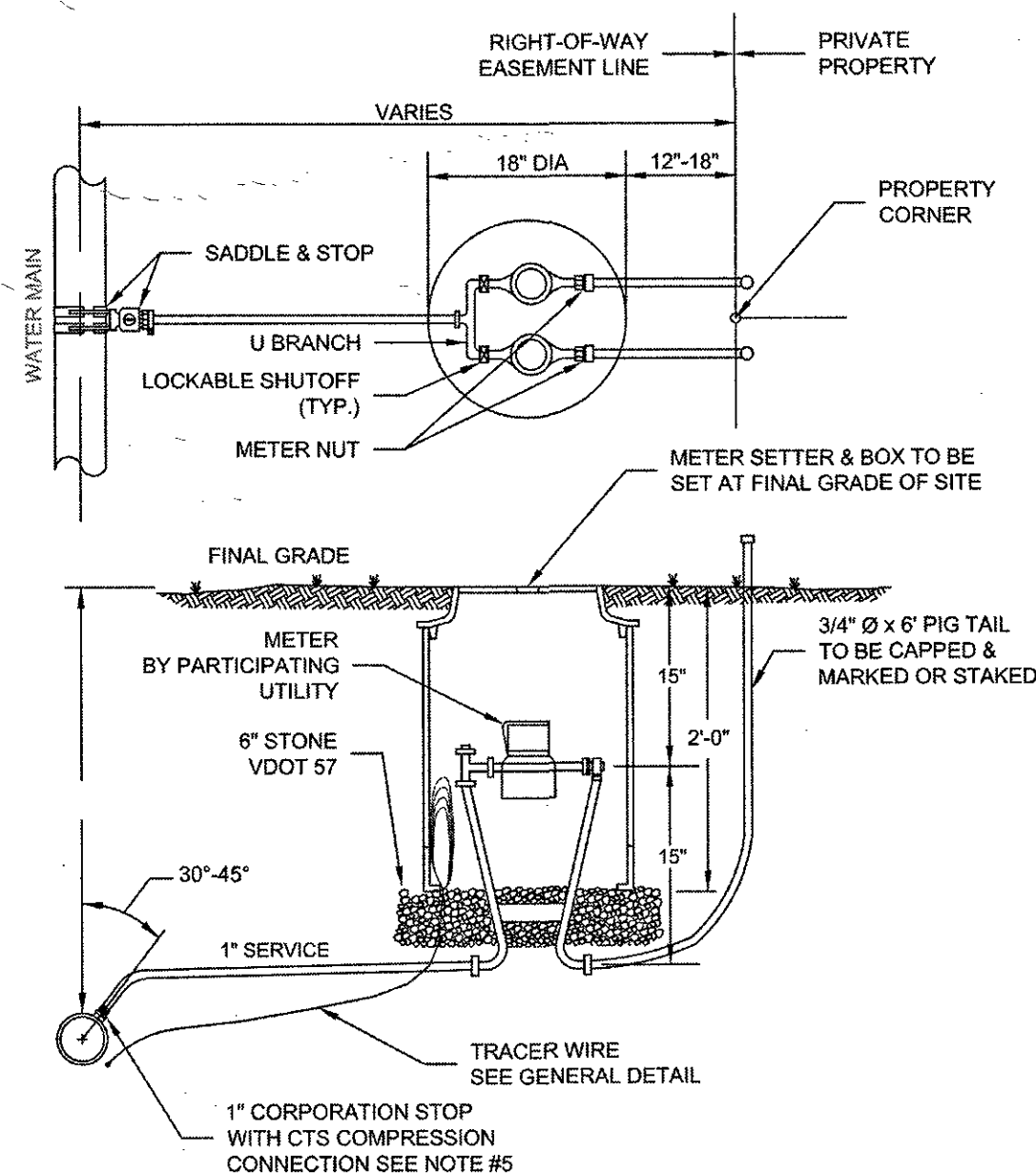


HOLLINS ROAD, NE
SUGGESTED SEQUENCE OF CONSTRUCTION:

1. INSTALL PROPOSED WATER MAIN FROM STATION 9+90 TO STATION 14+28. TEST AND TRANSFER SERVICES AND MAINS.
2. WWA TO INSTALL TEMPORARY WATER SERVICE #1 AND SHUT DOWN THE EXISTING 12-INCH WATER MAIN BETWEEN MASON MILL ROAD, NE AND KYLE AVENUE, NE.
3. PIPE BURST PROPOSED WATER MAIN FROM STATION 14+28 TO STATION 19+31. OPEN CUT AND INSTALL PROPOSED WATER MAIN FROM STATION 19+31 TO STATION 19+74. TEST AND TRANSFER SERVICES AND MAINS. REMOVE TEMPORARY SERVICE #1.
4. CUT-IN TEES, VALVES, AND FIRE HYDRANT ASSEMBLY FROM STATION 26+05 TO STATION 26+19. COORDINATE TEMPORARY SHUT DOWN WITH WWA.
5. WWA TO INSTALL TEMPORARY WATER SERVICE #2, AND SHUT DOWN EXISTING 12-INCH WATER MAIN BETWEEN KYLE AVENUE, NE AND MISSOURI AVENUE, NE.
6. INSTALL PROPOSED WATER MAIN FROM STATION 19+74 TO STATION 20+35.
7. PIPE BURST PROPOSED WATER MAIN FROM STATION 20+35 TO STATION 25+46. OPEN CUT AND INSTALL PROPOSED WATER MAIN FROM STATION 25+46 TO STATION 26+05. TEST AND TRANSFER SERVICES AND MAINS. REMOVE TEMPORARY SERVICE #2.
8. CUT-IN VALVE AT STATION 31+36. COORDINATE TEMPORARY SHUT DOWN WITH WWA.
9. WWA TO INSTALL TEMPORARY WATER SERVICE #3, AND SHUT DOWN EXISTING 12-INCH WATER MAIN BETWEEN MISSOURI AVENUE, NE AND CUT-IN VALVE AT STATION 31+36.
10. PIPE BURST PROPOSED WATER MAIN FROM STATION 26+19 TO STATION 31+28 AND EXTEND 12-INCH WATER MAIN TO STATION 31+36. TEST AND TRANSFER SERVICES AND MAINS. REMOVE TEMPORARY SERVICE #3.
11. WWA TO INSTALL TEMPORARY WATER SERVICE #4.
12. INSTALL CUT-IN VALVE AT STATION 36+13. COORDINATE TEMPORARY SHUT DOWN WITH WWA.
13. WWA TO SHUT DOWN EXISTING 12-INCH WATER MAIN BETWEEN CUT-IN VALVES, STATION 31+36 TO STATION 36+13.
14. INSTALL PROPOSED 12-INCH WATER MAIN FROM STATION 31+36 TO STATION 32+50. PIPE BURST PROPOSED 12-INCH WATER MAIN FROM STATION 32+50 TO STATION 36+13. TEST AND TRANSFER SERVICES AND MAINS. INSTALL FROM STATION 36+13 TO STATION 36+30. REMOVE TEMPORARY SERVICE #4.
15. WWA TO SHUT DOWN EXISTING 12-INCH WATER MAIN FROM CUT-IN VALVE AT EXISTING 12-INCH GATE VALVE AT STATION 41+29.
16. PIPE BURST PROPOSED 12-INCH WATER MAIN FROM STATION 36+30 TO STATION 40+95. TEST AND TRANSFER MAINS.
17. CONNECT 2-INCH WATER MAIN TO 24-INCH WATER MAIN AT POCAHONTAS AVENUE (SHEET 11). WWA TO SHUT DOWN EXISTING 12-INCH WATER MAIN FROM STATION 40+95 TO ORANGE AVENUE, NE.
18. INSTALL PROPOSED 12-INCH WATER MAIN FROM STATION 40+95 TO STATION 42+87.
19. PIPE BURST PROPOSED 12-INCH WATER MAIN FROM STATION 42+87 TO STATION 45+30.
20. INSTALL PROPOSED 12-INCH WATER MAIN FROM STATION 45+30 TO STATION 46+82. TEST AND TRANSFER MAINS.

