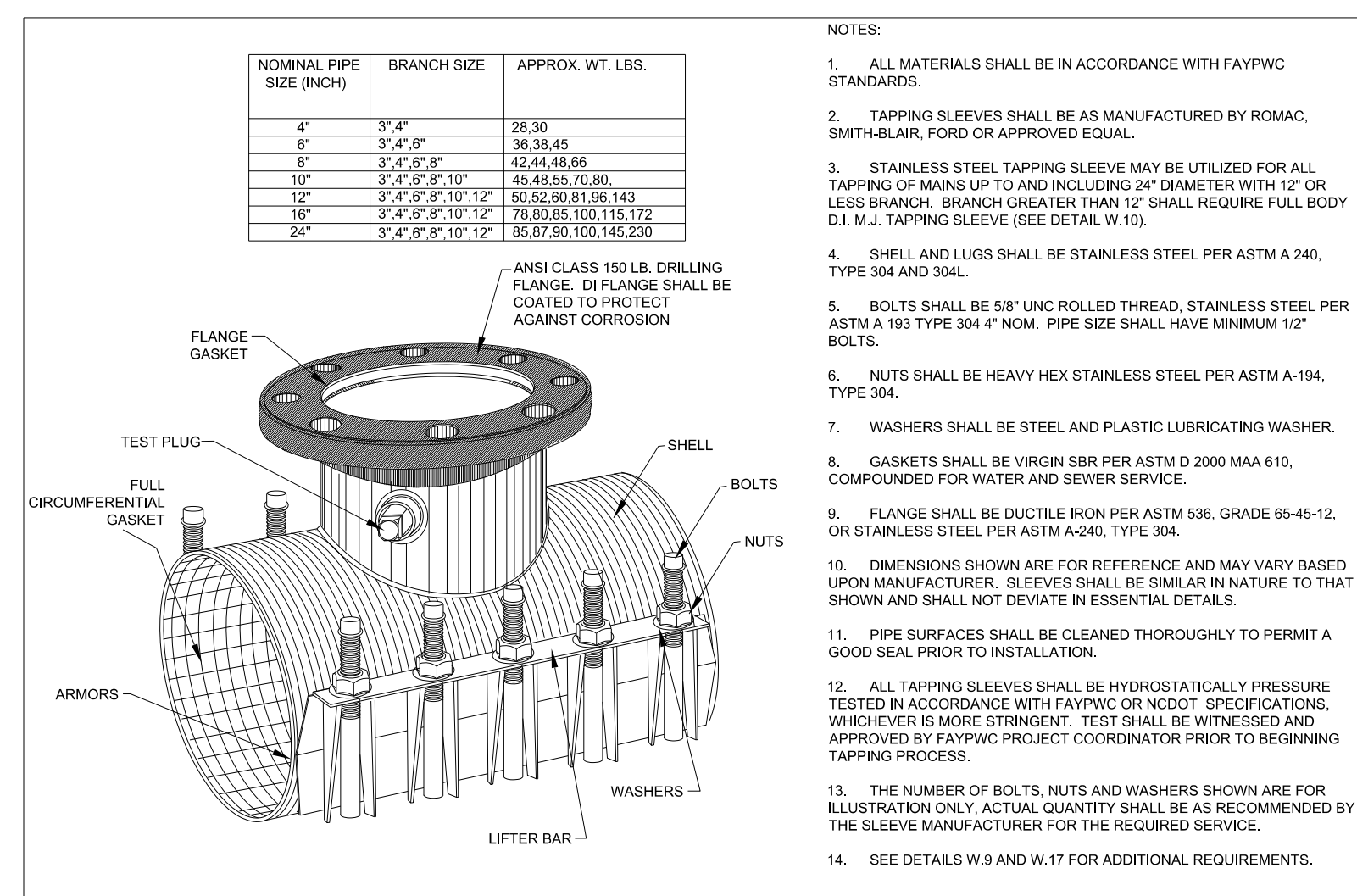


PROJECT REFERENCE NO.	SHEET NO.
U-5798A	UC-3D
DESIGNED BY: AAA	
DRAWN BY: KNS	
CHECKED BY: BRO	
APPROVED BY: BRO	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

