NOTES:
1. METER BOX SHALL BE INSTALLED AS SHOWN IN THE LOCATION DETAIL SHOWN BELOW.
2. ALL BENDS IN PLASTIC PIPE SHALL HAVE A MINIMUM RADIUS OF 30 PIPE DIAMETERS.
3. NO COUPLINGS OR UNIONS IN PLASTIC PIPE UNLESS AS SHOWN PER DETAIL.
4. PROVIDE 2’ MIN. OF COVER OVER SERVICE LATERAL PIPE IN ALL LOCATIONS.
5. INSTALL 6” PORTLAND CEMENT CONCRETE FOOTING UNDERNEATH TRAFFIC RATED METER BOXES.
6. ALL NON-RESIDENTIAL USES SHALL BE PROTECTED WITH A BACKFLOW PREVENTION DEVICE AS REQUIRED AND APPROVED BY THE CITY’S CROSS-CONNECTION CONTROL TEAM.
7. ALL DRY AND WET TAPS SHALL BE PERFORMED ACCORDING TO THE PIPE MANUFACTURERS RECOMMENDATION.
8. ALL RECYCLED PIPES SHALL BE INSTALLED A MIN OF 4’ FROM ALL POTABLE WATER MAINS AND SERVICES.
9. ALL HOPE PIPE SHALL BE PURPLE.
10. STAMP “RW” ON TOP OF THE CURB IN FRONT OF METER BOX.
11. PAINT INSIDE BOX PURPLE (PANTONE 512)

METER BOX TABLE

<table>
<thead>
<tr>
<th>METER SIZES</th>
<th>ARMORCAST BOX</th>
<th>ARMORCAST LID</th>
<th>TRAFFIC RATED LID</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/8” &amp; 3/4”</td>
<td>A600 1429</td>
<td>A600 1428-H7</td>
<td>A600 1428T-H7</td>
</tr>
<tr>
<td>1.5” &amp; 2”</td>
<td>A600 1640PCX12</td>
<td>A600 1643-H7</td>
<td>A600 1643T-H7</td>
</tr>
</tbody>
</table>

CITY OF REDWOOD CITY
ENGINEERING AND TRANSPORTATION
WATER SERVICE LINE
CONNECTIONS TO HDPE MAINS
FOR 5/8” TO 2” METERS

STANDARD DETAIL
RW - 1
HDPE

DATE: 11/25/19
NOTES:
1. ALL PIPE SIZES SHALL BE 4" OR 6", AS SHOWN ON THE PLANS.
2. FOR SERVICES TO 3" WATER METERS, PROVIDE AND INSTALL REDUCERS BETWEEN VAULT AND GATE VALVES TO REDUCE TO 3" WATER METER. ALL OTHER PIPE AND FITTINGS EXTERIOR TO THE VAULT SHALL BE 4" OR 6".
3. ALL PVC PIPE SHALL BE PURPLE PVC AWWA C900 CL305 DP14.
4. PROVIDE PURPLE METER BOX LID WITH 2-PIECE COVER W/ ONE PIECE TO HAVE A TOUCH READ HOLE (FLEX NET HOLE).
6. ALL JOINTS SHALL BE REINSRED AND WRAPPED PER DETAIL RW-23.
7. ALL DUCTILE IRON PIPE SPOOLS AND FITTINGS SHALL BE CL53 AND FUSION EPOXY LINED AND COATED.
8. GATE VALVES SHALL BE SUPPORTED BY CONCRETE, SEE DETAIL RW-10.

PIPE VAULT SIZE | LIDS | WATER METER BOX
---|---|---
4" | 30" | 48" | A6001470 (part 1) | ARMORCAST W/ MOUSE HOLES
6" | 36" | 60" | A6001457 (part 1) | ARMORCAST W/ MOUSE HOLES

