOTE: BEDDING GRAVEL SHALL BE OF COMPOSED OF CRUSHED ROCK CONFORMING TO STANDARD SPECIFICATIONS, SECTION 703.01, TYPE A OR B.



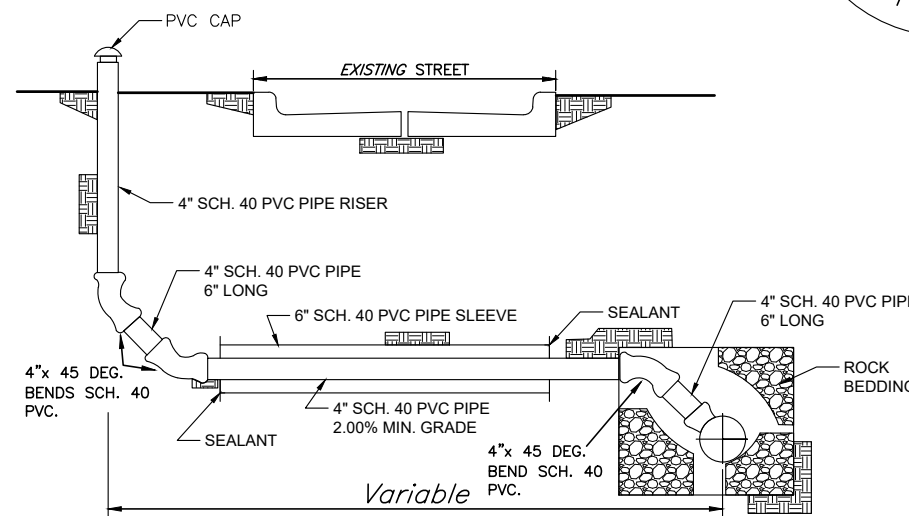
**SECTION E-E STANDARD FRAME TYPE B**

NOTE: Type "A" frames shall be used on paved streets and alleys. Type "B" frames shall be used on unpaved streets and alleys.



**SECTION F-F STANDARD FRAME TYPE A**

**STANDARD MANHOLE FRAMES**



**MIDWEST CITY ENGINEERING DEPARTMENT**

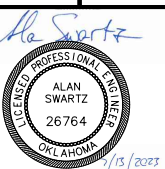
DATE: April 24, 2017	DRAWN: D.C.B.
CHECKED: D.D.D.	APPROVED:
SCALE: NO SCALE	
ENGR: P.M.	PROJECT NO. SHEET NO.

**STANDARD SEWER LINE DETAILS**

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

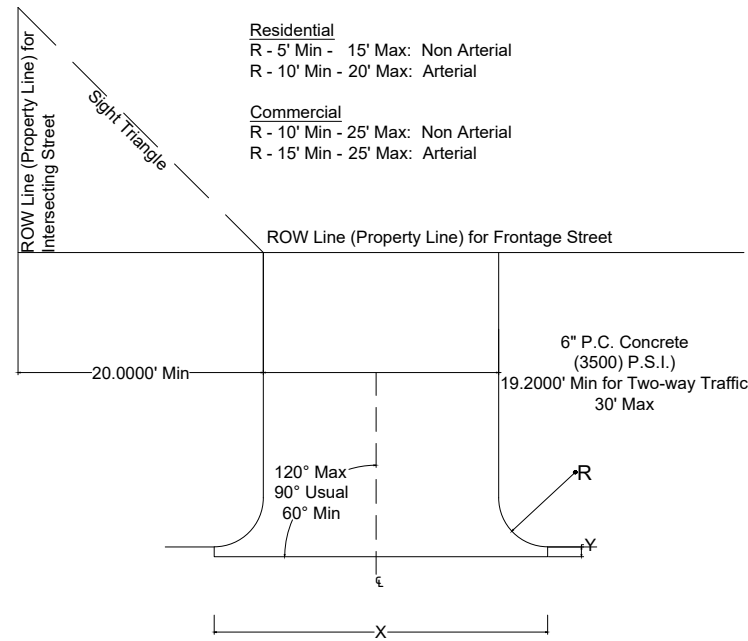
CITY OF MIDWEST CITY  
NORTH SIDE UTILITIES SANITARY SEWER PROJECT

MIDWEST CITY STANDARD DETAILS II



DESIGNED: R. WEINERT  
DRAWN: F. CAVE  
CHECKED: G. FARAH  
REVIEWED: A. SWARTZ

Seq. No. 30 of 36  
Dwg. No. C-901



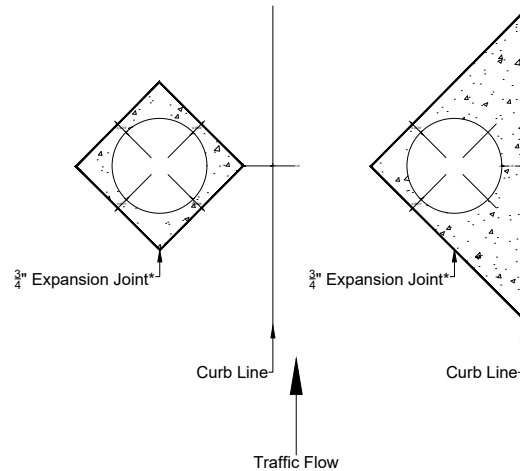
€ Drive elevation shall be such that drainage water will not enter drive.

Y For asphalt street, saw cut width of curb and gutter.  
For P.C. Concrete Street, saw cut width of 2"

X Saw Cut Line to be cut with Approved Saw. Curb cut shall not extend beyond side property line, nor extend beyond an intersecting street's radius return.

Not to Scale

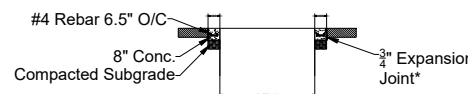
	Drafted By: Brandon Bundy	8/25/2022	<b>DRIVEWAY</b>
	Approved By: Brandon Bundy P.E., Director	8/25/2022	
	Reviewed By: Patrick Menefee P.E., City Engineer	8/25/2022	



Blockouts to be used for all surfaces; Concrete AND Asphalt.

