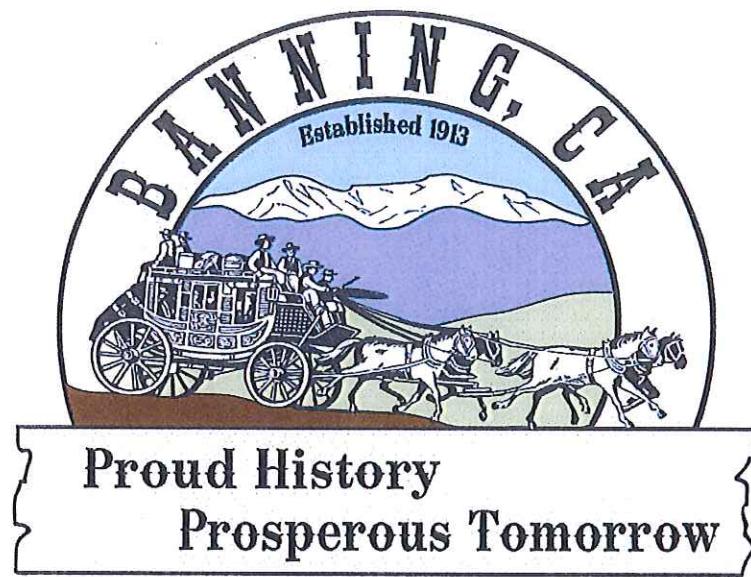


PUBLIC WORKS STANDARD DRAWINGS



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-2 POTABLE WATER LINE LOCATION
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FIRE SPRINKLER SERVICE LINE
- W-5 3/4" THRU 1" COPPER SERVICE INSTALLATION
- W-7 1 1/2" THRU 2" COPPER SERVICE INSTALLATION
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ASSEMBLY ABOVE GROUND FIRE LINE
- W-15 1" AND 2" AIR AND VACUUM VALVE ASSEMBLY
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- W-21 VALVE STEM EXTENSION
- W-24 PREFABRICATED VAULT/LID/VENT ASSEMBLY
- W-26 STEEL CASING PIPE
- W-30 TRENCH REPAIR DETAIL
- W-31 PIPE BEDDING DETAILS
- W-33 PIPE ENCASEMENT DETAIL



2012 EDITION



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

CITY OF BANNING
WATER STANDARD INDEX

STANDARD NO.

WSI

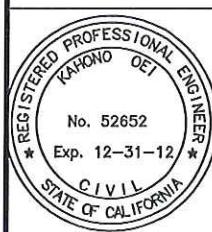
STANDARD LEGEND

— — — — —	RIGHT OF WAY (R.O.W.)
— — — — —	CENTERLINE
W x	EXISTING WATER LINE
W	PROPOSED WATER LINE
NPW x	EXISTING RECYCLED WATER LINE
NPW	PROPOSED RECYCLED WATER LINE
SS x	EXISTING SEWER LINE
SS	PROPOSED SEWER LINE
NG x	EXISTING GAS LINE
NG	PROPOSED GAS LINE
□	SERVICE LATERAL
— — — — —	ENCASEMENT
E x	EXISTING ELECTRICAL CONDUIT
E	PROPOSED ELECTRICAL CONDUIT
T x	EXISTING TELEPHONE CONDUIT
T	PROPOSED TELEPHONE CONDUIT
FO x	EXISTING FIBER OPTIC CABLE
FO	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	
— — — — —	J.M.H.	JUNCTION MANHOLE	
BUTTERFLY VALVE	M.H.	MANHOLE	
— — — — —	V.C.P.	VITRIFIED CLAY PIPE	
GATE VALVE	— — — — —	CLEAN-OUT	
— — — — —	— — — — —	HOUSE CONNECTION SEWER	
FIRE HYDRANT	— — — — —	WYE BRANCH	
— — — — —	— — — — —	— — — — —	
BLOW-OFF	— — — — —	— — — — —	
— — — — —	— — — — —	— — — — —	
AIR & VACUUM VALVE ASSEMBLY (SIZE PER PLAN)	— — — — —	— — — — —	
— — — — —	— — — — —	— — — — —	
POTABLE WATER QUALITY SAMPLE STATION	— — — — —	— — — — —	
— — — — —	— — — — —	— — — — —	
NON-POTABLE WATER QUALITY SAMPLE STATION	— — — — —	— — — — —	



2012 EDITION



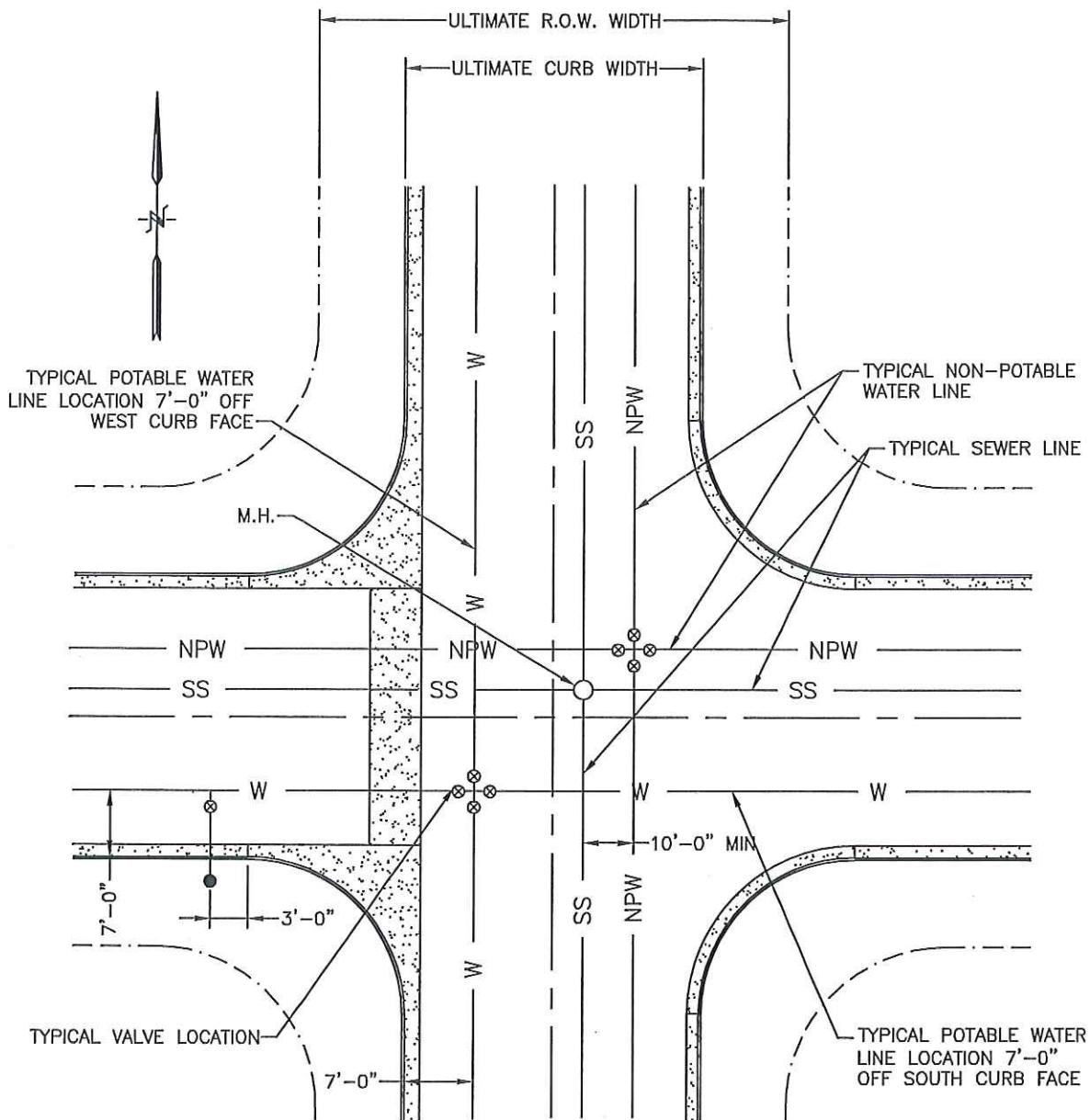
RECOMMENDED BY: ARTURO VELA, P.E., SR. ENGINEER	12-12-12
APPROVED BY: KAHONO OEI, P.E., CITY ENGINEER	12-12-12

CITY OF BANNING

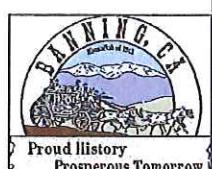
STANDARD NO.

STANDARD LEGEND

W-1
1 OF 1



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



2012 EDITION



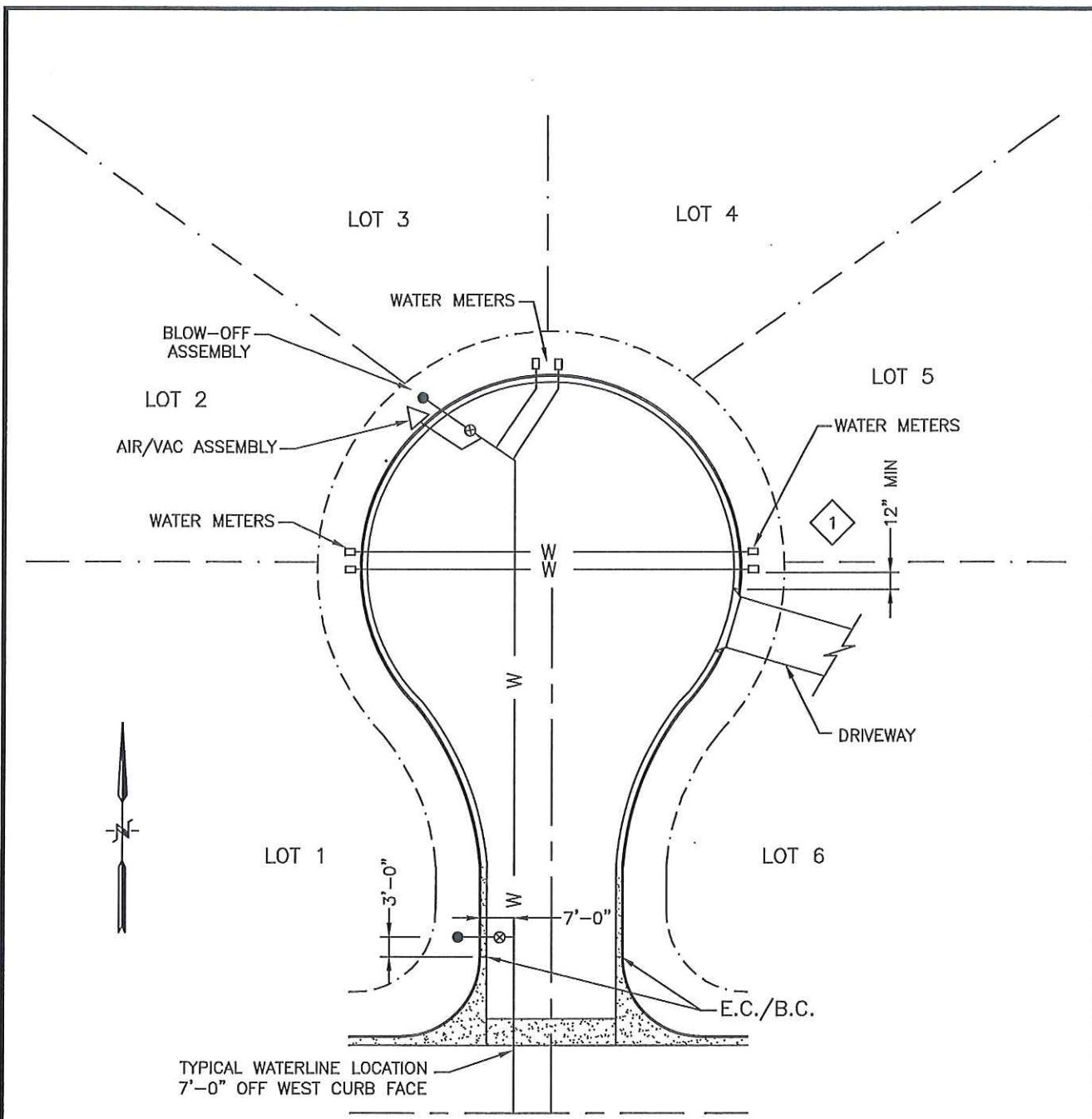
RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE
 APPROVED BY: *Ch* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

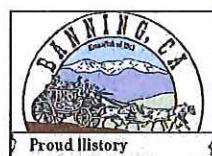
**POTABLE WATER
LINE LOCATION**

STANDARD
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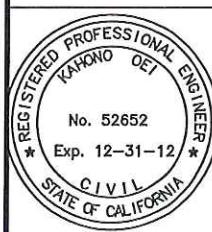
W-2
1 OF 2



1 METERS, AIR/VAC ASSEMBLIES, FIRE HYDRANTS AND BLOW OFFS
SHALL NOT BE LOCATED WITHIN 12" OF DRIVEWAY APPROACH
OR OTHER UTILITIES



