## UPDATE LOG FOR STANDARD DRAWINGS

<table>
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<td>6/1/18</td>
<td><strong>STANDARD DRAWINGS</strong></td>
</tr>
<tr>
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<td><strong>WATER STANDARD DRAWINGS</strong></td>
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<td></td>
<td>Fire Hydrant and Appurtenance Locations, Improved Streets with Curb</td>
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<tr>
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<td>Existing Water Service Abandonment</td>
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<td>6-Inch High Pressure Fire Hydrant (above 200 psi minimum design pressure)</td>
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<td>Below-Ground Blow-Off (Reclaimed)</td>
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<td>Super Fire Hydrant Assembly (Steel Pipe)</td>
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<td>6-Inch Fire Hydrant Assembly (PVC Pipe)</td>
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<td>1-Inch Air Vac and Air Release Assembly</td>
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<td>1-Inch Copper Service Lateral</td>
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<td>CML&amp;C Steel Service Lateral (4”, 6”, 8”, and 12”)</td>
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<td>PVC Service Lateral (4”, 6”, 8”, and 12”)</td>
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<td>Typical Drop-in Meter Installation</td>
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<td></td>
<td>Dual Service (Fireflow &amp; Domestic) Meter Assembly – Below-Grade (4”, 6”, 8”, and 10”)</td>
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<td>Turbine or Compound Meter Assembly – Below-Grade (3”, 4”, 6”, and 8”)</td>
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<td>Reduced Pressure Principle Backflow Prevention Assembly 2-Inch and Smaller</td>
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<td>Double Check Backflow Prevention Device – 3-Inch and Larger</td>
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<td>Above-Ground Fire Service &amp; Backflow Prevention Assembly (DCDA or RPDA)</td>
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<td>Below-Grade Double Check Detector Assembly</td>
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<td>PVC Pipe Installation</td>
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<td>Steel Casing for Steel or PVC Pipe</td>
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**Change Legend:**

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- Strike-out
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<td>6/18</td>
<td>Water Pipeline End Cap Installation (PVC)</td>
<td>Water Pipeline End Cap Installation (PVC)</td>
<td>RW-24</td>
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<td>Water Pipeline Dead End Hydrant</td>
<td>RW-24A</td>
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<td>CML&amp;C Steel Pipe Installation</td>
<td>RW-25</td>
<td>12/2016</td>
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<td>Thrust/Support Block Details</td>
<td>RW-26</td>
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<td>Thrust Block Detail—Shear Ring for CML&amp;C Steel Pipe</td>
<td>RW-26A</td>
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<td>Weld Saddle and Service Saddle Steel Pipe</td>
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<td>Fabricated Steel Fittings and Tapping Flange Outlet</td>
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<td>Valve Cap and Riser Detail</td>
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<td>Buried Valve Detail</td>
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<td>Buttstrap with Hand Hole</td>
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<td>Welded Steel Pipe</td>
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<td>Weld Detail for CML&amp;C Steel Pipe</td>
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<td>Pipe Support Detail</td>
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<td>Water Quality Sample Station</td>
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<td>Cathodic Protection Test Station</td>
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<td>Chain Link Fence Detail</td>
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<td>CP Test Box and Locator Wire Box</td>
<td>RW-47</td>
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<td>Turbine or Compound Meter Assembly - Above-Grade (3”, 4”, 6”, and 8”)</td>
<td>RW-51A</td>
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<td>SEWER STANDARD DRAWINGS</td>
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<td>Pipe Zone Bedding and Trench Backfill</td>
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<td>Concrete Caps and Encasement</td>
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<td>Sewer Lateral Normal Cut</td>
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<td>Sewer Lateral Deep Cut</td>
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<td>Sewer Lateral V.C.P. Saddle Connection</td>
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<td>Sewer Lateral Plastic Pipe Saddle Connection</td>
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<td>Connecting Dissimilar Sewer Pipes</td>
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<td>Sewer Tree Laterals and Cleanouts</td>
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<td>Terminus Manhole with House Laterals</td>
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<td>Manhole Cover and Frame - Standard and Water Tight</td>
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<td>36-Inch Two-Piece Manhole Cover and Frame – Standard and Water Tight</td>
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<td>Paving Detail around Manholes</td>
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<td>Manhole Cover and Frame - Locking Type</td>
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<td>Sewer Cleanout – Main Line</td>
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<td>36-Inch I.D. Sampling Manhole</td>
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<td>Typical Metering Manhole</td>
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<td>Sample Box #2 (Commercial)</td>
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<td>Grease Interceptor</td>
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<td>Sampling Wye</td>
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<td>Sewage Backflow Valve Assembly</td>
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NOTES:

1. PAINTING OF HYDRANTS:
   A. HYDRANTS TO BE PAINTED WITH APPROVED SAFETY YELLOW,
      PER RIVERSIDE COUNTY FIRE ORDINANCE 545.
   B. HYDRANT TOPS & NOZZLE TOPS, WITH CAPACITY GREATER THAN 999 G.P.M., TO BE GREEN.
   C. HYDRANT TOPS & NOZZLE TOPS, WITH CAPACITY FROM 500-999 G.P.M., TO BE ORANGE.
   D. HYDRANT TOPS & NOZZLE TOPS, WITH CAPACITY LESS THAN 500 G.P.M., TO BE RED.
   E. PRIVATE HYDRANTS SHALL BE PAINTED:
      1. CITY OF TEPESULA - FLEET WHITE
      2. CITY OF MURRIETA - RED
      3. COUNTY OF RIVERSIDE - RED

2. FIRE HYDRANT & APPURTENANCE PLACEMENT:
   A. CURB AND SIDEWALK SEPARATED - FIRE HYDRANT TO BE 30" BEHIND FACE OF CURB UNLESS DIRECTED OTHERWISE BY DISTRICT ENGINEER.
   B. CURB AND SIDEWALK ADJACENT - FIRE HYDRANT TO BE 18" BEHIND SIDEWALK, BUT NOT LESS THAN 6" WITHIN THE RIGHT-OF-WAY.
   C. ALL APPURTENANCES WILL BE STAKED FOR LOCATION AND ELEVATION.
   D. CONCRETE FOR THRUST BLOCKS AND SUPPORTS TO BE CLASS "C"
      (2000 P.S.I.) CONCRETE.
   E. GUARD POSTS ARE NOT REQUIRED WHERE FIRE HYDRANTS ARE ADJACENT TO CURB OR SIDEWALKS OR AS DIRECTED BY DISTRICT ENGINEER.
   F. APPURTENANCES SHALL INCLUDE THE FOLLOWING, BUT ARE NOT LIMITED TO: AIR/VAC RELEASE ASSEMBLIES, BLOW OFF ASSEMBLIES, TEST STATIONS, WATER METER BOXES AND FIRE HYDRANTS.
   G. ALL FIRE HYDRANTS, BLOW OFFS, DETECTOR CHECKS, AIR/VAC ASSEMBLIES AND WATER SERVICES, WILL BE LOCATED OUT OF DRIVEWAYS, SIDEWALKS, MAILBOXES AND/OR ANY CONCRETE STRUCTURES. ALL APPURTENANCES SHALL BE PLACED IN LAWN OR PLANTER AREAS WHERE AVAILABLE, OR OTHERWISE AS APPROVED BY DISTRICT.
   H. LANDSCAPING AROUND ALL APPURTENANCES IS LIMITED TO GROUND COVER 6" OR LESS IN HEIGHT WITHIN 2' OF APPURTENANCES.
   I. SEE DRAWING NO. 198-1A FOR APPURTENANCE LOCATIONS IN UNIMPROVED STREETS WITHOUT CURBS.
   J. PAINTING OF VALVE CASES:
      MAINLINE VALVES - HANDSPL BLUE
      FIRE HYDRANT, BLOW-OFF, FIRE SERVICE VALVES - HANDSPL BROWN
      ALL RECLAIM VALVES - MACERIA (PURPLE)
   K. MINIMUM 3' HORIZONTAL SEPARATION BETWEEN WATER AND SEWER SERVICE MATERIALS.
   L. SPECIFIC JURISDICTIONAL (AGENCY) REQUIREMENTS FOR SETBACKS AND/OR PLACEMENT OF FIRE HYDRANTS/APPURTENANCES WILL GOVERN, AND SHALL BE DEDUCED ON PLANS IF DIFFERENT THAN SHOWN HEREIN.
FIRE HYDRANT/APPURtenANCE INSTALLATIONS

CP TEST STATION, LOCATOR WIRE STATION

GUARD/MARKER POST DETAIL

NOTE
1. MARKER POST AND CONCRETE SLAB WILL NOT BE REQUIRED FOR LOCATION WIRE BOX AND CP TEST BOX LOCATED IMMEDIATELY ADJACENT TO A FIRE HYDRANT OR APPURtenANCE WHERE, AS CONFIRMED BY DISTRICT, ADEQUATE PROTECTION EXISTS.
2. REFER TO APPLICABLE NOTES ON DRAWING NO. RW-1.
3. SPECIFIC JURISDICTIONAL (AGENCY) REQUIREMENTS FOR SETBACK AND/OR PLACEMENT OF FIRE HYDRANTS/APPURtenANCES WILL GOVERN AND SHALL BE DEPicted ON PLANS IF DIFFERENT THAN SHOWN HEREIN.
FLANGED OUTLET
(4" AND LARGER CONNECTION)

SADDLE/THREADED OUTLET
(3/4" THRU 2" CONNECTION)

NOTES:
THE FOLLOWING SHALL BE THE STEPS TAKEN TO ABANDON EXISTING WATER APPURTENANCES:

1. PRIOR APPROVAL FROM ROWD SHALL BE OBTAINED IN THE FORM OF APPROVED PLANS, INSPECTION PACKAGE, AND SERVICE ABANDONMENT AGREEMENT BETWEEN ROWD AND PROPERTY OWNER.

2. CONTRACTOR SHALL:
   A. COORDINATE WITH ROWD TO REMOVE EXISTING METERS ON WATER SERVICES AND FIRE DETECTOR ASSEMBLIES.
   B. COORDINATE WITH ROWD TO SHUT-DOWN/ISOLATE MAIN FROM SERVICE.
   C. EXCAVATE DOWN TO GAIN ACCESS TO CONNECTION POINT AT MAIN AND LATERAL FOR REMOVAL.
   D. CUT AND CRIMP EXISTING COPPER SERVICES 12" TO 18" AWAY FROM THE SERVICE CONNECTION AND LEAVE IN PLACE. MAINS LARGER THAN 2" SHALL BE CUT 18" TO 28" FROM SERVICE CONNECTION AND HAVE REMAINING 18" OF THE PIPE PLUGGED WITH CONCRETE AND ABANDONED IN PLACE UNLESS PLANS SPECIFY THE REMOVAL OF THE REMAINING PIPE.
   E. EXCAVATE DOWN TO AND REMOVE THE RISER TO THE WATER METER OR FIRE SERVICE. CUT AND CRIMP, OR PLUG WITH CONCRETE (18 INCH MINIMUM), THE REMAINING SERVICE LINES.
   F. BACKFILL AND COMPACTION THE EXCAVATIONS IN ACCORDANCE WITH ROWD STANDARDS AND SPECIFICATIONS AND/OR ENCROACHMENT PERMIT.
   G. REPAIR ANY REMOVED PAVEMENT MATERIALS IN ACCORDANCE WITH ENCROACHMENT PERMIT REQUIREMENTS OR ROWD STANDARDS.
   H. CONTACT ROWD TO RECHARGE THE WATER MAIN AFTER SERVICE HAS BEEN ABANDONED. 
1. **Flanged Outlet or Weld Saddle** per RW-28 (on welded steel main) or flanged ductile iron tee (on PVC main) with flanged ductile iron or CML&C 45° ell.

2. **Flange.**

3. **Flanged Resilient Seated Gate Valve** per RW-31.


