

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

PIPE CONVEYANCE TYPE B

CCR, TITLE 22 SECTION 64572(B)

1. DISINFECTED TERTIARY RECYCLED WATER
2. STORM DRAINAGE

LEGEND

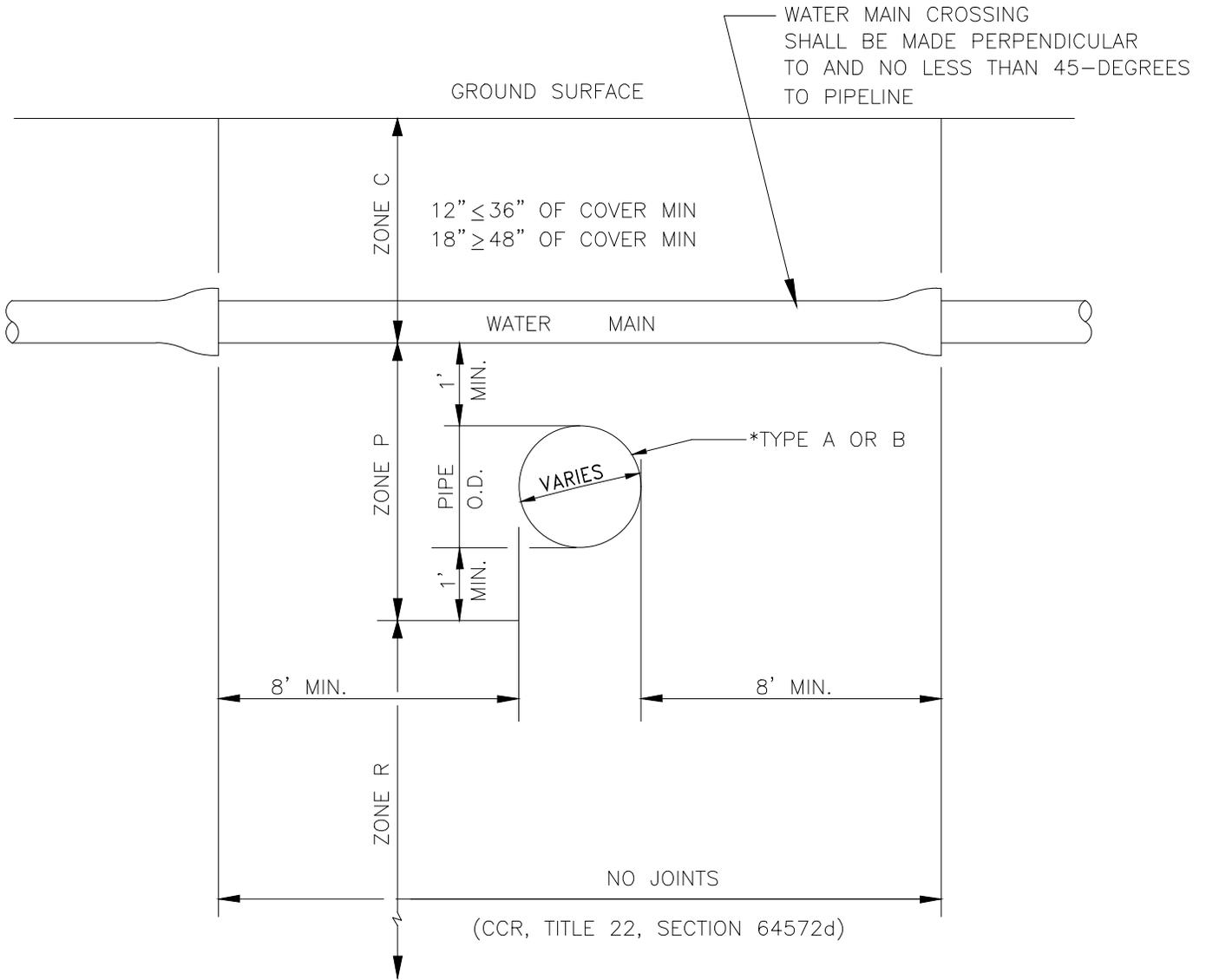
<u>ZONE</u>	<u>SPECIAL CONSTRUCTION</u>
C	DUCTILE IRON PIPE
R	CONSTRUCTION RESTRICTED (SWRCB - APPROVAL REQD)
P	CONSTRUCTION PROHIBITED



**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

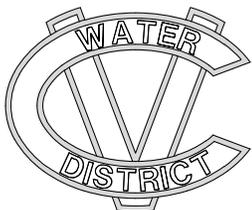


LEGEND

ZONE

SPECIAL CONSTRUCTION

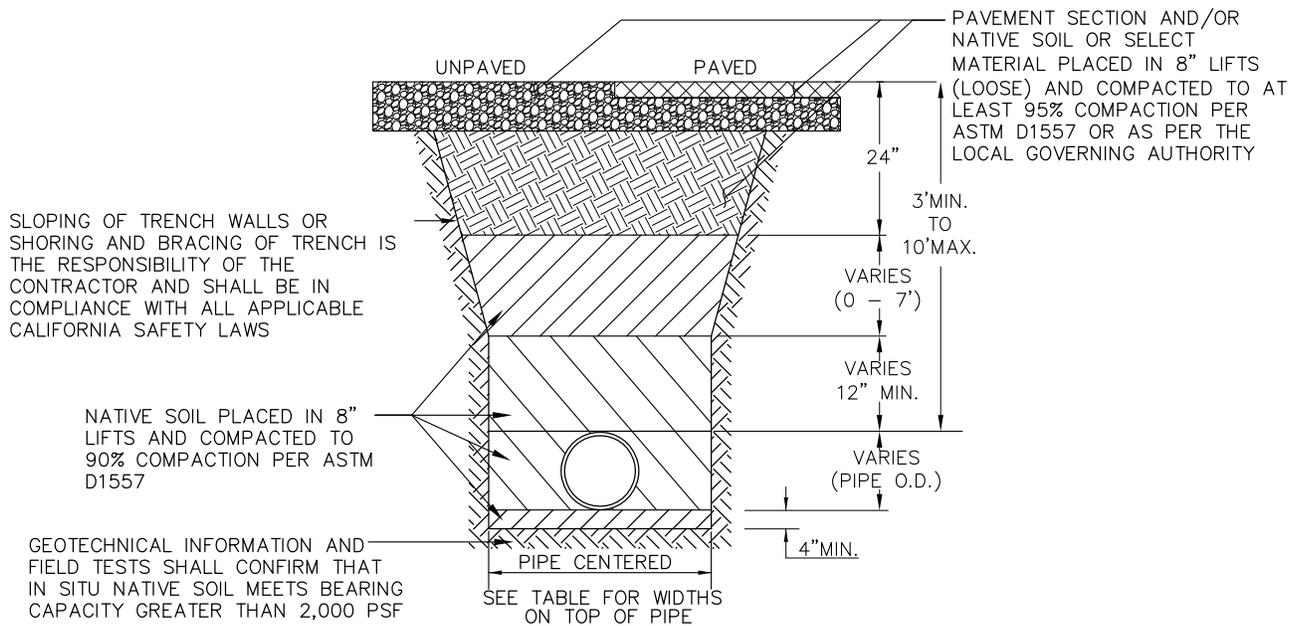
- C DUCTILE IRON PIPE (NO JOINTS)
- R CONSTRUCTION RESTRICTED (CDPH – APPROVAL REQD)
- P CONSTRUCTION PROHIBITED
- * SEE STD. DWG. W-1



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

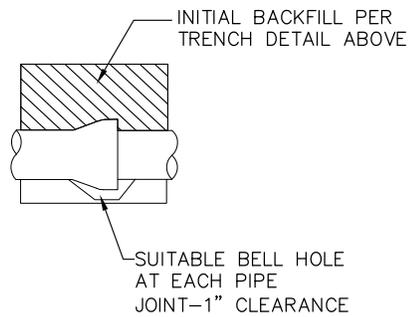
APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-2/S-4



TRENCH DETAIL FOR DUCTILE IRON PIPE

NTS

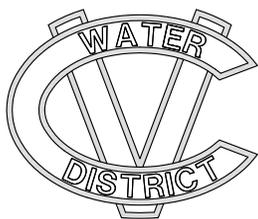


DIA	MIN	MAX
8"	30"	45"
12"	36"	49"
18"	42"	56"
24"	48"	62"

TRENCH WIDTHS

NOTE:

1. NATIVE SOILS SHALL MEET REQUIREMENTS FOR CLASS II OR CLASS III SOIL PER ASTM D2321 AND D2487. THIS DETAIL IS NOT APPLICABLE FOR CLASS IV NATIVE SOILS.
2. THE NATIVE SOIL MATERIAL MAY BE USED IN THE TRENCH BACKFILL PROVIDED IT'S FREE FROM UNSUITABLE MATERIAL. UNSUITABLE MATERIALS INCLUDES MATERIAL THAT CANNOT BE STABILIZED BY COMPACTION, MATERIAL GREATER THAN 6" IN SIZE (GREATER THAN 1" IN BEDDING, PIPE ZONE AND INITIAL BACK FILL), VEGETATION, TRASH, CONSTRUCTION DEBRIS, HIGHLY EXPANSIVE CLAYS, HIGHLY ORGANIC SOILS AND CONTAMINATED SOILS.
3. TRENCH DETAIL IS APPLICABLE FOR DUCTILE IRON PIPE- SIZES 8",12",18", & 24" CLASS 250 OR GREATER. MAXIMUM WORKING PRESSURE IS 120 PSI AND SAFETY FACTOR GREATER THAN 2.5.
4. TRENCH WALL SHALL BE PROTECTED FROM CAVING AT ALL TIMES ESPECIALLY IN PIPE ZONE. ANY RESULTANT VOIDS ON TRENCH WALL SHALL BE FILLED WITH NATIVE MATERIAL AND COMPACTED TO YIELD AN UNCOMPROMISED TRENCH WALL.
5. BELL HOLES SHALL BE PROVIDED AT EACH JOINT WITH A MINIMUM OF 1" CLEARANCE FROM BEDDING MATERIAL.
6. THIS DETAIL IS NOT APPLICABLE IF GROUND WATER EXISTS LESS THAN 5 FEET BELOW THE LOWEST EXCAVATED TRENCH ELEVATION. TRENCH FOUNDATION SHALL BE STABLE WITH NO PONDED WATER, MUD, OR MUCK.
7. ENGINEER OF RECORD FOR PIPELINE DESIGN IS RESPONSIBLE FOR VERIFYING THAT THE TRENCH DETAIL IS APPLICABLE FOR PROJECT SPECIFIC INSTALLATION CONDITIONS. A GEOTECHNICAL REPORT STAMPED AND DATED WITHIN THE LAST 3 YEARS SHALL BE PROVIDED TO CVWD.

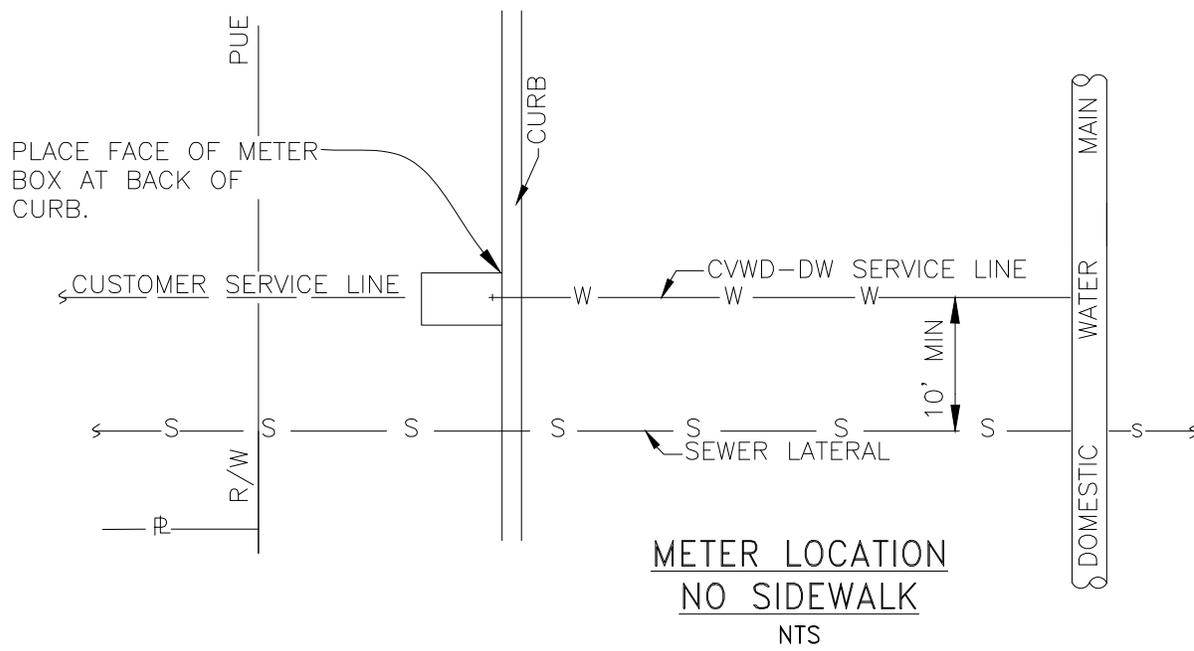
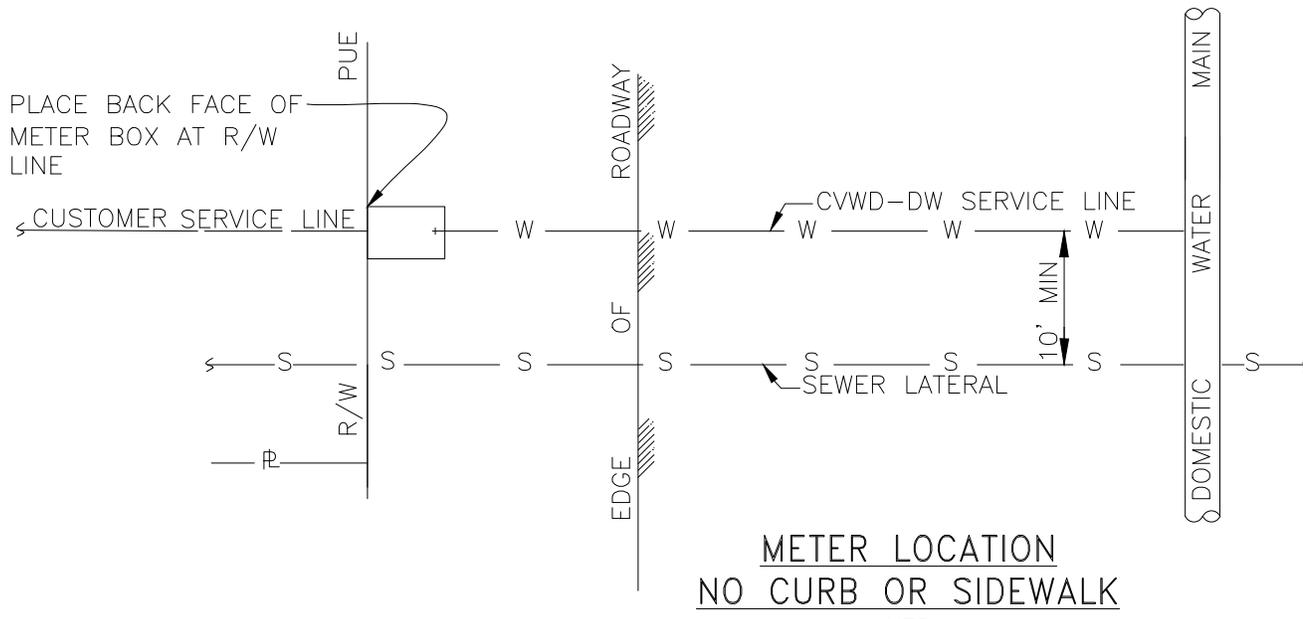


COACHELLA VALLEY WATER DISTRICT

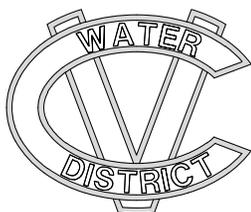
TRENCH DETAIL

APPROVAL DATE: APRIL 2018

DRAWING NUMBER: W-3



- 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.



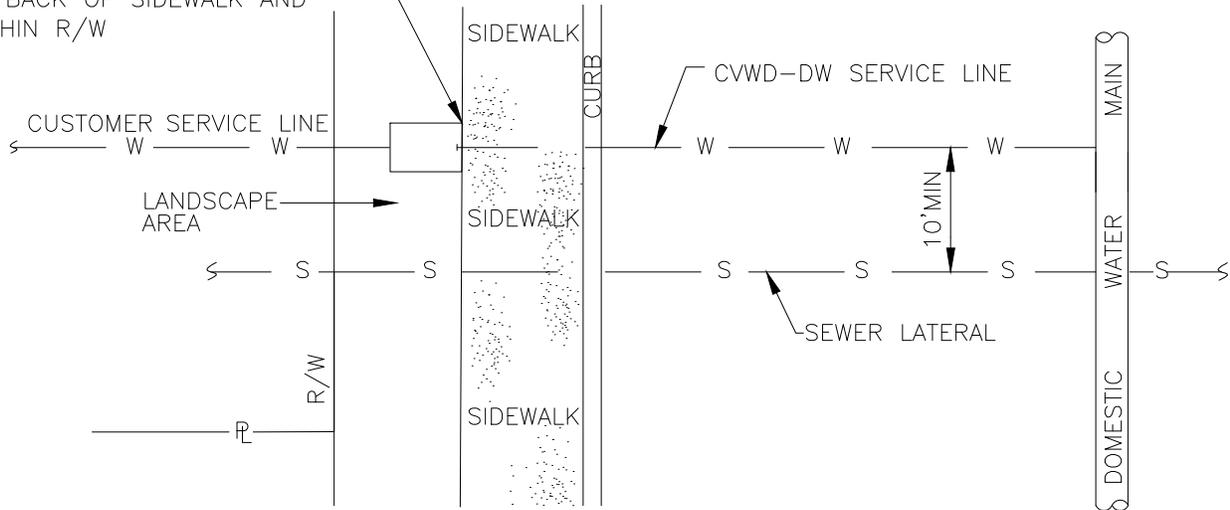
COACHELLA VALLEY WATER DISTRICT

**TYPICAL LOCATION OF
WATER METER BOX**

APPROVAL DATE: DRAFT 09/18

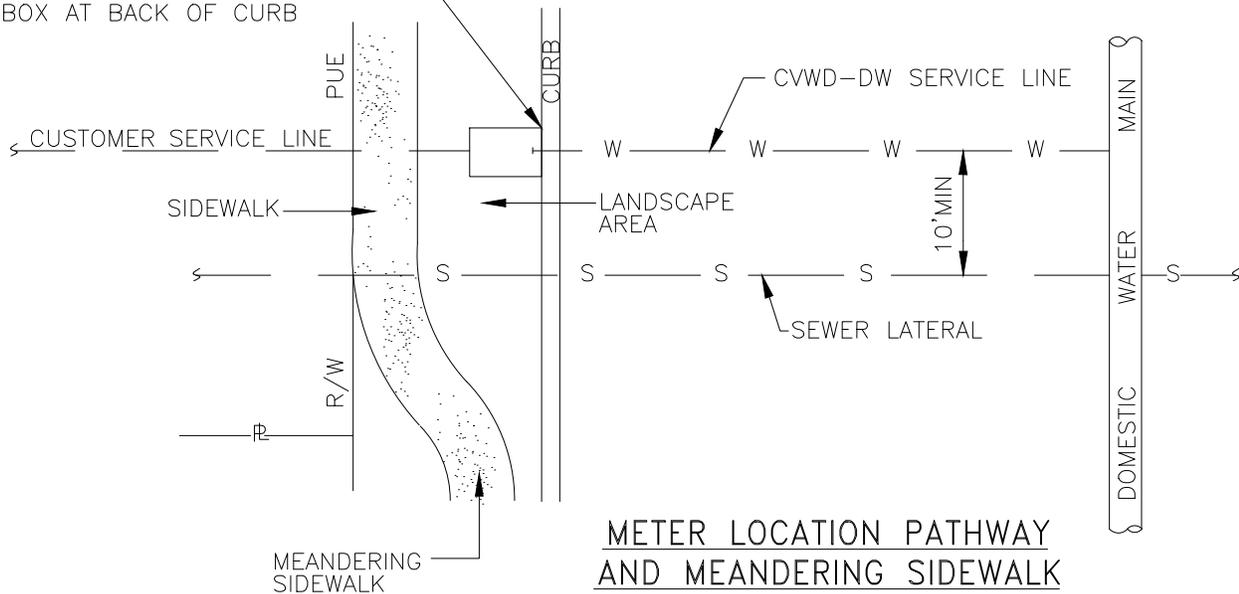
DRAWING NUMBER: W-5A

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



**METER LOCATION SIDEWALK
ADJACENT TO CURB
NTS**

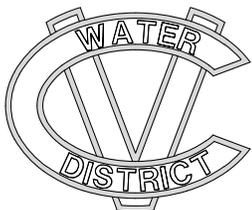
PLACE FACE OF METER BOX AT BACK OF CURB



**METER LOCATION PATHWAY
AND MEANDERING SIDEWALK
NTS**

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

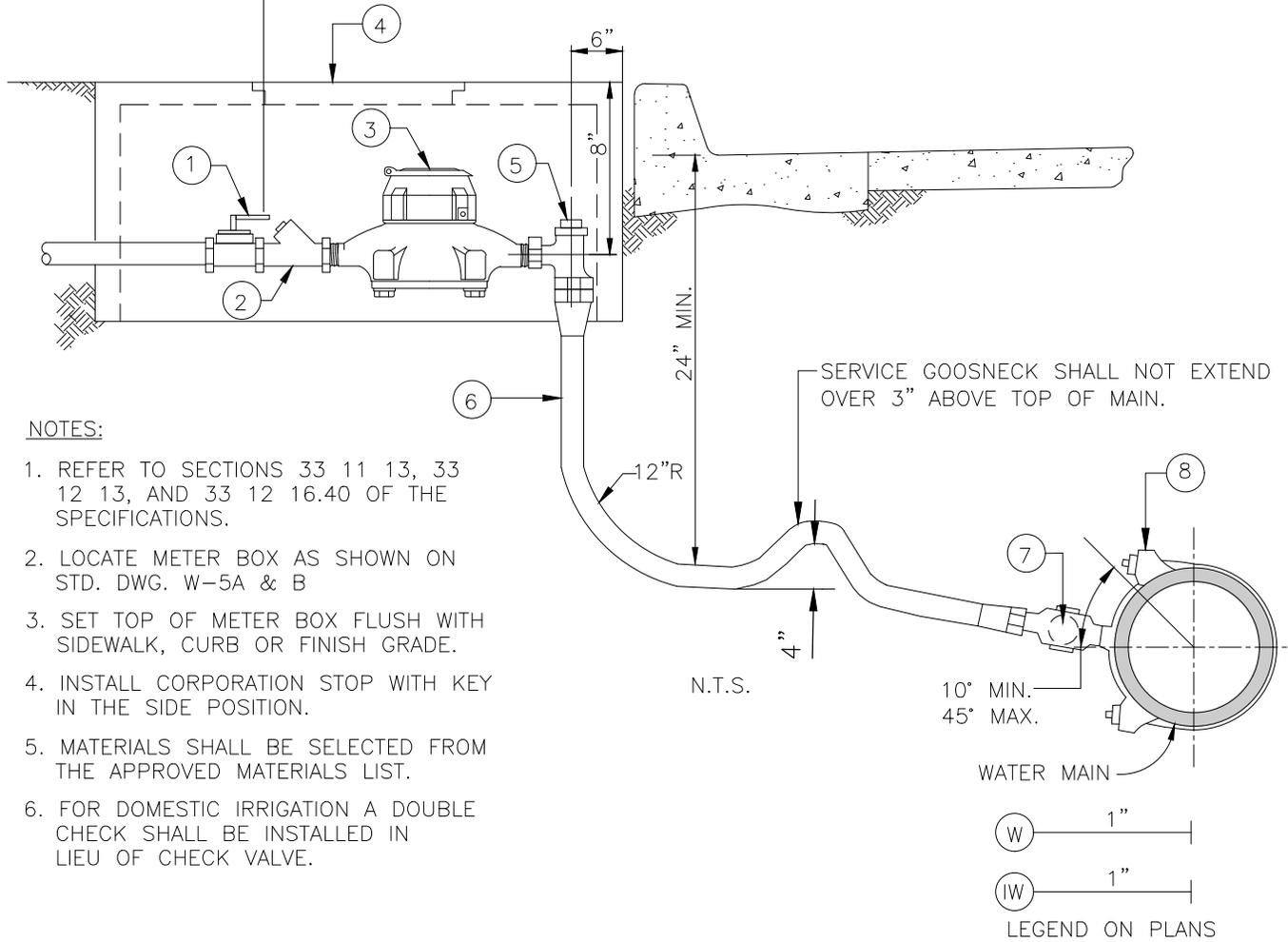
**TYPICAL LOCATION OF
WATER METER BOX**

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-5B

CUSTOMERS MAINTENANCE
RESPONSIBILITY

CVWD MAINTENANCE
RESPONSIBILITY

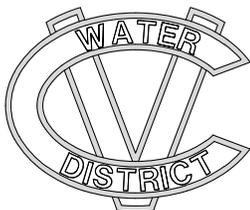


NOTES:

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.

