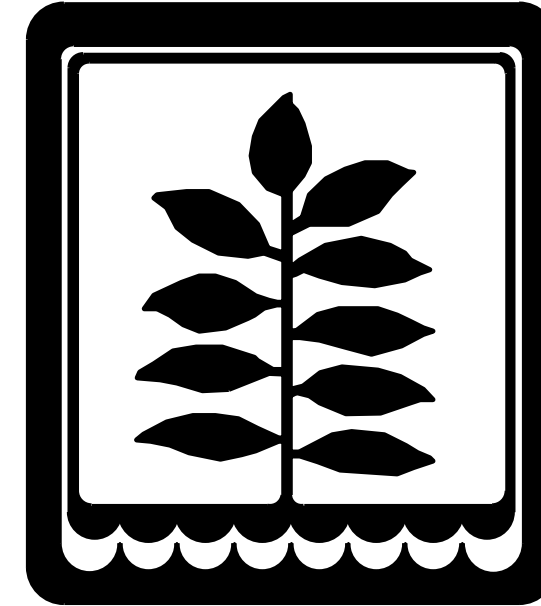


NORTH TEXAS MUNICIPAL WATER DISTRICT



NORTH MCKINNEY PIPELINE

PHASE I AND II

PROJECT NO. 210

OCTOBER 2013



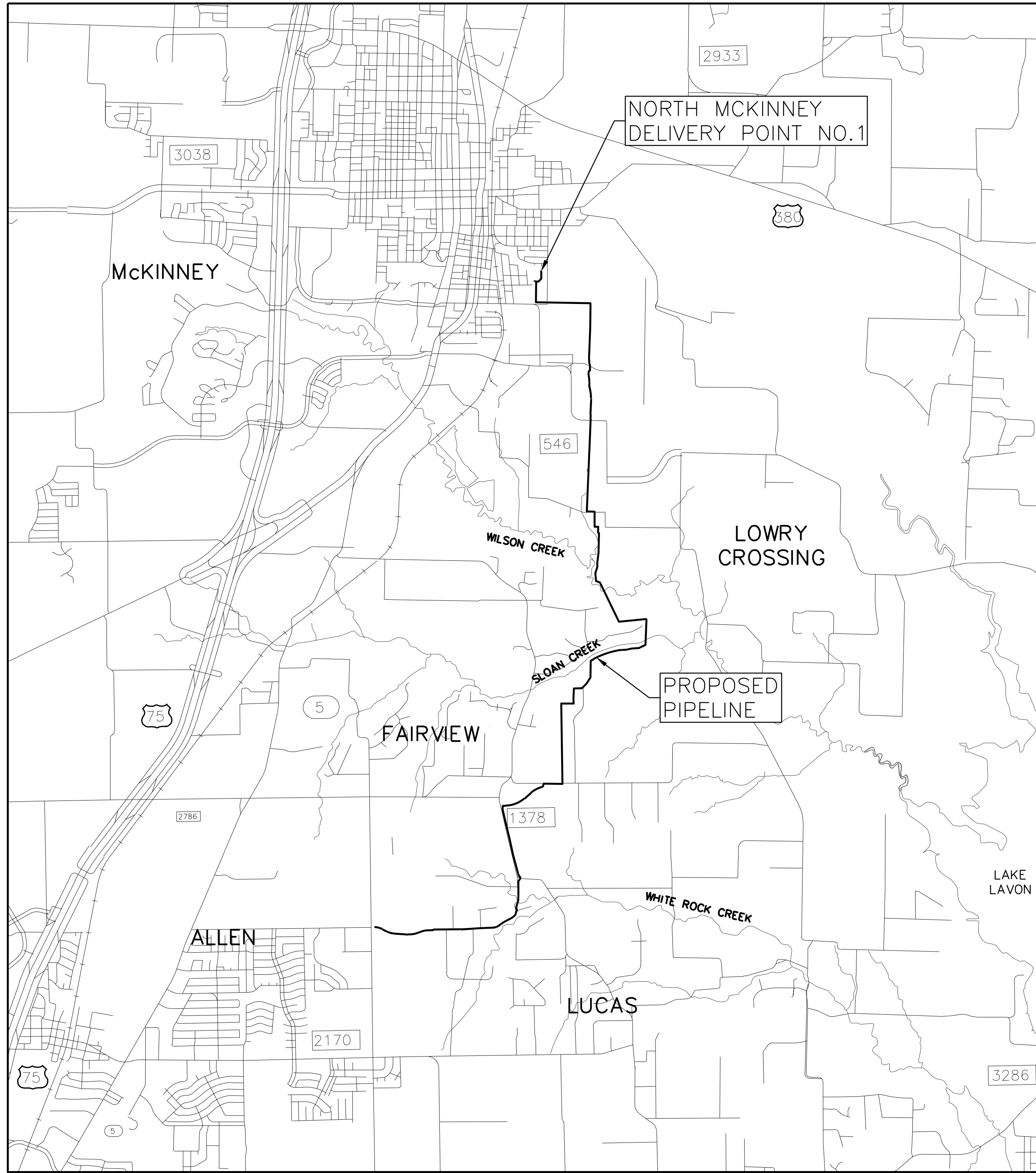
NTD10273/NTD11224

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This Record Drawing is a combination of the
sealed engineering contract drawings for this
project, modified by information furnished
by the contractor reflecting changes in the
Project made during construction. The original
sealed drawings are on file at the offices of
FREESE AND NICHOLS, INC.
4055 INTERNATIONAL PLAZA, SUITE 200
FORT WORTH, TEXAS 76109-4895
(817) 735-7300
RECORD DRAWINGS PREPARED ON:
1/22/2016

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144

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VICINITY MAP
 1"=3000'

INDEX OF DRAWINGS



SEQ.	SHT. NO.	TITLE	SEQ.	SHT. NO.	TITLE
		COVER SHEET			
		GENERAL			CATHODIC PROTECTION DETAILS
1	G-1	VICINITY MAP AND INDEX OF DRAWINGS	56	CP-1	CATHODIC PROTECTION FOR STEEL PIPE OPTION LAYOUT-1
2	G-2	GENERAL NOTES	57	CP-2	CATHODIC PROTECTION FOR STEEL PIPE OPTION LAYOUT-2
3	G-3	GENERAL NOTES	58	CP-3	CATHODIC PROTECTION FOR STEEL PIPE OPTION LAYOUT-3
4	G-4	HYDRAULIC GRADE LINE OVERALL PIPELINE	59	CP-4	CATHODIC PROTECTION FOR STEEL PIPE OPTION LAYOUT-4
5	G-5	PROJECT CONTROL PLAN	60	CP-5	CATHODIC PROTECTION FOR STEEL PIPE OPTION LAYOUT-5
		PIPELINE	61	CP-6	CORROSION PROTECTION FOR CBWCP OPTION LAYOUT-1
6	PL-1A	12-INCH LUCAS WATER LINE STA 1+00 TO STA 3+71	62	CP-7	CORROSION PROTECTION FOR CBWCP OPTION LAYOUT-2
7	PL-1	PLAN AND PROFILE STA 1+00 TO STA 13+00	63	CP-8	CORROSION PROTECTION FOR CBWCP OPTION LAYOUT-3
8	PL-2	PLAN AND PROFILE STA 13+00 TO STA 25+00	64	CP-9	CORROSION PROTECTION FOR CBWCP OPTION LAYOUT-4
9	PL-3	PLAN AND PROFILE STA 25+00 TO STA 37+00	65	CP-10	CORROSION PROTECTION FOR CBWCP OPTION LAYOUT-5
10	PL-4	PLAN AND PROFILE STA 37+00 TO STA 49+00	66	CP-11	CATHODIC PROTECTION DETAILS-1
11	PL-5	PLAN AND PROFILE STA 49+00 TO STA 61+00	67	CP-12	CATHODIC PROTECTION DETAILS-2
12	PL-6	PLAN AND PROFILE STA 61+00 TO STA 73+00	68	CP-13	CATHODIC PROTECTION DETAILS-3
13	PL-7	PLAN AND PROFILE STA 73+00 TO STA 85+00	69	CP-14	CATHODIC PROTECTION DETAILS-4
14	PL-8	PLAN AND PROFILE STA 85+00 TO STA 97+00	70	CP-15	CATHODIC PROTECTION DETAILS-5
15	PL-9	PLAN AND PROFILE STA 97+00 TO STA 109+00	71	CP-16	CATHODIC PROTECTION DETAILS-6
16	PL-10	PLAN AND PROFILE STA 109+00 TO STA 121+00			STRUCTURAL
17	PL-11	PLAN AND PROFILE STA 121+00 TO STA 133+00	72	S-1	VALVE VAULT SECTIONAL PLAN
18	PL-12	PLAN AND PROFILE STA 133+00 TO STA 145+00	73	S-2	VALVE VAULT TOP PLAN
19	PL-13	PLAN AND PROFILE STA 145+00 TO STA 157+00			ELECTRICAL
20	PL-14	PLAN AND PROFILE STA 157+00 TO STA 169+00	74	E-1	LEGEND I
21	PL-15	PLAN AND PROFILE STA 169+00 TO STA 181+00	75	E-2	LEGEND II
22	PL-16	PLAN AND PROFILE STA 181+00 TO STA 193+00	76	E-3	SITE PLAN
23	PL-17	PLAN AND PROFILE STA 193+00 TO STA 205+00	77	E-4	VAULT FLOOR PLAN
24	PL-18	PLAN AND PROFILE STA 205+00 TO STA 217+00	78	E-5	INTERCONNECTION DIAGRAM AND DETAILS
25	PL-19	PLAN AND PROFILE STA 217+00 TO STA 229+00	79	E-6	ONE-LINE DIAGRAM
26	PL-20	PLAN AND PROFILE STA 229+00 TO STA 241+00	80	E-7	PANELBOARD SCHEDULES
27	PL-21	PLAN AND PROFILE STA 241+00 TO STA 253+00	81	E-8	CONTROL SCHEMATICS
28	PL-22	PLAN AND PROFILE STA 253+00 TO STA 265+00	82	E-9	DETAILS
29	PL-23	PLAN AND PROFILE STA 265+00 TO STA 277+00			PROCESS AND INSTRUMENTATION
30	PL-24	PLAN AND PROFILE STA 277+00 TO STA 289+00	83	PI-1	LEGEND
31	PL-25	PLAN AND PROFILE STA 289+00 TO STA 301+00	84	PI-2	SCADA SYSTEM ARCHITECTURE
32	PL-26	PLAN AND PROFILE STA 301+00 TO STA 313+00	85	PI-3	LOOP DIAGRAMS
33	PL-27	PLAN AND PROFILE STA 313+00 TO STA 325+00			TREE PLAN
34	PL-28	PLAN AND PROFILE STA 325+00 TO STA 337+00	86	TP-1	TREE PLAN STA 55+00 TO STA 69+00
35	PL-29	PLAN AND PROFILE STA 337+00 TO STA 349+00	87	TP-2	TREE PLAN STA 69+00 TO STA 83+00
36	PL-30	PLAN AND PROFILE STA 349+00 TO STA 361+00	88	TP-3	TREE PLAN STA 83+00 TO STA 97+00
37	PL-31	PLAN AND PROFILE STA 361+00 TO STA 373+00	89	TP-4	TREE PLAN STA 97+00 TO STA 111+00
38	PL-32	PLAN AND PROFILE STA 373+00 TO END	90	TP-5	TREE PLAN STA 111+00 TO STA 125+00
39	PL-33	N. MCKINNEY NO. 1 DELIVERY LINE STA 1+00 TO END	91	TP-6	TREE PLAN STA 125+00 TO STA 139+00
		STANDARD DETAILS	92	TP-7	TREE PLAN STA 139+00 TO STA 153+00
40	DT-1	TRENCH DETAILS	93	TP-8	TREE PLAN STA 153+00 TO STA 167+00
41	DT-2	TRENCH DETAILS	94	TP-9	TREE PLAN STA 167+00 TO STA 181+00
42	DT-3	PARALLEL PIPELINE TRENCH DETAILS	95	TP-10	TREE PLAN STA 181+00 TO STA 195+00
43	DT-4	MISCELLANEOUS DETAILS	96	TP-11	TREE PLAN STA 195+00 TO STA 209+00
44	DT-5	STEEL PIPE DETAILS	97	TP-12	TREE PLAN STA 209+00 TO STA 223+00
45	DT-6	BAR-WRAPPED PIPE DETAILS	98	TP-13	TREE PLAN STA 223+00 TO STA 237+00
46	DT-7	PIPELINE APPURTENANCES	99	TP-14	TREE PLAN STA 237+00 TO STA 251+00
47	DT-8	PIPELINE APPURTENANCES	100	TP-15	TREE PLAN STA 251+00 TO STA 265+00
48	DT-9	BUTTERFLY VALVE MANHOLE DETAILS	101	TP-16	TREE PLAN STA 265+00 TO STA 279+00
49	DT-10	MISCELLANEOUS DETAILS	102	TP-17	TREE PLAN STA 279+00 TO STA 293+00
50	DT-11	MISCELLANEOUS DETAILS	103	TP-18	TREE PLAN STA 293+00 TO STA 307+00
51	DT-12	MISCELLANEOUS DETAILS	104	TP-19	TREE PLAN STA 307+00 TO STA 321+00
		SPECIAL DETAILS	105	TP-20	TREE PLAN STA 321+00 TO STA 335+00
52	SP-1	CONNECTION DETAILS	106	TP-21	TREE PLAN STA 335+00 TO STA 349+00
53	SP-2	MCKINNEY NO. 1 VALVE VAULT PLAN & SECTION	107	TP-22	TREE PLAN STA 349+00 TO STA 363+00
54	SP-3	EXISTING TANK CONNECTION	108	TP-23	TREE PLAN STA 363+00 TO STA 377+00
55	SP-4	BLOW OFF VALVE INSTALLATION	109	TP-24	TREE PLAN STA 377+00 TO END
			110	TP-25	TREE PLAN INDEX
			111	TP-26	TREE PLAN INDEX
			112	TP-27	TREE PLAN INDEX
			113	TP-28	TREE PLAN INDEX
			114	TP-29	TREE PLAN INDEX
			115	TP-30	TREE PLAN INDEX
			116	TP-31	TREE PLAN INDEX
			117	TP-32	TREE PLAN INDEX
			118	TP-33	TREE DETAILS

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 1/22/2016

Freese and Nichols, Inc.
 Texas Registered Engineering Firm F-2144

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


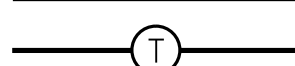
















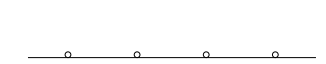



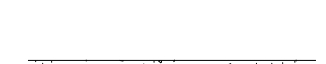
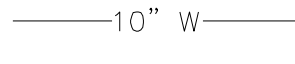
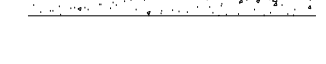
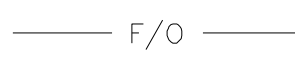




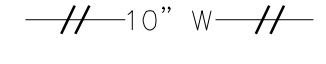

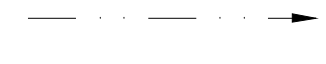

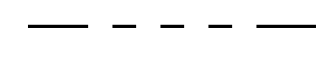

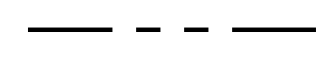

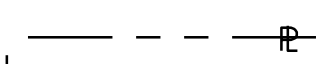
FREESSE AND NICHOLS
 2711 North Rossell, 33rd Floor
 Fort Worth, Texas 76109-4895
 Phone = (214) 217-2200
 Fax = (214) 217-2201

NORTH TEXAS MUNICIPAL WATER DISTRICT
NORTH MCKINNEY PIPELINE
 PHASE I AND II, PROJECT NO. 210
 GENERAL
VICINITY MAP AND INDEX OF DRAWINGS

NO.	ISSUE	BY	DATE	FRM. JOB NO.	NTD11224
	RECORD DRAWING	ASM	1/22/16	DESIGNED	WRS
	ISSUED FOR CONSTRUCTION	ASM	2/05/14	DRAWN	LMR
	ADDENDUM NO. 2	ASM	10/31/13	REVISED	ASM
	VERIFY SCALE			CHECKED	ASM
	0			FILE NAME	GN-ALL-INDEX
	1			GN-ALL-INDEX	

SHEET
G-1
 SEQ.
 1

LEGEND OF SYMBOLS

	AIR VALVE - PLAN VIEW		TELEPHONE PEDESTAL
	AIR VALVE - PROFILE VIEW		SIGN
	POST MOUNTED TEST STATION		WELL
	FLUSH MOUNTED TEST STATION		IRON ROD
	AIR VALVE MOUNTED TEST STATION		I.R. FOUND
	BLOWOFF VALVE		P.I.
	WATER VALVE		SURVEY CONTROL POINT
	BORING		MONUMENT
	EXISTING WATER VALVE		BENCH MARK AND / OR T.B.M.
	WATER METER OR GAS METER		TREE
	FIRE HYDRANT		MAILBOX
	OVERHEAD ELECTRIC		BARBED WIRE FENCE
	UNDERGROUND WATER LINE		CHAIN LINK OR WOOD FENCE
	UNDERGROUND FIBER OPTIC		RAILROAD
	UNDERGROUND TELEPHONE		CONCRETE PAVING
	UNDERGROUND GAS		ASPHALT PAVING
	ABOVE GROUND GAS		BRUSH OR TREELINE
	POWER POLE		ABANDON EXISTING WATERLINE
	STREET LIGHT		CREEK OR DRAINAGE PATH
	GUY WIRE AND ANCHOR		LIMITS OF TEMPORARY EASEMENT
	FINAL GRADE		LIMITS OF PERMANENT EASEMENT
	CUT/FILL AREA ON PIPELINE		PROPERTY LINE AND / OR R.O.W.

EXISTING UTILITY OWNERS

NORTH TEXAS MUNICIPAL WATER DISTRICT	
JEFF HOGAN	(972) 442-5405
GREG BRADLEY	
ONCOR	
JACK HINDS (DISTRIBUTION)	(972) 569-6324
RON ROARK (TRANSMISSION)	(817) 215-6237
CITY OF LUCAS	
STANTON FOERSTER	(972) 727-8999
TOWN OF FAIRVIEW	
JAMES CHANCELLOR	(972) 886-4235
CITY OF MCKINNEY	
ROB DAAKE	(972) 547-7398
CITY OF ALLEN	
CHRIS FLANIGAN	(214) 509-4578
AT&T	
DAVID JORDAN	(972) 569-4770
COSERV GAS	
HANK OGDEN	(940) 321-7800
GCEC	
MICHAEL LAUER	(903) 482-7183
VERIZON	
DAN DANCER	(972) 841-4651
GRANDE COMMUNICATIONS	
CHRIS LANGSTON	(940) 270-7016
ATMOS ENERGY	
JACKIE COOPER	(972) 881-4161
TxDOT	
BARRY HEARD	(972) 542-2345
TEXAS ONE CALL SYSTEM	
	(800) 245-4545
TEXAS EXCAVATION SAFETY SYSTEM	
	(800) 344-8377

GENERAL PROJECT NOTES (NO SEPARATE PAY ITEMS)

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 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.
- A3 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 TEXAS, FOR THIS PROJECT. THIS TRENCH SAFETY PLAN SHALL BE SUBMITTED PRIOR TO ANY WORK ACTIVITIES.
- A4 CONTRACTOR SHALL PROVIDE A STORM WATER POLLUTION PREVENTION PLAN AND PROVIDE ALL FACILITIES TO COMPLY WITH THE LATEST TCEQ STORM WATER POLLUTION PREVENTION REGULATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR FILING A NOTICE OF INTENT (NOI) AT THE START OF CONSTRUCTION WITH THE TCEQ AND A NOTICE OF TERMINATION (NOT) AT THE END, ALSO WITH THE TCEQ.
- A5 CONTRACTOR SHALL EMPLOY ADEQUATE METHODS TO MINIMIZE TURBIDITY IN WATERWAYS DURING ALL PHASES OF THE PROJECT. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS AND REGULATIONS CONCERNING WATER POLLUTION PREVENTION.
- 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 OR REIMBURSE THE CONTRACTOR'S SUBCONTRACTOR FOR COMPLETING SUCH REPAIRS.
- A8 CONTRACTOR IS RESPONSIBLE FOR KEEPING ROADWAYS AND SIDEWALKS ADJACENT TO THE PROJECT FREE OF MUD, TRASH, AND CONSTRUCTION DEBRIS.
- A9 CONTRACTOR SHALL NOTIFY TXDOT OF THE CONSTRUCTION SCHEDULE OF ALL TUNNELS TO BE INSTALLED WITHIN STATE HIGHWAYS AND ROADWAYS. NOTIFY TXDOT AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION SO THAT TXDOT CAN HAVE A REPRESENTATIVE PRESENT. CONTRACTOR SHALL COMPLY WITH ALL OF THE REQUIREMENTS OF THE CROSSING PERMITS ATTACHED TO THE PROJECT SPECIFICATIONS.
- A10 CONTRACTOR SHALL LEAVE AT LEAST ONE LANE OF TRAFFIC OPEN WHEN CROSSING OPEN CUT ROADWAYS.
- A11 ALL APPROVED PERMITS AND REQUIREMENTS OBTAINED PRIOR TO CONSTRUCTION ARE LOCATED IN APPENDIX C OF THE PROJECT SPECIFICATIONS.

B. GENERAL AND CONSTRUCTION

- B1 CONSTRUCTION SURVEYING IS THE RESPONSIBILITY OF THE CONTRACTOR INCLUDING BUT NOT LIMITED TO LIMITS OF PERMANENT EASEMENT, TEMPORARY EASEMENT, CENTERLINE, ETC. THE INSTALLATION CONTRACTOR SHALL VERIFY ALL CONTROL MONUMENTATION PRIOR TO BEGINNING CONSTRUCTION.
- B2 CONTRACTOR SHALL INSTALL ALL PIPE ON GRADUAL VERTICAL CURVATURES, EXCEPT AS SHOWN ON PLANS TO PRECLUDE THE NECESSITY OF USING FITTINGS FOR VERTICAL BENDS. HOWEVER, PIPE JOINTS AND FITTINGS SHALL NOT BE DEFLECTED MORE THAN 75% OF THE MANUFACTURER'S ALLOWABLE DEFLECTION PER JOINT.
- B3 VALVE AND MANHOLE RIMS & LIDS SHALL BE INSTALLED A MAXIMUM OF 18 INCHES ABOVE FINAL GRADE OF TRENCH OR STRUCTURAL BACKFILL, AND BE OF SUFFICIENT DEPTH TO ACCOMMODATE VALVE ASSEMBLY WITH HEADROOM UNLESS OTHERWISE NOTED IN PLANS. REFER TO PIPELINE DETAILS FOR ADDITIONAL INFORMATION.
- B4 AIR VALVES SHALL BE INSTALLED AT HIGH POINTS AND OTHER VARIOUS LOCATIONS ALONG THE PIPELINE AS SHOWN IN THE PLANS. MINOR STATION LOCATION ADJUSTMENTS MAY BE MADE WITH PRIOR APPROVAL OF THE ENGINEER.
- B5 BLOW-OFF VALVE DISCHARGE PIPING IS SHOWN IN THE PLANS AS A GENERAL LOCATION AND ORIENTATION OF THE DISCHARGE PIPING AND VALVE. FINAL LOCATION AND DIRECTION OF BLOW-OFF VALVE DISCHARGE SHALL BE DETERMINED PRIOR TO INSTALLATION BY THE OWNER'S ON-SITE INSPECTOR. CONTRACTOR SHALL COORDINATE WITH THE OWNER'S INSPECTOR PRIOR TO INSTALLATION OF THE DISCHARGE PIPING AND DUCK BILL VALVE.
- B6 CONTRACTOR SHALL PROVIDE 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, CORROSION TEST STATIONS, CONNECTIONS AND OUTLETS. CONTRACTOR SHALL ALSO PROVIDE AS-BUILT TOP-OF-PIPE SURVEY AS SPECIFIED IN THE CONTRACT DOCUMENTS AS IT IS BEING LAID, INCLUDING STATION AND ELEVATION INFORMATION. AS-BUILT DATA SHALL BE SUBMITTED WITH THE MONTHLY REQUEST FOR PAYMENT FOR THESE ITEMS.
- B7 NO BLASTING WILL BE ALLOWED.
- B8 NO BURNING WILL BE ALLOWED. ALL BRUSH AND CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE SITE.
- B9 NEW PIPE SHALL BE DESIGNED FOR THE OPERATING PRESSURES INDICATED ON THE HYDRAULIC GRADE LINE SHEET AND AS INDICATED ON THE PLANS. IN NO CASE SHALL PIPE BE DESIGNED FOR LESS THAN 150 PSI.
- B10 ALL OUTLETS ON THE WATERLINE SHALL BE FLANGED OUTLETS WITH THE EXCEPTION OF 4" PASS-THRU FOR WELD LEADS ON POLY-COATED STEEL PIPE. ALL VALVES CONNECTED TO THE OUTLETS SHALL BE FLANGED. ALL BURIED FLANGE BOLTS SHALL BE 316 STAINLESS STEEL.
- B11 CONTRACTOR SHALL BE REQUIRED TO INSTALL TEMPORARY TEST PLUGS FOR HYDROSTATIC TESTING AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER.
- B12 ALL ABOVE GROUND METAL SHALL BE PAINTED OR COATED ACCORDING TO THE SPECIFICATIONS. CONTRACTOR SHALL COORDINATE THE COLORS WITH THE OWNER.
- B13 VARIOUS LOCATIONS OF THE WORK 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 AS INCIDENTAL WORK.
- B14 CONTRACTOR SHALL COORDINATE HIS PROPOSED CONSTRUCTION WITH OTHER CONTRACTORS IN THE EVENT THE OTHER CONTRACTORS ARE DOING WORK 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.
- B15 THIS PROJECT IMPACTS WATER SUPPLY ENTITIES WHO MAY HAVE FACILITIES LOCATED IN THE PROJECT TEMPORARY AND PERMANENT EASEMENTS. PRIOR TO RECEIVING FINAL PAYMENT FROM NTMWD, THE CONTRACTOR SHALL PROVIDE A RELEASE TO NTMWD ON BEHALF OF EACH WATER SUPPLY ENTITY.
- B16 ALL STEEL PIPE JOINTS MUST BE WELDED.

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Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144

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NORTH TEXAS MUNICIPAL WATER DISTRICT
NORTH MCKINNEY PIPELINE
PHASE I AND II, PROJECT NO. 210
GENERAL

GENERAL NOTES

NO.	ISSUE	BY	DATE	FRM. JOB NO.	NTD11224	DATE	1/22/2016	DESIGNED	WFS	DRAWN	LMR	CHECKED	ASM
					RECORD DRAWING		1/22/16			2/05/14			
VERIFY SCALE: Bar is one inch on original drawing; if not one inch on this sheet, adjust scale.													
SHEET												G-2	
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C. ACCESS AND EASEMENT REQUIREMENTS

- C1 CONTRACTOR'S OPERATIONS MUST STAY WITHIN THE PERMANENT AND TEMPORARY EASEMENTS DESIGNATED ON THE PLAN SHEETS. CONTRACTOR WILL 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 LANDOWNER CONSENT. CONTRACTOR SHALL PROVIDE THE OWNER WITH A DRAFT OF THEIR STANDARD AGREEMENT PRIOR TO ANY AGREEMENTS BEING MADE. 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.
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 MAINTAIN AT LEAST ONE LANE OF TRAFFIC ON ALL ROADS AT ALL TIMES, AND CONSTRUCT TEMPORARY BYPASS, IF NECESSARY, IF THE ROADWAY MUST BE CLOSED TO FACILITATE CONSTRUCTION ACTIVITIES. ACCESS MUST BE MAINTAINED TO PRIVATE DRIVES AT ALL TIMES. CONTRACTOR SHALL NOTIFY PRIVATE DRIVE OWNERS AND CONTRACTOR A MINIMUM OF 7 DAYS PRIOR TO AFFECTING ACCESS TO DRIVES.
C4 CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE OWNER AND THE RIGHT-OF-WAY OWNER FOR THE ROADWAY FOR APPROVAL NO LESS THAN 14 DAYS IN ADVANCE OF THE PROPOSED ROADWAY CLOSURE. ANY COMMENTS RECEIVED ON THE PLAN BY THE OWNER OR RIGHT-OF-WAY OWNER SHALL BE INCORPORATED INTO THE PLAN. THE PLAN SHALL BE PREPARED SPECIFICALLY FOR THIS PROJECT AND SHALL BE SEALED AND SIGNED BY AN ENGINEER LICENSED IN THE STATE OF TEXAS.
C5 CONTRACTOR SHALL PROVIDE APPROPRIATE SIGNAGE, BARRICADES, FLAG MEN, ETC. REQUIRED TO MAINTAIN SAFE TRAFFIC FLOW AT ALL TIMES FOR ANY WORK ACTIVITY ON OR ADJACENT TO ANY CITY, COUNTY OR TXDOT ROADWAY. ALL TRAFFIC CONTROL MEASURES SHALL BE IN ACCORDANCE WITH TXDOT'S MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
C6 CONTRACTOR SHALL NOTIFY ALL CIVIC AUTHORITIES, EMERGENCY UNITS AND SCHOOL DISTRICTS OPERATING WITHIN THE AREA OF THE PROPOSED WORK OF LANE CLOSURES AND CONSTRUCTION SCHEDULES.
C7 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.
C8 CONTRACTOR SHALL NOT DISTURB PONDS, CREEKS OR OTHER WATERWAYS OUTSIDE OF THE PERMANENT EASEMENT.

D. EXCAVATION AND BACKFILL

- D1 IN ACCORDANCE WITH TEXAS STATE LAW, AT LEAST 2 DAYS PRIOR TO BEGINNING CLEARING OR EXCAVATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING A TEXAS REGISTERED NOTIFICATION CENTER (I.E. TEXAS ONE CALL, DIG TESS, ETC.), IN ORDER TO HAVE EXISTING UTILITIES LOCATED. SUBMIT TICKETS AS RECORD DATA.
D2 CONTRACTOR SHALL SECURE EXCAVATION AT THE END OF EACH DAY. THE OWNER MAY REQUIRE THAT NO TRENCHES BE LEFT OPEN OVERNIGHT IN STREETS OR POPULATED AREAS.
D3 THE TOP 12 INCHES OF TRENCH BACKFILL MATERIAL SHALL BE NATIVE TOPSOIL OR HAVE A GRADATION SIMILAR TO EXISTING GROUND ADJACENT TO THE TRENCH. MAXIMUM ROCK QUANTITY AND SIZE WITHIN THE 12 INCH TOP LAYER SHALL NOT EXCEED THAT OF THE SURROUNDING TOPSOIL.
D4 FLOWABLE FILL REQUIRED FOR CROSSING FLEXIBLE BASE ROADS, DRIVES, ASPHALT PAVEMENT, CONCRETE ROADS, AND CREEK CROSSINGS AREAS IS SHOWN ON THE PLAN AND PROFILE SHEETS FOR REFERENCE.
D5 CONTRACTOR SHALL REMOVE ALL SURPLUS MATERIAL FROM THE PROJECT AREA INCLUDING EXCAVATED MATERIAL, SOIL, RUBBLE, TRASH, ETC. AND DISPOSE OF APPROPRIATELY. 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.
D6 BACKFILL OF THE TRENCH OR WORK AREA SHALL BE KEPT WITHIN 500 LF OF THE INSTALL OPERATION. TRENCH AND WORK AREA IS TO BE ADEQUATELY SECURED AND MADE SAFE AT THE CONCLUSION OF EACH WORK DAY TO THE SATISFACTION OF THE OWNER.

E. EASEMENT RESTORATION

- E1 CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS WITHIN THE CONSTRUCTION SITE AS PER THE EASEMENT REQUIREMENTS ASSOCIATED WITH THE PROJECT AND ANY OTHER REQUIREMENTS SHOWN ON THE PLANS. IF NOT OTHERWISE SPECIFIED, ALL STREETS, DRIVEWAYS, FENCING, LANDSCAPING, IRRIGATION, ETC. SHALL BE RETURNED TO A CONDITION EQUAL TO OR BETTER THAN EXISTED PRIOR TO CONSTRUCTION.
E2 THE CONTRACTOR SHALL PROVIDE A DVD TO THE OWNER DOCUMENTING THE CONDITION OF THE PIPELINE ROUTE, INCLUDING THE PERMANENT EASEMENT, TEMPORARY EASEMENT AND SURROUNDING AREA. CONTRACTOR SHALL REVIEW DVD PRIOR TO THE START OF ANY CONSTRUCTION.
E3 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.
E4 FOLLOWING INSTALLATION OF PIPELINE ACROSS WATERWAYS, THE WATERWAY BANK SLOPE SHALL BE RESTORED IN ACCORDANCE WITH PROJECT DETAILS.
E5 CONTRACTOR SHALL CLEAN THE RIGHT-OF-WAY OF ANY AND ALL TRASH AND OTHER CONSTRUCTION DEBRIS.
E6 IT SHALL BE THE COMPLETE RESPONSIBILITY OF THE CONTRACTOR TO REBUILD THE CONCRETE, ASPHALT OR FLEXBASE PAVEMENT REPLACEMENT SECTIONS INCLUDING SUBGRADE TO THE SAME LINE AND GRADE THAT EXISTED PRIOR TO PIPELINE CONSTRUCTION.
E7 THE CONTRACTOR SHALL RESTORE, AT HIS OWN EXPENSE, TEMPORARY ROADS AND CONSTRUCTION WORK AREAS TO PRE-CONSTRUCTION CONDITIONS.
E8 CONTRACTOR SHALL RESEED OR RESOD ALL DISTURBED AREAS WITHIN TXDOT RIGHT-OF-WAY AND EASEMENTS AS SHOWN.

F. TREES

- F1 CONTRACTOR SHALL COMPLY WITH CITY TREE ORDINANCES DURING CONSTRUCTION WITHIN THE RESPECTIVE CITY LIMITS.
F2 CONTRACTOR SHALL OBTAIN A TREE REMOVAL PERMIT AS MAY BE REQUIRED BY CITY ORDINANCE OR OTHER AUTHORITY.
F3 CONTRACTOR SHALL CLEAR ALL TREES WITHIN THE PERMANENT EASEMENT UNLESS OTHERWISE SPECIFICALLY NOTED ON THE PLANS OR IN THE EASEMENT DOCUMENTS.
F4 CONTRACTOR SHALL NOT DAMAGE EXISTING TREES LARGER THAN 8-INCHES IN DIAMETER (MEASURED 4 FT. ABOVE THE EXISTING GRADE) THAT ARE OUTSIDE OF THE PERMANENT EASEMENT. THE CONTRACTOR MUST OBTAIN APPROVAL FROM THE OWNER BEFORE ANY TREES OUTSIDE OF THE PERMANENT EASEMENT CAN BE REMOVED OR TRIMMED.
F5 CONTRACTOR SHALL REPLACE ANY TREES REMOVED OR DESTROYED WITHOUT THE OWNERS PERMISSION OR SHALL PAY THE FAIR MARKET VALUE (AS DETERMINED BY THE OWNER) TO THE OWNER.
F6 TRIMMING OF TREES SHALL BE ACCOMPLISHED USING A SAW, 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 IN RESIDENTIAL AND LANDSCAPED AREAS.
F7 ALL NEW TREES REQUESTED BY THE OWNER, SHOWN ON THE PLANS, OR REQUIRED BY THE EASEMENT DOCUMENTS, SHALL BE PLANTED BY A NURSERYMAN LICENSED IN THE STATE OF TEXAS.

G. FENCES AND GATES

- G1 EXISTING FENCES, GATES, CATTLE GUARDS, ETC. USED FOR ACCESS SHALL BE LEFT IN CONDITION EQUAL TO OR BETTER THAN EXISTED PRIOR TO CONSTRUCTION. CONTRACTOR SHALL REPAIR OR REPLACE ALL DAMAGED FENCING ITEMS IN KIND WITH LIKE OR BETTER MATERIALS, AND PAINTED, STAINED OR TREATED TO MATCH EXISTING FENCING.
G2 CONTRACTOR SHALL REMOVE FENCES AND GATES AS REQUIRED FOR CONSTRUCTION AND REPLACE AFTER THE PIPELINE HAS BEEN INSTALLED AND TESTED. ALL FENCING INCLUDING BARBED WIRE, WROUGHT IRON, ORNAMENTAL AND CHAIN LINK FENCES SHALL BE REPLACED OR RECONSTRUCTED WITH NEW MATERIALS AND SHALL MATCH EXISTING FENCING UNLESS OTHERWISE NOTED IN THE PLANS OR EASEMENT DOCUMENTS.
G3 INSTALL PERMANENT STEEL GATES PER PROJECT DETAILS AT ALL FENCE CROSSINGS EXCEPT WHERE DESIGNATED OTHERWISE.
G4 TEMPORARY FENCING SHALL BE PROVIDED TO PROTECT LIVESTOCK OR IN PUBLIC AREAS. TEMPORARY FENCING SHALL BE INSTALLED WHERE PERMANENT FENCING IS NOT TO BE REPLACED BY END OF SAME WORK DAY OR AS DIRECTED BY OWNER. CONTRACTOR SHALL VERIFY PRESENCE OF LIVESTOCK WITH LANDOWNER PRIOR TO ENTERING PROPERTY.
G5 ANY 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. CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES RESULTING FROM FAILURE TO EXACTLY LOCATE AND PRESERVE THE UNDERGROUND UTILITIES.
H2 CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO DELIVERY 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 IMMEDIATELY WITH LIKE OR BETTER MATERIALS.
H3 CONTRACTOR SHALL TO SUBMIT A WRITTEN LAYING PLAN AND SCHEDULE 14 DAYS IN ADVANCE OF CONSTRUCTION ACTIVITIES REQUIRING REPLACEMENT OR SUPPORT OF EXISTING SANITARY SEWER PIPE, WATER PIPE OR STORM DRAIN PIPE. THE PLAN SHALL DESCRIBE IN DETAIL THE METHOD FOR REPLACING OR SUPPORTING EXISTING PIPE AND ASSOCIATED SCHEDULE.
H4 CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SERVICE LINES CROSSED OR EXPOSED BY HIS CONSTRUCTION OPERATIONS. WHERE EXISTING SERVICE LINES ARE CUT, BROKEN OR DAMAGED THE CONTRACTOR SHALL IMMEDIATELY REPLACE THE SERVICE LINES IN KIND WITH LIKE OR BETTER MATERIALS. CONTRACTOR SHALL ENSURE PROPER COMPACTION TO MINIMIZE ANY FUTURE DEFLECTION OF THE SERVICE LINE.
H5 CONTRACTOR SHALL PROTECT ALL UNDERGROUND IRRIGATION SYSTEMS ENCOUNTERED WITHIN THE CONSTRUCTION AREA. ALL DAMAGE SHALL BE REPAIRED BY IRRIGATOR LICENSED IN THE STATE OF TEXAS.
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, 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.
H8 WHEN NEW WATERLINE CONSTRUCTION CROSSES UNDER EXISTING PIPELINES, CONTRACTOR SHALL BACKFILL EXISTING PIPELINE WITH GRANULAR EMBEDMENT FROM TOP OF PIPE ZONE OF NEW WATERLINE TO ONE FOOT ABOVE EXISTING PIPELINE.
H9 WHERE OVERHEAD ELECTRICAL POWER POLES AND GUY WIRES ARE CALLED OUT TO BE RELOCATED, CONTRACTOR SHALL COORDINATE THE RELOCATION WITH THE ELECTRICAL DISTRIBUTION COMPANY AND PAY FOR ALL COSTS ASSOCIATED WITH THE ACTIVITIES. OVERHEAD ELECTRICAL POLES AND GUY WIRES SHALL BE RELOCATED TO OUTSIDE OF THE PERMANENT EASEMENT. CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT OF ALL POWER POLES WITHIN 15 FEET OF CONSTRUCTION OR WHERE TEMPORARY REMOVAL OF GUY WIRES IS NECESSARY FOR CONSTRUCTION.
H10 CONTRACTOR SHALL RETURN ALL REMOVED FIRE HYDRANTS ALONG EXCHANGE PARKWAY AND ROCK RIDGE ROAD TO THE CITY OF LUCAS AT 665 COUNTRY CLUB ROAD, LUCAS, TEXAS 75002.