5. **CML&C WSP and Fittings or PVC C-900 W/DI Fittings.**

6. **CML&C WSP or DI TEE. (Flanged)**

7. **Blind Flange.**

8. **Grooved Coupling and Spool. (Steel Pipe)**

9. **Precast Concrete Vault, Brooks 733A with 3/8" Bolt Down Diamond Plate Steel Cover.**

10. **Concrete Thrust/Support Block (5' x 3' x 3'), Placed Against Undisturbed Earth. Concrete Shall Be Class 'C' (2,000 psi Min).**

11. **1' Crushed Rock Base.**

12. **2' Cut to Fit. Ship Flange Loose.**

13. **Recycled Watermain**

### Notes:

1. **CML&C STL field joints may be flanged or welded but shall not permanently impair lining of pipe.**

2. **Grout all bare steel and iron.**

3. **Cold-apply wax tape coating to all bolts, nuts and flanges per specifications.**

4. **Placement of Blow-off shall be per RW-1 and RW-1A.**

5. **Refer to RW-36 for coating bonded joints.**

6. **For potable water mains reference applicable fire hydrant detail at Blow-off locations.**
1. REFER TO RW-1 OR RW-1A, "FIRE HYDRANT AND APPURTENANCE LOCATIONS".
2. FIRE HYDRANTS TO BE PAINTED PER RW-1.
3. GROUT ALL BARE STEEL AND IRON.
4. COLD-APPLY WAX TAPE COATING TO ALL BOLTS, NUTS AND FLANGES PER SPECIFICATIONS.
5. LARGE OUTLET TO BE POINTED TOWARDS THE STREET.
6. REFER TO RW-36 FOR COATING BONDED JOINTS.
7. INSTALL BLUE REFLECTING PAVEMENT MARKER PER FIRE DEPARTMENT STANDARDS.
8. USE CLASS "E" OR CLASS "I" FLANGES AS APPROPRIATE PER SPECIFICATIONS.
9. INSTALL BREAKOFF CHECK VALVE WHERE NOTED ON PLANS.
NOTES:
1. REFER TO RW-1 OR RW-1A, "APPURtenANCE LOCATIONS & NOTES."
2. FIRE HYDRANTS TO BE PAINTED PER RW-1
3. CROUT ALL BARE STEEL AND IRON.
4. COLO-APPLY WAX TAPE COATING TO ALL BOLTS, NUTS, AND FLANGES PER SPECIFICATIONS.
5. LARGE OUTLET TO BE POINTED TOWARDS THE STREET.
6. REFER TO RW-22 FOR LOCATOR WIRE REQUIREMENT AND INSTALLATION.
7. INSTALL BLUE REFLECTIVE PAVEMENT MARKER PER FIRE DEPARTMENT STANDARDS.
1. REFER TO RW-1 OR RW-1A, "APPENDIX LOCATIONS AND NOTES".
2. FIRE HYDRANTS TO BE PAINTED PER RW-1.
3. GROUT ALL BARE STEEL AND IRON.
4. COLD-APPLY WAX TAPE COATING TO ALL BOLTS, NUTS, AND FLANCS PER SPECIFICATIONS.
5. DIRECTION OF OUTLETS AT STREET TO BE 45° POINTED TOWARDS THE STREET.
6. REFER TO RW-36 FOR COATING BONDED JOINTS.
7. INSTALL BLUE METAL REFLECTING PAVEMENT MARKER PER FIRE DEPARTMENT STANDARDS.
8. USE CLASS "E" OR CLASS "4" FLANCS AS APPROPRIATE PER SPECIFICATIONS.
9. INSTALL BREAK-OFF CHECK VALVE WHERE NOTED ON PLANS.
Rancho California Water District

Plan

- CMI&C STEEL P.V.C OR A.C. PIPE
- MIN. 5" SEPARATION BETWEEN OUTLET & PIPE JOINT.
- SUPPORT BLOCK PER RW-26
- 6" TEE OR TAPPING SADDLE OUTLET (FOR STEEL MAINS WELD SADDLE PER RW-28)
- SEE NOTE 5
- 6" P.V.C PIPE
- EDGE OF ROADWAY
- SEE RW-1 OR RW-1A FOR LOCATION

Profile

- 6" X 4" X 2-1/2" FIRE HYDRANT HEAD
- 6" BREAKOFF SPOOL-12" MIN. OR 8 HOLE X 8 HOLE WITH BREAKOFF BOLTS AS REQUIRED BY R.W.
- 18" MIN. PER NFPA 24
- F.G.
- 6" D.L. HYDRANT BURY (FLG X RU)
- SEE RW-26 FOR SUPPORT BLOCK DETAILS

NOTES:
1. REFER TO RW-1 OR RW-1A, "APPURTENANCE LOCATIONS AND NOTES".
2. FIRE HYDRANTS TO BE PAINTED PER RW-1.
3. GROUT ALL BARE STEEL AND IRON.
4. COLO-APPLY WAX TAPE COATING TO ALL BOLTS, NUTS AND FLANGES PER SPECIFICATIONS.
5. DIRECTION OF OUTLETS SHALL BE AT 45° POINTED TOWARDS THE STREET.
6. REFER TO RW-22 FOR LOCATOR WIRE REQUIREMENT AND INSTALLATION.
7. INSTALL BLUE RETRO REFLECTING PAVEMENT MARKER PER FIRE DEPARTMENT STANDARDS.
8. INSTALL BREAKOFF CHECK VALVE WHERE NOTED ON PLANS
### NOTES:

1. **ALL BRASS/COPPER TUBING AND FITTINGS SHALL BE**: DOUBLE TAPE WRAPPED/COVERED WITH POLYPIPE TAPE, GUARD COAT=PORTABLE WATER, PORT LE=RECYCLED WATER.

2. **REFER TO RW-1 OR RW-1A FOR PLACEMENT**.

3. **LANDSCAPING AROUND AIR VAC ASSEMBLY IS LIMITED TO**: GROUND COVER 6" OR LESS IN HEIGHT WITHIN 2' OF ASSEMBLY.

### STANDARD DRAWING

**DESCRIPTION**

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<td>3</td>
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NOTES:
1. LOCATION AND PLANTING OF AV/AR UNIT PER RW-1 OR RW-1-A.
2. GROUT ALL BARE STEEL.
3. APPLY WAX TAPE COATING TO ALL BOLTS, NUTS AND PLATES PER SPECIFICATIONS. WRAP WITH 8 MIL POLYETHYLENE.
DETAIL "A"
UNMETERED CONSTRUCTION CONNECTION

NOTE:
1. ALL METER BOXES WILL BE STAKED FOR LOCATION AND ELEVATION. REFER TO RW-1 OR RW-1A.
2. BALL VALVE TYPE ANGLE STOPS – REFER TO ROAD SPECIAL PROVISIONS LIST OF APPROVED MATERIALS.
1. STAMP CURB WITH "A" FOR LATERAL LOCATION.
2. METER BOX LOCATION PER RW-1 & RW-14.
3. ALL METER BOXES SHALL BE STAKED FOR LOCATION AND ELEVATION.
4. NO DIPS OR POCKETS IN LATERAL WILL BE ALLOWED.
5. SEE RW-16 FOR METER BOX AND COMPONENTS.
6. ALL BARRE IRON & STEEL SHALL BE COATED WITH CEMENT MORTAR.
7. SERVICE SADDLE TO HAVE A MIN. 12" SEPARATION FROM ANY PIPE JOINTS UNLESS OTHERWISE APPROVED BY RW.
8. METER BOXES SHALL BE PLACED IN LAWN OR PLANTER AREAS ONLY. METER BOXES SHALL NOT BE PLACED IN SIDEWALKS, DRIVEWAYS, HANDICAPPED RAMPS, ETC.
9. MINIMUM 3'-0" SEPARATION BETWEEN WATER AND OTHER LATERALS AND BETWEEN WATER AND RECYCLED WATER LATERALS.
NOTES:
1. STAMP CURB WITH "W" FOR LATERAL LOCATION.
2. METER BOX LOCATION IS 7-1/2" FROM FACE OF CURB OR AS DIRECTED BY THE DISTRICT ENGINEER.
3. ALL METER BOXES SHALL BE STAKED FOR LOCATION AND ELEVATION.
4. NO DIPS OR POCKETS IN LATERAL WILL BE ALLOWED.
5. SEE RW-16 FOR METER BOX AND COMPONENTS.
6. ALL BARE IRON & STEEL SHALL BE COATED WITH CEMENT MORTAR.
7. SERVICE SADDLE TO HAVE A MIN. 12" SEPARATION FROM ANY PIPE JOINTS UNLESS OTHERWISE APPROVED BY RW.
8. METER BOXES SHALL BE PLACED IN LAWN OR PLANTED AREAS. METER BOXES SHALL NOT BE PLACED IN SIDEWALKS, DRIVEWAYS, HANDICAPPED RAMPS.
9. MINIMUM 5'-0" SEPARATION BETWEEN WATER AND SEWER LATERALS AND BETWEEN WATER AND RECYCLED WATER LATERALS.
NOTES:
1. GROUT ALL BARE STEEL AND IRON.
2. FULLY RESTRRAIN ALL JOINTS.
3. COLD-APPLY WAX TAPE COATING TO ALL BOLTS, NUTS AND FLANGES PER SPECIFICATIONS.
4. REFER TO RW-36 FOR COATING BONDED JOINTS.
5. ADDITIONAL RWGV AT DISTRICT DISCRETION
NOTES:
1. GROUT ALL BARE STEEL & IRON.
2. ALL JOINTS TO BE RETRAINED.
3. COLD-APPLY WAX TAPE COATING TO ALL BOLTS,
   NUTS AND FLANGES PER SPECIFICATIONS.
4. ADDITIONAL RIGID AT DISTRICT DISCRETION.
SECTION VIEW

NOTES

1. Stamp curb with "W" for lateral location.

2. Meter box location is 7 1/2" from face of curb or as directed by the district engineer.
   (Refer standard drawing RW-1 and RW-14)

3. All meter boxes will be staked for location and elevation.

4. No GPS or pockets in lateral will be allowed.

5. Meter box will be an 18" x 21" x 12" plastic flip-type meter box with 7/8" cover.

6. When no curb is existing or to be installed, place back edge of meter box 3'-0" from property line.

7. Landscaping around meter box is limited to ground cover 6" or less in height within 2' of meter box.

8. Angle stops - refer to local special provisions for list of approved materials.

9. Meter boxes shall be placed in lawn or planter areas only. Meters shall not be placed in sidewalks, driveways, handicapped ramps, etc.

10. Applicable one and two family residential units only.

11. Single service line to building/structure, tee for residential fire sprinklers must be within 12 inches of building/structure.

* If service requires pressure regulating, as determined by district, then refer to RW-16A.

SCHEMATIC PLAN VIEW

WATER SERVICE LATERAL FOR RW-13 OR RW-14

(WATER METER ASSEMBLY-FURNISHED & INSTALLED BY DISTRICT

BY CONTRACTOR)
NOTES:
1. ALL PIPE WITHIN VAULT TO BE DUCTILE IRON OR STEEL
2. SERVICE LATERAL AND MAIN-RUN PIPING TO MATCH METER SIZE (10' METERS TO USE 12' PIPE)
3. COAT ALL BOLTS AND BARE METAL PER SPECIFICATIONS.
4. REFER TO RW-15 AND RW-15A FOR SERVICE LATERAL
5. ON 3 PIECE COVERS, MIDDLE COVER SHOULD BE REINFORCED TO PREVENT FROM BUCKLING.
6. ALL VAULTS OVER 4' DEEP ARE REQUIRED TO HAVE ACCESS LADDERS.
7. BY-PASS TO BE HALF THE DIAMETER OF THE MAIN SERVICE RUN IN INCREMENTS OF 2", 4" AND 6" (2" BRASS FITTINGS, ALL OTHERS DUCTILE IRON)
8. FOR BY-PASS, 2" AND SMALLER, USE LOCKING COMP. STOP IN LUG OF 0.5" Y VALVE
9. LANDSCAPING AROUND METER BOX IS LIMITED TO GROUND COVER 6' OR LESS IN WIDTH WITHIN 2' OF METER BOX.
10. RESTRAIN ALL JOINTS (D.I. PIPE), WELD ALL JOINTS (STEEL PIPE)
NOTES:
1. ALL PIPING WITHIN VAULT TO BE DUCTILE IRON OR STEEL.
2. SERVICE LATERAL AND MAIN-RUN PIPING TO MATCH METER SIZE (3" METER TO USE 4" PIPE).
3. COAT ALL BOLTS AND NUT WITH METAL PRIMER.
4. REFER TO RW-15 AND RW-15A FOR SERVICE LATERAL.
5. ON 3 PIECE COVERS, WHEEL COVER SHOULD BE REINFORCED TO PREVENT FROM BUCKLING.
6. ALL VAULTS OVER 4' DEEP ARE REQUIRED TO HAVE ACCESS LADDER.
7. BY-PASS TO BE HAT THE DIAMETER OF THE MAIN SERVICE RUN IN INCREMENTS OF MIN. 3", 4" AND 6" (2" BRASS FITTINGS, ALL OTHERS DUCTILE IRON).
8. FOR BY-PASS, 2" & SMALLER, USE LOCKING COMP. STOP IN LUG OF O.S. & Y VALVE.
9. LANDSCAPING AROUND METER BOX IS LIMITED TO GROUND COVER 6" OR LESS IN HEIGH WITHIN 2' OF METER BOX.
10. REPAIR ALL JOINTS (O.I PIPE), WELD ALL JOINTS (STEEL PIPE).

| NO. | DESCRIPTION                        | QTY.
|-----|------------------------------------|------
| 1   | R.C.W.O. APPROVED COMPOUND METER ASSEMBLY | 1    
| 2   | FLG. X G.T. ADAPTER FOR PVC, FLG FOR DUCTILE IRON | 1    
| 3   | 3" LONG FLG." D.I SPOIL FOR PVC, DUCTILE IRON PIPE FOR STEEL | 1    
| 4   | ALUMINUM SPRING LOADED W. (PARKWAY COVER) "X"  | 1    
| 5   | CONCRETE UTILITY BOX (SEE DETAIL) | 1    
| 6   | 18" LONG FLG." NIPPLE, DUCTILE IRON PIPE FOR STEEL | 1    
| 7   | Soutte Couplings FOR PVC, INTEGRAL COUPLINGS | 1    
| 8   | D.I. OR DUCTILE IRON ST. | 1    
| 9   | APPROVED BACKFLOW PREVENTION ASSEMBLY (SEE RW-19) | 1    
| 10  | O.S.Y. VALVES WITH LOCK AND CHAIN | 2    
| 11  | METALLIC COUPLING | 1    
| 12  | STAINLESS ASSEMBLY | AS RED. 
| 13  | FLG." NIPPLE - D.I.P, DUCTILE IRON PIPE FOR STEEL - MIN. 5 PIPE DIAMETERS IN LENGTH | AS RED. 