1. SETTER TO BE A.Y. McDONALD 720-215 WXD33, FORD VB72-15W-11-33 OR APPROVED EQUAL.
2. SADDLES MUST BE USED WITH ALL PLASTIC DUCTILE IRON PIPE. SERVICE SADDLES SHALL BE USED IN ACCORDANCE WITH WATER DISTRIBUTION PIPING SPECIFICATION. SERVICE SADDLES FOR PLASTIC PIPE SHALL BE POWERSEAL 3417, OR 3412AS, ROMAC 202S, OR 306, OR FORD METER FS202 OR FS303. FOR DUCTILE IRON PIPE USE THE ABOVE OR POWERSEAL 3413, ROMAC 202 OR FORD METER F202.
3. METER BOX SHALL BE CARSON/MID-STATES PLASTICS, INC. PLASTIC BOX WITH FORD "A" DOMESTIC SERIES FRAME WITH A NICOR DOMESTIC 12.25 CX LID WITH SENSUS RECESS. ADS CORRUGATED HDPE BOX WITH FORD "A" DOMESTIC SERIES FRAME WITH A NICOR DOMESTIC 12.25 CX LID WITH SENSUS RECESS OR APPROVED EQUAL. METER BOX SHALL NOT BE PLACED IN AREAS SUBJECT TO VEHICULAR TRAFFIC. IF TRAFFIC BEARING BOX IS REQUIRED, DESIGN ENGINEER SHALL CONSULT WITH PARTICIPATING UTILITY TO DETERMINE SITE SPECIFIC REQUIREMENTS.
4. WHENEVER SIDEWALK EXISTS OR IS PROPOSED, MODIFY METER LOCATION AS DIRECTED.
5. CORPORATION STOP SHALL BE FORD FB1000-4-G-NL, MUELLER B-2500B OR APPROVED EQUAL.
6. SERVICE SHALL BE "K" TYPE COPPER, OR COPPER TUBE SIZE POLYETHYLENE (PE) 4710, SODR-9 (200 psi).



WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL

DOUBLE RESIDENTIAL
WATER SERVICE
(LINE PRESSURE UNDER 120 PSI)

W-4
09/07/17

GENERAL NOTES:

1. ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM TO THE LATEST EDITION OF THE WESTERN VIRGINIA REGIONAL DESIGN AND CONSTRUCTION STANDARDS AVAILABLE AT WWW.WESTERNVWATER.ORG OR BY CONTACTING THE AUTHORITY AT 540-853-5700. THE PROJECT SHALL ALSO COMPLY WITH THE GOVERNING JURISDICTION'S STANDARDS AND OTHER AGENCY STANDARDS (E.G., VDOT, DEQ, DCR, VDH, ETC.) WHERE APPLICABLE.
2. THE AUTHORITY WILL INSTALL ALL NEW WATER METERS AND REMOVE ALL EXISTING WATER METERS. THE CONTRACTOR SHALL INSTALL COMPLETE NEW WATER SERVICES INCLUDING THE METER SETTER AND BOX. FOLLOWING METER REPLACEMENT BY THE AUTHORITY, THE CONTRACTOR SHALL DEMOLISH THE EXISTING WATER METER SETTER AND BOX. THE CONTRACTOR SHALL COORDINATE EXISTING METER REMOVAL AND NEW METER INSTALLATION DIRECTLY WITH THE AUTHORITY. THE CONTRACTOR SHALL PROVIDE AT LEAST THREE (3) BUSINESS DAYS ADVANCE NOTICE TO THE AUTHORITY PRIOR TO NEEDING METER INSTALLATIONS. THE CONTRACTOR SHALL SEQUENCE CONSTRUCTION ACTIVITY TO PROVIDE A SERIES OF AT LEAST TEN (10) SERVICES THAT ARE READY TO RECEIVE NEW METERS BEFORE CONTACTING THE AUTHORITY FOR WATER METER REPLACEMENT.
3. ALL CONNECTIONS TO EXISTING WATERLINES SHALL BE PERFORMED BY THE AUTHORITY. THE CONTRACTOR SHALL PROVIDE FULL STAINLESS STEEL TAPPING SLEEVES(S) AND VALVES(S). THE CONTRACTOR SHALL EXCAVATE TO THE EXISTING WATERLINE, SHORE THE TRENCH PER OSHA REQUIREMENTS, CLEAN THE EXISTING WATERLINE, AND INSTALL THE TAPPING SLEEVE AND VALVE PRIOR TO THE AUTHORITY PERFORMING THE TAP. THE CONTRACTOR SHALL NOTIFY THE AUTHORITY'S UTILITY LINE SERVICES DIVISION AT 540-853-2792 AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO REQUIRING THE CONNECTION.
4. ALL CONNECTIONS TO EXISTING SANITARY SEWERLINES SHALL BE PERFORMED BY THE AUTHORITY. THE CONTRACTOR SHALL EXCAVATE TO THE EXISTING SEWERLINE, SHORE THE TRENCH PER OSHA REQUIREMENTS, AND CLEAN THE EXISTING SEWERLINE PRIOR TO THE AUTHORITY PERFORMING THE TAP. THE CONTRACTOR SHALL NOTIFY THE AUTHORITY'S UTILITY LINE SERVICES DIVISION AT 540-853-2792 AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO REQUIRING THE CONNECTION.
5. THE CONTRACTOR SHALL PERFORM ALL MANHOLE CONNECTIONS. THE CORING AND BOOT INSTALLATION SHALL BE INSPECTED AND APPROVED BY AN AUTHORITY CONSTRUCTION INSPECTOR PRIOR TO ACTIVATING SEWER SERVICE. THE CONTRACTOR SHALL CONTACT THE AUTHORITY'S CONSTRUCTION INSPECTOR RESPONSIBLE FOR THE PROJECT AT LEAST ONE (1) DAY PRIOR TO INITIATING THE MANHOLE CONNECTION.
