PROJECT REFERENCE NO.	SHEET NO.
U-5798A	UC-3F

DESIGNED BY: AAA
DRAWN BY: KNS
CHECKED BY: BRO
APPROVED BY: BRO
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC.
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024448 BRYAN R. ODOM

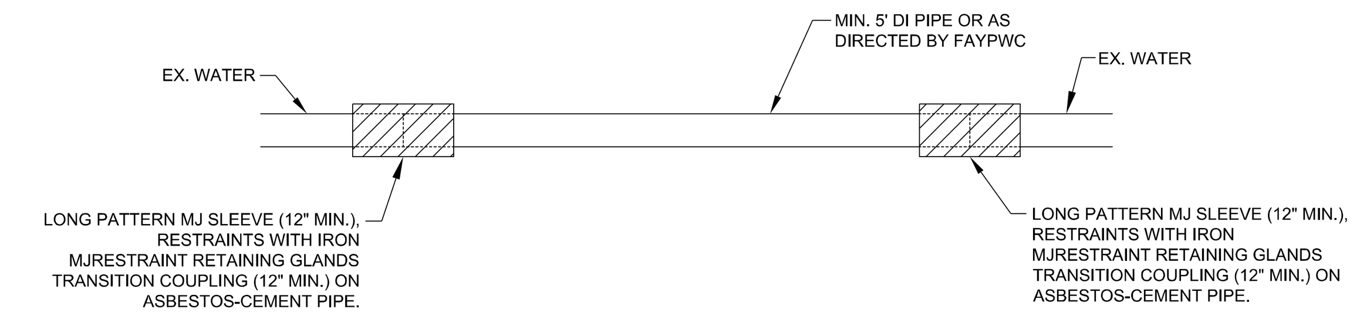
Dec 8 2021 3:10 PM

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTES:
1. ALL PIPE AND FITTINGS SHALL BE APPROVED BY FAYPWC.
2. CONTRACTOR TO COORDINATE NECESSARY OUTAGES WITH FAYPWC AND AFFECTED CUSTOMERS. MINIMUM 48 HOUR NOTICE REQUIRED.
3. NEW WATER MAIN TO BE SWABBED WITH A CHLORINE SOLUTION AND FLUSHED PRIOR TO PLACING INTO SERVICE.
4. ALL NEW FITTINGS AND PIPE TO BE RESTRAINED UTILIZING IRON MJ RESTRAINT RETAINING GLANDS.
5. ALL PIPES TO BE DUCTILE IRON.
6. FAYPWC PROJECT COORDINATOR TO BE PRESENT DURING WORK.
7. BACKFILL AND COMPACT IN ACCORDANCE WITH THE APPLICABLE AGENCY REQUIREMENTS.
8. PROVIDE STONE BEDDING (NO. 5 OR NO. 57 STONE) TO SUPPORT REPAIRED WATER MAIN, AS APPROVED BY FAYPWC PROJECT COORDINATOR.
9. MJ RESTRAINTS ARE NOT ALLOWED ON PVC PIPE.
10. DIMENSIONS ARE GIVEN AS GENERAL GUIDANCE, EXACT DIMENSIONS ARE SUBJECT TO CHANGE BASED ON FIELD CONDITIONS AND AS DIRECTED BY FAYPWC.
11. ALL MATERIALS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF FAYPWC.
12. PIPE REPAIR SHALL EXHIBIT STRAIGHT HORIZONTAL AND VERTICAL ALIGNMENT. DEFLECTIONS OF HORIZONTAL AND VERTICAL ALIGNMENT ARE NOT ACCEPTABLE.
13. THERE SHALL BE NO MORE THAN 1/4" SPACE BETWEEN THE EXISTING WATER MAIN AND THE REPLACEMENT PIPE AT EACH END.
14. DAMAGED SECTION SHALL BE CUT OUT WITHOUT DAMAGING THE PIPE TO REMAIN.
15. PIPE REPAIRS ON MATERIALS OTHER THAN SHOWN, SHALL BE AS DIRECTED BY FAYPWC.
16. THE MINIMUM LENGTH OF REPAIR SHALL BE 5 FEET, UNLESS OTHERWISE DIRECTED BY FAYPWC.