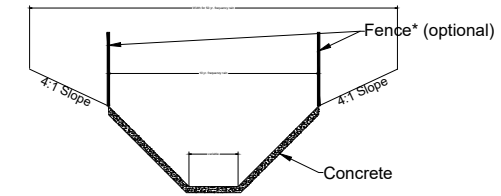
\* Expansion Joint used when blockout abuts concrete.

1. City Inspector shall verify all of the below prior to concrete pour.
2. The manhole frame / valve box shall be set to exact grade of paved surface both longitudinally and transversely.
3. Concrete used in collar shall be 4000 psi P.C. Concrete. During pour, concrete to be vibrated.
4. Subgrade outside the limits of the manhole cone / valve box shall be compacted by a suitable mechanical compactor. An equipment bucket is NOT SUITABLE.
5. All the extents of the concrete collar shall be excavated to 8" thickness throughout.

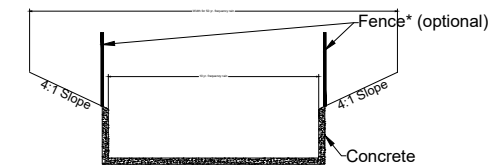


Manhole and Valvebox Blockout Standard

	Drafted By: Brandon Bundy	8/25/2022	<b>UTILITY BLOCKOUT</b>
	Approved By: Brandon Bundy P.E., Director	8/25/2022	
	Reviewed By: Patrick Menefee P.E., City Engineer	8/25/2022	



Typical Section - Sloping Walls



Typical Section - Straight Walls

General Specification

1. Construction of concrete lining to conform to City Specifications
2. Straight walls to be designed to withstand earth pressures
3. Sloping walls to have slope ratio of 1' horizontal to 1' vertical, or flatter.
4. Sodded slope ratio to be 4' horizontal to 1' vertical, or flatter.

\* Fence must be permitted and follow current MWC standards  
Fence posts cannot be grouted into the drainage structure but it is recommended that a concrete strip be placed under the fence to assist in controlling vegetation.  
Owner of fence is liable for fence if maintenance activities require removal of fence structure.

	Drafted By: Brandon Bundy	8/25/2022	<b>Figure B, Sec 13-73</b>
	Approved By: Brandon Bundy P.E., Director	8/25/2022	
	Reviewed By: Patrick Menefee P.E., City Engineer	8/25/2022	

NO.	DATE	REVISION	BY

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

CITY OF MIDWEST CITY  
NORTH SIDE UTILITIES SANITARY SEWER PROJECT  
STANDARD DETAILS  
MIDWEST CITY STANDARD DETAILS III



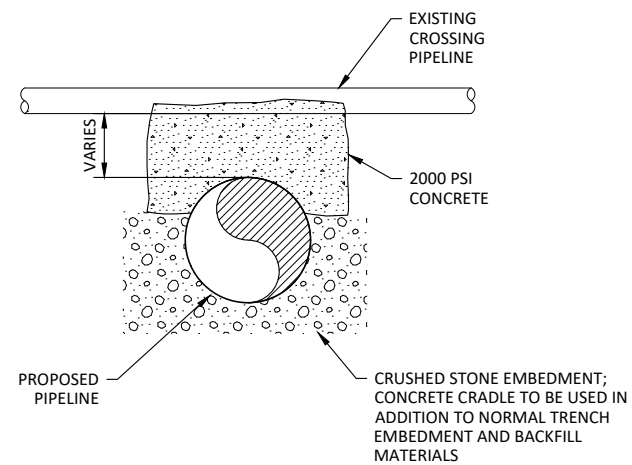
IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED R. WEINERT  
DRAWN F. CAVE  
CHECKED G. FARAH  
REVIEWED A. SWARTZ