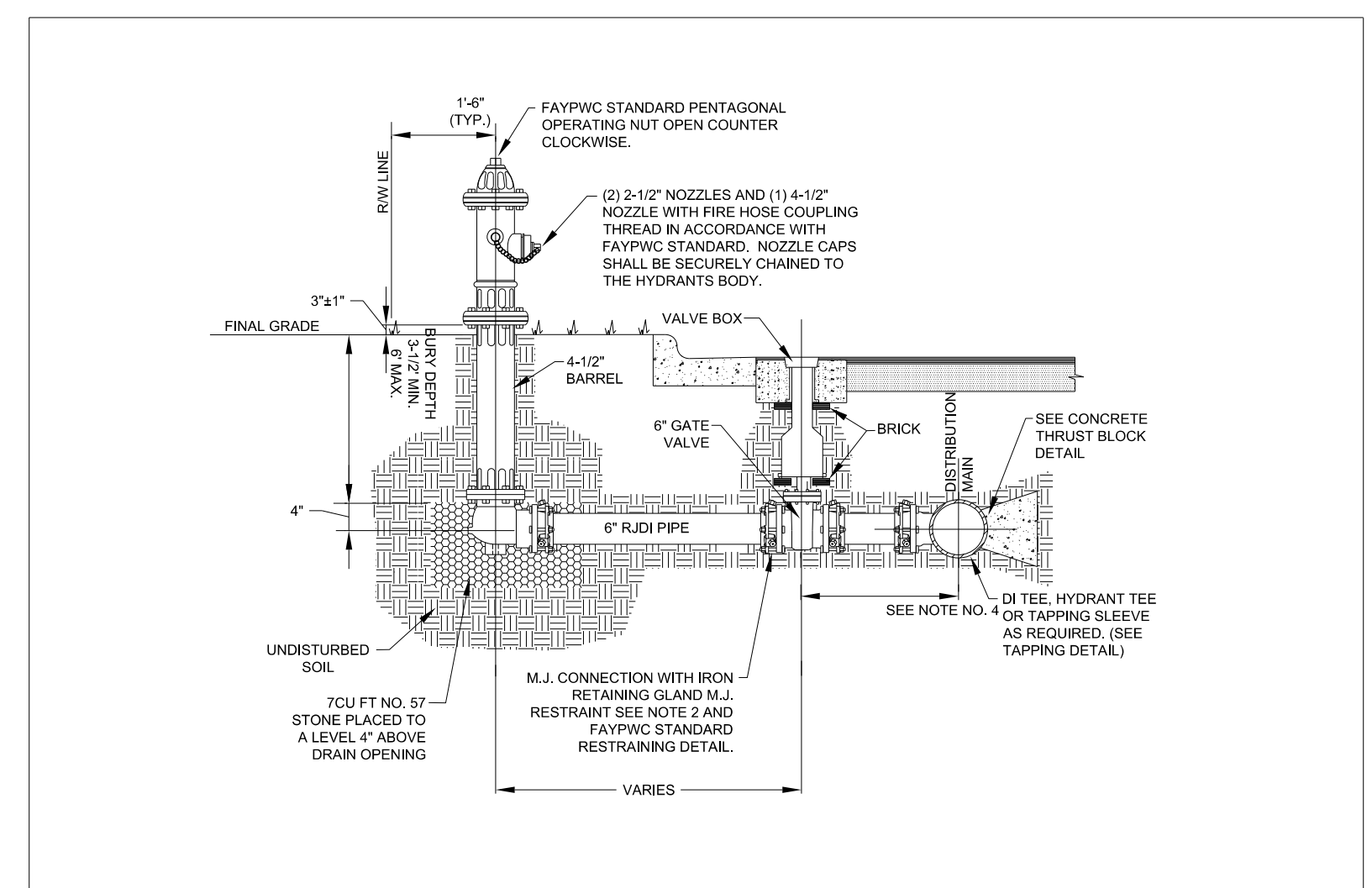
UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



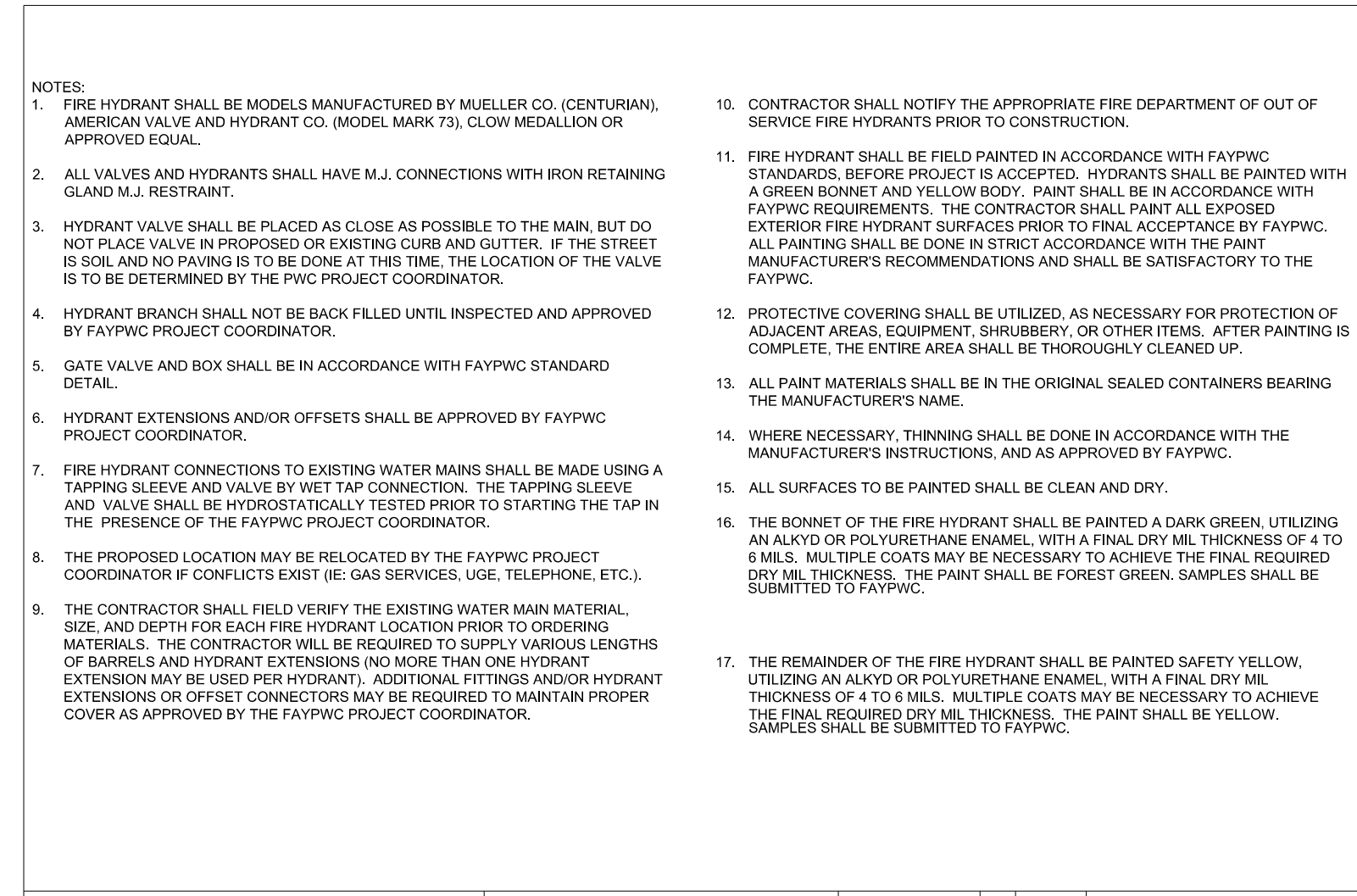
STAINLESS STEEL TAPPING SLEEVE N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	
DWG. NO. W.11 DWG. BY: FAYPWC		WATER RESOURCES ENGINEERING DEPARTMENT	
SHEET NO. 1 OF 1	DATE: JULY 01, 2021	APPROVED BY: J.E.G.	

- NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH FAYPWC STANDARDS.
 2. TAPPING SLEEVES SHALL BE AS MANUFACTURED BY ROMAC, SMITH-BLAIR, FORD OR APPROVED EQUAL.
 3. STAINLESS STEEL TAPPING SLEEVE MAY BE UTILIZED FOR ALL TAPPING OF MAINS UP TO AND INCLUDING 24" DIAMETER WITH 12" OR LESS BRANCH. BRANCH GREATER THAN 12" SHALL REQUIRE FULL BODY D.I. M.J. TAPPING SLEEVE (SEE DETAIL W.10).
 4. SHELL AND LUGS SHALL BE STAINLESS STEEL PER ASTM A 240, TYPE 304 AND 304L.
 5. BOLTS SHALL BE 8" UNF ROLLED THREAD, STAINLESS STEEL PER ASTM A 193 TYPE 304 NOM. PIPE SIZE SHALL HAVE MINIMUM 1/2" BOLTS.
 6. NUTS SHALL BE HEAVY HEX STAINLESS STEEL PER ASTM A-194, TYPE 304.
 7. WASHERS SHALL BE STEEL AND PLASTIC LUBRICATING WASHER.
 8. GASKETS SHALL BE VIRGIN SBR PER ASTM D 2000 MAA 610, COMPOUNDED FOR WATER AND SEWER SERVICE.
 9. FLANGE SHALL BE DUCTILE IRON PER ASTM 536, GRADE 65-45-12, OR STAINLESS STEEL PER ASTM A240, TYPE 304.
 10. DIMENSIONS SHOWN ARE FOR REFERENCE AND MAY VARY BASED UPON MANUFACTURER. SLEEVES SHALL BE SIMILAR IN NATURE TO THAT SHOWN AND SHALL NOT DEVIATE IN ESSENTIAL DETAILS.
 11. PIPE SURFACES SHALL BE CLEANED THOROUGHLY TO PERMIT A GOOD SEAL PRIOR TO INSTALLATION.
 12. ALL TAPPING SLEEVES SHALL BE HYDROSTATICALLY PRESSURE TESTED IN ACCORDANCE WITH FAYPWC OR NDOT. SPECIFICATIONS, WHICHEVER IS MORE STRINGENT. TEST SHALL BE WITNESSED AND APPROVED BY FAYPWC PROJECT COORDINATOR PRIOR TO BEGINNING TAPPING PROCESS.
 13. THE NUMBER OF BOLTS, NUTS AND WASHERS SHOWN ARE FOR ILLUSTRATION ONLY. ACTUAL QUANTITY SHALL BE AS RECOMMENDED BY THE SLEEVE MANUFACTURER FOR THE REQUIRED SERVICE.
 14. SEE DETAILS W.9 AND W.17 FOR ADDITIONAL REQUIREMENTS.



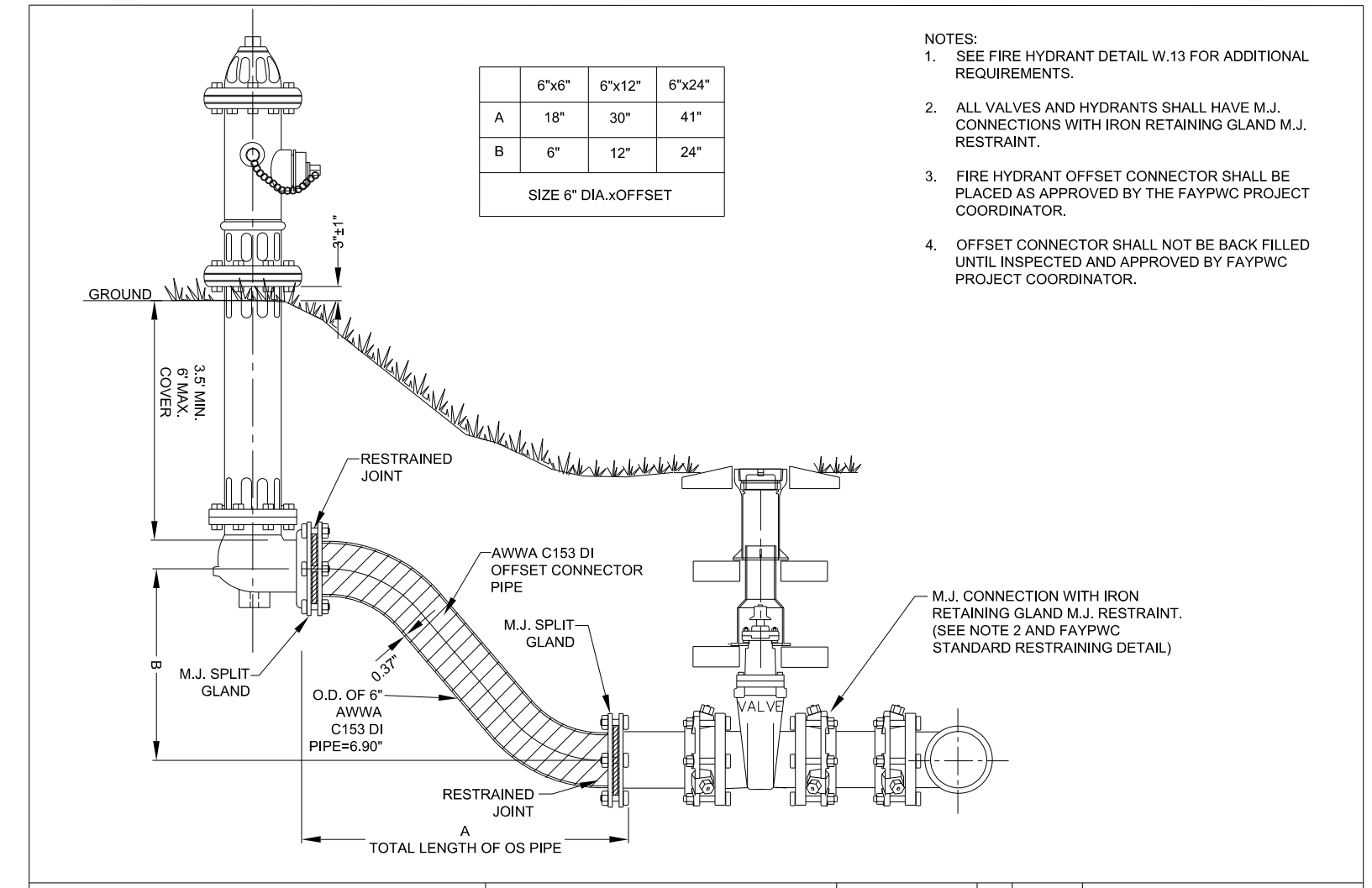
FIRE HYDRANT AND VALVE INSTALLATION N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	
DWG. NO. W.13 DWG. BY: FAYPWC		WATER RESOURCES ENGINEERING DEPARTMENT	
SHEET NO. 1 OF 2	DATE: JULY 01, 2021	APPROVED BY: J.E.G.	