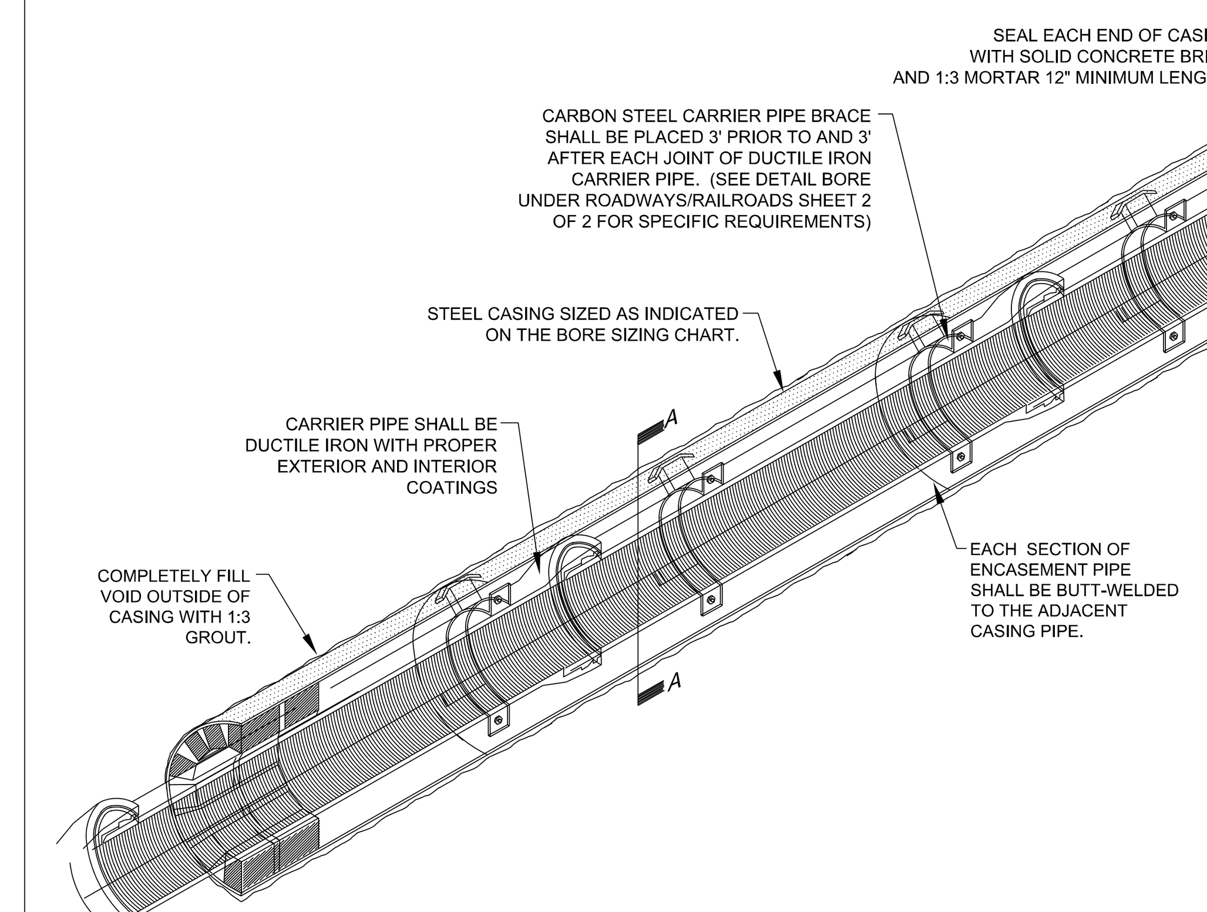
PIPE REPAIR DETAIL
N.T.S.

FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.
WATER RESOURCES ENGINEERING DEPARTMENT

SHEET NO. 1 OF 1 | DWG. NO.: W.31 | DWG. BY: FAYPWC | DATE: JULY 01, 2021 | APPROVED BY: J.E.G.

NO.	DATE	REVISION

W31-PIPE-REPAIR-DETAIL.dwg



HALF SECTION ISOMETRIC OF BORE

NOTE:
1. SEE DRAWING M.6 SHEET 2 OF 2 FOR ADDITIONAL INFORMATION.
2. CARRIER PIPE FOR PRESSURE APPLICATIONS (WATER MAINS AND FORCE MAINS) SHALL HAVE FACTORY RESTRAINED JOINTS. CARRIER PIPE FOR GRAVITY SEWER SHALL HAVE RESTRAINED JOINTS AND MAY USE RESTRAINING GASKETS SUCH AS FIELD LOC, SURE STOP 350, GRIPRING OR APPROVED EQUAL.
3. CARRIER PIPE SHALL BE CLASS 350 OR 250 FOR WATER, AND SHALL BE CLASS 50 FOR SEWER.

BORE UNDER ROADWAYS/RAILROADS
N.T.S.

FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.
WATER RESOURCES ENGINEERING DEPARTMENT

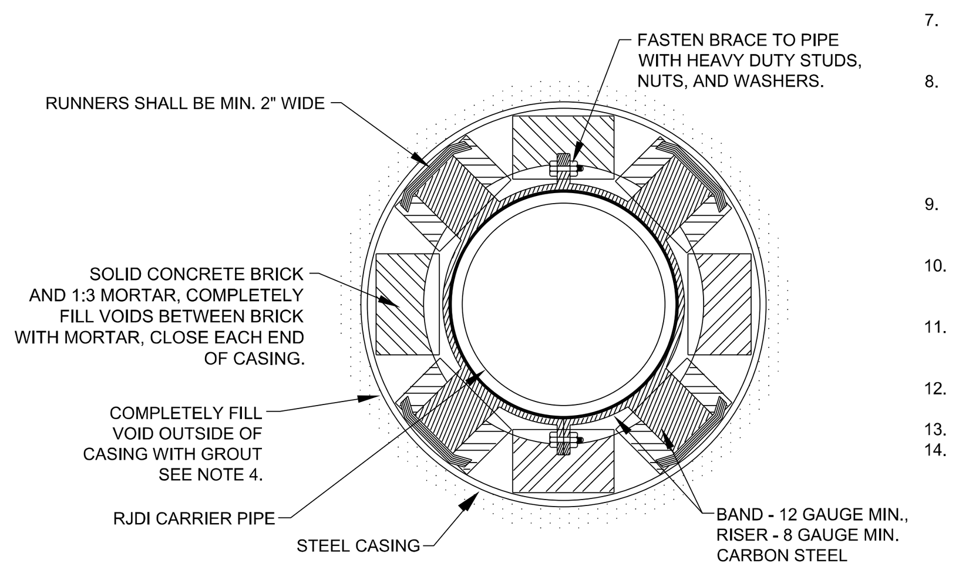
SHEET NO. 1 OF 2 | DWG. NO. M.6 | DWG. BY: FAYPWC | DATE: JULY 01, 2021 | APPROVED BY: J.E.G.