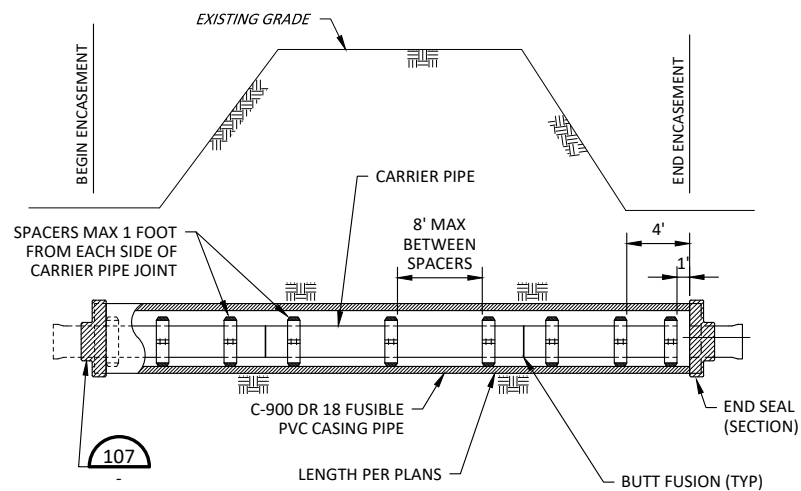
Seq. 31 of 36

Dwg. No. C-902

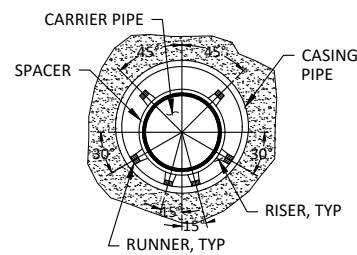
3435-003-01



**CONCRETE CRADLE** 104  
NOT TO SCALE



**PROFILE**

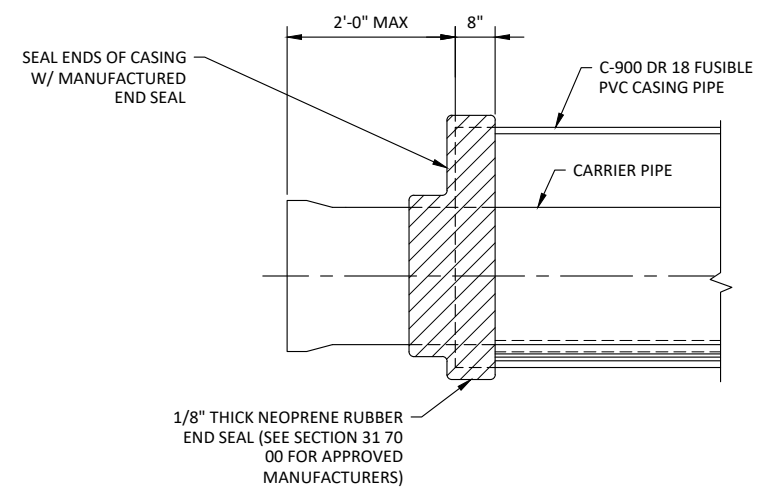


(STANDARD SPACER POSITION)  
**SECTION**

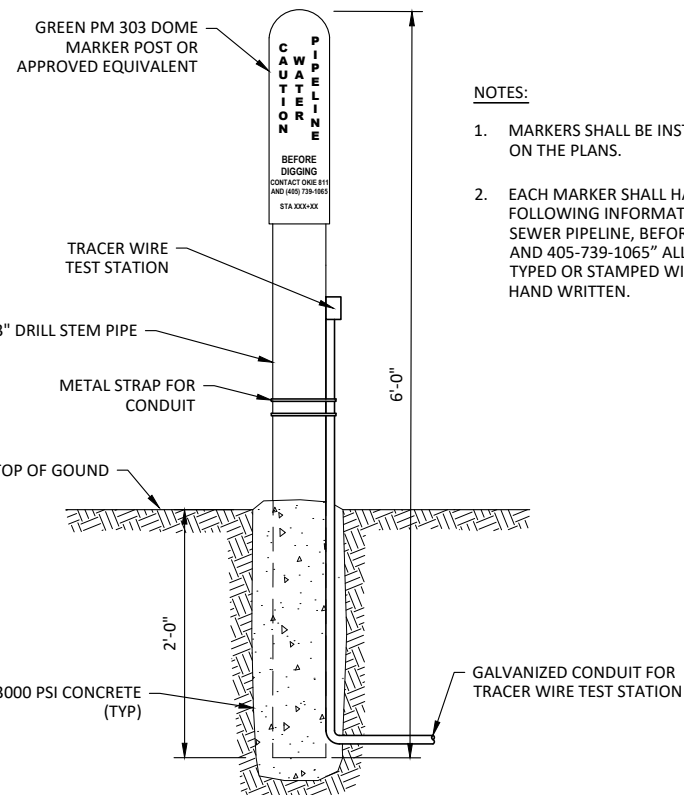
LOCATION	MINIMUM CARRIER PIPE DIA	MINIMUM CASING PIPE DIA	CASING PIPE THICKNESS
FORCE MAIN (STA 1+39 TO STA 7+59)	4"	8"	DR 18

- 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.

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

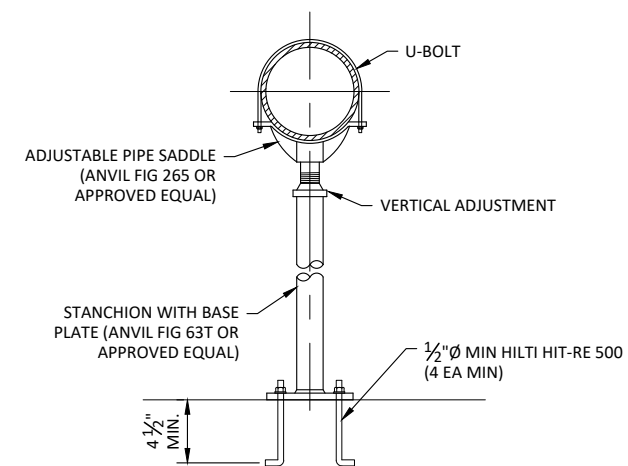


**TYPICAL END SEAL DETAIL** 107  
NOT TO SCALE



- 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 DETAIL** 108  
NOT TO SCALE

