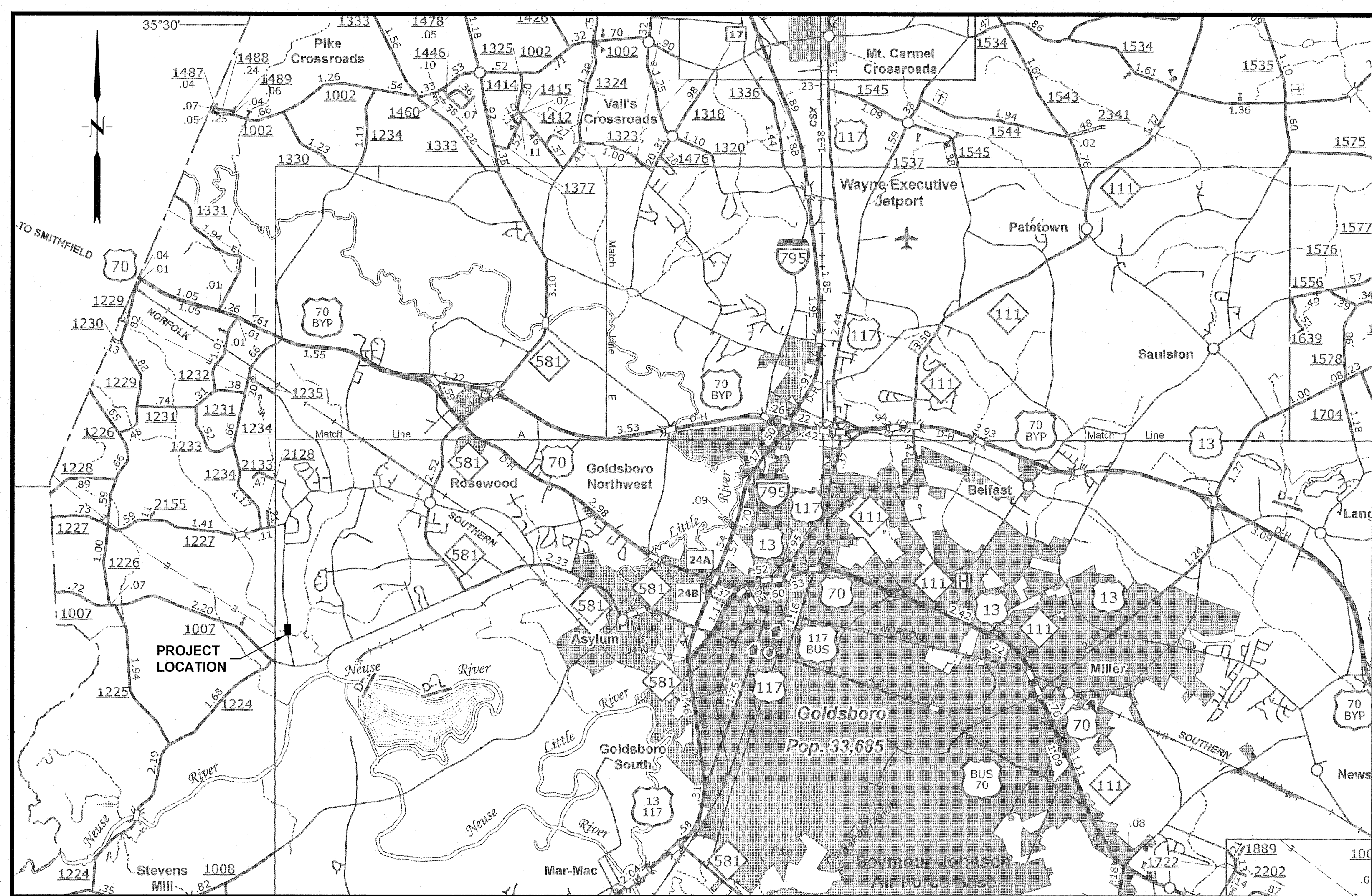


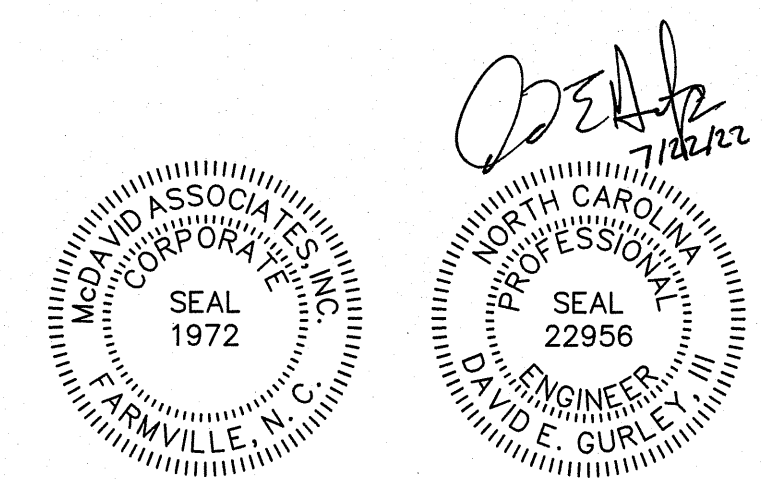
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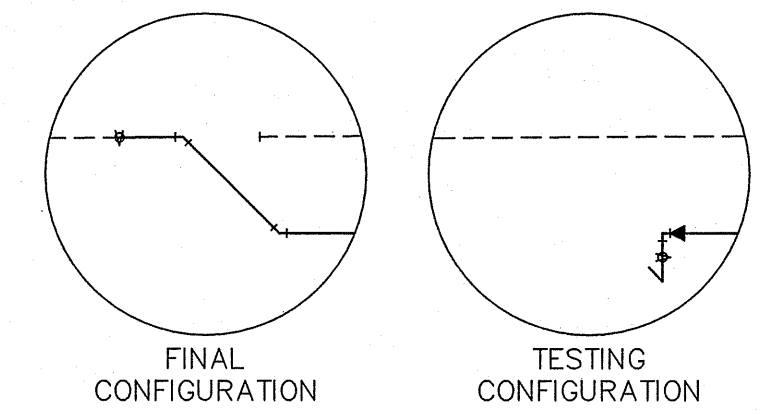
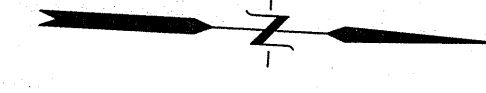
FORK TOWNSHIP SANITARY DISTRICT 2022 WATER IMPROVEMENTS PROJECT CONTRACT NO. 291 - ROSEWOOD BR66 RELOCATION WAYNE COUNTY, NORTH CAROLINA JULY 22, 2022

INDEX OF PLANS

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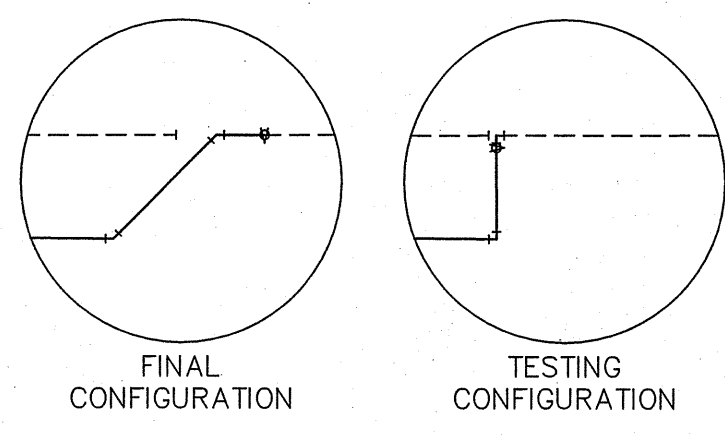
<p style="text-align: center;">McDAVID ASSOCIATES, INC. Corporate License No. C-131</p> <p style="text-align: center;">INC</p> <p style="text-align: center;"> CORPORATE OFFICE Engineers & Surveyors 3714 North Main Street P. O. Box 48 Farmville, NC 27829 Telephone: (919) 735-7239 Facsimile: (919) 735-7251 </p>	<p style="text-align: center;"> BRANCH OFFICE 105 East Walnut Street P. O. Box 1776 Goldsboro, NC 27530 Telephone: (919) 735-7251 Facsimile: (919) 735-7251 </p>
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<p>SHEET 1 OF 5</p>	



