COPPER SPLIT BOLT CONNECTOR
REMOVE INSULATION
WRAP WITH 10 MIL TAPE
SEE NOTE 3
SEE NOTE 3
STANDARD VALVE BOX & COVER.
SEE SDW–304

10" MAX.

CUT 1"x1/4" SLOT FOR WIRE
SEE DETAIL OF SPLICE

DETAIL OF SPLICE
INSTALLATION AT VALVE BOX

WATER MAIN (TYP.)
SEE NOTE 3

VALVE BOX (TYP.)
SPlice RUNS TOGETHER

CONTINUOUS

SPlice RUNS TOGETHER

TYPICAL PLACING AT MAIN INTERSECTIONS

NOTES:
1. WIRE TO BE CONTINUOUS BETWEEN VALVE BOXES.
2. TRACER/LOCATOR WIRE TO BE TAPEd TO TOP OF PIPE.
3. SOLID NO. 10 COPPER WIRE INSULATED WITH HIGH MOLECULAR WEIGHT POLYETHYLENE (HMWPE) — BLUE COLOR ONLY.
   (FOR DIRECT BURIAL USE ONLY)
CHANGES IN MAIN ELEVATION, 6" – 12"

<table>
<thead>
<tr>
<th>SIZE IN PIPE</th>
<th>6&quot;</th>
<th>8&quot;</th>
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<tbody>
<tr>
<td>MINIMUM DEPTH &quot;d&quot;</td>
<td>6&quot;</td>
<td>8&quot;</td>
<td>20&quot;</td>
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<tr>
<td>YDS. CONCRETE NECESSARY TO PROVIDE WEIGHT, BLOCK &quot;B&quot;</td>
<td>0.8</td>
<td>1-1/3</td>
<td>3</td>
</tr>
<tr>
<td>BEARING AREA &quot;A&quot; SQ. FT.</td>
<td>2</td>
<td>3</td>
<td>6.5</td>
</tr>
</tbody>
</table>

**NOTE:**
1. RESTRAINED JOINTS MAY BE USED IN LIEU OF CONCRETE BLOCKING WITH THE APPROVAL OF THE ENGINEER.
2. FIRE HYDRANTS MUST BE INSTALLED WITH A THRUST BLOCK. RESTRAINED JOINTS ARE NOT ALLOWED.

**NOTES:**
1. ABOVE BEARING AREAS BASED ON 150 PSI SERVICE PRESSURE AND 2000 PSF SOIL BEARING CAPACITY. WHERE SOIL CONDITIONS REQUIRE ADJUSTMENT OF ALLOWABLE BEARING PRESSURE, IN THE OPINION OF THE ENGINEER, REQUIRED BLOCKING AREAS WILL BE ADJUSTED.
2. USE CLASS "D" CONCRETE FOR BLOCKING. SEE STANDARD SPECS.
3. VERTICAL CHANGES IN DIRECTION REQUIRE BLOCKING AS SHOWN ABOVE.
4. CONCRETE THRUST BLOCKING SHALL NOT COMPLETELY INUNDATE FITTING.
5. RESTRAINED JOINTS MAY BE USED IN LIEU OF CONCRETE BLOCKING WITH THE APPROVAL OF THE ENGINEER.
6. MAINTAIN 4" MINIMUM CLEARANCE BETWEEN NEW MAIN AND EXISTING UTILITY EXCEPT FOR GAS MAINTAIN 1'-0" CLEARANCE SEE W-106.

REV. DATE DESCRIPTION

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES
CHANGES IN MAIN ELEVATION & THRUST BLOCKING FOR WATER MAINS

APPR'D BY: NO SCALE
DATE: SEPT 6, 2017 Dwg No. W-103
SECTION ALONG PIPE

1/4" MAX. CLEARANCE

TRIM SIDE PIPE TO A CLEAN CUT UNDAMAGED END

PVC PRESSURE PIPE TO MEET AWWA C-900 SPECS OF EQUAL I.D.

1' - 6" MIN.

SECTION ACROSS PIPE

1' - 6" MIN.

1/4" MAX. CLEARANCE

UNDISTURBED EARTH OR CLASS C CONCRETE AS REQUIRED FOR SUPPORT

WATER MAIN

NOTES:
1. CONTACT CUSTOMER SERVICE @ 808-5454 FOR ALL LATERAL OR MAIN LINE BREAKS.
2. ALTERATION OF SEWER GRADES WILL BE PERMITTED ONLY AFTER PERMISSION HAS BEEN RECEIVED FROM THE ENGINEER.
NOTE:
ALL INSTALLATIONS REQUIRE A SHUT DOWN AND DEWATERING OF THE EXISTING WATER MAIN.
MINIMUM DEPTH OF COVER FROM PAVEMENT SURFACE SHALL BE 36" UNLESS APPROVED BY THE ENGINEER. IF COVER IS LESS THAN 36", THEN MAIN MATERIAL SHALL BE DUCTILE IRON AND THE MINIMUM DEPTH OF COVER SHALL BE PER THE PIPE MANUFACTURER'S RECOMMENDATIONS.

SEE NOTE 2.

VERTICAL CLEARANCE (SEE NOTE 1)

2-45° ELBOWS

(SEE NOTE 3)

WATER MAIN

SEE NOTE 2.

VERTICAL CLEARANCE (SEE NOTE 1)

STYROFOAM PAD (SEE NOTE 1)

STORM DRAIN OR SANITARY SEWER

(SEE NOTE 5)

(NO JOINTS IF VERTICAL CLEARANCE IS ≤ 12")

RAISE WATER MAIN

WATER MAIN

STORM DRAIN OR SANITARY SEWER

VERTICAL CLEARANCE (SEE NOTE 1)

2-45° ELBOWS (SEE NOTE 3)

STYROFOAM PAD (SEE NOTE 1)

(SEE NOTE 5)

(NO JOINTS)

LOWER WATER MAIN

NOTES

1. STYROFOAM PAD SHALL BE 18" SQUARE X 4" THICK REQUIRED MINIMUM VERTICAL CLEARANCES:
   • RAISE WATER MAIN:
   • LOWER WATER MAIN:
     — VERTICAL CLEARANCE MUST BE A MINIMUM OF 4". THE CONTRACTOR SHALL CONSTRUCT WATER MAIN OF ONE OF THE SPECIAL PIPES LISTED IN NOTE 2.

2. SPECIAL PIPE:
   • DUCTILE IRON PIPE
   • WELDED STEEL WATER PIPE CEMENT—MORTAR LINED AND COATED.

3. THRUST BLOCKS OR HARNESSES FOR RESTRAINING JOINTS NOT SHOWN.

4. NO WATER SERVICES ALLOWED ALONG THE RAISED OR LOWERED LENGTH OF WATER MAIN.

5. ONE FULL LENGTH OF SPECIAL PIPE (DEscribed IN NOTE 2) SHALL BE INSTALLED, CENTERED OVER THE NON-POTABLE PIPE TO BE Crossed. UNLESS DIAMETER OF NON-POTABLE PIPE IS GREATER THAN 36", THEN CONTRACTOR SHALL USE WELDED STEEL PIPE, LENGTH=20'+O.D. OF Conflicting Utility.
NOTES:
1. APPROVED BACKFLOW PREVENTION ASSEMBLIES SHALL BE TESTED IMMEDIATELY AFTER THEY ARE INSTALLED, RELOCATED OR REPAIRED AND NOT PLACED IN SERVICE UNLESS THEY ARE FUNCTIONING AS REQUIRED.
2. TESTING OF BACKFLOW PREVENTION ASSEMBLIES SHALL BE PERFORMED BY CERTIFIED BACKFLOW PREVENTION ASSEMBLY TESTERS.
3. CURRENT LISTS OF APPROVED BACKFLOW ASSEMBLIES AND CERTIFIED TESTERS ARE AVAILABLE AT THE DEPARTMENT OF UTILITIES CUSTOMER SERVICE OFFICE, 1395 35TH AVENUE.
4. THE APPROVED BACKFLOW ASSEMBLY SHALL PASS THE REQUIRED TEST PRIOR TO FILLING THE NEW WATER MAIN.
5. FOR METER/STRAINER LAY LENGTH CONTACT METER SHOP SUPERVISOR CITY OPERATOR @ 311
PLACEMENT OF FIRE HYDRANTS

1. Body of all fire hydrants shall be painted with two coats of Rust-Oleum Professional Oil Based Enamel Aluminum #7715 Color or Equal.

2. Top (bonnet or dome) of all hydrants shall be painted to the following color code according to the size of the water main the hydrants are connected to:
   - Orange: For 4" or smaller mains
   - Red: For 6" mains
   - Yellow: For 8"-10" mains
   - Green: For 12" and larger mains

3. Raised pavement markers shall be placed for each hydrant installation in accordance with Section 32-4 of these standard specifications.

4. The blue reflectors shall be placed on the hydrant side of the street 5" from the street centerline in direction of the hydrant with reflector sides facing traffic. Provide two markers for hydrants installed at major street intersections.

5. Only one (1) 6" or 12" extension may be used for fire hydrant adjustment to grade. All other additional adjustments may be made with the use of 45° elbows on the hydrant lead.

6. Operating nut and outlet nozzle cap nuts shall be pentagon in shape.

7. Fire hydrants are to be installed so the bury line is at finished grade. If this is not possible due to existing utilities then the following variance may be allowed. 2" minimum and 8" maximum, measured from the bottom of the hydrant flange to finished grade.

NOTES

ELEVATION

REV. DATE DESCRIPTION

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

FIRE HYDRANT INSTALLATIONS

APPR'D BY:  DATE: SEPT 6, 2017  DWG. NO. W-201

NO SCALE
NOTES:
1. TO BE INSTALLED ONLY IN WARRANTED AREAS,
   i.e. PARKING LOTS, HEAVY TRAFFIC AREAS, ETC.
2. 4 INCH PIPES TO BE POURED FULL OF CONCRETE. TOP OF PIPE FINISHED OFF.
3. NO TOP BRACE AT PUMPER OUTLET.
4. EXPOSED STEEL PIPE TO BE PAINTED WITH 2 COATS OF RUST-OLEUM
   PROFESSIONAL OIL BASED ENAMEL ALUMINUM (#7715) OR EQUAL.
   PRIMER AND METAL PREPARATION AS SPECIFIED BY MANUFACTURER.
NOTES:

1. "AIR GAP SEPARATION" MEANS A PHYSICAL SEPARATION BETWEEN THE DISCHARGE END OF A POTABLE WATER SUPPLY PIPELINE AND AN OPEN OR NON-PRESSURE RECEIVING TANK.