NO.	DATE	REVISION	BY

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

CITY OF MIDWEST CITY  
NORTH SIDE UTILITIES SANITARY SEWER PROJECT  
STANDARD DETAILS  
CIVIL STANDARD DETAILS I



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

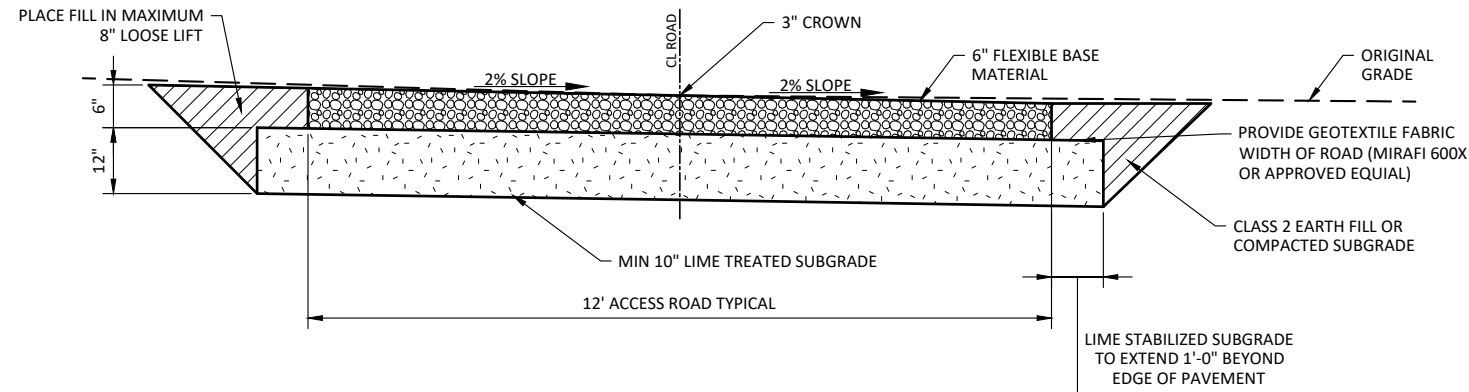
DESIGNED	R. WEINERT
DRAWN	F. CAVE
CHECKED	G. FARAH
REVIEWED	A. SWARTZ

Seq. 32 of 36  
Dwg. No. C-903  
3435-003-01

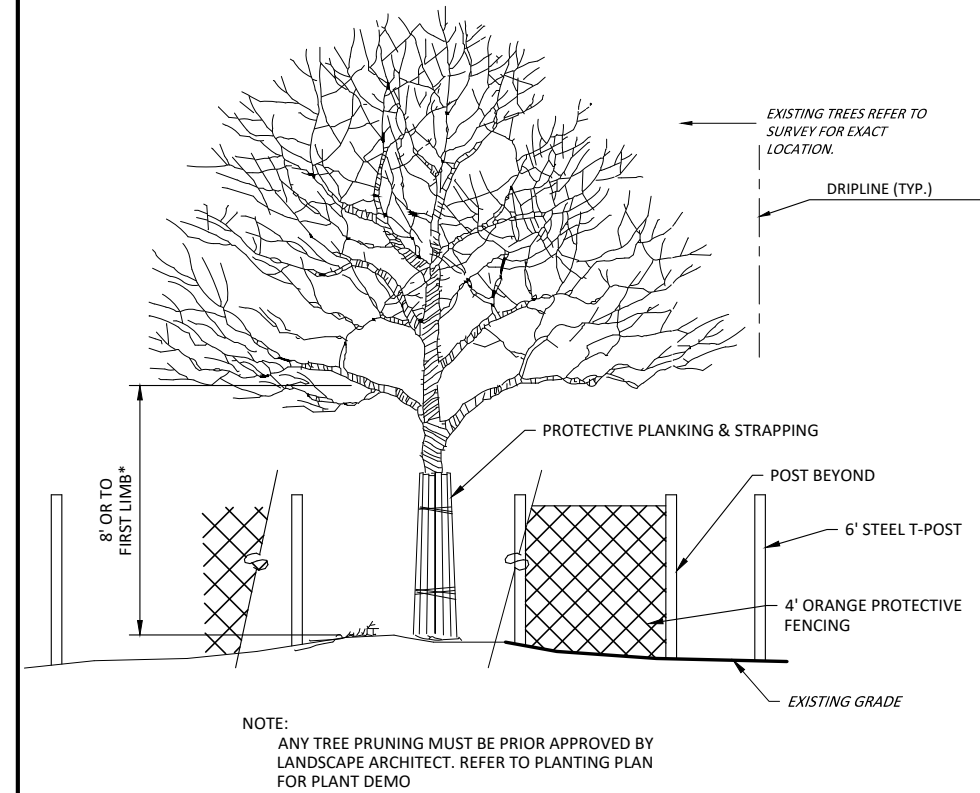


**NOTES:**

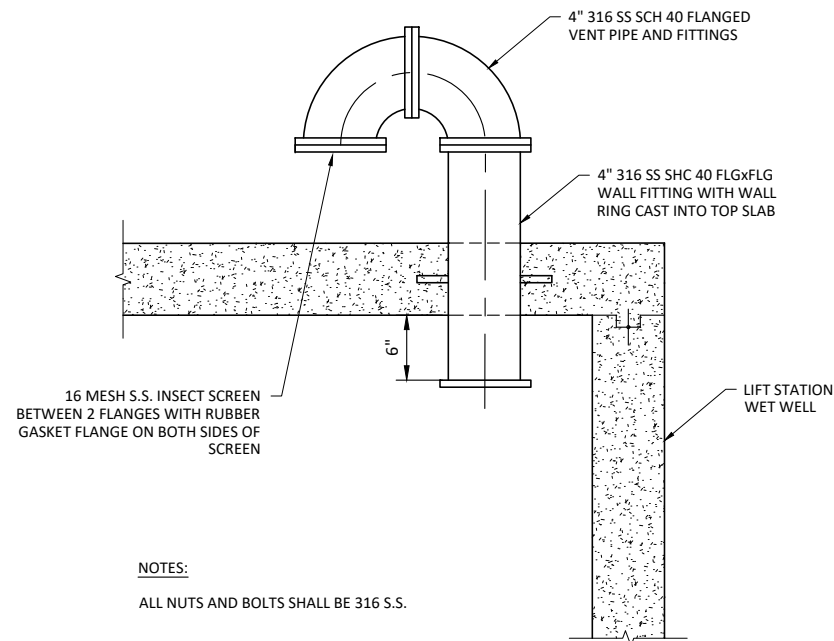
1. STRIP ALL TOPSOIL AND ORGANIC MATTER (AT A MINIMUM THE TOP 7 INCHES) AND STOCKPILE SEPARATELY. EXCAVATE AS NEEDED TO MINIMUM 18" BELOW FINAL PAVEMENT SURFACE ELEVATION.
2. PROOF ROLL THE SUBGRADE WITH A MINIMUM OF THREE PASSES OF HEAVY EQUIPMENT AND DETERMINE IF ANY SOFT OR LOOSE MATERIAL IS PRESENT. 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