NO.	DATE	REVISION
1	01/05	ADDED NOTES 2 AND 3
2	10/09	CLARIFIED RESTRAINT REQUIREMENTS

M6-BORE-ROAD-RAIL.dwg

BORE SIZING CHART*			
CARRIER PIPE SIZE	MIN. CASING SIZE	ROADWAYS MIN. WALL THICKNESS	RAILROADS MIN. WALL THICKNESS
4"	10"	0.188"	0.188"
6"	12"	0.25"	0.281"
8"	16"	0.25"	0.281"
12"	24"	0.25"	0.375"
16"	30"	0.312"	0.469"
18"	30"	0.312"	0.469"
24"	36"	0.375"	0.532"
30"	42"	0.500"	0.625"
36"	48"	0.500"	0.688"

*CONTRACTOR MAY SUBSTITUTE A LARGER SIZE CASING PIPE HAVING THE MINIMUM WALL THICKNESS SHOWN FOR SEWER MAINS. ALL ADDITIONAL COSTS SHALL BE INCLUDED IN THE NIT PRICE BID FOR BORING AND JACKING.



SECTION "A-A" CARBON STEEL CARRIER PIPE BRACE

NOTES:
1. INSTALLATION SHALL BE DRY BORE AND JACKING OF SMOOTH WALL STEEL PIPE. JETTING OR WET BORING WITH WATER SHALL NOT BE ALLOWED.
2. SEE BORE SIZING CHART FOR CARRIER PIPE SIZE AND STEEL CASING SIZE, MINIMUM DIAMETER, AND WALL THICKNESS.
3. CASING PIPE SHALL BE IN ACCORDANCE WITH ASTM A-53, GRADE B WITH A MINIMUM YIELD STRENGTH OF 35,000PSI.
4. EACH END OF ENCASEMENT TO BE PLUGGED WITH BRICK. ALL VOIDS OUTSIDE THE CASING PIPE SHALL BE COMPLETELY FILLED WITH 1:3 PORTLAND CEMENT GROUT AT SUFFICIENT PRESSURE TO INSURE NO SETTLEMENT OF ROADWAY/RAILROAD. METHOD OF GROUTING SHALL BE AS APPROVED BY THE PERMITTING AGENCY.
5. IT IS RECOMMENDED THAT THE BORE BE ACCOMPLISHED BEFORE PIPE CONSTRUCTION BEGINS.
6. THE BORING SHALL BE PERFORMED FROM "UPSTREAM" TO "DOWNSTREAM" DIRECTION MAINTAINING THE CRITICAL DOWNSTREAM INVERT ELEVATION. SHOULD THE BORE NOT BE ON GRADE, A REVISED PLAN SHALL BE SUBMITTED TO FAYPWC FOR APPROVAL.
7. THE BORING OPERATION SHALL BE CONDUCTED IN A MANNER THAT THE FLOW OF TRAFFIC IS NOT IMPEDED OR IN SUCH A MANNER SO AS NOT TO CREATE A HAZARD.
8. IF AN OBSTRUCTION IS ENCOUNTERED DURING THE BORING OPERATION, THE AUGER SHALL BE WITHDRAWN, THE EXCESS CASING PIPE CUT-OFF, CAPPED AND THE INTERIOR AND EXTERIOR VOIDS SHALL BE COMPLETELY FILLED WITH 1:3 PORTLAND CEMENT GROUT UNDER PRESSURE. NO SEPARATE PAYMENT FOR UNSUCCESSFUL BORES.
9. CONTRACTOR SHALL FIELD ADJUST AND INSTALL PROPER PIPE BRACES TO ACCOMPLISH GRADE AND INVERTS AS SHOWN ON THE DRAWINGS.
10. A MANUAL CONTROL STEERING HEAD OR OTHER GUIDANCE SYSTEM IS RECOMMENDED FOR BORES 30" DIAMETER AND/OR LARGER AND FOR BORES EXCEEDING 100' IN LENGTH OR AS SPECIFIED.
11. SUBCONTRACTORS SHALL ADHERE TO ALL PERMIT REQUIREMENTS AND SHALL PROVIDE APPROVED INSURANCE CERTIFICATES AS REQUIRED.
12. CONTRACTOR SHALL EXECUTE AND PERFORM ALL REQUIREMENTS AND CONDITIONS STIPULATED BY THE PERMITTING AGENCY.
13. SEE DRAWING M.6 SHEET 1 OF 2 FOR ADDITIONAL INFORMATION.
14. CARRIER PIPE FOR PRESSURE APPLICATIONS (WATER MAINS AND FORCE MAINS) SHALL HAVE FACTORY RESTRAINED JOINTS. CARRIER PIPE FOR GRAVITY SEWER SHALL HAVE RESTRAINED JOINTS AND MAY USE RESTRAINING GASKETS SUCH AS FIELD LOK, SURE STOP 350, GRIPRING OR APPROVED EQUAL.

BORE UNDER ROADWAYS/RAILROADS
N.T.S.