<table>
<thead>
<tr>
<th>VAULT SIZE (INSIDE DIM. IN FEET)</th>
<th>3 PIECE COVER **</th>
<th>C</th>
<th>D</th>
<th>E</th>
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<td>8&quot;</td>
<td>55.7 x 58</td>
<td>17.0</td>
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BELOW-GRADE METER REQUIRES SPECIAL APPROVAL BY RCWD (SUBJECT TO DISTRICT'S DISCRETION, AND MAY NOT BE GRANTED)

Rancho Water
Rancho California Water District

TURBINE OR COMPOUND BELOW GRADE METER ASSEMBLY
(3", 4", 6" AND 8"

SCALE 1/8"
NOTES:

1. ALL INSTALLATIONS SHALL BE ABOVE GROUND.

2. ALL BACKFLOW PREVENTION DEVICES SHALL BE IMMEDIATELY ADJACENT TO THE WATER METER UNLESS APPROVED BY RCWD PRIOR TO INSTALLATION.

3. THE BACKFLOW PREVENTION DEVICE SHALL BE SELECTED FROM THE APPROVED USB LIST ON FILE WITH THE DISTRICT.

4. NO CONNECTIONS SHALL BE MADE BETWEEN THE WATER METER AND THE BACKFLOW DEVICE.

5. TYPE OF BACKFLOW PREVENTION DEVICE SHALL BE BASED ON THE DEGREE OF HAZARD, AS DETERMINED BY RCWD.

6. APPROPRIATE TEST COCKS SHALL BE IN PLACE AT ALL TIMES.

7. DISTRICT SHALL HAVE ACCESS TO BACKFLOW PREVENTION DEVICE FOR THE INITIAL CERTIFICATION TEST.

8. REFER TO STANDARD DRAWINGS FOR INSTALLATION OF WATER METER & SERVICE.

9. NIPPLES SHALL BE BRASS, COPPER, OR GALVANIZED STEEL. (NO PVC)

MATERIALS

A. BACKFLOW PREVENTION DEVICE (U.S.C. APPROVED)
B. 90° ELBOW
C. UNION (THREADED UNION RECOMMENDED FOR REMOVAL AND REPAIR OF DEVICE)
D. PIP/E/PPIPE VARIES IN LENGTH (SEE NOTE NO. 9)
NOTES
A. ALL INSTALLATIONS SHALL BE ABOVE GROUND.
B. ALL BACKFLOW PREVENTION DEVICES SHALL BE IMMEDIATELY ADJACENT TO THE WATER METER.
C. THE BACKFLOW PREVENTION DEVICE SHALL BE SELECTED FROM THE U.S.C. APPROVED LIST ON FILE WITH THE DISTRICT.
D. NO CONNECTIONS SHALL BE MADE BETWEEN THE WATER METER AND THE BACKFLOW PREVENTION DEVICE.
E. TYPE OF BACKFLOW PREVENTION DEVICE SHALL BE BASED ON THE DEGREE OF HAZARD, AS DETERMINED BY ROWD.
F. APPROPRIATE TEST COCKS SHALL BE IN PLACE AT ALL TIMES.
G. DISTRICT SHALL HAVE UNOBSERVED ACCESS TO BACKFLOW PREVENTION DEVICE.
H. REFER TO APPLICABLE ROWD STANDARD DRAWINGS FOR INSTALLATION OF WATER METER & SERVICE.

MATERIALS
1. GATE VALVE WITH HANDWHEEL OPERATOR
2. BACKFLOW PREVENTION DEVICE (U.S.C. APPROVED)
3. VALVE SUPPORTS, SEE DETAIL BELOW
4. 90° DUCTILE IRON ELBOW
5. TEST COCK (4 REQUIRED)
6. CONCRETE PAD, 12"x12"x6"
7. PIPING BETWEEN METER AND BACKFLOW DEVICE SHALL BE DUCTILE IRON OR STEEL (NO PVC)
8. CONCRETE THRUST/SUPPORT BLOCK PER RW-26

VALVE SUPPORT DETAIL
MATERIALS

1. GATE VALVE WITH HANDWHEEL OPERATOR
2. DOUBLE CHECK BACKFLOW PREVENTION DEVICE (U.S.C. APPROVED)
3. VALVE SUPPORT, SEE DETAIL NOTE"A"
4. 90° DUCTILE IRON ELBOW
5. TEST COCK (4 REQUIRED)
6. CONCRETE PAD, 12" x 12" x 6"
7. PIPING BETWEEN METER AND BACKFLOW DEVICE SHALL BE DUCTILE IRON OR STEEL (NO PVC)
8. CONCRETE THRUST/SUPPORT BLOCK PER RW-26

NOTES

A. ALL INSTALLATIONS SHALL BE ABOVE GROUND.
B. ALL DOUBLE CHECK BACKFLOW PREVENTION DEVICES SHALL BE IMMEDIATELY ADJACENT TO THE WATER METER.
C. THE BACKFLOW PREVENTION DEVICE SHALL BE SELECTED FROM THE U.S.C. APPROVED LIST ON FILE WITH THE DISTRICT.
D. NO CONNECTIONS SHALL BE MADE OR EQUIPMENT INSTALLED BETWEEN THE WATER METER AND THE BACKFLOW PREVENTION DEVICE.
E. Appropriate test cocks shall be in place at all times.
F. DISTRICT SHALL HAVE UNOBTURBANCE ACCESS TO BACKFLOW PREVENTION DEVICE
G. REFER TO APPLICABLE RW STANDARD DRAWINGS FOR INSTALLATION OF WATER METER & SERVICE

VALVE SUPPORT DETAIL

- 4" x 4" x 4" x 4" Long Structural
- 2" Iron Pipe
- 4 1/2" x 3" J-Hooks
- 12" x 12" x 6" Concrete Slab
NOTES:
1. ALL PIPING WITHIN VAULT TO BE DUCTILE IRON OR STEEL.
2. COAT ALL BOLTS AND BARE METAL PER SPECIFICATIONS.
3. CUT 8" METER READ HOLE IN ALL COVERS OVER METER REGISTERS.
4. ON 3 PIECE COVERS, MIDDLE COVER SHOULD BE REINFORCED TO PREVENT FROM BUCKLING.
5. ALL VAULTS OVER 4FT DEEP ARE REQUIRED TO HAVE ACCESS LADDERS.
6. RESTRAIN ALL JOINTS.
7. EASEMENT REQUIRED IF D.C.O.A. ASSEMBLY ENCLOSES INTO PRIVATE PROPERTY.
8. APPROPRIATE TEST COCKS SHALL BE IN PLACE AT ALL TIMES.
9. DISTRICT SHALL HAVE UNRESTRICTED ACCESS TO D.C.O.A. DEVICE.
10. REDUCED PRESSURE DETECTOR ASSEMBLY (RPDA) REQUIRED IF SITE IS IRRIGATED WITH RECYCLED WATER AND AT THE DISTRICT DISCRETION.

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<td>6&quot; X 6&quot; X 6&quot; D.C.O.A. SEE DETAIL</td>
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<td>P.V.C. (D-800, CL 150 MIN.) REINFORCE ALL JOINTS</td>
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<td>C.S. &amp; Y. VALVES WITH LOCK AND CHAIN</td>
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<td>BY-PASS METER READER TO READ IN GALLON FEET</td>
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</tr>
<tr>
<td>10&quot;</td>
<td>10'-0&quot;</td>
<td>5'-3&quot;</td>
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* BELOW GRADE D.C.O.A. REQUIRES SPECIAL APPROVAL BY MEAD. (SUBJECT TO DISTRICT'S DISCRETION AND MAY NOT BE GRANTED)
NOTES

1. THE BACKFILL MATERIAL IN THE PIPE ZONE MAY CONSIST OF MATERIAL FROM THE EXCAVATION WHERE THAT MATERIAL IS A UNIFORMLY GRADED GRANULAR SOIL FREE FROM STONES OR LUMPS EXCEEDING 3/4" IN MAX. DIA. VEGETATIVE MATTER, OR OTHER UNSATISFACTORY MATERIAL HAVING NOT LESS THAN 95% RELATIVE DENSITY AND SAND EQUIVALENT (SE) VALUE OF 30 (MIN).


3. WHEN INSTALLING PVC, CONTRACTOR TO EXCAVATE BELOW ALL BELLS/JOINTS TO A DEPTH WHICH ALLOWS THE PIPE TO REST IN A UNIFORM MANNER.

4. INSTALL #4 ARIA AND LOCATOR WIRE WITH APPROPRIATE MATERIAL TO GROUND SURFACE. TERMINATE LOCATOR WIRE IN LOCATOR WIRE BOX PER RW-47. LOCATOR WIRE SHALL BE INSTALLED AT A MAXIMUM OF EVERY 500' INTERVAL ALONG THE PVC MAIN. SPACED AT 100' WITH WATER TIGHT CONNECTOR.

5. INSTALL 6" WIDE MARKING TAPE LACED WITH COLOR AS FOLLOWS:
   - PONTIFICAL WATER = BLUE
   - SEWER = GREEN
   - RECYCLED WATER = MAGENTA (PURPLE)

6. PAVEMENT REPLACEMENT SECTION SHOWN IS MINIMUM REQUIREMENT AND SHALL MEET STRIGHT REQUIREMENTS OF LOCAL JURISDICTION, IF APPLICABLE.
NOTES:
1. STEEL CASINGS SHALL BE SMOOTH STEEL PIPE WITH FULLY WELDED JOINTS.
2. CARRIER PIPE SHALL BE INSTALLED PER MANUFACTURER’S RECOMMENDATIONS WITH WELDED OR RESTRAINED JOINTS.
3. CARRIER PIPE SHALL BE TESTED BEFORE SEALING ENDS OF CASING.
4. CASING SPACERS SHALL BE LUBRICATED AS NECESSARY BASED ON MANUFACTURES RECOMMENDATION, AS APPROVED BY DISTRICT, TO FACILITATE CARRIER PIPE INSTALLATION.
5. ANY VOIDS CREATED BY BORING, JACKING, OR TUNNELING CASING PIPE SHALL BE FILLED BY PRESSURE GROUTING.
6. ANNUAL SPACE INSIDE CARRIER PIPE SHALL NOT BE FILLED UNLESS OTHERWISE SPECIFIED.
7. CATHODIC PROTECTION SHALL BE DESIGNED AND INSTALLED ON ALL STEEL CASINGS.

* MATERIALS LISTED ARE MINIMUM VALUES ONLY. DESIGN ENGINEER IS TO DESIGN AND SELECT ACTUAL MATERIALS BASED ON IN-SITU SITE CONDITIONS SUCH AS DEPTH, SOIL CORROSIVITY, LOADING CONDITIONS, ETC. ON ALL CASINGS.

