

- ① STAINLESS STEEL TAPPING SLEEVE: MUELLER, JCM, ROMAC, SMITH-BLAIR OR FLANGED TEE WITH 3 FLANGED VALVES. PER DS 5-04. INSTALLATION OF ADDITIONAL MAIN LINE VALVES WILL BE DETERMINED BY THE CITY.
- ② FLANGED MUELLER VALVE WITH OPERATING NUT AND A RESTRAINED FLANGE ADAPTER (DOMESTICALLY MANUFACTURED).
- ③ PRESSURE CLASS 350 D.I.P. SIZE TO BE DETERMINED BY THE DESIGN ENGINEER FROM FIRE AND DOMESTIC REQUIREMENTS. THE SIZE SHALL BE DESIGNATED ON THE CONSTRUCTION PLANS FOR APPROVAL BY THE CITY.
- ④ CITY APPROVED DOUBLE DETECTOR CHECK VALVE ASSEMBLY. SEE APPLICABLE STANDARD DRAWINGS.
- ⑤ WATER METER FURNISHED AND INSTALLED BY THE CITY.
- ⑥ FLANGED MUELLER VALVE WITH OPERATING NUT AND A RESTRAINED FLANGE ADAPTER (DOMESTICALLY MANUFACTURED) ON EACH END.
- ⑦ REDUCED PRESSURE BACKFLOW DEVICE. SEE APPLICABLE STANDARD DRAWING.
- ⑧ BALL CORP VALVE OR MUELLER GATE VALVE CONSISTENT WITH STANDARD DRAWINGS 5-05 TO 5-09.

NOTES:

ALL MATERIALS LISTED OR SHOWN SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.

DOUBLE DETECTOR VALVE ASSEMBLY AND WATER METER SHALL BE INSTALLED AS NEAR TO BACK OF SIDEWALK AS POSSIBLE.

	DRAWING NO	5-01	<h2 style="text-align: center;">CITY OF VACAVILLE</h2> <h3 style="text-align: center;">STANDARD DRAWING</h3> <hr/> <h3 style="text-align: center;">COMBINATION FIRE AND DOMESTIC WATER SERVICE</h3>
	DATE	02/08/08	
	SCALE	NONE	
	APPROVED BY		
		R.C.E. C24974 DIRECTOR OF PUBLIC WORKS ENGINEERING SERVICES	

TABLE A
REQUIRED BEARING SURFACE DIMENSIONS

TYPE OF FITTING	90° BEND	45° BEND	11 1/4" OR 22 1/2" BEND	TEE OR DEAD END	TEE W/ PLUG	CROSS W/ PLUG	CROSS W/ PLUGS
TYPICAL INSTALLATION							
	HEIGHT "H" "B"	HEIGHT "H" "B"	HEIGHT "H" "B"	HEIGHT "H" "B"	HEIGHT "H" "B"	HEIGHT "H" "B"	HEIGHT "H" "B"
8"	2 1/2'x5'	2'x3'	1 1/2'x2'	2'x4'	(A) 2'x4' (B) 2'x2'	2 1/2'x2 1/2' (BOTH BLOCKS)	2 1/2'x5'
12"	3'x7'	2 1/2'x5'	2'x3'	3'x6'	(A) 3'x6' (B) 3'x3'	3'x4' (BOTH BLOCKS)	3'x7'

NOTES:

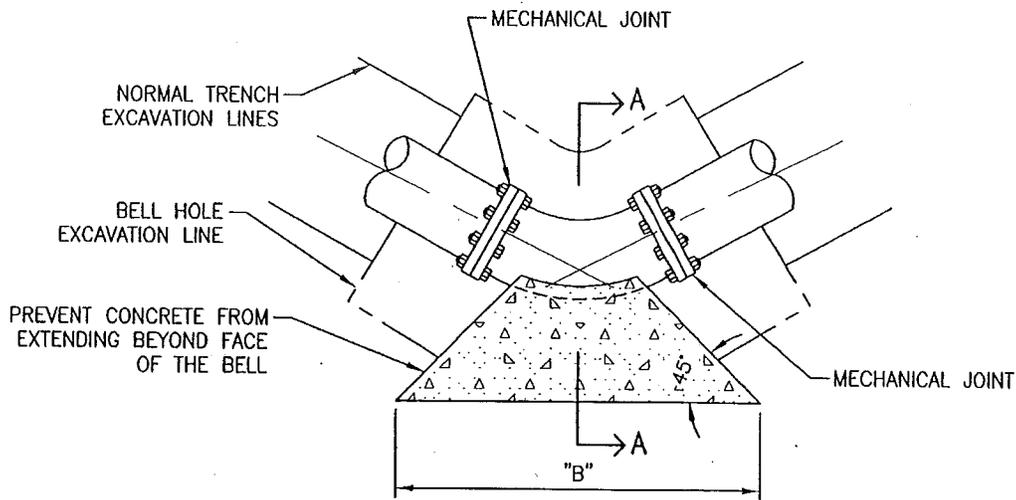
- THRUST BLOCKS TO BE CONSTRUCTED OF PORTLAND CEMENT CONCRETE WITH A MINIMUM STRENGTH OF 3000 PSI.
- AREAS GIVEN ARE FOR CLASS 150 PIPE AT TEST PRESSURE OF 150 P.S.I. IN SOIL WITH 2,000 P.S.F. BEARING CAPACITY. INSTALLATIONS USING DIFFERENT PIPE, TEST PRESSURES, AND/OR SOIL TYPES SHOULD ADJUST AREAS ACCORDINGLY, SUBJECT TO APPROVAL OF ENGINEER.
- BLOCKS TO BE POURED AGAINST UNDISTURBED SOIL.
- JOINTS, NUTS, BOLTS, AND FACE OF PLUGS TO BE KEPT CLEAR OF CONCRETE.
- USE FOR HORIZONTAL AND DOWNWARD THRUSTS ONLY.
- THRUST BLOCKS SHALL BE ELIMINATED IF A FULL RESTRAINED JOINT DESIGN IS INCLUDED FOR THE PIPING, JOINTS, AND FITTINGS.



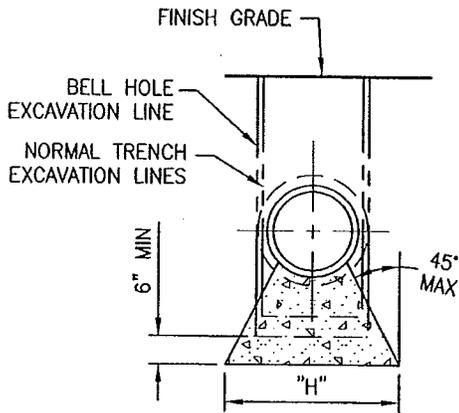
DRAWING NO.: 5-02
 DATE: 09/09/03
 SCALE: NONE
 APPROVED BY: *Paul J. Horn*
 R.C.E. C59003
 DEPUTY DIRECTOR OF PUBLIC WORKS
 ENGINEERING SERVICES

CITY OF VACAVILLE
STANDARD DRAWING

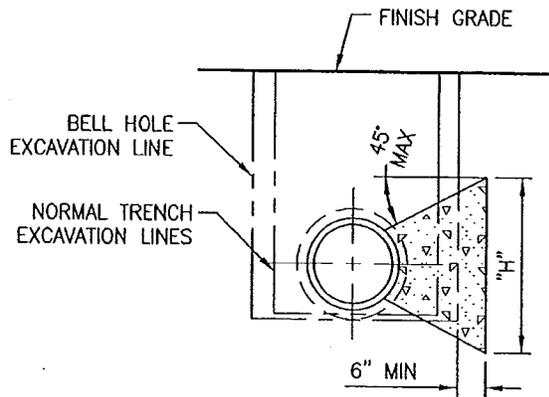
THRUST BLOCK BEARING
SURFACE DIMENSIONS



**PLAN VIEW FOR HORIZONTAL BEND
ELEVATION VIEW FOR DOWNWARD BEND**



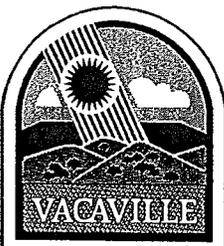
**SECTION A-A
(DOWNWARD BEND)**



**SECTION A-A
(HORIZONTAL BEND)**

NOTES:

1. THRUST BLOCKS TO BE POURED AGAINST UNDISTURBED SOIL.
2. THIS TYPE OF THRUST BLOCK IS TO BE USED FOR HORIZONTAL BENDS OF 1 1/4" OR MORE IN ALL PIPE BENDS OF 4", 6", 8", 10" AND 12" DIAMETERS.
3. THRUST BLOCKS SHALL BE PORTLAND CEMENT CONCRETE WITH A MINIMUM STRENGTH OF 3000 PSI.
4. SEE TABLE "A" (STANDARD DRAWING 5-02) FOR HEIGHT OF BLOCK "H" AND WIDTH OF BLOCK "B".
5. THRUST BLOCKS SHALL BE ELIMINATED IF A FULL RESTRAINED JOINT DESIGN IS INCLUDED FOR THE PIPING, JOINTS, AND FITTINGS.



DRAWING NO.: 5-03
 DATE: 09/09/03
 SCALE: NONE
 APPROVED BY: *Paul J. Home*
 R.C.E. C59003
 DEPUTY DIRECTOR OF PUBLIC WORKS
 ENGINEERING SERVICES

**CITY OF VACAVILLE
STANDARD DRAWING**

**STANDARD THRUST BLOCK FOR
HORIZONTAL AND DOWNWARD
FORCE BENDS**

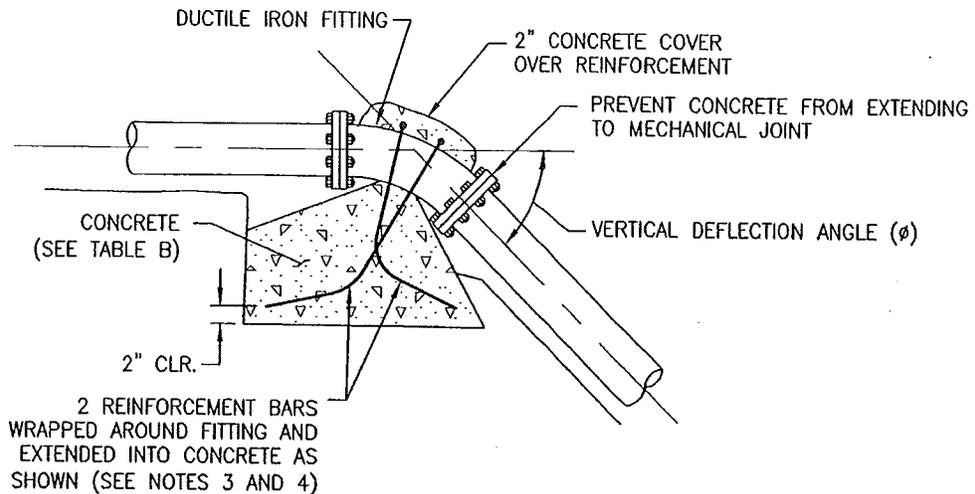


TABLE B

TOTAL VOLUME OF THRUST BLOCKS (IN CUBIC YARDS)				
PIPE SIZE	VERTICAL DEFLECTION ANGLE (ϕ)			
	11 1/4°	22 1/2°	45°	90°
6"	0.4	0.8	1.5	2.1
8"	0.7	1.4	2.5	3.6
12"	1.5	2.9	5.4	7.6

VOLUMES GIVEN ARE FOR A MAXIMUM TEST PRESSURE OF 150 P.S.I. VOLUMES SHOULD BE ADJUSTED FOR HIGHER PRESSURES SUBJECT TO APPROVAL OF THE DIRECTOR OF PUBLIC WORKS.

NOTES:

- THRUST BLOCKS TO BE POURED AGAINST UNDISTURBED SOIL.
- VOLUME OF THRUST BLOCKS IN TABLE B FROM FORMULA:

WHERE:
$$V = \frac{1.5 PA (\sin \phi)}{4050}$$

P=150 PSI

A=CROSS SECTIONAL AREA OF THE PIPE USING THE OUTSIDE DIAMETER OF THE PIPE IN INCHES.

- REINFORCEMENT BAR SIZE SHALL BE:

- #4 FOR VOLUME OF THRUST BLOCK < 2.4 C.Y.
- #5 FOR VOLUME OF THRUST BLOCK BETWEEN 2.4 & 4.4 C.Y.
- #6 FOR VOLUME OF THRUST BLOCK BETWEEN 4.4 & 6.8 C.Y.

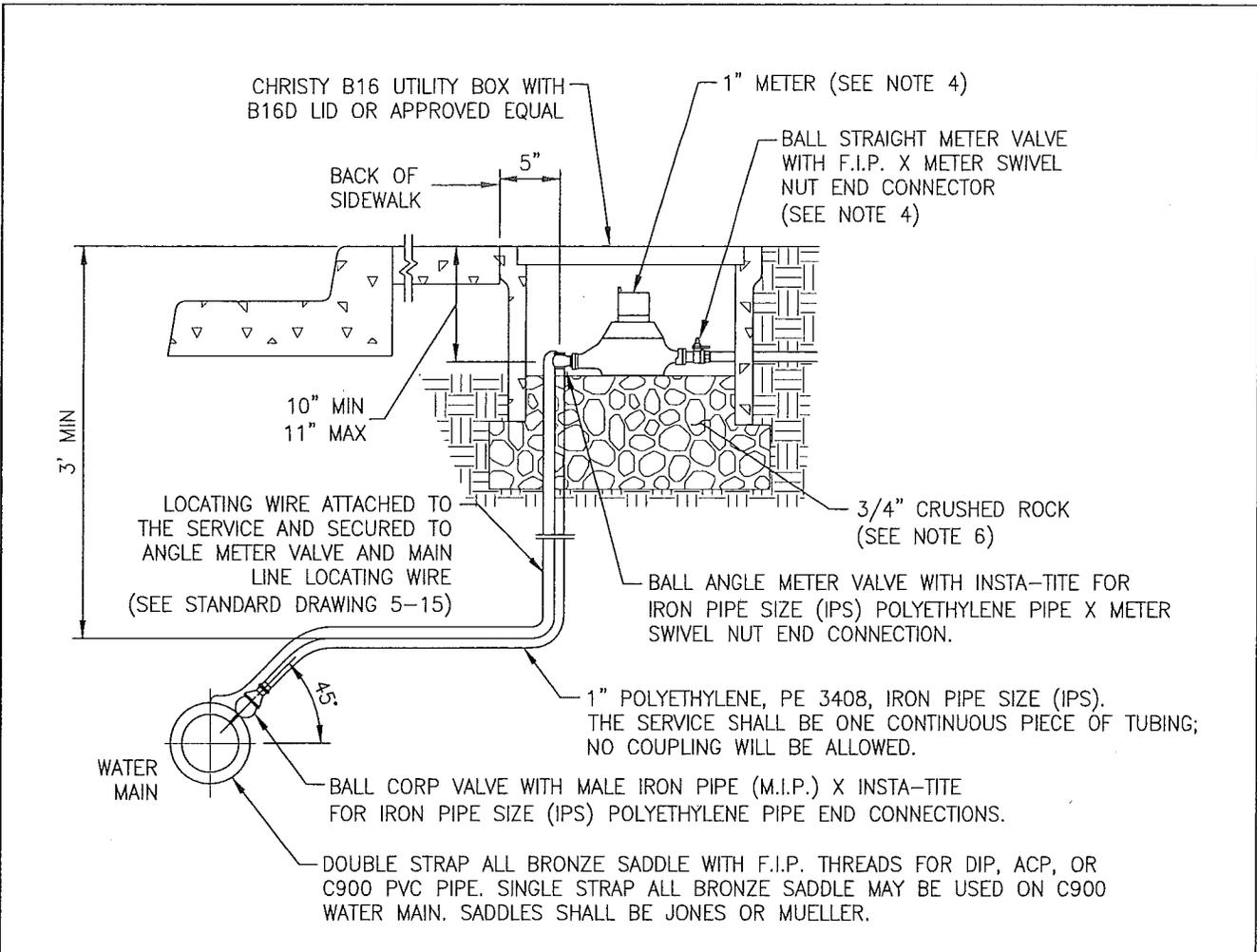
- REINFORCEMENT BARS SHALL BE PLACED TO HAVE A 2" CLEARANCE FROM OUTSIDE EDGE OF CONCRETE.
- THRUST BLOCKS SHALL BE ELIMINATED IF A RESTRAINED JOINT DESIGN IS INCLUDED FOR THE PIPING, JOINTS, AND FITTINGS.
- "CONCRETE" SHALL BE PORTLAND CEMENT CONCRETE WITH A MINIMUM STRENGTH OF 3000 PSI.