I. EXISTING STRUCTURES AND FACILITIES

- I1 WHEN THE PLANS OR EASEMENTS INDICATE THE DEMOLITION OR REMOVAL OF AN EXISTING STRUCTURE OR FACILITY BY THE CONTRACTOR, THE CONTRACTOR SHALL PROVIDE AT LEAST 30 DAYS NOTICE TO THE PROPERTY OWNER OF THE PENDING REMOVAL.
I2 WHERE IT IS NECESSARY FOR LANDOWNERS TO MOVE TRAILERS, SHEDS, OR OTHER FACILITIES OR IMPROVEMENTS, THE CONTRACTOR SHALL NOTIFY THE PROPERTY OWNER AND THE PROJECT OWNER NO LESS THAN 30 DAYS PRIOR TO THE NEED FOR MOVING THE FACILITIES OR IMPROVEMENTS.

This Record Drawing is a combination of the sealed engineering contract drawings for this project, modified by information furnished by the contractor reflecting changes in the field. The original sealed drawings are on file at the offices of FREESE AND NICHOLS, INC. 4055 INTERNATIONAL PLAZA, SUITE 200 FORT WORTH, TEXAS 76109-4895 RECORD DRAWINGS PREPARED ON: 1/22/2016

Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144

THE SEAL THAT ORIGINALLY APPEARED ON THIS DOCUMENT WAS ISSUED BY THE ENGINEER ON 1/22/2016. THE SEAL OF THE ENGINEER IS AN INDICATION OF THE ENGINEER'S PROFESSIONAL STATUS AND NOT A GUARANTEE OF THE ACCURACY OF THE INFORMATION CONTAINED HEREIN. THE SEAL OF THE ENGINEER IS AN INDICATION OF THE ENGINEER'S PROFESSIONAL STATUS AND NOT A GUARANTEE OF THE ACCURACY OF THE INFORMATION CONTAINED HEREIN.

FREESE AND NICHOLS 2711 North Haskell, 33rd Floor Fort Worth, Texas 76107 Phone - (214) 217-2200 Fax - (214) 217-2201

NORTH TEXAS MUNICIPAL WATER DISTRICT NORTH MCKINNEY PIPELINE PHASE I AND II, PROJECT NO. 210

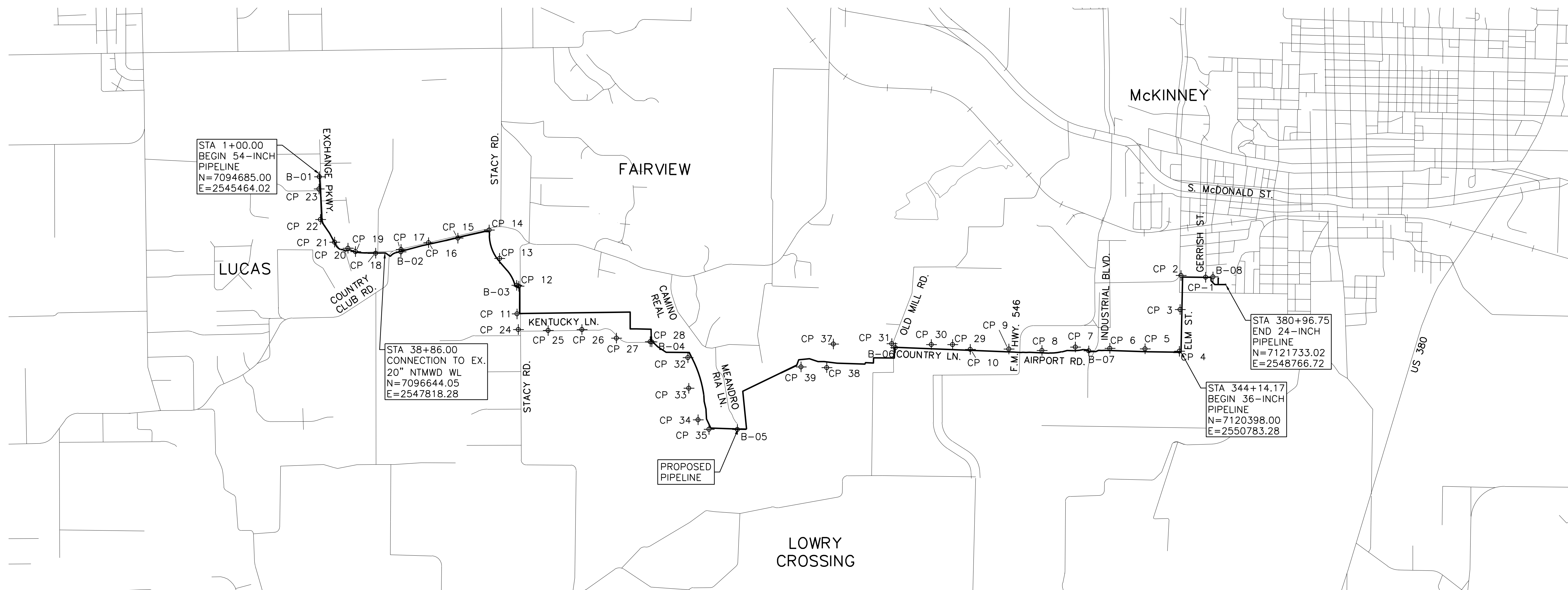
GENERAL

GENERAL NOTES

Table with columns: NO., ISSUE, DATE, BY, DESIGN, WRS, LMR, REVISION, CHECKED, FILE NAME, and SHEET. Includes drawing title 'RECORD DRAWING ISSUED FOR CONSTRUCTION' and sheet number 'G-3'.

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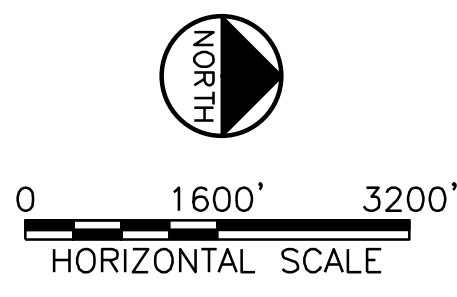
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CP 1	7121131.72	2548545.19	595.54	5/8" CIRS
CP 2	7120397.05	2548492.95	595.44	5/8" CIRS
CP 3	7120371.05	2549509.47	588.99	5/8" CIRS
CP 4	7120346.62	2550752.67	582.41	5/8" CIRS
CP 5	7119323.62	2550680.00	582.26	5/8" CIRS
CP 6	7118272.48	2550665.08	581.49	5/8" CIRS
CP 7	7117243.28	2550629.37	592.36	5/8" CIRS
CP 8	7116246.08	2550729.73	593.77	5/8" CIRS
CP 9	7115260.24	2550687.02	587.14	5/8" CIRS
CP 10	7114108.07	2550697.23	583.60	5/8" CIRS
CP 11	7100585.28	2549638.25	615.91	5/8" CIRS
CP 12	7100635.82	2548812.39	626.69	5/8" CIRS
CP 13	7100064.38	2547984.94	631.95	5/8" CIRS
CP 14	7099753.48	2547136.59	635.58	5/8" CIRS
CP 15	7098821.19	2547377.49	623.41	5/8" CIRS
CP 16	7097943.29	2547515.70	618.47	5/8" CIRS
CP 17	7097121.03	2547716.32	614.43	5/8" CIRS
CP 18	7096365.54	2547828.26	606.54	5/8" CIRS
CP 19	7095765.85	2547781.22	598.50	5/8" CIRS

POINT TABLE				
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CP 20	7095541.91	2547680.98	607.05	5/8" CIRS
CP 21	7095141.22	2547499.63	603.00	5/8" CIRS
CP 22	7094719.28	2546819.64	612.56	5/8" CIRS
CP 23	7094677.38	2545912.28	622.51	5/8" CIRS
CP 24	7100622.71	2550105.11	611.41	5/8" CIRS
CP 25	7101511.61	2550135.09	610.59	PK NAIL W/ WASHER
CP 26	7102518.28	2550105.00	580.79	PK NAIL W/ WASHER
CP 27	7103551.40	2550359.96	559.44	PK NAIL W/ WASHER
CP 28	7104555.93	2550467.58	544.11	PK NAIL W/ WASHER
CP 29	7113580.82	2550554.64	579.64	5/8" CIRS
CP 30	7112946.22	2550553.21	576.07	5/8" CIRS
CP 31	7111766.56	2550526.36	538.42	5/8" CIRS
CP 32	7105683.67	2550945.02	527.11	5/8" CIRS
CP 33	7105711.26	2551856.69	522.23	5/8" CIRS
CP 34	7105987.26	2552798.38	518.64	5/8" CIRS
CP 35	7106313.34	2553082.69	517.36	5/8" CIRS
CP 37	7110022.33	2550537.18	522.19	5/8" CIRS
CP 38	7109826.05	2551241.20	521.00	5/8" CIRS
CP 39	7109057.53	2551218.35	518.95	5/8" CIRS

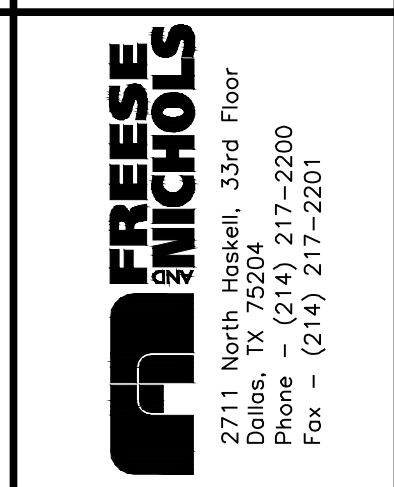
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B-03	7100572.75	2548785.61		B-03
B-04	7104607.68	2550473.62		B-04
B-05	7107160.57	2553085.76		B-05
B-06	7111873.65	2550646.64		B-06
B-07	7117645.65	2550741.82		B-07
B-08	7121352.95	2548534.35		B-08

ALL HORIZONTAL COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983, CORS96 (EPOCH 2002.00), NORTH CENTRAL ZONE (4202) AND ADJUSTED TO SURFACE VALUES USING THE TEXAS DEPARTMENT OF TRANSPORTATION SURFACE ADJUSTMENT FACTOR FOR COLLIN COUNTY (1.000152710). DISTANCES AND AREAS SHOWN ARE IN SURFACE VALUES.

This Record Drawing is a combination of the sealed engineering contract drawings for this project, modified by information furnished by the contractor reflecting changes in the Project made during construction. The original sealed drawings are on file at the offices of
FREES AND NICHOLS, INC.
 4055 INTERNATIONAL PLAZA, SUITE 200
 FORT WORTH, TEXAS 76109-4895
 (817) 735-7300
 RECORD DRAWINGS PREPARED ON:
 1/22/2016



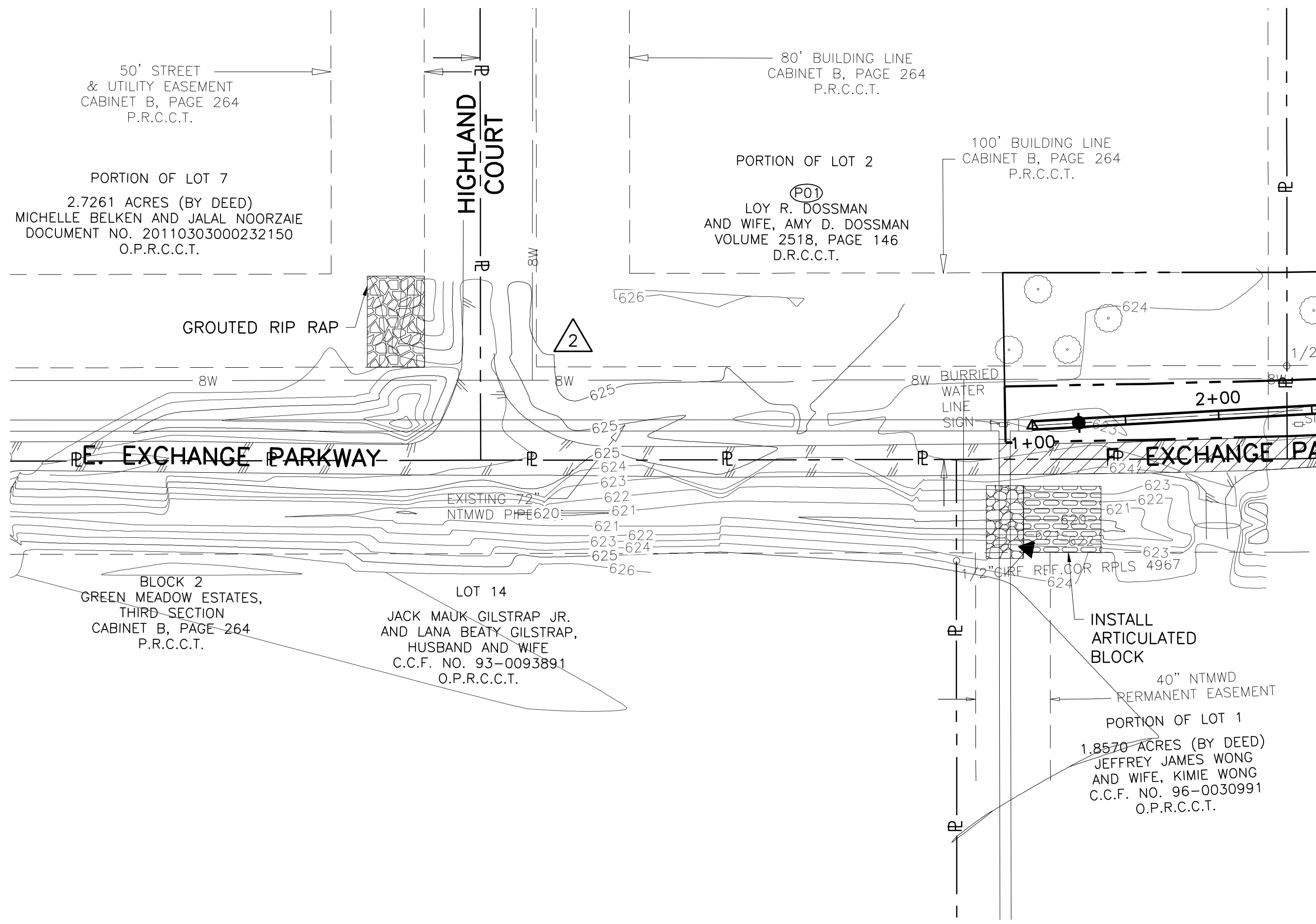
Freese and Nichols, Inc.
 Texas Registered Engineering Firm F-2144



NORTH TEXAS MUNICIPAL WATER DISTRICT
NORTH MCKINNEY PIPELINE
 PHASE I AND II, PROJECT NO. 210
 GENERAL
PROJECT CONTROL PLAN

NO.	ISSUE	BY	DATE	FRM. JOB NO.	NTD11224
				DATE	1/22/2016
				DESIGNED	WFS
				DRAWN	LMR
				REVISION	ASM
				CHECKED	ASM
				FILE NAME	GN-ALL-HORZ01
RECORD DRAWING		ASM 1/22/16			
ISSUED FOR CONSTRUCTION		ASM 2/05/14			
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SEC.	5				

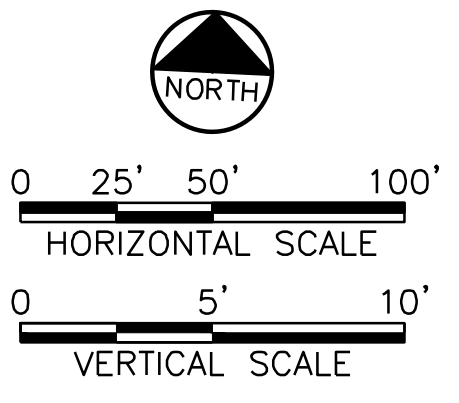
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 4055 INTERNATIONAL PLAZA, SUITE 200
 FORT WORTH, TEXAS 76109-4895
 RECORD DRAWINGS PREPARED ON:
 1/22/2016

Freese and Nichols, Inc.
 Texas Registered Engineering Firm F-2144

THE SEAL AND SIGNATURE OF THE ENGINEER APPEARING ON THIS DOCUMENT WAS
 FOR THE STATE OF TEXAS NO. 91877-0001 ON 10/22/2015
 NOTIFICATION OF THE RESPONSIBLE ENGINEER IS AN
 OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.



- NOTES:
1. CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION.
 2. CONTRACTOR MUST MAINTAIN WATER SERVICE TO ALL RESIDENTS DURING CONSTRUCTION. EXISTING WATER LINE AND/OR TEMPORARY SERVICES MUST BE MAINTAINED UNTIL NEW LUCAS WATER LINE HAS BEEN TESTED AND ACTIVATED.
 3. CONTRACTOR SHALL MAINTAIN AT LEAST ONE LANE OF TRAFFIC OPEN DURING CONSTRUCTION ALONG EXCHANGE PKWY AND ROCK RIDGE RD.
 4. CONTRACTOR SHALL RESTORE EXISTING DRAINAGE DITCHES ALONG DISTURBED SECTIONS OF EXCHANGE PARKWAY AND ROCK RIDGE ROAD TO PRE-CONSTRUCTION CONDITION, OR BETTER, AND DITCHES SHALL BE GRADED FOR SUFFICIENT DRAINAGE FOR ENTIRE LENGTH OF ROADWAY. REMOVE AND REPLACE EXISTING CULVERTS AS SHOWN.
 5. ALL DISTURBED AREAS FROM STA 0+00 TO STA 3+71.10 SHALL BE RESTORED USING SOD.

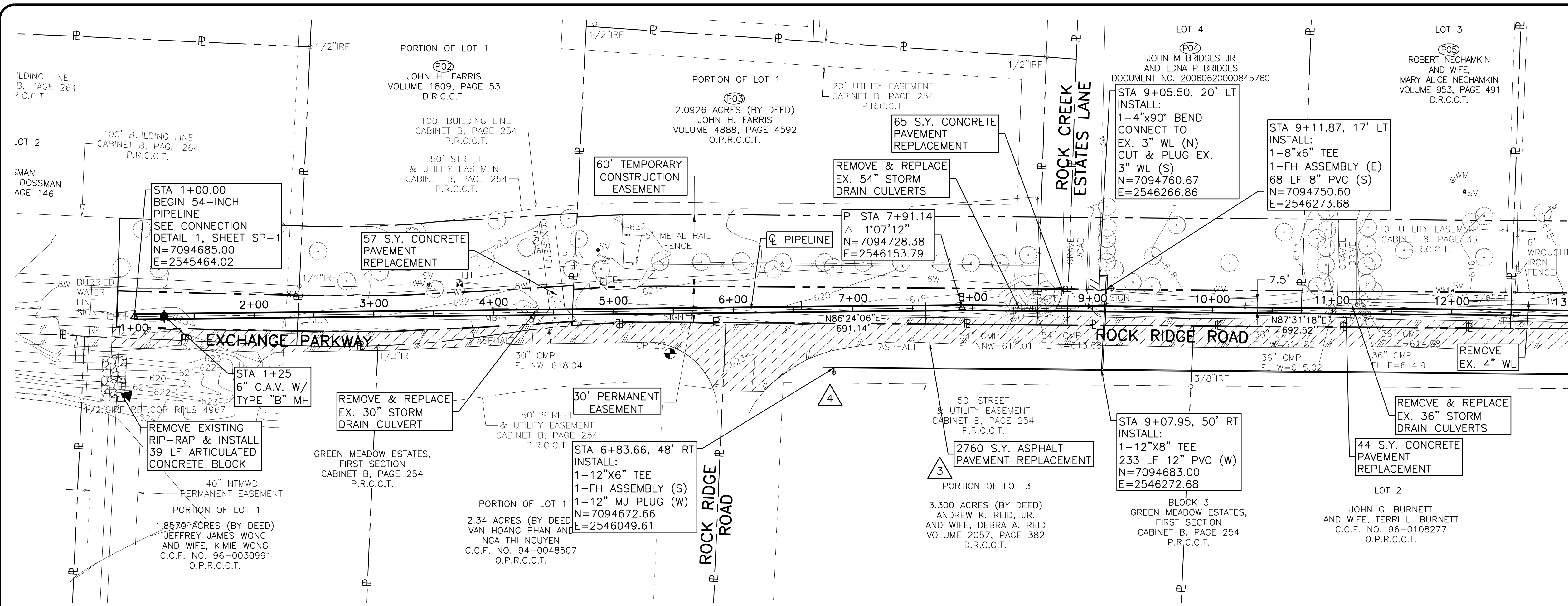
NORTH TEXAS MUNICIPAL WATER DISTRICT
NORTH MCKINNEY PIPELINE
 PHASE I AND II, PROJECT NO. 210
 PIPELINE
12-INCH LUCAS WATER LINE
 STA 1+00 TO STA 3+71

NO.	ISSUE	BY	DATE	REV.	DATE	DESIGNED	WRS	TEF
1	RECORD DRAWING	ASM	1/22/16	BROWN	1/22/2016	WRS	TEF	ASM
2	ISSUED FOR CONSTRUCTION	ASM	2/05/14	REVISED				ASM
3	VERIFY SCALE							

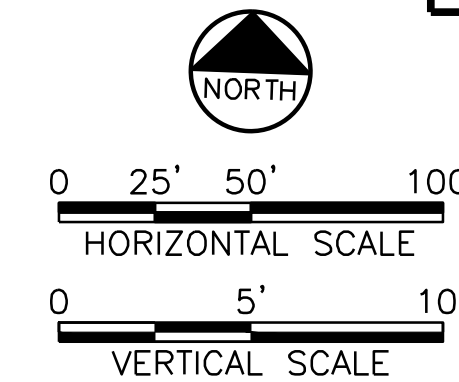
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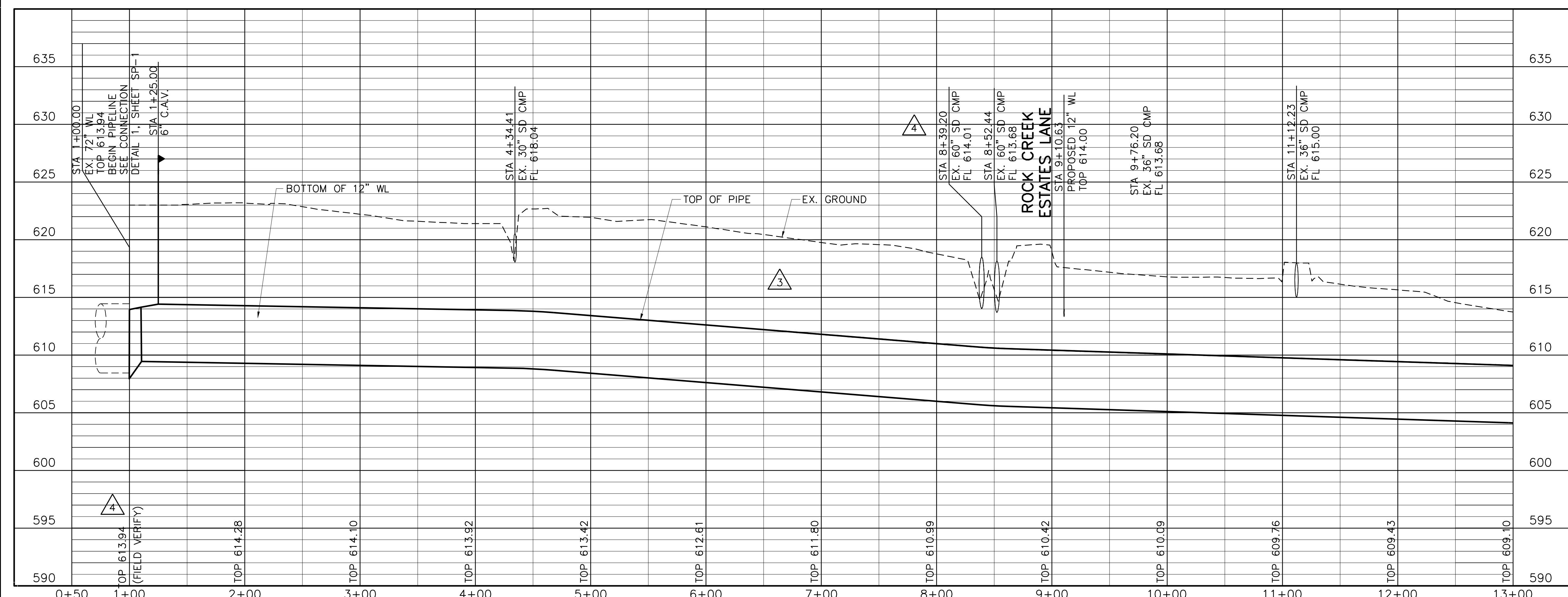
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MATCH LINE STA 13+00



- NOTES:**
- CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION.
 - CONTRACTOR MUST MAINTAIN WATER SERVICE TO ALL RESIDENTS DURING CONSTRUCTION. EXISTING WATER LINE AND/OR TEMPORARY SERVICES MUST BE MAINTAINED UNTIL NEW LUCAS WATER LINE HAS BEEN TESTED AND ACTIVATED.
 - CONTRACTOR SHALL MAINTAIN AT LEAST ONE OPEN LANE OF TRAFFIC DURING CONSTRUCTION ALONG EXCHANGE PKWY AND ROCK RIDGE RD.
 - CONTRACTOR SHALL RESTORE EXISTING DRAINAGE DITCHES ALONG DISTURBED SECTIONS OF EXCHANGE PARKWAY AND ROCK RIDGE ROAD TO PRE-CONSTRUCTION CONDITION, OR BETTER, AND DITCHES SHALL BE GRADED FOR SUFFICIENT DRAINAGE FOR ENTIRE LENGTH OF ROADWAY. REMOVE AND REPLACE EXISTING CULVERTS AS SHOWN.
 - ALL DISTURBED AREAS FROM STA 1+00 TO STA 13+00 SHALL BE RESTORED USING SOD.
 - CONTRACTOR SHALL MATCH NEW PAVEMENT ELEVATION TO EXISTING DRIVEWAY AND STREET ELEVATIONS.
 - CONTRACTOR SHALL INSTALL 2-INCH SERVICE CONNECTIONS TO 2150, 2170, 2313 AND 2315 ROCK RIDGE ROAD.



This Record Drawing is a combination of the sealed engineering contract drawings for this project, modified by information furnished by the contractor reflecting changes in the original sealed drawings are on file at the offices of FREENE AND NICHOLS, INC. 4025 INTERNATIONAL PLAZA, SUITE 200 FORT WORTH, TEXAS 76109-4885 RECORD DRAWINGS PREPARED ON: 1/22/2016
 FREENE AND NICHOLS, INC.
 Texas Registered Engineering Firm F-2144

THE SEAL OF THE ENGINEER APPEARED ON THIS DOCUMENT WAS ISSUED BY THE BOARD OF ENGINEERING EXAMINERS OF THE STATE OF TEXAS AND IS NOT VALID UNLESS THE ENGINEER'S SIGNATURE AND EXPIRATION DATE ARE PRINTED ON THE SEAL. NOTIFICATION OF THE RESPONSIBLE ENGINEER IS AN OBLIGATION UNDER THE TEXAS ENGINEERING PRACTICE ACT.

FREENE AND NICHOLS
 2711 North Rossell, 33rd Floor
 Fort Worth, TX 76109
 Phone = (214) 217-2200
 Fax = (214) 217-2201

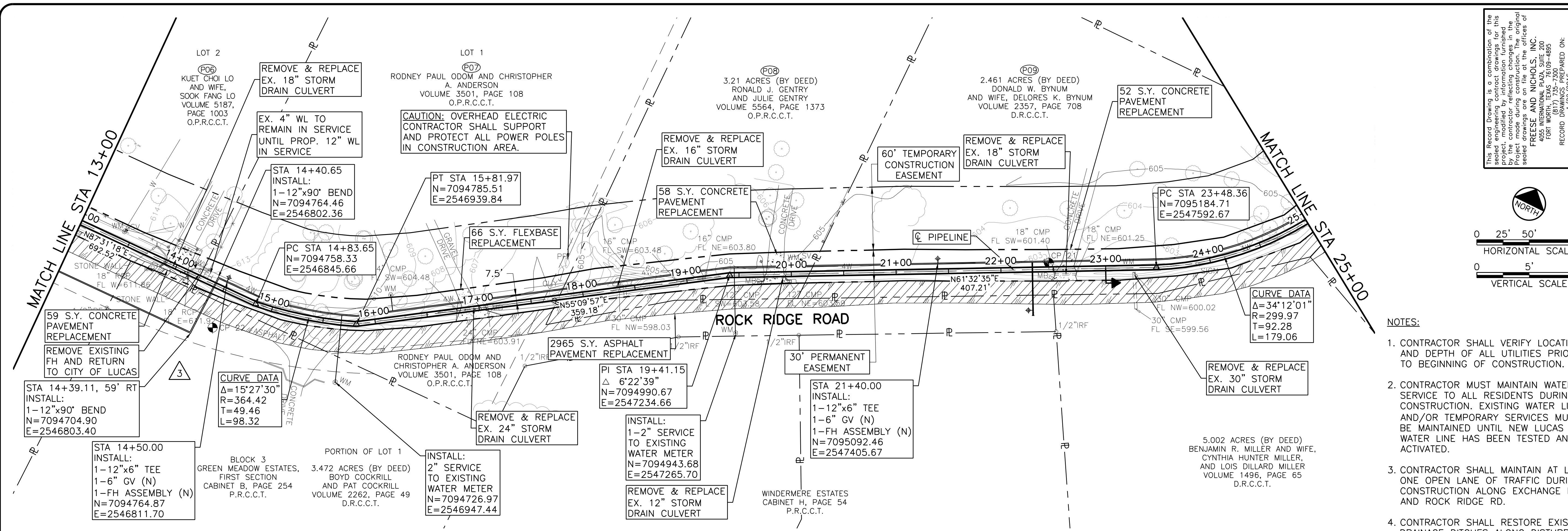
NORTH TEXAS MUNICIPAL WATER DISTRICT
 NORTH MCKINNEY PIPELINE
 PHASE I AND II, PROJECT NO. 210
 PIPELINE
 PLAN AND PROFILE
 STA 1+00 TO STA 13+00

NO.	ISSUE	BY	DATE	FILE NAME
1	RECORD DRAWING	ASM	1/22/16	NTD11224
2	PCM NO. 8	ASM	2/05/14	DESIGNED WRS
3	ISSUED FOR CONSTRUCTION	ASM	2/05/14	DRAWN LMR
4	ADDENDUM NO. 1	WS	10/25/13	REVISED
5	VERIFY SCALE	WS	10/25/13	CHECKED ASM
6				FILE NAME
7				CV-PPL-PP-WTRL1

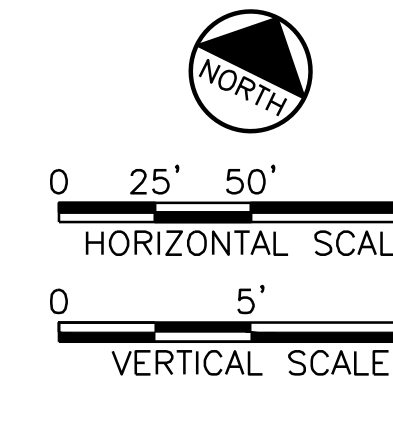
SHEET **PL-1**

SEQ. 7

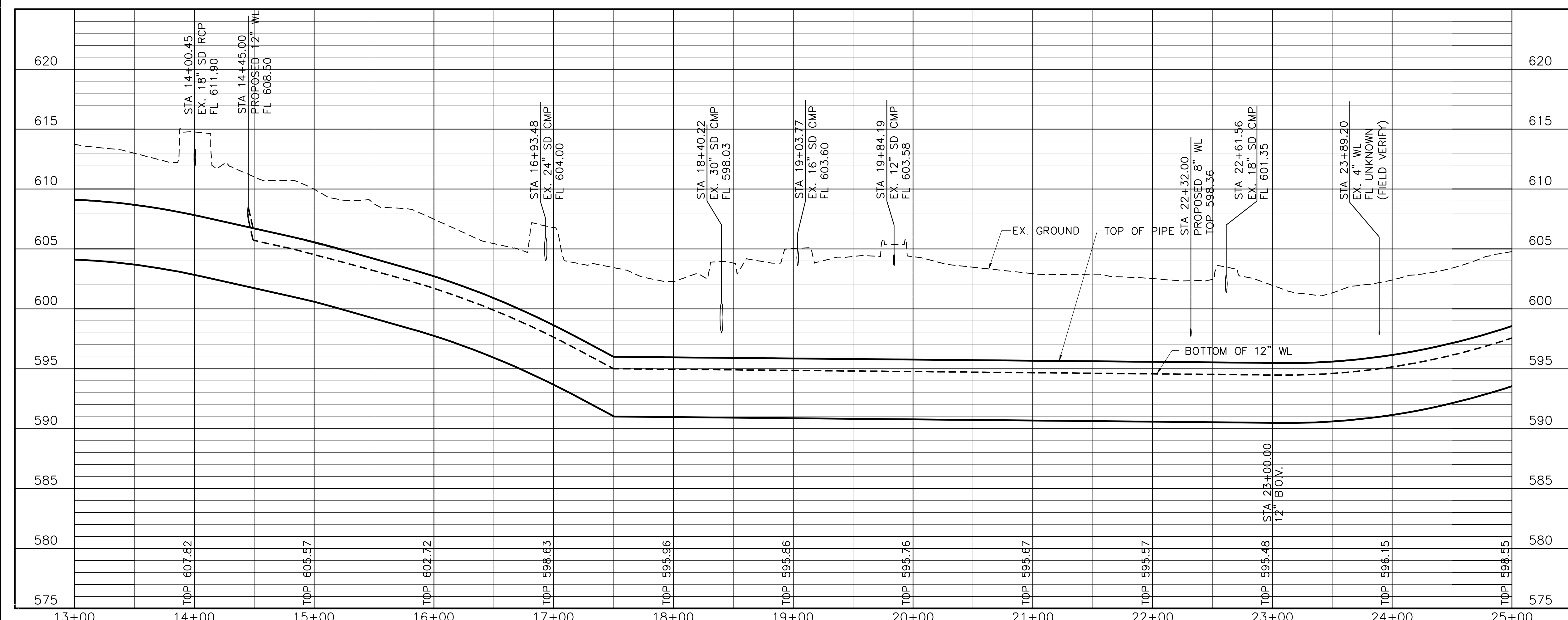
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 5 REFERENCE FILES: ...BASE\CV-ALL-PL-PRODUCTION...STANDARD\34BORDER...N:\UTIL\BASE\CV-ALL-PR-VIEWS...N:\UTIL\SURVEY\CV-ALL-PL-TOPO



This Record Drawing is a combination of the sealed engineering contract drawings for this project, modified by information furnished by the contractor reflecting changes in the original sealed drawings are on file at the offices of
FREESSE AND NICHOLS, INC.
 4055 INTERNATIONAL PLAZA, SUITE 200
 FORT WORTH, TEXAS 76109-4895
 RECORD DRAWINGS PREPARED ON: 1/22/2016
 Freesse and Nichols, Inc.
 Texas Registered Engineering Firm F-2144



- NOTES:**
- CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION.
 - CONTRACTOR MUST MAINTAIN WATER SERVICE TO ALL RESIDENTS DURING CONSTRUCTION. EXISTING WATER LINE AND/OR TEMPORARY SERVICES MUST BE MAINTAINED UNTIL NEW LUCAS WATER LINE HAS BEEN TESTED AND ACTIVATED.
 - CONTRACTOR SHALL MAINTAIN AT LEAST ONE OPEN LANE OF TRAFFIC DURING CONSTRUCTION ALONG EXCHANGE PKWY AND ROCK RIDGE RD.
 - CONTRACTOR SHALL RESTORE EXISTING DRAINAGE DITCHES ALONG DISTURBED SECTIONS OF EXCHANGE PARKWAY AND ROCK RIDGE ROAD TO PRE-CONSTRUCTION CONDITION, OR BETTER, AND DITCHES SHALL BE GRADED FOR SUFFICIENT DRAINAGE FOR ENTIRE LENGTH OF ROADWAY. REMOVE AND REPLACE EXISTING CULVERTS AS SHOWN.
 - ALL DISTURBED AREAS FROM STA 13+00 TO STA 25+00 SHALL BE RESTORED USING SOD.
 - CONTRACTOR SHALL MATCH NEW PAVEMENT ELEVATION TO EXISTING DRIVEWAY AND STREET ELEVATIONS.
 - CONTRACTOR SHALL INSTALL 2-INCH SERVICE CONNECTIONS TO 2240, 2325, 2335 AND 2345 ROCK RIDGE ROAD.
 - CONTRACTOR SHALL INSTALL DOUBLE 2-INCH SERVICE CONNECTIONS TO 2210 AND 2339 ROCK RIDGE ROAD.



