BELLA VISTA WATER DISTRICT
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Bella Vista Water District

Construction Standards

Adopted: July 27, 2009
Latest Revision: August 14, 2018

The Bella Vista Water District has adopted the City of Redding Construction Standards with the specific exceptions listed below.

1. Substitute "Bella Vista Water District" for all references to the "Water Utility" and substitute "District Engineer" for "City Engineer" wherever they appear in the Construction Standards.

2. Where references are made to AWWA Standards DELETE all of the specific year references. All products shall comply with the most recent version of the applicable AWWA Standard.

3. PAGE 400.00 – WATER SYSTEM MATERIALS

MATERIALS – After the first sentence ADD the following text: "All products that come in contact with drinking water shall be NSF/ANSI Standard 61 compliant."

Item No. 1 – PIPES & FITTINGS

A. SERVICES: DELETE entire note and REPLACE with the following:

"All 1-inch & 2-inch services shall be SDR 9, 200 psi, copper tube size (CTS) polyethylene with stainless steel sleeves. All services with fire sprinklers shall be a minimum of 2-inch. No copper or galvanized pipe will be allowed."

B. MAINS: Modify as follows:

DELETE all notes regarding pipe sizes 4" – 18". REPLACE with the following:

The minimum size for water mains shall be 8-inches(6-inch for lines only providing service to a single fire hydrant).

6-inch, 8-inch, 10-inch & 12-inch mains shall be AWWA C900 PVC Class 235, AWWA C909 PVCO Class 235, or AWWA C151 (Class 350) DIP.

16-inch & 18-inch mains shall be AWWA C905 PVC Class 200, DR21 or AWWA C151 (Class 350) DIP.

Note a – DELETE the second bullet "MAIN…" and REPLACE with "The minimum size main shall be 8-inch."

Note d – DELETE entire note and REPLACE with the following: "New polyethylene water services 1-inch and 2-inch shall be a continuous run of pipe with no unions."

Note f - DELETE entire note and REPLACE with the following: "All buried ductile iron pipe (DIP) shall be tube encased with (8 mil) polyethylene (AWWA C105) and all buried cast iron or ductile iron fittings shall be (8 mil) polyethylene sheet encased, held together with adhesive tape (AWWA C105).

Item No. 2 FITTINGS:

Note b – DELETE entire note and REPLACE with the following:

"Bolts and nuts for all fittings and valves shall be low-carbon steel and conform to the chemical and mechanical requirements of ASTM A307, Standard Specification for Carbon Steel Bolts and Studs, 60,000 psi tensile strength, grade B. The carbon-steel bolts shall be used where gray-iron flanges are installed with flat ring gaskets that extend only to the bolts. Higher-strength bolts shall be used where gray-iron flanges are installed with full-face gaskets. Higher-strength bolts shall be used where ductile flanges are installed with either ring or full-face gaskets."

Item No. 3 – VALVES

BLOWOFF VALVES: ADD the following:

Blowoff valves placed in cul-de-sacs shall be placed in the street a minimum of 11' from the face of the curb.

COMBINATION AIR VALVE – (CAV) – DELETE entire note and REPLACE with the following:

"CAV shall be 2-inch (min) APCO No, 143C or Crispin UL-10, CAV double orifice single body with bronze trim and SS float."

Item 4. SADDLES – DELETE entire text and REPLACE with the following:

"For DIP & PVC water mains with taps 1-inch through 3-inch use: Ford 202BS, 202B, or FC202; Jones J969 or J979; or Mueller BR2B, BR2S, or DE25."

Item 6. FIRE HYDRANTS – Modify note "c" by DELETING "Fire hydrants shall be painted red" and INSERTING the following:

"Fire hydrants within the Bella Vista Water District service area shall be painted high visibility Federal Safety Yellow meeting OSHA specification 1910.144 and ANSI specification 253.1 from the breakaway flange up."