2012 EDITION



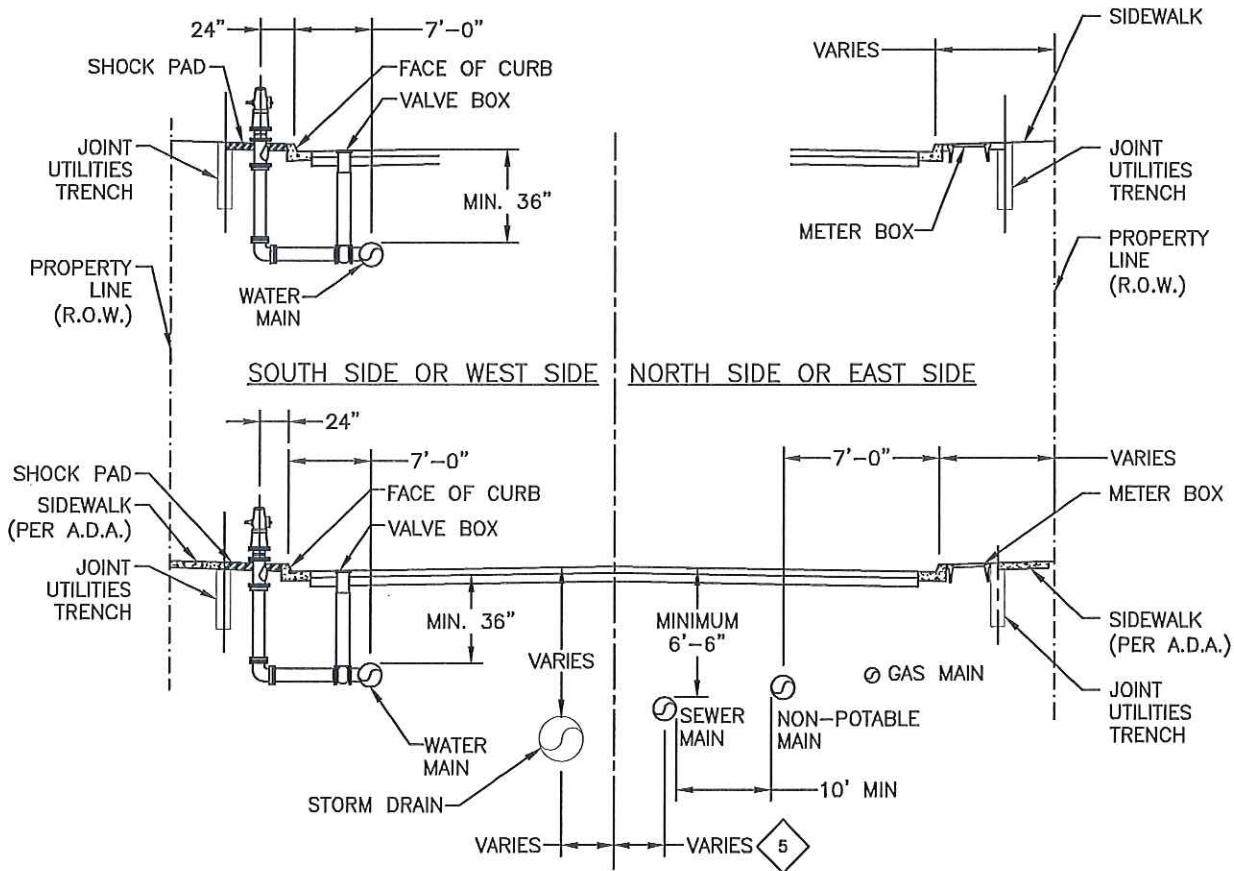
RECOMMENDED BY: *Arturo Vela* 12-12-12
ARTURO VELA, P.E., SR. ENGINEER DATE
APPROVED BY: *Chm* 12-12-12
KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

**POTABLE WATER
LINE LOCATION**

STANDARD
NO.

W-2
2 OF 2



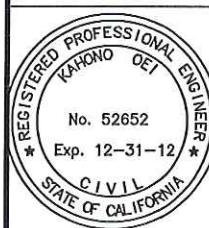
NOTES:

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.



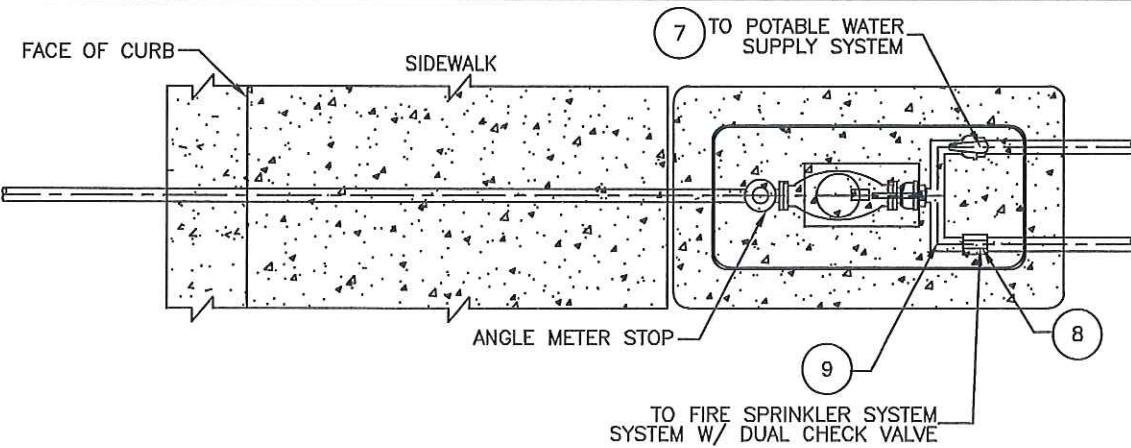
2012 EDITION



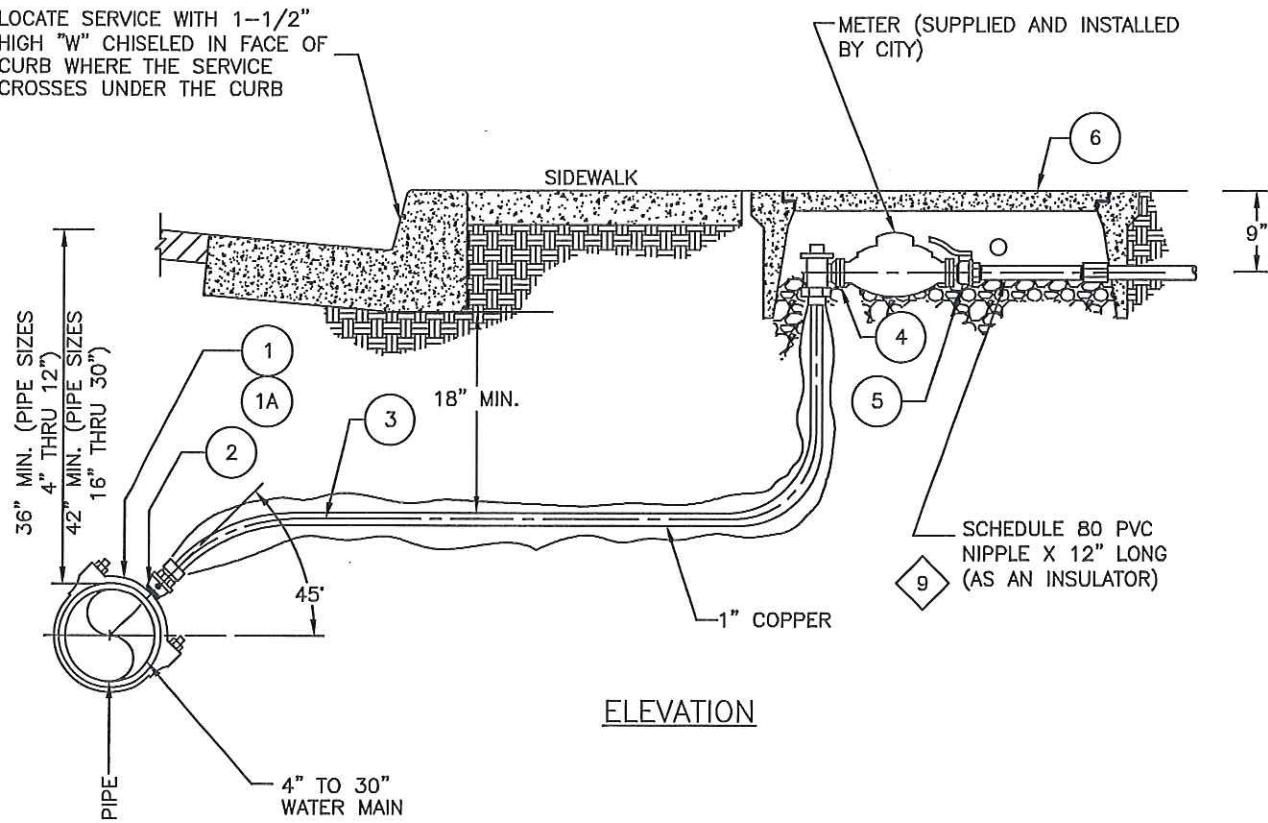
RECOMMENDED BY: *A.H. Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE
 APPROVED BY: *Ch* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING
UTILITY LOCATIONS
SECTIONS

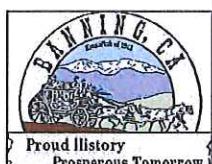
STANDARD NO.
W-3
 1 OF 1



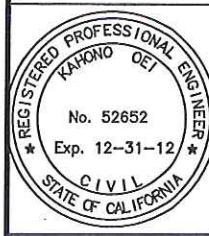
LOCATE SERVICE WITH 1-1/2" HIGH "W" CHISELED IN FACE OF CURB WHERE THE SERVICE CROSSES UNDER THE CURB



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



2012 EDITION



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

CITY OF BANNING

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

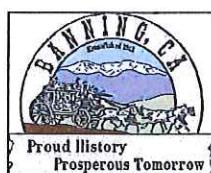
STANDARD NO.
W-4
1 OF 2

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

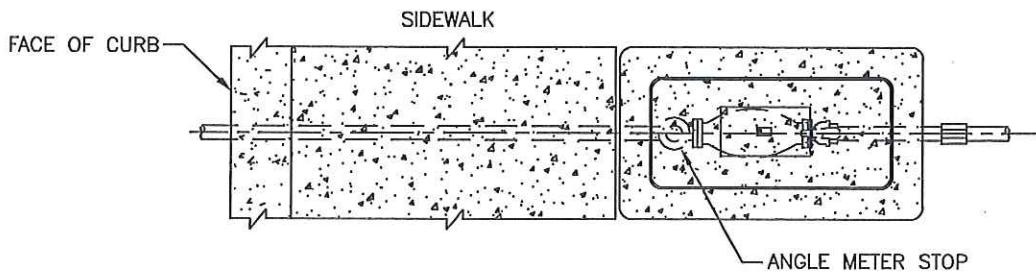
NOTES:

1. SERVICE SADDLE SHALL NOT BE INSTALLED WITHIN 12" OF VALVE, COUPLING, JOINT OR FITTING.
2. BLUE PLASTIC COATED OR POLY-SLEEVE SHALL BE SECURED AT THE CORP. AND THE ANGLE VALVE WITH 10 MIL. TAPE.
3. SET TOP OF METER BOX FLUSH WITH SIDEWALK AS SHOWN.
4. THE CORPORATION STOP TAP SHALL BE MADE AT A 45° DEGREE ANGLE FROM THE TOP OF THE PIPE.
5. THE WATER SERVICE SHALL EXTEND PERPENDICULAR TO THE CENTERLINE OF THE STREET FROM THE WATER MAIN TO THE METER STOP.
6. METER BOX SHALL BE SET BEHIND SIDEWALK.
7. ALL CONNECTIONS TO COPPER TUBING SHALL BE COMPRESSION FITTINGS.
8. ALL SERVICE LATERALS WILL BE LOCATED AT PROPERTY LINES.
9. 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.
10. APPROVALS TO SUBSTITUTIONS TO THE ABOVE MATERIAL LIST MUST BE ACQUIRED FROM THE CITY ENGINEER.



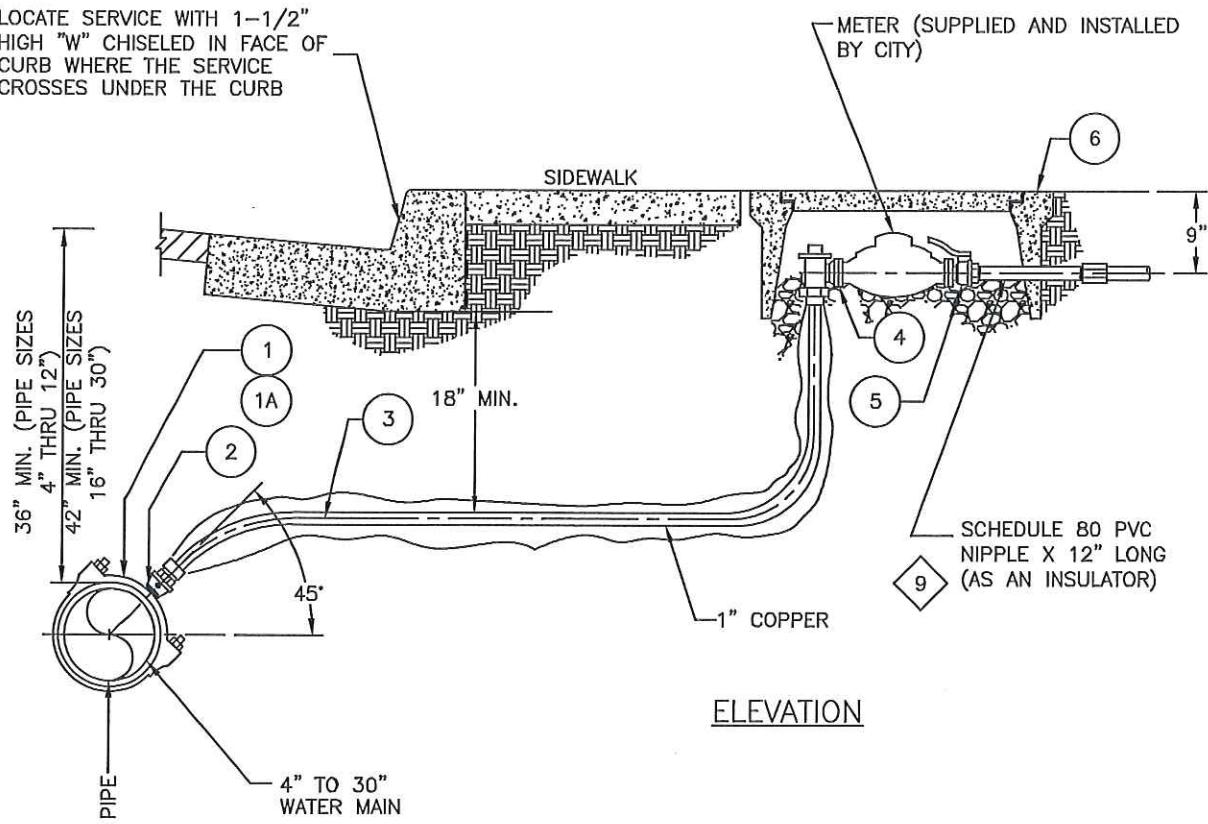
2012 EDITION

 <p>REGISTERED PROFESSIONAL ENGINEER KAHONO OEI No. 52652 Exp. 12-31-12 CIVIL STATE OF CALIFORNIA</p>	<p>RECOMMENDED BY: ARTURO VELA, P.E., SR. ENGINEER</p> <p>APPROVED BY: KAHONO OEI, P.E., CITY ENGINEER</p>	<p><i>Arturo Vela</i> 12-12-12</p> <p><i>KAHONO OEI</i> 12-12-12</p>	<p>CITY OF BANNING</p>	STANDARD NO.
			<p>3/4" THRU 1" POTABLE COPPER DUAL SERVICE INSTALLATION W/ FIRE SPRINKLER SERVICE LINE</p>	<p>W-4</p> <p>2 OF 2</p>



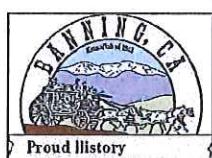
PLAN

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

CITY OF BANNING

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

STANDARD
NO.