ITEM NO.	NO. REQ.	SIZE AND DESCRIPTION	REMARKS
①	1	SHUT-OFF VALVE*	TO BE INSTALLED BY CVWD
②	1	STRAIGHT CHECK VALVE (SEE NOTE #6)	
③	1	METER *	
④	1	17"(W) X 30"(L) X 12"(D) METER BOX & LID (66S)	TO BE INSTALLED BY CONTRACTOR
⑤	1	1" ANGLE METER STOP	
⑥	1	1" X REQUIRED LENGTH COPPER PIPE SERVICE LINE (TYPE K SOFT) (POLYETHYLENE ENCASED)	
⑦	1	1" CORPORATION STOP	
⑧	1	1" SERVICE SADDLE	

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



COACHELLA VALLEY WATER DISTRICT

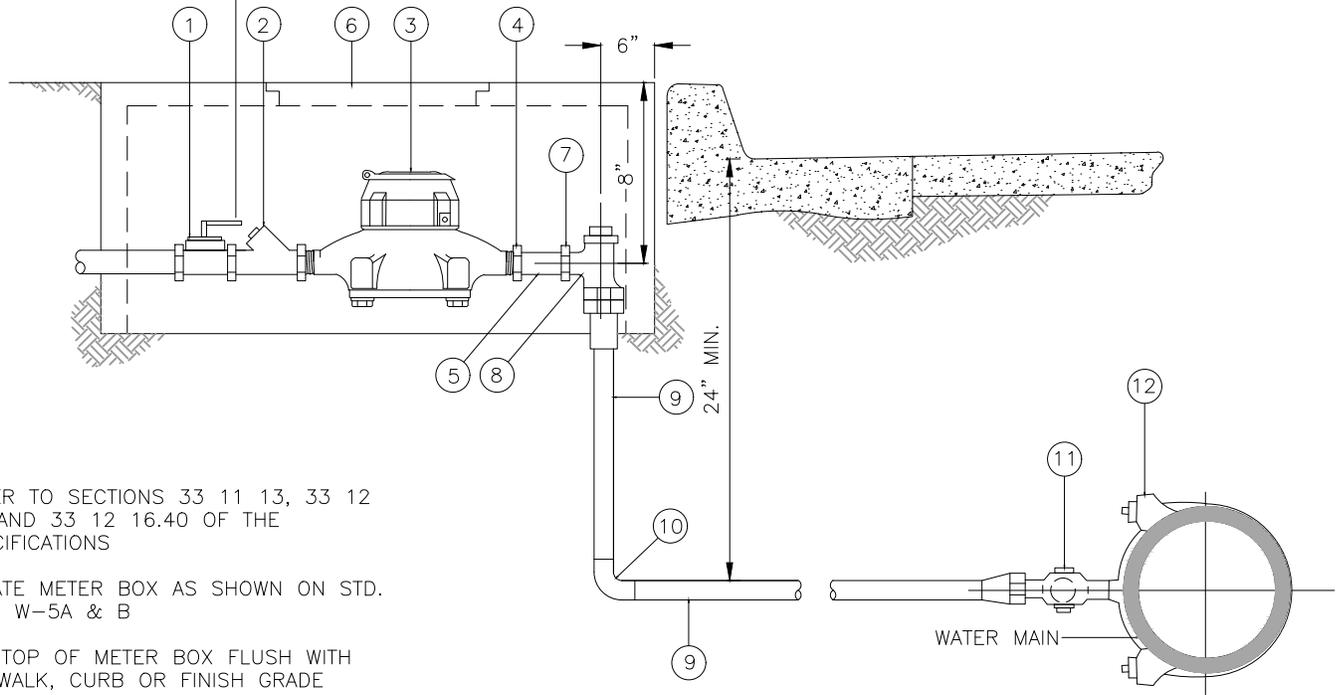
DETAIL OF 1" SERVICE CONNECTION AND METER INSTALLATION

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-7

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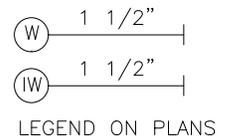
CUSTOMERS MAINTENANCE RESPONSIBILITY ← | → CVWD MAINTENANCE RESPONSIBILITY



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

NTS



ITEM NO.	NO. REQ.	SIZE AND DESCRIPTION	REMARKS
①	1	SHUT-OFF VALVE*	TO BE INSTALLED BY CVWD
②	1	STRAIGHT CHECK VALVE (SEE NOTE #6)	
③	1	METER*	
④	1	STRAIGHT METER COUPLING*	
⑤	1	BRASS BUSHING*	
⑥	1	17"(W) X 30"(L) X 12"(D) METER BOX & LID (66S)	TO BE INSTALLED BY CONTRACTOR
⑦	1	FLANGE COMPANION	
⑧	1	1-1/2" ANGLE METER STOP	
⑨	1	1-1/2" X REQUIRED LENGTH COPPER PIPE SERVICE LINE (TYPE "K" SOFT) (POLYETHYLENE ENCASED)	
⑩	1	1-1/2" X 90° COMPRESSION ELBOW	
⑪	1	1-1/2" CORPORATION STOP	
⑫	1	1-1/2" SERVICE SADDLE	

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

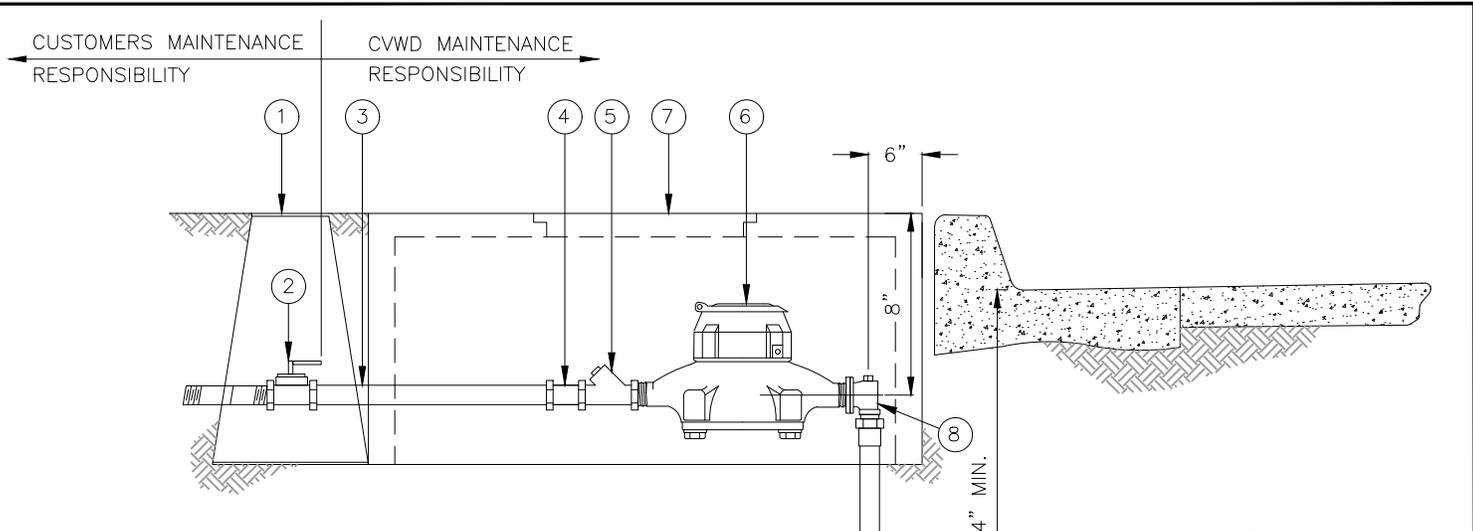


COACHELLA VALLEY WATER DISTRICT

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

APPROVAL DATE: DRAFT 09/18

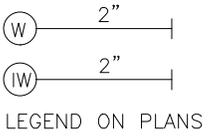
DRAWING NUMBER: W-9



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, 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

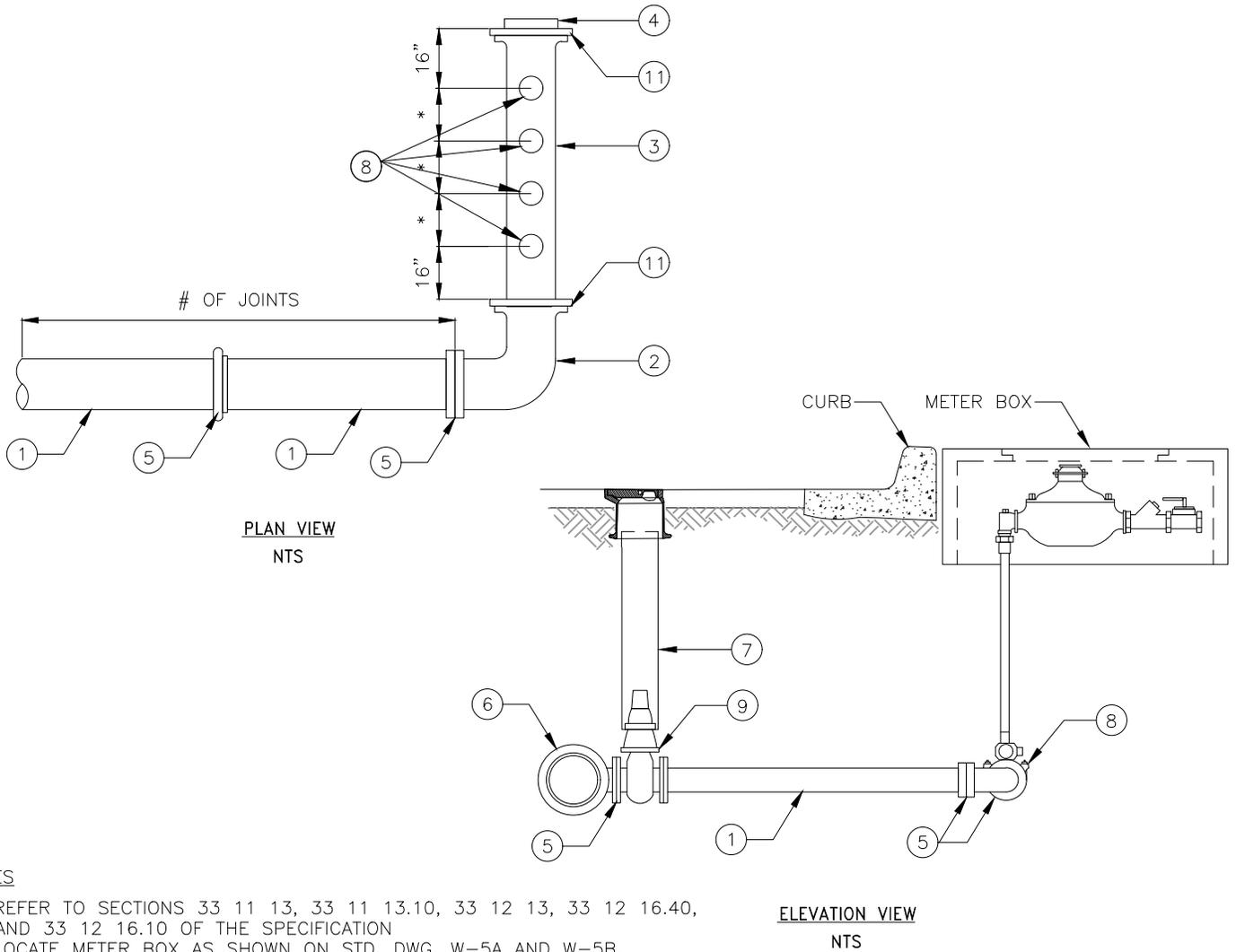
NTS



ITEM NO.	NO. REQ.	SIZE AND DESCRIPTION	REMARKS
①	1	10" ROUND VALVE BOX	TO BE INSTALLED BY CVWD
②	1	SHUT-OFF VALVE*	
③	1	NIPPLE FLANGE X FLANGE*	
④	1	METER FLANGE X MALE IRON PIPE THREAD*	
⑤	1	STRAIGHT CHECK VALVE (SEE NOTE #6)	
⑥	1	FLANGE X FLANGE METER*	
⑦	1	17"(W) X 30"(L) X 12"(D) METER BOX & LID	TO BE INSTALLED BY CONTRACTOR
⑧	1	2" ANGLE METER STOP	
⑨	1	2" X REQUIRED LENGTH COPPER PIPE (66S) SERVICE LINE (TYPE "K" SOFT) (POLYETHYLENE ENCASED)	
⑩	1	2" X 90° COMPRESSION ELBOW	
⑪	1	2" CORPORATION STOP	
⑫	1	2" SERVICE SADDLE	

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

	COACHELLA VALLEY WATER DISTRICT	
	DETAIL OF 2" SERVICE CONNECTION AND METER INSTALLATION	
	APPROVAL DATE: DRAFT 09/18	DRAWING NUMBER: W-11



NOTES

1. REFER TO SECTIONS 33 11 13, 33 11 13.10, 33 12 13, 33 12 16.40, AND 33 12 16.10 OF THE SPECIFICATION
2. LOCATE METER BOX AS SHOWN ON STD. DWG. W-5A AND W-5B.
3. FOR SERVICE INSTALLATIONS, SEE STD. DWG. W-7, W-9 AND W-11.
4. FOR VALVE OPERATOR WELL INSTALLATION SEE STD. DWG. W-17 AND W-18.
5. ALL JOINTS ARE TO BE RESTRAINED.
6. ALL MATERIALS SHALL BE SELECTED FROM THE APPROVED MATERIALS LIST.

ELEVATION VIEW
NTS

*24" FOR 1" CORPORATIONS
*30" FOR 1½" CORPORATIONS

ITEM NO.	NO. REQ.	SIZE AND DESCRIPTION	REMARKS
①	1+	6" OR 8" CL. 350 D.I. PIPE	<u>GENERAL:</u> MECHANICAL JOINT FITTINGS CAN BE USED WITH ENGINEER APPROVED RESTRAINING GLANDS.
②	1	6" OR 8" D.I. 90° FLANGED	
③	1	6" OR 8" CL. 350 D.I. PIPE	
④	1	6" OR 8" BLIND FLANGE	
⑤	4+	6" OR 8" "TYTON" "FIELD LOK" GASKET	
⑥	1	MAIN SIZE X 6" OR 8" TEE	
⑦	1	VALVE OPERATOR WELL AND CAP	
⑧	1+	SERVICE SADDLE	
⑨	1	6" OR 8" FLANGED CL 350 D.I. PIPE	
⑩	2+	6" OR 8" FLG X "TYTON" GATE VALVE	
⑪	2+	6" OR 8" FLG X MJ ADAPTER	

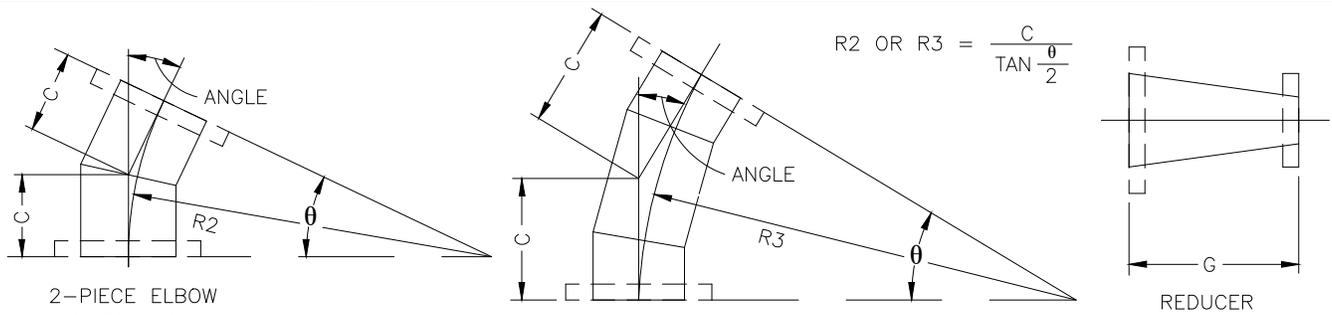


COACHELLA VALLEY WATER DISTRICT

DETAIL OF DUCTILE IRON METER MANIFOLD ASSEMBLY

APPROVAL DATE: DRAFT 09/18

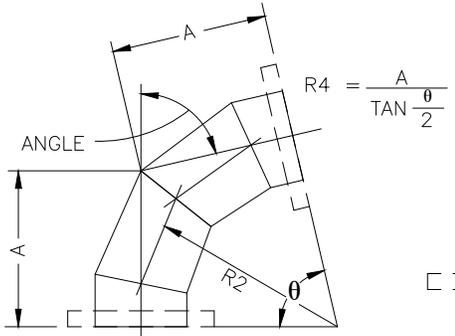
DRAWING NUMBER: W-13B



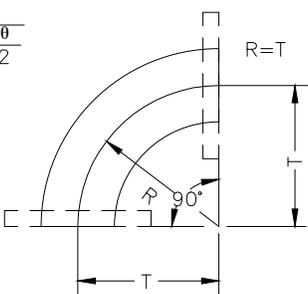
2-PIECE ELBOW
0-30 DEG.

3-PIECE ELBOW
31-60 DEG.

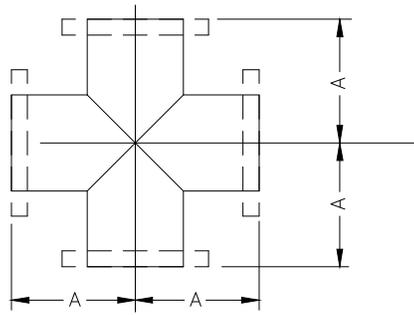
REDUCER



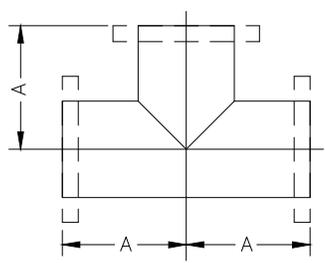
4-PIECE ELBOW
61-90 DEG.



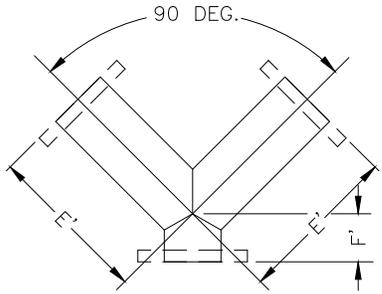
SMOOTH 90-DEG. ELBOW



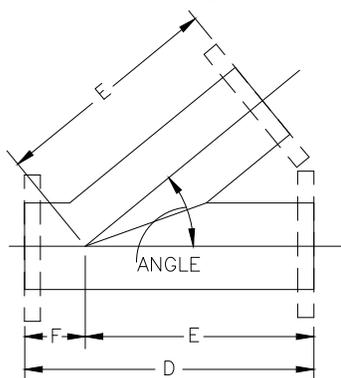
CROSS



TEE



WYE



ANGLE

LATERAL

45-DEG. MIN.; 75-DEG. MAX.

NOTE:
STEEL FITTINGS FOR
ABOVE GROUND
INSTALLATION ONLY

NOMINAL DIAM.	TEE		CROSS A + A	LATERAL (45-75 DEG.)		WYE		ELBOWS					REDUCER CONE G
	RUN A + A	OUTLET A		RUN D	OUTLET E	E'	F'	TWO- PIECE (0-31 DEG.) C	THREE- PIECE (31-61 DEG.) C	FOUR- PIECE (61-90 DEG.) A	SMOOTH (90 DEG.) T		
4	13	6.5	13	15	12	6.5	3	4	4	6.5	6	7	
6	16	8	16	18	14.5	8	3.5	5	5	8	9	9	
8	18	9	18	22	17.5	9	4.5	5.5	5.5	9	12	11	
10	22	11	22	25.5	20.5	11	5	6.5	6.5	11	15	12	
12	24	12	24	30	24.5	12	5.5	7.5	7.5	12	18	14	
14	28	14	28	33	27	14	6	7.5	7.5	14	21	16	
16	30	15	30	36.5	30	15	6.5	8	8	15	24	18	
18	33	16.5	33	39	32	16.5	7	8.5	8.5	16.5	27	19	
20	36	18	36	43	35	18	8	9.5	9.5	18	30	20	
22	40	20	40	46	37.5	—	—	10	10	20	33	22	
24	44	22	44	49.5	40.5	22	9	11	11	22	36	24	
30	50	25	50	59	49	25	10	15	15	25	45	30	
36	56	28	56	84	60	—	—	18	18	28	—	36	
42	62	31	62	95	69	—	—	21	21	31	—	42	
48	68	34	68	104	77	—	—	24	24	34	—	48	

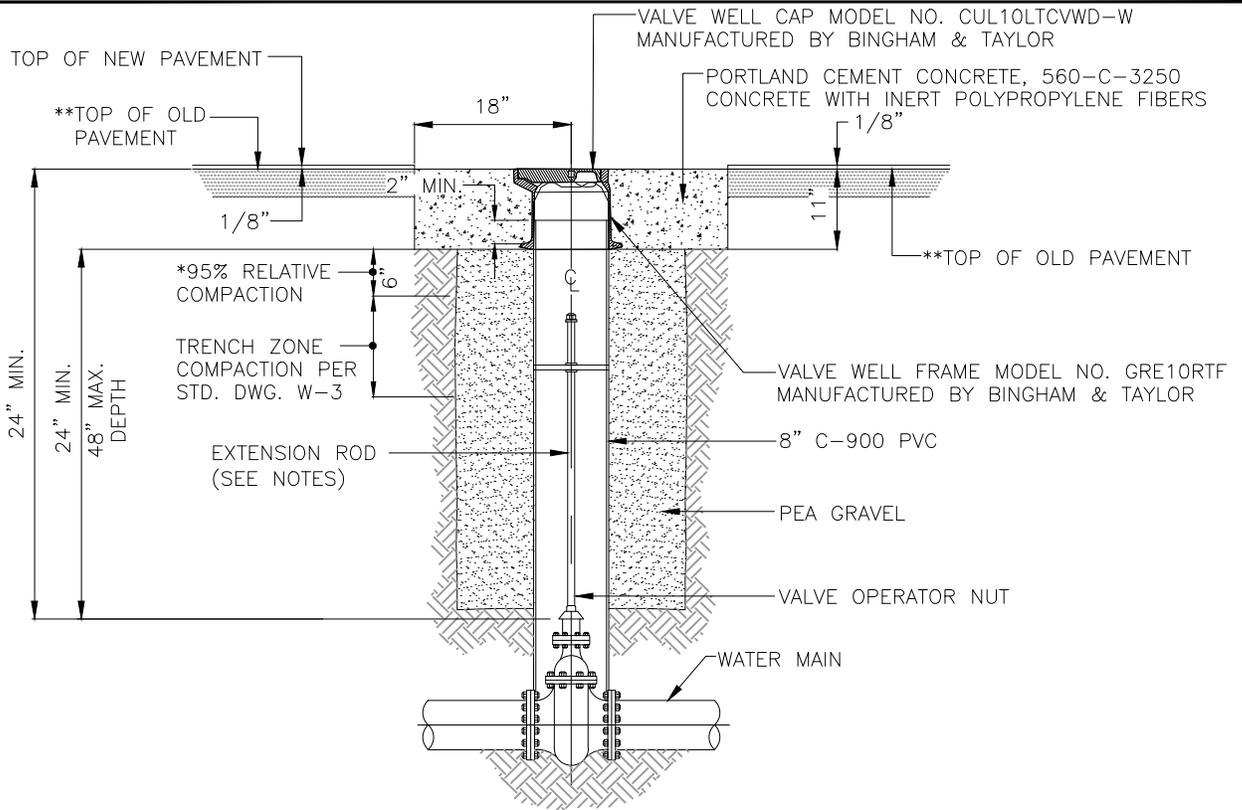


COACHELLA VALLEY WATER DISTRICT

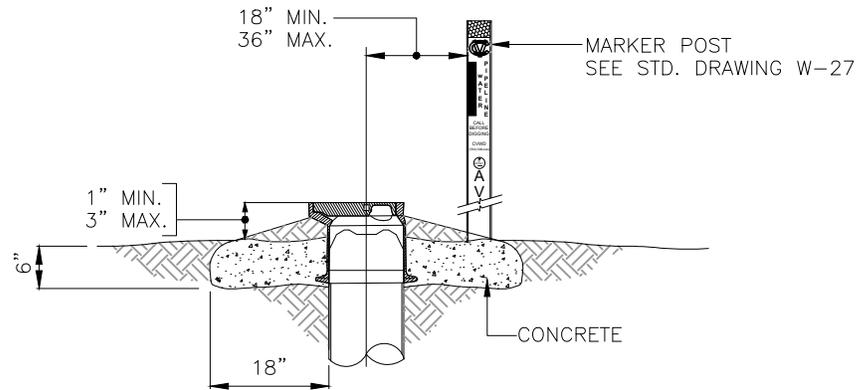
**DIMENSIONS FOR FABRICATED
STEEL FITTINGS
(ALL DIMENSIONS IN INCHES)**

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-14



TYPICAL INSTALLATION (STREET, ALLEY, DIRT ROAD OR SHOULDER)
NTS



TYPICAL INSTALLATION (UNTRAVELED AREAS)
NTS

NOTES:

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

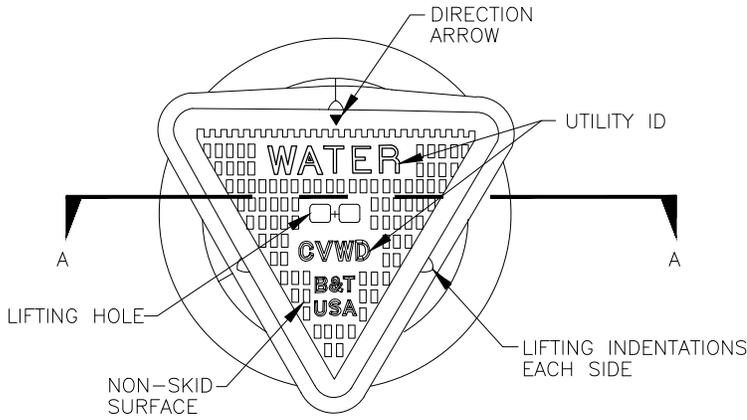


COACHELLA VALLEY WATER DISTRICT

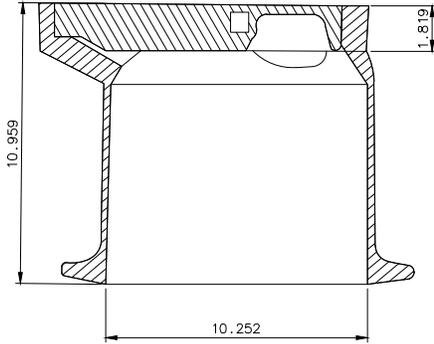
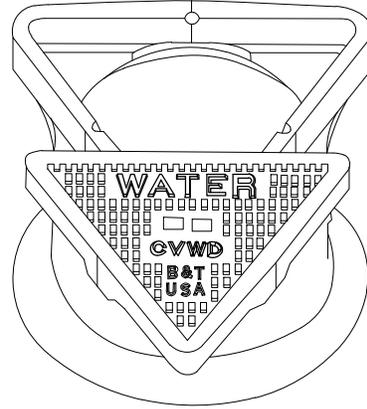
**DETAIL OF DOMESTIC WATER
VALVE OPERATOR WELL INSTALLATION**

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-17

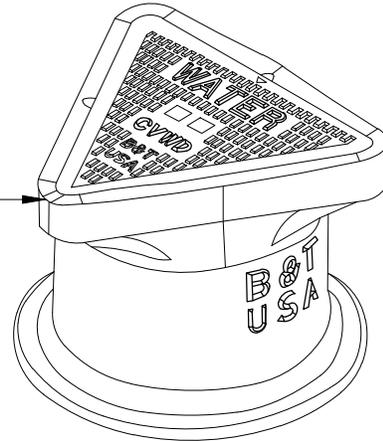


PLAN VIEW
NTS



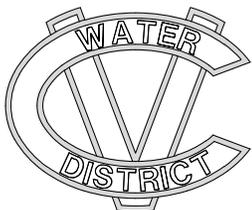
SECTION A-A
NTS

DIRECTIONAL NOTCH



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. GRE10RTF MANUFACTURED BY BINGHAM & TAYLOR
 - 10 INCH MARK V TRI LID CVWD-WATER YELLOW POWDER MODEL NO. CUL10LTCVWD-W MANUFACTURED BY BINGHAM & TAYLOR

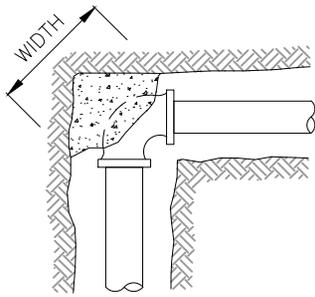


COACHELLA VALLEY WATER DISTRICT

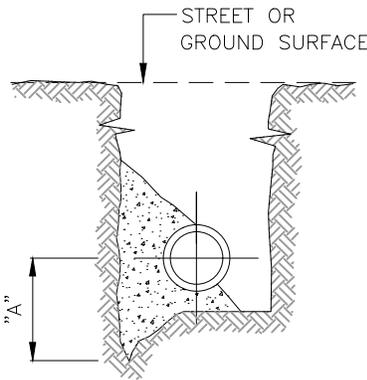
**DETAIL OF DOMESTIC WATER VALVE
OPERATOR WELL CAP AND FRAME**

APPROVAL DATE: DRAFT 09/18

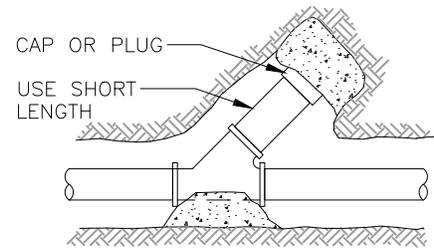
DRAWING NUMBER: W-18



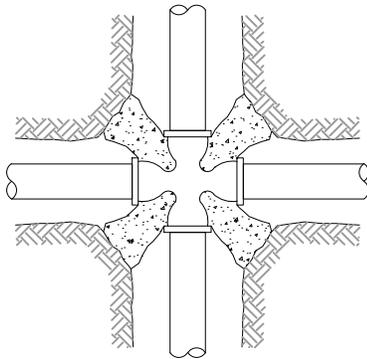
BEND



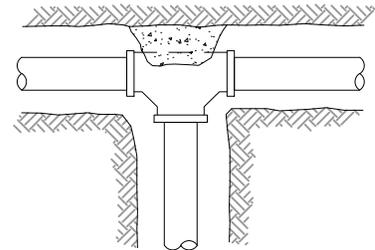
TYPICAL SECTION



WYE
(SHOWN WITH BRANCH CLOSED)

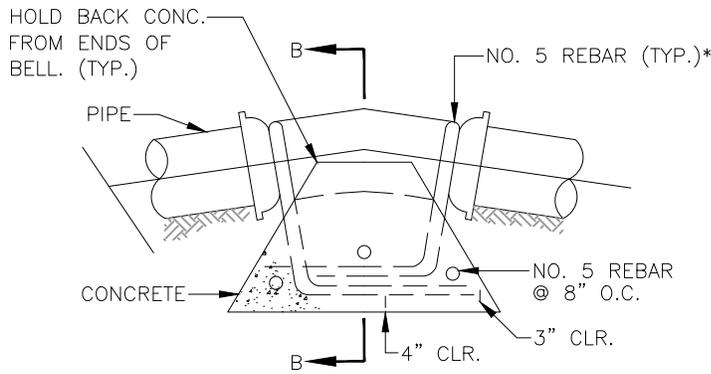


CROSS

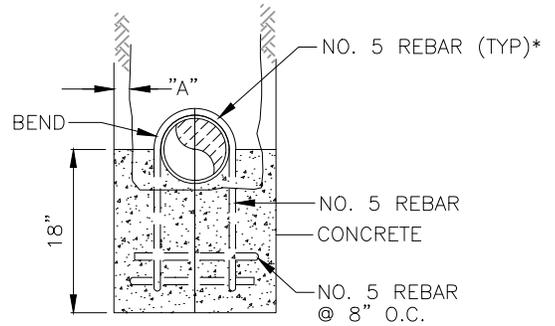


TEE

SECTION:
 6" FOR 6"-8" PIPE
 A=12" FOR 12" PIPE
 18" FOR 18" PIPE



SECTIONAL ELEVATION



SECTION B-B
 VERTICAL ANCHOR BLOCK

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 mil PIPE TAPE

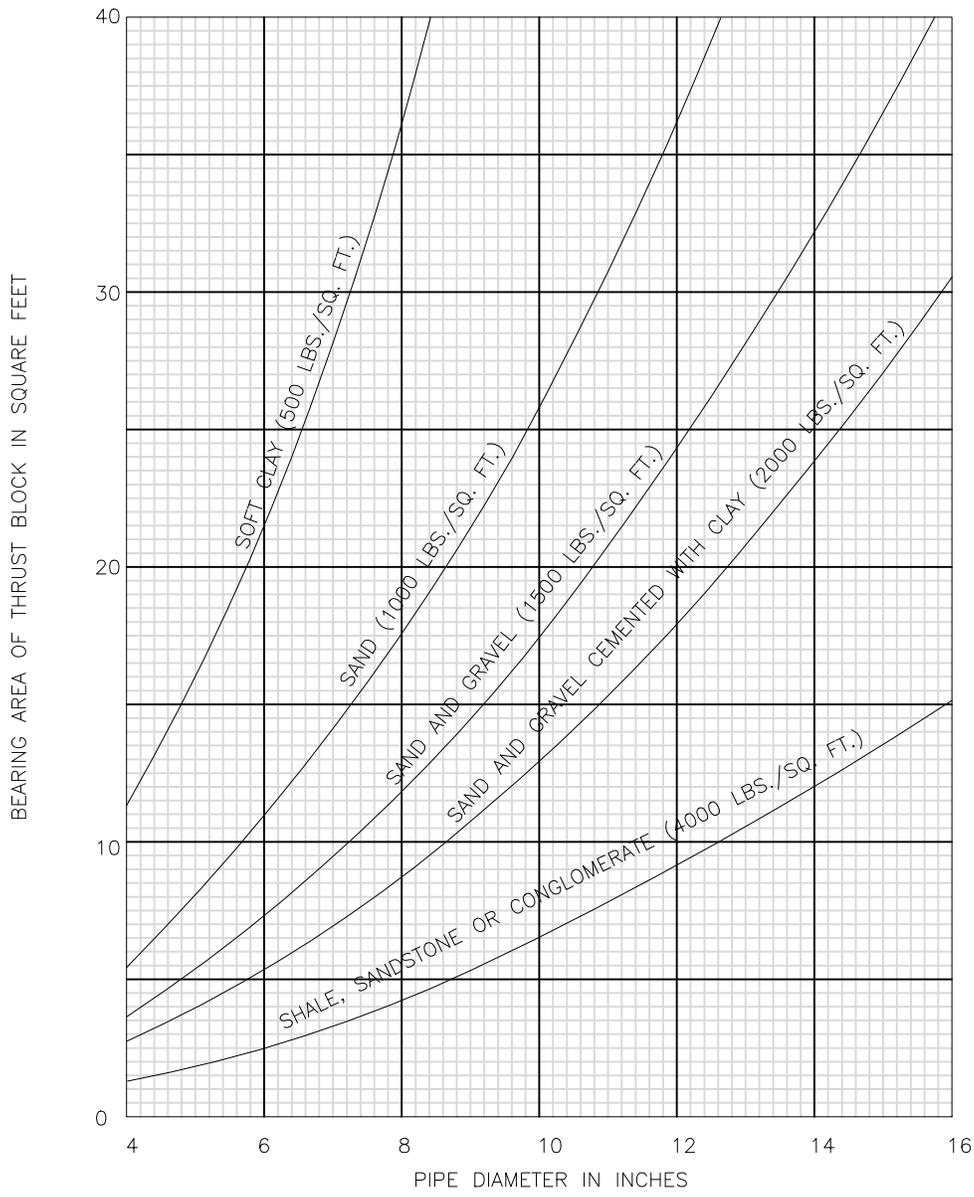


COACHELLA VALLEY WATER DISTRICT

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.

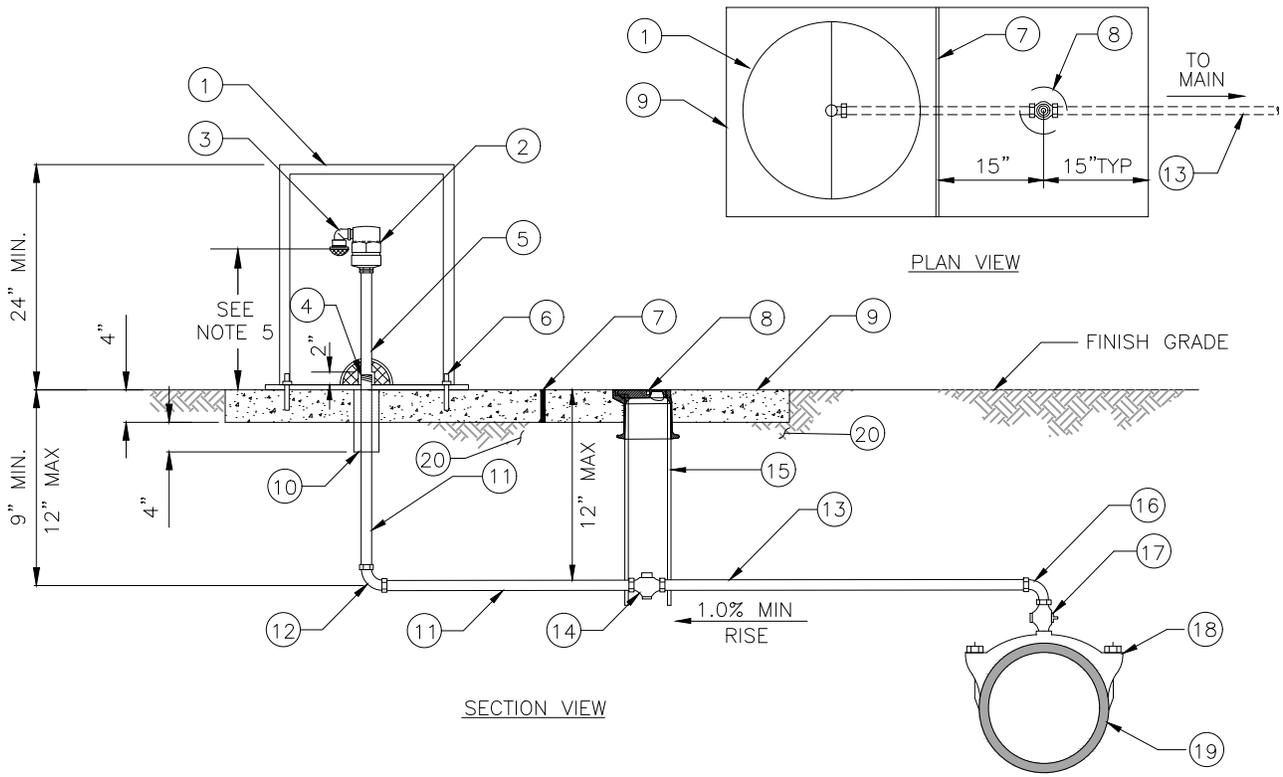


COACHELLA VALLEY WATER DISTRICT

THRUST BLOCK BEARING AREAS

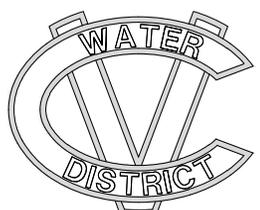
APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-20/S-20



- NOTES:
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

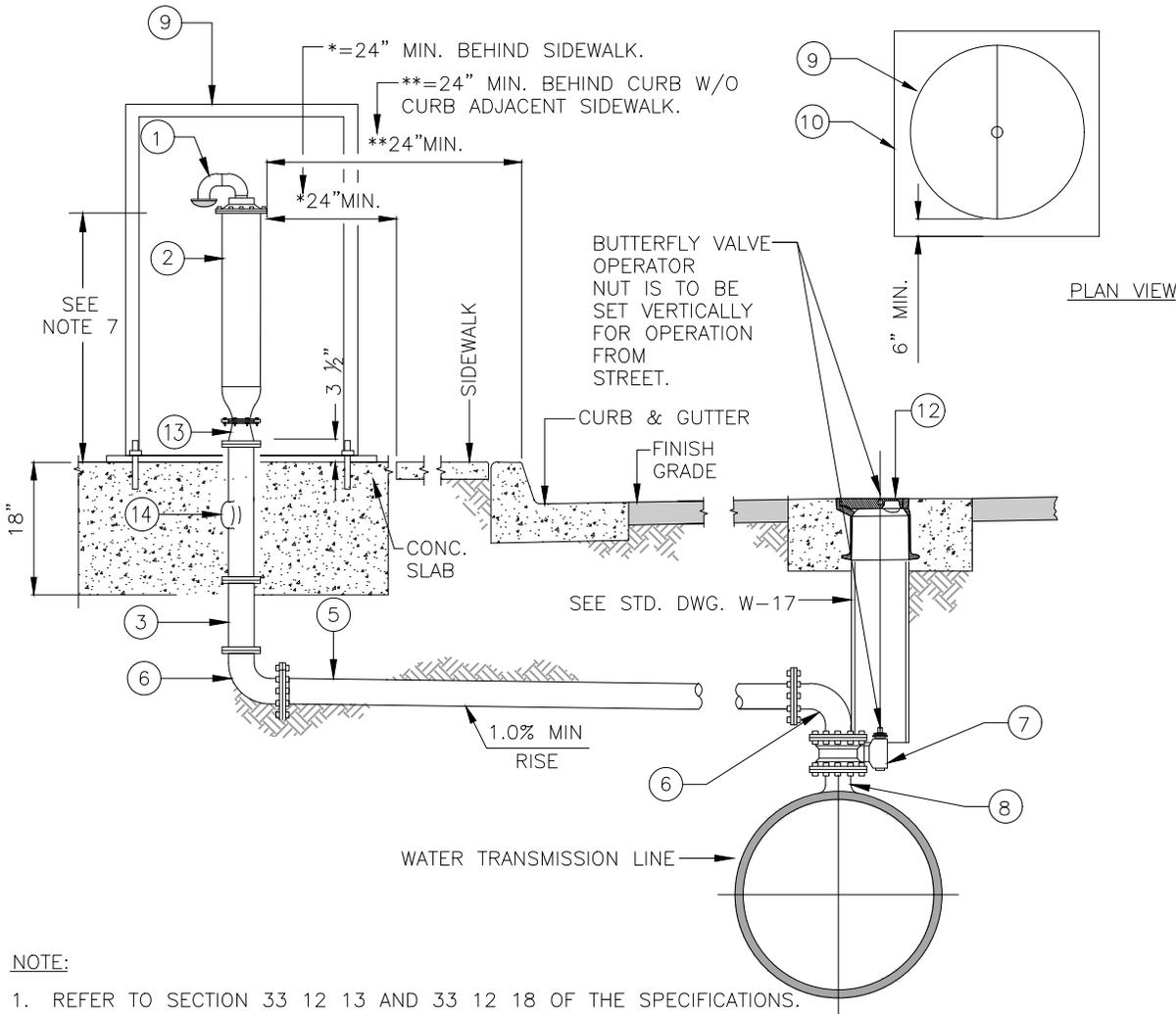
ITEM NO.	SIZE AND DESCRIPTION	ITEM NO.	SIZE AND DESCRIPTION
①	VALVE ENCLOSURE (COLOR SANDSTONE)	⑪	1" X REQ'D LENGTH BRONZE NIPPLE MIPT X MIPT
②	1" AUTOMATIC COMBINATION AIR RELEASE & AIR/VACUUM VALVE W/TEST PORT	⑫	1" 90° BRONZE FIPT X FIPT ELBOW
③	INSECT SCREEN	⑬	1" X REQUIRED LENGTH COPPER PIPE TYPE "K" RIGID OR SOFT
④	1" BRONZ FIPT X FIPT COUPLING	⑭	BRASS BALL VALVE W/TEE HEAD
⑤	1" X REQ'D LENGTH PVC SCH 80 PIPE SLIP X FIPT WITH S.S. REINFORCEMENT/MPT X SLIP	⑮	SEE STANDARD DRAWING W-17
⑥	1/2" X 3" STAINLESS STEEL DROP-IN ANCHORS 6 EA	⑯	1" 90° BRONZE FIPT X COMP ELBOW
⑦	1/4" X 1" DEEP WEAKENED PLANE JOINT	⑰	1" BRONZE MIPT X MIPT CORPORATION STOP
⑧	SEE STANDARD DRAWING W-18	⑱	SIZE X 1" SERVICE SADDLE
⑨	5' X 2'-6" X 4" THICK CONCRETE SLAB	⑳	90% RELATIVE COMPACTION (MIN.)
⑩	1" X 8" BLACK FOAM SLEEVE		



COACHELLA VALLEY WATER DISTRICT

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

APPROVAL DATE: DRAFT 09/18 DRAWING NUMBER: W-21A



NOTE:

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 MEDIANS.
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

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

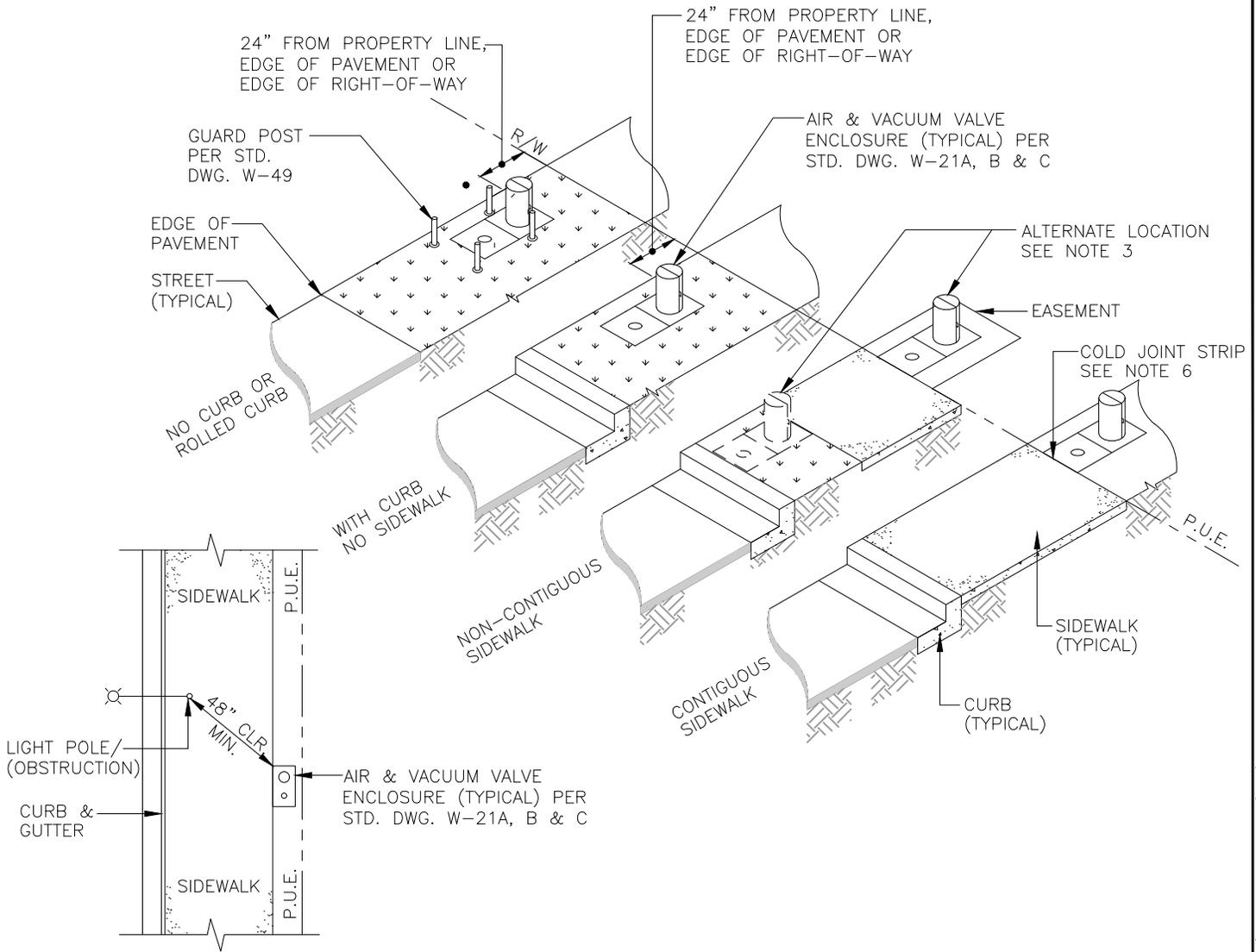


COACHELLA VALLEY WATER DISTRICT

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

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-21C



PLAN VIEW (SEE NOTES NO. 6 & 7)

NOTES

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 UNOBSTRUCTED CLEAR WIDTH OF 48".
7. WITH PRIOR CVWD APPROVAL THE ENCLOSURE, CONCRETE SLAB AND VALVE MAY BE TURNED 90° TO THE ROADWAY.

INDICATE SIZE

 LEGEND ON PLANS

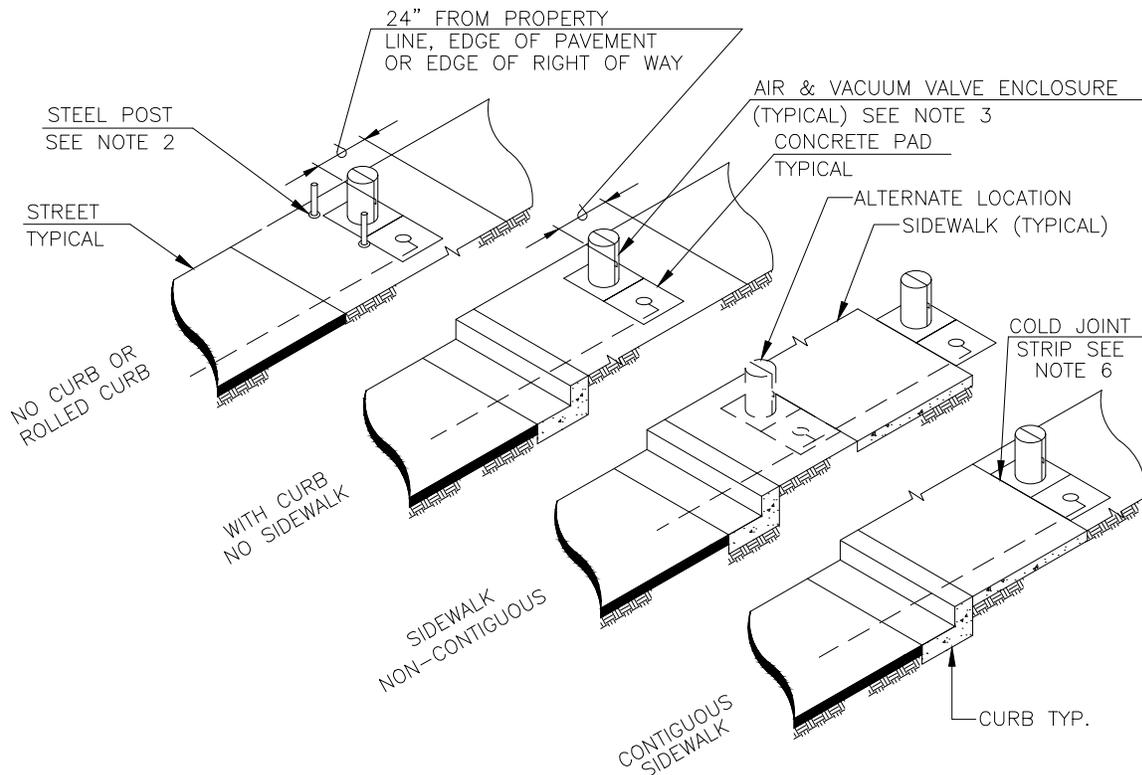


COACHELLA VALLEY WATER DISTRICT

1" AND 2" AIR & VACUUM VALVE ENCLOSURE LOCATIONS

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-22A

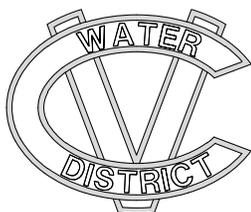


NOTES

1. THIS CONFIGURATION IS ALTERNATIVE AND CAN ONLY BE USED AS SHOWN ON PLANS OR AS DIRECTED BY ENGINEER
2. COMBINATION AIR RELEASE & AIR/VACUUM TO BE CONSTRICTED AS SHOWN ON W-21 WITH THE ADDITION OF A 90° BRONZE COMPRESSION ELL LOCATED UNDER CONCRETE SLAB ADJACENT TO BALL VALVE
3. REFER TO SECTION 33 11 13 OF THE SPECIFICATIONS
4. PROTECTION POSTS SHALL BE INSTALLED AS CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER
5. AS EASEMENT MAY BE NEEDED DEPENDING ON LOCATION OF ENCLOSURE
6. THE ENCLOSURE SHALL BE DESERT TAN AS MANUFACTURED IN ACCORDANCE WITH THE APPROVED MATERIALS LIST
7. ENCLOSURES INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DIRECTED BY THE ENGINEER
8. IF THE CONCRETE SLAB IS TO BE INSTALLED ADJACENT TO A CONCRETE SIDEWALK A COLD JOINT STRIP SHALL BE INSTALLED
9. AIR & VACUUM VALVES & APPURTENANCES INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DIRECTED BY THE ENGINEER.
10. MATERIALS SHALL BE SELECTED FROM THE APPROVED MATERIALS LIST.

