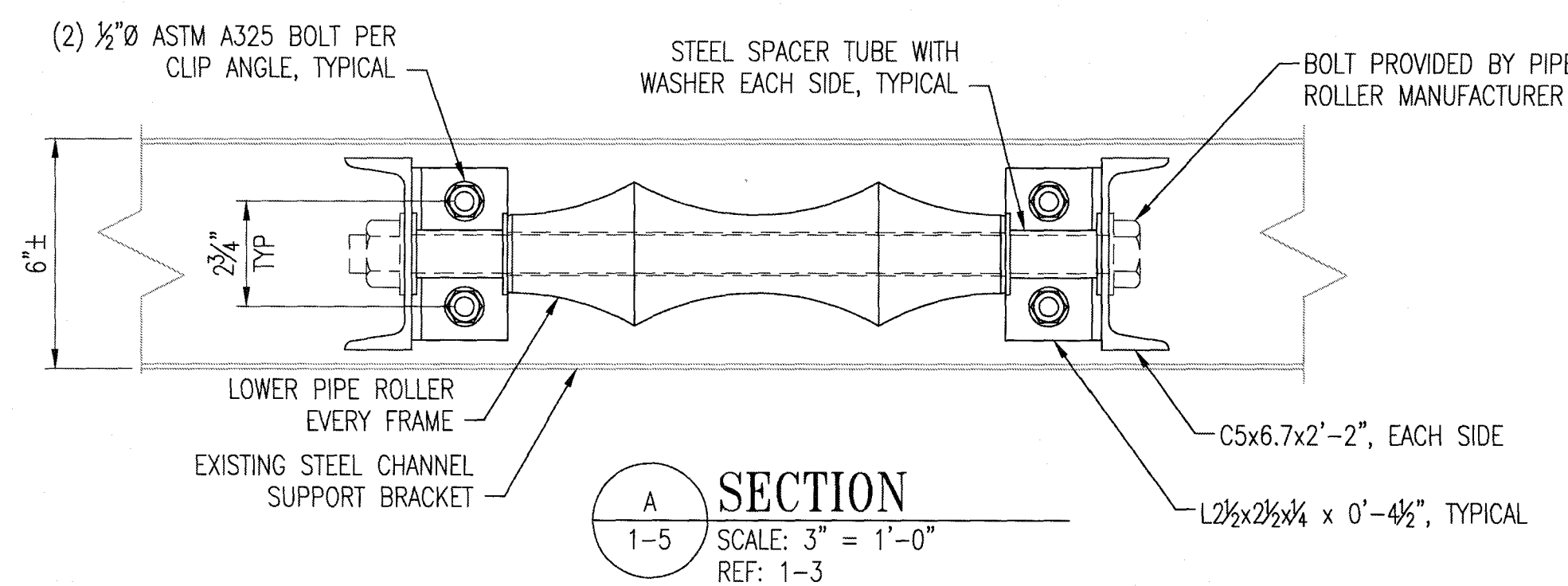


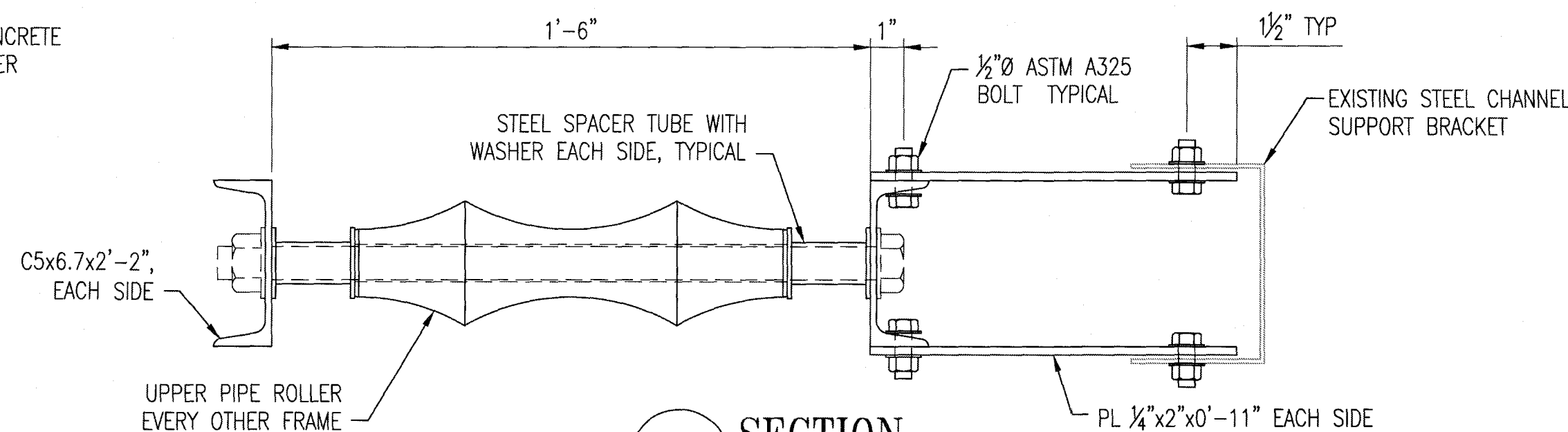
PIPE SUPPORT NOTES

- FIELD VERIFY AND COORDINATE DIMENSIONS MARKED WITH AN ASTERISK WITH FIELD CONDITIONS INCLUDING EXISTING CHANNEL SUPPORT BRACKET, PIPE CENTERLINE ELEVATION AND APPROVED PIPE ROLLERS. PRIOR TO FABRICATION, NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO ADJUSTMENT.