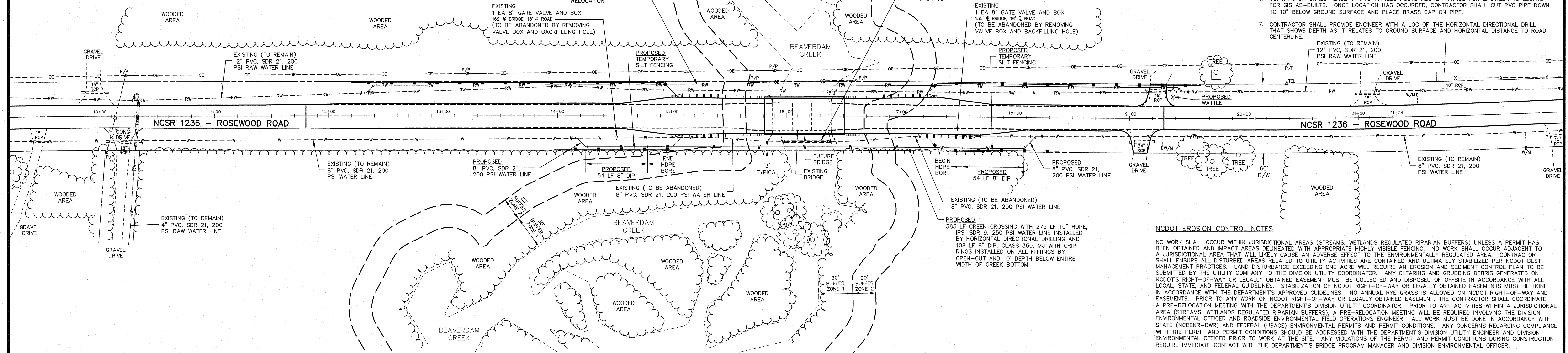
- PROPOSED**
 1 EA 8" PLUG, TAPPED 2", DI (TEMPORARY)
 1 EA 2" BLOW-OFF ASSEMBLY (TEMPORARY)
 1 EA 8" GATE VALVE AND BOX
 2 EA 8" 45° BEND, DI
 1 EA 8" PLUG, DI

NOTE: SEE SHEET 2 OF 5 FOR 12" RAW WATER LINE RELOCATION

- PROPOSED**
 1 EA 8" X 8" TAPPING SLEEVE AND VALVE (TEMPORARY)
 1 EA 8" 90° BEND, DI (TEMPORARY)
 1 EA 8" GATE VALVE AND BOX
 2 EA 8" 45° BEND, DI
 1 EA 8" PLUG, DI

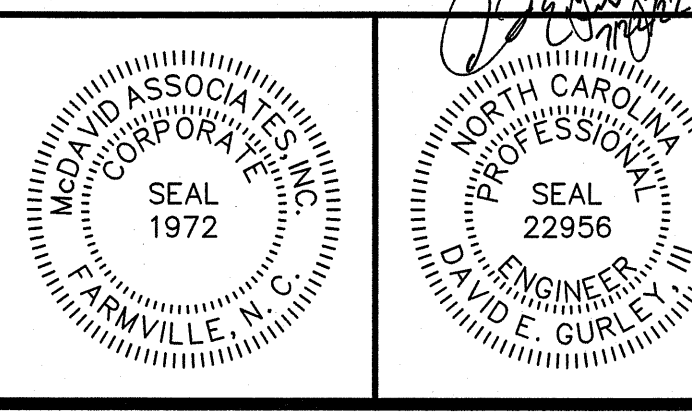
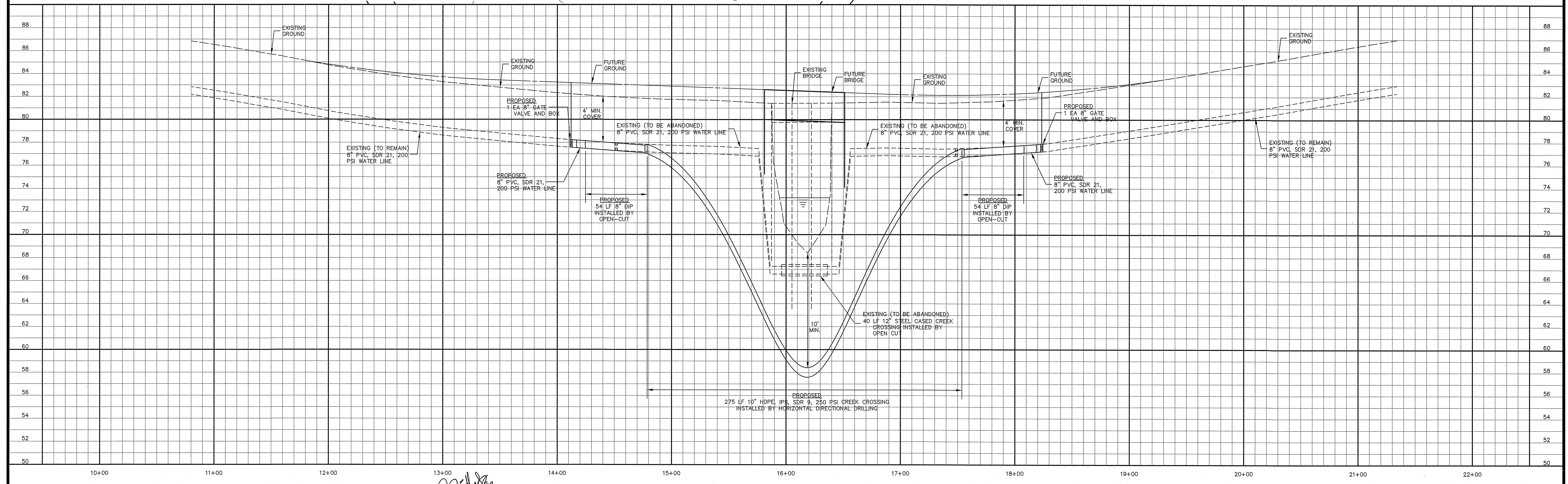


- CONSTRUCTION NOTES**
- CONSTRUCT PROPOSED WATER LINE AND APPURTENANCES. LEAVE ONE END OPEN AND TURNED UP ABOVE GROUND LEVEL TO FLUSH AND PIG PRIOR TO INSTALLING TEMPORARY BLOWOFF FOR TESTING AND DISINFECTION PURPOSES.
 - TEST AND DISINFECT WATER LINE. PROVIDE TEST RESULTS TO ENGINEER.
 - CONTRACTOR SHALL NOT PROCEED WITH ADDITIONAL WORK UNTIL AUTHORIZED BY ENGINEER.
 - TRANSFER ANY EXISTING WATER SERVICES FROM EXISTING WATER LINE TO PROPOSED WATER LINE.
 - COORDINATE TEMPORARY SHUTDOWN OF EXISTING WATER LINES WITH WAYNE WATER DISTRICTS (JOEY THREEWITTS 919-731-2310) AND NOTIFY USERS TO BE IMPACTED VIA DOOR HANGERS OF TIME, DATE AND DURATION OF OUTAGE. MAXIMUM OUTAGE SHALL NOT EXCEED FOUR (4) HOURS. TIE-IN NEW WATER LINE TO EXISTING WATER LINE VIA 8" 45° BENDS.
 - CONTRACTOR SHALL PLACE 4" PVC WITNESS POSTS ABOVE FITTINGS FOR ENGINEER TO LOCATE FOR GIS AS-BUILTS. ONCE LOCATION HAS OCCURRED, CONTRACTOR SHALL CUT PVC PIPE DOWN TO 10" BELOW GROUND SURFACE AND PLACE BRASS CAP ON PIPE.
 - CONTRACTOR SHALL PROVIDE ENGINEER WITH A LOG OF THE HORIZONTAL DIRECTIONAL DRILL THAT SHOWS DEPTH AS IT RELATES TO GROUND SURFACE AND HORIZONTAL DISTANCE TO ROAD CENTERLINE.