INDICATE SIZE

 LEGEND ON PLANS

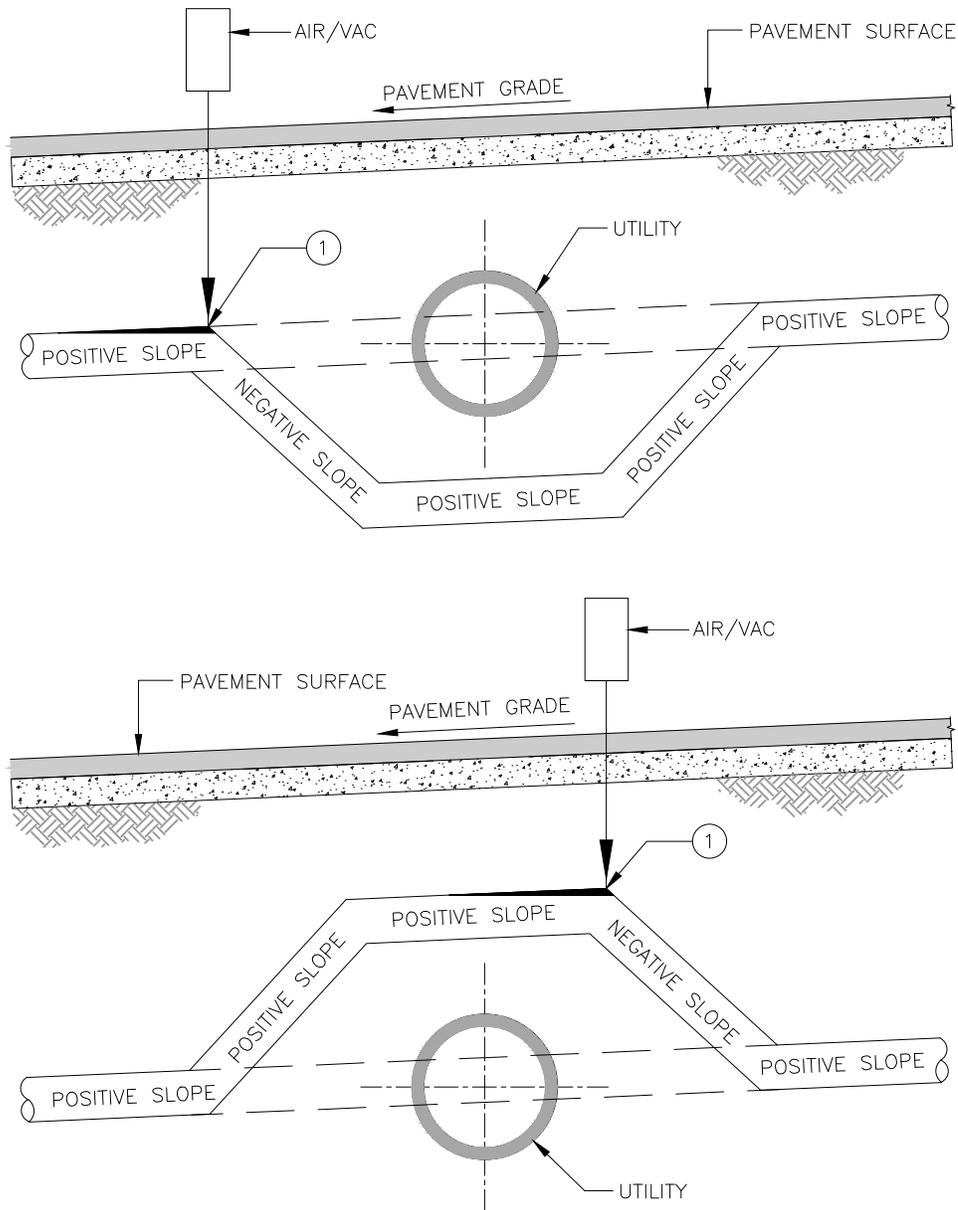


COACHELLA VALLEY WATER DISTRICT

ALTERNATIVE 1" AND 2" AIR & VACUUM VALVE ENCLOSURE LOCATIONS

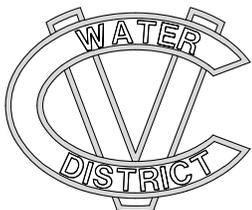
APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-22B



NOTES:

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.



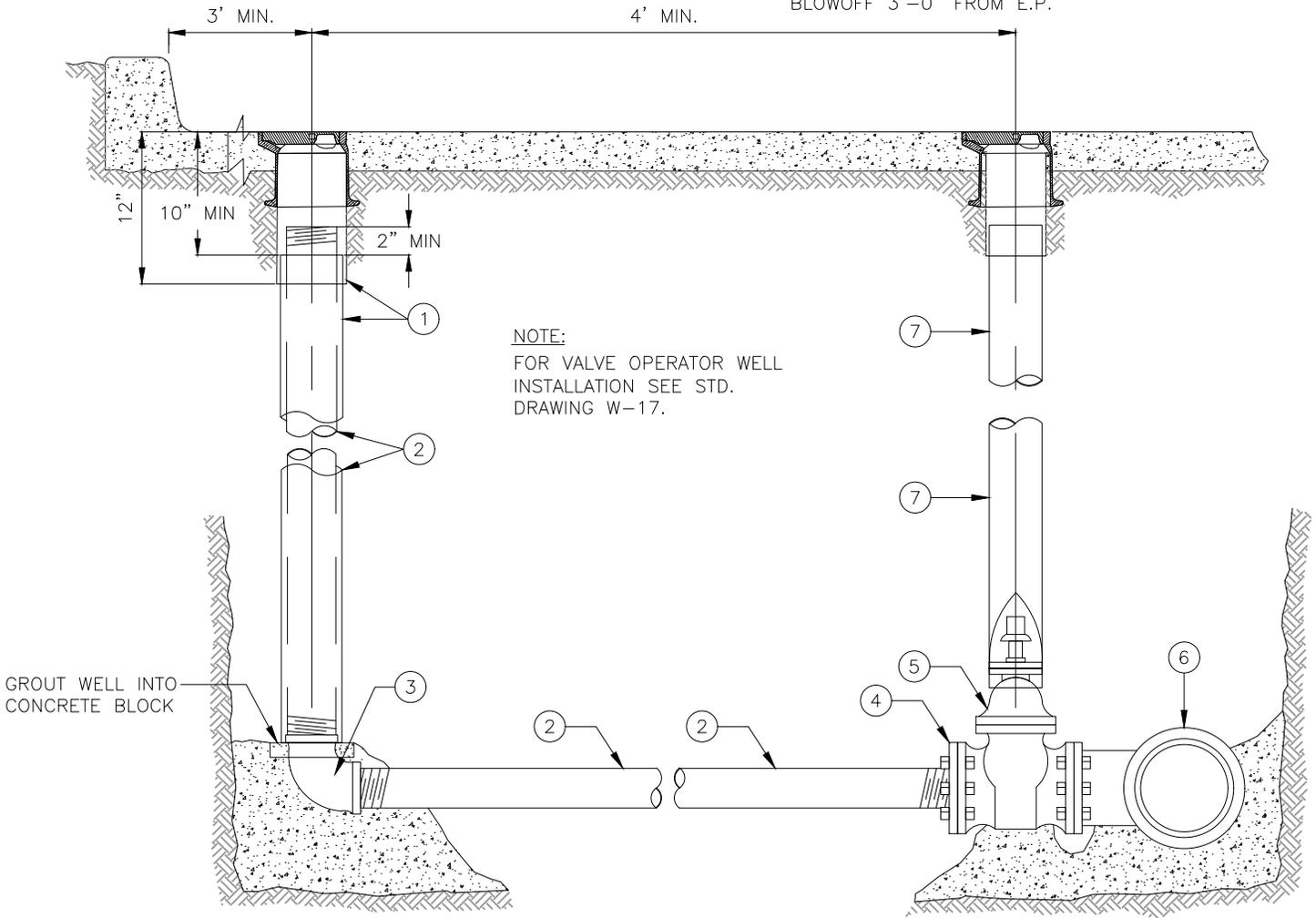
COACHELLA VALLEY WATER DISTRICT

AIR RELEASE & AIR/VACUUM INSTALLATION LOCATIONS AT SIPHONS

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-22C

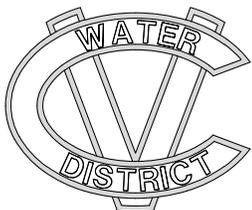
NOTE:
IF CONCRETE CURBS ARE NOT INSTALLED LOCATE BLOWOFF 3'-0" FROM E.P.



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

GROUT WELL INTO
CONCRETE BLOCK

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

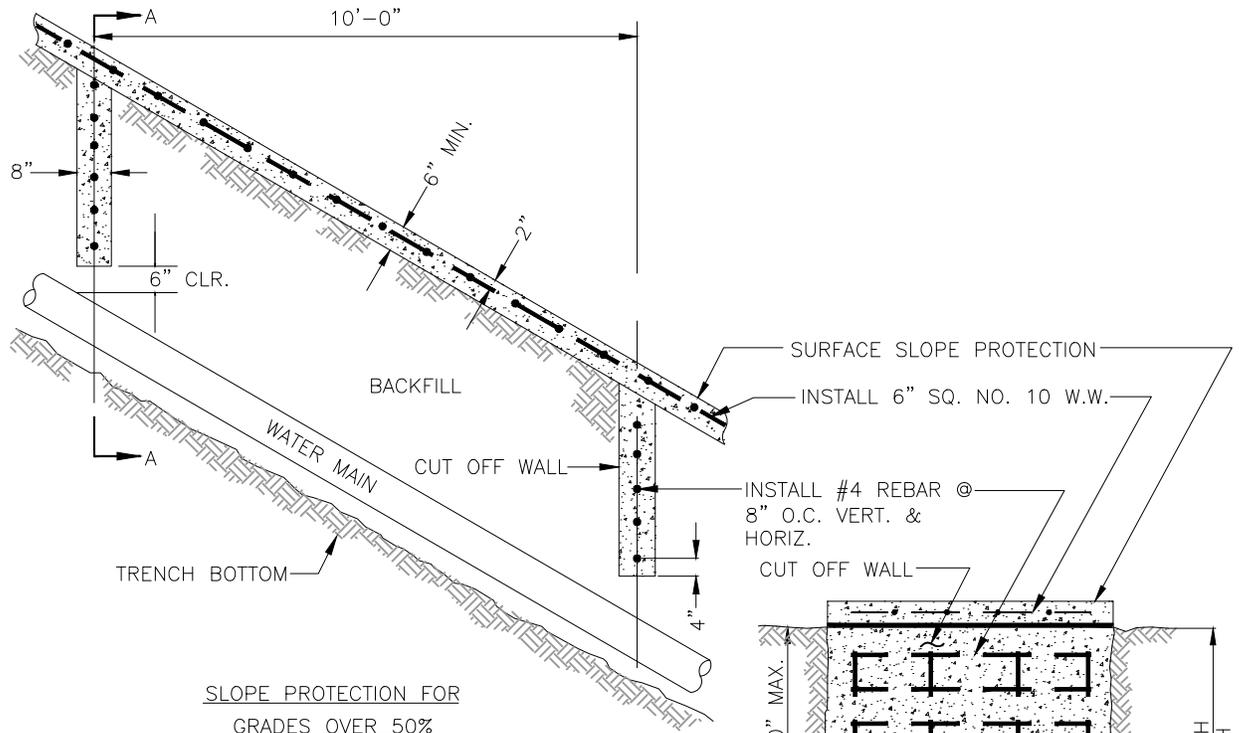


COACHELLA VALLEY WATER DISTRICT

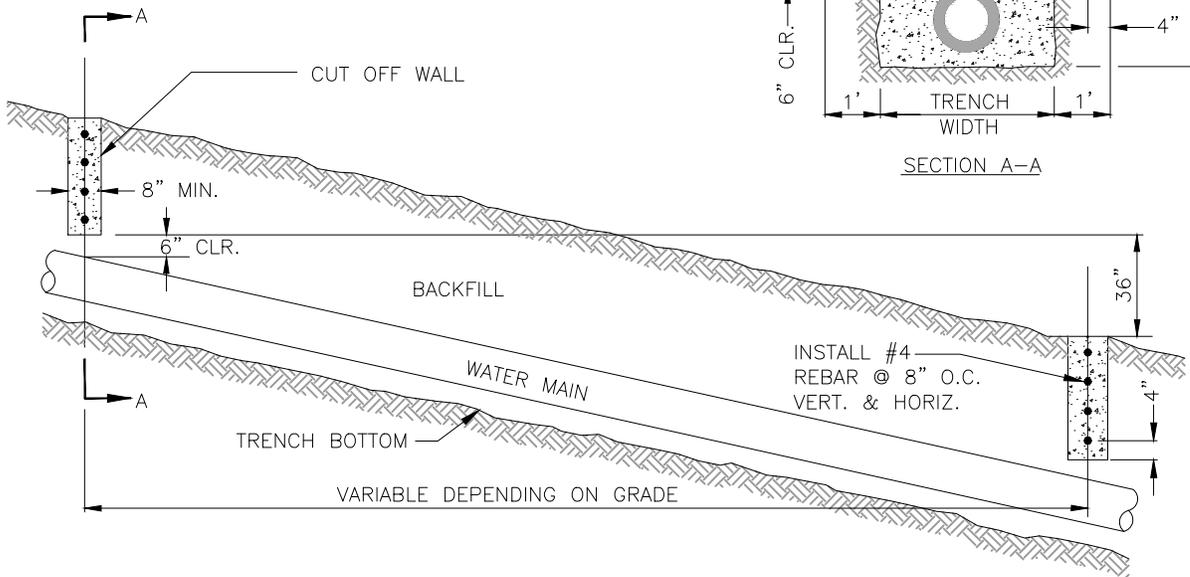
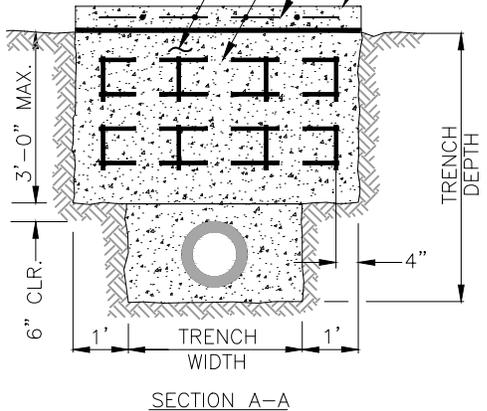
**DETAIL OF 4" OR 6" BLOWOFF ASSEMBLY
INSTALLATION
BLOWOFF TO STREET**

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-23



SLOPE PROTECTION FOR GRADES OVER 50%



SLOPE PROTECTION FOR GRADES 15% TO 50%



COACHELLA VALLEY WATER DISTRICT

DETAIL OF SLOPE PROTECTION

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-26/S-26

NOTES:

1. UTILITY MARKER LEGENDS

DOMESTIC WATER (VERTICAL ALIGNMENT)
"CAUTION WATER PIPELINE"

NON-POTABLE WATER (VERTICAL ALIGNMENT)
"CAUTION NON-POTABLE WATER"

SEWER (VERTICAL ALIGNMENT)
"CAUTION SEWER PIPELINE"

2. CALL BEFORE DIGGING (HORIZONTAL ALIGNMENT)

3. CVWD (760) 398-2651 (HORIZONTAL ALIGNMENT)

4. BRASS TAG 1-INCH MIN. DIA. STAMPED AS SHOWN WITH DISTANCE IN FEET, THE WORD "OFFSET" AND DIRECTION ARROW POINTING IN DIRECTION OF OFFSET. TO BE SECURED WITH ALUMINUM POP RIVET AND WASHER.

5. FACILITY TYPE ID (3-INCH LETTERS VERT.)

LEGEND

- BO = BLOW-OFF
- AV = AIR-VAC RELIEF VALVE
- GV = GATE VALVE
- PV = PRESSURE REGULATOR VALVE
- LV = LINE VALVE
- MH = MANHOLE
- CP = CATHODIC PROTECTION