Casing Pipe Selection

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<tr>
<th>CARRIER PIPE SIZE</th>
<th>CASING SIZE</th>
<th>STEEL CYLINDER THICKNESS</th>
<th>MATERIAL</th>
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<td>60&quot;</td>
<td>3/4&quot;</td>
<td>1/4&quot; CML&amp;C STEEL</td>
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</table>
NOTES

1. CONCRETE THRUST BLOCKS TO BE POURED AGAINST UNDISTURBED EARTH WITH MINIMUM BEARING AREA PER RW-26.

2. CONCRETE THRUST BLOCKS SHALL BE OF CLASS "C" (2000 P.S.I.) CONCRETE MIN. 4-1/2 SACK W/C.
NOTES
1. THIS DETAIL IS ONLY APPLICABLE FOR DEAD END MAINS WHERE NO FUTURE WATER MAIN EXTENSION IS REASONABLY ANTICIPATED (SUCH AS OUT-OF-SIGHT). ALL OTHER DEAD END MAINS WHERE FUTURE EXTENSIONS ARE FEASIBLE SHALL BE PER RW-24 AND HAVE A FIRE HYDRANT CALLED OUT AS THE LAST APPURtenANCE FOR THE PURPOSE OF FLUSHING.

2. DESIGN ENGINEER SHALL SPECIFY ON PLANS THE PRESSURE CLASS OF ALL VALVES, DIMENSION RATIO OF PVC PIPE, CYLINDER THICKNESS OF STEEL PIPE, AND ANGLES REQUIRED FOR ELBOWS.
NOTES

1. CONTRACTOR SHALL DETERMINE DEPTH AND LOCATION OF EXISTING UNDERGROUND FACILITIES PRIOR TO TRENCHING.

2. ALL EXCAVATION, BACKFILL, DISPOSAL OF WASTE, AND OPERATIONS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.

3. OPEN TRENCH AT ANY ONE TIME SHALL BE LIMITED TO 500 FT., UNLESS OTHERWISE APPROVED IN WRITING BY THE DISTRICT’S ENGINEER.

4. PIPE SHALL BE HANDLE SO AS TO PROTECT THE PIPE, JOINTS, AND COATING, AND CAREFULLY BEDDED SO AS TO PROVIDE CONTINUOUS BEARING AND PREVENT UNEVEN SETTLEMENT.

5. BACKFILL ALONG ROAD RIGHT-OF-WAY SHALL BE COMPACTED IN ACCORDANCE WITH SPECIFICATIONS, TO A DENSITY NOT LESS THAN 90% OF OPTIMUM DENSITY.

6. COVER OVER PIPE SHALL BE 4'-0" (MIN.) TO 9'-0" (MAX.) UNLESS OTHERWISE APPROVED BY THE ENGINEER.

7. FOR EXCAVATION IN ROCK REFER TO TECHNICAL PROVISIONS 3.2.7.

8. INSTALL 2" LOCATOR TAPE 24" ABOVE TOP OF PIPE. COLOR CODED WITH TYPE OF PIPE STENCILED ON TAPE.

<table>
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<tr>
<th>PIPE SIZE</th>
<th>TOTAL TRENCH WIDTH</th>
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</tr>
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SECTION
NO SCALE
## Minimum Thrust Block Installation for Unrestrained Joints at 150 PSI and 200 PSI

<table>
<thead>
<tr>
<th>PIPE SIZE (IN)</th>
<th>TYPE OF FITTING</th>
<th>SAFE SOIL EROSION (PSI)</th>
<th>THRUST BLOCK AREA (FT²)</th>
<th>THRUST BLOCK AREA (FT²)</th>
<th>THRUST BLOCK AREA (FT²)</th>
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<td>5.50</td>
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<td>2250</td>
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<td>45°</td>
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<tr>
<td>10</td>
<td>TEE</td>
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<td>2.00</td>
<td>1.50</td>
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</tr>
<tr>
<td>10</td>
<td>45°</td>
<td>1.50</td>
<td>1.25</td>
<td></td>
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<td></td>
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<tr>
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<td>90°</td>
<td>1.00</td>
<td>0.75</td>
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<td></td>
</tr>
<tr>
<td>8</td>
<td>45°</td>
<td>0.75</td>
<td>0.60</td>
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</table>

### Notes:
1. Thrust blocks are only allowed in special circumstances where restrained mechanical joints can not be used.
2. The sizes shown are to be considered minimum allowable bearing areas. Actual thrust block sizes shall be determined based on actual in-situ soil conditions & design pressure.
3. Concrete thrust blocks are to be poured against undisturbed earth.
4. Concrete thrust blocks shall be of class C (2000 psi) concrete.
5. All concrete shall be poured to avoid any interference with block connections or joints.
6. Where pipe connects to a fitting in a steel pipe, the steel pipe shall be blocked as shown.
7. Figure (100%) at thrust block indicates percent of total thrust to be applied for bearing area. Arrow (↑) indicates thrust direction.
8. The table at left is based upon test pressure of 200 psi for class 150 and 250 psi for class 200.
9. Key: all thrust blocks into trench wall and bottoms.
10. For end plugs or caps use thrust block equivalent to tee thrust block.
NOTES

1. THE SIZES SHOWN ARE TO BE CONSIDERED MINIMUM ALLOWABLE BEARING AREAS. ACTUAL SHEAR WALL SIZES SHALL BE DESIGNED BASED ON ACTUAL IN-SITU SOIL CONDITIONS AND DESIGN PRESSURE.

2. BLOCK CONCRETE SHALL BE CLASS A IN ACCORDANCE WITH BASIC CONCRETE SPECIFICATIONS.

3. BLOCK SHALL BE FORMED WITH LUMBER TO ACHIEVE REQUIRED CONFIGURATION. ALL FORMS SHALL BE REMOVE PRIOR TO BACKFILLING.

4. BLOCKS SHALL BE AGAINST UNDISTURBED EARTH OR REPLACE EARTH HAVING 90% RELATIVE COMPACTION, MINIMUM.

5. BACKFILL AROUND AND OVER BLOCKS SHALL BE COMPACTED TO 90% RELATIVE COMPACTION, MINIMUM.

6. COMPACTED EARTH SHALL EXTEND TO DEPTH AND WIDTH (W) OF BLOCK AND TO DISTANCE W/2 BEFORE AND PAST BLOCK.

<table>
<thead>
<tr>
<th>PIPE SIZE (INCHES)</th>
<th>H/2 (Ft)</th>
<th>W/2 (Ft)</th>
<th>H/2 (Ft)</th>
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<td>10</td>
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</tr>
<tr>
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<td>5.2</td>
<td>1.3</td>
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</tr>
<tr>
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<td>8.0</td>
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<td>36</td>
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</table>
TEE/EACH SIDE OF VALVE

 DEAD END/EACH SIDE OF VALVE

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<th>8</th>
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<tbody>
<tr>
<td>L</td>
<td>59</td>
<td>84</td>
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<td>156</td>
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VERTICAL BEND

HORIZONTAL BEND

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<td>11</td>
</tr>
<tr>
<td>22.5°</td>
<td>5</td>
<td>7</td>
<td>9</td>
<td>13</td>
<td>16</td>
<td>18</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>45°</td>
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<td>14</td>
<td>19</td>
<td>26</td>
<td>34</td>
<td>37</td>
<td>40</td>
<td>47</td>
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<tr>
<td>RESTRAINED LENGTHS &quot;L&quot; IN FEET</td>
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<td></td>
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</table>

RESTRAINT JOINT LENGTHS USAGE GENERAL NOTES
1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED.
2. PIPES SHALL HAVE FORTY-EIGHT (48) INCHES MINIMUM DEPTH OF COVER.
3. A SAFETY FACTOR OF 1.5 ASSUMED.
4. ASSUMED SOIL TYPE ML (INORGANIC SILTS, VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS) PER UNITED SOIL CLASSIFICATION ASTM D 2487.
   A. NO BEDDING IN GRANULAR MATERIAL.
   B. NO USE OF PMI = 0 PRINCIPAL.
5. PIPE BEDDING PER RCPD STANDARDS.
6. TEST PRESSURE 10% OVER MINIMUM DESIGN PRESSURE, RESTRAINED LENGTHS ABOVE BASED UPON DESIGN PRESSURE OF 200 PSI.
7. IF ACTUAL CONDITIONS DIFFER FROM THOSE LISTED ABOVE OR THE REQUIRED RESTRAINED LENGTH CANNOT BE MET, THE RESTRAINED LENGTH SHALL BE DETERMINED BY THE DESIGN ENGINEER AND APPROVED BY THE DISTRICT ENGINEER.
CONCRETE ENCASEMENT NO. 1

NOTES:
1. PIPE SIZES GREATER THAN 18" REQUIRE SPECIFIC STRUCTURAL DESIGN.
2. CONCRETE ENCASEMENTS AND CONCRETE CAP SHALL BE CLASS "A" CONCRETE (3000 PSI).
3. PIPE MUST BE ANCHORED TO AVOID FLUTuations.

CONCRETE ENCASEMENT NO. 2

CONCRETE CAP

SLURRY BACKFILL
### Dimensions

<table>
<thead>
<tr>
<th>Nominal Diameter (D)</th>
<th>Outside Diameter (OD)</th>
<th>Minimum Radius (R)</th>
<th>2-Piece δ=22.5° (M)</th>
<th>3-Piece δ=45.0° (N)</th>
<th>4-Piece δ=67.5° (P)</th>
<th>5-Piece δ=90.0° (Q)</th>
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<tr>
<td>6</td>
<td>6 5/8</td>
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<tr>
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<td>8 5/8</td>
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<tr>
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<td>15 1/4</td>
<td>38.13</td>
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<td>17 3/8</td>
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<td>44.01</td>
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<tr>
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<tr>
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<td>25 3/4</td>
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The dimensions given are the minimum recommended standard for deflections that are exactly 22.5°, 45°, 67.5° and 90°. Radius is based on 2.5 x OD. For custom deflection angles and where clearances are restricted, other dimensions may be used in accordance with AWWA C-208 and M-11. Dimensions are based on plain or flange-end fittings. Fabrication shall comply with all requirements identified in AWWA C-200 and RWW plans and specifications.
### Dimensions Are Inches

<table>
<thead>
<tr>
<th>Large Diameter (D)</th>
<th>Small Diameter (d)</th>
<th>Tees &amp; Crosses (L)</th>
<th>Reducers (L)</th>
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<tr>
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<td>18.00</td>
<td>18.00</td>
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<table>
<thead>
<tr>
<th>Large Diameter (D)</th>
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<th>Reducers (L)</th>
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<tr>
<td>24</td>
<td>18</td>
<td>21.00</td>
<td>17.00</td>
</tr>
</tbody>
</table>

THE DIMENSIONS GIVEN ARE THE MINIMUM RECOMMENDED STANDARD. WHERE CLEARANCES ARE RESTRICTED, HOWEVER, OTHER DIMENSIONS MAY BE USED IN ACCORDANCE WITH AWWA C-208 AND M-11. DIMENSIONS ARE BASED ON PLAIN OR FLANGE-END FITTINGS. FABRICATION SHALL COMPLY WITH ALL REQUIREMENTS IDENTIFIED IN AWWA C-208 AND ROWD PLANS AND SPECIFICATIONS.
**Rancho Water**

**Rancho California Water District**

---

**Valve Cover and Riser Detail**

- **NOTES**
  1. Contractor shall raise slip cap to finish street grade, where paving is proposed.
  2. In unpaved areas, contractor shall leave cap and slip cap 5" below finish grade (6" graded shoulders).
  3. For unpaved roads only, set top of valve cap (covered) 5" below roughned sub-grade to avoid damage during paving and grading operation.
  4. Refer to RW-36 for bonded joint.
  5. Grooved end coupling and buttstrap are only required for pipe diameters 12" or less.

---

**Bracing Plate Plan View Detail**

- **HOLE FOR 1-1/8" GALVANIZED SCHEDULE 40 RISER PIPE TO TACK WELD.**

---

**Scale: 1" = 1'-0"**

**Rancho Water**

Rancho California Water District

**Standard Drawing:**

**RW-30**

**Valve Cap & Riser Detail**

**Approving Authority:**

Andrew Wester
Acting District Engineer

---

**Date:** 3-17-2008
6" AND LARGER PLUG VALVES
WITH ENCLOSED GEAR OPERATOR

NOTES
1. CONTRACTOR SHALL RAISE SLIP CAN TO GRADE AFTER STREET IS PAVED, WHERE PAVING IS PROPOSED.
2. IN UNPAVED AREAS, CONTRACTOR SHALL LEAVE CAP AND SLIP CAN 6" BELOW FINISH GRADE (W/ GRADED SHOULDERS)
3. CONTRACTOR TO PROVIDE VALVE STEM EXTENSION WHERE DEPTH TO OPERATOR NUT EXCEEDS 5". SEE RW-30 VALVE STEM EXTENSION. NOTE THAT EXTENSION IS REQUIRED FOR PLUG VALVE WHERE DEPTH EXCEEDS 5 FEET. FOR ALL OTHER VALVES EXTENSION REQUIRED WHERE DEPTH EXCEEDS 10 FEET.