FREESSE AND NICHOLS

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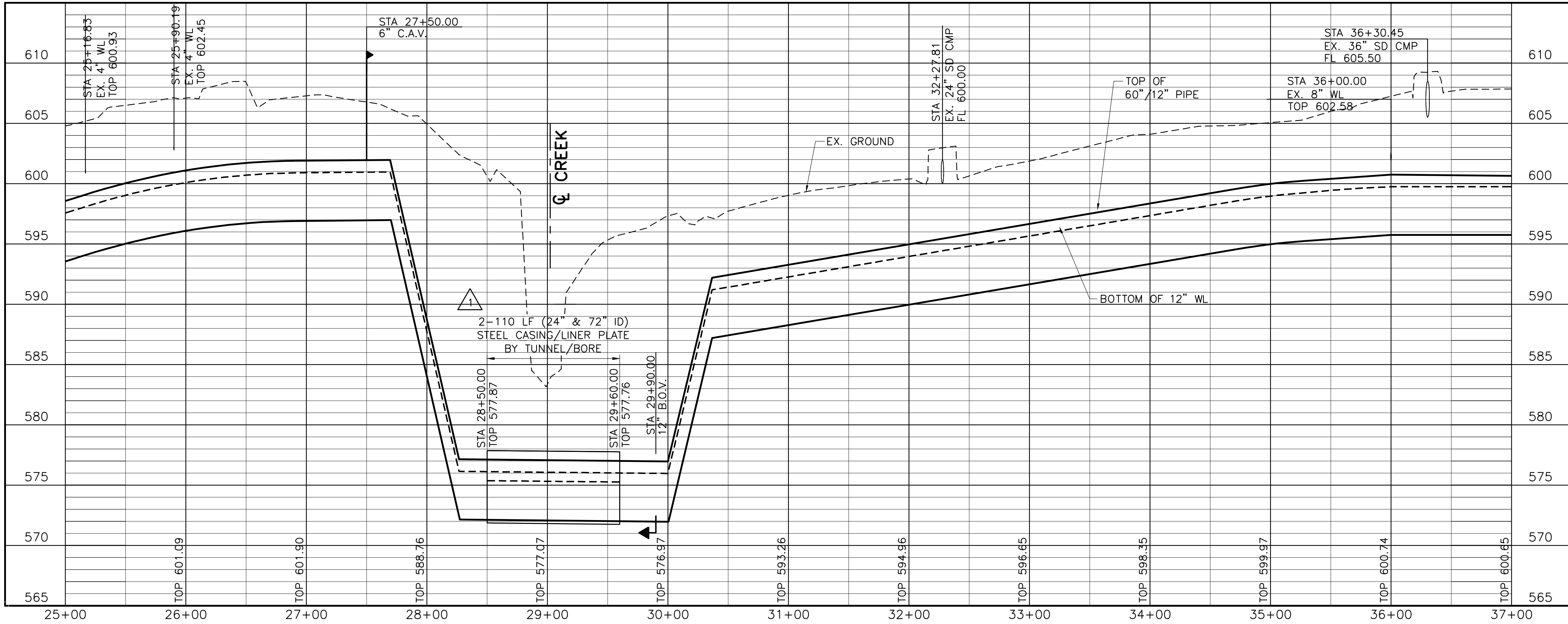
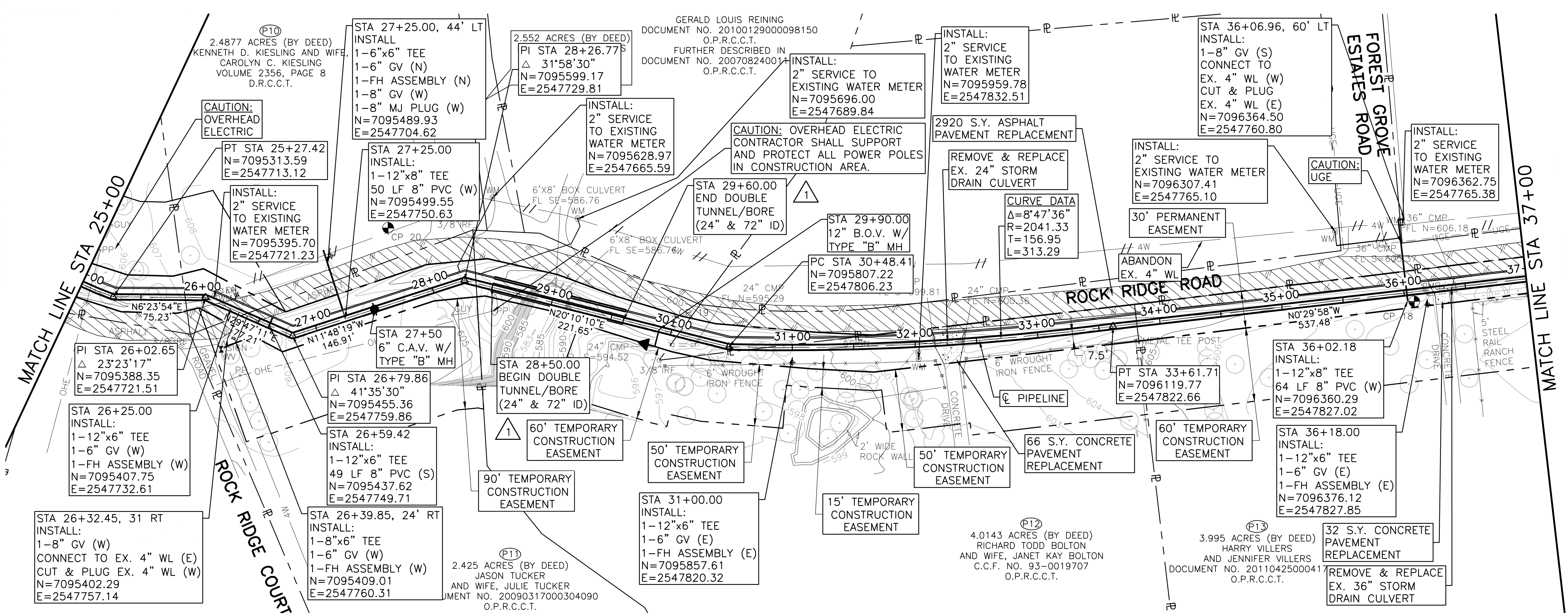
NORTH TEXAS MUNICIPAL WATER DISTRICT
NORTH MCKINNEY PIPELINE
 PHASE I AND II, PROJECT NO. 210
 PIPELINE
PLAN AND PROFILE
 STA 13+00 TO STA 25+00

NO.	ISSUE	BY	DATE	FRM. JOB NO.
1	RECORD DRAWING	ASM	1/22/16	NTD11224
2	ISSUED FOR CONSTRUCTION	ASM	2/05/14	DESIGNED WRS
3	ADDENDUM NO. 1	WS	10/25/13	DRAWN LMR

VERIFY SCALE: Bar is one inch on original drawing; if not one inch on this sheet, adjust scale.

SHEET **PL-2**
 SEQ. 8

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 5 REFERENCE FILES: N:\BASE\CV-ALL-PP-VIEWS and N:\UTIL\SURVEY\CV-ALL-PP-TOPO



- NOTES:**
- CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION.
 - CONTRACTOR MUST MAINTAIN WATER SERVICE TO ALL RESIDENTS DURING CONSTRUCTION. EXISTING WATER LINE AND/OR TEMPORARY SERVICES MUST BE MAINTAINED UNTIL NEW LUCAS WATER LINE HAS BEEN TESTED AND ACTIVATED.
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 - CONTRACTOR SHALL RESTORE EXISTING DRAINAGE DITCHES ALONG DISTURBED SECTIONS OF EXCHANGE PARKWAY AND ROCK RIDGE ROAD TO PRE-CONSTRUCTION CONDITION, OR BETTER, AND DITCHES SHALL BE GRADED FOR SUFFICIENT DRAINAGE FOR ENTIRE LENGTH OF ROADWAY. REMOVE AND REPLACE EXISTING CULVERTS AS SHOWN.
 - ALL DISTURBED AREAS FROM STA 25+00 TO STA 37+00 SHALL BE RESTORED USING SOD.
 - CONTRACTOR SHALL MATCH NEW PAVEMENT ELEVATION TO EXISTING DRIVEWAY AND STREET ELEVATIONS.
 - CONTRACTOR SHALL INSTALL 2-INCH SERVICE CONNECTIONS TO 2355 ROCK RIDGE ROAD.

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Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144

0 25' 50' 100'
HORIZONTAL SCALE

0 5' 10'
VERTICAL SCALE

FREESE AND NICHOLS
 2711 North Rossell, 33rd Floor
 Fort Worth, Texas 76109-4895
 Phone = (214) 217-2200
 Fax = (214) 217-2201

NORTH TEXAS MUNICIPAL WATER DISTRICT
NORTH MCKINNEY PIPELINE
 PHASE I AND II, PROJECT NO. 210
 PIPELINE
PLAN AND PROFILE
 STA 25+00 TO STA 37+00

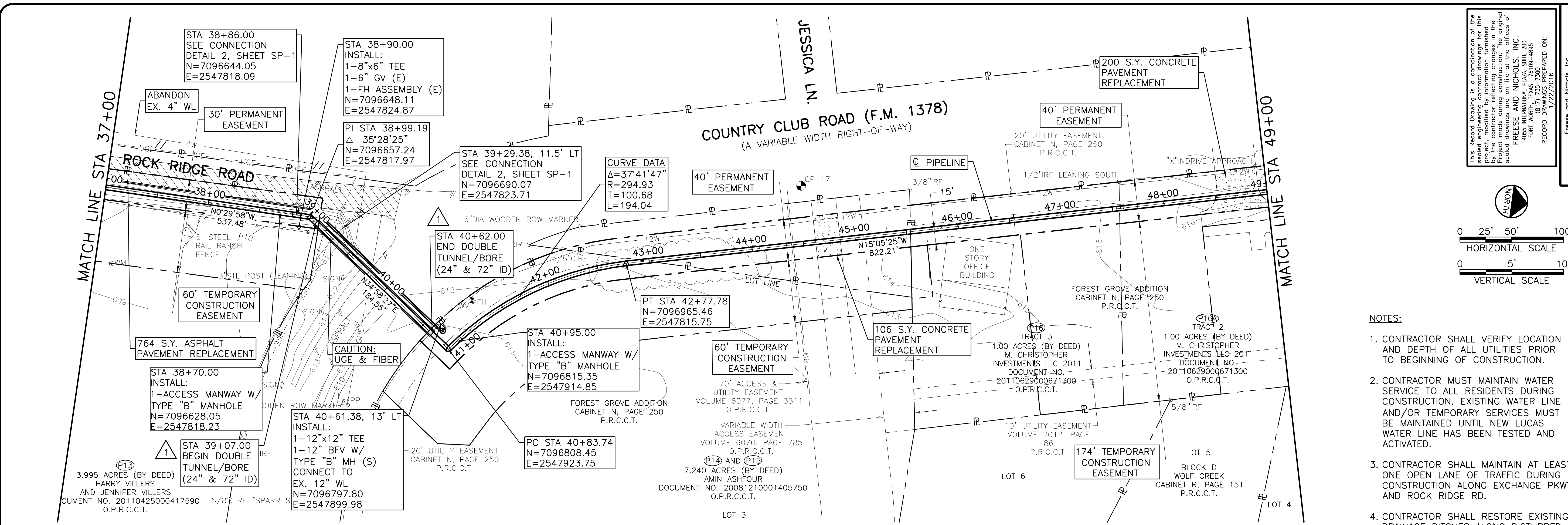
NTD11224
 DATE 1/22/2016
 DESIGNED WRS
 DRAWN LMR
 CHECKED ASM
 FILE NAME CV-PPL-PP-WTRL3

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 ISSUED FOR CONSTRUCTION
 ADDENDUM NO. 1
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 Bar is one inch on original drawing; if not one inch on this sheet, adjust scale.

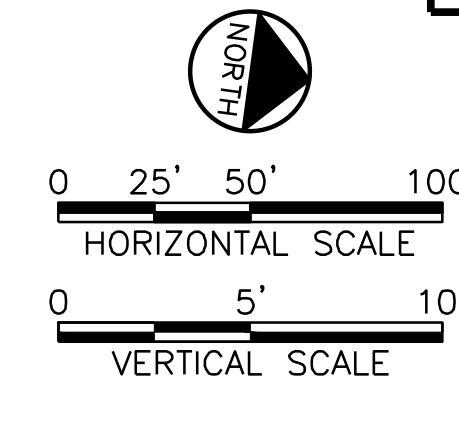
SHEET **PL-3**

SEQ. 9

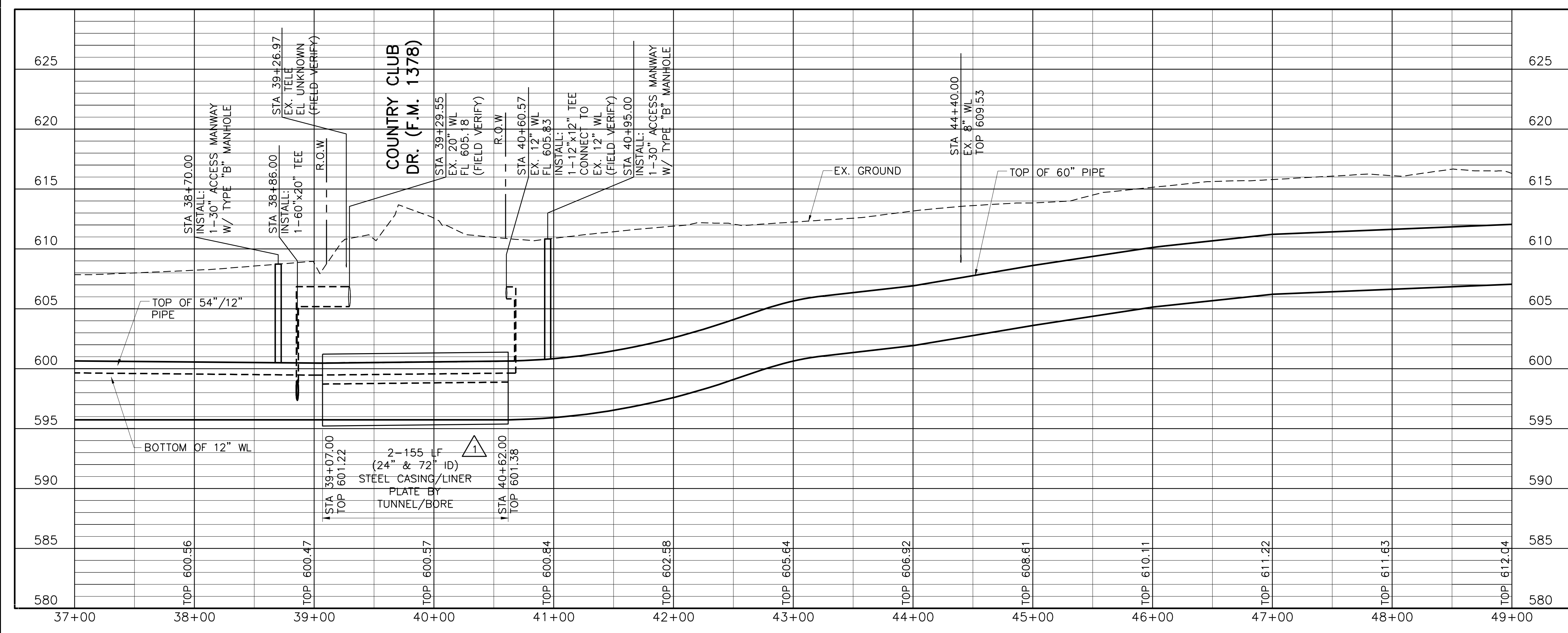
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This Record Drawing is a combination of the sealed engineering contract drawings for this project, modified by information furnished by the contractor reflecting changes in the original sealed drawings are on file at the offices of
FREESSE AND NICHOLS, INC.
 4025 INTERNATIONAL PLAZA, SUITE 200
 FORT WORTH, TEXAS 76109-4895
 RECORD DRAWINGS PREPARED ON: 1/22/2016
 Freesse and Nichols, Inc.
 Texas Registered Engineering Firm F-2144



- NOTES:**
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 - CONTRACTOR SHALL MAINTAIN AT LEAST ONE OPEN LANE OF TRAFFIC DURING CONSTRUCTION ALONG EXCHANGE PKWY AND ROCK RIDGE RD.
 - CONTRACTOR SHALL RESTORE EXISTING DRAINAGE DITCHES ALONG DISTURBED SECTIONS OF ROCK RIDGE ROAD TO PRE-CONSTRUCTION CONDITION, OR BETTER, AND DITCHES SHALL BE GRADED FOR SUFFICIENT DRAINAGE FOR ENTIRE LENGTH OF ROADWAY. REMOVE AND REPLACE EXISTING CULVERTS AS SHOWN.
 - ALL DISTURBED AREAS FROM STA 37+00 TO STA 39+43 SHALL BE RESTORED USING SOD.



FREESSE AND NICHOLS
 2711 North Rossell, 33rd Floor
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 Fax - (214) 217-2201

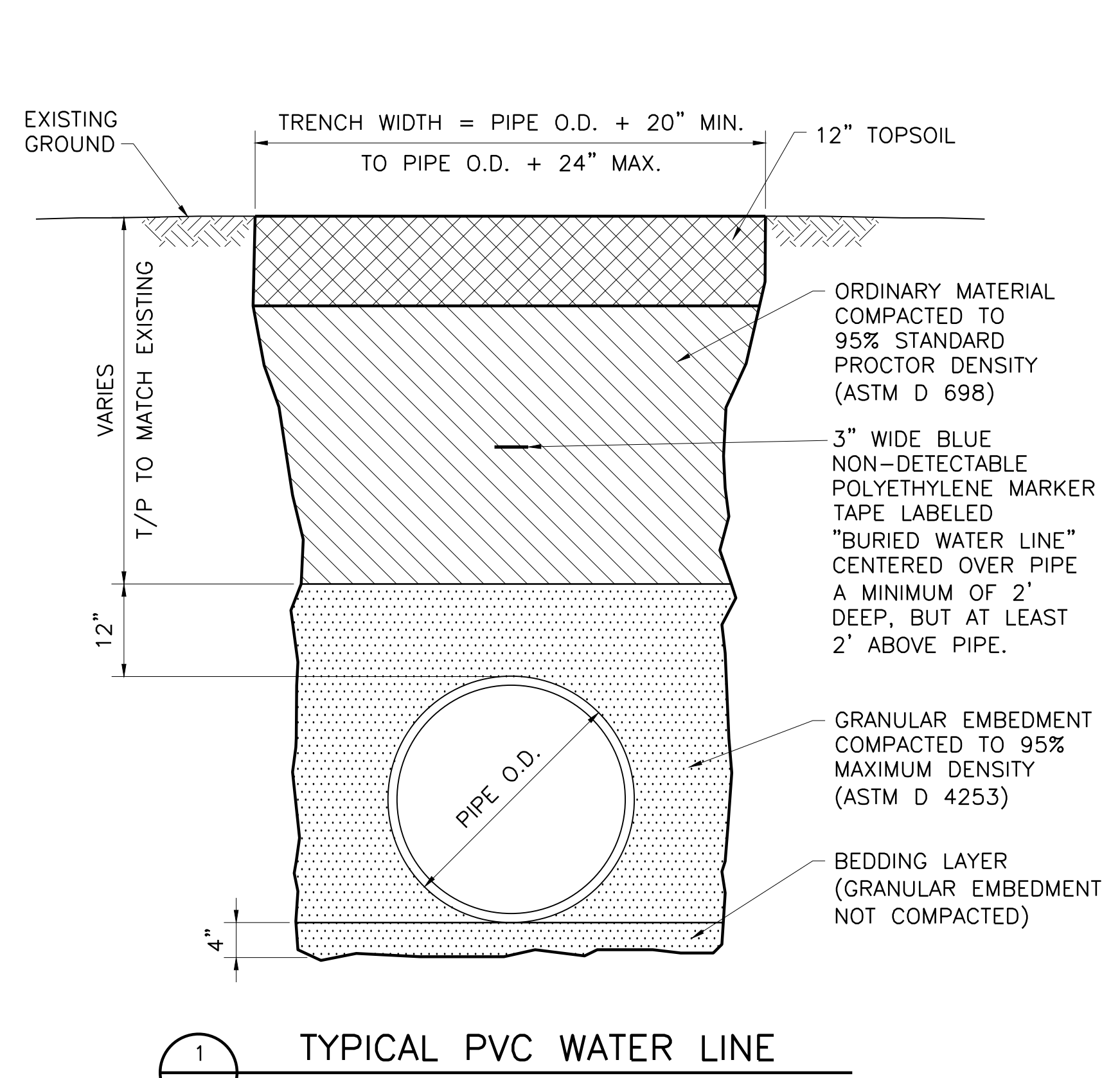
NORTH TEXAS MUNICIPAL WATER DISTRICT
NORTH MCKINNEY PIPELINE
 PHASE I AND II, PROJECT NO. 210
 PIPELINE
PLAN AND PROFILE
 STA 37+00 TO STA 49+00

NO.	ISSUE	BY	DATE	FRM. JOB NO.
1	RECORD DRAWING	ASM	1/22/16	NTD11224
2	ISSUED FOR CONSTRUCTION	ASM	2/05/14	DATE 1/22/2016
3	ADDENDUM NO. 1	ASM	10/25/13	DESIGNED WFS
4	VERIFY SCALE	ASM	10/25/13	DRAWN LMR

Bar is one inch on original drawing, if not one inch on this sheet, adjust scale.

SHEET **PL-4**

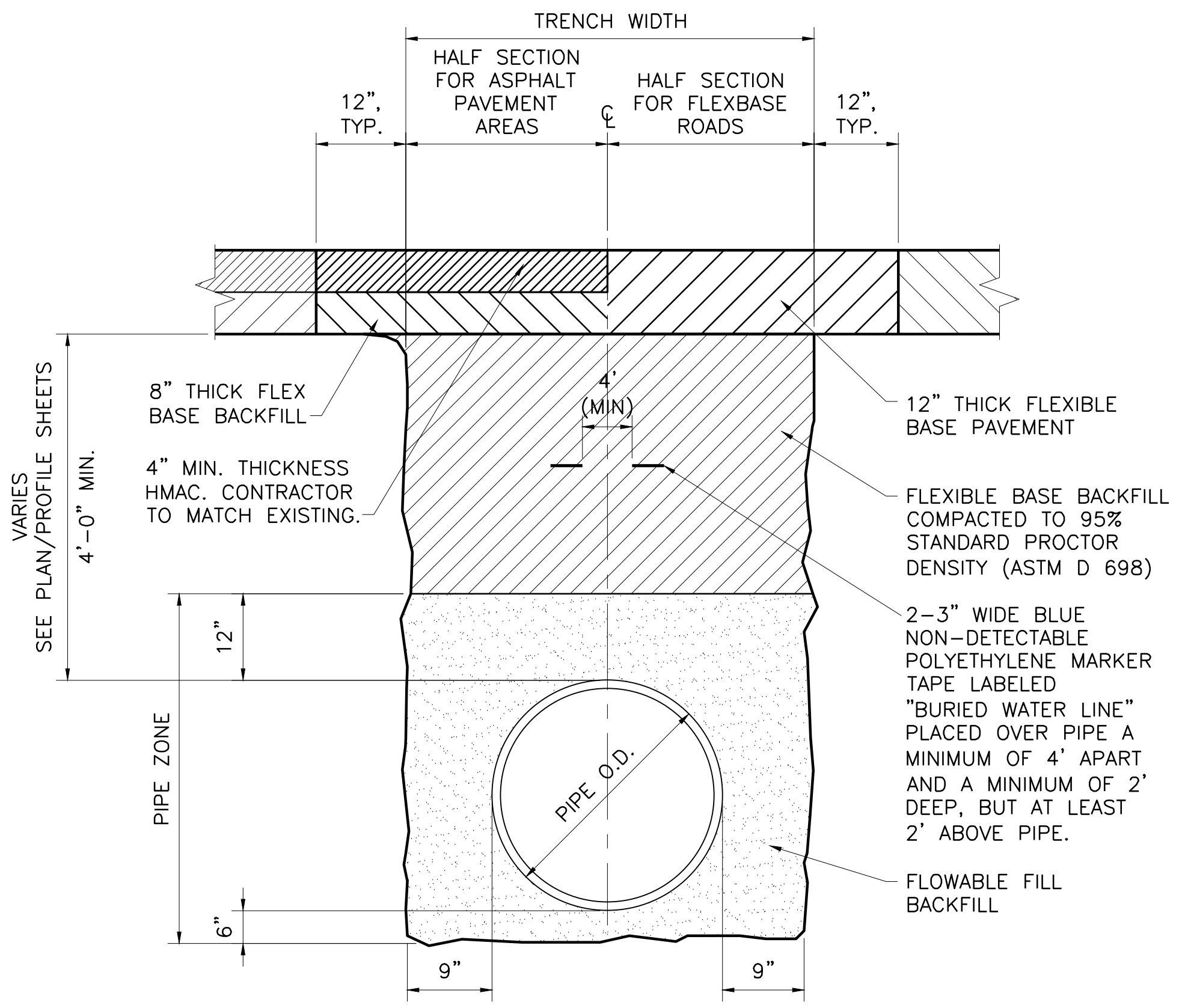
SEC. 10



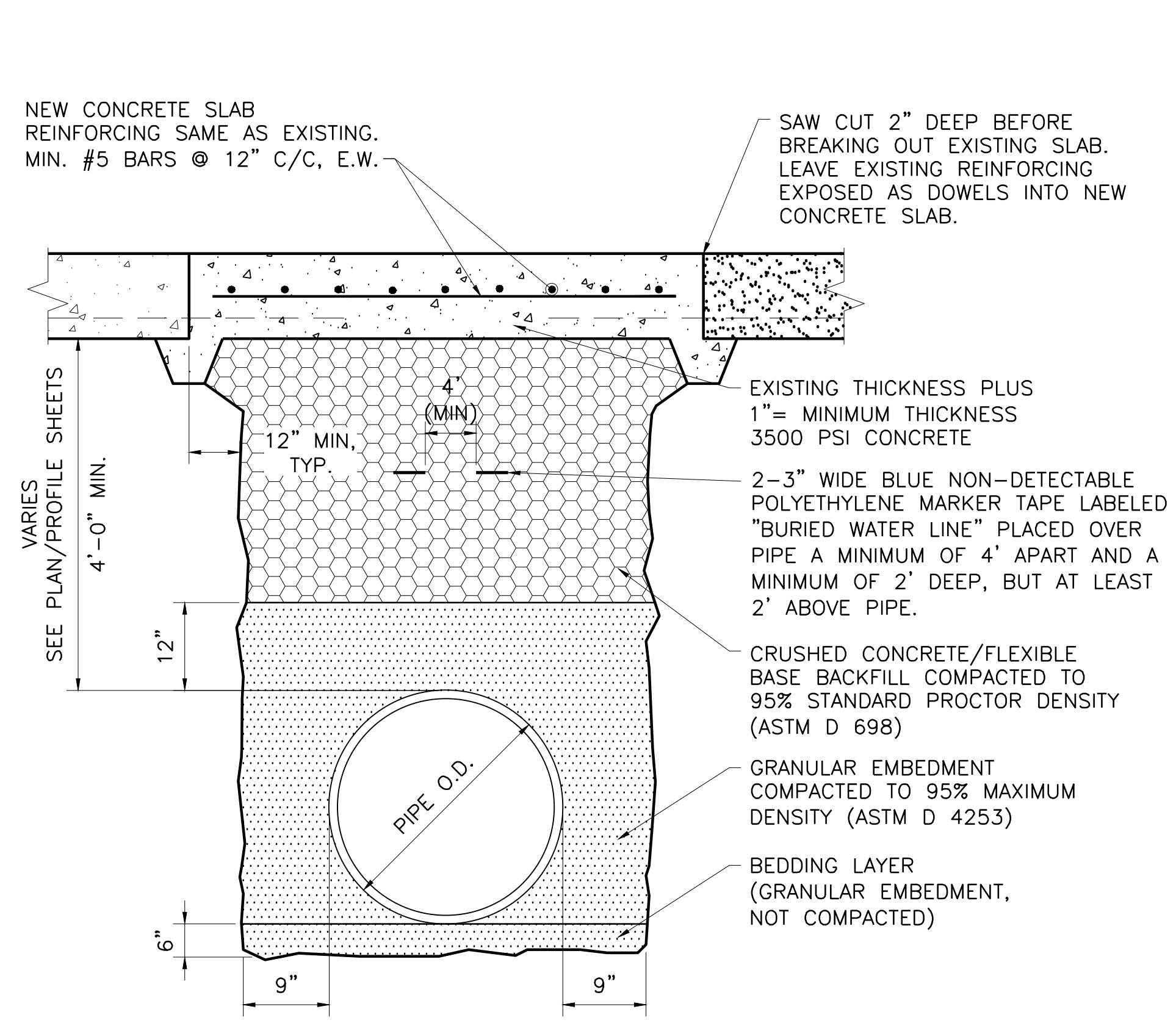
1
-
TYPICAL PVC WATER LINE
NOT TO SCALE

GENERAL NOTE:

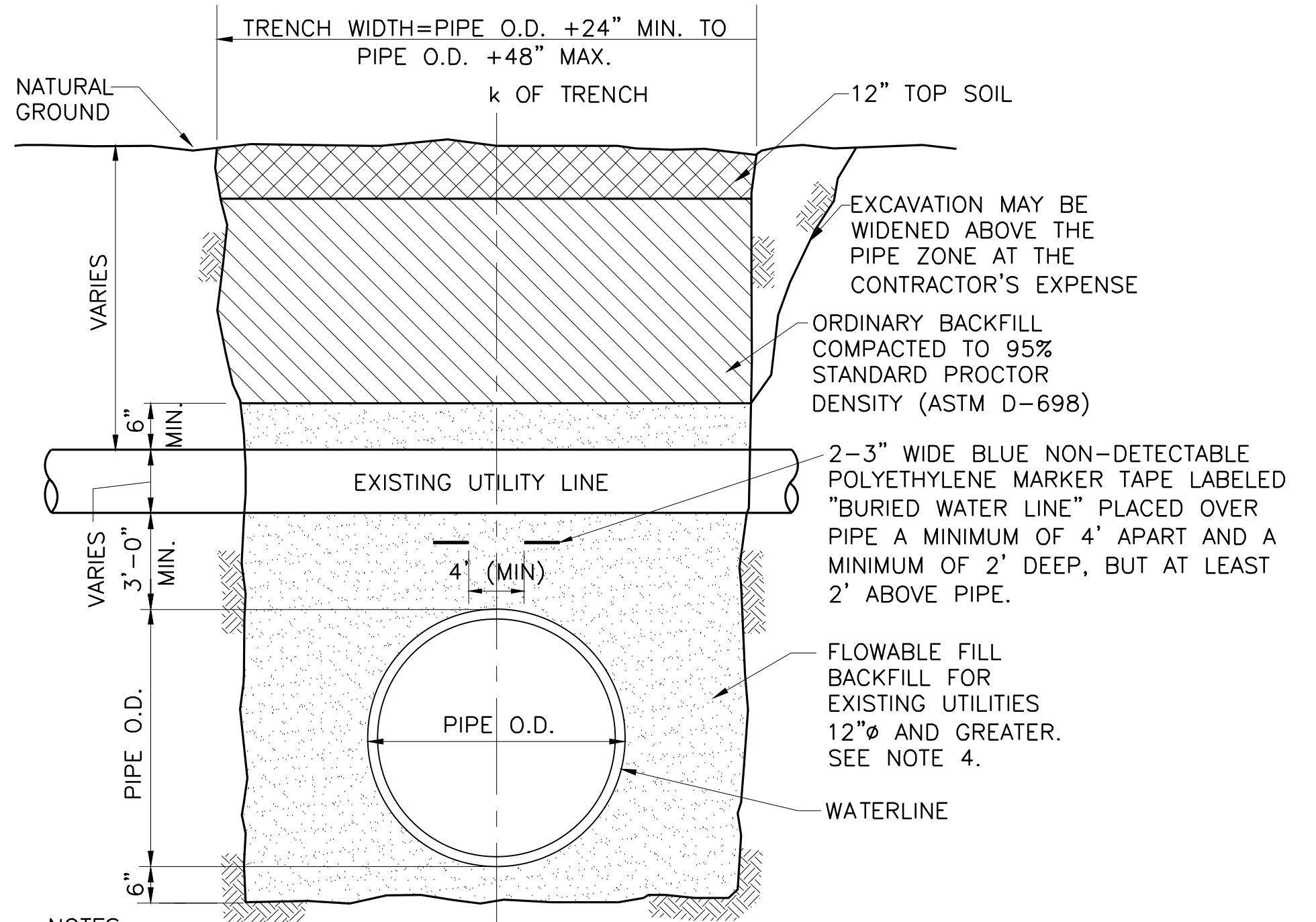
- IF TRENCH BOX IS USED, TRENCH WIDTH DIMENSION IS THE DISTANCE FROM THE INSIDE WALL OF TRENCH BOX TO INSIDE WALL OF TRENCH BOX.



2
-
TYPICAL TRENCH SECTION FOR OPEN CUT FLEX BASE ROADS, DRIVES, AND ASPHALT PAVEMENT AREAS
NOT TO SCALE

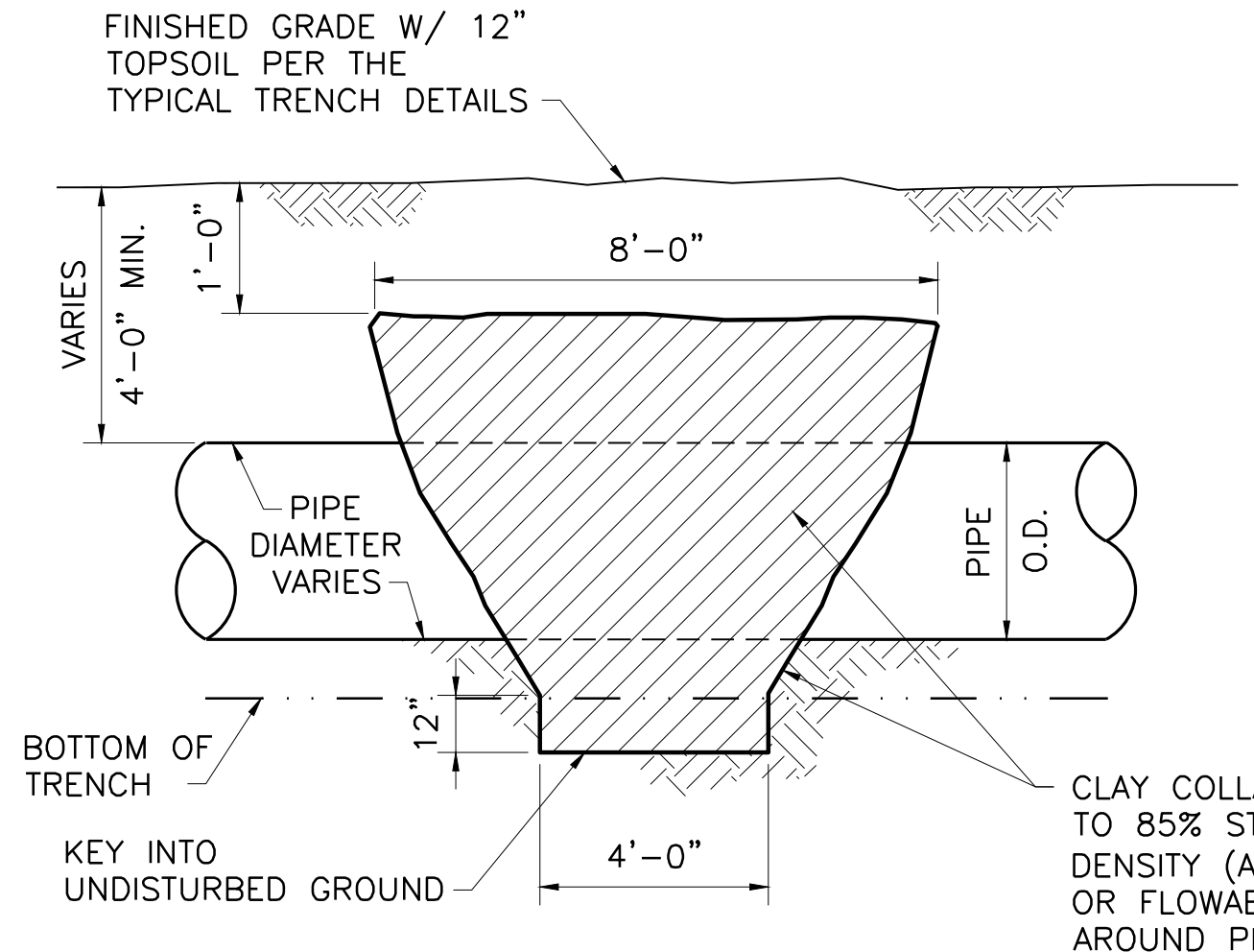


3
-
TYPICAL TRENCH SECTION FOR OPEN CUT CONCRETE ROADS
NOT TO SCALE



- NOTES:
- MINIMUM 3' SPACING BETWEEN UTILITY LINES AND PROPOSED PIPELINE.
 - THE CONTRACTOR SHALL BE REQUIRED TO USE WOOD MATS FOR CONSTRUCTION TRAFFIC OVER EXISTING GAS PIPELINES AND 12" AND LARGER WATER LINES.
 - THE CONTRACTOR SHALL CONTACT UTILITY OWNER AT LEAST (3) DAYS PRIOR TO CROSSING THE UTILITY.
 - FOR UTILITIES LESS THAN 12" DIA., USE GRANULAR EMBEDMENT COMPACTED TO 95% MAXIMUM INDEX DENSITY AS MEASURED BY ASTM D4253.
 - SEE SECTION 31 23 23.33 FOR FLOWABLE FILL SPECIFICATIONS.

