SEPARATION AND CONSTRUCTION
FOR SEWER AND WATER LINES
(PARALLEL)

PIPE CONVEYANCE TYPE A
CCR, TITLE 22, SECTION 64572(A)
1. UNTREATED SEWAGE
2. PRIMARY OR SECONDARY TREATED SEWAGE
3. DISINFECTED SECONDARY-22 RECYCLED WATER
4. DISINFECTED SECONDARY-23 RECYCLED WATER
5. HAZARDOUS FLUIDS

LEGEND

ZONE
G
R
P

SPECIAL CONSTRUCTION
DUCTILE IRON PIPE
CONSTRUCTION RESTRICTED (SUBST - APPROVAL REQU.)
CONSTRUCTION PROHIBITED

COACHELLA VALLEY WATER DISTRICT
SEPARATION AND CONSTRUCTION REQUIREMENTS FOR SEWER AND WATER LINES (PARALLEL)
APPROVAL DATE: DRAFT 09/18 DRAWING NUMBER: W-1/S-3
SEPARATION AND CONSTRUCTION FOR SEWER AND WATER LINES (CROSSINGS) REQUIREMENTS

WATER MAIN CROSSING SHALL BE MADE PERPENDICULAR TO AND NO LESS THAN 45-DEGREES TO PIPELINE

GROUND SURFACE

ZONE C

12" 36" OF COVER MIN
18" 54" OF COVER MIN

WATER MAIN

ZONE P

ZONE R

VARIABLE

TYPE A OR B

6' MIN.

8' MIN.

NO JOINTS

(CCR, TITLE 22, SECTION 64572d)

LEGEND

ZONE

SPECIAL CONSTRUCTION

DUCTILE IRON PIPE (NO JOINTS)
CONSTRUCTION RESTRICTED
(CD-9H = APPROVAL REQUIRED)
CONSTRUCTION PROHIBITED
SEE STD. DWG. W-

COACHELLA VALLEY WATER DISTRICT
SEPARATION AND CONSTRUCTION REQUIREMENTS FOR SEWER AND WATER LINES (CROSSINGS)

APPROVAL Date: Draft 09/18  DRAWING NUMBER: W-2/S-4
NOTES:

1. OVEREXCAVATION OF UNSUITABLE MATERIAL SHALL BE PER SECTION 31.23.17 OF THE SPECIFICATIONS.
2. SEE SPECIFICATION FOR PAV'T REQUIREMENTS.
3. FOR SOIL CONDITIONS WHICH WARRANT SPECIAL BEDDING SEE STD. SPEC. FOR PUBLIC WORKS CONSTRUCTION 306-6.
4. ALL EXCAVATION SHALL CONFORM TO CONSTRUCTION SAFETY ORDER, DM INDUSTRIAL SAFETY.
5. REQUIREMENTS OF LOCAL JURISDICTION MAY SUPERCEDE CVWD'S REQUIREMENTS WHERE APPLICABLE.
TYPICAL LOCATION OF WATER METER BOX

PLACE BACK FACE OF METER BOX AT R/W LINE

CUSTOMER SERVICE LINE

PLACE BACK FACE OF METER BOX AT BACK OF CURB.

CUSTOMER SERVICE LINE

NOTE:
1. IF SIDEWALK IS ADJACENT TO THE CURB THE METER BOX IS TO BE LOCATED OUTSIDE AND ADJACENT TO SIDEWALK WITHIN THE PUE.
2. FOR SERVICE INSTALLATION DETAILS, SEE DETAIL DRAWINGS W-7, W-9, AND W-11.
3. METER BOXES SHALL NOT BE LOCATED IN SIDEWALK.

COACHELLA VALLEY WATER DISTRICT

TYPICAL LOCATION OF WATER METER BOX

APPROVAL DATE: DRAFT 09/18 DRAWING NUMBER: W-5A

NOTE: 1. IF SIDEWALK IS ADJACENT TO THE CURB THE METER BOX IS TO BE LOCATED OUTSIDE AND ADJACENT TO SIDEWALK WITHIN THE PUE.
2. FOR SERVICE INSTALLATION DETAILS, SEE DETAIL DRAWINGS W-7, W-9, AND W-11.
3. METER BOXES SHALL NOT BE LOCATED IN SIDEWALK.
TYPICAL LOCATION OF W-5B WATER METER BOX

PLACE FACE OF METER BOX AT BACK OF SIDEWALK AND WITHIN R/W

CUSTOMER SERVICE LINE

LANDSCAPE AREA

SIDEWALK

CVWD-DW SERVICE LINE

W

W

W

SIDEWALK

SIDEWALK

SIDEWALK

SEWER LATERAL

NOTES:

1. IF SIDEWALK IS ADJACENT TO THE CURB THE METER BOX IS TO BE LOCATED OUTSIDE AND ADJACENT TO SIDEWALK WITHIN THE PUE.

2. FOR SERVICE INSTALLATION DETAILS, SEE DETAIL DRAWINGS W-7, W-9, AND W-11.

3. METER BOXES SHALL NOT BE LOCATED IN SIDEWALK.

COACHELLA VALLEY WATER DISTRICT

TYPICAL LOCATION OF WATER METER BOX

APPROVAL DATE: DRAFT 09/18    DRAWING NUMBER: W-5B
NOTES:

1. REFER TO SECTIONS 33 11 13, 33 12 13, AND 33 12 16.40 OF THE SPECIFICATIONS.

2. LOCATE METER BOX AS SHOWN ON STD. DWG. W-5A & B

3. SET TOP OF METER BOX FLUSH WITH SIDEWALK, CURB OR FINISH GRADE.

4. INSTALL CORPORATION STOP WITH KEY IN THE SIDE POSITION.

5. MATERIALS SHALL BE SELECTED FROM THE APPROVED MATERIALS LIST.

6. FOR DOMESTIC IRRIGATION A DOUBLE CHECK SHALL BE INSTALLED IN LIEU OF CHECK VALVE.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>NO.</th>
<th>SIZE AND DESCRIPTION</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>SHUT-OFF VALVE*</td>
<td>TO BE INSTALLED BY CVWD</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>STRAIGHT CHECK VALVE (SEE NOTE #6)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>METER*</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>17&quot;(W) X 30&quot;(L) X 12&quot;(D) METER BOX &amp; LID (66S)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>T ANGLE METER STOP</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>1&quot; X REQUIRED LENGTH COPPER PIPE SERVICE LINE (TYPE K SOFT) (POLYETHYLENE ENCASED)</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>1&quot; CORPORATION STOP</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>1&quot; SERVICE SADDLE</td>
<td></td>
</tr>
</tbody>
</table>

*SIZE DETERMINED BY ENGINEER OF RECORD BASED ON DOMESTIC WATER AND FIRE SPRINKLER DEMANDS.