Rancho Water
Rancho California Water District

VALVE CAP
& RISER DETAIL
(PLUG VALVES)

RW-30A
LAP-WELDED SLIP JOINT

SINGLE-BUTT WELD JOINT

DOUBLE-BUTT WELD JOINT

INSIDE WELD MAY BE SUBSTITUTED FOR OUTER WELD.
(REQUIRES ADDITIONAL HOLD BACK OF CEMENT MORTAR
LINING ON SPEG END AS APPROVED BY SUBMITTAL)

FIELD MORTAR
2" PIPE AND SMALLER DADO BELL AT END
OF LINING BEFORE SHADING, THEN SHADE
SMOOTH. 24" PIPE AND LARGER, MORTAR
AFTER ASSEMBLY.

NOTES
1. PIPE LESS THAN 1/4 PLATE USE
   WELDING BAND OR BUTTSTAIR.
2. CEMENT MORTAR ALL BARE STEEL
3. REFER TO RW-32 FOR HANDELINE
   REQUIREMENTS.
4. MATERIALS, MANUFACTURING AND TOLERANCES
   SHALL REFER ANN C-200 AND C-260.

<table>
<thead>
<tr>
<th>MINIMUM PIPE SIZE</th>
<th>BAND WIDTH</th>
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<tbody>
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<td>4&quot;</td>
<td>6&quot;</td>
</tr>
<tr>
<td>8&quot;</td>
<td>6&quot;</td>
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<td>10&quot;</td>
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<tr>
<td>36&quot;</td>
<td>12&quot;</td>
</tr>
</tbody>
</table>

WELDING NIPPLE TO STEEL PIPE

CMLAC STEEL PIPE

WELDING BAND
CARNegie BELL AND SPIGOT

INSIDE WELD MAY BE SUBSTITUTED FOR OUTSIDE WELD.
(REQUIRES ADDITIONAL WELD BACK OF CEMENT MORTAR
LINING ON SPIGOT END AS APPROVED BY SUBMITTAL.)

STEEL RETAINING ROD

CONCRETE FIELD WELD, OWHT ROD &
WELD IF INSIDE WELD IS USED, 3
PASSES MIN.

1/16" MIN. PENETRATION
1/16" MIN. CIRCUT IN FIELD

INSIDE WELD AT CONTRACTOR'S OPTION FOR 24"
TO 36" PIPE 2 PASSES MIN.

FIELD MORTAR *

OWHT RUBBER GASKET IF FIELD WELD IS MADE ON
INSIDE OF PIPE. PROVIDE GASKET IF FIELD WELD
IS MADE ON OUTSIDE OF PIPE.

1-1/2"
1-1/2"

CIRCUT IN FIELD

FIELD MORTAR

CONTINUOUS WELD 2 PASSES MIN.

LAP WELDED SLIP JOINT

INSIDE WELD MAY BE SUBSTITUTED FOR OUTSIDE WELD.
(REQUIRES ADDITIONAL WELD BACK OF CEMENT MORTAR
LINING ON SPIGOT END AS APPROVED BY SUBMITTAL.)

INSIDE WELD AT CONTRACTOR'S OPTION FOR 24" AND LARGER PIPE
2 PASSES MIN.

FIELD MORTAR *

1/8" MIN.
1/16" MIN. PENETRATION

CIRCUT IN FIELD

CONCRETE FIELD WELD, OWHT ROD AND
WELD IF INSIDE WELD IS USED, 3
PASSES MIN.

FIELD MORTAR *

OWHT RUBBER GASKET IF FIELD WELD IS MADE ON
INSIDE OF PIPE. PROVIDE GASKET IF FIELD WELD IS
MADE ON OUTSIDE OF PIPE.

SWEDGED BELL AND SPIGOT

* 21" PIPE AND SMALLER DAUB BELL AT END
OF LINING BEFORE STABLING, THEN SWAB
SMOOTH 24" PIPE AND LARGER, MORTAR
AFTER ASSEMBLY.

NOTE:
MATERIALS, MANUFACTURING, AND TOLERANCES
SHALL BE PER AMWA C-200 AND C-205.
BONDED PIPE FLANGE JOINT

BONDED VICTAULIC COUPLING JOINT

BONDED VALVE JOINT

BONDED DRESSER COUPLING JOINT

NOTES:

1. CATHODIC PROTECTION (CP) CABLES SHALL BE A SOFT DRAWN BARE COPPER STRAND WITH HIGH-MOLECULAR WEIGHT LOW DENSITY BLACK POLYETHYLENE (HPPE) COVERING HAVING 7 TO 8 BLACK BETWEEN POINTS OF ATTACHMENT OF CABLES SHALL NOT EXCEED 18" IN LENGTH UNLESS OTHERWISE APPROVED BY DIRECTOR.

2. PIPE SHALL BE ASSEMBLED IN TRENCH PRIOR TO WELDING PER RW-46.

3. CABLE BONDED CONNECTIONS SHALL BE PROTECTED DURING FIELD MOUNTING OF PIPE JOINT.

4. CONTINUITY TEST MUST BE CONDUCTED ON PIPELINE TO INSURE 100% BOND IS FUNCTIONING PROPERLY AFTER INSTALLATION OF EACH PIPE SECTION.

5. COLD-APPLY WAX TAPE COATING TO ALL BOLTS, NUTS AND FLANGES PER SPECIFICATIONS Wrap ALL COUPLINGS AND VALVE JOINTS WITH 8 MIL POLYETHYLENE.

6. 3 OP CABLES < 18" OK
   3 OP CABLES 18"-36"
   4 OP CABLES 36" OR GREATER
   ALL OP CABLES SHALL BE SPACED IN PARALLEL A MINIMUM OF 6" APART.

7. FOR BONDED RUBBER GASKET BELL & SPIGOT PIPE JOINT SEE RW-35.
NOTES:
1. WHEN SUPPORTING ON THE SAME LINE, ALTERNATELY FIRE AND FLANGE CONCRETE PIER FOR FIRE SUPPORTS SHALL ALL HAVE THE SAME DIMENSION (B) FOR FLANGE SUPPORT.
2. FIRE SUPPORTS TO BE LOCATED IN PLAN AT POINTS MARKED WITH THIS SYMBOL X.
3. DRIVER 1-1/2" SPACE IN BOLTED MORTAR WHERE INTERFERENCE SETTLEMENT IS LIKELY TO OCCUR, AS DIRECTED BY ENGINEER.
4. PRIME AND PAINT AFTER FABRICATION.
5. FOR 6" AND LARGER PIPE SIZES PROVIDE 3/8" STEEL STIFFENER PLATES AT EACH END OF PIPE SUPPORT.

PIPE SUPPORT DIMENSION TABLE

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SANDBLAST TO ENHANCE ADHESION AND SMUDGE THROUGHOUT. THEN APPLY AN EPOXY BONDING AGENT 1/2" SELF OR NON-DRILLING TYPE CONCRETE ANCHORS AT 12" D.C.

Pier on Existing Slab
Pier on New Slab
NOTES:

1. LED LEAD WIRES TO PIPE AFTER INSTALLATION IN TRENCH.

2. WIRE AND BONDED CONNECTIONS TO BE PROTECTED DURING FIELD MORTARING.

3. LEAD WIRES SHALL HAVE A BURY DEPTH OF 0.75' (MIN.) AT CURB OR SHOULDER OF ROAD.
   WITH 3' WIRE MARKING TAPE AT ABOVE WIRE LABLED "CAUTION: BURIED CATHODIC PROTECTION LINE!".

4. REFER TO RW-7 OR RW-14 FOR CP TEST STATION PLACEMENT.

5. TERMINATE ALL WIRES PER RW-48.


7. TEST STATIONS SHALL BE INSTALLED WITH EVERY 1000-FEET OR AS INDICATED BY CONTRACT DRAWINGS.
NOTES:
1. WELD LEAD WIRES TO PIPE AFTER INSTALLATION IN TRENCH
2. WIRE AND BONDED CONNECTIONS TO BE PROTECTED DURING FIELD MORTARING.
3. LEAD WIRES SHALL HAVE A BURY DEPTH OF 6" (MIN.) AT CURB OR SHOULDER OF ROAD WITH 3' WIDE MARKING DETECTOR TAPE 24" ABOVE WIRE Labeled, "CAUTION: BONDED CATHODIC PROTECTION LINE."
4. REFER TO RW-1 OR RW-1A FOR OT TEST STATION PLACEMENT.
5. TERMINATE ALL WIRES PER RW-4B.
6. LEAD WIRES SHALL BE COLORED AND TAGGED AS NOTED PER RW-4B.
7. TEST STATIONS SHALL BE INSTALLED MIN. EVERY 1000- FEET OR AS INDICATED BY CONTRACT DRAWINGS.
8. REFERENCE ELECTRODE LOCATION: UPPER - EXISTING PIPE LAYER - NEW PIPE INSTALLATION
NOTES:
1. BEND LEAD WIRES TO PIPE AFTER INSTALLATION IN TRENCH.
2. WIRE AND BONDED CONNECTIONS TO BE PROTECTED DURING PIPELINE MORTARING.
3. LEAD WIRE SHALL HAVE A BURY DEPTH OF 18" (MIN) AT CURB OR SHOULDER OF ROAD WITH 1/2" WIRE WARNING DETECTOR TAPE 24" ABOVE WIRE LABELED "CAUTION: BURIED CATHODIC PROTECTION LINE."
4. REFER TO RW-1 OR RW-1A FOR OP TEST STATION PLACEMENT.
5. TERMINATE ALL WIRES PER RW-18.
7. NUMBER AND SPACING OF ANODES AS DETERMINED BY DISTRICT/ENGINEER.
8. TEST STATIONS SHALL BE INSTALLED MIN. EVERY 1000- FEET OR AS IndICATED BY CONTRACT DRAWINGS.
**Detail A**

**In-Line Insulated Test Connection**

- **Pipe Lead Wire**: AWG-18/HH/HH-2, Stranded Copper Wire, Black
- **Reference Electrode Lead Wire**: AWG-18/HH/HH-2, Stranded Copper Wire, Yellow or Standard Color Per Manufacturer
- **Electrode Lead Wire**: AWG-18/HH/HH-2, Stranded Copper Wire, Yellow or Standard Color Per Manufacturer

**Elevation**

No Scale

**Notes:**

1. All Pipe Lead Wire Connections to be Made at Exposed Field Joints.
2. Pipeline shall be assembled in trench prior to welding of Lead Wires to Pipe.
3. Pipe Connections shall be protected during field mortaring of pipe joints.
4. Insulate Welds from all exterior elements with an approved coating.
5. Orient Lead Wires in OP Test Box to be in the same relative position as connected to the Pipe and colored and tagged as noted per RW-48.
6. Refer to RW-1 or RW-1A for OP Test Station Placement.
7. Lead Wires shall have a bury depth of 5’ (min) at curb or shoulder of road with 6” wide warning tape 3’ above wire labeled, “Caution Cathodic Protection Line Bury Below.”

**Detail B**

**Insulated Flanged Joint Detail**

- **Steel Washer**
- **Insulating Washer**
- **Insulating Sleeve**
- **Flange**
- **Insulating Casket**
- **Steel Pipe**

**Notes:**

A. If anodes are installed, place non-insulated side of bolt toward anode.
B. Do not apply metal or other non-insulating paints to insulating parts or outer edges of flange.
C. Cold-apply wax tape coating to all bolts, nuts and entire insulating flange assembly per specifications.
D. Insulating sleeve to be 1/8’’ shorter than distance between steel washers when bolt is fully tightened.
GENERAL NOTES

1. REBARRE ELECTRIC/UTILITY PRODUCTS, STEEL HOUSING
   MFG. NO. CARBIDE CAT. NO. 52295-84452 OR EQUAL

2. INSTALL PEDESTAL EVERY 1,000 FT. MAX. AND AT EACH END, OR AS SHOWN ON DWGS.

3. PLACE R.O.M.D. LABEL ON PEDESTAL

4. REFER TO RW-1 OR RW-14 FOR PEDESTAL PLACEMENT
SPECIFICATIONS:

BARBED WIRE ___________ 2 STRAND, NO. 12-1/2 STEEL WIRE WITH 4 POINT BARBS,

FABRIC ___________ NO. 9 GALV. STEEL WIRE 27' MESH,

FABRIC TIES ___________ NO. 9 GALV. STEEL WIRE SPACED 14" APART ON POSTS AND 24" APART ON RAILS,

CORNER POSTS ___________ 2.375" O.D. P.E., 5.79 $/FT,

LINE POSTS ___________ 2.375" O.D. P.E., 3.85 $/FT,

SWING GATE POSTS ___________ 4.00 O.D. P.E., 9.11 $/FT,

TOP RAIL AND BRACES ___________ 1.600" O.D. P.E., 2.27 $/FT,

BOTTOM WIRE ___________ COIL SPRING WIRE, 7 GA.