DRAWING NO.: 5-04
 DATE: 09/09/03
 SCALE: NONE
 APPROVED BY: *Paul J. Horn*
 R.C.E. C59003
 DEPUTY DIRECTOR OF PUBLIC WORKS
 ENGINEERING SERVICES

CITY OF VACAVILLE
 STANDARD DRAWING

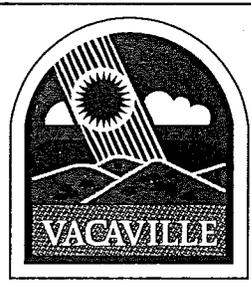
STANDARD THRUST BLOCK FOR
 UPWARD FORCE VERTICAL BENDS
 IN WATER LINE



NOTES:

1. ALL VALVES AND FITTINGS SHALL BE MUELLER UNLESS OTHERWISE SPECIFIED.
2. SERVICE LINE SHALL BE INSTALLED IN A STRAIGHT LINE, HORIZONTALLY FROM MAIN TO METER IN THE SHORTEST DISTANCE POSSIBLE.
3. THE SERVICE LINE SHALL BE ENCASED IN SAND TO A DEPTH OF 3" BELOW AND 6" ABOVE THE PIPE. THE SAND SHALL HAVE A MINIMUM SAND EQUIVALENCY OF 30.
4. CONTRACTOR TO FURNISH AND INSTALL METER BOX. CITY TO FURNISH AND INSTALL METER AND BALL STRAIGHT METER VALVE.
5. SEE CONSTRUCTION PLANS FOR METER LOCATION WHERE THE SIDEWALK IS NOT CONTIGUOUS TO THE CURB AND GUTTER.
6. CRUSHED ROCK SHALL BE INSTALLED TO A DEPTH OF 4" BELOW THE BOX AND WITHIN THE BOX TO A DEPTH TO SUPPORT THE WATER METER. THE LENGTH OF THE SERVICE PIPING WITHIN THE LIMITS OF THE CRUSHED ROCK SHALL BE WRAPPED WITH 10 MIL VINYL TAPE.

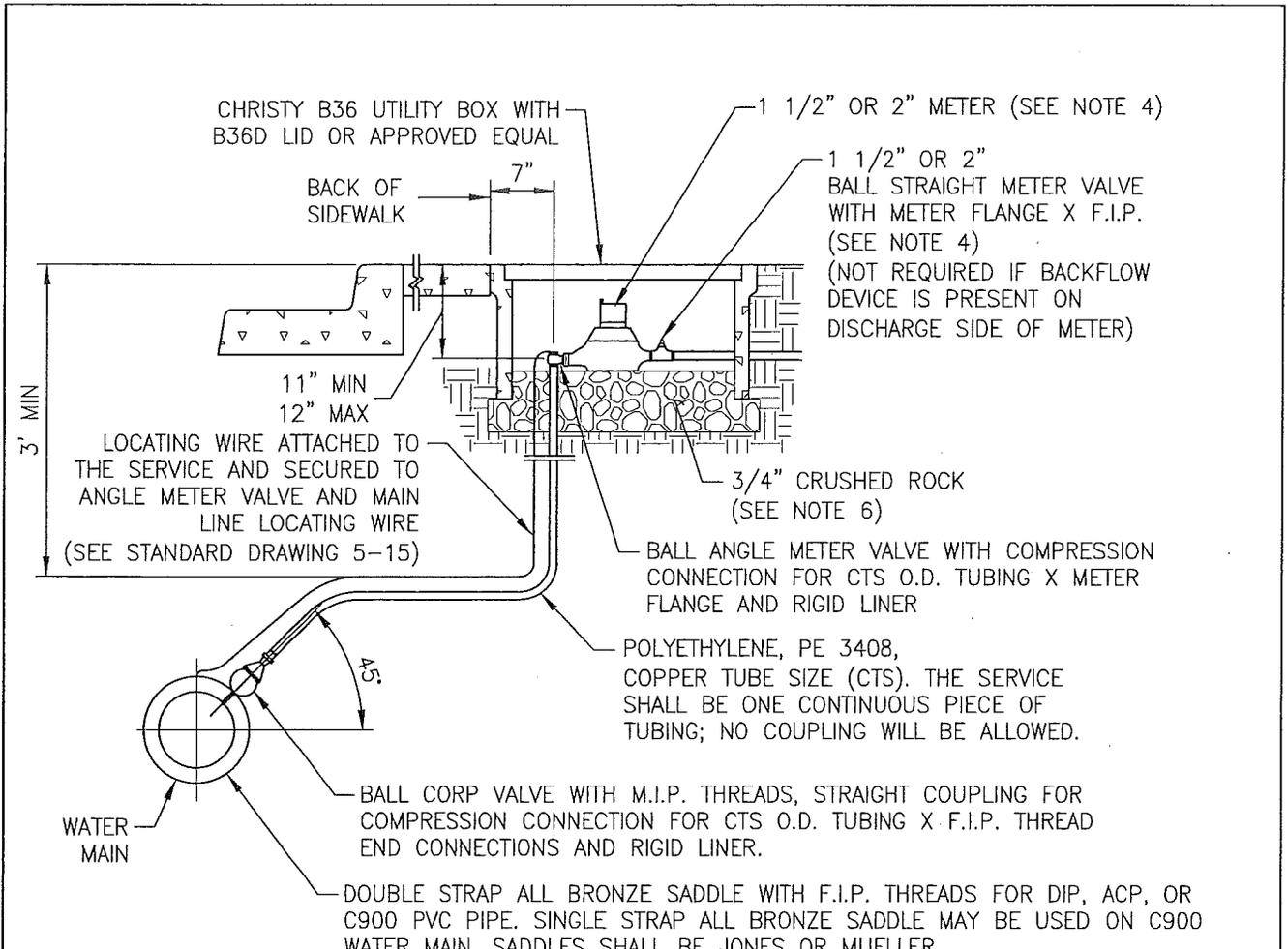
DWG File: G:\CIP\600's\653\Standard Drawings\AutoCad\All Current Standard Drawings\5-05.dwg



DRAWING NO.:	5-05
DATE:	REVISED ON 10/01/15
SCALE:	NONE
APPROVED BY:	<i>[Signature]</i> R.C.E. 43666
DIRECTOR OF PUBLIC WORKS / CITY ENGINEER	

**CITY OF VACAVILLE
STANDARD DRAWING**

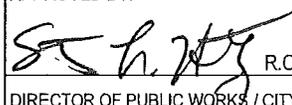
**STANDARD
1" WATER SERVICE**

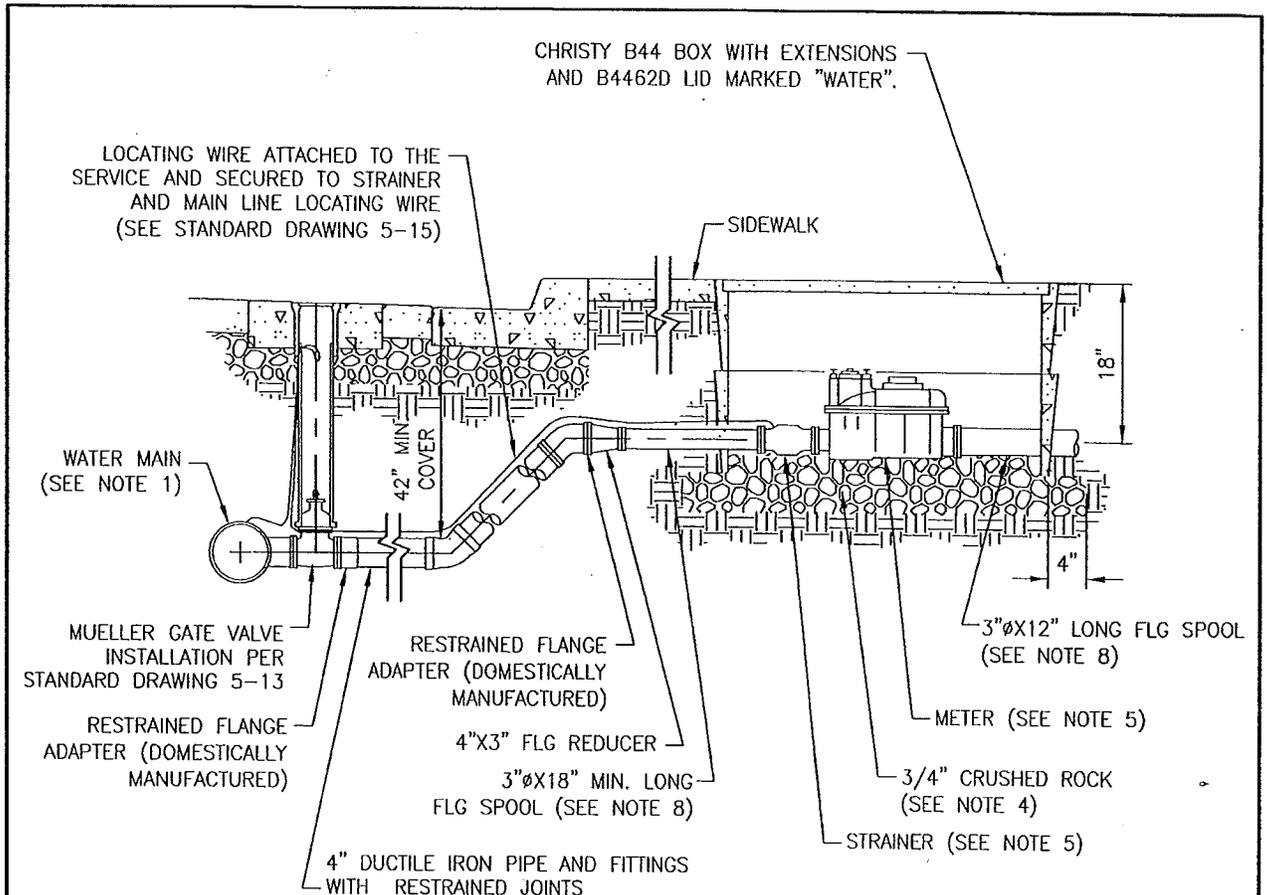


NOTES:

1. ALL VALVES AND FITTINGS SHALL BE MUELLER UNLESS OTHERWISE SPECIFIED.
2. SERVICE LINE SHALL BE INSTALLED IN A STRAIGHT LINE, HORIZONTALLY FROM MAIN TO METER IN THE SHORTEST DISTANCE POSSIBLE.
3. THE SERVICE LINE SHALL BE ENCASED IN SAND TO A DEPTH OF 3" BELOW AND 6" ABOVE THE PIPE. THE SAND SHALL HAVE A MINIMUM SAND EQUIVALENCY OF 30.
4. CITY TO FURNISH AND INSTALL METER AND BALL STRAIGHT METER VALVE ON DISCHARGE SIDE OF METER.
5. SEE CONSTRUCTION PLANS FOR METER LOCATION WHERE THE SIDEWALK IS NOT CONTIGUOUS TO THE CURB AND GUTTER.
6. 3/4" CRUSHED ROCK SHALL BE INSTALLED TO A DEPTH OF 4" BELOW THE BOX AND WITHIN THE BOX TO A DEPTH TO SUPPORT THE WATER METER. THE LENGTH OF THE SERVICE PIPING WITHIN THE LIMITS OF THE CRUSHED ROCK SHALL BE WRAPPED WITH 10 MIL VINYL TAPE.

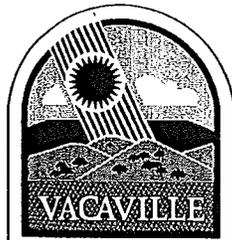
DWG File: G:\CIP\600's\653\Standard Drawings\AutoCad\All Current Standard Drawings\5-06.dwg

	DRAWING NO.: 5-06	<h2 style="margin: 0;">CITY OF VACAVILLE</h2> <h3 style="margin: 0;">STANDARD DRAWING</h3> <h2 style="margin: 0;">1 1/2" AND 2"</h2> <h3 style="margin: 0;">WATER SERVICE</h3>
	DATE: REVISED ON 10/01/15	
	SCALE: NONE	
	APPROVED BY:	
	 R.C.E. 43666 DIRECTOR OF PUBLIC WORKS / CITY ENGINEER	



NOTES:

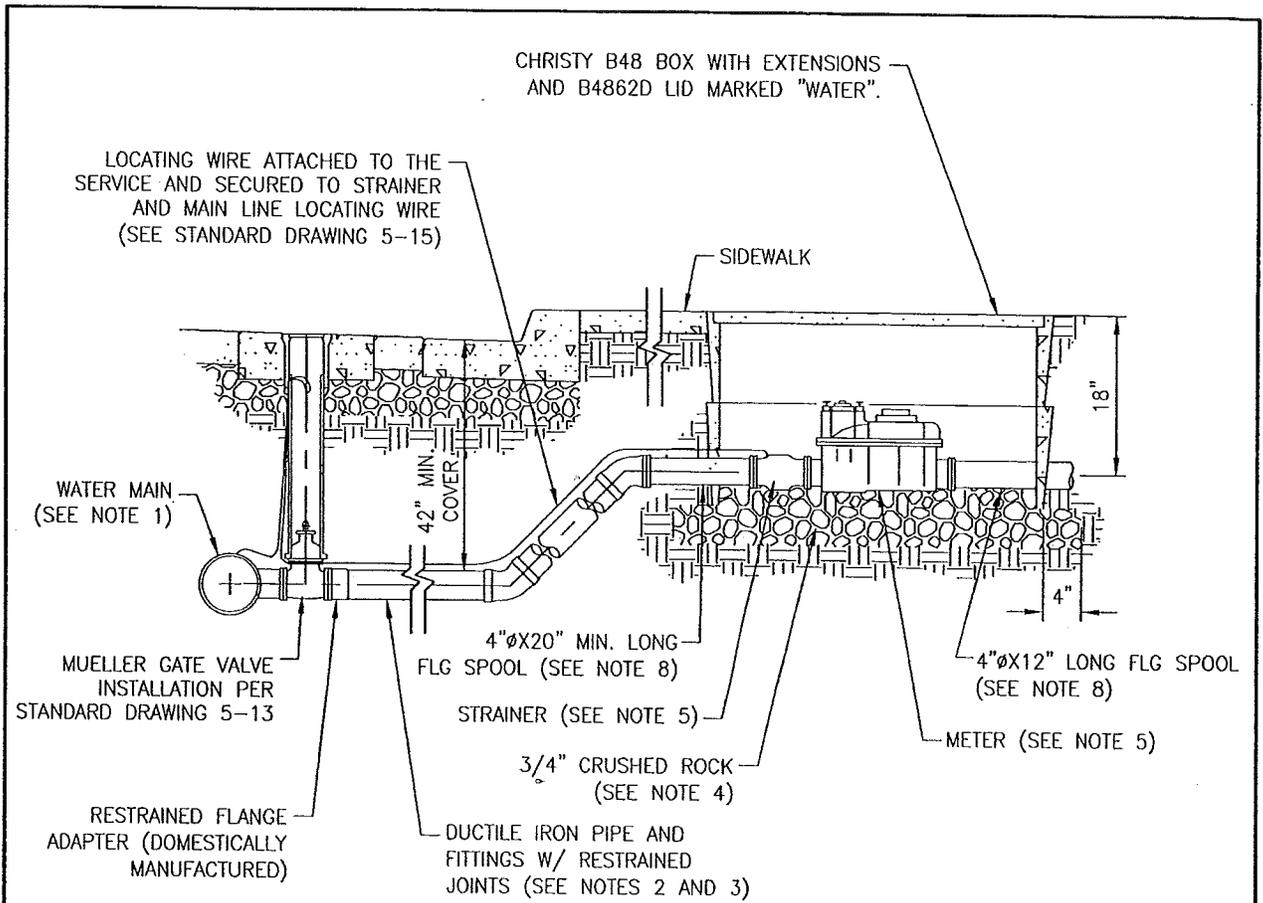
1. REFER TO CONSTRUCTION PLANS OR ENCROACHMENT PERMIT FOR SERVICE LINE CONNECTION REQUIREMENTS TO THE WATER MAIN.
2. THE SERVICE LINE SHALL BE 4" DIAMETER AT THE MAIN TEE CONNECTION AND BE INSTALLED IN A STRAIGHT LINE FROM THE MAIN TO THE METER IN THE SHORTEST DISTANCE POSSIBLE. WRAP SERVICE LINE AND ALL FITTINGS IN POLYETHYLENE PER AWWA C-105.
3. THE SERVICE LINE SHALL BE ENCASED IN SAND TO A DEPTH OF 3" BELOW AND 6" ABOVE THE PIPE. THE SAND SHALL HAVE A MINIMUM SAND EQUIVALENCY OF 30.
4. 3/4" CRUSHED ROCK SHALL BE INSTALLED TO A DEPTH OF 4" BELOW THE BOX AND WITHIN THE BOX TO A DEPTH TO SUPPORT THE METER AND STRAINER.
5. CONTRACTOR TO FURNISH AND INSTALL ALL ITEMS SHOWN ON THIS DRAWING EXCEPT FOR THE STRAINER AND METER WHICH SHALL BE FURNISHED AND INSTALLED BY THE CITY.
6. SEE CONSTRUCTION PLANS FOR METER LOCATION WHERE THE SIDEWALK IS NOT CONTIGUOUS TO THE CURB AND GUTTER.
7. "CONCRETE" SHALL BE PORTLAND CEMENT CONCRETE WITH A MINIMUM STRENGTH OF 3000 PSI.
8. THE SECTION OF PIPE 18" IN LENGTH PRECEDING THE STRAINER AND THE PIPE 12" AFTER THE METER MUST BE INSTALLED IN A STRAIGHT RUN LEVEL WITH THE METER.