Item 7. METER BOXES AND VAULTS – DELETE entire table and REPLACE with the following table:

METER BOXES AND VAULTS

METER CLASS	NOTE*	BOX SIZE MINIMUM I.D.	BOX / VAULT #			
			COOK CONCRETE	CHRISTY	ARMORCAST	DFW Plastics
20 and 30	(A)	10" x 23.5"	---	---	---	DFWB16C-12-1A
50	(A)	10" x 23.5"	---	---	---	DFWB16C-12-1A
100	(A)	13 1/4" X 24"	---	---	P6001868X12	DFW1324C-12-1A
200	(A)	17" X 30"	---	---	P6001534X12	DFW1730C-12-1A
450	(B)	30" X 48"	B4.0	B48	A6001430PCX12	---
900	(B)	30" X 60"	B5.0	B52	A6001460AX_MT	---
2000	(B)	48" X 78"	V4.0 6.5	R37P	A6001448AX_MT	---
4500	(B)	54" X 102"	V4.5 8.5	---	---	---
LARGER THAN 4500	(C)	---	---	---	---	---
MULTIPLE METER BANKS	(F)	---	---	---	---	---

*Refer to notes in City of Redding standards

Item 8. TRAFFIC VALVE BOX AND EXTENSIONS – DELETE Cook Concrete Box # VB10T.

Item 9. BLOWOFF BOXES – DELETE Cook Concrete Box # VB10T.

Item 10. COMBINATION AIR VALVE (CAV) ENCLOSURE/BOX – DELETE Cook Concrete Box # B2.0 and B3.0.

Item 12. BACKFLOW DEVICE ASSEMBLY BOXES, VAULTS AND ENCLOSURES –

Note a – REPLACE "OR" with "FOR" and DELETE reference to ¾" size and REPLACE with 1-inch.

Note b – DELETE reference to ¾" size and REPLACE with 1-inch.

Item 13. LOCATING WIRE AND WARNING TAPE –

Wire - DELETE entire note and REPLACE with the following:

Locator wire shall be installed over all waterlines. Locator wire shall be #10-1 solid insulated copper wire (UF), in a continuous strand, placed on top of the pipe and secured with tape at 10 foot (maximum) intervals. Locator wire shall be brought to the surface at all valve risers and where valves are more than 660 feet apart at the edge of the right-of-way at 660 feet maximum on center in Brooks No. 1-SP, or equal, valve boxes.

After all trench backfill operations are complete, the District will conduct the "locatability" test to confirm that the wire is continuous. The Contractor shall be responsible for all costs to confirm, locate and repair any breaks in the location wire identified in the locatability test. In addition, the Contractor shall reimburse the District for all costs to retest repaired sections of the wire. The Contractor is advised to use care in the installation and backfilling operations to prevent damage to the wire.

4. PAGE 400.60 – VALVE OPERATION – DELETE the entire text of this City standard and REPLACE with the following:

Operating Main Line Water Valves within the Bella Vista Water District will be by District personnel only. The District will handle the notification of the customers to be affected by any outage. For shutdowns lasting longer than 4 hours the contractor may be required to provide temporary water service to affected customers. To schedule the shutdown the contractor shall provide the District at least 48 hours notice before the required shutdown. The contact number for the Bella Vista Water District is 530-241-1085 (during work hours and after hours).

5. PAGE 400.70 – WATER SYSTEM HOT TAPS – ADD note 11 as follows:

Hot taps 1-inch and 2-inch in size on District water lines shall be performed by District personnel. Hot taps 3-inch and larger shall be performed by prequalified hot-tapping contractors. Contact the District for a list of approved hot-tapping contractors.

6. PAGE 401.00 – WATER SERVICE CONNECTION

DELETE all references to Double Service connections.

On note 1, DELETE: "Service connection charges shall be for a Class 30 meter, unless resident requires a larger domestic connection, then the greater connection charges shall apply."

DELETE note 7 and replace with "All services shall be tapped 0º from the horizontal."

7. PAGE 401.20 – WATER SERVICE CONNECTION (Meter & Bypass Detail 3" Services & Larger) – MODIFY the drawing as follows: The bypass valve on all installations shall be located inside the meter vault and shall be lockable.

