

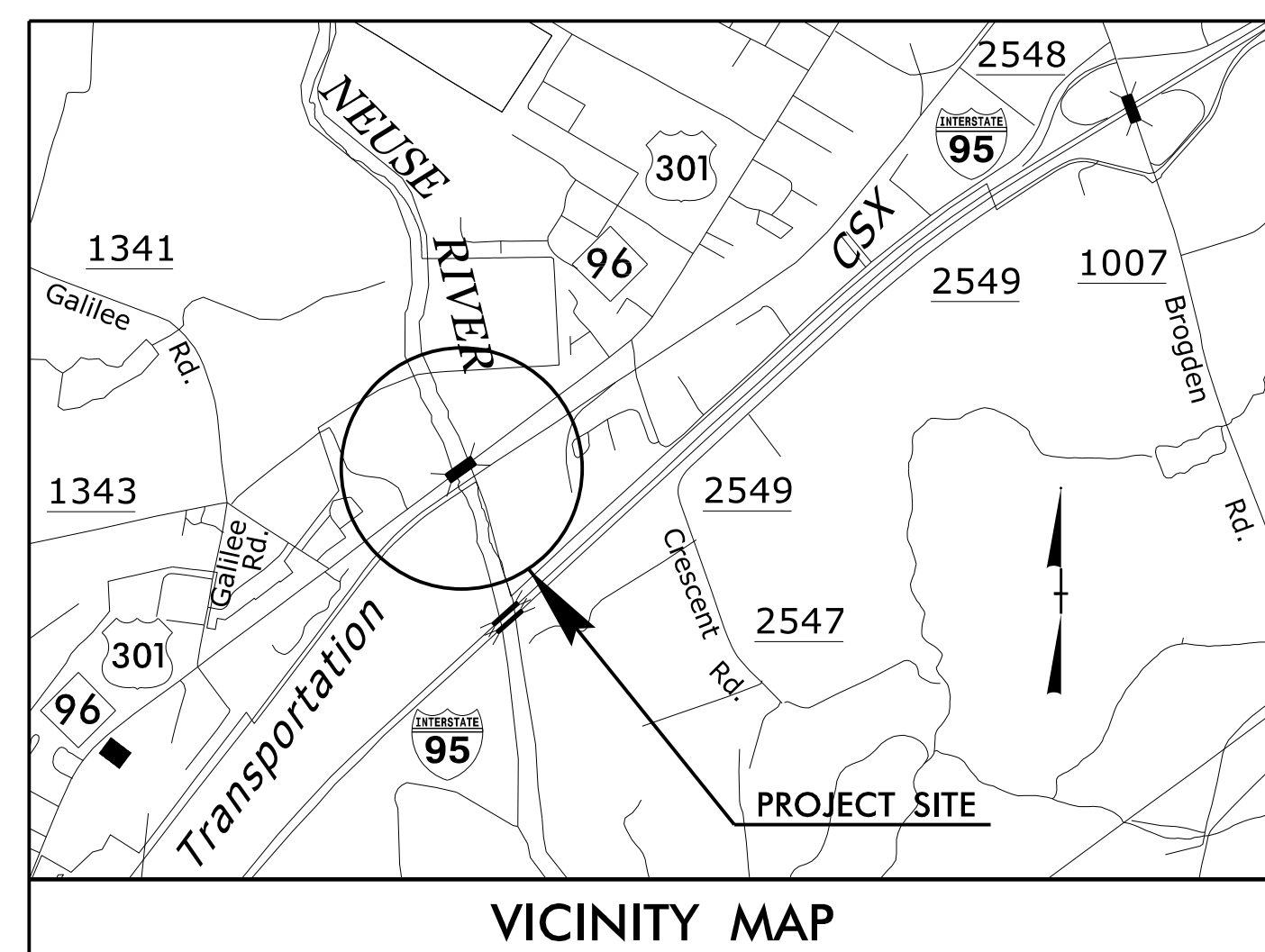
09_08/2019

TIP PROJECT: BR-0086

T.I.P. NO.	SHEET NO.
BR-0086	UC-1

FINAL DESIGN NOT FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



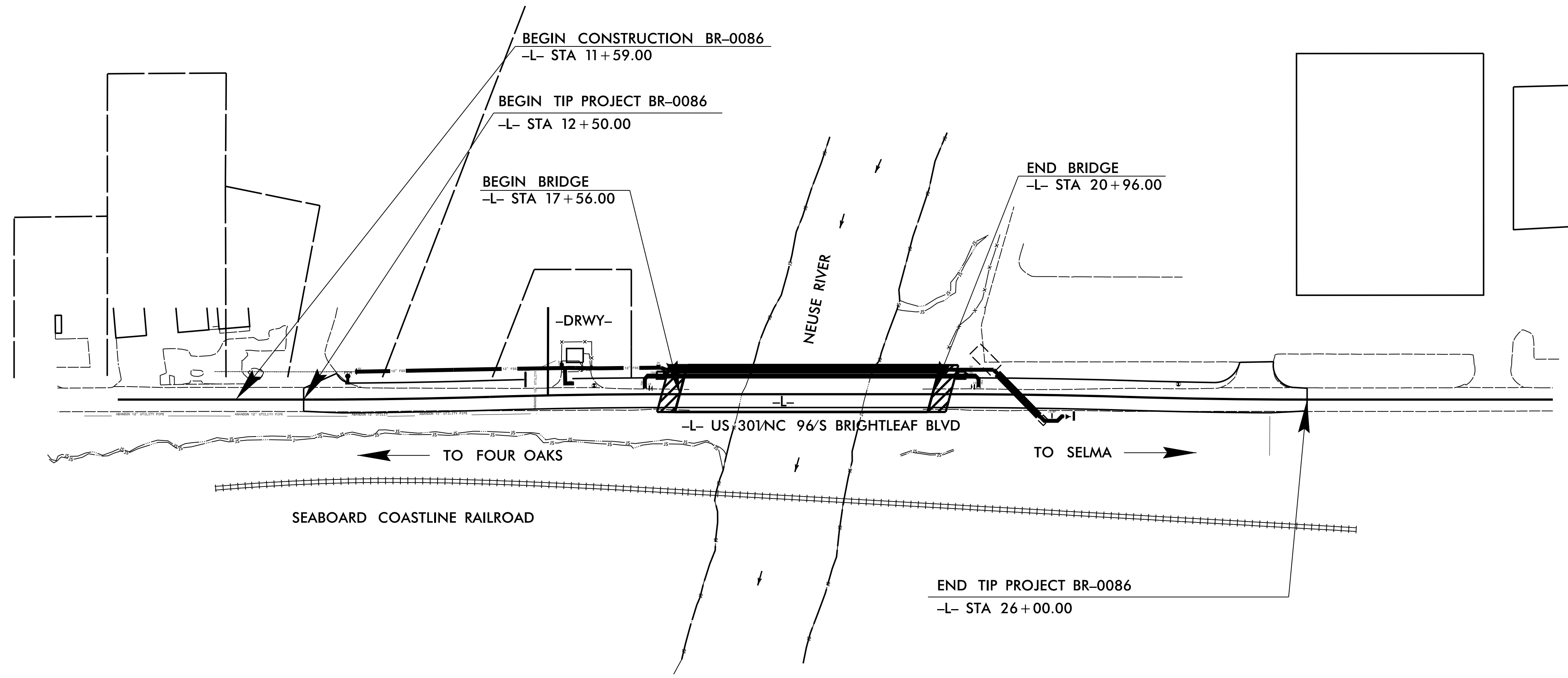
VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

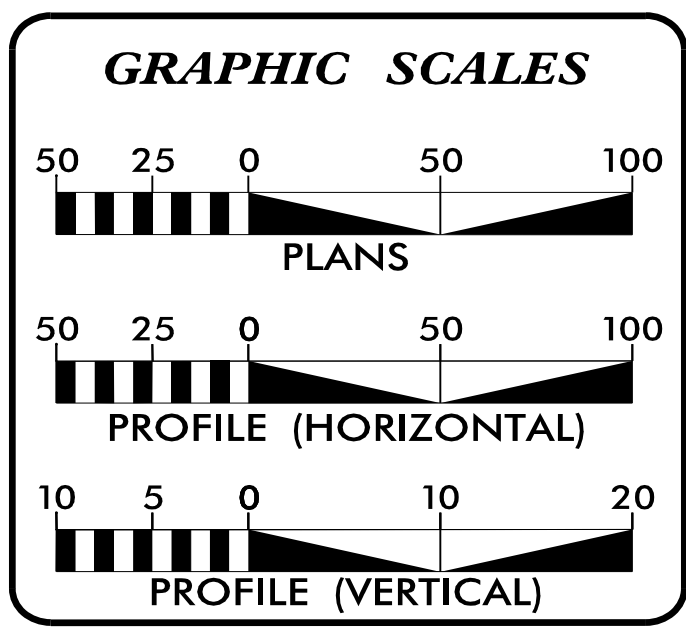
UTILITY CONSTRUCTION PLANS JOHNSTON COUNTY

LOCATION: REPLACE BRIDGE NO.50070 ON US 301 OVER NEUSE RIVER

TYPE OF WORK: WATER AND SEWER RELOCATIONS



THIS PROJECT HAS NO CONTROLLED ACCESS
THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF SMITHFIELD
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III



INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UC-1	COVER SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	UTILITY NOTES
UC-3A THRU UC-3G	UTILITY DETAILS
UC-4A THRU UC-4B	UTILITY CONSTRUCTION PLAN AND PROFILE

WATER AND SEWER OWNERS ON PROJECT

(A) WATER - JOHNSTON COUNTY
(B) SANITARY SEWER - JOHNSTON COUNTY

PREPARED IN THE OFFICE OF

HDR HDR Engineering, Inc. of the Carolinas
555 Fayetteville St. Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

STEPHANIE HOLLOMAN, PE UTILITY PROJECT MANAGER
KATIE ROUGEOT PROJECT UTILITY DESIGNER

SEAL

Stephanie Holloman
NORTH CAROLINA PROFESSIONAL ENGINEER
STEPHANIE M. HOLLOMAN
040783
11/21/2024

DIVISION OF HIGHWAYS UTILITIES UNIT
1555 MAIL SERVICES CENTER
RALEIGH, NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

NABIL HAMDAN UTILITIES REGIONAL ENGINEER
TEVIN ASAMOAH UTILITIES ENGINEER
TANGA SAMPSON UTILITIES AREA COORDINATOR
TYRON STALLINGS UTILITIES COORDINATOR

11/21/2024
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9:30:02 AM

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

UTILITY SYMBOLOGY

PROJECT REFERENCE NO. BR-0086	SHEET NO. UC-2
DESIGNED BY: SMH	
DRAWN BY: KSR	
CHECKED BY: JG	
APPROVED BY: JLL	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

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PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11 1/4 Degree Bend	
22 1/2 Degree Bend	
45 Degree Bend	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	
Butterfly Valve	
Tapping Valve	
Line Stop	
Line Stop with Bypass	
Blow Off	
Fire Hydrant	
Relocate Fire Hydrant	
Remove Fire Hydrant	
Water Meter	
Relocate Water Meter	
Remove Water Meter	
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

PROPOSED SEWER SYMBOLS

Gravity Sewer Line (Sized as Shown)	
Force Main Sewer Line (Sized as Shown)	
Manhole (Sized per Note)	
Sewer Pump Station	

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	
Utility Line by Others (Type as Shown)	
Trenchless Installation	
Encasement by Open Cut	
Encasement	

Thrust Block	
Air Release Valve	
Utility Vault	
Concrete Pier	
Steel Pier	
Plan Note	
Pay Item Note	

NOTE
PAY ITEM

EXISTING UTILITIES SYMBOLS

Power Pole		*Underground Power Line	
Telephone Pole		*Underground Telephone Cable	
Joint Use Pole		*Underground Telephone Conduit	
Utility Pole		*Underground Fiber Optics Telephone Cable	
Utility Pole with Base		*Underground TV Cable	
H-Frame Pole		*Underground Fiber Optics TV Cable	
Power Transmission Line Tower		*Underground Gas Pipeline	
Water Manhole		Aboveground Gas Pipeline	
Power Manhole		*Underground Water Line	
Telephone Manhole		Aboveground Water Line	
Sanitary Sewer Manhole		*Underground Gravity Sanitary Sewer Line	
Hand Hole for Cable		Aboveground Gravity Sanitary Sewer Line	
Power Transformer		*Underground SS Forced Main Line	
Telephone Pedestal		Underground Unknown Utility Line	
CATV Pedestal		SUE Test Hole	
Gas Valve		Water Meter	
Gas Meter		Water Valve	
Located Miscellaneous Utility Object		Fire Hydrant	
Abandoned According to Utility Records	AATUR	Sanitary Sewer Cleanout	
End of Information	E.O.I.		

*For Existing Utilities
 Utility Line Drawn from Record (Type as Shown)

Designated Utility Line (Type as Shown)

PROJECT REFERENCE NO.		SHEET NO.	
BR-0086		UC-3	
DESIGNED BY:	SMH		UTILITY CONSTRUCTION PLANS ONLY
DRAWN BY:	KSR		
CHECKED BY:	JG		
APPROVED BY:	JLL		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION			
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151			

UTILITY NOTES

GENERAL:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2024.

2. THE EXISTING UTILITIES BELONG TO THE JOHNSTON COUNTY PUBLIC UTILITIES. THE CONTACT IS MIKE KEEN, JOHNSTONNC.COM, 919-795-1944.

3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.

4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.

5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.

7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS.

8. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

9. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SITE SAFETY ASSOCIATED WITH THE WORK UNDER THIS PROJECT AND FOR COMPLIANCE WITH ALL FEDERAL, STATE, AND LOCAL HEALTH AND SAFETY LAWS, CODES, REGULATIONS, AND ORDINANCES INCLUDING BUT NOT LIMITED TO THOSE CURRENTLY MANDATED BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

PROJECT SPECIFIC:

1. WATER LINE AND SEWER LINE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE OWNERS STANDARD DETAILS WHICH ARE SHOWN ON THE DETAIL SHEETS AND THE PROJECT SPECIAL PROVISIONS.

2. PRIOR TO FINAL ACCEPTANCE OF THE WATER AND SEWER LINE WORK THE CONTRACTOR SHALL PROVIDE SURVEYED AS-BUILT RECORD DRAWINGS.

3. ANY PROPOSED CHANGES TO WATER OR SEWER LINE WORK SHALL BE APPROVED IN ADVANCE IN WRITTING BY THE ENGINEER.

4. TESTING OF WATER OR SANITARY PIPING AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIAL PROVISIONS.

5. CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION STAKING.

6. BORE PITS, TRENCHES AND ALL OTHER EXCAVATIONS WHERE SLOPE IS 1:1 OR STEEPER FROM EDGE OF ROADWAY MUST INCLUDE POSITIVE SHORING MEETING NCDOT AND OSHA REQUIREMENTS. ALL SHORING SYSTEMS MUST BE DESIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN NORTH CAROLINA.

7. REMOVE AND RESET FENCES AS NOTED ON THE PLANS AND/OR AS DIRECTED BY THE INSPECTOR/NCDOT.

8. PRIOR TO CONSTRUCTION, NOTIFY ALL UTILITY OWNERS WHOSE FACILITIES MAY BE AFFECTED TO DETERMINE UTILITY LOCATIONS. THE CONTRACTOR SHALL PROTECT ALL UTILITIES FROM DAMAGE CAUSED BY HIS OPERATIONS OR THOSE OF HIS AGENTS. THE CONTRACTOR SHALL HOLD JOHNSTON COUNTY UTILITIES HARMLESS FOR ANY THIRD-PARTY INCONVENIENCE CREATED BY WORK OF HIS OWN FORCES OR THAT OF HIS AGENTS.

9. IN THE EVENT OF DAMAGE TO EXISTING UTILITIES, CONTRACTOR SHALL STOP WORK IMMEDIATELY, TAKE NECESSARY PRECAUTIONS TO PREVENT INJURY OR FURTHER DAMAGE, AND NOTIFY PROPER AUTHORITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING/REPAIRING ALL EXISTING STRUCTURES, CONDUITS, OR OTHER UTILITIES DAMAGED BY CONTRACTOR'S OPERATIONS AT NO ADDITIONAL COST TO THE DEPARTMENT.

10. CONTRACTOR SHALL COORDINATE CONNECTIONS AND ANY WATER SERVICE. SHUT DOWNS AND PROVIDE 24 HOURS OF NOTICE TO JOHNSTON COUNTY UTILITIES.

11. MAINTAIN SANITARY SEWER SERVICE AT ALL TIMES. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO JOHNSTON COUNTY UTILITIES.

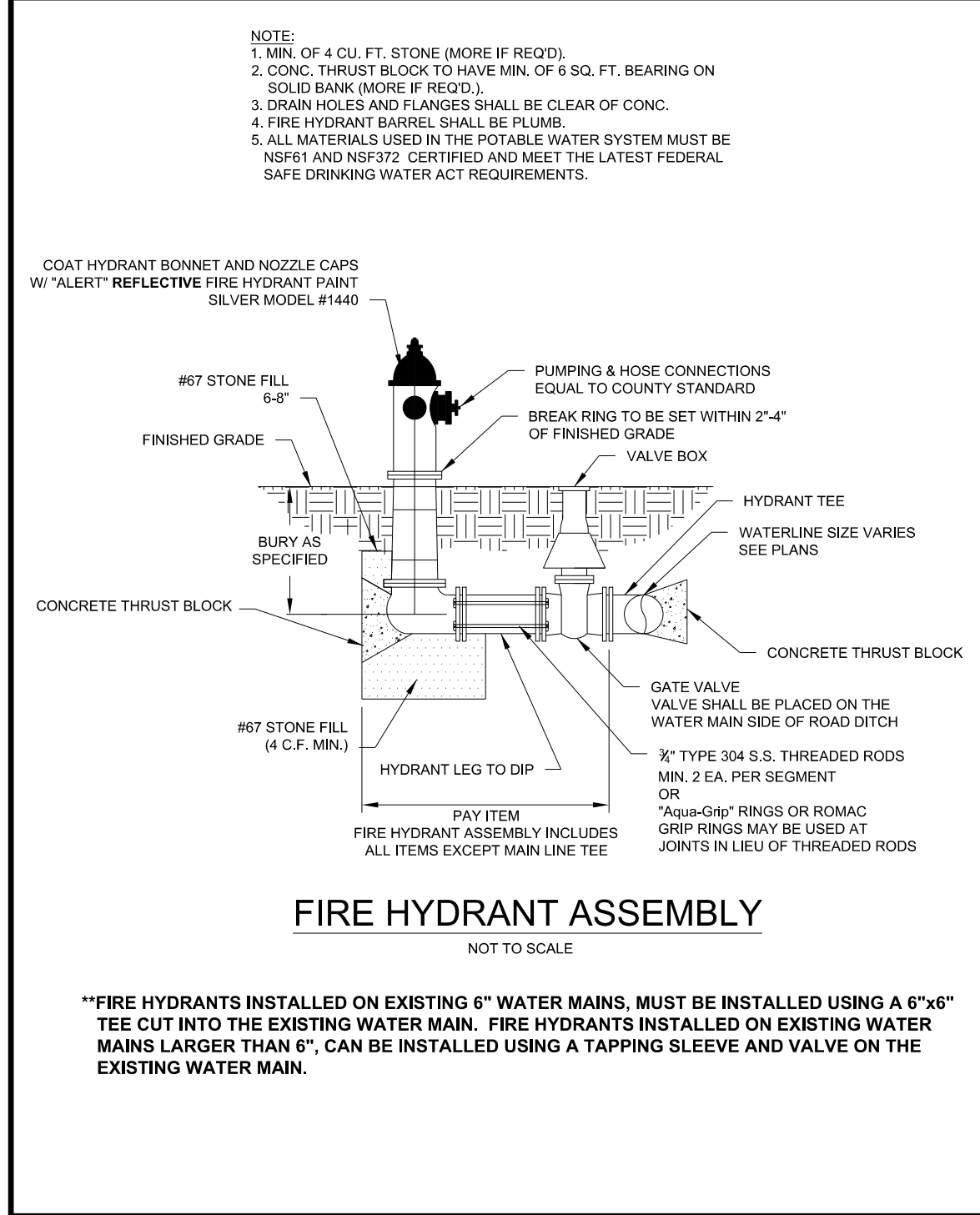
12. PLUG ALL PIPE OPENINGS AND FILL ANY EXPOSED TRENCHES AT THE END OF EACH WORK DAY.