DRAWING NO.:	5-07
DATE:	09/09/03
SCALE:	NONE
APPROVED BY:	<i>Paul J. Hawn</i>
	R.C.E. C59003
DEPUTY DIRECTOR OF PUBLIC WORKS ENGINEERING SERVICES	

**CITY OF VACAVILLE
STANDARD DRAWING**

**STANDARD
3" WATER SERVICE**

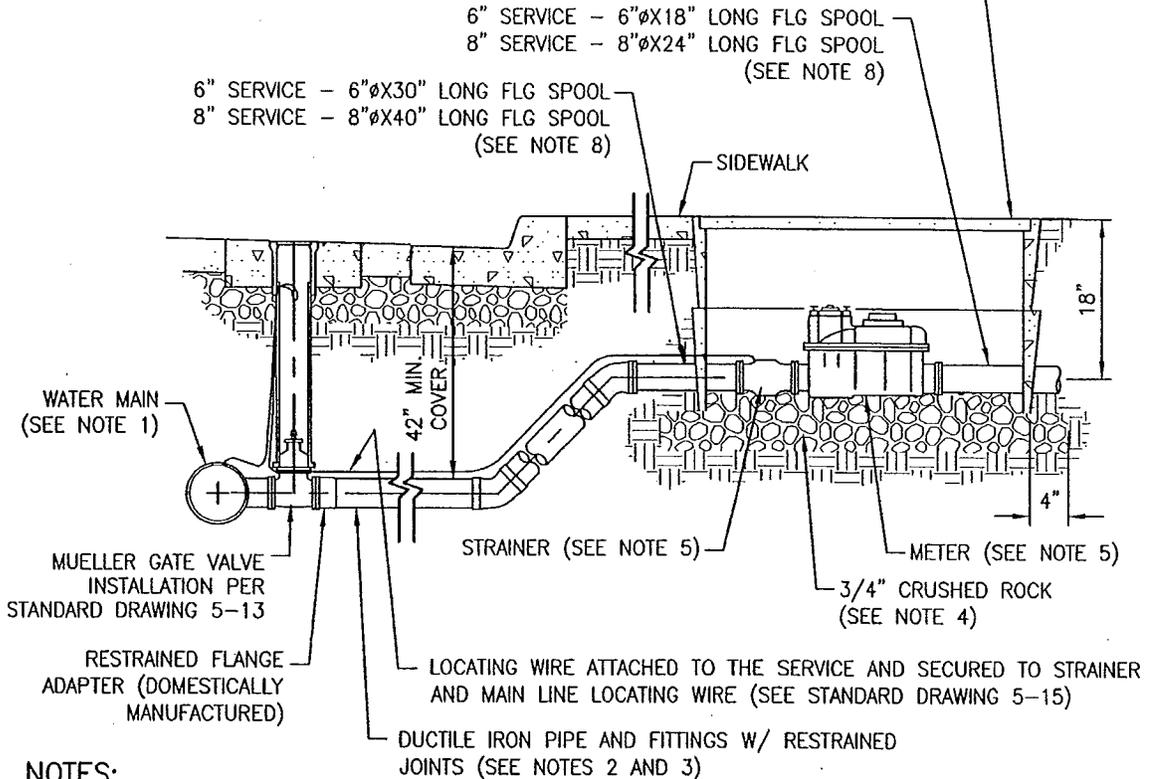


NOTES:

1. REFER TO CONSTRUCTION PLANS OR ENCROACHMENT PERMIT FOR SERVICE LINE CONNECTION REQUIREMENTS TO THE WATER MAIN.
2. THE SERVICE LINE SHALL BE INSTALLED IN A STRAIGHT LINE FROM THE MAIN TO THE METER IN THE SHORTEST DISTANCE POSSIBLE. WRAP SERVICE LINE AND ALL FITTINGS IN POLYETHYLENE PER AWWA C-105.
3. THE SERVICE LINE SHALL BE ENCASED IN SAND TO A DEPTH OF 3" BELOW AND 6" ABOVE THE PIPE. THE SAND SHALL HAVE A MINIMUM SAND EQUIVALENCY OF 30.
4. 3/4" CRUSHED ROCK SHALL BE INSTALLED TO A DEPTH OF 4" BELOW THE BOX AND WITHIN THE BOX TO A DEPTH TO SUPPORT THE METER AND STRAINER.
5. CONTRACTOR TO FURNISH AND INSTALL ALL ITEMS SHOWN ON THIS DRAWING EXCEPT THE STRAINER AND METER WHICH SHALL BE FURNISHED AND INSTALLED BY THE CITY.
6. SEE CONSTRUCTION PLANS FOR METER LOCATION WHERE THE SIDEWALK IS NOT CONTIGUOUS TO THE CURB AND GUTTER.
7. "CONCRETE" SHALL BE PORTLAND CEMENT CONCRETE WITH A MINIMUM STRENGTH OF 3000 PSI.
8. THE SECTION OF PIPE 20" IN LENGTH PRECEDING THE STRAINER AND THE PIPE 12" AFTER THE METER MUST BE INSTALLED IN A STRAIGHT RUN LEVEL WITH THE METER.

	DRAWING NO.: 5-08	CITY OF VACAVILLE STANDARD DRAWING
	DATE: 09/09/03	
	SCALE: NONE	
	APPROVED BY: <i>Paul J. How</i> R.C.E. C59003	
	DEPUTY DIRECTOR OF PUBLIC WORKS ENGINEERING SERVICES	STANDARD 4" WATER SERVICE

CHRISTY METER BOX AND LID. LID SHALL INCLUDE TOUCH READ HOLES.
 6" SERVICE - CHRISTY CAT NO. R-17 PIT W/ R-17-52D LID W/ 8" ROUND READING LID.
 8" SERVICE - CHRISTY CAT NO. R-37 PIT W/ R-37-54D LID W/ 8" ROUND READING LID.



NOTES:

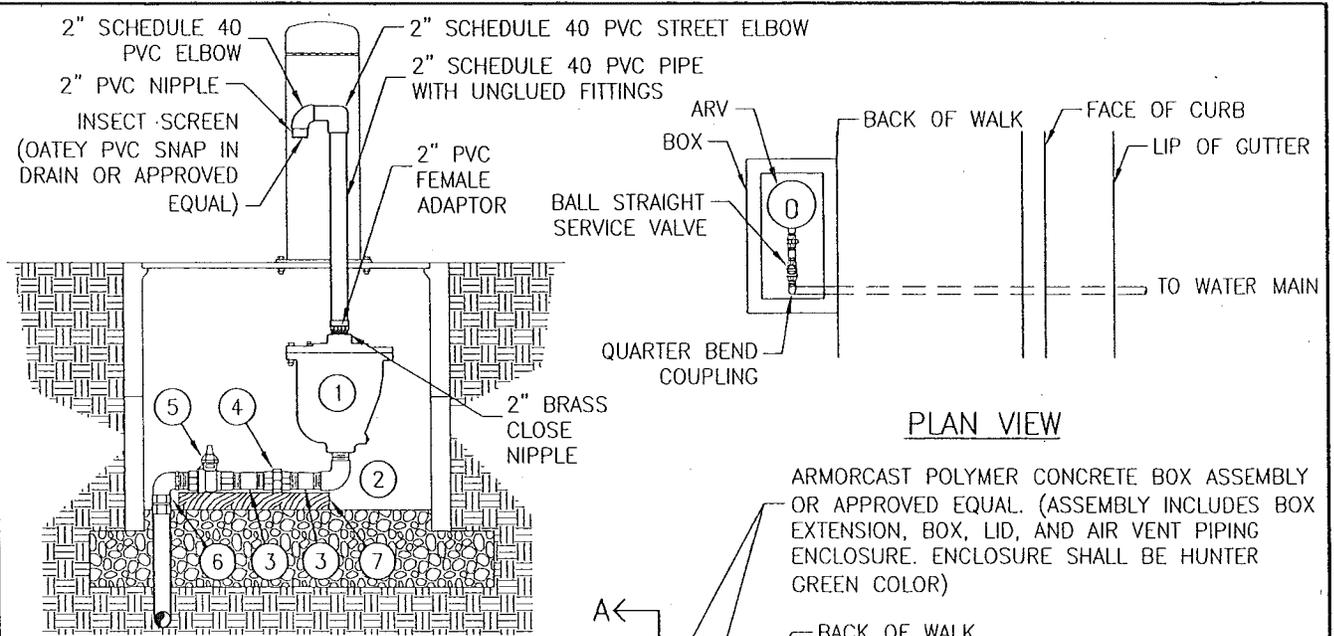
1. REFER TO CONSTRUCTION PLANS OR ENCROACHMENT PERMIT FOR SERVICE LINE CONNECTION REQUIREMENTS TO THE WATER MAIN.
2. THE SERVICE LINE SHALL BE INSTALLED IN A STRAIGHT LINE FROM THE MAIN TO THE METER IN THE SHORTEST DISTANCE POSSIBLE. WRAP SERVICE LINE AND ALL FITTINGS IN POLYETHYLENE PER AWWA C-105.
3. THE SERVICE LINE SHALL BE ENCASED IN SAND TO A DEPTH OF 3" BELOW AND 6" ABOVE THE PIPE. THE SAND SHALL HAVE A MINIMUM SAND EQUIVALENCY OF 30.
4. 3/4" CRUSHED ROCK SHALL BE INSTALLED TO A DEPTH OF 4" BELOW THE BOX AND WITHIN THE BOX TO A DEPTH TO SUPPORT THE METER AND STRAINER.
5. CONTRACTOR TO FURNISH AND INSTALL ALL ITEMS SHOWN ON THIS DRAWING EXCEPT FOR STRAINER AND METER WHICH SHALL BE FURNISHED AND INSTALLED BY THE CITY.
6. SEE CONSTRUCTION PLANS FOR METER LOCATION WHERE THE SIDEWALK IS NOT CONTIGUOUS TO THE CURB AND GUTTER.
7. "CONCRETE" SHALL BE PORTLAND CEMENT CONCRETE WITH A MINIMUM STRENGTH OF 3000 PSI.
8. THE SECTION OF PIPE PRECEDING THE STRAINER (30" FOR 6" SERVICE, 40" FOR 8" SERVICE) AND THE PIPE AFTER THE METER (18" FOR 6" SERVICE, 24" FOR 8" SERVICE) MUST BE INSTALLED IN A STRAIGHT RUN LEVEL WITH THE METER.



DRAWING NO.: 5-09
 DATE: 09/09/03
 SCALE: NONE
 APPROVED BY: *Paul Horn*
 R.C.E. C59003
 DEPUTY DIRECTOR OF PUBLIC WORKS
 ENGINEERING SERVICES

**CITY OF VACAVILLE
 STANDARD DRAWING**

**STANDARD
 WATER SERVICE
 6" AND 8"**

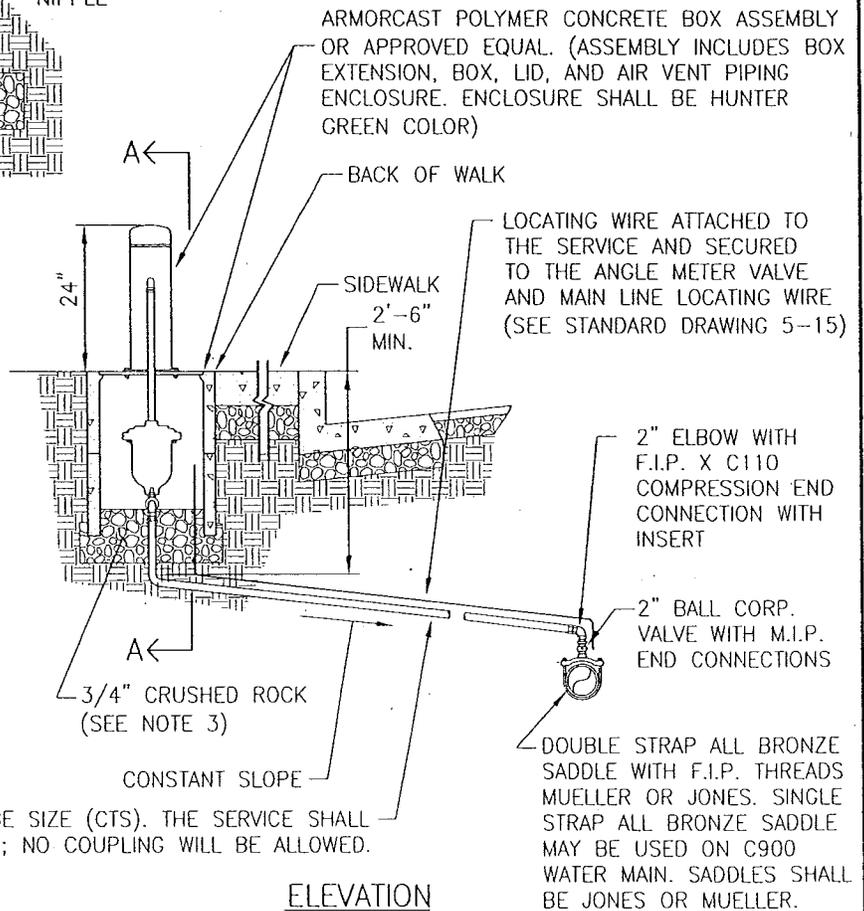


SECTION A-A

LEGEND:

- ① COMBINATION AIR VACUUM AND RELEASE VALVE, CRISPIN OR APPROVED EQUAL
- ② 2" STREET ELBOW
- ③ NIPPLE
- ④ UNION
- ⑤ BALL STRAIGHT SERVICE VALVE WITH F.I.P. X F.I.P. END CONNECTIONS AND LOCK WING
- ⑥ QUARTER BEND COUPLING WITH M.I.P. X C110 COMPRESSION END CONNECTION WITH INSERT
- ⑦ 2"x6" REDWOOD BLOCK SUPPORT

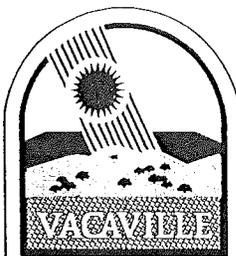
POLYETHYLENE, PE 3408, COPPER TUBE SIZE (CTS). THE SERVICE SHALL BE ONE CONTINUOUS PIECE OF TUBING; NO COUPLING WILL BE ALLOWED.



ELEVATION

NOTES:

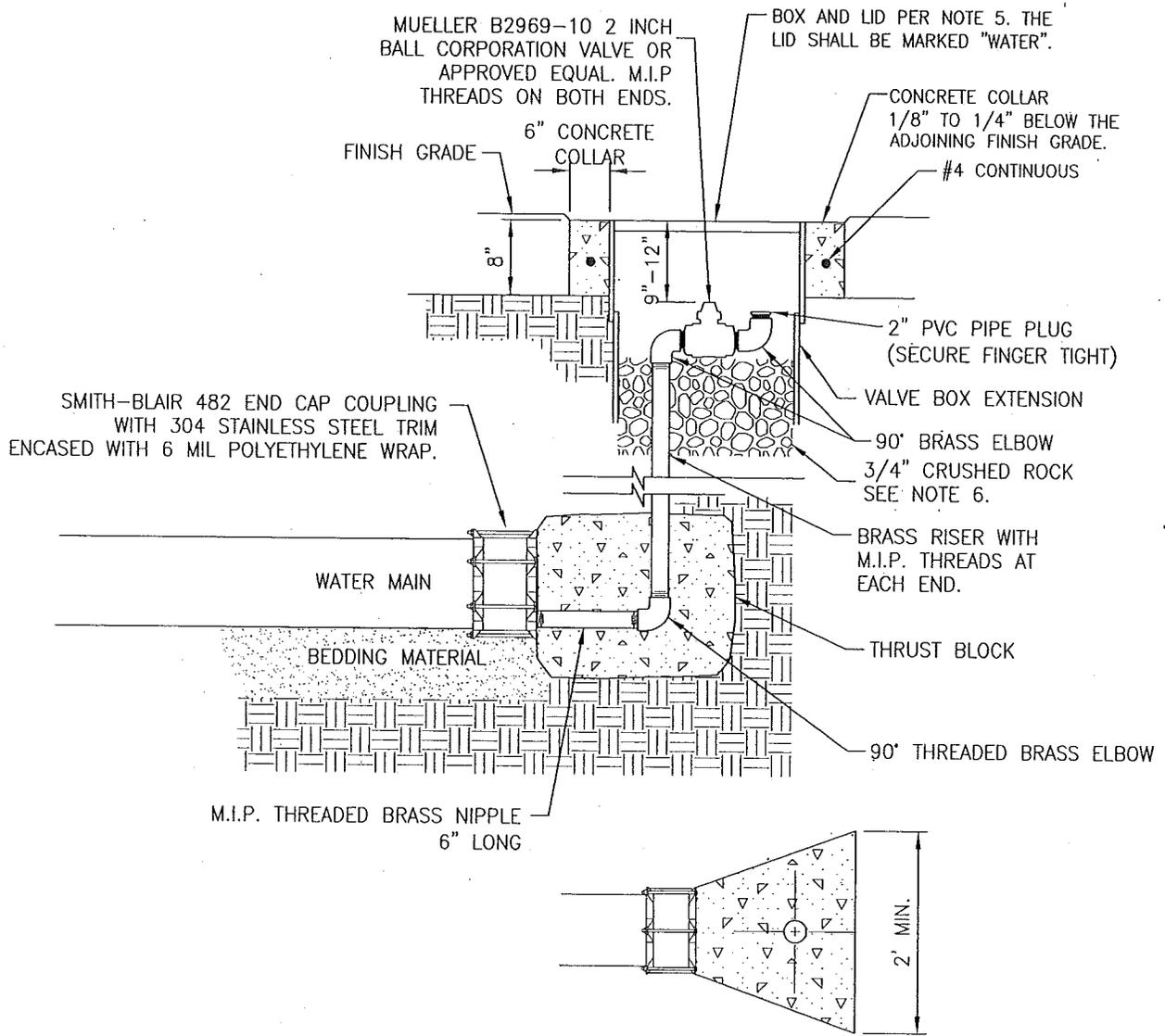
1. ALL PIPING, VALVES, AND FITTINGS SHALL BE 2" BRASS AND MUELLER UNLESS OTHERWISE SPECIFIED.
2. THE SERVICE LINE SHALL BE ENCASED IN SAND TO A DEPTH OF 3" BELOW AND 6" ABOVE THE PIPE. THE SAND SHALL HAVE A MINIMUM SAND EQUIVALENCY OF 30.
3. 3/4" CRUSHED ROCK SHALL BE INSTALLED TO A DEPTH OF 4" BELOW THE BOX AND WITHIN THE BOX TO SUPPORT THE BOX. THE LENGTH OF PE SERVICE PIPING WITHIN THE LIMITS OF THE CRUSHED ROCK SHALL BE WRAPPED WITH 10 MIL VINYL TAPE.



