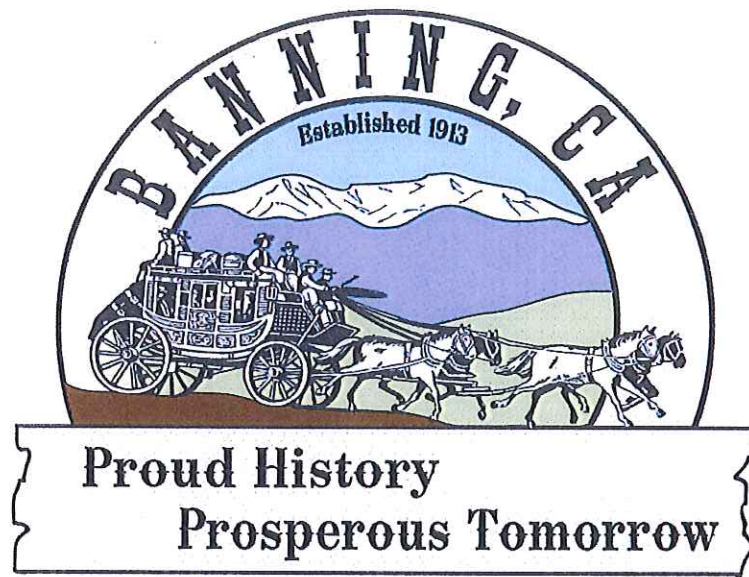


PUBLIC WORKS STANDARD DRAWINGS



CITY OF BANNING

P. O. BOX 998

BANNING, CA 92220

951-922-3130



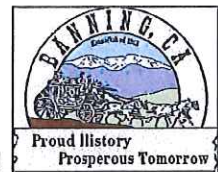
DECEMBER 12, 2012

CITY OF BANNING POTABLE WATER STANDARDS

DRAWING INDEX

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W-33	PIPE ENCASEMENT DETAIL

2012 EDITION



RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE

APPROVED BY: *Kahono OEI* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

**WATER STANDARD
INDEX**

STANDARD
NO.

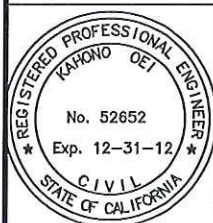
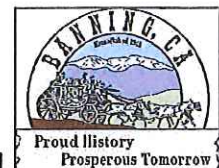
WSI

STANDARD LEGEND

	RIGHT OF WAY (R.O.W.)
	CENTERLINE
	EXISTING WATER LINE
	PROPOSED WATER LINE
	EXISTING RECYCLED WATER LINE
	PROPOSED RECYCLED WATER LINE
	EXISTING SEWER LINE
	PROPOSED SEWER LINE
	EXISTING GAS LINE
	PROPOSED GAS LINE
	SERVICE LATERAL
	ENCASEMENT
	EXISTING ELECTRICAL CONDUIT
	PROPOSED ELECTRICAL CONDUIT
	EXISTING TELEPHONE CONDUIT
	PROPOSED TELEPHONE CONDUIT
	EXISTING FIBER OPTIC CABLE
	PROPOSED FIBER OPTIC CABLE
	PORTLAND CEMENT CONCRETE IN SECTION
	PORTLAND CEMENT CONCRETE IN PLAN

	POWER POLE AND GUY LINE	C.O.	CLEAN-OUT
	TRAFFIC SIGNAL EXISTING	D.I.P.	DUCTILE IRON PIPE
	WATER WELL	D.M.H.	DROP MANHOLE
	BUTTERFLY VALVE	J.M.H.	JUNCTION MANHOLE
	GATE VALVE	M.H.	MANHOLE
	FIRE HYDRANT	V.C.P.	VITRIFIED CLAY PIPE
	BLOW-OFF		CLEAN-OUT
	AIR & VACUUM VALVE ASSEMBLY (SIZE PER PLAN)		HOUSE CONNECTION SEWER
	POTABLE WATER QUALITY SAMPLE STATION		WYE BRANCH
	NON-POTABLE WATER QUALITY SAMPLE STATION		

2012 EDITION



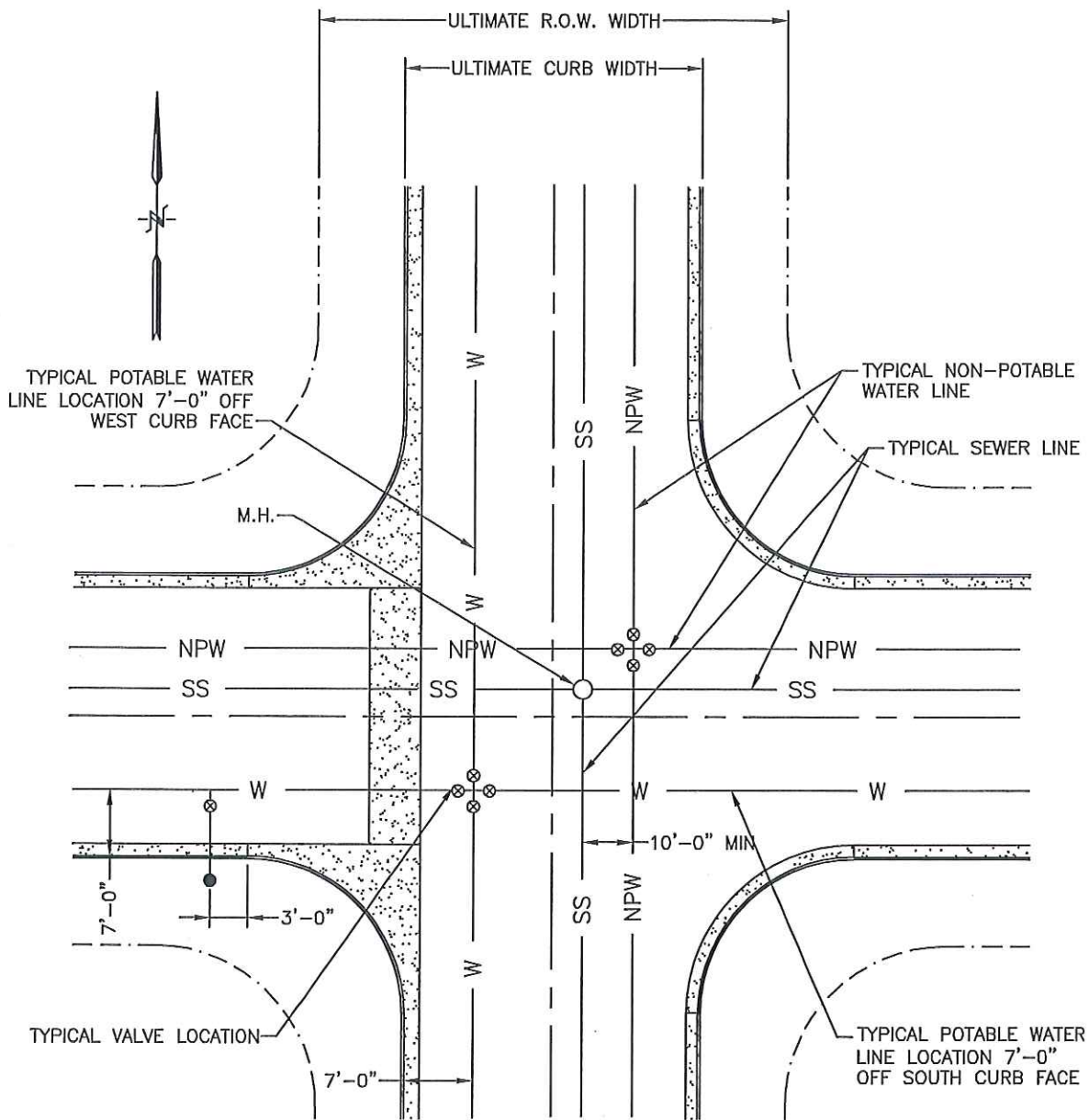
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	ARTURO VELA, P.E., SR. ENGINEER	DATE
APPROVED BY:		12-12-12
	KAHONO OEI, P.E., CITY ENGINEER	DATE

CITY OF BANNING

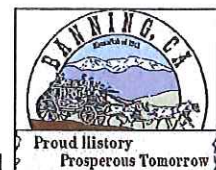
**STANDARD
LEGEND**

STANDARD
NO.

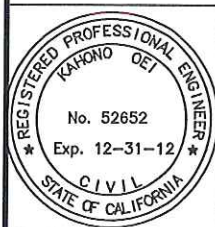
W-1
1 OF 1



NOTE: POTABLE WATER LINE SIZE TO BE DETERMINED BY C.O.B. MASTER PLAN



2012 EDITION



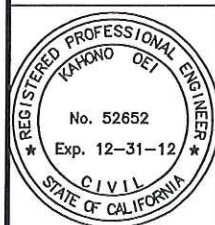
RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE
 APPROVED BY: *[Signature]* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE


CITY OF BANNING


**POTABLE WATER
 LINE LOCATION**

STANDARD
 NO.

W-2
 1 OF 2



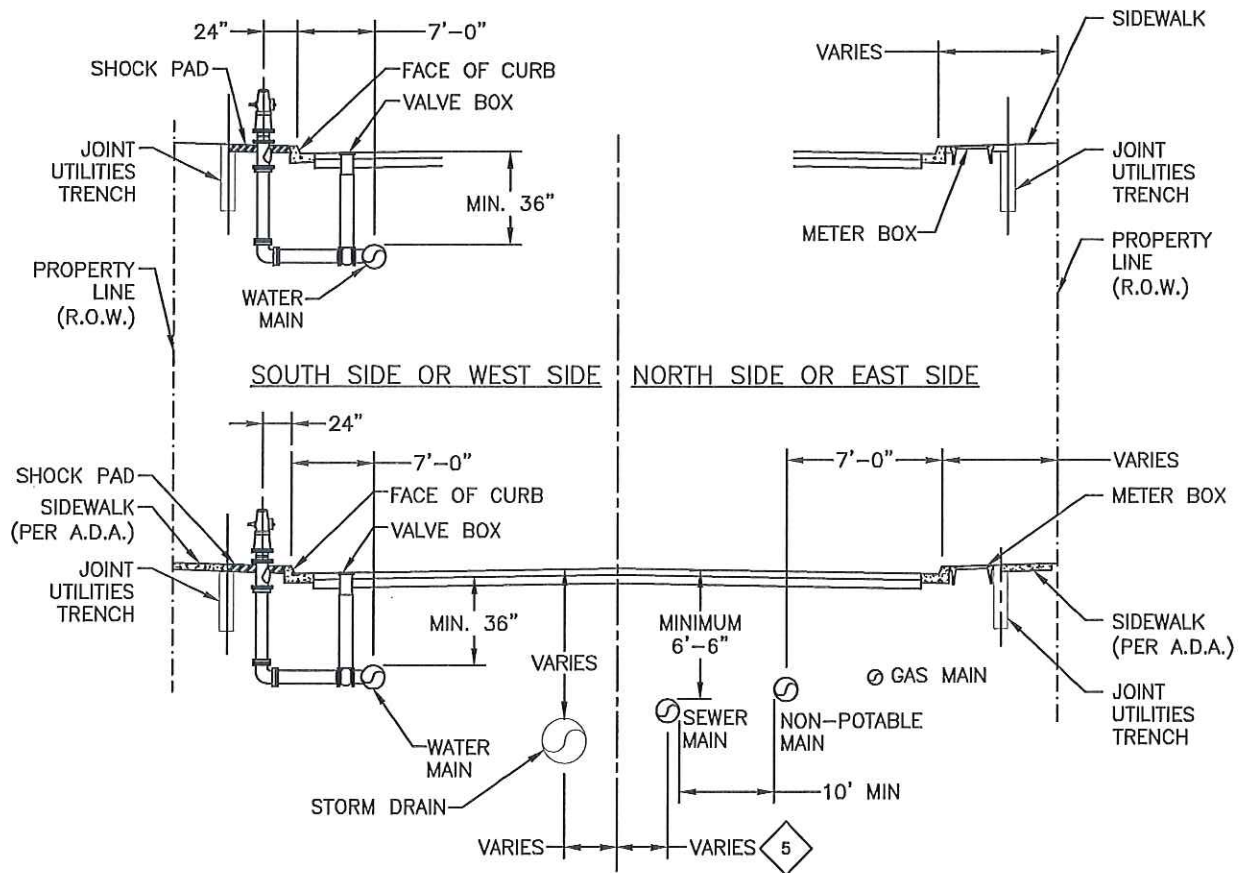
RECOMMENDED BY:  12-12-12
ARTURO VELA, P.E., SR. ENGINEER DATE

APPROVED BY:  12-12-12
KAHONO OEI, P.E., CITY ENGINEER DATE

POTABLE WATER LINE LOCATION

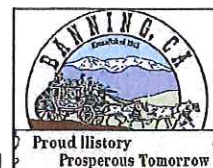
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W-2
2 OF 2

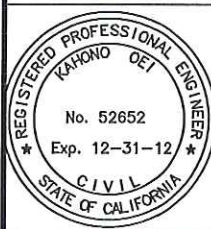


NOTES:

1. LOCATION AND DEPTH OF EXISTING AND PROPOSED UTILITIES MUST BE PROVIDED BY THE SUBDIVIDER AND SHOWN ON ANY PLANS SUBMITTED TO C.O.B. FOR APPROVAL.
 2. FIRE HYDRANTS SHALL BE PLACED WITHIN THE SIDEWALK 2'-0" TO CENTER LINE OF BARREL BEHIND FACE OF CURB.
 3. CHANGES MAY BE PERMITTED BY C.O.B. IN CASES OF CONFLICTING FACILITIES.
 4. CONFLICTS BETWEEN UTILITY COMPANIES FACILITIES, EXISTING AND PROPOSED, MUST BE MUTUALLY RESOLVED BY THE UTILITY COMPANIES.
- 6 PIPING SHOULD BE LOCATED 6'-0" TO ROAD CENTERLINE WHEN POSSIBLE, EXCEPT IN DIVIDED ROADWAYS.



2012 EDITION



RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE

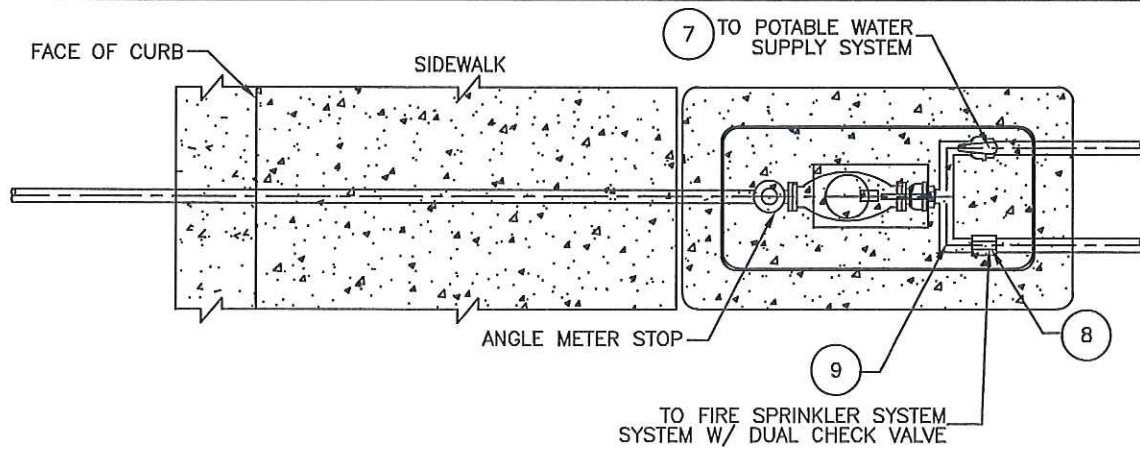
APPROVED BY: *Kahono Oei* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

UTILITY LOCATIONS SECTIONS

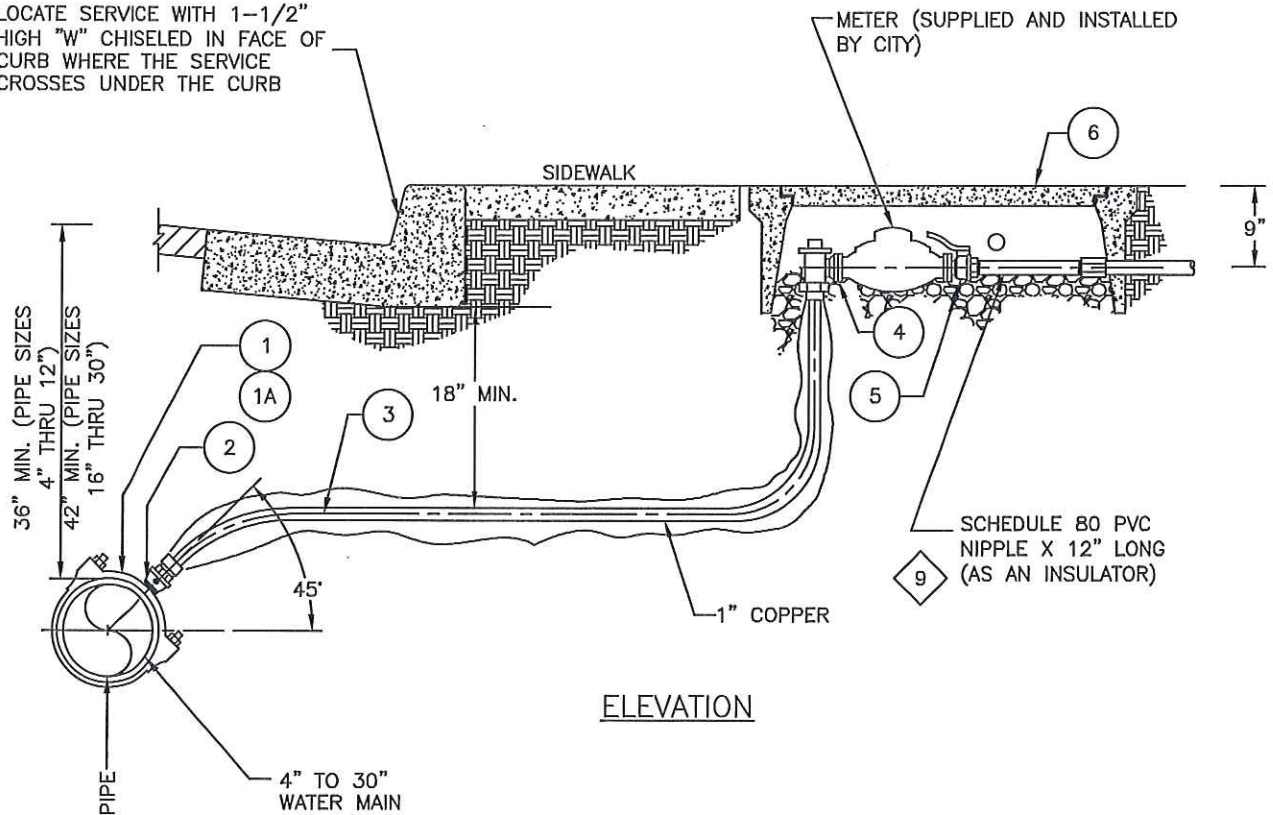
STANDARD NO.