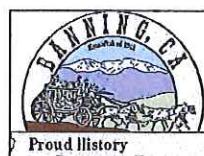
W-5
1 OF 2

LIST OF MATERIALS

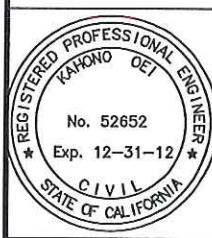
ITEM NO.	SIZE & DESCRIPTION	MANUFACTURER	SPEC. NO.
1	DOUBLE STRAP SERVICE SADDLE I.P. OUTLET (FOR D.I.P. MAINS) DUCTILE IRON BODY STAINLESS STEEL STRAPS	ROMAC FORD MUELLER SMITH BLAIR	202S-PIPE O.D.-1" I.P. DR2S-PIPE O.D.-1" I.P. FS202-PIPE O.D.-I.P. 100 317
2	BRONZE BALL CORPORATION STOP M.I.P.T. X 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:

1. SERVICE SADDLE SHALL NOT BE INSTALLED WITHIN 12" OF VALVE, COUPLING, JOINT OR FITTING.
2. BLUE PLASTIC COATED OR POLY-SLEEVE SHALL BE SECURED AT THE CORP. AND THE ANGLE VALVE WITH 10 MIL. TAPE.
3. SET TOP OF METER BOX FLUSH WITH SIDEWALK AS SHOWN.
4. THE CORPORATION STOP TAP SHALL BE MADE AT A 45° DEGREE ANGLE FROM THE TOP OF THE PIPE.
5. THE WATER SERVICE SHALL EXTEND PERPENDICULAR TO THE CENTERLINE OF THE STREET FROM THE WATER MAIN TO THE METER STOP.
6. METER BOX SHALL BE SET BEHIND SIDEWALK.
7. ALL CONNECTIONS TO COPPER TUBING SHALL BE COMPRESSION FITTINGS.
8. ALL SERVICE LATERALS WILL BE LOCATED AT PROPERTY LINES.
9. 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.
10. APPROVALS TO SUBSTITUTIONS TO THE ABOVE MATERIAL LIST MUST BE ACQUIRED FROM THE CITY ENGINEER.



2012 EDITION



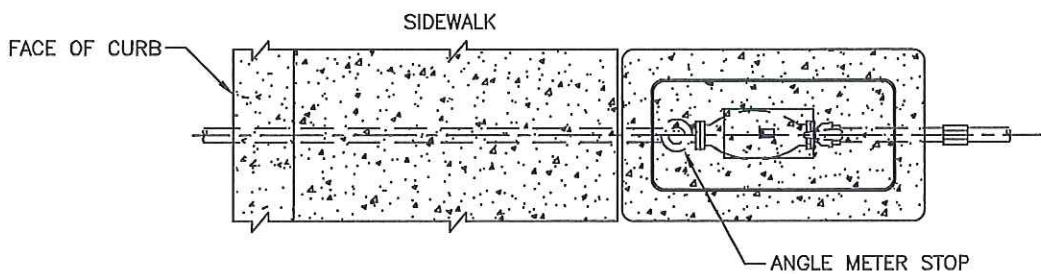
RECOMMENDED BY: *Arturo Vela* 12-12-12
ARTURO VELA, P.E., SR. ENGINEER DATE
APPROVED BY: *Ch* 12-12-12
KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

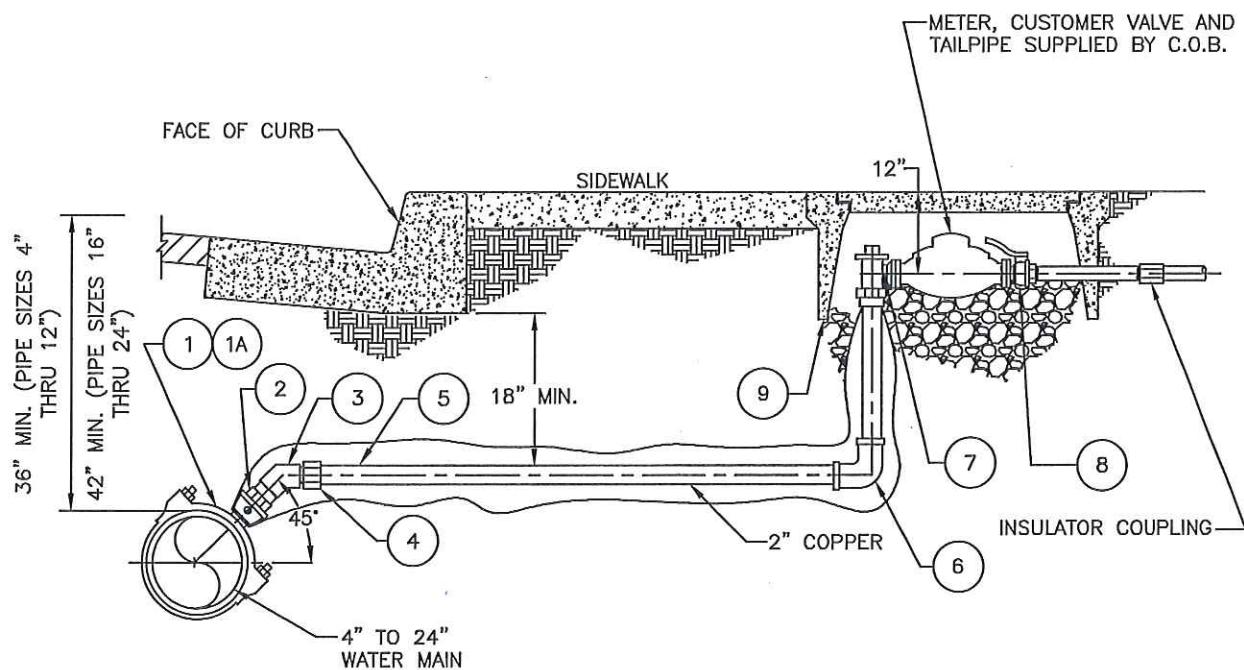
STANDARD
NO.

3/4" THRU 1" POTABLE COPPER
SERVICE INSTALLATION

W-5
2 OF 2

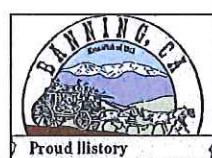


PLAN

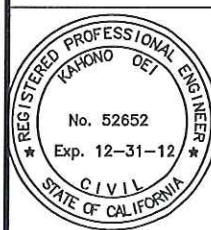


ELEVATION

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: *Ch* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

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

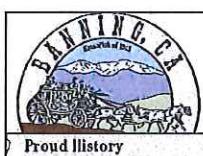
STANDARD
NO.
W-7
1 OF 2

NOTES:

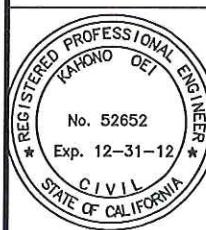
1. SERVICE SADDLE SHALL NOT BE INSTALLED WITHIN 12" OF VALVE, COUPLING, JOINT OR FITTING.
2. POLY-SLEEVE (BLUE FOR POTABLE WATER, PURPLE FOR NON-POTABLE/IRRIGATION) SHALL BE SECURED AT THE CORP. AND THE ANGLE VALVE WITH 10 MIL. TAPE.
3. SET TOP OF METER BOX FLUSH WITH SIDEWALK OR CURB AS SHOWN.
4. THE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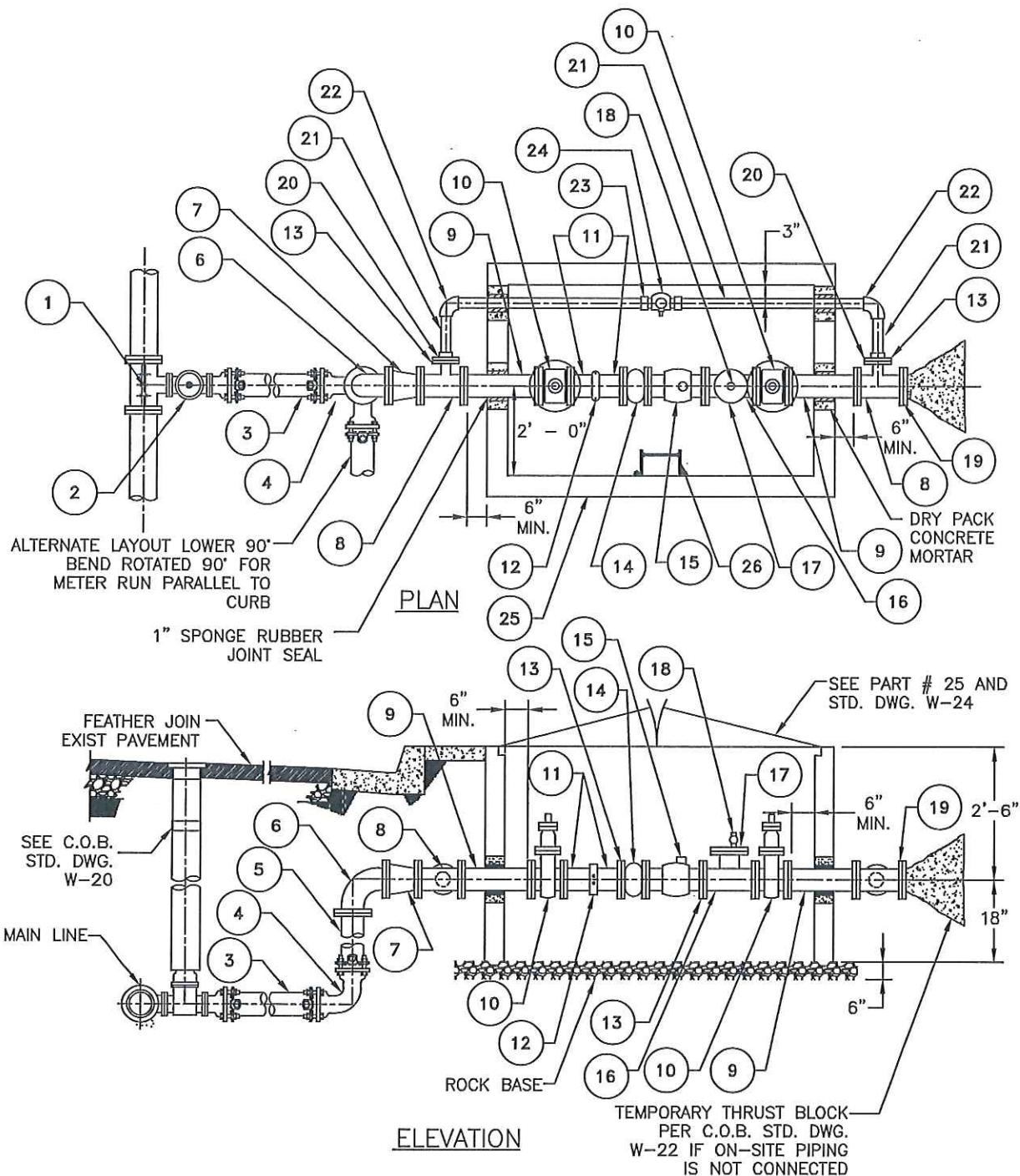
RECOMMENDED BY: ARTURO VELA, P.E., SR. ENGINEER	12-12-12
APPROVED BY: KAHONO OEI, P.E., CITY ENGINEER	12-12-12

CITY OF BANNING

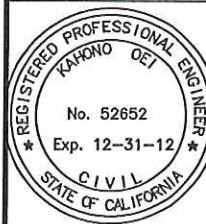
STANDARD NO.

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

**W-7
2 OF 2**



2012 EDITION



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

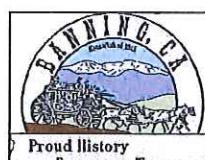
APPROVED BY:
KAHONO OEI, P.E., CITY ENGINEER DATE
12-12-12

CITY OF BANNING
3" AND 4" METER
SERVICE INSTALLATION

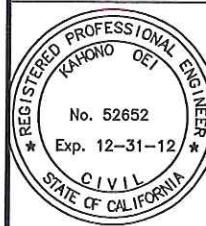
STANDARD NO.
W-8
1 OF 2

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, P.E., SR. ENGINEER

12-12-12

CITY OF BANNING

STANDARD
NO.

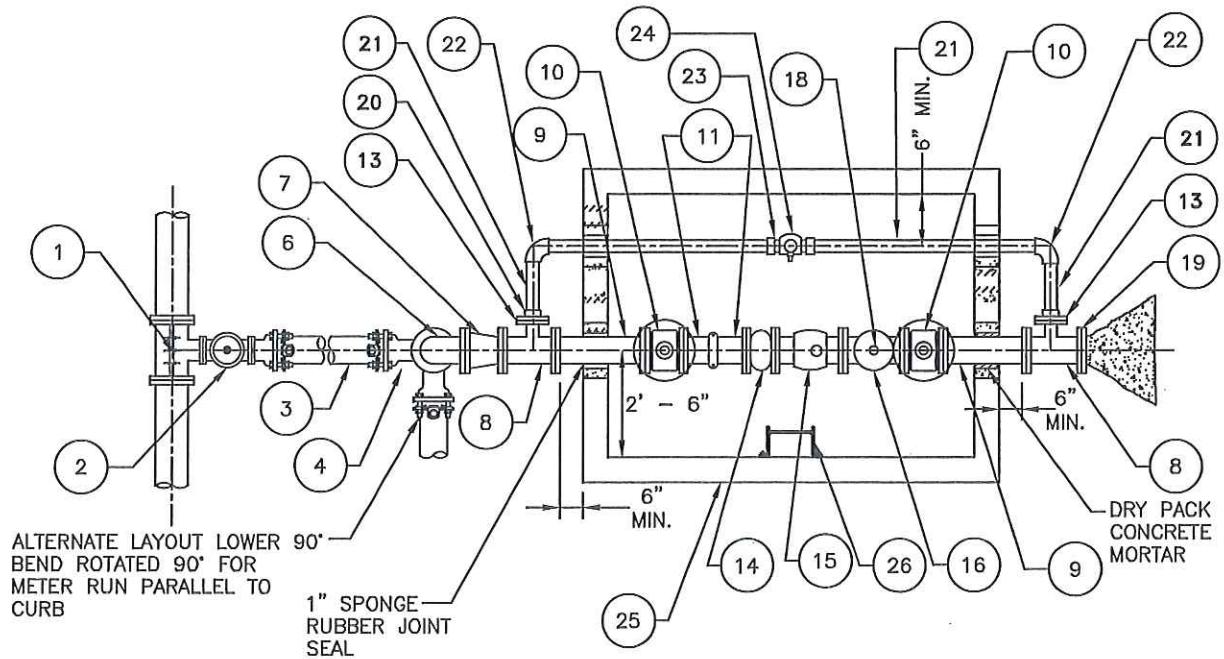
APPROVED BY:

KAHONO OEI, P.E., CITY ENGINEER

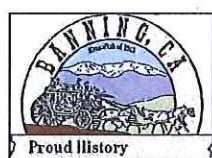
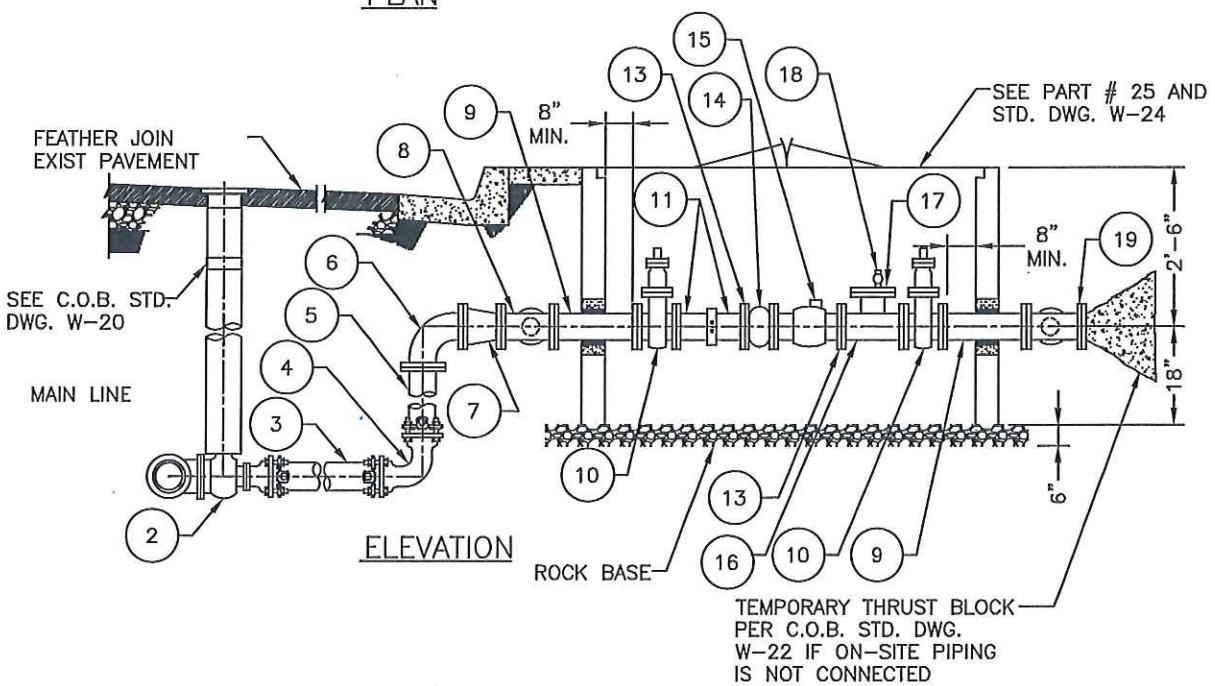
12-12-12

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

W-8
2 OF 2



PLAN



2012 EDITION



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

CITY OF BANNING

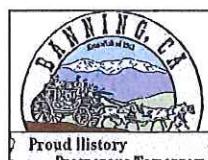
**6" - 8" METER
INSTALLATION**

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



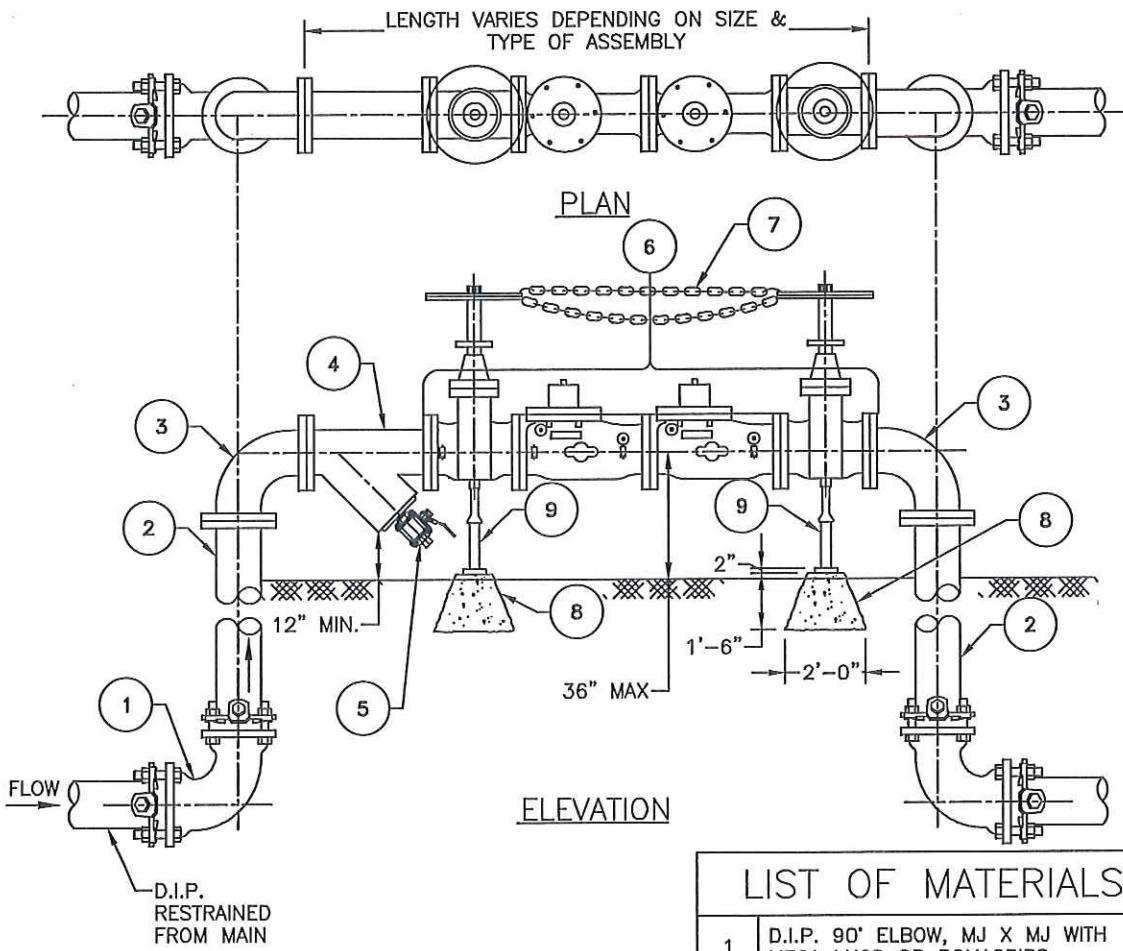
RECOMMENDED BY: ARTURO VELA, P.E., SR. ENGINEER	12-12-12
APPROVED BY: KAHONO OEI, P.E., CITY ENGINEER	12-12-12

CITY OF BANNING

STANDARD
NO.

**6" - 8" METER
INSTALLATION**

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: *John* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

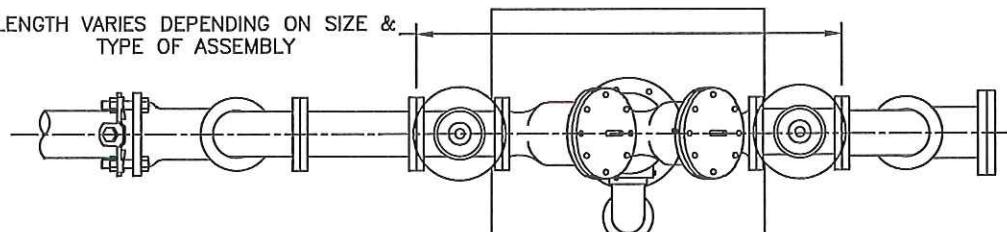
CITY OF BANNING

STANDARD NO.

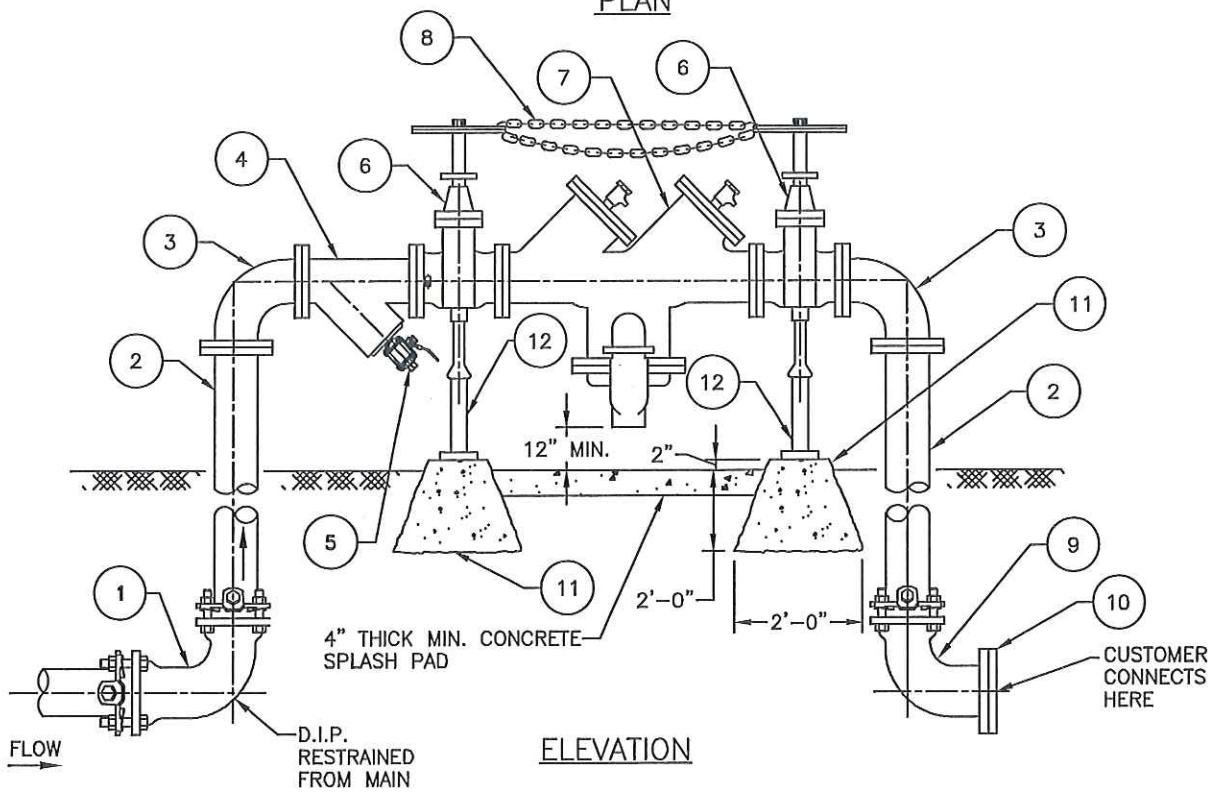
**DOUBLE CHECK
BACKFLOW ASSEMBLY**

W-10
1 OF 1

LENGTH VARIES DEPENDING ON SIZE & TYPE OF ASSEMBLY



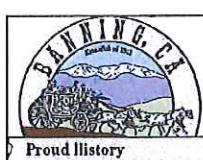
PLAN



ELEVATION

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



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

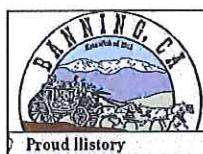
CITY OF BANNING

**REDUCED PRESSURE
BACKFLOW ASSEMBLY**

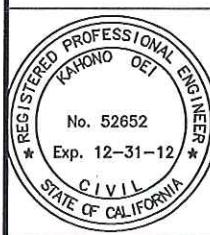
STANDARD
NO.

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



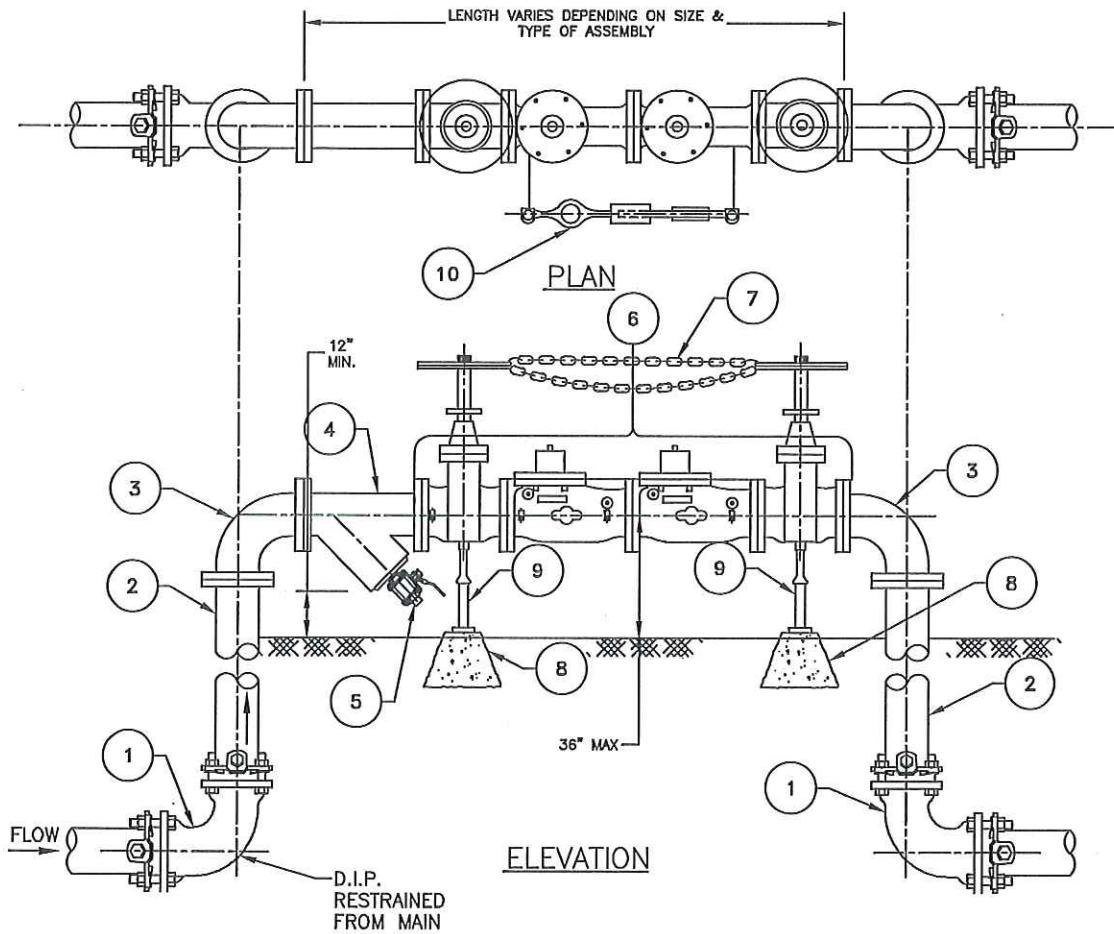
2012 EDITION



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

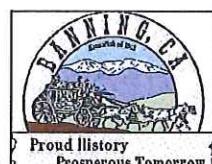
CITY OF BANNING
REDUCED PRESSURE
BACKFLOW ASSEMBLY

STANDARD NO.
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, P.E., SR. ENGINEER

12-12-12

DATE

APPROVED BY:

KAHONO OEI, P.E., CITY ENGINEER

12-12-12

DATE

CITY OF BANNING

STANDARD NO.