COACHELLA VALLEY WATER DISTRICT

DETAIL OF 1" SERVICE CONNECTION AND METER INSTALLATION

APPROVAL DATE: DRAFT 09/18 | DRAWING NUMBER: W-7
NOTES:

1. REFER TO SECTIONS 33.11.13, 33.12.13, AND 33.12.16.40 OF THE SPECIFICATIONS

2. LOCATE METER BOX AS SHOWN ON STD. DWG. W-5A & B

3. SET TOP OF METER BOX FLUSH WITH SIDEWALK, CURB OR FINISH GRADE

4. INSTALL CORPORATION STOP WITH KEY IN THE SIDE POSITION.

5. MATERIALS SHALL BE SELECTED FROM THE APPROVED MATERIALS LIST.

6. FOR DOMESTIC IRRIGATION A DOUBLE CHECK VALVE BE INSTALLED IN LIEU OF CHECK VALVE

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>SIZE AND DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SHUT-OFF VALVE*</td>
</tr>
<tr>
<td>2</td>
<td>STRAIGHT CHECK VALVE (SEE NOTE #6)</td>
</tr>
<tr>
<td>3</td>
<td>METER*</td>
</tr>
<tr>
<td>4</td>
<td>STRAIGHT METER COUPLING*</td>
</tr>
<tr>
<td>5</td>
<td>BRASS BUSHING*</td>
</tr>
<tr>
<td>6</td>
<td>1 1/2&quot; x 30&quot;(L) x 12&quot;(D) METER BOX &amp; LD (685)</td>
</tr>
<tr>
<td>7</td>
<td>FLANGE COMPANION</td>
</tr>
<tr>
<td>8</td>
<td>1 1/2&quot; X 1/2&quot; COMP. STOP</td>
</tr>
<tr>
<td>9</td>
<td>1 1/2&quot; X REQUIRED LENGTH COPPER PIPE SERVICE LINE (TYPE &quot;K&quot; SOFT) (POLYETHYLENE ENCASED)</td>
</tr>
<tr>
<td>10</td>
<td>1 1/2&quot; X 90 DEGREE ELBOW</td>
</tr>
<tr>
<td>11</td>
<td>1 1/2&quot; CORPORATION STOP</td>
</tr>
<tr>
<td>12</td>
<td>1 1/2&quot; SERVICE SADDLE</td>
</tr>
</tbody>
</table>

*SIZE DETERMINED BY ENGINEER OF RECORD BASED ON DOMESTIC WATER AND FIRE SPRINKLER DEMANDS.

COACHELLA VALLEY WATER DISTRICT

DETAIL OF 1-1/2" SERVICE CONNECTION AND METER INSTALLATION

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-9
NOTES:

1. REFER TO SECTIONS 33 11 13, 33 12 13, AND 33 12 16.40 OF THE SPECIFICATIONS.

2. LOCATE METER BOX AS SHOWN ON STD. DWG. W-5A & B.

3. SET TOP OF METER BOX FLUSH WITH SIDEWALK, CURE OR FINISH GRADE.

4. INSTALL CORPORATION STOP WITH KEY IN THE SIDE POSITION.

5. MATERIALS SHALL BE SELECTED FROM THE APPROVED MATERIALS LIST.

6. FOR DOMESTIC IRRIGATION A DOUBLE CHECK VALVE BE INSTALLED IN LIEU OF CHECK VALVE.

COACHELLA VALLEY WATER DISTRICT

DETAIL OF 2" SERVICE CONNECTION AND METER INSTALLATION

Approval Date: Draft 09/18  Drawing Number: W-11
WHERE VALVE OPERATING NUT IS GREATER THAN 48" BELOW THE SURFACE, AN EXTENSION ROD FOR VALVE OPERATION, WITH CIRCULAR CENTERING GUIDE, SHALL BE REQUIRED. THE TOP OF THE EXTENSION ROD SHALL BE MIN. 24" AND MAX. 48" BELOW THE SURFACE.

1. FOR VALVE OPERATOR WELL CAP SEE STD. DRAWING W-18
2. FOR MARKER POST SEE STD. DRAWING W-27
3. PER COUNTY OF RIVERSIDE STANDARD NO. 818 TRENCH BACKFILL
4. **DEFINED AS 6 MONTHS OR OLDER
NOTES:

1. ALL METALLIC MATERIALS SHALL BE CAST IRON OR DUCTILE IRON.
2. FRAME AND LID SHALL HAVE CAST SEAT AND SIDE TO ASSURE CLOSE FIT.
3. FOR INSTALLATION, SEE STANDARD DRAWING W-17.
4. FRAME AND LID SHALL EXCEED H-20 WHEEL LOADING.
5. APPROVED MODELS:
   • 10 INCH HEAVY MARK V TRI RIM W/FLANGE MODEL NO. 12710RTF MANUFACTURED BY BINGHAM & TAYLOR
   • 10 INCH MARK V TRI LID CVWD-WATER YELLOW POWDER MODEL NO. CUL10LTCWWD-W MANUFACTURED BY BINGHAM & TAYLOR
NOTES:

1. BEARING AREA FOR THRUST BLOCKS SHALL DEPEND ON PRESSURE AND PIPE SIZE

2. FOR BEARING AREA SEE STD. DRAWING W-20/S-20

3. CONCRETE THRUST BLOCKS SHALL BE CONSTRUCTED OF 420-B-2000 CONCRETE

EXPOSED REBAR TO GROUND SOIL SHALL BE EPOXY COATED OR WRAPPED WITH 10 FT PIPE TAPE

COACHELLA VALLEY WATER DISTRICT

DETAIL OF CONCRETE THRUST BLOCKS

APPROVAL DATE: DRAFT 09/18 DRAWING NUMBER: W-19/S-19
NOTES:

1. BASED ON A 225 PSI TEST PRESSURE AND BEARING VALUES OF DRY SOILS.

2. VALUES FROM CURVES ARE FOR TEES AND DEAD ENDS, I.E. STRAIGHT LINE THRUST.
   FOR 90° BENDS: 1.4 X VALUE FROM CURVE
   FOR 45° BENDS: 0.8 X " "
   FOR 22-1/2°: 0.4 X " "

3. FOR CONDITIONS NOT COVERED BY CURVES, THRUST DEVICES MUST BE APPROVED BY THE ENGINEER.

4. FOR LOCATION OF THRUST BLOCKS SEE STD. DRAWING W-19/S-19.

5. CONCRETE THRUST BLOCKS SHALL BE CONSTRUCTED OF 420-B-2000 CONCRETE.
1. REFER TO SECTION 33 12 13 AND 33 12 18 OF THE SPECIFICATIONS
2. NO DIPS OR LOW SPOTS WILL BE ALLOWED IN PIPING INSTALLATION
3. LOCATE ENCLOSURE AS SHOWN ON W-22A OR W-22B
4. MATERIALS SHALL BE SELECTED FROM THE APPROVED MATERIALS LIST
5. MINIMUM HEIGHT SHALL BE 18" UNLESS OTHERWISE CALLED OUT ON THE PLANS OR DIRECTED BY THE ENGINEER