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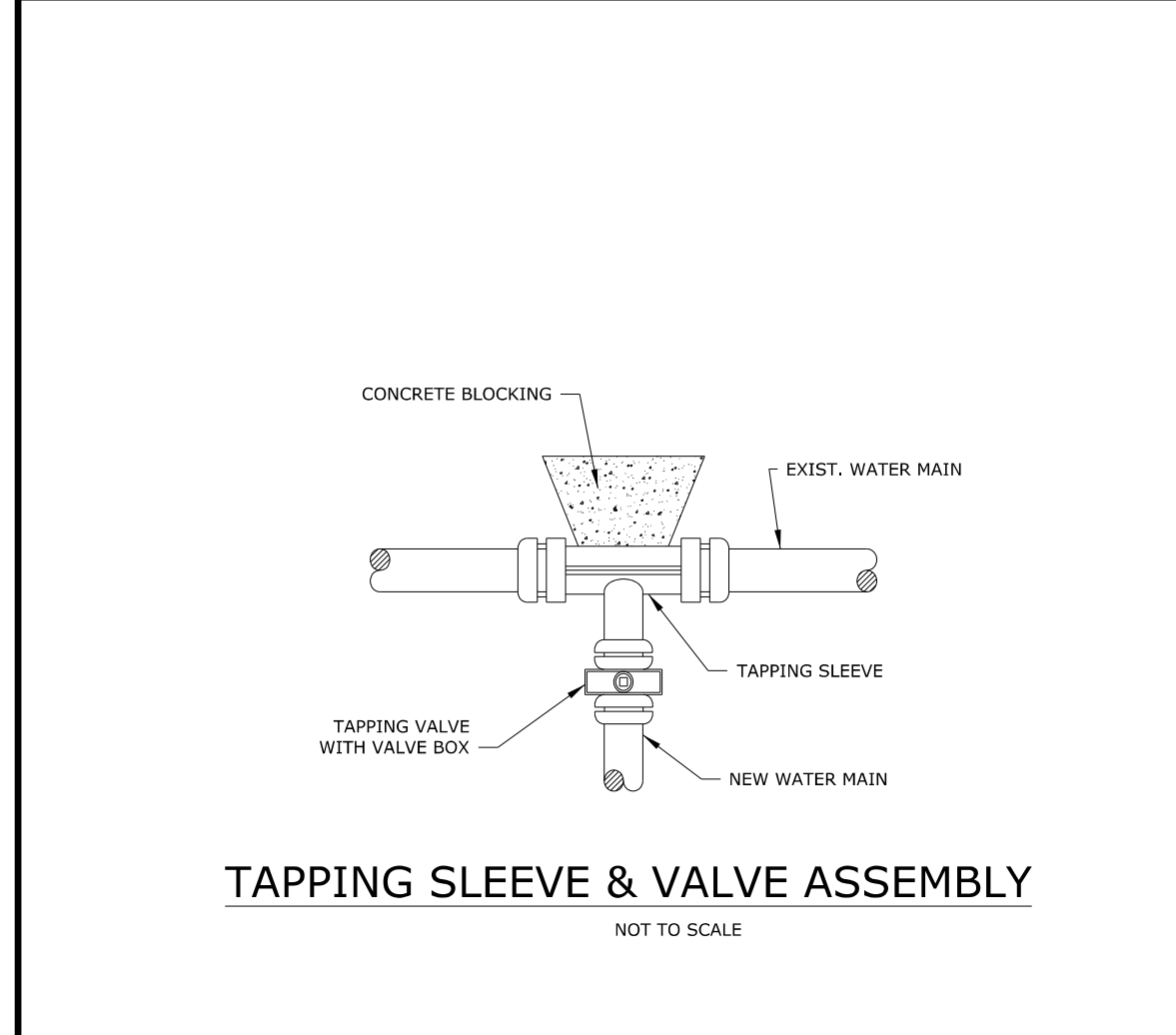
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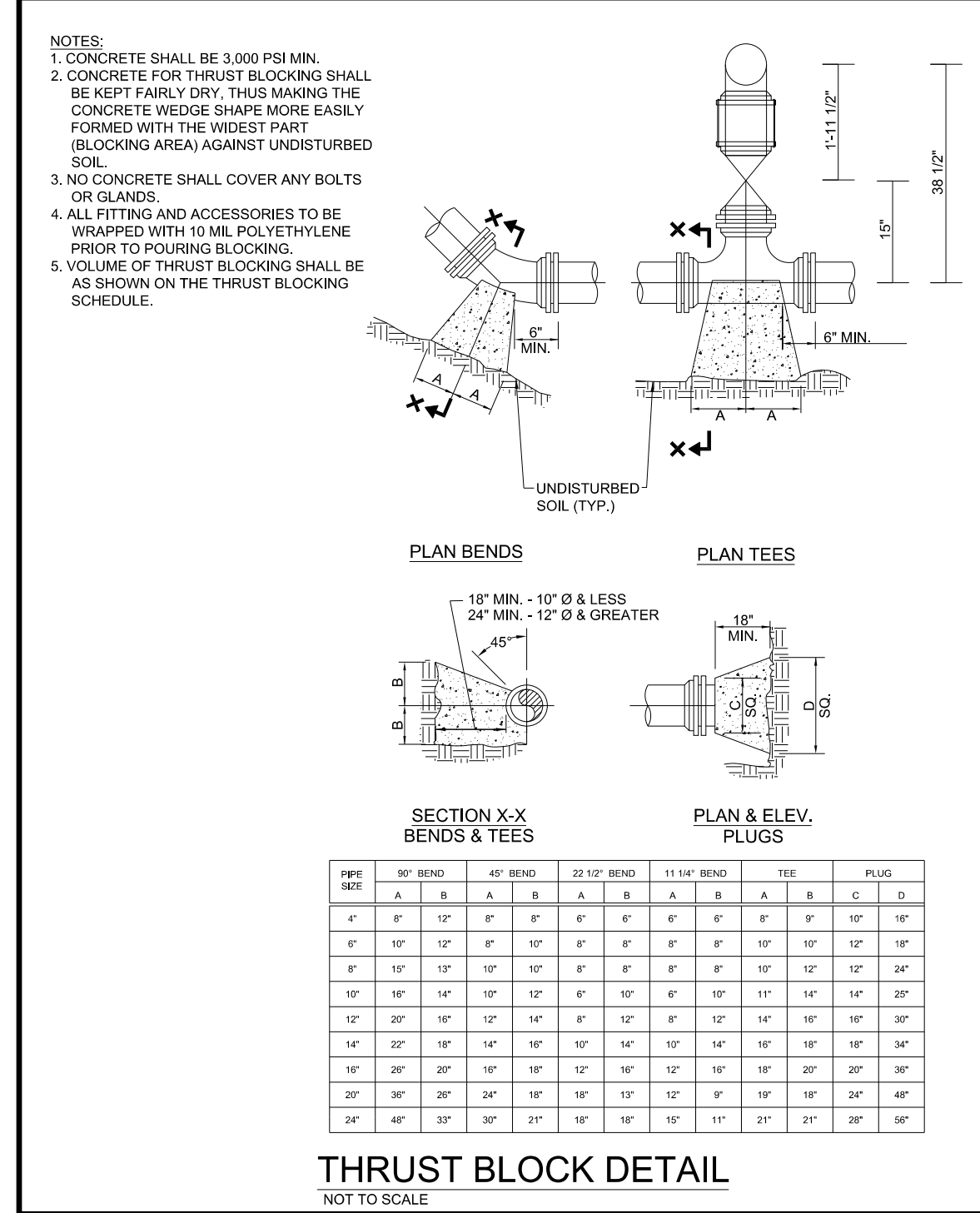
Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577	WATER STANDARD DETAIL Fire Hydrant Assembly	PAGE 4
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Approved By:					
Scale:					
Rev.	Description	Date	Init.		



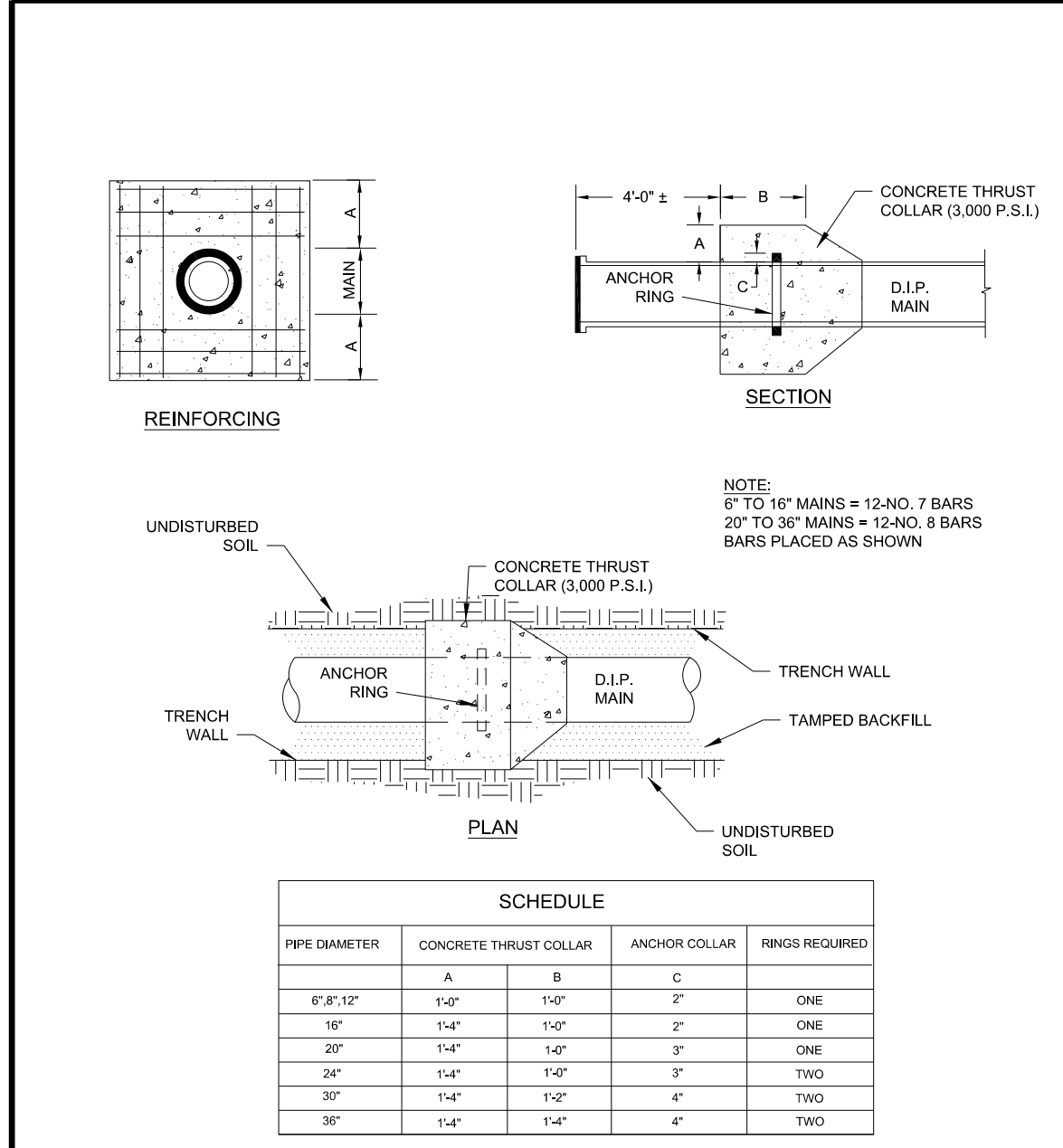
NOTES:

- TAPPING SLEEVE SHALL BE FABRICATED OF TYPE 304 OR 316 S.S. AND PROVIDE A 360° SEAL AROUND EXISTING PIPE WITH FULL CIRCUMFERENTIAL GASKET.
- TAPPING SLEEVE SHALL BE JCM 432, MUELLER H-304, FORD FTSS, ROMAC ST III OR APPROVED EQUAL.
- ALL MATERIALS USED IN THE POTABLE WATER SYSTEM MUST BE NSF61 AND NSF372 CERTIFIED AND MEET THE LATEST FEDERAL SAFE DRINKING WATER ACT REQUIREMENTS.

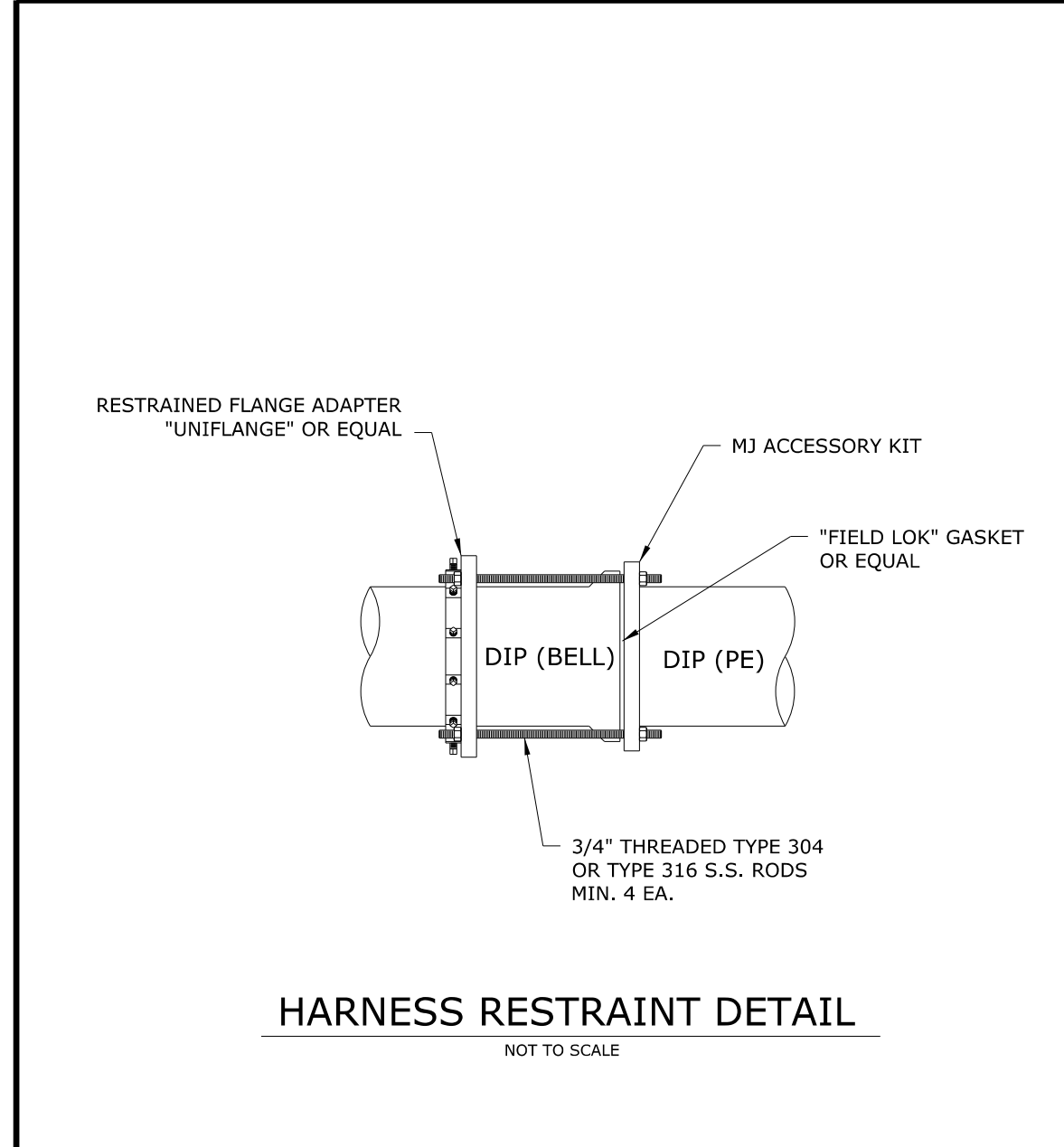
Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577	WATER STANDARD DETAIL Tapping Sleeve and Valve Assembly	PAGE 5
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Approved By:					
Scale:					
Rev.	Description	Date	Init.		