ALL FENCING MATERIALS TO BE HOT-DIPPED GALVANIZED AFTER FABRICATION.

NOTES:

1. EXTENSION ARM MAY BE TURNED IN AT OPTION OF OWNER.
ADVANCE NOTIFICATION SIGN
1. File structure to bare metal and clean surface at points of attachment by making a 1/4-inch square window in the coating. The exposed metal surface shall be cleaned to produce a bright metal finish equivalent to SSPC SP-10, "near white" before application. Grinding wheels will not be allowed.

2. Strip insulation from wire or cable and attach sleeve as necessary.

3. Hold weld firmly with hindering away from operator, ignite with flat-tungsten.

4. Remove slag from connection with chipping hammer.

5. Cover weld nugget connection with a fast cure non-hardening epoxy coating over all metal or apply weld cap.

6. Apply concrete bonding agent and repair cement mortar coating after weld coating cures.

**Notes:**


2. Wire or bonded cable connections shall be protected during field monitoring or during re-coating of bonded areas.

3. Cartridge type, size, and weight shall be as recommended by the manufacturer for the type of pipe (steel, ductile iron, or cast iron) to which the cathodic protection cable or wire is to be welded. See cable or wire and welder weld being used.

4. As soon as weld cools the weld shall be tested by striking a sharp blow with a 22-ounce hammer (min.) while pulling firmly on wire or cable. All unsound welds shall be re-welded a minimum of 2-inches away from the failed location and re-tested.
NOTES:

1. USE TRAFFIC RATED CONCRETE UTILITY BOX, MINIMUM 10" ID, X 12" HIGH BY CHAPUTY CONCRETE PRODUCTS GSC OR BROOKS PRODUCTS MRT. OR APPROVED EQUAL.

2. LOCATE BOX BEHIND SIDEWALK OR CURB AND INSTALL STATION PER RW-1 AND RW-1A, OR AS DETERMINED BY DISTRICT REPRESENTATIVES.

3. CAST IRON BOX SHALL BE CAST WITH EMBOSSED TEXT WARNINGS, AS FOLLOWS:

   ROWD LOCATE = (FOR LOCATOR WIRE)
   ROWD CPTE = (FOR CP TEST)
   ROWD CPTE+ = (FOR CP TEST W/ ANODE)
   ROWD CPTE+IF = (FOR CP TEST W/ INSULATING FLANGE)

4. REFER TO RW-48 FOR MARKING AND TERMINATING WIRES WITHIN UTILITY BOX.
NOTE:
1. ALL WIRE LEADS SHALL BE COLOR-CODED IN ACCORDANCE WITH THE STANDARD DRAWINGS. IF
   STANDARD WIRE COLOR (BY MANUFACTURER) IS DIFFERENT THAN COLOR-CODES NOTED IN STANDARD
   DRAWING, HEAT SHRINK TUBING OR HIGH-GRADE ELECTRICAL TAPE SHALL BE INSTALLED TO COLOR-
   CODE WIRE LEADS IN ACCORDANCE WITH THE STANDARD DRAWINGS.

2. WIRE LEADS SHALL HAVE 3-FOOT OF BLACK COILING INSIDE CONCRETE UTILITY BOX.

3. WIRE LEADS FOR CP TEST STATION W/ PREPACKAGED SACRIFICIAL ANODE AND CP TEST STATION WITH
   INSULATING FLANGE OR CASING SHALL BE LAMINATED ON APPROVED TERMINAL BOARD. TERMINAL BOARD SHALL
   BE SUPPLIED TO CONTRACTOR BY BOND.

4. WIRE LEADS SHALL BE IDENTIFIED BY A 1-1/2 BRASS TAG. THE TAG SHALL BE ATTACHED TO EACH WIRE LEAD
   AND DIE-STAMPED, AS INDICATED ABOVE.

DIE-STAMP LEGEND:
A. FACILITY/STRUCTURE SIZE (IN INCHES)
B. TYPE OF FACILITY/STRUCTURE (I.E. P=PORTABLE WATER PIPE, R=RECYCLED WATER PIPE, S=SEWER PIPE, C=
   CASING PIPE, A=SACRIFICIAL ANODE, R=REFERENCE ELECTRODE)
C. DIRECTIONAL REFERENCE FOR WIRE ATTACHMENT, AS NECESSARY (I.E. N= NORTH, S=SOUTH, E=EAST, W=
   WEST)
D. STRUCTURE MATERIAL (I.E. C=CEMENT MORTAR LINER/COATED STEEL PIPE, P=PRESTRESSED
   CONCRETE CYLINDER PIPE, B=STEEL CASING PIPE)
E. STATION/LOCATION (I.E. 1+00)
NOTES:

1. WHEN THE VERTICAL CLEARANCE BETWEEN PIPELINES IS LESS THAN 12 INCHES, INSERT A SQUARE SHEET OF INSULATING MATERIAL, 1/8 THICK, OR A SQUARE SHEET OF HIGH MOLECULAR WEIGHT POLYETHYLENE, 1/8 THICK, WITH LENGTHS EQUAL TO THE OD, PLUS 1/2 OF LARGER PIPE OR 18, WHICHEVER IS LARGER.

2. WHEN DISTRICT AND FOREIGN PIPES ARE BOTH STEEL, INSTALL OR TEST STATION W/PREPACKAGED SACRIFICIAL ANODE PER RW-408 OR AS DIRECTED BY SPECIAL DESIGN.
PREPACKAGED MAGNESIUM ANODE

COPPER–COPPER SULFATE REFERENCE ELECTRODE

NOTES:
1. ANODE AND ELECTRODE SHALL BE INSTALLED IN A HOLE 3' TO 5' IN DEPTH AND 8" GREATER IN DIAMETER THAN THE ANODE OR ELECTRODE TO ALLOW ROOM FOR COMPACTION DURING BACKFILL.
2. BACKFILL WITH NATURAL SOIL OR SAND.
3. AFTER INSTALLATION OF ANODE WATER EXTERIOR UNTIL MOIST.
4. REFERENCE ELECTRODE SHALL BE PLACED MAXIMUM 24" FROM PIPE HORIZONTALLY AND 12" BELOW PIPE INLET.
5. AFTER INSTALLATION OF REFERENCE CELL FLOOD WITH (MIN) 5 GAL. OF WATER.
NOTES:
1. ENGINEER SHALL DETAIL METER SERVICE ASSEMBLY (AND BACKFLOW PREVENTION ASSEMBLY) ON PLANS, AS APPLICABLE.
2. D.S.Y., VALVES SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.
3. NOMINAL DIAMETER OF MAIN SERVICE PIPING, VALVES AND FITTINGS SHALL MATCH METER SIZE (4-INCH DIAMETER MINIMUM).
4. BYPASS LINE SHALL BE HALF THE DIAMETER OF THE MAIN SERVICE RUN IN INGREDIENTS OF 2", 3" AND 4" (USE THREADED RED BRASS PIPE (SCH. 40) FOR 2" AND SMALLER)
5. FOR BYPASS 2" & SMALLER USE LOCKING CUP STOP IN LIEU OF D.S.Y. VALVE AND UNION IN LIEU OF METALICCLE.
6. LANDSCAPING IS LIMITED TO ONE COVER 6" OR LESS IN HEIGHT WITHIN 3 OF PIPING.
7. PROVIDE 5 PIPE DIAMETERS UPSTREAM AND 3 DOWNSTREAM OF METER/STRAINER ASSEMBLY (INCLUDES VALVE LENGTH).
8. VARIES FROM 3/4 (4-INCH) TO 1 1/4 (10-INCH); BACKFLOW PER RW-19 NOT INCLUDED.

* ROAD TO FURNISH METERS AND STRAINERS - CONTRACTOR TO PICK UP METER AT ROAD & INSTALL ALL OTHER MATERIALS SUPPLIED & INSTALLED BY CONTRACTOR.
NOTES:

1. ENGINEER SHALL DETAIL METER SERVICE ASSEMBLY (AND BACKFLOW PREVENTION ASSEMBLY) ON PLANS, AS APPROPRIATE.
2. O.S.&Y. VALVES (WHEN) SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.
3. NOMINAL DIAMETER OF MAIN SERVICE PIPING, VALVES AND FITTINGS SHALL MATCH METER SIZE (4"-INCH DIAMETER MINIMUM).
4. BYPASS LINE SHALL BE HAD THE DIAMETER OF THE MAIN SERVICE IN INCREMENTS OF 2", 3", AND 4". (USE THREADED RED BRASS PIPE (SCHED 40) FOR 2" AND SMALLER).
5. FOR BYPASS 2" & SMALLER, USE LOCKING CORP. STOP IN LIEU OF O.S.&Y. VALVE AND UNION IN LIEU OF VALVE.
6. LANDSCAPING IS LIMITED TO GROUND COVER 6" OR LESS IN HEIGHT WITHIN 3" OF PIPING.
7. WITH STRAINER: PROVIDE 5 PIPE DIAMETERS UPSTREAM AND 3 DOWNSTREAM OF METER ASSEMBLY (INCLUDES VALVE LENGTH); DOUBLE LENGTHS IF NO STRAINER.
8. VARIETY FROM 5'/ (3-FOOT) TO 12'/ (8-FOOT); BACKFLOW PER RW-19 NOT INCLUDED.
9. BYPASS LINE NOT REQUIRED FOR IRRIGATION SERVICES. PROVIDE BLIND FLANGE AT BYPASS TEE ON BOTH ENDS AS SHOWN HERED.

* ROWD TO FURNISH METERS AND STRAINERS - CONTRACTOR TO PICK UP METER AT ROWD & INSTALL ALL OTHER MATERIALS SUPPLIED & INSTALLED BY CONTRACTOR.
1. Concrete encasement and caps shall be installed as required by the specifications or as directed by the engineer.

2. All concrete shall be Class "A" concrete.

3. Use Concrete Encasement No. 2 unless otherwise approved by the engineer or shown on the contract drawings.

4. Based on 1.25 Factor of Safety refer to AASHTO Standard No. 3-50. The depth of cover over 35 may be calculated from Horton's formula:

\[
X = \frac{2t}{f_y}
\]

where \(X\) is the embedded distance at which trench width may be increased without adding to the weight on the pipe.

5. "A:" Ratio of area of steel to area of concrete per linear foot (0.4 or 4"x12" = concrete area).

6. Concrete can be poured against trench wall (optional).

7. Bedding conditions are as follows:
   (A) Bedding shall be used or exceed that given in the applicable tables per standards drawing S-56.
   (B) Class "A" shall be used for sewers whenever depth of cover is less than 1.
   (C) Concrete shall be used for bedding if flooding is not permitted in clay soils.
   (D) Depth of cover greater than 10 shall require a site investigation and analysis by the engineer.

8. Two approved flexible couplings shall be used at each end of sewer pipe encasements pursuant to standard drawing S-56.
NOTES

1. NO CONNECTION ALLOWED AT BELL END OF V.C.P. OR P.V.C.; CUT BELL END OFF PIPE PRIOR TO MAKING CONNECTION.

NOTES

1. SEWER LATERALS SHALL HAVE A MINIMUM SLOPE OF 2% EXCEPT AS OTHERWISE SPECIFICALLY NOTED ON THE PLANS.

2. PLUGS SHALL BE CEMENTED IN WITH CEMENT MORTAR, OR SHALL BE REINFORCED STOPPER OR APPROVED EQUAL.

3. IN NO CASE SHALL A LATERAL CONNECT TO THE SEWER MAIN DIRECTLY ON TOP OF THE PIPE.

4. WHERE A STANDARD SADDLE TEE IS ADDED, IT SHALL BE SURROUNDED WITH 4' OF CLASS "A" PORTLAND CEMENT CONCRETE IN ACCORDANCE WITH STD. DWG. S-6.