6. PRIOR TO CONSTRUCTION IN THE RIGHT-OF-WAY, ALL APPLICABLE PERMIT(S) FROM THE GOVERNING JURISDICTION AND/OR AGENCY MUST BE OBTAINED AND A COPY KEPT ON THE PROJECT SITE.
7. FOR PROJECTS REQUIRING TRAFFIC CONTROL IN THE CITY OF ROANOKE, NOTIFY MANAGER OF TRANSPORTATION, MARK JAMISON, AT 540-853-5471 AT LEAST TWO WEEKS IN ADVANCE OF REQUIRING TRAFFIC CONTROL. FOR A LANE CLOSURE PERMIT IN THE CITY OF ROANOKE, CONTACT THE TRAFFIC ENGINEER, HONG LIU, AT 540-853-2686. IN ROANOKE OR FRANKLIN COUNTIES, TRAFFIC CONTROL REQUIREMENTS SHALL BE DETERMINED ONCE THE VDOT LAND USE PERMIT HAS BEEN ISSUED. PLEASE CONTACT THE LOCAL VDOT OFFICE. TRAFFIC CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH THE MOST RECENT MUTCD MANUAL AND THE VDOT WORK AREA PROTECTION MANUAL UNLESS OTHERWISE SPECIFIED.
8. THE CONTRACTOR SHALL NOTIFY THE AUTHORITY'S ENGINEERING COORDINATOR, MARK SINK, AT 540-537-3460 AT LEAST THREE (3) DAYS PRIOR TO CONSTRUCTION.
9. A PRE-CONSTRUCTION CONFERENCE SHALL BE SCHEDULED AT LEAST ONE (1) DAY PRIOR TO ANY CONSTRUCTION.
10. THE CONTRACTOR SHALL HAVE A VALID MISS UTILITY TICKET PRIOR TO EXCAVATION. CONTACT MISS UTILITY AT 1-800-552-7001.
11. ALL EXISTING UTILITIES MAY NOT BE SHOWN OR MAY NOT BE SHOWN IN THEIR EXACT LOCATION. CONTRACTOR SHALL LOCATE ALL UTILITIES AND DETERMINE ALL INVERTS PRIOR TO CONSTRUCTION TO ALLOW FOR ADJUSTMENTS DUE TO CONFLICTS WITH OTHER UTILITIES. THE CONTRACTOR SHALL COMPLY WITH THE VIRGINIA STATE WATERWORKS REGULATIONS, SECTION 12VAC5-590-1150, AND THE VIRGINIA STATE SEWAGE COLLECTION AND TREATMENT REGULATIONS WHERE LINES CROSS.
12. AN APPROVED SET OF PLANS AND PERMITS MUST BE AVAILABLE AT THE CONSTRUCTION SITE AT ALL TIMES.
13. CONSTRUCTION DEBRIS SHALL BE CONTAINERIZED IN ACCORDANCE WITH THE VIRGINIA LITTER CONTROL ACT.
14. PRIOR TO COMMENCING WORK, THE CONTRACTOR'S CERTIFIED RESPONSIBLE LAND DISTURBER SHALL OBTAIN AN EROSION AND SEDIMENT CONTROL PERMIT FOR THE PROJECT FROM THE LOCAL GOVERNING JURISDICTION AND DEQ (IF REQUIRED). ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE IN ACCORDANCE WITH THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND SHALL BE INSTALLED PRIOR TO CONSTRUCTION.
15. THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF CLEANING ALL VEHICLES AND EQUIPMENT PRIOR TO ENTERING PUBLIC STREETS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE STREETS ARE KEPT IN A CLEAN, MUD- AND DUST-FREE CONDITION AT ALL TIMES.
16. FIELD CHANGES SHALL BE APPROVED BY THE AUTHORITY'S ENGINEERING DIVISION PRIOR TO SUCH CONSTRUCTION.
17. THE CONTRACTOR SHALL MAKE PROVISIONS TO PROVIDE ACCESS TO ALL PROPERTIES DURING CONSTRUCTION AND SHALL MAINTAIN SAFE ACCESSIBILITY TO FIRE HYDRANTS AT ALL TIMES.
18. THE CONTRACTOR SHALL REPAIR ALL OPEN CUT PAVEMENT IN ACCORDANCE WITH DETAIL G-12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND UNCOVERING ALL MANHOLES AFTER PAVING. MANHOLE RIMS SHALL BE INSTALLED TO GRADE AND FLUSH WITH THE FINAL PAVEMENT.
19. UNREPAIRED ROADWAYS OPENED TO TRAFFIC SHALL HAVE, AT A MINIMUM, COMPACTED AGGREGATE MATERIAL VDOT 21A OR 21B FLUSH WITH THE ADJACENT ROADWAY SURFACE AND SHALL BE INSPECTED AND REPAIRED ON A DAILY BASIS. SOME AREAS WILL REQUIRE A TEMPORARY PATCH UNTIL FINAL PAVING CAN BE COMPLETED.
20. THE CONTRACTOR SHALL NOT EXCAVATE MORE TRENCH LENGTH THAN CAN BE RESTORED WITHIN THE SAME WORK DAY. ALL TRENCHES SHALL BE BACKFILLED OR PLATED AT THE END OF EACH WORK DAY OR WHEN THE CONTRACTOR IS NOT ON SITE.
21. THE CONTRACTOR SHALL SUPPLY THE AUTHORITY WITH CORRECT AS-BUILT PLANS BEFORE SUBSTANTIAL COMPLETION WILL BE GRANTED.
22. STEEL CASING PIPE SHALL BE SMOOTH WALL FOR JACKING AND SHALL MEET THE REQUIREMENTS OF ASTM A139 WITH A MINIMUM WALL THICKNESS OF 0.5-INCH AND SHALL BE IN ACCORDANCE WITH VDOT ROAD AND BRIDGE SPECIFICATIONS SECTION 232.
23. THE TEST PRESSURE SHALL BE 150 PSI.
24. CONTRACTOR SHALL EXCAVATE A TEST PIT TO DETERMINE THE DEPTH AND SIZE OF ALL CROSSING UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION.
25. HDPE PIPE FOR PIPE BURSTING SHALL BE IN ACCORDANCE WITH CONSTRUCTION SPECIFICATION CS-8 OF THE WESTERN VIRGINIA REGIONAL DESIGN AND CONSTRUCTION STANDARDS. PIPE BURSTING INSTALLATION SHALL BE IN ACCORDANCE WITH INDUSTRY STANDARD PRACTICES FOR PIPE BURSTING OF WATER MAINS, AWWA MANUAL M28, AND PIPE BURSTING MANUFACTURERS RECOMMENDED TRAINING AND PROCEDURES. HDPE FITTINGS SHALL BE BUTT-FUSED OR ELECTRO-FUSED PRIOR TO TESTING.
26. AT ALL CROSSING AND ADJACENT UTILITIES, STRUCTURES, AND UTILITY POLES WITHIN 2- FEET OF PIPE BURSTING OPERATION, REMOVE ALL SOIL WITHIN 6-INCHES OF PIPE TO BE BURST.