NCDOT EROSION CONTROL NOTES

NO WORK SHALL OCCUR WITHIN JURISDICTIONAL AREAS (STREAMS, WETLANDS REGULATED RIPARIAN BUFFERS) UNLESS A PERMIT HAS BEEN OBTAINED AND IMPACT AREAS DELINEATED WITH APPROPRIATE HIGHLY VISIBLE FENCING. NO WORK SHALL OCCUR ADJACENT TO A JURISDICTIONAL AREA THAT WILL CAUSE AN ADVERSE EFFECT TO THE ENVIRONMENTALLY REGULATED AREA. CONTRACTOR SHALL ENSURE ALL DISTURBED AREAS RELATED TO UTILITY ACTIVITIES ARE CONTAINED AND ULTIMATELY STABILIZED PER NCDOT BEST MANAGEMENT PRACTICES. LAND DISTURBANCE EXCEEDING ONE ACRE WILL REQUIRE AN EROSION AND SEDIMENT CONTROL PLAN TO BE SUBMITTED BY THE UTILITY COMPANY TO THE DIVISION UTILITY COORDINATOR. ANY CLEARING AND GRUBBING DEBRIS GENERATED ON NCDOT'S RIGHT-OF-WAY OR LEGALLY OBTAINED EASEMENT MUST BE COLLECTED AND DISPOSED OFF-SITE IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL GUIDELINES. STABILIZATION OF NCDOT RIGHT-OF-WAY OR LEGALLY OBTAINED EASEMENTS MUST BE DONE IN ACCORDANCE WITH THE DEPARTMENT'S APPROVED GUIDELINES. NO ANNUAL RYE GRASS IS ALLOWED ON NCDOT RIGHT-OF-WAY AND EASEMENTS. PRIOR TO ANY WORK ON NCDOT RIGHT-OF-WAY OR LEGALLY OBTAINED EASEMENT, THE CONTRACTOR SHALL COORDINATE A PRE-RELOCATION MEETING WITH THE DEPARTMENT'S DIVISION UTILITY COORDINATOR. PRIOR TO ANY ACTIVITIES WITHIN A JURISDICTIONAL AREA (STREAMS, WETLANDS REGULATED RIPARIAN BUFFERS), A PRE-RELOCATION MEETING WILL BE REQUIRED INVOLVING THE DIVISION ENVIRONMENTAL OFFICER AND ROADSIDE ENVIRONMENTAL FIELD OPERATIONS ENGINEER. ALL WORK MUST BE DONE IN ACCORDANCE WITH STATE (NCDENR-DWR) AND FEDERAL (USACE) ENVIRONMENTAL PERMITS AND PERMIT CONDITIONS. ANY CONCERNS REGARDING COMPLIANCE WITH THE PERMIT AND PERMIT CONDITIONS SHOULD BE ADDRESSED WITH THE DEPARTMENT'S DIVISION UTILITY ENGINEER AND DIVISION ENVIRONMENTAL OFFICER PRIOR TO WORK AT THE SITE. ANY VIOLATIONS OF THE PERMIT AND PERMIT CONDITIONS DURING CONSTRUCTION REQUIRE IMMEDIATE CONTACT WITH THE DEPARTMENT'S BRIDGE PROGRAM MANAGER AND DIVISION ENVIRONMENTAL OFFICER.



REVISIONS		
NO.	DATE	DESCRIPTION

MAI REVIEW OFFICER APPROVAL

DATE: _____ MAI REVIEW OFFICER: _____

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PLAN & PROFILE - NCSR 1236 - ROSEWOOD ROAD BR66
 CONTRACT NO. 291 - ROSEWOOD BR66 RELOCATION
 2022 WATER IMPROVEMENTS PROJECT
 FORK TOWNSHIP SANITARY DISTRICT
 WAYNE COUNTY NORTH CAROLINA

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DATE: JULY 22, 2022	APPROVED BY:

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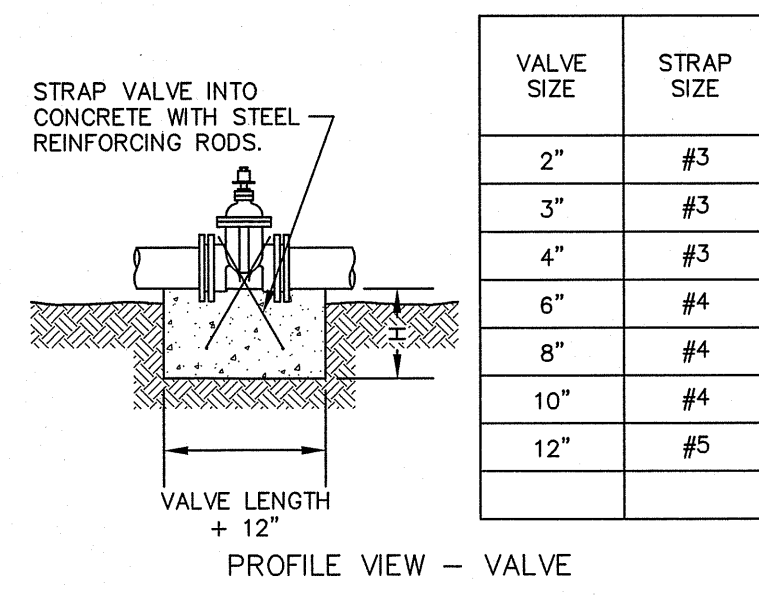
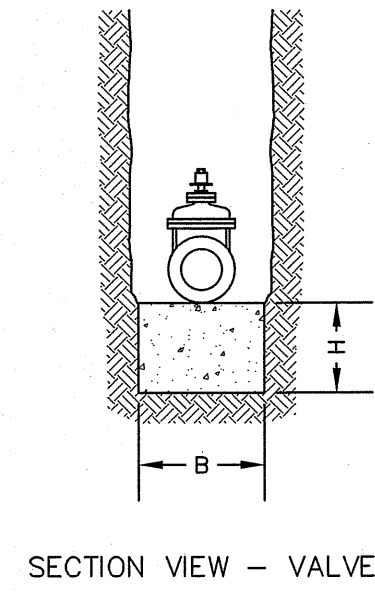
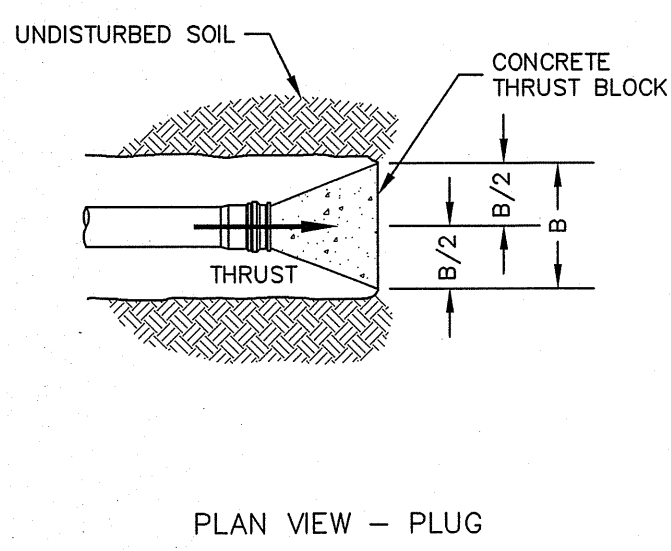
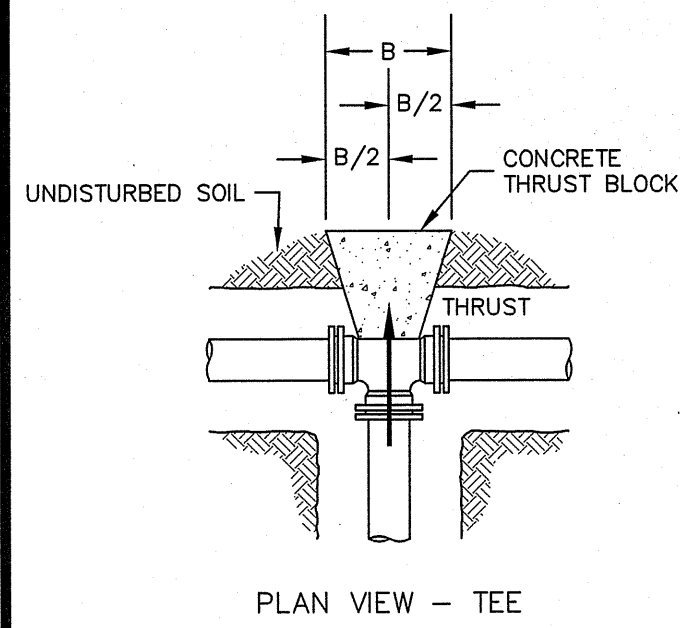
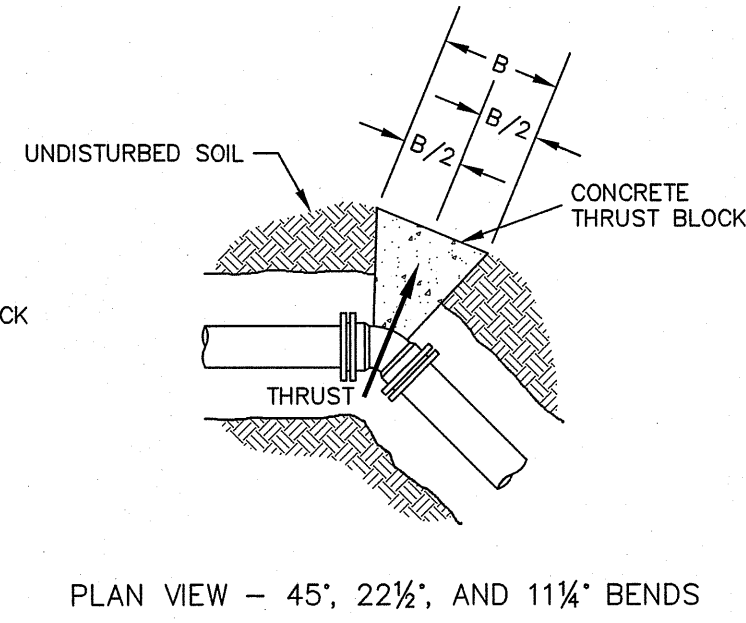
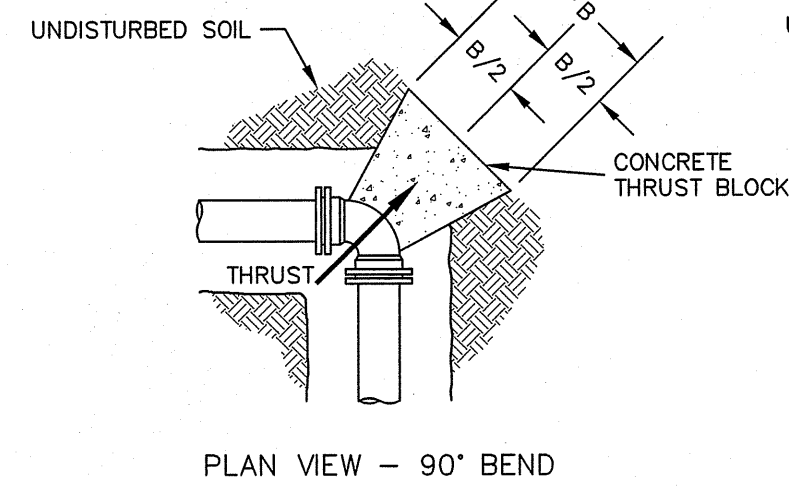
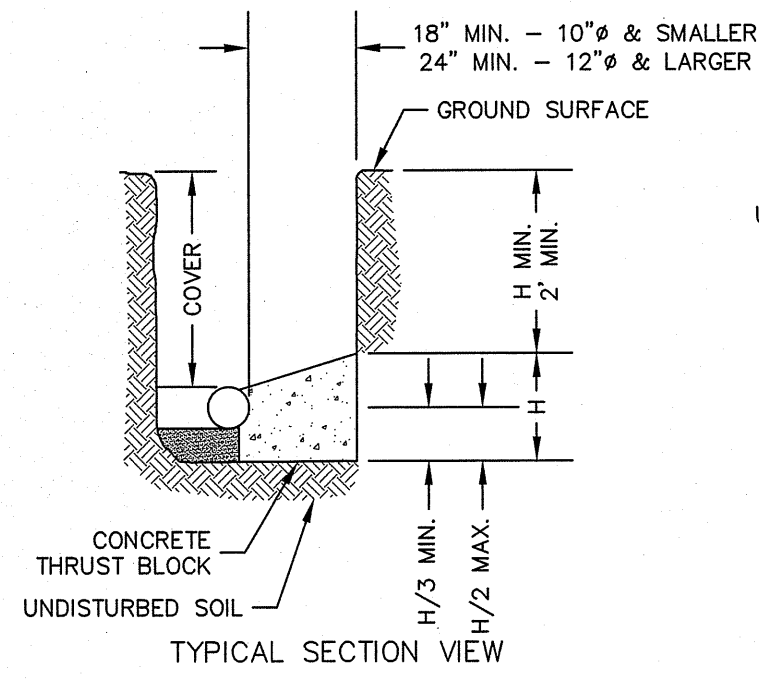
TABLE 1 - MINIMUM THRUST BLOCK AREAS AND DIMENSIONS

NOMINAL PIPE SIZE	90° BEND			45° BEND			22½° BEND			11¼° BEND			TEES, PLUGS AND VALVES		
	AREA (sf)	B (in)	H (in)	AREA (sf)	B (in)	H (in)	AREA (sf)	B (in)	H (in)	AREA (sf)	B (in)	H (in)	AREA (sf)	B (in)	H (in)
2"	0.4	10	6	0.2	8	4	0.1	6	3	0.1	6	3	0.3	8	6
3"	0.8	13	9	0.4	10	6	0.2	6	5	0.1	6	4	0.6	11	8
4"	1.5	18	12	0.8	13	9	0.4	10	6	0.2	6	6	1.0	15	10
6"	3.0	24	18	1.6	20	12	0.8	13	9	0.4	8	8	2.1	21	15
8"	5.2	32	24	2.8	24	17	1.4	17	12	0.7	11	11	3.6	28	20
10"	7.7	40	28	4.2	30	20	2.1	22	14	1.1	13	13	5.5	33	24
12"	10.9	50	32	5.9	36	24	3.0	24	18	1.5	15	15	7.7	40	28

BEARING AREAS IN TABLE 1 ABOVE ARE BASED ON BEARING AGAINST SAND. FOR OTHER SOIL CONDITIONS, THE AREAS AND DIMENSIONS IN TABLE 1 ABOVE SHALL BE MULTIPLIED BY THE APPROPRIATE MULTIPLIER FROM TABLE 2 BELOW.