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>SIZE AND DESCRIPTION</th>
<th>ITEM NO.</th>
<th>SIZE AND DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VALVE ENCLOSURE (COLOR SANDSTONE)</td>
<td>11</td>
<td>1&quot; X 90° LENGTH BRONZE NIPPLE MPT X MPT</td>
</tr>
<tr>
<td>2</td>
<td>1&quot; AUTOMATIC COMBINATION AIR RELEASE &amp; AIR/VACUUM VALVE W/TEST PORT</td>
<td>12</td>
<td>1&quot; 90° BRONZE FIT X FIT ELBOW</td>
</tr>
<tr>
<td>3</td>
<td>INSECT SCREEN</td>
<td>13</td>
<td>1&quot; X REQUIRED LENGTH COPPER PIPE TYPE &quot;K&quot; REED OR SOFT</td>
</tr>
<tr>
<td>4</td>
<td>1&quot; BRONZ FIT X FIT COUPLING</td>
<td>14</td>
<td>BRASS BALL VALVE W/TEE HEAD</td>
</tr>
<tr>
<td>5</td>
<td>1&quot; X REQUIRED LENGTH PVC Sch 40</td>
<td>15</td>
<td>SEE STANDARD DRAWING W-17</td>
</tr>
<tr>
<td>6</td>
<td>1/2&quot; X 3&quot; STAINLESS STEEL DROP-IN ANCHORS</td>
<td>16</td>
<td>1&quot; 90° BRONZE FIT X COMP ELBOW</td>
</tr>
<tr>
<td>7</td>
<td>1/4&quot; X 1&quot; DEEP WEAKENED PLANE JOINT</td>
<td>17</td>
<td>1&quot; BRONZE MPT X MPT CORPORATION STOP</td>
</tr>
<tr>
<td>8</td>
<td>SEE STANDARD DRAWING W-18</td>
<td>18</td>
<td>REAL LINE</td>
</tr>
<tr>
<td>9</td>
<td>6&quot; X 2&quot;- 6&quot; X 4&quot; THICK CONCRETE SLAB</td>
<td>19</td>
<td>WATER MAIN</td>
</tr>
<tr>
<td>10</td>
<td>1&quot; X 8&quot; BLACK FOAM SLEEVE</td>
<td>20</td>
<td>90% RELATIVE COMPACTION (MIN.)</td>
</tr>
</tbody>
</table>

COACHELLA VALLEY WATER DISTRICT

1" AUTOMATIC COMBINATION AIR RELEASE & AIR/VACUUM VALVE INSTALLATIONS

APPROVAL DATE: DRAFT 09/18
DRAWING NUMBER: W-21A
1. REFER TO SECTION 33.12.13 AND 33.12.18 OF THE SPECIFICATIONS
2. NO DIPS OR LOW SPOTS WILL BE ALLOWED IN PIPING INSTALLATION
3. LOCATE ENCLOSURE AS SHOWN ON W-22A OR W-22B
4. MATERIALS SHALL BE SELECTED FROM THE APPROVED MATERIALS LIST
5. MINIMUM HEIGHT SHALL BE 12" UNLESS OTHERWISE CALLED OUT ON THE PLANS OR DIRECTED BY THE ENGINEER

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>SIZE AND DESCRIPTION</th>
<th>ITEM NO.</th>
<th>SIZE AND DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VALVE ENCLOSURE (COLOR SANDSTONE)</td>
<td>2</td>
<td>2&quot; X REG'D LENGTH BRONZE NIPPLE MPT X MPT</td>
</tr>
<tr>
<td>2</td>
<td>2&quot; BRONZE FIT X FIT COUPLING</td>
<td>3</td>
<td>2&quot; 90° BRONZE COMPRESSION ELBOW</td>
</tr>
<tr>
<td>3</td>
<td>2&quot; BRONZE FIT X FIT ELBOW</td>
<td>4</td>
<td>2&quot; X REG'D LENGTH COPPER PIPE</td>
</tr>
<tr>
<td>4</td>
<td>2&quot; AUTOMATIC COMBINATION AIR RELEASE &amp; AIR/VACUUM VALVE W/TEST PORT</td>
<td>5</td>
<td>2&quot; COMP X FIT BALL VALVE W/TEE HEAD</td>
</tr>
<tr>
<td>5</td>
<td>2&quot; X REG'D LENGTH PVC SCH 80 PIPE SLIP X FIT WITH S.S. REINFORCEMENT MPT X SLIP</td>
<td>6</td>
<td>2&quot; 90° BRONZE FIT X COMP ELBOW</td>
</tr>
<tr>
<td>6</td>
<td>1/2&quot; X 3&quot; STAINLESS STEEL DROP-IN ANCHORS E4</td>
<td>7</td>
<td>2&quot; BRONZE MPT X MPT CORPORATION STOP</td>
</tr>
<tr>
<td>7</td>
<td>1/4&quot; X 1&quot; DEEP WEAKENED PLANE JOINT</td>
<td>8</td>
<td>SIZE X 2&quot; SERVICE SADDLE</td>
</tr>
<tr>
<td>8</td>
<td>SEE STANDARD DRAWING W-18</td>
<td>9</td>
<td>WATER MAIN</td>
</tr>
<tr>
<td>9</td>
<td>5&quot; X 2&quot;-6&quot; X 4&quot; THICK CONCRETE SLAB</td>
<td>10</td>
<td>SEE STANDARD DRAWING W-17</td>
</tr>
<tr>
<td>10</td>
<td>2&quot; X 8&quot; BLACK FOAM SLEEVE</td>
<td>11</td>
<td>90% RELATIVE COMPACT (MIN.)</td>
</tr>
</tbody>
</table>

COACHELLA VALLEY WATER DISTRICT

2" AUTOMATIC COMBINATION AIR RELEASE & AIR VACUUM VALVE INSTALLATIONS

APPROVAL DATE: DRAFT 09/18 DRAWING NUMBER: W-21B
1. REFER TO SECTION 33 12 13 AND 33 12 18 OF THE SPECIFICATIONS.
2. AIR/VAC PIPING RUN SHALL SLOPE CONTINUOUSLY TO MAIN.
3. MATERIALS SHALL BE SELECTED FROM THE APPROVED MATERIALS LIST.
4. AIR/VAC SHALL NOT BE PLACED IN ROADWAY MEDIAN.
5. ALL BELOW GROUND AIR/VAC PIPING AND APPURTENANCES SHALL BE
   POLYETHYLENE ENCASED PER SECTION 33 11 13 OF THE SPECIFICATIONS.
6. IN LOCATIONS WITHOUT CURB & GUTTER, GUARD POSTS SHALL BE INSTALLED PER
   STD. DWG. W-49
7. MINIMUM HEIGHT SHALL BE 18" UNLESS OTHERWISE CALLED OUT ON THE PLANS OR DIRECTED BY THE ENGINEER