DOUBLE CHECK OR REDUCED
PRESSURE DETECTOR ASSEMBLY
ABOVE GROUND FIRE LINE

W-13

1 OF 2

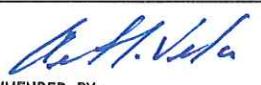
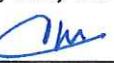
LIST OF MATERIALS	
1	D.I.P. 90° ELBOW, MJ x MJ WITH MEGA LUGS OR ROMAGRIPS
2	D.I.P. HALF SPOOL, FLG x PE
3	D.I.P. 90° ELBOW, FLG x FLG
4	WYE STRAINER
5	FULL SIZE BLOWOFF VALVE WITH PLUG TO PREVENT TAMPERING
6	APPROVED REDUCED PRESSURE BACKFLOW OR REDUCED PRESSURE DETECTOR ASSEMBLY (WILKINS 375 SERIES 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.

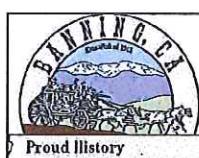
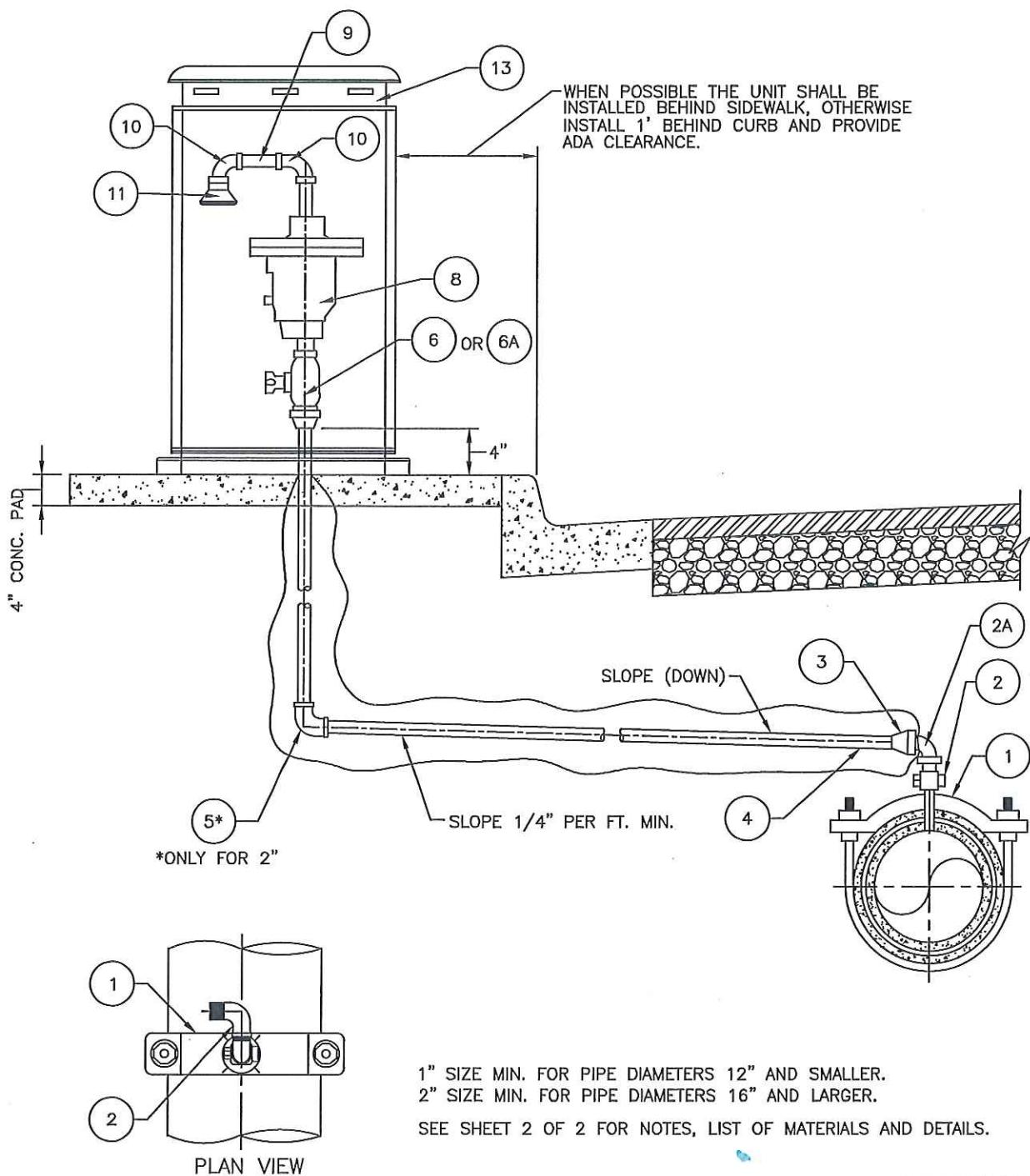
NOTES:

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



2012 EDITION

 REGISTERED PROFESSIONAL KAHONO OEI ENGINEER No. 52652 Exp. 12-31-12 CIVIL STATE OF CALIFORNIA	RECOMMENDED BY:  ARTURO VELA, P.E., SR. ENGINEER	12-12-12	CITY OF BANNING	STANDARD NO.
	APPROVED BY:  KAHONO OEI, P.E., CITY ENGINEER	12-12-12	DOUBLE CHECK OR REDUCED PRESSURE DETECTOR ASSEMBLY ABOVE GROUND FIRE LINE	W-13 2 OF 2



2012 EDITION



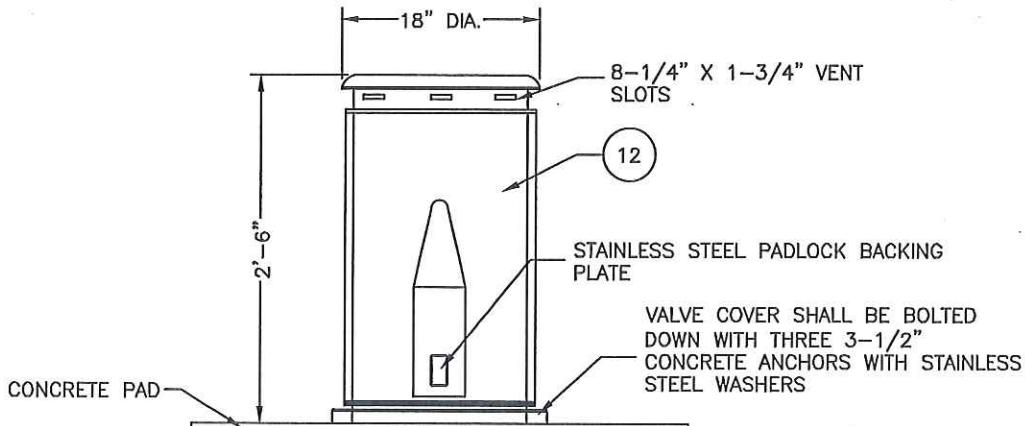
RECOMMENDED BY:
ARTURO VELA, P.E., SR. ENGINEER
12-12-12
APPROVED BY:
KAHONO OEI, P.E., CITY ENGINEER
12-12-12

CITY OF BANNING

STANDARD
NO.

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

W-15
1 OF 2



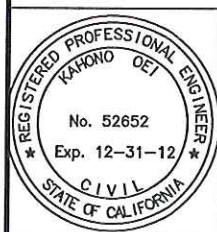
Vault Cover Detail
FOR 1" AND 2" AIR VAC

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 1½" 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)		



2012 EDITION



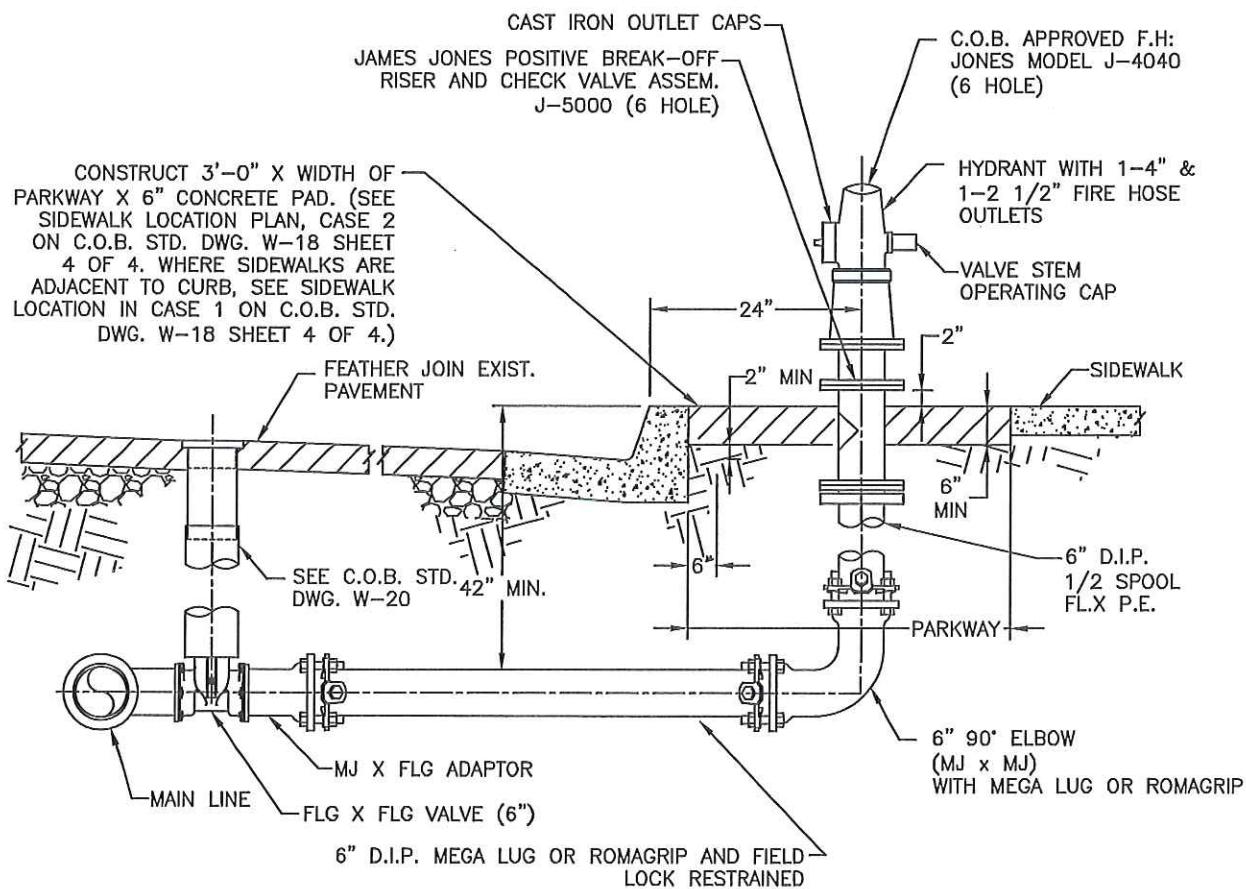
RECOMMENDED BY: *Arturo Vela* 12-12-12
ARTURO VELA, P.E., SR. ENGINEER DATE
APPROVED BY: *Chu* 12-12-12
KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

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

**STANDARD
NO.**

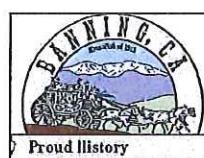
**W-15
2 OF 2**



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



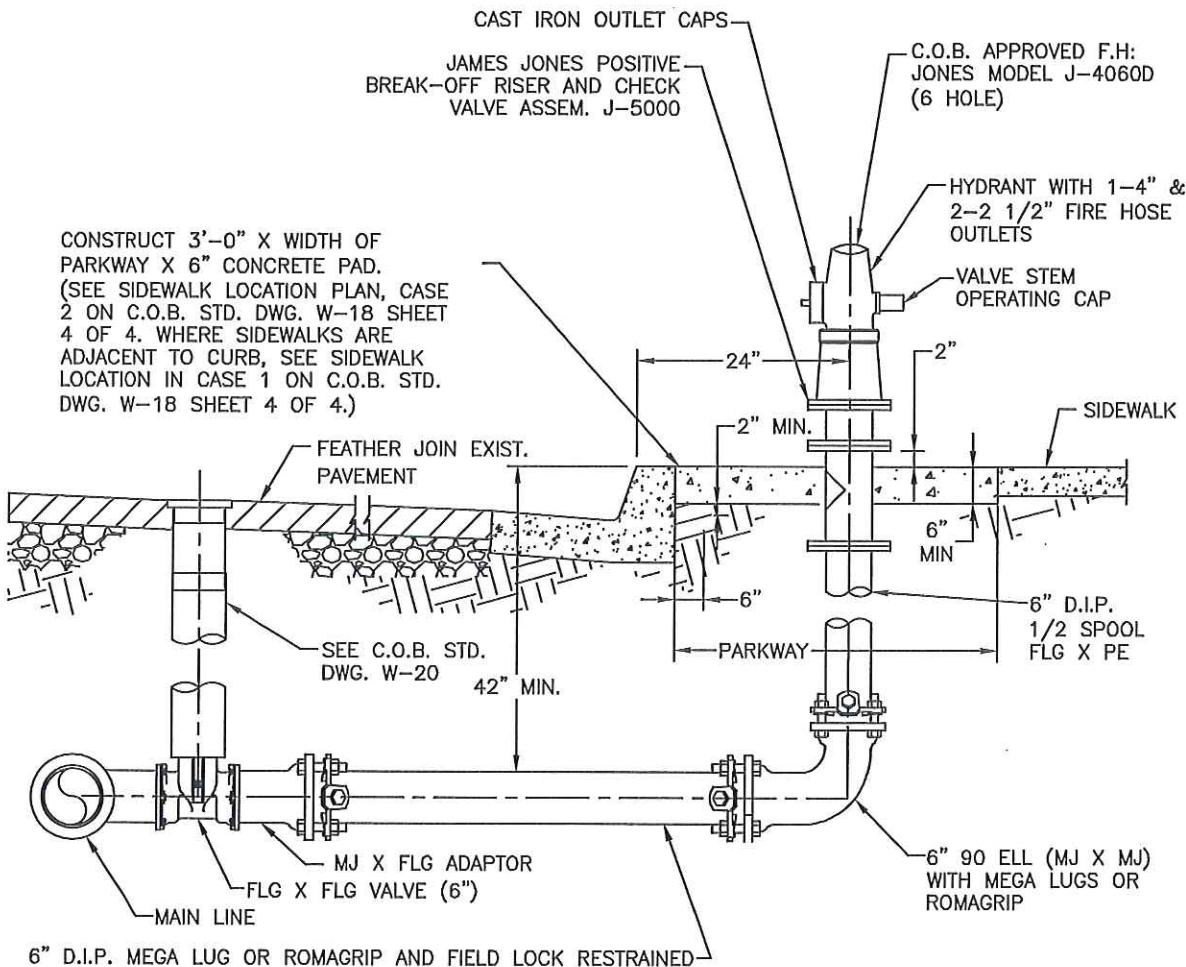
RECOMMENDED BY: ARTURO VELA, P.E., SR. ENGINEER	12-12-12
APPROVED BY: KAHONO OEI, P.E., CITY ENGINEER	12-12-12

CITY OF BANNING

STANDARD NO.

