

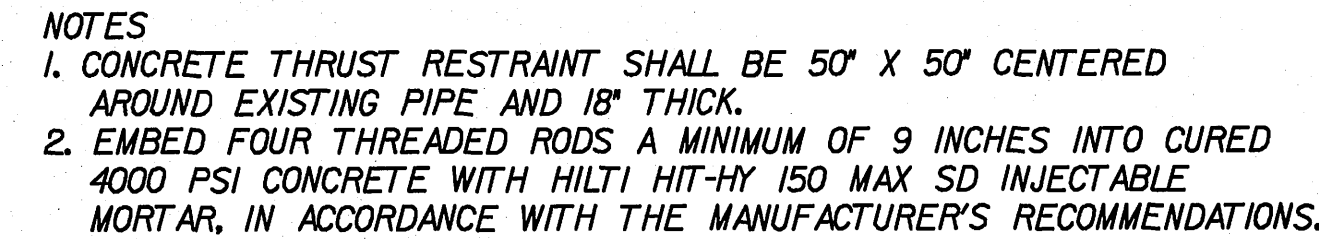
WATER MAIN MATERIALS, INSTALLATION, AND TESTING SHALL BE IN ACCORDANCE WITH THE WESTERN VIRGINIA REGIONAL DESIGN AND CONSTRUCTION STANDARDS, LATEST EDITION, THE SUPPLEMENTAL SPECIFICATIONS INCLUDED HEREIN, THE DEPARTMENT OF TRANSPORTATION'S 2007 ROAD AND BRIDGE SPECIFICATIONS, THE 2008 ROAD AND BRIDGE STANDARDS, AND 2005 VIRGINIA WORK AREA PROTECTION MANUAL. IN CASE OF CONFLICT, THE MOST STRINGENT STANDARD SHALL APPLY.