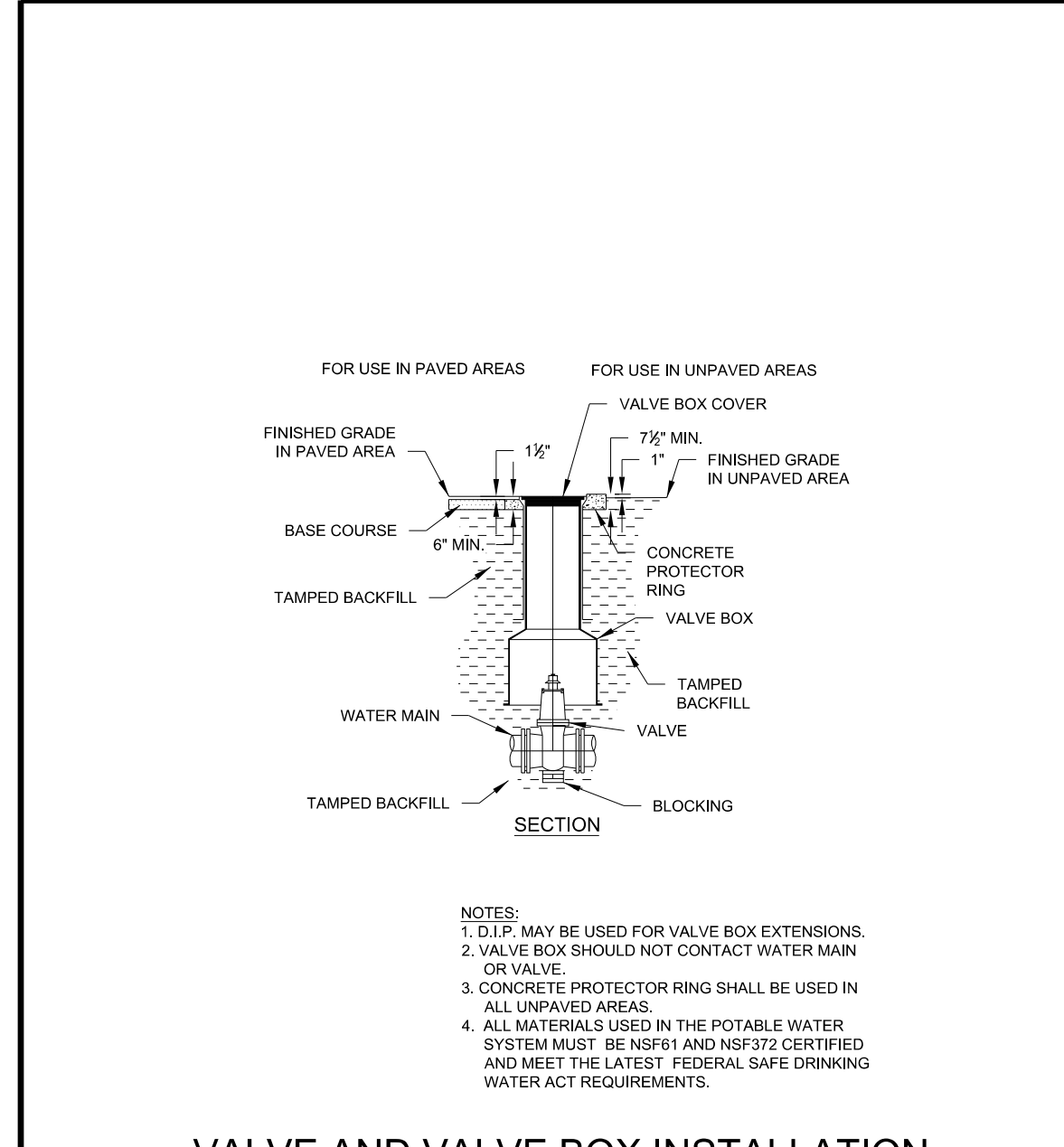
Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577	WATER STANDARD DETAIL Thrust Block	PAGE 8
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Approved By:					
Scale:					
Rev.	Description	Date	Init.		



Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577	WATER STANDARD DETAIL Thrust Collar Installation	PAGE 9
Checked By:					
Approved By:					
Scale:					
Rev.	Description	Date	Init.		



Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577	WATER STANDARD DETAIL Restraint Harness	PAGE 10
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Approved By:					
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Rev.	Description	Date	Init.		

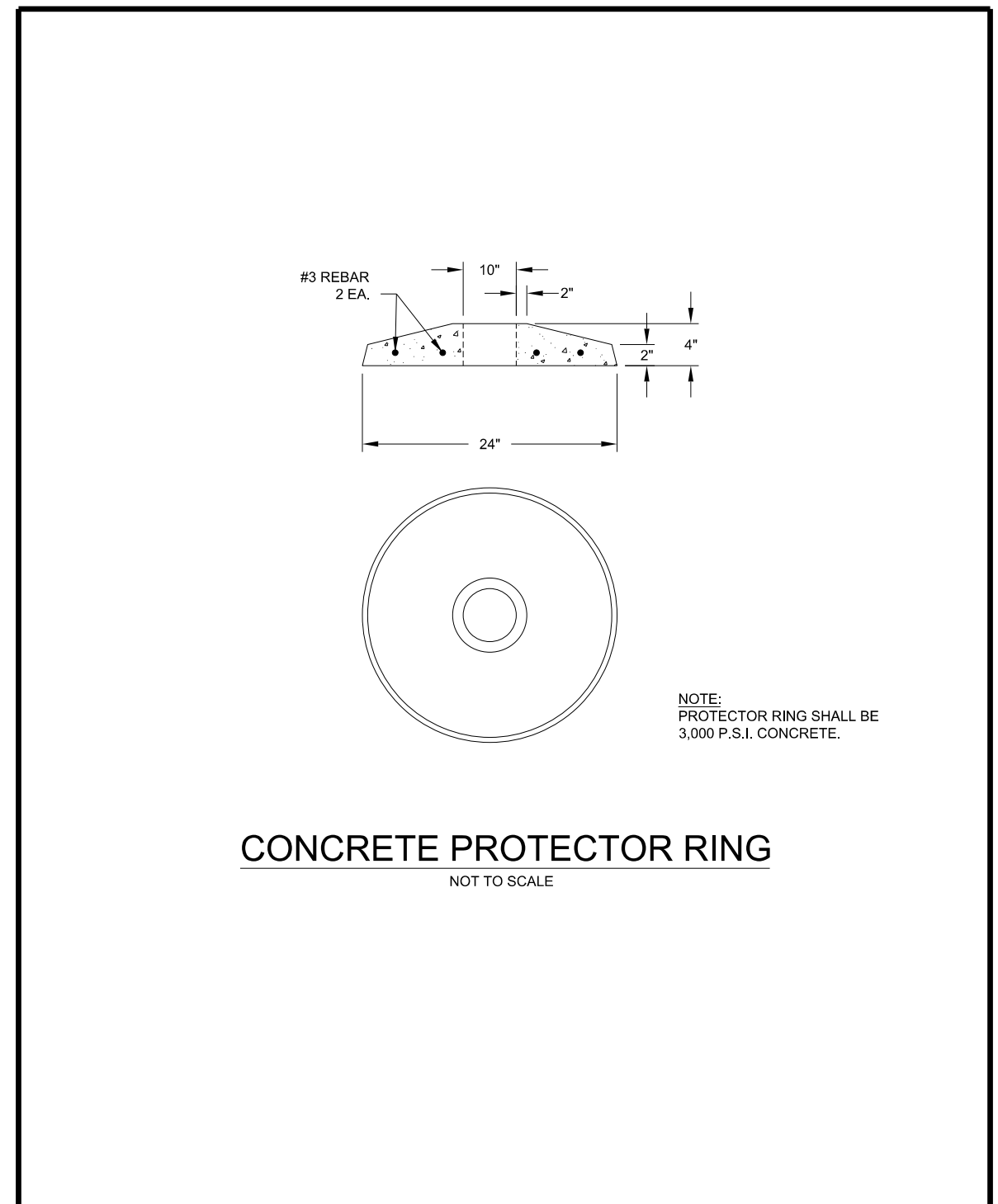


Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577	WATER STANDARD DETAIL Valve and Valve Box Installation	PAGE 13
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Approved By:					
Scale:					
Rev.	Description	Date	Init.		

PROJECT REFERENCE NO.	SHEET NO.
BR-0086	UC-3B
DESIGNED BY: SMH	
DRAWN BY: KSR	
CHECKED BY: JG	
APPROVED BY: JLL	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

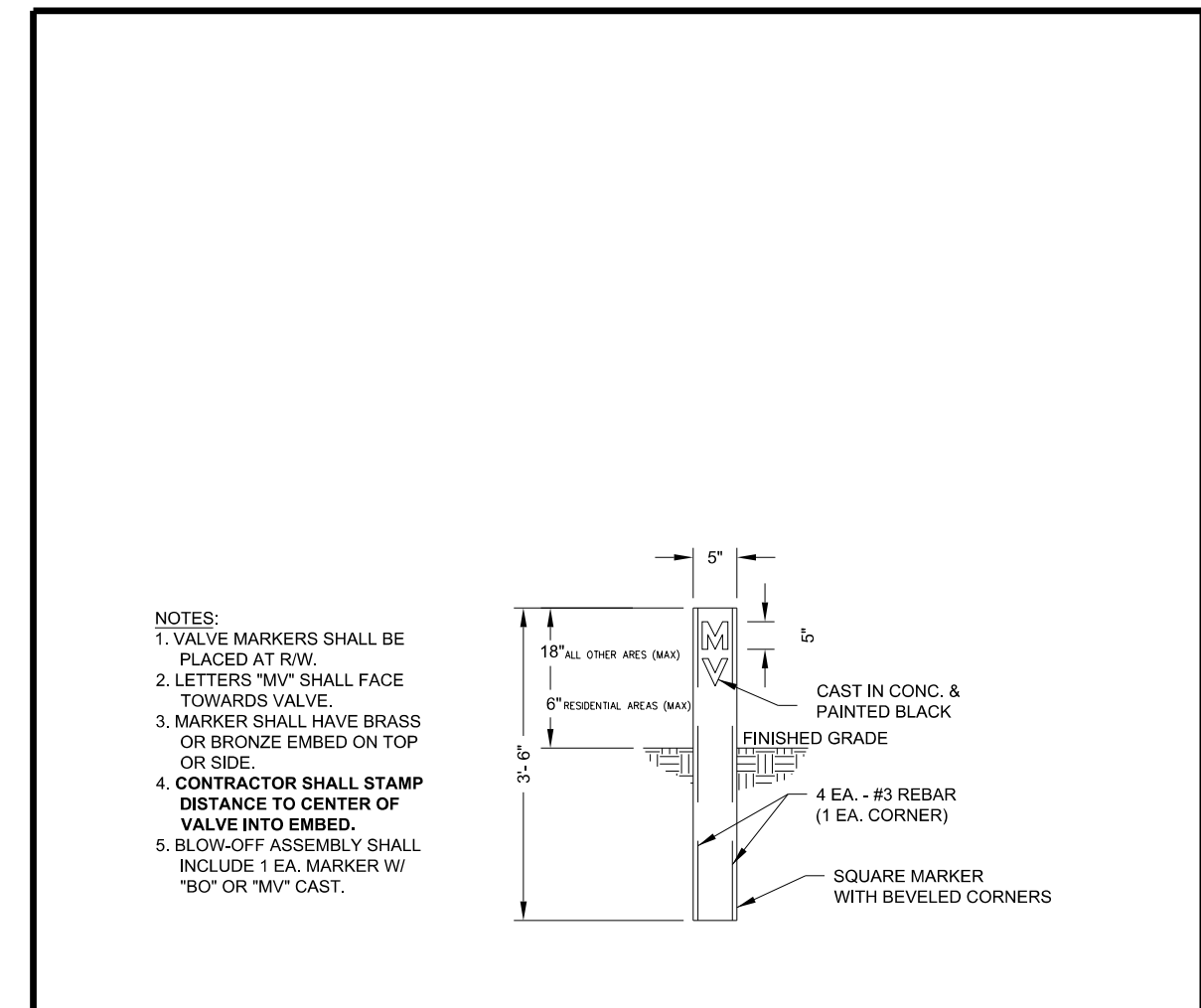
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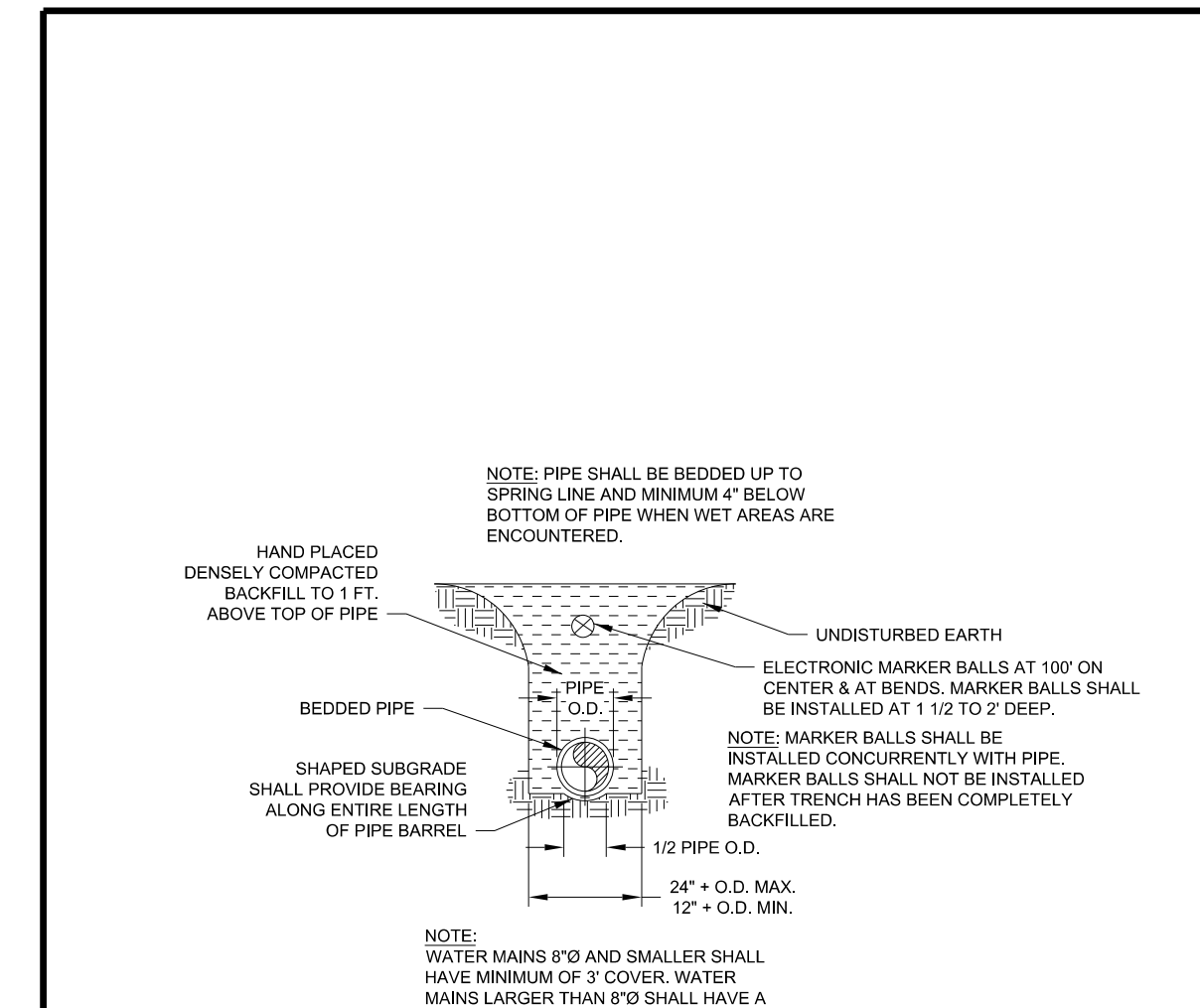
CONCRETE PROTECTOR RING
NOT TO SCALE

Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577	WATER STANDARD DETAIL Concrete Protector Ring	PAGE 14
Checked By:					
Approved By:					
Scale:					
Rev.	Description	Date			



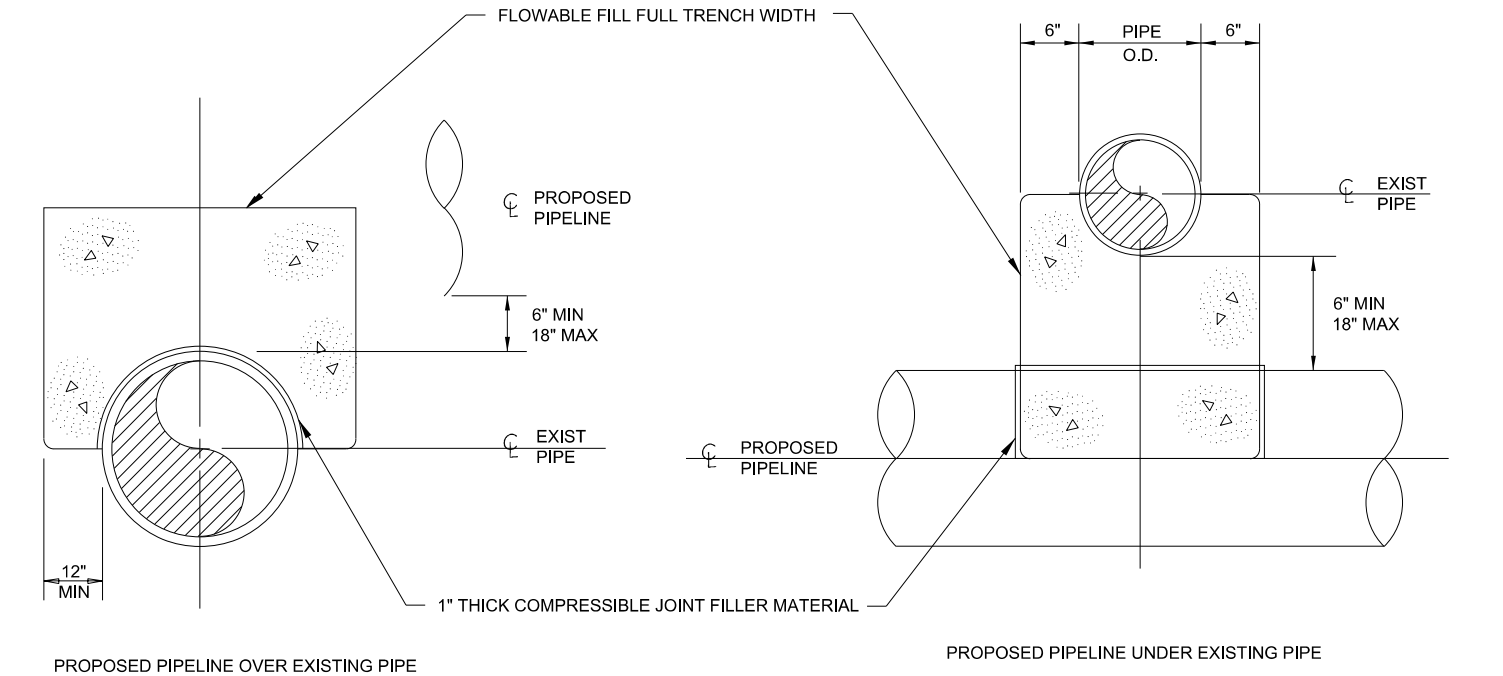
VALVE MARKER DETAIL
NOT TO SCALE

Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577	WATER STANDARD DETAIL Valve Marker	PAGE 15
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Approved By:					
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Rev.	Description	Date			