TABLE 2 - SOIL MULTIPLIERS

SOIL TYPE	SOIL BEARING STRENGTH (psf)	AREA MULTIPLIER	DIMENSION MULTIPLIER
SOFT CLAY	1,000	4.00	2.00
SILT	1,500	2.67	1.64
SANDY SILT	3,000	1.33	1.16
SAND	4,000	1.00	1.00
SANDY CLAY	5,000	0.80	0.90
HARD CLAY	9,000	0.45	0.67



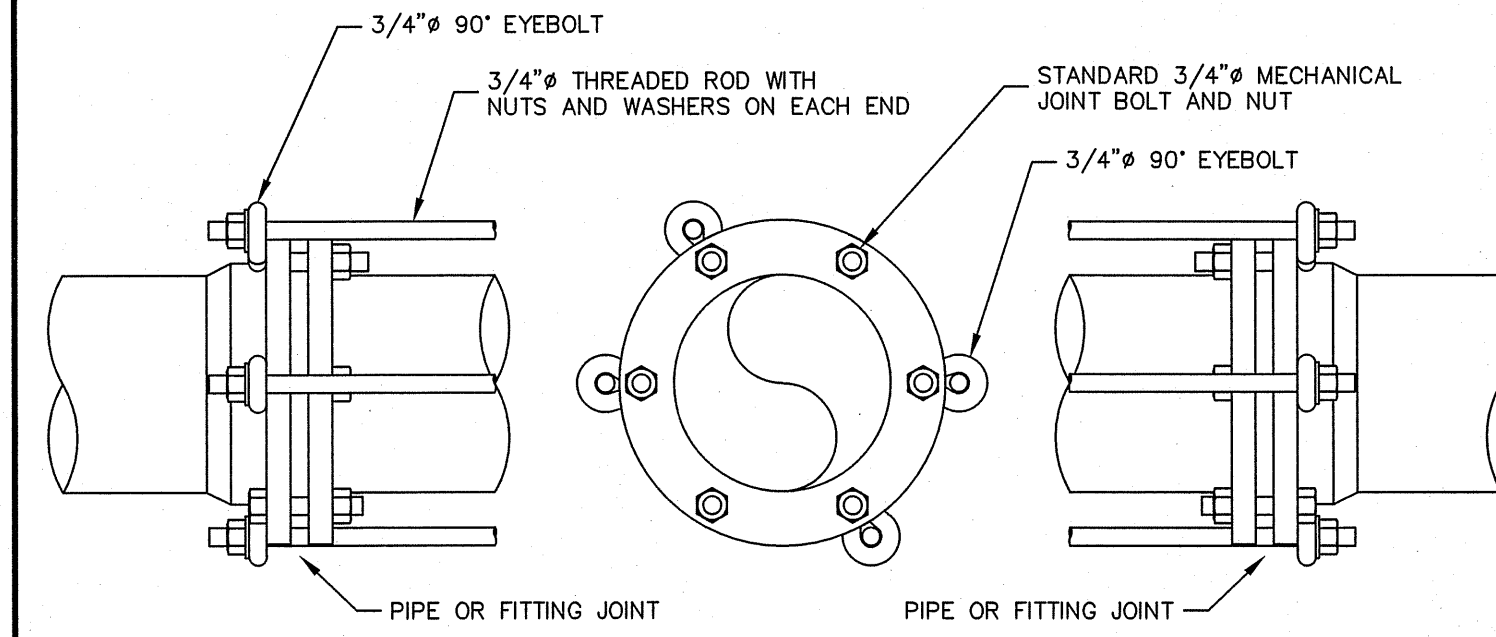
VALVE SIZE	STRAP SIZE
2"	#3
3"	#3
4"	#3
6"	#4
8"	#4
10"	#4
12"	#5

- CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS.
- MINIMUM THRUST BLOCK BEARING AREAS SHALL BE AS SHOWN IN TABLE 1. THRUST BLOCK DIMENSIONS SHALL BE CHOSEN SUCH THAT THE WIDTH (B) IS BETWEEN ONE AND TWO TIMES THE BLOCK HEIGHT (H). DIMENSIONS SHOWN IN TABLE 1 ARE PREFERRED BUT MAY BE VARIED TO MEET SITE CONDITIONS.
- THRUST BLOCKS SHALL BEAR AGAINST THE ITEM BEING BLOCKED FOR A MINIMUM OF 60° ABOVE AND BELOW THE HORIZONTAL CENTERLINE OF THE ITEM.
- SURFACES OF ITEM BEING BLOCKED SHALL BE COVERED WITH POLYETHYLENE ENCASUREMENT PRIOR TO PLACING CONCRETE TO PREVENT DIRECT CONTACT AND BONDING WITH CONCRETE.
- ALL JOINTS SHALL BE ACCESSIBLE FOR REPAIR AND/OR FUTURE CONNECTIONS. CONCRETE SHALL NOT COVER BOLTS, NUTS, OR GLANDS.
- FOR 12" AND SMALLER DIAMETER FITTINGS (BOTH RESTRAINED JOINT AND NON RESTRAINED JOINT) CONCRETE THRUST BLOCKING IS REQUIRED.

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NOMINAL PIPE SIZE (inches)	NUMBER OF THRUST RODS REQUIRED
4	2
6	2
8	2
10	4
12	4

- PROVIDE THRUST RODDING IN ACCORDANCE WITH SECTION 02868 OF THE SPECIFICATIONS.
- PROVIDE THRUST RODDING WITH 90° EYEBOLTS, RODDING LUGS, AND THREADED RODS IN ACCORDANCE WITH THE TABLE TO THE LEFT.
- EVENLY SPACE THE REQUIRED NUMBER OF THRUST RODS AROUND THE PIPE JOINT.
- INSTALL EYEBOLTS IN LIEU OF STANDARD MECHANICAL JOINT BOLTS IN ROUND HOLES. INSTALL RODDING LUGS USING STANDARD MECHANICAL JOINT BOLTS IN SLOTTED HOLES. DO NOT USE EYEBOLTS IN SLOTTED HOLES.
- COMPLETELY TIGHTEN ALL MECHANICAL JOINT BOLTS BEFORE INSTALLING THREADED RODS.
- WHERE THRUST RODDING IS REQUIRED AT THE ENDS OF STEEL CASING, WELD EYEBOLTS TO THE OUTSIDE OF THE CASING WITH 1/4" BY 3" LONG WELDS ON EACH SIDE OF EYEBOLTS. SPACE EYEBOLTS AROUND CASING AT ANGULAR LOCATIONS CORRESPONDING TO THE ANGULAR LOCATIONS OF EYEBOLTS AND/OR RODDING LUGS ON THE FITTING OR VALVE.
- INSTALL THREADED RODS THROUGH EYEBOLTS AND RODDING LUGS. INSTALL NUT AND WASHER ON EACH END OF THREADED ROD AND TIGHTEN SNUG. DO NOT OVERTIGHTEN.