W-3
1 OF 1



PLAN

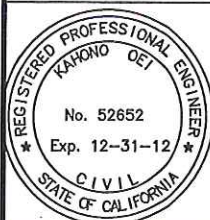
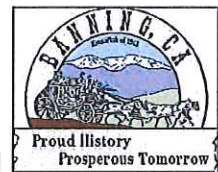
LOCATE SERVICE WITH 1-1/2" HIGH "W" CHISELED IN FACE OF CURB WHERE THE SERVICE CROSSES UNDER THE CURB



ELEVATION

* SEE SHEET 2 OF 2 FOR NOTES AND LIST OF MATERIALS

2012 EDITION



RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE

APPROVED BY: *[Signature]* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

**3/4" THRU 1" POTABLE COPPER
 DUAL SERVICE INSTALLATION W/
 FIRE SPRINKLER SERVICE LINE**

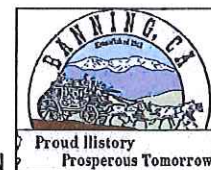
STANDARD
 NO.

W-4
 1 OF 2

LIST OF MATERIALS			
ITEM NO.	SIZE & DESCRIPTION	MANUFACTURER	SPEC. NO.
1	DOUBLE STRAP SERVICE SADDLE I.P. OUTLET (FOR D.I.P. MAINS) DUCTILE IRON BODY STAINLESS STEEL STRAPS	ROMAC FORD MUELLER SMITH BLAIR	202S-PIPE O.D.-1" I.P. DR2S-PIPE O.D.-1" I.P. FS202-PIPE O.D.-I.P. 100 317
2	BRONZE BALL CORPORATION STOP M.I.P.T. X COMP 110 CONNECTION	JONES MUELLER	E1943 B-20013N
3	1" CTS COPPER TUBING - BLUE PLASTIC SLEEVED	MUELLER	COPPER TYPE "K" SOFT PLUMB SHIELD
4	BRONZE ANGLE METER STOP W/LOCKWING (COMPRESSION TYPE) 1" COPPER X 3/4" OR 1" METER	JONES MUELLER	E-1963 WSG B-24258N
5	BRONZE CUSTOMER SERVICE VALVE-METER NUT X F.I.P., WITH HANLE	JONES MUELLER	E1908W B24351 WITH B20298 HANDLE
6	POLYMER METER BOX AND COVER WITH READING LID	J&R	
7	BALL STYLE CURB STOP	JONES MUELLER AYM	E-1900W B-20283N 76101W
8	INLINE DUAL CHECK VALVE	AYM	AYM 1" 711-4FE 44
9	1" X 1" X 7 1/2" U BRANCH	AYM	708UMM

NOTES:

- SERVICE SADDLE SHALL NOT BE INSTALLED WITHIN 12" OF VALVE, COUPLING, JOINT OR FITTING.
- BLUE PLASTIC COATED OR POLY-SLEEVE SHALL BE SECURED AT THE CORP. AND THE ANGLE VALVE WITH 10 MIL. TAPE.
- SET TOP OF METER BOX FLUSH WITH SIDEWALK AS SHOWN.
- THE CORPORATION STOP TAP SHALL BE MADE AT A 45° DEGREE ANGLE FROM THE TOP OF THE PIPE.
- THE WATER SERVICE SHALL EXTEND PERPENDICULAR TO THE CENTERLINE OF THE STREET FROM THE WATER MAIN TO THE METER STOP.
- METER BOX SHALL BE SET BEHIND SIDEWALK.
- ALL CONNECTIONS TO COPPER TUBING SHALL BE COMPRESSION FITTINGS.
- ALL SERVICE LATERALS WILL BE LOCATED AT PROPERTY LINES.
- CUSTOMER SERVICE VALVE AND INSULATOR NIPPLE IS REQUIRED ON CUSTOMER SIDE OF METER. METER, CUSTOMER SERVICE VALVE, INSULATOR TO BE PROVIDED BY THE C.O.B.
- APPROVALS TO SUBSTITUTIONS TO THE ABOVE MATERIAL LIST MUST BE ACQUIRED FROM THE CITY ENGINEER.



2012 EDITION



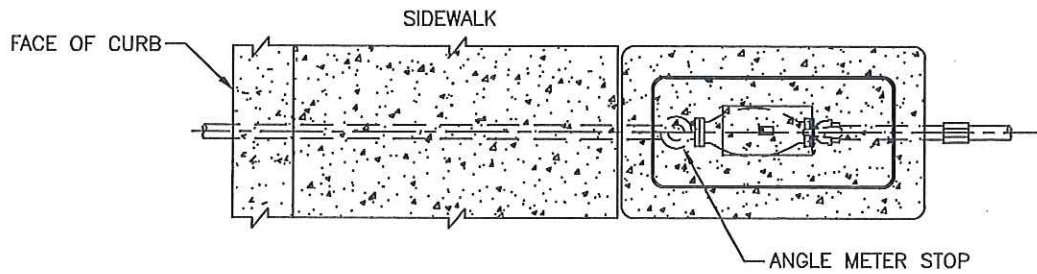
RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE
 APPROVED BY: *[Signature]* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

3/4" THRU 1" POTABLE COPPER
 DUAL SERVICE INSTALLATION W/
 FIRE SPRINKLER SERVICE LINE

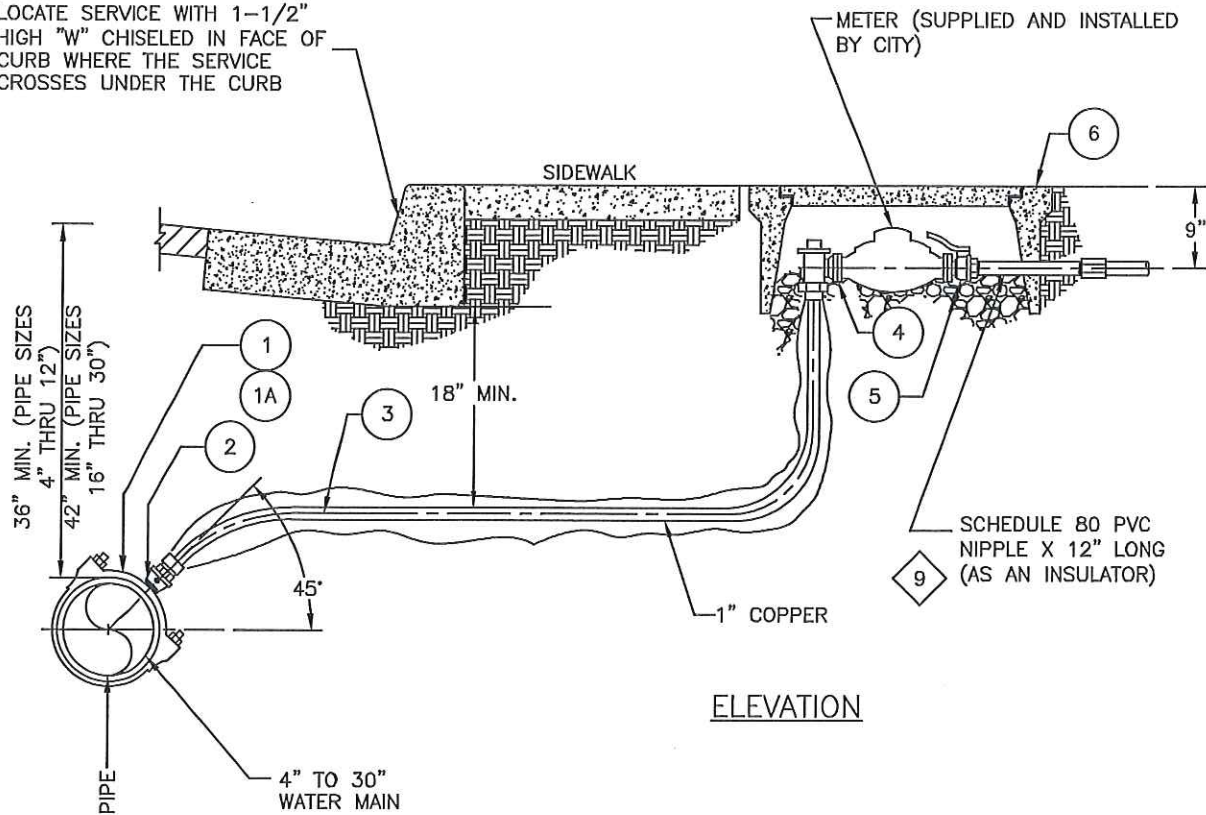
STANDARD
 NO.

W-4
 2 OF 2



PLAN

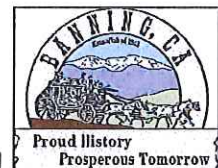
LOCATE SERVICE WITH 1-1/2" HIGH "W" CHISELED IN FACE OF CURB WHERE THE SERVICE CROSSES UNDER THE CURB



ELEVATION

* SEE SHEET 2 OF 2 FOR NOTES AND LIST OF MATERIALS

2012 EDITION



RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE

APPROVED BY: *[Signature]* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

3/4" THRU 1" POTABLE COPPER
 SERVICE INSTALLATION

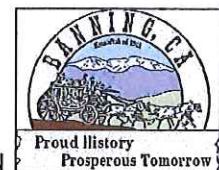
STANDARD
 NO.

W-5
 1 OF 2

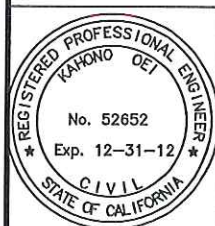
LIST OF MATERIALS			
ITEM NO.	SIZE & DESCRIPTION	MANUFACTURER	SPEC. NO.
1	DOUBLE STRAP SERVICE SADDLE I.P. OUTLET (FOR D.I.P. MAINS) DUCTILE IRON BODY STAINLESS STEEL STRAPS	ROMAC FORD MUELLER SMITH BLAIR	202S-PIPE O.D.-1" I.P. DR2S-PIPE O.D.-1" I.P. FS202-PIPE O.D.-I.P. 100 317
2	BRONZE BALL CORPORATION STOP M.I.P.T. X COMP 110 CONNECTION	JONES MUELLER	E1943 B-20013N
3	1" CTS COPPER TUBING - BLUE PLASTIC SLEEVED	MUELLER	COPPER TYPE "K" SOFT PLUMB SHIELD
4	BRONZE ANGLE METER STOP W/LOCKWING (COMPRESSION TYPE) 1" COPPER X 3/4" OR 1" METER	JONES MUELLER	E-1975 WSG B-24258N
5	BRONZE CUSTOMER SERVICE VALVE-METER NUT X F.I.P., WITH HANDLE	JONES MUELLER	E1908 B24351 WITH HANDLE
6	POLYMER METER BOX AND COVER WITH READING LID	J&R	4 1/2 P

NOTES:

- SERVICE SADDLE SHALL NOT BE INSTALLED WITHIN 12" OF VALVE, COUPLING, JOINT OR FITTING.
- BLUE PLASTIC COATED OR POLY-SLEEVE SHALL BE SECURED AT THE CORP. AND THE ANGLE VALVE WITH 10 MIL. TAPE.
- SET TOP OF METER BOX FLUSH WITH SIDEWALK AS SHOWN.
- THE CORPORATION STOP TAP SHALL BE MADE AT A 45° DEGREE ANGLE FROM THE TOP OF THE PIPE.
- THE WATER SERVICE SHALL EXTEND PERPENDICULAR TO THE CENTERLINE OF THE STREET FROM THE WATER MAIN TO THE METER STOP.
- METER BOX SHALL BE SET BEHIND SIDEWALK.
- ALL CONNECTIONS TO COPPER TUBING SHALL BE COMPRESSION FITTINGS.
- ALL SERVICE LATERALS WILL BE LOCATED AT PROPERTY LINES.
- CUSTOMER SERVICE VALVE AND INSULATOR NIPPLE IS REQUIRED ON CUSTOMER SIDE OF METER. METER, CUSTOMER SERVICE VALVE, INSULATOR TO BE PROVIDED BY THE C.O.B.
- APPROVALS TO SUBSTITUTIONS TO THE ABOVE MATERIAL LIST MUST BE ACQUIRED FROM THE CITY ENGINEER.



2012 EDITION



RECOMMENDED BY: *Arturo Vela* 12-12-12
ARTURO VELA, P.E., SR. ENGINEER DATE

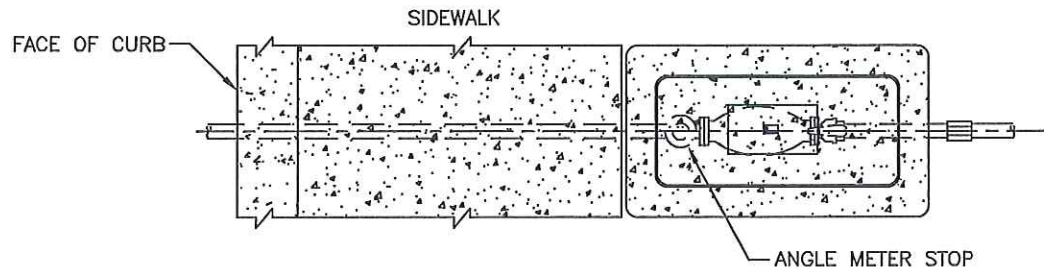
APPROVED BY: *[Signature]* 12-12-12
KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

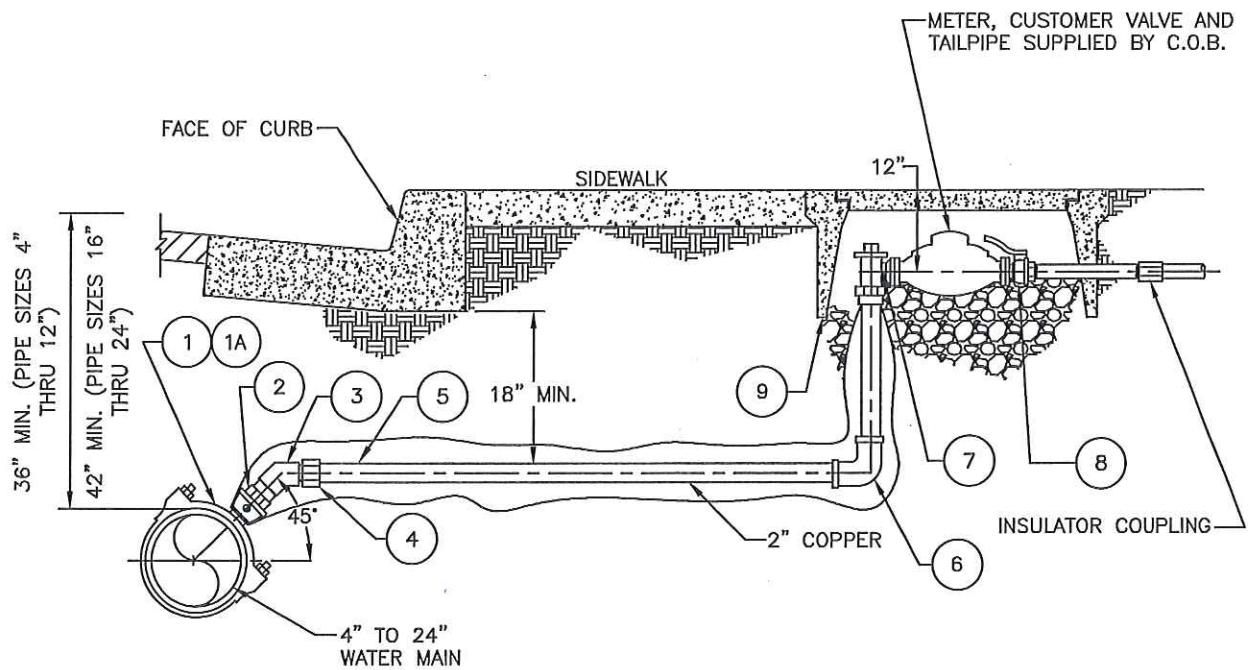
**3/4" THRU 1" POTABLE COPPER
SERVICE INSTALLATION**

STANDARD
NO.

W-5
2 OF 2



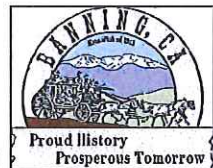
PLAN



ELEVATION

SEE SHEET 2 OF 2 FOR NOTES AND LIST OF MATERIALS.

2012 EDITION



RECOMMENDED BY: *Arturo Vela* 12-12-12
ARTURO VELA, P.E., SR. ENGINEER DATE

APPROVED BY: *[Signature]* 12-12-12
KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

**1-1/2" THRU 2" COPPER
SERVICE INSTALLATION**

STANDARD
NO.