WATER SERVICE NOTES:

1. SINGLE WATER SERVICE CONNECTIONS SHALL BE IN ACCORDANCE WITH DETAIL W-2. DOUBLE WATER SERVICE CONNECTIONS SHALL BE IN ACCORDANCE WITH DETAIL W-4 AS REVISED. SEE THIS SHEET. NO CHECK VALVES SHALL BE PROVIDED WITHIN RESIDENTIAL METER BOXES. CONTRACTOR SHALL PROVIDE ITEMS AS SHOWN IN THE DETAILS AND FIELD VERIFY EXISTING SERVICES PRIOR TO ORDERING MATERIALS AS NOTED ON THE PLANS. IF EXISTING RESIDENTIAL METERS ARE FOUND TO BE OTHER THAN 5/8-INCHES X 3/4-INCHES, NOTIFY THE OWNER.

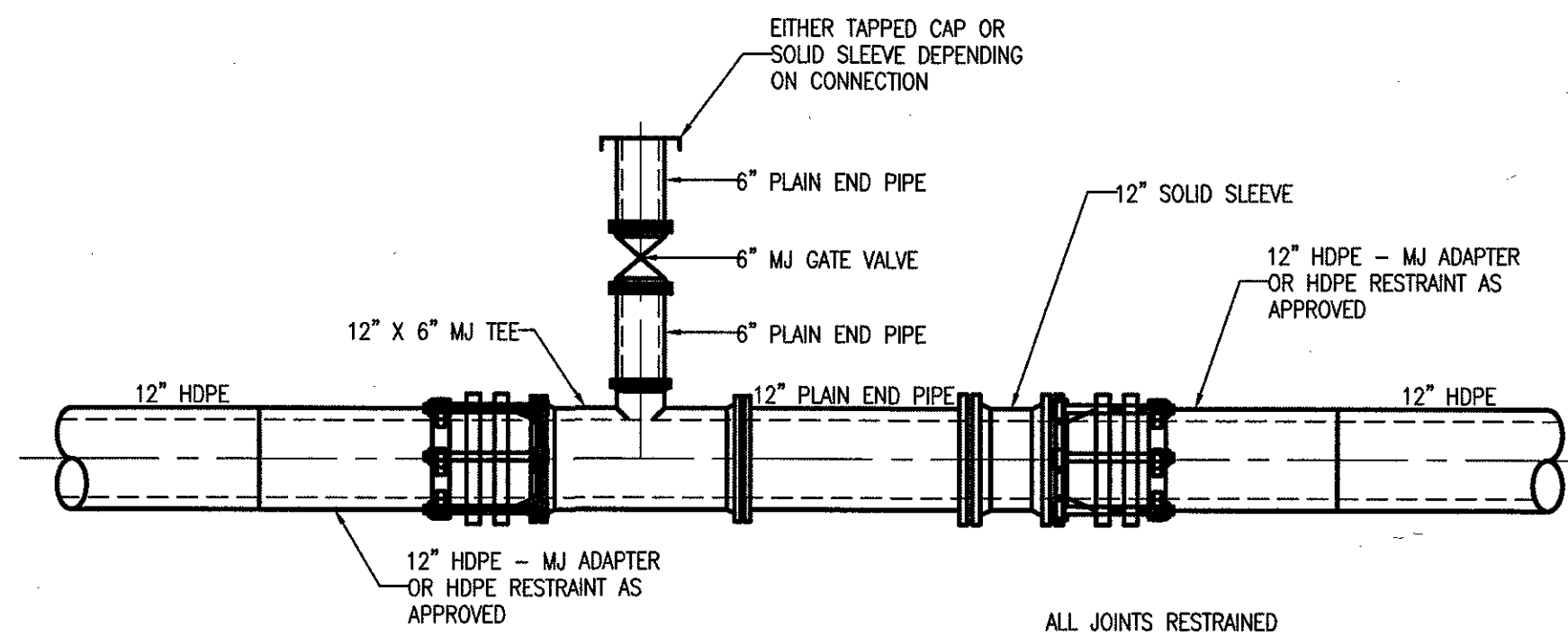
UTILITY TEST HOLES (TH) - DEPTH TO TOP OF UTILITY			
TH NO.	UTILITY 1	UTILITY 2	SHEET
1	12" WATER	8" SANITARY SEWER	10
	4'-11"	4'-0"	

SYMBOL LEGEND (PROPOSED)

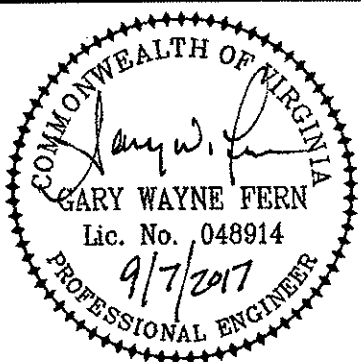
W	WATER MAIN
W	WATER MAIN TO BE ABANDONED
SF	SILT FENCE
SF	TEMPORARY WATER SERVICE
X	CONCRETE SIDEWALK, CURB & GUTTER AND CURB REMOVAL AND REPLACEMENT IN KIND
IP	INLET PROTECTION
H	FIRE HYDRANT
V	VALVE
P	TEST PIT
O	BLOW-OFF VALVE
O	AIR RELEASE VALVE
WSC, O ^{WM}	SINGLE RESIDENTIAL WATER SERVICE, SEE DETAIL W-2

DEMOLITION OF UTILITY VAULT (PROPOSED)

P	PAVEMENT PATCH FOR REMOVED VALVE VAULT
P	REMOVED VALVE VAULT IN GRASS



DETAIL:
CUT-IN TEE ON HDPE PIPE



Whitman, Requardt & Associates, LLP
1700 Kraft Dr, Suite 1200, Blacksburg, VA 24060

WESTERN VIRGINIA WATER AUTHORITY

601 South Jefferson Street, Suite 300
Roanoke, Virginia 24011

DES: PJM	SCALE: N/A
DRAWN: JES	HORIZ: N/A
CHECK: CWF	VERT: N/A
DATE: 8/07/17	

HOLLINS ROAD WATER MAIN REPLACEMENT - PHASE 2

GENERAL NOTES, PROPOSED LEGEND, &
SUGGESTED SEQUENCE OF CONSTRUCTION

DRAWING

SHEET

2