9. ALL GATE VALVES SHALL HAVE BOX AND RISERS, SEE DETAIL RW-42.
10. "RECYCLED WATER DO NOT DRINK" SHALL BE CAST ONTO THE LIDS.
11. ALL PIPES SHALL BE EPOXY COATED WITH PURPLE EPOXY.
12. ALL RECYCLED PIPES SHALL BE INSTALLED A MIN. OF 4' FROM ALL POTABLE WATER MAINS AND SERVICES.
13. ALL HDPE PIPE SHALL BE PURPLE.
14. STAMP "RW" ON TOP OF THE CURB IN FRONT OF THE METER BOX.
15. PAINT INSIDE BOX PURPLE (PANTONE 512).
CONCRETE BASE, SEE DETAIL W-42

VALVE BOX AND RISER, SEE DETAIL RW-42

G4 BOX, SEE DETAIL RW-42

LOCATOR WIRE, SEE DETAIL W-40

IN-LINE VALVE, SEE DETAIL RW-16 HDPE MJ CONNECTOR OR (FLxMJ) ADAPTER

2" BRASS NIPPLE

HDPE FLANGE ADAPTER

2" x 12" BRASS NIPPLE, KEEP PIPE & FITTINGS CLEAR OF CONCRETE

REstrained ECCENTrIC TAPPED CAP w/ 2" I.P. THREAD. MJ RETAINER GLAND EBAA IRON SERIES 2000PV FOR PVC OR 1100 FOR DUCTILE IRON, OR ROMAC ALPHA TAPPED CAP, OR APPROVED EQUAL.

3" MIN LENGTH OF PURPLE PVC SD614 PIPE

NOTES:
1. LOCATOR WIRE SHALL BE CAPABLE OF EXTENDING 2' ABOVE VALVE BOXES.

CITY OF REDWOOD CITY
ENGINEERING AND TRANSPORTATION

DATE: 11/25/19

STANDARD DETAIL
RW - 5
HDPE

SECTION A-A

THRUST BLOCK, TO UNDISTURBED EARTH, SEE CITY STANDARD DETAIL W-10 FOR SIZING.

STANDARD HDPE

DATE: 11/25/19

CITY OF REDWOOD CITY
ENGINEERING AND TRANSPORTATION

2" BLOW OFF

REDWOOD CITY, California
Founded 1867

NOT TO SCALE

REDWOOD CITY, California
Founded 1867

NOT TO SCALE
6" MID LINE BLOW OFF ASSEMBLY ON NEW RECYCLED HDPE MAIN

NOTES:
1. ALL FLANGE BOLTS & NUTS SHALL BE KEPT CLEAR OF CONCRETE.
2. ALL NUTS, BOLTS, AND WASHERS SHALL BE ASTM 316 STAINLESS STEEL.
3. SEE STANDARD SPECIFICATION FOR EPOXY COATING AND LINING OF VALVES AND FITTINGS.
4. VALVE BOX CHRISTY B1324 WITH B1324-61JH CHECKER PLATE LID OR EQUAL. LID SHALL BE CAST WITH "RECYCLED WATER BLOW-OFF".
5. TAG BLOW OFF ASSEMBLY, PER RW-30.
6. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE RATED FOR 250 PSI WORKING PRESSURE AND FUSION BONDED EPOXY LINED, COATED, AND BONDED TO ANODE SYSTEM.
7. SEE STANDARD DETAIL RW-18A FOR ANODE SIZE AND CONSTRUCTION REQUIREMENTS, AND SEE STANDARD DETAIL RW-19 FOR CATHODIC PROTECTION TEST STATION HOUSING.
8. SPRAY PAINT INSIDE OF VALVE BOX PURPLE (PANTONE 512).
9. IF NOMINAL SIZE OF MAIN LINE IS 14" OR LARGER TEE RUN SHALL EXTEND DOWN AND INSTALL RESTRAINED 90° ELBOW, SEE ALTERNATE CONNECTION TO HDPE MAIN.