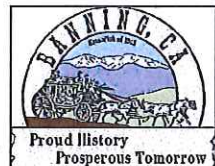
W-7
1 OF 2

NOTES:

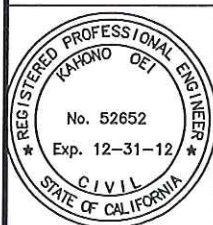
- SERVICE SADDLE SHALL NOT BE INSTALLED WITHIN 12" OF VALVE, COUPLING, JOINT OR FITTING.
- POLY-SLEEVE (BLUE FOR POTABLE WATER, PURPLE FOR NON-POTABLE/IRRIGATION) SHALL BE SECURED AT THE CORP. AND THE ANGLE VALVE WITH 10 MIL. TAPE.
- SET TOP OF METER BOX FLUSH WITH SIDEWALK OR CURB AS SHOWN.
- THE CORPORATION STOP TAP SHALL BE MADE AT A 45° ANGLE FROM THE TOP OF THE PIPE.
- THE WATER SERVICE SHALL EXTEND PERPENDICULAR TO THE CENTERLINE OF THE STREET FROM THE WATER MAIN TO THE METER STOP.
- METER BOX SHALL BE PLACED BEHIND SIDEWALK UNLESS OTHERWISE NOTED ON THE APPROVED PLANS.
- METER BOX READING LID FOR ALL RECLAIMED WATER SERVICE SHALL BE PAINTED PER SPECIFICATIONS.
- A 1" BYPASS LINE WITH LOCKING CURB STOP MAY BE REQUIRED FOR INSTALLATIONS NEEDING CONTINUOUS SERVICE.
- METER, CUSTOMER VALVE AND TAILPIPE TO BE PROVIDED BY THE C.O.B..
- APPROVALS OF SUBSTITUTIONS TO THE LIST OF MATERIALS MUST BE ACQUIRED FROM THE CITY ENGINEER

LIST OF MATERIALS

ITEM NO.	SIZE & DESCRIPTION	MANUFACTURER	SPEC. NO.
1	DOUBLE STRAP SERVICE SADDLE I.P. OUTLET (FOR D.I.P. MAINS)	ROMAC FORD MUELLER	202S-PIPE O.D.-2" I.P. FS202-PIPE O.D.-2" I.P. DR2S-PIPE O.D.-I.P. 200
2	BRONZE CORPORATION STOP MIPT X MIPT	JONES MUELLER	E-1935SG B-25028N
3	BRASS 45° ELBOW 2" X 2" F.I.P.T. X F.I.P.T.	-	-
4	M.I.P.T. X COMPRESSION ADAPTOR	JONES MUELLER	E-2605SG NH-15428N
5	2" TYPE "K" SOFT COPPER PIPE/POLY SLEEVED (BLUE)	-	-
6	BRASS 90° ELBOW 2" X 2" COMPRESSION X COMPRESSION.	JONES MUELLER	E-2611SG NH-15526N
7	BRONZE ANGLE METER STOP W/LOCKWING COMP X FLANGE 1 1/2" THRU 2" COMBO ANGLE VALVE.	JONES MUELLER	E-1963WSG B-25028N
8	BRONZE CUSTOMER SERVICE VALVE-METER FLANGE X F.I.P. WITH HANDLE	JONES MUELLER	E-1913W NB24337 WITH HANDLE
9	METER BOX W/READING LID	J&R	#6 POLYMER



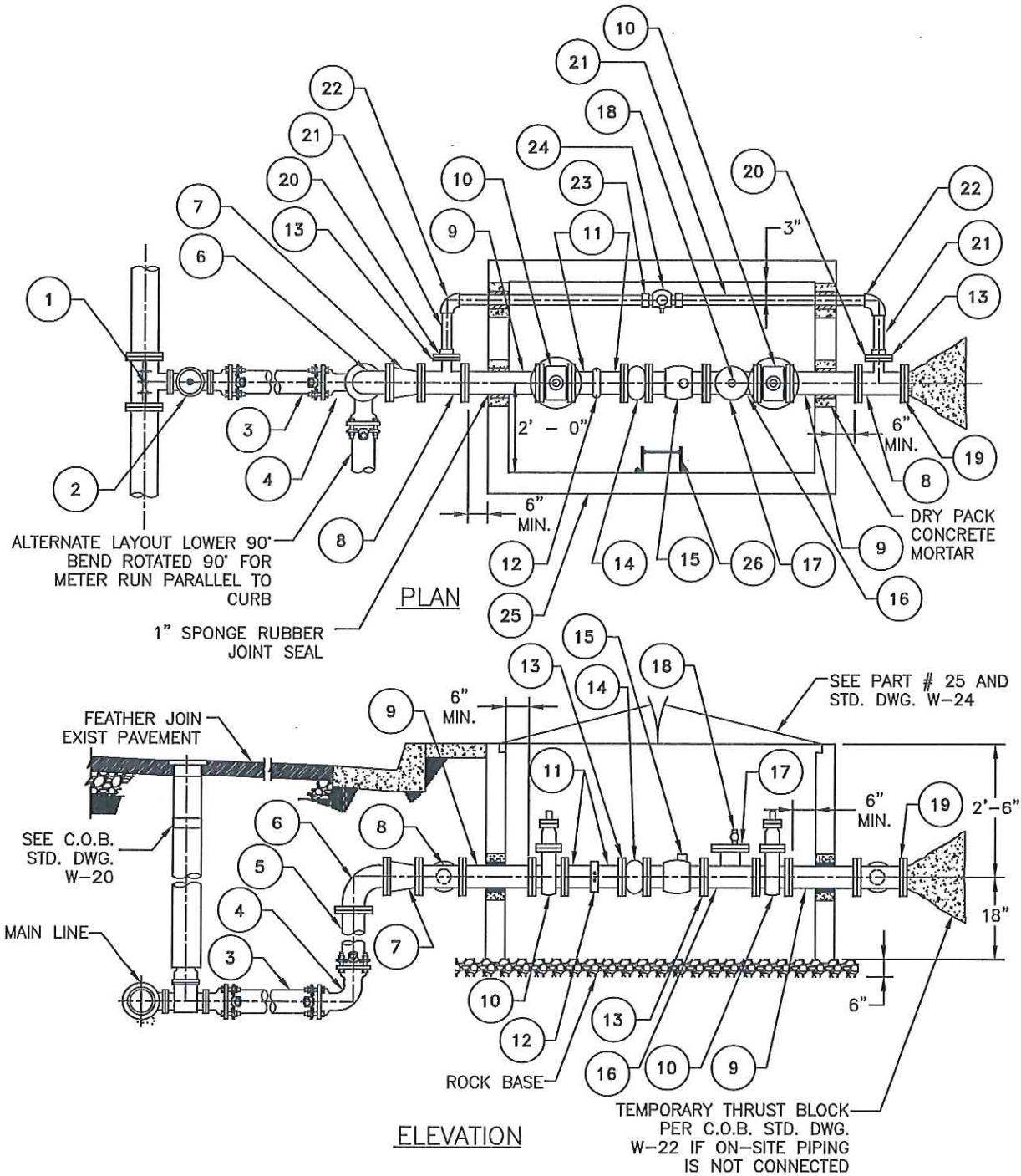
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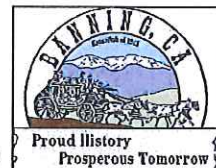
RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE

APPROVED BY: *[Signature]* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING
**1-1/2" THRU 2" COPPER
 SERVICE INSTALLATION**
STANDARD
NO.
W-7
 2 OF 2



2012 EDITION



RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE
 APPROVED BY: *[Signature]* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

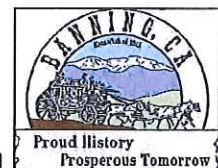
**3" AND 4" METER
SERVICE INSTALLATION**

STANDARD
NO.

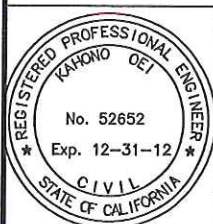
W-8
1 OF 2

LIST OF MATERIALS

ITEM	QUANTITY	DESCRIPTION
1	1 EA	SIZE X 4" TAPPING SLEEVE (USE MJ X FLG. TEE IF HOT TAP IS NOT REQUIRED).
2	1 EA	4" FLG. X FLG. TAPPING VALVE (USE RW OR GATE VALVE IF HOT TAP IS NOT REQUIRED).
3	AS REQ'D	4" D.I. PIPE LATERAL, RESTRAINED JOINTS
4	1 EA	4" D.I. 90° ELL, MJ. X MJ (IF REQUIRED).
5	2 EA	4" D.I. HALF SPOOL - FLG. X PLAIN END (IF REQUIRED)
6	1 EA	4" D.I. 90° ELL, FLG. X FLG. (IF REQUIRED).
7	1 EA	4" X 3" D.I. REDUCER FLG. X FLG. (FOR 3" SERVICE ONLY)
8	2 EA	METER SIZE FLANGED D.I. TEE
9	2 EA	FLG x FLG. D.I. SPOOL - METER SIZE X 2'-6"
10	2 EA	RW OR GATE VALVE FLG. X FLG.
11	2 EA	D.I.P. HALF SPOOL, VICTAULIC X FLG., 6" LENGTH
12	1 EA	GROOVED-END COUPLING (VICTAULIC)
13	4 EA	BOLT AND FLANGE INSULATING KIT
14	1 EA	STRAINER (BY DISTRICT)
15	1 EA	METER (BY DISTRICT)
16	1 EA	METER SIZE D.I. TEE - FLANGED
17	2 EA	METER-SIZE D.I. COMPANION FLANGE TAPPED FOR 2" I.P.
18	1 EA	2" CORPORATION STOP - MIP X MIP
19	1 EA	D.I. BLIND FLANGE
20	2 EA	METER SIZE COMPANION FLANGE WITH 2" THREADED I.P. OUTLET
21	AS REQ'D	2" GALVANIZED PIPE
22	2 EA	2" 90° ELBOW
23	1 EA	2" UNION
24	1 EA	2" BALL VALVE WITH LOCKING WING - F.I.P. X F.I.P.
25	1 EACH	PRECAST CONCRETE VAULT WITH SPRING ASSIST HINGED DIAMOND PLATE ALUMINUM COVER AND RECESSED LOCKING HASP. PROVIDE 6" x 12" HINGED READING LID INSTALLED OVER METER REGISTER. (REFER TO C.O.B. STD. DWG. W-24)
26	1 EA	GALV. STEEL LADDER (ALHAMBRA FOUNDRY A3400) W/LADDER - UP AND S.S. ANCHOR BOLTS.



2012 EDITION



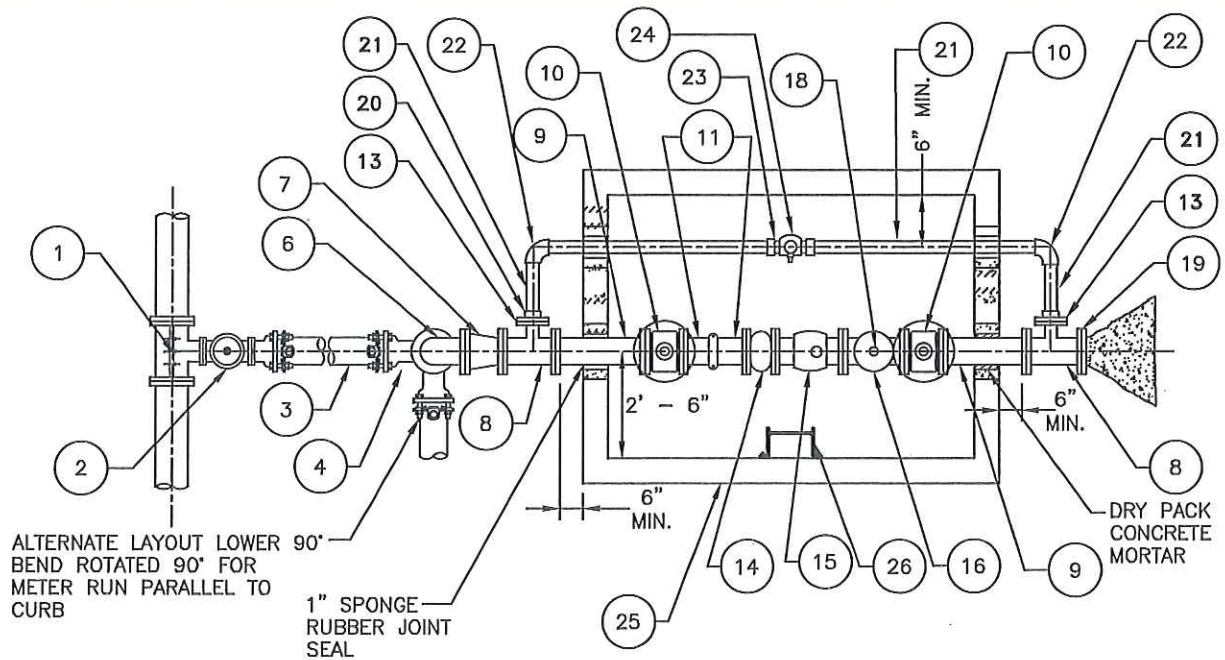
RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE
 APPROVED BY: *[Signature]* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

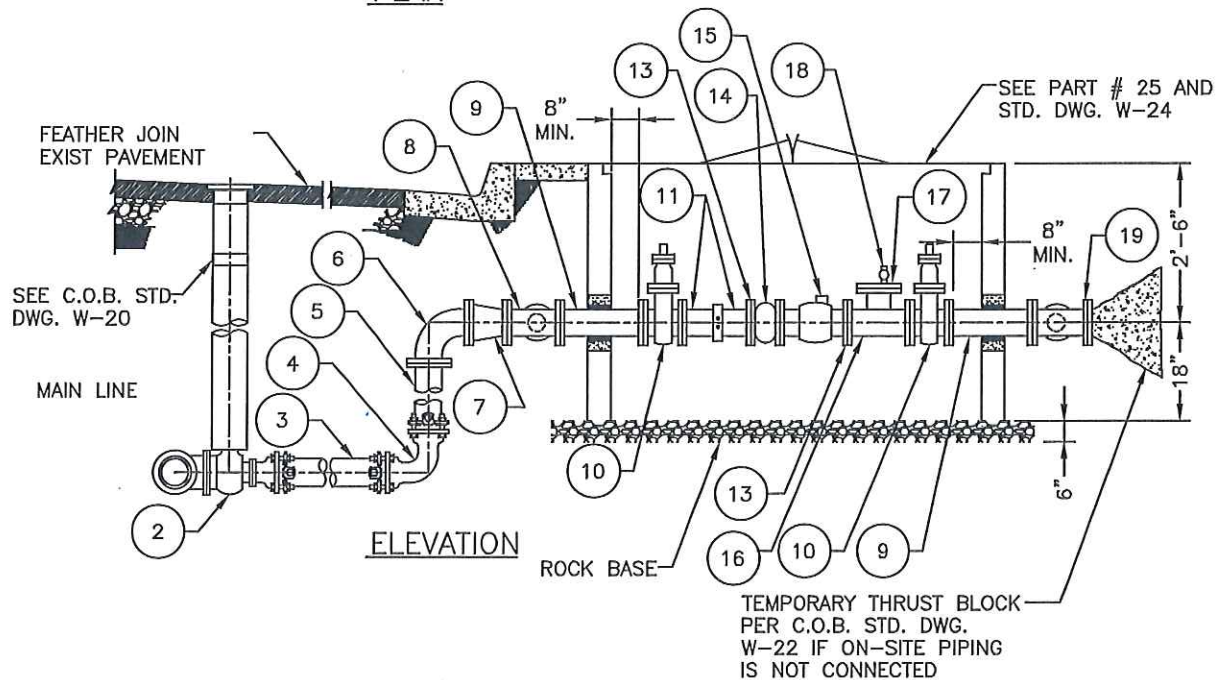
**3" AND 4" METER
SERVICE INSTALLATION**

STANDARD
NO.

W-8
2 OF 2

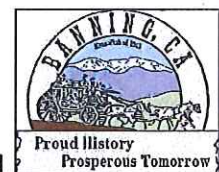


PLAN



ELEVATION

2012 EDITION



RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE
 APPROVED BY: *[Signature]* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

**6" - 8" METER
 INSTALLATION**

STANDARD
 NO.

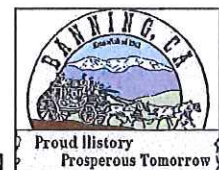
W-9
 1 OF 2

LIST OF MATERIALS		
ITEM	QUANTITY	DESCRIPTION
1	1 EA	SIZE X 8" TAPPING SLEEVE (USE MJ X FLG. TEE IF HOT TAP IS NOT REQUIRED) ROMAC STAINLESS STEEL.
2	1 EA	8" FLG. X FLG. TAPPING VALVE (USE RW GATE VALVE; MUELLER A2362 OR APPROVED EQUAL)
3	AS REQ'D	8" D.I. PIPE LATERAL, RESTRAINED JOINTS (ROMAGRIP OR MEGALUGS)
4	1 EA	8" D.I. 90° ELL, MJ. X MJ (IF REQUIRED).
5	1 EA	8" D.I. HALF SPOOL - FLG. X PLAIN END OR PLAIN END X PLAIN END (IF REQUIRED)
6	1 EA	8" D.I. 90° ELL, FLG. X FLG OR MJ X FLG (IF REQUIRED).
7	1 EA	8" X 6" D.I. REDUCER FLG. X FLG. (FOR 6" SERVICE ONLY)
8	2 EA	METER SIZE FLANGED D.I. TEE
9	2 EA	FLG x FLG. D.I. SPOOL - METER SIZE X 2'-6"
10	2 EA	RW OR GATE VALVE FLG. X FLG. (MUELLER OR APPROVED EQUAL)
11	1 EA	D.I.P. DISMANTLING JOINT (ROMAC DJ405 OR APPROVED EQUAL)
12		NOT USED
13	4 EA	BOLT AND FLANGE KIT
14	1 EA	STRAINER (BY C.O.B.)
15	1 EA	METER (BY C.O.B.)
16	1 EA	METER SIZE D.I. TEE - FLANGED
17	1 EA	METER-SIZE 2" I.P. X TAPPED BLIND FLANGE
18	1 EA	2" CORPORATION STOP - MIP X MIP, E-1943, B20013N
19	1 EA	D.I. BLIND FLANGE
20	2 EA	METER SIZE COMPANION FLANGE WITH 2" THREADED I.P. OUTLET
21	AS REQ'D	2" GALVANIZED PIPE
22	2 EA	2" 90° ELBOW
23	1 EA	2" UNION
24	1 EA	2" BALL VALVE WITH LOCKING WING - F.I.P. X F.I.P., E1900W OR B20283
25	1 EACH	PRECAST CONCRETE VAULT WITH SPRING ASSIST HINGED DIAMOND PLATE ALUMINUM COVER AND RECESSED LOCKING HASP. PROVIDE 6" x 12" HINGED READING LID INSTALLED OVER METER REGISTER. (REFER TO C.O.B. STD. DWG. W-24)
26	1 EA	GALV. STEEL LADDER (ALHAMBRA FOUNDRY A3400) W/LADDER - UP AND S.S. ANCHOR BOLTS.