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>SIZE AND DESCRIPTION</th>
<th>ITEM NO.</th>
<th>SIZE AND DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2 - 90° ELBOWS, 1 - PIPE NIPPLE &amp;</td>
<td>8</td>
<td>FLANGED FABRICATEDTEE</td>
</tr>
<tr>
<td></td>
<td>INSECT SCREEN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>COMBINATION AIR/VACUUM VALVE &amp; AIR</td>
<td>9</td>
<td>VALVE ENCLOSURE (COLOR SANDSTONE)</td>
</tr>
<tr>
<td></td>
<td>RELEASE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>6&quot; STEEL SPOOL FLG X FLG</td>
<td>10</td>
<td>4&quot; X 4&quot; X 18&quot; MIN. THICK CONCRETE SLAB</td>
</tr>
<tr>
<td>4</td>
<td>NOT USED</td>
<td>11</td>
<td>NOT USED</td>
</tr>
<tr>
<td>5</td>
<td>6&quot; DUCTILE IRON PIPE (RESTRAINED JOINTS)</td>
<td>12</td>
<td>SEE STANDARD DRAWING W-1B</td>
</tr>
<tr>
<td>6</td>
<td>1 - 6&quot; 90° DIP ELBOW FLG X FLG</td>
<td>13</td>
<td>6&quot; X 4&quot; REDUCER NEEDED FOR AIR-VACS 4&quot; IN SIZE</td>
</tr>
<tr>
<td>7</td>
<td>BUTTERFLY VALVE FLG X FLG OPERATOR</td>
<td>14</td>
<td>6&quot; POSITIVE BREAK-OFF VALVE STANDARD 8 HOLE X 8 HOLE</td>
</tr>
<tr>
<td></td>
<td>NUT TO BE SET VERTICALLY</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

COACHELLA VALLEY WATER DISTRICT

4" AND LARGER AUTOMATIC COMBINATION AIR RELEASE & AIR/VACUUM VALVE INSTALLATION

APPROVAL DATE: DRAFT 09/18     DRAWING NUMBER: W-21C
ENCLOSURE LOCATIONS

1" AND 2" AIR & VACUUM VALVE
ENCLOSURE LOCATIONS

COLD JOINT STRIP
SEE NOTE 8

1. REFER TO SECTION .33.12.18 OF THE SPECIFICATIONS.

2. GUARD POSTS SHALL BE INSTALLED AS CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

3. EASEMENTS ARE REQUIRED WHEN LOCATED OUTSIDE PUBLIC RIGHT-OF-WAY.

4. THE ENCLOSURE SHALL BE DESERT TAN FOR DOMESTIC WATER AND PURPLE FOR NON-POTABLE AND SHALL BE SELECTED FROM THE APPROVED MATERIALS LIST.

5. IF THE CONCRETE SLAB IS TO BE INSTALLED ADJACENT TO A CONCRETE SIDEWALK A COLD JOINT STRIP SHALL BE INSTALLED.

6. ENCLOSURES LOCATIONS SHALL COMPLY WITH ADA PEDESTRIAN ACCESS AND MAINTAIN A MINIMUM UNOBRSTUCED CLEAR WIDTH OF 48".

7. WITH PRIOR CWWD APPROVAL THE ENCLOSURE, CONCRETE SLAB AND VALVE MAY BE TURNED 90 TO THE ROADWAY.

COACHELLA VALLEY WATER DISTRICT

1" AND 2" AIR & VACUUM VALVE
ENCLOSURE LOCATIONS

APPROVAL DATE: DRAFT 09/18 DRAWING NUMBER: W-22A
1. This configuration is alternative and can only be used as shown on plans or as directed by the engineer.

2. Construction and release of air & vacuum to be constructed as shown on plans and with the addition of a by-pass pipe compression bell located under concrete slab adjacent to valve.

3. Refer to Section 3.11 of the specifications.

4. Protection hole shall be installed as called for in the plans or as directed by the engineer.

5. Elements to be selected depending on location of enclosure.

6. The enclosure shall be painted as manufactured in accordance with the approved materials list.

7. Enclosures installed for the use of recycled water shall be identified as such by the engineer.

8. If the concrete slab is to be installed adjacent to a concrete sidewalk, a cold joint shall be installed.

9. Air & vacuum valves & apparatuses installed for the use of recycled water shall be identified as such by the engineer.

10. Materials shall be selected from the approved materials list.
1. PRIOR SWRCB APPROVAL IS REQUIRED OF ALL DOMESTIC WATER SIPHON UNDERCROSSING PER CCR, TITLE 22 SECTION 64572(d) & (h). SIPHONS SHALL ONLY BE PROPOSED IN RARE CASES AND WILL NEED CVWD APPROVAL PRIOR TO SUBMITTAL.

2. FOR PIPELINE SEPARATION SEE STANDARD DRAWING NO'S. W-1 AND W-2.

3. SIPHONS SHALL BE CONSTRUCTED WITH RESTRAINED JOINTS AND SHALL BE DESIGNATED ON THE PLANS (SEE RESTRAINED JOINT GUIDELINE).

4. AIR RELEASE AND AIR/VACUUM VALVES SHALL BE LOCATED AT SIPHONS WHERE AIR POCKETS MAY FORM.
**INSTALLATION DETAIL OF 4" OR 6" BLOWOFF ASSEMBLY**

**DRAWING NUMBER:** BLOWOFF TO STREET

**Approval Date:** Draft 09/18

---

**ITEM NO.** | **NO. SEQ.** | **SIZE AND DESCRIPTION** | **REMARKS**
--- | --- | --- | ---
1 | | 8" VALVE OPERATOR WELL & CAP | PER STO. DWG W-17 & W-18
2 | 2 | 4" OR 6" X REQUIRED LENGTH PIPE | GALVANIZED MALLEABLE IRON, THREADED ON ENDS
3 | | 4" OR 6" X 90° BEND | GALVANIZED MALLEABLE IRON, INSIDE I.P.T.
4 | | 4" OR 6" COMPANION FLANGE | 
5 | | 4" OR 6" FLANGED GATE VALVE | FLANGED
6 | | MAIN SIZE X 4" OR 6" TEE | 
7 | | VALVE OPERATOR WELL & CAP | SEE STO. DRAWING W-17 & W-18

---

**COACHELLA VALLEY WATER DISTRICT**

**DETAIL OF 4" OR 6" BLOWOFF ASSEMBLY INSTALLATION**

**BLOWOFF TO STREET**

**Approval Date:** Draft 09/18 **DRAWING NUMBER:** W-23
CALL BEFORE DIGGING (HORIZONTAL ALIGNMENT)

CVWD (760) 398-2651 (HORIZONTAL ALIGNMENT)

BRASS TAG 1-INCH MIN. DIAMETER STAMPED AS SHOWN
WITH DISTANCE IN FEET, THE WORD OFFSET, AND
LOCATION SERIAL NUMBER IN DIRECTION OF
OFFSET. TO BE SECURED WITH ALUMINUM POP RIVET
AND WASHER.