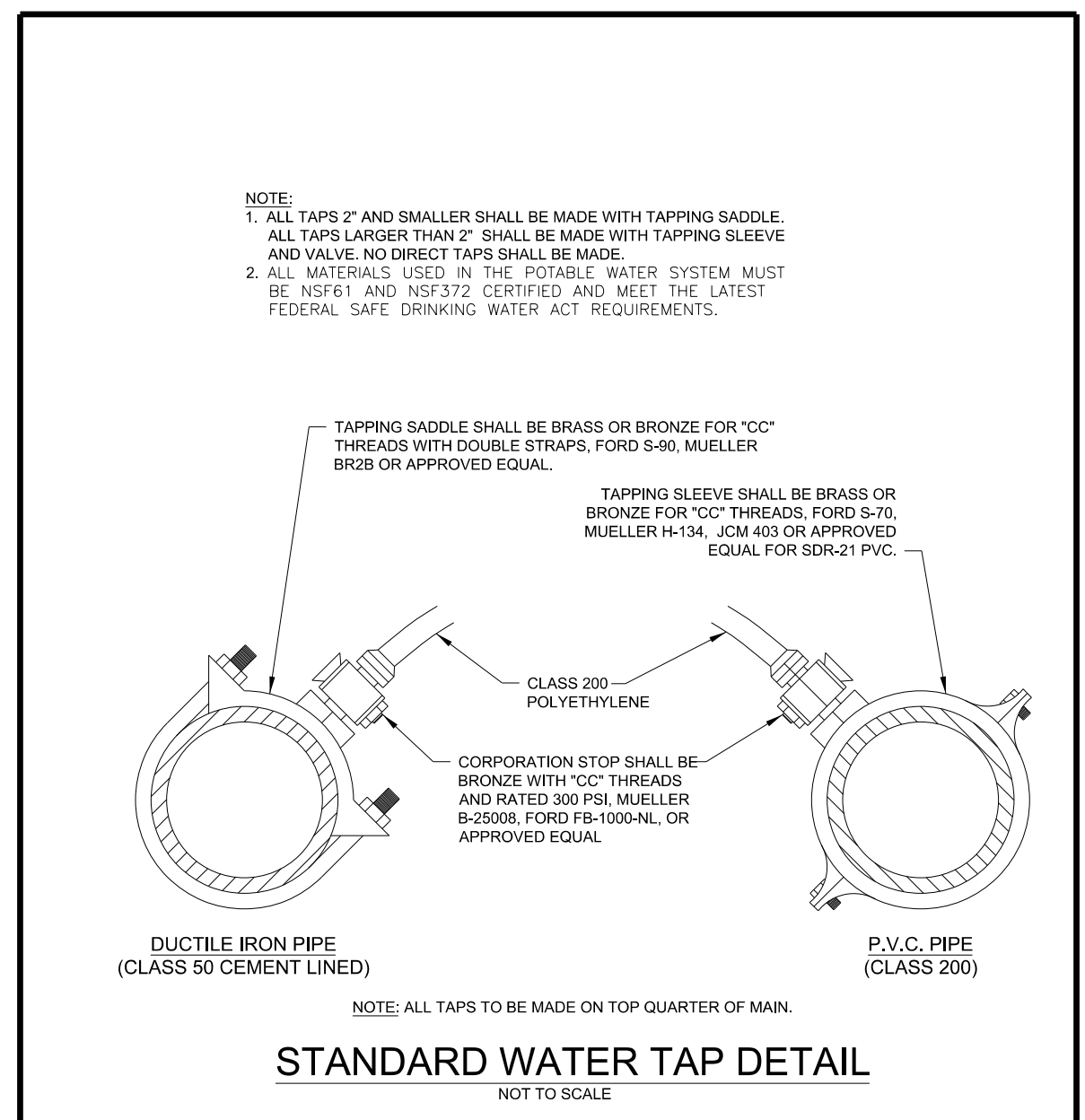


PIPE LAYING CONDITION
NOT TO SCALE

Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577	WATER STANDARD DETAIL Pipe Laying Condition	PAGE 17
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Approved By:					
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Rev.	Description	Date			

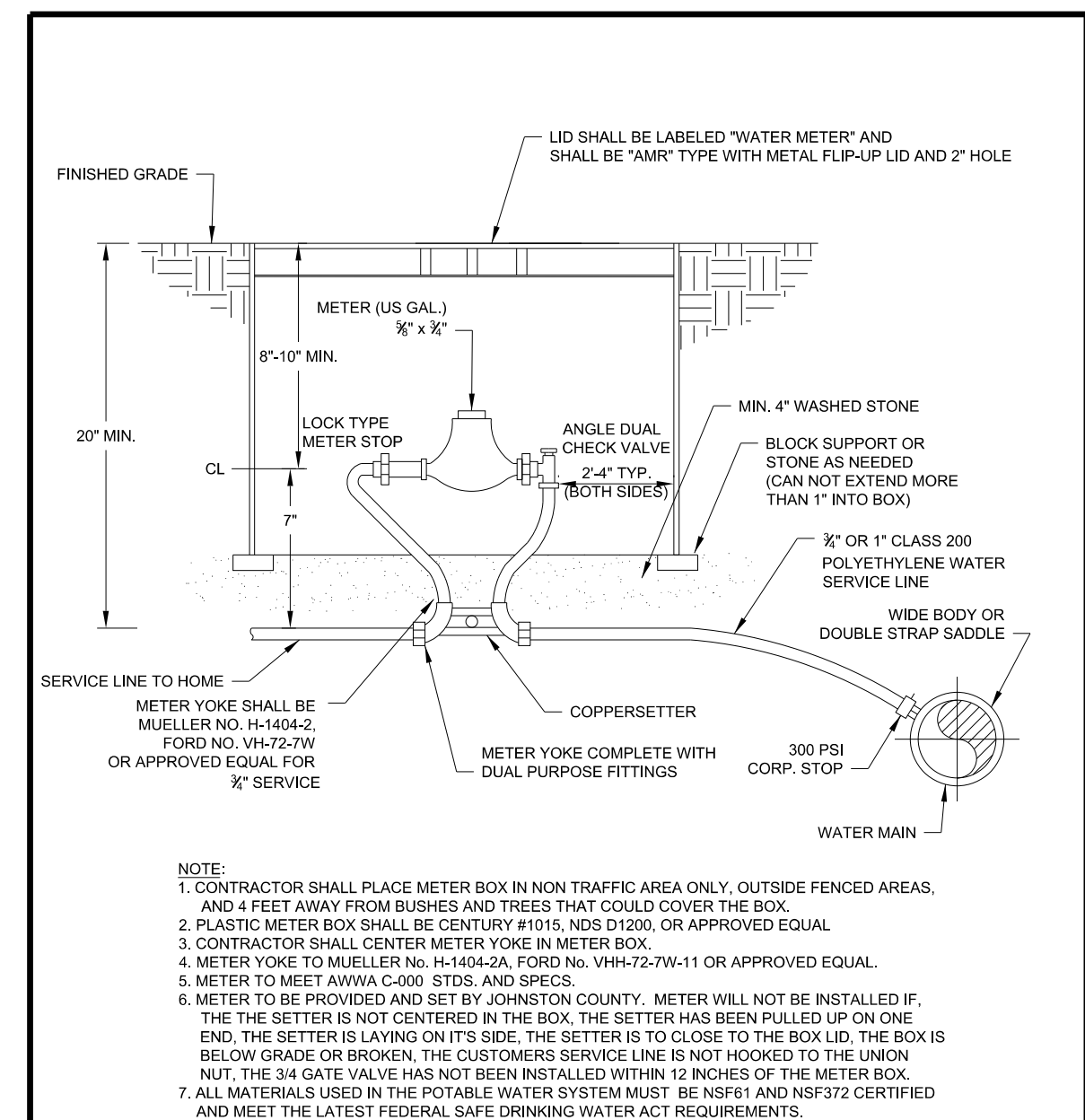


CONCRETE SADDLE PROTECTION FOR PIPE CROSSINGS
NOT TO SCALE



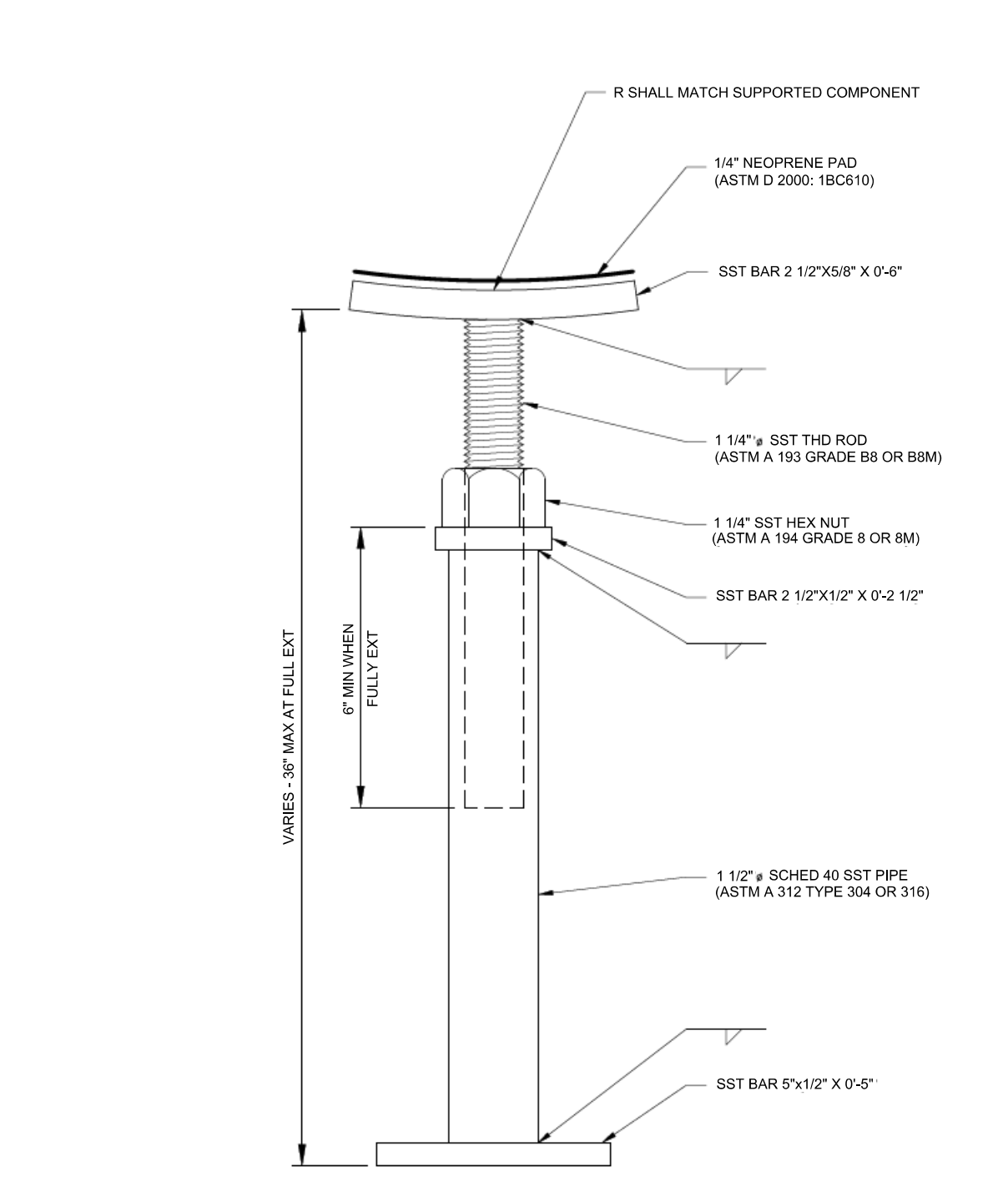
STANDARD WATER TAP DETAIL
NOT TO SCALE

Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577	WATER STANDARD DETAIL Standard Water Tap	PAGE 20
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Scale:					
Rev.	Description	Date			



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Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577	WATER STANDARD DETAIL 3/4" and 1" Water Meter Service	PAGE 21
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Approved By:					
Scale:					
Rev.	Description	Date			

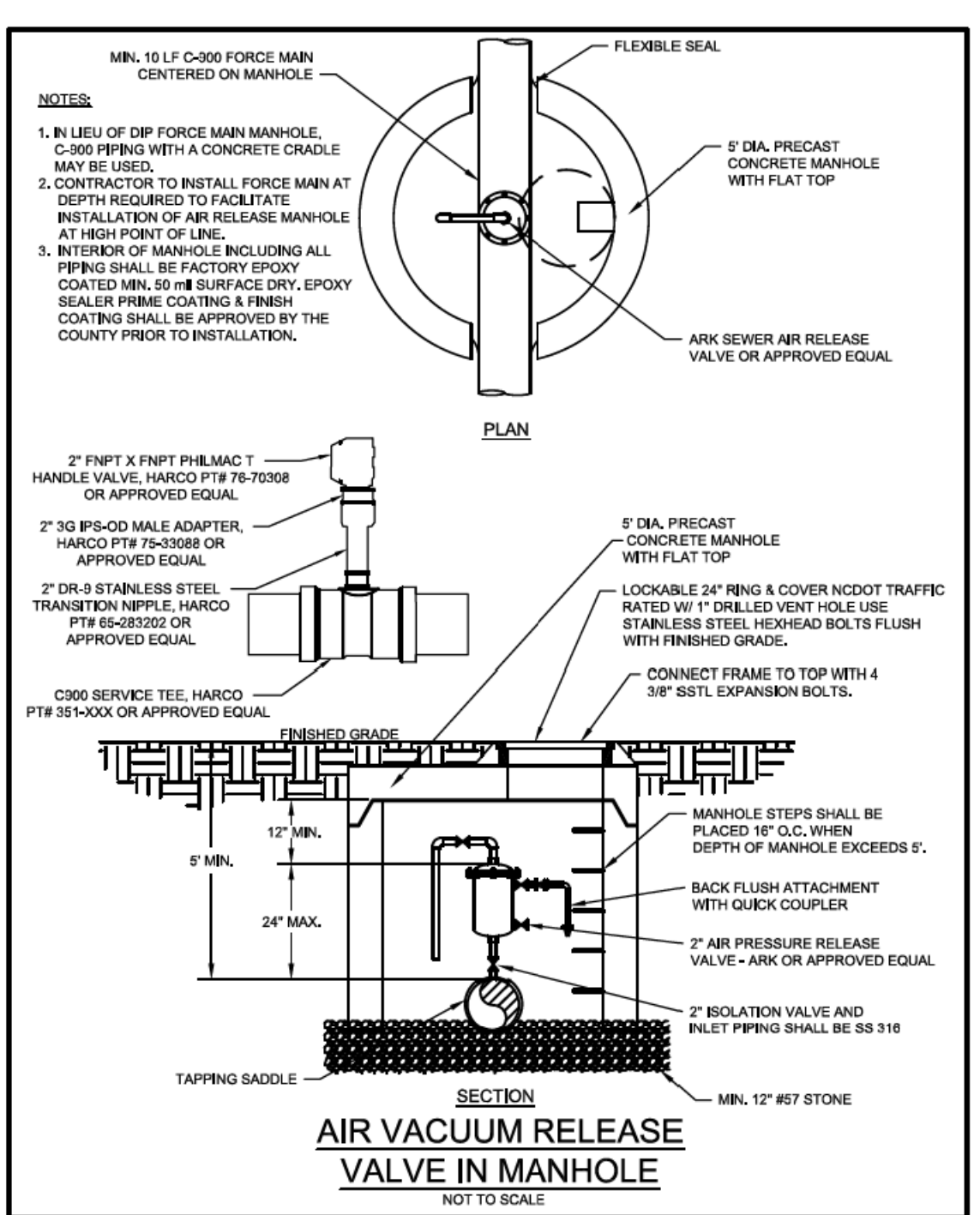


AERIAL PIPE SUPPORT
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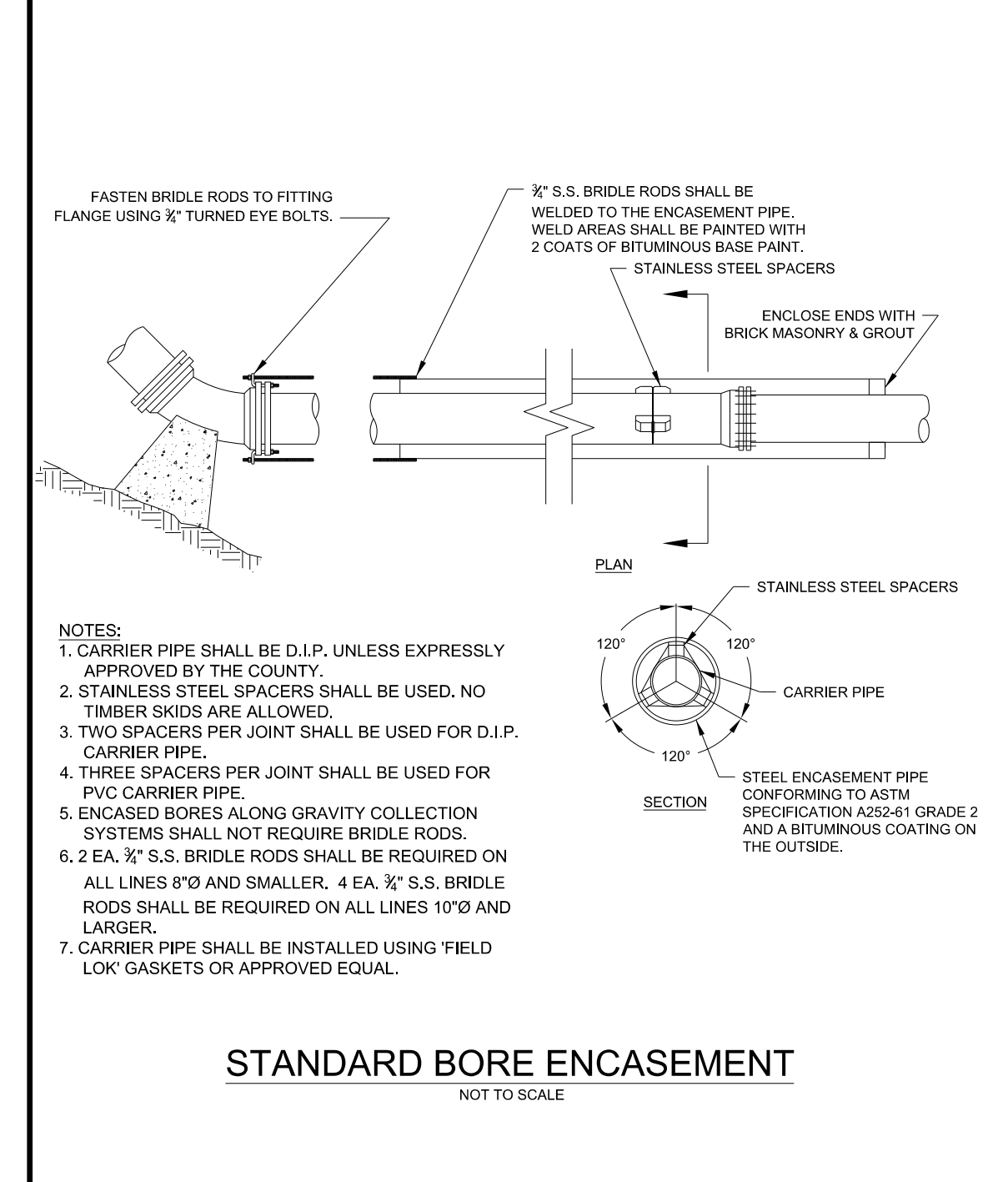
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Approved By:					
Scale:					
Rev.	Description	Date			