NOTES:

1. VAULT SHOWN IS FOR PARKWAY USE ONLY. FOR TRAFFIC LOADING AND OTHER REQUIREMENTS, CONTACT CITY ENGINEER.
2. VAULT COVER TO BE SET TO CONFORM TO PARKWAY GRADE.
3. WHEN A BY-PASS LINE IS NOT REQUIRED, DO NOT INSTALL ITEMS 21 TO
4. APPROVALS FOR SUBSTITUTIONS TO THE ABOVE MATERIAL LIST MUST BE ACQUIRED FROM THE CITY ENGINEER.

2012 EDITION



RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE

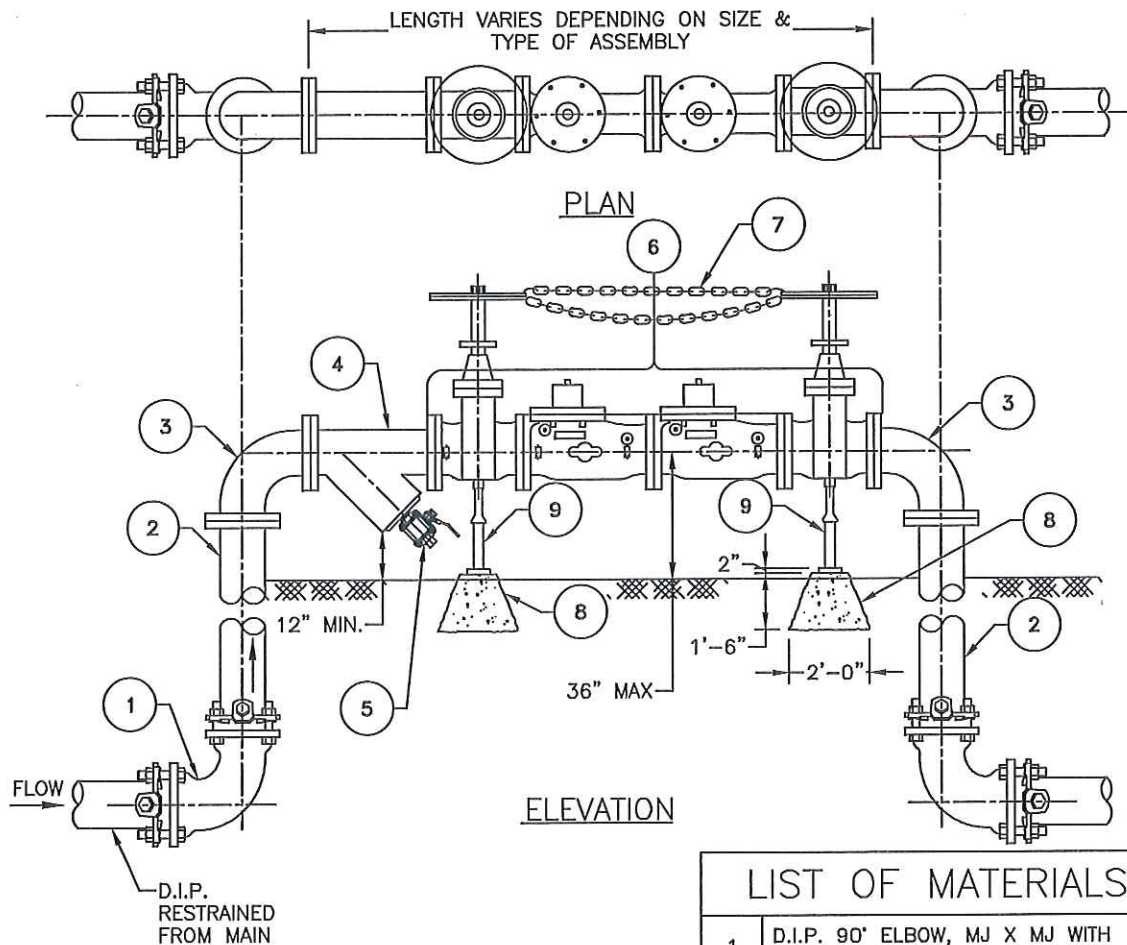
APPROVED BY: *[Signature]* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

**6" - 8" METER
INSTALLATION**

STANDARD
NO.

W-9
2 OF 2

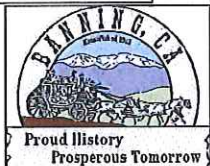


NOTES:

1. NOTIFY C.O.B. PRIOR TO INSTALLATION OF UNIT.
2. INSTALLATION SHALL COMPLY WITH THE LATEST PLUMBING CODES AND APPLICABLE LOCAL AGENCY REQUIREMENTS. DOUBLE CHECK ASSEMBLY MAY BE INSTALLED IN AN UNDERGROUND VAULT AS SHOWN IN C.O.B. STD. DWG. W-14.
3. ALL TEST VALVES MUST BE PLUGGED TO PREVENT TAMPERING.
4. MATERIALS 8 AND 9 ARE REQUIRED ON ALL ASSEMBLIES 6" AND LARGER. ASSEMBLIES SMALLER THAN 6" MAY REQUIRE A FULL LENGTH CONCRETE PAD BELOW THE DEVICE.
5. ALL BACKFLOW ASSEMBLIES ARE TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE METER AND ON THE CUSTOMER SIDE OF RIGHT OF WAY.

LIST OF MATERIALS

1	D.I.P. 90° ELBOW, MJ X MJ WITH MEGA LUGS OR ROMAGRIPS
2	D.I.P. HALF SPOOL, FLG x PE
3	D.I.P. 90° ELBOW, FLG x FLG
4	WYE STRAINER
5	FULL SIZE BLOWOFF VALVE WITH PLUG TO PREVENT TAMPERING
6	DOUBLE CHECK BACKFLOW ASSEMBLY (WILKINS 350 SERIES OR APPROVED EQUAL)
7	CHAIN AND LOCK BETWEEN VALVE HANDLES TO PREVENT TAMPERING
8	CONCRETE FOOTING
9	GALVANIZED ADJUSTABLE PIPE SUPPORT. SEE C.O.B. STD. DWG. W-25 TO FIT BODY OF GATE VALVE



2012 EDITION



RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE
 APPROVED BY: *[Signature]* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

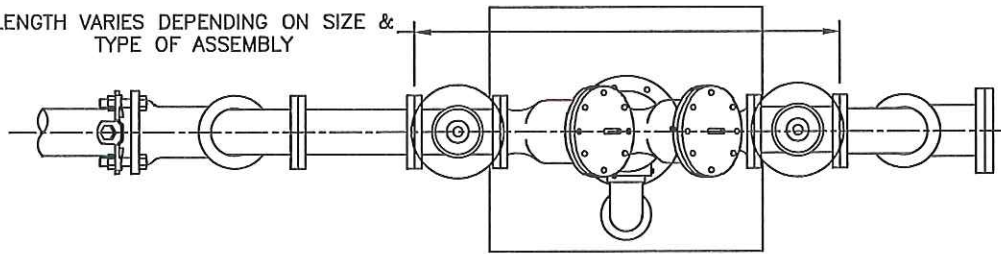
CITY OF BANNING

**DOUBLE CHECK
BACKFLOW ASSEMBLY**

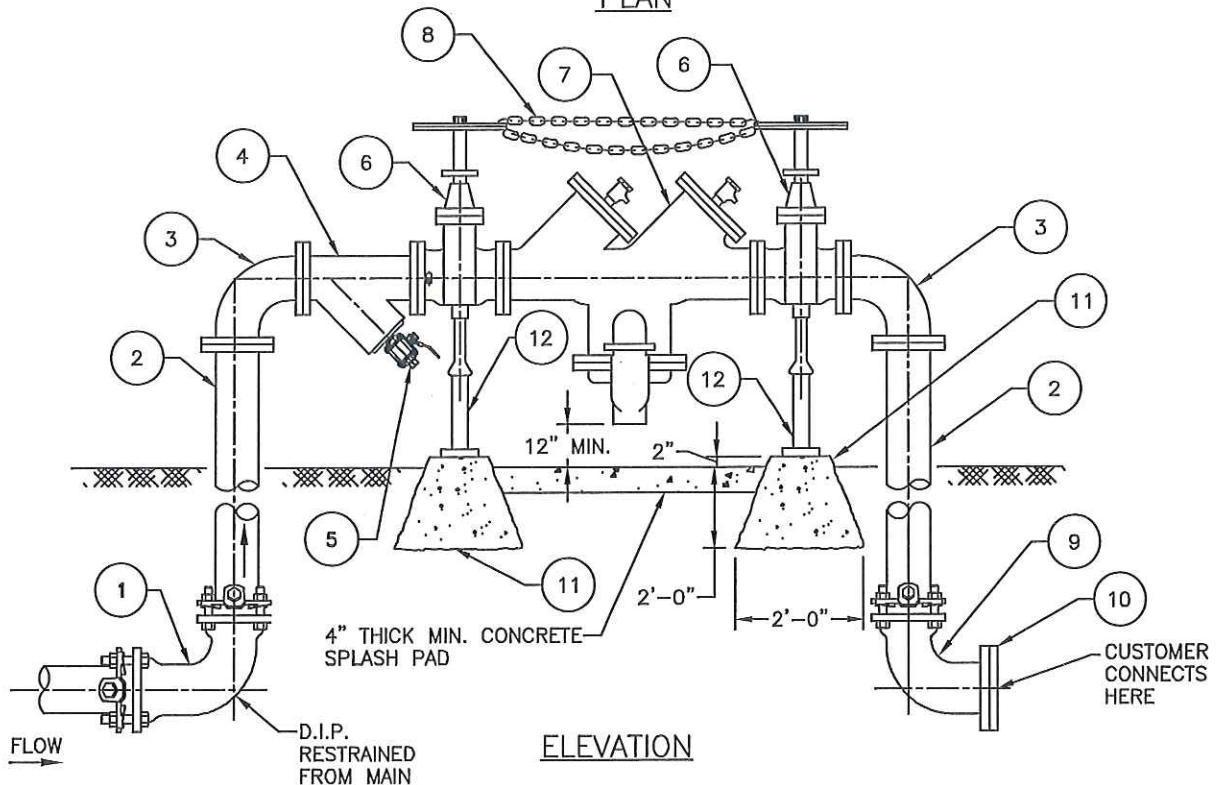
STANDARD
NO.

W-10
1 OF 1

LENGTH VARIES DEPENDING ON SIZE &
TYPE OF ASSEMBLY



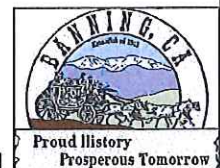
PLAN



NOTES:

1. NOTIFY C.O.B. PRIOR TO INSTALLATION OF UNIT.
2. INSTALLATION SHALL COMPLY WITH THE LATEST PLUMBING CODES AND APPLICABLE LOCAL AGENCY REQUIREMENTS.
3. ALL BACKFLOW ASSEMBLIES ARE TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE METER AND ON THE CUSTOMER SIDE OF RIGHT OF WAY.
4. RESTRAINED MECHANICAL JOINTS (MEGALUG) D.I.P. PIPE TO THE MAIN.
5. SEE SHEET 2 OF 2 FOR LIST OF MATERIALS.

2012 EDITION



RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE
 APPROVED BY: *[Signature]* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

STANDARD
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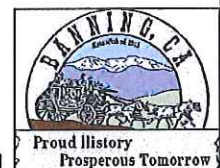
**REDUCED PRESSURE
BACKFLOW ASSEMBLY**


W-11
1 OF 2


LIST OF MATERIALS

1	D.I.P. 90° ELBOW, MJ X MJ WITH MEGA LUGS OR ROMA GRIPS
2	D.I.P. HALF SPOOL, FLG X PE
3	D.I.P. 90° ELBOW, FLG x FLG
4	WYE STRAINER
5	FULL SIZE BLOWOFF VALVE WITH PLUG TO PREVENT TAMPERING
6	U.S.C.-APPROVED SHUT-OFF VALVES. SEE SPECIFICATIONS FOR ASSEMBLY
7	APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY (SIZE PER REQUIREMENT); WILKINS 375 SERIES OR APPROVED EQUAL
8	CHAIN AND LOCK BETWEEN VALVE HANDLES TO PREVENT TAMPERING
9	D.I.P. 90° ELBOW, MJ X FLG WITH MEGA LUG OR ROMA GRIPS
10	BLIND FLANGE IF NOT CONNECTING IMMEDIATELY AFTER INSTALL OF DEVICE
11	CONCRETE FOOTING
12	GALVANIZED ADJUSTABLE PIPE SUPPORT. SEE C.O.B. STD. DWG. W-25

2012 EDITION




 RECOMMENDED BY: 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE

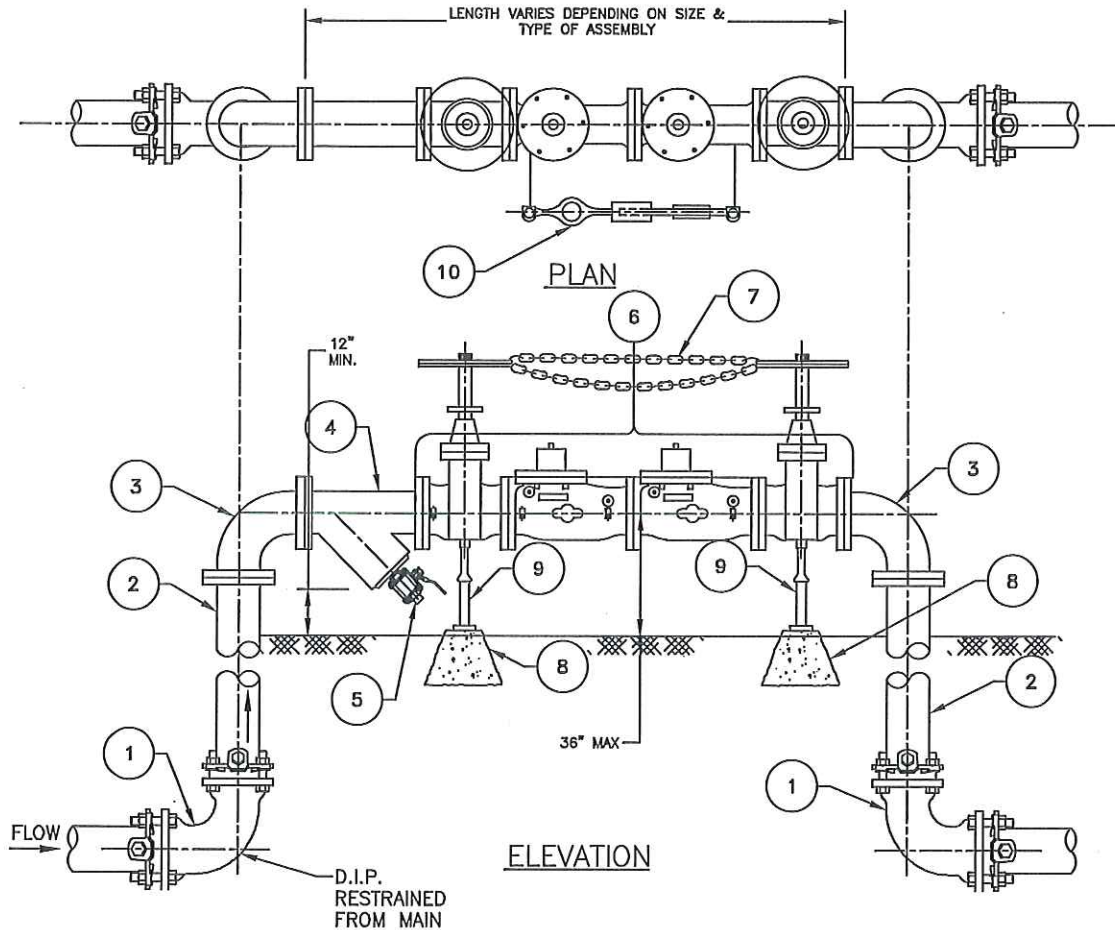

 APPROVED BY: 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER

CITY OF BANNING

STANDARD
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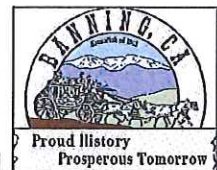
**REDUCED PRESSURE
BACKFLOW ASSEMBLY**

W-11
2 OF 2

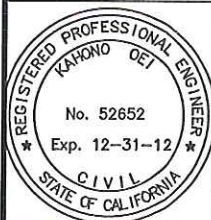


NOTES:

1. NOTIFY C.O.B. PRIOR TO INSTALLATION OF UNIT.
2. INSTALLATION SHALL COMPLY WITH THE LATEST PLUMBING CODES AND APPLICABLE LOCAL AGENCY REQUIREMENTS.
3. DOUBLE CHECK ASSEMBLIES MAY BE INSTALLED UNDERGROUND AS SHOWN IN STANDARD DRAWING W-14. RP ASSEMBLIES MAY NOT BE INSTALLED WITHIN A VAULT. ABOVE GROUND ONLY.
4. ALL TEST VALVES MUST BE PLUGGED TO PREVENT TAMPERING.
5. MATERIALS 8 AND 9 ARE REQUIRED ON ALL ASSEMBLIES 6" AND LARGER. ASSEMBLIES SMALLER THAN 6" MAY REQUIRE A FULL LENGTH CONCRETE PAD BELOW THE DEVICE.
6. ALL BACKFLOW ASSEMBLIES ARE TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE METER AND ON THE CUSTOMER SIDE OF RIGHT OF WAY.
7. SEE SHEET 2 OF 2 FOR LIST OF MATERIALS.



2012 EDITION



RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE
 APPROVED BY: *Chino* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

**DOUBLE CHECK OR REDUCED
 PRESSURE DETECTOR ASSEMBLY
 ABOVE GROUND FIRE LINE**

STANDARD
 NO.