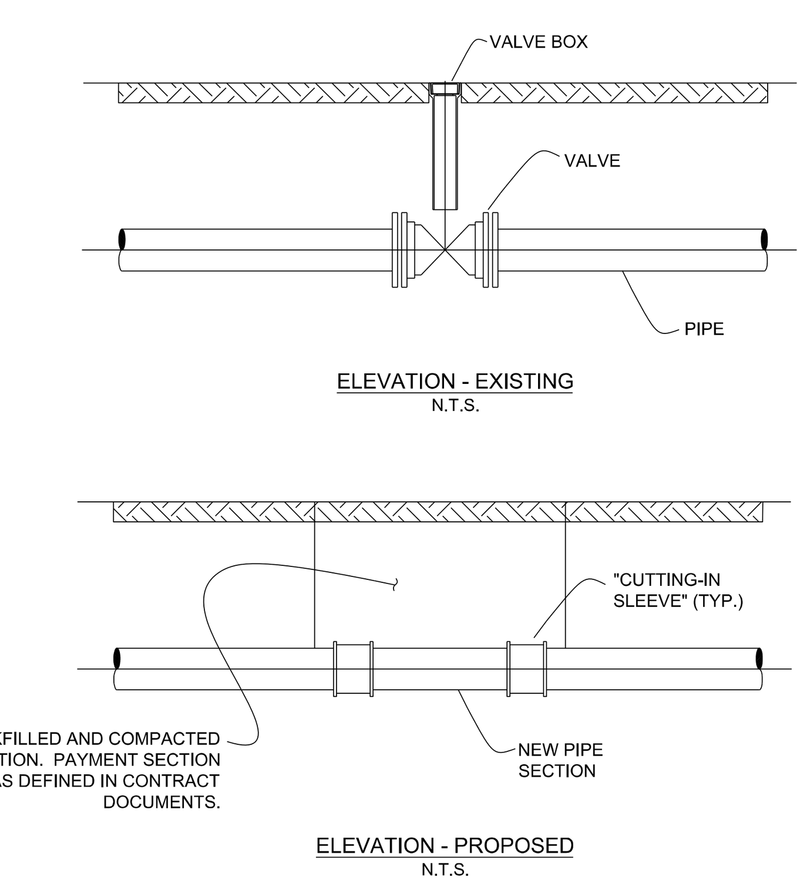
FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.
WATER RESOURCES ENGINEERING DEPARTMENT

SHEET NO. 2 OF 2 | DWG. NO. M.6 | DWG. BY: FAYPWC | DATE: JULY 01, 2021 | APPROVED BY: J.E.G.

NO.	DATE	REVISION
1	02/11/04	ADDED 6" CARRIER PIPE TO BORE SIZING CHART
2	07/10	REVISED NOTES, SIZING CHART

M6-BORE-ROAD-RAIL.dwg

MINIMUM LENGTH OF BURIED PIPE BETWEEN CLOSED VALVE AND EXCAVATION FOR RESTRAINT		
BASED ON MINIMUM TYPE 2 BEDDING IN SILT SOIL		
Diameter (inches)	Depth of Cover (feet)	Length (feet)
16	3 - 3.99	221
16	4 - 5.99	173
16	6 - 7.99	120
16	8 - 9.99	92
16	>= 10	75
12	3 - 3.99	174
12	4 - 5.99	135
12	6 - 7.99	93
12	8 - 9.99	71
12	>= 10	57
10	3 - 3.99	149
10	4 - 5.99	115
10	6 - 7.99	79
10	8 - 9.99	60
10	>= 10	49
8	3 - 3.99	123
8	4 - 5.99	95
8	6 - 7.99	65
8	8 - 9.99	49
8	>= 10	40
6	3 - 3.99	95
6	4 - 5.99	73
6	6 - 7.99	50
6	8 - 9.99	38
6	>= 10	31



VALVE REMOVAL WITH EXCAVATION
N.T.S.

FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.
WATER RESOURCES ENGINEERING DEPARTMENT

SHEET NO. 1 OF 1 | DWG. NO. M.15 | DWG. BY: FAYPWC | DATE: JULY 01, 2021 | APPROVED BY: J.E.G.

NO.	DATE	REVISION

M15-VAL-REMOVAL.dwg

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1. ALL SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.

2. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

3. CONSTRUCTION STAKING IS REQUIRED FOR ALL PWC WATER AND SEWER UTILITY INSTALLATIONS. CUT SHEETS, SIGNED AND SEALED BY A NC PLS, SHALL BE PROVIDED TO THE PWC WATER RESOURCES ENGINEERING DEPARTMENT AND THE CONTRACTOR IN ADVANCE OF CONSTRUCTION FOR PWC WATER AND SEWER UTILITIES.

4. CONTRACTOR SHALL MAINTAIN A COPY OF THE SIGNED AND SEALED CUT SHEET ON THE JOB SITE. CONSTRUCTION ON PWC WATER AND SEWER UTILITIES CANNOT BEGIN UNTIL THE CONTRACTOR POSSESSES, ON SITE, A SIGNED AND SEALED CUT SHEET FROM THE PROFESSIONAL LAND SURVEYOR.

5. ALL NEW WATER AND SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE TESTED AND/OR DISINFECTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS PRIOR TO PLACING INTO SERVICE.

6. CONTRACTOR SHALL COORDINATE TESTING AND INSPECTION WITH THE FAYETTEVILLE PWC PROJECT COORDINATOR.

7. ALL DUCTILE IRON PIPE IN SANITARY SEWER SERVICE SHALL HAVE AN INTERIOR CERAMIC EPOXY LINING.

8. ALL NEW MANHOLES ARE TO BE VACUUM-TESTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.

9. CONTRACTOR SHALL REPAIR ALL SEWER LATERALS AND MAINS DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY REPORT ALL SEWER MAIN AND LATERAL BREAKS TO THE PWC PROJECT COORDINATOR. THE CONTRACTOR SHALL INITIATE IMMEDIATE REPAIRS IN ACCORDANCE WITH PWC STANDARDS.