- PROVIDE STRUCTURAL STEEL SHAPES AND PLATE CONFORMING TO ASTM A36 ($F_y=36\text{KSI}$).
- HOT DIP GALVANIZE ALL STEEL SHAPES.
- COAT ALL NEW HOLES MADE IN EXISTING SUPPORT BRACKET WITH SPRAY GALVANIZING REPAIR COATING PRIOR TO INSTALLING PIPE SUPPORTS.
- LOCATE FINAL POSITION OF ALL PIPE FITTINGS A MINIMUM OF 4" CLEAR FROM ANY ROLLER SUPPORTS TO ALLOW FOR MOVEMENT.

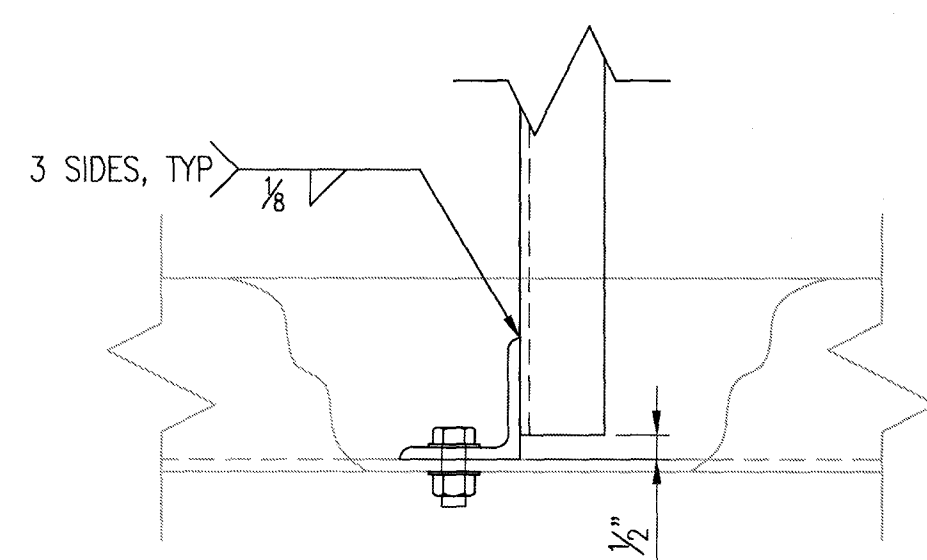
1-5 PIPE SUPPORT DETAIL
SCALE: 1" = 1'-0"
REF: 1-3