8. PAGE 401.30 – NON-RESIDENTIAL IRRIGATION SUB-METER – DELETE note 3 and REPLACE with the following:

"The irrigation meter shall be purchased, installed, and maintained by the customer/owner."

9. PAGE 403.00 THRUST BLOCKS AND ANCHOR DETAILS – DELETE the "Anchor Block Schedule" and REPLACE with the following table:

ANCHOR BLOCK SCHEDULE				
Pipe Dia. (inches)	Anchor Rod Dia. (inches)	Minimum Volume (cubic yards)		
		45º bend	22.5º bend	11.25º bend
4	1/2	0.7	0.4	0.2
6	1/2	1.5	0.8	0.4
8	5/8	2.6	1.4	0.7
10	5/8	4.1	2.2	1.1
12	3/4	5.9	3.2	1.6

10. PAGE 405.00 – Temporary Connection to New Water Main – ADD the following notes to the "NOTES" on page 2 of 2:

8. Approved backflow prevention assemblies shall be tested immediately after they are installed, relocated or repaired and not placed in service unless they are functioning as required.
9. Testing of backflow prevention assemblies shall be performed by certified backflow prevention assembly testers.
10. The approved backflow assembly shall pass the required test prior to filling the new water main.

11. PAGE 422.01 – FIRE SERVICES (TYPICAL) CASE I – MODIFY the drawing as follows:

The shut-off valve on the fire service line shall be located at the connection to the water main. For all dedicated fire sprinkler services an approved RPPDA type backflow device shall be installed at the point of connection (P.O.C.) at the property line. The backflow device and the fire service line downstream of the backflow device shall be the responsibility of the property owner.

12. PAGE 422.02 – TYP. FIRE SERVICES (TYPICAL) CASE II – MODIFY the drawing as follows:

For all fire hydrants outside of the public right-of-way an approved RPPDA backflow device shall be installed at the point of connection (P.O.C.) at the property line. The backflow device, fire service line and hydrants downstream of the point of connection shall be the responsibility of the property owner. In cases where the hydrants are clearly visible from the public right-of-way and cross contamination risks are minimal a DCDA may be installed in lieu of an RPPDA based on the review and approval of the District's Engineer.

13. PAGE 422.03 – FIRE SERVICES (NON-TYPICAL) CASE III – DELETE this drawing in its entirety. This type of fire service is not allowed within the Bella Vista Water District water system.

14. PAGE 422.30 – FIRE SERVICES (NON-TYPICAL) 1", 1½" and 2" – MODIFY the drawing as follows:

For all dedicated 1", 1½" and 2" fire sprinkler services an approved RPPDA type backflow device shall be installed at the point of connection (P.O.C.) at the property line. The backflow device and the fire service line downstream of the backflow device shall be the responsibility of the property owner.

15. PAGE 422.31 – RESIDENTIAL FIRE SERVICE –

DELETE note 5 in its entirety and REPLACE with the following: Meters for residential fire services shall be UL rated for domestic fire sprinkler service.

16. PAGE 422.32 – REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY, INTERNAL – ALTERNATE LOCATION – DELETE this drawing in its entirety. This type of service is not allowed within the Bella Vista Water District's water system.

17. PAGE 431.00 – REDUCED PRESSURE PRINCIPLE DEVICE (RPP) – Note 2 - REPLACE "within city right-of-way or easement" with "within the public right-of-way or a dedicated easement." ADD "No connection, outlet, tap, or tee is allowed between the water main and the backflow device."

18. PAGE 431.10 – REDUCED PRESSURE PRINCIPLE DEVICE (RPP) – DELETE note on the drawing saying "Pipe between main and backflow device shall be brass or copper."

19. PAGE 431.20 – Backflow Prevention Assembly – "N" Pattern - ADD Note 3: "Backflow device shall have a detector assembly.