FACILITY TYPE ID (3-INCH LETTERS VERT.)

LEGEND:
- B = BLOW-OFF
- RV = RE-VALVE
- BV = BACK VALVE
- PR = PRESSURE REGULATOR VALVE
- ML = MAIN LINE
- CP = CATHODIC PROTECTION

UTILITY MARKER POST COLOR

DOMESTIC WATER = BLUE
GAS = GREEN
NON-POTABLE = PURPLE

REFLECTIVE SHEETING SHALL BE HIGH INTENSITY
GRADE AND 3-INCHES WIDE

INSTALLATION DEPTH PER MANUFACTURERS
RECOMMENDATIONS.

CVWD LOGO
W-30

DRAWING NUMBER:

DETAIL OF 4" OR 6" DETECTOR CHECK WITH BY-PASS METER INSTALLATION FOR DUCTILE IRON PIPE

SECTION A-A

COACHELLA VALLEY WATER DISTRICT

ITEM NO. | DESCRIPTION | MATERIAL SPECIFICATIONS | REMARKS
--- | --- | --- | ---
1 | 4" OR 6" DETECTOR CHECK W/BYPASS METER | CVWD APPROVED | CVWD INSTALLED
2 | 4" OR 6" ADAPTER, FLANGED ATYTUN" OR M.J. | DUCTILE IRON | RESTRAINED JOINT
3 | 2-4" X 1-4" UTILITY BOX W/4" WALLS | SEE MATERIALS LIST
4 | 2-4" X 4-0" UTILITY BOX TOP SECTION | SEE MATERIALS LIST
5 | 2-4" X 4-0" UTILITY BOX COVER | SEE MATERIALS LIST
6 | 4" OR 6" X REQUIRED LENGTH DUCTILE IRON PIPE | DUCTILE IRON | RESTRAINED JOINT
7 | 4" OR 6" GATE VALVE, FLANGED | CVWD APPROVED | CVWD INSTALLED
8 | VALVE OPERATOR WELL | SEE STD. DWG. W-17
9 | GATE WELL CAP VALVE OPERATOR WELL CAP | CAST IRON | SEE STD. DWG. W-18
10 | MAIN SIZE X 6" OR 4" TEE | DUCTILE IRON | CVWD APPROVED
11 | 8" X 8" HINGED METER READING LID | DUCTILE IRON | CVWD APPROVED

Approval Date: Draft 09/18

DRAWING NUMBER: W-30
DETAIL OF 8" DETECTOR CHECK WITH BY-PASS METER INSTALLATION
FOR DUCTILE IRON PIPE

COACHELLA VALLEY WATER DISTRICT

APPROVAL DATE: DRAFT 09/18  DRAWING NUMBER: W-31B
TEMPORARY BACTERIA-SAMPLE RISER DETAIL

NOTE:
1'-0" ABOVE TOP
OF METER BOX
OR EXISTING
GRADE

CALV, 90° BEND

THREADLESS HOSE BIB

REQUIRED LENGTH CALV RISER

EXISTING GRADE

METER BOX WHERE
STATION METER

1'-0" SERVICE
(ANGEL METER STOP)

CALV 6" R.L.

REDUCER

TO MAIN

NOTE:
THREADLESS HOSE BIB TO BE FACING DOWN FOR
SAMPLE COLLECTION

CONTRACTOR TO TURN ANGLE METER
THIS TO THE POSITION BEFORE
INSTALLATION OF SAMPLE RISER.
DRAWING NUMBER: W-33A

DETAIL OF WET BARREL TYPE FIRE HYDRANT INSTALLATION ADJACENT TO SIDEWALK OR CURB FOR DUCTILE IRON PIPE

Approval Date: Draft 09/18  Drawing Number: W-33A
NOTE:
CONCRETE CURBS ARE NOT INSTALLED. LOCATE FIRE HYDRANT 1'-6" FROM PROPERTY LINE. MAINTAIN 12" CLEAR AROUND HYDRANT WHERE STREETS ARE IMPROVED WITH BERM. LOCATE FIRE HYDRANT 1'-6" FROM BERM.

NOTE:
FOR VALVE OPERATOR WELL INSTALLATION SEE STANDARD DRAWING W-17.

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>ITEM DESCRIPTION</th>
<th>SIZE AND DESCRIPTION</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6&quot; FIRE HYDRANT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2+</td>
<td>6&quot; X NO. OF JOINTS AS REQUIRED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>GATE VALVE, FLANGED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>VALVE OPERATOR WELL &amp; CAP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5+</td>
<td>6&quot; TYTON RESTRAINING GASKET OR MECHANICAL JOINT</td>
<td>RESTRAINING GASKET</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>MAIN SIZE X 6&quot; TEE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>6&quot; FLANGED C.I. BREAK-OFF RISER - 6&quot; LONG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>3&quot; X 3&quot; X 6&quot; CONCRETE PAD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>6&quot; 90° BURY, &quot;TYTON&quot; OR M.J. X FLANGED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>6&quot; X REQUIRED LENGTH RISER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>6&quot; POSITIVE BREAK-OFF VALVE ASSEMBLY (FLANGE)</td>
<td>THRUST BLOCKING</td>
<td></td>
</tr>
</tbody>
</table>

COACHELLA VALLEY WATER DISTRICT

DETAIL OF WET BARREL TYPE FIRE HYDRANT INSTALLATION UNIMPROVED STREET FOR DUCTILE IRON PIPE

APPROVAL DATE: DRAFT 09/18  DRAWING NUMBER: W-34A
NOTES:

1. CABLES SHALL BE TAGGED USING TIMES ROMAN 10 POINT FONT IN THE FOLLOWING ORDER:

- NAME OF FACILITY–SIZE–PIPE–MATERIAL
- TYPE OF INSTALLATION
- SURVEY STATION
1. WELDER SHOWN IS FOR HORIZONTAL-surfaces. For vertical surfaces side welder is required.
2. All wire welds shall be minimum 6 inches apart.
3. Remove existing coating as required from pipe to facilitate installation. Clean steel by wire brush method and grind to bright metal prior to welding. Install wires using the exothermic welding process.
4. All exposed metal (structure, wire, & weld) shall be covered with 2 coats of primer and an elastomeric weld cap and restore coating in accordance with specifications.