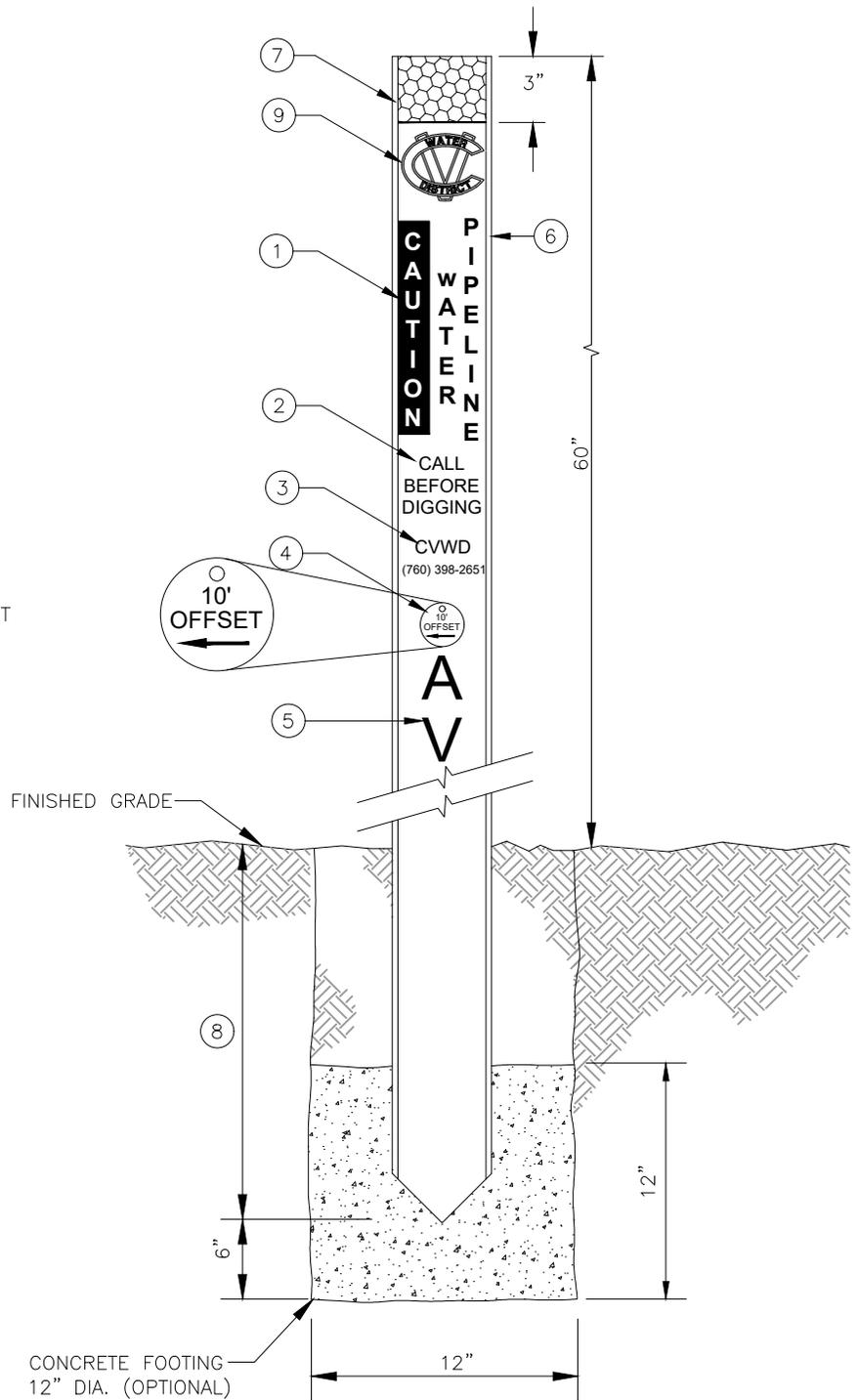
6. UTILITY MARKER POST COLOR

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

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

8. INSTALLATION DEPTH PER MANUFACTURERS RECOMMENDATIONS.

9. CVWD LOGO

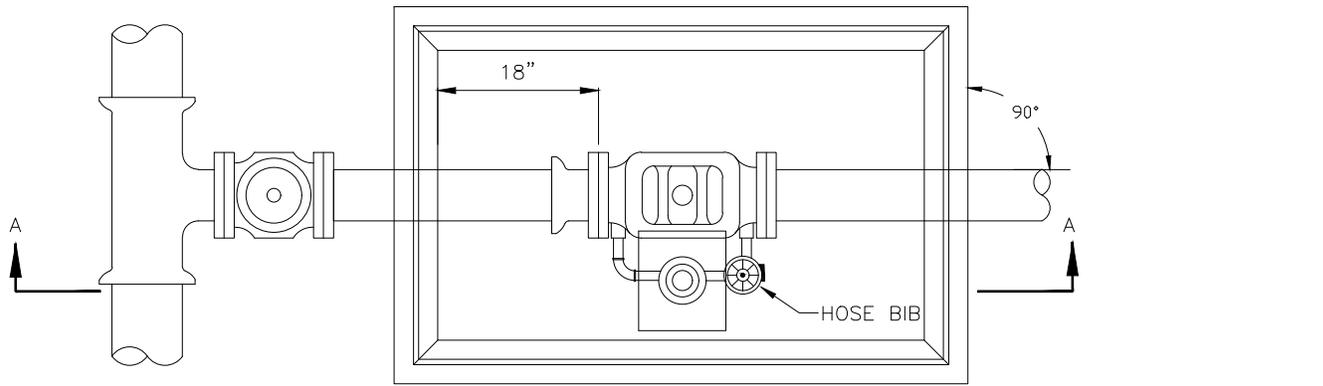


COACHELLA VALLEY WATER DISTRICT

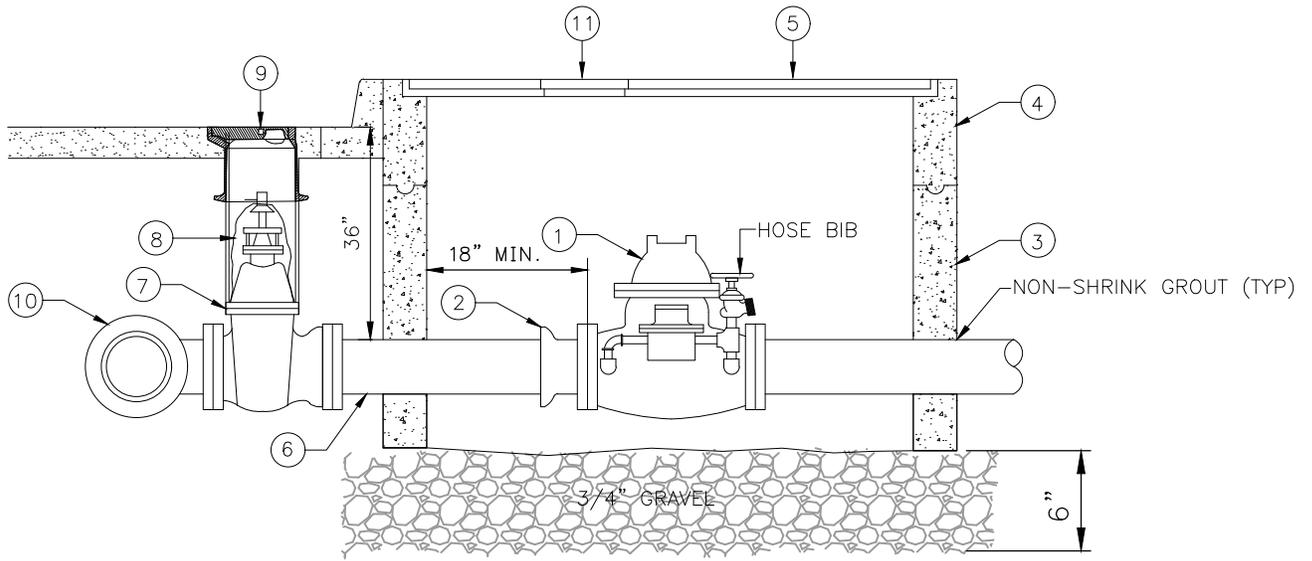
UTILITY MARKER POST

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-27/S-38

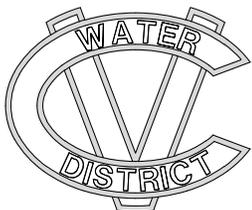


PLAN VIEW



SECTION A-A

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

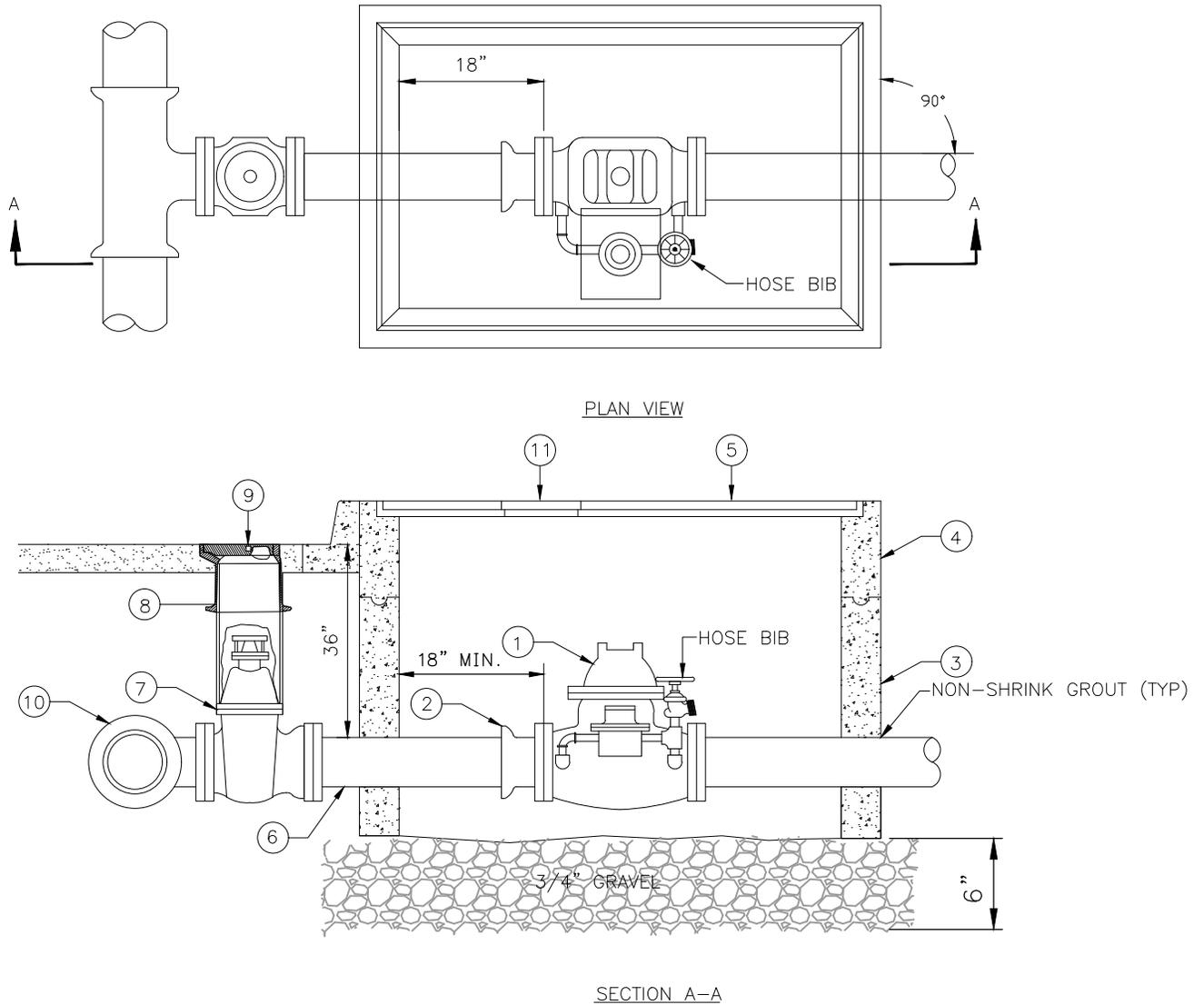


COACHELLA VALLEY WATER DISTRICT

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

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-30



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

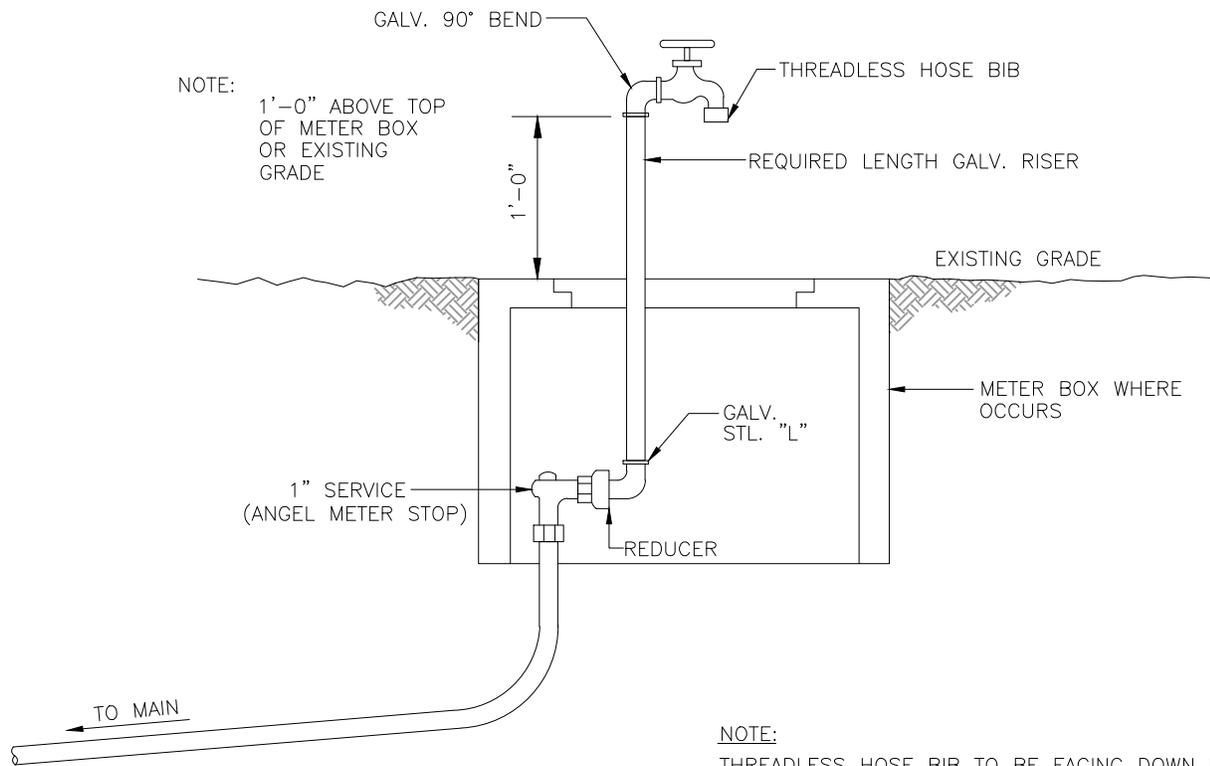


COACHELLA VALLEY WATER DISTRICT

**DETAIL OF 8" DETECTOR CHECK
WITH BY-PASS METER INSTALLATION
FOR DUCTILE IRON PIPE**

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-31B



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

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

CONTRACTOR TO TURN ANGLE METER
STOP TO ON POSITION AFTER
INSTALLATION OF SAMPLE RISER

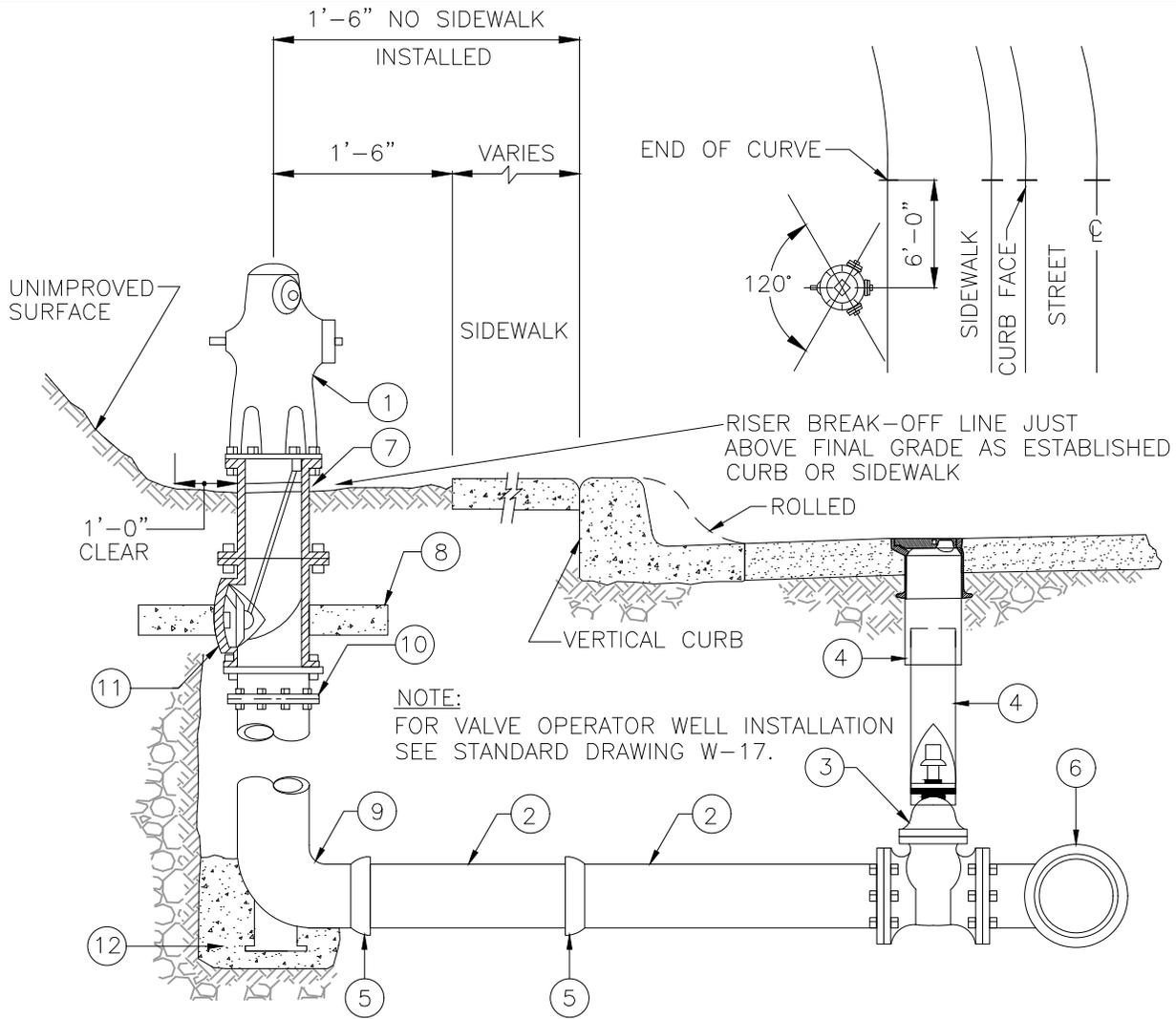


COACHELLA VALLEY WATER DISTRICT

TEMPORARY BACTERIA-SAMPLE RISER DETAIL

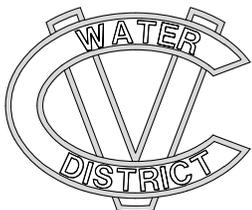
APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-32



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

ITEM NO.	NO. REQ.	SIZE AND DESCRIPTION	REMARKS
①	1	6" FIRE HYDRANT	6-HOLE
②	1+	6" X NO. OF JOINTS AS REQUIRED	D.I.P. V-BIO POLYETHYLENE WRAPPED
③	1	GATE VALVE, FLANGED	
④	1	VALVE OPERATOR WELL & CAP	SEE STANDARD DRAWING W-17
⑤	2+	6" "TYTON" RESTRAINING GASKET OR MECHANICAL JOINT RESTRAINING GLAND	
⑥	1	MAIN SIZE X 6" TEE	
⑦	1	6" FLANGED C.I. BREAK-OFF RISER - 6" LONG	6-HOLE
⑧	1	3' X 3' X 6" CONCRETE PAD	CLASS 520-C-2500
⑨	1	6" 90° BURY, "TYTON" OR M.J. X FLANGED	D.I.P.
⑩	1	6" X REQUIRED LENGTH RISER	FLANGED (8-HOLE) D.I.P.
⑪	1	6" POSITIVE BREAK-OFF VALVE ASSEMBLY (FLANGE)	8-HOLE X 6-HOLE
⑫		THRUST BLOCKING	SEE STANDARD DRAWING W-19

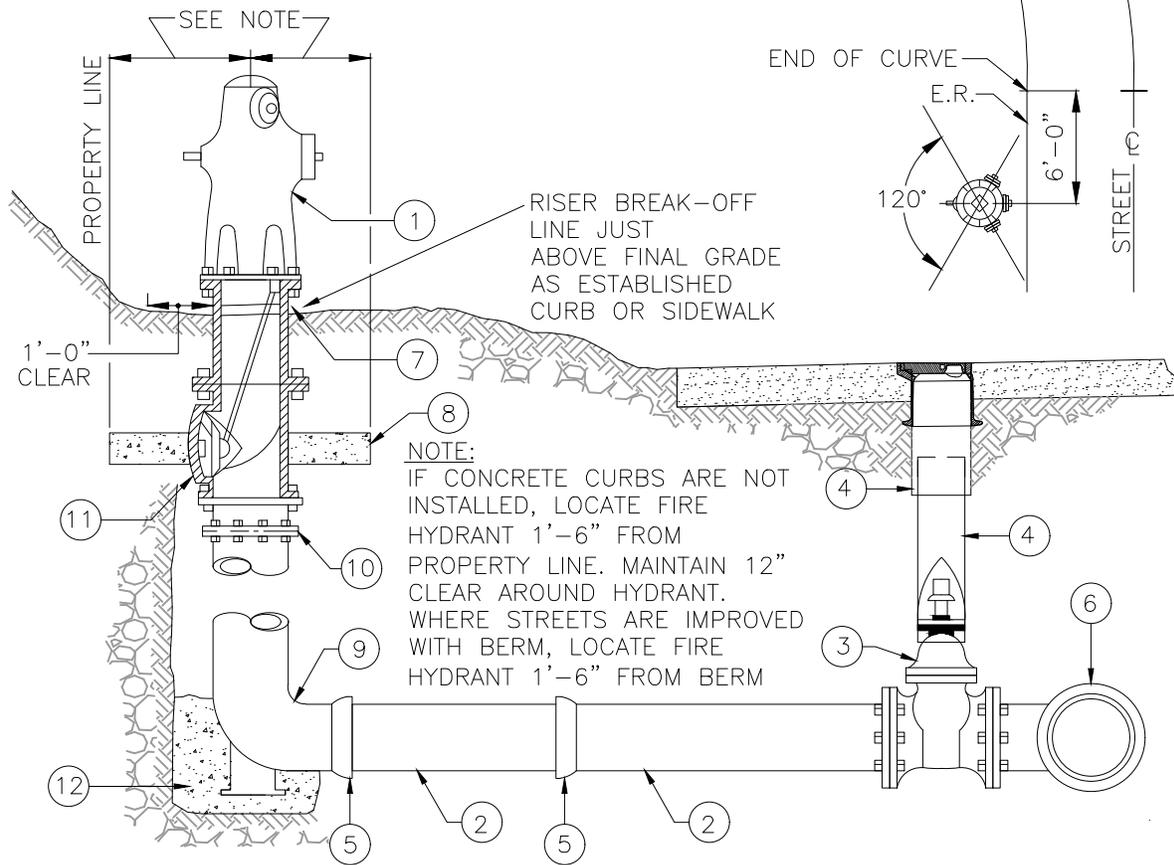


COACHELLA VALLEY WATER DISTRICT

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

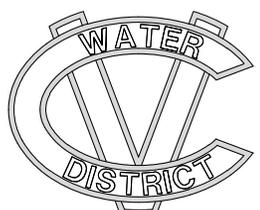
APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-33A



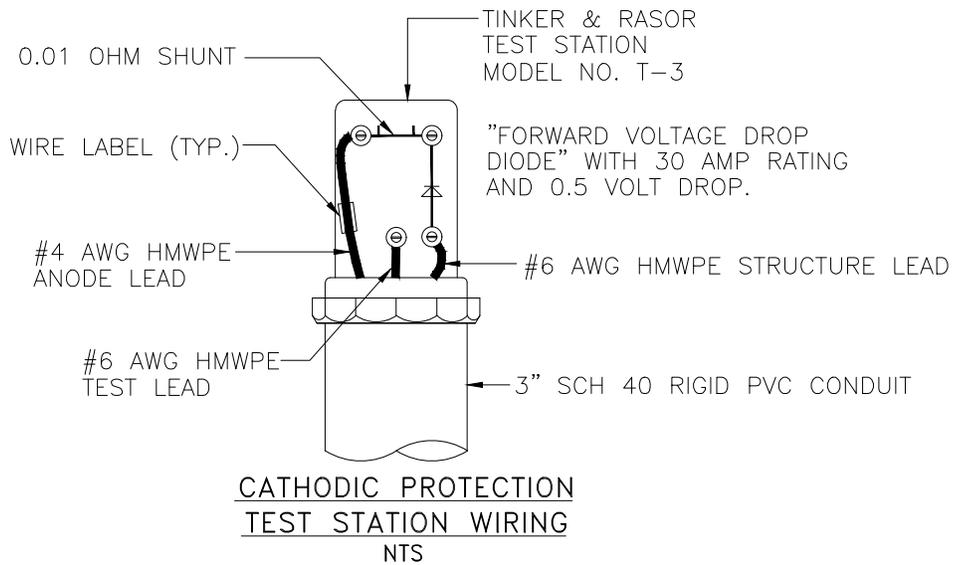
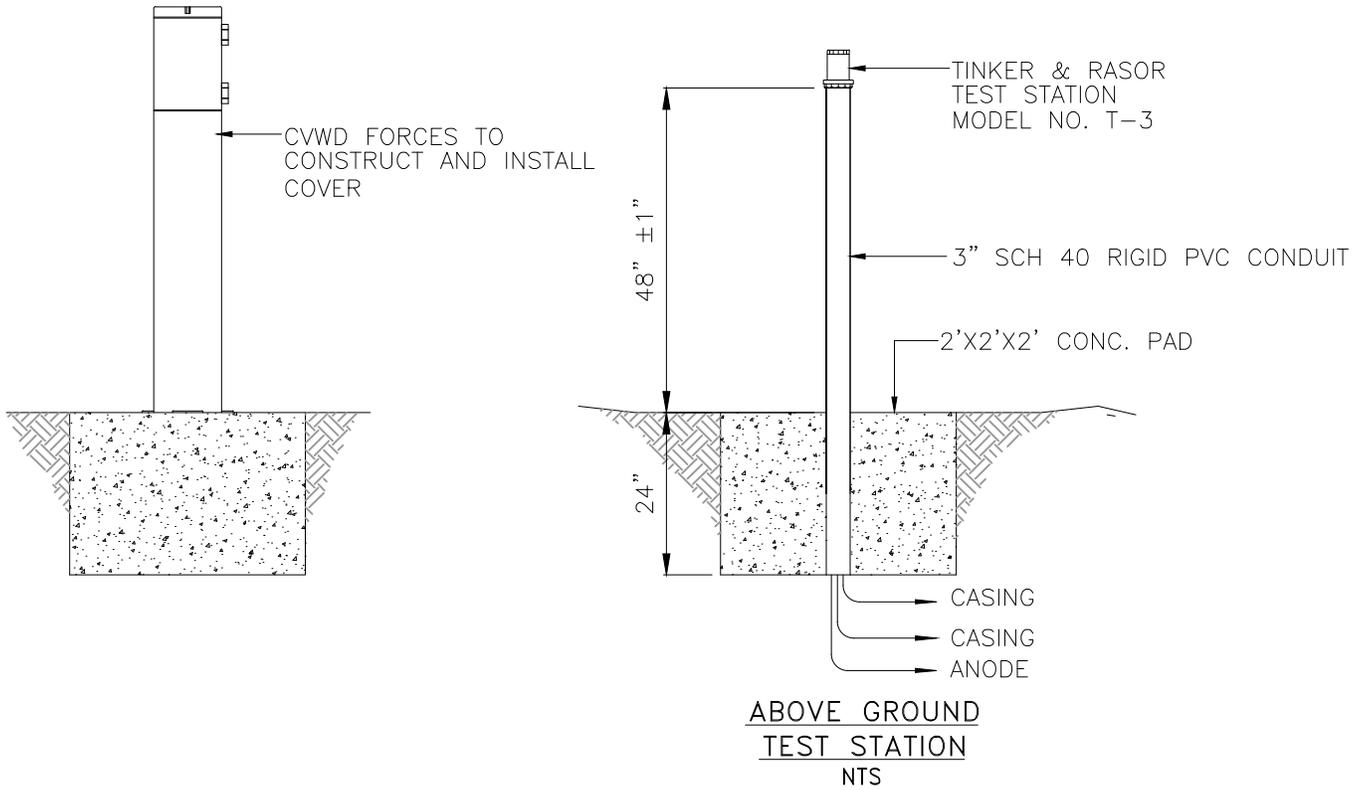
NOTE:
 FOR VALVE OPERATOR WELL INSTALLATION
 SEE STANDARD DRAWING W-17.

ITEM NO.	NO. REQ.	SIZE AND DESCRIPTION	REMARKS
①	1	6" FIRE HYDRANT	6-HOLE
②	1+	6" X NO. OF JOINTS AS REQUIRED	D.I.P. V-BIO POLYETHYLENE WRAPPED
③	1	GATE VALVE, FLANGED	
④	1	VALVE OPERATOR WELL & CAP	SEE STANDARD DRAWING W-17.
⑤	2+	6" "TYTON" RESTRAINING GASKET OR MECHANICAL JOINT RESTRAINING GLAND	
⑥	1	MAIN SIZE X 6" TEE	
⑦	1	6" FLANGED C.I. BREAK-OFF RISER - 6" LONG	6-HOLE
⑧	1	3' X 3' X 6" CONCRETE PAD	CLASS 520-C-2500
⑨	1	6" 90° BURY, "TYTON" OR M.J. X FLANGED	D.I.P.
⑩	1	6" X REQUIRED LENGTH RISER	FLANGED (8-HOLE) D.I.P.
⑪	1	6" POSITIVE BREAK-OFF VALVE ASSEMBLY (FLANGE)	8-HOLE X 6-HOLE
⑫		THRUST BLOCKING	SEE STANDARD DRAWING W-19



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



COACHELLA VALLEY WATER DISTRICT

CP TEST STATION DETAIL

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-36A

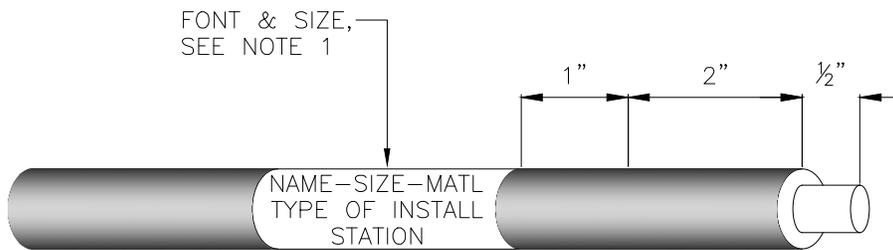
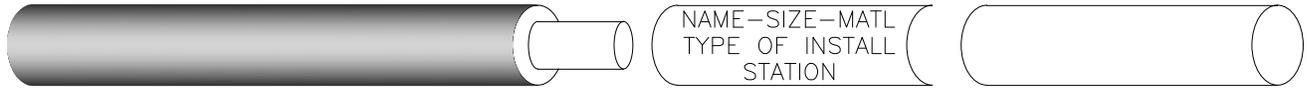