2. AN "APPROVED AIR GAP SEPARATION" SHALL BE AT LEAST TWICE THE DIAMETER OF THE SUPPLY PIPE MEASURED VERTICALLY ABOVE THE OVERFLOW RIM OF THE RECEIVING TANK. IN NO CASE SHALL THE AIR GAP BE LESS THAN ONE INCH.

3. METER IS REQUIRED FOR FILLING WATER TRUCKS AND PORTABLE EQUIPMENT. CUSTOMER SHALL PROVIDE A SECURITY DEPOSIT AND BE RESPONSIBLE FOR THE SECURITY AND CONDITION OF THE METER FOR DURATION OF THE PERMIT.

4. CUSTOMER SHALL RETURN METER TO RECEIVE REFUND OF SECURITY DEPOSIT LESS ANY UNPAID WATER USAGE FEES, DAMAGED/STOLEN METER WILL RESULT IN FORFEITURE OF ALL OR PART OF THE SECURITY DEPOSIT.
NOTES:
1. PORTABLE WATER TRUCK FILL STATIONS SHALL BE INSPECTED ANNUALLY BY THE DEPARTMENT OF UTILITIES PRIOR TO THEIR USE. METER IS REQUIRED FOR PORTABLE TANKS AND LOADING DEVICES, SEE W-504 FOR CONNECTION DETAIL.
2. ALTERNATIVE WATER TRUCK FILL STATIONS SHALL BE SUBMITTED TO THE DEPARTMENT OF UTILITIES PRIOR TO USE.
3. ONLY WATER TRUCKS WITH CURRENT PERMIT STICKER SHALL BE ALLOWED TO FILL AT PORTABLE WATER TRUCK STATIONS.
4. LOCATION OF PORTABLE WATER TRUCK FILL STATIONS BE SITE SPECIFIC.
5. NO HOSES SHALL BE LAID ACROSS STREETS OR TRAFFIC AREAS.
PLACEMENT OF VERTICAL SHOE FIRE HYDRANTS

NOTES
1. BODY OF ALL FIRE HYDRANTS SHALL BE PAINTED WITH TWO COATS OF RUST-OLEUM PROFESSIONAL OIL BASED ENAMEL ALUMINUM #7715 COLOR OR EQUAL.
2. TOP (BONNET OR DOME) OF ALL HYDRANTS SHALL BE PAINTED TO THE FOLLOWING COLOR CODE ACCORDING TO THE SIZE OF THE WATER MAIN THE HYDRANTS ARE CONNECTED TO:
   - RED: FOR 6" MAINS
   - ORANGE: FOR 8"-10" MAINS
   - GREEN: FOR 12" AND LARGER MAINS
3. THE BLUE REFLECTORS SHALL BE IN ACCORDANCE WITH SECTION 32-4 OF THESE STANDARD SPECIFICATIONS AND PLACED ON THE HYDRANT SIDE OF THE STREET 5" FROM THE STREET CENTERLINE IN DIRECTION OF THE HYDRANT WITH REFLECTOR SIDES FACING TRAFFIC. PROVIDE TWO MARKERS FOR HYDRANTS INSTALLED AT MAJOR STREET INTERSECTIONS.
4. OPERATING NUT AND OUTLET NOZZLE CAP NUTS SHALL BE 1-1/2" PENTAGON IN SHAPE.
5. FIRE HYDRANTS ARE TO BE INSTALLED SO THE BURY LINE IS AT FINISHED GRADE. IF THIS IS NOT POSSIBLE DUE TO EXISTING UTILITIES THEN THE FOLLOWING VARIANCE MAY BE ALLOWED. 2" MINIMUM AND 5" MAXIMUM, MEASURED FROM THE BOTTOM OF THE HYDRANT FLANGE TO FINISHED GRADE.
6. BARREL DRAIN OUTLET–NONE REQUIRED. IF HYDRANT IS PROVIDED WITH SUCH AN OUTLET IT MUST BE PLUGGED WITH A THREADED BRONZE OR CAST IRON PLUG.
7. FIRE HYDRANTS SHALL BE MUELLER SUPER CENTURION OR APPROVED EQUAL.

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

VERTICAL SHOE FIRE HYDRANT

APP'D BY:  NO SCALE
DATE: OCT 15, 2017  DWG. NO. W-205
2” BLOW-OFF TYPICAL INSTALLATION IN CUL-DE-SAC

PLAN

2” BLOW-OFF

WATER MAIN

CENTER OF CUL-DE-SAC

METER BOX

2” CLR.

WATER MAIN

2” BLOW-OFF ASSEMBLY

PROPERTY LINE

END OF STREET

CURB, GUTTER AND SIDEWALK

2” AND 4” BLOW-OFF LOCATION

2” SW Blow-off

STREET R/W

FINISH GRADE

2” SQUARE HEAD PLASTIC PLUG

CHRISTY B1324 H2O RATED METER BOX

OR EQUAL WITH STEEL TRAFFIC COVER

COVER 12” LOOPED LOCATING WIRE IN BOX

SAND BACKFILL FULL WIDTH OF TRENCH

LOCATING WIRE REQUIRED

SEE DETAIL W-102

WATER MAIN

CONCRETE THRUST BLOCK – SEE DETAIL W-103

D.I. CAP OR PLUG TAPPED FOR

2” PIPE IRON PIPE THREADS

ELEVATION

STANDARD 2” BLOW-OFF

FINISH GRADE OF STREET

OR EASEMENT

END OF STREET SEE

SEE DETAIL ABOVE

8” STEEL RISER

LOCATING WIRE

REQUIRED SEE

DETAIL W-102

WATER MAIN

REDUCER

GATE VALVE

4”x12” DUCTILE IRON

FLxFL SPOOL.

4” BLIND FLANGE WITH TWO

INCH TAP AND BRASS PLUG

4”MxFL – 45° w/MEGA LUG.

8 MIL POLYETHYLENE ENCAESMENT

4” DUCTILE IRON PIPE CUT TO FIT.

CONCRETE THRUST BLOCK – SEE DETAIL W-103

UNDISTURBED EARTH

ELEVATION

STANDARD 4” BLOW-OFF

REV. DATE DESCRIPTION

CITY OF SACRAMENTO

DEPARTMENT OF UTILITIES

STANDARD 2-INCH AND

4-INCH BLOW-OFF

APPR'D BY: May 2007

NO SCALE

W-301

W-301
FOR CITY STREETS, ALLEY & EASEMENTS

STANDARD VALVE BOX INSTALLATION

**NOTE:**
1. ONE (1) CONTINUOUS PIECE
2. NUT EXTENSION REQUIRED WHEN VALVE NUT IS IN EXCESS OF 30° BELOW FINISH GRADE. SEE W-308.

---

VALVE BOX INSTALLATION IN CITY STREETS, ALLEYS AND PAVED UTILITY EASEMENTS

---

VALVE BOX INSTALLATION IN PUBLIC UTILITY EASEMENTS

---

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

STANDARD VALVE BOX INSTALLATION FOR CITY STREETS, ALLEY & EASEMENTS

APPROVED BY: [Signature]
DATE: April 2012
Dwg. No: W-303
PLAN

VALVE BOX FOR STREETS AND PAVED SURFACES

SECTION A-A

SECTION B-B

SECTION C-C

NOTE:

1. VALVE BOX, VALVE BOX COVER AND DROP CAP SHALL BE CONSTRUCTED OF CAST IRON WITH MINIMUM TENSILE STRENGTH OF 25,000 P.S.I.

2. VALVE COVER WITH "L" DESIGNATION SHALL BE USED FOR NEW VALVE INSTALLATION SOUTH OF THE AMERICAN RIVER.

PLAN & LETTERS ON TOP OF DROP CAP

DROP CAP FOR PUBLIC UTILITY EASEMENTS
NOTES:

1. ALL EXISTING VALVE BOXES THAT MEET THESE STANDARDS WITH BOTTOM FLANGES MAY BE REUSED BY THE CONTRACTOR WITH THE APPROVAL OF THE ENGINEER. EXISTING DROP CAPS INSTALLED IN CITY STREETS AND ALLEYS SHALL BE REPLACED WITH STANDARD VALVE BOXES AND RETURNED TO THE CITY CORPORATION YARD.

2. ALL VALVE BOXES NOT MENTIONED IN NOTE NO.1 WILL BECOME THE PROPERTY OF AND DISPOSED OF BY THE CONTRACTOR.

3. TRACER/LOCATOR WIRE SHALL BE ADJUSTED TO 10" PER DETAIL W-102.

4. IF VALVE BONNET DEPTH IS LESS THAN 3' DEEP REPLACE ENTIRE RISER WITH SDR 35 PVC PIPE. IF VALVE BONNET IS MORE THAN 3'-DEEP, EXPOSE JUST THE TOP 3' OF THE RISER CUT SQUARE AS SHOWN @ 3', AND REPLACE TOP 3' W/SDR 35 PVC & CALDER COUPLING AS SHOWN. SEE W-303.
NOTE:
VALVE BOX COVER SHALL BE CONSTRUCTED OF DUCTILE IRON OR CAST IRON WITH MINIMUM TENSILE STRENGTH OF 25,000 P.S.I.

SECTION A-A

SERVICE BOX COVERS

NOTE:
VALVE BOX SHALL BE CONSTRUCTED OF CAST IRON WITH MINIMUM TENSILE STRENGTH OF 25,000 P.S.I.
WELD ARROW TO SHOW DIRECTION TO OPEN VALVE.

1" DIAM. FINGER HOLE (TYP.)

7-1/2" O.D.
10 GA. DISC

DISC TO REST ON TAPERED OPERATING NUT.

TAPERED OPERATING NUT, SOLID CAST

1" DIAM. SOLID STEEL ROD

1/4" PL X 2-1/2" SQ.

LENGTH VARIES (TOP OF FABRICATED EXT. TO BE 12" FROM FINISH GRADE)

NOTES:
1. REQUIRED WHEN VALVE NUT IS IN EXCESS OF 30" BELOW FINISH GRADE.
2. SET TOP OF EXTENSION 12" BELOW GRADE.
H-20 TRAFFIC LIDS

METER BOX AND LIDS

TIER 15 & TIER 22

NOTES:
1. STEEL LIDS SHALL HAVE "PROPERTY OF CITY OF SACRAMENTO" WELDED ONTO THE TOP. THE LETTERS SHALL BE 1 IN. IN HEIGHT.

2. FOR TRAFFIC INSTALLATIONS THE H-20 LID SHALL BE "LOCKED" INTO THE METER BOX BODY WITH A PENTA HEAD BOLT (0.84 P/F 18-8 STAINLESS), 3/8 - 16X1 THRD, WITH WASHER OR 3/8 - 7X3-1/2 SS PENTA HEAD AUGER BOLT.