CITY OF REDWOOD CITY
ENGINEERING AND TRANSPORTATION

DATE: 11/25/19
GATE VALVES & BUTTERFLY VALVES

JOINT TYPES AND ADAPTERS

VALVES AT CROSSES AND TEES

IN-LINE VALVES

GATE VALVE

BUTTERFLY VALVE

CITY OF REDWOOD CITY
ENGINEERING AND TRANSPORTATION

GATE VALVES & BUTTERFLY VALVES
JOINT TYPES AND ADAPTERS

DATE: 11/25/19

STANDARD DETAIL
RW - 16
HDPE

NOT TO SCALE
**Design Parameters:**
1. Soil Bearing Value of 2000 lbs. per sq. ft.
2. DR 11 HDPE Pipe (I.P.S.) PE 4710, conforming to AWWA C906-07.
3. Design System Pressure = 100 PSI
4. Recurring Surge Pressure = 100 PSI
5. Flow Velocity = 7 FPS
6. Flex Restraint Capacity of 7000 lbs. each.
7. Pavement Surface Max. 8”
8. Safety Factor = 1.5
9. In cases not conforming to design parameters, recalculate wall dimensions, per AWWA Manual M55

**Nominal Pipe Size (L.P.S.)**
- 6”
- 8”
- 10”
- 12”
- 14”
- 16”
- 18”

**Wall Dimensions (FT)**
- W” Width
- H” Height
- D” Depth
- C” Cover
- P”

**Re-bar Spacing (In.)**
- 12”

**# of Flex Restraints**
- 3
- 4
- 5
- 6
- 7
- 8

**# of Bars**
- 2
- 4
- 4
- 4
- 4
- 6
- 8

**City of Redwood City**
**Engineering and Transportation**

**Poisson Force Restraint**
**Anchor Wall for HDPE Recycled Water Main**

**Date:** 11/25/19
CATHODIC PROTECTION TEST STATION HOUSING

**CITY OF REDWOOD CITY**
ENGINEERING AND TRANSPORTATION

**DATE:** 11/25/19

**STANDARD DETAIL**
RW - 21
PVC

ANODE BOX — CHRISTY TYPE G4 BOX OR APPROVED EQUAL EACH COVER SHALL BE CAST WITH THE LABEL "CP TEST"

Ø 14-1/4" ANODE BOX — CHRISTY TYPE G5 BOX OR APPROVED EQUAL EACH COVER SHALL BE CAST WITH THE LABEL "ANODE"

TEST BOARD DETAIL

- 4"x4"x1/4" MICARTA BOARD
- ETCHED LAMINATED LABEL (TYP.)
- 0.01 OHM SHUNT
- ANODE LEAD
- TEST LEAD #8 WHITE
- DRAIN CABLE #8 WHITE
- PROVIDE 18" SLACK ON CABLE (TYP.) #10 BLACK

3" MIN. AC PAVEMENT

EXIST. AC

CONCRETE COLLAR

CALTRANS CLASS 2AB AGGREGATE

SETTING BOX IN NON-PAVED AREA

TEST BOARD, SEE DETAIL BELOW

ANODE LEAD, TEST LEAD, AND DRAIN CABLE SHALL BE LONG ENOUGH TO EXTEND 18-INCHES BEYOND GROUND SURFACE.

NOT TO SCALE
STEPS FOR WELDING JUMPER BONDS AND LEADS:

1. FILE TO BARE METAL & CLEAN OVER SURFACE
   - Bare Metal
   - Epoxy or Asphalitic Coated
   - Clean Metal Surface by Grinding or Filing

2. STRIP INSULATION FROM WIRE AND ATTACH COPPER SLEEVE
   - Copper Wire Sleeve
   - Jumper Bond or Lead Wire

3. HOLD MOLD FIRMLY WITH OPENING AWAY FROM OPERATOR IGNITE WITH FLINT GUN.
   - Bare Metal
   - Epoxy or Asphalitic Coated Surface
   - Cadweld Exothermic Weld Kit or Approved Equal
   - Type XF Weld Metal to Ductile Iron or Type F-33 to Stainless Steel as Manufactured by Erico or Approved Equal
   - Welding Kit Shall Be Placed on Bare Metal Surface

4. REMOVE SLAG FROM CONNECTION, COVER CONNECTION WITH COMPATIBLE COATING OVER EXPOSED METAL
   - Royston Handy Cap or Approved Equal All Exposed Metal Areas Shall Be Covered
   - Coat Bond with Bitumastic 50, as Manufactured by Koppers, or Approved Equal
   - Cable

CITY OF REDWOOD CITY
ENGINEERING AND TRANSPORTATION
CATHODIC PROTECTION
EXOTHERMIC WELDING

DATE: 11/25/19
NOTES:

1. THE PETROLATUM TAPE SYSTEM IS BY TRENTON CORPORATION, DENSO PASTE AND DENSYL TAPE MADE BY DENSO NORTH AMERICA, OR APPROVED EQUAL. SEE INSTALLATION STEPS BELOW NOTES.