DRAWING NO.: 5-10
 DATE: 03-11-08
 SCALE: NONE
 APPROVED BY: *[Signature]*
 R.C.E. C59003
 DEPUTY DIRECTOR OF PUBLIC WORKS
 ENGINEERING SERVICES

CITY OF VACAVILLE
 STANDARD DRAWING

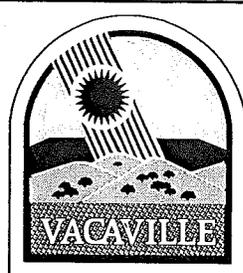
2" AIR RELEASE VALVE



TOP VIEW OF THRUST BLOCK

NOTES:

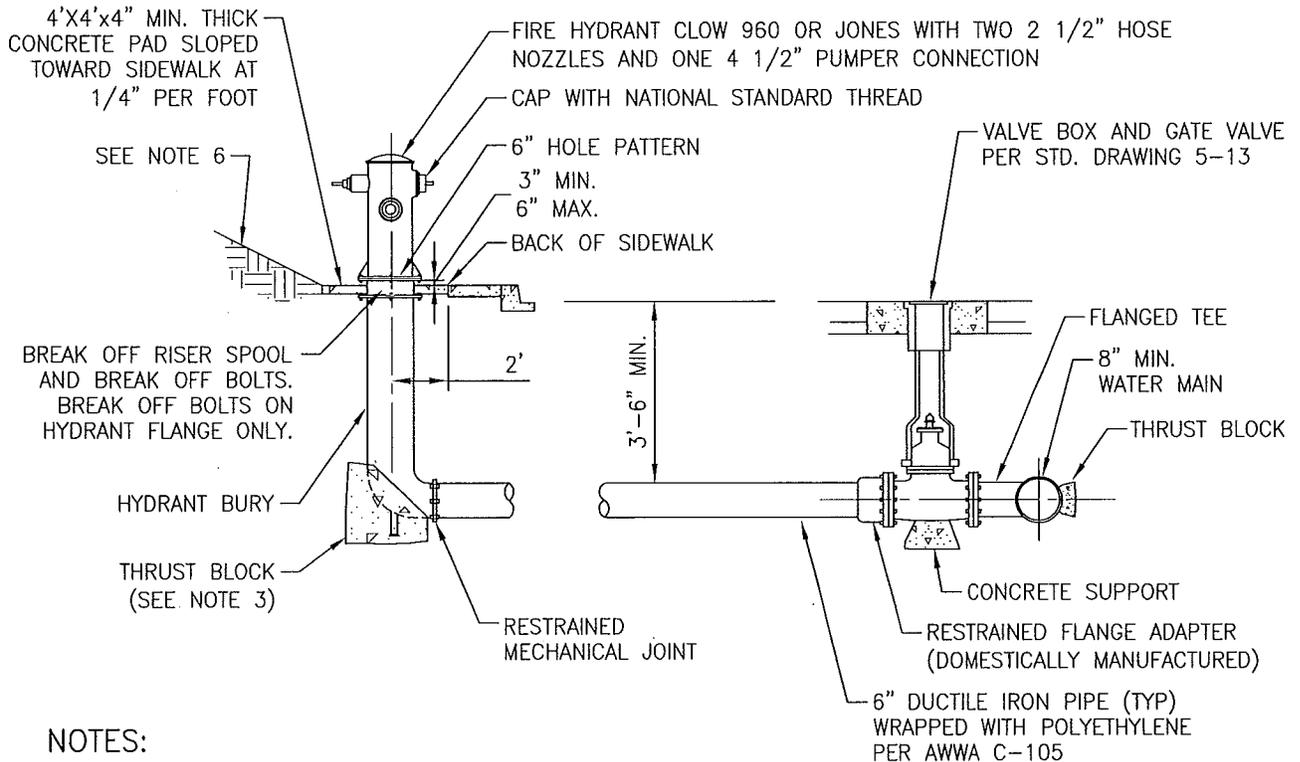
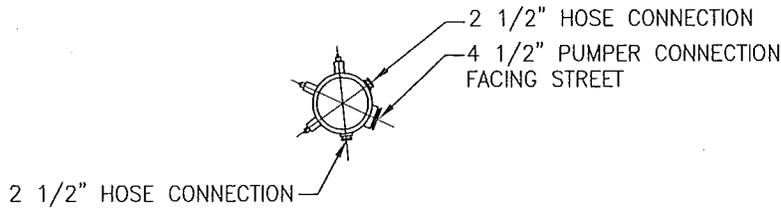
1. FOR PERMANENT INSTALLATIONS SUCH AS CUL-DE-SACS, FIRE HYDRANTS SHALL BE USED AS BLOWOFFS.
2. WHEN LINE IS EXTENDED THE BLOWOFF SHALL BE REPLACED WITH AN IN-LINE GATE VALVE UNLESS A GATE VALVE ALREADY EXISTS BEYOND THE LAST SERVICE CONNECTION.
3. THE BRASS PIPE AND ELBOW SHOWN ON THIS DETAIL SHALL BE 2" IN SIZE AND SHALL BE WRAPPED WITH 10 MIL VINYL TAPE.
4. "CONCRETE" SHALL BE PORTLAND CEMENT CONCRETE WITH A MINIMUM STRENGTH OF 3000 PSI.
5. CHRISTY B1017 BOX H/20 LOADING WITH B1017-61JH LID OR APPROVED EQUAL IN ANY AREA ACCESSIBLE TO VEHICLE TRAFFIC. OTHERWISE, USE CHRISTY B16 BOX WITH B16D LID OR APPROVED EQUAL FOR AREAS NOT ACCESIBLE TO VEHICULAR TRAFFIC.
6. 3/4" CRUSHED ROCK SHALL BE INSTALLED TO A DEPTH OF 4" BELOW THE BOX AND WITHIN THE BOX TO A DEPTH TO SUPPORT THE CORPORATION VALVE.



DRAWING NO.:	5-11
DATE:	09/10/07
SCALE:	NONE
APPROVED BY:	<i>[Signature]</i>
DIRECTOR OF PUBLIC WORKS	R.C.E. C24974

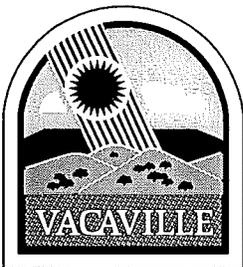
CITY OF VACAVILLE
STANDARD DRAWING

2" BLOWOFF VALVE



NOTES:

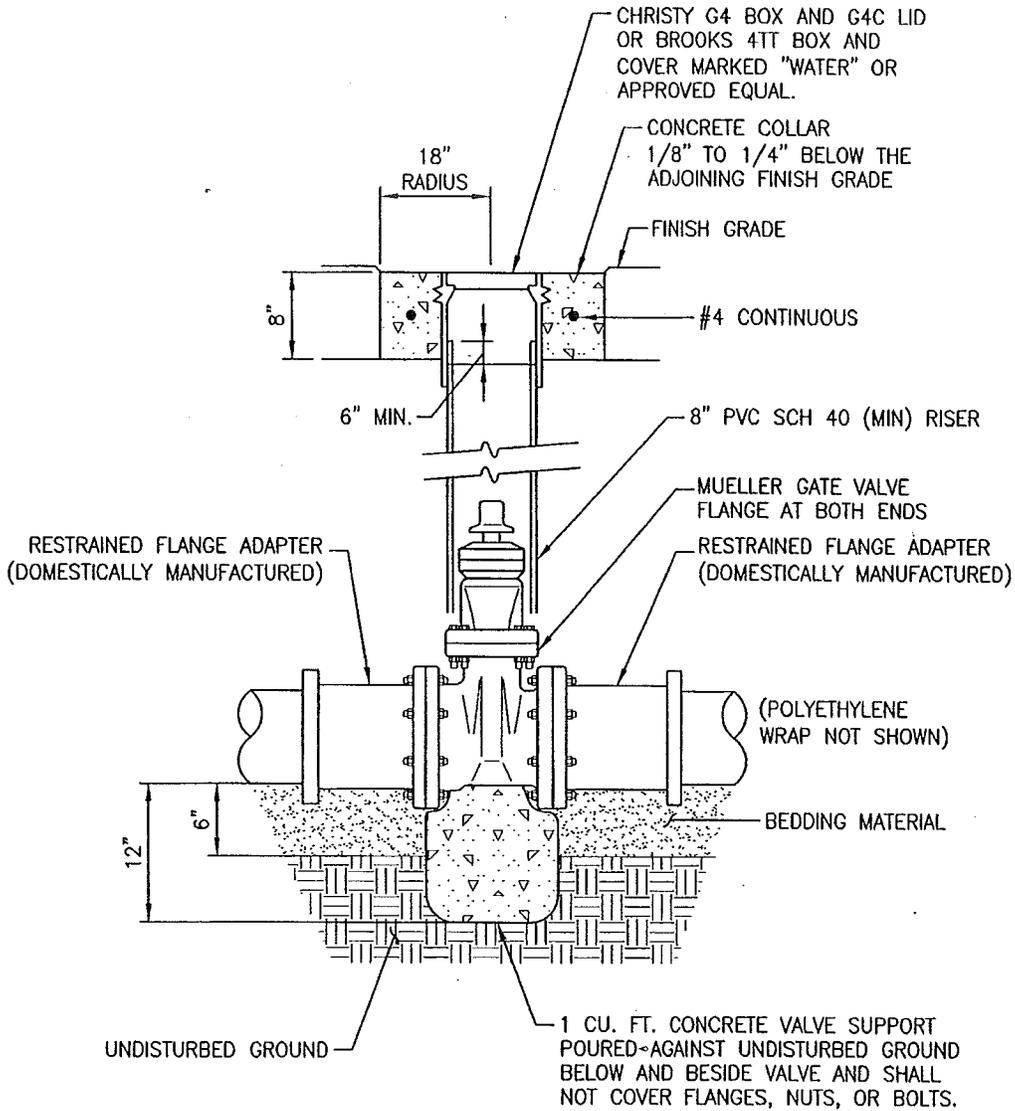
1. A BLUE RETROREFLECTIVE MARKER SHALL BE LOCATED 2' OFF THE STREET CENTERLINE OR MEDIAN CURB TOWARDS THE HYDRANT.
2. FIRE HYDRANTS SHALL BE PAINTED WHITE.
3. THRUST BLOCKS PER CITY STANDARD DRAWINGS 5-02 AND 5-03.
4. ALL PIPE AND FITTINGS SHALL BE RESTRAINED JOINTS.
5. IN CASES WHERE SIDEWALK IS NOT CONTIGUOUS TO CURB, THE FIRE HYDRANT SHALL BE 30" MINIMUM BEHIND FACE OF CURB AND OUTSIDE SIDEWALK AREA.
6. SLOPES BEHIND AND ADJACENT TO THE FIRE HYDRANT PAD SHALL NOT EXCEED 2:1 WITHOUT A MASONRY RETAINING WALL.
7. "CONCRETE" SHALL BE PORTLAND CEMENT CONCRETE WITH A MINIMUM STRENGTH OF 3000 PSI.
8. ALL UNDERGROUND FLANGE BOLT ASSEMBLIES SHALL BE TYPE 304 STAINLESS STEEL WITH TEFLON ANTI-SEIZE COMPOUND.



DRAWING NO.:	5-12
DATE:	01/16/07
SCALE:	NONE
APPROVED BY:	
R.C.E. C24974 DIRECTOR OF PUBLIC WORKS	

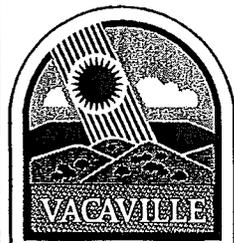
**CITY OF VACAVILLE
STANDARD DRAWING**

**STANDARD
FIRE HYDRANT ASSEMBLY
(PUBLIC)**



NOTES:

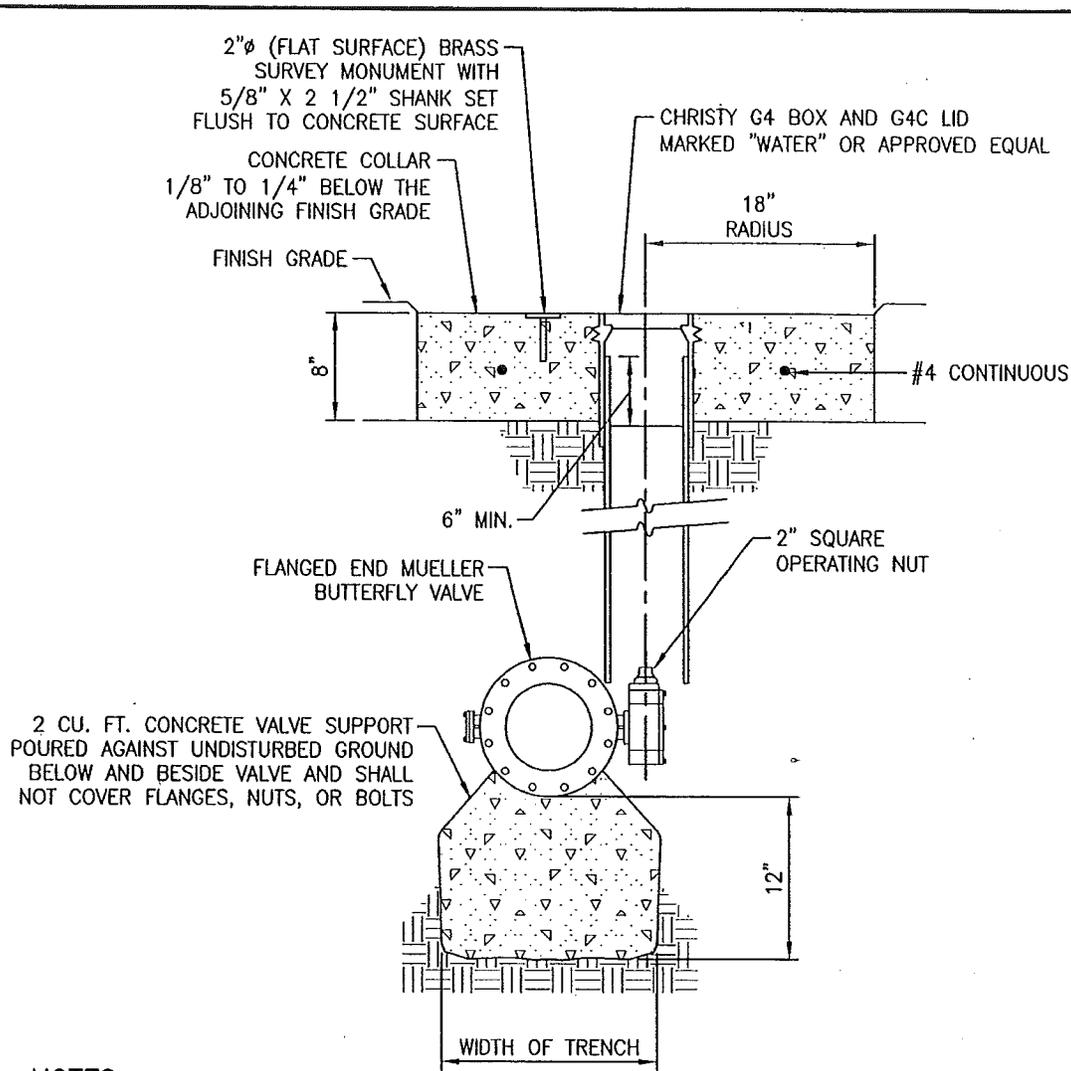
1. GATE VALVES SHALL BE INSTALLED ON WATER MAINS OF 12" DIAMETER OR LESS.
2. INSTALL LOCATING WIRE AT THE VALVE LOCATION IN ACCORDANCE WITH STANDARD DRAWING 5-15.
3. "CONCRETE" SHALL BE PORTLAND CEMENT CONCRETE WITH A MINIMUM STRENGTH OF 3000 PSI.
4. ALL UNDERGROUND FLANGE BOLT ASSEMBLIES SHALL BE TYPE 304 STAINLESS STEEL WITH TEFLON ANTI-SEIZE COMPOUND.