10. TRANSFER OF SEWER SERVICES SHALL BE ACCOMPLISHED AS FOLLOWS:
  A. INSTALL AND TEST NEW MAINS, MANHOLES, AND LATERALS. CLEANOUTS SHALL BE INSTALLED 18" INSIDE R/W UNLESS OTHERWISE DIRECTED BY PWC.
  B. CONNECT EXISTING PLUMBING TO NEW LATERAL UTILIZING THE NECESSARY FITTINGS AS DIRECTED BY PWC.
  C. AFTER ALL SERVICES HAVE BEEN TRANSFERRED TO THE NEW MAIN, THE EXISTING SEWER SYSTEM SHALL BE ABANDONED IN ACCORDANCE WITH PWC REQUIREMENTS.

11. CONTRACTOR SHALL ABANDON ("KILL-OUT") ANY EXISTING SEWER SERVICES THAT WILL NOT BE UTILIZED BY UNCOVERING THE EXISTING LATERAL AT THE MAIN, CUT AND PLUG AT BOTH ENDS, REMOVE THE EXISTING CLEANOUT AND COMBINATION, AND PLUG THE TAP OR TEE AT THE MAIN. FOR LATERALS THAT CONNECT TO A MANHOLE AND ARE TO BE ABANDONED ("KILLED-OUT"), THE LATERAL SHALL BE REMOVED FROM THE MANHOLE AND THE REMAINING VOID IN THE MANHOLE SHALL BE FILLED WITH BLOCK AND MORTAR.

12. SEWER PLUGS SHALL BE INSTALLED TO ELIMINATE ANY DEBRIS OR OTHER MATERIAL FROM ENTERING THE ACTIVE SEWER SYSTEM. UPON ACCEPTANCE OF THE NEW SEWER SYSTEM, THE CONTRACTOR SHALL CLEAN THE NEW MAINS, REMOVE ALL DEBRIS, AND THEN REMOVE THE PLUG.

13. ALL EXISTING UTILITIES IMPACTED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISHED GRADE, IN ACCORDANCE WITH PWC REQUIREMENTS.

14. ALL WORK ON PWC SEWER UTILITIES (MAINS, LATERALS, ETC) SHALL BE PERFORMED BY A LICENSED UTILITY CONTRACTOR. THE FAYETTEVILLE PUBLIC WORKS COMMISSION SHALL OBSERVE AND APPROVE ALL WORK ON PWC SEWER UTILITIES. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH PWC REQUIREMENTS.

15. SEPARATION REQUIREMENTS:
  A. **CROSSING WATER MAIN UNDER A SEWER:** WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER MAIN/LATERAL, BOTH THE WATER MAIN AND THE SEWER MAIN/LATERAL SHALL BE CONSTRUCTED OF DUCTILE IRON MATERIAL AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.
  B. **CROSSING STORM DRAINAGE LINES:** A MINIMUM OF 24-INCHES OF VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN A SEWER MAIN/LATERAL CROSSING UNDER A STORM DRAINAGE LINE UNLESS DUCTILE IRON PIPE IS USED. IF DUCTILE IRON PIPE IS USED, A MINIMUM OF SIX(6) INCHES OF SEPARATION SHALL BE MAINTAINED, UNLESS OTHERWISE APPROVED BY PWC.

GENERAL NOTES SANITARY SEWER UTILITY

FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.
WATER RESOURCES ENGINEERING DEPARTMENT

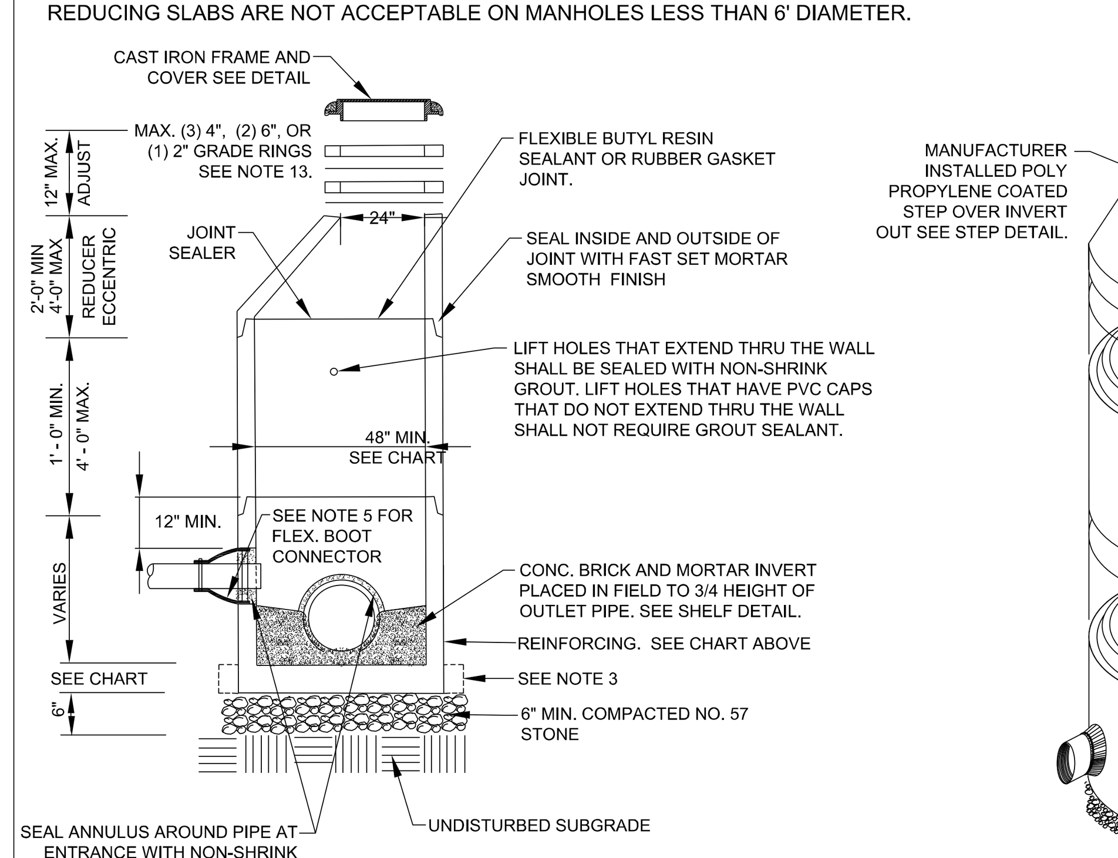
SHEET NO. 1 OF 1 | DWG. NO. S.1 | DWG. BY: FAYPWC | DATE: JULY 01, 2021 | APPROVED BY: J.E.G.