2. APPLICABLE TO FITTINGS IN HORIZONTAL AND VERTICAL ORIENATIONS.

3. PROVIDE A SMOOTH PROFILE ON IRREGULAR SHAPED FITTINGS SUCH AS FLANGED JOINTS AND JOINT RESTRAINTS USING MOLDED MASTIC FILLER PACKED INTO IRREGULARITIES TO ELIMINATE BRIDGING AND VOIDS PRIOR TO WRAPPING.

4. INSTALL MJ RESTRAINTS FOR ALL MJ FITTINGS EBAA 2000PV SERIES OR APPROVED EQUAL. INSTALL BELL JOINT RESTRAINT WHERE SHOWN ON PLANS, EBAA 1500 OR EBAA 2800 SERIES OR APPROVED EQUAL.

5. INSTALLATION STEPS IN ORDER ARE LISTED BELOW.
   A. APPLY PETROLATUM TAPE SYSTEM PRIMER.
   B. APPLY MOLDED PLASTIC FILLER.
   C. INSTALL PETROLATUM TAPE.
   D. INSTALL PROTECTIVE OVER-WRAP.
NOTES:
1. TRACING WIRE SHALL BE NO. 8 THHN OR HMWPE SINGLE STRANDED ELECTRICAL WIRE WITH A SOLID PURPLE JACKET.
2. TRACING WIRE SHALL BE EXTENDED TO THE TERMINUS OF EVERY LATERAL INCLUDING EXTENSION TO THE END OF BOVs, ARVs, WATER METERS, HYDRANTS, ETC.
3. TAPE LOCATOR WIRE TO ALL PIPES AT 3’ INTERVALS.
4. 3M DIRECT BURY WIRE SPLICE KIT MAY BE USED IN-LIEU OF BRASS SPLIT WIRE NUT AND COATING.

CITY OF REDWOOD CITY
ENGINEERING AND TRANSPORTATION

DATE: 11/25/19
NOTE:

1. Extensions are required for valves extending for more than 9 feet below the surface.
2. The valve stem shall be fusion epoxy coated per standard specifications.

CITY OF REDWOOD CITY
ENGINEERING AND TRANSPORTATION

VALVE STEM EXTENSION

DATE: 11/25/19

STANDARD DETAIL

RW - 41
PVC
NOTES:

1. NO TAP SHALL BE MADE WITHIN 2.5' OF A JOINT OR FITTING OR OTHER TAPS ON C.I.P. OR D.I.P.

2. NO TAP SHALL BE MADE WITHIN 3' OF A JOINT OR FITTING OR OTHER TAPS ON A.C.P. OR PVC.

3. THE CONTRACTOR PROVIDES AND Installs THE TAPPING SLEEVE, AND THE CITY WILL PERFORM THE TAP WITH CITY TAPPING MACHINE.

4. TAPPING SLEEVES SHALL BE ALL TYPE 316 STAINLESS STEEL BY SMITH BLAIR MODEL 663, JCM 6432 OR APPROVED EQUAL AND TAPPING VALVES SHALL BE MUELLER FLANGE X MECHANICAL JOINT OR APPROVED EQUAL.
ALL WATER METERS, AIR/VACUUM RELIEF VALVES, VALVES, PRESSURE REDUCING VALVES, PRESSURE SUSTAINING VALVES, CORPORATION STOPS, BLOWOFF ASSEMBLIES ETC. SHALL BE TAGGED OR LABELED INDICATING WHETHER THE DEVICES ARE ON RECYCLED WATER OR POTABLE WATER SYSTEM.

CITY OF REDWOOD CITY
ENGINEERING AND TRANSPORTATION
RECYCLED WATER IDENTIFICATION
TAG AND SITE USE DETAILS

DATE: 11/25/19