W-13
 1 OF 2

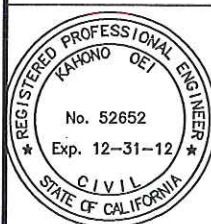
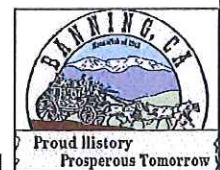
LIST OF MATERIALS

1	D.I.P. 90° ELBOW, MJ X MJ WITH MEGA LUGS OR ROMAGRIPS
2	D.I.P. HALF SPOOL, FLG x PE
3	D.I.P. 90° ELBOW, FLG x FLG
4	WYE STRAINER
5	FULL SIZE BLOWOFF VALVE WITH PLUG TO PREVENT TAMPERING
6	APPROVED REDUCED PRESSURE BACKFLOW OR REDUCED PRESSURE DETECTOR ASSEMBLY (WILKINS 375 SERIES OR APPROVED EQUAL)
7	CHAIN AND LOCK BETWEEN VALVE HANDLES TO PREVENT TAMPERING
8	CONCRETE FOOTING
9	GALVANIZED ADJUSTABLE PIPE SUPPORT. SEE C.O.B. STD. DWG. W-25 TO FIT BODY OF GATE VALVE
10	FACTORY INSTALLED BY-PASS METER ASSEMBLY CONSISTING OF APPROVED POSITIVE DISPLACEMENT METER, DOUBLE CHECK VALVE AND ASSOCIATED PIPING. BY-PASS METER TO BE SUPPLIED BY THE C.O.B..

NOTES:

- FOR 2" AND SMALLER BACKFLOW ASSEMBLIES INSTALL A ECONOCAGE BY GUARDSHACK WITH CONCRETE PAD OR APPROVED EQUAL

2012 EDITION



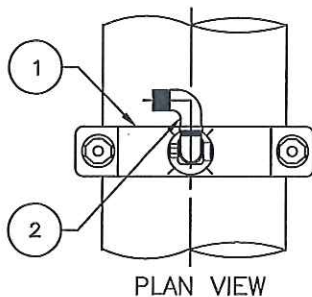
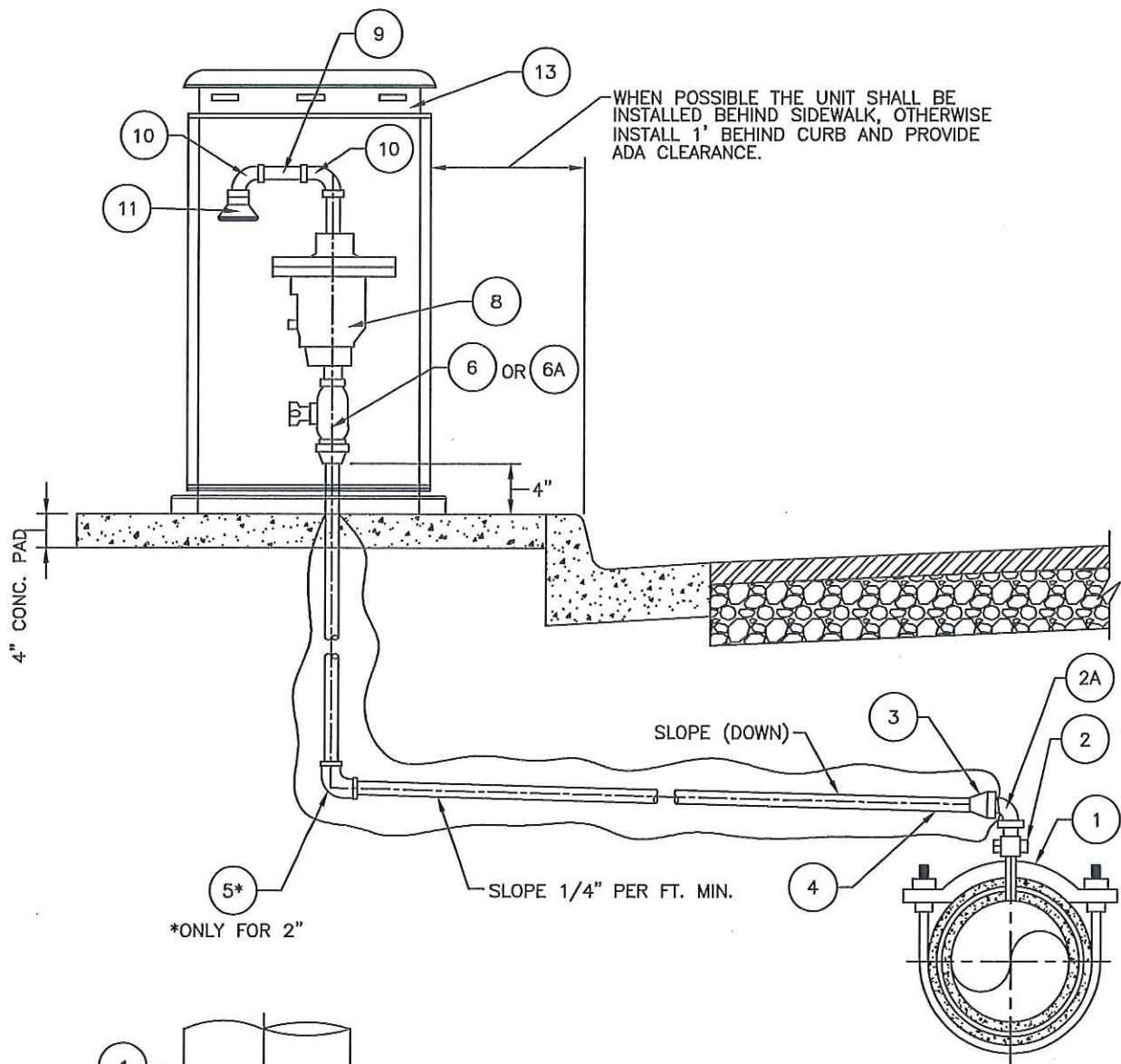
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ARTURO VELA, P.E., SR. ENGINEER DATE	
 APPROVED BY: 12-12-12	
KAHONO OEI, P.E., CITY ENGINEER DATE	

CITY OF BANNING

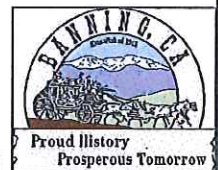
**DOUBLE CHECK OR REDUCED
PRESSURE DETECTOR ASSEMBLY
ABOVE GROUND FIRE LINE**

STANDARD
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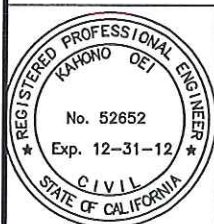
W-13
2 OF 2



1" SIZE MIN. FOR PIPE DIAMETERS 12" AND SMALLER.
 2" SIZE MIN. FOR PIPE DIAMETERS 16" AND LARGER.
 SEE SHEET 2 OF 2 FOR NOTES, LIST OF MATERIALS AND DETAILS.



2012 EDITION



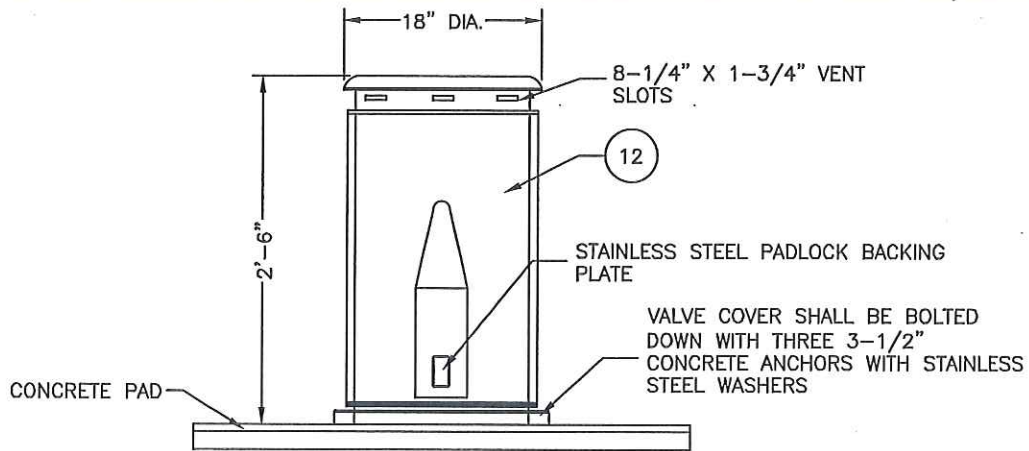
RECOMMENDED BY: *Arturo Vela* 12-12-12
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 APPROVED BY: *Arturo Vela* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

**1" AND 2" AIR AND VACUUM
 VALVE ASSEMBLY**

STANDARD
 NO.

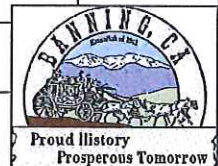
W-15
 1 OF 2



VAULT COVER DETAIL
FOR 1" AND 2" AIR VAC

LIST OF MATERIAL

ITEM NO.	SIZE & DESCRIPTION	MANUFACTURER	SPEC. NO.
1	CONNECTION PER C.O.B. STD. DWG. W-5 OR DWG. W-7 OFF THE TOP OF PIPE	-	-
2	CORPORATION STOP	JONES MUELLER	E1943 NB-20013N
2A	2-90° STREET ELBOW SWING JOINT (BRASS)		
3	F.I.P. X COMPRESSION ADAPTOR	JONES MUELLER	E2607SG H-15451N
4	TUBING, CTS (BLUE POLY SLEEVE FOR 1 1/2" AND ABOVE)	MUELLER	COPPER TYPE K SOFT PLUMB SHIELD
5	COMPRESSION X COMPRESSION 90° ELBOW (WILL ONLY BE USED ON 2")	JONES MUELLER	E-2611 H-15526N
6	1" BALL CORP STOP MIP X COMP	JONES MUELLER	E-1935SG B-25028N
6A	2" BALL COPR STOP MIP X COMP	JONES MUELLER	E-1935SG B-25028N
8	COMBINATION, AIR & VACUUM VALVE, 1" MIN. VAULT SIZE PER PLAN	ARI	D040P W/ SCREEN
9	2" STANDARD WEIGHT GALV. STEEL NIPPLE	-	-
10	90° DEGREE STREET ELL G.I.P.	-	-
11	BUG SCREEN	-	-
12	POLYETHYLENE VAULT COVER (SEE DETAIL, ABOVE).	PIPELINE PRODUCTS OR APPROVED EQUAL	VCAS-1830
13	BLUE COLLAR STRAP FOR POTABLE (REFLECTIVE)		



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RECOMMENDED BY: *Arturo Vela* 12-12-12
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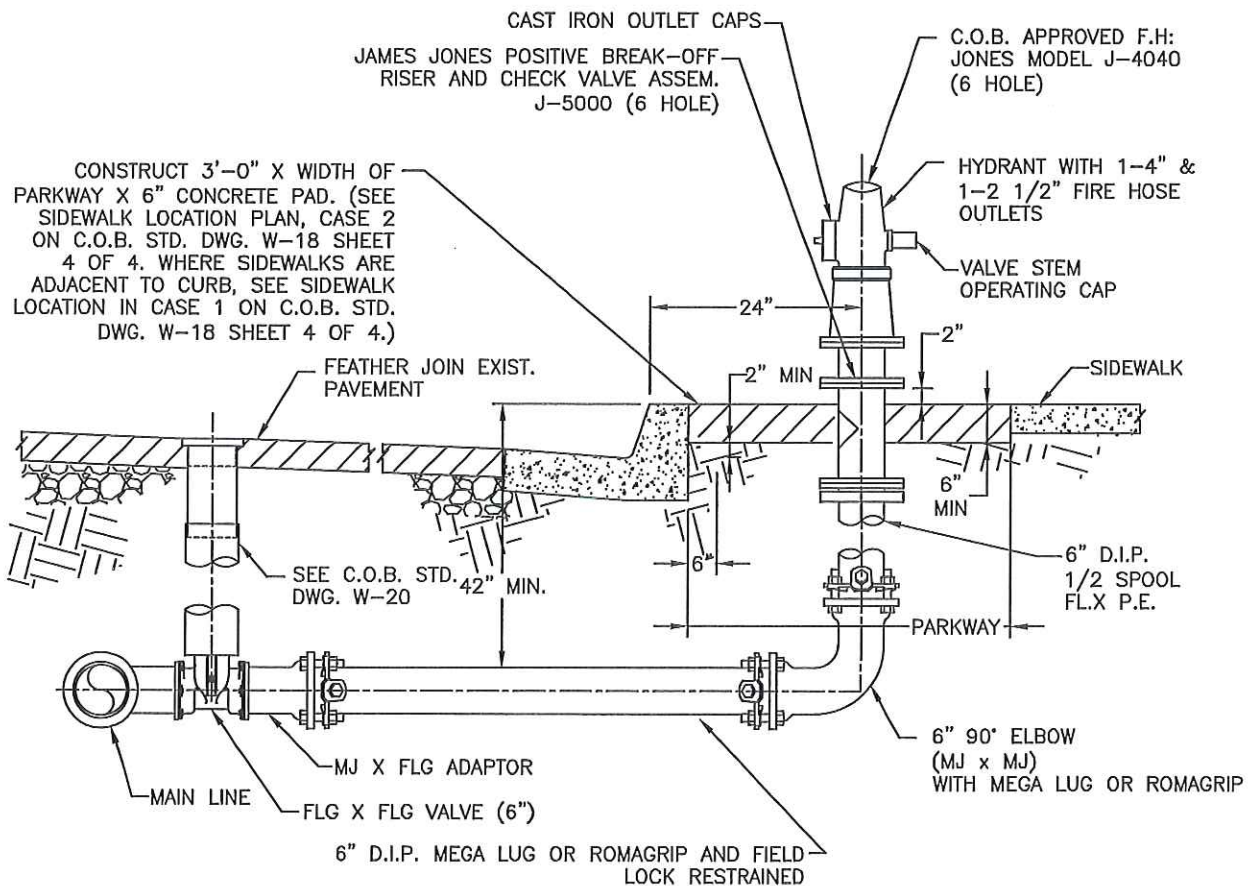
APPROVED BY: *Kahono Oei* 12-12-12
KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

STANDARD
NO.

**1" AND 2" AIR AND VACUUM
VALVE ASSEMBLY**

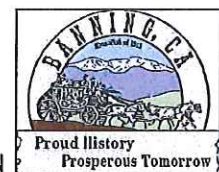
W-15
2 OF 2



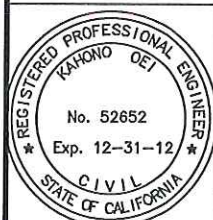
ELEVATION

NOTES:

1. PAINT WITH 2 COATS, 3 TO 5 MILS EACH, OF TNEMIC N69 SAFETY YELLOW 025F.
2. PROVIDE "BREAK-OFF" RISER AT HYDRANT FLANGE. BOLTS FROM THE "BREAK-OFF" SPOOL TO THE CHECK VALVE ASSEMBLY MUST BE INSTALLED FROM TOP TO BOTTOM.
3. HYDRANT FLANGE GASKET SHALL BE "FULL FACE" AND OF RUBBER COMPOSITION 1/8" THICK.
4. DRY BARREL HYDRANTS ARE REQUIRED AT ELEVATIONS ABOVE 3,500 FT.
5. ALL HYDRANT FLANGE BOLTS ARE TO BE INSTALLED WITH THE CAP OF THE BOLT ON TOP AND THE NUT ON THE BOTTOM.
6. INSTALL A FIRE HYDRANT SPOTTER, STIMSONITE #88 BLUE OR APPROVED EQUAL. SPOTTER SHALL BE PLACED 12" FROM CENTERLINE ON THE FIRE HYDRANT SIDE WITH THE REFLECTIVE FACE TOWARD TRAFFIC AND INSTALLED PER THE MANUFACTURERS RECOMMENDATIONS.
7. SEE SHEET 4 OF 4 FOR HYDRANT FLOW COLOR CODING.



2012 EDITION



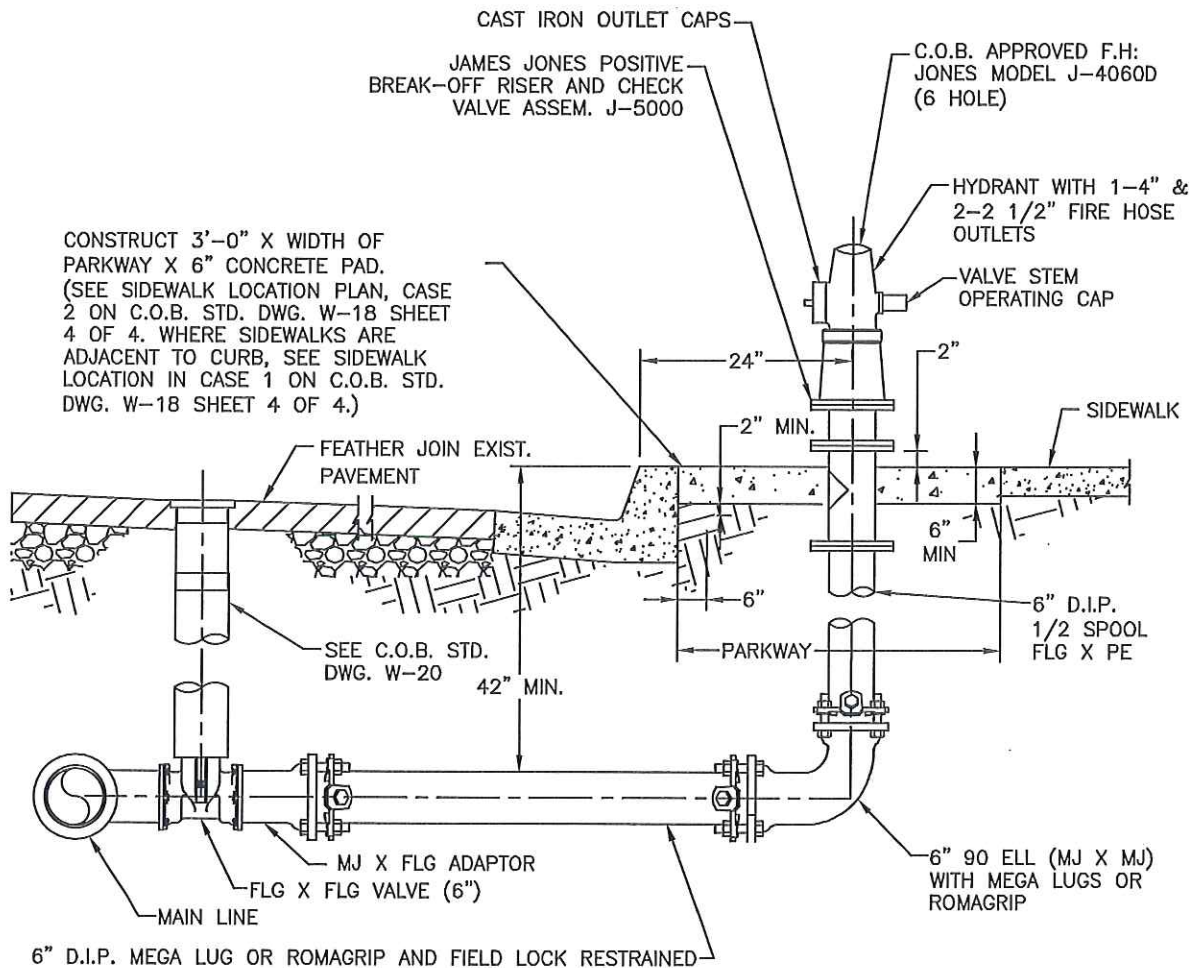
RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE
 APPROVED BY: *Kahono Oei* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

**RESIDENTIAL FIRE
HYDRANT INSTALLATION**

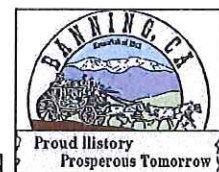
STANDARD
NO.