DRAWING NO.:	5-13
DATE:	09/09/03
SCALE:	NONE
APPROVED BY:	<i>Paul H. ...</i>
	R.C.E. C59003
DEPUTY DIRECTOR OF PUBLIC WORKS ENGINEERING SERVICES	

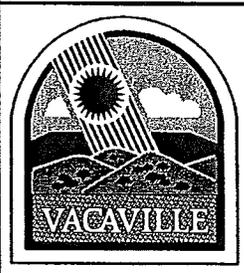
**CITY OF VACAVILLE
STANDARD DRAWING**

**GATE
WATER VALVE
INSTALLATION**



NOTES:

1. BUTTERFLY VALVES SHALL BE USED WHERE THE DIAMETER OF THE WATER MAIN IS GREATER THAN TWELVE INCHES IN SIZE.
2. THE VALVE SHALL BE POSITIONED SUCH THAT THE OPERATING NUT IS LOCATED ON EITHER THE NORTH OR EAST SIDE OF THE WATER MAIN LOCATION.
3. "CONCRETE" SHALL BE PORTLAND CEMENT CONCRETE WITH A MINIMUM STRENGTH OF 3000 PSI.
4. ALL VALVES SHALL BE MUELLER.
5. INSTALL LOCATING WIRE AT THE VALVE LOCATION IN ACCORDANCE WITH STANDARD DRAWING 5-15.
6. ALL UNDERGROUND FLANGE BOLT ASSEMBLIES SHALL BE TYPE 304 STAINLESS STEEL WITH TEFLON ANTI-SEIZE COMPOUND.

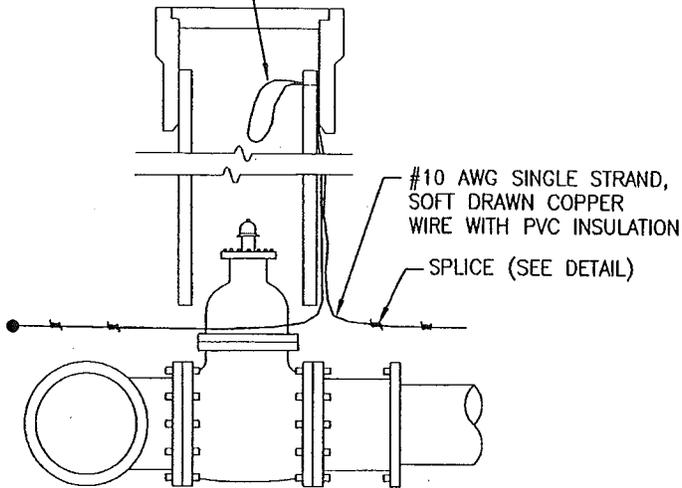


DRAWING NO.:	5-14
DATE:	09/09/03
SCALE:	NONE
APPROVED BY:	<i>Paul J. Brown</i> R.C.E. C59003
DEPUTY DIRECTOR OF PUBLIC WORKS ENGINEERING SERVICES	

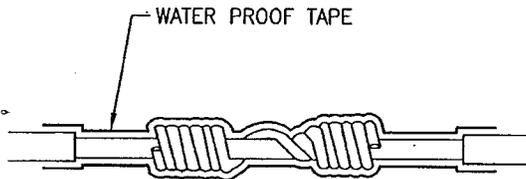
**CITY OF VACAVILLE
STANDARD DRAWING**

BUTTERFLY VALVE

6" LOOP (BARE WIRE)

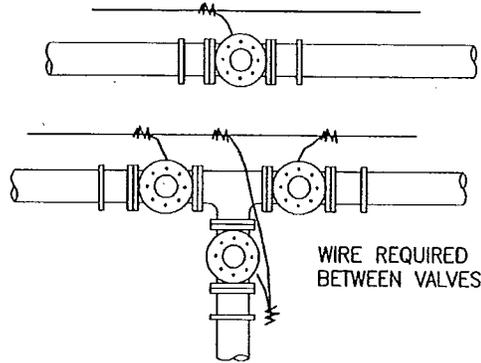


VALVE INSTALLATION



NOTE:
REMOVE INSULATION AT SPLICE. INSURE CONTINUITY.
WRAP SPLICE WITH WATER-PROOF TAPE (SCOTCHKOTE
ELECTRICAL COATING OR APPROVED EQUAL).

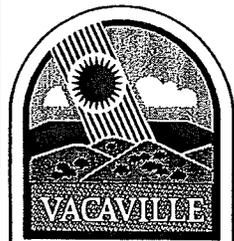
SPLICE DETAIL



MAIN INTERSECTIONS

NOTES:

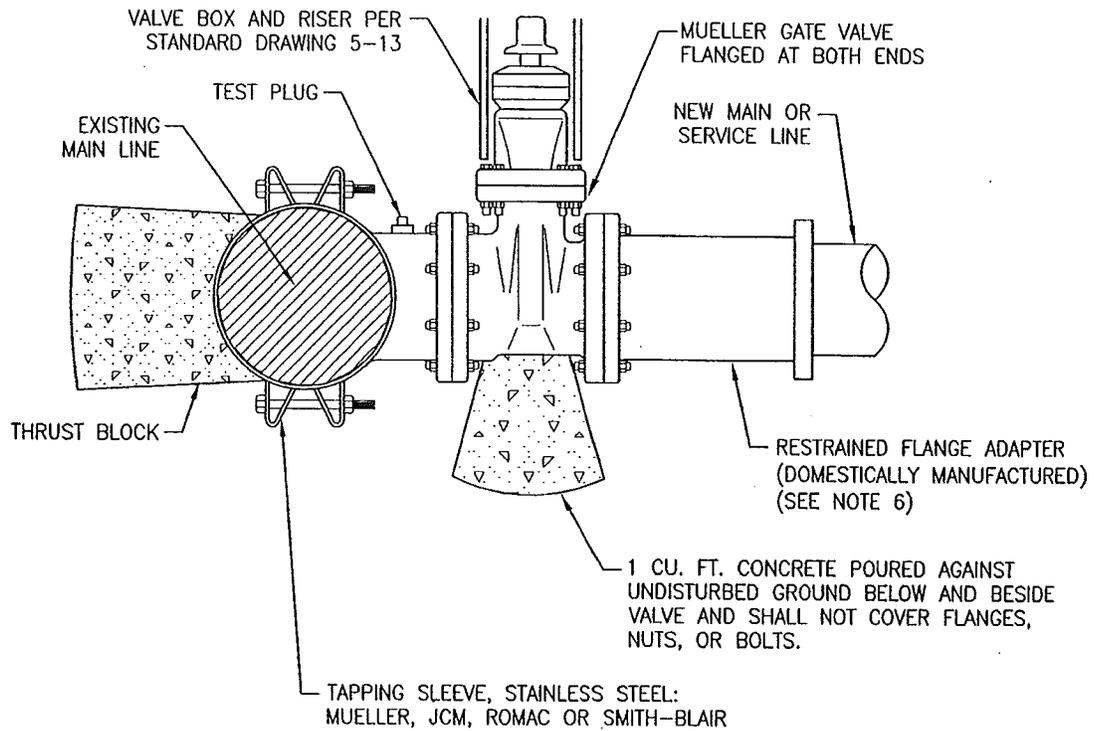
1. WIRE SHALL BE CONTINUOUS BETWEEN VALVE BOXES ALONG THE MAIN LINE.
2. WIRE SHALL BE CONTINUOUS BETWEEN THE MAIN AND METER VALVE OR AIR RELEASE VALVE ON THE RELATED SERVICE LINE.
3. LOCATING WIRE TO BE LAID 6" OVER TOP OF PIPE AND SECURED WITH TAPE AT EVERY 10' INTERVAL AND AT ELBOWS AND VALVES.
4. WIRE TO BE EXTENDED THROUGH NOTCH IN RISER AND TO WITHIN 6" MIN. OF VALVE BOX LID, AS SHOWN ABOVE.
5. CONTRACTOR SHALL CONDUCT A CONTINUITY TEST ON ALL LOCATING WIRE SPLICES.



DRAWING NO.: 5-15
 DATE: 09/09/03
 SCALE: NONE
 APPROVED BY: *Paul Han* R.C.E. C59003
 DEPUTY DIRECTOR OF PUBLIC WORKS
 ENGINEERING SERVICES

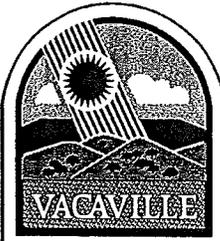
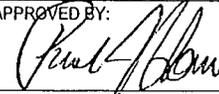
**CITY OF VACAVILLE
STANDARD DRAWING**

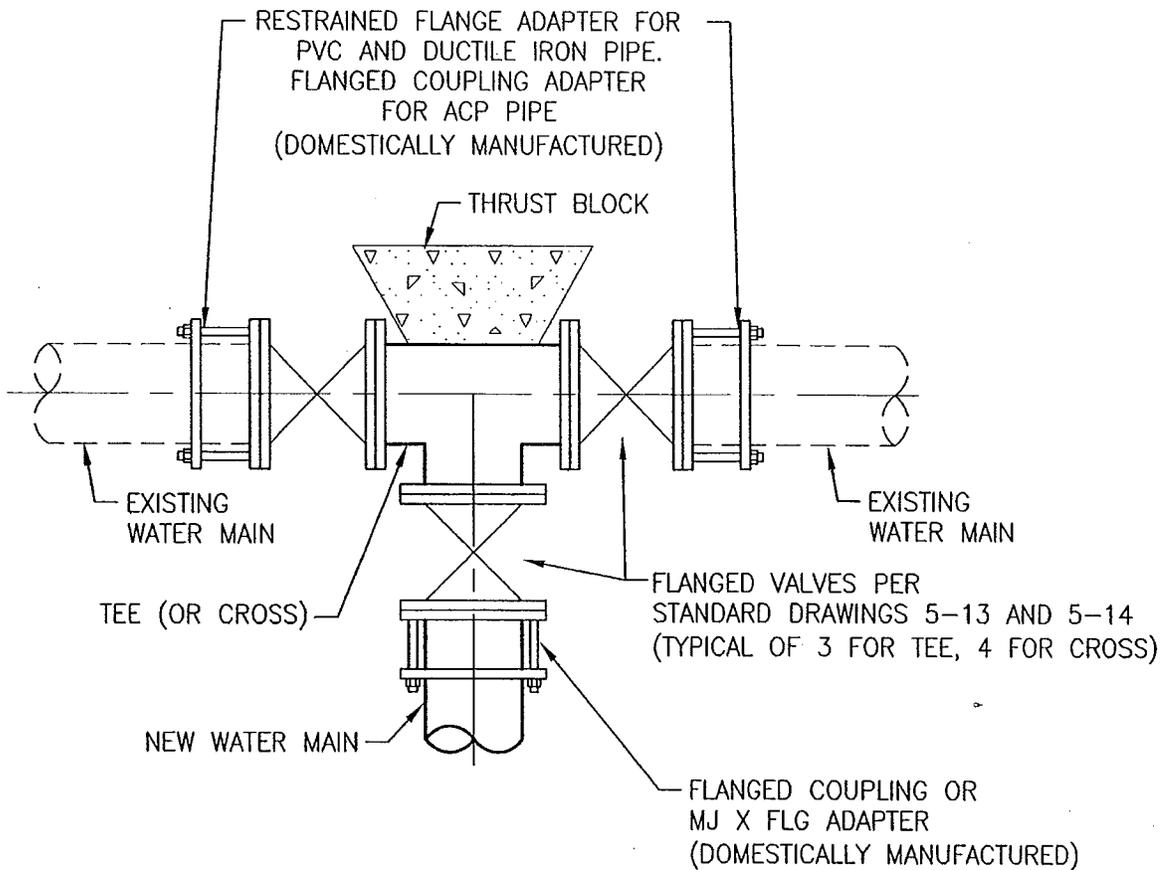
**LOCATING WIRE
INSTALLATION**



NOTES:

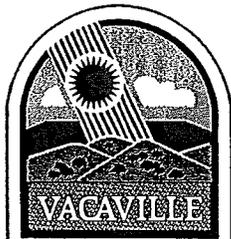
1. TAPPING SLEEVES MAY BE USED ONLY WITH THE APPROVAL OF THE DIRECTOR OF PUBLIC WORKS.
2. THE NEW MAIN OR SERVICE TAP MUST BE SMALLER THAN THE EXISTING MAIN LINE.
3. TAPPING SLEEVE MUST BE INDEPENDENTLY SUPPORTED DURING THE TAPPING. LEAVE SUPPORTS IN PLACE DURING BACKFILL.
4. PRESSURE TEST THE SLEEVE TO 150 PSI AFTER FITTING BUT PRIOR TO TAPPING TO INSURE THE GASKET SEAL.
5. THRUST BLOCKS SHALL BE INSTALLED PER STANDARD DRAWINGS 5-02 AND 5-03.
6. SEE CONSTRUCTION PLANS FOR SPECIFIC JOINT REQUIREMENTS.
7. "CONCRETE" SHALL BE PORTLAND CEMENT CONCRETE WITH A MINIMUM STRENGTH OF 3000 PSI.
8. SEE DETAIL 5-07 FOR REQUIREMENTS FOR 3" SERVICE.
9. INSTALL LOCATING WIRE AT THE VALVE LOCATION IN ACCORDANCE WITH STANDARD DRAWING 5-15.

	DRAWING NO.: 5-16	CITY OF VACAVILLE STANDARD DRAWING
	DATE: 09/09/03	
	SCALE: NONE	TAPPING SLEEVE & VALVE 3" THRU 8" SERVICE
	APPROVED BY:  R.C.E. C59003 DEPUTY DIRECTOR OF PUBLIC WORKS ENGINEERING SERVICES	



NOTES:

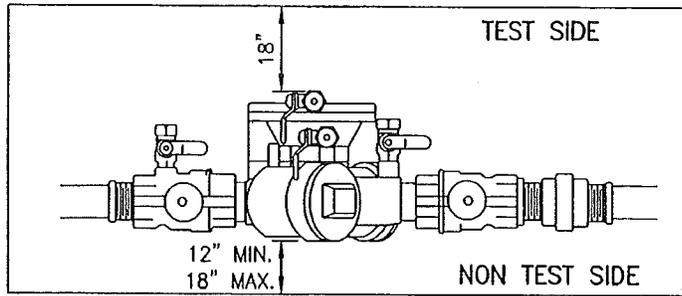
1. EXISTING WATER MAIN MUST BE SHUT DOWN BY THE CITY AND DEWATERED BY THE CONTRACTOR. NOTIFICATION OF AFFECTED CUSTOMERS IS THE RESPONSIBILITY OF THE CONTRACTOR.
2. A GATE VALVE (OR BUTTERFLY VALVE FOR VALVES LARGER THAN 12") MUST BE INSTALLED ON EACH BRANCH OR RUN OF NEW TEE OR CROSS.
3. LOCATE ALL BUTTERFLY VALVE OPERATORS ON NORTH OR EAST SIDE OF PIPE.
4. PROVIDE THRUST BLOCK RESTRAINT PER CITY STANDARD DRAWING 5-02.
5. INSTALL LOCATING WIRE AT VALVE LOCATIONS IN ACCORDANCE WITH STANDARD DRAWING 5-15.