3. THE METER BOXES AND LIDS SHALL BE FABRICATED BY THE SAME MANUFACTURER.

4. ALL LIDS SHALL BE MARKED "WATER" WITH A NOMINAL LETTERING HEIGHT OF 1-INCH.

5. ALLEYS & UNGRADED STREETS SHALL HAVE A TIER 22 BOX AND COVER FOR ALL 1" THRU 2" METERS. AND SIDEWALKS SHALL BE TIER 15.

TYPE AND SIZE BOXES:

1-INCH TO 2-INCH

FOR 1-INCH SERVICES THE NOMINAL METER BOX SIZE SHALL BE 13x24"x12"D. FOR 1 1/2-INCH AND 2-INCH SERVICES THE NOMINAL SIZE SHALL BE 17"Wx30"x12"D.

3-INCH TO 8-INCH

FOR 3" AND LARGER SERVICES LIDS SHALL HAVE TWO 1 3/4" DIAMETER HOLE WITH A 3-1/8" DIAMETER, 1/2" DEEP RECESSED AREA CENTERED OVER THE 1 3/4" DIAMETER HOLE.

3" AND 4" IN TRAFFIC = 3024 BOX W/ H20 RATED COVER.
3" AND 4" IN PLANTER AREA = RD8 BOX WITH 2 PIECE STEEL COVER R48-620 W/READING LID.
5" & 8" IN TRAFFIC = RD2 BOX WITH 2 PIECE R52-625 W/READING LID.
5" & 8" IN PLANTER AREA = R17 PL W/ H20 RATED STEEL SPRING LOADED COVER.

CITY OF SACRAMENTO

DEPARTMENT OF UTILITIES

METER BOX AND LIDS

REV | DATE | DESCRIPTION
--- | --- | ---
\[signature\] | May 10, 2019 | NO SCALE
LOCATION OF RESIDENTIAL METERED WATER SERVICES

RESIDENTIAL WATER PIPE BY PROPERTY OWNER OR PLUMBER.

4" MIN., 6" MAX. FROM BACK OF SIDEWALK OR
4" MIN., 6" MAX. FROM BACK OF CURB IF SIDEWALK
IS NOT CONTIGUOUS WITH CURB AND GUTTER.

MIN. 3' FROM STREET LIGHTS
MIN. 3' FROM FIRE HYDRANTS
MIN. 5' FROM DRAIN INLETS

RESIDENTIAL METER BOX LOCATION DETAIL
METER BOX LIDS SHALL CONFORM TO W-400 & CITY STANDARD SPECIFICATIONS

MUeller B-2470-2A-N 12 H. (FULL PORT) METER SETTER OR EQUAL

COMPACTED TO 90% NATIVE SOIL 13" MIN. 17" MAX.

4" MIN. 6" MAX. FROM BACK OF SIDEWALK OR 4" MIN. 6" MAX. FROM BACK OF CURB IF SIDEWALK IS NOT CONTIGUOUS WITH CURB & GUTTER.

EXISTING SIDEWALK OR CURB AND GUTTER

18" MIN. COVER (24" MIN. COVER IF ELECTRICAL CONDUIT IS PRESENT OR IF AGGREGATE BASE IS PLACED BENEATH CURB, GUTTER, AND SIDEWALK)

SEE NOTE 2 TO CITY WATER MAIN

3'-0"

1" TYPE K COPPER OR HOPE WATER SERVICE.

3'-0"

1" TYPE K COPPER OR HOPE WATER SERVICE.

9" MIN. 11" MAX.

10" MIN. COVER (24" MIN. COVER IF ELECTRICAL CONDUIT IS PRESENT OR IF AGGREGATE BASE IS PLACED BENEATH CURB, GUTTER, AND SIDEWALK)

NOTE:

1. CITY FORCES WILL FURNISH AND INSTALL WATER METER AFTER PLUMBING PERMIT HAS BEEN ISSUED, AND METER FEES HAVE BEEN PAID. PROPERTY WILL NOT PASS FINAL INSPECTION WITHOUT WATER METER.

2. 6 MIL POLYETHYLENE WRAP WITH 10 MIL TAPE IS REQUIRED ON COPPER SERVICE (ONLY).

3. FOR STREETS INSTALLATIONS, METER BOXES SHALL BE CONSTRUCTED OF AN H2O TRAFFIC RATED (PER AASHTO-H20 LOAD TEST) CONCRETE MATERIAL AND SHALL MEET THE CAL TRANS No. 5T OR 6T STATE SPECIFICATION. LIDS SHALL BE H2O RATED. ALL LIDS SHALL BE PER CITY STD W-400.

4. ALLEYS AND UNIMPROVED STREET SHALL HAVE A TIER 22 BOX AND COVER FOR ALL 1" TO 2" METERS.
6 MIL POLYETHYLENE WRAP WITH 10 MIL TAPE AT 5' INTERVALS ON COPPER PIPE (NOT FOR USE WITH HDPE PIPE)

LOCATING WIRE TO EXTEND TO METER BOX (FOR USE WITH HDPE PIPE ONLY)

COPPER STRAP CONNECTOR FOR COPPER PIPE (NOT FOR USE WITH HDPE PIPE)

LOCATING WIRE

CORPORATION STOP

MUELLER (CC) THREAD

CONNECT TO MAIN LOCATING WIRE WITH SPLIT BOLT CONNECTOR SEE W-102

TYPE K COPPER OR COPPER TUBING SIZED HDPE PIPE

COMPRESSION FITTING OR MUELLER INSTA-TITE FITTING FOR HDPE PIPE

INSTALL WITHIN THIS SECTOR

RUBBER OR NEOPRENE GASKET

BRONZE SERVICE SADDLE

BRONZE DOUBLE SERVICE STRAP

NOTES:
1. ALL CORPORATION STOPS TO HAVE A.W.W.A. STANDARD CORPORATION STOP THREAD (MUELLER CC) ON INLET END. OUTLET END CONNECTIONS SHALL BE FLARED OR COMPRESSION FITTINGS.

2. A BRONZE DOUBLE STRAP SERVICE SADDLE IS REQUIRED ON ALL WATER SERVICE TAPS 1" THRU 2" EXCEPT C-900. FOR C-900 SADDLE SHALL BE CAMBRIDGE SERIES 811 OR EQUAL.
**NOTE:**
CLEAR SEPARATION OF 3'-0"
SHALL BE MAINTAINED BETWEEN
ALL FITTINGS, BELLS, SADDLES, ETC.

**PLAN VIEW**

**SECTION VIEW**

**TAP EXCAVATION REQUIREMENTS**

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<thead>
<tr>
<th>MAIN SIZE</th>
<th>TAP SIZE</th>
<th>DIMENSION &quot;W&quot;</th>
<th>DIMENSION &quot;L&quot;</th>
<th>DEPTH &quot;D&quot;</th>
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<td>5'-0&quot;</td>
<td>1'-6&quot;</td>
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<td></td>
<td>4&quot;-6&quot;</td>
<td>4'-0&quot;</td>
<td>9'-0&quot;</td>
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<td>12&quot;</td>
<td>7'-0&quot;</td>
<td>9'-0&quot;</td>
<td>4'-0&quot;</td>
</tr>
</tbody>
</table>

**NOTE:**
CONTRACTOR SHALL ENSURE TRENCH SAFETY AND TRAFFIC CONTROL.
COPPER SERVICE INSTALLATION

NOTES:
1. COPPER TUBING AND METER SETTER TO BE SAME SIZE AS CORPORATION STOP.
2. SEE STANDARD DRAWING W-403 FOR DETAIL OF CONNECTION TO MAIN.
3. 6 MIL POLYETHYLENE WRAP WITH 10 MIL TAPE @ 5" INTERVALS SHALL BE REQUIRED.

HDPE SERVICE INSTALLATION

NOTES:
1. COPPER TUBING SIZE HDPE PIPE AND METER SETTER TO BE SAME SIZE AS CORPORATION STOP.
2. SEE STANDARD DRAWING W-403 FOR DETAIL OF CONNECTION TO MAIN.
3. LOCATING WIRE TERMINATING IN METER BOX SHALL EXTEND INSIDE BOX A MINIMUM OF 10".
4. CONNECT LOCATING WIRE TO HDPE USING 10 MIL TAPE @ 3" INTERVALS.
NOTES:
1. INSTALLATION AND TESTING SHALL BE IN ACCORDANCE WITH THE CURRENT CROSS CONNECTION CONTROL POLICY.
2. REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLIES SHALL BE CONNECTED TO CITY WATER AND TESTED PRIOR TO BEING PLACED INTO SERVICE.
3. POINT OF SERVICE:
   A. POINT OF SERVICE IS THE BACK OF CURB FOR ALL CITY STREETS WITH PLANTER STRIPS.
   B. POINT OF SERVICE IS THE BACK OF SIDEWALK FOR STREETS WITH SIDEWALK CONTIGUOUS WITH CURB AND GUTTER.
   C. POINT OF SERVICE IS THE RIGHT-OF-WAY LINE ON ALL ALLEYS AND UNIMPROVED STREETS.
   D. WHERE THE POINT OF SERVICE IS UNCLEAR THE LOCATION SHALL BE DETERMINED BY THE CROSS CONNECTION CONTROL SPECIALIST.
4. LISTS OF APPROVED BACKFLOW PREVENTION ASSEMBLIES AND CERTIFIED BACKFLOW PREVENTION ASSEMBLY TESTERS ARE AVAILABLE AT THE DEPARTMENT OF UTILITIES CUSTOMER SERVICE COUNTER LOCATED AT 1395 35TH AVE.
5. THE BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED ABOVE GROUND, IN A HORIZONTAL AND LEVEL POSITION. THE ASSEMBLY SHALL BE LOCATED ON THE CUSTOMER'S SIDE AND NO FURTHER THAN FIVE (5) FEET FROM THE POINT OF SERVICE OR THE METER.
6. OUTLETS, TAPS, TEES, OR CONNECTIONS BETWEEN THE WATER MAIN AND BACKFLOW PREVENTER ARE NOT ALLOWED.
7. CONCRETE PAD IS RECOMMENDED IF ASSEMBLY IS PLACED WITHIN A PROTECTIVE ENCLOSURE.
8. FREEZE BAGS ARE RECOMMENDED FOR FREEZE PROTECTION.
9. 6 MIL POLYETHYLENE WRAP WITH 10 MIL TAPE IS REQUIRED FOR ALL UNDERGROUND COPPER TUBING.
10. FOR STREETS INSTALLATIONS, METER BOXES SHALL BE CONSTRUCTED OF AN H2O TRAFFIC RATED (PER AASHTO-H2O LOAD TEST) CONCRETE MATERIAL AND SHALL MEET THE CAL TRANS NO. 5T OR 6T STATE SPECIFICATION. LIDS SHALL BE H2O RATED. ALL LIDS SHALL BE PER CITY STD W-400.
11. ALLEYS AND UNIMPROVED STREET SHALL HAVE A TIER 22 BOX AND COVER FOR ALL 1" TO 2" METERS.
12. 18" MIN. COVER (24" MIN. COVER IF ELECTRICAL CONDUIT IS PRESENT OR IF AGGREGATE BASE IS PLACED BENEATH CURB, GUTTER, AND SIDEWALK).
13. CITY FORCES WILL FURNISH AND INSTALL WATER METER AFTER PLUMBING PERMIT HAS BEEN ISSUED, AND METER FEES HAVE BEEN PAID. PROPERTY WILL NOT PASS FINAL INSPECTION WITHOUT WATER METER.