4
-
UTILITY LINE CROSSING (>12" DIA.) DETAIL BY OPEN CUT
NOT TO SCALE

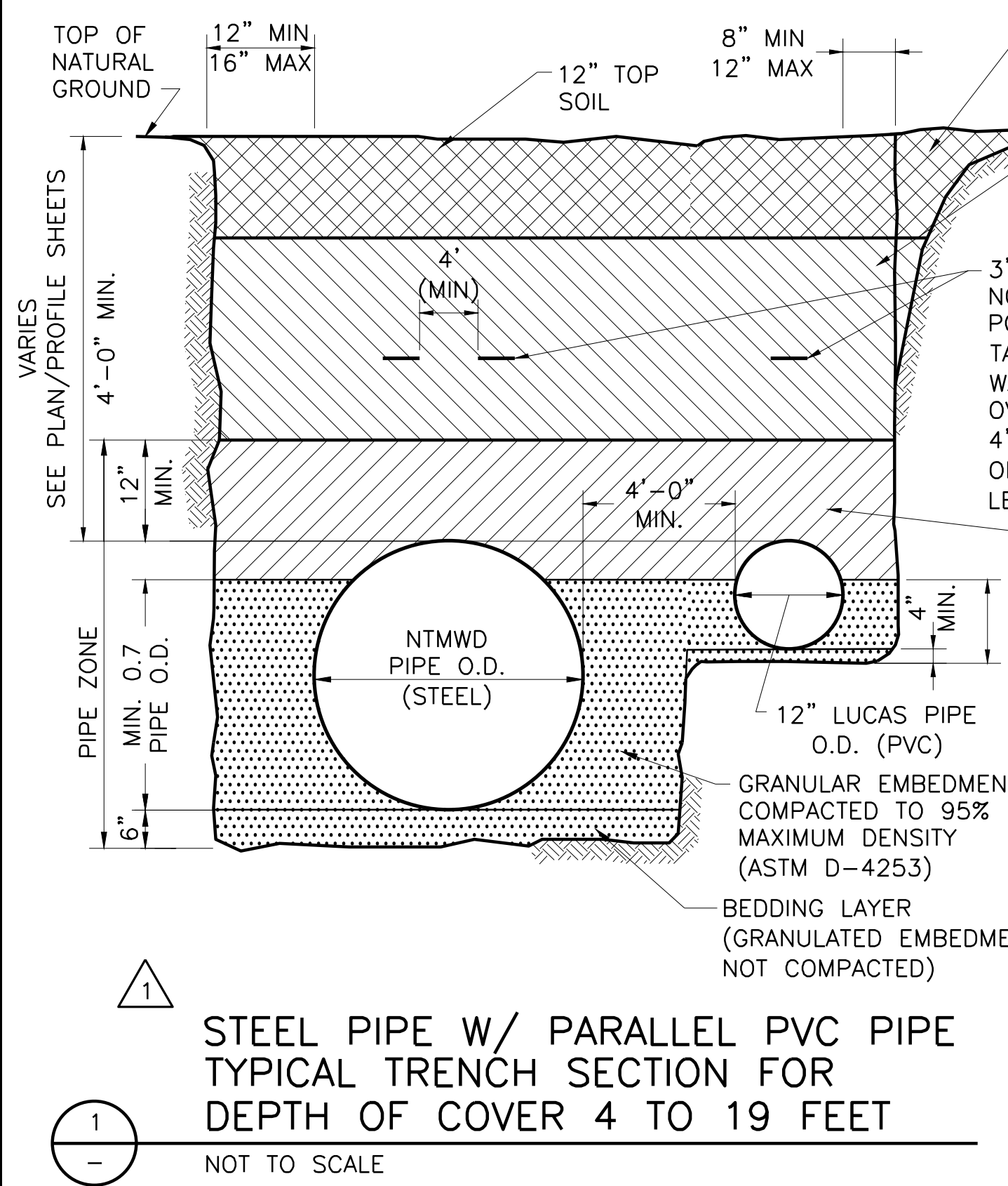


5
-
FLOWABLE FILL COLLAR DETAIL
NOT TO SCALE

- NOTES:
- CLAY SHALL HAVE P.I. NOT LESS THAN 18. CONTRACTOR TO SUBMIT LABORATORY DATA (BASIC SOIL CLASSIFICATION AND ATTERBERG LIMITS) FOR PROPOSED CLAY MATERIAL.
 - SEE PLAN & PROFILE SHEETS FOR LOCATION OF COLLARS.
 - FLOWABLE FILL BACKFILL MUST BE USED WHERE CALLED FOR AND MAY BE USED IN PLACE OF CLAY.

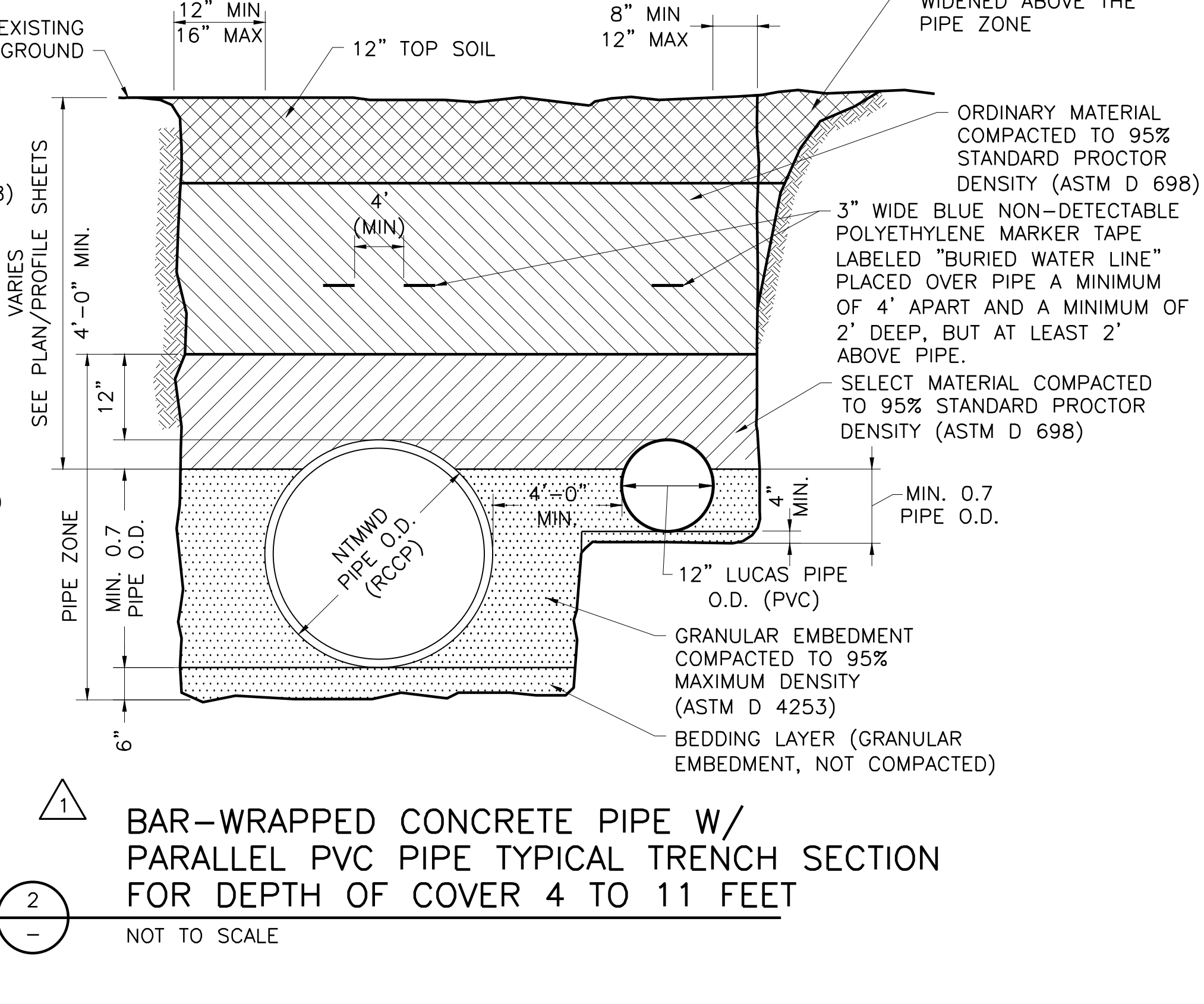
This Record Drawing is a combination of the sealed engineering contract drawings for this project, modified by information furnished by the contractor reflecting changes in the Project made during construction. The original sealed drawings are on file at the offices of
FREESE AND NICHOLS, INC.
4055 INTERNATIONAL PLAZA, SUITE 200
FORT WORTH, TEXAS 76109-4895
(817) 735-7300
RECORD DRAWINGS PREPARED ON:
1/22/2016

User: LMR [N:\UTIL\DRAWINGS\CV-PPL-DT-TRCH02.DWG LAYOUT: Layout1 05/14/2013 12:30:22 P.M. LRS: 1.00 PSLTS: 1 2 REFERENCE FILES: N:\STANDARD\34BORDER and IN\STANDARD\SEAL-ASM	
NORTH TEXAS MUNICIPAL WATER DISTRICT NORTH MCKINNEY PIPELINE PHASE I AND II, PROJECT NO. 210	
STANDARD DETAILS TRENCH DETAILS	
NO. ISSUE SHEET SEC.	DATE DESIGNED DRAWN REVISION FILE NAME CHECKED ASM CV-PPL-DT-TRCH02
RECORD DRAWING ISSUED FOR CONSTRUCTION VERIFY SCALE	NTD11224 DATE 1/22/2016 WRS LMR ASM ASM 1/22/16 2/05/14 Bar is one inch on original drawing, if not one inch on this sheet, adjust scale.
DT-2 41	Freese and Nichols, Inc. Texas Registered Engineering Firm F-2144 2711 North Rossell, 33rd Floor Fort Worth, TX 76109-4895 Phone = (214) 217-2200 Fax = (214) 217-2201 THE SEAL IS THE PROPERTY OF THE ENGINEER. IT IS TO BE USED ONLY FOR THE PROJECT AND FOR THE PERIOD OF TIME SPECIFIED IN THE NOTIFICATION OF THE RESPONSIBLE ENGINEER. IT IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.



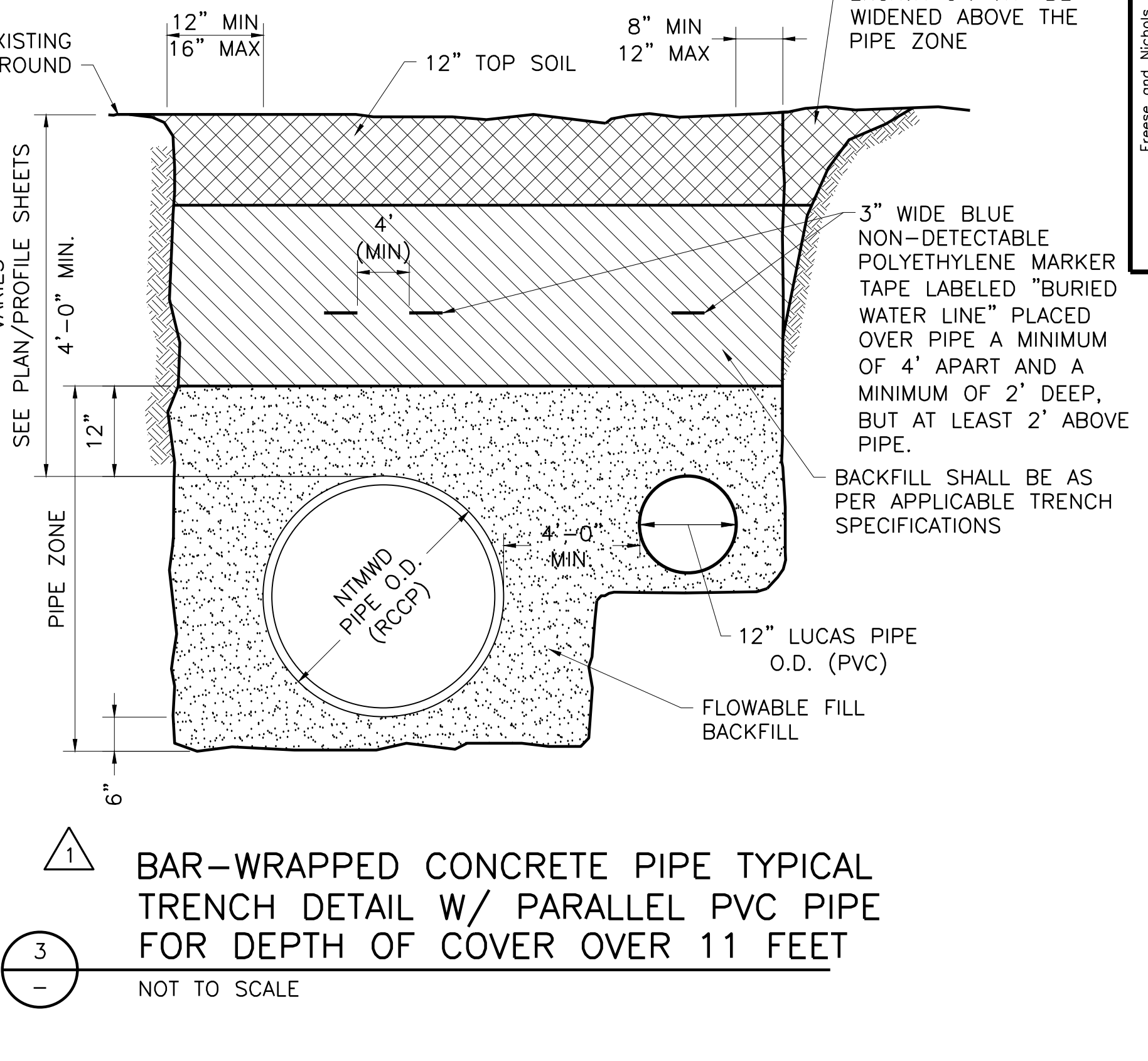
**STEEL PIPE W/ PARALLEL PVC PIPE
TYPICAL TRENCH SECTION FOR
DEPTH OF COVER 4 TO 19 FEET**

NOT TO SCALE



**BAR-WRAPPED CONCRETE PIPE W/
PARALLEL PVC PIPE TYPICAL TRENCH SECTION
FOR DEPTH OF COVER 4 TO 11 FEET**

NOT TO SCALE

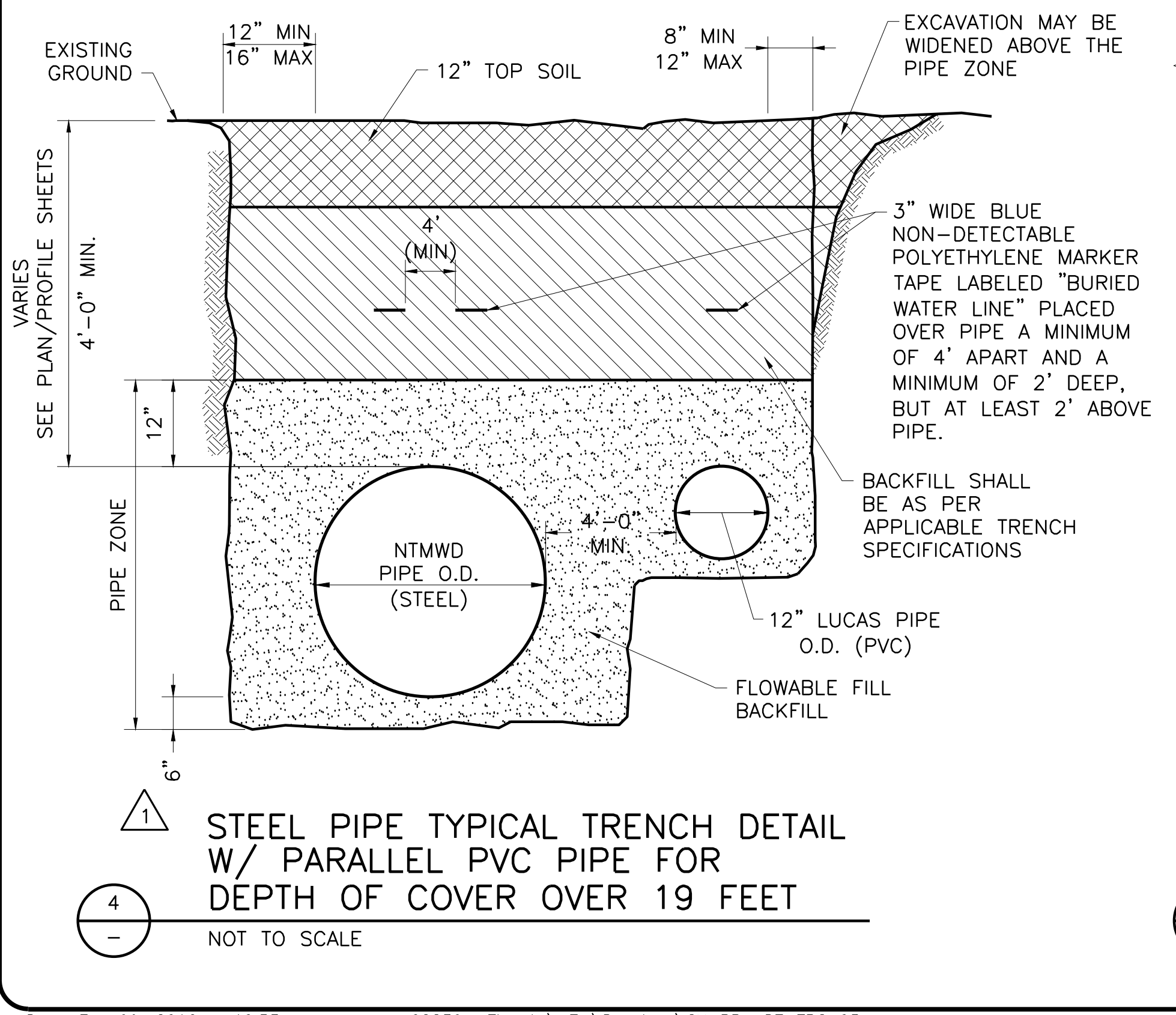


**BAR-WRAPPED CONCRETE PIPE TYPICAL
TRENCH DETAIL W/ PARALLEL PVC PIPE
FOR DEPTH OF COVER OVER 11 FEET**

NOT TO SCALE

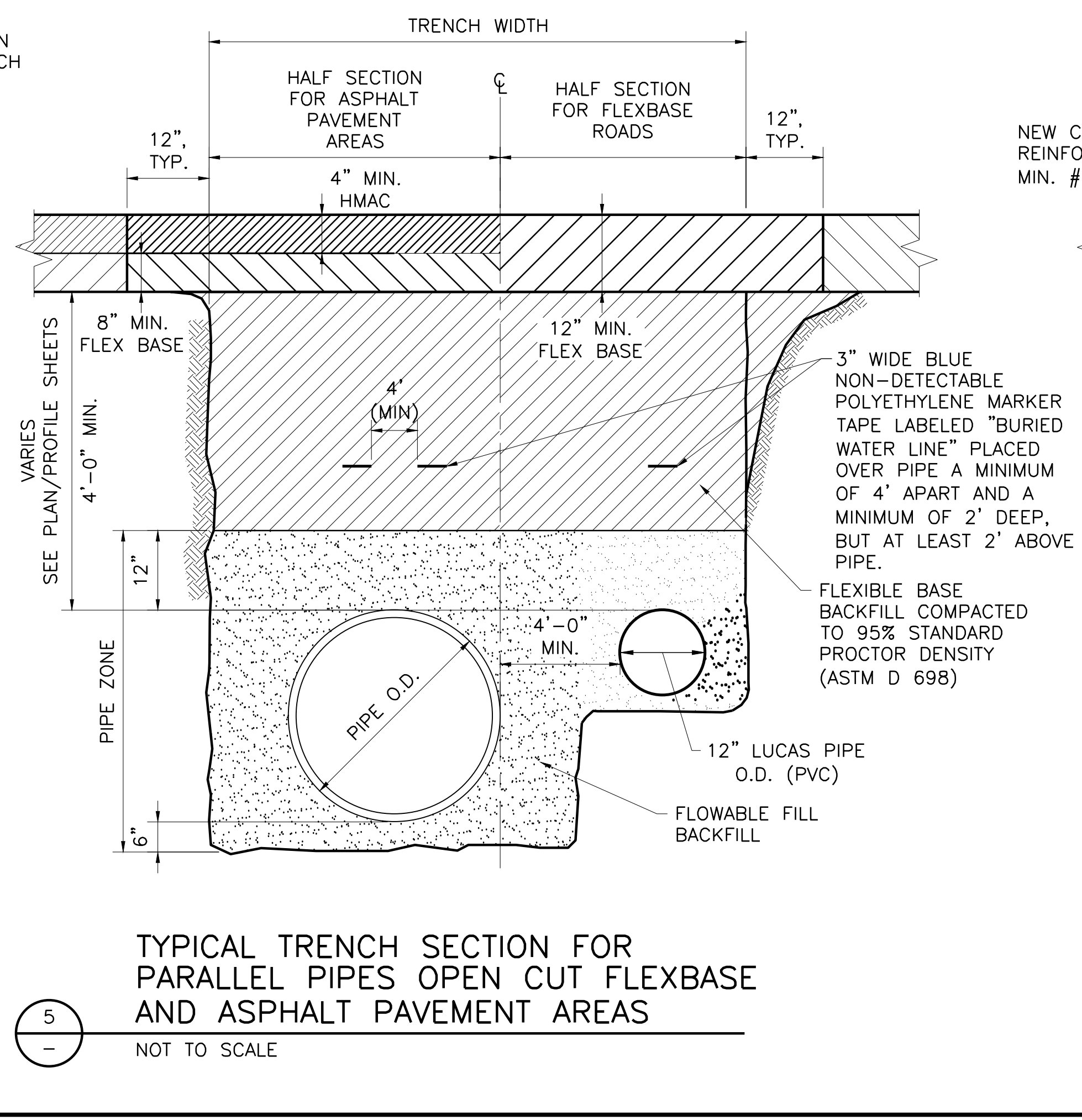
GENERAL NOTE:

1. IF TRENCH BOX IS USED, TRENCH WIDTH DIMENSION IS THE DISTANCE FROM THE INSIDE WALL OF TRENCH BOX TO INSIDE WALL OF TRENCH BOX.



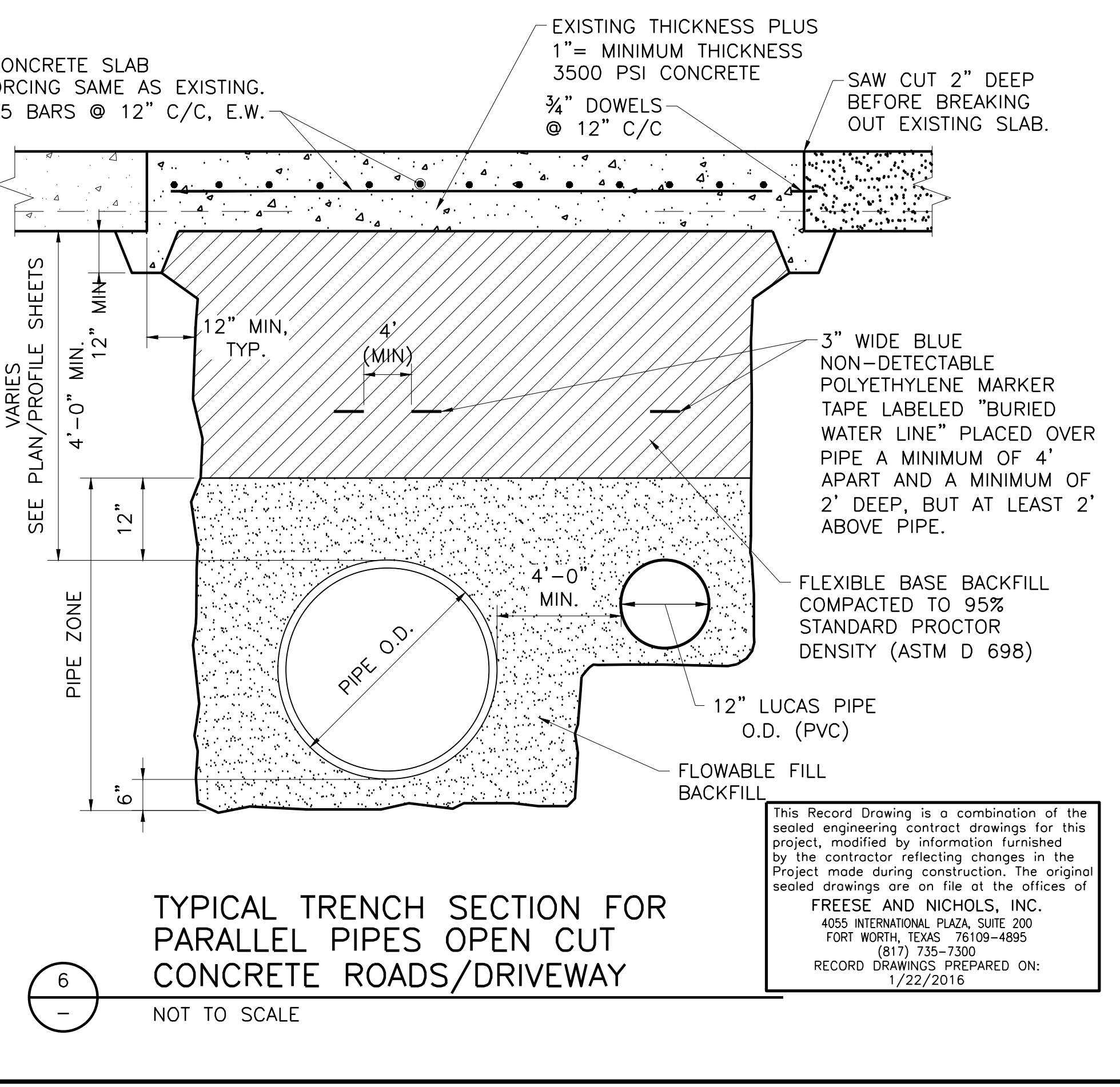
**STEEL PIPE TYPICAL TRENCH DETAIL
W/ PARALLEL PVC PIPE FOR
DEPTH OF COVER OVER 19 FEET**

NOT TO SCALE



**TYPICAL TRENCH SECTION FOR
PARALLEL PIPES OPEN CUT FLEXBASE
AND ASPHALT PAVEMENT AREAS**

NOT TO SCALE



**TYPICAL TRENCH SECTION FOR
PARALLEL PIPES OPEN CUT
CONCRETE ROADS/DRIVEWAY**

NOT TO SCALE

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FREESIE AND NICHOLS, INC.
 4055 INTERNATIONAL PLAZA, SUITE 200
 FORT WORTH, TEXAS 76109-4895
 (817) 735-7300
 RECORD DRAWINGS PREPARED ON:
 1/22/2016

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Freese and Nichols, Inc.
 Texas Registered Engineering Firm F-2144

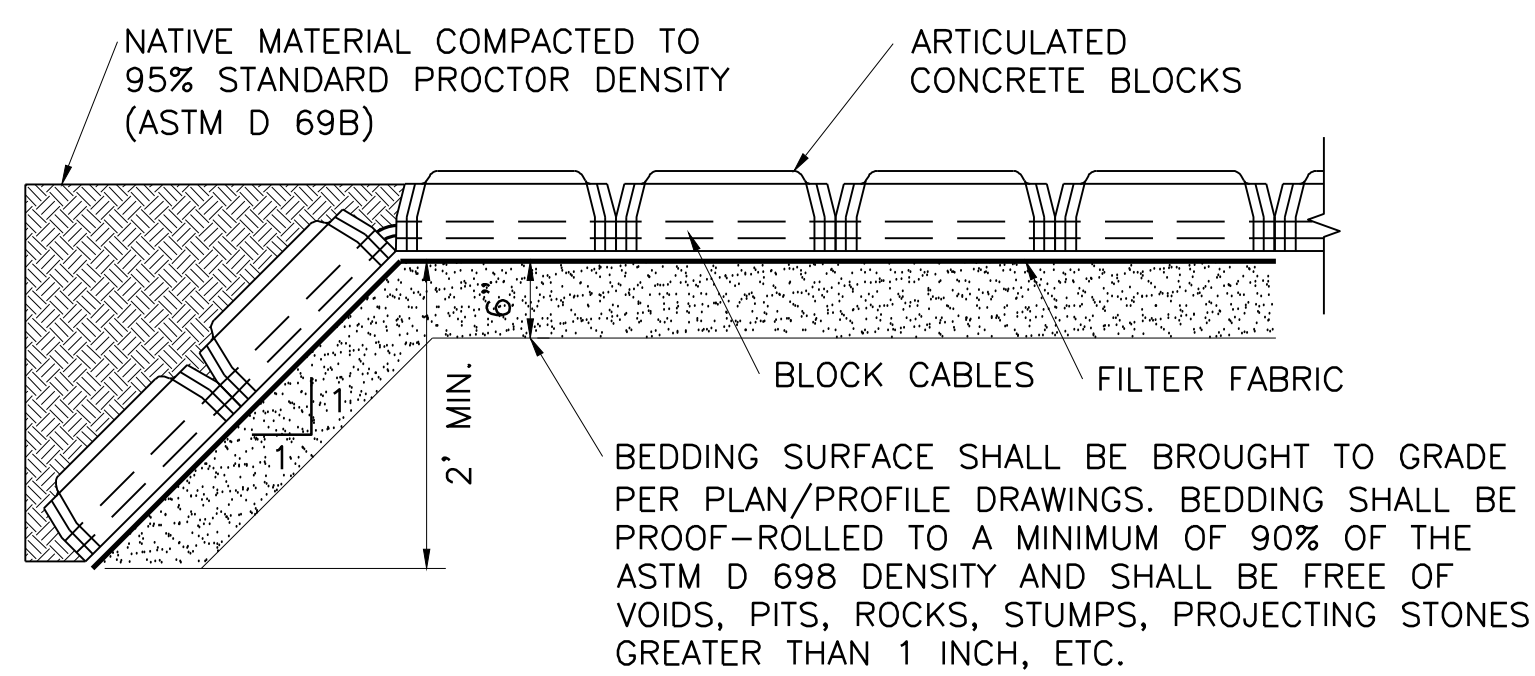
FREESIE AND NICHOLS
 2711 North Rossell, 33rd Floor
 Fort Worth, TX 76164
 Phone = (214) 217-2200
 Fax = (214) 217-2201

NORTH TEXAS MUNICIPAL WATER DISTRICT
NORTH MCKINNEY PIPELINE
 PHASE I AND II, PROJECT NO. 210
 STANDARD DETAILS

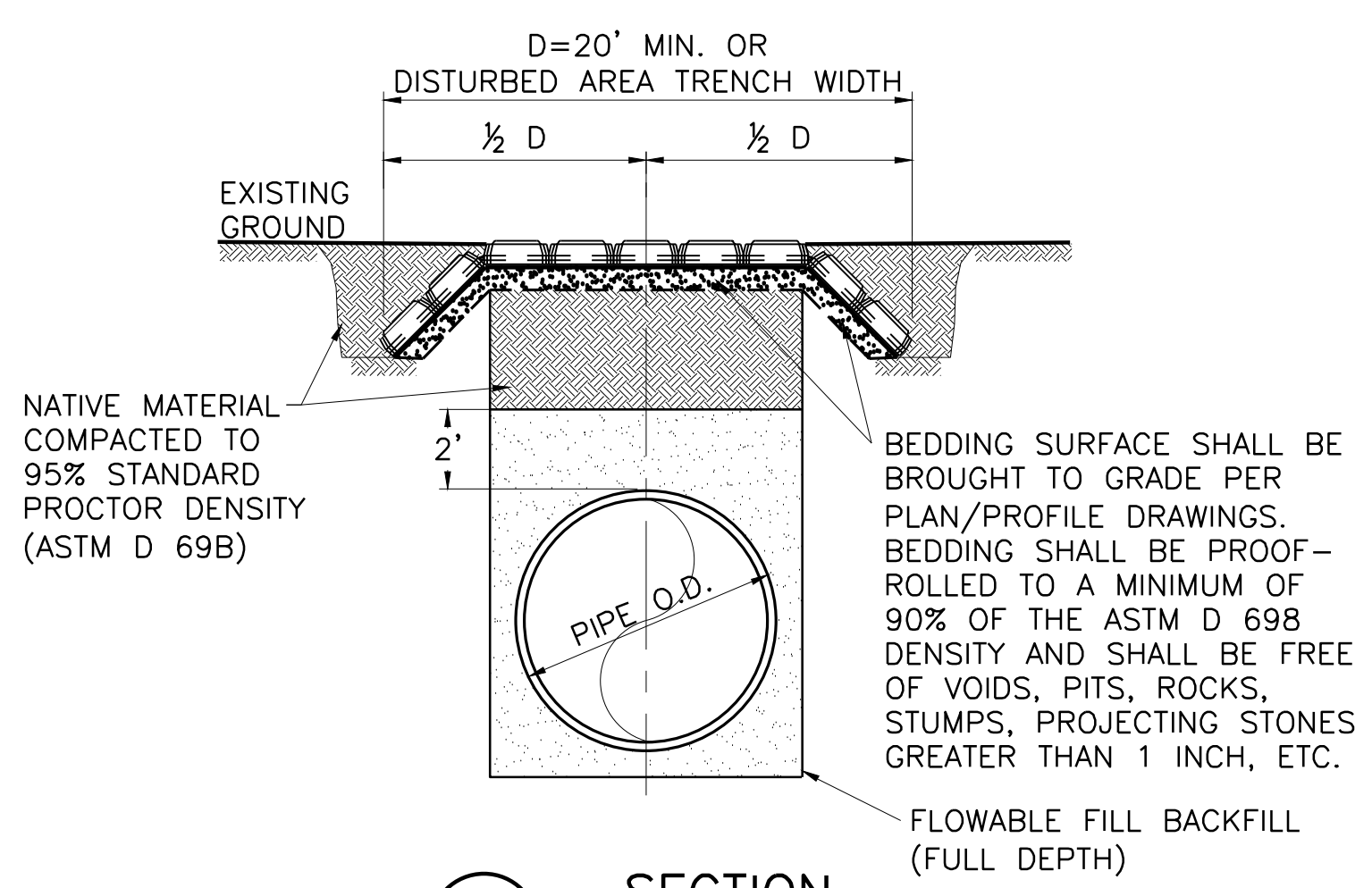
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1	RECORD DRAWING	1/22/16	ASM	1/22/2016	WRS	NTD11224	
2	ISSUED FOR CONSTRUCTION	2/05/16	ASM	2/05/16	LMR		
3	ADDENDUM NO. 2	10/31/13	ASM	10/31/13	REVISED		

Bar is one inch on original drawing. If not one inch on this sheet, adjust scale.
 VERIFY SCALE 0

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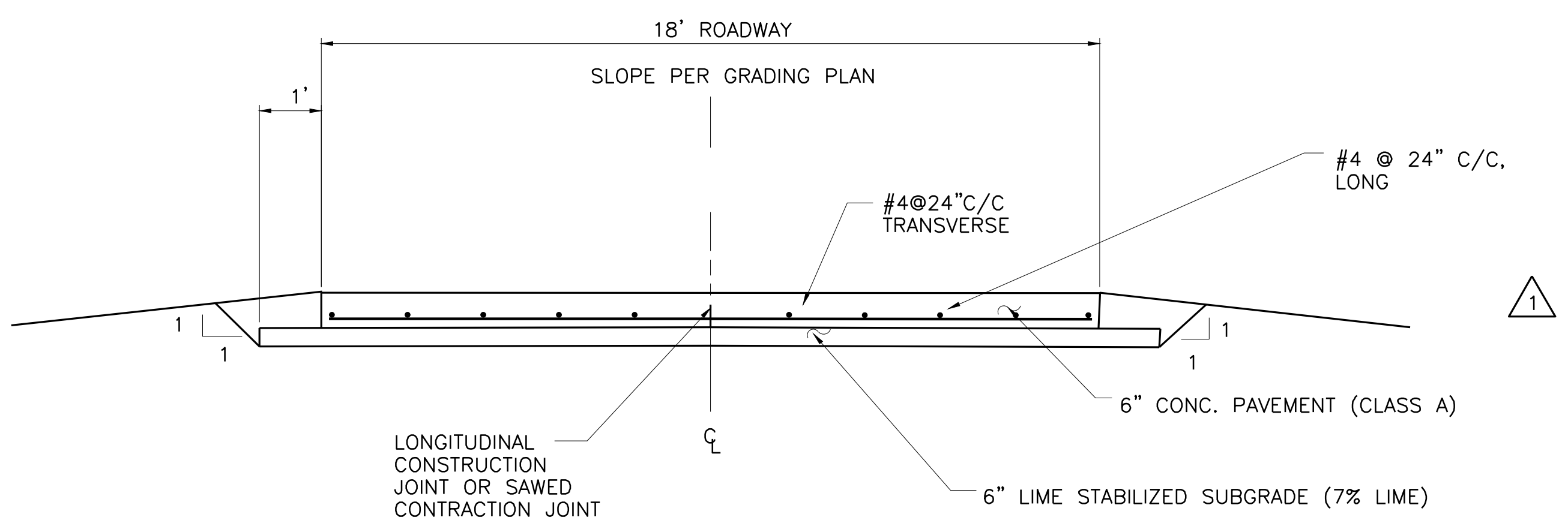