TABLE EXAMPLE

CVWD-42"-STEEL CASING 15+23

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

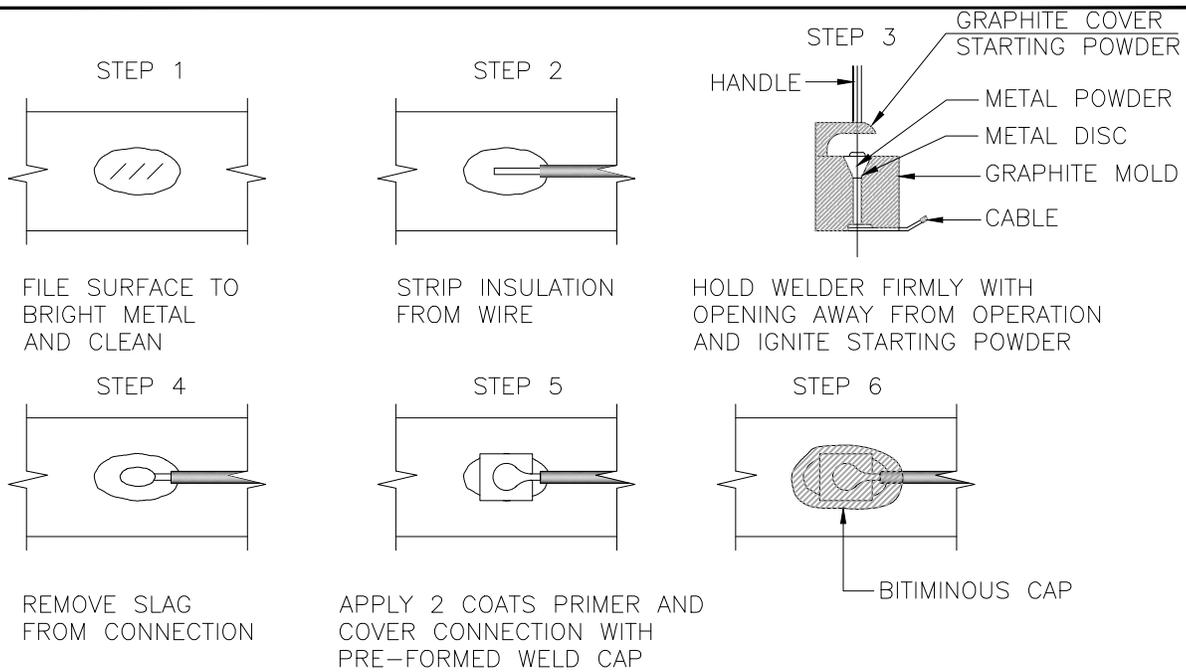


COACHELLA VALLEY WATER DISTRICT

WIRE LABELING IDENTIFICATION

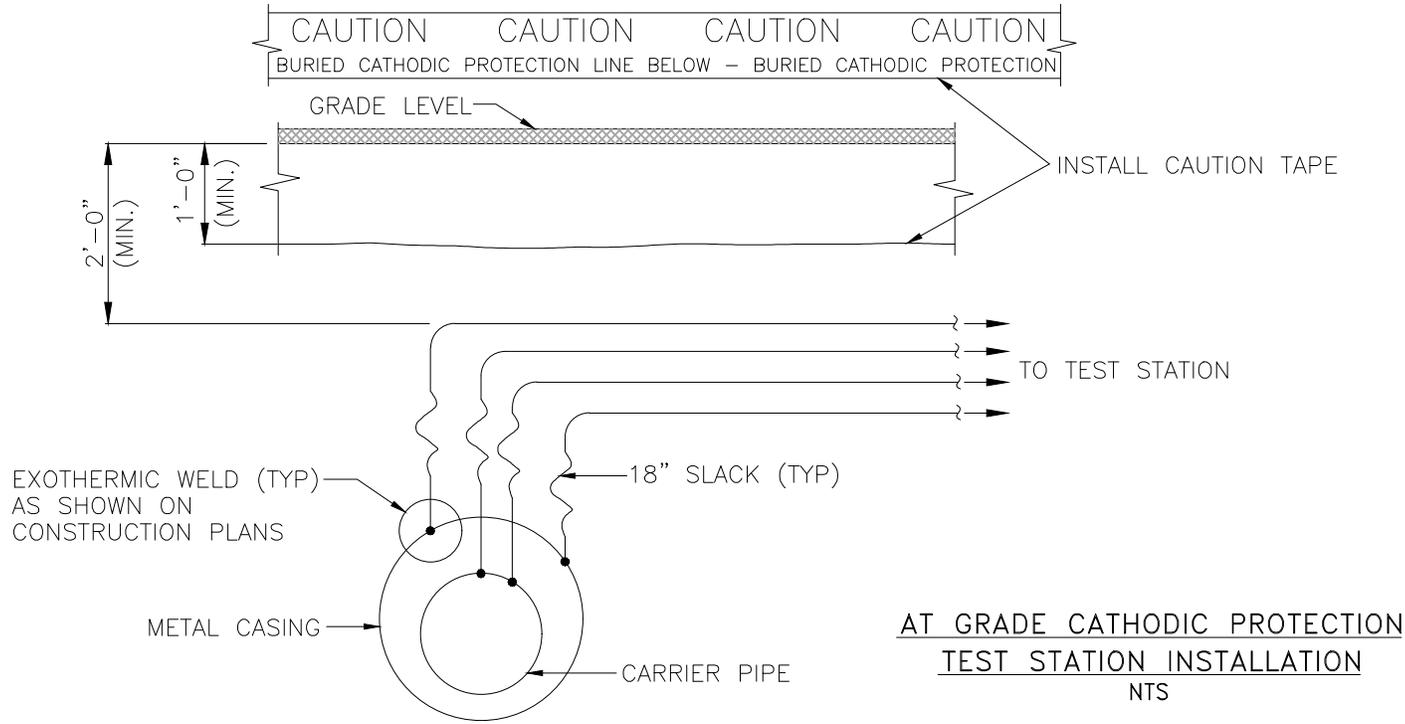
APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-36B



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
NTS



COACHELLA VALLEY WATER DISTRICT

DETAIL OF CATHODIC PROTECTION TEST STATION-IMPROVED AREAS

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-36C

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

FUSION BONDED EPOXY
STEEL CASING

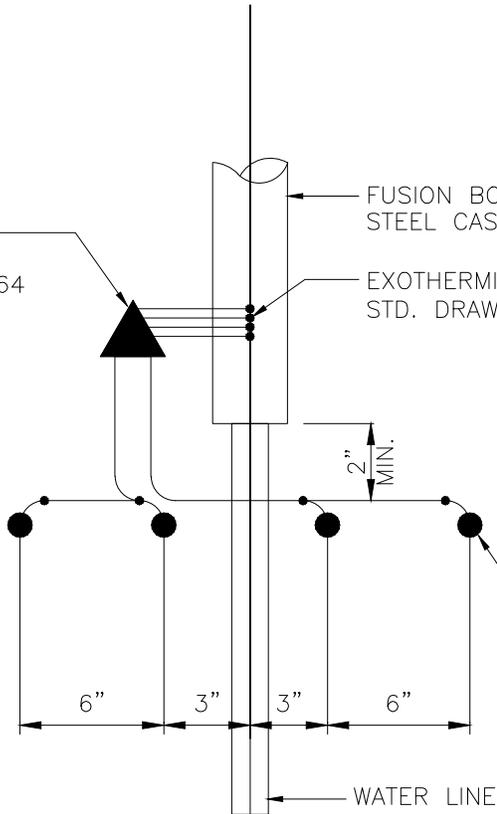
EXOTHERMIC WELDS PER
STD. DRAWING W-36B

2"
MIN.

MAGNESIUM ANODES
ON COMMON HEADER CABLE EACH
END OF CASING

SEE CONTRACT DOCUMENTS
FOR SIZE AND QUANTITY

CVWD MARKER
POST



NOTES:

ROUTE MAG. ANODE HEADER
CABLE TO TEST STATION

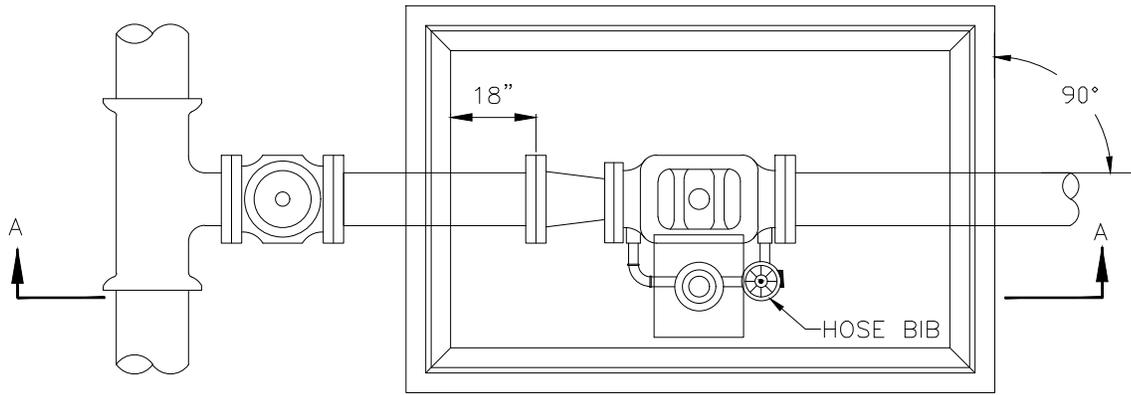


COACHELLA VALLEY WATER DISTRICT

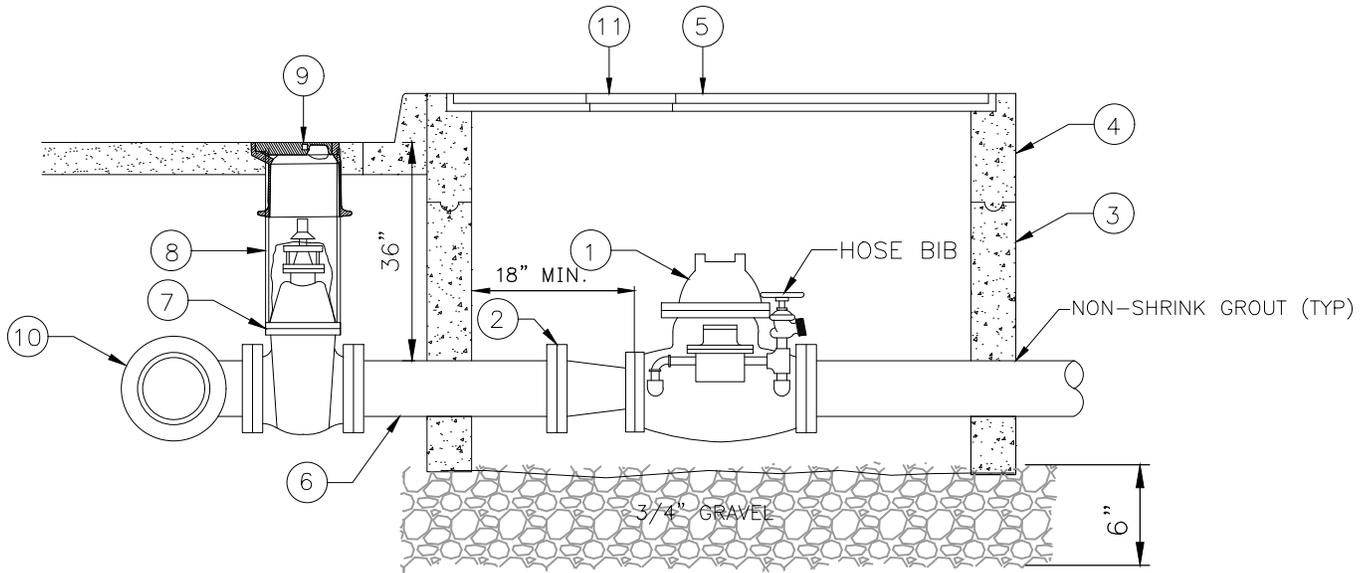
PIPE CASING CATHODIC PROTECTION

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-36D

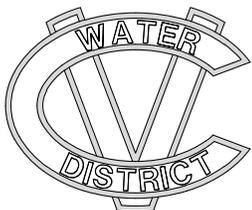


PLAN VIEW



SECTION A-A

ITEM NO.	NO. REQ.	SIZE AND DESCRIPTION	MATERIAL SPECIFICATIONS	REMARKS
①	1	10" DETECTOR CHECK W/BY-PASS METER.	CVWD APPROVED	CVWD INSTALLED
②	1	12"X10" REDUCING ADAPTER, FLANGED BY "TYTON" OR M.J.	DUCTILE IRON	RESTRAINED
③	1	7'-6" X 4'-0" UTILITY BOX W/ 6" WALLS.	SEE MATERIALS LIST	
④	1	7'-6" X 4'-0" UTILITY BOX TOP SECTION.		
⑤	1	7'-6" X 4'-0" UTILITY BOX COVER.		
⑥	1	12" X REQUIRED LENGTH DUCTILE IRON PIPE.	DUCTILE IRON	RESTRAINED
⑦	1	12" GATE VALVE, FLANGED	CVWD APPROVED	RESTRAINED
⑧	1	VALVE WELL		SEE STD. DWG. W-17
⑨	1	VALVE WELL CAP		SEE STD. DWG. W-18
⑩	1	MAIN SIZE X 12" TEE	DUCTILE IRON	
⑪	1	8" X 8" HINGED METER READING LID		

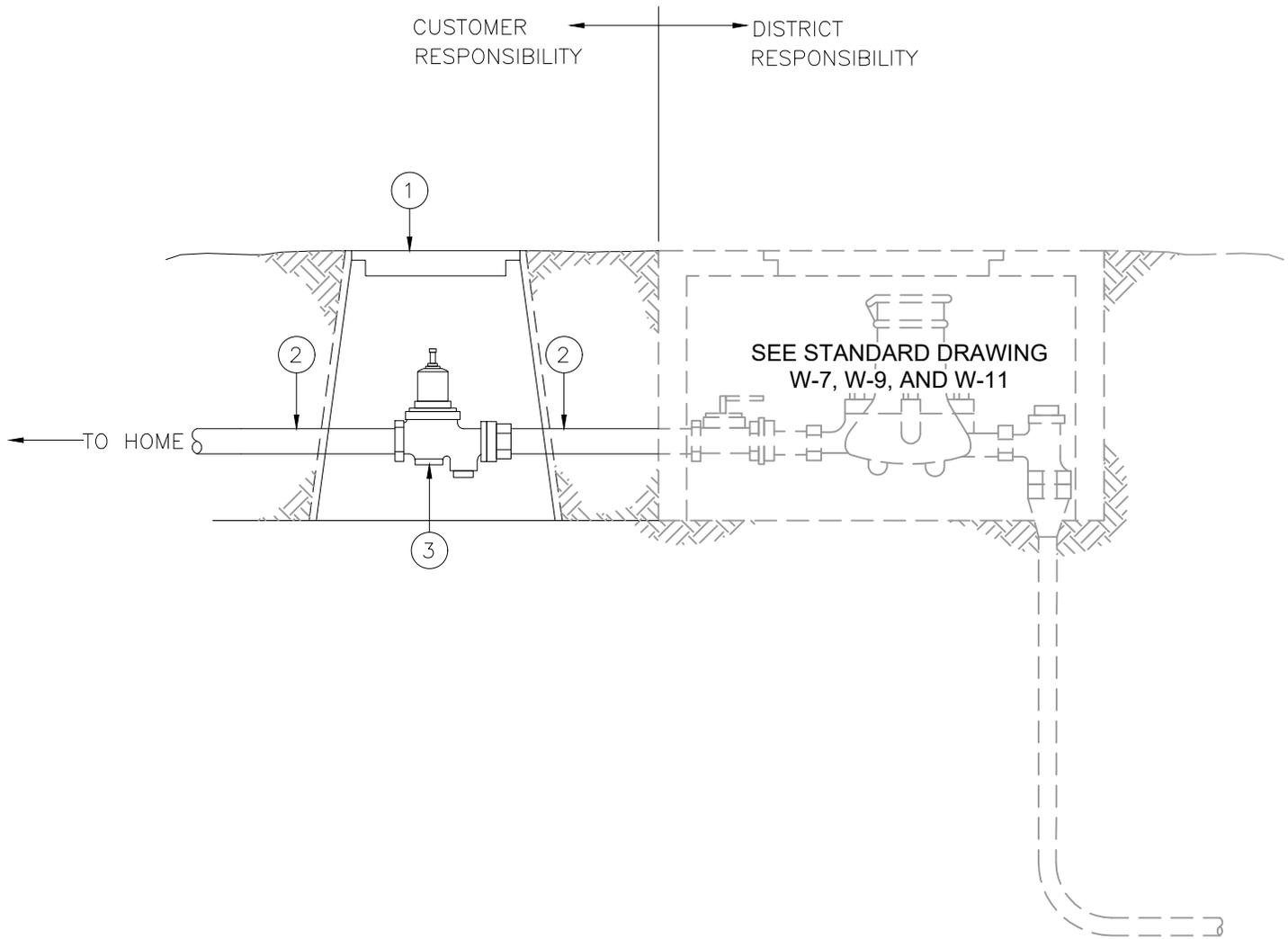


COACHELLA VALLEY WATER DISTRICT

DETAIL OF 10" DETECTOR CHECK WITH BY-PASS METER INSTALLATION FOR DUCTILE IRON PIPE

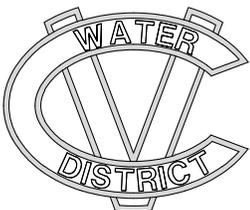
APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-38



NOTE: PRESSURE REDUCING VALVE TO BE CENTERED IN 10" IRRIGATION BOX

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

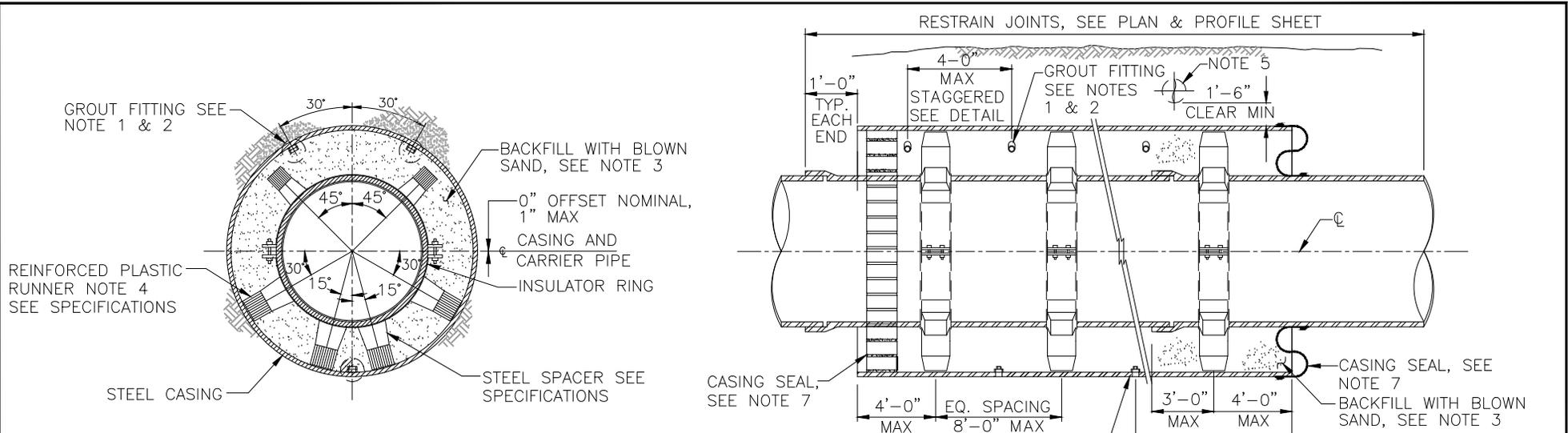


COACHELLA VALLEY WATER DISTRICT

TYPICAL DETAIL OF INDIVIDUAL 1" PRESSURE REDUCING VALVE INSTALLATION

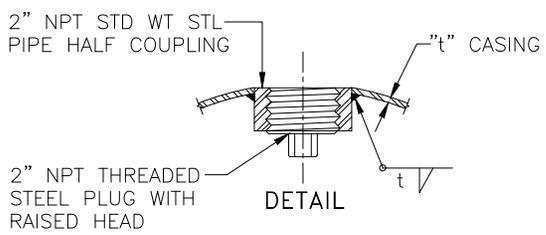
APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-39



CARRIER PIPE DIAMETER	CASING DIAMETER	CASING* THICKNESS	CASING** THICKNESS
8"	18"	3/8"	3/8"
12"	24"	3/8"	3/8"
18"	36"	1/2"	3/8"
24"	42"	3/4"	1/2"
30"	54"	3/4"	1/2"
36"	66"	3/4"	3/4"
42"	72"	3/4"	3/4"

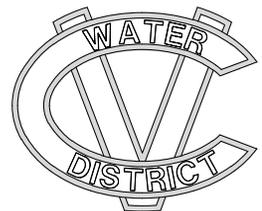
* BORES LONGER THAN 150 FEET.
 ** BORES 150 FEET IN LENGTH AND SHORTER.



CASING GROUT CONNECTION

NOTES

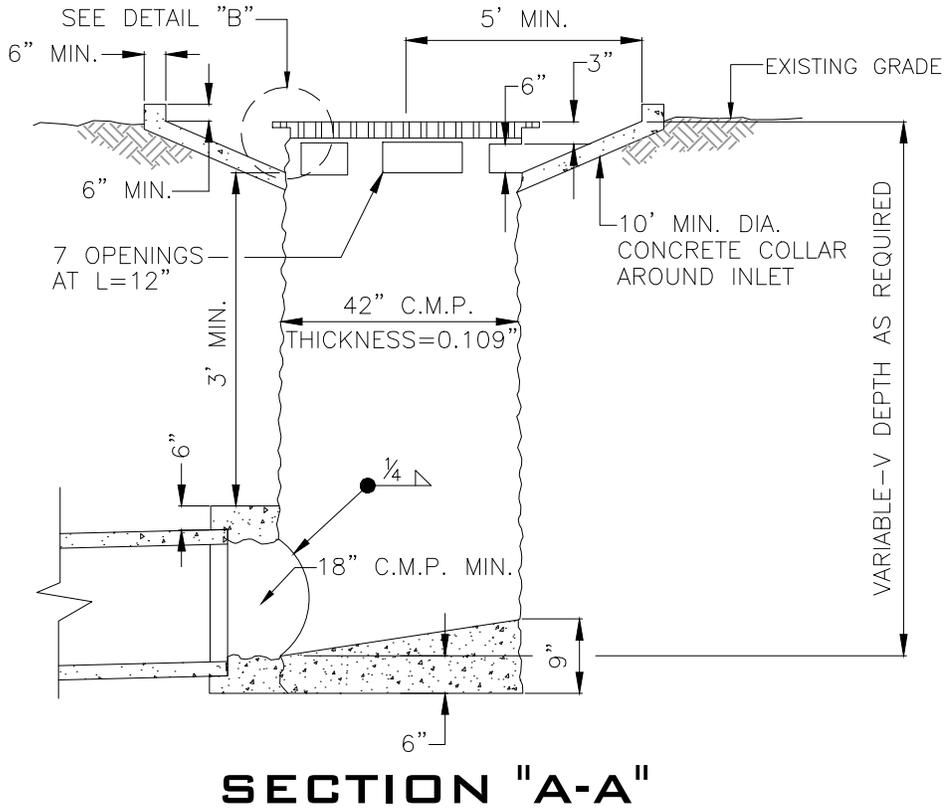
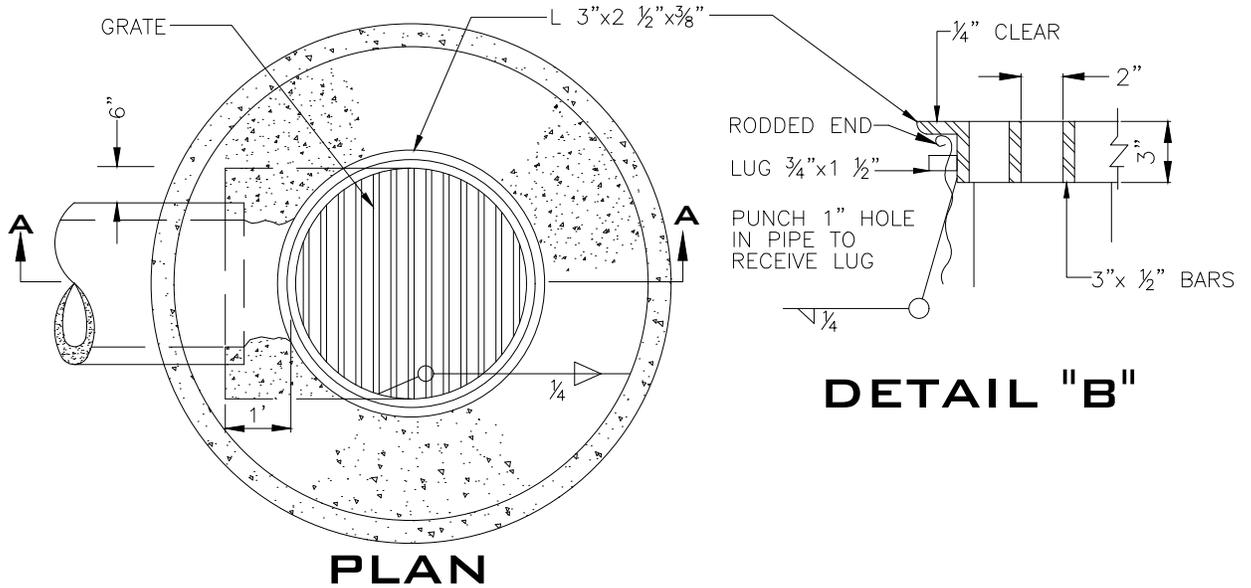
- 1 USE BENTONITE AS REQUIRED TO REDUCE JACKING FORCE.
- 2 36" AND LARGER CASINGS, BLOCK INSIDE OF CASING AFTER INSTALLATION AND GROUT ALL VOIDS OUTSIDE OF CASING. MAXIMUM GROUT PRESSURE = 0.6 X OVERBURDEN PRESSURE. SEE SPECIFICATIONS FOR GROUTING REQUIREMENTS.
- 3 BACKFILL ANNULAR SPACE BETWEEN CASING 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 BULKHEAD OR RUBBER END SEALS.
- 7 AFTER THE CARRIER PIPE HAS PASSED TESTING THE CASING ENDS SHALL BE SEALED WITH BRICK AND MORTAR BULKHEADS. RUBBER END SEALS MAY BE USED 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