- NOTES:
1. ALL VALVES AND HYDRANTS SHALL HAVE M.J. CONNECTIONS WITH IRON RETAINING GLAND M.J. RESTRAINT.
 2. ALL VALVES AND HYDRANTS SHALL HAVE M.J. CONNECTIONS WITH IRON RETAINING GLAND M.J. RESTRAINT.
 3. FIRE HYDRANT OFFSET CONNECTOR SHALL BE PLACED AS APPROVED BY THE FAYPWC PROJECT COORDINATOR.
 4. OFFSET CONNECTOR SHALL NOT BE BACK FILLED UNTIL INSPECTED AND APPROVED BY FAYPWC PROJECT COORDINATOR.



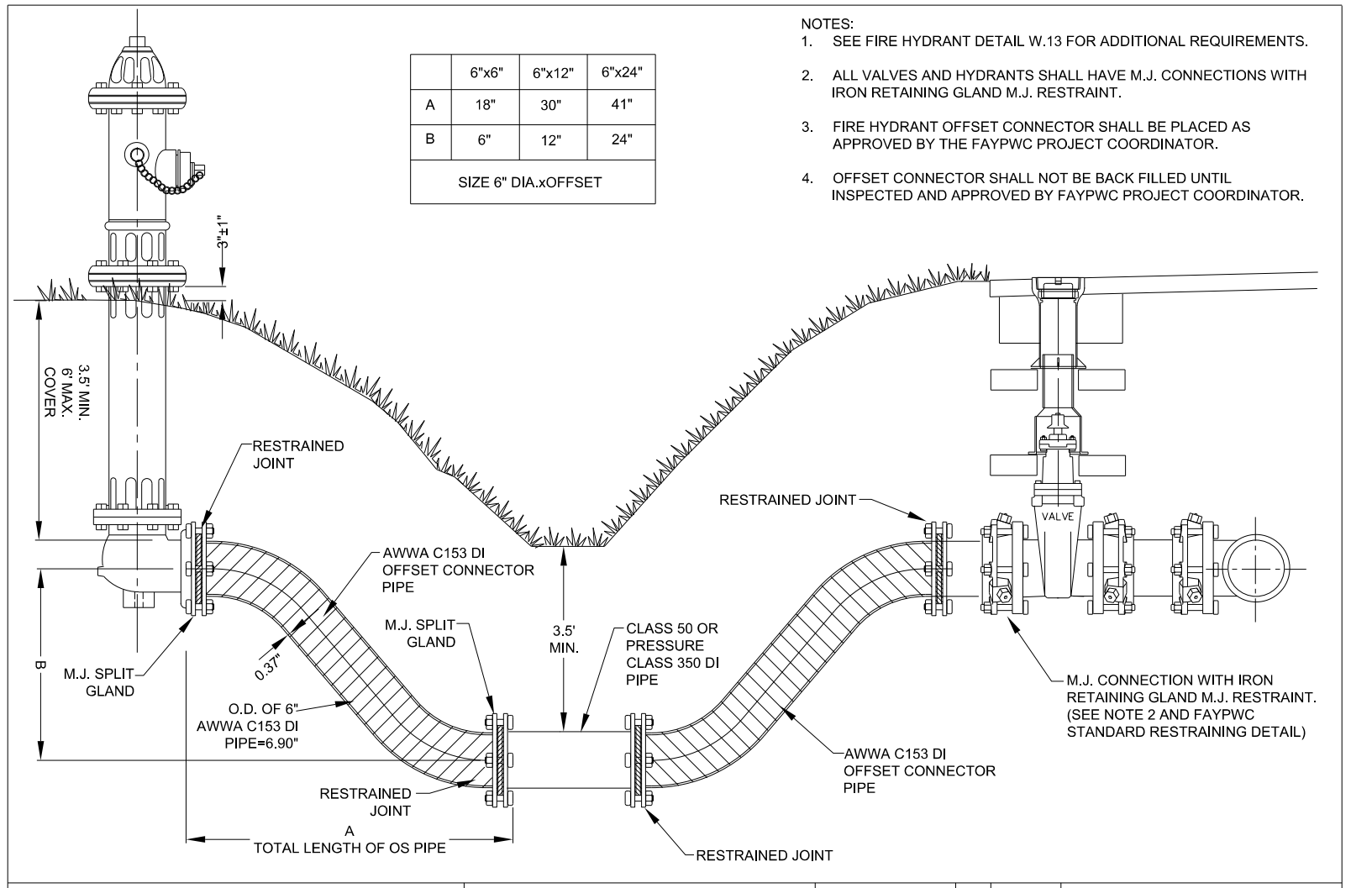
FIRE HYDRANT AND VALVE INSTALLATION N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	
DWG. NO. W.13 DWG. BY: FAYPWC		WATER RESOURCES ENGINEERING DEPARTMENT	
SHEET NO. 2 OF 2	DATE: JULY 01, 2021	APPROVED BY: J.E.G.	