**Exothermic Welding of Cables and Coating of Welding**

**Caution:**
- Buried Cathodic Protection Line below - Buried Cathodic Protection
- Grade Level

**Exothermic Weld (Typ)**
As shown on Construction Plans

Metal casing
Carrier pipe

AT Grade Cathodic Protection
Test Station Installation

**Coaching Valley Water District**

Detail of Cathodic Protection Test Station Improved Areas

Approval Date: Draft 09/18   Drawing Number: W-36C
PIPE CASING CATHODIC PROTECTION

COACHELLA VALLEY WATER DISTRICT

NOTES:
- ROUTE MAG. ANODE HEADER CABLE TO TEST STATION

WATER LINE

MAGNESIUM ANODES ON COMMON HEADER CABLE EACH END OF CASING

SEE CONTRACT DOCUMENTS FOR SIZE AND QUANTITY

EXOTHERMIC WELDS PER STD. DRAWING W-36D

FUSION BONDED EPOXY STEEL CASING

ABOVE GRADE TEST STATION
SEE STD. DWG. W-364

CVWD. MARKER POST

6" 3" 3" 6"

2.5 MIN

DRAWING NUMBER: W-36D

APPROVAL DATE: DRAFT 09/18
NOTE: PRESSURE REDUCING VALVE TO BE CENTERED IN 10" IRRIGATION BOX

ITEM | NO. | SIZE AND DESCRIPTION | REMARKS
-----|-----|----------------------|-------
1    |     | 10" IRRIGATION VALVE BOX | NOT MAINTAINED BY CWWD
2    |     | SERVICE LINE          |       
3    |     | 1" PRESSURE REDUCING VALVE |       

TYPICAL DETAIL OF INDIVIDUAL 1" PRESSURE REDUCING VALVE INSTALLATION

COACHELLA VALLEY WATER DISTRICT

Approval Date: Draft 09/18   Drawing Number: W-39
REINFORCED PLASTIC RUNNER NOTE 4
SEE SPECIFICATIONS

STEEL CASING

STEEL SPACER SEE SPECIFICATIONS

<table>
<thead>
<tr>
<th>CARRIER PIPE DIAMETER</th>
<th>CASING DIAMETER</th>
<th>CASING THICKNESS</th>
<th>CASING ** THICKNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>8&quot;</td>
<td>18&quot;</td>
<td>3/8&quot;</td>
<td>3/8&quot;</td>
</tr>
<tr>
<td>12&quot;</td>
<td>24&quot;</td>
<td>3/8&quot;</td>
<td>3/8&quot;</td>
</tr>
<tr>
<td>18&quot;</td>
<td>36&quot;</td>
<td>1/2&quot;</td>
<td>3/8&quot;</td>
</tr>
<tr>
<td>24&quot;</td>
<td>42&quot;</td>
<td>3/4&quot;</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>30&quot;</td>
<td>54&quot;</td>
<td>3/4&quot;</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>36&quot;</td>
<td>66&quot;</td>
<td>3/4&quot;</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>42&quot;</td>
<td>72&quot;</td>
<td>3/4&quot;</td>
<td>3/4&quot;</td>
</tr>
</tbody>
</table>

* BORES LONGER THAN 150 FEET.
** BORES 150 FEET IN LENGTH AND SHORTER.

NOTES
1. USE BENTONITE AS REQUIRED TO REDUCE J ACKING FORCE.
2. 36" AND LARGER CASINGS, BLOCK INSIDE OF CASING AFTER INSTALLATION AND GROUT ALL VODS EXCEPT OUTSIDE OF CASING. MAXIMUM GROUT PRESSURE = 0.6 X OVERBURDEN PRESSURE. SEE SPECIFICATIONS FOR GROUTING REQUIREMENTS.
3. BACKFILL ANGULAR SPACE BETWEEN CASING AND CARRIER PIPE WITH SAND UNLESS OTHERWISE NOTED ON THE PLANS. SEE SPECIFICATIONS.
4. FOR TYPE, NUMBER, AND SPACING OF CASING RUNNERS, SEE SPECIFICATIONS. CONTACT CASING RUNNER MANUFACTURER (MAY VARY FROM ILLUSTRATION).
5. PROTECT EXISTING BURIED UTILITIES IN PLACE. SIZE, DEPTH, AND LOCATION VARY.
6. CARRIER PIPE SHALL BE TESTED BEFORE CASING IS SEALED BY BRICK AND MORTAR BULLETS OR REINFORCED END SEALS.
7. AFTER THE CASING PIPE HAS PASSED TESTING THE CASING ENDS SHALL BE SEALED WITH BRICK AND MORTAR BULLETS. LARGER ENDS MAY BE SEALED IF NOTED ON THE PLANS AND INCLUDED IN THE SPECIFICATIONS.

COACHELLA VALLEY WATER DISTRICT
STANDARD CASING FOR DOMESTIC WATER MAINS

Approval Date: Draft 09/18

DRAWING NUMBER: W-40
INLET FOR BLOW-OFF WATER AT WELL SITES
(GRAVITY FLOW ONLY)

NOTES:
1. GRATE AND FRAME SHALL BE GALVANIZED

COACHELLA VALLEY WATER DISTRICT

DRAWING NUMBER: W-41

APPROVAL DATE: Draft 09/18
<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>SIZE AND DESCRIPTION</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3/4&quot; METER BOX</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1&quot; ANGLE STOP</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1 1/4&quot; X 3/4&quot; BRASS BUSHING REDUCER</td>
<td>LENGTH DEPENDS ON RUN</td>
</tr>
<tr>
<td>4</td>
<td>3/4&quot; COPPER TUBING</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>CEMENT PAD</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>STATION CANISTER- BOLTED TO CONCRETE SLAB</td>
<td>DISTRICT SUPPLIED</td>
</tr>
<tr>
<td>7</td>
<td>PLUMBING INSULATION</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>3/4&quot; X 3/4&quot; FERRULE FITTING</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>3/4&quot; X 3/4&quot; BRASS BALL VALVE</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>3/4&quot; X 3/8&quot; FERRULE FITTING</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>3/8&quot; 316SS GOOSE NECK</td>
<td></td>
</tr>
</tbody>
</table>

**COACHELLA VALLEY WATER DISTRICT**

**SAMPLE STATION**

**APPROVAL DATE: DRAFT 09/18**

**DRAWING NUMBER: W-42**
WELL SITE GATES & DETAILS

NOTES:
1. GATES TO OPEN INTO THE WELL SITE
2. GATES TO BE PAINTED an APPROVED COLOR BY C.V.W.D.
3. ALL HINGES TO BE 6" x 6" HEAVY DUTY (69002) MANUFACTURED BY PATTONS CORP. OR APPROVED EQUAL

COACHELLA VALLEY WATER DISTRICT

WELD TO GATE AT THIS POINT

GATE POST ANCHORING

GATE POST

HINGE DETAIL

6" x 6" GATE POST

HINGE WELDED TO GATE POST AND GATE FRAME
USE SEAMLESS ROUND TUBING 1" O.D. x 1/2" I.D.