5. LATERALS SHALL END AT THE PROPERTY LINE, UNLESS OTHERWISE NOTED ON THE PLANS.

6. UNLESS MARKED BY THE ENGINEER, 2' WIDE METALLIC DETECTABLE LOCATOR TAP SHALL BE PLACED WITH EACH LATERAL APPROXIMATELY 8 INCHES ABOVE THE PIPE, BUT NOT GREATER THAN 6 FEET DEEP.

7. WHERE SEWER LATERAL CROSSES ABOVE AN EXISTING OR PROPOSED WATER MAIN, USE 4" PIPE (4" CL5/6" CL80) WITH HOT DIP BITUMINOUS COATING TO EACH SIDE OF WATER MAIN.

8. MINIMUM 5'-0" SEPARATION BETWEEN SEWER LATERAL AND WATER SERVICE.
1. SEE DRAWING S-1 FOR DETAILS OF SEWER LATERAL TO PROPERTY LINE

2. USE CLASS "A" CONCRETE WHERE SHOWN.

3. IN NO CASE SHALL A LATERAL CONNECT TO THE SEWER MAIN DIRECTLY ON TOP OF THE PIPE.

4. UNLESS WAIVED BY THE ENGINEER, 2" WIDE METALLIC DETECTABLE LOCATOR TAPE SHALL BE PLACED WITH EACH LATERAL APPROXIMATELY 6" ABOVE THE PIPE.

5. MINIMUM 5' SEPARATION BETWEEN SEWER LATERAL AND WATER SERVICE.

6. PIPELINE FOR THIS VERTICAL SEWER LATERAL SHALL BE PVC SDR 35, VCP WILL NOT BE ALLOWED.
SECTION - SEWER LATERAL

WHERE A 1/8 RADIUS IS NOT USED, A ONE FOOT PIECE OUT OF TEE IS REQUIRED

STANDARD V.C.P. COLLARTEE SADDLE OR APPROVED EQUAL, EMBEDDED IN PLACE PRIOR TO ENCASING

CLASS "A" CONCRETE ENCASMENT 12" MIN. EACH SIDE OF SADDLE

UNDISTURBED EARTH
SECTION - SEWER LATERAL

- Tee & Yve saddles per manufacturers specifications and to be thinned with two stainless steel bands around pipe and saddle
- Cut hole with saber saw or shell cutter
- Undisturbed earth

MIN. 2% LATERAL SLOPE UP
FLEXIBLE COUPLING
(NON-PRESSURE)

NOTES:
NO CONNECTION ALLOWABLE AT BEAD END OF VCP.
CUT BEAD END OFF VCP. PRIOR TO MAKING CONNECTION.
GLUED BEAD REDUCER ACCEPTABLE WHEN JOINING 4" P.V.C.
LATERAL TO 3" P.V.C. OR A.B.S. WASTELINE.
NOTES

1. CLEAN OUT TO BE INSTALLED BY CUSTOMER.
2. PLACE CLEANOUT A MAXIMUM OF 1'-0" FROM PROPERTY LINE WITHIN R.W.
3. LD. TO BE CAST IRON MARKED "SEWER".
4. INSPECTOR TO TAKE LATERAL TO MAIN TO ENSURE LATERAL IS CLEAR AND CONNECTED.
5. CLEANOUT IS REQUIRED FOR ALL RESIDENTIAL LATERALS.
6. SEWER BACKFLOW VALVE ASSEMBLY TO BE INSTALLED ON ALL LATERALS WHERE THE FALL ELEVATION IS LESS THAN THAT OF THE FIRST UPSTREAM MANHOLE SEE STANDARD DWG. S-28 FOR DETAILS.

MATERIAL LIST

1. "BROOKS NO. 1-HT VALVE BOX" MARKED "SEWER" OR EQUAL
2. THREADED CAP WITH 2" SQUARE NUT.
3. SIZE EQUAL TO LATERAL
4. YHE PER UNIFORM BLDG CODE.
5. 4" SEWER PIPE PER R.C.W.D. STANDARDS.
NOTES:

1. THE UPPER END OF THE CHIMNEY PIPE WILL BE 8 FEET BELOW THE GRACE OF THE LOWER CURB, UNLESS OTHERWISE SPECIFIED.

2. WHERE ONE OR TWO HOUSE CONNECTIONS ARE TO BE JOINED TO THE CHIMNEY PIPE USE A SINGLE "Y" BRANCH. WHERE THREE HOUSE CONNECTIONS ARE TO BE JOINED USE DOUBLE "Y" BRANCH.

3. WHERE THE CHIMNEY PIPE IS TO BE USED FOR A SINGLE HOUSE CONNECTION FACE "Y" TOWARDS PROPERTY TO BE SERVED. WHERE USED FOR HOUSE CONNECTIONS ON BOTH SIDES OF STREET, THE "Y" WILL FACE TOWARDS THE RIGHT LOOKING UPSTREAM AND THE HOUSE ON THAT SIDE WILL BE CONNECTED TO THE "Y" BRANCH BY A 6-INCH ONE-DIAMETER END AND THE HOUSE CONNECTION ON THE LEFT WILL BE CONNECTED TO THE UPPER END OF THE CHIMNEY BY A 6-INCH ONE-DIAMETER END UNLESS OTHERWISE SPECIFIED.

4. THE SEWER MAIN WILL BE CONSTRUCTED OF THE MATERIAL SPECIFIED ON PLANS.

5. INSTALL 2'X2' WOODEN MARKER ABOVE UPPER END OF CHIMNEY FOR REFERENCE PERFORMANCE LOCATION.
CASTING SHALL BE ALHAMBRA FOUNDRY NUMBER 4-1241, OR EQUAL AS APPROVED BY THE DISTRICT.

PLAN VIEW

Casting shall be Alhambra Founotry Number 4-1241, or equal as approved by the District.

6" LATERAL
SEWER MAIN
CLASS "A" CONCRETE

COVER DETAIL
INSTALL REUSABLE DOLLAR TEST PLUG FOR TESTING, LEAVE PLUG TO WATERPROOF CLEANOUT.

洁净 DETAIL

PROFILE

STREET SURFACE
PROPOSED CURB
EXIST. OR PROPOSED WATER OR GAS MAIN OR OTHER FACILITY

6" LATERAL
6" LATERAL DOUBLE WYE TO BE LAY HORIZONTAL (4" WHEN SPECIFIED)

NOTE
MIN. SLOPE 0.02' RISE PER FOOT UNLESS OTHERWISE SPECIFIED ON PLAN AND PROFILE.

UNLESS WAIVED BY ENGINEER, A 2" HIDE METALLIC DETECTABLE LOCATOR TAPE SHALL BE PLACED WITH EACH LATERAL, APPROXIMATELY 6" ABOVE THE PIPE, BUT NO GREATER THAN 8" DEEP.
NOTE

1. PRECAST REINFORCED CONCRETE MANHOLES SHALL CONFORM TO THE REQUIREMENTS OF ASTM C475, LATEST, AND SHALL BE DESIGNED FOR H-20 LOADING.

2. ALL MANHOLE SECTIONS SHALL BE JOINED WITH 5/8" THICK CONCRETE PLATE, HEAVILY STRIPPED AND POINTED. ALL JOINTS SHALL HAVE PREFORMED BUTYL JOINT SEALANT.

3. WHEN A CHANGE OF PIPE SIZING AT THE MANHOLE IS SPECIFIED, THE PIPES SHALL BE PLACED SO THAT THE TOPS OF THE PIPES ARE ALIGNED.

4. MANHOLE DIAMETER SHALL BE 40" WITH 36" OPENING FOR ALL NEW INSTALLATIONS.

5. WHEN MANHOLE IS IN A STREET TO BE PAVED, MANHOLE FRAME SHALL BE SET AFTER PAVEMENT HAS BEEN PLACED. TOP OF MANHOLE SHALL BE INSTALLED PER STD. Dwg. S-10

6. MANHOLE SHALL BE SPACED AT 400 FOOT INTERVALS, MAXIMUM, UNLESS SPECIFIED OTHERWISE.

7. VERTICAL WALL OF CONE SHALL BE ON UPSTREAM SIDE OF MANHOLE.

8. OVER-ELEVATE A MINIMUM 1-FOOT BELOW MANHOLE BASE AND BACKFILL WITH 1-INCH CRUSHED ROCK.

Concrete inverts shall be true to grade and alignment w/ a smooth finish.

SECTION B-B
PLAN

SECTION A-A
NOTES:

1. REFER TO STANDARD DRAWINGS OF MANHOLE FOR DETAILS PERTAINING TO MANHOLE ONLY.

2. THE TOP 1/2 DIAMETER OF THE PIPE IS TO BE BROKEN OUT TO A NEAT LINE. BROKEN EDGES SHALL BE PLASTERED SMOOTH WITH CEMENT MORTAR.

3. THE MAXIMUM NUMBER OF LATERALS INTO A TERMINUS MANHOLE SHALL BE LIMITED TO FOUR.

4. MANHOLE DIAMETER SHALL BE 60" WITH 36" OPENING FOR ALL NEW INSTALLATIONS.
TYPICAL INSTALLATION SECTION

COVER & FRAME REQUIRED DIMENSIONS

<table>
<thead>
<tr>
<th>CLEAR OPENING</th>
<th>COVER O.D.</th>
<th>FRAME O.D.</th>
<th>FRAME HEIGHT</th>
<th>OVERALL BASE</th>
<th>TOTAL WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>24&quot;</td>
<td>36-1/4&quot;</td>
<td>40-1/2&quot;</td>
<td>4&quot;</td>
<td>32&quot;</td>
<td>315 LBS</td>
</tr>
</tbody>
</table>

NOTES:
1. MANHOLE COVER SHALL BE DESIGNED FOR A.A.S.H.O. H-20 LOADING.
2. CAST IRON SHALL HAVE MINIMUM TENSILE STRENGTH OF 30,000 LBS. PER SQUARE INCH.
3. MARKER POSTS AND A.C. APRONS SHALL BE INSTALLED FOR MANHOLES LOCATED IN UNTIMPROVED AREAS. REFER TO S-15.
4. RAINSTORMS SHALL BE INSTALLED IN AREAS SUBJECT TO STORM RUNOFF OR FLOODING.
Typical Installation Section

General Notes:
1. Manhole cover shall be designed for AASHTO H-20 loading.
2. Cast iron shall have minimum tensile strength of 30,000 lbs. per square inch.
3. Marker posts and A.C. approns shall be installed for manholes located in unimproved areas. Refer to S-15.
4. Rainstoppers shall be installed in areas subject to storm runoff flooding.

Cover & Frame Required Dimensions

<table>
<thead>
<tr>
<th>Clear Opening</th>
<th>Small Opening</th>
<th>Frame Height</th>
<th>Overall Base</th>
<th>Total Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>36&quot;</td>
<td>22&quot;</td>
<td>6&quot;</td>
<td>44&quot;</td>
<td>850 lbs.</td>
</tr>
</tbody>
</table>

Drawing Information:
- Scale: 1:20
- Drawing Number: S-14A
- Approved: 3-17-2008

Rancho Water
Rancho California Water District
NOTES

1. SLOPE WILL CONFORM WITH RIVERSIDE COUNTY ROAD OR STATE HIGHWAY IMPROVEMENT STANDARDS AND SPECIFICATIONS, AS APPLICABLE, OR MEET EXISTING CONDITIONS AS DIRECTED BY ENGINEER.