W-18
1 OF 4

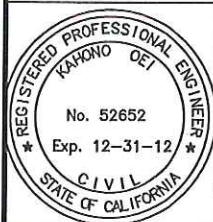


NOTES:

1. PAINT WITH 2 COATS, 3 TO 5 MILS EACH, OF TNEMIC N69 SAFETY YELLOW 025F.
2. PROVIDE "BREAK-OFF" RISER AT HYDRANT FLANGE. BOLTS FROM THE "BREAK-OFF" TO THE CHECK VALVE ASSEMBLY MUST BE INSTALLED FROM TOP TO BOTTOM.
3. HYDRANT FLANGE GASKET SHALL BE "FULL FACE" AND OF RUBBER COMPOSITION 1/8" THICK.
4. DRY BARREL HYDRANTS ARE REQUIRED AT ELEVATIONS ABOVE 3,500 FT.
5. ALL HYDRANT FLANGE BOLTS ARE TO BE INSTALLED WITH THE CAP OF THE BOLT ON TOP AND THE NUT ON THE BOTTOM.
7. INSTALL A FIRE HYDRANT SPOTTER, STIMSONITE #88 BLUE OR APPROVED EQUAL. SPOTTER SHALL BE PLACED 12" FROM CENTERLINE ON THE FIRE HYDRANT SIDE WITH THE REFLECTIVE FACE TOWARD TRAFFIC AND INSTALLED PER THE MANUFACTURERS RECOMMENDATIONS.
8. SEE SHEET 4 OF 4 FOR HYDRANT FLOW COLOR CODING.



2012 EDITION



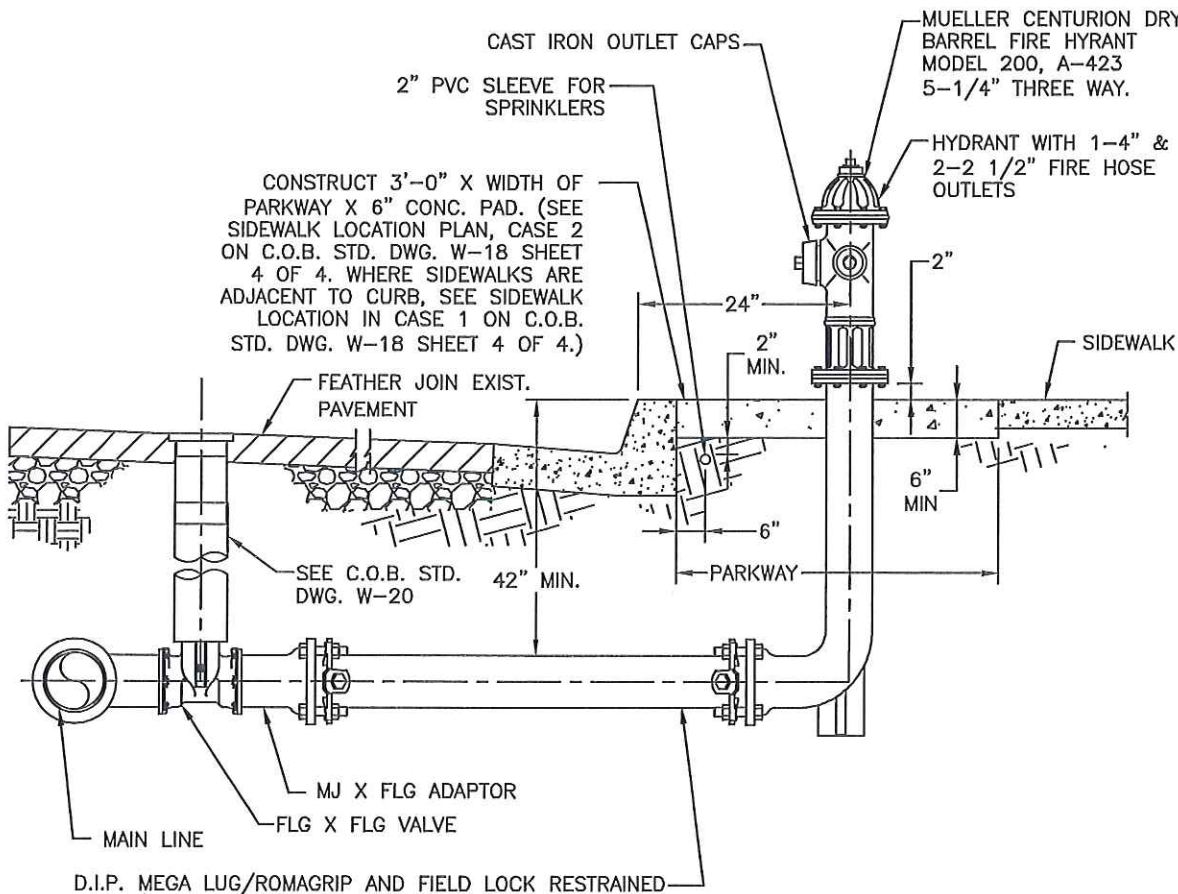
RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE
 APPROVED BY: *Arturo Vela* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

**COMMERCIAL FIRE
HYDRANT INSTALLATION**

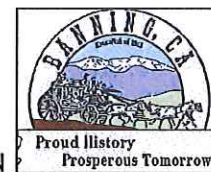
STANDARD
NO.

W-18
2 OF 4

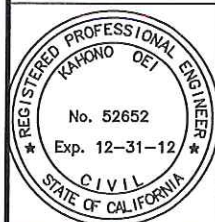


NOTES:

1. PAINT WITH 2 COATS, 3 TO 5 MILS EACH, OF TNEMIC N69 SAFETY YELLOW 025F.
2. HYDRANT FLANGE GASKET SHALL BE "FULL FACE" AND OF RUBBER COMPOSITION 1/8" THICK.
3. DRY BARREL HYDRANTS ARE REQUIRED AT ELEVATIONS ABOVE 3,500 FT.
4. ALL HYDRANT FLANGE BOLTS ARE TO BE INSTALLED WITH THE CAP OF THE BOLT ON TOP AND THE NUT ON THE BOTTOM.
7. INSTALL A FIRE HYDRANT SPOTTER, STIMSONITE #88 BLUE OR APPROVED EQUAL. SPOTTER SHALL BE PLACED 12" FROM CENTERLINE ON THE FIRE HYDRANT SIDE WITH THE REFLECTIVE FACE TOWARD TRAFFIC AND INSTALLED PER THE MANUFACTURERS RECOMMENDATIONS.
8. SEE SHEET 4 OF 4 FOR HYDRANT FLOW COLOR CODING.



2012 EDITION



RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE
 APPROVED BY: *[Signature]* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

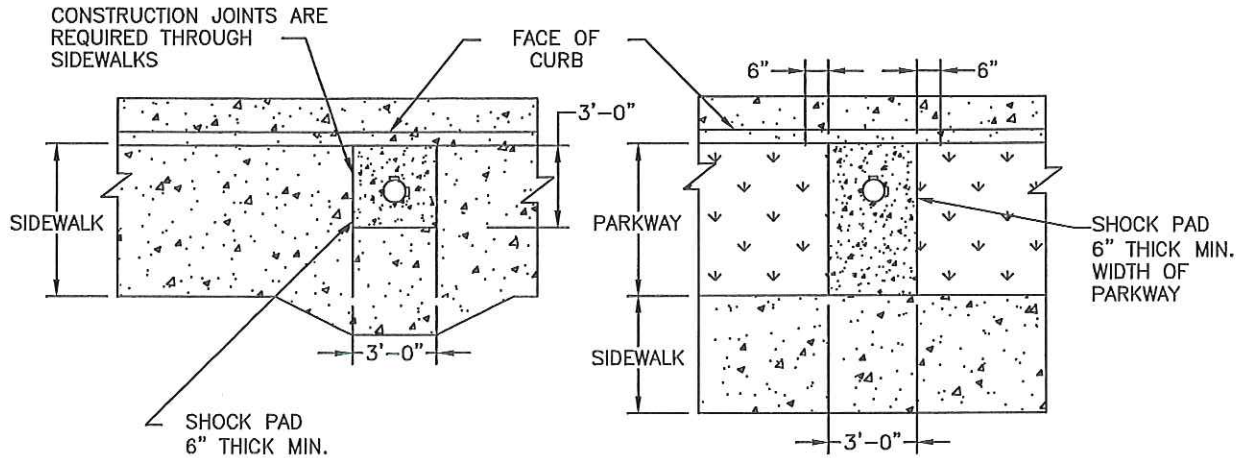
CITY OF BANNING

**DRY BARREL FIRE
HYDRANT INSTALLATION**

STANDARD
NO.

W-18
3 OF 4

SIDEWALK LOCATION PLANS



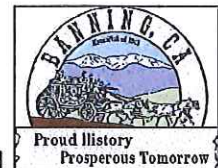
CASE 1
SIDEWALK ADJACENT TO CURB

CASE 2
SIDEWALK NOT ADJACENT TO CURB

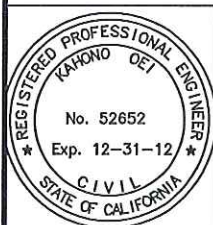
NOTES:

1. PAINT WITH 2 COATS, 3 TO 5 MILS EACH, OF TNEMIC N69 SAFETY YELLOW 025F.
2. PROVIDE "BREAK-OFF" RISER AT HYDRANT FLANGE.
3. HYDRANT FLANGE GASKET SHALL BE "FULL FACE" AND OF RUBBER COMPOSITION 1/8" THICK.
4. ALL HYDRANT FLANGE BOLTS ARE TO BE INSTALLED WITH THE CAP OF THE BOLT ON TOP AND THE NUT ON THE BOTTOM.
5. DRY BARREL HYDRANTS ARE REQUIRED AT ELEVATIONS ABOVE 3,500 FT.
7. INSTALL A FIRE HYDRANT SPOTTER, STIMSONITE #88 BLUE OR APPROVED EQUAL. SPOTTER SHALL BE PLACED 12" FROM CENTERLINE ON THE FIRE HYDRANT SIDE WITH THE REFLECTIVE FACE TOWARD TRAFFIC AND INSTALLED PER THE MANUFACTURERS RECOMMENDATIONS.
8. HYDRANT FLOW COLOR CODING;

1,500 + GPM = BLUE CAPS
 1,000 + GPM = GREEN CAPS
 500 to 1,000 GPM = ORANGE CAPS
 LESS THAN 500 GPM = RED CAPS



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 ARTURO VELA, P.E., SR. ENGINEER DATE

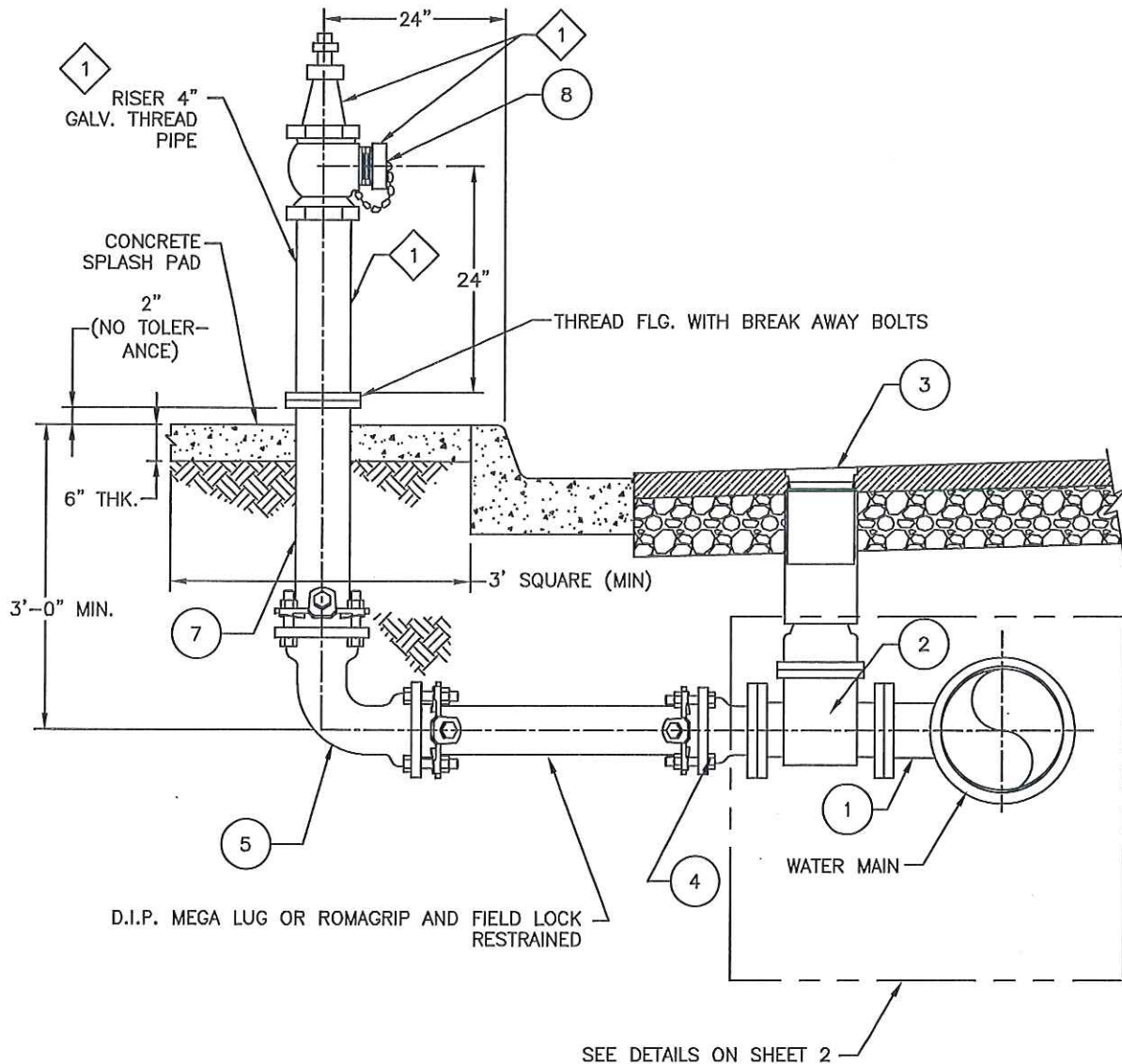
APPROVED BY: *[Signature]* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

**FIRE HYDRANT
SHOCK PAD LAYOUT**

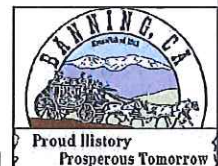
STANDARD
NO.

W-18
4 OF 4



NOTES:

1. PAINT WITH 2 COATS, 3 TO 5 MILS EACH, OF TNEMIC N69 SAFETY YELLOW 025F. ENTIRE HEAD SHALL BE PAINTED RED.
2. BLOW-OFFS LOCATED HIGHER THEN 3,500 FT ABOVE SEA LEVEL SHOULD BE A DRY BARREL FIRE HYDRANT.
3. BOTTOM FLUSH INSTALLATION WHERE REQUIRED BY C.O.B.



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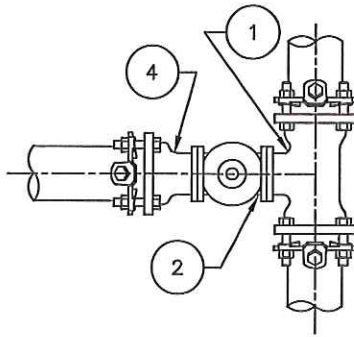
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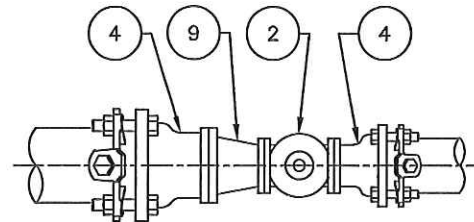
BLOW-OFF ASSEMBLY

STANDARD
NO.