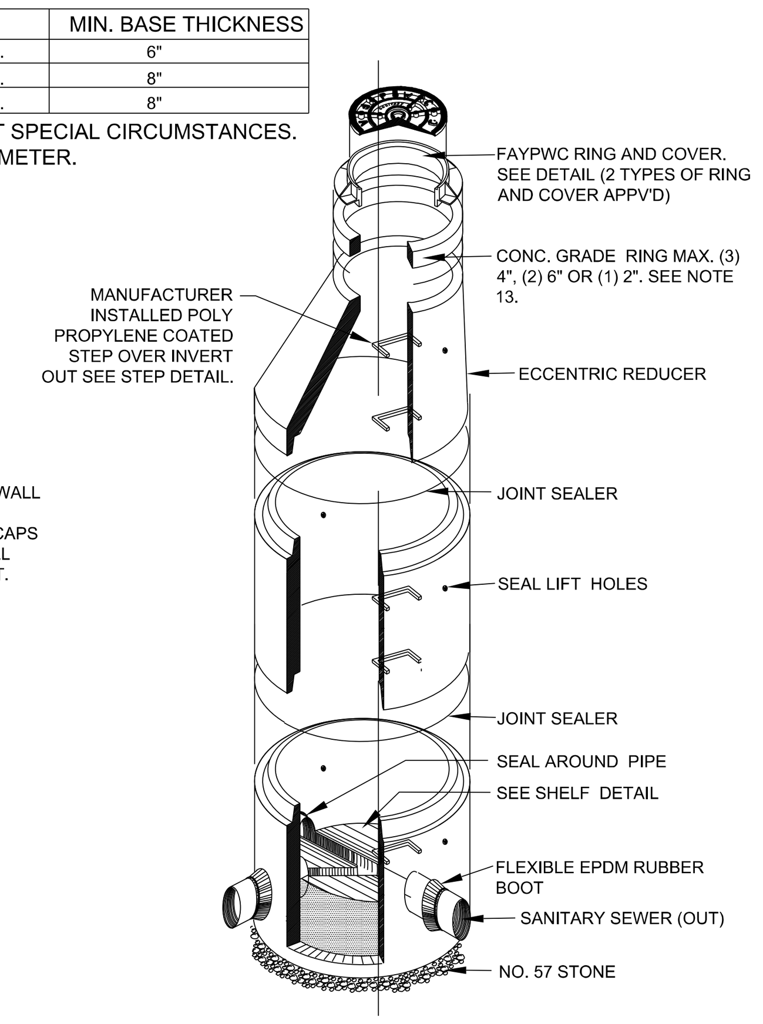
NO.	DATE	REVISION
1	07/16	ADDED NOTE 6
2	01/18	ADDED NOTES 5, 8
3	06/21	ADDED NOTES 1-8 AND RENUMBERED

S1-SEWER-NOTES.dwg

PIPE SIZES	MANHOLE SIZE	MIN. WALL THICKNESS	MIN. REINF. STEEL	MIN. BASE THICKNESS
21" AND LESS	48" DIAMETER	5"	ASTM A-1064 0.12 SQ./IN.	6"
24" - 36"	60" DIAMETER	6"	ASTM A-1064 0.15 SQ./IN.	8"
42"	72" DIAMETER	7"	ASTM A-1064 0.15 SQ./IN.	8"

MANHOLE DIAMETER SIZES MAY BE ADJUSTED ON THE PLANS TO REFLECT SPECIAL CIRCUMSTANCES. REDUCING SLABS ARE NOT ACCEPTABLE ON MANHOLES LESS THAN 6' DIAMETER.





STANDARD MANHOLE
N.T.S.

FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.
WATER RESOURCES ENGINEERING DEPARTMENT

SHEET NO. 1 OF 2 | DWG. NO. S.2 | DWG. BY: FAYPWC | DATE: JULY 01, 2021 | APPROVED BY: J.E.G.

NO.	DATE	REVISION
1	02/07	CREATED S.2A ADDED NOTES 13-17
2	07/13	ADDED SHEET 2 OF 2

S2-STANDARD-MANHOLE.dwg

NOTES:
1. PRECAST REINFORCED CONCRETE MANHOLES SHALL BE IN ACCORDANCE WITH ASTM C-478.

2. MINIMUM CONCRETE COMPRESSIVE STRENGTH SHALL BE 4,000PSI.

3. MANHOLES GREATER THAN 12' DEPTH SHALL HAVE MINIMUM 6" EXTENDED BASE.

4. FLEXIBLE BUTYL RESIN JOINT SEALANT SHALL BE IN ACCORDANCE WITH ASTM C990. RUBBER GASKET JOINTS SHALL BE IN ACCORDANCE WITH ASTM C-443.

5. FLEXIBLE EPDM RUBBER BOOT CONNECTORS SHALL BE IN ACCORDANCE WITH ASTM C923, INSTALLED BY MANUFACTURER WITH STAINLESS STEEL COMPRESSION RING AND TAKE-UP CLAMP. CONNECTION TO MAIN SHALL BE BY CONTRACTOR WITH STAINLESS STEEL PIPE CLAMP.