2. THE CONTRACTOR SHALL NOTE THAT THE UTILITY PLAN SHEETS ARE FOR WATER RELOCATION AND ADJUSTMENT ONLY. THE CONTRACTOR SHALL REFER TO THE ROADWAY PLAN SHEETS FOR ROADWAY AND DRAINAGE DESIGN AND THE BRIDGE PLAN SHEETS FOR BRIDGE DESIGN.
3. THE CONTRACTOR SHALL NOTIFY THE WESTERN VIRGINIA WATER AUTHORITY (WVWA) INSPECTOR OR CALL (540) 853-5700 IN CASE OF EMERGENCIES RELATING TO UTILITIES OWNED BY THE WVWA.
4. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE EXCEPT AS SPECIFICALLY NOTED ON THE PLANS. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE WVWA AND AT NO EXPENSE TO WVWA AND THE OWNER. ANY DAMAGES OR UNSCHEDULED INTERRUPTION OF SERVICE SHALL BE REPORTED IMMEDIATELY TO THE WVWA INSPECTOR OR CALL (540) 853-5700.
5. THE LOCATIONS, DEPTHS AND SIZES OF EXISTING UTILITIES SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM AVAILABLE UTILITY RECORDS AND FIELD UTILITY SURVEYS AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL FIELD VERIFY, WITH TEST HOLES, THE EXACT LOCATION, ELEVATION, TYPE, ROUNDNESS AND SIZE OF ALL EXISTING UNDERGROUND UTILITIES AT POINTS OF CONNECTION PRIOR TO ORDERING OF MATERIALS, EXCAVATION AND INSTALLATION FOR THIS PROJECT. ALL COSTS ASSOCIATED WITH ADDITIONAL UNDERGROUND UTILITY LOCATING SHALL BE INCLUDED IN THE APPROPRIATE PRICE BID.
6. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 811 TO REQUEST FIELD UTILITY LOCATIONS AT LEAST 72 HOURS BEFORE BEGINNING ANY EXCAVATION OR CONSTRUCTION SHOWN ON THESE PLANS.
7. THE SEQUENCE OF CONSTRUCTION SHALL BE DEVELOPED IN SUCH A MANNER THAT WATER SERVICE IS MAINTAINED TO THE MAXIMUM EXTENT POSSIBLE DURING CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT A PLAN OF OPERATIONS FOR CONSTRUCTING, EXCEPT FOR THE EXISTING 12-INCH DIAMETER WATER MAIN REMOVAL, THE WATER RELOCATION 14 DAYS PRIOR TO BEGINNING UTILITY CONSTRUCTION:
  - A. THE CONTRACTOR'S SEQUENCE OF WATER MAIN CONSTRUCTION SHALL CONSIST OF A PRELIMINARY LIST OF DATES FOR WATER MAIN CONNECTIONS. ALL UTILITY FLUSHING AND CONNECTIONS OF THE MAIN SHALL OCCUR TUESDAY THROUGH THURSDAY, UNLESS OTHERWISE AUTHORIZED BY THE WVWA.
  - B. PRIOR TO CUTTING INTO ANY WATER MAIN, THE CONTRACTOR SHALL HAVE ALL FITTINGS, VALVES AND PIPES AT THE SITE AND SHALL VERIFY, IN THE PRESENCE OF THE ENGINEER AND THE INSPECTOR, THROUGH FIELD MEASUREMENTS, THAT ALL PIPING, FITTINGS AND VALVES WILL ALIGN AND FIT PROPERLY WITH THE EXISTING FACILITIES. CONNECTION TO EXISTING LINES SHALL BE MADE ONLY AFTER THE PROPOSED LINE IS INSTALLED, TESTED AND APPROVED BY THE ENGINEER. CONNECTION TO EXISTING WATER MAINS SHALL OCCUR TUESDAY THROUGH THURSDAY, 9:00 AM TO 4:00 PM. ALL WORK MUST BE COMPLETED WITHIN THIS SPECIFIED TIME FRAME.
  - C. CONTRACTOR SHALL PROVIDE 72 HOURS ADVANCE NOTICE TO THE WVWA PRIOR TO A REQUESTED WATER SYSTEM SHUT DOWN.
8. NO LATER THAN 30 DAYS AFTER THE NOTICE TO PROCEED, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER, FOR REVIEW BY THE WVWA, A SCHEDULE OF OPERATIONS, AND PROPOSED METHODS AND TECHNIQUES.
9. PROCEDURE FOR ACCOMPLISHING EACH INSTALLATION SHALL BE THE CONTRACTOR'S RESPONSIBILITY. ALL MATERIALS, EQUIPMENT, LABOR APPURTENANCES (SHALL INCLUDE BUT NOT BE LIMITED TO: EXCAVATING, TESTING, DISINFECTING, BACKFILLING, COMPACTING, DEWATERING, DISPOSING OF SURPLUS AND UNSUITABLE MATERIAL, SHEETING AND SHORING, BEDDING MATERIAL, INSTALLING PIPE, AND CONNECTING TO EXISTING LINES) REQUIRED TO ACCOMPLISH INSTALLATIONS IN ACCORDANCE WITH SEQUENCE OF CONSTRUCTION SHALL BE INCLUDED IN THE BID PRICE FOR THE ASSOCIATED PAY ITEM OR SCHEDULE OF VALUES. AN ALTERNATE SEQUENCE MAY BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL.
10. DURING INSTALLATION OF NEW PIPES, THE CONTRACTOR SHALL DO WHAT IS NECESSARY TO PROTECT EXISTING UTILITIES, PIPELINES AND FACILITIES AGAINST DAMAGE CAUSED BY CONSTRUCTION ACTIVITIES. CONTRACTORS SHALL PROVIDE ANY NEEDED TEMPORARY SUPPORTS REQUIRED TO INSTALL THE NEW UTILITIES WHILE MAINTAINING THE EXISTING UTILITIES AND FACILITIES IN OPERATION. TEMPORARY SUPPORT AND/OR FACILITIES, INCLUDING MATERIALS, LABOR AND EQUIPMENT NEEDED TO COMPLETE THE WORK AS DEFINED ON THE PLANS, ARE CONSIDERED INCIDENTAL TO CONSTRUCTION AT NO ADDITIONAL COST TO THE CONTRACT PRICE.
11. CONTRACTOR SHALL PERFORM UTILITY RELOCATION WORK CONCURRENT WITH ROADWAY AND BRIDGE CONSTRUCTION ACCORDING TO THE SEQUENCE OF CONSTRUCTION SHOWN ON THE STRUCTURAL DRAWINGS.