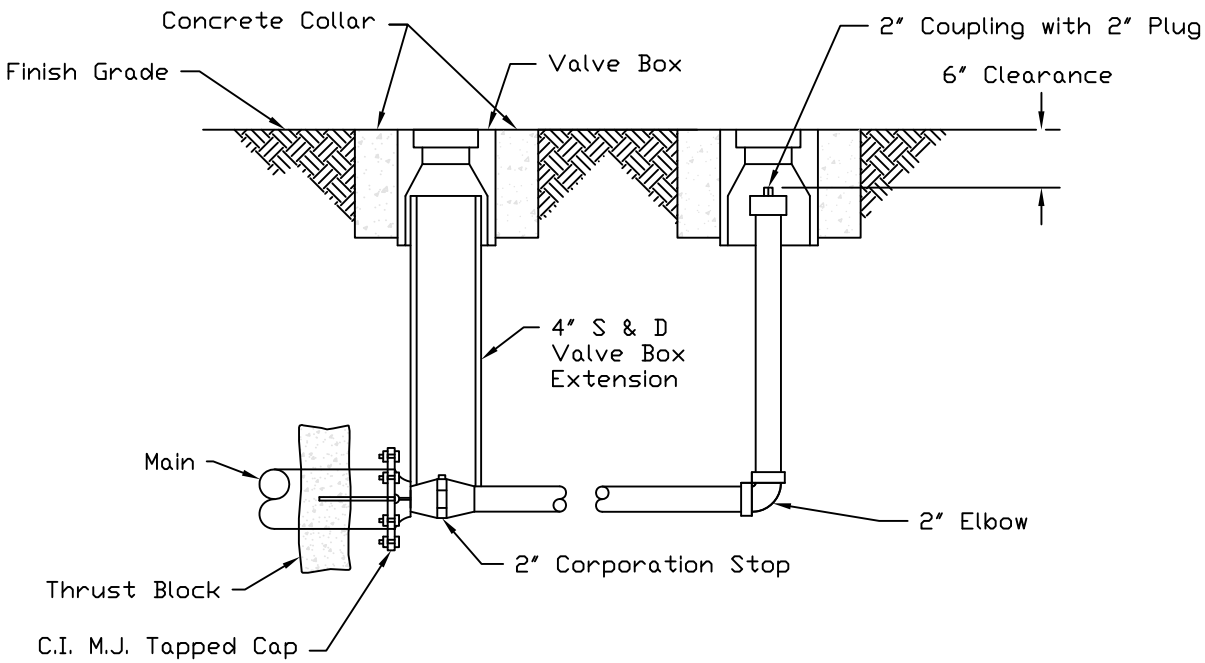
20. PAGE 450.00 – TYPICAL BLOW-OFF INSTALLATION – DELETE City of Redding Standard 450.00 and REPLACE with the attached BVWD drawing titled "Typical Installation – 2" Blowoff Assembly."

21. PAGE 480.00 – BACTERIOLOGICAL SAMPLING STATION – DELETE the following from note #5: "per Page 400.00, Item 7. No concrete collar required for installation in unpaved finished surface." and REPLACE with "per Page 404.00"

22. WATERSTOPs – Waterstops shall be placed when and where shown on the plans or as specified in the contract drawings. See attached detail titled "Typical Installation – Waterstop for Trenches."