A SECTION
1-5 SCALE: 3" = 1'-0"
REF: 1-3



B SECTION
1-5 SCALE: 3" = 1'-0"
REF: 1-3



C SECTION
1-5 SCALE: 3" = 1'-0"
REF: 1-3

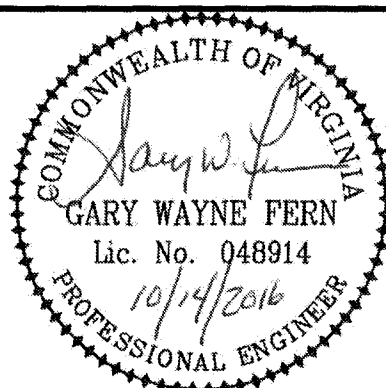
SUGGESTED SEQUENCE OF CONSTRUCTION

- INSTALL FIRE HYDRANT AT 11TH STREET / ORANGE AVENUE INTERSECTION. UPON COMPLETION, NOTIFY THE AUTHORITY AND REQUEST INSTALLATION OF TEMPORARY WATER SERVICES. TEMPORARY WATER SERVICES TO INCLUDE:
 - REED AUTOMOTIVE
 - ADVANTAGE FLEET (IF NEEDED)
- RELOCATE TEMPORARY WATER SERVICE TO UNITED RENTALS, STA. 17+99, EAST SIDE OF EXISTING 12" GATE VALVE AT STA. 17+97.
- PERFORM WORK SHOWN ON DRAWING 1-2A, SHEET 6. CLOSE 6" GATE VALVE AT STA. 12+59 (PERMANENT CLOSURE).
- NOTIFY THE AUTHORITY AND REQUEST SHUTDOWN OF 12" DIAMETER WATER MAIN ALONG ORANGE AVENUE FROM 11TH STREET TO TINKER CREEK BRIDGE. AUTHORITY TO CLOSE 2 - 6" GATE VALVES AND 1 - 12" GATE VALVE AT THE INTERSECTION OF 11TH STREET AND ORANGE AVENUE; AND 1 - 12" GATE VALVE AT STA. 17+97.
- INSTALL NEW 12" CROSS, 12" GATE VALVE AT STA. 10+18 AND CONNECT INTO EXISTING WATER MAINS AT INTERSECTION OF 11TH STREET AND ORANGE AVENUE. NOTIFY AUTHORITY UPON COMPLETION.
- UPON NOTICE, AUTHORITY TO RE-OPEN 2 - 6" GATE VALVES AND 1 - 12" GATE VALVE. NEW 12" GATE VALVE AT STA. 10+18 TO REMAIN TEMPORARILY CLOSED.
- INSTALL WATER MAIN FROM STA. 10+18 TO 10+72 (OPEN CUT). INSTALL FITTINGS AS NEEDED FOR FLUSHING AND TESTING.
- TEST PIT EXISTING UTILITIES AND INSTALL WATER MAIN FROM STA. 10+72 TO 16+75 (PIPE BURST).
- INSTALL WATER MAIN FROM STA. 16+75 TO 17+76 (OPEN CUT), UP TO AND INCLUDING 12" GATE VALVE AT STA. 17+76. INSTALL TEMPORARY CONNECTION TO EXISTING 12" WATER MAIN.
- FILL, DISINFECT, FLUSH, AND TEST AS SPECIFIED, NEW WATER MAIN FROM STA. 10+18 TO 17+76.
- INSTALL PERMANENT WATER SERVICE CONNECTION TO UNITED RENTALS AT STA. 17+73.
- INSTALL PERMANENT WATER SERVICE CONNECTIONS TO REED AUTOMOTIVE AND ADVANTAGE FLEET (IF NEEDED).
- INSTALL 12" WATER MAIN FROM STA. 30+82 TO STA. 30+92. TEMPORARILY CAP AT STA. 30+82. SPRAY OR SWAB DISINFECT (AWWA C651 Sec. 4.10.1) AND CONNECT TO EXISTING 12" WATER MAIN ALONG 13TH STREET SOUTH. INSTALL WATER SERVICES TO LITTLE CAESARS AND LABOR READY. NEW 12" GATE VALVE AT STA. 30+82 TO REMAIN CLOSED.
- INSTALL 12" GATE VALVE AND 12" WATER MAIN ALONG 13TH STREET, NORTH OF INTERSECTION WITH ORANGE AVENUE. SPRAY OR SWAB DISINFECT (AWWA C651 Sec. 4.10.1) AND CONNECT TO EXISTING 12" WATER MAIN. NEW 12" GATE VALVE TO REMAIN CLOSED.