RESIDENTIAL FIRE HYDRANT INSTALLATION

W-18
1 OF 4

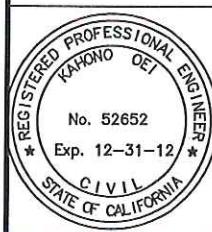


NOTES:

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.



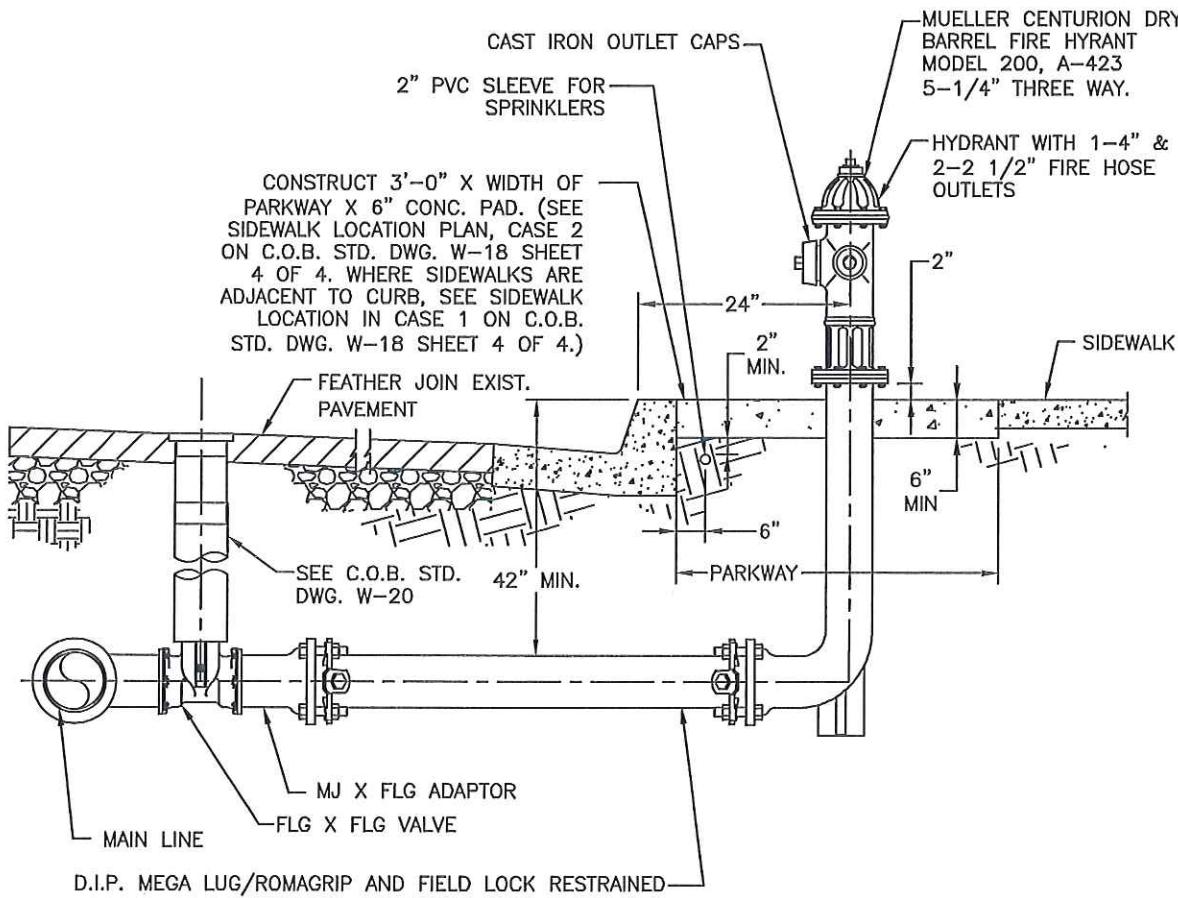
2012 EDITION



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

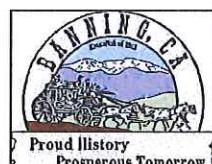
CITY OF BANNING
COMMERCIAL FIRE
HYDRANT INSTALLATION

STANDARD NO.
W-18
2 OF 4

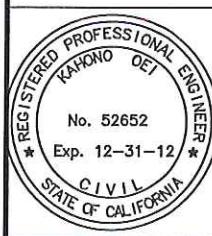


NOTES:

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: *Chas* 12-12-12

KAHONO OEI, P.E., CITY ENGINEER DATE

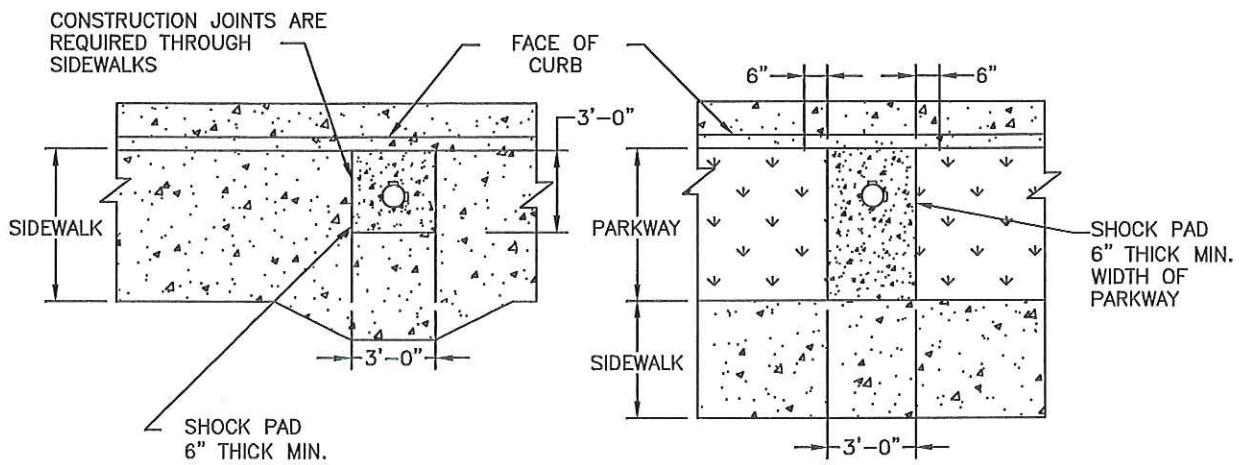
CITY OF BANNING

STANDARD NO.

DRY BARREL FIRE HYDRANT INSTALLATION

W-18
3 OF 4

SIDEWALK LOCATION PLANS



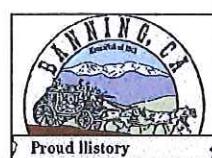
CASE 1
SIDEWALK ADJACENT TO CURB

CASE 2
SIDEWALK NOT ADJACENT TO CURB

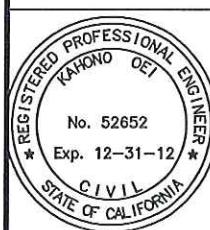
NOTES:

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.
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. 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



2012 EDITION



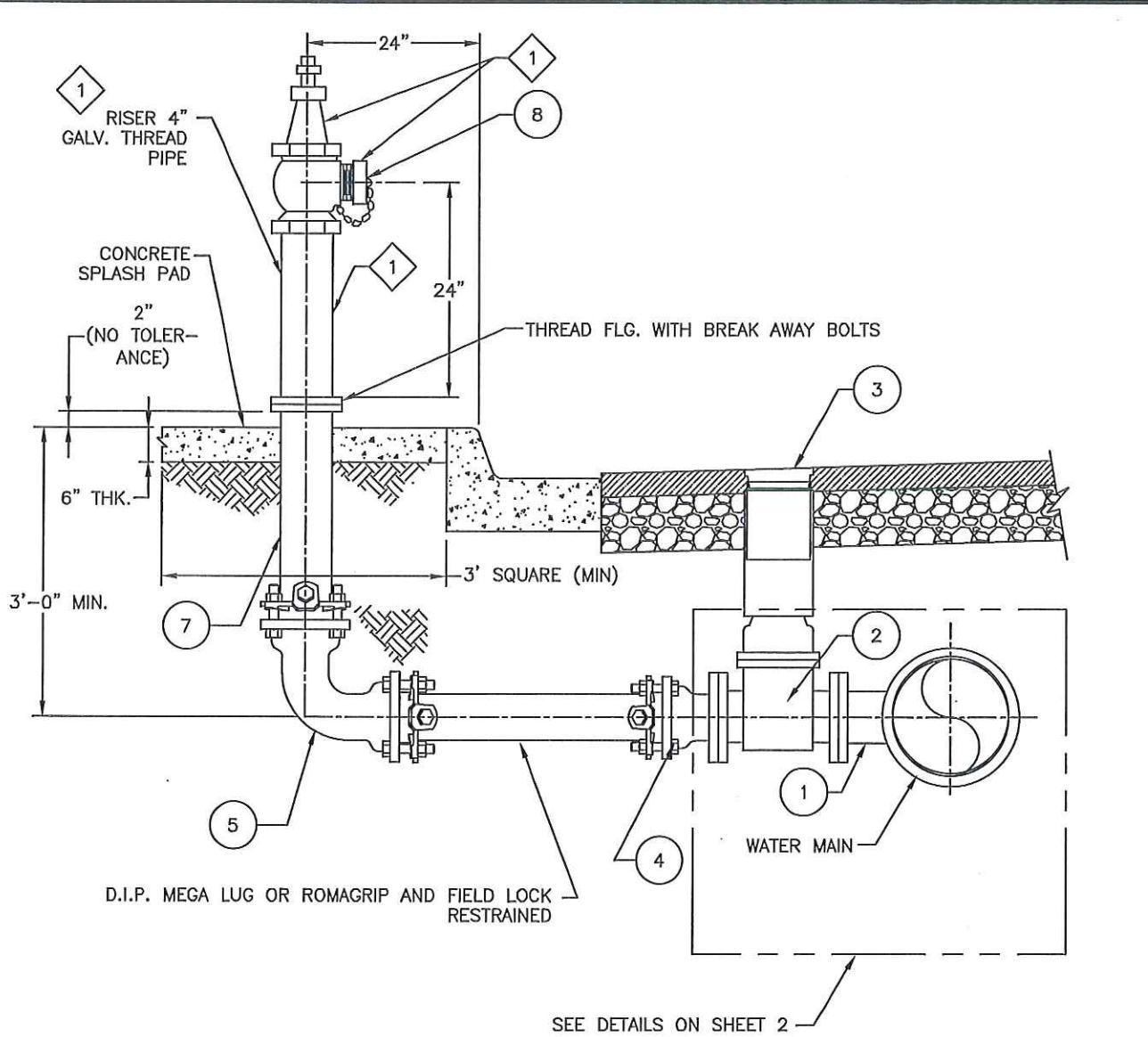
RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE
 APPROVED BY: *John* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

STANDARD NO.

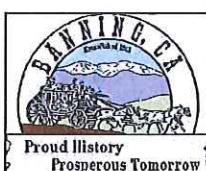
**FIRE HYDRANT
SHOCK PAD LAYOUT**

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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RECOMMENDED

RECOMMENDED BY: ARTURO VELA, P.E., SR. ENGINEER

12-12-12

CITY OF BANNING

STANDARD
NO.