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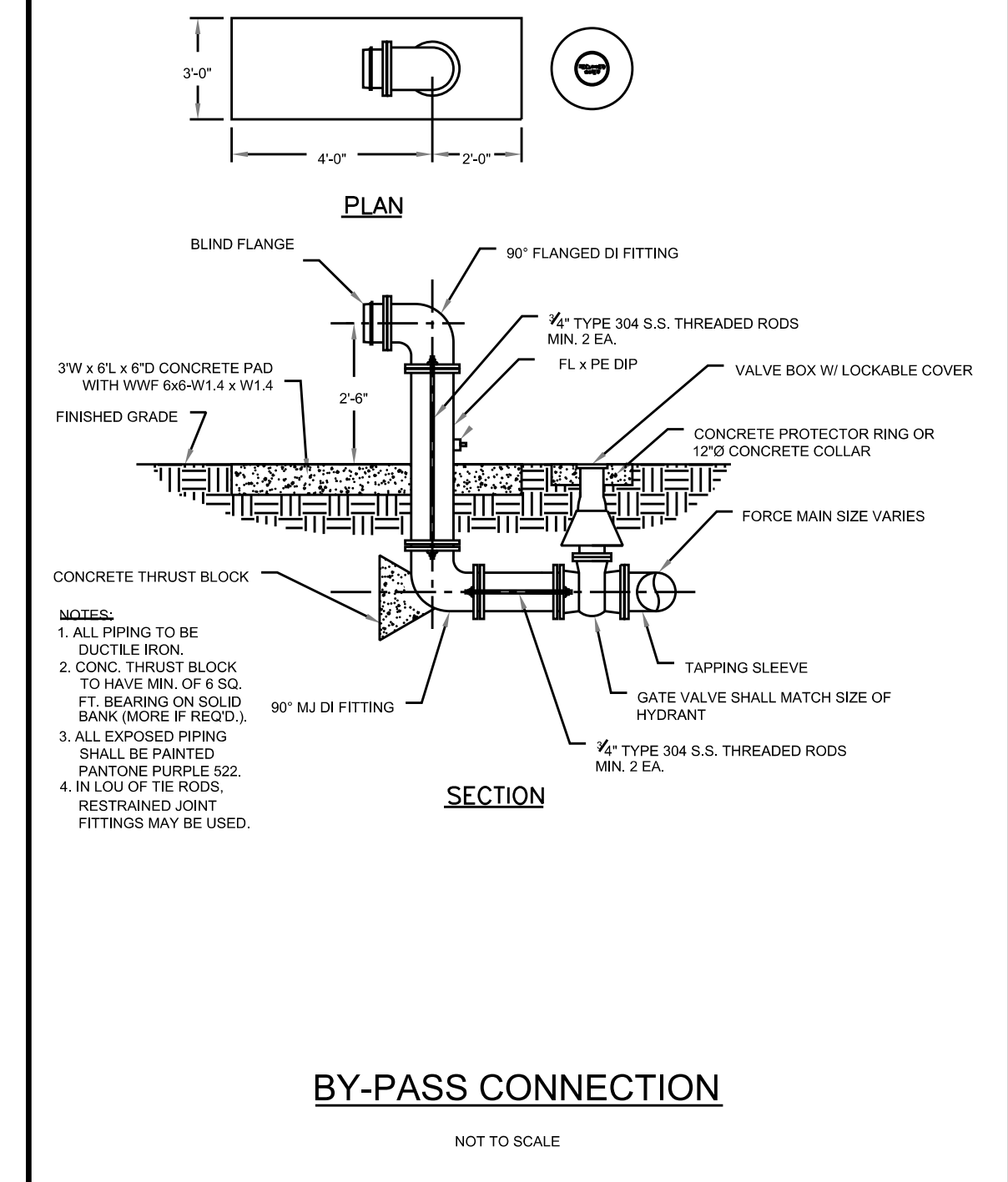
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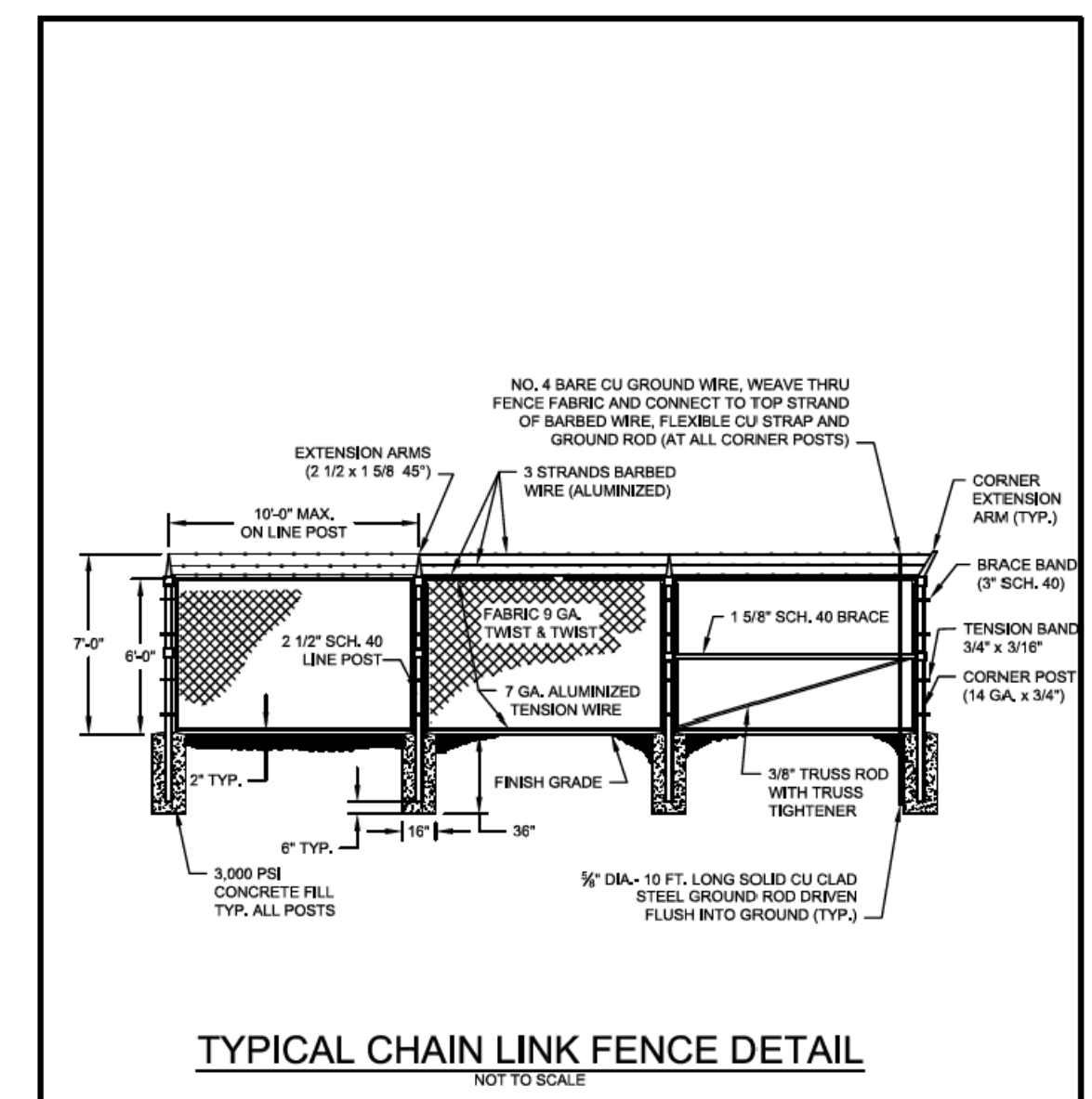
Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577		SANITARY SEWER STANDARD DETAIL Air Vacuum Release Valve in Manhole	PAGE 42
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Approved By:						
Scale:						
Rev.	Description	Date	Link			



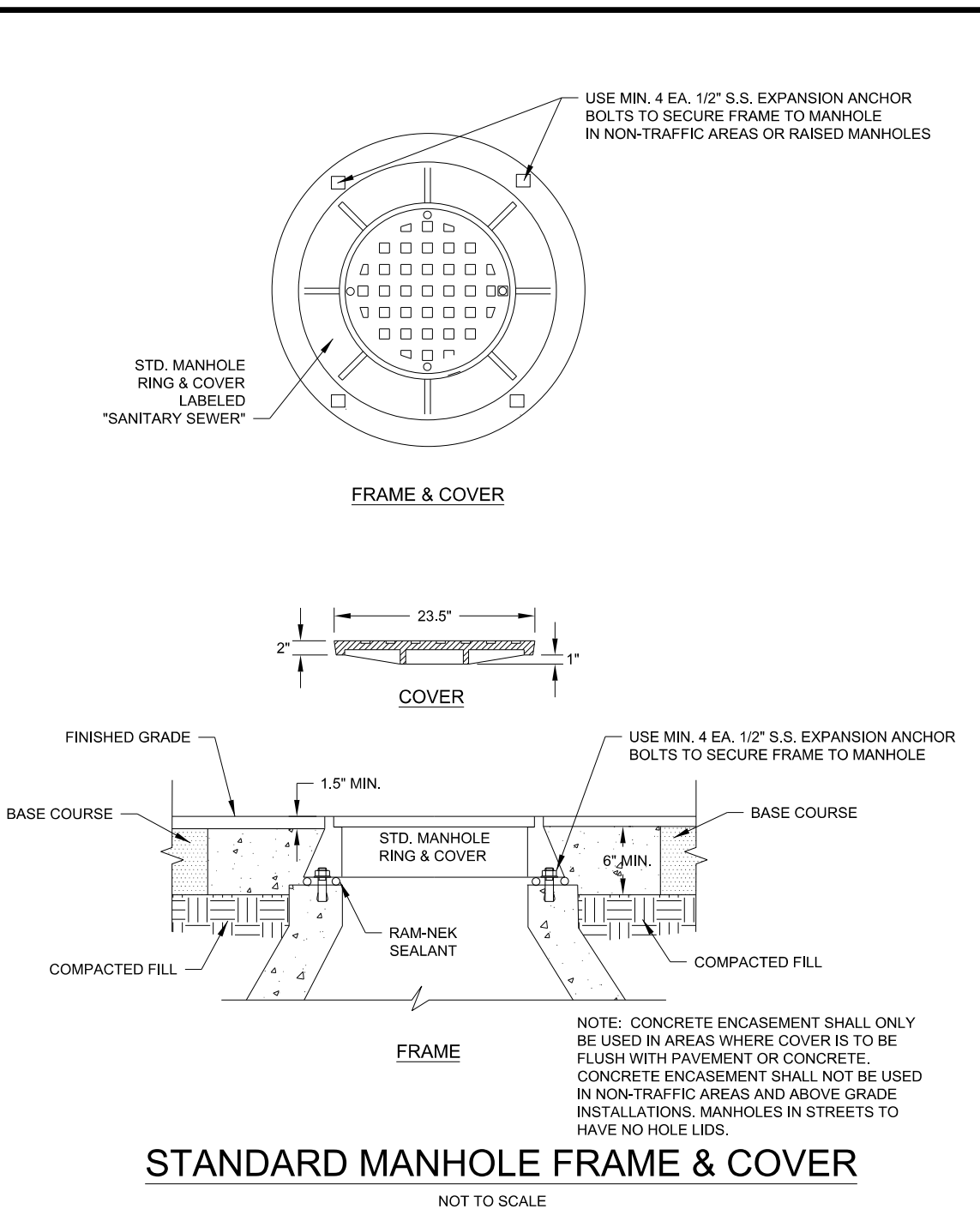
Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577		WATER STANDARD DETAIL Standard Bore Encasement	PAGE 6
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Rev.	Description	Date	Link			



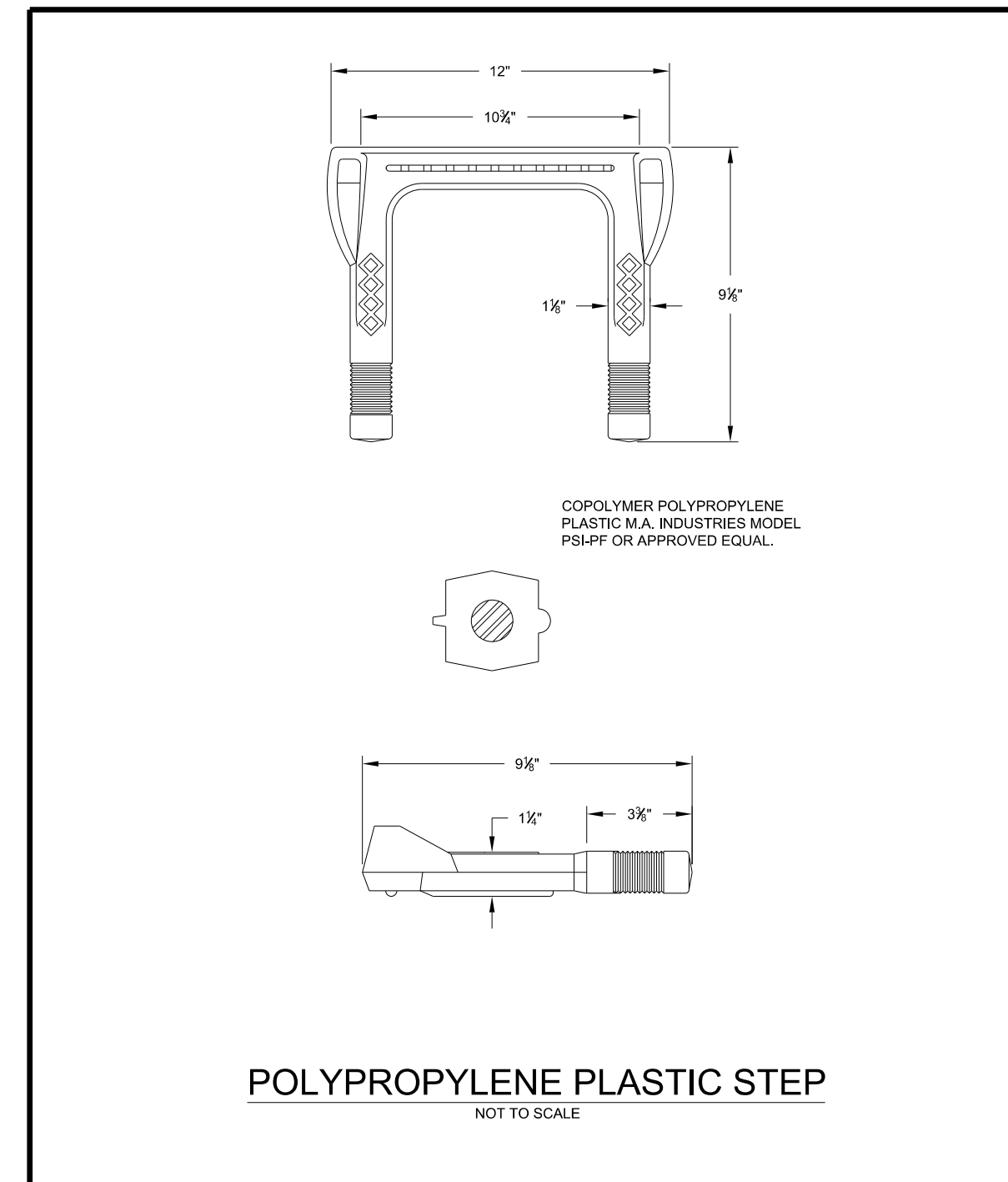
Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577		SANITARY SEWER STANDARD DETAIL BY-PASS CONNECTION	PAGE 68
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Approved By:						
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Rev.	Description	Date	Link			



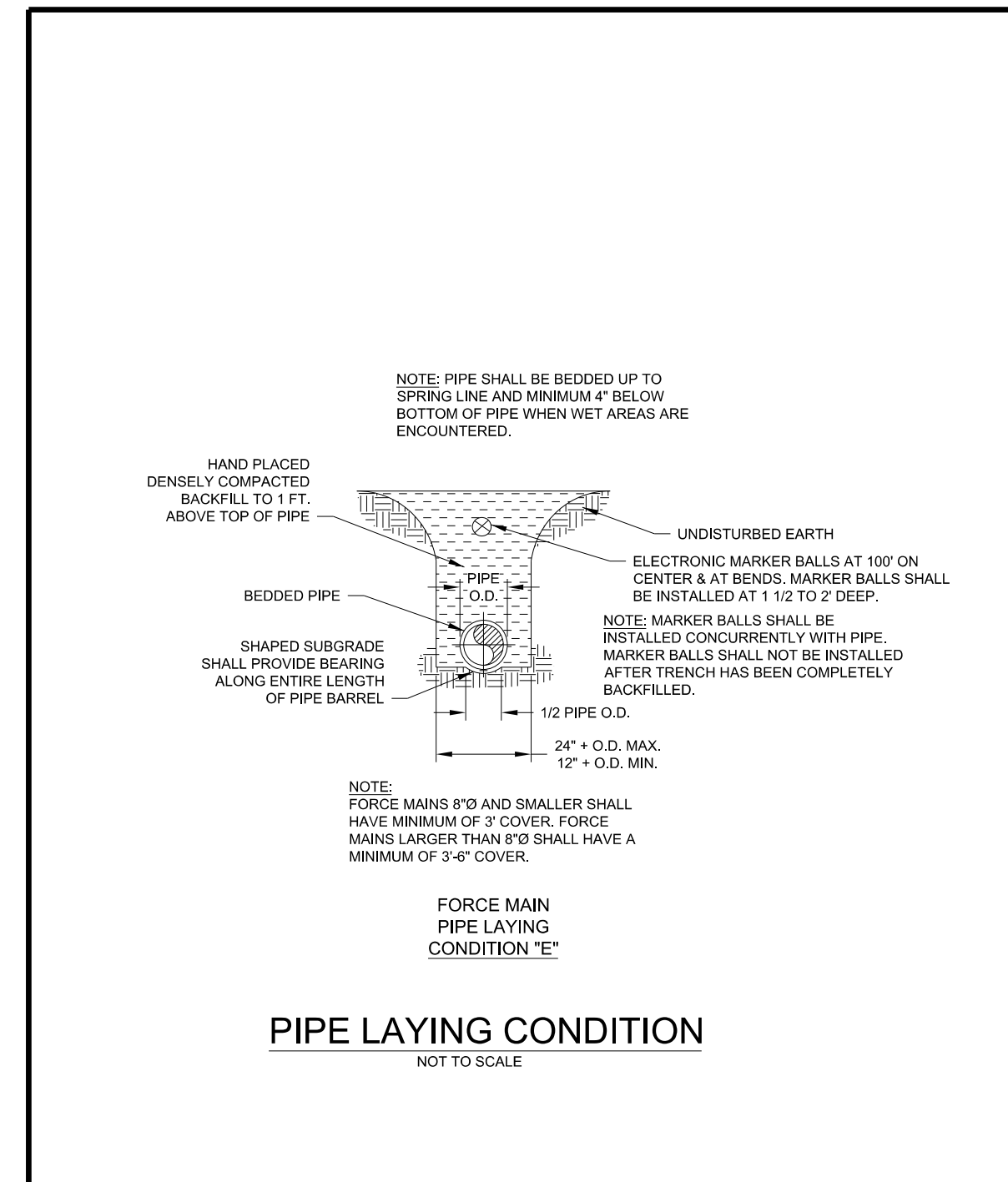
Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577		SANITARY SEWER STANDARD DETAIL Chain Link Fence	PAGE 48A
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Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577		SANITARY SEWER STANDARD DETAIL Standard Manhole Frame & Cover	PAGE 27
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Rev.	Description	Date	Link			



Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577		SANITARY SEWER STANDARD DETAIL Polypropylene Plastic Manhole Step	PAGE 35
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Approved By:						
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Rev.	Description	Date	Link			

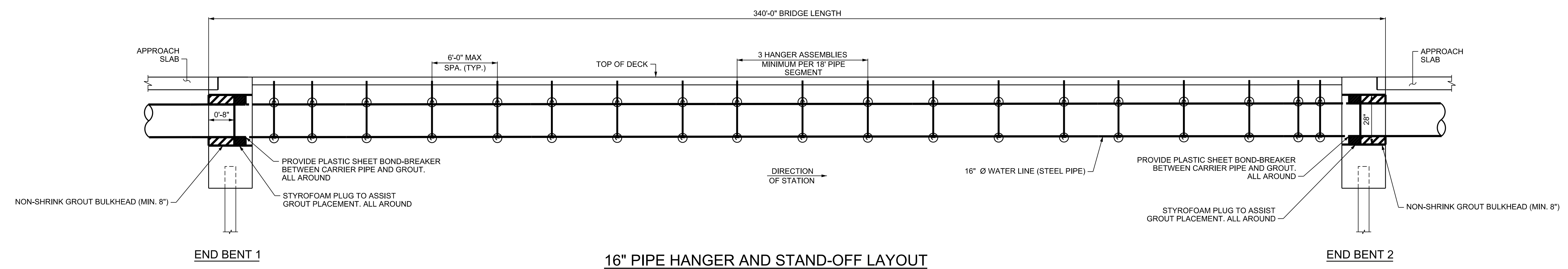


Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577		SANITARY SEWER STANDARD DETAIL Pipe Laying Conditions E	PAGE 38
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Approved By:						
Scale:						
Rev.	Description	Date	Link			

PROJECT REFERENCE NO.	SHEET NO.
BR-0086	UC-3D
DESIGNED BY: SMH	
DRAWN BY: KSR	
CHECKED BY: JG	
APPROVED BY: JLL	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

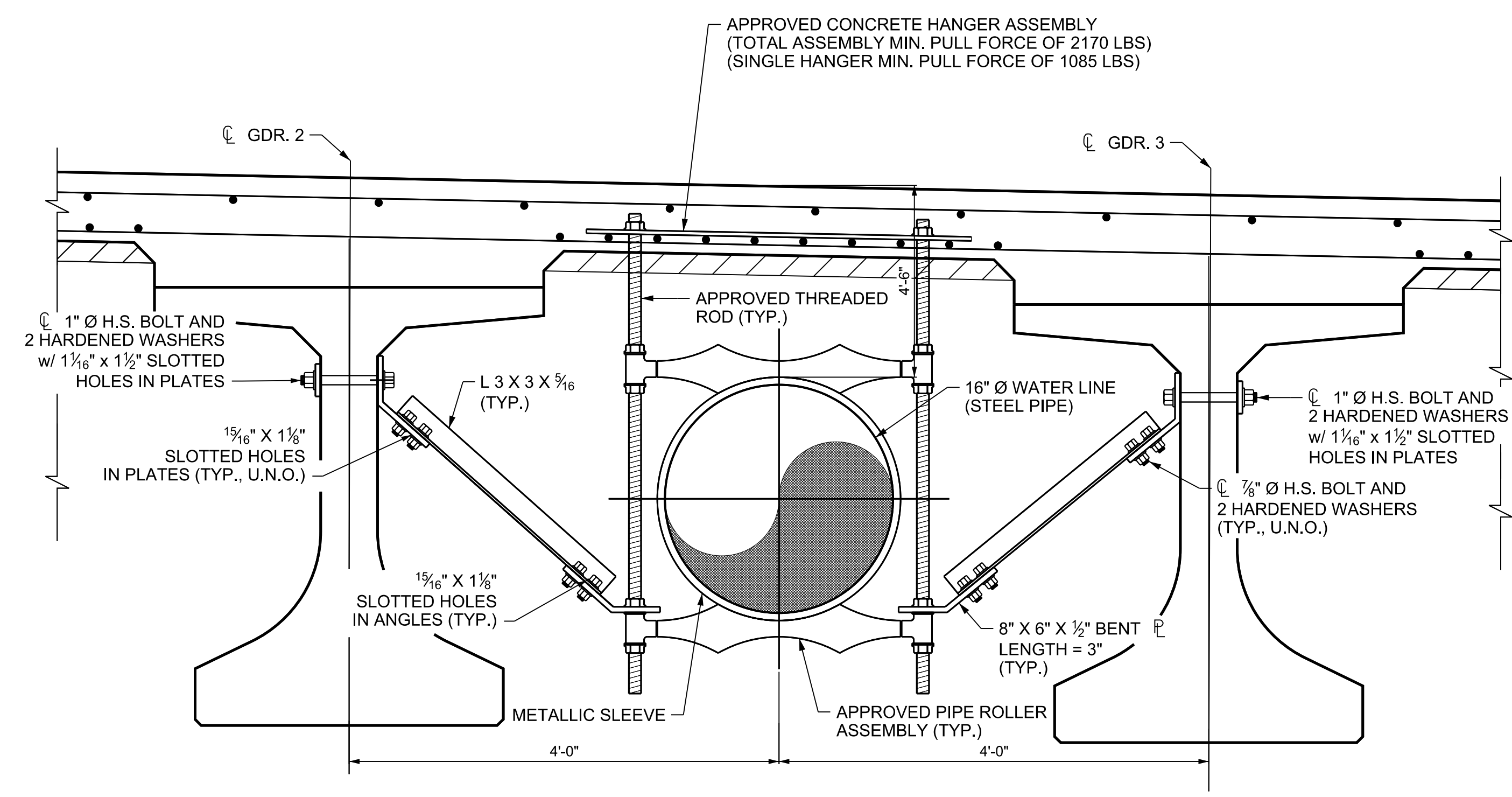
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16" PIPE HANGER AND STAND-OFF LAYOUT

NOT TO SCALE
(GIRDERS AND INTERIOR BENTS NOT SHOWN FOR CLARITY)



16" PIPE HANGER AND STAND-OFF DETAIL

NOT TO SCALE

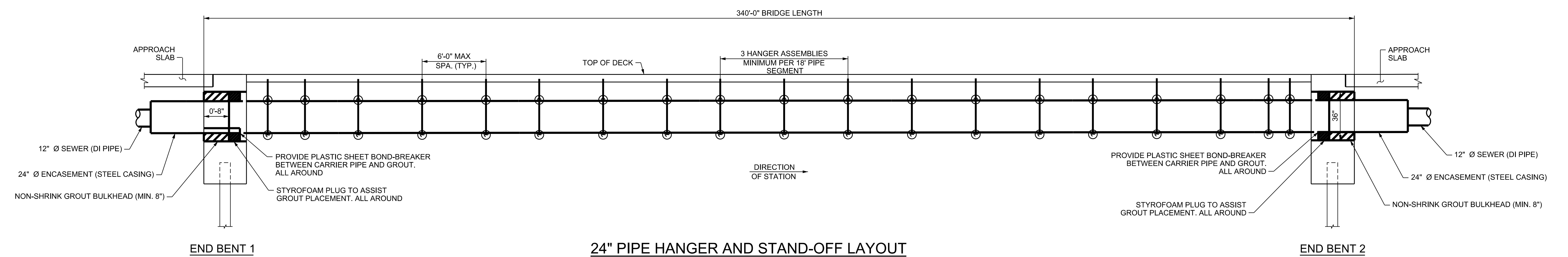
NOTES

1. THE PLATES, BENT PLATES, ANGLES, HIGH STRENGTH BOLTS, NUTS, WASHERS, THREADED RODS, AND ROLLER ASSEMBLIES SHALL BE 304 STAINLESS STEEL.
2. THE METALLIC SLEEVE AROUND THE PIPE THAT COMES INTO CONTACT WITH THE ROLLER SHALL BE 304 STAINLESS STEEL WITH NYLON BACKING FOR ADDITIONAL CORROSION PROTECTION.
3. APPROVED STRUCTURAL INSERTS SHALL NOT BE PLACED IN THE VALLEYS OF THE METAL SIP FORMS.
4. BRIDGE COMPONENTS ARE SHOWN FOR REFERENCE ONLY. SEE STRUCTURAL SHEETS FOR BRIDGE DETAILS.

PROJECT REFERENCE NO.	SHEET NO.
BR-0086	UC-3E
DESIGNED BY: SMH	
DRAWN BY: KSR	
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REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
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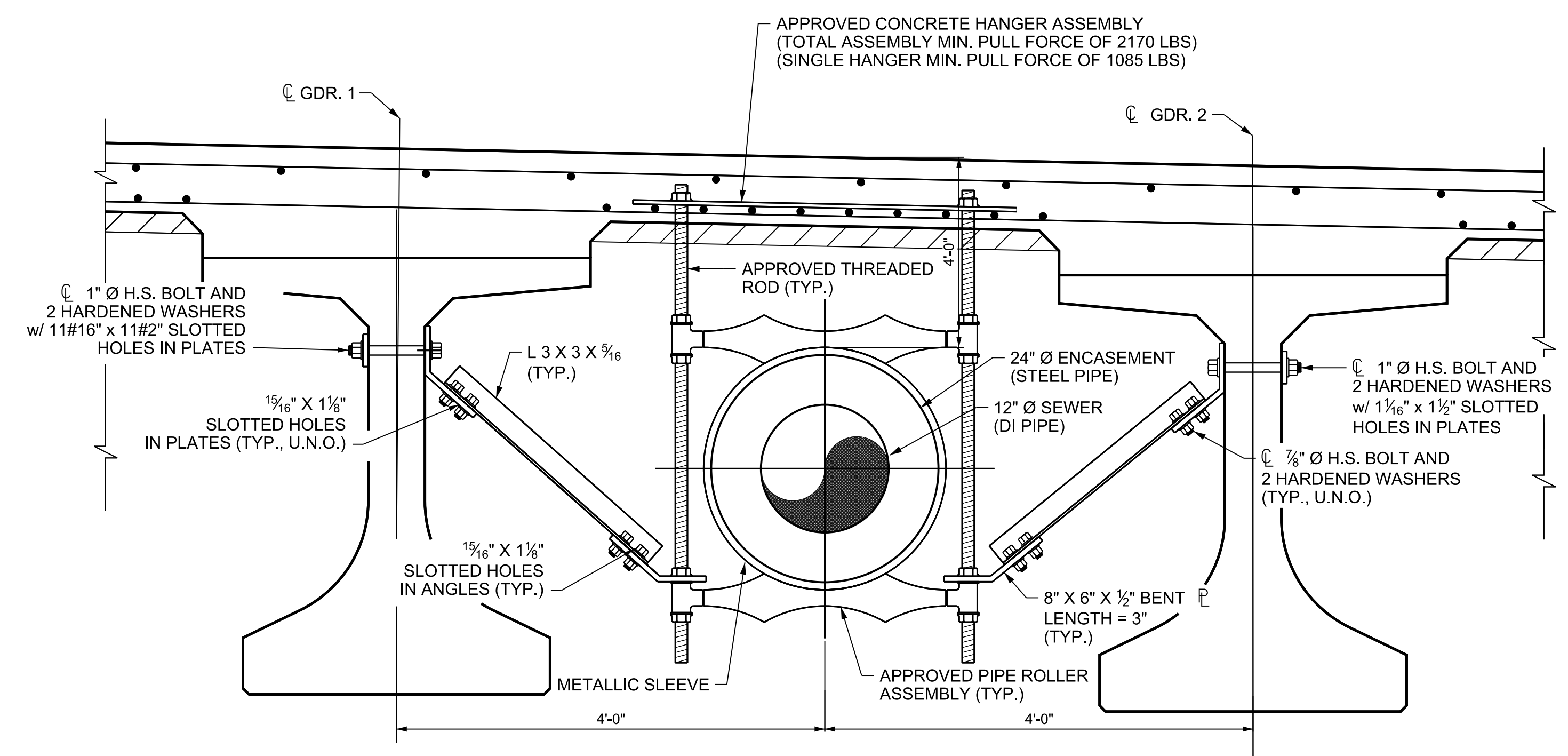
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24" PIPE HANGER AND STAND-OFF LAYOUT

NOT TO SCALE
(GIRDERS AND INTERIOR BENTS NOT SHOWN FOR CLARITY)



24" PIPE HANGER AND STAND-OFF DETAIL

NOT TO SCALE

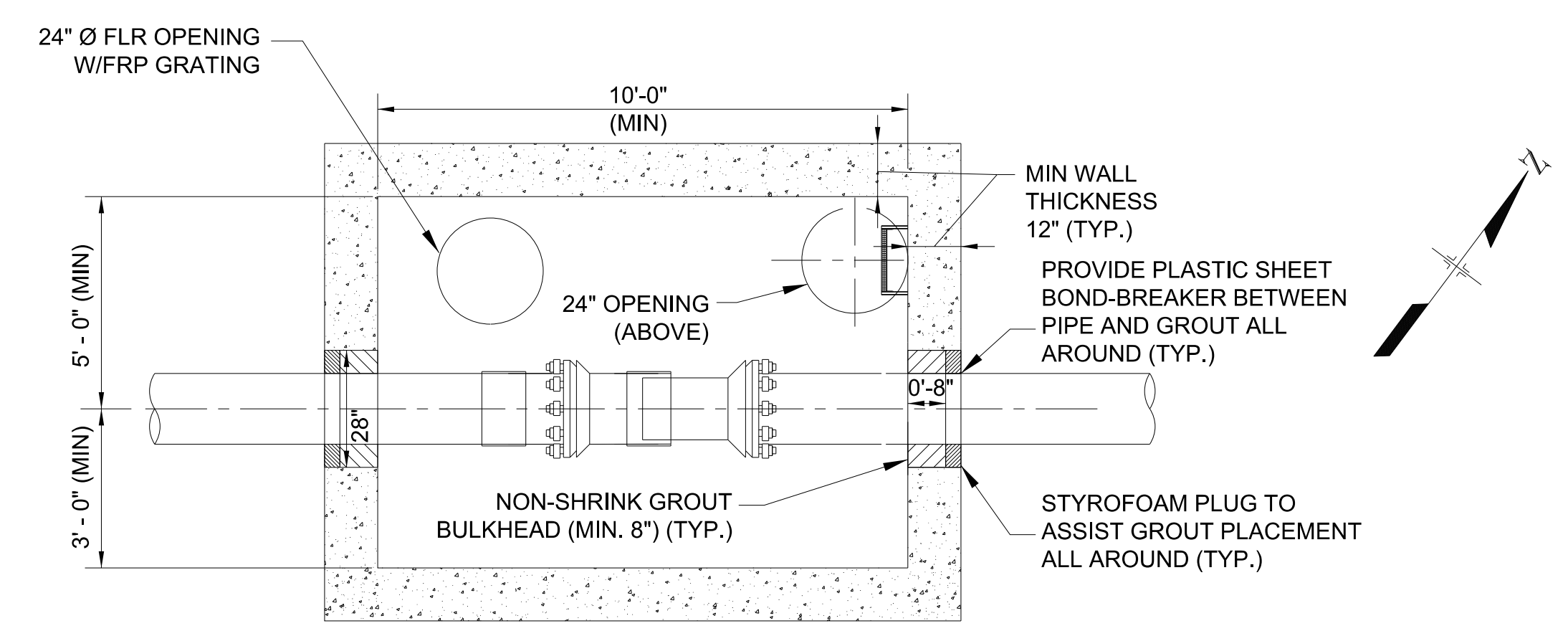
NOTES

1. THE PLATES, BENT PLATES, ANGLES, HIGH STRENGTH BOLTS, NUTS, WASHERS, THREADED RODS, AND ROLLER ASSEMBLIES SHALL BE 304 STAINLESS STEEL.
2. THE METALLIC SLEEVE AROUND THE PIPE THAT COMES INTO CONTACT WITH THE ROLLER SHALL BE 304 STAINLESS STEEL WITH NYLON BACKING FOR ADDITIONAL CORROSION PROTECTION.
3. APPROVED STRUCTURAL INSERTS SHALL NOT BE PLACED IN THE VALLEYS OF THE METAL SIP FORMS.
4. BRIDGE COMPONENTS ARE SHOWN FOR REFERENCE ONLY. SEE STRUCTURAL SHEETS FOR BRIDGE DETAILS.