NOTES:
 1. GRATE AND FRAME SHALL BE GALVANIZED

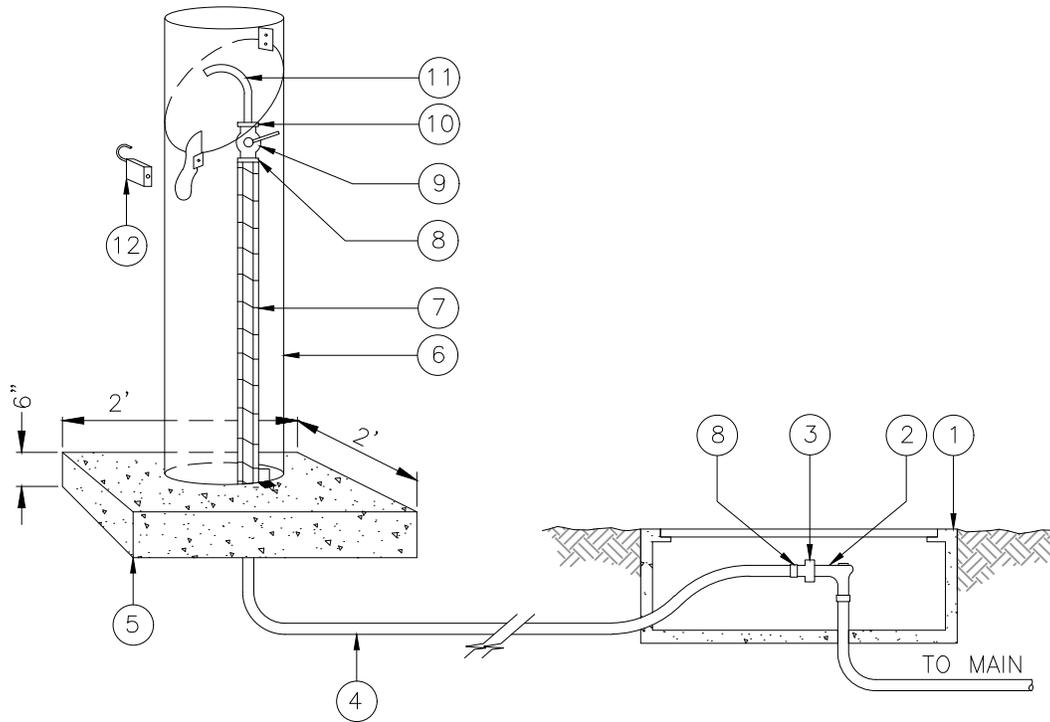


COACHELLA VALLEY WATER DISTRICT

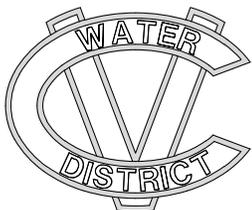
**INLET FOR BLOW-OFF WATER AT WELL SITES
 (GRAVITY FLOW ONLY)**

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-41



ITEM NO.	SIZE AND DESCRIPTION	REMARKS
①	33-S METER BOX	
②	1" ANGLE STOP	
③	1 1/4" X 3/4" BRASS BUSHING REDUCER	
④	3/4" COPPER TUBING	LENGTH DEPENDS ON RUN
⑤	CEMENT PAD	
⑥	STATION CANISTER- BOLTED TO CONCRETE SLAB	
⑦	PLUMBING INSULATION	
⑧	3/4" X 3/4" FERRULE FITTING	
⑨	3/4" X 3/4" BRASS BALL VALVE	
⑩	3/4" X 3/8" FURRULE FITTING	
⑪	3/8" 316SS GOOSE NECK	
	MASTER PADLOCK NO. 2356	DISTRICT SUPPLIED

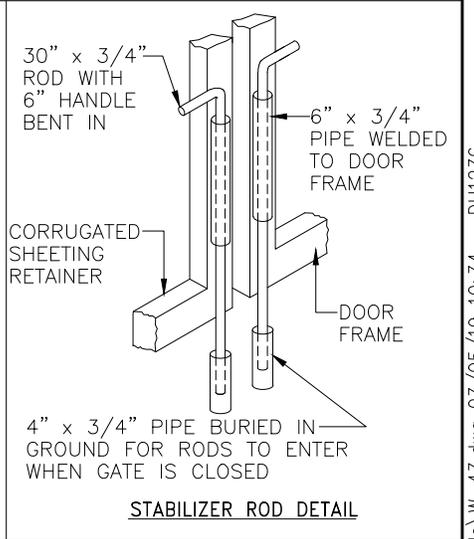
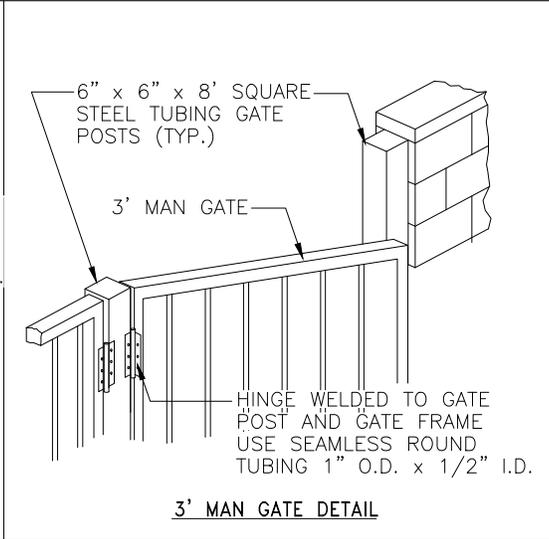
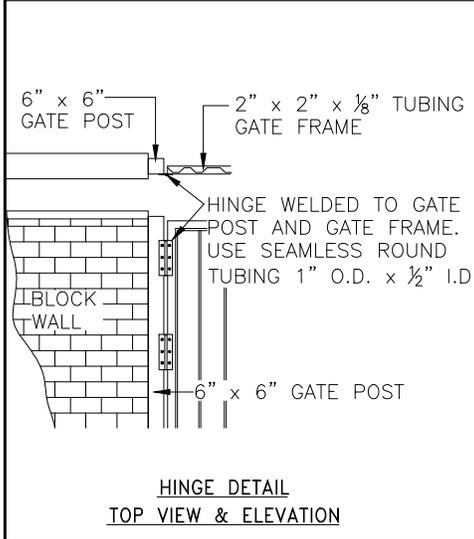
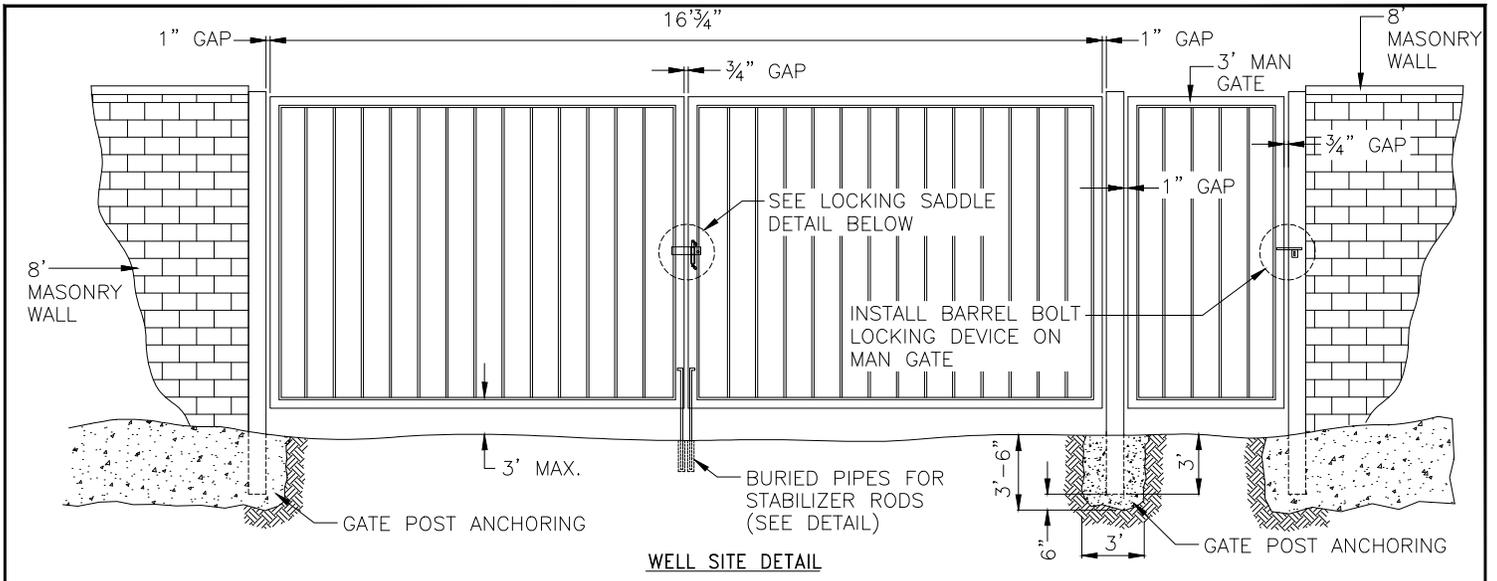


COACHELLA VALLEY WATER DISTRICT

SAMPLE STATION

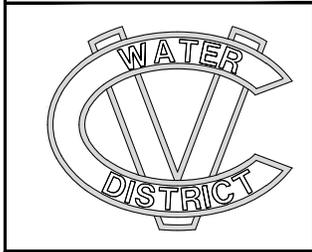
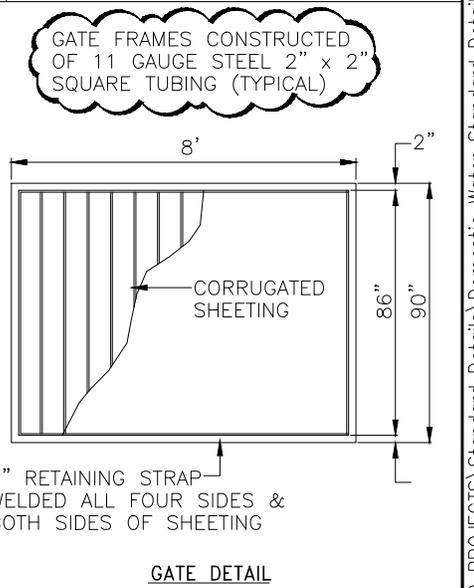
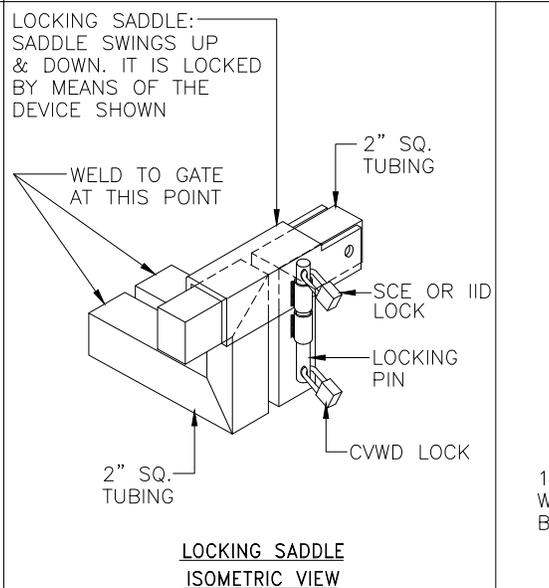
APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-42



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



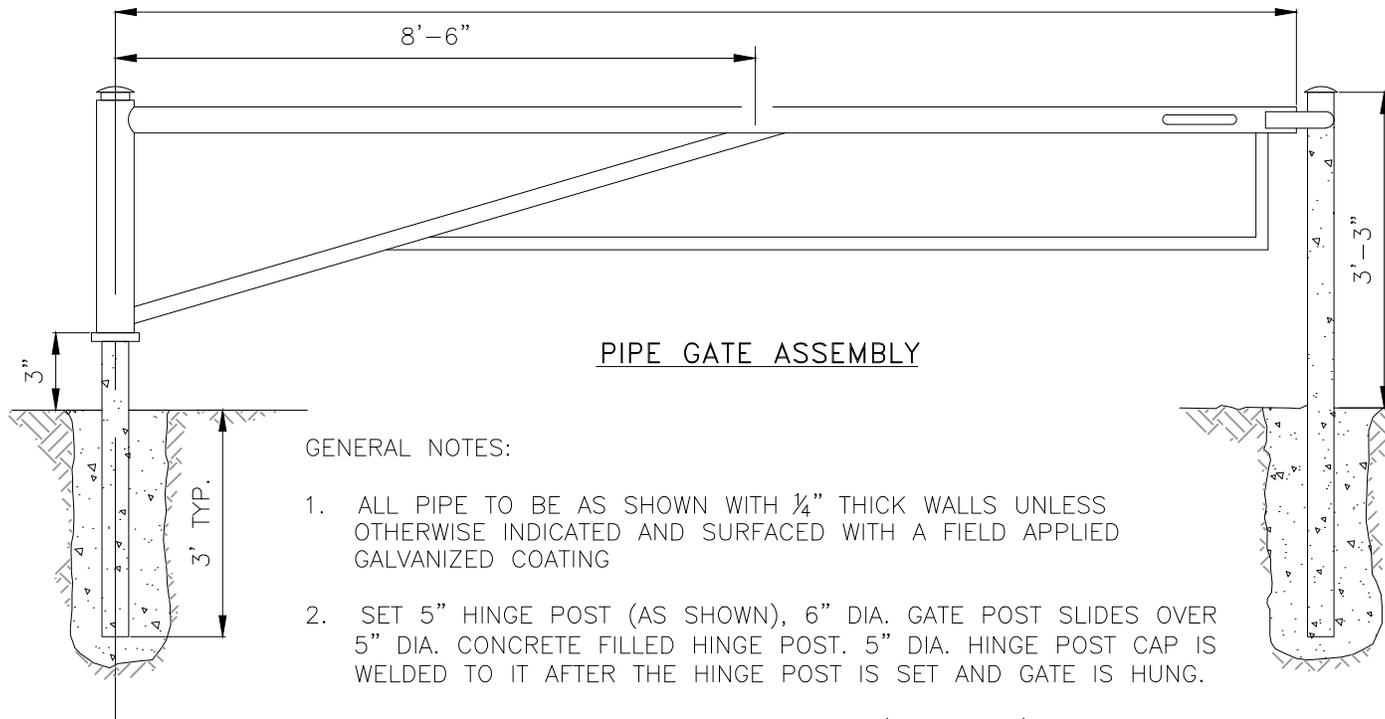
COACHELLA VALLEY WATER DISTRICT

WELL SITE GATES & DETAILS

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-43

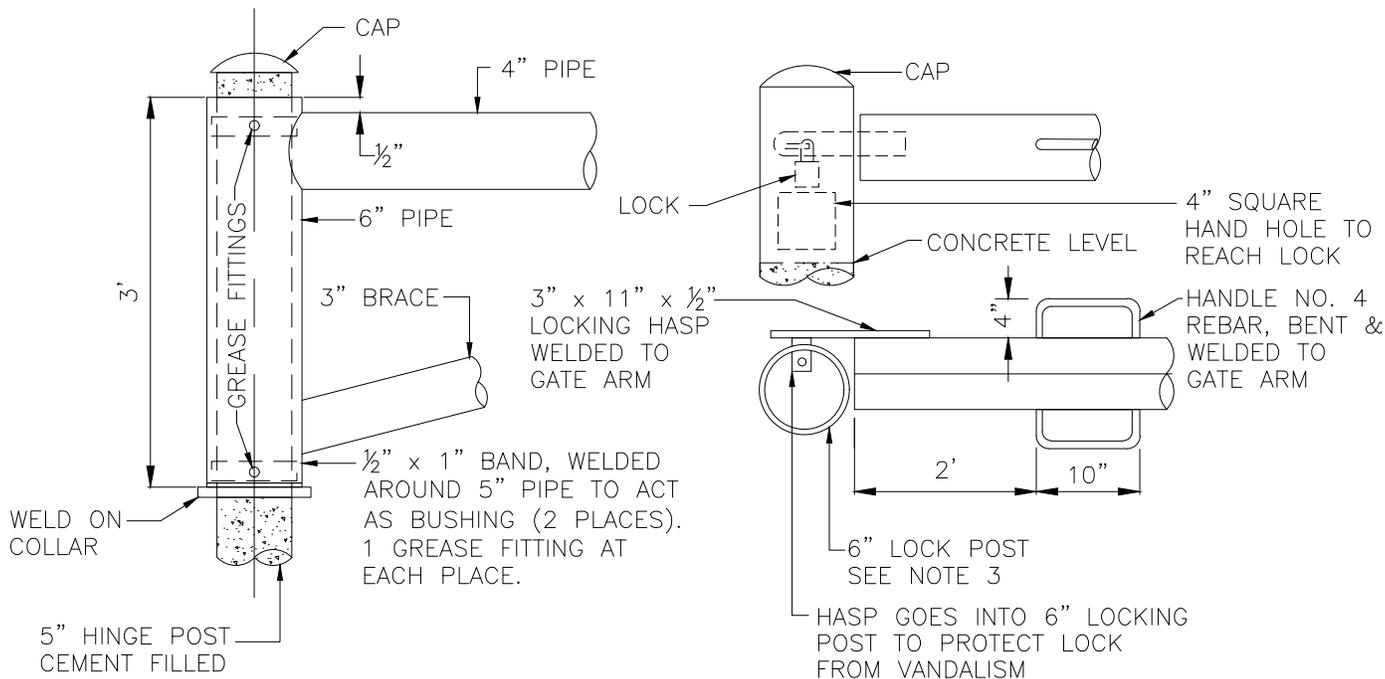
AS REQUIRED, 16' MIN.



PIPE GATE ASSEMBLY

GENERAL NOTES:

1. ALL PIPE TO BE AS SHOWN WITH $\frac{1}{4}$ " 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.



HINGE POST

LOCKING POST

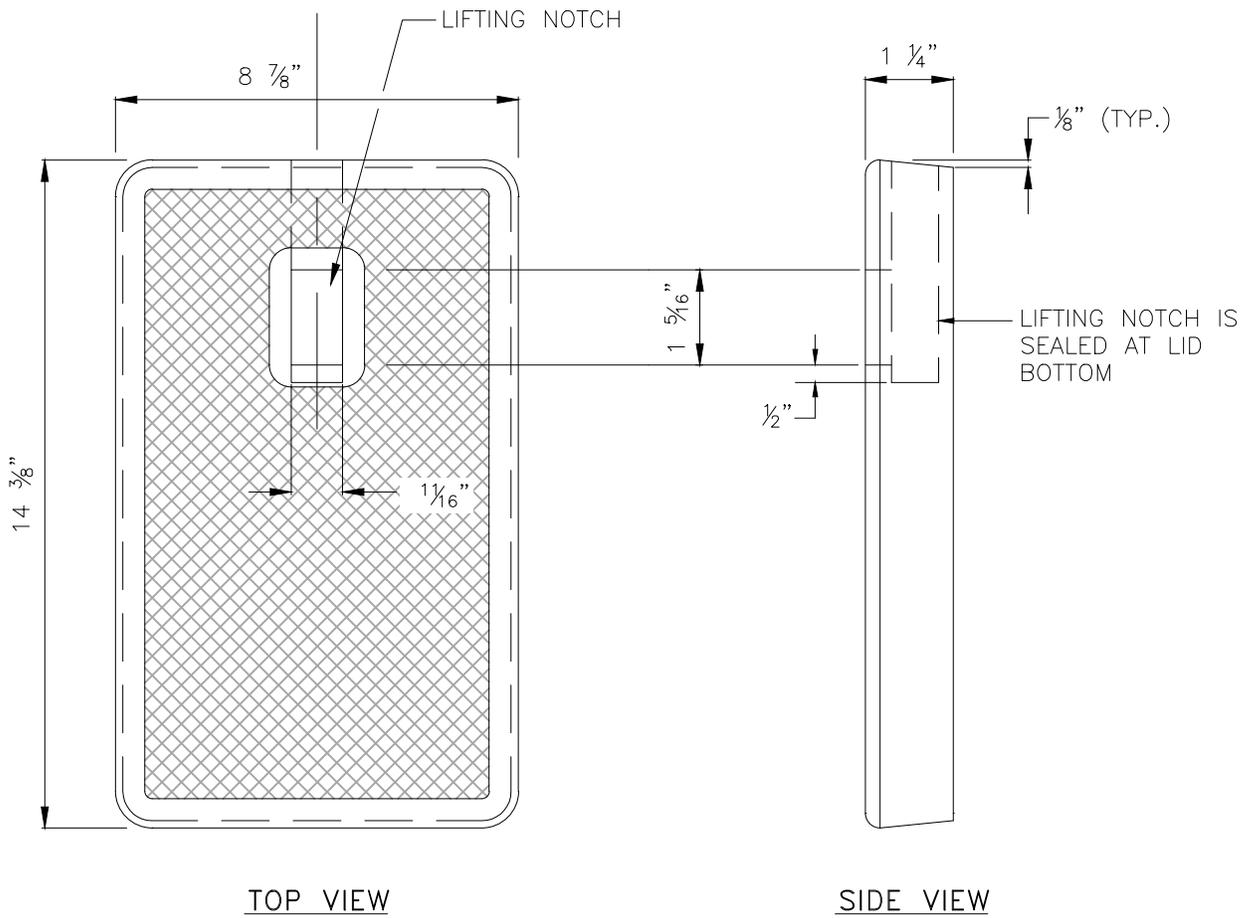
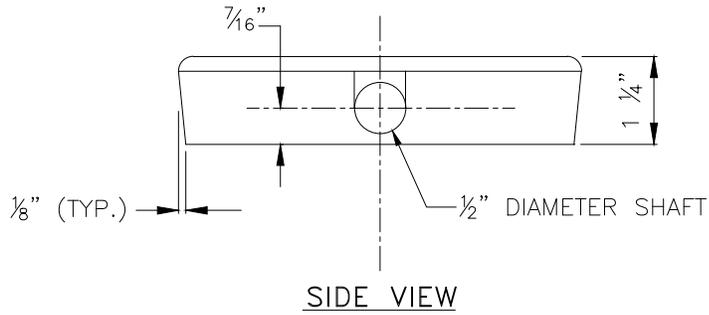


COACHELLA VALLEY WATER DISTRICT

STANDARD PIPE GATE ASSEMBLY

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-44

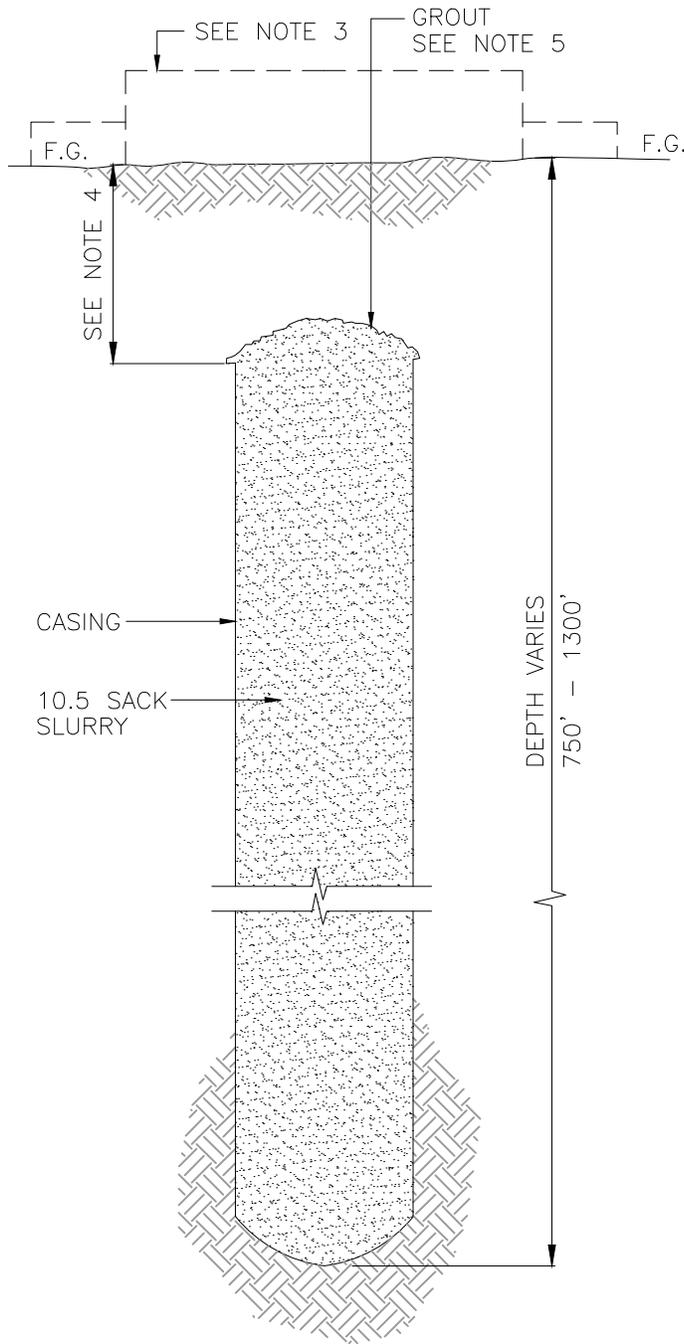


COACHELLA VALLEY WATER DISTRICT

**DETAIL OF DOMESTIC WATER
BEE PROOF METER READING LID**

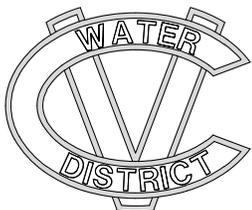
APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-45



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 BAILING 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