1A
 -
 TIE DOWN DETAIL - ARTICULATED CONCRETE BLOCK AT CONNECTION WITH NATURAL GROUND
 NOT TO SCALE

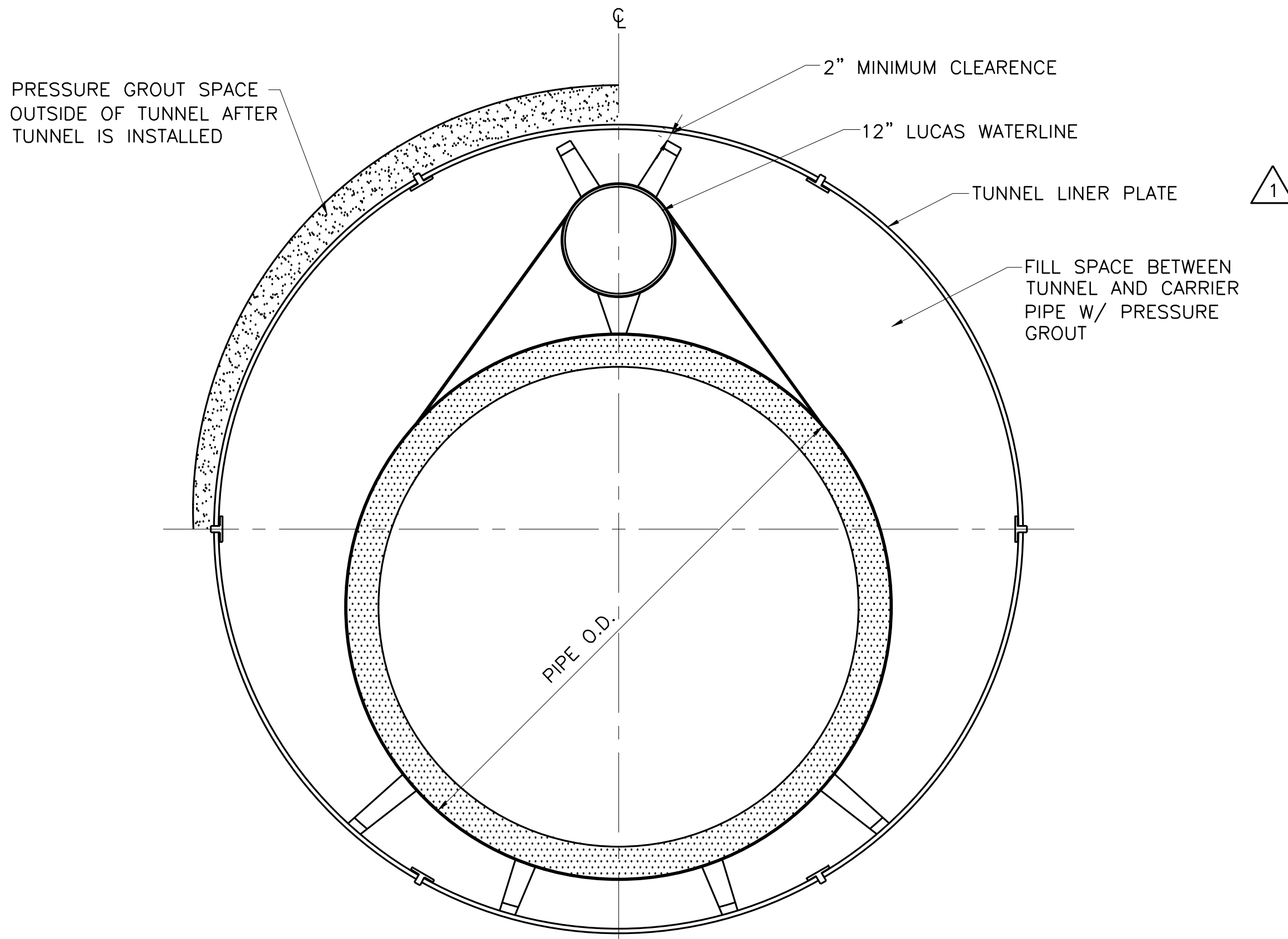


1B
 -
 SECTION
 NOT TO SCALE
 NOTE: REFER TO TRENCH DETAILS FOR ADDITIONAL INFORMATION

1
 1
 ARTICULATED CONCRETE BLOCKS
 NOT TO SCALE



2
 -
 TYPICAL CONCRETE PAVEMENT SECTION
 NOT TO SCALE



3
 -
 INSTALLATION IN TUNNEL LINER FOR DOUBLE CARRIER PIPE
 NOT TO SCALE

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FREESSE AND NICHOLS, INC.
 4055 INTERNATIONAL PLAZA, SUITE 200
 FORT WORTH, TEXAS 76109-4895
 RECORD DRAWINGS PREPARED ON: 1/22/2016

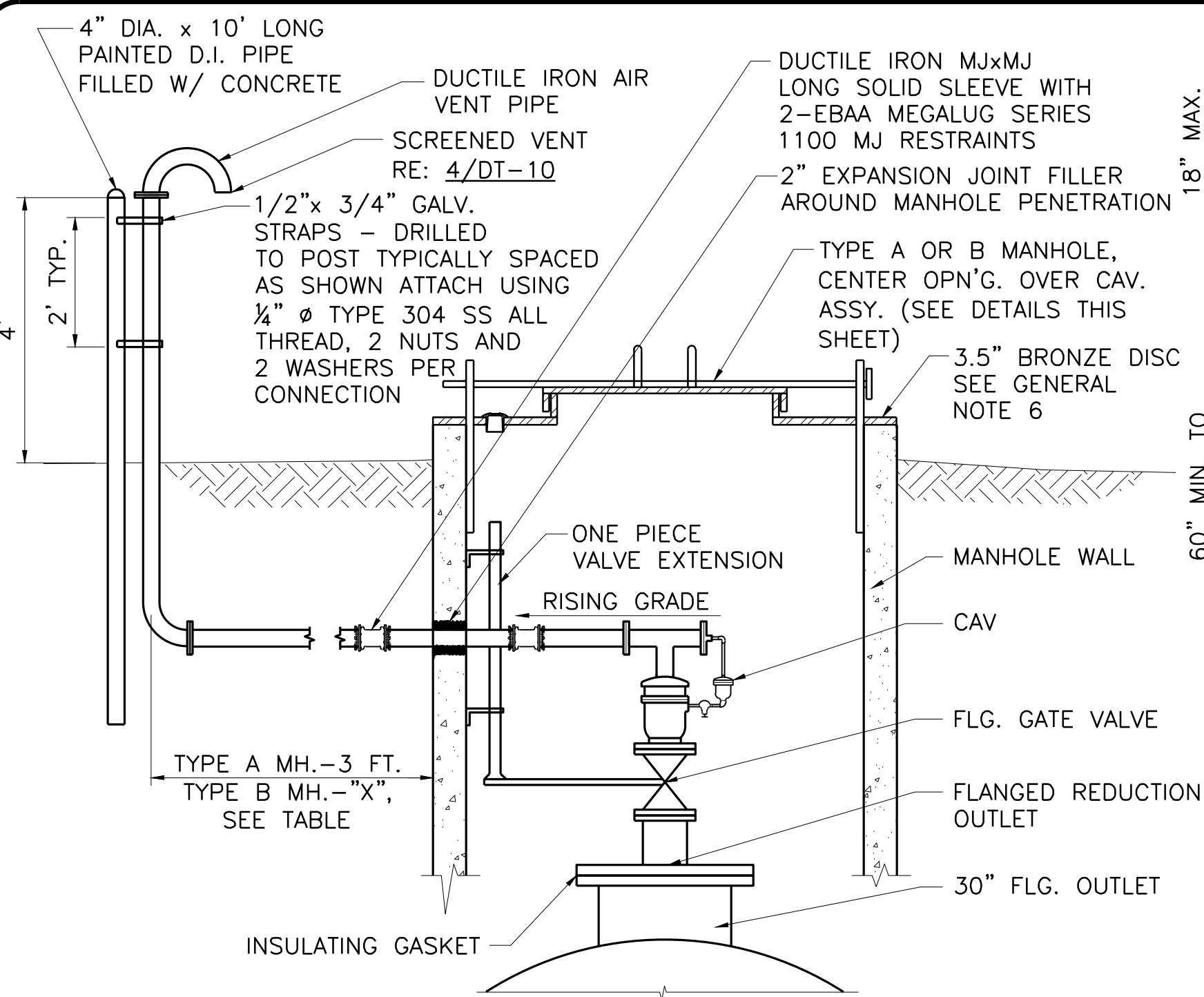
Freese and Nichols, Inc.
 Texas Registered Engineering Firm F-2144

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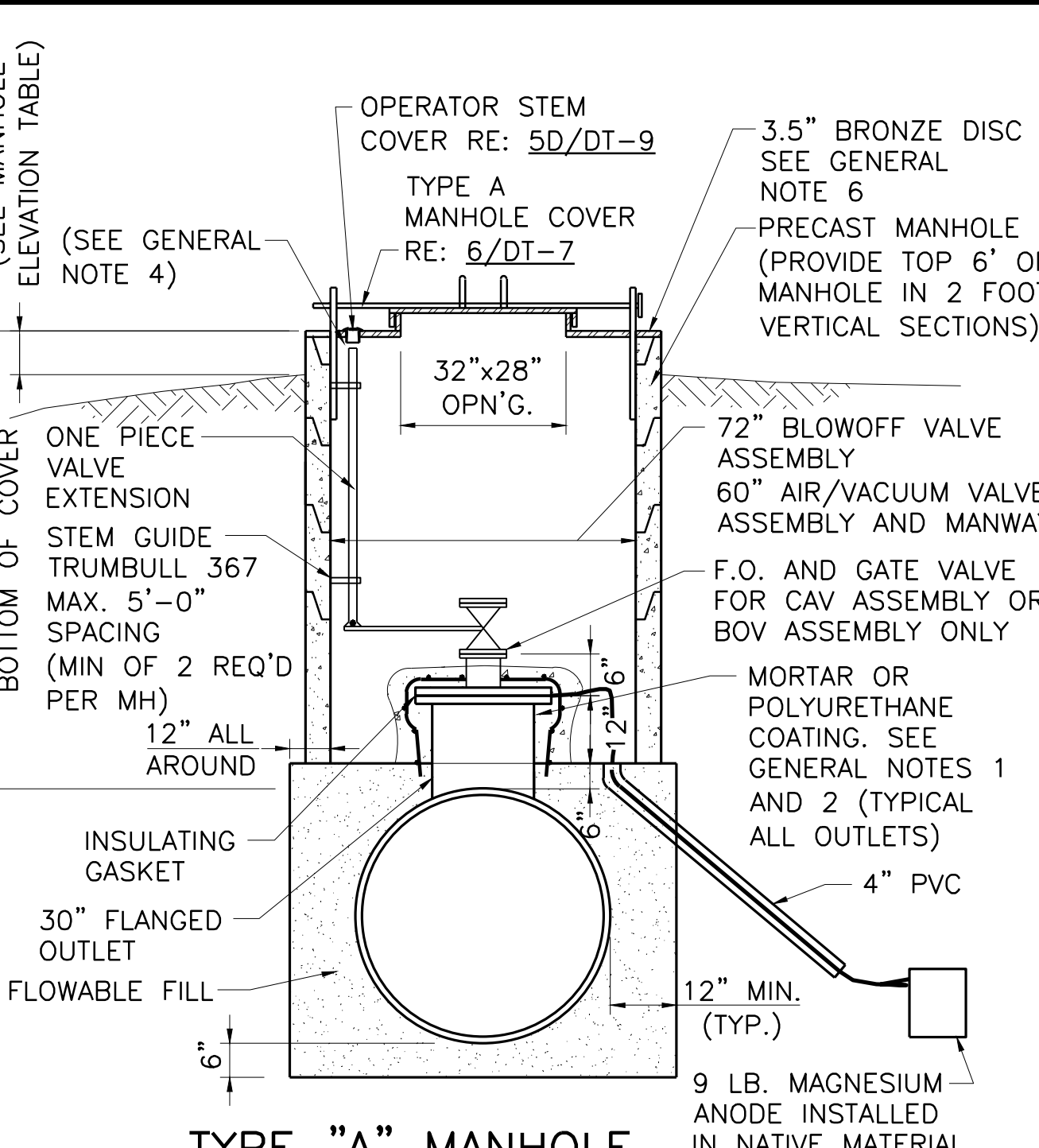
FREESSE AND NICHOLS
 2711 North Rossell, 33rd Floor
 Fort Worth, Texas 76109-4895
 Phone - (214) 217-2200
 Fax - (214) 217-2201

NORTH TEXAS MUNICIPAL WATER DISTRICT
NORTH MCKINNEY PIPELINE
 PHASE I AND II, PROJECT NO. 210
 STANDARD DETAILS
MISCELLANEOUS DETAILS

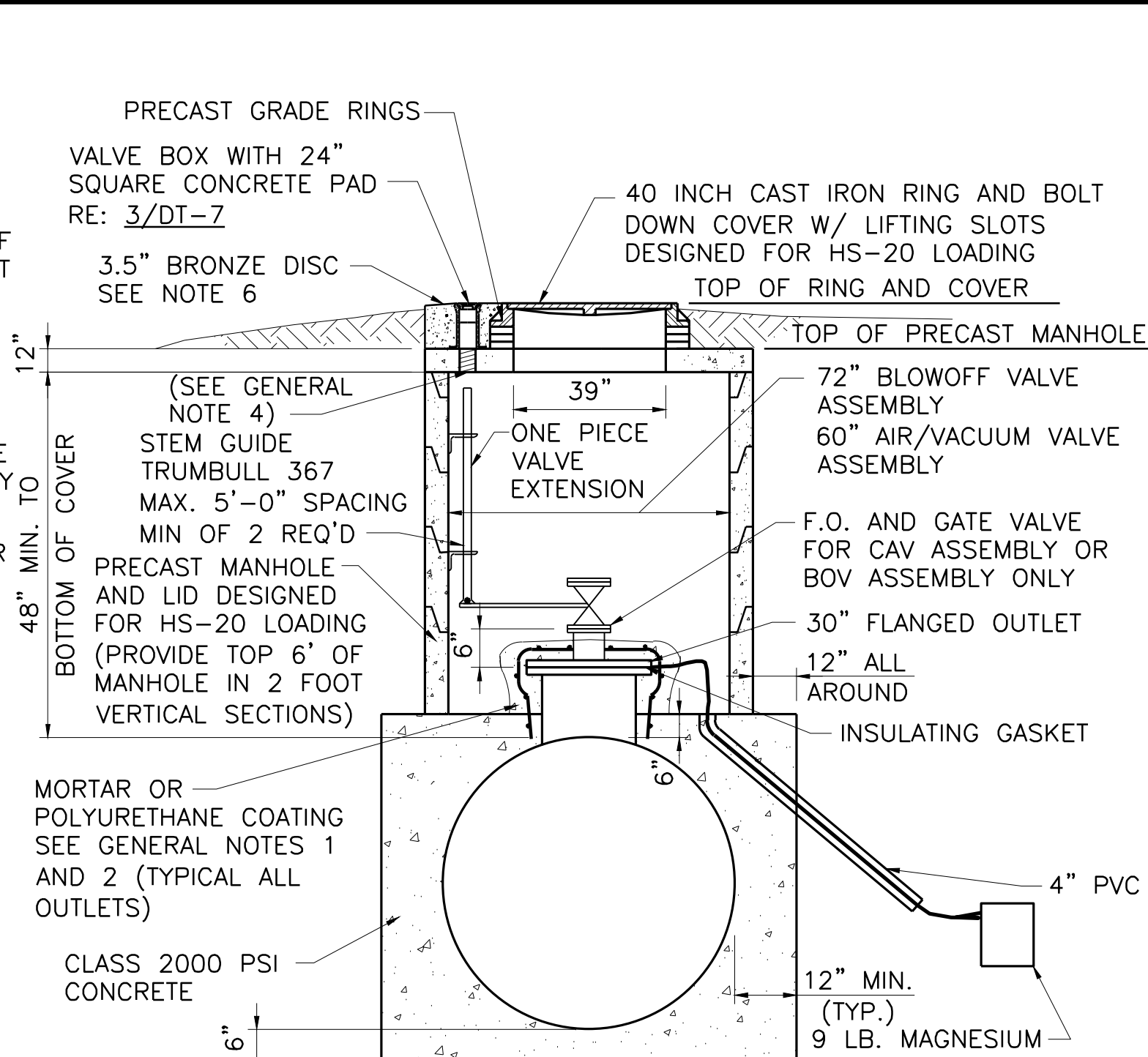
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RECORD DRAWING	ASM	1/22/16	NTD11224
ISSUED FOR CONSTRUCTION	ASM	2/05/14	DATE 1/22/2016
ADDENDUM NO. 2	ASM	10/31/13	DESIGNED WRS
VERIFY SCALE	ASM	10/31/13	DRAWN LMR
Bar is one inch on original drawing; if not one inch on this sheet, adjust scale.	FILE NAME	CV-PPL-DT-CREK	CHECKED ASM



1 CAV FOR TREATED WATER PIPELINE
NOT TO SCALE



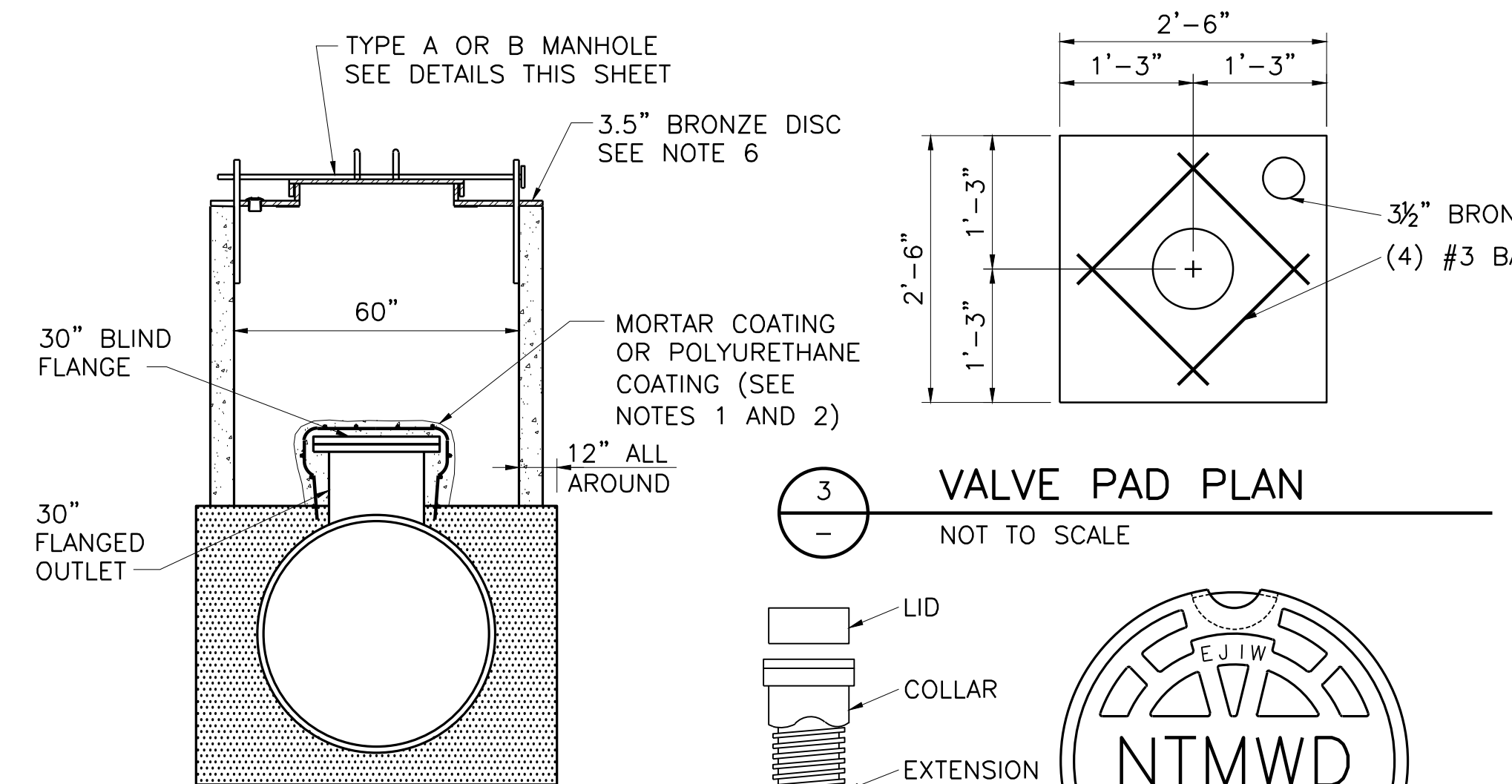
7 TYPE "A" MANHOLE LOCATIONS NOT IN PAVEMENT
NOT TO SCALE



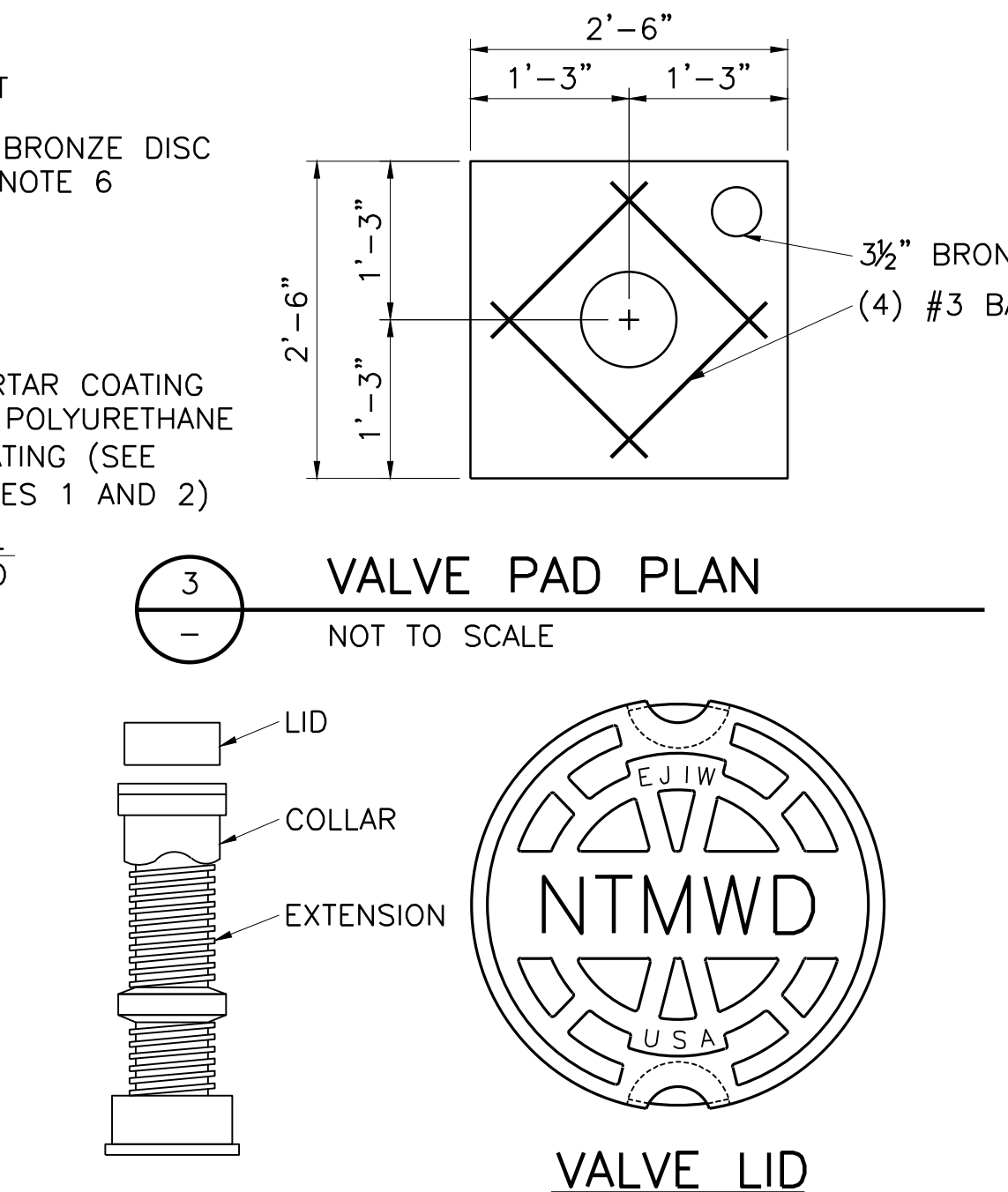
8 TYPE "B" MANHOLE TRAFFIC RATED
NOT TO SCALE

TOP OF PRECAST MANHOLE ELEVATIONS				
STATION	MH TYPE	APPURTENANCE	TOP OF PRECAST MANHOLE ELEVATION	"X"
1+04	"B"	BFV	622.50'	
1+25	"B"	6" CAV	622.50'	
23+00	"B"	12" BOV	601.46'	
27+50	"B"	6" CAV	606.84'	
29+90	"B"	12" BOV	596.27'	
38+70	"B"	ACCESS MW	608.23'	
40+95	"B"	ACCESS MW	610.32'	
51+07	"B"	ACCESS MW	616.85'	
57+03	"A"	ACCESS MW	621.95'	
72+50	"A"	6" CAV	636.85'	
89+95	"A"	ACCESS MW	626.57'	
91+70	"A"	ACCESS MW	626.54'	
107+23	"A"	6" CAV	617.95'	
143+15	"A"	12" BOV	535.18'	
146+55	"A"	6" CAV	542.30'	
165+00	"A"	ACCESS MW	524.64'	
182+40	"A"	ACCESS MW	521.48'	
184+63	"A"	12" BOV	521.15'	
200+00	"A"	ACCESS MW	517.97'	
215+00	"A"	6" CAV	524.85'	
217+91	"A"	12" BOV	521.74'	
223+04	"A"	ACCESS MW	521.45'	
242+00	"A"	ACCESS MW	525.61'	
263+57	"B"	6" CAV	555.45'	
263+96	"B"	12" BOV	555.76'	
271+79	"B"	ACCESS MW	571.90'	
276+50	"B"	ACCESS MW	576.74'	
294+80	"B"	ACCESS MW	586.78'	
296+10	"B"	ACCESS MW	586.93'	
310+88	"B"	6" CAV	594.50'	
316+56	"B"	ACCESS MW	587.15'	
318+74	"B"	ACCESS MW	583.81'	
324+90	"A"	12" BOV	579.71'	
342+08	"B"	6" CAV	582.60'	
342+28	"B"	BFV	582.60'	
342+76	"A"	12" BOV	583.90'	
377+60	"A"	6" BOV	595.56'	
378+16	"A"	4" CAV	595.02'	

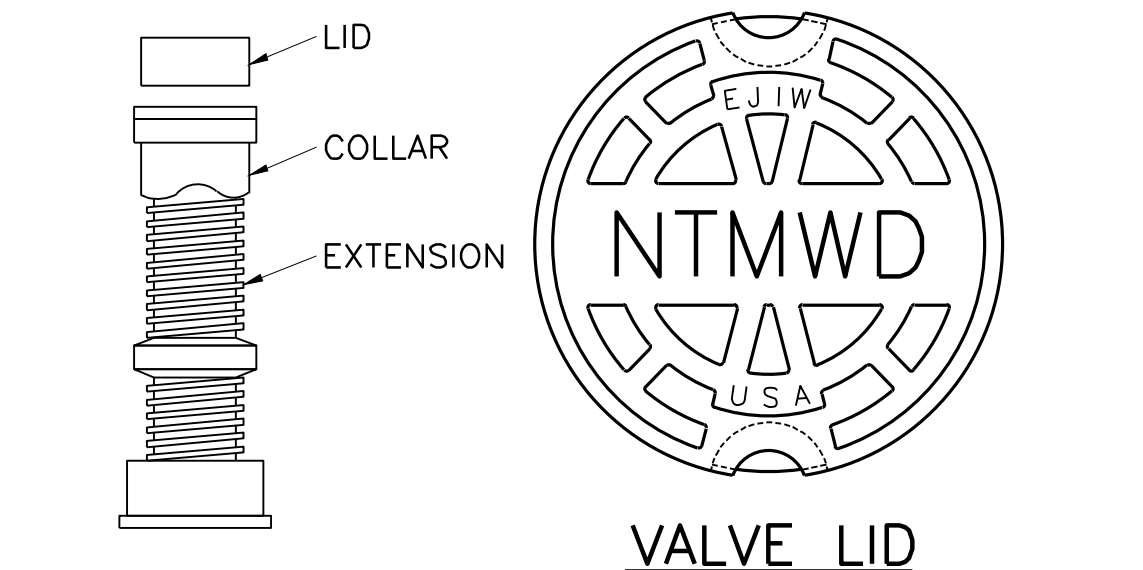
- NOTES:
- A PERMANENTLY ATTACHED VALVE STEM EXTENSION SHALL BE REQUIRED FOR ANY VALVE WHOSE OPERATING NUT IS LOCATED IN EXCESS OF 2 FEET BELOW THE TOP OF VALVE BOX. THIS EXTENSION SHALL BE OF SUFFICIENT LENGTH TO ENSURE THAT ITS TOP IS WITHIN 4" OF THE VALVE BOX COVER. VALVE STEM EXTENSION SHALL BE 1" DIA. SOLID STEEL ROD.
 - INSTALL 3/2"Ø BRONZE MARKERS, BERNTSEN C35DB.



2 ACCESS MANWAY
NOT TO SCALE



3 VALVE PAD PLAN
NOT TO SCALE

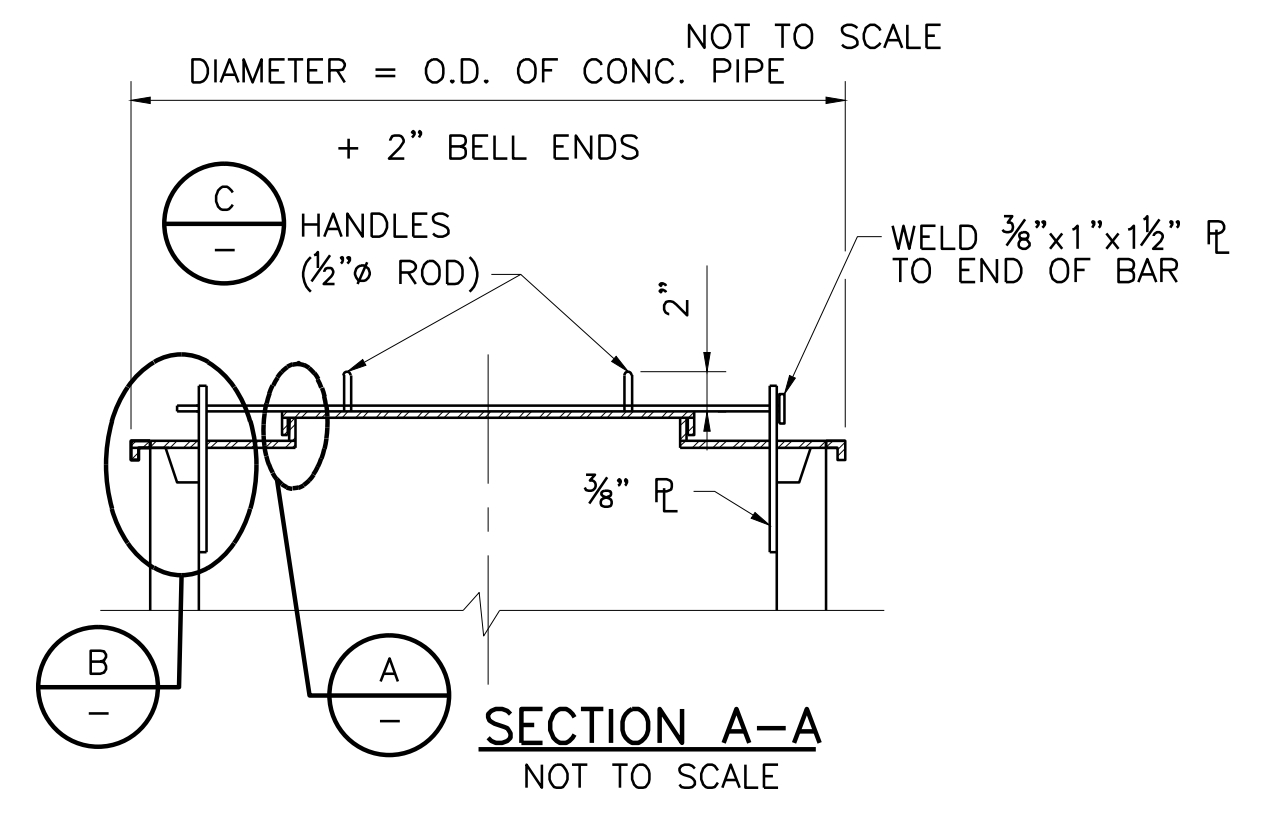


4 VALVE BOX EXTENSION
NOT TO SCALE

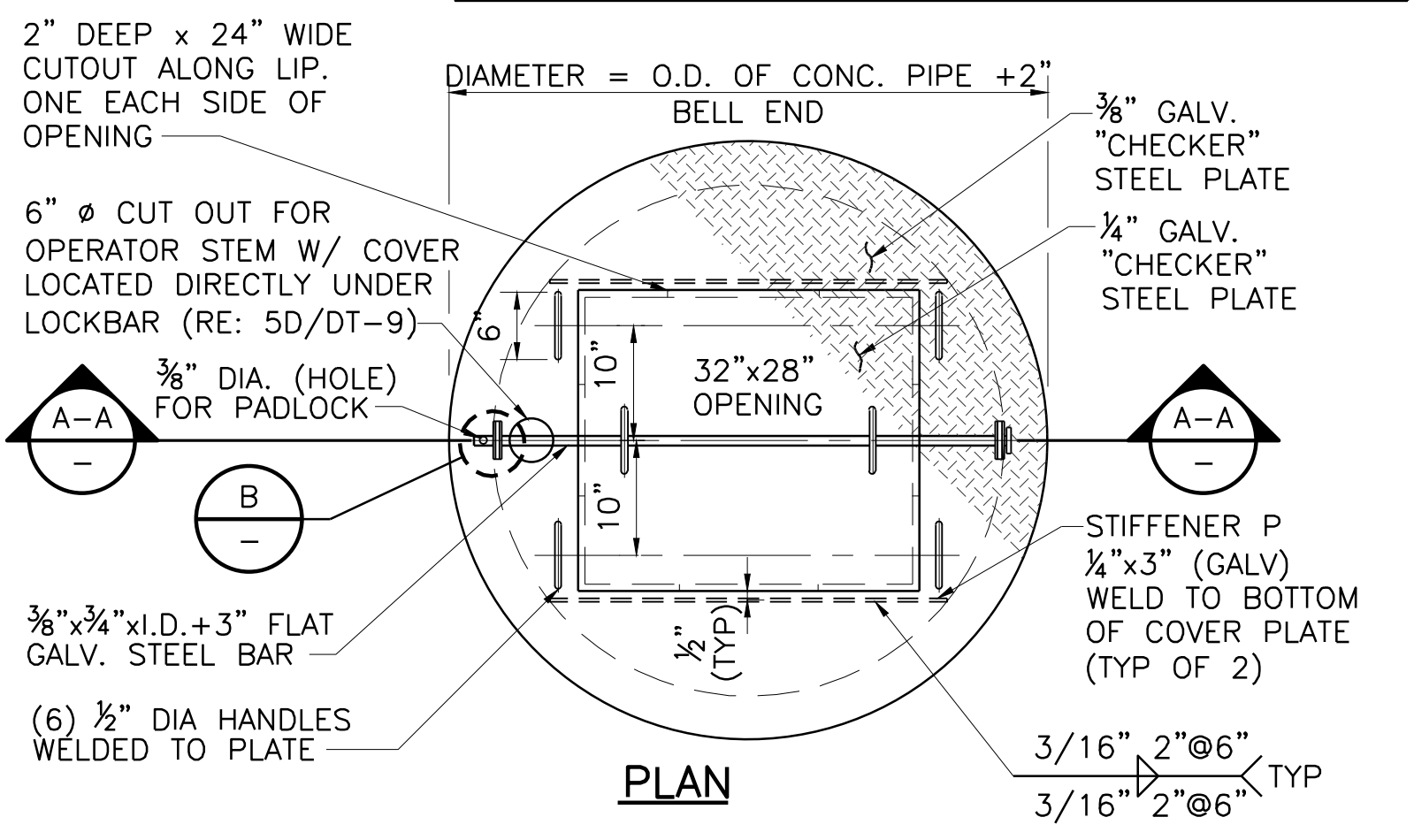


- NOTES:
- BRONZE MARKER SHALL BE 3/2" DIAMETER MANUFACTURED BY BERNTSEN C35DB OR APPROVED EQUAL.
 - MARKERS SHALL BE STAMPED WITH CHARACTERS 1/8" SIZE.
 - BUTTERFLY VALVE SIZE SHALL BE STAMPED IN PLACE OF XX.

5 BRONZE MARKER
NOT TO SCALE



6 TYPE A MANHOLE COVER
NOT TO SCALE



3 VALVE LID
NOT TO SCALE

SHEET GENERAL NOTES:

- FOR POLYURETHANE COATED STEEL PIPE (AWWA C200), THE TOP AND BOTTOM OF THE 30" FLANGED OUTLET AT CAVS SHALL RECEIVE A FIELD-APPLIED POLYURETHANE COATING OR TWO COATS OF BITUMASTIC COATING (KOPPERS 50 OR PAINT PER SYSTEM NO. 4). THE TOP AND BOTTOM OF THE 30" FLANGED OUTLET AT BOVS SHALL RECEIVE A FIELD-APPLIED POLYURETHANE COATING, TWO COATS OF BITUMASTIC COATING (KOPPERS 50 OR APPROVED EQUAL), ALL COATINGS SHALL OVERLAP FACTORY APPLIED COATINGS BY A MINIMUM OF 6".
- FOR BAR-WRAPPED CONCRETE CYLINDER PIPE (AWWA C303), THE TOP AND BOTTOM OF THE 30" FLANGED OUTLET AT CAVS SHALL RECEIVE TWO COATS OF BITUMASTIC COATING (KOPPERS 50 OR APPROVED EQUAL). THE TOP AND BOTTOM OF THE 30" FLANGED OUTLET AT BOVS SHALL RECEIVE TWO COATS OF BITUMASTIC COATING (KOPPERS 50 OR APPROVED EQUAL), OR A 1" THICK MORTAR COATING CONSISTING OF ONE PART PORTLAND CEMENT TO TWO AND ONE HALF PARTS FINE, SHARP (PLASTER) SAND, REINFORCED WITH WIRE MESH AS NECESSARY. ALL COATINGS SHALL OVERLAP FACTOR APPLIED COATINGS BY A MINIMUM OF 6".
- ALL METAL SURFACES INSIDE OF MANHOLES OTHER THAN THOSE RELATING TO NOTES 1 AND 2 SHALL RECEIVE A MINIMUM OF TWO (2) COATS OF BITUMASTIC COATING (KOPPERS 50 OR APPROVED EQUAL). CARE SHALL BE TAKEN TO APPLY THE COATING IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
- THE VALVE EXTENSION SHALL BE ONE PIECE AND POSITIONED INSIDE THE MANHOLE SUCH THAT THE VALVE CAN BE OPERATED FROM GROUND LEVEL THROUGH THE MANHOLE TOP. VALVE STEM EXTENSION SHALL EXTEND TO WITHIN 4" OF THE MANHOLE TOP. ACCESS TO VALVE EXTENSION SHALL NOT BE THROUGH MANHOLE COVER.
- ALL BLOW OFF AND AIR VALVE PIPING SHALL BE CLASS 53 DUCTILE IRON PIPE WITH FLANGED JOINTS. PIPING INSIDE MANHOLE AND BURIED PIPE SHOWN HAVE FACTORY APPLIED STANDARD COATING. ABOVE-GROUND PIPING SHALL BE FACTORY-PRIMED AND PAINTED SILVER.
- CONTRACTOR SHALL INSTALL BLANK 3.5" (BERNTSEN C35DB OR APPROVED EQUAL) BRASS DISC ON TOP OF MANHOLE COVER. CONTRACTOR WILL BE RESPONSIBLE FOR STAMPING DISC AT END OF PROJECT WITH IDENTIFICATION PROVIDED BY NTMWD.
- INSTALL STEM GUIDES USING EPOXY COATED ANCHOR BOLTS. DO NOT TIE STEM GUIDE INTO MANHOLE REINFORCEMENT.
- THE 12-INCH WATERLINE AND ALL CONNECTED PIPE SHOWN IN SHEETS PL-1A THROUGH PL-4 SHALL NOT INCLUDE THE "NTMWD" ON ANY VALVE LIDS.