2. ANY PAVEMENT AREAS THAT MAY COLLECT STORM WATER AROUND MANHOLE WILL REQUIRE A RAIN-STOPPER INSERT.
## NOTES

1. MANHOLE COVER SHALL BE DESIGNED FOR A.A.S.H.O. H=20 LOADING.

2. CAST IRON SHALL HAVE MINIMUM TENSILE STRENGTH OF 30,000 LBS. PER SQ. INCH

3. MANHOLE COVER SHALL BE "ALHAMBRA FOUNDARY CO." TYPE 4-1175 FOR 22-3/4" DIA. (CATALOG 17-MAR, '68) OR APPROVED EQUAL.

4. RAISE ALL UNIMPROVED AREA MANHOLE ABOVE GRADE AND USE BOLT DOWN COVERS (INSTALL GUARDPOSTS).
NOTES:

1. CLEAN-OUT IS TO BE USED FOR SPECIAL CONDITIONS ONLY.
2. CLEAN-OUT IS NOT TO BE SUBSTITUTED FOR MANHOLE.
3. CLEAN-OUTS ARE NOT TO BE PLACED ON LATERALS OVER 150' LONG.
4. CLEAN-OUT PIPES MUST BE SAME DIAMETER AND MATERIAL AS MAIN LINE SEWER.
5. CASTING WILL BE ALABAMA FOUNDRY NO. A-1041 OR APPROVED EQUAL AS PER ENGINEER.
6. COVER FRAME AND CONCRETE PAD ARE TYPICAL FOR 8" LD. MAIN LINE SEWER.
7. PLUGS WILL BE CEMENTED IN PLACE WITH CEMENT MORTAR.
   NEOPRENE PLUGS OR APPROVED EQUALS MAY BE SUBSTITUTED.
8. STATION OF LINE OR LOWER 1/8 SWEET BEND WILL CORRESPOND TO THE CLEAN-OUT LOCATION SHOWN ON CONSTRUCTION DRAWINGS.
   WITH CLEAN-OUT CONSTRUCTION EXTENDED BEYOND THAT POINT AS NECESSARY.
9. USE ONLY CLASS "A" CONCRETE FOR CONSTRUCTION.
NOTES

1. MANHOLE TO BE INSTALLED ON BUILDING SEWER AND LOCATED SUCH THAT THE MANHOLE WILL BE ACCESSIBLE AT ALL TIMES.

2. PRECAST REINFORCED CONCRETE MANHOLES SHALL CONFORM TO THE REQUIREMENTS OF ASTM C478, LATEST, AND SHALL BE DESIGNED FOR H-20 LOADINGS.

3. WHERE NO BUILDING SET-BACK IS AVAILABLE, SET MANHOLE IN PAVED AREA. THESE MANHOLES MUST BE SET IN CONCRETE WALK. PLACE PERMANENT PLUG IN MUDFLUSH TO PREVENT INTRUDER. LOCATE MANHOLE TO CLEAR OTHER UTILITIES.

4. CONCRETE BASE SHALL BE OF CLASS "A" CONCRETE AND PLACED IN ONE OPERATIONAL CONCRETE INERTS SHALL BE TRUE TO GRACE AND ALIGNED. AND FINISHED WITH A SMOOTH SURFACE. SPECIAL CARE SHALL BE TAKEN IN FORMING ALL CHANNELS TO FACILITATE THE FLOW OF SEWAGE.

5. ALL MANHOLE TOPS SHALL BE INSTALLED WITH THE MANHOLE COVER OVER THE DOWNSTREAM INLET, EXCEPT AS OTHERWISE SPECIFIED.

6. SEE Dwg. No. S-16 FOR DETAILS AND INSTALLATION OF MANHOLE AND FRAME.

7. GRADE RINGS SHALL BE 24" IN DIA. EXCEPT AS OTHERWISE NOTED.

8. JOINTS SHALL BE 3/8" THICKNESS CEMENT MORTAR NEATLY STRUCK AND POINTED. ALL JOINTS SHALL HAVE A PREFORMED BUTYL JOINT SEALANT.

9. ALL SAMPLING MANHOLES MUST HAVE PROVIDED FOR POWER AND COMPOSITE SAMPLES IN LOCKABLE CABINET.

10. OVER-ELEVATE A MINIMUM 6" FOOT BELOW MANHOLE BASE AND BACKFILL WITH 2-INCH CRUSHED ROCK.
NOTES:
1. MATERIAL IS FIBERGLASS REINFORCED POLYESTER (FRP).
2. NEOPRENE BUSHINGS ARE SECURED WITH STAINLESS STEEL BANDS.
3. HINGE, HASP, ANCHOR BRACKET AND BOLTS ARE TYPE 304 SS.
4. FRP. GRATING TO BE INSTALLED OVER FLUME ONLY, BUT SHALL BE OMITTED BELOW TRANSUCER.
NOTES


2. NEMA 4 CABINET DOOR TO BE VENTED.

3. DOOR TO BE EQUIPPED W/HASPB FOR PADLOCK.

4. PROVIDE DUAL 20 AMP, 120 VAC WEATHERPROOF, GROUND FAULT RECEPTACLE (INSIDE CABINET).

5. ELECTRICAL CONDUIT, FITTINGS, ETC., PER R.O.W.

STANDARD SPECIFICATIONS.

6. EDISON METER BY MIFIBRAK WEST UNICORN ELECTRIC PRODUCTS ANAHEIM, CA TYPE 0622013A NEMA 3R, 120/240 VAC 1 1/2 WIRE, 100 AMPS.

7. ALL CONDUIT TO BE RIGID STEEL PVC COATED PER SPECS.
NOTES:

1. ENDS OF THE CASING PIPE SHALL BE CLOSED AROUND THE CARRIER PIPE WITH A RUBBER END SEAL.

2. STEEL CASING SHALL BE INSTALLED BY MEANS OF JACKING OR DRY BORING, EXCEPT WHERE SPECIFICALLY NOTED ON THE PLANS TO BE INSTALLED BY OPEN DITCH CONSTRUCTION.

3. CASING DIA. SHALL BE A MINIMUM OF 4" GREATER THAN THE OUTSIDE DIAMETER OF THE HOLLOW PIPE CASING, SMALLER THAN 30" IN DIA. WHEN CASING IS BONDED, UNLESS SPECIFICALLY NOTED.

4. THE STEEL PIPE CASING THICKNESS SPECIFIED IN "TABLE A" IS REQUIRED FOR CASING IN PLACE AND DOES NOT ACCOUNT FOR CONSTRUCTION LOADS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE STRUCTURAL STABILITY OF THE CASING DURING CONSTRUCTION AND THE METHOD OF INSTALLATION.

5. GRAVITY SEWER PIPELINES AND PRESSURE PIPELINES SHALL BE SUPPORTED ON CASING SPACING SUBJECT TO THE APPROVAL OF THE ENGINEER.

6. FLEXIBLE PIPE (PVC, ABS, RPW, ETC.) SHALL HAVE SPACER GUIDE ALONG THE TOP TO PREVENT PIPE FROM FLOATING. FOR ENDS OF CASING PIPE, SEE NOTE ON PIPE WITHIN CASING TO BE BONDED TOGETHER AT THE JOINTS FOR AN INTERNAL UNIT PER MANUFACTURER'S RECOMMENDATION. TWO APPROVED FLEXIBLE COUPLINGS SHALL BE USED AT EACH END OF CASING, PER S-18.

7. NOTICE AS REQUIRED BY THE DISTRICT SHALL BE GIVEN PRIOR TO CONSTRUCTION FOR INSPECTION OF CASING PIPE AND CARRIER PIPE INSTALLATION. THE AS-BUILT LOCATION AND Grade OF THE CASING PIPE SHALL BE APPROVED BY THE DISTRICT PRIOR TO INSTALLATION OF THE CARRIER PIPE. DEPARTURES FROM PLANNED Location OR Grade OF THE CARRIER PIPE SHALL REQUIRE A FIELD SURVEY FOR CARRIER PIPE DEPARTURE IF FLEXIBLE, OR ANABANDONMENT IN FAVOR OF A NEW INSTALLATION.

8. CAST-IRON PIPE AND PIPE LEAD WIRE, AS APPLICABLE, SHALL BE SIMILAR TO THAT SHOWN ON RW-47. PIPE AND PIPE LEAD WIRE SHALL BE ROUTED TO VALVE BOX PER RW-47 AND LABELED PER RW-40.

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**TABLE "A" (STEEL)**

<table>
<thead>
<tr>
<th>DIAMETER &quot;D&quot;</th>
<th>STEERS &amp; MINS</th>
<th>RAILROADS</th>
</tr>
</thead>
<tbody>
<tr>
<td>(INCHES)</td>
<td>1/8&quot; ACTUAL</td>
<td>1/8&quot; ACTUAL</td>
</tr>
<tr>
<td>4&quot; - 10&quot;</td>
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<tr>
<td>63&quot; - 72&quot;</td>
<td>3/8&quot;</td>
<td>1/2&quot; - 1/2&quot;</td>
</tr>
</tbody>
</table>

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*For standards and requirements regarding pipe casing and sewer main installation, see RW-47 and RW-40. For any inquiries, please contact the Acting District Engineer.*
ZONE "A" NO SEWERS SHALL BE CONSTRUCTED WITHOUT SPECIAL APPROVAL FROM STATE DEPARTMENT OF HEALTH SERVICES AND RANCHO CALIFORNIA WATER DISTRICT.

ZONE "B" SEWER SHALL BE CONSTRUCTED OF EXTRA STRENGTH VITRIFIED CLAY PIPE WITH COMPRESSION JOINTS, POLYVINYL CHLORIDE PLASTIC PIPE WITH RUBBER RING JOINTS (PER ASTM D 3034), OR DUCTILE IRON PIPE WITH COMPRESSION JOINTS.

ZONE "C" & "D" SEWER SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING AND MECHANICAL JOINTS, CONTINUOUS SECTION OF CLASS 200 (DWM PER AWWA C-900) POLYVINYL CHLORIDE PLASTIC PIPE CENTERED OVER PIPE BEING CROSSED OR VERIFIED CLAY PIPE WITHIN A CONTINUOUS STEEL SLEEVE (1/4″ MINIMUM WALL THICKNESS).

ZONE "E" NO SEWER LINE CONSTRUCTION ALLOWED.
BOX TO BE SET 2" ABOVE FINISHED GRADE AND FINISHER INTO FINISHED GRADE TO AVOID TRIP HAZARDS

STEEL PLATE COVER: A NON-SKID SURFACE SUCH AS DIAMOND PLATE OR OTHER APPROVED SURFACE IS REQUIRED FOR THE COVER PLATE IF THE BOX IS LOCATED IN A PEDESTRIAN OR VEHICULAR TRAFFIC AREA. A 3/4" HOLE MUST BE DRILLED 3" FROM ANY EDGE OF THE COVER.

SECTION A-A

INLET

OUTLET

FLOW

520-4-3000 CONCRETE

TO BE CONNECTED AS PER LOCAL PLUMBING CODE

NOTES

1. ALL Surface WATER SHALL DRAIN AWAY FROM THE SAMPLE BOX.

2. LID AND ANGLE IRON THICKNESS WILL DEPEND ON TRAFFIC PATTERNS IN SAMPLE BOX AREA.

3. INSTALLATION IN ACCORDANCE WITH ALL LOCAL PLUMBING CODES.

PLAN
STEEL PLATE COVER
A NONE END SURFACE SUCH AS DIAMOND PLATE OR OTHER APPROVED SURFACE IS REQUIRED FOR THE COVER PLATE IF THE BOX IS LOCATED IN A PEDESTRIAN OR VEHICULAR TRAFFIC AREA. A 3/4" DIA. HOLE MUST BE DRILLED 8" FROM ANY EDGE OF THE COVER.

NOTE:  
1. ALL SURFACE WATER SHALL DRAIN AWAY FROM THE SAMPLE BOX.
2. LP AND ANGLE IRON THICKNESS WILL DEPEND ON TRAFFIC PATTERNS IN SAMPLE BOX AREA.
3. INSTALLATION IN ACCORDANCE WITH ALL LOCAL PLUMBING CODES.
2. CHAMBER INTERCEPTOR

NOTES:
1. ALL INTERCEPTORS SHALL HAVE A MINIMUM LIQUID CAPACITY OF 750 GALLONS.
2. ALL WASTEWATER EXCLUDING RESTROOMS MUST PASS THROUGH THE INTERCEPTOR.
3. ALL SURFACE WATER SHALL DRAIN AWAY FROM THE INTERCEPTOR.
4. PLUMBING PER LOCAL PLUMBING CODE.
NOTES

1. BARREL DIAMETER OF SAMPLING WYE TO BE A MINIMUM OF 2 INCHES LARGER THAN BUILDING DISCHARGE LINE.

2. DIAMETER OF RISER PIPE TO BE 4 INCHES.

3. MUST BE ACCESSIBLE AT ALL TIMES TO R.C.W.S. PERSONNEL.

4. IF NECESSARY TO PLACE SAMPLING WYE IN SIDEWALK, USE COVER AND FRAME.

5. CASTING SHALL BE ALHAMBRA FOUNDRY NUMBER A-2922, TEST STATION MARKER COVER AND FRAME OR EQUAL AS APPROVED BY THE ENGINEER.

NON-TRAFFIC USE

CONSOLIDATED TRENCH BACKFILL

CLASS "C" CONCRETE

4" PIPE-LENGTH AS NECESSARY

TRAFFIC USE

SEE NOTE NO. 5 TRAFFIC SURFACE

4'-3/4" 19'-1/2"

9" MIN.
NOTES:

1. Sewage backflow valve assembly to be installed on all laterals where the pad elevation is lower than that of the first up stream manhole.

2. Property owner is responsible for the installation and maintenance of the sewage backflow valve assembly.