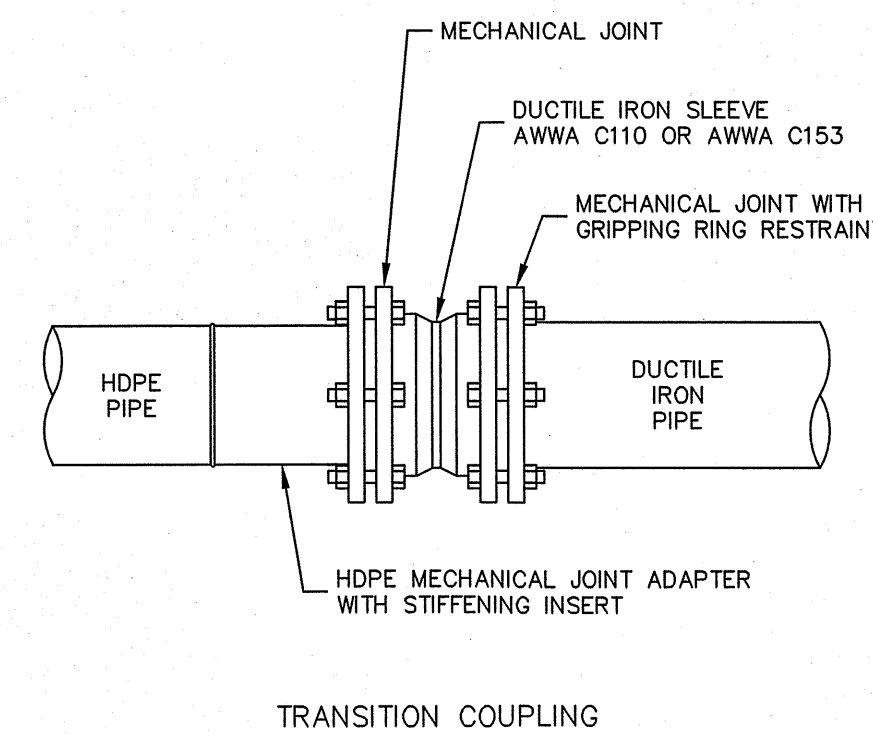
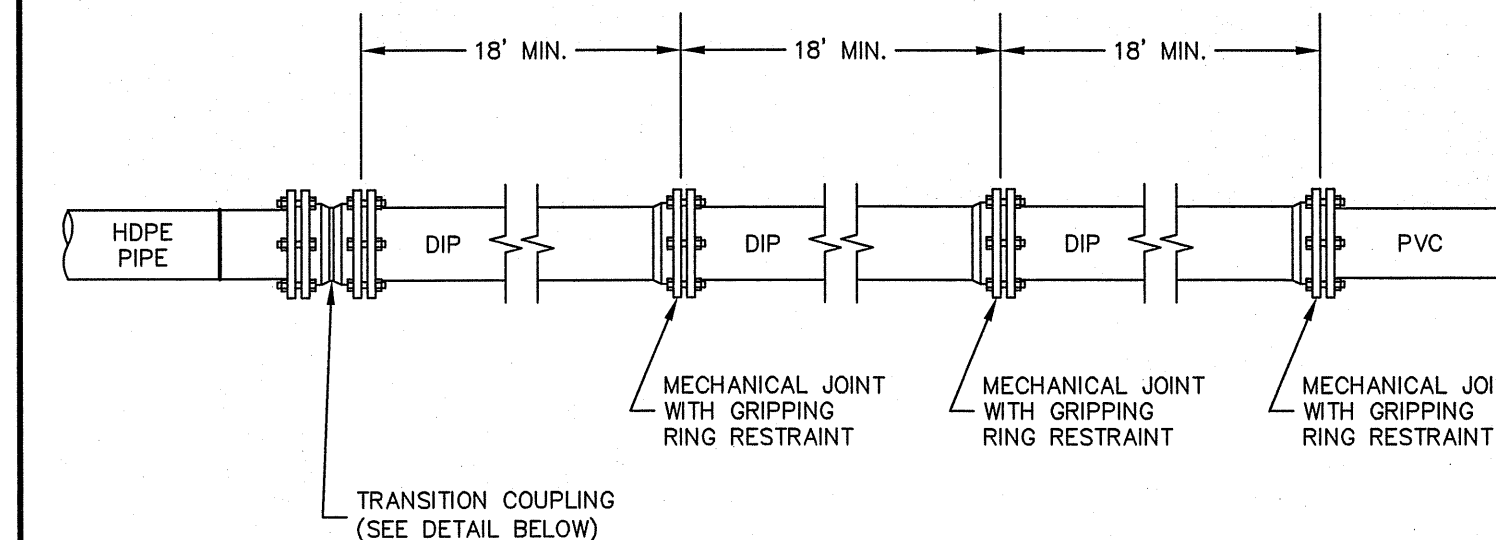
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MECHANICAL JOINT THRUST RODDING

B

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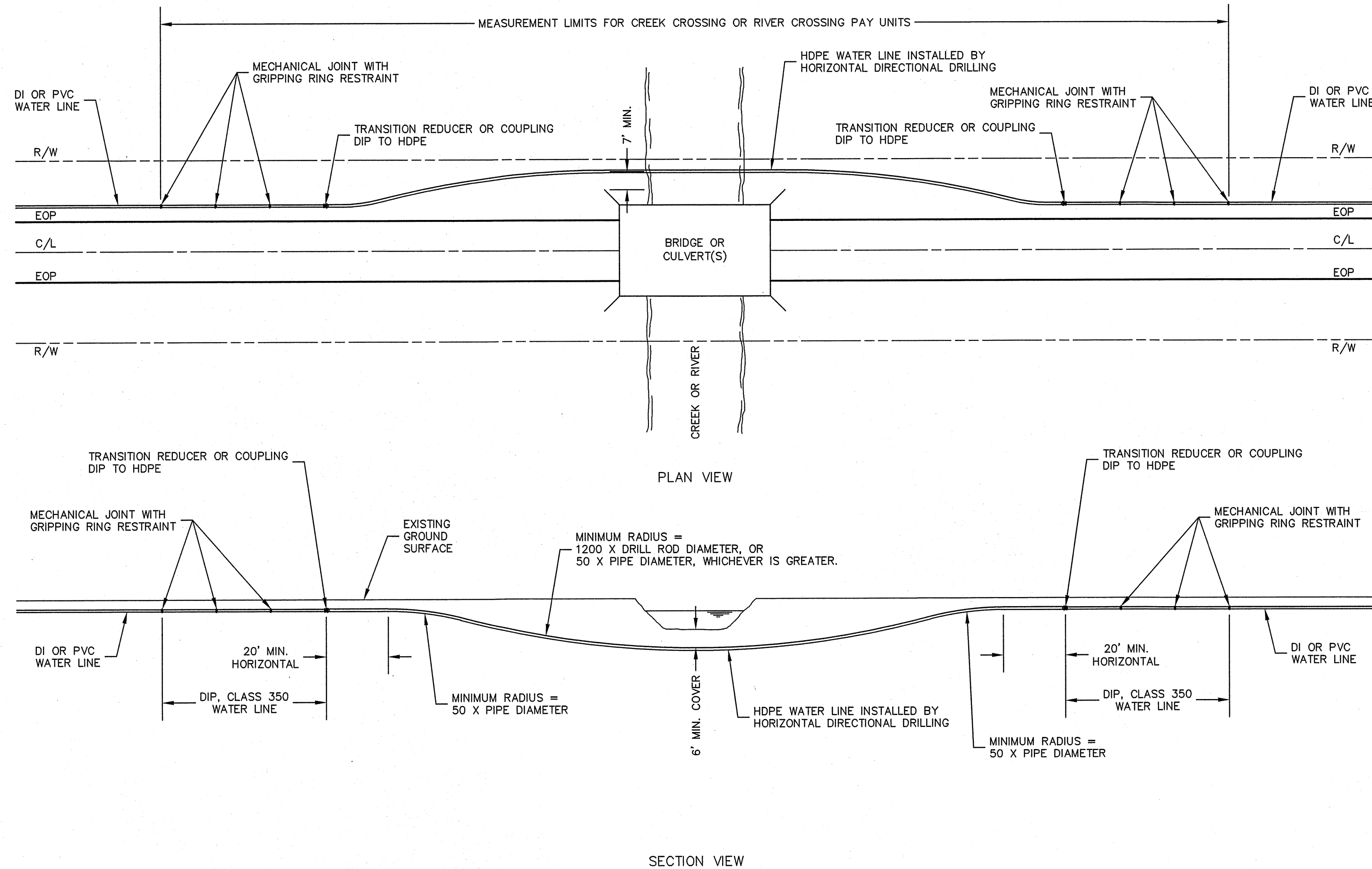
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TRANSITION COUPLING AND JOINT RESTRAINT FOR WATER LINE CREEK OR RIVER CROSSINGS WITH HDPE PIPE