COACHELLA VALLEY WATER DISTRICT

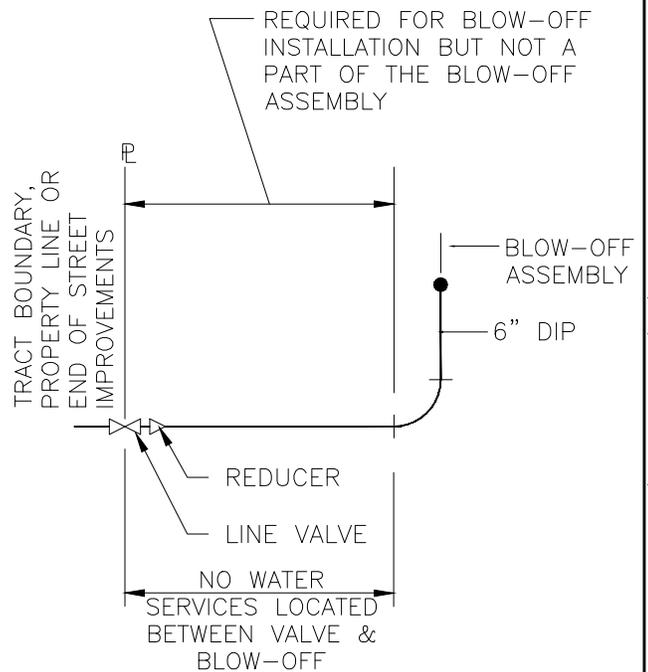
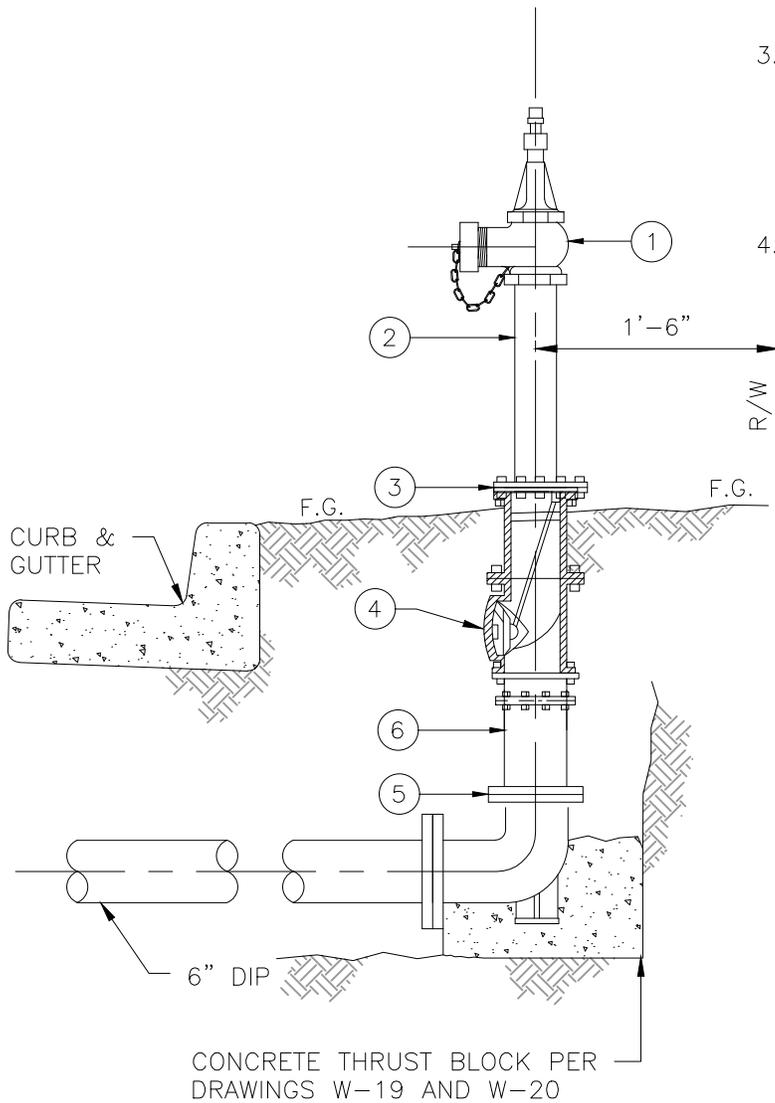
DETAIL OF WELL DESTRUCTION

APPROVAL DATE: DRAFT 09/18

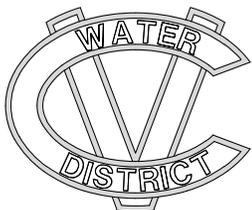
DRAWING NUMBER: W-46

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 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	ITEM NO.	SIZE AND DESCRIPTION
①	FIRE HYDRANT HEAD 4"x1-2 1/2"	⑤	6" WET BARREL HYDRANT BURY
②	4" X 15 3/4" LONG GALVANIZED NIPPLE THREADED AT BOTH ENDS	⑥	6" STEEL SPOOL FE X FE
③	6"x4" CAST IRON REDUCER COMPANION FLANGE		
④	6" POSITIVE BREAK-OFF VALVE ASSEMBLY (FLANGE)		



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

Hydrostatic Testing Maximum Allowable Leakage per 1,000 feet of Pipeline, Gallons per Hour									
System Static Pressure, psi	Test Pressure	Nominal Pipe Diameter, in.							
		6	8	12	18	24	30	36	42
100 or less	150	0.50	0.66	0.99	1.49	1.99	2.48	2.98	3.48
110	165	0.52	0.69	1.04	1.56	2.08	2.60	3.12	3.65
120	180	0.54	0.73	1.09	1.63	2.18	2.72	3.26	3.81
130	195	0.57	0.75	1.13	1.70	2.26	2.83	3.40	3.96
140	210	0.59	0.78	1.17	1.76	2.35	2.94	3.52	4.11
150	225	0.61	0.81	1.22	1.82	2.43	3.04	3.65	4.26
160	240	0.63	0.84	1.26	1.88	2.51	3.14	3.77	4.40
170	255	0.65	0.86	1.29	1.94	2.59	3.24	3.88	4.53
180	270	0.67	0.89	1.33	2.00	2.66	3.33	4.00	4.66
190	285	0.68	0.91	1.37	2.05	2.74	3.42	4.11	4.79
200	300	0.70	0.94	1.40	2.11	2.81	3.51	4.21	4.92

* IF THE PIPELINE CONTAINS SECTIONS OF VARIOUS DIAMETERS THE TESTING ALLOWANCE WILL BE BASE ON THE SUM OF THE TESTING ALLOWANCE FOR EACH SIZE.

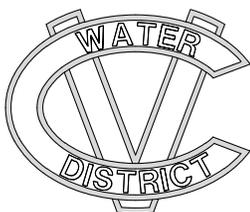
NOTE:

1. REFER TO SECTION 33 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 APPROVED PLANS THE ALLOWABLE LEAKAGE FOR STEEL PIPE (FLANGED OF WELDED) SHALL BE ZERO.
4. THE FOLLOWING FORMULA SHALL BE USED TO CALCULATE THE ALLOWED LOSS:

$$L = \frac{SD\sqrt{P}}{148,000}$$

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)

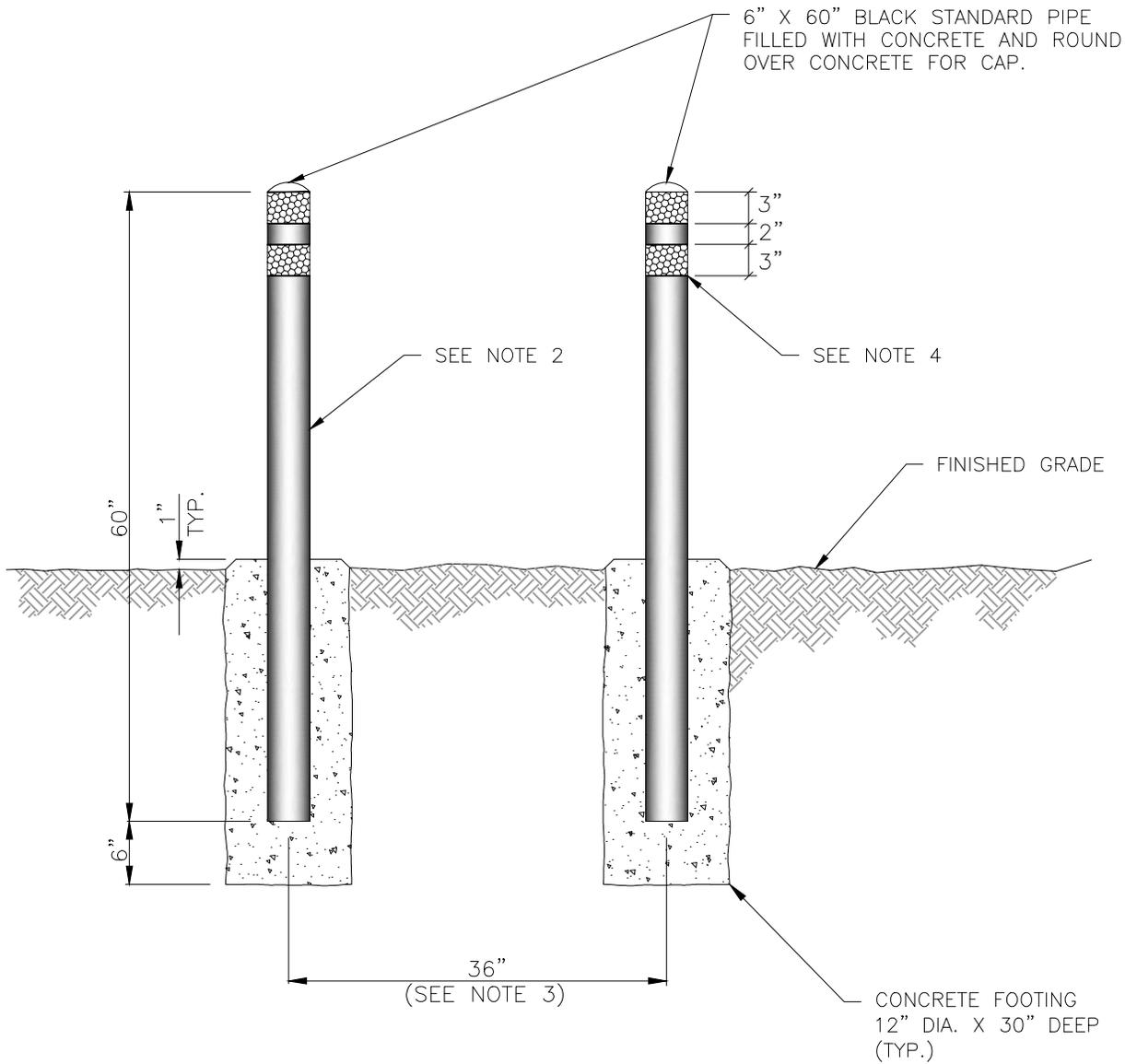


COACHELLA VALLEY WATER DISTRICT

**HYDROSTATIC TESTING
ALLOWABLE LEAKAGE CHART FOR TESTING
DOMESTIC WATER PIPES**

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-48



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.

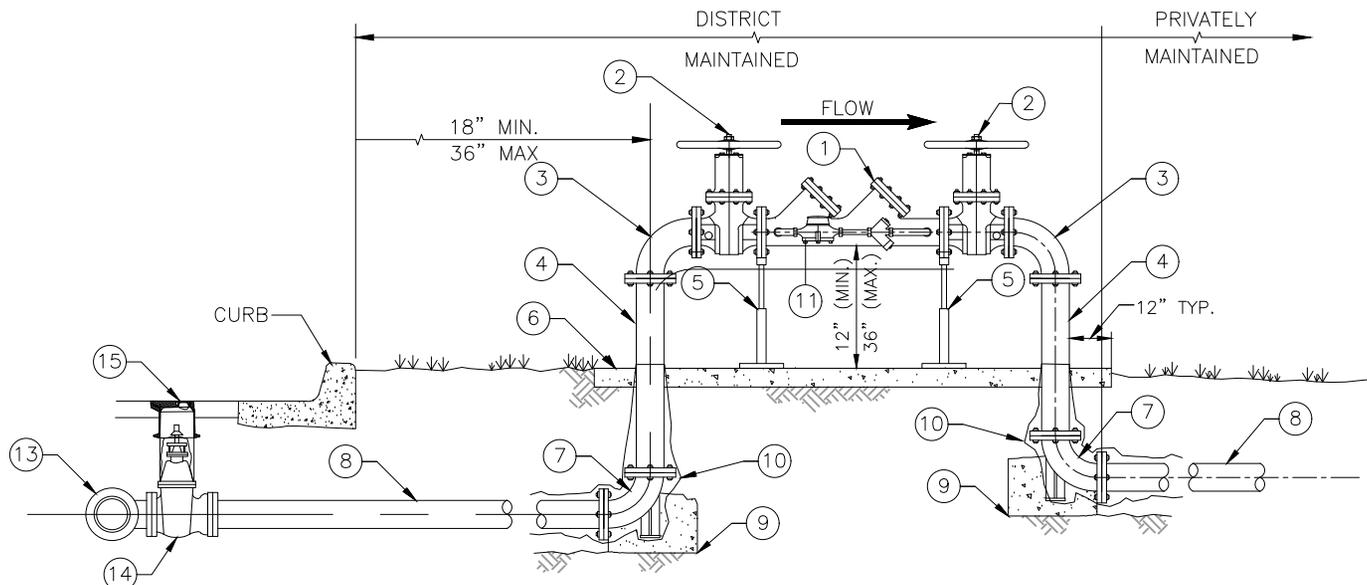


COACHELLA VALLEY WATER DISTRICT

GUARD POST DETAIL

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-49



NOTE:

1. REFER TO SECTION 33 11 13 OF THE SPECIFICATIONS.
2. LOCATE DOUBLE CHECK BACKFLOW PREVENTION ASSEMBLY (DCBP) IN SUCH A MANNER THAT ALLOWS THE DCBP TO BE READILY ACCESSIBLE FOR INSPECTION AND REPAIR.
3. NO OUTLETS, TEES OR CONNECTIONS SHALL BE ALLOWED BETWEEN THE METER AND THE DCBP.
4. POLYETHYLENE ENCASUREMENT SHALL BE INSTALLED PER SECTION 15000 OF THE SPECIFICATIONS.
5. MATERIALS SHALL BE SELECTED FROM THE APPROVED MATERIALS LIST.
6. PROTECTIVE CAGES ARE OPTIONAL, AND ARE REQUIRED TO MEET CLEARANCE, ACCESS AND DRAINAGE REQUIREMENTS.
7. THE INSTALLATION OF A DCBP MAY CREATE A CLOSED SYSTEM. CONSULT LOCAL PLUMBING CODES FOR PRESSURE RELIEF VALVE AND THERMAL EXPANSION REQUIREMENTS.
8. DCBP ASSEMBLY INSTALLATIONS INCLUDING ALL APPURTENANCES FOR THE SUPPLY OF DOMESTIC WATER SHALL COMPLY WITH CALIFORNIA LEAD FREE STATUE §116875.

ITEM NO.	SIZE AND DESCRIPTION	ITEM NO.	SIZE AND DESCRIPTION
①	4" THRU 10" DOUBLE CHECK BACKFLOW PREVENTION ASSEMBLY.	⑨	CONCRETE THRUST BLOCK PER DRAWINGS W-19 AND W-20.
②	FLANGED RESILIENT WEDGE GATE VALVE.	⑩	POLYETHYLENE ENCASUREMENT PER SECTION 33 11 13.
③	FLANGED 90° BEND DIP.	⑪	BY-PASS METER (DISTRICT INSTALLED)
④	FLANGED DUCTILE IRON PIPE.	⑫	VALVE OPERATOR WELL PER STD. DWG. W-17
⑤	ADJUSTABLE PIPE SUPPORT.	⑬	MAIN SIZE X DOUBLE CHECK SIZE, TEE, FLANGED
⑥	36" WIDE X 4" THICK CONCRETE PAD (LENGTH VARIES).	⑭	GATE VALVE, SIZE PER DOUBLE CHECK SIZE, FLANGED
⑦	DI BASE 90° BEND FLANGED	⑮	VALVE OPERATOR WELL CAP AND FRAME PER STD DWG. W-18
⑧	DUCTILE IRON PIPE.		

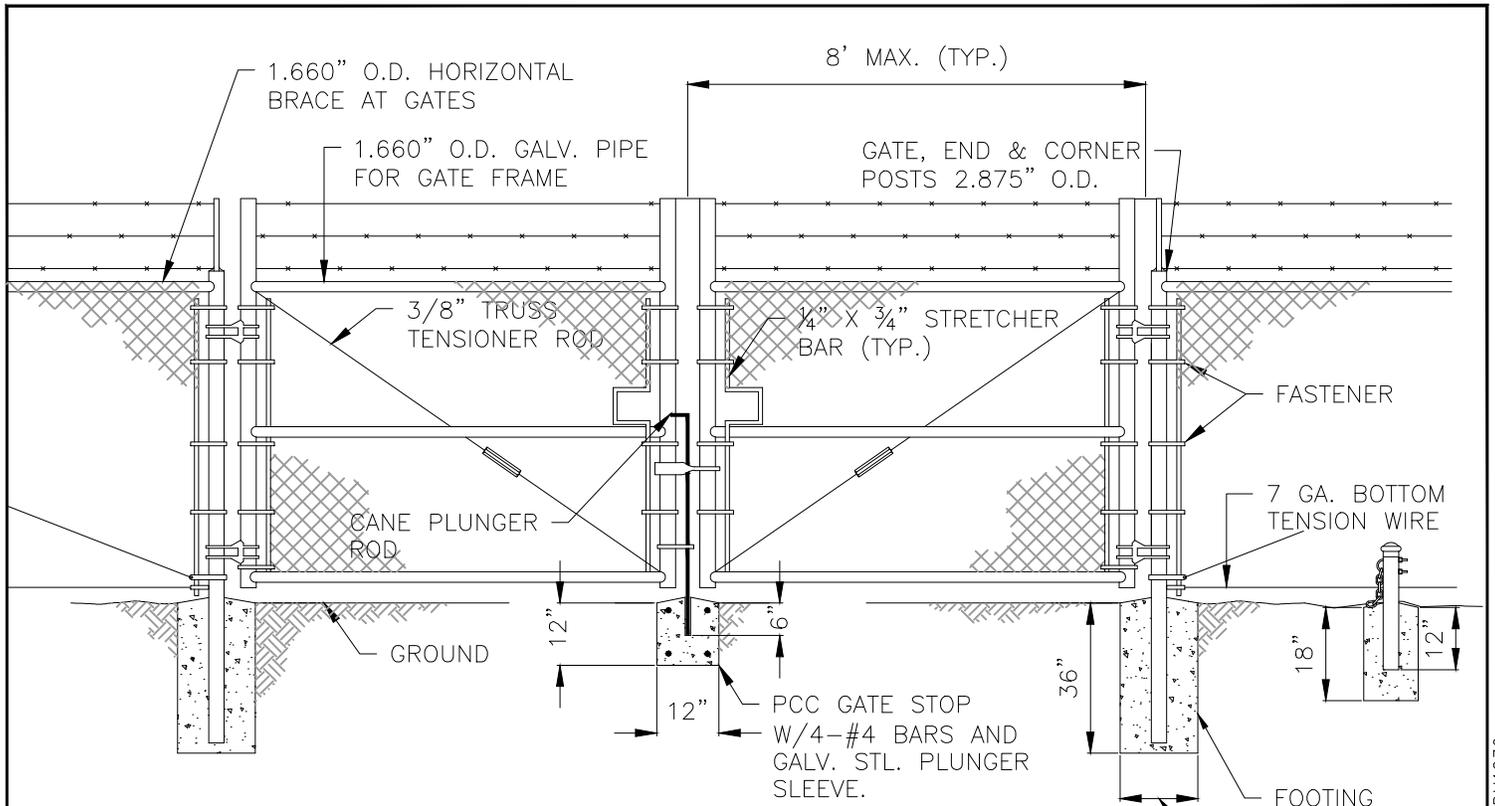


COACHELLA VALLEY WATER DISTRICT

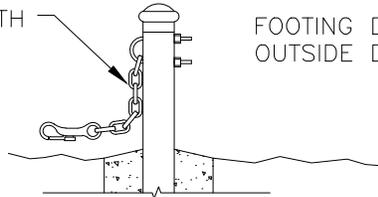
**DOUBLE CHECK BACKFLOW PREVENTER
ASSEMBLY FOR SIZES 4" THROUGH 10"**

APPROVAL DATE: DRAFT 09/18

DRAWING NUMBER: W-50



ATTACH $\frac{3}{8}$ " GALV. CHAIN TO U BOLT WITH SNAP CLASP ON OPPOSITE END. CHAIN SHALL BE OF SUFFICIENT LENGTH TO ENCIRCLE GATE FRAME



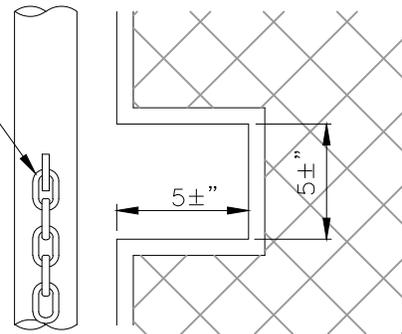
GATE KEEPER

FOOTING DIAMETER = 4 TIMES OUTSIDE DIAMETER OF POST

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.

ATTACH $\frac{3}{8}$ " GALV. CHAIN AT ITS MIDPOINT TO U BOLT. CHAIN SHALL BE OF SUFFICIENT LENGTH TO ENCIRCLE GATE



GATE LOCK DETAIL

LEGEND ON PLANS

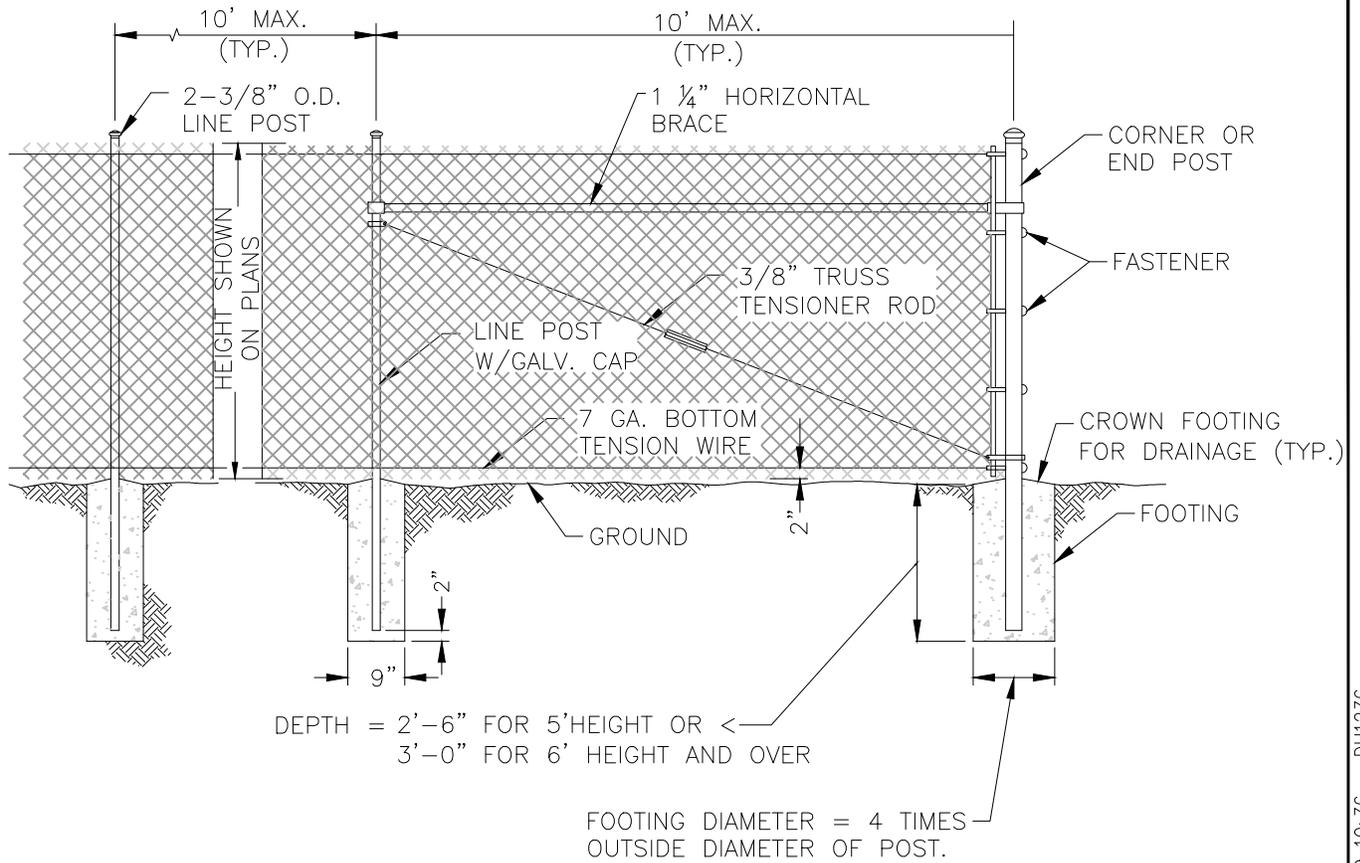


COACHELLA VALLEY WATER DISTRICT

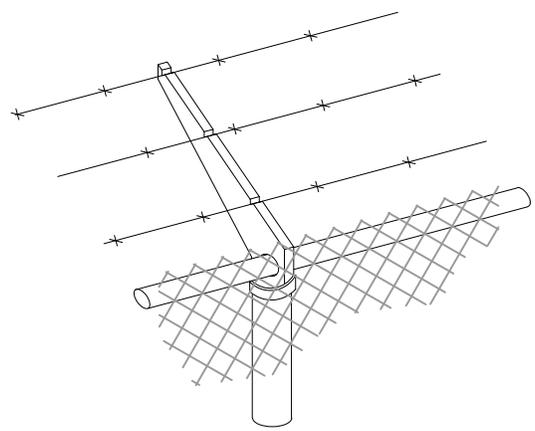
CHAIN LINK FENCE GATES

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 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-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