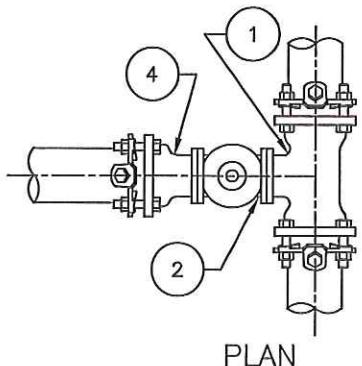
APPENDIX B

APPROVED BY: *[Signature]* 10-
KAHONO OEI, P.E., CITY ENGINEER

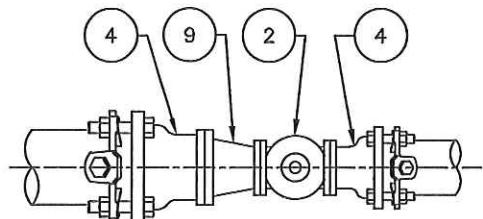
$$12 - 12 = 12$$

BLOW-OFF ASSEMBLY

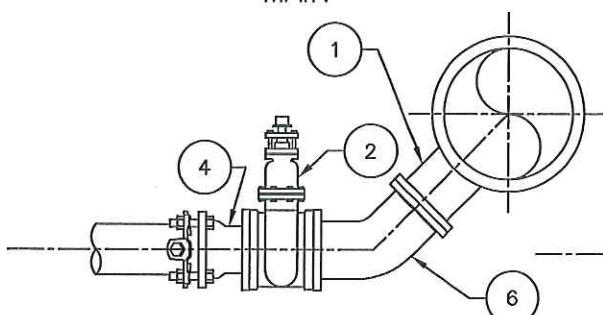
W-19
1 OF 2



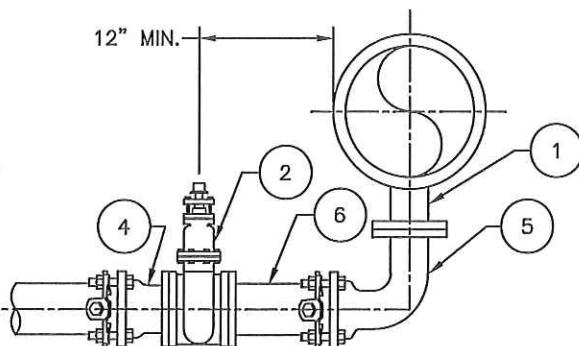
PLAN
BLOW-OFF ASSEMBLY GATE VALVE,
BRANCH CONNECTION FROM WATER
MAIN



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



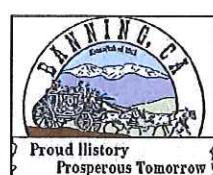
BRANCH CONNECTION CASE A



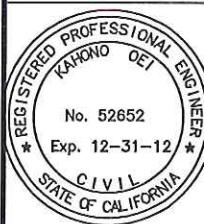
BRANCH CONNECTION CASE B

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



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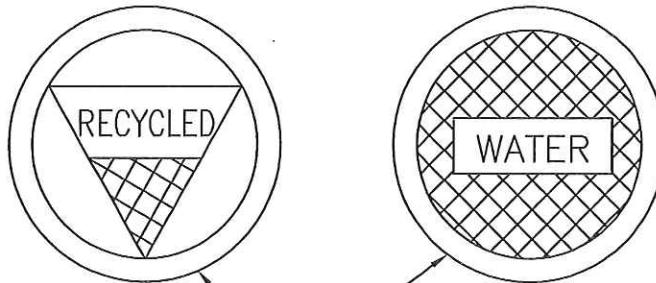
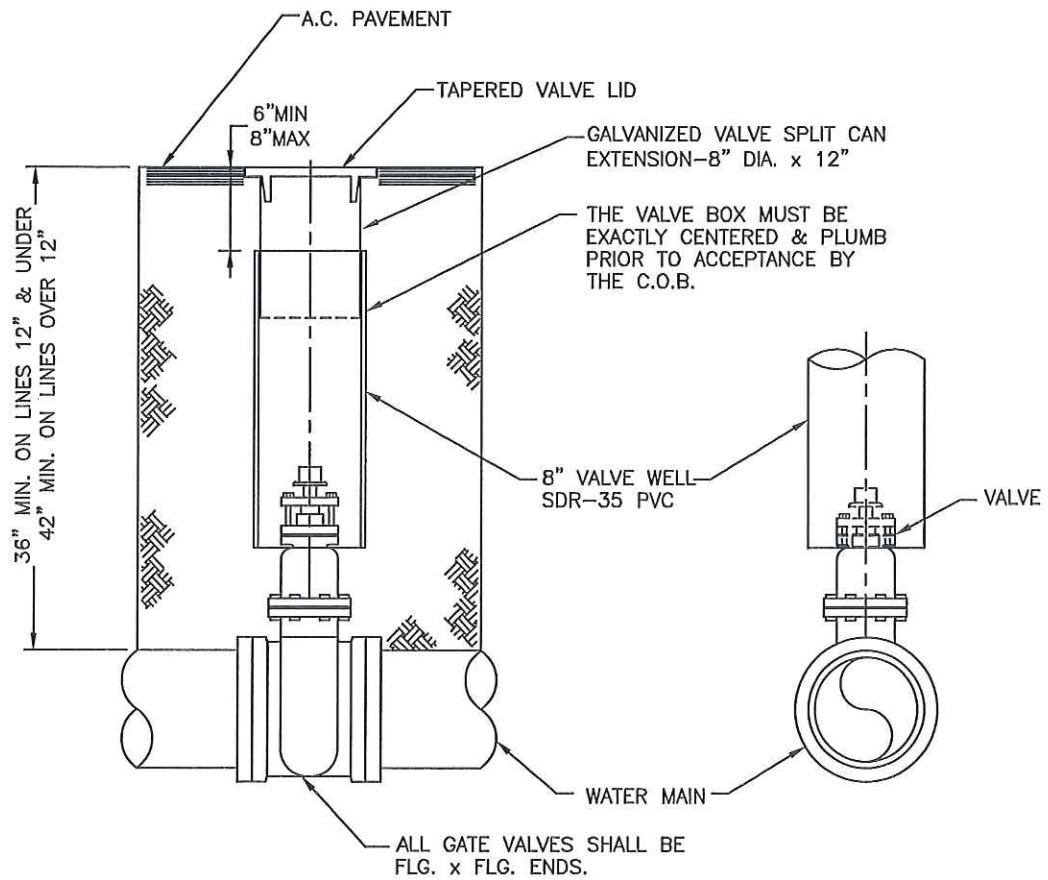
RECOMMENDED BY:
ARTURO VELA, P.E., SR. ENGINEER DATE
12-12-12
APPROVED BY: *Ch* 12-12-12
KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

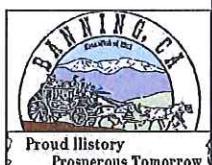
STANDARD
NO.

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



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RECOMMENDED BY: *Arturo Vela* 12-12-12

ARTURO VELA, P.E., SR. ENGINEER

APPROVED BY: *Chu* 12-12-12

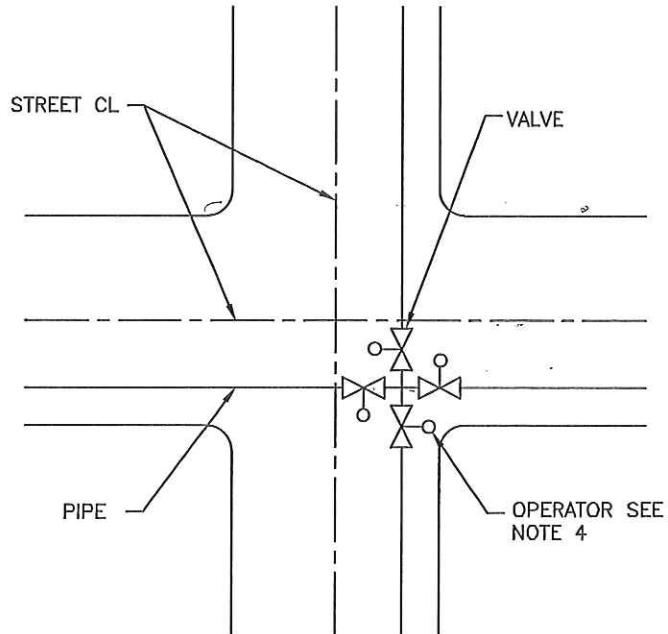
KAHONO OEI, P.E., CITY ENGINEER

CITY OF BANNING

STANDARD NO.

VALVE AND VALVE BOX INSTALLATION

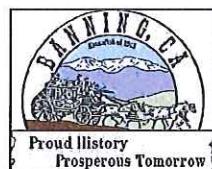
W-20
1 OF 2



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 CUTTERS 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 BURRIED METALIC SURFACES SHALL BE PROTECTED BY AN ASPHALTIC OR BITUMINOUS COATING IN ACCORDANCE WITH AWWA C151 (ANSI A21.51).



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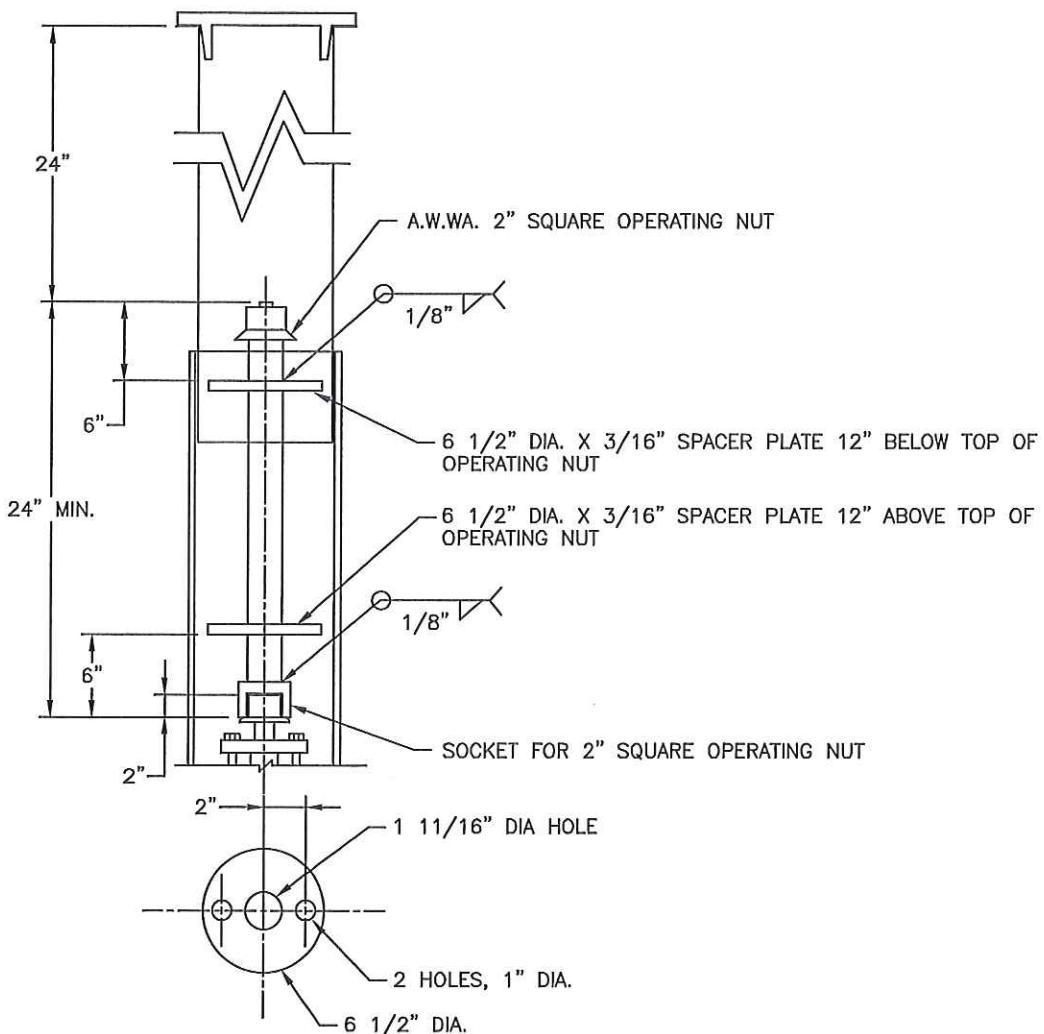
RECOMMENDED BY: *Arturo Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE
 APPROVED BY: *Ch* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

STANDARD NO.

VALVE AND VALVE BOX INSTALLATION

W-20
2 OF 2



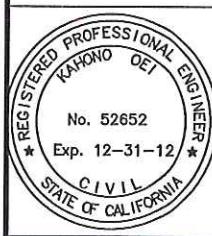
SPACER PLATE PLAN

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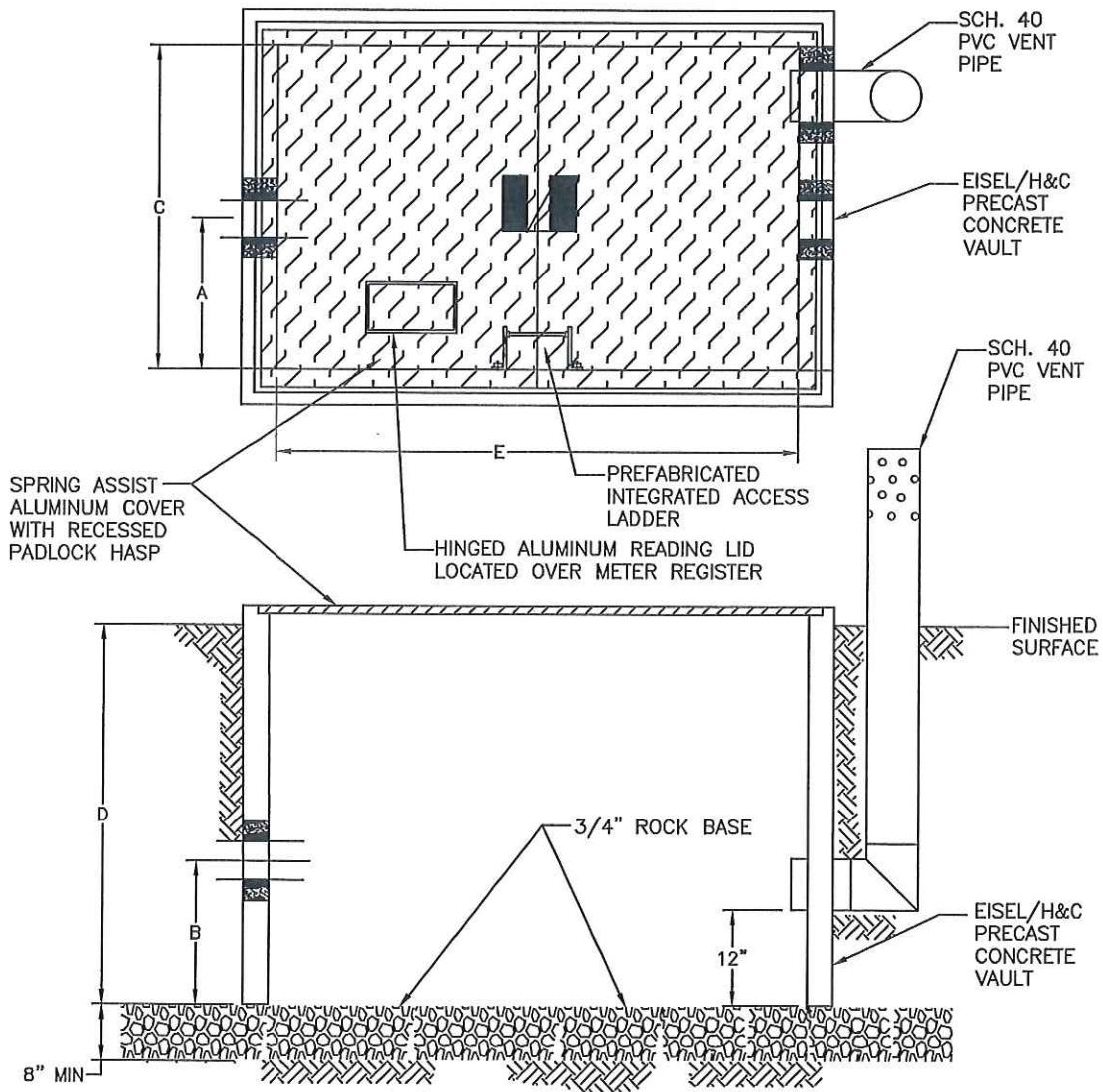
RECOMMENDED BY:
ARTURO VELA, P.E., SR. ENGINEER DATE
12-12-12
APPROVED BY:
KAHONO OEI, P.E., CITY ENGINEER DATE
12-12-12

CITY OF BANNING

STANDARD NO.