- NOTES:
1. FIRE HYDRANT SHALL BE MODELS MANUFACTURED BY MUELLER CO. (CENTURIAN), AMERICAN VALVE AND HYDRANT CO. (MODEL MARK 73), CLOW MEDALLION OR APPROVED EQUAL.
 2. ALL VALVES AND HYDRANTS SHALL HAVE M.J. CONNECTIONS WITH IRON RETAINING GLAND M.J. RESTRAINT.
 3. HYDRANT VALVE SHALL BE PLACED AS CLOSE AS POSSIBLE TO THE MAIN, BUT DO NOT PLACE VALVE IN PROPOSED OR EXISTING CURB AND GUTTER. IF THE STREET IS SOIL AND NO PAVING IS TO BE DONE AT THIS TIME, THE LOCATION OF THE VALVE IS TO BE DETERMINED BY THE PWC PROJECT COORDINATOR.
 4. HYDRANT BRANCH SHALL NOT BE BACK FILLED UNTIL INSPECTED AND APPROVED BY FAYPWC PROJECT COORDINATOR.
 5. GATE VALVE AND BOX SHALL BE IN ACCORDANCE WITH FAYPWC STANDARD DETAIL.
 6. HYDRANT EXTENSIONS AND/OR OFFSETS SHALL BE APPROVED BY FAYPWC PROJECT COORDINATOR.
 7. FIRE HYDRANT CONNECTIONS TO EXISTING WATER MAINS SHALL BE MADE USING A TAPPING SLEEVE AND VALVE BY WET TAP CONNECTION. THE TAPPING SLEEVE AND VALVE SHALL BE HYDROSTATICALLY TESTED PRIOR TO STARTING THE TAP IN THE PRESENCE OF THE FAYPWC PROJECT COORDINATOR.
 8. THE PROPOSED LOCATION MAY BE RELOCATED BY THE FAYPWC PROJECT COORDINATOR IF CONFLICTS EXIST (IE. GAS SERVICES, UGE, TELEPHONE, ETC.).
 9. THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING WATER MAIN MATERIAL SIZE, AND DEPTH FOR EACH FIRE HYDRANT LOCATION PRIOR TO ORDERING MATERIALS. THE CONTRACTOR WILL BE REQUIRED TO SUPPLY VARIOUS LENGTHS OF BARRELS AND HYDRANT EXTENSIONS (NO MORE THAN ONE HYDRANT EXTENSION MAY BE USED PER HYDRANT). ADDITIONAL FITTINGS AND/OR HYDRANT EXTENSIONS OR OFFSET CONNECTORS MAY BE REQUIRED TO MAINTAIN PROPER COVER AS APPROVED BY THE FAYPWC PROJECT COORDINATOR.
 10. CONTRACTOR SHALL NOTIFY THE APPROPRIATE FIRE DEPARTMENT OF OUT OF SERVICE FIRE HYDRANTS PRIOR TO CONSTRUCTION.
 11. FIRE HYDRANT SHALL BE FIELD PAINTED IN ACCORDANCE WITH FAYPWC STANDARDS. BEFORE PROJECT IS ACCEPTED, HYDRANTS SHALL BE PAINTED WITH A GREEN BONNET AND YELLOW BODY. PAINT SHALL BE IN ACCORDANCE WITH FAYPWC REQUIREMENTS. THE CONTRACTOR SHALL PAINT ALL EXPOSED EXTERIOR FIRE HYDRANT SURFACES PRIOR TO FINAL ACCEPTANCE BY FAYPWC. ALL PAINTING SHALL BE DONE IN STRICT ACCORDANCE WITH THE PAINT MANUFACTURER'S RECOMMENDATIONS AND SHALL BE SATISFACTORY TO THE FAYPWC.
 12. PROTECTIVE COVERING SHALL BE UTILIZED, AS NECESSARY FOR PROTECTION OF ADJACENT AREAS, EQUIPMENT, SHRUBBERY, OR OTHER ITEMS. AFTER PAINTING IS COMPLETE, THE ENTIRE AREA SHALL BE THOROUGHLY CLEANED UP.
 13. ALL PAINT MATERIALS SHALL BE IN THE ORIGINAL SEALED CONTAINERS BEARING THE MANUFACTURER'S NAME.
 14. WHERE NECESSARY, THINNING SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, AND AS APPROVED BY FAYPWC.
 15. ALL SURFACES TO BE PAINTED SHALL BE CLEAN AND DRY.
 16. THE BONNET OF THE FIRE HYDRANT SHALL BE PAINTED DARK GREEN, UTILIZING AN ALKYL OR POLYURETHANE ENAMEL, WITH A FINAL DRY MIL THICKNESS OF 4 TO 6 MILS. MULTIPLE COATS MAY BE NECESSARY TO ACHIEVE THE FINAL REQUIRED DRY MIL THICKNESS. THE PAINT SHALL BE FOREST GREEN. SAMPLES SHALL BE SUBMITTED TO FAYPWC.
 17. THE REMAINDER OF THE FIRE HYDRANT SHALL BE PAINTED SAFETY YELLOW, UTILIZING AN ALKYL OR POLYURETHANE ENAMEL, WITH A FINAL DRY MIL THICKNESS OF 4 TO 6 MILS. MULTIPLE COATS MAY BE NECESSARY TO ACHIEVE THE FINAL REQUIRED DRY MIL THICKNESS. THE PAINT SHALL BE YELLOW. SAMPLES SHALL BE SUBMITTED TO FAYPWC.