DRAWING NO.:	5-17
DATE:	09/09/03
SCALE:	NONE
APPROVED BY:	<i>Paul J. Horn</i>
	R.C.E. C59003
DEPUTY DIRECTOR OF PUBLIC WORKS ENGINEERING SERVICES	

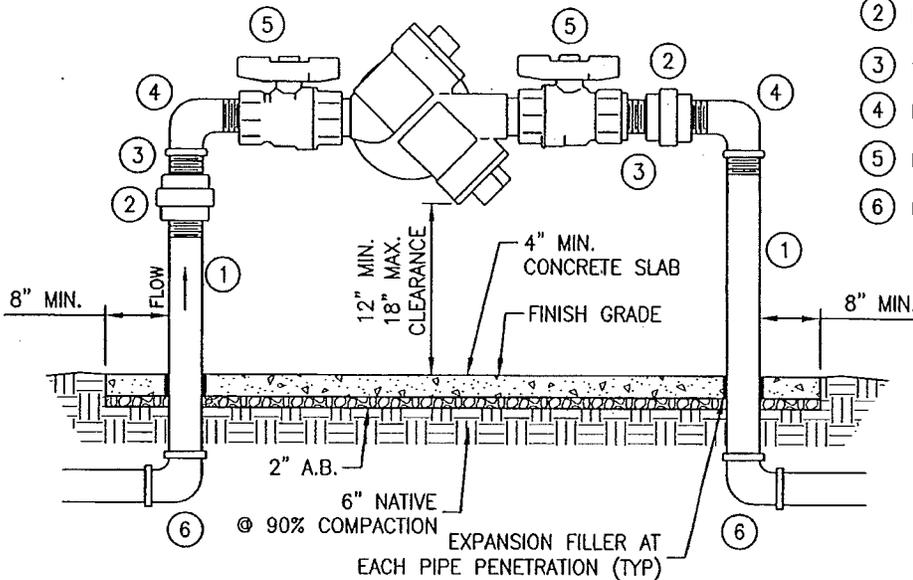
**CITY OF VACAVILLE
STANDARD DRAWING**

**WATER MAIN CUT-IN
CONNECTION DETAIL**



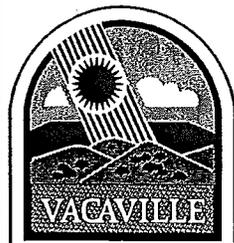
LEGEND:

- ① BRASS THREADED NIPPLE OR COPPER PIPE WITH BRASS MALE THREADED ADAPTER
- ② BRASS UNION
- ③ CLOSE NIPPLE
- ④ BRASS 90° STREET ELBOW
- ⑤ BALL VALVE
- ⑥ BRASS 90° ELBOW



NOTES:

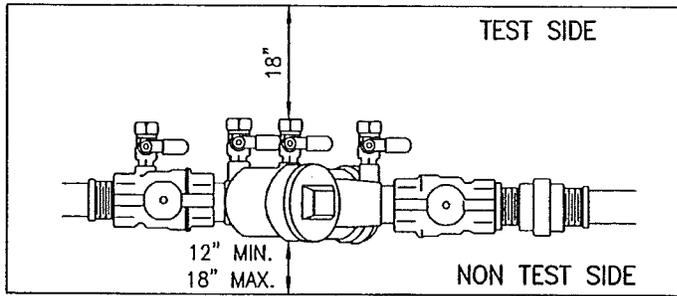
1. TEST COCKS SHALL BE PLUGGED WITH BRASS TEST PLUGS.
2. CONCRETE FOR PAD SHALL BE PORTLAND CEMENT CONCRETE WITH A MINIMUM STRENGTH OF 3000 PSI.
3. DEVICES SHALL BE FEBCO, WATTS, OR APPROVED EQUAL & APPROVED BY THE U.S.C. TESTING LABORATORY.
4. USE TEFLON PLUMBERS TAPE ON ALL PIPE THREADS. PIPE DOPE IS NOT ALLOWED.
5. ALL PIPING BETWEEN THE WATER METER & THE BACKFLOW DEVICE, INCLUDING ALL ABOVE GROUND PIPING, SHALL BE RIGID CLASS "K" COPPER WITH SILVER SOLDERED JOINTS, OR BRASS THREADED FITTINGS AS SHOWN.
6. DEVICE SHALL BE LOCATED IMMEDIATELY BEHIND WATER METER.
7. DEVICE SHALL HAVE CAGE PROTECTION PER STANDARD DRAWING 5-24. LOCK FURNISHED BY CITY.
8. DEVICE SHALL HAVE FREEZE PROTECTION (FABRICATED INSULATED COVER).
9. PRIOR TO COMPLETING NOTE 1 ABOVE, THE DEVICE SHALL BE TESTED BY A CERTIFIED TESTER APPROVED BY THE CITY AND THE TEST RESULTS SHALL BE SUBMITTED TO THE DEPARTMENT OF PUBLIC WORKS INSPECTOR.



DRAWING NO.: 5-18
 DATE: 09/09/03
 SCALE: NONE
 APPROVED BY: *Paul Horn* R.C.E. C59003
 DEPUTY DIRECTOR OF PUBLIC WORKS
 ENGINEERING SERVICES

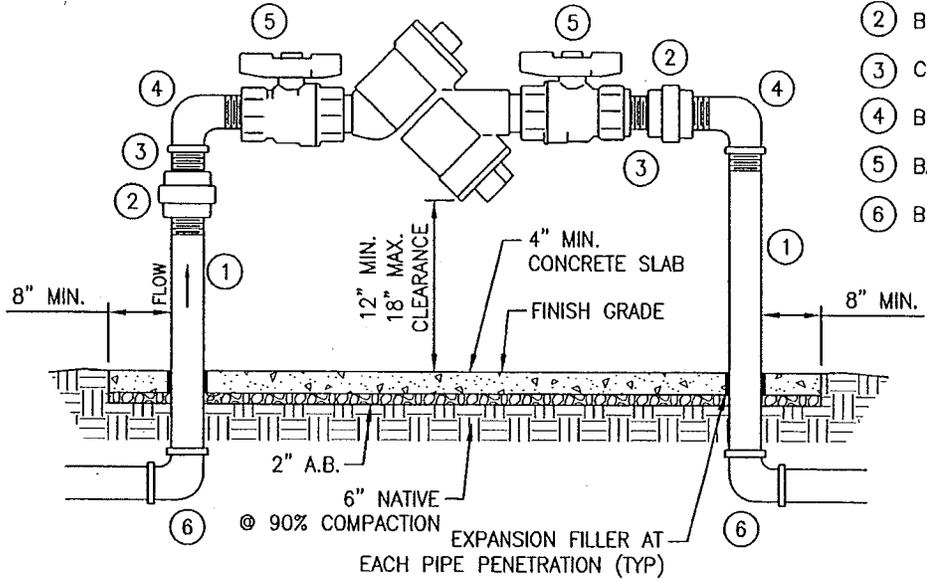
**CITY OF VACAVILLE
 STANDARD DRAWING**

**REDUCED PRESSURE BACKFLOW
 PREVENTER INSTALLATION
 3/4" - 2"**



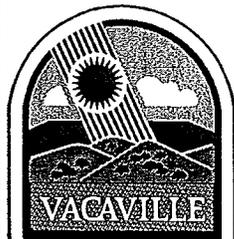
LEGEND:

- ① BRASS THREADED NIPPLE OR COPPER PIPE WITH BRASS MALE THREADED ADAPTER
- ② BRASS UNION
- ③ CLOSE NIPPLE
- ④ BRASS 90° STREET ELBOW
- ⑤ BALL VALVE
- ⑥ BRASS 90° ELBOW



NOTES:

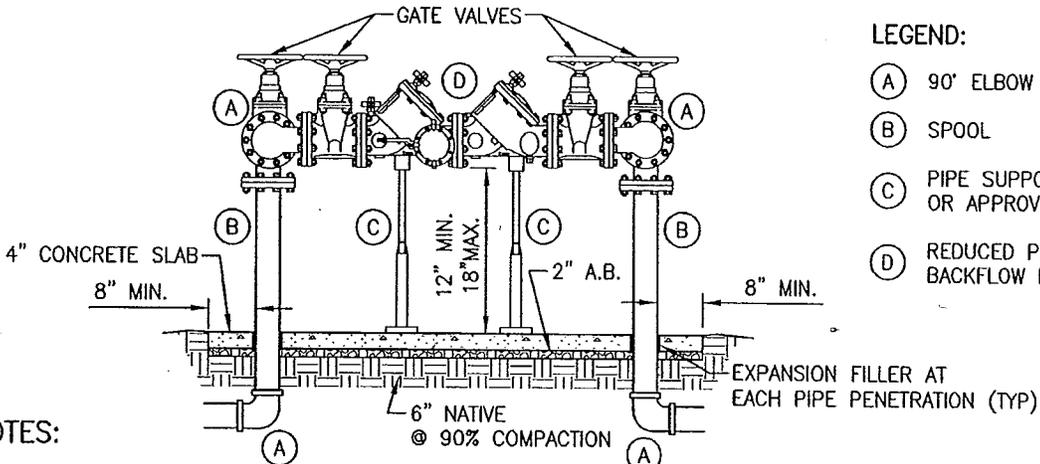
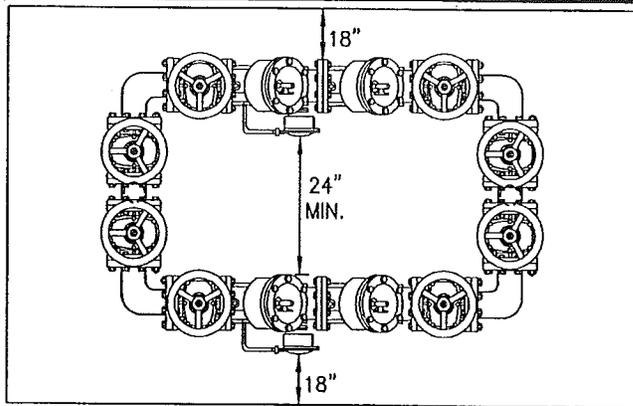
1. TEST COCKS SHALL BE PLUGGED WITH BRASS TEST PLUGS.
2. CONCRETE FOR PAD SHALL BE PORTLAND CEMENT CONCRETE WITH A MINIMUM STRENGTH OF 3000 PSI.
3. DEVICES SHALL BE FEBCO, WATTS, OR APPROVED EQUAL & APPROVED BY THE U.S.C. TESTING LABORATORY.
4. USE TEFLON PLUMBERS TAPE ON ALL PIPE THREADS. PIPE DOPE IS NOT ALLOWED.
5. ALL PIPING BETWEEN THE WATER METER & THE BACKFLOW DEVICE, INCLUDING ALL ABOVE GROUND PIPING, SHALL BE RIGID CLASS "K" COPPER WITH SILVER SOLDERED JOINTS, OR BRASS THREADED FITTINGS AS SHOWN.
6. DEVICE SHALL BE LOCATED IMMEDIATELY BEHIND WATER METER.
7. DEVICE SHALL HAVE CAGE PROTECTION PER STANDARD DRAWING 5-24. LOCK FURNISHED BY CITY.
8. DEVICE SHALL HAVE FREEZE PROTECTION (FABRICATED INSULATED COVER).
9. PRIOR TO COMPLETING NOTE 1 ABOVE, THE DEVICE SHALL BE TESTED BY A CERTIFIED TESTER APPROVED BY THE CITY, AND THE TEST RESULTS SHALL BE SUBMITTED TO THE DEPARTMENT OF PUBLIC WORKS INSPECTOR.



DRAWING NO.: 5-19
 DATE: 09/09/03
 SCALE: NONE
 APPROVED BY: *Paul J. Horn*
 R.C.E. C59003
 DEPUTY DIRECTOR OF PUBLIC WORKS
 ENGINEERING SERVICES

**CITY OF VACAVILLE
 STANDARD DRAWING**

**DOUBLE CHECK BACKFLOW
 PREVENTER INSTALLATION
 3/4" - 2"**

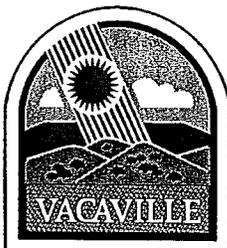


LEGEND:

- (A) 90° ELBOW
- (B) SPOOL
- (C) PIPE SUPPORT, ANVIL OR APPROVED EQUAL
- (D) REDUCED PRESSURE BACKFLOW DEVICE

NOTES:

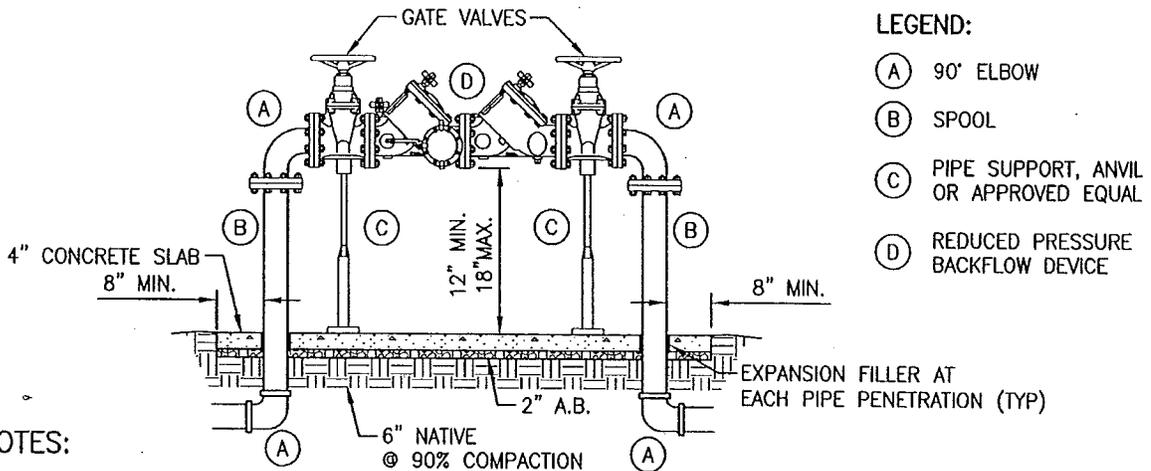
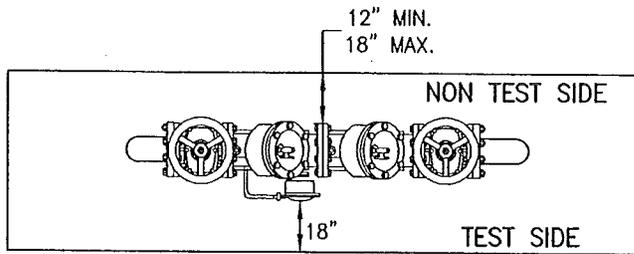
1. ALL FITTINGS & PIPING SHALL BE DUCTILE IRON AND FLANGE BOLTED. EXCEPT (B) MAY BE RESTRAINED JOINT.
2. TEST COCKS SHALL BE PLUGGED WITH BRASS TEST PLUGS.
3. CONCRETE FOR PAD SHALL BE PORTLAND CEMENT CONCRETE WITH A MINIMUM STRENGTH OF 3000 PSI.
4. DEVICE SHALL BE FEBCO, WATTS, OR APPROVED EQUAL, & APPROVED BY THE U.S.C. TESTING LABORATORY.
5. ALL UNDERGROUND ELBOWS SHALL HAVE THRUST BLOCKS PER STANDARD DRAWING 5-02.
6. BELOW GROUND BOLTS SHALL BE 304 STAINLESS STEEL FOR FLANGED FITTINGS WITH TEFLON ANTI-SEIZE COMPOUND.
7. VALVES SHALL BE OF RESILIENT WEDGE CONSTRUCTION.
8. GATES VALVE SHALL BE SECURED WITH 1/4" GRADE 30 GALVANIZED CHAIN. LOCK SUPPLIED BY CITY.
9. DEVICE SHALL BE LOCATED IMMEDIATELY BEHIND WATER METER.
10. DEVICES 3" SHALL HAVE CAGE PROTECTION PER STANDARD DRAWING 5-24.
11. DEVICES 3" SHALL HAVE FREEZE PROTECTION (FABRICATED INSULATED COVER).
12. PAINT ALL PIPING, FITTINGS, AND DEVICES WITH RUST RESISTANT GLOSS ENAMEL PAINT (FOREST GREEN COLOR) FOR SIZES 4" AND GREATER.
13. PRIOR TO COMPLETING NOTE 2 ABOVE, THE DEVICE SHALL BE TESTED BY A CERTIFIED TESTER APPROVED BY THE CITY, AND THE TEST RESULTS SHALL BE SUBMITTED TO THE CITY DEPARTMENT OF PUBLIC WORKS INSPECTOR.
14. THIS DEVICE SHALL BE SCREENED PER STANDARD DRAWING 5-25.