**TREE PROTECTION DETAIL** 262  
NOT TO SCALE

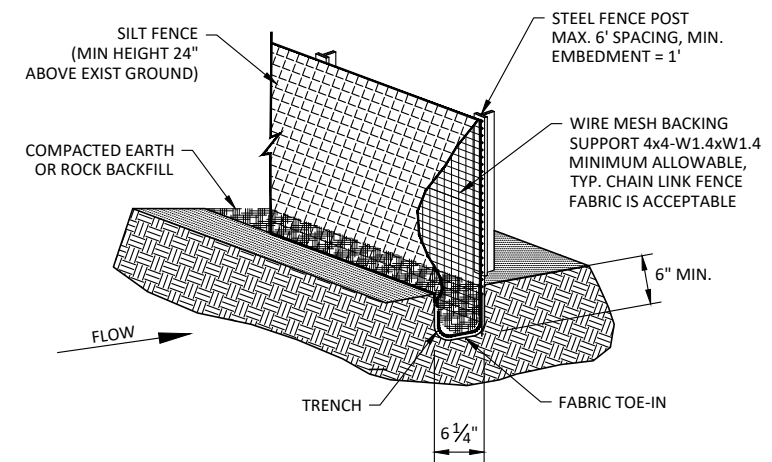


**NOTES:**  
ALL NUTS AND BOLTS SHALL BE 316 S.S.

**GOOSE NECK VENT DETAIL** 130  
NOT TO SCALE



**WARNING SIGN** 270  
NOT TO SCALE



**SILT FENCE** 280  
NOT TO SCALE

**PLUMMER**

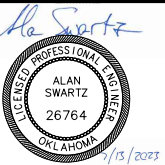


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NO.	DATE	REVISION	BY

CITY OF MIDWEST CITY  
NORTH SIDE UTILITIES SANITARY SEWER PROJECT

STANDARD DETAILS  
CIVIL STANDARD DETAILS II



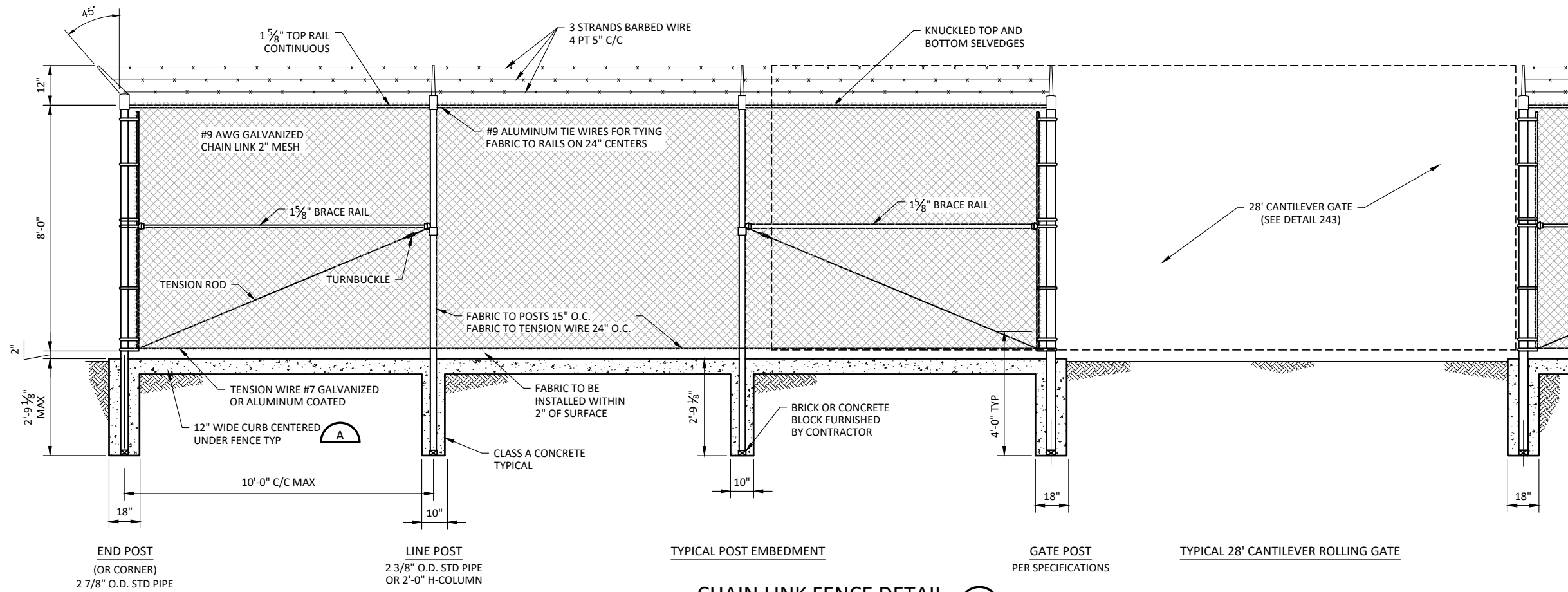
IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED R. WEINERT  
DRAWN F. CAVE  
CHECKED G. FARAH  
REVIEWED A. SWARTZ