This Record Drawing is a combination of the sealed engineering contract drawings for this project, modified by information furnished by the contractor reflecting changes in the Project made during construction. The original sealed drawings are on file at the offices of
FREESE AND NICHOLS, INC.
 4055 INTERNATIONAL PLAZA, SUITE 200
 FORT WORTH, TEXAS 76109-4895
 (817) 735-7300
 RECORD DRAWINGS PREPARED ON:
 1/22/2016

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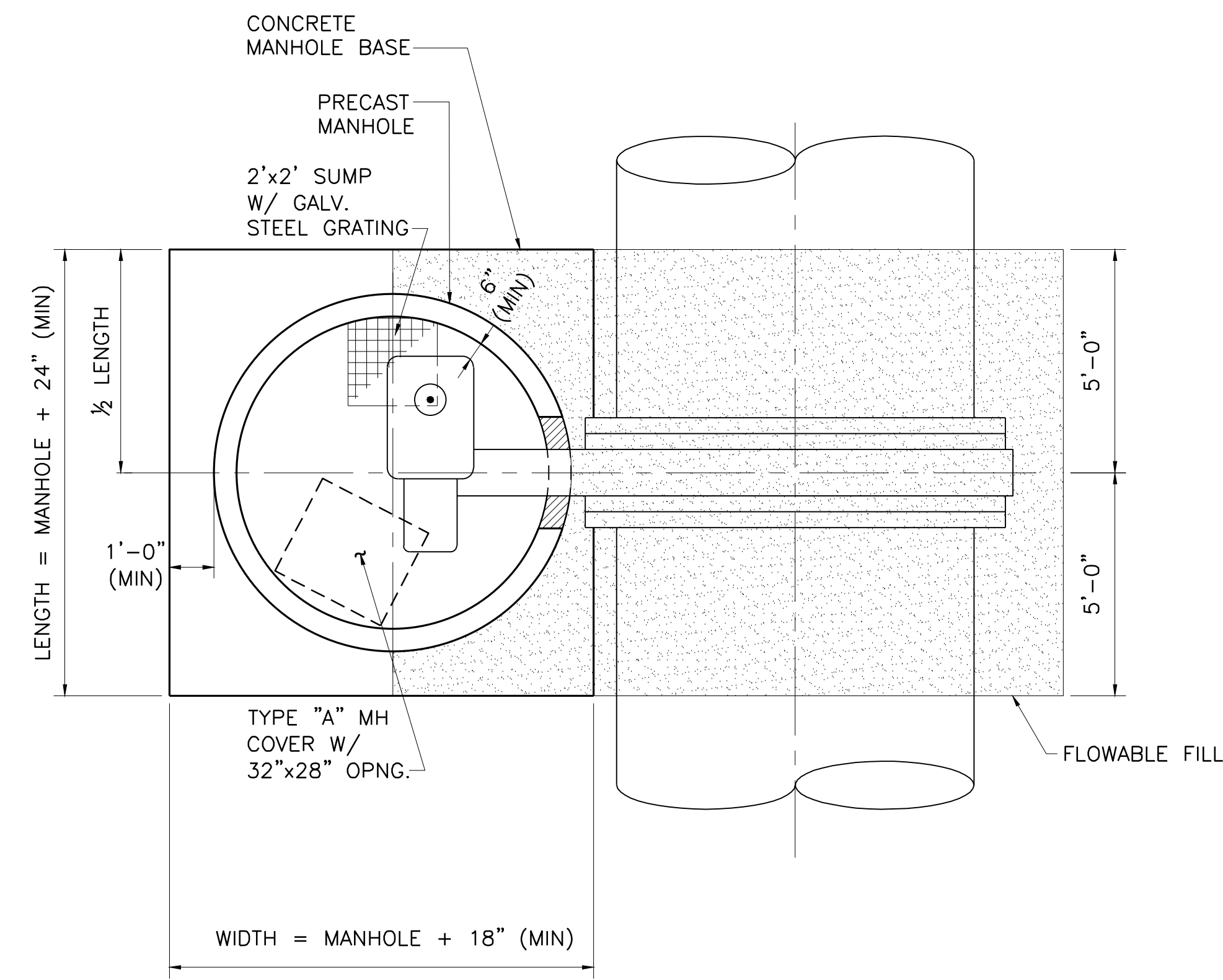
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 DATE 1/22/2016
 DESIGNED WRS
 DRAWN LMR
 REVISIONS
 1/22/16
 2/05/14
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RECORD DRAWING
 ISSUED FOR CONSTRUCTION
 VERIFY SCALE
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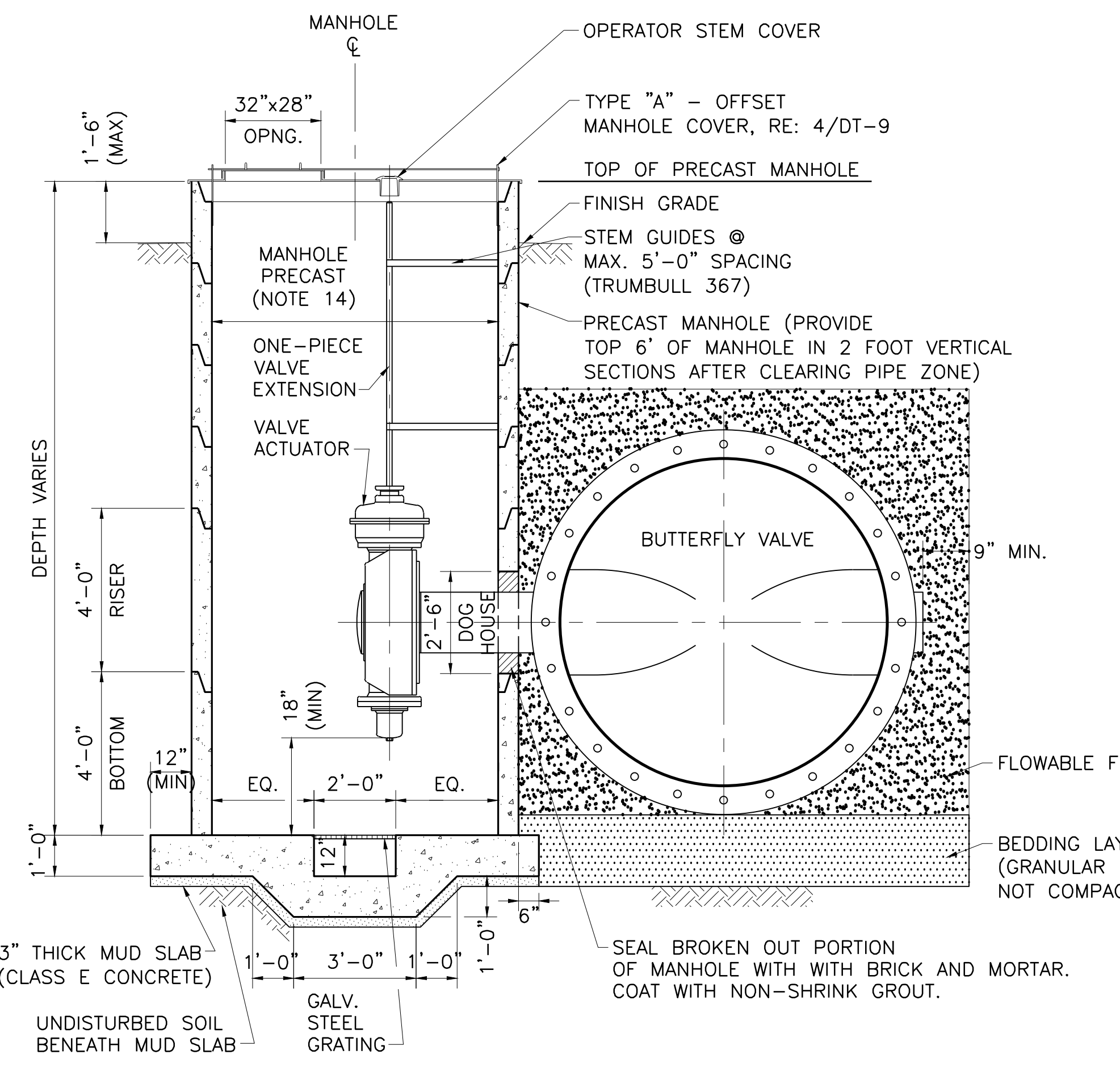
NORTH TEXAS MUNICIPAL WATER DISTRICT
 NORTH MCKINNEY PIPELINE
 PHASE I AND II, PROJECT NO. 210
 STANDARD DETAILS
 PIPELINE APPURTENANCES

DT-7
 46

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 Texas Registered Engineering Firm F-2144
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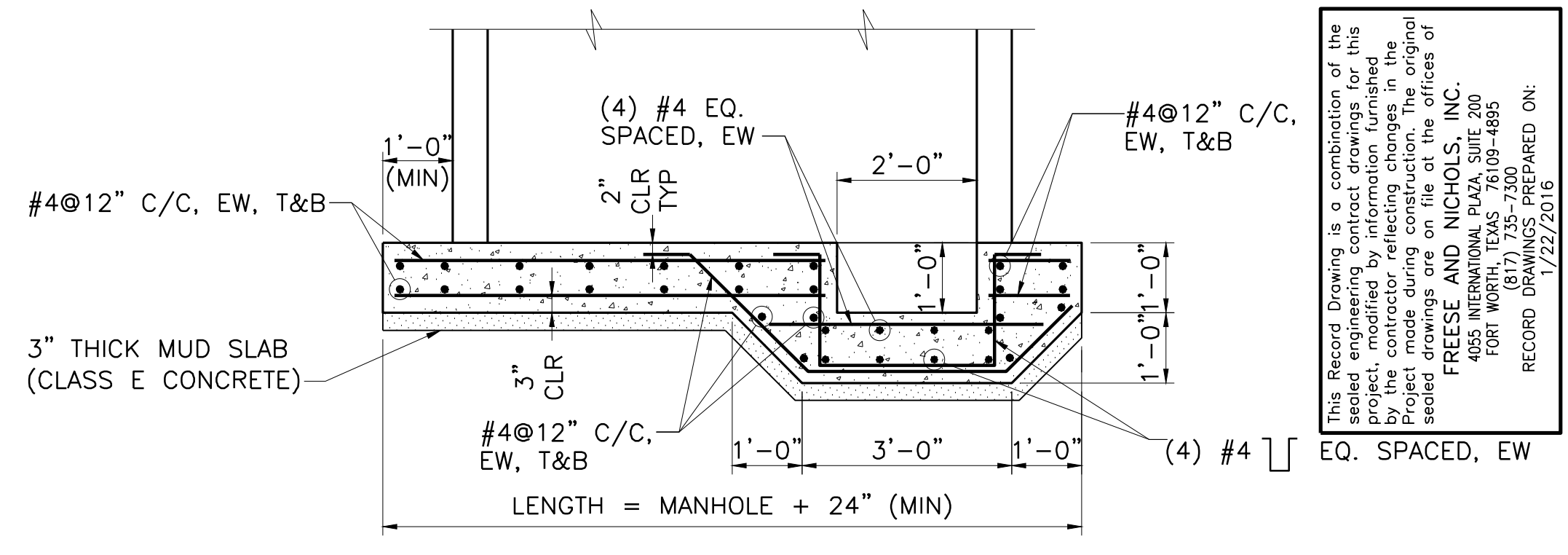


1 BUTTERFLY VALVE MANHOLE PLAN
NOT TO SCALE

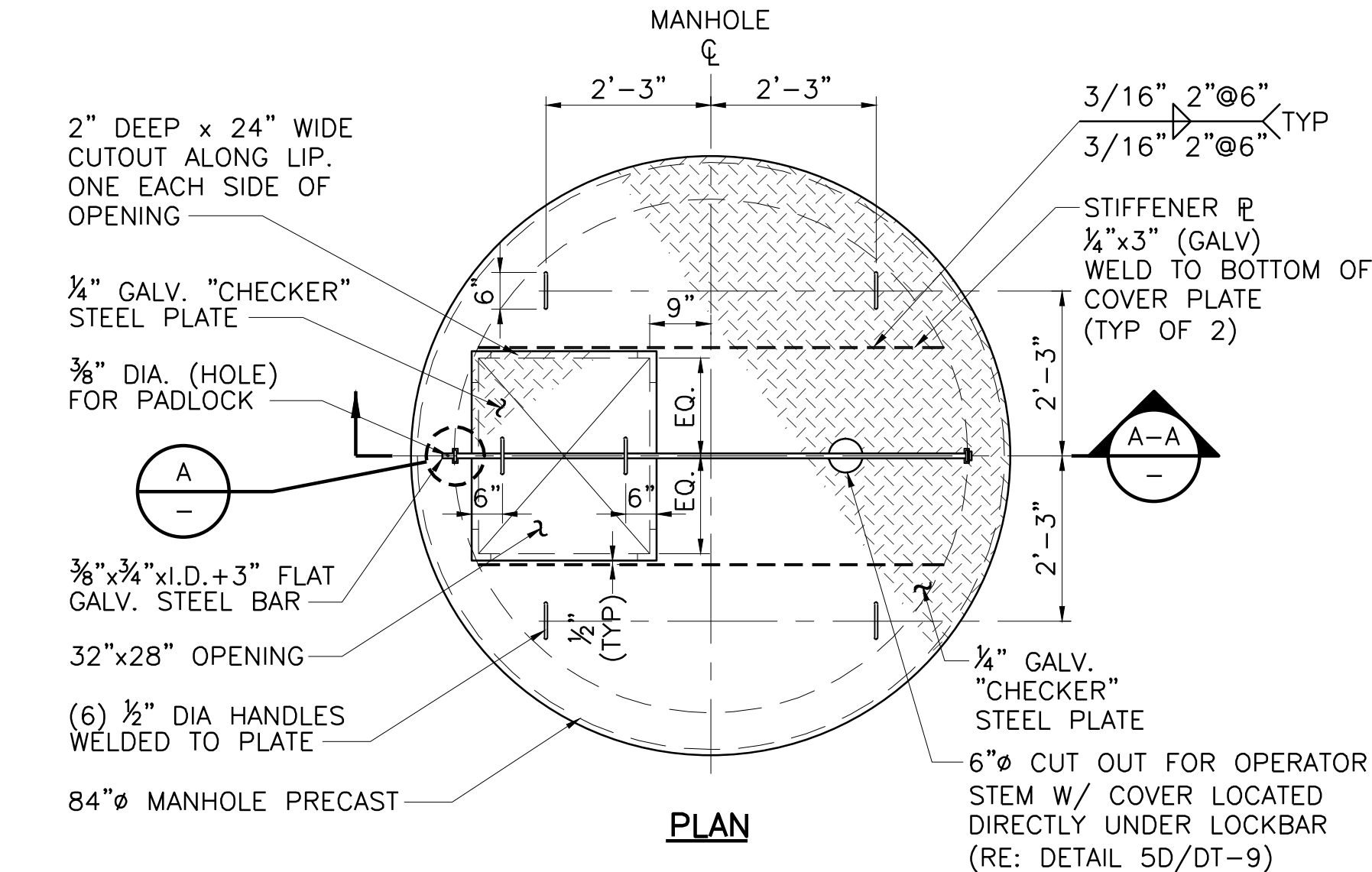


2 BUTTERFLY VALVE MANHOLE SECTION
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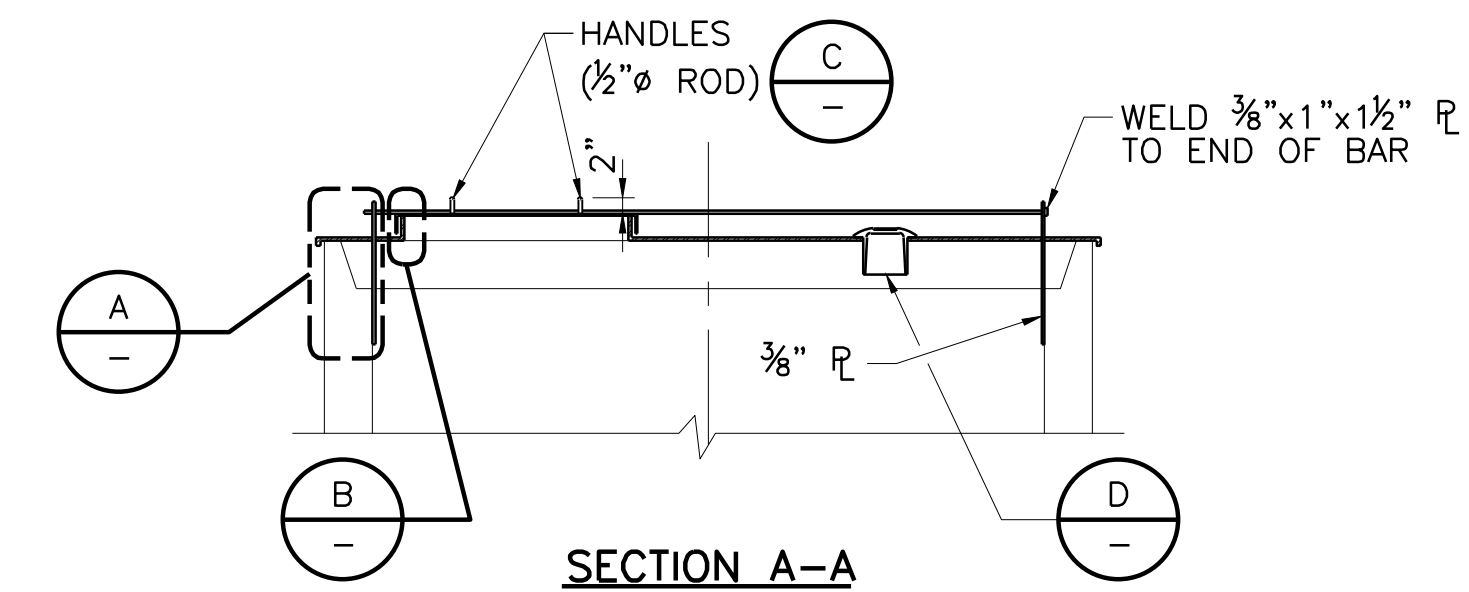
- GENERAL NOTES:**
- ALL METAL SURFACES INSIDE OF MANHOLES SHALL RECEIVE A MINIMUM OF TWO (2) COATS OF BITUMASTIC COATING (KOPPERS 50 OR APPROVED EQUAL). CARE SHALL BE TAKEN TO APPLY THE COATING IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
 - VALVES SHALL BE COMPLETELY WRAPPED IN WAX TAPE AND COATED WITH MASTIC PER SPECIFICATION 09 97 16.
 - THE VALVE EXTENSION SHALL BE ONE PIECE AND POSITIONED INSIDE THE MANHOLE SUCH THAT THE VALVE CAN BE OPERATED FROM GROUND LEVEL THROUGH THE MANHOLE TOP. THE VALVE EXTENSION SHALL EXTEND TO WITHIN 4" OF THE MANHOLE TOP. ACCESS TO VALVE EXTENSION SHALL NOT BE THROUGH MANHOLE COVER.
 - CONTRACTOR SHALL INSTALL BLANK 3.5" (BERNTSEN C35DB OR APPROVED EQUAL) BRASS DISC ON TOP OF MANHOLE COVER. CONTRACTOR WILL BE RESPONSIBLE FOR STAMPING DISC AT END OF PROJECT WITH IDENTIFICATION PROVIDED BY NTMWD.
 - CONTRACTOR SHALL INSTALL 1" THICK NEOPRENE PAD AROUND PIPE WHEN IN AREAS OF CONTACT WITH MANHOLE. PAD SHALL EXTEND 12" PAST MANHOLE.
 - THE BUTTERFLY VALVE SHAFT EXTENSION SHALL PROVIDE ENOUGH LENGTH THAT THE ACTUATOR HAS A MINIMUM CLEARANCE OF 6" FROM THE INSIDE OF THE MANHOLE.
 - THE MANHOLE SECTION WITH THE ACTUATOR PENETRATION SHALL HAVE A HEIGHT TO ALLOW 12" MINIMUM OF MANHOLE PRIOR TO THE JOINT ABOVE & BELOW PENETRATION.
 - INSTALL STEM GUIDES USING EPOXY COATED ANCHOR BOLTS. DO NOT TIE STEM GUIDE INTO MANHOLE REINFORCEMENT.
 - THE CONTRACTOR SHALL ENSURE ALL STULLING IN PIPE ADJACENT TO VALVES REMAINS IN PLACE UNTIL FLOWABLE FILL HAS BEEN PLACED AND CURED.
 - CONTRACTOR SHALL PLACE FLOWABLE FILL IN EQUAL LIFTS ON EITHER SIDE OF PIPE AND VALVE AND ENSURE THE PIPE AND VALVE REMAIN ROUND WITHOUT DEFLECTION UNTIL FLOWABLE FILL CURES.
 - FLANGE BOLTS SHALL BE TIGHTENED IN A CRISS-CROSS OR STAR PATTERN AS DESCRIBED BY THE VALVE MANUFACTURER.
 - CONTRACTOR SHALL PROVIDE EQUIPMENT INSTALLATION REPORTS AND SHALL HYDRO TEST BOTH SIDES OF VALVE PRIOR TO FINAL ACCEPTANCE.
 - BUTTERFLY VALVES 72" AND LARGER SHALL HAVE 84" DIAMETER MANHOLES. BUTTERFLY VALVES 60" AND 54" SHALL HAVE 72" MANHOLES. BUTTERFLY VALVES 36" AND SMALLER SHALL HAVE 60" MANHOLES.



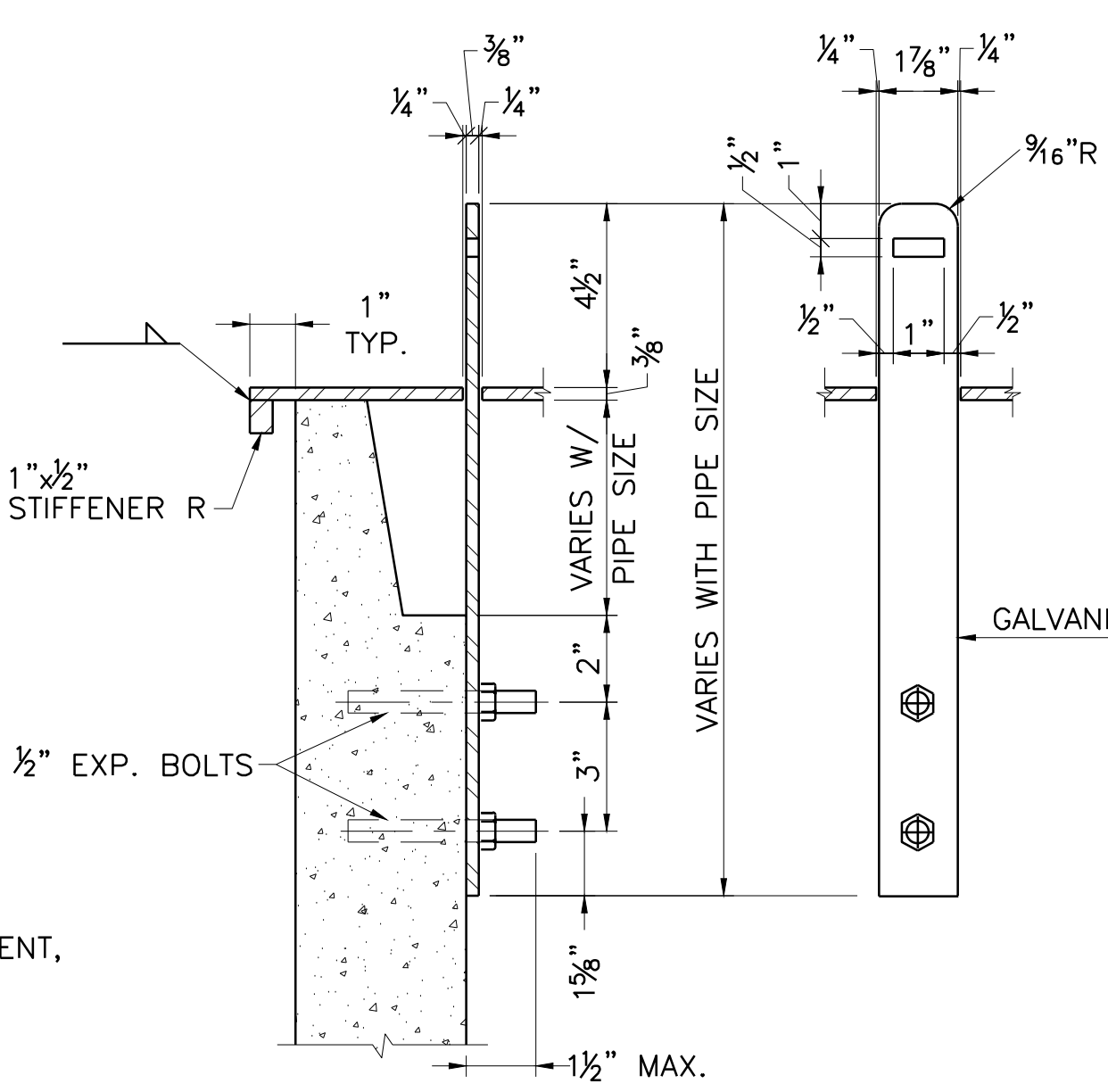
3 BFV MANHOLE SLAB DETAIL
NOT TO SCALE



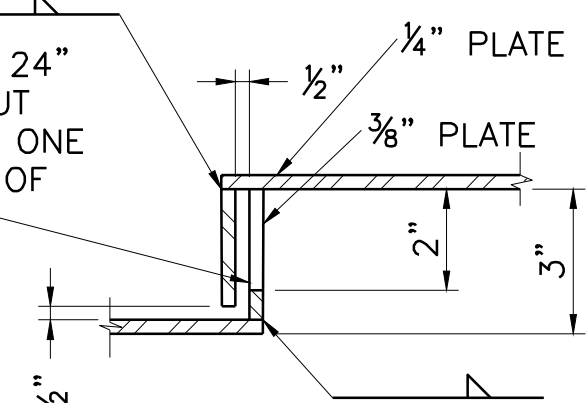
PLAN



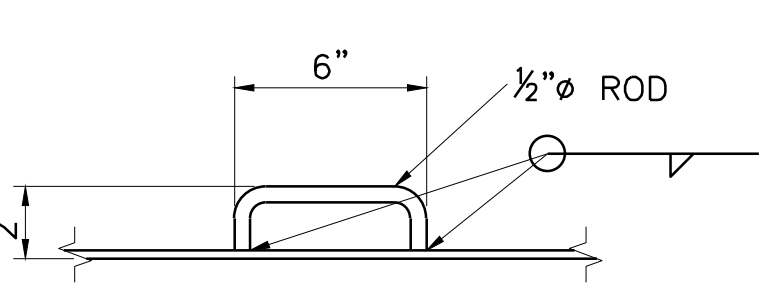
SECTION A-A
BUTTERFLY VALVE MANHOLE COVER
NOT TO SCALE



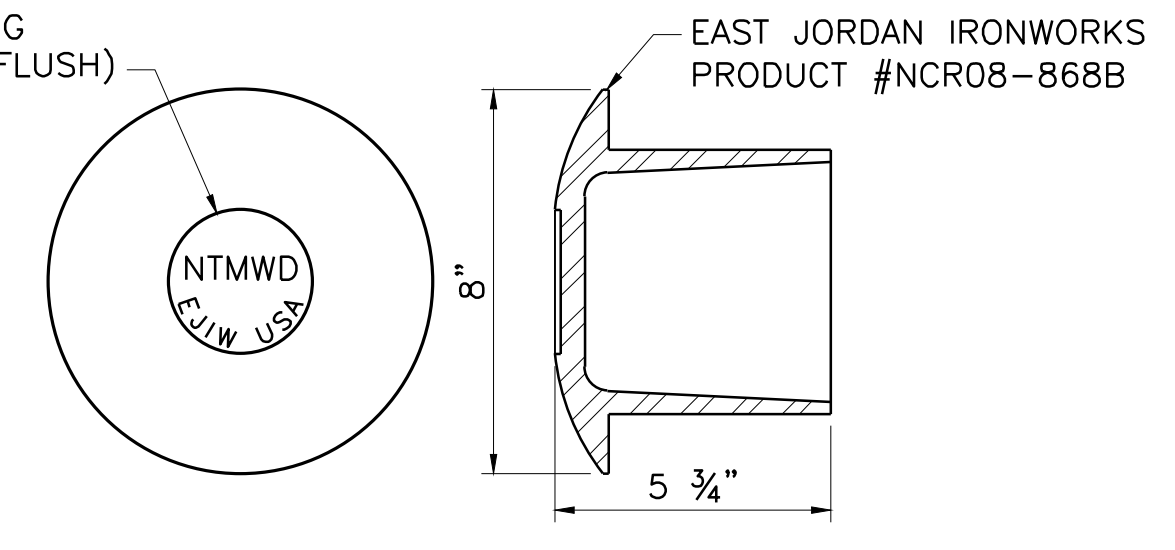
- NOTES:**
- LOCKS WILL BE PROVIDED BY THE OWNER.
 - COVERS THAT ARE WARPED OR DO NOT PROPERLY FIT WILL BE REJECTED.
 - COVERS SHALL NOT BE BOLTED DOWN.
 - OPERATOR STEM COVER SHALL BE GALVANIZED STEEL.



DETAIL
NOT TO SCALE



TYPICAL HANDLE DETAIL
NOT TO SCALE



OPERATOR STEM COVER
NOT TO SCALE

5 BUTTERFLY VALVE AND TYPE A MANHOLE COVER DETAILS
NOT TO SCALE

This Record Drawing is a combination of the sealed engineering contract drawings for this project, modified by information furnished by the contractor reflecting changes in the field. The original sealed drawings are on file at the offices of
FREESSE AND NICHOLS, INC.
 4055 INTERNATIONAL PLAZA, SUITE 200
 FORT WORTH, TEXAS 76109-4895
 RECORD DRAWINGS PREPARED ON: 1/22/2016

Freese and Nichols, Inc.
 Texas Registered Engineering Firm F-2144

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 FOR THE STATE OF TEXAS NO. 93877-0001 OR 102124/16
 FREESSE AND NICHOLS, INC. REGISTERED PROFESSIONAL ENGINEER
 NOTIFICATION OF THE RESPONSIBLE ENGINEER IS AN
 OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

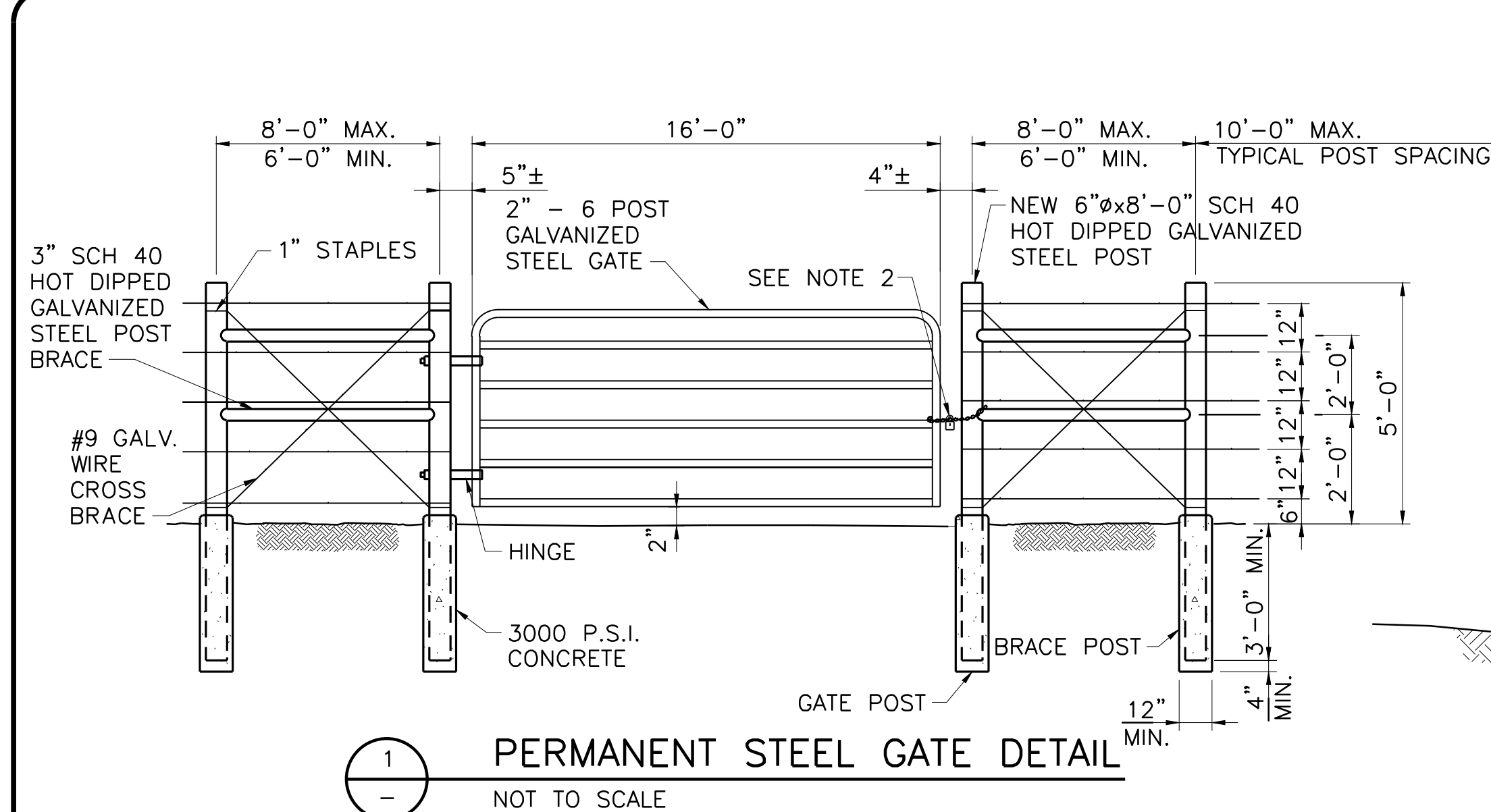
FREESSE AND NICHOLS
 2711 North Rossell, 33rd Floor
 Fort Worth, TX 76107
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 Fax - (214) 217-2201

NORTH TEXAS MUNICIPAL WATER DISTRICT
NORTH MCKINNEY PIPELINE
 PHASE I AND II, PROJECT NO. 210

STANDARD DETAILS
BUTTERFLY VALVE MANHOLE DETAILS

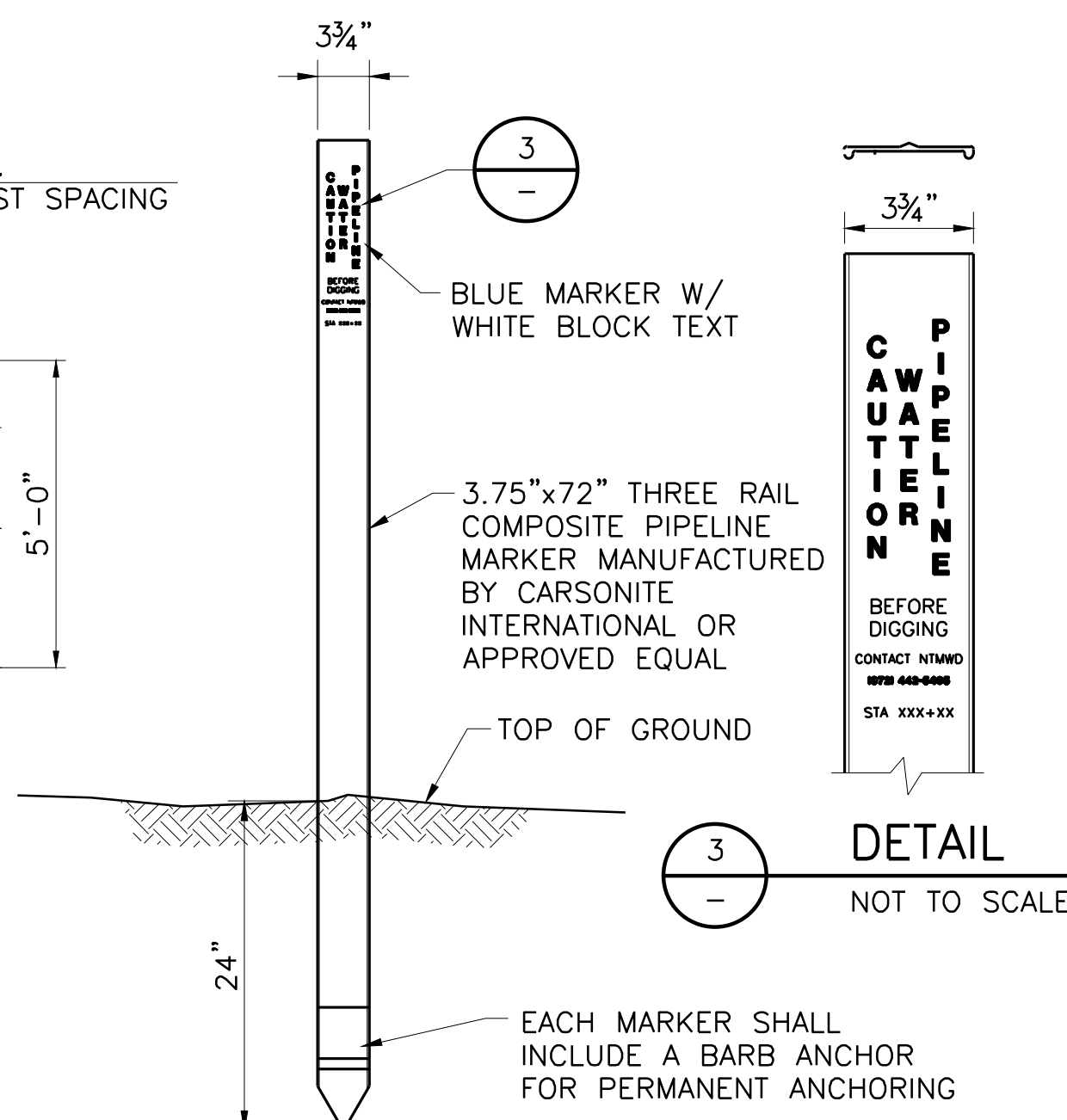
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	ISSUED FOR CONSTRUCTION									
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STEEL GATE NOTES:

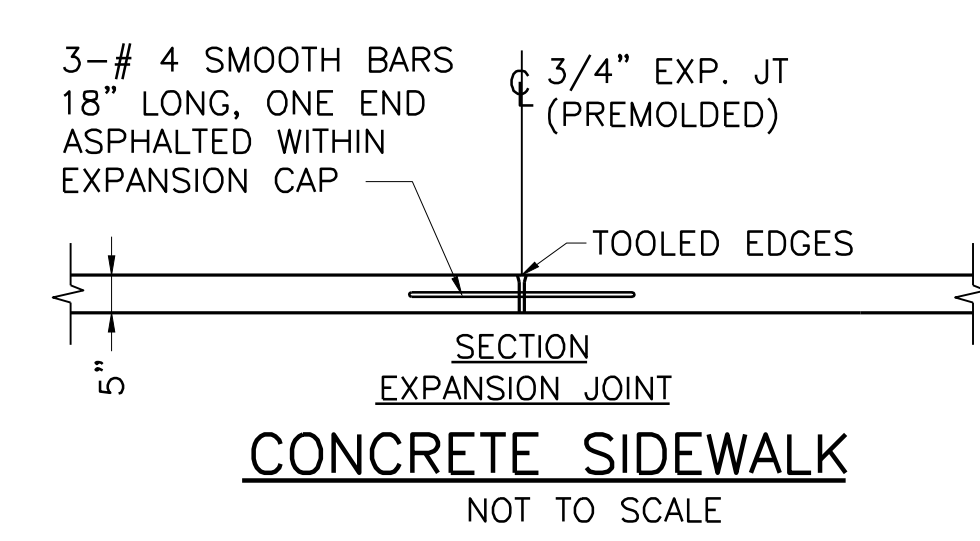
- GATE SHALL BE 2", 16GA., 16'x50" TUBE GATE MANUFACTURED BY TRACTOR SUPPLY CO., SKU #3604722, SKU #3603132 OR APPROVED EQUAL. CONTRACTOR SHALL SUBMIT GATE SPECS AS RECORD DATA.
- CONTRACTOR SHALL FURNISH 3/8" GALVANIZED CHAIN, MIN. 3/16" DIA. LOCKS WILL BE PROVIDED BY THE OWNER.
- WHERE EXISTING ADJACENT POST IS MORE THAN 6'-0" FROM NEW GATE POST, CONTRACTOR SHALL INSTALL NEW LINE POST 6'-0" MAX. FROM GATE POST.
- WHERE NEW FENCE IS REQUIRED THE POSTS SHALL BE SPACED AT A MAXIMUM DISTANCE OF 10'-0", SHALL BE 6" Ø MIN. AT TOP, 8'-0" LONG, SET A MINIMUM OF 3'-0" BELOW GROUND AND THOROUGHLY TAMPED IN PLACE.