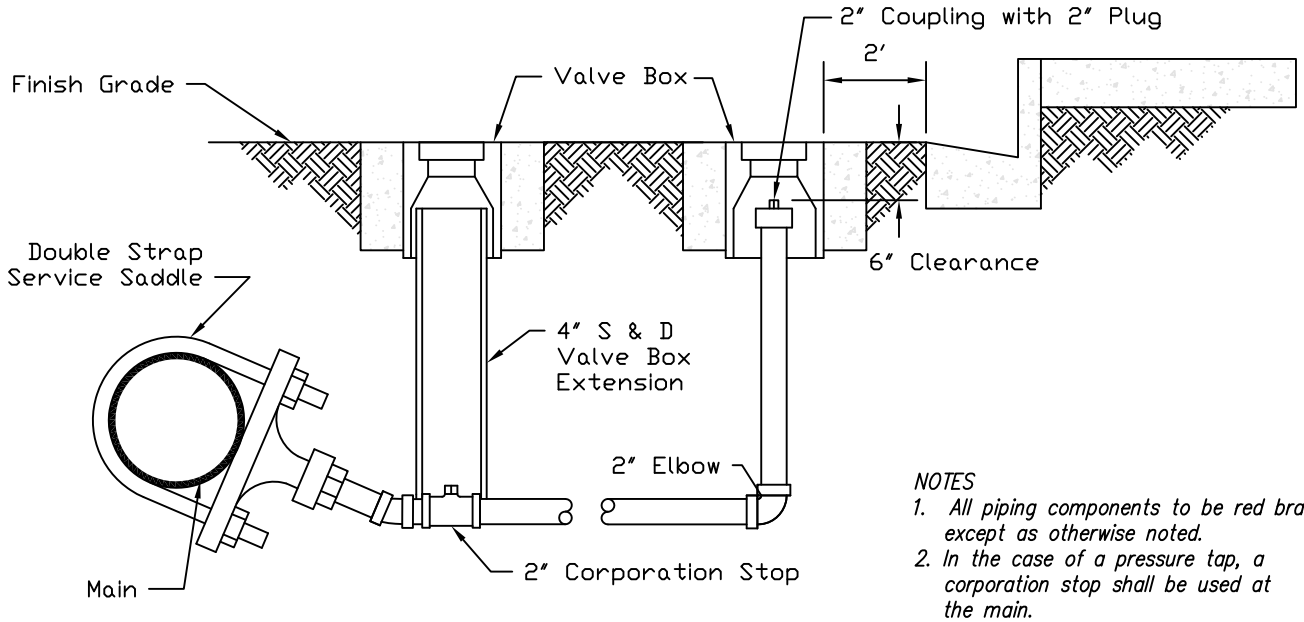
Note: The City of Redding's Construction Standards can be found on the City of Redding's web site https://www.cityofredding.org/home; at the following location:

https://www.cityofredding.org/departments/public-works/engineering/construction-standards



TYPICAL BLOWOFF

DEAD END



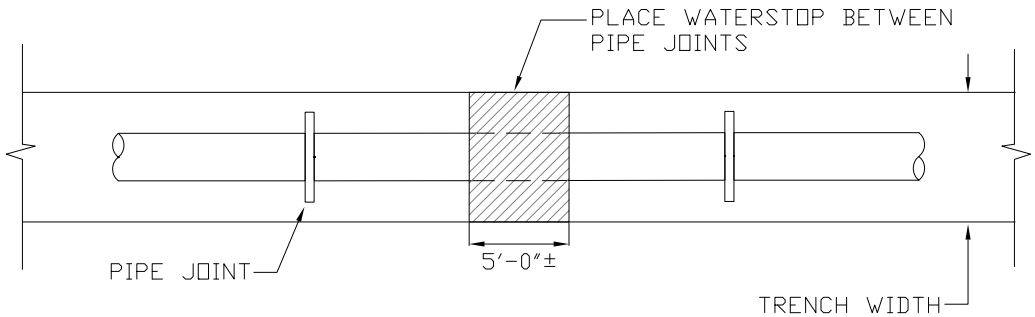
NOTES

1. *All piping components to be red brass except as otherwise noted.*
2. *In the case of a pressure tap, a corporation stop shall be used at the main.*
3. *Size blowoff according to California Waterworks Std. Title 22.*
4. *Replaces City of Redding Standard 450.00*