LOCKING SADDLE

1" CAP

1/4" GAP

3/8" GAP

2" SQUARE TUBING

SEE LOCKING SADDLE DETAIL BELOW

INSTALL BARREL BOLT LOCKING DEVICE ON MAN GATE

STABILIZER ROD DETAIL

3" MAN GATE DETAIL

3" MAN GATE

GATE FRAMES CONSTRUCTED OF SQUARE TUBE 1" X 1/2"

LOCKING SADDLE

2" SQUARE TUBING

CVWD LOCK

LOCKING SADDLE ISO-METRIC VIEW

GATE DETAIL

WELL SITE DETAIL

WELL SITE GATES & DETAILS

Approval Date: Draft 09/18

DRAWING NUMBER: W-43
PIPE GATE ASSEMBLY

GENERAL NOTES:

1. All pipe to be as shown with 1/4" thick walls unless otherwise indicated and surfaced with a field applied galvanized coating.

2. Set 5" hinge post (as shown), 6" dia. gate post slides over 5" dia. concrete filled hinge post. 5" dia. hinge post cap is welded to it after the hinge post is set and gate is hung.

3. Set lock post to match gate latch (as shown) and fill lock post with concrete to just below slot to maintain space for lock. Weld cap to top of lock post.

COACHELLA VALLEY WATER DISTRICT

STANDARD PIPE GATE ASSEMBLY

APPROVAL DATE: DRAFT 09/18 DRAWING NUMBER: W-44
WELL DESTRUCTION NOTES:

1. DESTROY WELL IN ACCORDANCE WITH DWR BULLETIN 74-81, WATER WELL STANDARDS

2. OBTAIN PERMIT FROM RIVERSIDE COUNTY HEALTH DEPT.

3. REMOVE EQUIPMENT AND EXISTING PCC PUMP BASE AND SLAB.

4. REMOVE CASING TO A MINIMUM OF 5' BELOW GRADE.

5. UTILIZING A TREMIE PIPE, AND BEGINNING FROM BOTTOM, FILL CASING TO A MUSHROOM TOP WITH 10.5 SACK SAND. GROUT UNDER DIRECT INSPECTION.

6. IF DEBRIS BLOCKING THE FLOW OF GROUT, THE WELL SHALL FIRST BE CLEANED WITH A SNAPPING TOOL.

7. CONTRACTOR SHALL POSSESS A C-57 LICENSE.

8. BACKFILL excavaTION SHALL CONFORM TO SAFETY STANDARDS, OSHA, ETC., INCLUDING COMPACTION REQUIREMENTS.

9. OTHER PERTINENT PIPING SHALL BE PLUGGED OR ABANDONED AS DIRECTED BY ENGINEER.

COACHELIA VALLEY WATER DISTRICT

DETAIL OF WELL DESTRUCTION

APPROVAL DATE: DRAFT 09/18  DRAWING NUMBER: W-46
NOTE:

1. REFER TO SECTION 33 12 17 OF THE SPECIFICATIONS.

2. WHEN NO CURB OR SIDEWALK IS PROPOSED, BLOW-OFF IS TO BE PLACED 1'-6" INSIDE THE ROADWAY RIGHT-OF-WAY.

3. TEMPORARY BLOW-OFF ASSEMBLIES SHALL BE LOCATED AS SHOWN ON THE PLANS AND SHALL BE LOCATED SO AS NOT TO INTERFERE WITH FUTURE IMPROVEMENTS THAT WILL BE INSTALLED PRIOR TO THE WATER MAIN EXTENSION.

4. ABOVE GROUND BLOW-OFF ASSEMBLY SHALL BE PAINTED CHROME YELLOW.

---

**ITEM NO.** | **SIZE AND DESCRIPTION**  
---|---  
1 | FIRE HYDRANT HEAD 4"x1-2 1/2"  
2 | 4" X 15 3/4" LONG GALVANIZED NIPPLE THREADED AT BOTH ENDS  
3 | 6"4" CAST IRON REDUCER  
4 | 6" POSITIVE BREAK-OFF VALVE ASSEMBLY (FLANGE)

---

**ITEM NO.** | **SIZE AND DESCRIPTION**  
---|---  
3 | 6" WET BARREL HYDRANT BURY  
6 | 6" STEEL SPOOL FE X FE

---

**COACHELLA VALLEY WATER DISTRICT**

6" X 1-2 1/2" TEMPORARY BLOW-OFF END OF MAIN INSTALLATION DOMESTIC WATER PIPES

**APPROVAL DATE:** Draft 09/18  
**DRAWING NUMBER:** W-47
<table>
<thead>
<tr>
<th>System Static Pressure, psi</th>
<th>Test Pressure</th>
<th>Nominal Pipe Diameter, in.</th>
<th>6</th>
<th>8</th>
<th>12</th>
<th>18</th>
<th>24</th>
<th>30</th>
<th>36</th>
<th>42</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 or less</td>
<td>150</td>
<td></td>
<td>0.50</td>
<td>0.66</td>
<td>0.99</td>
<td>1.49</td>
<td>1.99</td>
<td>2.48</td>
<td>2.98</td>
<td>3.48</td>
</tr>
<tr>
<td>110</td>
<td>165</td>
<td></td>
<td>0.52</td>
<td>0.69</td>
<td>1.04</td>
<td>1.56</td>
<td>2.08</td>
<td>2.60</td>
<td>3.12</td>
<td>3.65</td>
</tr>
<tr>
<td>120</td>
<td>180</td>
<td></td>
<td>0.54</td>
<td>0.73</td>
<td>1.09</td>
<td>1.63</td>
<td>2.18</td>
<td>2.72</td>
<td>3.26</td>
<td>3.81</td>
</tr>
<tr>
<td>130</td>
<td>195</td>
<td></td>
<td>0.57</td>
<td>0.75</td>
<td>1.13</td>
<td>1.70</td>
<td>2.26</td>
<td>2.83</td>
<td>3.40</td>
<td>3.96</td>
</tr>
<tr>
<td>140</td>
<td>210</td>
<td></td>
<td>0.59</td>
<td>0.78</td>
<td>1.17</td>
<td>1.76</td>
<td>2.35</td>
<td>2.94</td>
<td>3.52</td>
<td>4.11</td>
</tr>
<tr>
<td>150</td>
<td>225</td>
<td></td>
<td>0.61</td>
<td>0.81</td>
<td>1.22</td>
<td>1.82</td>
<td>2.43</td>
<td>3.04</td>
<td>3.65</td>
<td>4.26</td>
</tr>
<tr>
<td>160</td>
<td>240</td>
<td></td>
<td>0.63</td>
<td>0.84</td>
<td>1.26</td>
<td>1.88</td>
<td>2.51</td>
<td>3.14</td>
<td>3.77</td>
<td>4.40</td>
</tr>
<tr>
<td>170</td>
<td>255</td>
<td></td>
<td>0.65</td>
<td>0.86</td>
<td>1.29</td>
<td>1.94</td>
<td>2.59</td>
<td>3.24</td>
<td>3.88</td>
<td>4.53</td>
</tr>
<tr>
<td>180</td>
<td>270</td>
<td></td>
<td>0.67</td>
<td>0.89</td>
<td>1.33</td>
<td>2.00</td>
<td>2.66</td>
<td>3.33</td>
<td>4.00</td>
<td>4.66</td>
</tr>
<tr>
<td>190</td>
<td>285</td>
<td></td>
<td>0.68</td>
<td>0.91</td>
<td>1.37</td>
<td>2.05</td>
<td>2.74</td>
<td>3.42</td>
<td>4.11</td>
<td>4.79</td>
</tr>
<tr>
<td>200</td>
<td>300</td>
<td></td>
<td>0.70</td>
<td>0.94</td>
<td>1.40</td>
<td>2.11</td>
<td>2.81</td>
<td>3.51</td>
<td>4.21</td>
<td>4.92</td>
</tr>
</tbody>
</table>

* If the pipeline contains sections of various diameters, the testing allowance will be based on the sum of the testing allowance for each size.