DRAWING NO.: 5-20
 DATE: 09/09/03
 SCALE: NONE
 APPROVED BY: *Paul J. Horn* R.C.E. C59003
 DEPUTY DIRECTOR OF PUBLIC WORKS
 ENGINEERING SERVICES

**CITY OF VACAVILLE
 STANDARD DRAWING**

**MANIFOLD ASSEMBLY REDUCED
 PRESSURE BACKFLOW DEVICE
 3" TO 10"**



LEGEND:

- (A) 90° ELBOW
- (B) SPOOL
- (C) PIPE SUPPORT, ANVIL OR APPROVED EQUAL
- (D) REDUCED PRESSURE BACKFLOW DEVICE

NOTES:

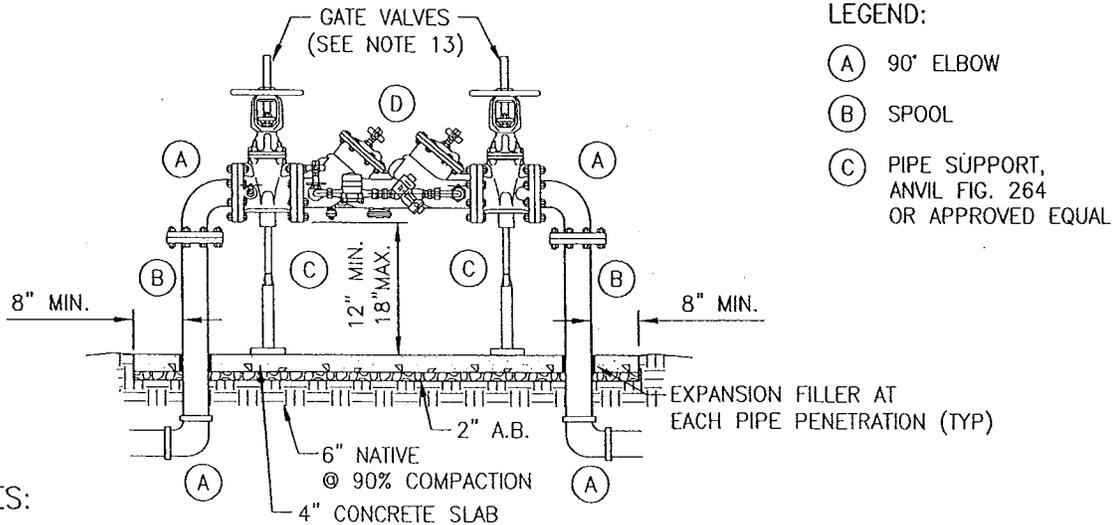
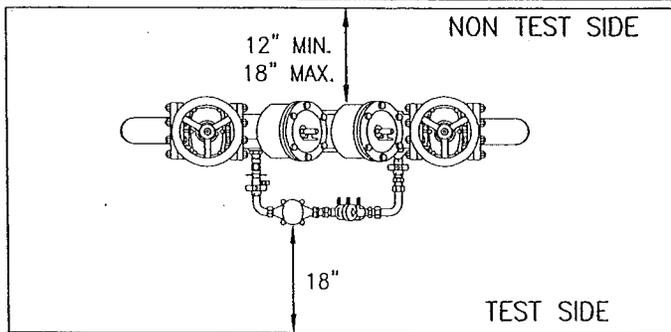
1. ALL FITTINGS & PIPING SHALL BE DUCTILE IRON AND FLANGE BOLTED. EXCEPT (B) MAY BE RESTRAINED JOINT.
2. TEST COCKS SHALL BE SECURED WITH BRASS TEST PLUGS OR CAPS.
3. CONCRETE FOR PAD SHALL BE PORTLAND CEMENT CONCRETE WITH A MINIMUM STRENGTH OF 3000 PSI.
4. DEVICE SHALL BE FEBCO, WATTS, OR APPROVED EQUAL, & APPROVED BY THE U.S.C. TESTING LABORATORY.
5. ALL UNDERGROUND ELBOWS SHALL HAVE THRUST BLOCKS PER STANDARD DRAWING 5-02 UNLESS A VALVE SETTER IS USED WITH THE DEVICE.
6. BELOW GROUND BOLTS SHALL BE 304 STAINLESS STEEL FOR FLANGED FITTINGS WITH TEFLON ANTI-SEIZE COMPOUND.
7. VALVES SHALL BE OF RESILIENT WEDGE CONSTRUCTION.
8. GATE VALVES SHALL BE SECURED WITH 1/4" GRADE 30 GALVANIZED CHAIN. LOCK SUPPLIED BY CITY.
9. DEVICE SHALL BE LOCATED IMMEDIATELY BEHIND WATER METER.
10. DEVICES 3" SHALL HAVE CAGE PROTECTION PER STANDARD DRAWING 5-24.
11. DEVICES 3" SHALL HAVE FREEZE PROTECTION (FABRICATED INSULATED COVER).
12. PAINT ALL PIPING, FITTINGS, AND DEVICES WITH RUST RESISTANT GLOSS ENAMEL PAINT (FOREST GREEN COLOR).
13. PRIOR TO COMPLETING NOTE 2 ABOVE, THE DEVICE SHALL BE TESTED BY A CERTIFIED TESTER APPROVED BY THE CITY, AND THE TEST RESULTS SHALL BE SUBMITTED TO THE CITY DEPARTMENT OF PUBLIC WORKS INSPECTOR.
14. THIS DEVICE SHALL BE SCREENED PER STANDARD DRAWING 5-25.



DRAWING NO.:	5-21
DATE:	09/09/03
SCALE:	NONE
APPROVED BY:	<i>Paul J. Horn</i>
	R.C.E. C59003
DEPUTY DIRECTOR OF PUBLIC WORKS ENGINEERING SERVICES	

**CITY OF VACAVILLE
STANDARD DRAWING**

**REDUCED PRESSURE BACKFLOW
PREVENTER DEVICE
3" TO 10"**



LEGEND:

- (A) 90° ELBOW
- (B) SPOOL
- (C) PIPE SUPPORT, ANVIL FIG. 264 OR APPROVED EQUAL

NOTES:

1. ALL FITTINGS AND PIPING SHALL BE DUCTILE IRON AND FLANGE BOLTED. EXCEPT (B) MAY BE RESTRAINED JOINT.
2. TEST COCKS SHALL BE SECURED WITH BRASS TEST PLUGS OR CAPS.
3. CONCRETE FOR PAD SHALL BE PORTLAND CEMENT CONCRETE WITH A MINIMUM STRENGTH OF 3000 PSI.
4. ALL UNDERGROUND ELBOWS SHALL HAVE THRUST BLOCKS PER STANDARD DRAWING 5-02 UNLESS A VALVE SETTER IS USED WITH THE DEVICE.
5. DEVICE SHALL BE FEBCO, WATTS, OR APPROVED EQUAL, & APPROVED BY THE U.S.C. TESTING LABORATORY.
6. BELOW GROUND BOLTS SHALL BE TYPE 304 STAINLESS STEEL FOR FLANGED FITTING WITH TEFLON ANTI-SEIZE COMPOUND.
7. VALVES SHALL BE OF RESILIENT WEDGE CONSTRUCTION.
8. GATE VALVES SHALL BE SECURED WITH 1/4" GRADE 30 GALVANIZED CHAIN. LOCK SUPPLIED BY CITY.
9. DEVICES 3" SHALL INCLUDE FREEZE PROTECTION (FABRICATED INSULATED COVER).
10. PAINT ALL PIPING, FITTINGS, AND DEVICES WITH RUST RESISTANT GLOSS ENAMEL PAINT (FOREST GREEN COLOR) FOR SIZES 4" AND GREATER.
11. PRIOR TO COMPLETING NOTE 2 ABOVE, THE DEVICE SHALL BE TESTED BY A CERTIFIED TESTER APPROVED BY THE CITY, AND THE TEST RESULTS SHALL BE SUBMITTED TO THE CITY DEPARTMENT OF PUBLIC WORKS INSPECTOR.
12. THIS DEVICE SHALL BE SCREENED PER STANDARD DRAWING 5-25.
13. WHEN A TAMPER ALARM IS REQUIRED IT SHALL BE INSTALLED WITH A TOGGLE TYPE SWITCH ON THE STEM OF EACH GATE VALVE.

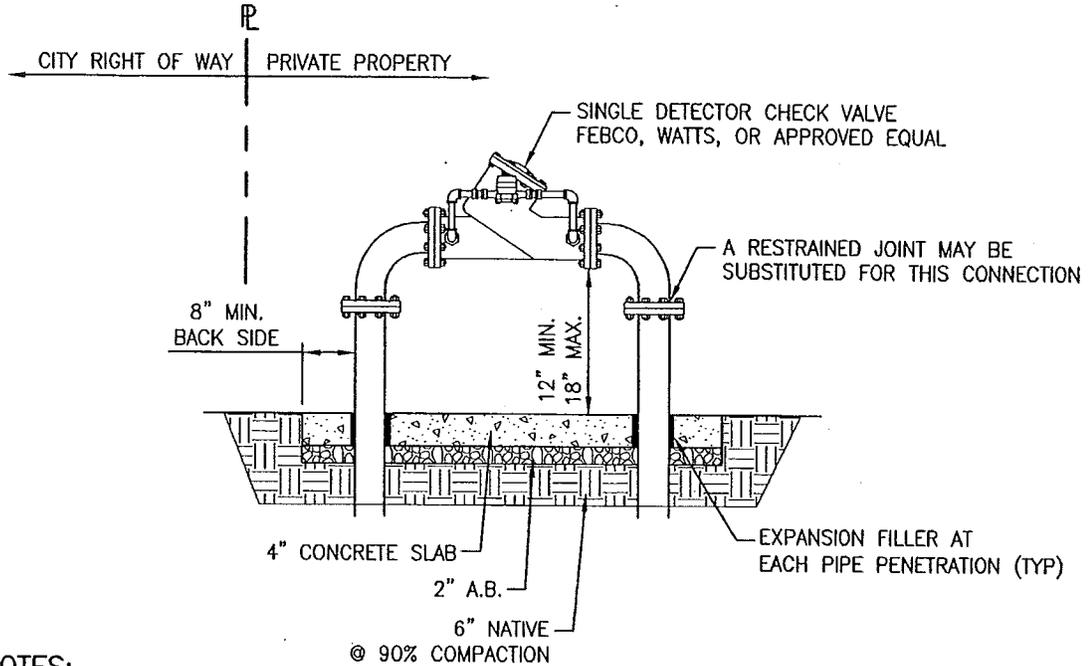
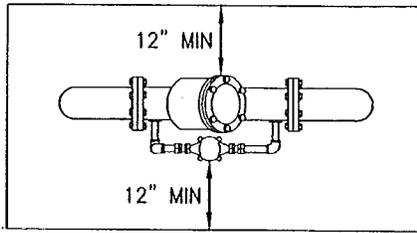
DWG File: G:\CIP\B000\sd8653\Standard Drawings\AutoCad\All Current Standard Drawings\5-22.dwg



DRAWING NO.:	5-22
DATE:	01/10/07
SCALE:	NONE
APPROVED BY:	
	R.C.E. C24974
	DIRECTOR OF PUBLIC WORKS

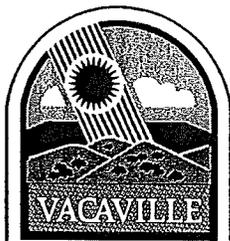
**CITY OF VACAVILLE
STANDARD DRAWING**

**DOUBLE CHECK AND
DETECTOR CHECK VALVE
INSTALLATION 3" TO 10"**



NOTES:

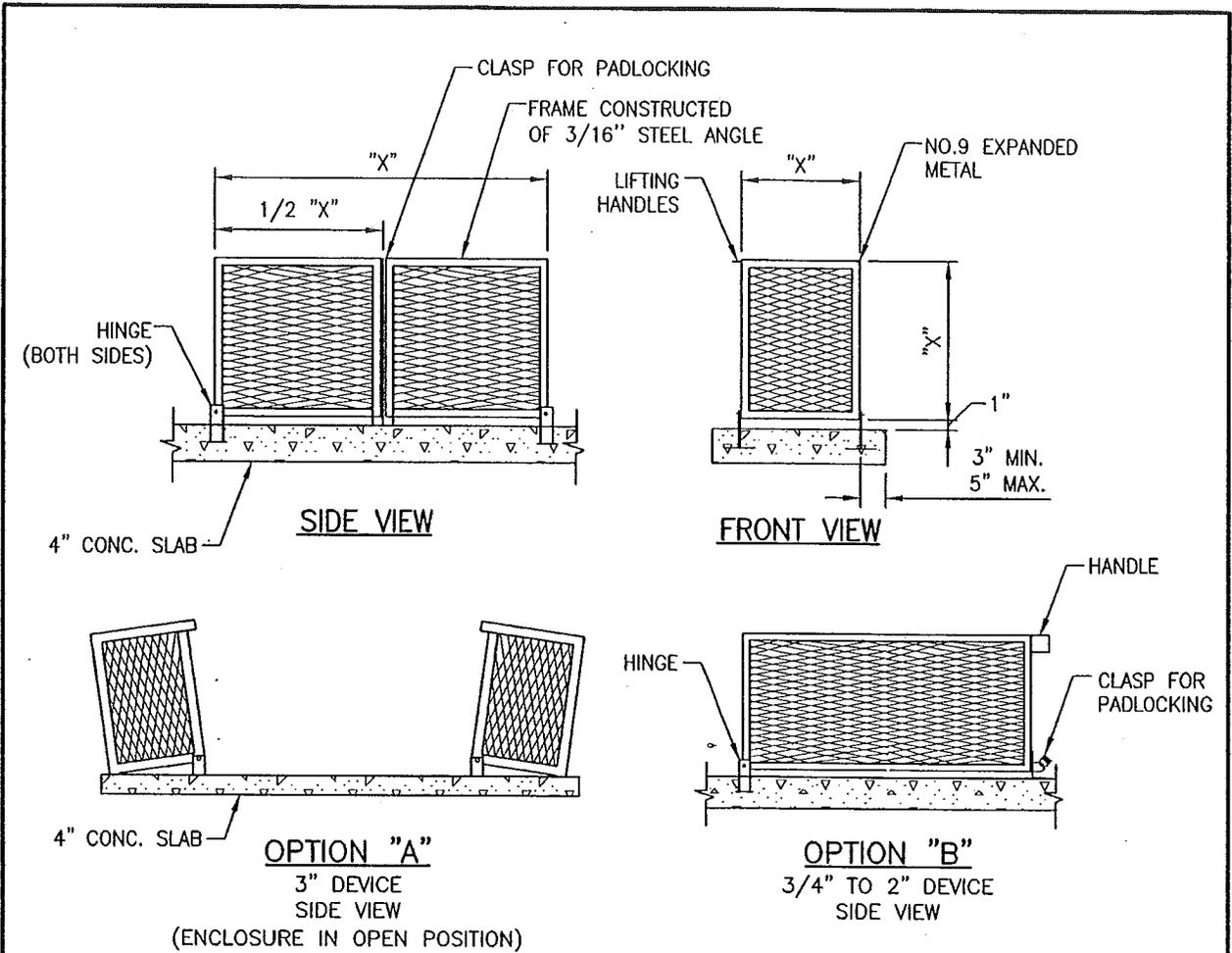
1. THIS ASSEMBLY IS LOCATED OUTSIDE OF THE PUBLIC RIGHT OF WAY AND IS PRIVATELY OWNED AND MAINTAINED.
2. THE CITY RESPONSIBILITY FOR THE MAINTENANCE OF THE FIRE SERVICE LINE ENDS AT THE \mathcal{P} .
3. SINGLE DETECTOR CHECK VALVES ARE ONLY ALLOWED ON SINGLE FIRE HYDRANT SUPPLY SYSTEMS THAT DO NOT HAVE A FIRE DEPARTMENT CONNECTION.
4. ALL FITTINGS AND PIPING SHALL BE DUCTILE IRON AND FLANGE BOLTED, WITH TYPE 304 STAINLESS STEEL BOLT ASSEMBLY WITH TEFLON ANTI-SEIZE COMPOUND.
5. CONCRETE FOR PAD SHALL BE PORTLAND CEMENT CONCRETE WITH A MINIMUM STRENGTH OF 3000 PSI.
6. ALL UNDERGROUND ELBOWS SHALL HAVE THRUST BLOCKS.
7. PAINT ALL PIPING, FITTINGS, AND DEVICES WITH RUST RESISTANT GLOSS ENAMEL PAINT (FOREST GREEN COLOR).
8. THIS DEVICE SHALL BE SCREENED PER STANDARD DRAWING 5-25.



DRAWING NO.:	5-23
DATE:	09/09/03
SCALE:	NONE
APPROVED BY:	<i>Paul J. Hume</i>
	R.C.E. C59003
DEPUTY DIRECTOR OF PUBLIC WORKS ENGINEERING SERVICES	

**CITY OF VACAVILLE
STANDARD DRAWING**

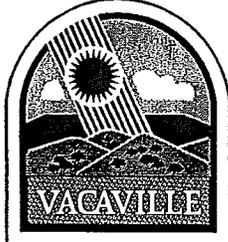
**SINGLE DETECTOR
CHECK VALVE**

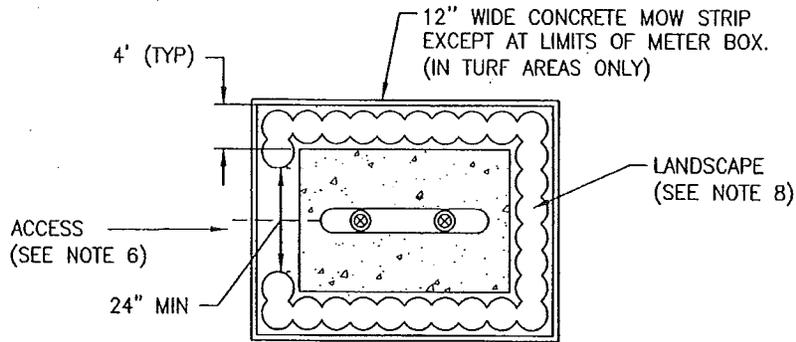


"X" = REFER TO DIMENSIONS ON CONSTRUCTION PLANS

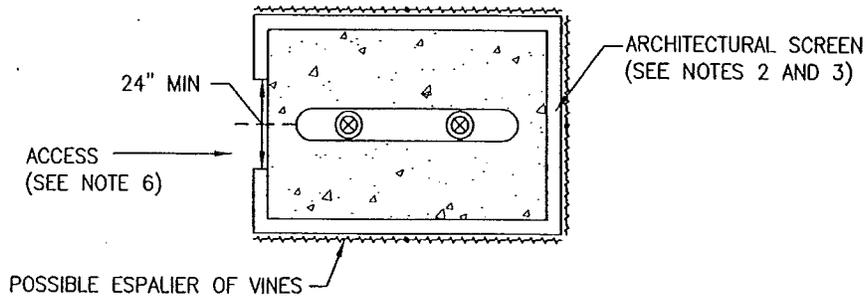
NOTES:

1. REFER TO MANUFACTURER'S CATALOG FOR CORRECT DIMENSIONS TO FIT SIZE OF SPECIFIED BACKFLOW DEVICE.
2. CONCRETE FOUNDATION DIMENSIONS TO SUIT EACH INDIVIDUAL INSTALLATION, MINIMUM 4" THICK, OR AS PER MANUFACTURER'S RECOMMENDATION.
3. OPTION SELECTION:
 OPTION "A": 3" DEVICE
 OPTION "B": 3/4" TO 2" DEVICES
4. PAINT ALL METAL SURFACES WITH RUST RESISTANT GLOSS ENAMEL PAINT (FOREST GREEN COLOR).