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CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

INSTALLATION OF 1 INCH RP ASSEMBLY WITH WATER METER

APPROD. BY: [Signature]
DATE: NOV 14, 2011
Dwg. NO: W-406
NOTES:

1. "AIR GAP SEPARATION" SHALL MEAN A PHYSICAL SEPARATION BETWEEN THE DISCHARGE END OF A POTABLE WATER SUPPLY PIPELINE AND AN OPEN OR NON-PRESSURE RECEIVING VESSEL. AN "APPROVED AIR-GAP SEPARATION" SHALL BE AT LEAST DOUBLE THE DIAMETER OF THE SUPPLY PIPE MEASURED VERTICALLY ABOVE THE OVERFLOW RIM OF THE RECEIVING VESSEL AND IN NO CASE SHALL BE LESS THAN 1 INCH.

2. OUTLETS, TAPS, TEEs, OR CONNECTIONS BETWEEN THE WATER MAIN AND AIR GAP SEPARATION ARE NOT ALLOWED UNLESS OTHERWISE APPROVED BY THE CROSS CONNECTION CONTROL SPECIALIST.

3. POINT OF SERVICE:
   A. POINT OF SERVICE IS THE BACK OF CURB FOR ALL CITY STREETS WITH PLANTER STRIPS.
   B. POINT OF SERVICE IS THE BACK OF SIDEWALK FOR STREETS WITH SIDEWALK CONTIGUOUS WITH CURB AND GUTTER.
   C. POINT OF SERVICE IS THE RIGHT-OF-WAY LINE ON ALL ALLEYS AND UNIMPROVED STREETS.
   D. WHERE THE POINT OF SERVICE IS UNCLEAR THE LOCATION SHALL BE DETERMINED BY THE CROSS CONNECTION CONTROL SPECIALIST.

4. PVC PIPE SHALL NOT BE USED FOR THE ABOVE GROUND PORTION OF THE INSTALLATION.

5. APPROVED AIR GAP SEPARATION SHALL BE INSTALLED WITHIN 5 FEET FROM THE POINT OF SERVICE OR 5 FEET FROM THE METER UNLESS OTHERWISE APPROVED BY THE CROSS CONNECTION CONTROL SPECIALIST.

6. PIPING INSTALLED BELOW GROUND SHALL NOT EXCEED 12 INCHES FROM THE POINT OF SERVICE OR 12 INCHES FROM THE METER IF METER IS REQUIRED.

7. INSPECTION SHALL BE BY CROSS CONNECTION CONTROL SPECIALIST.
2" TEMPORARY METERED WATER SERVICE WITH REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY

4" METERED TEMPORARY WATER SERVICE WITH REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY

NOTES:
1. CONTRACTOR/CUSTOMER SHALL BE RESPONSIBLE FOR THE SECURITY AND CONDITION OF THE METER & BACKFLOW ASSEMBLY FOR DURATION OF THE HYDRANT USE PERMIT.
2. CONTRACTOR/CUSTOMER SHALL CONTACT METER SHOP SUPERVISOR AT 808-4891 FOR METER & BACKFLOW ASSEMBLY PICK UP.
3. DAMAGED OR STOLEN METER OR BACKFLOW ASSEMBLY WILL RESULT IN FORFEITURE OF SECURITY DEPOSIT.
4. CITY TO PROVIDE TESTING AND INSTALLATION UPON PAYMENT OF SECURITY DEPOSIT.
5. NO HOSES SHALL CROSS STREETS OR TRAFFIC AREAS.
INSTALLATION OF 1 1/2 TO 2-INCH REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY W/WATER METER

NOTES:
1. INSTALLATION AND TESTING SHALL BE IN ACCORDANCE WITH THE CURRENT CROSS CONNECTION CONTROL POLICY.
2. REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLIES SHALL BE CONNECTED TO CITY WATER AND TESTED PRIOR TO BEING PLACED INTO SERVICE.
3. POINT OF SERVICE:
   A. POINT OF SERVICE IS THE BACK OF CURB FOR ALL CITY STREETS WITH PLANTER STRIPS.
   B. POINT OF SERVICE IS THE BACK OF SIDEWALK FOR STREETS WITH SIDEWALK CONTINUOUS WITH CURB AND CUTTER.
   C. POINT OF SERVICE IS THE RIGHT-OF-WAY LINE ON ALL ALLEYS AND UNIMPROVED STREETS.
   D. WHERE THE POINT OF SERVICE IS UNCLEAR THE LOCATION SHALL BE DETERMINED BY THE CROSS CONNECTION CONTROL SPECIALIST.
4. LISTS OF APPROVED BACKFLOW PREVENTION ASSEMBLIES AND CERTIFIED BACKFLOW PREVENTION ASSEMBLY TESTERS ARE AVAILABLE AT THE DEPARTMENT OF UTILITIES CUSTOMER SERVICE CENTER LOCATED AT 1305 35TH AVE.
5. THE BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED ABOVE GROUND IN A HORIZONTAL AND LEVEL POSITION. THE ASSEMBLY SHALL BE LOCATED ON THE CUSTOMER'S SIDE AND NO FURTHER THAN FIVE (5) FEET FROM THE POINT OF SERVICE OR THE METER.
6. OUTLETS, TAPS, TEES, OR CONNECTIONS BETWEEN THE WATER MAIN AND BACKFLOW PREVENTER ARE NOT ALLOWED.
7. CONCRETE PAD IS RECOMMENDED IF ASSEMBLY IS PLACED WITHIN A PROTECTIVE ENCLOSURE.
8. FREEZE BAGS ARE RECOMMENDED FOR FREEZE PROTECTION.
9. 6 MIL POLYETHYLENE WRAP WITH 10 MIL TAPE IS REQUIRED FOR ALL UNDERGROUND COPPER TUBING.
10. FOR STREETS INSTALLATIONS, METER BOXES SHALL BE CONSTRUCTED OF AN H20 TRAFFIC RATED (PER AASHTO-H20 LOAD TEST) CONCRETE MATERIAL AND SHALL MEET THE CAL TRANS No. 57 OR GT-STATE SPECIFICATION. LIDS SHALL BE H20 RATED. ALL LIDS SHALL BE PER CITY STD W-400.
11. ALLEYS AND UNIMPROVED STREET SHALL HAVE A TIER 22 BOX AND COVER FOR ALL 1” TO 2” METERS.

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES
INSTALLATION OF 1 1/2 TO 2-INCH RP ASSEMBLY WITH WATER METER
APRVED BY
DATE: SEPT 8, 2019
DRAWN NO: W-505
1 1/2" & 2" METERED WATER SERVICE INSTALLATION
WITHOUT REDUCED PRESSURE PRINCIPLE ASSEMBLY

**NOTES:**

1. **POINT OF SERVICE**
   A. POINT OF SERVICE IS THE BACK OF CURB FOR ALL CITY STREETS WITH PLANTER STRIPS.
   B. POINT OF SERVICE IS THE BACK OF SIDEWALK FOR STREETS WITH SIDEWALK CONTINUOUS WITH CURB AND GUTTER.
   C. POINT OF SERVICE IS THE RIGHT-OF-WAY LINE ON ALL ALLEYS AND UNIMPROVED STREETS.
   D. WHERE THE POINT OF SERVICE IS UNCLEAR THE LOCATION SHALL BE DETERMINED BY THE DEPARTMENT OF UTILITIES METER SUPERVISOR.

2. 6 MIL POLYETHYLENE WRAP WITH 10 MIL TAPE IS REQUIRED FOR ALL UNDERGROUND COPPER TUBING.

3. FOR STREETS INSTALLATIONS, METER BOXES SHALL BE CONSTRUCTED OF AN H2O TRAFFIC RATED (PER AASHHTO-H2O LOAD TEST) CONCRETE MATERIAL AND SHALL MEET THE CALTRANS NO. 5T OR 6T STATE SPECIFICATION. LIDS SHALL BE H2O RATED. ALL LIDS SHALL BE PER CITY STD W-400.

4. ALLEYS AND UNIMPROVED STREET SHALL HAVE A TIER 22 BOX AND COVER FOR ALL 1" TO 2" METERS.
4-INCH AND LARGER FIRE SERVICE WITH APPROVED DOUBLE CHECK VALVE ASSEMBLY

NOTES:

1. DOUBLE CHECK VALVE ASSEMBLIES SHALL BE CONNECTED TO CITY WATER AND TESTED PRIOR TO BEING PLACED INTO SERVICE.

2. POINT OF SERVICE:
   A. POINT OF SERVICE IS THE BACK OF CURB FOR ALL CITY STREETS WITH PLANTER STRIPS.
   B. POINT OF SERVICE IS THE BACK OF SIDEWALK FOR STREETS WITH SIDEWALK CONTIGUOUS WITH CURB AND GUTTER.
   C. POINT OF SERVICE IS THE RIGHT-OF-WAY LINE ON ALL ALLEYS AND UNIMPROVED STREETS.
   D. WHERE THE POINT OF SERVICE IS UNCLEAR THE LOCATION SHALL BE DETERMINED BY THE CROSS CONNECTION CONTROL SPECIALIST.

3. LISTS OF APPROVED DOUBLE CHECK VALVE ASSEMBLIES AND CERTIFIED BACKFLOW PREVENTION ASSEMBLY TESTERS ARE AVAILABLE AT THE DEPARTMENT OF UTILITIES CUSTOMER SERVICE CENTER LOCATED AT 1395 35TH AVENUE.

4. THE DOUBLE CHECK VALVE ASSEMBLIES SHALL BE INSTALLED ABOVE GROUND, IN A HORIZONTAL AND LEVEL POSITION. THE ASSEMBLY SHALL BE LOCATED ON THE CUSTOMER'S SIDE AND NO FURTHER THAN FIVE (5) FEET FROM THE POINT OF SERVICE.