**NOTE:**
1. Refer to Section 3.3.14.00 of the specifications.
2. Allowable leakage for ductile iron (flanged) shall be zero.
3. Where allowed by the engineering or shown on the approved plans, the allowable leakage for steel pipe (flanged or welded) shall be zero.
4. The following formula shall be used to calculate the allowed loss:

\[ L = \frac{SD\sqrt{P}}{748,000} \]

**WHERE:**
- \( L \) = Testing Allowance (makeup water), in gallons per hour
- \( S \) = Length of pipe tested, ft
- \( D \) = Nominal diameter of pipe, in inches
- \( P \) = Average test pressure during the hydrostatic test, in pounds per square inch (gauge)
NOTE:

1. CONCRETE FOOTING TO BE POURED AGAINST UNDISTURBED SOIL OR 90% MIN. COMPACTED MATERIAL.

2. PAINT THE POST ABOVE GROUND WITH 2 COATS OF SAFETY YELLOW.

3. POSTS ARE TO BE EQUALLY SPACED ON EACH SIDE OF OBJECT TO BE PROTECTED WITH A MINIMUM OF 3' FROM FIRE HYDRANTS AND 2' FROM AIR-VAC VALVE OR AS SHOWN ON THE APPROVED PLANS AND AS DIRECTED BY THE ENGINEER.

4. THE TOP 8' OF EACH POST SHALL BE WRAPPED WITH TWO BANDS OF 3" WIDE YELLOW HIGH INTENSITY REFLECTIVE WARNING TAPE.
Double Check Backflow Preventer Assembly for Sizes 4" Through 10"

Approval Date: Draft 09/18  DRAWING NUMBER:  W-50

COACHELLA VALLEY WATER DISTRICT

1. Refers to Section 33.11.13 of the Specifications.
2. Locate Double Check Backflow Prevention Assembly within such a manner that allows the joint to be securely accessible for inspection purposes.
3. No outlets, test, or connectors shall be allowed between the meter and the curb.
4. Pressure Relief Assemblies shall be installed per Section 33.11.13 of the Specifications.
5. Materials shall be selected from the approved materials list.

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>SIZE AND DESCRIPTION</th>
<th>ITEM NO.</th>
<th>SIZE AND DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4&quot; Thru 10&quot; Double Check Backflow Prevention Assembly</td>
<td>11</td>
<td>Concrete Thrust Block Per Drawings W-19 and W-20</td>
</tr>
<tr>
<td>2</td>
<td>Flanged Resilient Wedge Gate Valve</td>
<td>12</td>
<td>Polyethylene Encasement Per Section 33.11.13</td>
</tr>
<tr>
<td>3</td>
<td>Flanged 90° Bend FIP</td>
<td>13</td>
<td>By-Pass Meter (District Installed)</td>
</tr>
<tr>
<td>4</td>
<td>Flanged Ductile Iron Pipe</td>
<td>14</td>
<td>Valve Operator Well Per Std. Dwg. W-17</td>
</tr>
<tr>
<td>5</td>
<td>Adjustable Pipe Support</td>
<td>15</td>
<td>Main Size X Double Check Size, Tee, Flanged</td>
</tr>
<tr>
<td>6</td>
<td>36&quot; Wide X 4&quot; Thick Concrete Pad (Length Varies)</td>
<td>16</td>
<td>Gate Valve, Size Per Double Check Size, Flanged</td>
</tr>
<tr>
<td>7</td>
<td>DI Base 90° Bend Flanged</td>
<td>17</td>
<td>Valve Operator Well Cap and Frame Per Std. Dwg. W-18</td>
</tr>
<tr>
<td>8</td>
<td>Ductile Iron Pipe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE

6. Protective cages are optional and are required to meet clearance, access and drainage requirements.
7. The installation of a pipe on a closed system shall have the local plumbing code for pressure relief valve and other expansion requirements.
8. High assembly installations, including all appliances, the supply of domestic water shall comply with California Lead Free Statue.
ATTACH 3/8" GALV. CHAIN TO U BOLT WITH SNAP CLASP ON OPPOSITE END. CHAIN SHALL BE OF SUFFICIENT LENGTH TO ENCIRCLE GATE FRAME

NOTE:

1. REFER TO SECTION 03 30 00 OF THE SPECIFICATIONS.

2. CHAIN LINK FENCE SHALL CONFORM TO SECTION 206-6 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION UNLESS OTHERWISE NOTED IN THE SPECIAL PROVISIONS OR THIS STANDARD DRAWING.

3. THE FOLLOWING ITEMS SHALL ONLY BE INSTALLED IF SHOWN ON THE APPROVED PLANS AND/OR CALLED FOR IN THE SPECIAL PROVISIONS:
   a. BARBED WIRE
   b. EXTENSION ARM
   c. CONTINUOUS HORIZONTAL TOP RAIL

4. SEE STANDARD DRAWING W-52 FOR ADDITIONAL DETAILS.

COACHELLA VALLEY WATER DISTRICT

CHAIN LINK FENCE GATES

APPROVAL DATE: DRAFT 09/18   DRAWING NUMBER: W-51
NOTE:
1. REFER TO SECTION 03 30 00 OF THE SPECIFICATIONS.
2. CHAIN LINK FENCE SHALL CONFORM TO SECTION 208-6 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION UNLESS OTHERWISE NOTED IN THE SPECIAL PROVISIONS OR THIS STANDARD DRAWING.
3. THE FOLLOWING ITEMS SHALL ONLY BE INSTALLED IF SHOWN ON THE APPROVED PLANS AND/OR CALLED FOR IN THE SPECIAL PROVISIONS.
   a. BARBED WIRE
   b. EXTENSION ARM
   c. CONTINUOUS HORIZONTAL TOP RAIL
4. SEE STANDARD DRAWING W-51 FOR ADDITIONAL DETAILS.

EXTENSION ARM AND BARBED WIRE

LEGEND ON PLANS

COACHELLA VALLEY WATER DISTRICT

CHAIN LINK FENCE

APPROVAL DATE: DRAFT 09/18
DRAWING NUMBER: W-52