6. CONNECTIONS TO EXISTING MANHOLES SHALL BE BY CORING MANHOLE AND FIELD INSTALLING A FLEXIBLE EPDM RUBBER BOOT CONNECTOR. DO NOT ALLOW DEBRIS TO ENTER SYSTEM.

7. MORTAR SHALL BE QUICK SETTING, NON-SHRINK GROUT MIXED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

8. MANHOLE STEPS SHALL BE IN ACCORDANCE WITH ASTM C478 AND OSHA REGULATIONS. ALIGN STEPS WITH INVERT OUT.

9. PRECAST INVERTS ARE NOT ALLOWED.

10. VERTICAL DROPS BETWEEN THE INFLOW PIPES AND OUTFLOW PIPES SHALL REQUIRE THE FOLLOWING:
  A. GREATER THAN 2.5' SEE DROP STRUCTURE DETAIL (MIN. 5' DIAMETER MH REQUIRED).
  B. LESS THAN 2.5' SEE PIPE SLIDE DETAIL.

11. AN ECCENTRIC CONE SHALL BE UTILIZED ON ALL MANHOLES, UNLESS OTHERWISE APPROVED BY FAYPWC.

12. INVERT ON PLANS IS TO MANHOLE CENTERLINE.

13. CONCRETE GRADE RINGS SHALL NOT BE USED FOR ABOVE GRADE ADJUSTMENTS (IE: OUTFALL AREAS). USE OF GRADE RINGS ARE ALLOWABLE IN YARD AREAS AND PAVEMENT, WHERE THE RING AND COVER ARE AT GROUND LEVEL.

14. THE MINIMUM SLOPE ACROSS THE INVERT OF THE MANHOLE SHALL BE 1%, UNLESS OTHERWISE APPROVED BY FAYPWC. STANDING WATER IN INVERT OF MANHOLE IS NOT ACCEPTABLE.

15. THE EXTERIOR MANHOLE RISER JOINTS, INCLUDING THE JOINT AT THE CONE, SHALL BE SEALED ON THE OUTSIDE BY AN APPROVED JOINT WRAP. THE WRAP SHALL BE IN ACCORDANCE WITH FAYPWC SPECIFICATIONS.

16. MANHOLE BOOT FOR 4-INCH LATERALS. SHOULD IT BE NECESSARY TO INSTALL A 4-INCH LATERAL INTO A MANHOLE, THE RUBBER BOOT THAT THE LATERAL IS INSERTED INTO SHALL BE SECURELY FASTENED TO THE CORE HOLE BY UTILIZING A STAINLESS STEEL BAND THAT IS TIGHTENED USING A JACK OR A TORQUE WRENCH (DIRECT DRIVE). BOTH STANDARD SIZE AND STEP DOWN BOOTS ARE ALLOWED. THE TORQUE WRENCH SHALL BE SUPPLIED BY THE MANUFACTURER. NO OTHER TYPE BANDS OR METHOD OF SECURING THE BOOT TO THE MANHOLE SHALL BE ACCEPTED.

FOR FOUR (4) INCH SDR 26 LATERALS, THE PIPE OUTSIDE DIAMETER RANGE OF THE BOOT SHALL BE 3.5 INCHES TO 4.25 INCHES.

FOR FOUR (4) INCH DUCTILE IRON LATERALS, THE PIPE OUTSIDE DIAMETER RANGE OF THE BOOT SHALL EITHER BE AS FOR VC OR 4.25 INCHES TO 4.81 INCHES.

IN ALL CASES, THE BOOT SHALL BE TIGHTENED ON THE LATERAL BY MEANS OF A SINGLE STAINLESS STEEL STRAP.

THE LATERAL INVERT SHALL BE AT THE TOP OF THE SHELF.

17. NO MORE THAN 4, FOUR INCH LATERALS OR 3, SIX INCH LATERALS SHALL ENTER A 4' DIAMETER TERMINAL MANHOLE. NO MORE THAN 2 LATERALS (REGARDLESS OF SIZE) SHALL ENTER ALL OTHER 4' DIAMETER MANHOLES. ALL LATERALS SHALL HAVE AN INDIVIDUAL TROUGH. 5' DIAMETER MANHOLES SHALL BE USED IF THE ABOVE CONDITIONS ARE NOT MET.

18. NO MORE THAN 5 LATERALS SHALL ENTER A 5' DIAMETER MANHOLE.

19. USE OF TEE-WYES ON LATERALS IS NOT ALLOWED.

20. ALL MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH FAYPWC STANDARDS.

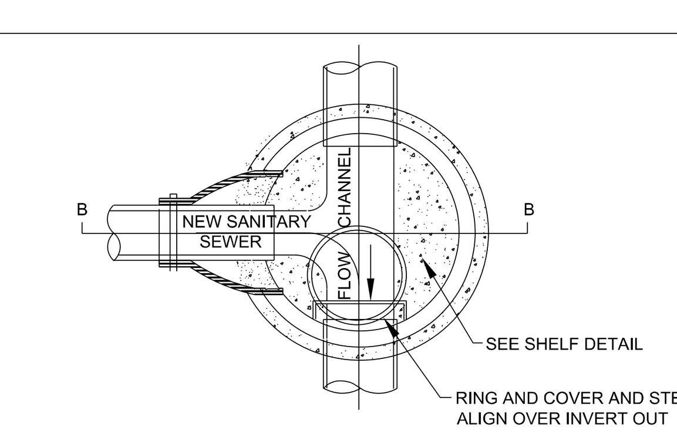
STANDARD MANHOLE

FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.
WATER RESOURCES ENGINEERING DEPARTMENT

SHEET NO. 2 OF 2 | DWG. NO. S.2 | DWG. BY: FAYPWC | DATE: JULY 01, 2021 | APPROVED BY: J.E.G.