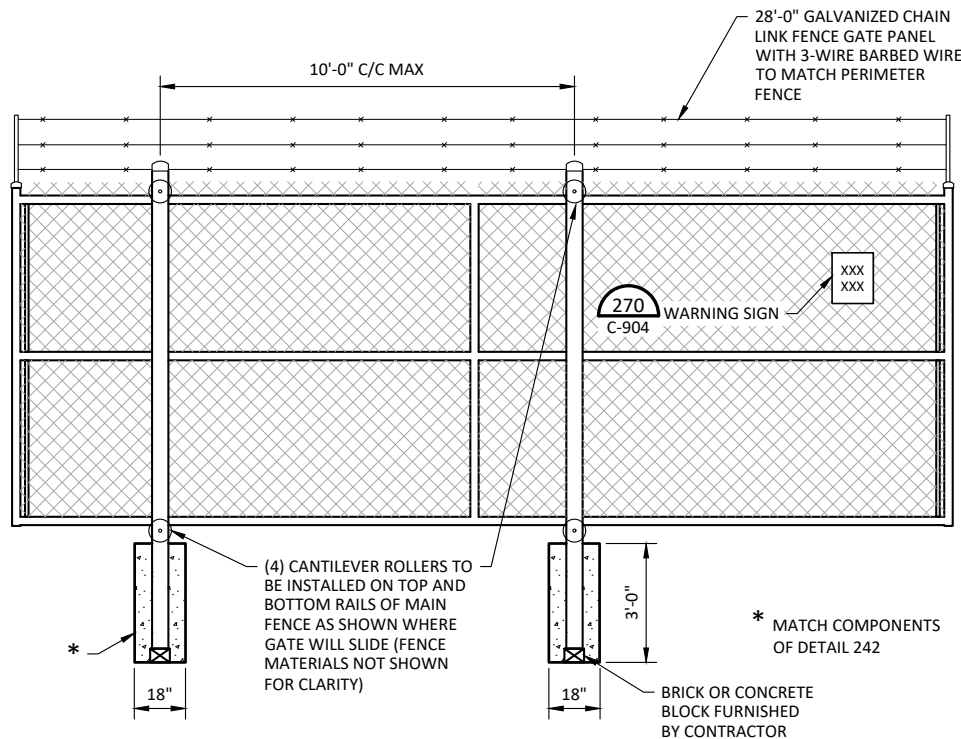
Seq. 33 of 36

Dwg. No. C-904

3435-003-01



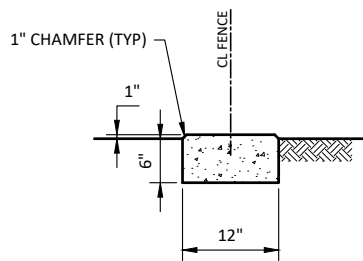
**CHAIN LINK FENCE DETAIL 242**  
NOT TO SCALE



**GALVANIZED CHAIN-LINK CANTILEVER ROLLING GATE 243**  
NOT TO SCALE

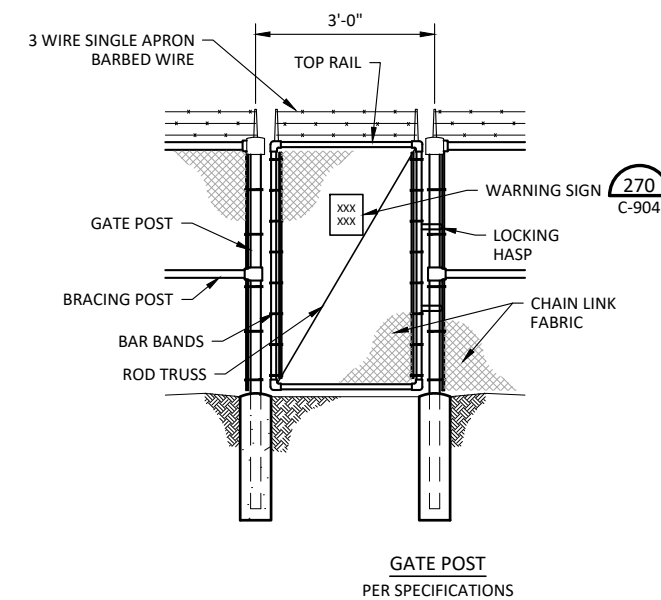
NOTE: MATCH COMPONENTS OF DETAIL 242

- CHAIN LINK FENCE NOTES:**
- ALL METAL PARTS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
  - FENCES AND GATES SHALL BE FURNISHED COMPLETE WITH ALL NECESSARY FITTINGS AND HARDWARE.
  - CANTILEVER GATE SHALL BE FURNISHED WITH A ROLLING OFFSET LATCH CAPABLE OF SECURING THE GATE.
  - POST SHALL BE ROLLED OR EXTRUDED SECTIONS OR TUBING OF STEEL CAPABLE OF WITHSTANDING A LATERAL FORCE OF 100 POUNDS APPLIED AT THE TOP. ALL HOLLOW POSTS SHALL BE CAPPED.
  - STANDARD PIPE SIZES INDICATED ARE NOMINAL DIAMETER, SCHEDULE 40, PER AMERICAN STANDARDS ASSOCIATION (ASA) B 36.10.
  - FENCE MEASUREMENTS TO BE VERIFIED BY CONTRACTOR PRIOR TO INSTALLATIONS.