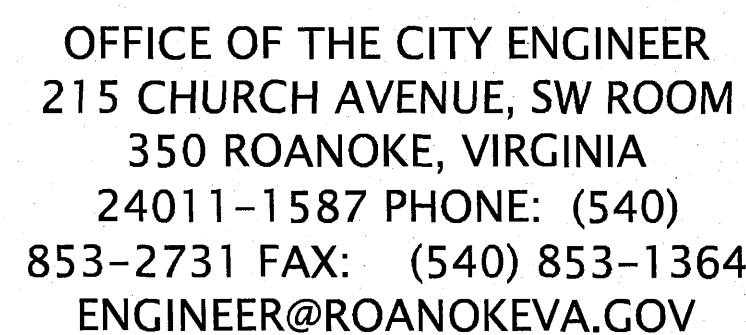
- ## WATER CONSTRUCTION NOTES

- ### WATER SUPPLEMENTAL SPECIFICATIONS

1. EXPANSION JOINTS
- EXPANSION JOINTS SHALL BE INSTALLED IN THE LOCATIONS INDICATED ON THE DRAWINGS AND SHALL BE MANUFACTURED OF DUCTILE IRON CONFORMING TO THE MATERIAL PROPERTIES OF ANSI/AWWA C153/A21.53. ALL EXPANSION JOINTS SHALL BE CAPABLE OF EXPANDING OR CONTRACTING A MINIMUM OF 4 LINEAR INCHES. SEPARATION BEYOND THE MAXIMUM EXTENSION OF THE EXPANSION JOINT SHALL BE PREVENTED BY RESTRAINT INHERENT TO THE DESIGN OF THE EXPANSION JOINT. RESTRAINED MECHANICAL JOINTS OR FLANGED JOINTS WITH RESTRAINED MECHANICAL JOINT ADAPTERS SHALL BE PROVIDED. ALL INTERNAL SURFACES (WETTED PARTS) SHALL BE LINED WITH A MINIMUM OF 15 MILS OF FUSION BONDED EPOXY CONFORMING TO THE APPLICABLE REQUIREMENTS OF ANSI/AWWA C213. EXTERIOR SURFACES SHALL BE COATED WITH A MINIMUM OF 6 MILS OF FUSION BONDED EPOXY CONFORMING TO THE APPLICABLE REQUIREMENTS OF ANSI/AWWA C116/A21.16. SEALING GASKETS SHALL BE CONSTRUCTED OF EPDM. THE COATING AND GASKETS SHALL MEET ANSI/NSF-61. ALL EXPANSION JOINTS SHALL BE EX-TEND 200, AS MANUFACTURED BY EBAA IRON, INC., OR APPROVED EQUAL.
2. PIPE INSULATION
- WATER MAIN EXPOSED TO THE ATMOSPHERE SHALL BE INSULATED WITH FOAMED IN-PLACE CLOSED CELL POLYURETHANE FOAM ENCASED WITH WHITE PVC JACKETING. JOINTS SHALL BE INSULATED IN-PLACE AFTER TESTING, AND SHALL BE SEALED AND JACKETED WITH THE SAME MATERIALS AS USED ON THE STRAIGHT LENGTHS OF PIPE AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. POLYURETHANE FOAM SHALL BE 2 INCHES THICK AND HAVE A MINIMUM DENSITY OF 2.0 PCF IN ACCORDANCE WITH ASTM D-1621, "K" FACTOR OF 0.14 BTU/HR SQ. FT. DEGREES F/IN. IN ACCORDANCE WITH ASTM C-177, AND A CLOSED CELL CONTENT BETWEEN 90-95% IN ACCORDANCE WITH ASTM D-2856. INSULATED PIPE SHALL BE PROVIDED WITH A MINIMUM 10 GAUGE STEEL WEAR PLATE PROTECTION SADDLE OF THE INSULATION AT EACH ROLLER SUPPORT.
3. PIPE BACKFILL
- PROPOSED WATER MAIN INSTALLED BELOW GRADE SHALL BE INSTALLED IN ACCORDANCE WITH WESTERN VIRGINIA REGIONAL-CONSTRUCTION DETAIL G-12. BACKFILL MATERIAL SHALL BE VDOT 21A COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D698.



**VALVE CLOSURE RESTRAINT DETAIL**  
N.T.S.



<p align="center"><b>9TH STREET OVER ROANOKE RIVER BRIDGE SUPERSTRUCTURE REPLACEMENT</b></p>		
<p align="center"><b>WATER MAIN NOTES &amp; DETAILS</b></p>		<p align="center">APPROVED FEB 23 2014</p>
Designed: P.J.M. Drawn: R.D.W. Checked: G.W.F.	<p align="center">DATE</p> <p align="center"><b>DEC 2013</b></p>	<p align="center">SHEET NUMBER</p> <p align="center"><b>U4</b></p>

# 99TH STREET OVER ROANOKE RIVER BRIDGE SUPERSTRUCTURE REPLACEMENT