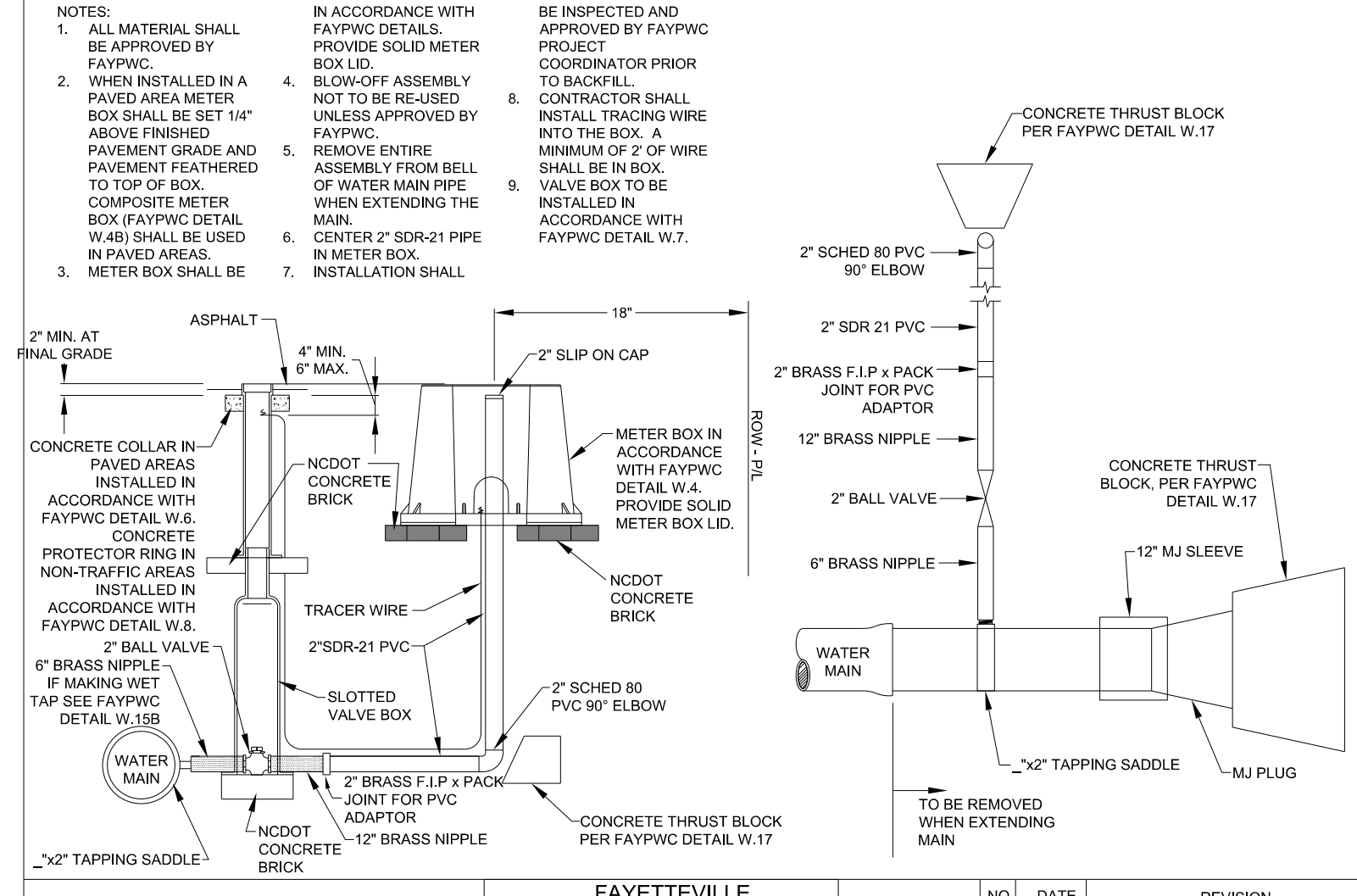
RESTRAINED JOINT FIRE HYDRANT OFFSET CONNECTOR (STEEP BANK) N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	
DWG. NO. W.14 DWG. BY: FAYPWC		WATER RESOURCES ENGINEERING DEPARTMENT	
SHEET NO. 1 OF 2	DATE: JULY 01, 2021	APPROVED BY: J.E.G.	

- NOTES:
1. SEE FIRE HYDRANT DETAIL W.13 FOR ADDITIONAL REQUIREMENTS.
 2. ALL VALVES AND HYDRANTS SHALL HAVE M.J. CONNECTIONS WITH IRON RETAINING GLAND M.J. RESTRAINT.
 3. FIRE HYDRANT OFFSET CONNECTOR SHALL BE PLACED AS APPROVED BY THE FAYPWC PROJECT COORDINATOR.
 4. OFFSET CONNECTOR SHALL NOT BE BACK FILLED UNTIL INSPECTED AND APPROVED BY FAYPWC PROJECT COORDINATOR.



