NOTES:
1. THERMITE WELD BONDING WIRES TO TOP OF PIPE OR FITTING.
2. BOND WIRE LENGTH SHALL BE A MAXIMUM OF 18" UNLESS APPROVED BY THE ENGINEER.
   LEAVE SLACK IN ALL CABLES.
3. TWO BOND WIRES SHALL BE USED ACROSS EACH PIPE JOINT.
4. COAT ALL THERMITE WELDS AND EXPOSED COPPER IN ACCORDANCE WITH LOUDOUN WATER’S
   APPROVED MATERIALS LIST.
5. WIRE SIZE FOR BONDING WIRES SHALL BE AS FOLLOWS:
   PIPES 36” IN DIAMETER & SMALLER – AWG #4
   PIPES LARGER THAN 36” DIAMETER – AWG #2
STRUCTURE (TOP OF PIPE, FITTING OR STEEL BONDING PLATE)

STEP 1

CLEAN SURFACE TO BRIGHT METAL AT WELD LOCATION BY MECHANICAL GRINDER

GRAPHITE MOLD

OPENING

HOLD GRAPHITE MOLD FIRMLY OVER ADAPTER SLEEVE WITH OPENING AWAY FROM OPERATOR—IGNITE STARTING POWDER.

TOP

STEP 2

STRANDED COPPER WIRE (WITH THWN OR HMWPE INSULATION).

ADAPTER SLEEVE

HANDLE

STARTING POWDER

METAL POWDER

METAL DISC

WIRE

STRUCTURE (TOP OF PIPE, FITTING OR STEEL BONDING PLATE)

SIDE

STEP 3

PRIME AND COAT ALL EXPOSED METAL AT WELD AREA.

THERMITE WELD

STEP 4

REMOVE SLAG FROM CONNECTION. THOROUGHLY CLEAN WELD AREA.

STEP 5

NOTES:
1. THERMITE WELDS MADE TO STEEL OR DUCTILE IRON PIPE SHALL BE COATED IN ACCORDANCE WITH LOUDOUN WATER’S APPROVED MATERIALS LIST.

APR. 2010

THERMITE WELD

CP—2
NOTES:
1. APPLY PRIMER, WAX TAPE, AND OUTER WRAP IN ACCORDANCE WITH MANUFACTURER’S INSTRUCTIONS AND RECOMMENDATIONS. PROFILING MASTIC NOT REQUIRED.
INSTALL ANODES AND REFERENCE ELECTRODES IN SOIL BACKFILL. DO NOT BACKFILL ANODES OR REFERENCE ELECTRODES WITH BEDDING MATERIAL.
**TEST PEDESTAL OR BOX**
SEE DETAILS CP-10 AND CP-11

**SPLICE TOGETHER HEADER CABLE AND ANODE**
SEE DETAIL CP-5

**Cu/CuSO4 REFERENCE ELECTRODE**

**TERMINAL BOARD**

**WIRING SCHEDULE**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>WIRE</th>
<th>TEST STATION TERMINAL</th>
<th>AWG WIRE SIZE</th>
<th>TYPE OF INSULATION</th>
<th>COLOR OF INSULATION</th>
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<tbody>
<tr>
<td>NEW PIPE</td>
<td>A</td>
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**NOTES:**
1. INSTALL PREPACKAGED MAGNESIUM ANODES. SEE DETAIL CP-4.

**OCT. 2016**

**ANODE BED AND TEST STATION**

**CP-6**
FINISHED GRADE

THERMITE WELD (TYP)
SEE DETAIL CP-2

EXISTING PIPE

NEW PIPE

INSULATING FLANGE COAT FLANGE PER CP-3

Cu/CuSO4 REFERENCE ELECTRODE

WIRING SCHEDULE

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OCT. 2016

INSULATING FLANGE TEST STATION

CP-7
FINISHED Grade

EXISTING PIPE
Cu/CuSO4 REFERENCE ELECTRODE

ANODE HEADER CABLES
NEW PIPE

INSTALL 4 PREPACKAGED 32 POUND MAGNESIUM ANODES

INSULATING FLANGE
COAT FLANGE PER CP-3

WIRING SCHEDULE

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INSTALL 0.01 OHM SHUNT BETWEEN TERMINALS 1 AND 4.

OCT. 2016
INSULATING FLANGE TEST STATION WITH ANODES
CP-8
WIRING SCHEDULE

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NOTES:
1. CARRIER PIPE WITHIN STEEL CASING DOES NOT REQUIRE POLYETHYLENE ENCASEMENT, BUT ALL JOINTS MUST BE BONDED.
NOTES:
1. PROVIDE 54" TRACER PEDESTAL WITH INTERNAL TERMINAL BOARD BY RHINO MARKING AND PROTECTION SYSTEMS. SELECT COLOR ACCORDING TO UTILITY: BLUE (WATER), GREEN (SEWER), PURPLE (REUSE).
NOTES:
1. TO BE USED ONLY WHERE TEST STATION BY PEDESTAL IS NOT FEASIBLE.
2. CONCRETE PAD NOT REQUIRED IN PAVEMENT.
NOTES:
1. IF TEST STATION IS NOT DIRECTLY OVER WATER MAIN, ROUTE WIRES FROM PIPE TRENCH TO STATION THROUGH PVC CONDUIT. CONDUIT IS NOT REQUIRED FOR WIRES IN PIPE TRENCH.
2. MARKING TAPE SHALL READ, "CATHODIC PROTECTION CABLE BURIED BELOW."

OCT. 2016
TEST STATION
OFFSET FROM PIPELINE
CP-12
CLEAN AND COAT SCRATCHES, SCRAPES, AND SCORE MARKS ON PIPE SURFACE WITH APPROVED FIELD COATING.

CLEAN AND COAT HARDWARE OF MECHANICAL JOINT WITH APPROVED FIELD COATING.

ANODE

12" MINIMUM

6"

ANODE

NOTES:
1. INSTALL ANODES IN THE VICINITY OF ALL REPAIRED PIPE FAILURES DUE TO CORROSION.
3. "HOT SPOT" CATHODIC PROTECTION TO BE APPLIED TO CAST AND DUCTILE IRON PIPING. DO NOT INSTALL ON COPPER PIPING.
20 POUND PREPACKAGED MAGNESIUM ANODE, SEE DETAIL CP-13 FOR PLAN VIEW.  
EXISTING CAST OR DUCTILE IRON PIPE

12" MINIMUM

12" MINIMUM

THERMITE WELD ANODE LEAD WIRE TO TOP OF EXISTING PIPE. SEE DETAIL CP-2.

20 POUND PREPACKAGED MAGNESIUM ANODE, SEE DETAIL CP-13 FOR PLAN VIEW.

SECTION VIEW

NOTES:
1. INSTALL ANODES ON BOTH SIDES OF PIPE. SEE DETAIL CP-13.
2. INSTALL ANODES IN NATIVE SOIL. DO NOT BACKFILL ANODES WITH SAND OR STONE.
3. PRESOAK ANODE WITH FIVE GALLONS OF WATER AFTER PLACEMENT AND BEFORE BACKFILLING.