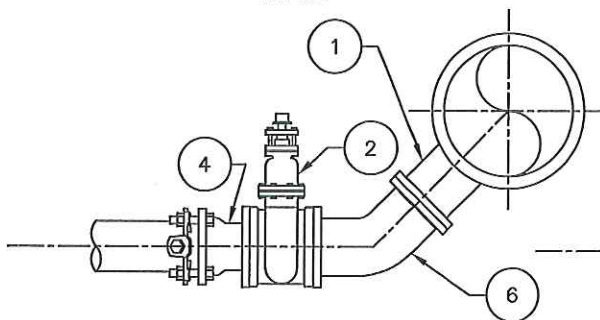
W-19
1 OF 2



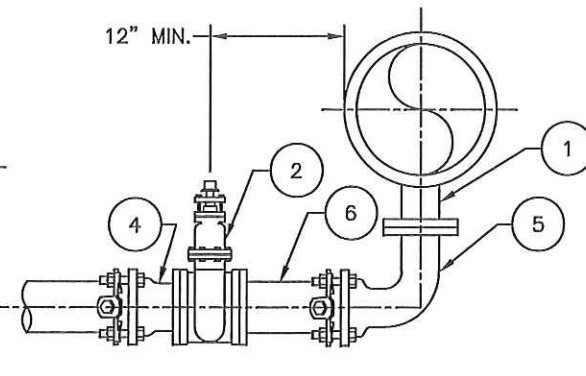
PLAN
BLOW-OFF ASSEMBLY GATE VALVE,
BRANCH CONNECTION FROM WATER
MAIN



PLAN
BLOW-OFF ASSEMBLY GATE VALVE,
END CONNECTION FROM WATER MAIN
(OPTIONAL)



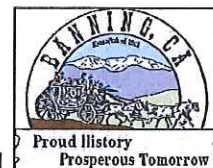
BRANCH CONNECTION CASE A



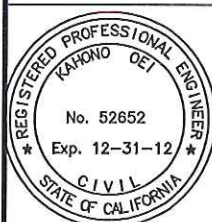
BRANCH CONNECTION CASE B

LIST OF MATERIAL

ITEM NUMBER	DESCRIPTION
1	TEE - MJ X MJ X FLG WITH MEGALUG OR ROMAGRIP
2	GATE VALVE - FLG X FLG (MUELLER A2362 OR APPROVED EQUAL)
3	VALVE BOX PER STD. DWG. W-20
4	MJ X FLG ADAPTOR WITH MEGALUG OR ROMAGRIP
5	90° ELBOW - FLG X MJ OR MJ X MJ WITH MEGA LUG OR ROMAGRIP RESTRAINTS
6	45° ELBOW - FLG X FLG
7	D.I.P. HALF SPOOL - FLG x PE
8	CAST IRON HYDRANT CAP WITH CHAIN
9	FLG X FLG REDUCER



2012 EDITION



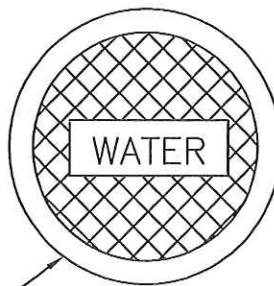
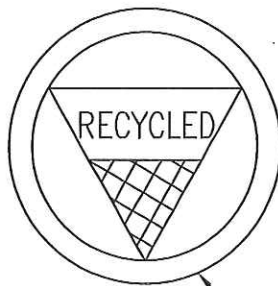
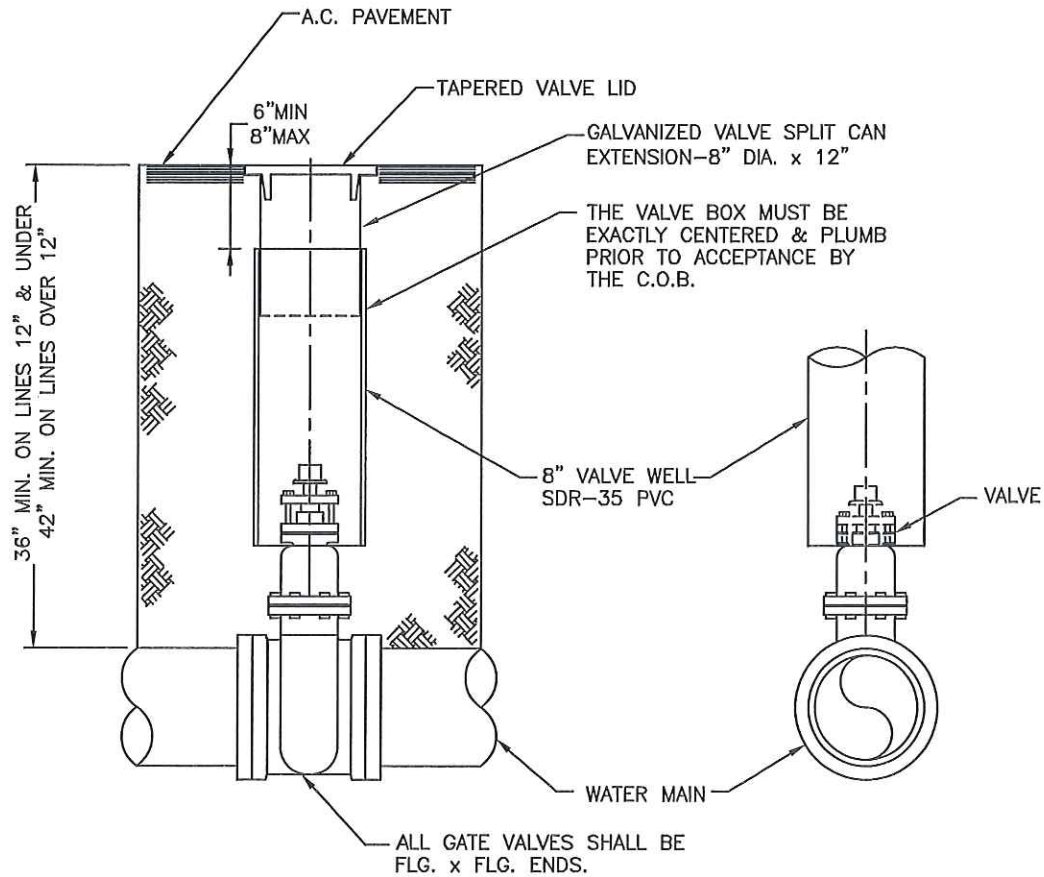
RECOMMENDED BY: *Arturo Vela* 12-12-12
ARTURO VELA, P.E., SR. ENGINEER DATE
APPROVED BY: *Arturo Vela* 12-12-12
KAHONO OEI, P.E., CITY ENGINEER DATE

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NO.

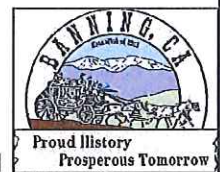
BLOW-OFF ASSEMBLY

W-19
2 OF 2



IRON COVER WITH THE WORD "WATER" CAST
THEREON FOR DOMESTIC WATER LINES OR
"RECYCLED" FOR RECLAIMED WATERLINES. VALVE
LIDS MUST BE TAPERED

2012 EDITION



RECOMMENDED BY: *Arturo Vela* 12-12-12
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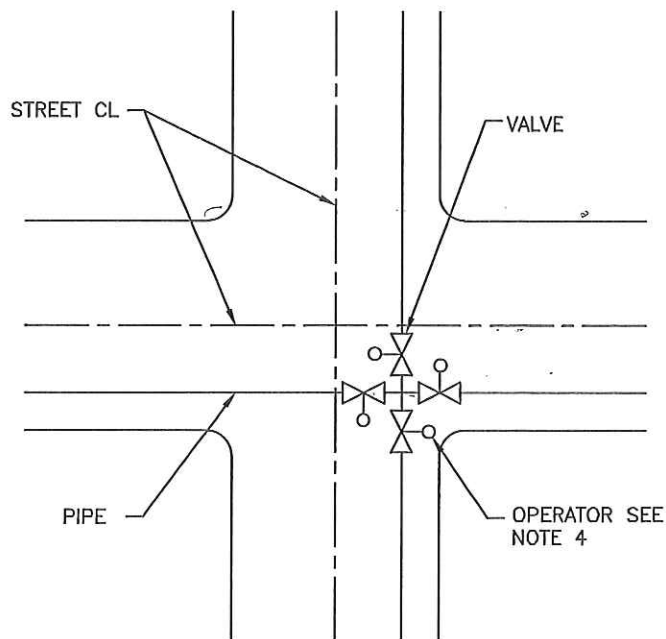
APPROVED BY: *Ch...* 12-12-12
KAHONO OEI, P.E., CITY ENGINEER DATE

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**VALVE AND VALVE
BOX INSTALLATION**

STANDARD
NO.

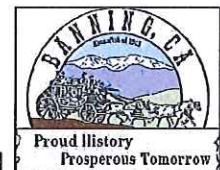
W-20
1 OF 2



TYPICAL BUTTERFLY
VALVE OPERATOR
POSITION

NOTES:

1. PROVIDE VALVE STEM EXTENSION IF DEPTH TO VALVE NUT EXCEEDS 4 FEET. SEE C.O.B. STD. DWG. W-21.
2. IN NEW TRACT DEVELOPMENTS EXTEND VALVE WELL PIPE 2' ABOVE GROUND ON "KEY VALVES" FOR EMERGENCY SHUTOFFS.
3. BUTTERFLY VALVE OPERATORS SHALL BE LOCATED ON THE LEFT-HAND SIDE OF THE VALVE (AT THE TEE OR CROSS), LOOKING THROUGH THE VALVE TOWARD THE PIPE END.
4. WHERE CONCRETE CROSS GUTTERS AT STREET INTERSECTIONS WILL INTERFERE WITH VALVE BOXES, THE PIPELINE SHALL BE MOVED TO A POSITION 7 FEET OFF THE CURB FACE TO CLEAR THE CROSS GUTTER.
5. VALVES TO BE LOCATED ADJACENT TO FITTINGS WHEREVER POSSIBLE.
6. VALVES BOLTED TO FITTINGS WILL NOT REQUIRE ANCHOR BLOCKS.
7. ALL GATE VALVES SHALL BE MUELLER, RESILIENT WEDGE, EPOXY COATED, FLG. X FLG. ENDS.
8. ALL BURIED METALIC SURFACES SHALL BE PROTECTED BY AN ASPHALTIC OR BITUMINUOS COATING IN ACCORDANCE WITH AWWA C151 (ANSI A21.51).



2012 EDITION



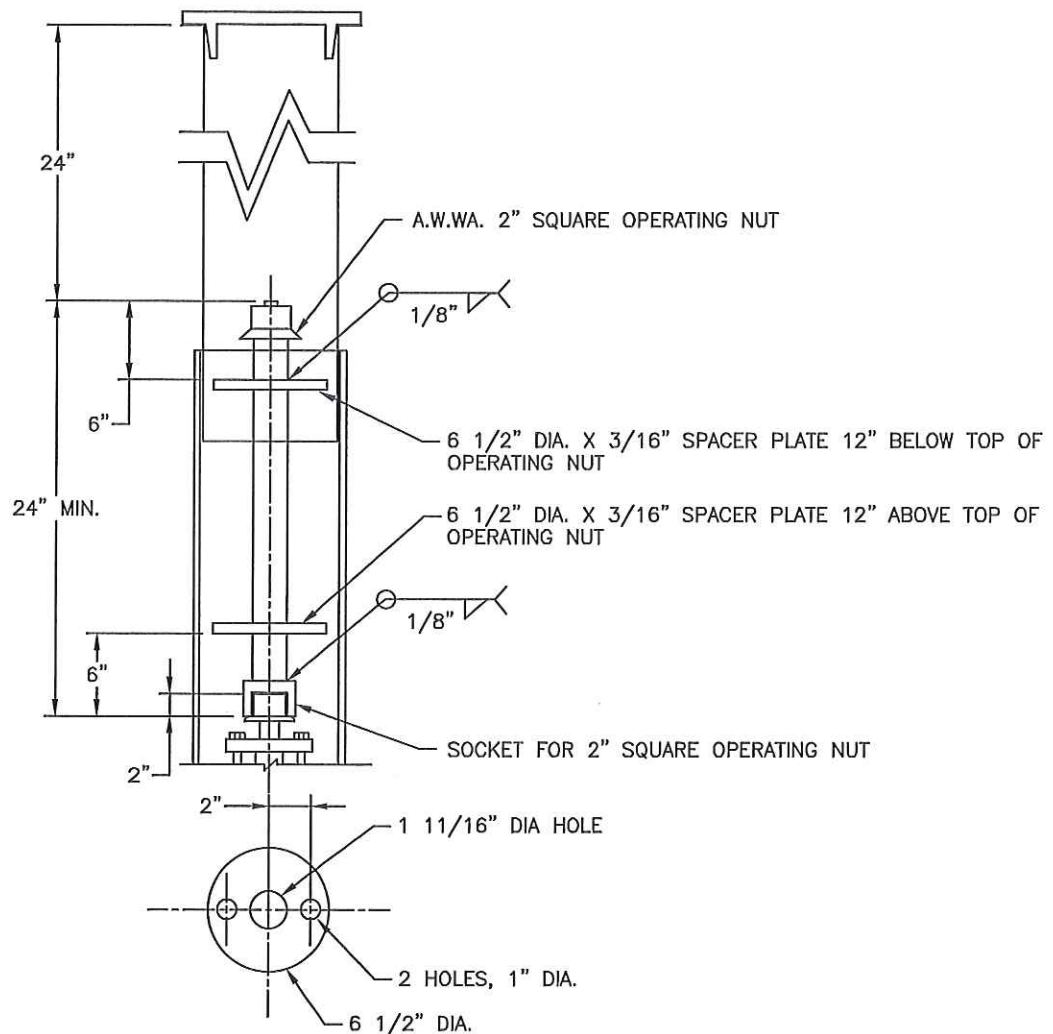
RECOMMENDED BY:	<i>Arturo Vela</i>	DATE	12-12-12
ARTURO VELA, P.E., SR. ENGINEER			
APPROVED BY:	<i>Ch</i>	DATE	12-12-12
KAHONO OEI, P.E., CITY ENGINEER			

CITY OF BANNING

**VALVE AND VALVE
BOX INSTALLATION**

STANDARD
NO.

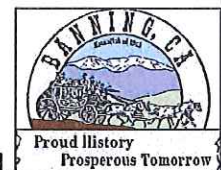
W-20
2 OF 2



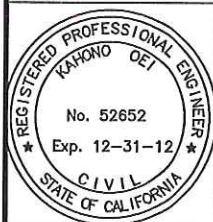
SPACER PLATE PLAN

NOTES:

1. PROVIDE VALVE STEM EXTENSION WHEN DEPTH TO OPERATING NUT EXCEEDS 48" (FABRICATE EXTENSION TO FIELD MEASUREMENT - SEE NOTE 2)
2. NO VALVE STEM EXTENSION SHALL BE LESS THAN 2 FEET IN LENGTH UNLESS APPROVED BY THE CITY ENGINEER.
3. PROVIDE TWO SPACER PLATES. FIRST PLATE IS 6" DOWN FROM TOP OF EXTENSION. SECOND PLATE IS 6" UP FROM BOTTOM OF EXTENSION



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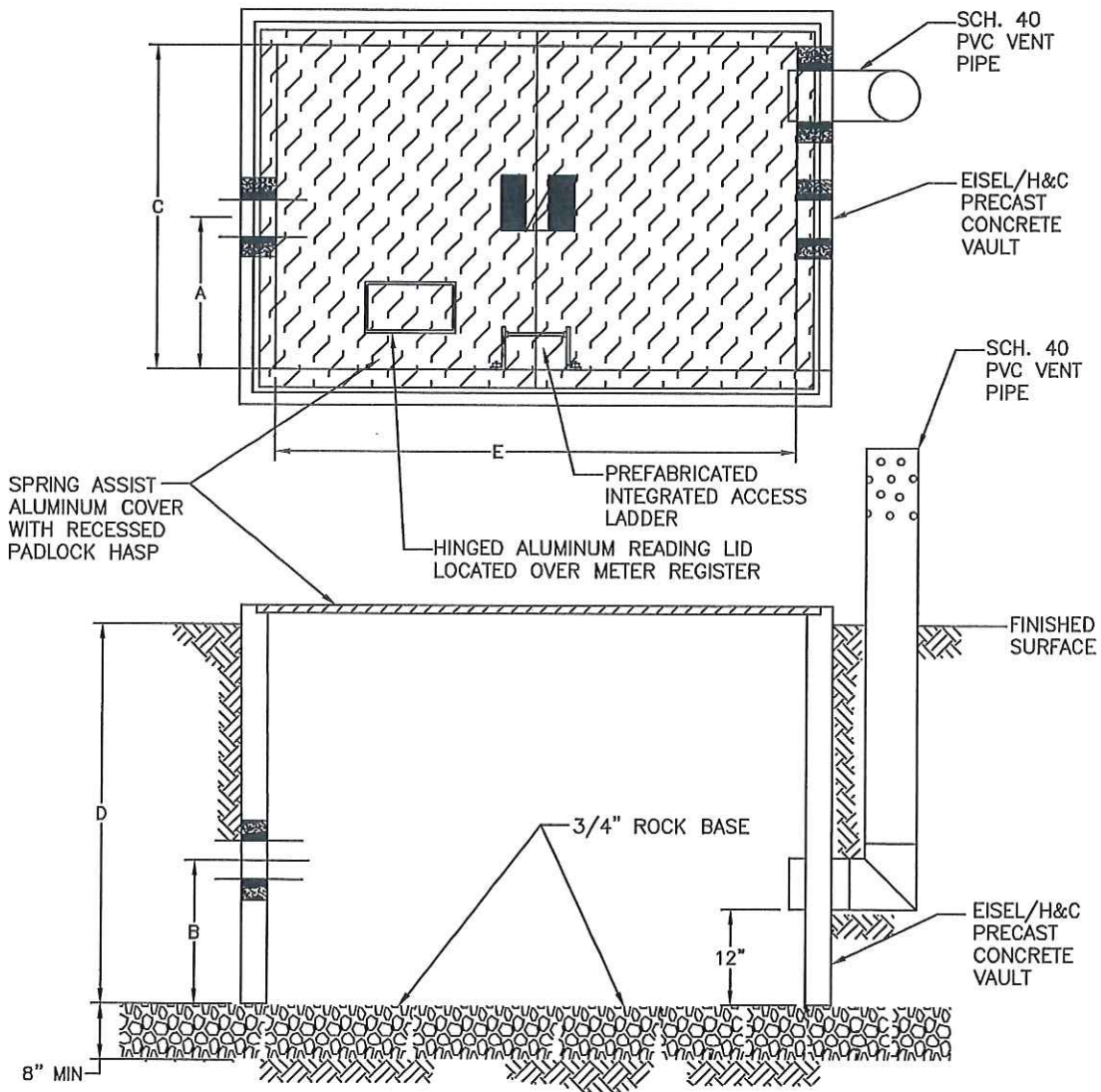
APPROVED BY: *Kahono OEI* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

**VALVE STEM
EXTENSION**

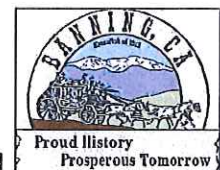
STANDARD
NO.