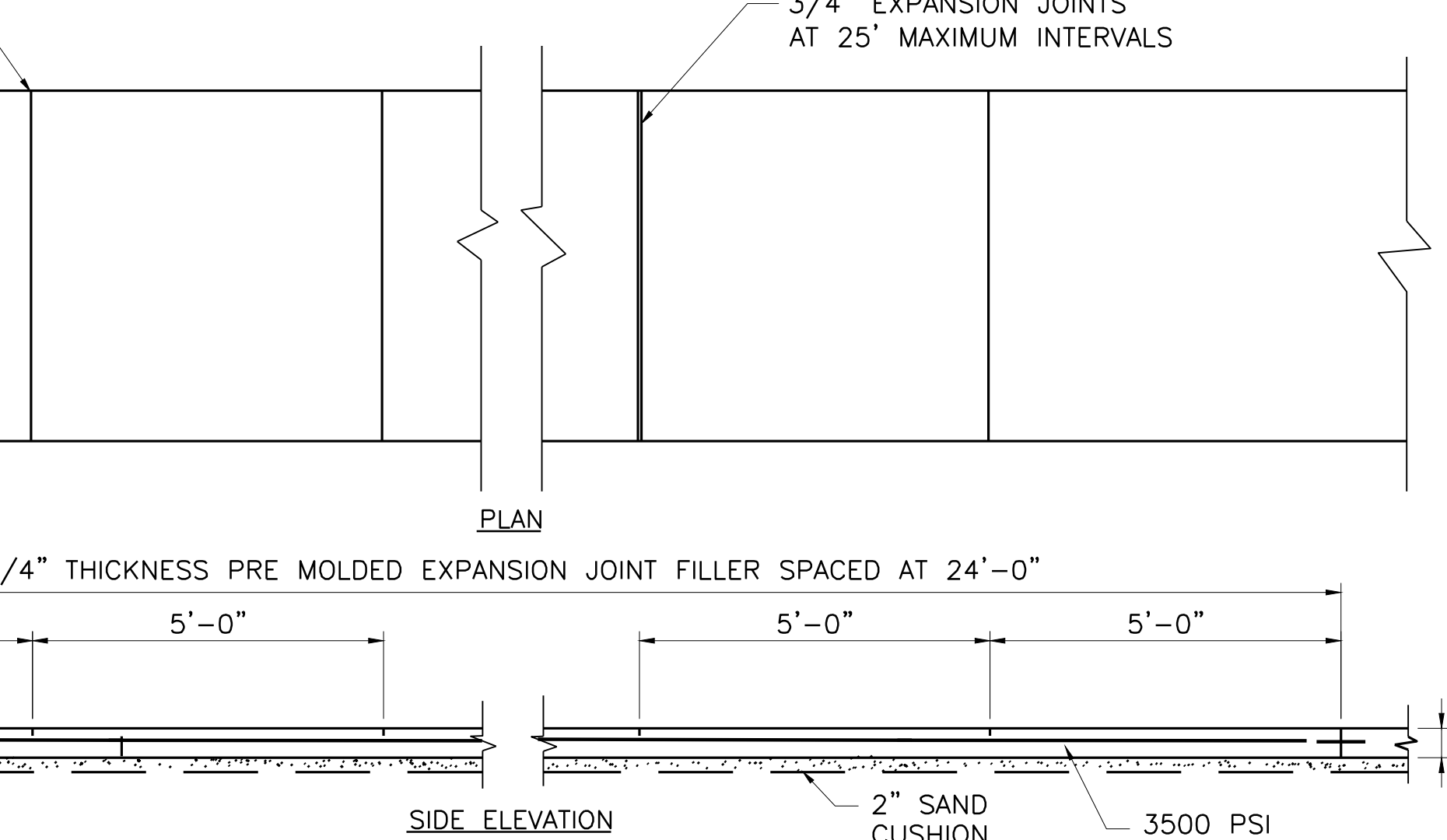
PIPELINE MARKER
NOT TO SCALE

PIPELINE MARKER NOTES:

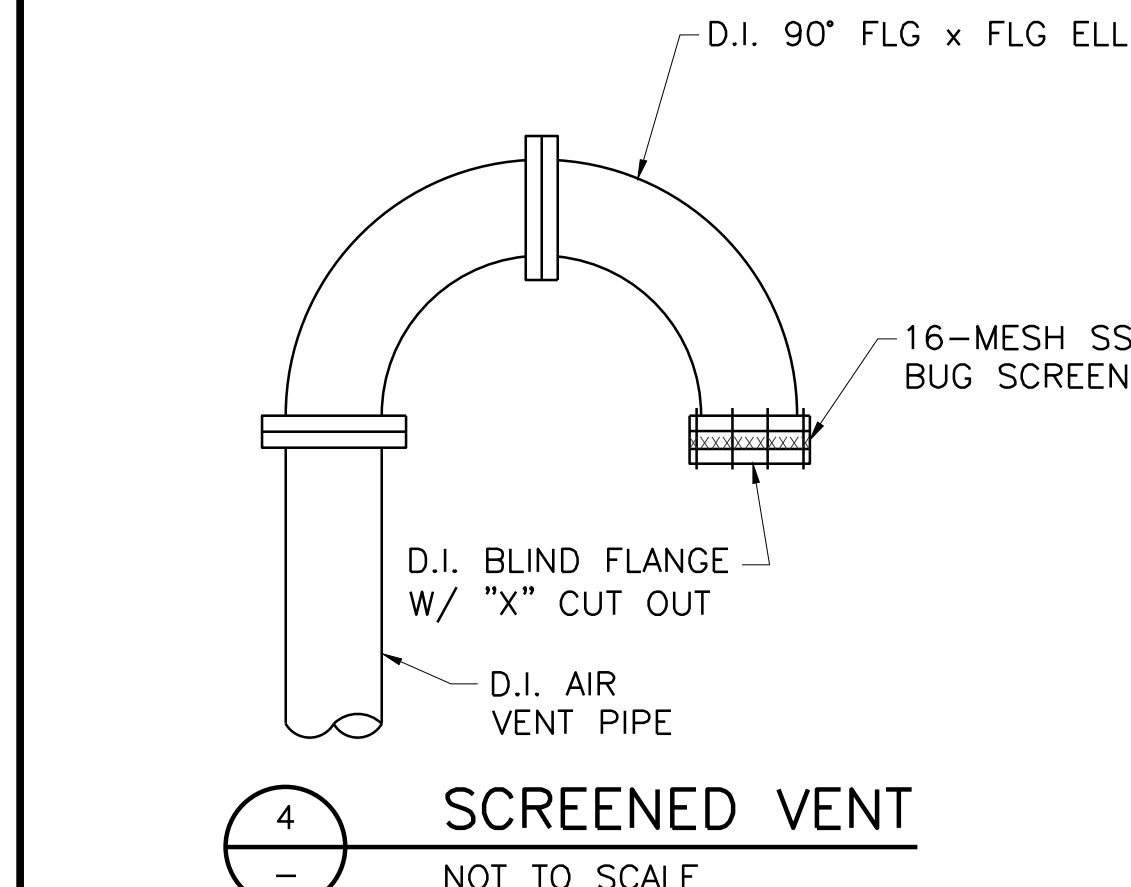
- MARKER SHALL BE LOCATED ON BOTH SIDES OF ALL ROADS AND RAILROADS, AT ALL MAINLINE VALVES, AIR VALVES, AND BLOWOFF VALVES, AND AT ALL HORIZONTAL BENDS.
- EACH MARKER SHALL HAVE A STICKER WITH THE FOLLOWING INFORMATION "CAUTION WATER PIPELINE BEFORE DIGGING CONTACT NTMWD (972) 442-5405, STA. XX+XX" ALL INFORMATION MUST BE TYPED OR STAMPED WITH NON-FADING INK, NOT HAND WRITTEN.



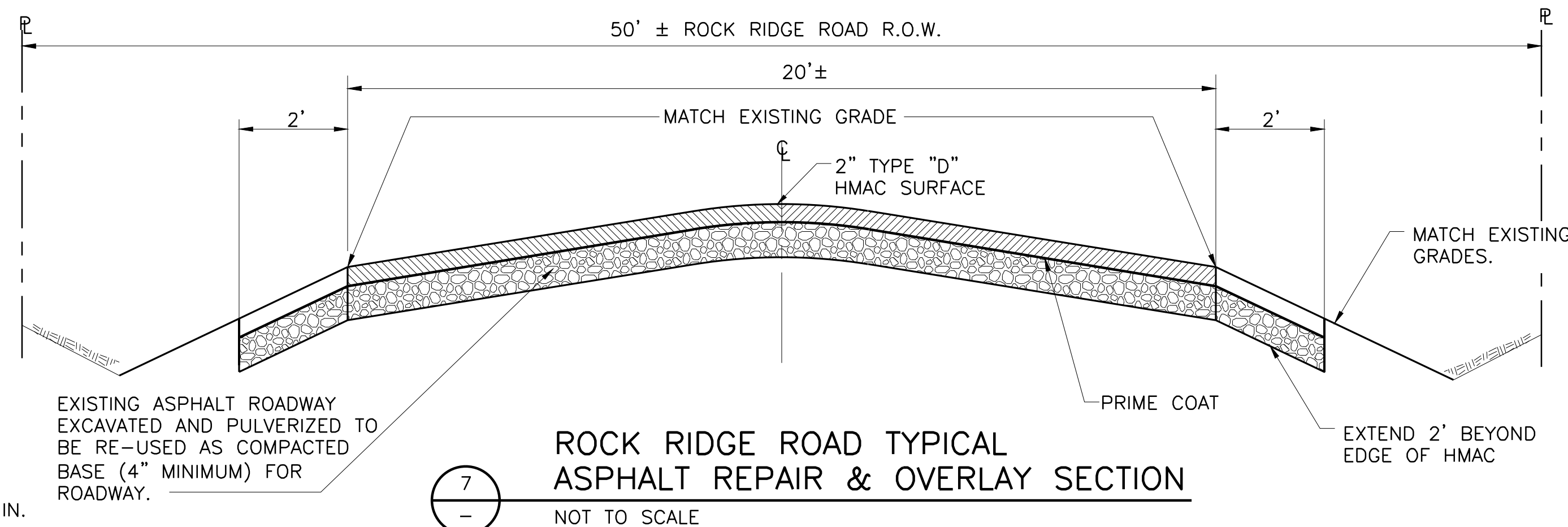
CONCRETE SIDEWALK
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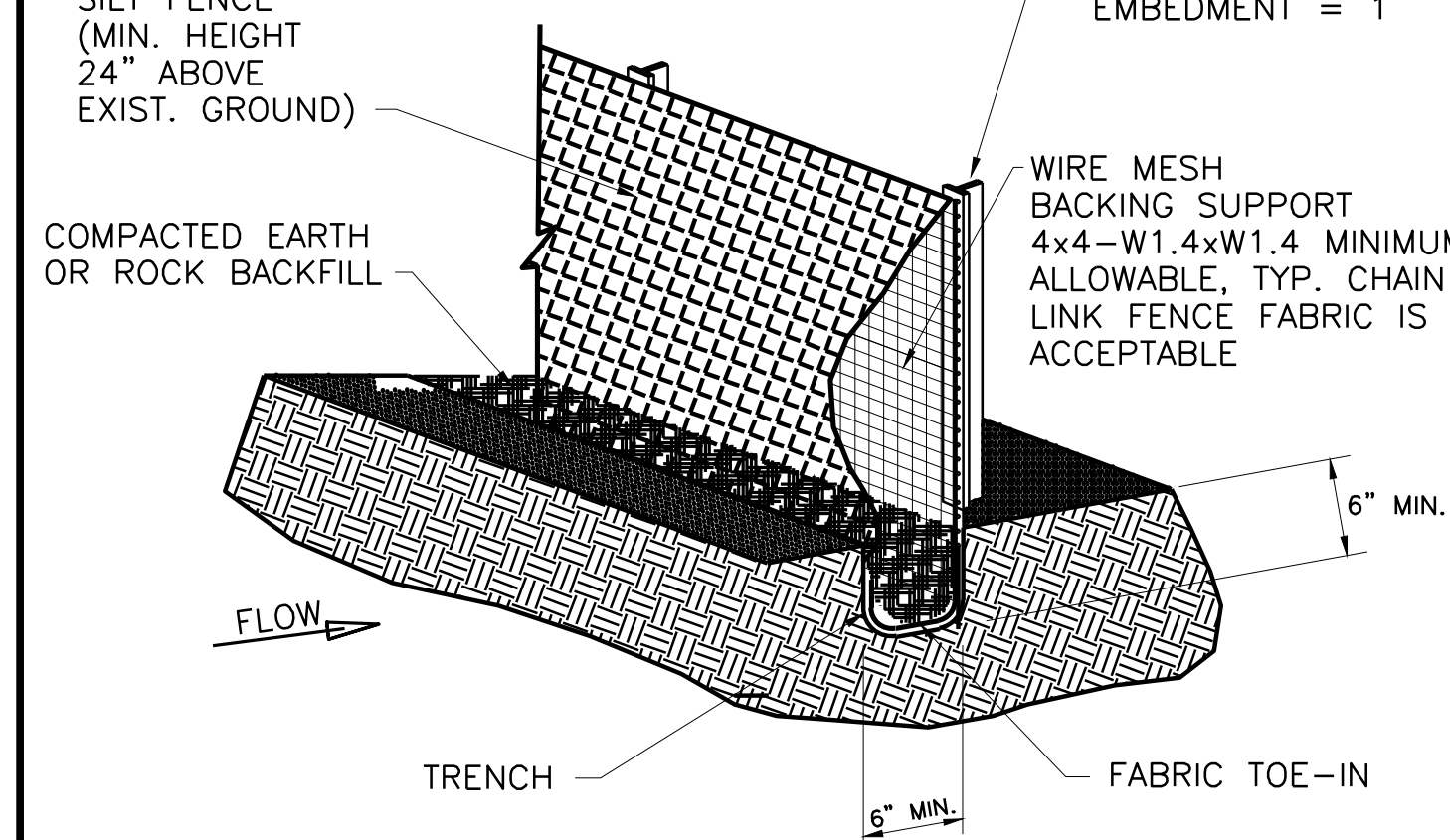
GOLF CART PATH/SIDEWALK DETAILS
NOT TO SCALE



SCREENED VENT
NOT TO SCALE



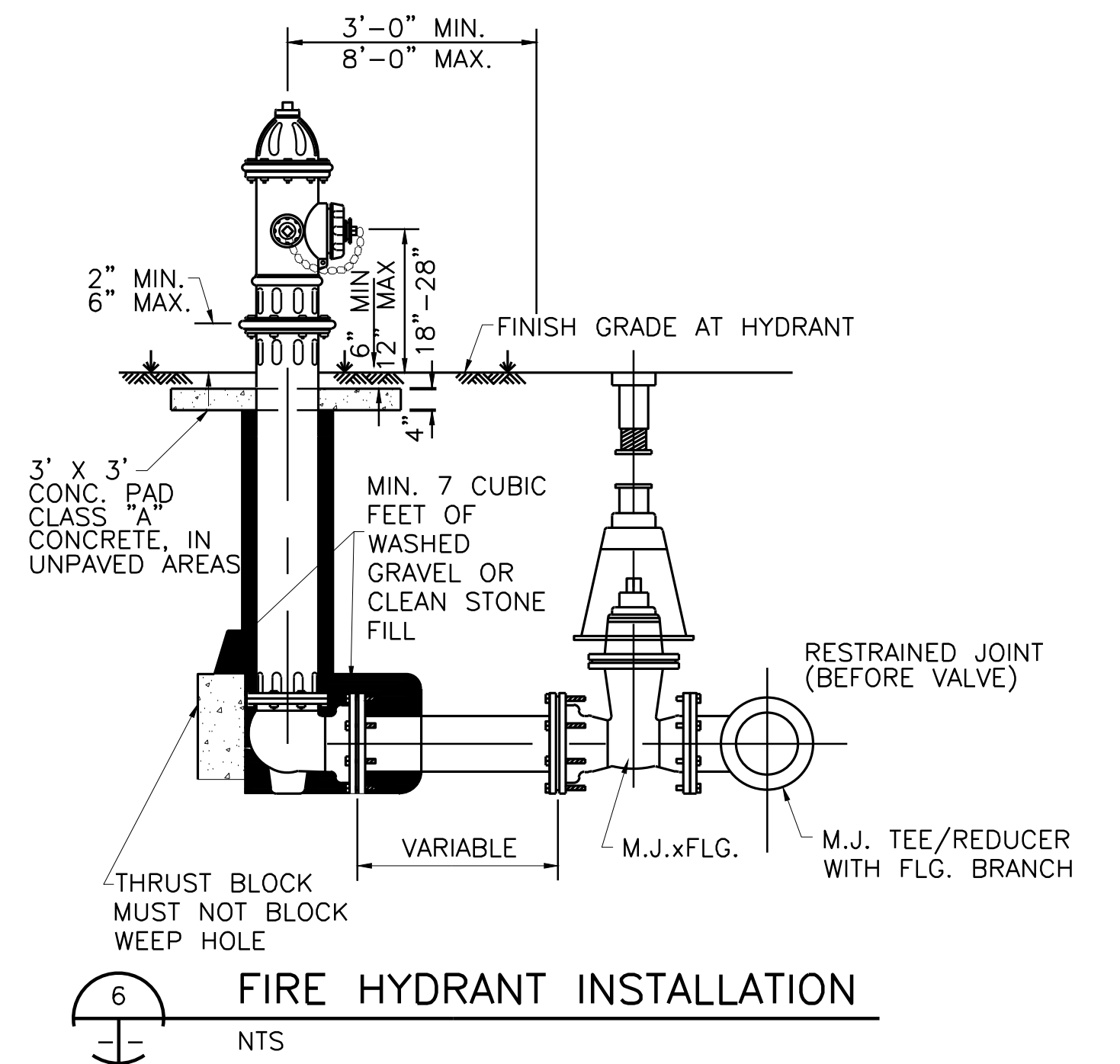
ROCK RIDGE ROAD TYPICAL ASPHALT REPAIR & OVERLAY SECTION
NOT TO SCALE



SILT FENCE
NOT TO SCALE

SILT FENCE GENERAL NOTES:

- STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.
- THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
- THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
- SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS ATTACHED TO THE STEEL FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
- INSPECTION SHALL BE MADE EVERY TWO WEEKS AND AFTER EACH 1/2" RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
- SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
- ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.



FIRE HYDRANT INSTALLATION
NTS

FIRE HYDRANT NOTES:

- ALL FIRE HYDRANTS SHALL BE MUELLER CENTURION 250 FIRE HYDRANTS.
- IN GENERAL, ALL FIRE HYDRANTS SHALL CONFORM TO AWWA STANDARD SPECIFICATIONS FOR FIRE HYDRANTS FOR ORDINARY WATER WORKS SERVICE, C-505. FIRE HYDRANTS SHALL HAVE A 5/8" MIN. VALVE OPENING AND A BARREL APPROXIMATELY 7" INSIDE DIAMETER. ALL HYDRANTS SHALL BE EQUIPPED WITH A BREAKAWAY FLANGE.
- TYPICAL VALVE: ACTUAL VALVE LOCATION WILL DEPEND ON LOCATION OF WATER MAIN.
- STANDARD BURY DEPTH 5' FEET
- SET FIRE HYDRANT ON THE LOT LINE EXTENDED WHEN POSSIBLE.

This Record Drawing is a combination of the sealed engineering contract drawings for this project, modified by information furnished by the contractor reflecting changes in the project. The contractor shall be responsible for sealed drawings on file at the offices of FREESE AND NICHOLS, INC. 4055 INTERNATIONAL PLAZA, SUITE 200 FORT WORTH, TEXAS 76109-4895 RECORD DRAWINGS PREPARED ON: 1/22/2016

Freeze and Nichols, Inc. Texas Registered Engineering Firm F-2144

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Fax - (214) 217-2201

NORTH TEXAS MUNICIPAL WATER DISTRICT
NORTH MCKINNEY PIPELINE
PHASE I AND II, PROJECT NO. 210
STANDARD DETAILS
MISCELLANEOUS DETAILS

NO.	ISSUE	DATE	BY	DATE	BY	DATE	BY
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3	REVISION		ASM		TEF	DESIGNED	DESIGNED
4	REVISION		ASM		TEF	DRAWN	DRAWN
5	REVISION		ASM		TEF	CHECKED	CHECKED
6	REVISION		ASM		TEF	FILE NAME	FILE NAME
7	REVISION		ASM		TEF	CV-ALL-DT-FENC	CV-ALL-DT-FENC

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FREESE AND NICHOLS, INC.
 4055 INTERNATIONAL PLAZA, SUITE 200
 FORT WORTH, TEXAS 76109-4895
 RECORD DRAWINGS PREPARED ON: 1/22/2016

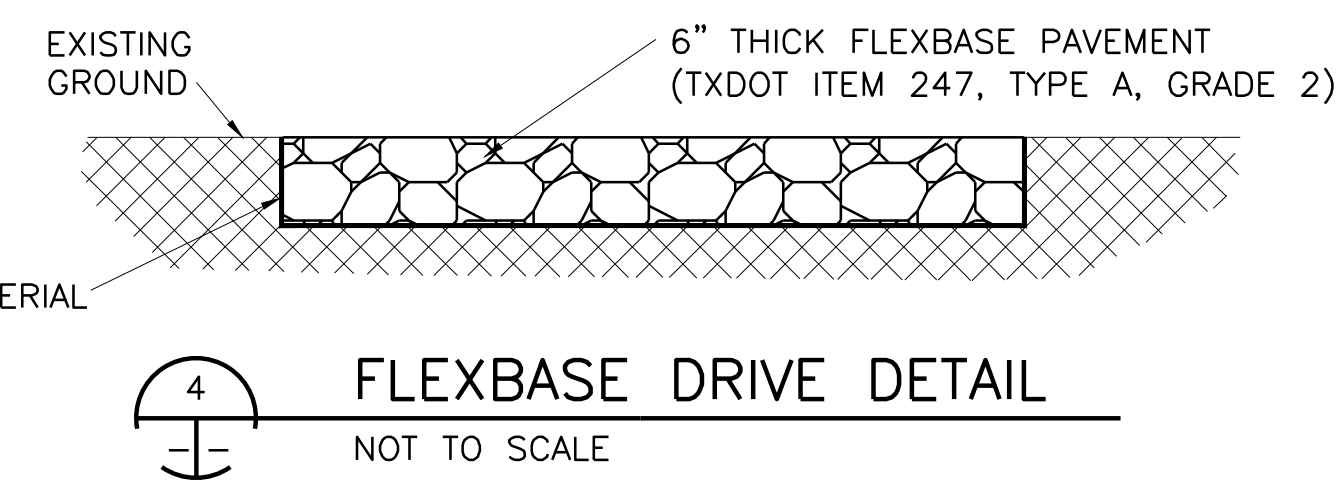
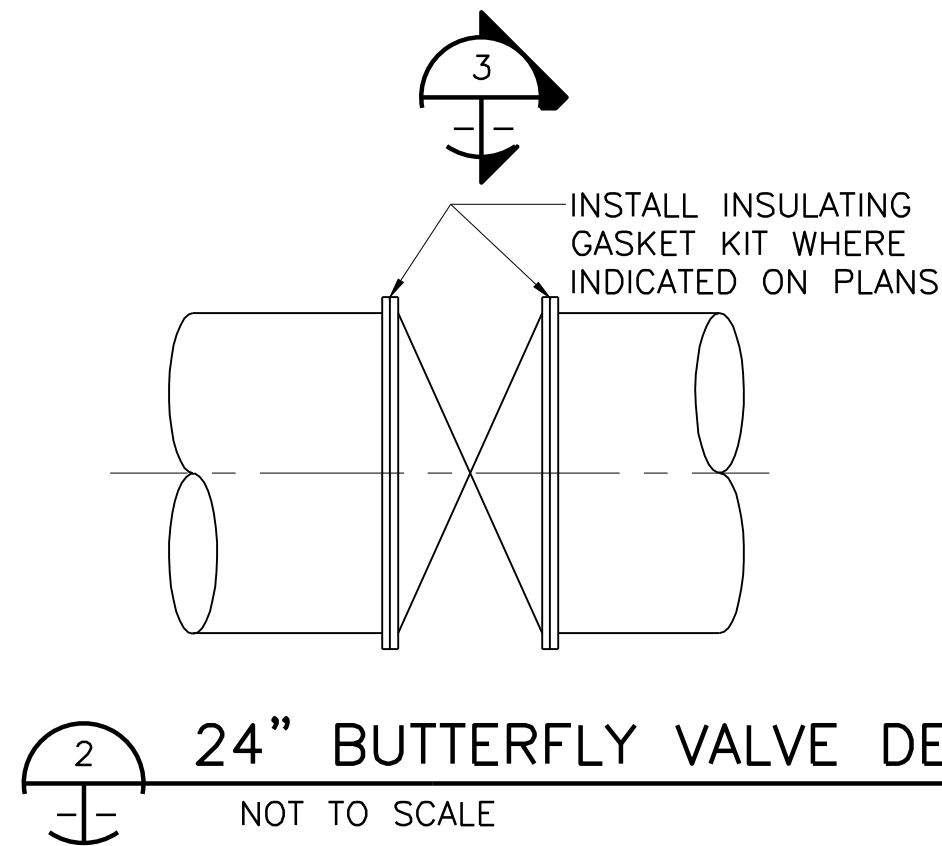
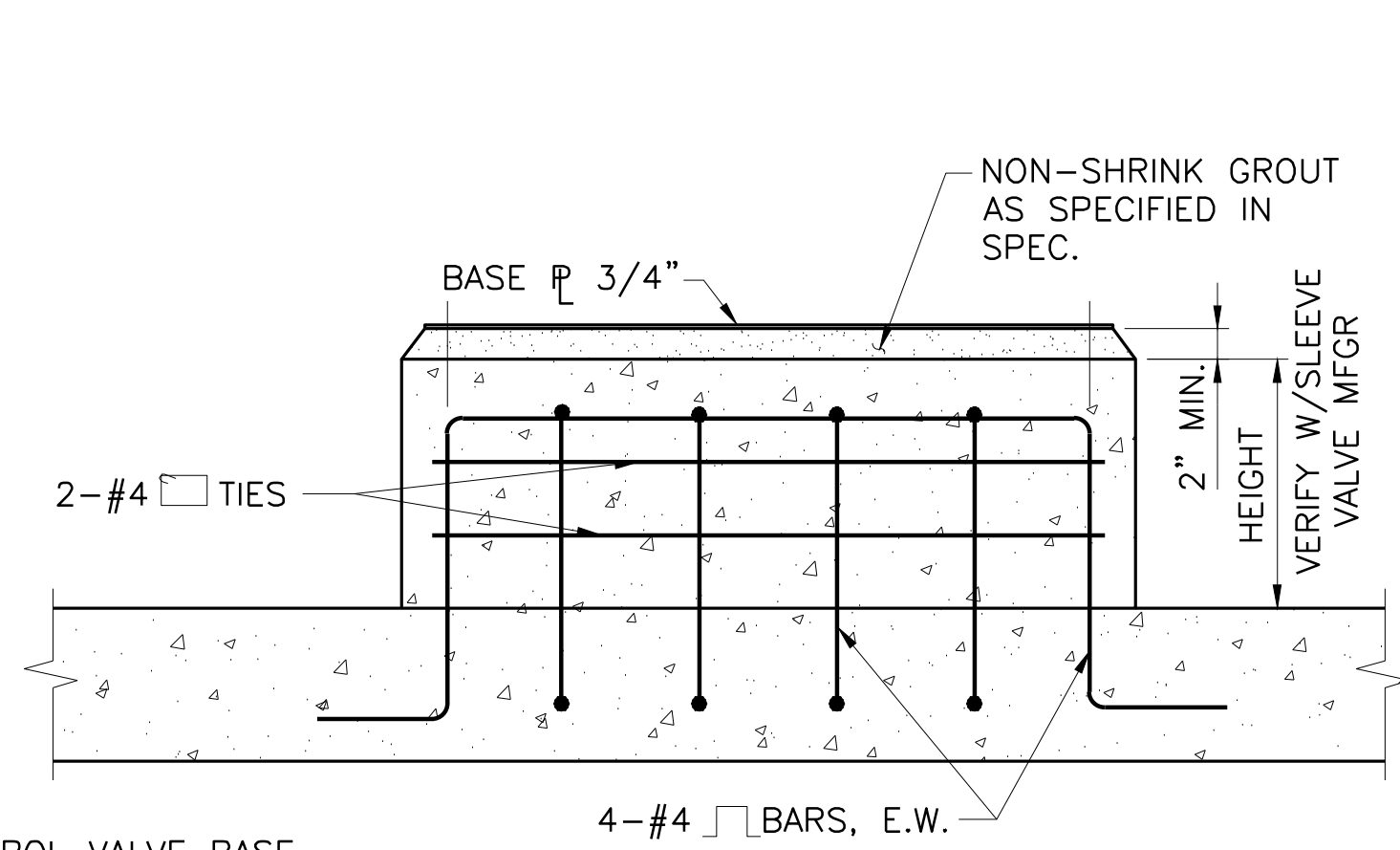
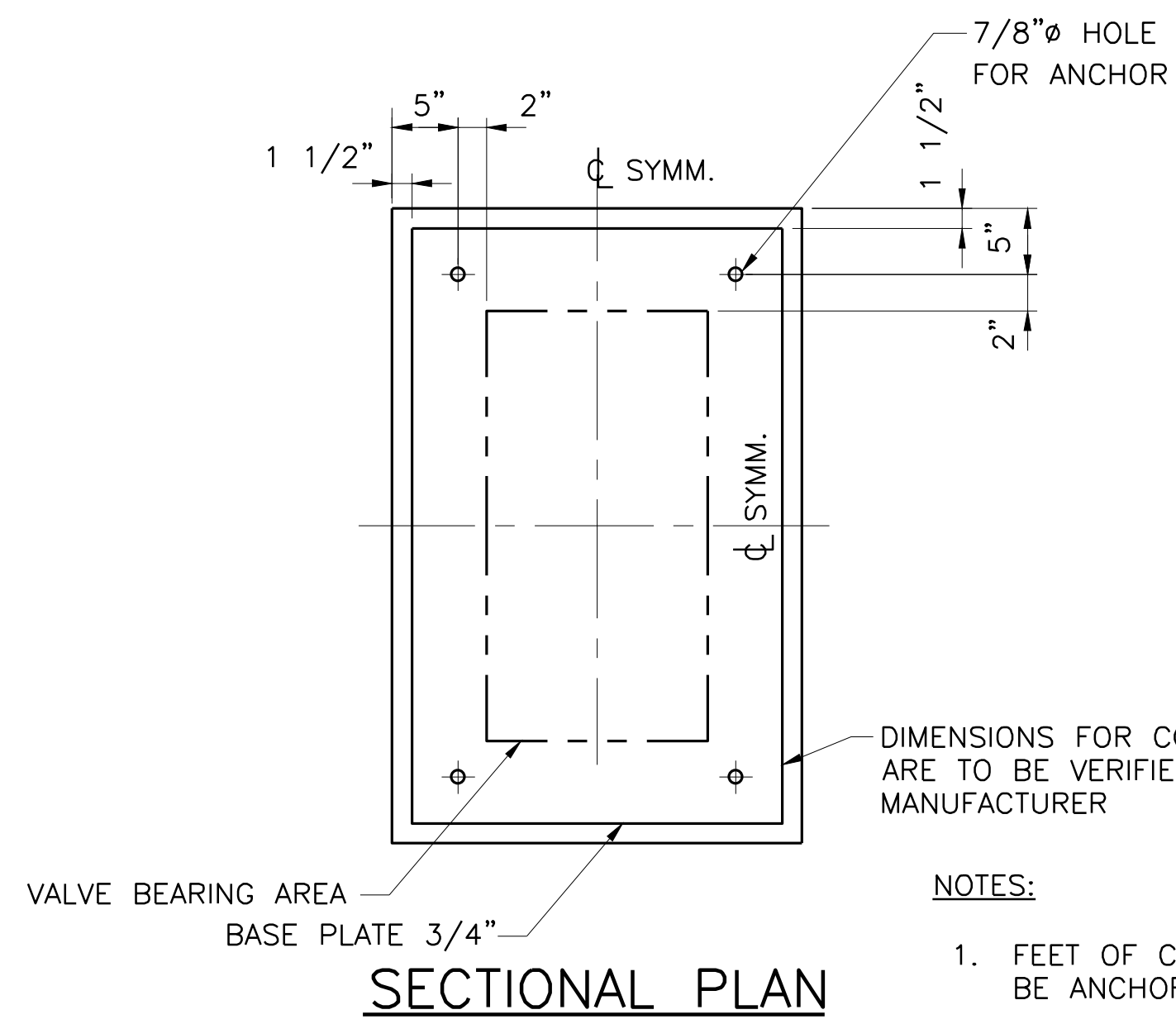
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FREESE AND NICHOLS
 2711 North Rossell, 33rd Floor
 Fort Worth, Texas 76109-4895
 Phone - (214) 217-2200
 Fax - (214) 217-2201

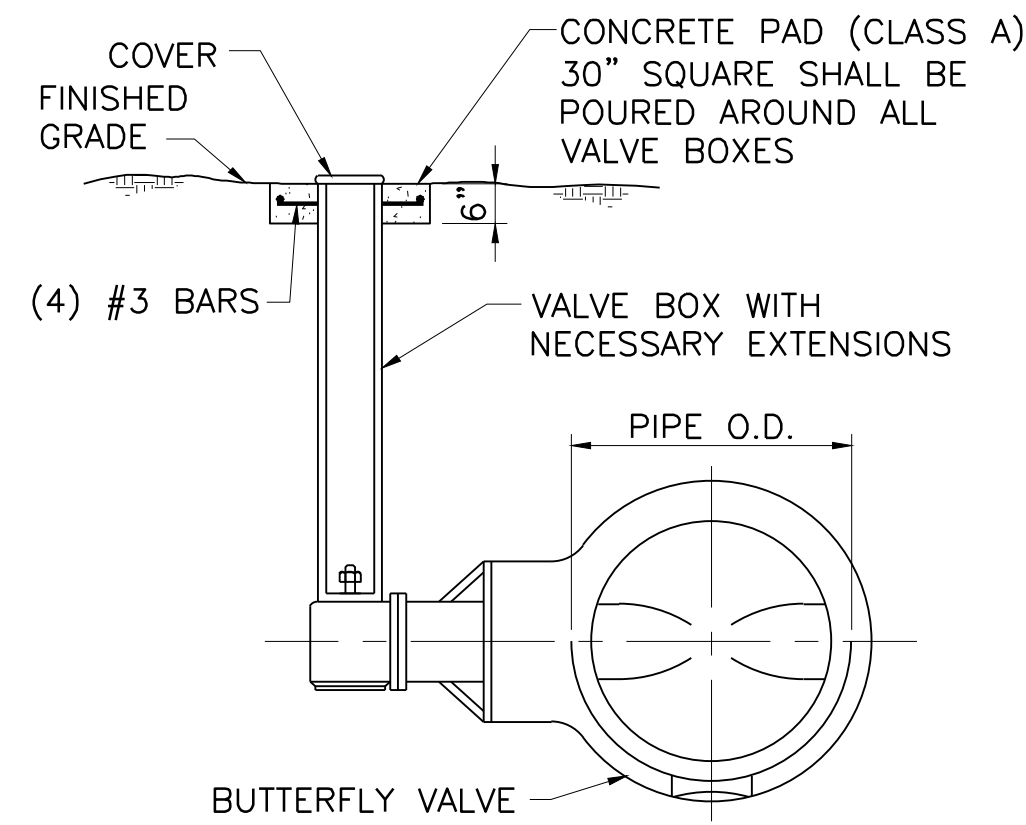
NORTH TEXAS MUNICIPAL WATER DISTRICT
NORTH MCKINNEY PIPELINE
 PHASE I AND II, PROJECT NO. 210

STANDARD DETAILS
MISCELLANEOUS DETAILS



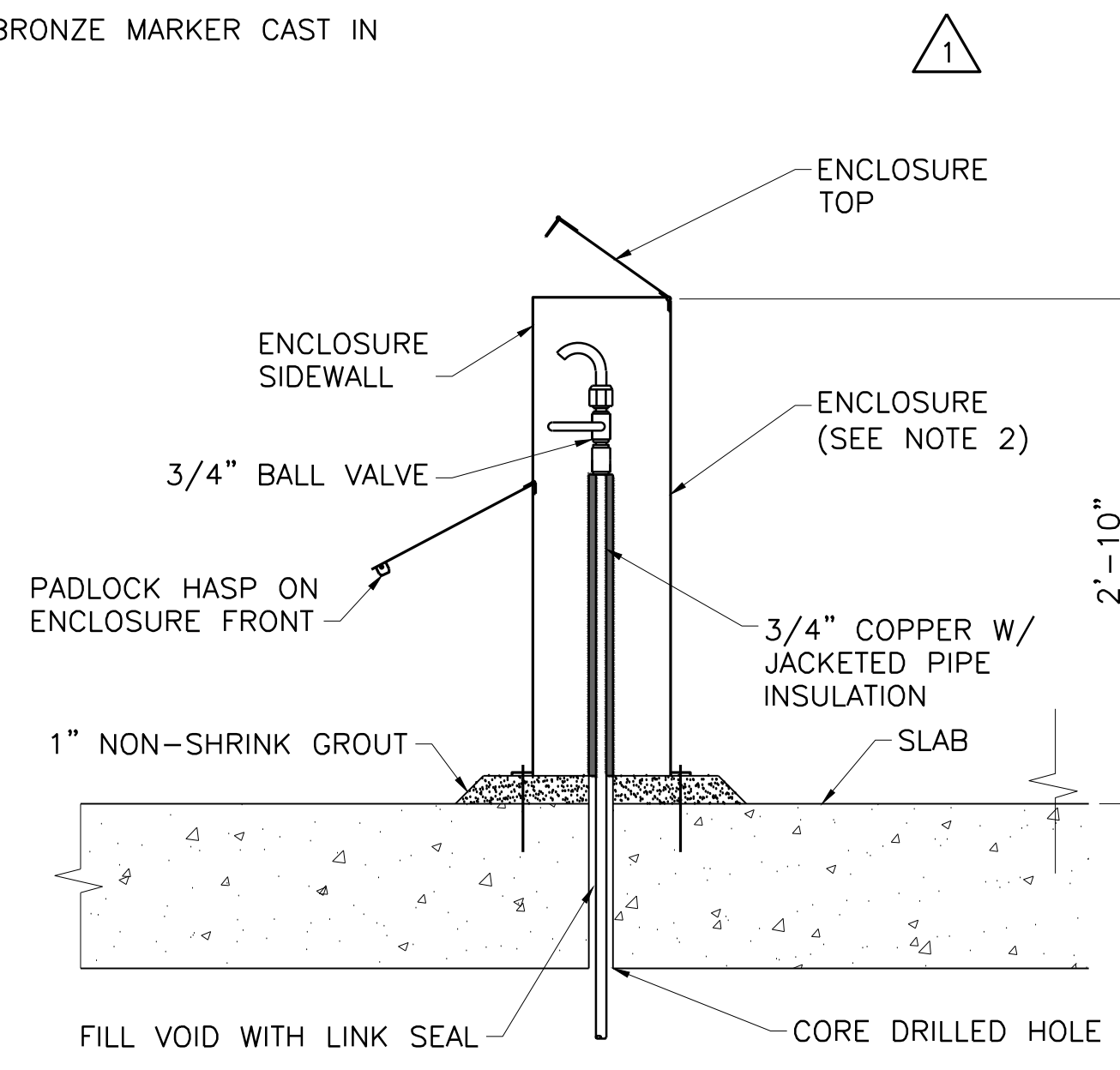
- NOTES:**
1. FEET OF CONTROL VALVE SHALL REST ON 3/4" BASE PLATE, BUT SHALL NOT BE ANCHORED TO THE PLATE OR CONCRETE VALVE SUPPORT.
 2. CONTRACTOR SHALL VERIFY THE CONTROL VALVE FOOT PRINT LAYS INSIDE THE VALVE BEARING AREA PRIOR TO CONSTRUCTION OF CONTROL VALVE SUPPORT.