5. OUTLETS, TAPS, TEES, OR CONNECTIONS BETWEEN THE WATER MAIN AND BACKFLOW PREVENTER ARE NOT ALLOWED.

6. SUPPORTS ARE REQUIRED FOR ASSEMBLIES.

7. CONCRETE PAD IS REQUIRED FOR ALL DOUBLE CHECK VALVE ASSEMBLIES ON FIRE SERVICES.

8. FOR SPECIFIC FIRE DEPARTMENT REQUIREMENTS, CONTACT CITY FIRE DEPARTMENT.

9. FREEZE BAG PROTECTION IS RECOMMENDED. BAGS USED FOR FREEZE PROTECTION SHALL BE LABELED "FIRE" IN A CONTRASTING COLOR. BAG SHALL HAVE OPENING FOR STEM IF OS&Y VALVES ARE USED.

10. BACKFLOW ASSEMBLIES MAY BE PAINTED RED AND PAINT SHALL NOT COVER THE MANUFACTURER'S IDENTIFICATION PLATE.

11. STANDARD SIGN IS REQUIRED TO BE INSTALLED ON BACKFLOW ASSEMBLY TO READ "FIRE SERVICE/CONNECTION". SIGN MUST BE PAINTED IN A CONTRASTING COLOR.

12. A 2" CLEARANCE SPACE MUST BE MAINTAINED AROUND ASSEMBLY PIPE RISERS AND CONCRETE PAD.

13. INSTALLATION AND TESTING SHALL BE IN ACCORDANCE WITH THE CURRENT CROSS CONNECTION CONTROL POLICY.
PLAN VIEW

SECTION VIEW

TYPE AND SIZE BOXES:

3" AND 4" IN TRAFFIC = 3048 BOX W/ H20 RATED COVER
3" AND 4" IN PLANTER AREA = B48 BOX WITH 2 PIECE CONCRETE COVERS.
6" IN PLANTER AREA = B52 BOX WITH 3 PIECE CONCRETE COVERS
6" IN TRAFFIC AREA = R10 PIT W/ H20 TRAFFIC RATED STEEL SPRING LOADED COVER
8" IN PLANTER AREA = R17 PIT W/ 4 PIECE STEEL COVER
8" IN TRAFFIC AREA + R17 PIT W/ H20 RATED STEEL SPRING LOADED COVER

NOTE:
1. CONTACT METER SHOP SUPV. VIA CITY OPERATOR FOR METER/STRAINER LAY LENGTH.
2. 3" ON-SITE WATER SERVICE REQUIRES A 4" TAP, 4"x3" REDUCER, 3" METER AND 3" BACKFLOW ASSEMBLY. 4" AND LARGER METER REQUIRES TAP SIZE EQUIVALENT TO METER SIZE.
1. INSTALLATION SHALL BE IN ACCORDANCE WITH THE CURRENT CROSS CONNECTION CONTROL POLICY.
2. BACKFLOW ASSEMBLIES MUST BE TESTED BY A COUNTY OF SACRAMENTO CERTIFIED BACKFLOW ASSEMBLY TESTER AT TIME OF CONNECTION TO THE CITY WATER SERVICE.
3. METER IDENTIFICATION TAG NUMBER REQUIRED ON ALL BACKFLOW ASSEMBLY TEST REPORT FORMS.
4. IRRIGATION SYSTEM MAINTENANCE CONTROL VALVE REQUIRED.
5. WATER SERVICES WILL BE TERMINATED AT ONCE IF THE BACKFLOW ASSEMBLY HAS NOT BEEN TESTED PRIOR TO BEING PLACED IN SERVICE.
6. POINT OF SERVICE FOR MEDIAN IRRIGATION SYSTEMS IS THE BACK OF CURB IN THE MEDIAN AT THE DOWNSTREAM SIDE OF THE WATER METER:
   A. BACK OF CURB FOR ALL CITY STREETS WITH PLANTER STRIPS AT THE DOWNSTREAM SIDE OF THE WATER METER.
   B. BACK OF SIDEWALK FOR ALL STREETS WITH SIDEWALK CONTIGUOUS WITH CURB AND GUTTER AT THE DOWNSTREAM SIDE OF THE WATER METER.
   C. WHERE THE POINT OF SERVICE IS UNCLEAR THE LOCATION SHALL BE DETERMINED BY THE CROSS CONNECTION CONTROL PROGRAM SPECIALIST.
7. FREEZE BAGS ARE REQUIRED ON ALL CITY MAINTAINED ASSEMBLIES.
8. CONCRETE PAD AND PROTECTIVE ENCLOSURE REQUIRED FOR ALL CITY MAINTAINED ASSEMBLIES. ENCLOSURE SHALL BE PLACER WATERWORKS PW/E1AW-M (W18'xL40'xH30") OR EQUAL. FINISH SHALL BE POWDER COATED HUNTER GREEN.
9. 6 MIL POLYETHYLENE WRAP WITH 10 MIL TAPE IS REQUIRED FOR ALL UNDERGROUND COPPER TUBING.
10. PLACE BLOCKS UNDER STAND PIPE SO SUPPORTED CLEAR OF HORIZ Pipe. STAND PIPE TO BE 8" SDR 35 WITH 910 CARSON VALVE BOX GREY IN COLOR WITH (WATER) LETTERING ON THE LID, OR APPROVED EQUAL.

2-INCH AND SMALLER METERED IRRIGATION WATER SERVICES WITH REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY IN A LANDSCAPE CORRIDOR OWNED BY CITY
INSTALLATION OF 1 1/2 & 2-INCH REDUCED PRESSURE PRINCIPAL BACKFLOW PREVENTION ASSEMBLY/WATER METER ON ALL CITY IRRIGATION SYSTEMS OWNED BY THE CITY.

NOTES:
1. INSTALLATION AND TESTING SHALL BE IN ACCORDANCE WITH THE CURRENT CROSS CONNECTION CONTROL POLICY.
2. REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLIES SHALL BE CONNECTED TO CITY WATER AND TESTED PRIOR TO BEING PLACED INTO SERVICE.
3. POINT OF SERVICE:
   A. POINT OF SERVICE IS THE BACK OF CURB FOR ALL CITY STREETS WITH PLANTER STRIPS.
   B. POINT OF SERVICE IS THE BACK OF SIDEWALK FOR STREETS WITH SIDEWALK CONTIGUOUS WITH CURB AND CUTTER.
   C. POINT OF SERVICE IS THE RIGHT-OFF-WAY LINE ON ALL ALLEYS AND UNIMPROVED STREETS.
   D. WHERE THE POINT OF SERVICE IS UNCLEAR THE LOCATION SHALL BE DETERMINED BY THE CROSS CONNECTION CONTROL SPECIALIST.
4. LISTS OF APPROVED BACKFLOW PREVENTION ASSEMBLIES AND CERTIFIED BACKFLOW PREVENTION ASSEMBLY TESTERS ARE AVAILABLE AT THE DEPARTMENT OF UTILITIES CUSTOMER SERVICE COUNTER LOCATED AT 1395 35TH AVE.
5. THE BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED ABOVE GROUND, IN A HORIZONTAL AND LEVEL POSITION. THE ASSEMBLY SHALL BE LOCATED ON THE CUSTOMER'S SIDE AND NO FURTHER THAN FIVE (5) FEET FROM THE POINT OF SERVICE OR THE METER.
6. OUTLETS, TAPS, TEES, OR CONNECTIONS BETWEEN THE WATER MAIN AND BACKFLOW PREVENTER ARE NOT ALLOWED.
7. FREEZE BAGS ARE REQUIRED ON ALL CITY MAINTAINED ASSEMBLIES.
8. CONCRETE PAD AND PROTECTIVE ENCLOSURE REQUIRED FOR ALL CITY MAINTAINED ASSEMBLIES. ENCLOSURE SHALL BE PLACER WATERWORKS PW/E1AW-M (W16 x L40 x H30") OR EQUAL. FINISH SHALL BE POWDER COATED HUNTER GREEN.
9. IF PROTECTIVE ENCLOSURE IS REQUIRED, DEPARTMENT OF UTILITIES LOCK(S) SHALL BE INSTALLED.
10. 6 MIL POLYETHYLENE WRAP WITH 10 MIL TAPE IS REQUIRED FOR ALL UNDERGROUND COPPER TUBING.
11. PLACE BLOCKS UNDER STAND PIPE SO SUPPORTED CLEAR OF HORIZ PIPE. STAND PIPE TO BE 8" SDR 35 WITH 910 CARSON VALVE BOX GREY IN COLOR WITH (WATER) LETTERING ON THE LID, OR APPROVED EQUAL.
INSTALLATION OF 3-INCH AND LARGER REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY WITH WATER METER
ON ALL CITY IRRIGATION SYSTEMS

NOTES:
1. INSTALLATION AND TESTING SHALL BE IN ACCORDANCE WITH THE CURRENT CROSS CONNECTION CONTROL POLICY.
2. REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLIES SHALL BE CONNECTED TO CITY WATER AND TESTED PRIOR TO BEING PLACED INTO SERVICE.
3. POINT OF SERVICE:
   A. POINT OF SERVICE IS THE BACK OF CURB FOR ALL CITY STREETS WITH PLANTER STRIPS.
   B. POINT OF SERVICE IS THE BACK OF SIDEWALK FOR STREETS WITH SIDEWALK CONTIGUOUS WITH CURB AND GUTTER.
   C. POINT OF SERVICE IS THE RIGHT-OF-WAY LINE ON ALL ALLEYS AND UNIMPROVED STREETS.
   D. WHERE THE POINT OF SERVICE IS UNCLEAR THE LOCATION SHALL BE DETERMINED BY THE CROSS CONNECTION CONTROL SPECIALIST.
4. LISTS OF APPROVED BACKFLOW PREVENTION ASSEMBLIES AND CERTIFIED BACKFLOW PREVENTION ASSEMBLY TESTERS ARE AVAILABLE AT THE DEPARTMENT OF UTILITIES CUSTOMER SERVICE COUNTER LOCATED AT 1395 35TH AVENUE.
5. THE BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED ABOVE GROUND, IN A HORIZONTAL AND LEVEL POSITION. THE ASSEMBLY SHALL BE LOCATED ON THE CUSTOMER'S SIDE AND NO FURTHER THAN FIVE (5) FEET FROM THE POINT OF SERVICE OR THE Meter.
6. OUTLETS, TAPS, TEES, OR CONNECTIONS BETWEEN THE WATER MAIN AND BACKFLOW PREVENTER ARE NOT ALLOWED.
7. SUPPORTS ARE REQUIRED FOR ASSEMBLIES 3-INCH AND LARGER.
8. CONCRETE CLASS "B" 4" THICK. PAD SHALL EXTEND 12" BEYOND ENCLOSURE SIDES.
9. FREEZE BAGS ARE REQUIRED FOR CITY OWNED & MAINTAINED ASSEMBLIES.
10. PROTECTIVE ENCLOSURE IS REQUIRED, FOR CITY OWNED & MAINTAINED ASSEMBLIES. ENCLOSURES FOR ASSEMBLIES 4" AND SMALLER SHALL BE PLACER WATERWORKS PW/E2AW-M (W24"X72"X48") OR EQUAL. FOR ASSEMBLIES 6" AND LARGER THE ENCLOSURE SHALL BE PW/E2AW-L (W30"X84"X60") OR EQUAL. ALL ENCLOSURES SHALL BE POWDER COATED HUNTER GREEN.
11. 6 MIL POLYETHYLENE WRAP WITH 10 MIL TAPE IS REQUIRED FOR ALL UNDERGROUND COPPER TUBING AND DUCTILE IRON PIPE.
12. 3" ON-SITE WATER SERVICE REQUIRES A 4" TAP, 4"x3" REDUCER, 3" METER AND 3" BACKFLOW ASSEMBLY. 4" AND LARGER SERVICES REQUIRE TAP SIZE EQUIVALENT TO METER SIZE.
13. PLACE BLOCKS UNDER STAND PIPE TO SUPPORT CLEAR OF HORIZ PIPE. STAND PIPE TO BE 8" SDR 35 PER W-304.
14. FOR METER/STRAINER LAY LENGTH CONTACT METER SHOP SUPV VIA CITY OPERATOR.