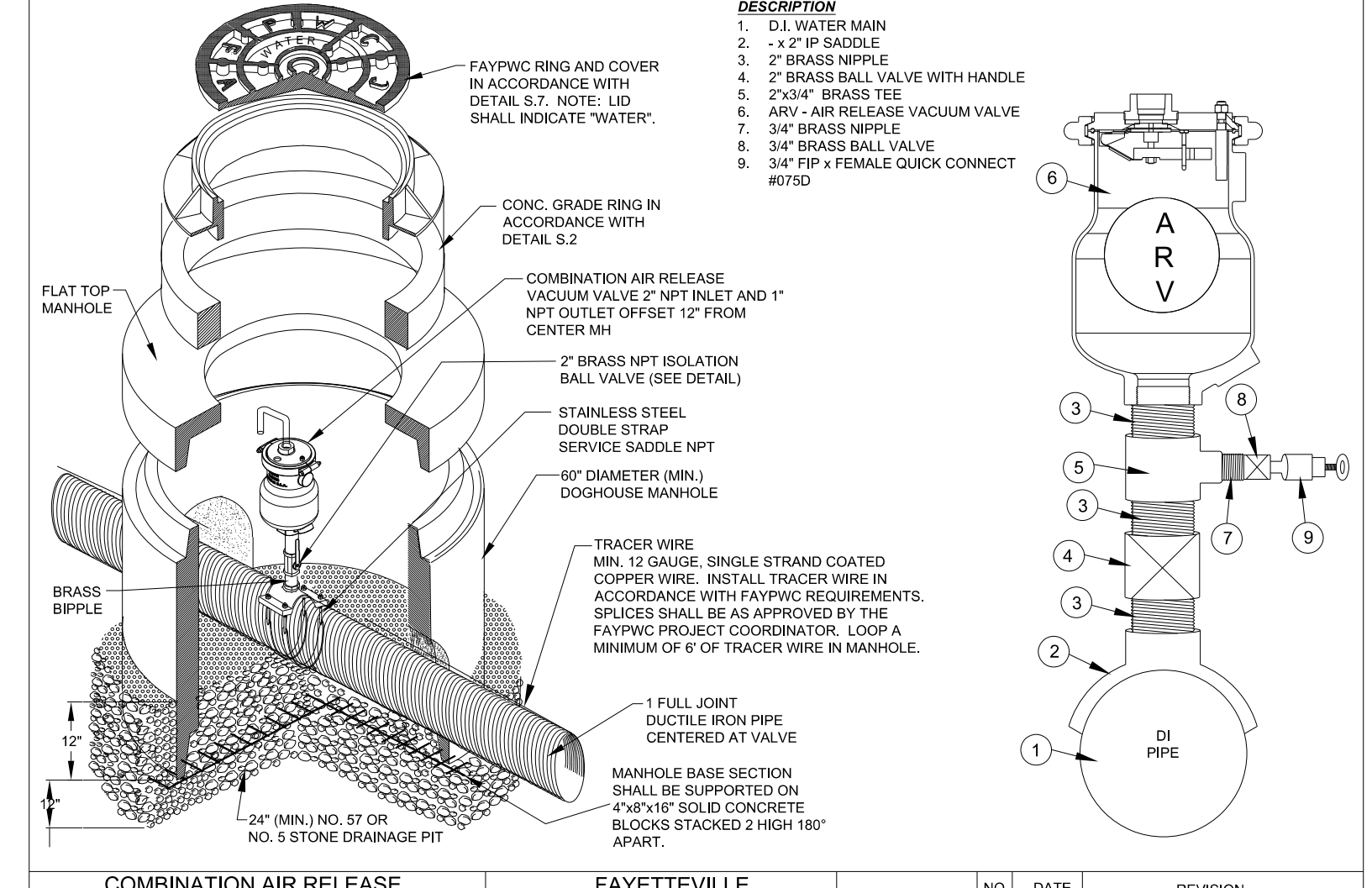
RESTRAINED JOINT FIRE HYDRANT OFFSET CONNECTOR AT DITCH N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	
DWG. NO. W.14 DWG. BY: FAYPWC		WATER RESOURCES ENGINEERING DEPARTMENT	
SHEET NO. 2 OF 2	DATE: JULY 01, 2021	APPROVED BY: J.E.G.	

- NOTES:
1. SEE FIRE HYDRANT DETAIL W.13 FOR ADDITIONAL REQUIREMENTS.
 2. ALL VALVES AND HYDRANTS SHALL HAVE M.J. CONNECTIONS WITH IRON RETAINING GLAND M.J. RESTRAINT.
 3. FIRE HYDRANT OFFSET CONNECTOR SHALL BE PLACED AS APPROVED BY THE FAYPWC PROJECT COORDINATOR.
 4. OFFSET CONNECTOR SHALL NOT BE BACK FILLED UNTIL INSPECTED AND APPROVED BY FAYPWC PROJECT COORDINATOR.



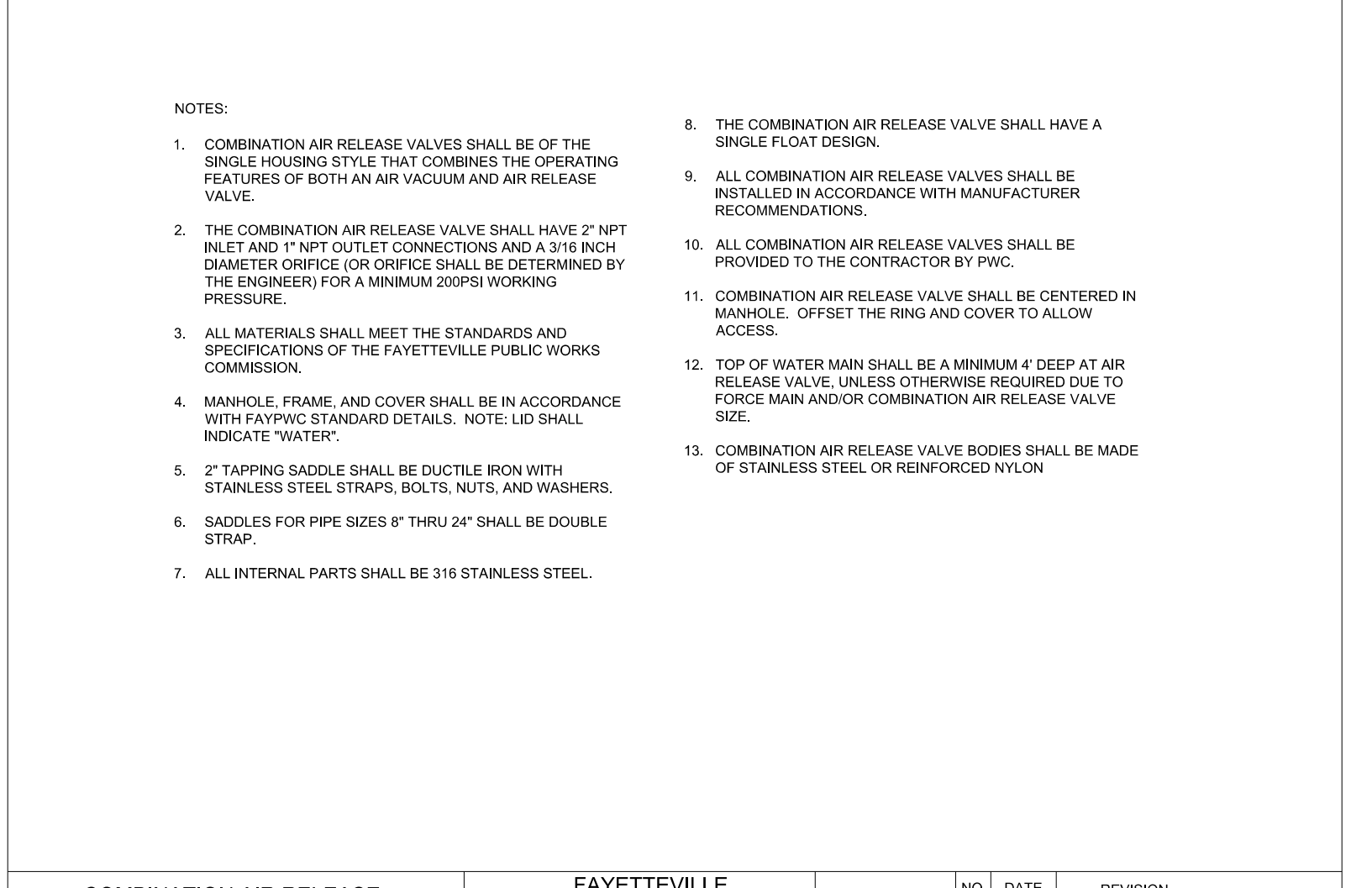
2" BLOW OFF N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	
DWG. NO. W.15 DWG. BY: FAYPWC		WATER RESOURCES ENGINEERING DEPARTMENT	
SHEET NO. 1 OF 1	DATE: JULY 01, 2021	APPROVED BY: J.E.G.	