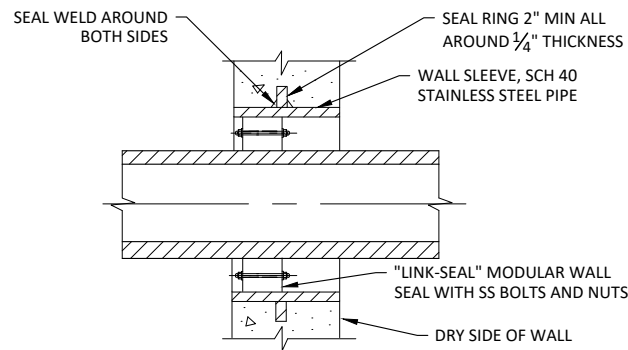
**TYPICAL FENCE MOW STRIP SECTION A**  
NOT TO SCALE

NOTE: FENCE MOW STRIP SHALL HAVE AN 1/8\"/>



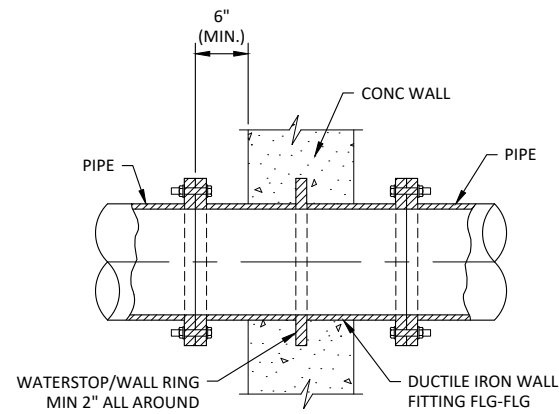
**CHAIN LINK PEDESTRIAN GATE DETAIL 244**  
NOT TO SCALE

NOTE: MATCH COMPONENTS OF DETAIL 242



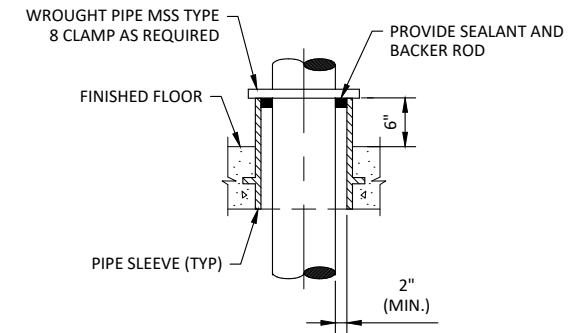
FOR CORE DRILLED WALLS, WALL SLEEVE IS NOT REQUIRED. PLACE PIPE IN CORE DRILLED HOLE. COAT HOLE WITH EPOXY TO PROTECT REBAR.

**LINK SEAL WALL FITTING** 326  
NOT TO SCALE

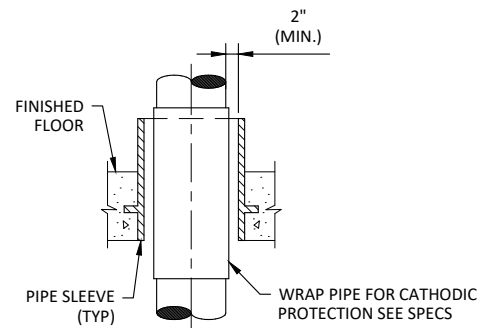


WALL FITTINGS CAN BE FLG.-FLG. (SHOWN), FLG.-MJ FLG.-PE, MJ-MJ, MJ-PE, PE-PE. PAINT WALL FITTING PER SPECS 09900 PRIOR TO INSTALLATION.

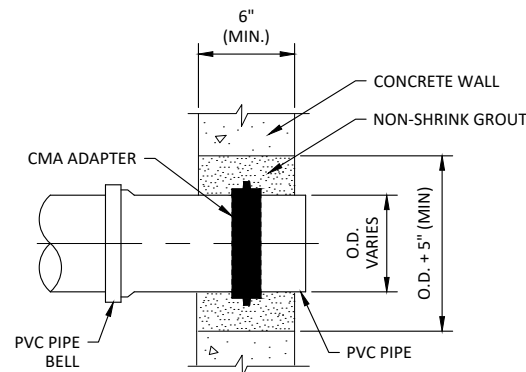
**STL OR DIP WALL FITTING** 320  
NOT TO SCALE



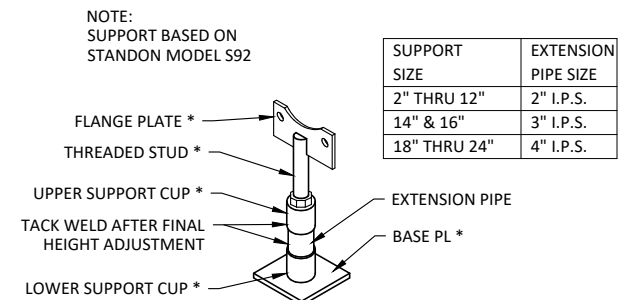
**SEALED FLOOR & CEILING PENETRATION** 327  
NOT TO SCALE