W-21

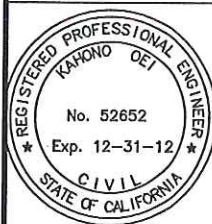


UNDERGROUND INSTALLATIONS						
PIPE SIZE	A	B	C	D	E	VAULT DIM
3"	24"	18"	4'	5'	6'	4'x6'
4"	24"	18"	4'	5'	6'	4'x6'
6"	24"	18"	4'	5'	8'	4'x8'
8"	24"	18"	4'	5'	12'	4'x12'
12"	36"	18"	6'	5'	12'	6'x12'

NOTE: VENT PIPE IS NOT REQUIRED WHEN D IS 3' OR LESS



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 ARTURO VELA, P.E., SR. ENGINEER DATE
 APPROVED BY: *Kahono OEI* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

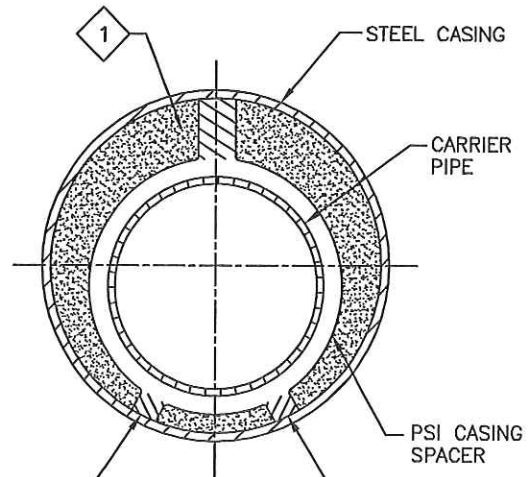
CITY OF BANNING

**PREFABRICATED
VAULT/LID/VENT ASSEMBLY**

STANDARD
NO.

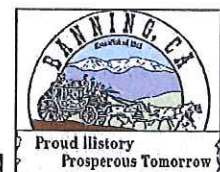
W-24

SCHEDULE STEEL CASING		
NOMINAL CARRIER PIPE SIZE	MINIMUM CASING SIZE	MIN. WALL THICK.
4"	10 3/4 O.D.	1/4"
6"	12 3/4 O.D.	1/4"
8"	16" O.D.	5/16"
12"	24" O.D.	3/8"
16"	30" O.D.	3/8"
20"	36" O.D.	3/8"
24"	36" O.D.	3/8"
30"	48" O.D.	3/8"

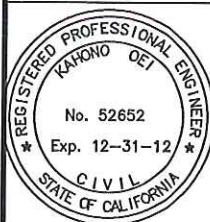


NOTES:

1. THE ANNULAR SPACE BETWEEN THE CASING AND THE CARRIER PIPE SHALL BE FILLED WITH AIR-BLOWN SAND.
2. CASING SHALL BE INSTALLED BY THE BORE, JACK AND/OR TUNNEL METHOD.
3. SIZE AND THICKNESS OF CASING SHALL BE AS SHOWN IN SCHEDULE. FOR LONG BORES OR SPECIAL SITUATIONS, GREATER WALL THICKNESS THAN SHOWN IN THE SCHEDULE MAY BE REQUIRED.
4. ALL STEEL CASING PIPE FIELD JOINTS SHALL BE WELDED FULL-CIRCUMFERENCE.
5. PSI CASING SPACERS SHALL BE PROVIDED PER DETAIL ABOVE.
6. CARRIER PIPE SHALL BE PRESSURE TESTED PRIOR TO FILLING CASING.
7. EACH END OF CASING SHALL BE SEALED WITH CONCRETE.
8. CONTRACTOR SHALL FURNISH ALL NECESSARY THRUST RESTRAINT DEVICES.
9. BACK FILL FOR CASING IN OPEN CUT SHALL BE IN ACCORDANCE WITH C.O.B. STD. DWG. W-30.
10. PSI CASING SPACERS REQUIRED, SIZE PER MANUFACTURERS RECOMMENDATIONS.



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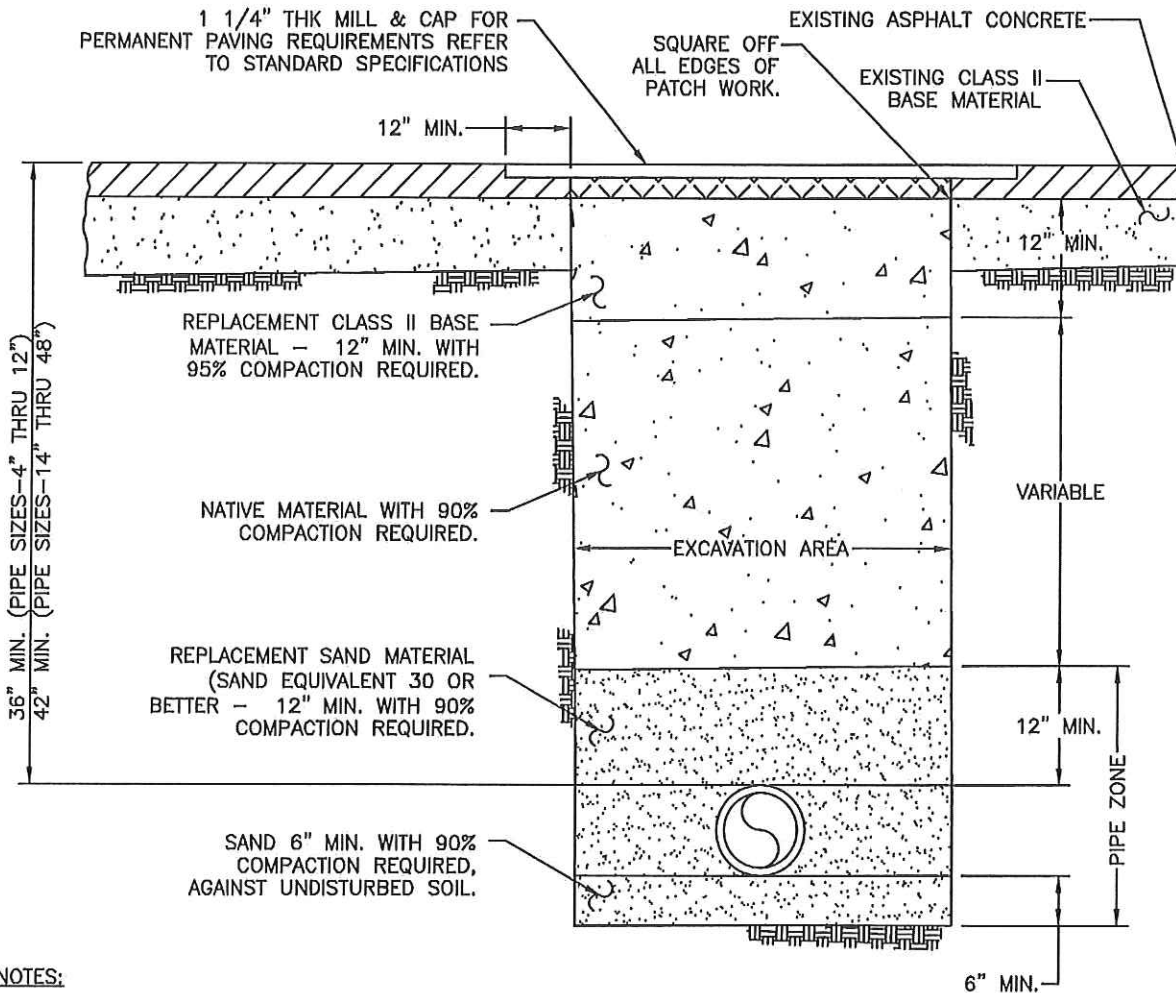
RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE
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 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

STEEL PIPE CASING

STANDARD NO.

W-26

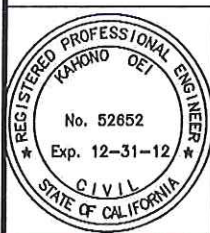


NOTES:

1. NO TRENCHING, CUTTING, POTHOLING, GRINDING OR CORING WILL BE ALLOWED, EXCEPT FOR EMERGENCIES OR TO PROVIDE SERVICE CONNECTIONS, IF THE STREET HAS BEEN PAVED OR RESURFACED WITHIN THE PREVIOUS THREE YEARS.
2. WHEN TRENCHING OR CUTTING INTO ANY STREET, FULL LANE WIDTH (10 FEET WIDE MINIMUM) ASPHALT CONCRETE (AC) PAVEMENT REPLACEMENT, AC COLD MILLING (0.10 FEET THICK) AND AC OVERLAY, SHALL BE REQUIRED.
3. REPLACEMENT AC PAVEMENT SHALL BE 1 INCH GREATER THAN EXISTING AC PAVEMENT THICKNESS OR 5 INCHES THICK, WHICHEVER IS GREATER.
4. OUTSIDE OF STREET RIGHT OF WAY, COMPACTION SHALL BE 90%.
5. ADDITIONAL ARTERIAL STREET BACKFILL MAY BE REQUIRED.
6. TRENCHES SHALL BE PAVED WITH TEMPORARY AC PAVEMENT IMMEDIATELY FOLLOWING WORK. ALL TEMPORARY ASPHALT SHALL BE A MINIMUM 3 INCHES THICK AND SHALL BE PROPERLY COMPACTED FLUSH WITH EXISTING PAVING USING A VIBRATORY ROLLER OR VIBRATORY PLATE. ALL TEMPORARY ASPHALT MUST BE KEPT UP DAILY AT THE CONTRACTOR'S EXPENSE. PERMANENT PAVING IS REQUIRED WITHIN 2 WEEKS OF EXCAVATION.
7. SEE SHEET 2 OF 2 FOR PIPE VS. TRENCH SIZES.



2012 EDITION



RECOMMENDED BY: *Arturo Vela* 5-10-13
 ARTURO VELA, P.E., SR. ENGINEER DATE

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 KAHONO OEI, P.E., CITY ENGINEER DATE

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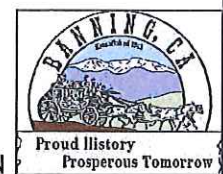
STANDARD NO.

TRENCH REPAIR DETAIL

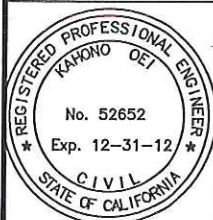
W-30
1 OF 2

TRENCH REPAIR—PIPE SIZE VS TRENCH SIZE

PIPE SIZE—INCHES (INSIDE DIAMETER)	TRENCH WIDTH—INCHES	
	MINIMUM	MAXIMUM
4	18	24
6	20	30
8	24	32
10	24	36
12	30	36
14	32	42
16	34	42
24	38	46
29	42	46
30	46	48
36	—	—
48	—	—



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RECOMMENDED BY: Arturo Vela 12-12-12 DATE

ARTURO VELA, P.E., SR. ENGINEER

APPROVED BY: Ch 12-12-12 DATE

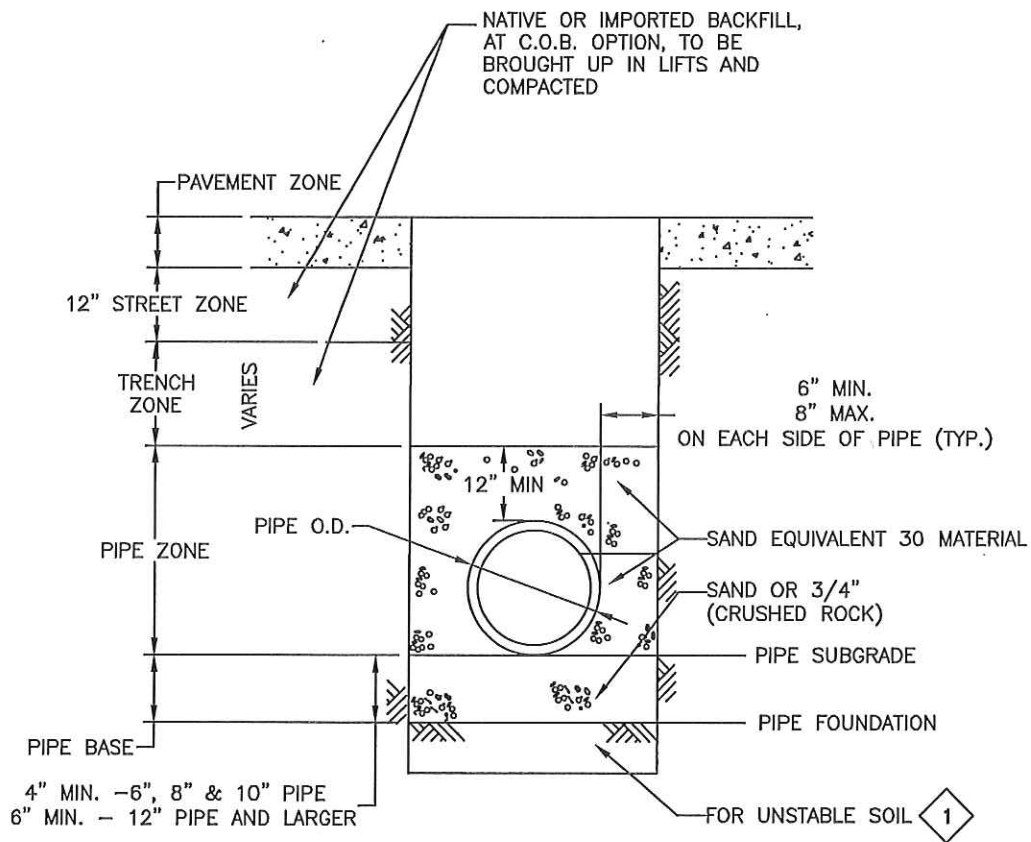
KAHONO OEI, P.E., CITY ENGINEER

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NO.

TRENCH REPAIR DETAIL

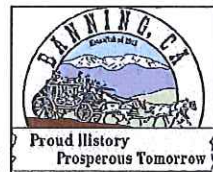
W-30
2 OF 2



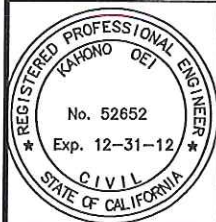
NORMAL BEDDING

NOTE:

- 1 IF UNSTABLE SOIL IS ENCOUNTERED, C.O.B. REPRESENTATIVE SHALL DETERMINE DEPTH OF REMOVAL AND SIZE OF FOUNDATION ROCK REFILL MATERIAL.



2012 EDITION



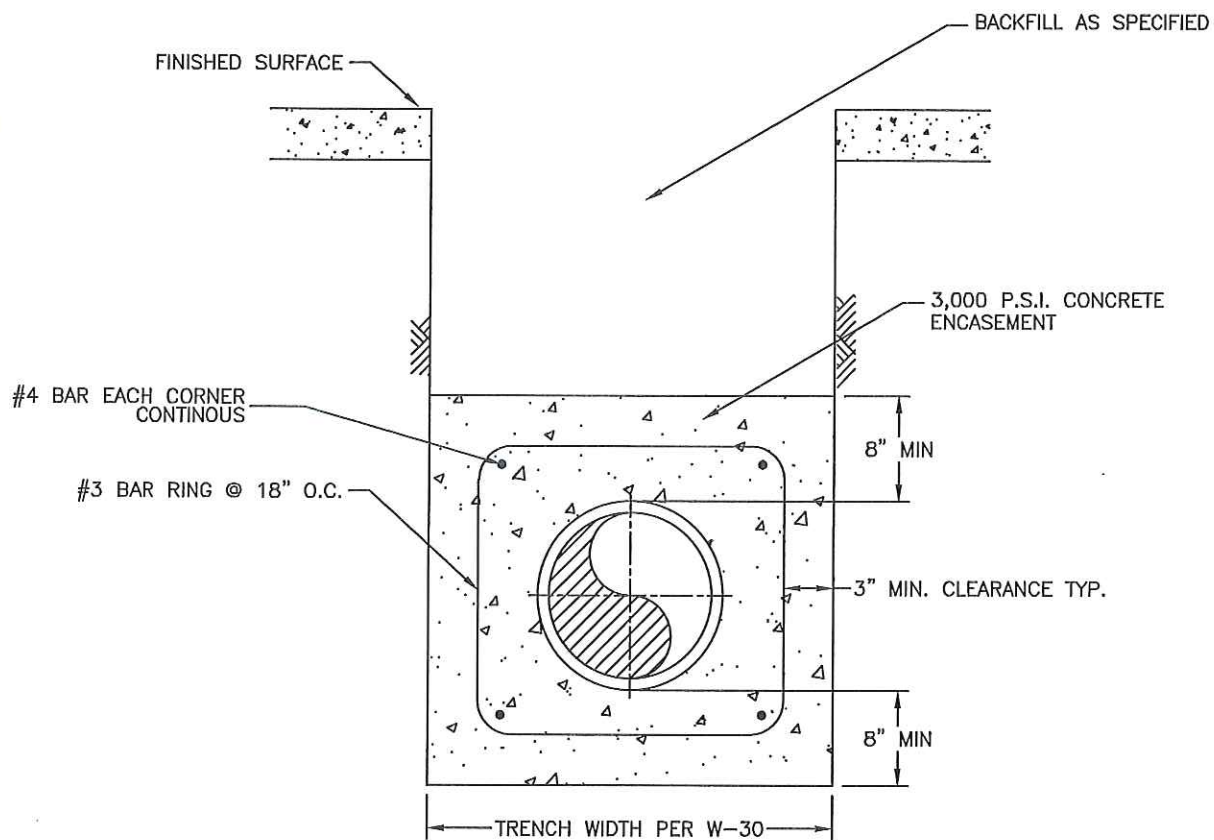
RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE
 APPROVED BY: *[Signature]* 12-12-12
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PIPE BEDDING DETAIL

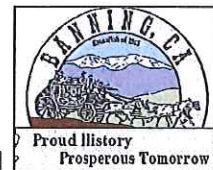
STANDARD NO.

W-31

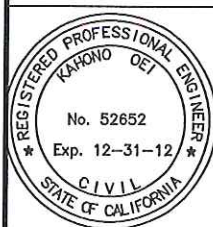


NOTES:

1. PIPE ENCASEMENT SHALL BE INSTALLED WHERE SPECIFIED.
2. CONTRACTOR SHALL TAKE DUE PRECAUTION AGAINST PIPE FLOTATION DURING THE PLACEMENT OF CONCRETE.
3. IF ANY PIPE APPURTENANCES, SUCH AS OUTLETS AND MANWAYS ARE REQUIRED WITHIN THE LIMITS OF THE PIPE ENCASEMENT, ENCASEMENT SHALL BE FORMED SO THAT REASONABLE ACCESS IS AVAILABLE TO THE PIPE APPURTENANCE.



2012 EDITION



RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE
 APPROVED BY: *Kahono* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

**PIPE ENCASEMENT
DETAIL**

STANDARD
NO.

W-33