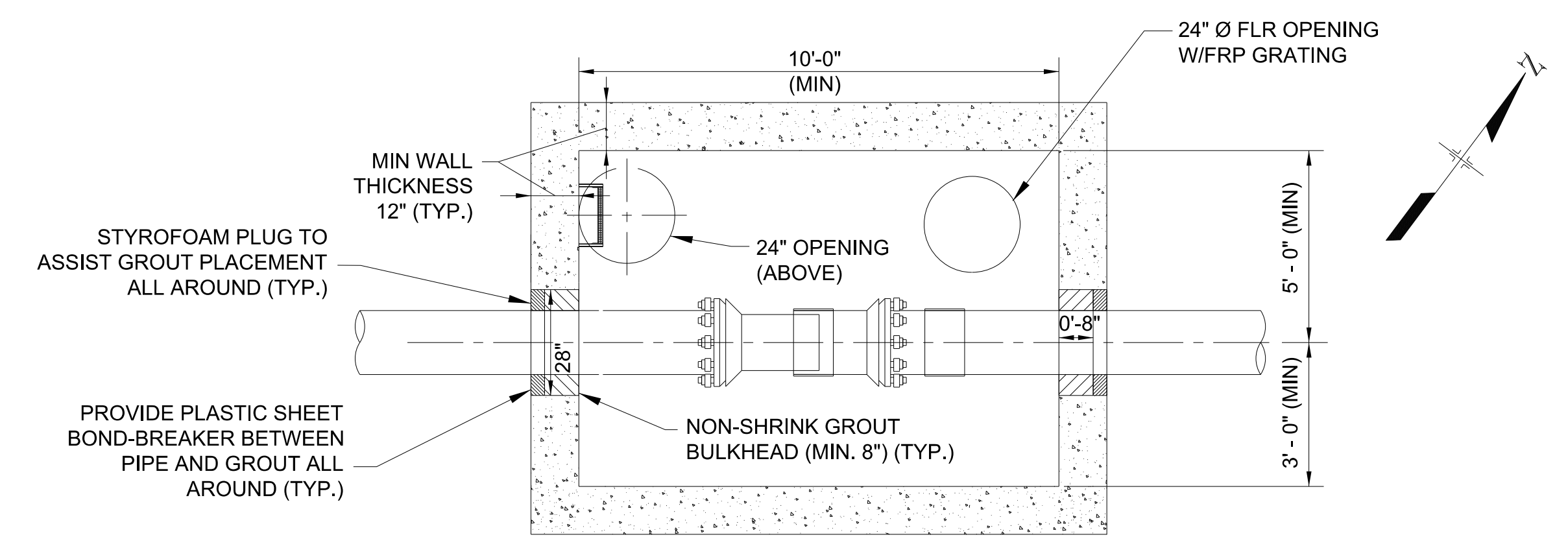
PROJECT REFERENCE NO.	SHEET NO.
BR-0086	UC-3F
DESIGNED BY: SMH	
DRAWN BY: KSR	
CHECKED BY: JG	
APPROVED BY: JLL	
REVISED:	
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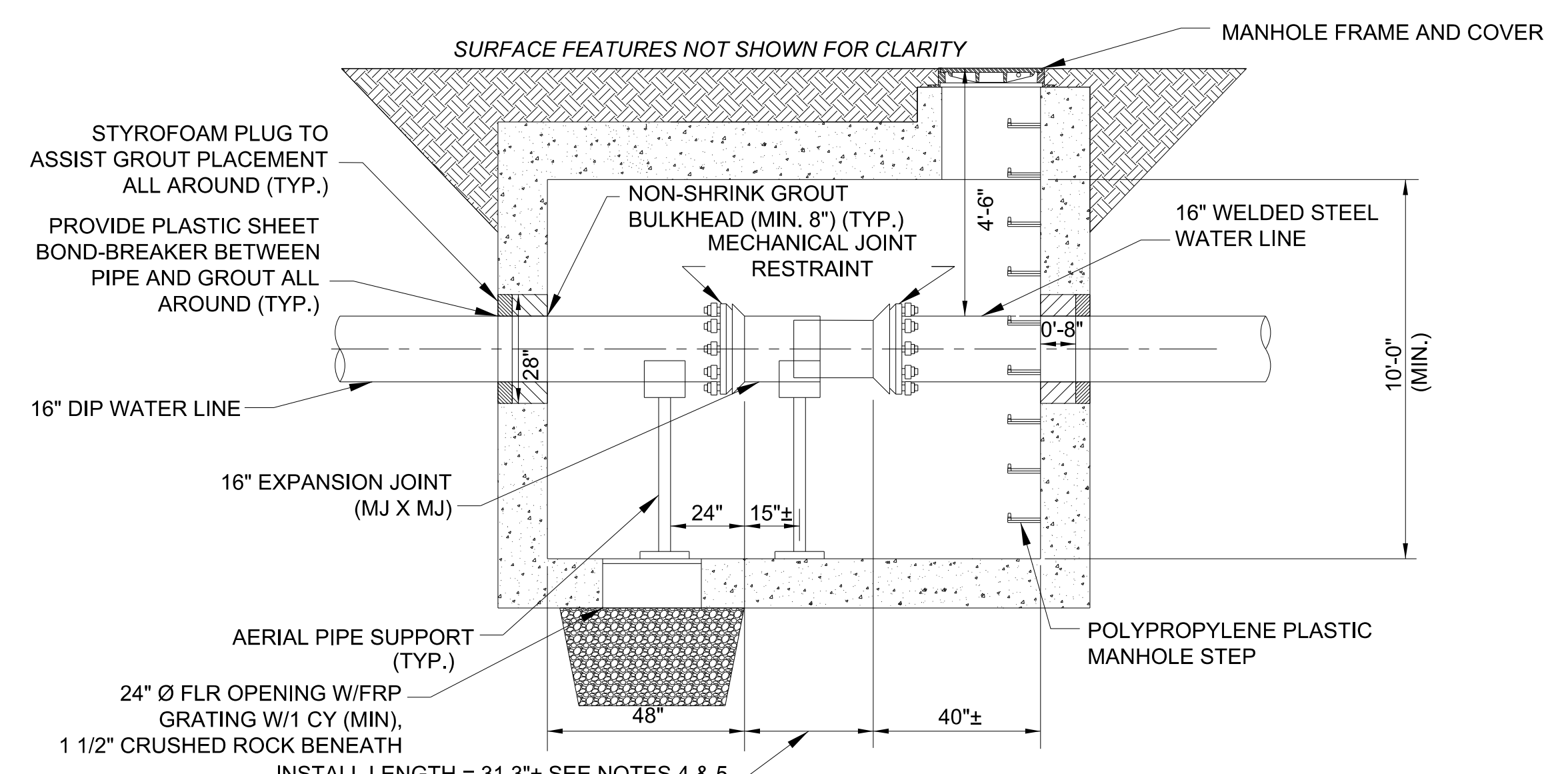
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PLAN
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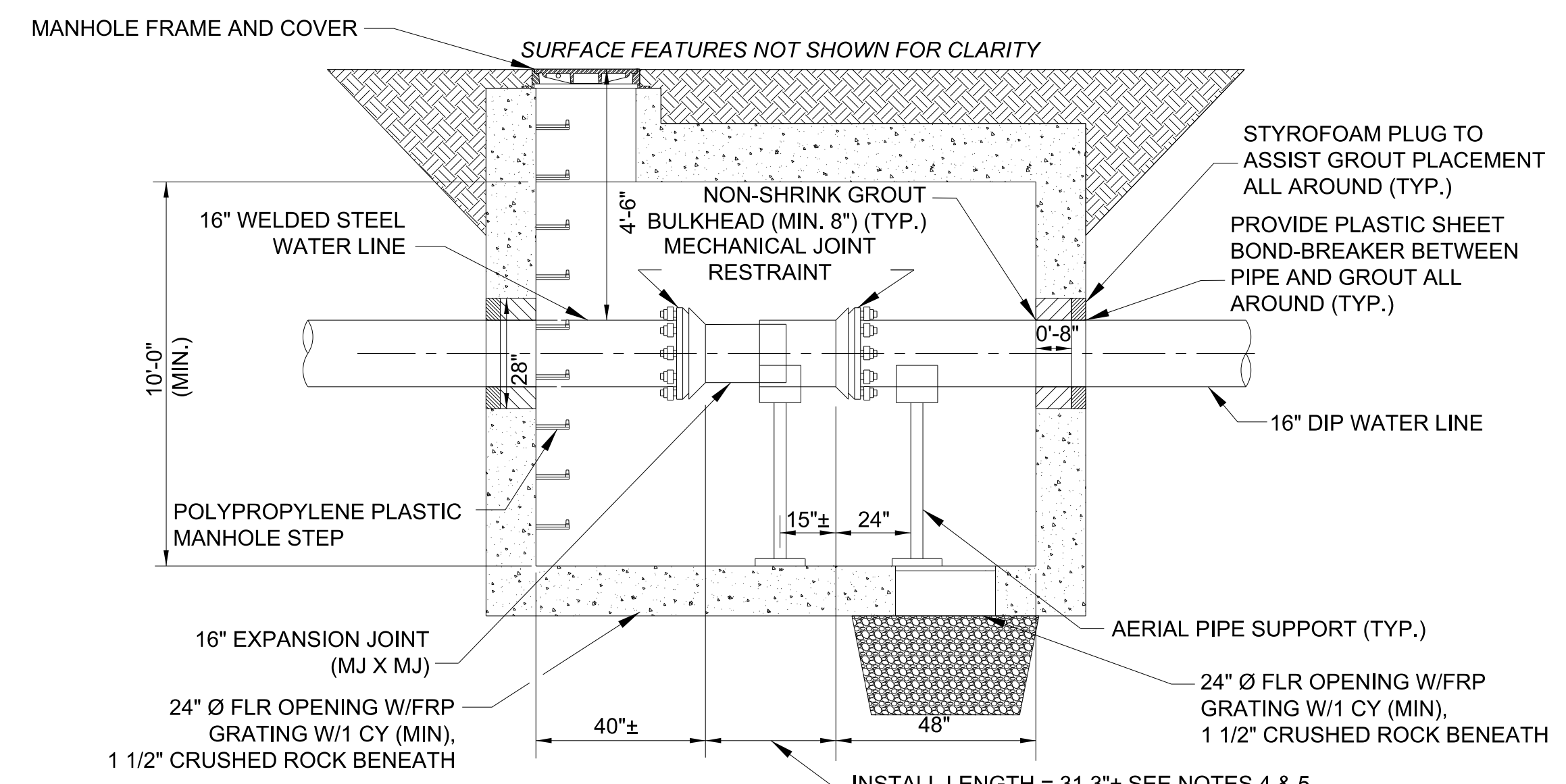


PLAN
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SECTION
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EXPANSION JOINT VAULT 1



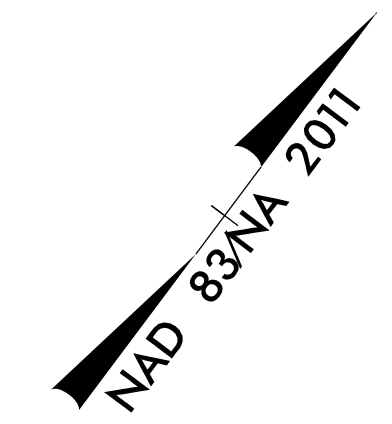
SECTION
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EXPANSION JOINT VAULT 2

NOTES

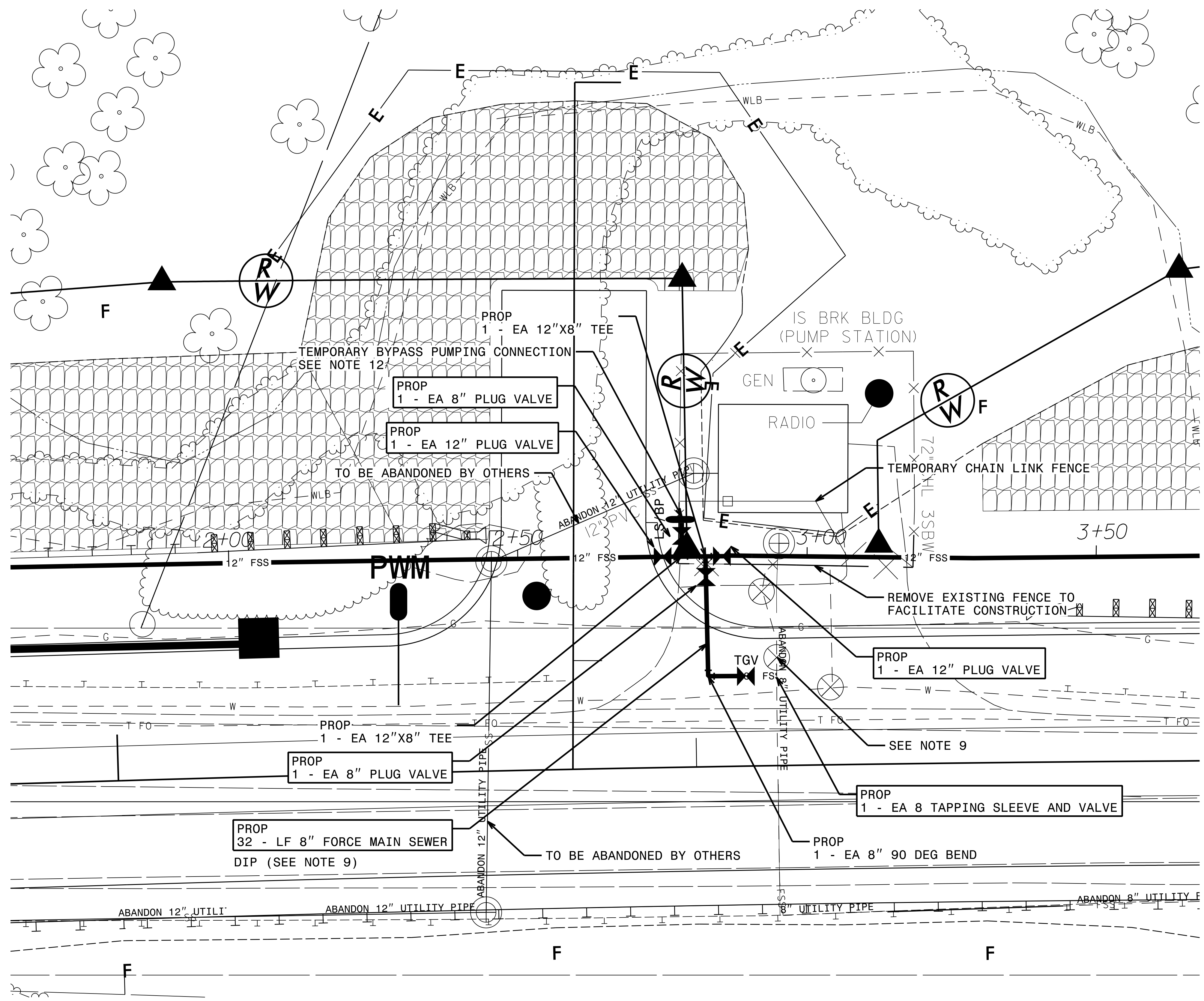
1. FINAL POSITION OF THE EXPANSION JOINT VAULT SHALL BE FIELD ADJUSTED SUCH THAT IT MINIMIZES IMPACT TO THE ROADWAY AND SURROUNDING FEATURES.
2. EXPANSION JOINT VAULTS SHALL BE PRECAST, RATED FOR AASHTO HS-20 LIVE LOAD WITH TRAFFIC -BEARING MANHOLE FRAMES OR RINGS WITH COVERS, FOR DELIBERATE HEAVY VEHICULAR TRAFFIC APPLICATIONS.
3. THE TOP AND SIDES OF THE VAULT EXTERIOR SHALL BE COATED WITH TNEMEC COAL TAR SERIES 46-465.
4. EXPANSION JOINT SHALL BE EBAA SERIES 200 EX-TEND (MODEL 216M0); OR APPROVED EQUAL. CONTRACTOR SHALL VERIFY THE DIMENSIONS OF THE EXPANSION JOINT COUPLING AND MODIFY THE VAULT DIMENSIONS AS NEEDED TO ACCOMMODATE THE EXPANSION JOINT.
5. EXPANSION JOINT MANUFACTURER'S REP SHALL BE ONSITE DURING FIELD INSTALLATION OF EXPANSION JOINT. EXPANSION JOINT INSTALLED LENGTH AND PIPE PIPE PENETRATION INTO VAULT SHALL BE ADJUSTED BASED ON TEMPERATURE CONDITIONS. EXPANSION JOINT SHALL BE INSTALLED PER MANUFACTURER INSTRUCTION.
6. EXPANSION JOINT VAULT ROOF SLAB SHALL BE REMOVABLE.
7. WRAP ALL DI PIPE AND FITTINGS IN POLYETHYLENE (EXCEPT THE EXPANSION JOINT).

PROJECT REFERENCE NO.	SHEET NO.
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NOTES

- 8" FORCE MAIN SEWER SHALL BE CLASS 350 DIP.
- DIP IN SEWER SERVICE SHALL HAVE AN INTERIOR LINING OF PROTECTO 401 OR APPROVED EQUAL.
- PROVIDE POLYETHYLENE ENCASMENT ON DIP.
- 12" FORCE MAIN SEWER SHALL BE DR-25 PVC.
- ALL PIPING JOINTS, BENDS, FITTINGS, AND SPECIALS SHALL BE RESTRAINED JOINT TYPE.
- BLOCKING AND BRACING SHALL BE USED IN CONJUNCTION WITH RESTRAINED JOINT PIPE.
- PIPE CROSSINGS WITH LESS THAN 18" OF CLEARANCE SHALL REQUIRE A CONCRETE SADDLE TO BE PROVIDED.
- DEFLECT PIPE JOINTS HORIZONTALLY AND/OR VERTICALLY AS NECESSARY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS TO MATCH ALIGNMENTS SHOWN.
- CLOSE EXISTING VALVE. THIS SEGMENT OF PIPE WILL SERVE AS A TEMPORARY CONNECTION TO THE EXISTING 8-INCH FORCE MAIN UNTIL THE 12-INCH FORCE MAIN ACROSS THE BRIDGE IS READY FOR SERVICE.
- DEMOLITION AND ABANDONMENT OF 8" FORCE MAIN SEWER INSIDE PUMP STATION FENCE LINE AND 12" GRAVITY SEWER ALONG US 301 TO BE COMPLETED BY OTHERS AS PART OF NEUSE RIVER WASTEWATER PUMP STATION REPLACEMENT PROJECT.
- CONTRACTOR SHALL MAINTAIN SEWER SERVICE TO THE NEUSE RIVER WASTEWATER PUMP STATION. COORDINATE WITH NEUSE RIVER WASTEWATER PUMP STATION REPLACEMENT PROJECT CONTRACTOR BEFORE ABANDONMENT OF EXISTING 8" FORCE MAIN SEWER. UPON COMPLETION OF CONSTRUCTION, CLOSE BURIED VALVE, REMOVE VALVE BOX, AND PROVIDE RJ PLUG ON VALVE.

EXISTING PUMP STATION AND FORCE MAIN TIE-IN PLAN

8/17/19

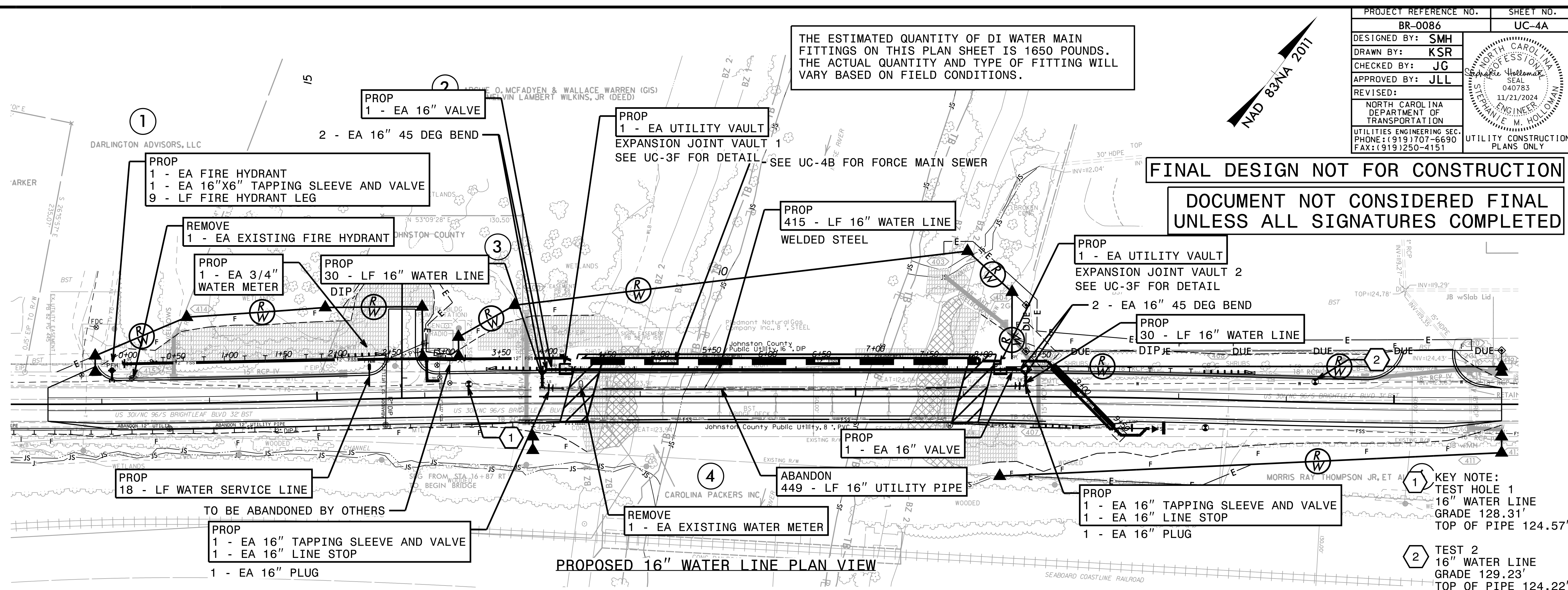
PROJECT REFERENCE NO.	SHEET NO.
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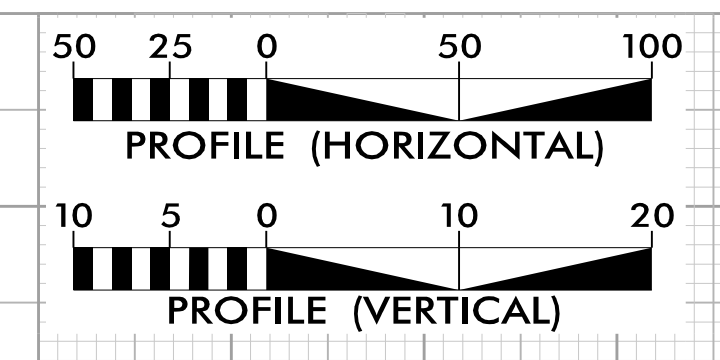
THE ESTIMATED QUANTITY OF DI WATER MAIN FITTINGS ON THIS PLAN SHEET IS 1650 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTING WILL VARY BASED ON FIELD CONDITIONS.