E

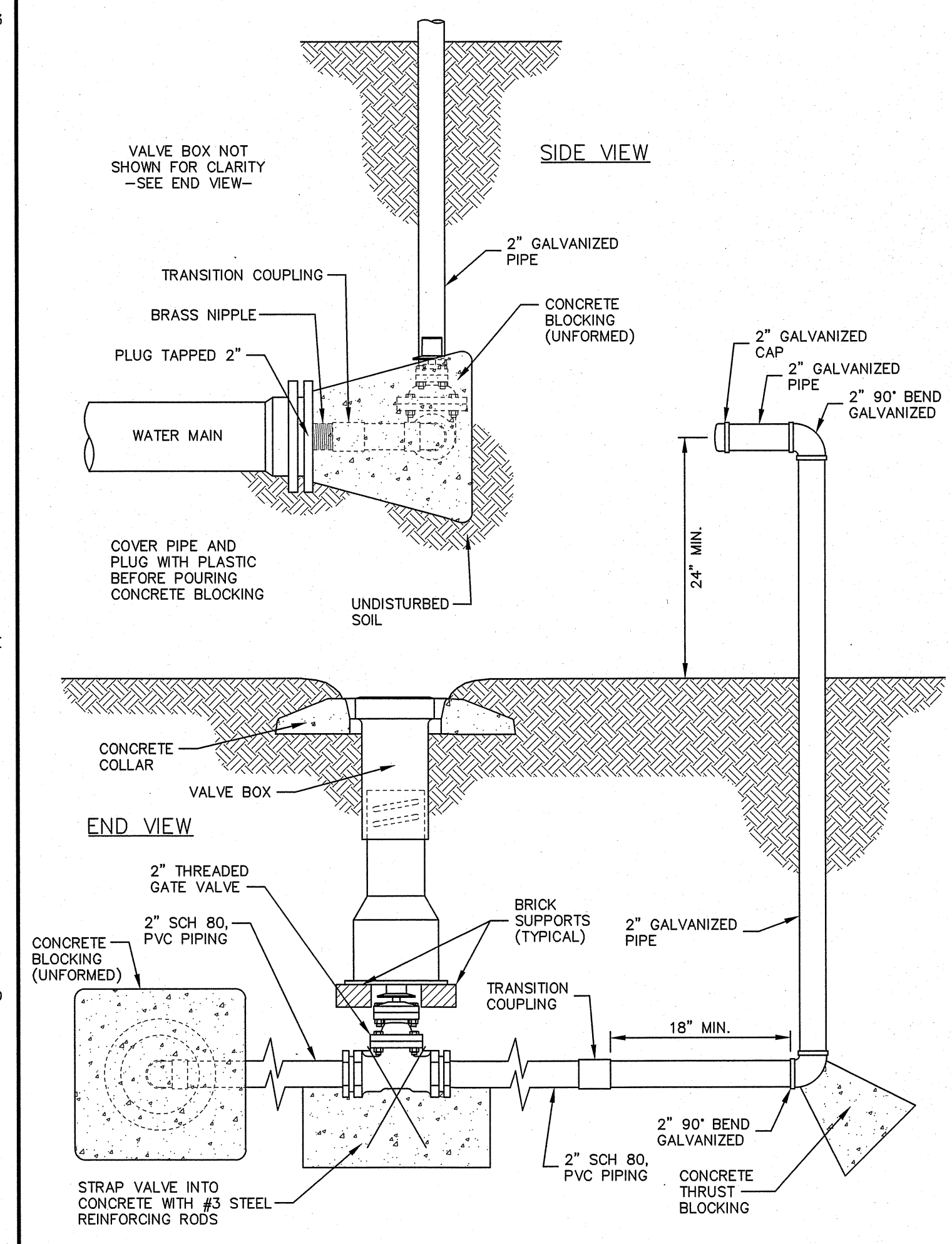
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WATER LINE CREEK OR RIVER CROSSING WITH HDPE INSTALLED BY HORIZONTAL DIRECTIONAL DRILLING