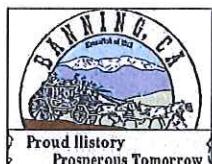
**VALVE STEM
EXTENSION**

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

CITY OF BANNING

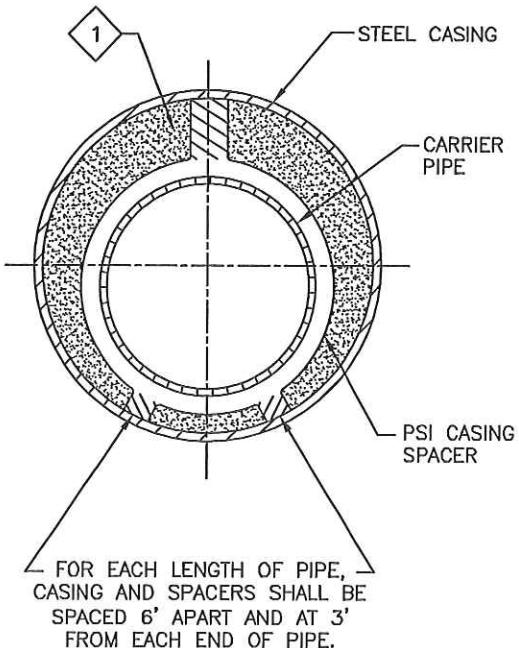
STANDARD NO.

PREFABRICATED
VAULT/LID/VENT ASSEMBLY

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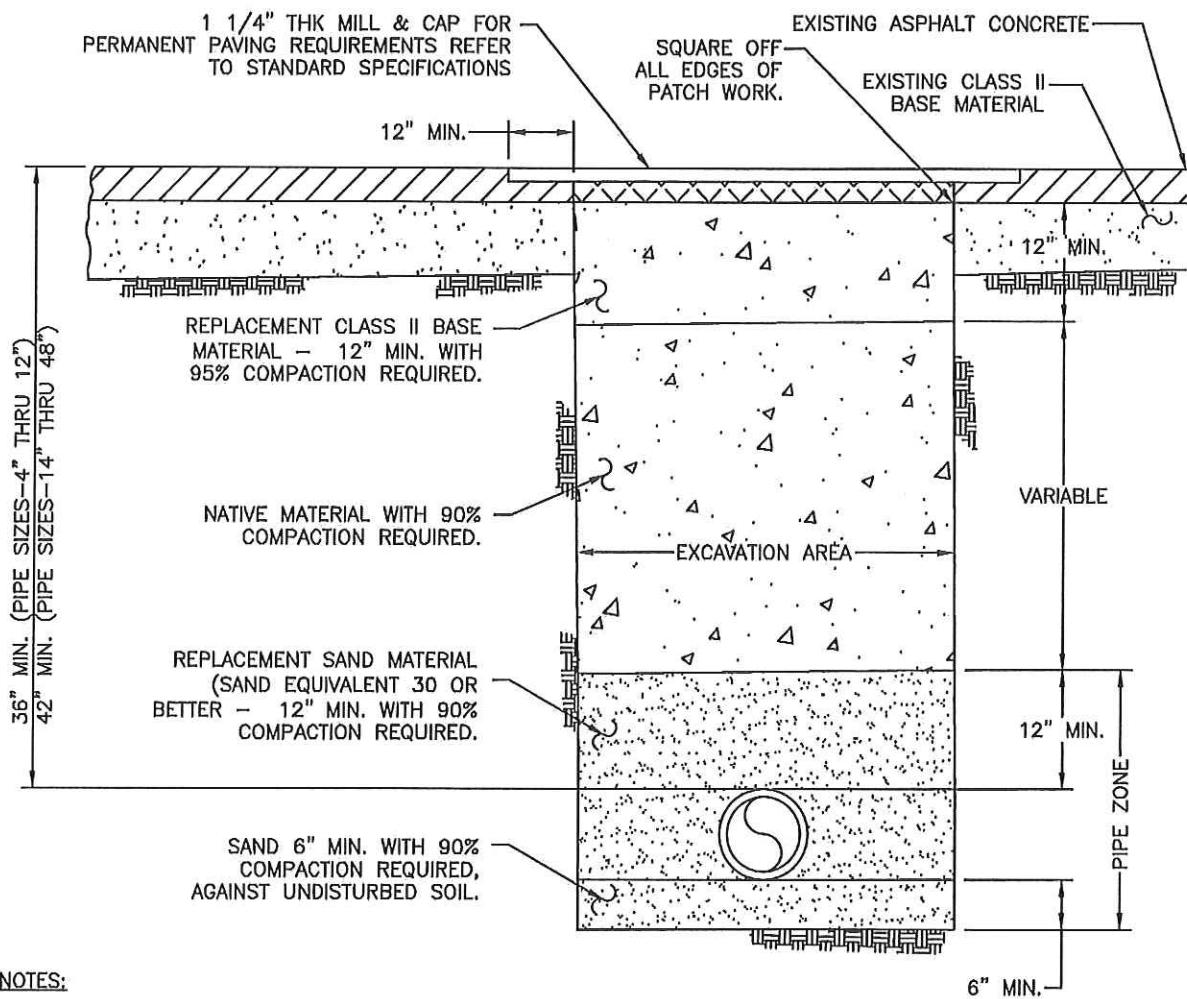
RECOMMENDED BY:	<i>Arturo Vela</i>	12-12-12
ARTURO VELA, P.E., SR. ENGINEER		DATE
APPROVED BY:	<i>Chm</i>	12-12-12
KAHONO OEI, P.E., CITY ENGINEER		DATE

CITY OF BANNING

STANDARD NO.

STEEL PIPE CASING

W-26

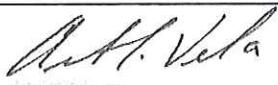


NOTES:

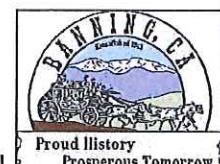
1. NO TRENCHING, CUTTING, POTHOLING, GRINDING OR CORING WILL BE ALLOWED, EXCEPT FOR EMERGENCIES OR TO PROVIDE SERVICE CONNECTIONS, IF THE STREET HAS BEEN PAVED OR RESURFACED WITHIN THE PREVIOUS THREE YEARS.
2. WHEN TRENCHING OR CUTTING INTO ANY STREET, FULL LANE WIDTH (10 FEET WIDE MINIMUM) ASPHALT CONCRETE (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.



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		RECOMMENDED BY: ARTURO VELA, P.E., SR. ENGINEER	5-10-13	CITY OF BANNING	STANDARD NO.
		APPROVED BY: KAHONO OEI, P.E., CITY ENGINEER	5-10-13		
				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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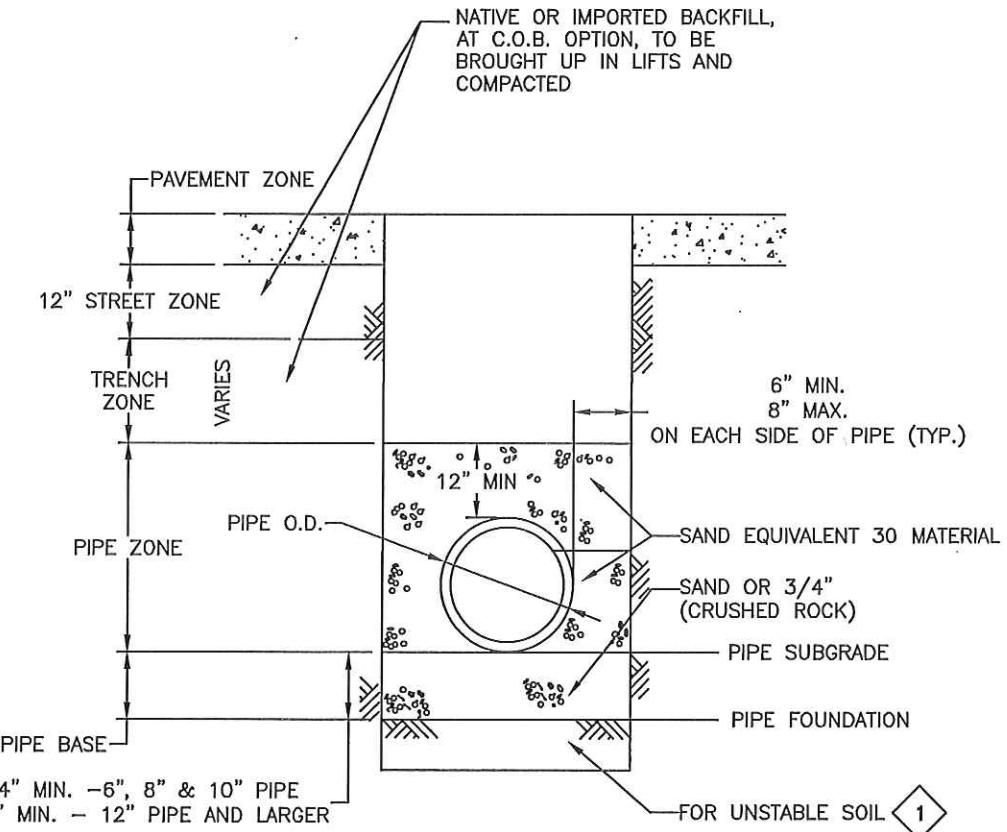
RECOMMENDED BY:	<i>Arturo Vela</i>	12-12-12
ARTURO VELA, P.E., SR. ENGINEER		DATE
APPROVED BY:	<i>Ch</i>	12-12-12
CAHONO OEI, P.E., CITY ENGINEER		DATE

CITY OF BANNING

TRENCH REPAIR DETAIL

STANDARD
NO.

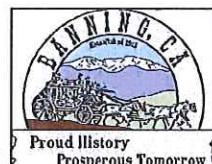
W-30
2 OF 2



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



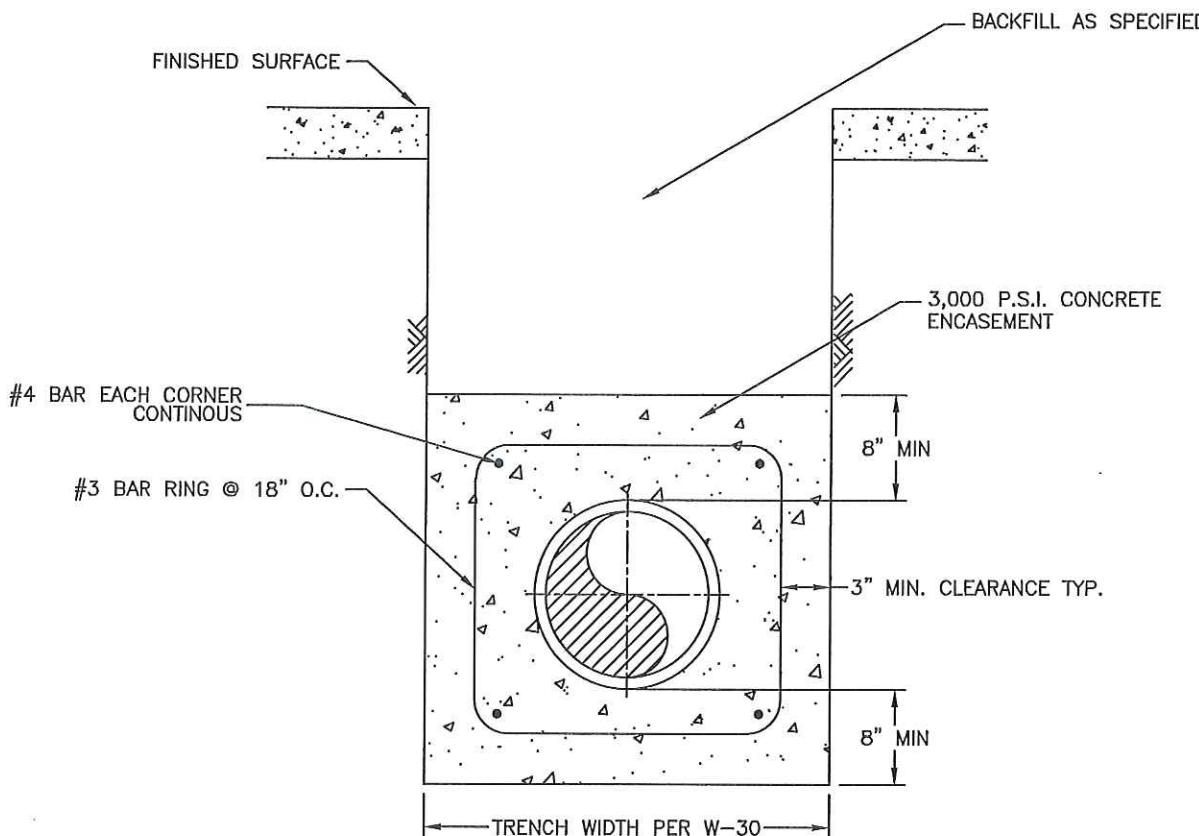
RECOMMENDED BY: ARTURO VELA, P.E., SR. ENGINEER	12-12-12
APPROVED BY: KAHONO OEI, P.E., CITY ENGINEER	12-12-12

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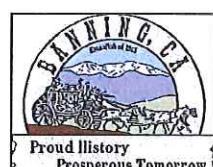
PIPE BEDDING DETAIL

W-31

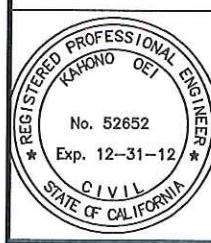


NOTES:

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: *A.H. Vela* 12-12-12
 ARTURO VELA, P.E., SR. ENGINEER DATE
 APPROVED BY: *Ch* 12-12-12
 KAHONO OEI, P.E., CITY ENGINEER DATE

CITY OF BANNING

STANDARD NO.

PIPE ENCASEMENT
DETAIL

W-33