- NOTIFY AUTHORITY AND REQUEST SHUTDOWN OF 12" WATER MAIN ALONG ORANGE AVENUE FROM TINKER CREEK BRIDGE TO STA. 23+36. AUTHORITY TO CLOSE 12" GATE VALVE AT STA. 23+36.
- REMOVE AND REPLACE 12" WATER MAIN FROM STA. 17+76 TO STA. 19+21, UNDERNEATH TINKER CREEK BRIDGE.
 - WORK MAY BE PERFORMED FROM ABOVE, OR UNDERNEATH EXISTING BRIDGE IN TWO OUTER DRY SPANS. WORK MUST BE PERFORMED "IN THE DRY", ABOVE THE WATER LEVEL. CONTRACTOR SHALL ALSO PROTECT CREEK FROM ANY EROSION AND SEDIMENTATION DUE TO WORK ABOVE THE WATER LEVEL. WORK SHALL BE PERFORMED WITHIN THE EXISTING RIGHT-OF-WAY.
 - EXCAVATE WORK TRENCH ADJACENT TO WESTERN BRIDGE ABUTMENT AT EXISTING WATER MAIN. CUT EXISTING PIPE NEAR EASTERN BRIDGE ABUTMENT.
 - CUT OR DISASSEMBLE JOINTS, AND REMOVE EXISTING WATER MAIN FROM WESTERN WORK TRENCH. PULL EXISTING WATER MAIN THROUGH EXISTING CHANNEL SUPPORTS, PIERS, AND THE ABUTMENT, SPOT-ASSISTING THE PIPE AS NEEDED, AND REPEAT REMOVAL PROCEDURES UNTIL WATER MAIN IS REMOVED. MAINTAIN AND PROTECT EXISTING STEEL CHANNEL SUPPORTS, PARALLEL CONDUITS, AND THE BRIDGE STRUCTURE FROM DAMAGE.
 - REMOVE EXISTING WOOD SUPPORT BLOCKS FROM STEEL CHANNEL SUPPORTS.
 - INSTALL NEW ROLLER SUPPORT FRAMES ON EACH STEEL CHANNEL PER THE DETAILS.
 - PUSH NEW WATER MAIN THROUGH WESTERN ABUTMENT, NEW ROLLER SUPPORTS, AND EASTERN ABUTMENT. CHECK EACH JOINT FOR PROPER "HOMING" OF PIPE.
- INSTALL REMAINING WATER MAIN, FITTINGS AND VALVES, FROM STA. 19+21 TO STA. 23+36 AND FROM STA. 30+00 TO 30+82, AND FROM STA. 19+86 TO THE NEW 12" GATE VALVE INSTALLED IN STEP 13. INSTALL FITTINGS AS NEEDED FOR FLUSHING AND TESTING AT STA. 30+71.
- FILL, DISINFECT, FLUSH, AND TEST AS SPECIFIED, NEW WATER MAIN FROM STA. 17+79 TO STA. 23+36 AND FROM 30+00 TO 30+82.
- NOTIFY AUTHORITY UPON COMPLETION. AUTHORITY TO OPEN GATE VALVES.

SUPPLEMENTAL SPECIFICATIONS

- EXPANSION JOINT

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.



WESTERN VIRGINIA WATER AUTHORITY
601 South Jefferson Street, Suite 300
Roanoke, Virginia 24011

DES: PJM SCALE: AS SHOWN
DRAWN: JES HORIZ: N/A
CHECK: GWF VERT: N/A
DATE: 10/14/16

2016 12-INCH WATER MAIN REPLACEMENTS
1. ORANGE AVENUE (11TH STREET TO 13TH STREET)
2. PETERS CREEK ROAD & HERSHBERGER ROAD
3. MELROSE AVENUE & COUNTRY CLUB DRIVE

1. ORANGE AVENUE (11TH STREET TO 13TH STREET)
TINKER CREEK BRIDGE
WATER MAIN CROSSING DETAILS AND NOTES

DRAWING
1-5
SHEET
9