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

3-INCH & LARGER RP DEVICE WIMETER
ON ALL CITY IRRIGATION SYSTEMS

REV. DATE DESCRIPTION

APPR'D BY: DATE: SEPT 9, 2017 Dwg. No. W-607
INSTALLATION OF 3-INCH AND LARGER METERED WATER SERVICE WITH BACKFLOW ASSEMBLY

NOTES:
1. INSTALLATION AND TESTING SHALL BE IN ACCORDANCE WITH THE CURRENT CROSS CONNECTION CONTROL POLICY.
2. REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLIES SHALL BE CONNECTED TO CITY WATER AND TESTED PRIOR TO BEING PLACED INTO SERVICE.
3. POINT OF SERVICE:
   A. POINT OF SERVICE IS THE BACK OF CURB FOR ALL CITY STREETS WITH PLANTER STRIPS.
   B. POINT OF SERVICE IS THE BACK OF SIDEWALK FOR STREETS WITH SIDEWALK CONTIGUOUS WITH CURB AND GUTTER.
   C. POINT OF SERVICE IS THE RIGHT-OF-WAY LINE ON ALL ALLEYS AND UNIMPROVED STREETS.
   D. WHERE THE POINT OF SERVICE IS UNCLAR, THE LOCATION SHALL BE DETERMINED BY THE CROSS CONNECTION CONTROL SPECIALIST.
4. LISTS OF APPROVED BACKFLOW PREVENTION ASSEMBLIES AND CERTIFIED BACKFLOW PREVENTION ASSEMBLY TESTERS ARE AVAILABLE AT THE DEPARTMENT OF UTILITIES CUSTOMER SERVICE COUNTER LOCATED AT 1395 35TH AVE.
5. THE BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED ABOVE GROUND, IN A HORIZONTAL AND LEVEL POSITION. THE ASSEMBLY SHALL BE LOCATED ON THE CUSTOMER’S SIDE AND NO FURTHER THAN FIVE (5) FEET FROM THE POINT OF SERVICE OR THE METER.
6. OUTLETS, TAPS, TEES, OR CONNECTIONS BETWEEN THE WATER MAIN AND BACKFLOW PREVENTER ARE NOT ALLOWED UNLESS SHOWN ON THE DETAIL.
7. SUPPORTS ARE REQUIRED.
8. CONCRETE PAD IS REQUIRED. WIDTH 3’ (MIN), LENGTH 12’ (MIN) BEYOND EDGE OF PIPE, THICKNESS 4” (MIN)
9. FREEZE BAGS ARE RECOMMENDED FOR FREEZE PROTECTION.
10. 6 MIL POLYETHYLENE WRAP WITH 10 MIL TAPE IS REQUIRED FOR ALL UNDERGROUND COPPER TUBING AND DUCTILE IRON PIPE.
11. 3” ON-SITE WATER SERVICE REQUIRES A 4” TAP, 4”x3” REDUCER, 3” METER AND 3” BACKFLOW ASSEMBLY.
   4” AND LARGER METERS REQUIRE TAP SIZE EQUIVALENT TO METER SIZE.
12. DETERMINATION OF THE TYPE OF BACKFLOW ASSEMBLY REQUIRED SHALL BE MADE BY THE COS, DOU’S CROSS CONNECTION SPECIALIST.
13. PROTECTIVE ENCLOSURE IS REQUIRED, FOR CITY OWNED & MAINTAINED ASSEMBLIES. ENCLOSURES FOR ASSEMBLIES 4” AND SMALLER SHALL BE PLACER WATERWORKS PW/E2AW-M (W24”xL72”xH48”) OR EQUAL. FOR ASSEMBLIES 6” AND LARGER THE ENCLOSURE SHALL BE PW/E2AW-L (W30”xL84”xH60”) OR EQUAL. ALL ENCLOSURES SHALL BE POWDER COATED HUNTER GREEN.
14. FOR METER/STRAINER LAY LENGTH CONTACT METER SHOP SUPV CITY OPERATOR
INSTALLATION OF 3-INCH AND LARGER REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY WITH WATER METER ON NON CITY IRRIGATION AND LOOPED DOMESTIC SYSTEMS

NOTES:
1. INSTALLATION AND TESTING SHALL BE IN ACCORDANCE WITH THE CURRENT CROSS CONNECTION CONTROL POLICY.
2. REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLIES SHALL BE CONNECTED TO CITY WATER AND TESTED PRIOR TO BEING PLACED INTO SERVICE.
3. POINT OF SERVICE:
   A. POINT OF SERVICE IS THE BACK OF CURB FOR ALL CITY STREETS WITH PLANter STRIPS.
   B. POINT OF SERVICE IS THE BACK OF SIDEWALK FOR STREETS WITH SIDEWALK CONTIGUOUS WITH CURB AND GUTTER.
   C. POINT OF SERVICE IS THE RIGHT-OF-WAY LINE ON ALL ALLEYS AND UNIMPROVED STREETS.
   D. WHERE THE POINT OF SERVICE IS UNCLEAR THE LOCATION SHALL BE DETERMINED BY THE CROSS CONNECTION CONTROL SPECIALIST.
4. LISTS OF APPROVED BACKFLOW PREVENTION ASSEMBLIES AND CERTIFIED BACKFLOW PREVENTION ASSEMBLY TESTERS ARE AVAILABLE AT THE DEPARTMENT OF UTILITIES CUSTOMER SERVICE COUNTER LOCATED AT 1395 35TH AVENUE.
5. THE BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED ABOVE GROUND, IN A HORIZONTAL AND LEVEL POSITION. THE ASSEMBLY SHALL BE INSTALLED ON THE CUSTOMER'S SIDE AND NO FURTHER THAN FIVE (5) FEET FROM THE POINT OF SERVICE OR THE METER.
6. OUTLETS, TAPS, TEES, OR CONNECTIONS BETWEEN THE WATER MAIN AND BACKFLOW PREVENTER ARE NOT ALLOWED.
7. SUPPORTS ARE REQUIRED FOR ASSEMBLIES 3-INCH AND LARGER.
8. CONCRETE CLASS "B" 4" THICK. PAD SHALL EXTEND 12" BEYOND ENCLOSURE SIDES.
9. 6 MIL POLYETHYLENE WRAP WITH 10 MIL TAPE IS REQUIRED FOR ALL UNDERGROUND COPPER TUBING AND DUCTILE IRON PIPE.
10. 3" ON-SITE WATER SERVICE REQUIRES A 4" TAP, 4"X3" REDUCER, 3" METER AND 3" BACKFLOW ASSEMBLY.
    4" AND LARGER SERVICES REQUIRES TAP SIZE EQUIVALENT TO METER SIZE.
11. FOR METER/STRAINER LAY LENGTH CONTACT METER SHOP SUPV VIA CITY OPERATOR.
PLAN

SECTION A–A

TOP OF GRADE

2" FORD BALL VALVE
B11–777 OR EQUIVALENT
WITH 2" PLASTIC PLUG
THREADED TO BLIND FLANGE

24" BLIND FLANGE WITH
2" THREADED OUTLET

SLOPE CONCRETE TO DRAIN

#5 BARS (TYP.)

HEAD & COVER 3-B
MARKED "WATER"
WITH 2"X2" LETTERING

60" DIA., MIN

1'-0" (MIN.)

2" PVC DRAIN
EMBEDDED IN
CONCRETE, TOTAL 2

1'-0" (MIN.)

10"

SECTION B–B

TRANSMISSION PIPE

TYPE A CLEAN
CRUSHED ROCK

NOTE:
1. MANHOLE SHALL CONFORM
TO SECTION 25
NOTE:
1. SEE SECTION 10 FOR VALVE AND COUPLING COATINGS.
2. A ONE PIECE FULL FACED GASKET IS REQUIRED ON ALL FLANGED FITTINGS.
CHRISTY'S FPT-#10
STAINLESS MESH AIR
VENT SCREEN OR EQUAL

SCH. 40 PVC
TUBING & FITTINGS
FOR VENT PIPE

2" MIN./6" MAX.
12" MIN.
2" MIN.
12" TYP.
18" TYP.
6" TYP.

SEE NOTE 5

2" COMXCOM
CURB STOP

6# WIRE MESH
SEE NOTE 4

INSULATED LLB INLINE
CORP STOP, MEULLER
MODEL N30046N

COMXMALE
FITTING (TYP)

BRASS SERVICE
SADDLE FOR D.I.
OR PVC MAINS

WATER MAIN

PARK STRIP

12" (TYP)
FROM CURB
& SIDEWALK

18" (MIN.)
INSULATION
(SEE NOTE 3)
SLOPE

COMPRESSION TYPE
FITTINGS ONLY (COM.)
SEE NOTE 2
PIPE SHALL BE COPPER, TYPE "K"

COMXMALE FITTING (TYP)

INSULATED LLB INLINE CORP
MEULLER MODEL N30046N

WELDED FIPT OUTLET
FOR STEEL PIPE

NOTES:
1. MAINTAIN A SLOPE UPWARD FROM CORP. STOP TO AIR VALVE
   (NO TRAPS).
2. 6 MIL POLYETHYLENE ENCASEMEMENT WITH 10 MIL TAPE IS
   REQUIRED FOR ALL UNDERGROUND COPPER TUBING
3. 3/32"x6" POLYETHYLENE FOAM WRAP REQUIRED, THREE WRAPS
   AROUND THE PIPE.
4. BLOCKS TO BE PLACED UNDER STAND PIPE. STAND PIPE TO BE
   8" SDR 35 WITH 910 CARSON VALVE BOX GRAY IN COLOR WITH
   (WATER) LETTERING ON THE LID OR APPROVED EQUAL.
5. GUARDSHACK GS-1 OR APPROVED EQUAL.