CONTROL VALVE SUPPORT DETAILS
 NOT TO SCALE



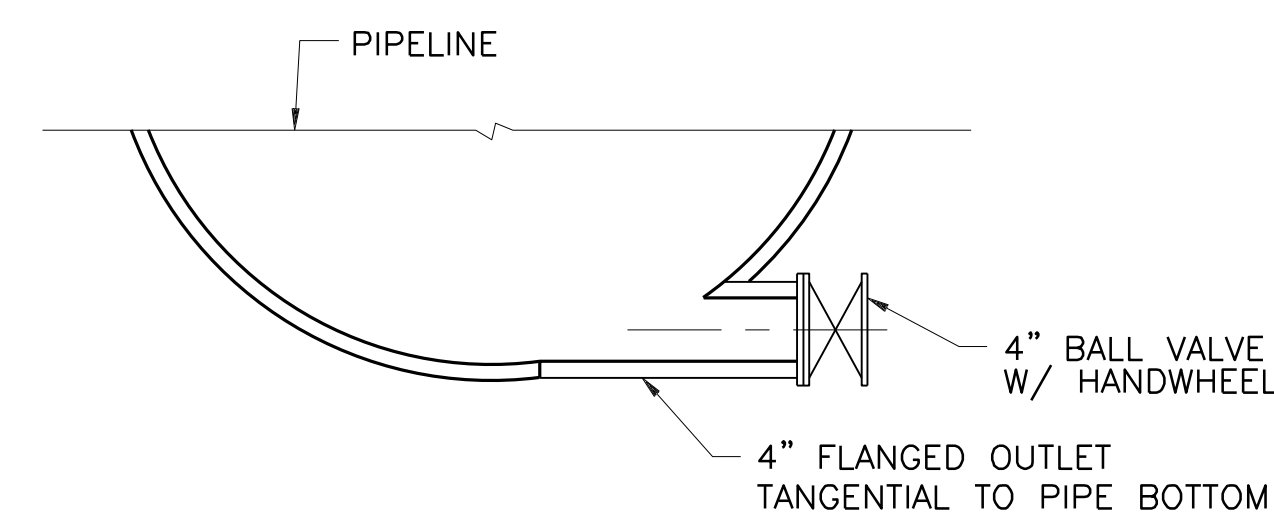
- NOTES:**
1. ENCASE MANUAL OPERATED VALVES AND FITTINGS IN WAX TAPE AND FLOWABLE FILL TO CENTERLINE OF VALVE
 2. INSTALL BRONZE MARKER CAST IN PAD.

SECTION
 NOT TO SCALE

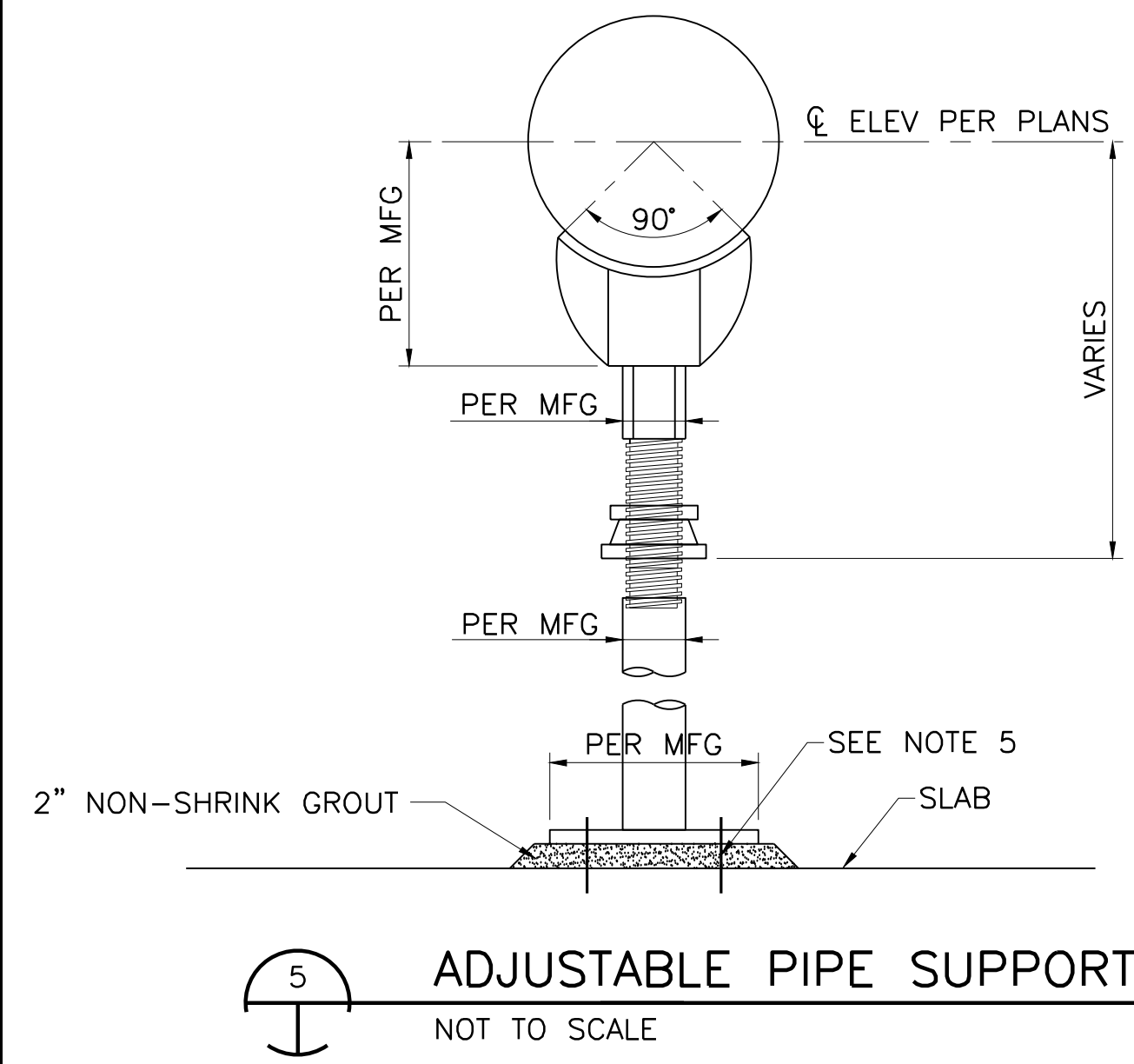


- NOTES:**
1. PROVIDE 3/8" DIA 316 STAINLESS STEEL EPOXY ANCHOR, TYPICAL ALL 4 SIDES.
 2. ENCLOSURE SHALL BE A MUELLER CO. MODEL MUE101033BL OR APPROVED EQUAL.
 3. INSTALL HANGERS AND SUPPORTS TO ADEQUATELY ATTACH PIPING TO VAULT.

SAMPLING STATION
 NOT TO SCALE



4" DRAIN OUTLET DETAIL
 NOT TO SCALE



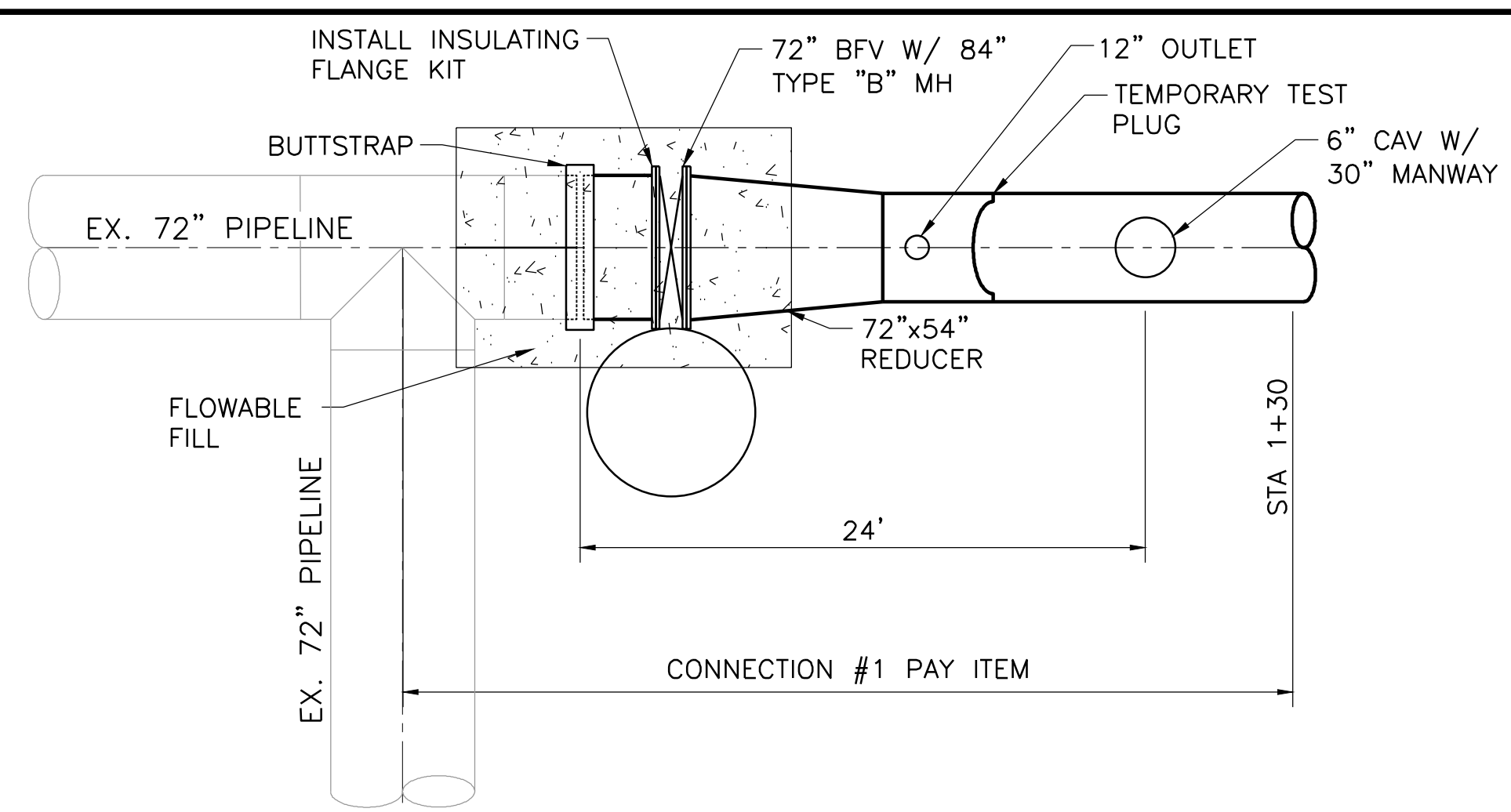
- NOTES:**
1. PIPE SUPPORT DIMENSION TO BE DETERMINED BY MANUFACTURER.
 2. SADDLE SUPPORT SHALL BE DESIGNED FOR THE OD OF PIPE.
 3. ADJUSTABLE PIPE SUPPORT SHALL BE ANVIL FIG. 264 OR APPROVED EQUAL. PIPE SUPPORT WITH STRAP SHALL BE ANVIL FIG. 265 OR APPROVED EQUAL.
 4. SUPPORT SHALL BE HOT DIPPED GALVANIZED.
 5. ANCHOR PIPE SUPPORT TO SLAB AS REQUIRED BY MANUFACTURER. AT A MINIMUM PROVIDE (4) 1/2 inch HAS ROD (TYPE 304 SS) WITH HILT RE500 ADHESIVE AND 6" EMBEDMENT.

ADJUSTABLE PIPE SUPPORT
 NOT TO SCALE

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 Feb 09, 2016 - 10:56am
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NO.	ISSUE	BY	DATE	FRM. JOB NO.	NTD11224
1	RECORD DRAWING	ASM	1/22/16	DATE	1/22/2016
2	ISSUED FOR CONSTRUCTION	ASM	2/05/14	DESIGNED	RJR
3	ADDENDUM NO. 2	ASM	10/31/13	DRAWN	RCW
4	VERIFY SCALE	JP		CHECKED	JP
Bar is one inch on original drawing. If not one inch on this sheet, adjust scale.					
SHEET DT-12					
SEQ. 51					

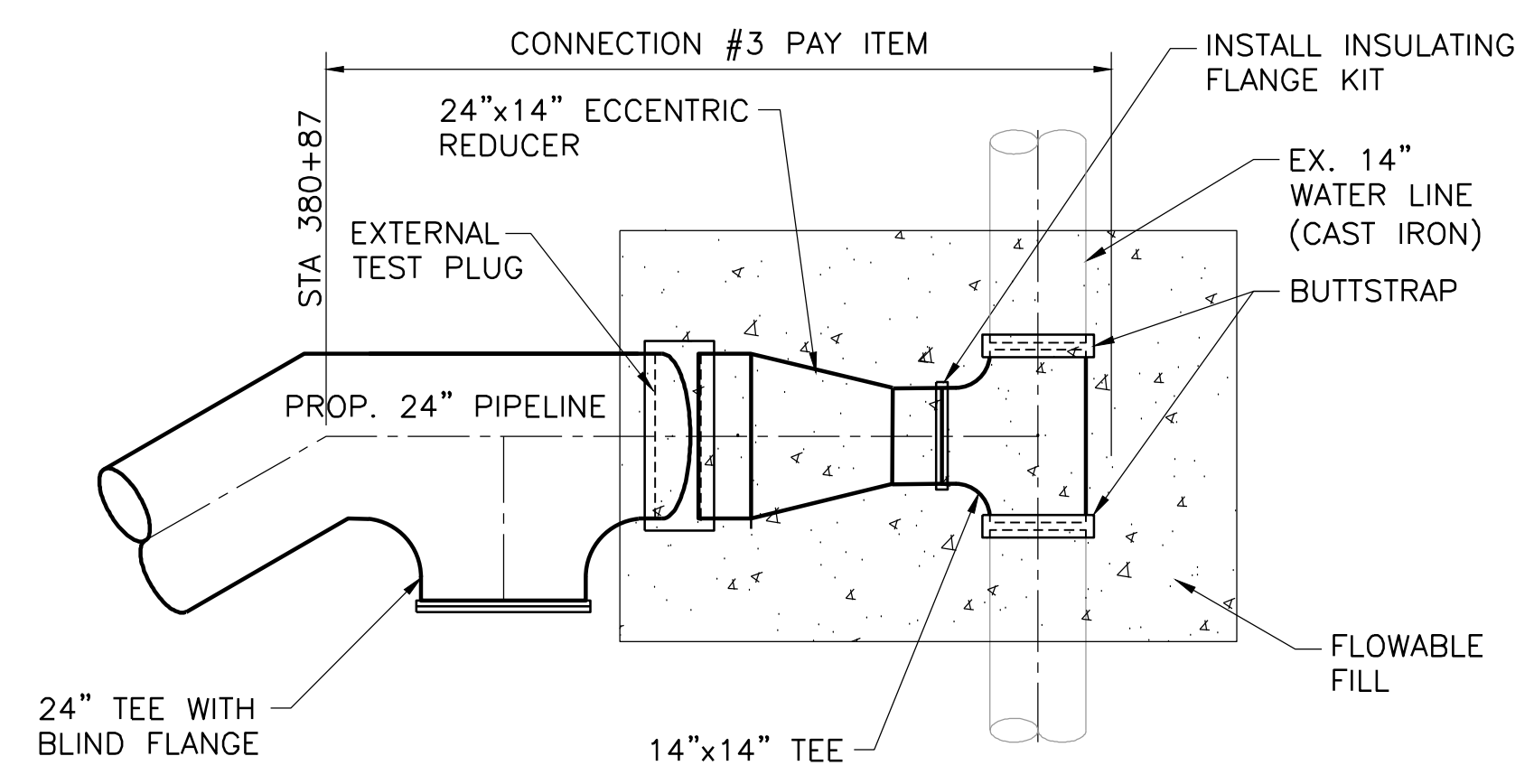
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 LMS Tech
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 09/24/2013 6:30:04 P.M. LTS: 1.00 PSLTS: 0 TWST: 360.0 0.0 360.0
 7 REFERENCE FILES: N:\STANDARD\34BORDER.N:\STANDARD\SEAL-ASM.N:\UTIL\BASE\CV-ALL-PL-PRODUCTION.N:\UTIL\BASE\CV-ALL-PL-PRODUCTION.N:\UTIL\BASE\CV-ALL-PR-VIEWS.N:\UTIL\ENG\CV-ALL-PL-DESIGN and N:\UTIL\SURVEY\CV-ALL-PL-TOPO



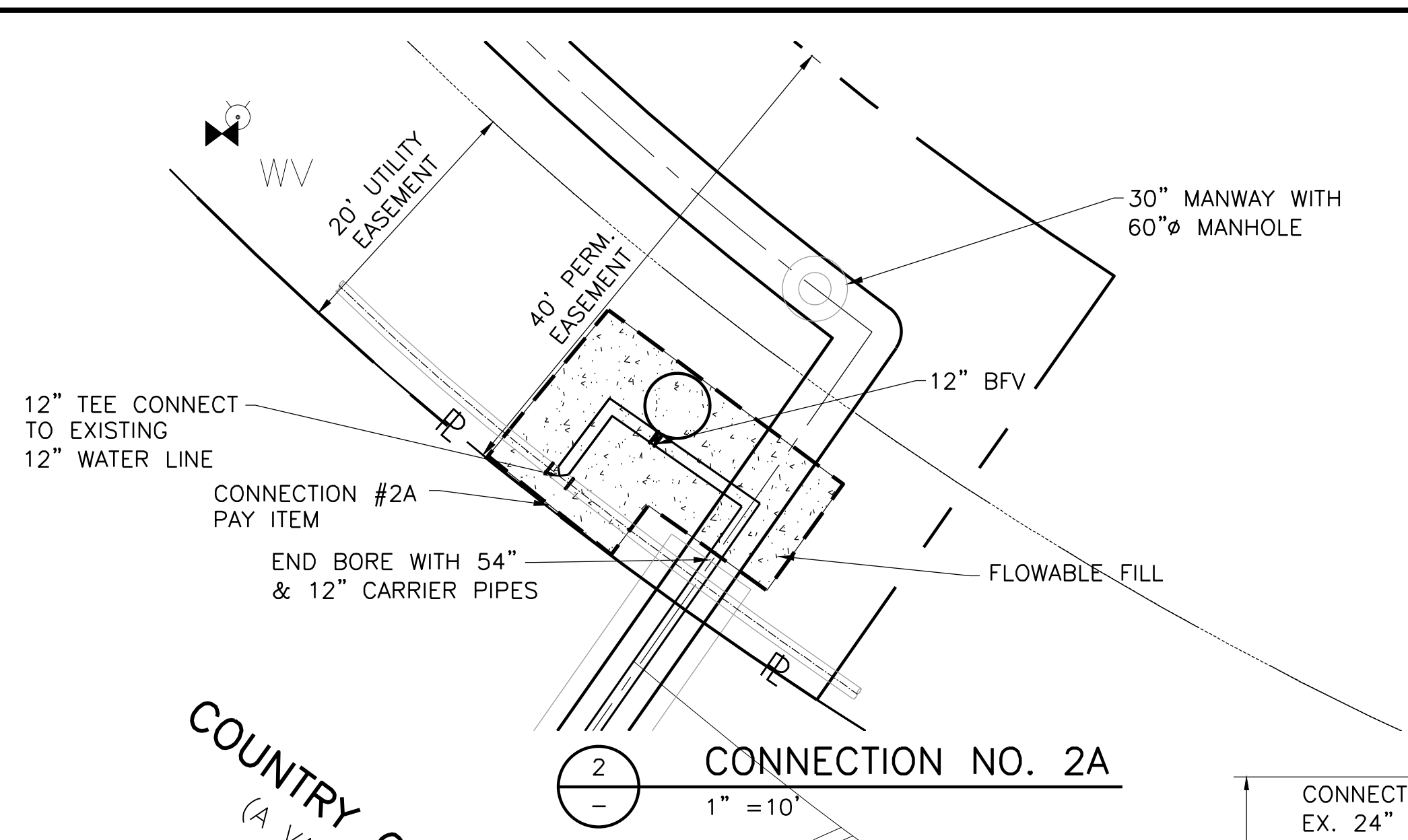
1
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CONNECTION NO. 1
NOT TO SCALE

GENERAL CONNECTION NOTES:

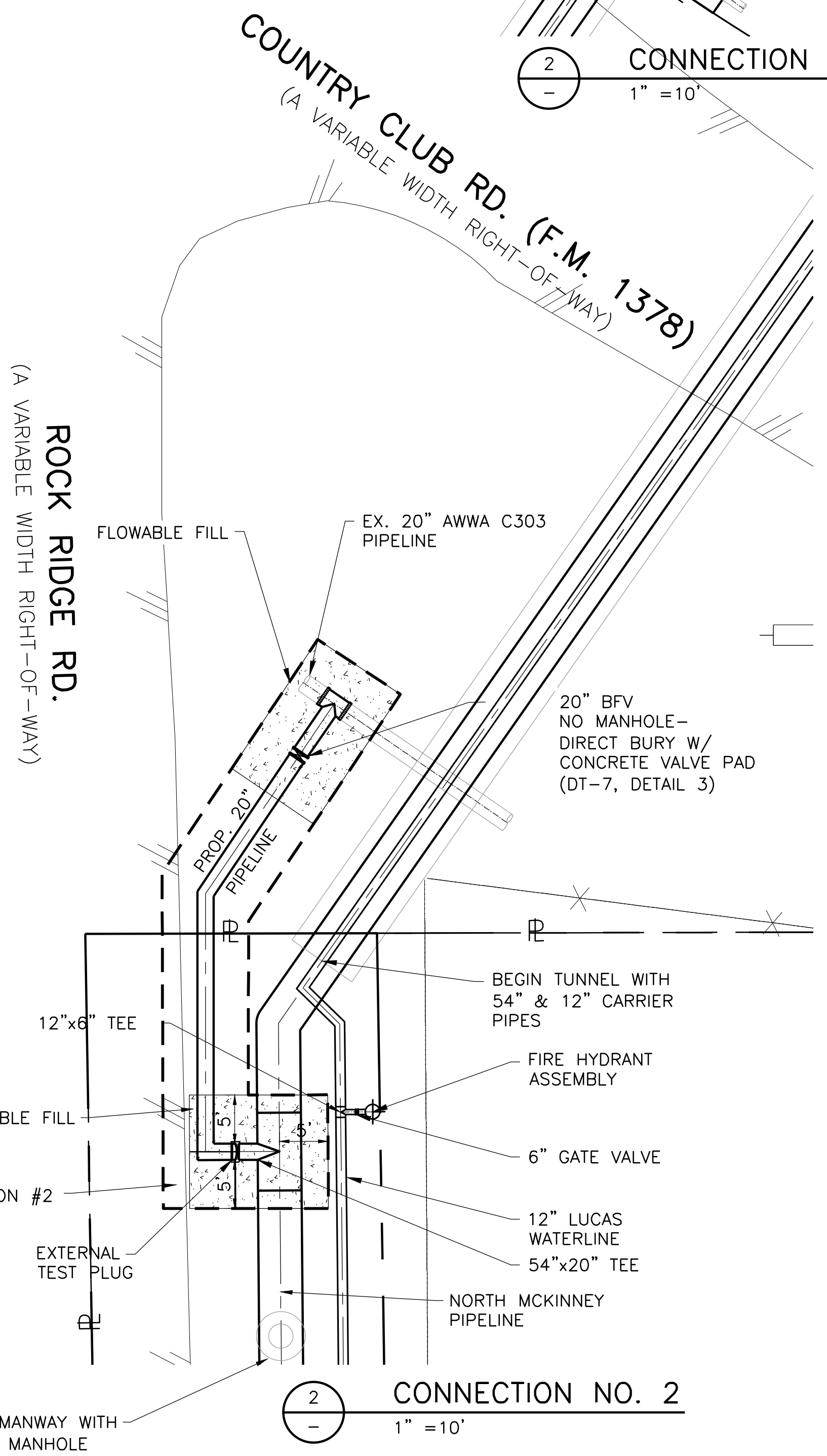
- PIPELINE CONNECTION DETAILS MUST BE MADE BETWEEN OCT. 1 AND MARCH 15 UPON NTMWD APPROVAL.
- CONTRACTOR SHALL PROVIDE NECESSARY THRUST RESTRAINT BY WELDING PIPE JOINTS ON NEW AND/OR EXISTING PIPE, AS DETERMINED NECESSARY BY THE PIPE MANUFACTURER. FITTINGS SHALL BE WELDED EXCEPT WHERE FLANGE OR HARNESSED COUPLING IS SHOWN. ALL BOLTS SHALL BE STAINLESS STEEL. DAMAGE TO EXISTING PIPE DURING REMOVAL SHALL BE REPAIRED BY CONTRACTOR, AT HIS COST.
- CONTRACTOR SHALL UNCOVER AND FIELD VERIFY HORIZONTAL AND VERTICAL DIMENSIONS AND EXISTING JOINT LOCATIONS FOR CONNECTION TIE-INS PRIOR TO MANUFACTURING OF NEW PIPE AND CONSTRUCTION. ALL EXISTING UTILITIES IN AREA TO BE LOCATED AND COORDINATED WITH NTMWD BEFORE PIPE CONSTRUCTION TO ALLOW CHANGES, IF CONFLICTS EXIST.
- CONTRACTOR SHALL SUPPORT AND PROTECT ALL EXISTING MANHOLES AND PIPING.
- THE CONTRACTOR SHALL INSTALL TEMPORARY TEST PLUGS TO HYDROTEST THE PIPELINE. AFTER THE SUCCESSFUL HYDROSTATIC TEST, THE CONTRACTOR SHALL DISINFECT THE PIPELINE PER SPECIFICATION 33 10 13. CONTRACTOR SHALL REMOVE PLUG AFTER TEST COMPLETION AND REPAIR THE PIPE.
- ENCASE VALVES AND FITTINGS IN WAX TAPE, FILL IRREGULAR SURFACES OF VALVE/BUTTS WITH PETROLEUM MASTIC AND PLACE FLOWABLE FILL BACKFILL TO THE LIMITS SHOWN IN THE DETAILS.
- CONTRACTOR TO SETUP 12" WATERLINE WITH 12" GATE VALVE AND 12" CHECK VALVE FROM FLANGED OUTLET AT CONNECTION TO NEAREST FLANGED CONNECTION ON EXISTING PIPELINE TO FILL PIPE.
- CONTRACTOR MUST SALVAGE GATE VALVES AND 72" BLIND FLANGE AND DELIVER TO NTMWD.
- COAT INTERIOR OF PIPE AT INSULATION FLANGES PER SECTION 09 97 16 PIPELINE COATINGS AND LININGS.
- COAT PIPELINE TO MATCH EXISTING PIPELINE COATING UP TO INSULATING FLANGE.
- INSTALL TYPE-I TEST STATION AT ALL INSULATING FLANGES.
- CONTRACTOR SHALL PREPARE A WRITTEN DESCRIPTION OF THE TIE-IN PROCEDURES AND SUBMIT TO THE OWNER AT LEAST TWO WEEKS PRIOR TO SHUTDOWN. SEE SECTION 01 35 00 FOR ADDITIONAL REQUIREMENTS.
- PIPE MANUFACTURER RESPONSIBLE FOR DESIGN OF SPOOL PIECES TO MATCH EXISTING PIPE MATERIAL AND PRESSURE CLASS INCLUDING COATINGS AND LININGS.
- CONNECTION NO. 2A PAY ITEM WILL NOT INCLUDE 54-INCH PIPELINE INSTALLATION AND APPURTENANCES THAT ARE LOCATED IN THE VICINITY OF THE 12-INCH WATERLINE CONNECTION.



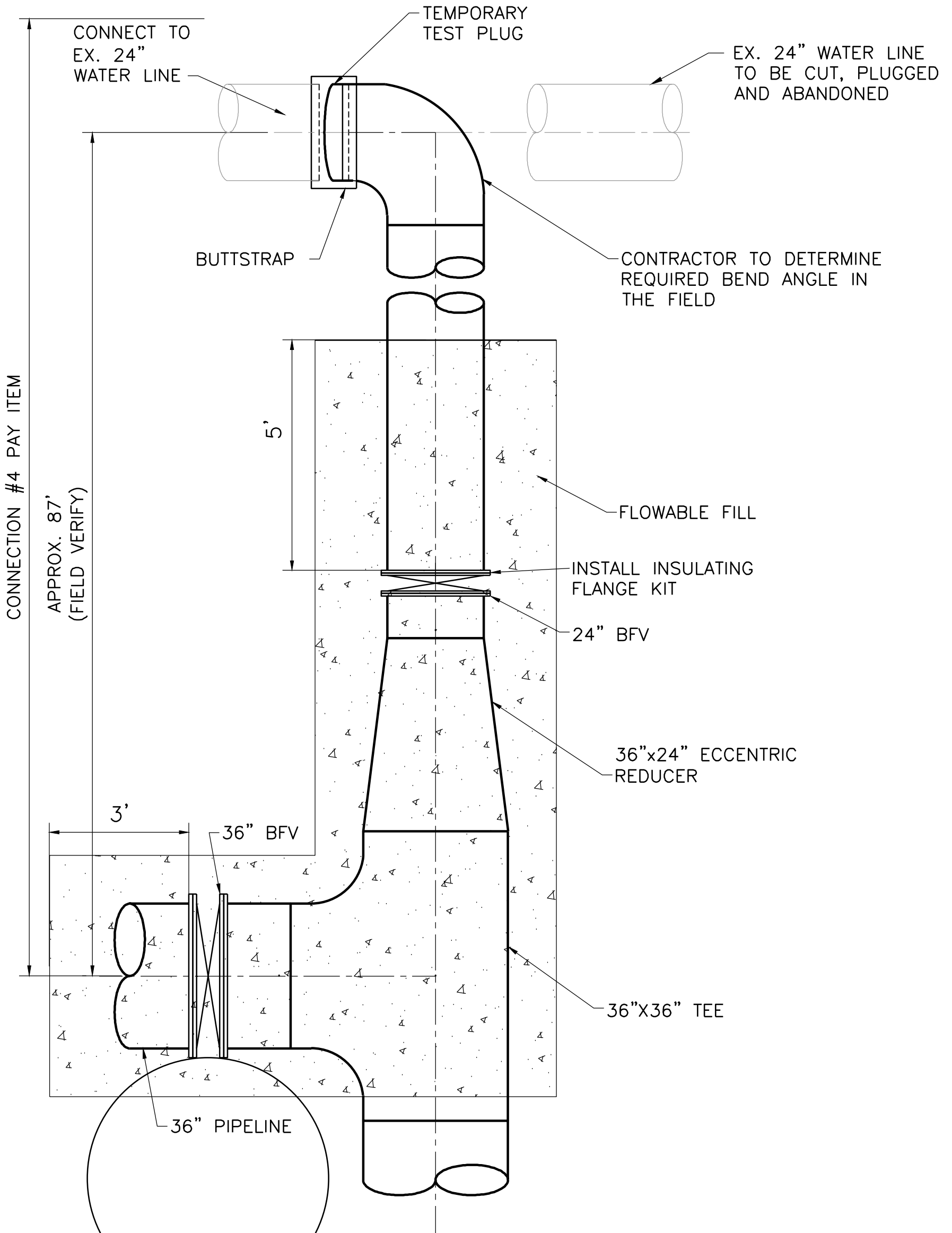
3
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CONNECTION NO. 3
NOT TO SCALE



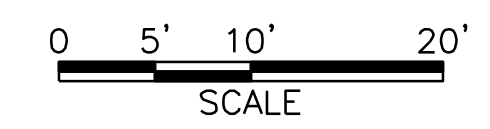
2
-
CONNECTION NO. 2A
1" = 10'



2
-
CONNECTION NO. 2
1" = 10'



4
-
CONNECTION NO. 4
NOT TO SCALE



This Record Drawing is a combination of the sealed engineering contract drawings for this project, modified by information furnished by the contractor reflecting changes in the field. The contractor shall be responsible for sealed drawings on file at the offices of
FREESSE AND NICHOLS, INC.
 4055 INTERNATIONAL PLAZA, SUITE 200
 FORT WORTH, TEXAS 76109-4895
 RECORD DRAWINGS PREPARED ON:
 1/22/2016
 Freesse and Nichols, Inc.
 Texas Registered Engineering Firm F-2144

FREESSE AND NICHOLS
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NORTH TEXAS MUNICIPAL WATER DISTRICT
NORTH MCKINNEY PIPELINE
 PHASE I AND II, PROJECT NO. 210

NO.	ISSUE	BY	DATE	FRM. JOB NO.	NTD11224
				DATE	1/22/2016
				DESIGNED	WRS
				DRAWN	LMR
				REVISED	
				CHECKED	
				FILE NAME	CV-PPL-DT-CON01
				RECORD DRAWING	
				ISSUED FOR CONSTRUCTION	
				VERIFY SCALE	

SHEET SP-1
 SEQ. 52