**UNSEALED FLOOR PENETRATION** 328  
NOT TO SCALE



**PVC WALL PENETRATION** 332  
NOT TO SCALE



\* SUPPLIED BY STANDON

**ADJUSTABLE FLANGE SUPPORT DETAILS** 344  
NOT TO SCALE

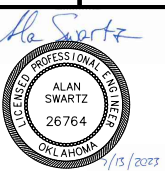


NO.	DATE	REVISION	BY

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

CITY OF MIDWEST CITY  
NORTH SIDE UTILITIES SANITARY SEWER PROJECT

STANDARD DETAILS  
MECHANICAL STANDARD DETAILS I



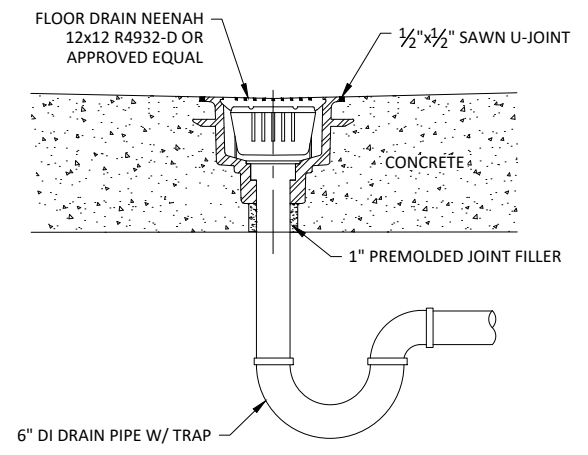
IF THIS BAR DOES NOT MEASURE ONE INCH, DRAWING IS NOT TO LABELED SCALE

DESIGNED R. WEINERT  
DRAWN F. CAVE  
CHECKED G. FARAH  
REVIEWED A. SWARTZ

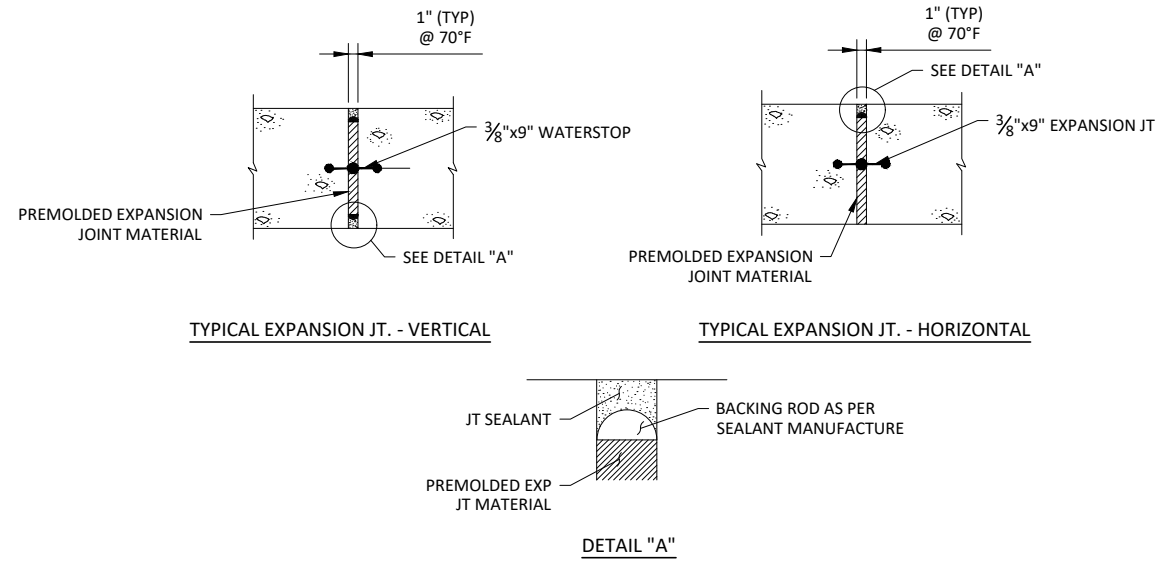
Seq. 35 of 36

Dwg. No. M-900

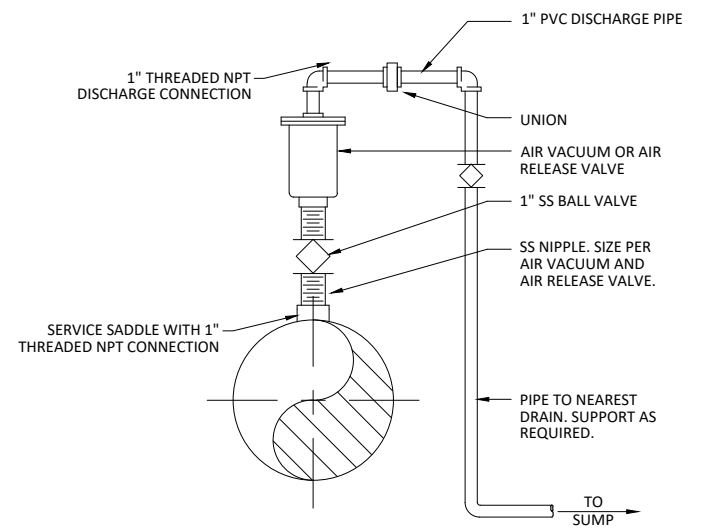
3435-003-01



**TYPICAL FLOOR DRAIN DETAIL** 368  
 NOT TO SCALE

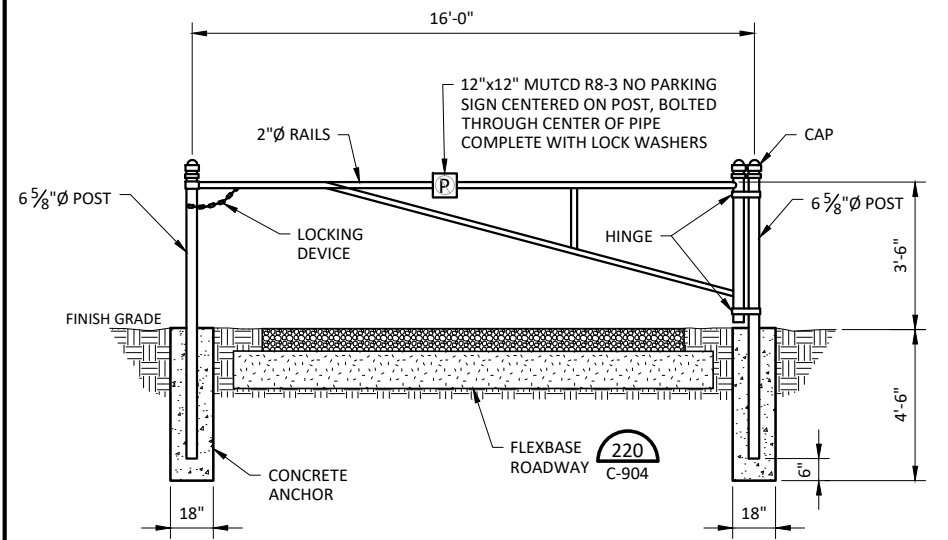


**EXPANSION JOINT DETAIL** 531  
 NOT TO SCALE



- NOTES:
1. VALVE SIZE SHALL BE AS INDICATED ON THE DRAWINGS.
  2. SERVICE TAP AND BALL VALVE SHALL MATCH VALVE INLET SIZE.

**AIR VACUUM & AIR RELEASE FOR 3" & SMALLER VALVE ASSEMBLY** 302  
 NOT TO SCALE



- NOTES:
1. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR OWNER APPROVAL.
  2. GATE MATERIALS SHALL BE ASTM F1083 SCHEDULE 40 STEEL.
  3. PROVIDE STAND ALONE 4" POST WITH LOCK MECHANISM SO THAT WHEN GATE IS OPENED, GATE ARM CAN BE LOCKED AND SECURED IN THE OPEN CONDITION.
  4. ALL EXPOSED METAL SHALL BE PAINTED PER SPECIFICATION SECTION 09 91 00, PAINTING AND PROTECTIVE COATINGS.

**SWING BARRIER ARM GATE DETAIL** 304  
 NOT TO SCALE

NOT USED