- NOTES:
1. ALL MATERIAL SHALL BE APPROVED BY FAYPWC.
 2. WHEN INSTALLED IN A PAVED AREA METER BOX SHALL BE SET 1/4" ABOVE FINISHED PAVEMENT GRADE AND PAVEMENT FEATHERED TO TOP OF BOX. COMPOSITE METER BOX (FAYPWC DETAIL W.4B) SHALL BE USED IN PAVED AREAS.
 3. METER BOX SHALL BE IN ACCORDANCE WITH FAYPWC DETAILS.
 4. BLOW-OFF ASSEMBLY NOT TO BE RE-USED UNLESS APPROVED BY FAYPWC.
 5. REMOVE ENTIRE ASSEMBLY FROM BELL OF WATER MAIN PIPE WHEN EXTENDING THE MAIN.
 6. CENTER 2" SDR-21 PIPE IN METER BOX.
 7. INSTALLATION SHALL BE INSPECTED AND APPROVED BY FAYPWC PROJECT COORDINATOR PRIOR TO BACKFILL.
 8. CONTRACTOR SHALL INSTALL TRACING WIRE INTO THE BOX. A MINIMUM OF 2' OF WIRE SHALL BE IN BOX.
 9. VALVE BOX TO BE INSTALLED IN ACCORDANCE WITH FAYPWC DETAIL W.7.



COMBINATION AIR RELEASE VACUUM VALVE (WATER SERVICE) N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	
DWG. NO. W.16 DWG. BY: FAYPWC		WATER RESOURCES ENGINEERING DEPARTMENT	
SHEET NO. 1 OF 2	DATE: JULY 01, 2021	APPROVED BY: J.E.G.	

- DESCRIPTION
1. D.I. WATER MAIN
 2. 2" x 2" P SADDLE
 3. 2" BRASS NIPPLE
 4. 2" BRASS BALL VALVE WITH HANDLE
 5. 2"x2" BRASS TEE
 6. AIR - AIR RELEASE VACUUM VALVE
 7. 3/4" BRASS NIPPLE
 8. 3/4" BRASS BALL VALVE
 9. 3/4" FIP x FEMALE QUICK CONNECT #075D



COMBINATION AIR RELEASE VACUUM VALVE (WATER SERVICE) N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	
DWG. NO. W.16 DWG. BY: FAYPWC		WATER RESOURCES ENGINEERING DEPARTMENT	
SHEET NO. 2 OF 2	DATE: JULY 01, 2021	APPROVED BY: J.E.G.	

- NOTES:
1. COMBINATION AIR RELEASE VALVES SHALL BE OF THE SINGLE HOUSING STYLE THAT COMBINES THE OPERATING FEATURES OF BOTH AIR VACUUM AND AIR RELEASE VALVE.
 2. THE COMBINATION AIR RELEASE VALVE SHALL HAVE 2" NPT INLET AND 1" NPT OUTLET CONNECTIONS AND A 3/16" INCH DIAMETER ORifice (OR ORifice SHALL BE DETERMINED BY THE ENGINEER) FOR A MINIMUM 200PSI WORKING PRESSURE.
 3. ALL MATERIALS SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE FAYETTEVILLE PUBLIC WORKS COMMISSION.
 4. MANHOLE, FRAME, AND COVER SHALL BE IN ACCORDANCE WITH FAYPWC STANDARD DETAILS. NOTE: LID SHALL INDICATE "WATER".
 5. 2" TAPPING SADDLE SHALL BE DUCTILE IRON WITH STAINLESS STEEL STRAPS, BOLTS, NUTS, AND WASHERS.
 6. SADDLES FOR PIPE SIZES 8" THRU 24" SHALL BE DOUBLE STRAP.
 7. ALL INTERNAL PARTS SHALL BE 316 STAINLESS STEEL.
 8. THE COMBINATION AIR RELEASE VALVE SHALL HAVE A SINGLE FLOAT DESIGN.
 9. ALL COMBINATION AIR RELEASE VALVES SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
 10. ALL COMBINATION AIR RELEASE VALVES SHALL BE PROVIDED TO THE CONTRACTOR BY PWC.
 11. COMBINATION AIR RELEASE VALVE SHALL BE ALLOWED IN MANHOLE. OFFSET THE RING AND COVER TO CENTER ACCESS.
 12. TOP OF WATER MAIN SHALL BE A MINIMUM 4' DEEP AT AIR RELEASE VALVE UNLESS OTHERWISE REQUIRED DUE TO FORCE MAIN AND/OR COMBINATION AIR RELEASE VALVE SIZE.
 13. COMBINATION AIR RELEASE VALVE BODIES SHALL BE MADE OF STAINLESS STEEL OR REINFORCED NYLON.

5/14/99
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A:\P\Parmentier\Fayetteville Public Works Commission\20190616\02RA - U-5798 Hills Hill Road Utility Coordination\CADD\Microstation\Utilities\Engineering\U-5798A_ut_dtl_UC03D_psh.dgn