1 & 2 INCH AIR VACUUM AND ARV
ABOVEGROUND INSTALL WITHOUT FLOODSAFE

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES
1 & 2 INCH AIR VACUUM AND AIR
RELEASE VALVE ABOVEGROUND
INSTALLATIONS

APPR'D BY: ____________________ NO SCALE
DATE: Nov. 22, 2019
REV. DATE DESCRIPTION

W-802
CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

1 & 2 INCH AIR VACUUM AND ARV ABOVEGROUND INSTALLATIONS

NOTES:
1. MAINTAIN A SLOPE UPWARD FROM CORP. STOP TO AIR VALVE (NO TRAPS).
2. 6 MIL POLYETHYLENE ENGASEMENT WITH 10 MIL TAPE IS REQUIRED FOR ALL UNDERGROUND COPPER TUBING
3. 3/32"x6" POLYETHYLENE FOAM WRAP REQUIRED, THREE WRAPS AROUND THE PIPE.
4. BLOCKS TO BE PLACED UNDER STAND PIPE, STAND PIPE TO BE 8" SDR 35 WITH 910 CARSON VALVE BOX GRAY IN COLOR WITH (WATER) LETTERING ON THE LID OR APPROVED EQUAL.
5. GUARDSHACK GS-1 OR APPROVED EQUAL.

1 & 2 INCH AIR VACUUM AND ARV ABOVEGROUND INSTALL
NOTE:
1. FOR D.I. WATER MAIN, INSULATED JOINT SHALL BE LOCATED AT THE GATE VALVE.
2. GUARDSHACK GS-M4, OR APPROVED EQUAL.
3. 3/32"x6" POLYETHYLENE FOAM WRAP REQUIRED, THREE WRAPS AROUND THE PIPE.
NOTE:
1. FOR D.I. WATER MAIN, INSULATED JOINT SHALL BE LOCATED AT THE GATE VALVE.
2. GUARDSHACK GS-M4, OR APPROVED EQUAL.
3. 3/32"x6" POLYETHYLENE FOAM WRAP REQUIRED, THREE WRAPS AROUND THE PIPE.

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

3 INCH & LARGER AIR VACUUM AND AIR RELEASE VALVE ABOVEGROUND INSTALLATIONS WITHOUT FLOODSAFE

APP'D BY: SEPT 6, 2017
DATE: Dwg. No. W-803

REV. DATE DESCRIPTION

SEE NOTE 2
CHRISTY'S FPT--#10 STAINLESS MESH AIR VENT SCREEN OR EQUAL
SCH. 40 PVC TUBING & FITTINGS FOR VENT PIPE
2" MIN./6" MAX.
6" (TYP.)
6# WIRE MESH
FLANGED DUCTILE IRON WRAPPED WITH 8 MIL POLYETHYLENE
D.I. FLANGED ELL

EXISTING GROUND

INSULATION NOTE 3

12" (TYP) FROM CURB & SIDEWALK

DI PIPE AS NEEDED (FULLY RESTRAINED)

MJ JOINTS WITH MEGALUG RESTRAINTS

WATER MAIN

VARIES

VIEW A-A
4" PLUG W/KEY SLOT

4" COUPLING

4" STEEL PIPE
ONE PIECE, ONE END THREADED

8 MIL POLYETHYLENE ENCASMENT

8"x4" REDUCING SLIP-ON WELDING FLANGE

8"x6" D.I. TEE

8" BLIND FLANGE

1/4"

4"

6" BEDDING

6"-90° ELL D.I. FLANGED HEAVY BODY

6" FLANGED SPOOL (IF REQUIRED TO CLEAR MAIN)

INSULATED JOINT

6" FLANGED GATE VALVE

VALVE BOX AND COVER
SEE DWG. W-303.

GROUND OR PAVED SURFACE

8" SDR 35 PVC BOTH ENDS CUT TRUE

SHAFT EXTENSION
SEE DWG. W-308.

D.I. TEE W/6"
FLANGED OUTLET

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

6-INCH BLOW OFF FOR DUCTILE IRON PIPE

APPR'D BY:  DATE:  NO SCALE

DATE:  SEPT 6, 2017  DWG. NO. W-804
4" PLUG 
W/KEY SLOT

4" COUPLING

4" STEEL PIPE
ONE PIECE, ONE 
END THREADED

8 MIL POLYETHYLENE
ENCASMENT

8"x4"
REDUCING
SLIP-ON WELDING
FLANGE

8"x6" D.I. TEE

4"

8" BLIND FLANGE

VALVE BOX AND COVER 
SEE DWG. W-303.

GROUND OR 
PAVED SURFACE

8" SDR 35 PVC 
BOTH ENDS CUT TRUE

SHAFT EXTENSION 
SEE DWG. W-308

STEEL CYLINDER

6" FLANGED 
TANGENT OUTLET

INSULATED JOINT

6" FLANGED GATE VALVE

6" BEDDING

CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

6-INCH BLOW OFF FOR WELDED 
STEEL AND CONCRETE CYLINDER PIPE

DATE: SEPT 6, 2017

APPROD BY:

REV. | DATE | DESCRIPTION
---|---|---

NO SCALE

W-805
NOTE:
1. WRAP WSP OR DIP WATER MAINS IN 8 MIL POLYETHYLENE THRU CASING THAT IS TO BE FILLED WITH SAND OR OTHER MEDIA. OMIT POLYETHYLENE WRAP THRU SEALED CASING SECTIONS THAT ARE NOT FILLED.
**ITEM**

1. HEX HEAD BOLT, AM. STD. N.C. THREAD. STAINLESS STEEL HEX HEAD BOLT, TYPE 304 (ASTM F593, GROUP 1)
2. HEX NUT, STAINLESS STEEL NUT, TYPE 304 (ASTM F594, GROUP 1) SIZE AND THREAD TO FIT HEX HEAD BOLT.
3. STEEL WASHER, 1/4" THICK, ROUND, FACES TO BE FLAT AND PARALLEL, STAINLESS STEEL.
4. INSULATING WASHER, 1/8" THICK, FABRIC REINFORCED BAKELITE, SLIP FIT OVER SLEEVE.
5. INSULATING SLEEVE, 1/32" WALL THICKNESS FABRIC REINFORCED BAKELITE.
6. INSULATING GASKET, 1/8" THICK, MICARTA, FULL FACE, AM. STD. CLASS 150 FLANGE DRILLING, NEOPRENE FACED.

**DESCRIPTION**

- WATER T-MAIN
- FLANGED SIDE OUTLET
- FLANGED GATE VALVE

**Nominal Size (In.)**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>PIPE SIZE</th>
<th>NOMINAL SIZE (IN.)</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>HEX HEAD BOLT, AM. STD. N.C. THREAD. STAINLESS STEEL HEX HEAD BOLT, TYPE 304</td>
<td>DIAMETER</td>
<td>3/4 3/4 7/8 7/8</td>
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<tr>
<td></td>
<td>(ASTM F593, GROUP 1)</td>
<td>MIN. LENGTH</td>
<td>3 1/2 3 3/4 4 4</td>
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<tr>
<td></td>
<td></td>
<td>QUANTITY</td>
<td>8 8 10 12</td>
</tr>
<tr>
<td>2.</td>
<td>HEX NUT, STAINLESS STEEL NUT, TYPE 304 (ASTM F594, GROUP 1) SIZE AND THREAD</td>
<td>QUANTITY</td>
<td>16 16 24 24</td>
</tr>
<tr>
<td></td>
<td>TO FIT HEX HEAD BOLT.</td>
<td>O. DIAMETER</td>
<td>1 9/16 1 9/16 1 3/4 1 3/4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>L. DIAMETER</td>
<td>13/16 13/16 15/16 15/16</td>
</tr>
<tr>
<td>3.</td>
<td>STEEL WASHER, 1/4&quot; THICK, ROUND, FACES TO BE FLAT AND PARALLEL, STAINLESS</td>
<td>QUANTITY</td>
<td>16 16 24 24</td>
</tr>
<tr>
<td></td>
<td>STEEL.</td>
<td>O. DIAMETER</td>
<td>1 9/16 1 9/16 1 3/4 1 3/4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>L. DIAMETER</td>
<td>13/16 13/16 15/16 15/16</td>
</tr>
<tr>
<td>4.</td>
<td>INSULATING WASHER, 1/8&quot; THICK, FABRIC REINFORCED BAKELITE, SLIP FIT OVER</td>
<td>QUANTITY</td>
<td>8 8 12 12</td>
</tr>
<tr>
<td></td>
<td>SLEEVE.</td>
<td>L. DIAMETER</td>
<td>3/4 3/4 7/8 7/8</td>
</tr>
<tr>
<td>5.</td>
<td>INSULATING SLEEVE, 1/32&quot; WALL THICKNESS FABRIC REINFORCED BAKELITE.</td>
<td>LENGTH</td>
<td>*</td>
</tr>
<tr>
<td>6.</td>
<td>INSULATING GASKET, 1/8&quot; THICK, MICARTA, FULL FACE, AM. STD. CLASS 150 FLANGE</td>
<td>O. DIAMETER</td>
<td>11 13 1/2 16 19</td>
</tr>
<tr>
<td></td>
<td>DRILLING, NEOPRENE FACED.</td>
<td>I. DIAMETER</td>
<td>I.D. OF LINED OUTLET, MINUS 1/8&quot;</td>
</tr>
</tbody>
</table>

**NOTES:**

1. VALVE AND FLANGE TO BE WRAPPED WITH 8 MIL POLYETHYLENE ENCASEMENT, AFTER ASSEMBLY.
2. RESISTANCE ACROSS FLANGE TO BE 50,000 OHMS OR HIGHER.
3. COMPONENTS ARE FOR 150 P.S.I. CLASS.

**REV.**

**DATE**

**DESCRIPTION**

**CITY OF SACRAMENTO**

**DEPARTMENT OF UTILITIES**

**FLANGE INSULATOR FOR T-MAIN SIDE OUTLET THRU 12-INCH PIPE**

**APPR'D BY:**

**NO SCALE**

**DATE:** SEPT 6, 2017

**DWC. NO.:** W-902
RUBBER GASKET CARNEGIE JOINT

- CLOTH WRAP, SECURED WITH 3/8" STEEL STRAPPING EACH SIDE.
- FIELD APPLIED MORTAR
- 1.4" T (TYP.)
- CEMENT MORTAR, SWABBED IN 18" PIPES, POINT AND TROWEL SMOOTH IN LARGER SIZES. COAT WITH APPROVED CURING COMPOUND.
- SPICOT RING, CARNEGIE OR EQUAL
- MORTAR LINING
- RUBBER GASKET
- THE CLEAR DIAMETER OF THE PIPE AFTER MORTAR LINING SHALL BE EQUAL TO OR GREATER THAN THE NOMINAL PIPE SIZE

WELD JOINT INSIDE FOR PIPE 42" AND LARGER
- 1.4" T (TYP.)
- WELD JOINT OUTSIDE FOR PIPE 36" AND SMALLER, WITH GASKET IN PLACE.
- CAULK 1/4" Ø ROD IN OPENING AND WELD IN FIELD.