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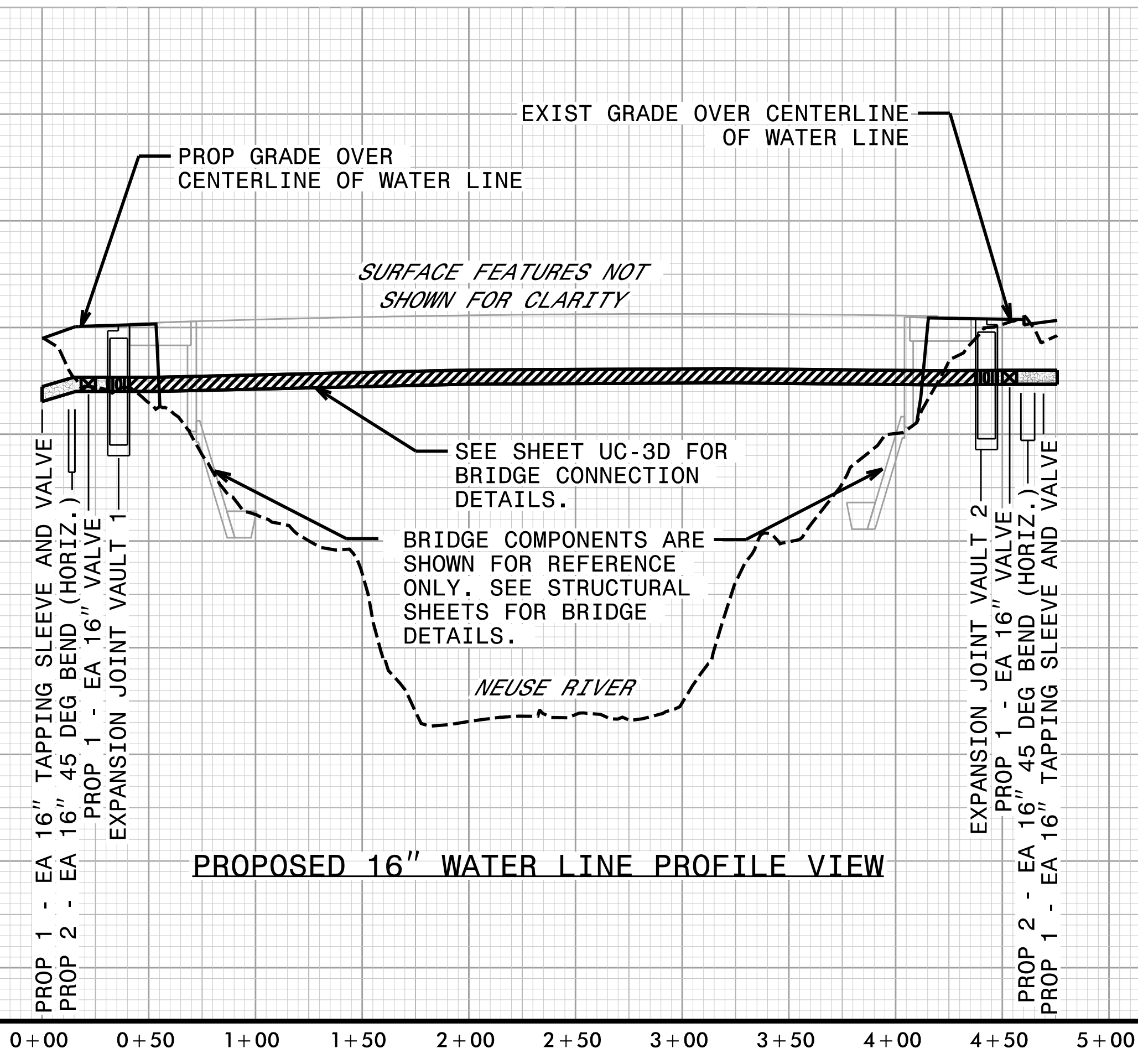


PROPOSED 16" WATER LINE PLAN VIEW



LEGEND

	DIP WATER LINE
	WELDED STEEL WATER LINE



PROPOSED 16" WATER LINE PROFILE VIEW

NOTES

- DIP WATER LINE SHALL BE CLASS 350.
- DIP WATER LINE SHALL BE CEMENT LINED IN ACCORDANCE WITH ANSI 21.4, WITH MINIMUM THICKNESS OF 3/32-INCH.
- DIP WATER LINE SHALL BE COATED ON THE OUTSIDE WITH STANDARD BITUMINOUS COATING OF EITHER COAL TAR OR ASPHALT BASE APPROXIMATELY ONE MIL THICK. THE COATING SHALL BE CONTINUOUS, SMOOTH, AND STRONGLY ADHERENT TO THE PIPE AND SHALL NOT BECOME BRITTLE FROM COLD OR STICKY FROM HEAT.
- ALL BENDS, FITTINGS, AND SPECIALS SHALL BE RESTRAINED JOINT TYPE.
- BLOCKING AND BRACING SHALL BE USED IN CONJUNCTION WITH RESTRAINED JOINT PIPE.
- PIPE CROSSINGS WITH LESS THAN 18" OF CLEARANCE SHALL REQUIRE A CONCRETE SADDLE TO BE PROVIDED.
- DEFLECT PIPE JOINTS HORIZONTALLY AND/OR VERTICALLY AS NECESSARY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS TO MATCH ALIGNMENTS SHOWN.
- SEQUENCE PROPOSED FILL GRADING WITH UTILITY WORK TO PROVIDE MINIMUM COVER REQUIRED FOR WATER LINES.
- CONTRACTOR SHALL MAINTAIN WATER SERVICE TO THE NEUSE RIVER WASTEWATER PUMP STATION. COORDINATE WITH NEUSE RIVER WASTEWATER PUMP STATION REPLACEMENT PROJECT CONTRACTOR FOR ABANDONMENT OF EXISTING SERVICE AND METER.
- CONTRACTOR SHALL KEEP EXISTING 16" WATER LINE OPERATIONAL UNTIL NEW 16" WATER LINE IS INSTALLED, TESTED, AND ACCEPTED INTO SERVICE. EXISTING 16" WATER LINE SHALL BE REMOVED AND DISPOSED OF WITH BRIDGE DEMOLITION.

REVISIONS

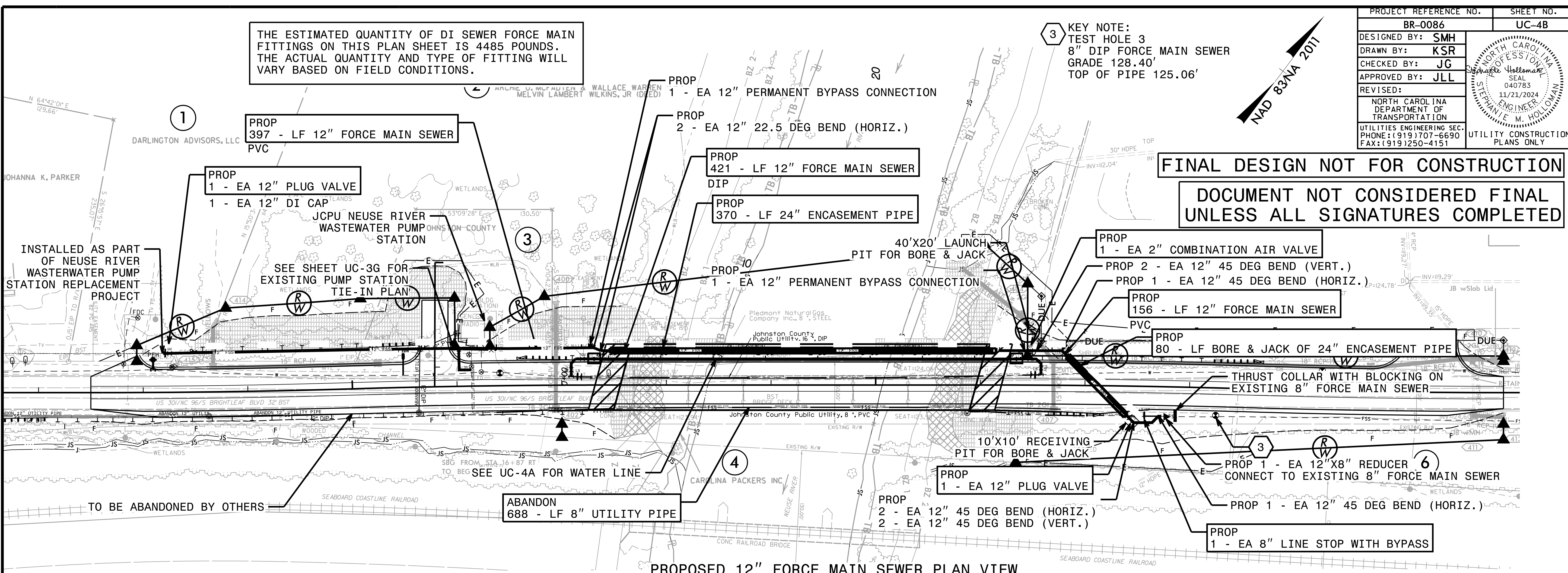
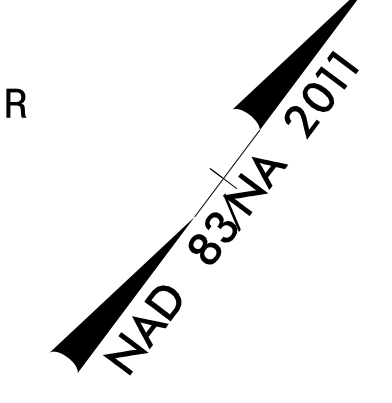
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8/17/2024

PROJECT REFERENCE NO.	SHEET NO.
BR-0086	UC-4B
DESIGNED BY: SMH	
DRAWN BY: KSR	
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APPROVED BY: JLL	
REVISED:	
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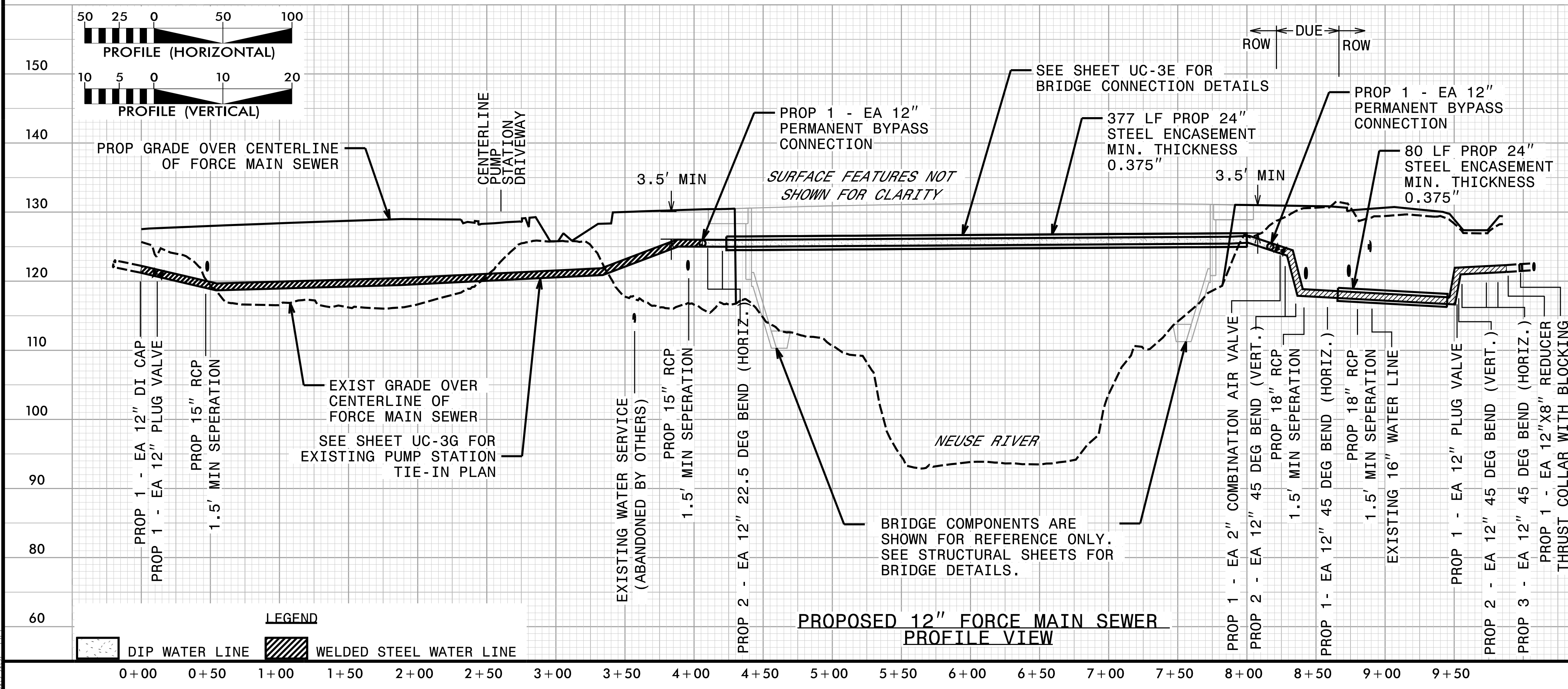
THE ESTIMATED QUANTITY OF DI SEWER FORCE MAIN FITTINGS ON THIS PLAN SHEET IS 4485 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTING WILL VARY BASED ON FIELD CONDITIONS.

3 KEY NOTE:
 TEST HOLE 3
 8" DIP FORCE MAIN SEWER
 GRADE 128.40'
 TOP OF PIPE 125.06'



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PROPOSED 12" FORCE MAIN SEWER PLAN VIEW



PROPOSED 12" FORCE MAIN SEWER PROFILE VIEW

- NOTES
- DIP FORCE MAIN SEWER SHALL BE CLASS 350 RESTRAINED JOINT TR FLEX PIPE.
 - DIP IN SEWER SERVICE SHALL HAVE AN INTERIOR LINING OF PROTECTO 401 OR APPROVED EQUAL.
 - PROVIDE POLYETHYLENE ENCASEMENT ON DIP. TR FLEX PIPE SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS TO PROVIDE REQUIRED EXPANSION AND CONTRACTION OF PIPE.
 - ALL BENDS, FITTINGS, AND SPECIALS SHALL BE RESTRAINED JOINT TYPE. BLOCKING AND BRACING SHALL BE USED IN CONJUNCTION WITH RESTRAINED JOINT PIPE. PIPE CROSSINGS WITH LESS THAN 18" OF CLEARANCE SHALL REQUIRE A CONCRETE SADDLE TO BE PROVIDED.
 - DEFLECT PIPE JOINTS HORIZONTALLY AND/OR VERTICALLY AS NECESSARY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS TO MATCH ALIGNMENTS SHOWN.
 - PRIOR TO COMMENCING ANY WORK ON ANY TRENCHLESS INSTALLATION ON THIS PROJECT, PROVIDE A DESIGN FOR THE TRENCHLESS INSTALLATION CERTIFIED BY AN ENGINEERING LICENSED BY THE STATE OF NORTH CAROLINA, AS REQUIRED BY SUBARTICLE 1550-3(B) OF THE STANDARD SPECIFICATIONS.
 - SEQUENCE PROPOSED FILL GRADING WITH UTILITY WORK TO PROVIDE MINIMUM COVER REQUIRED FOR SEWER LINES.
 - PROVIDE MAINTENANCE AND ABANDONMENT OF 8" FORCE MAIN SEWER INSIDE PUMP STATION FENCE LINE AND 12" GRAVITY SEWER ALONG US 301 TO BE COMPLETED BY OTHERS AS PART OF NEUSE RIVER WASTEWATER PUMP STATION REPLACEMENT PROJECT.
 - CONTRACTOR SHALL MAINTAIN SEWER SERVICE TO THE NEUSE RIVER WASTEWATER PUMP STATION. COORDINATE WITH NEUSE RIVER WASTEWATER PUMP STATION REPLACEMENT PROJECT CONTRACTOR BEFORE ABANDONMENT OF EXISTING 8" FORCE MAIN SEWER.
 - CONTRACTOR SHALL KEEP EXISTING 8" FORCE MAIN SEWER OPERATIONAL UNTIL NEW 12" FORCE MAIN SEWER IS INSTALLED, TESTED, AND ACCEPTED INTO SERVICE. EXISTING 8" FORCE MAIN SEWER SHALL BE REMOVED AND DISPOSED OF WITH BRIDGE DEMOLITION.
 - CONSTRUCT FORCE MAIN SEWER FROM STA. 0+00 TO STA. 3+00 AND GRADE TO MEET MINIMUM COVER DURING PHASE 1 STEP 3A (SEE TRAFFIC MANAGEMENT PLANS SHEET TMP-4) COMPLETE WORK PRIOR TO DECEMBER 1, 2025. SEE INTERMEDIATE CONTRACT TIME.

LEGEND
 DIP WATER LINE
 WELDED STEEL WATER LINE

11/21/2024
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