D

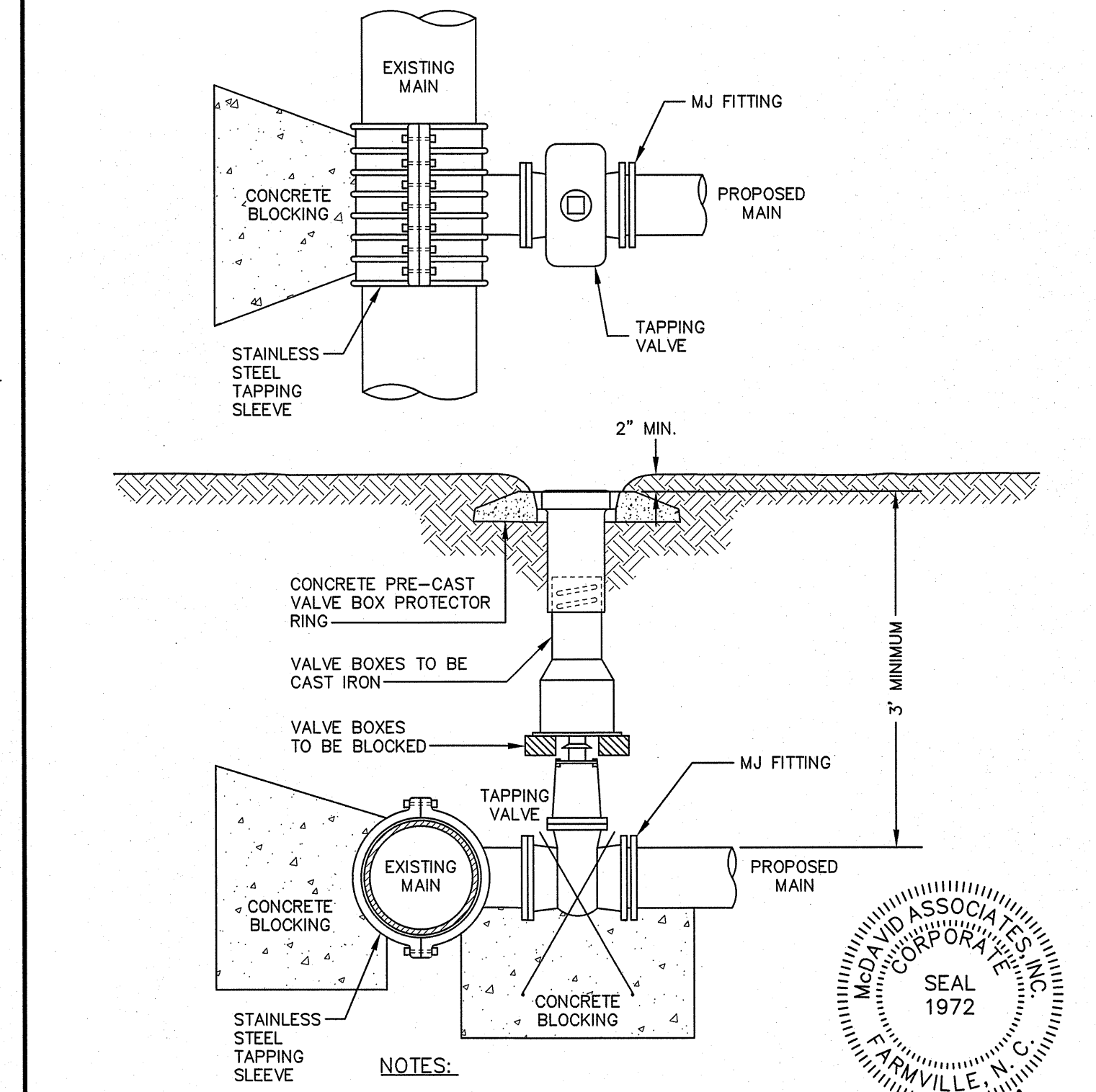
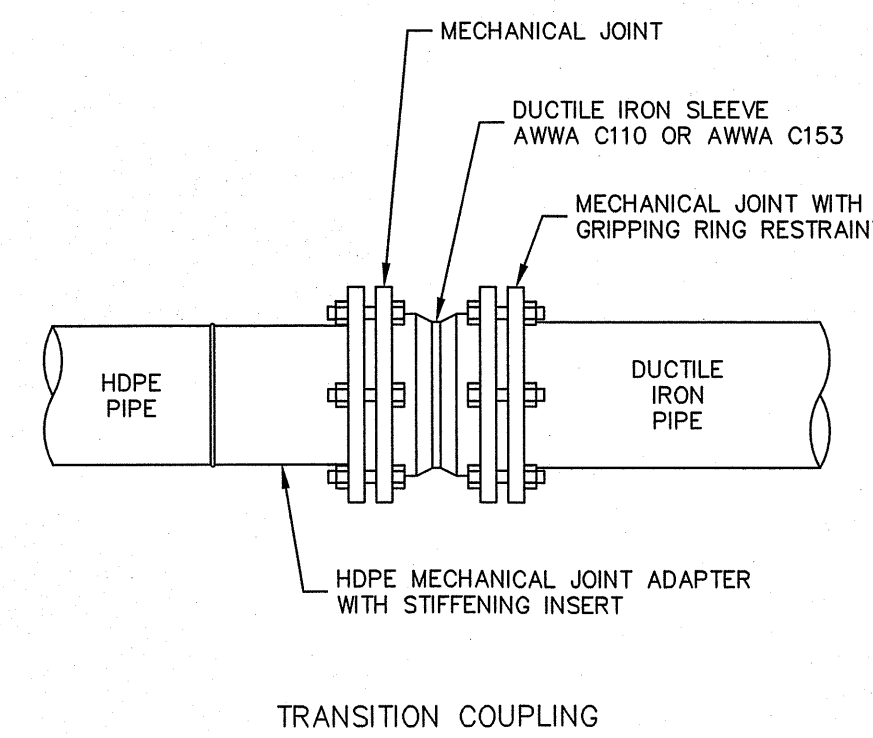
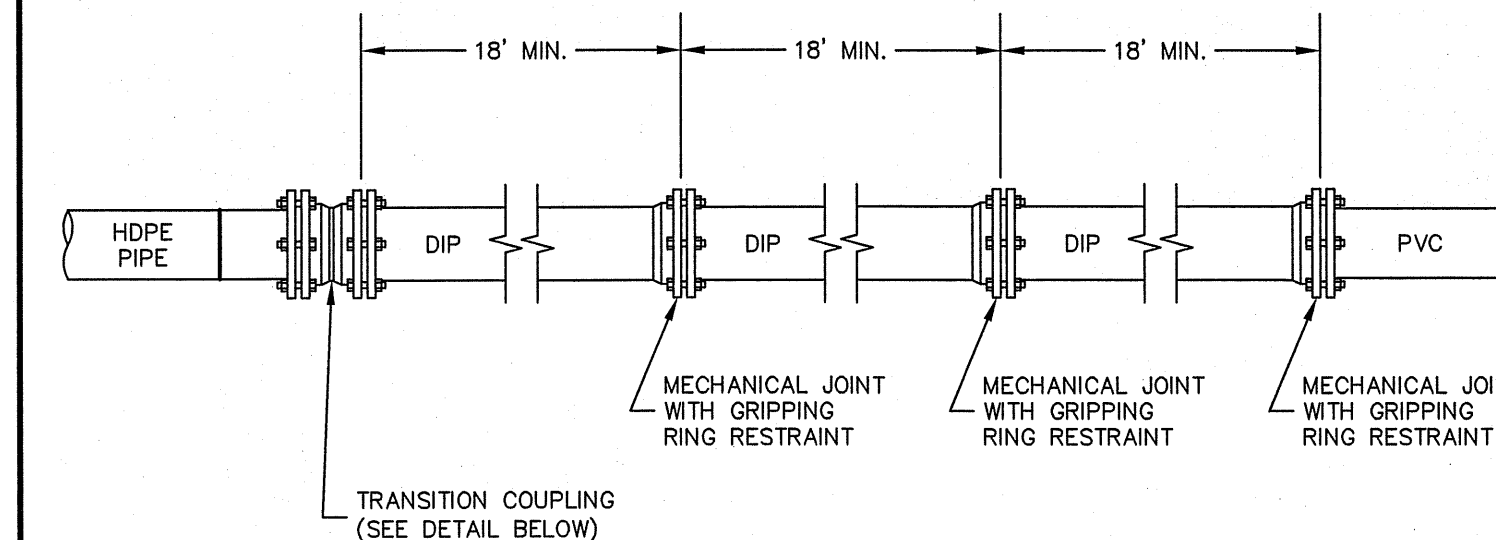


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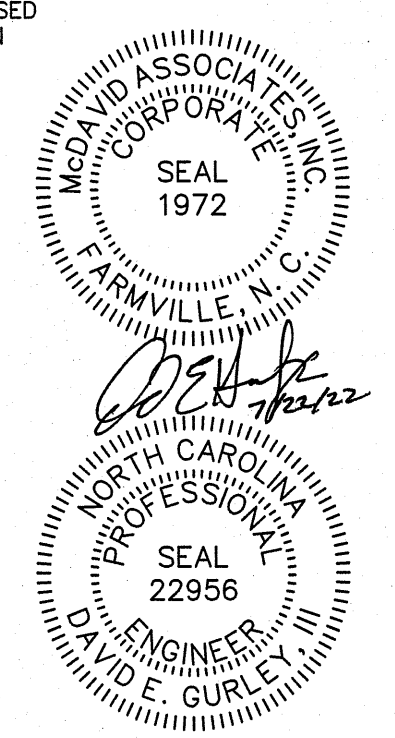
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- NOTES:
- TAPPING SLEEVE SHALL BE PRESSURE TESTED PRIOR TO CUTTING EXISTING WATER LINE
 - CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS
 - CONCRETE USED FOR BLOCKING SHALL REACH 3,000 PSI AT 28 DAYS



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 DATE: JULY 22, 2022

GENERAL CONSTRUCTION DETAILS
 CONTRACT NO. 291 - ROSEWOOD BR66 RELOCATION
 2022 WATER IMPROVEMENTS PROJECT
 FORK TOWNSHIP SANITARY DISTRICT
 NORTH CAROLINA
 WAYNE COUNTY

SHEET 4 OF 5