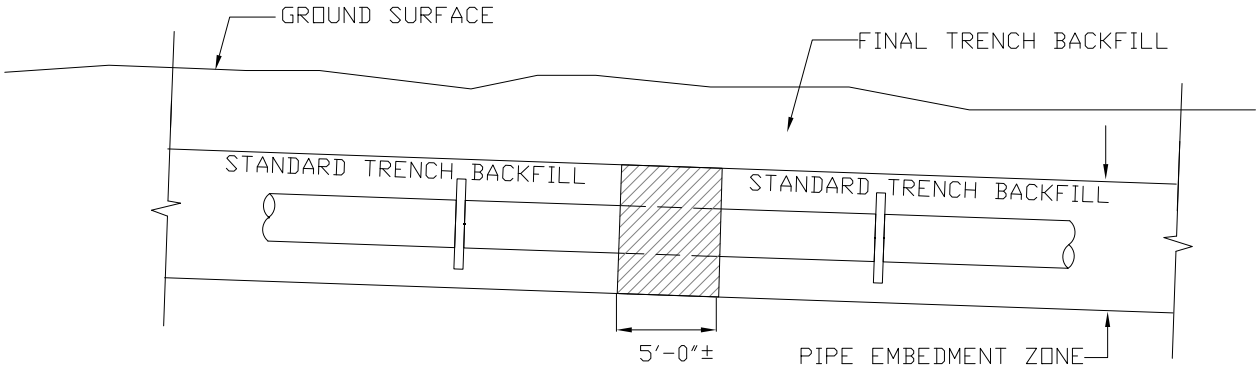
TYPICAL FLUSHOUT

PERMANENT INSTALLATION

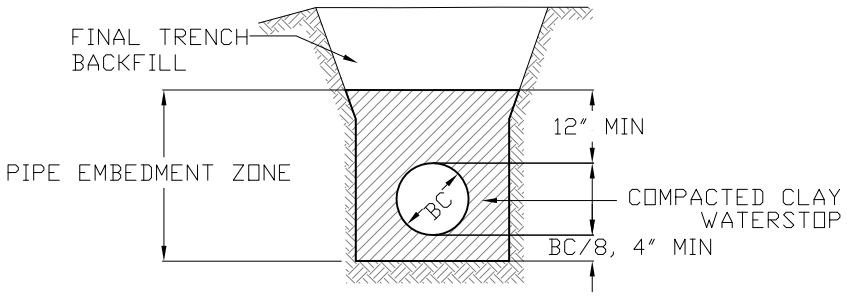
DWG DATE:8-09		SCALE NTS	BELLA VISTA WATER DISTRICT	
			APPROVED BY	TYPICAL INSTALLATION 2" BLOWOFF ASSEMBLY
MARK	DATE	REVISION	DISTRICT ENGINEER	



PLAN



PROFILE



SECTION A–A

NOTES:

1. PLACE CLAY WATERSTOP IN TRENCH AS SHOWN TO PREVENT WATER FLOW THROUGH GRANULAR TRENCH BACKFILL. COMPACT CLAY WATERSTOP TO MINIMUM 95% DENSITY.

2. IF STABILIZATION (FOUNDATION) MATERIAL IS REQUIRED, EXTEND WATERSTOP THROUGH STABILIZATION MATERIAL TO BOTTOM OF TRENCH.

3. BACKFILL REQUIREMENTS ABOVE WATERSTOP (FINAL TRENCH BACKFILL) SHALL BE IN ACCORDANCE WITH THE CITY OF REDDING CONSTRUCTION STANDARDS, PAGES 610.00 (TRENCH BACKFILL) AND 611.00 (TRENCH RESURFACING DETAILS).

4. WATERSTOPS ARE REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT DOCUMENTS. WHEN REQUIRED, WATERSTOPS SHALL BE PLACED AT A NOMINAL SPACING OF 800' OR AT LOCATIONS SHOWN ON THE PLANS.

5. WHEN SUITABLE CLAY MATERIAL IS AVAILABLE ON-SITE, INSTALLATION OF WATERSTOPS SHALL BE CONSIDERED INCIDENTAL.

Dwg. Date: 4/3/14		SCALE NTS	BELLA VISTA WATER DISTRICT	
			APPROVED BY	TYPICAL INSTALLATION WATERSTOP FOR TRENCHES
MARK	DATE	REVISION	DISTRICT ENGINEER	