WELDED CARNEGIE JOINT

- ADD 3/4" MESH STUCCO WIRE REINF. TO FIELD APPLIED MORTAR, OVERLAP WITH CLOTH WRAP SECURED AS ABOVE.
- WELD OUTSIDE PIPES LESS THAN 36" DIA.
- MORTAR LINING
- FOR OUTSIDE WELD
- CEMENT MORTAR, SWABBED IN 18" PIPES, POINT AND TROWEL SMOOTH IN LARGER SIZES. COAT WITH APPROVED CURING COMPOUND.

WELDED SLIP JOINT

- I.D. OF BELL SHALL BE BETWEEN 1/32 AND 1/16 OF AN INCH GREATER THAN O.D. OF PLAIN END FOR A DISTANCE OF 3 INCHES.
- R-T TANGENT TO CURVE
- EDGE SHALL BE SCARFed OR GROUND SLIGHTLY.
- DETAIL "A"

NOTES:
1. WALL THICKNESS "T" SHALL BE DETERMINED BY THE PIPE MANUFACTURER. THE DESIGN OF THE PIPE SHALL CONFORM TO SECTION 10.
2. USE SPACERS TO GET 1/2" CLEARANCE FOR INSIDE MORTAR JOINT ON PIPE 24" AND LARGER.

<table>
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CITY OF SACRAMENTO
DEPARTMENT OF UTILITIES

CCP AND WSP
JOINT DETAILS

APP'D BY: M. O. BRADBURY
DATE: MAY 2007
DWG. NO. W-903
CEMENT MORTAR POURED IN FIELD REINFORCED WITH 2x4x13 GA. WWM

HOLD BACK COATING (2" MIN.)

CLOTH WRAP SECURED WITH 3/8" STEEL STRAPPING EACH SIDE

STEEL RETAINING BAND (TYP.)

4" MIN. TYP.

10"±

2" 6"± 2"

STEEL BUTT-STRAP SPLIT-RING

T (MIN. 1/4")

Field Weld

NOTES:
1. WALL THICKNESS "T" SHALL BE DETERMINED BY THE PIPE MANUFACTURER. THE DESIGN OF PIPE SHALL CONFORM TO SECTION 10.
DIELECTRIC INSULATING JOINT FLANGE KIT

NOTE:
1. HARDWARE QUANTITIES IN INSULATING FLANGE KIT
   WILL VARY BASED ON GASKET PATTERN AND PIPE SIZE.
2. NUTS & STUDS SHALL BE AS SPECIFIED.
TEST STATION
HOUSING AND TEST BOARD
SEE DRAWINGS W-1004 AND W-1005

AWG #8 THWN (RED)
TEST LEAD CABLES

AWG #8 THWN (WHITE)
TEST LEAD CABLES

CABLE TO PIPE
CONNECTION (TYP.)
SEE DRAWINGS
W-1011

EXISTING MAIN

NEW MAIN OR BUTTERFLY VALVE

INSTALL DIELECTRIC
INSULATING FLANGE KIT
SEE DRAWING W-905
TEST STATION HOUSING
AND TEST BOARD
SEE DRAWINGS W-1004 AND W-1006

AWG #8 THWN (WHITE) TEST
AND DRAIN CABLE

CABLE TO PIPE CONNECTION (TYP).
SEE DRAWING W-1011

WATER TRANSMISSION MAIN
TEST STATION DETAIL
IN TRAFFIC AREAS

8" STEEL PIPE,
10 GA. 12" LONG
BOTH ENDS CUT TRUE

CRUSHED ROCK

TEST STATION DETAIL
IN NON-TRAFFIC AREAS

8" STEEL PIPE,
10 GA. 12" LONG
BOTH ENDS CUT TRUE

CRUSHED ROCK

MODIFY VALVE BOX COVER
TO READ CP-TEST

6" CONCRETE COLLAR

2" AC OR MATCH EXISTING

CLASS 2 AGGREGATE BASE

CRUSHED ROCK

MODIFY VALVE BOX COVER
TO READ CP-TEST

6" CONCRETE COLLAR

STANDARD VALVE BOX AND
COVER SEE DRAWING W-304

STANDARD VALVE BOX AND
COVER SEE DRAWING W-304
5" X 5" X 1/4" THICK MIN. MICARTA BOARD

LABEL AS SHOWN

COPPER SOLDERLESS LUG CONNECTOR (TYP.)

AWG #8 THWN (WHITE) TEST LEAD AND DRAIN CABLE
TYPICAL BONDING JOINT DETAIL

FIELD INSTALLATION PROCEDURE
PLACE BONDING CLIPS IN EXTERIOR JOINT RECESS AS SHOWN.
WELD CLIPS TO BELL AND SPIGOT USING FILLET WELDS AS SHOWN.
REMOVE SLAG FROM WELD AND FILL RECESS WITH CEMENT MORTAR COVERING ALL EXPOSED STEEL.

THE BONDING METHOD SHOWN PROVIDES ELECTRICAL CONDUCTIVITY ACROSS THE JOINT AND ACCOMMODATES RELATIVE MOVEMENT DUE TO PIPELINE SETTLEMENT. TO PROVIDE ACCESS FOR WELDING THE BONDS, RECESSES ARE CHIPPED IN THE MORTAR COATING AS REQUIRED AFTER FIELD ASSEMBLY. SEPARATE BONDING IS NOT REQUIRED WHEN JOINTS ARE FIELD WELDED.

NOTES:
1. STEEL BONDING CLIP:
MATERIAL SPEC: ASTM A366
CUT LENGTH: 2-1/2"±1/16"
WIDTH: 1-1/4"±1/16"
2. LYTHERM FILLER STRIP TO BE 1"x1-1/2" WIDE TO OVERLAP SIDES OF CLIP
3. BONDING CLIP CRIMPED OVER FILLER AT "A" TO COMPRESS FILLER
EXOTHERMIC WELD

CABLE-TO-PIPE CONNECTION FOR CONCRETE CYLINDER AND WELDED STEEL PIPE

EXOTHERMIC WELD PROCEDURE

STEP 1. FILE STRUCTURE CONNECTION AREA TO BARE SHINY METAL AND CLEAN.

STEP 2. STRIP INSULATION FROM WIRE. ATTACH SLEEVE (REQUIRED ON #6 AWG WIRE OR SMALLER.)

STEP 3. HOLD MOLD FIRMLY WITH OPENING AWAY FROM OPERATOR AND IGNITE WITH FLINT GUN.

STEP 4. REMOVE SLAG FROM CONNECTION AND PEEN WELD FOR SOUNDNESS, WITH CHIPPING HAMMER.

STEP 5. ONCE WELD HAS COOLED, COMPLETELY COVER CONNECTION AND EXPOSED STRUCTURE SURFACE WITH EPOXY COATING COMPOUND. PLACE WELD CAP OVER CONNECTION.

NOTES

1. EXOTHERMIC WELD PROCEDURE SHOWN ABOVE IS TO BE USED AS A GENERAL GUIDE ONLY. CONSULT MANUFACTURER’S LITERATURE FOR SPECIFIC SIZE AND INSTALLATION INSTRUCTIONS.

2. PUTTY USED FOR THE CABLE TO PIPE CONNECTION SEAL DAM (THERMITE CONNECTIONS) SHALL BE "A+B" EPOXY AS MANUFACTURED BY BIGGS COMPANY, OR EQUAL. ALL BONDS SHALL BE INSPECTED PRIOR TO BACKFILLING TRENCH.

3. ALL WIRE WELDS SHALL BE A MINIMUM OF 6-INCHES APART.

4. REPAIR ALL DAMAGE TO COATING AND LINING IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS.
NOTES:

1. BOND WIRES SHALL NOT BE INSTALLED ACROSS INSULATING JOINTS OR WELDED JOINTS.

2. FOR 14" AND LARGER DIAMETER PIPE AND FITTINGS, BOND WIRES SHALL BE #4 AWG/HMWPE AND TWO WIRES ARE REQUIRED PER JOINT.

3. FOR 12" DIAMETER AND SMALLER PIPE AND FITTINGS, BOND WIRE SHALL BE #8 AWG/HMWPE AND ONE WIRE IS REQUIRED PER JOINT.
NOTES:

1. INSTALL ANODES 5–FT (HORIZONTAL) OFF THE PIPE/FITTING IN NATIVE SOIL, A MIN. OF 1–FT DEEPER THAN THE FACILITY IT IS PROTECTING.

2. ANODES SHALL BE KEPT A MIN. OF 3–FT FROM STORM DRAIN AND SEWER FACILITIES, AND 5–FT FROM ALL OTHER UTILITIES (INCLUDING, BUT NOT LIMITED TO, GAS, ELECTRICAL, PHONE & CABLE)

3. ANODES MAY BE INSTALLED HORIZONTALLY OR VERTICALLY, UNLESS SPECIFICALLY DIRECTED BY THE ENGINEER.

4. ANODES SHALL BE TESTED FOR CURRENT POTENTIAL PRIOR TO EXOTHERMIC WELD TO PIPE OR CONNECTION TO TEST STATION. ANODES SHALL BE SOAKED WITH WATER AND BURIED IN NATIVE SOIL PRIOR TO TESTING. ALL ANODES SHALL BE WITHIN ±100mV FROM −1700mV (AS IT RELATES TO COPPER SULFATE) TO BE CONSIDERED A "HIGH POTENTIAL" MAGNESIUM ANODE. ALL ANODES NOT MEETING THIS CRITERIA SHALL BE REPLACED.
0.01 OHM SHUNT (TYP.)  
(8 AMP. CAPACITY)  

6"x6"x1/4" THICK MIN. MICARTA BOARD  

LABEL AS SHOWN  

COPPER SOLDERLESS LUG CONNECTOR (TYP.)  

AWG #10 THWN (BLACK) ANODE LEAD CABLES  

AWG #8 THWN (WHITE) CASING TEST LEAD AND DRAIN CABLE  

DRAIN  

ANODE  

TEST
NYLON WIRE MARKER

ANODE No. 1

CABLE

NYLON WIRE TIE STRAP

CABLE

1" DIA. BRASS TAG WITH 3/16" MIN. STAMPED WITH PIPE IDENTIFICATION