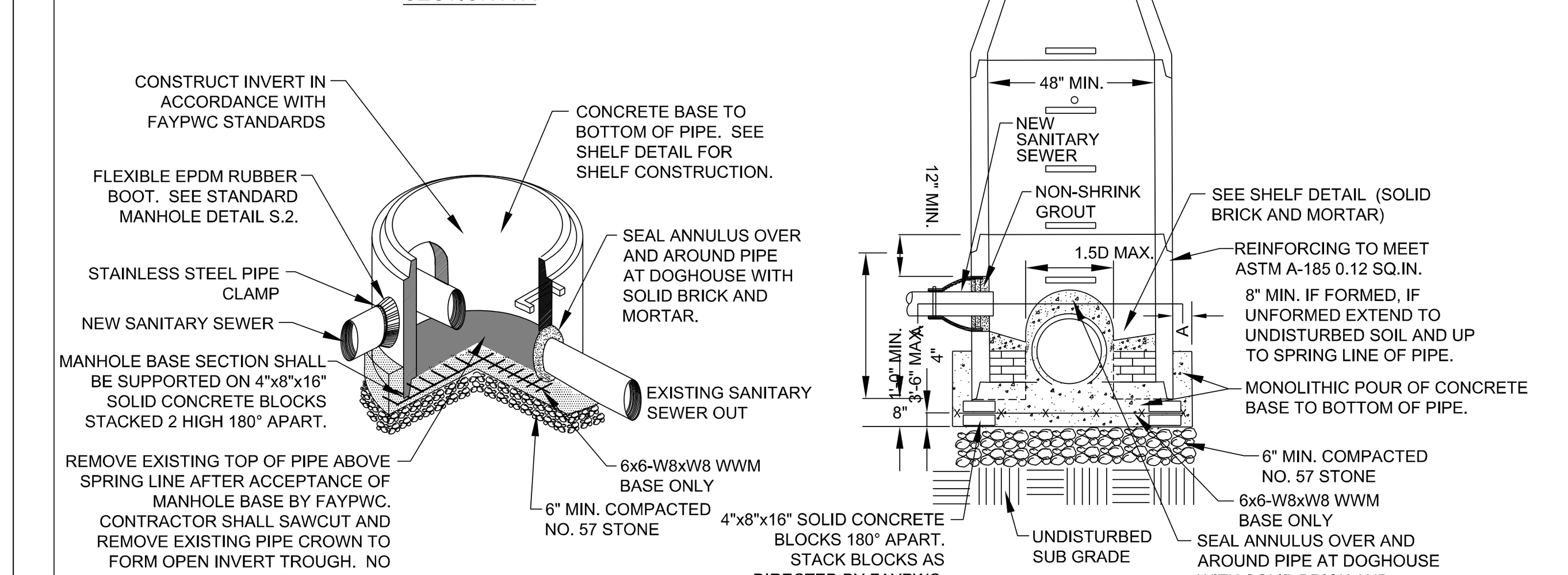
NO.	DATE	REVISION
1	01/08	CREATED DETAIL, ADDED NOTES 14-20
2	07/13	REVISED NOTES 9, 10, 11, 15. CONVERTED TO S.2 SHEET 2 OF 2
3	01/01/19	REVISED NOTES 10, 18

S2-STANDARD-MANHOLE.dwg



SECTION A-A

NOTES:
1. MANHOLE MEETS ALL REQUIREMENTS OF ASTM C478.
2. CONCRETE IS MINIMUM 4,000PSI COMPRESSIVE STRENGTH.
3. MATERIAL USED TO SEAL AROUND PIPE SHALL BE NON-SHRINK GROUT.
4. MANHOLE SHALL BE CONSTRUCTED OF PRECAST CONCRETE. FIBERGLASS MANHOLE IS NOT ACCEPTABLE.
5. A DROP STRUCTURE SHALL BE PLACED WHERE PIPE VERTICAL SEPARATION BETWEEN INVERTS EXCEEDS 2.50'. USE 5' DIAMETER MANHOLES WHEN DROP STRUCTURES ARE NEEDED.
6. WITH THE EXCEPTION OF THE MANHOLE BASE SECTION. ALL OTHER MATERIALS, INSTALLATION AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE FAYPWC STANDARD MANHOLE DETAILS.
7. DOGHOUSE MANHOLE SHALL BE FREE OF LEAKS.
8. SEE STANDARD MANHOLE DETAIL S.2 FOR ADDITIONAL REQUIREMENTS.



SECTION B-B

DOGHOUSE MANHOLE (MAINS 15" OR LESS)
N.T.S.

FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.
WATER RESOURCES ENGINEERING DEPARTMENT

SHEET NO. 1 OF 2 | DWG. NO. S.3 | DWG. BY: FAYPWC | DATE: JULY 01, 2021 | APPROVED BY: J.E.G.

NO.	DATE	REVISION
1	07/16	ADDED SHEET 2
2	11/25/08	MADE CHANGES TO NOTES

S3-DOGHOUSE-MH.dwg

5/14/99
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Z:\Projects\Environmental\Fayetteville Public Works Commission\20190616004RA - U-5798 Gills Hill Road Utility Coordination\CADD\Microstation\Utilities\Engineering\UC\Proj\U-5798A_ut_dtl_UC03F_psh.dgn
$$$$USERNAME$$$$