	DRAWING NO.: 5-24	CITY OF VACAVILLE STANDARD DRAWING
	DATE: 09/09/03	
	SCALE: NONE	
	APPROVED BY: <i>Paul J. H... R.C.E. C59003</i>	
	DEPUTY DIRECTOR OF PUBLIC WORKS ENGINEERING SERVICES	BACKFLOW ASSEMBLY CAGE



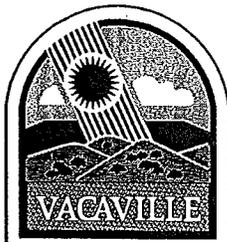
LANDSCAPE



ARCHITECTURAL SCREEN

NOTES:

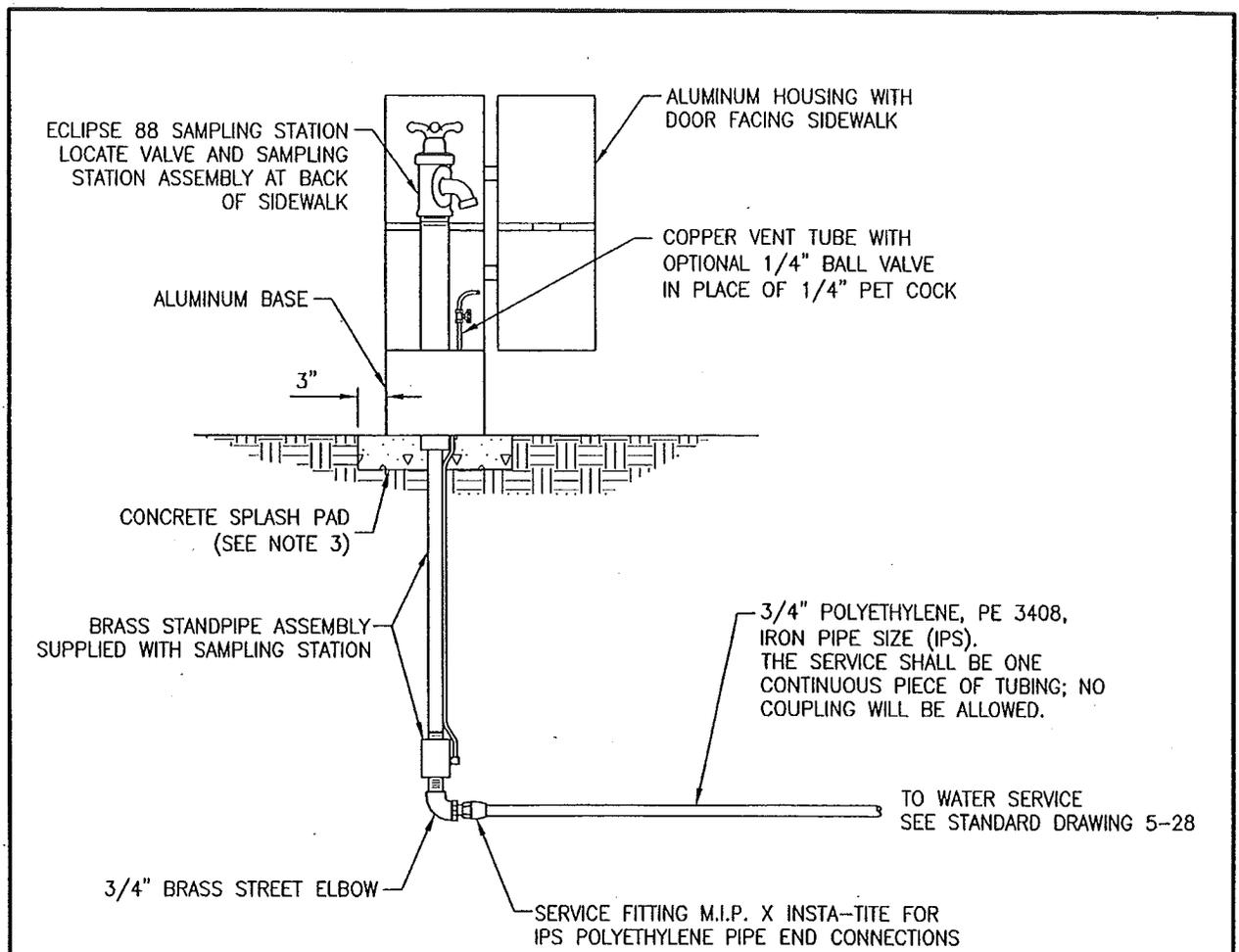
1. LANDSCAPING IS THE PREFERRED METHOD FOR SCREENING. ARCHITECTURAL SCREENING MATERIAL MAY BE USED ONLY IF THERE IS NOT ADEQUATE ROOM FOR LANDSCAPING AND IRRIGATION.
2. ARCHITECTURAL SCREENING, IF USED, SHALL BE MASONRY OR WOOD, AND SHALL MATCH ADJACENT ARCHITECTURE DESIGN, MATERIALS AND COLOR SHALL BE SUBJECT TO CITY APPROVAL.
3. IF A RETAINING WALL IS REQUIRED IN ORDER TO MEET MINIMUM CLEARANCE REQUIREMENTS AROUND DEVICE, LANDSCAPE SCREENING SHALL BE INCORPORATED ADJACENT TO THE WALL.
4. SIGHT DISTANCE CRITERIA MUST BE MET. FOR CRITERIA, SEE STANDARD DRAWINGS FOR "INTERSECTION STOPPING SIGHT DISTANCE".
5. SCREEN MAINTENANCE IS THE RESPONSIBILITY OF THE PROPERTY OWNER.
6. PROVIDE 24" MINIMUM VISUAL ACCESS FROM STREET FOR INSPECTION.
7. SCREENING MATERIAL (LANDSCAPE/ARCHITECTURAL) SHALL MAINTAIN A MINIMUM 24" CLEARANCE FROM ANY PART OF THE DEVICE TO LANDSCAPE OR SCREENING.
8. PLANT MATERIAL SHALL BE SELECTED FROM THE APPROVED "SCREENING PLANT MATERIAL FOR BACKFLOW PREVENTION DEVICES" AVAILABLE FROM THE PUBLIC WORKS ENGINEERING DIVISION OFFICE.



DRAWING NO.: 5-25
 DATE: 09/09/03
 SCALE: NONE
 APPROVED BY: *[Signature]*
 R.C.E. C59003
 DEPUTY DIRECTOR OF PUBLIC WORKS
 ENGINEERING SERVICES

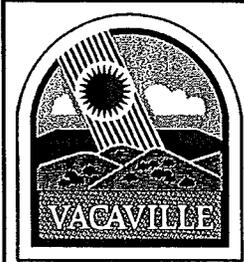
**CITY OF VACAVILLE
 STANDARD DRAWING**

**SCREENING OF
 BACKFLOW PREVENTOR,
 DETECTOR CHECK VALVE AND
 MANIFOLD BACKFLOW DEVICES**



NOTES:

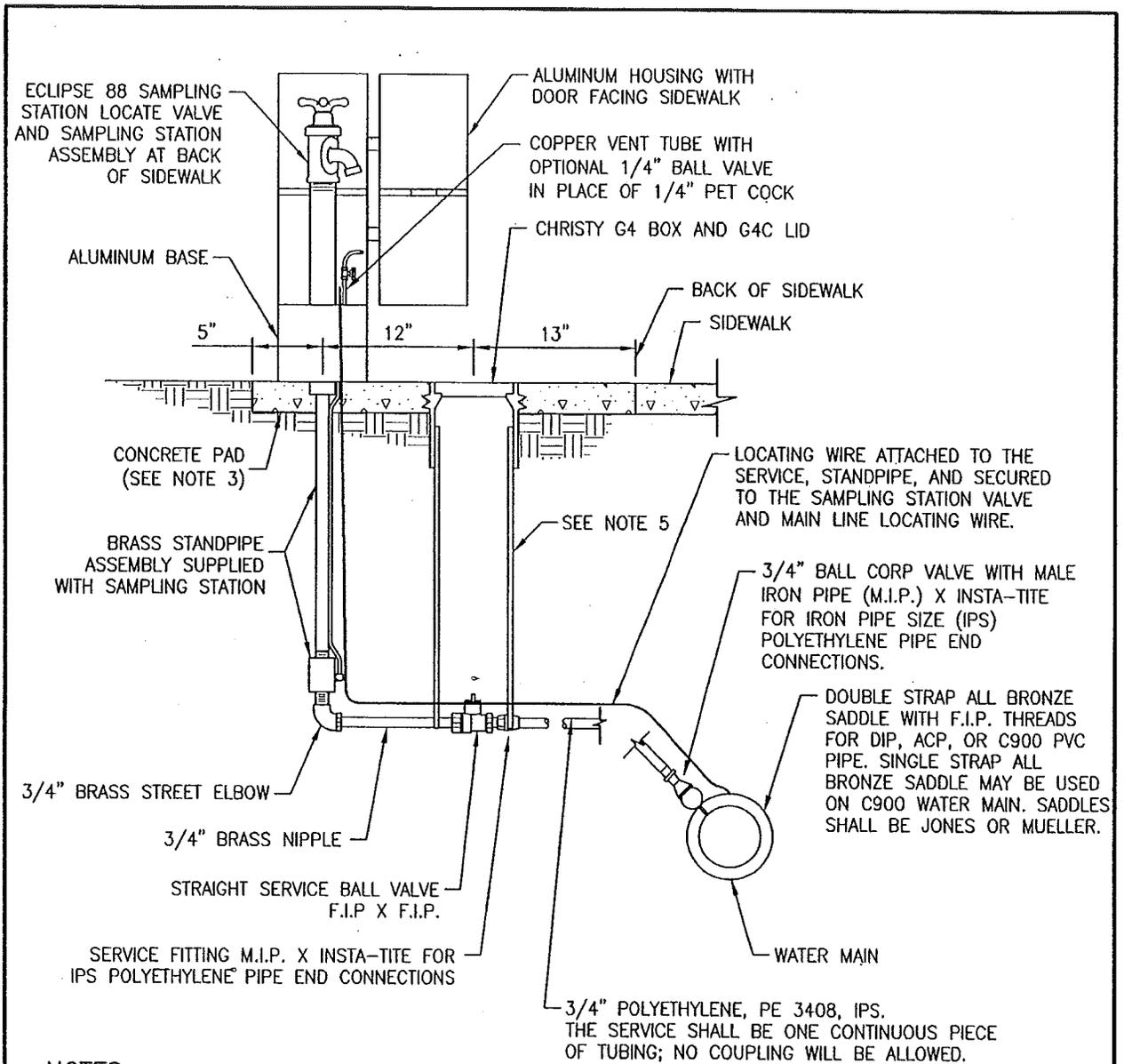
1. SAMPLING STATIONS SHALL BE 2' BURY, WITH A 3/4" F.I.P. INLET AND NOZZLE (3/4" HOSE OR UNTHREADED).
2. ECLIPSE NO.88 SAMPLING STATION IS FROM KUPFERLE FOUNDRY, ST. LOUIS, MO 63102.
3. PORTLAND CEMENT CONCRETE, 3000 PSI MINIMUM, 4" THICK, EXTENDING 3" MINIMUM BEYOND THE FOOTPRINT OF THE HOUSING AND SLOPING AT 1/4" PER FOOT TOWARDS SIDEWALK.
4. SEE STANDARD DRAWING 5-28 FOR LOCATION AND CONNECTION TO WATER SERVICE.



DRAWING NO.: 5-26
 DATE: 09/09/03
 SCALE: NONE
 APPROVED BY: *Paul J. [Signature]*
 R.C.E. C59003
 DEPUTY DIRECTOR OF PUBLIC WORKS
 ENGINEERING SERVICES

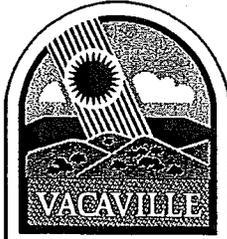
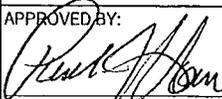
**CITY OF VACAVILLE
 STANDARD DRAWING**

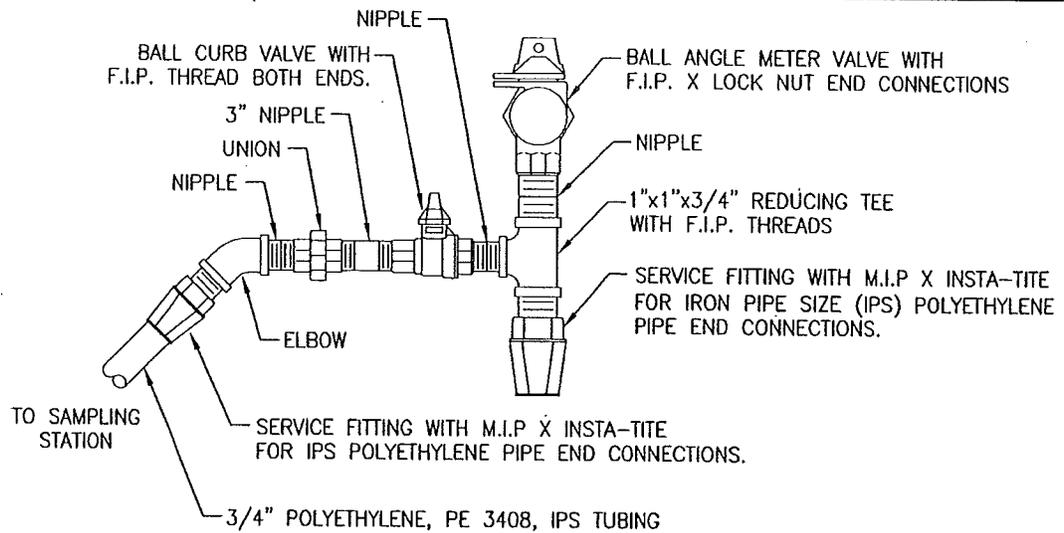
**WATER QUALITY
 SAMPLING STATION**
 (STANDARD INSTALLATION COMBINED WITH
 1" DOMESTIC SERVICE)



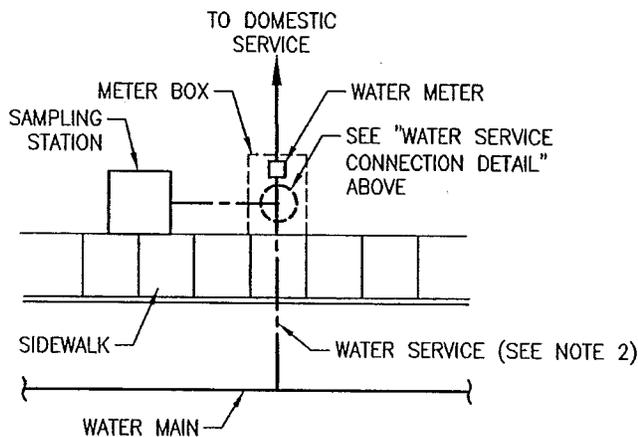
NOTES:

1. SAMPLING STATIONS SHALL BE 1' BURY, WITH A 3/4" F.I.P. INLET AND NOZZLE (3/4" HOSE OR UNTHREADED).
2. ECLIPSE NO.88 SAMPLING STATION IS FROM KUPFERLE FOUNDRY, ST. LOUIS, MO 63102.
3. PAD SHALL BE PORTLAND CEMENT CONCRETE, 3000 PSI MINIMUM, 2.5'X2'X4" THICK AND SLOPING AT 1/4" PER FOOT TOWARDS SIDEWALK.
4. ALL VALVES AND FITTINGS LOCATED BELOW THE SAMPLING STATION ASSEMBLY SHALL BE MUELLER UNLESS OTHERWISE NOTED.
5. NOTCH BOTTOM OF VALVE RISER MATERIAL TO ACCOMMODATE THE SERVICE LINE AND LOCATING WIRE.

	DRAWING NO.: 5-27	<h2 style="margin: 0;">CITY OF VACAVILLE</h2> <h3 style="margin: 0;">STANDARD DRAWING</h3>
	DATE: 09/09/03	
	SCALE: NONE	
	APPROVED BY:  R.C.E. C59003	
DEPUTY DIRECTOR OF PUBLIC WORKS ENGINEERING SERVICES		<h2 style="margin: 0;">WATER QUALITY SAMPLING STATION</h2> <p style="margin: 0;">(ISOLATED SERVICE)</p>



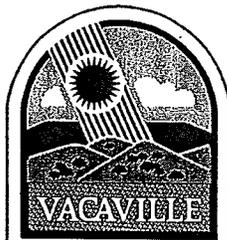
**WATER SERVICE
CONNECTION DETAIL
ELEVATION**



**SAMPLING STATION
CONNECTION DETAIL**

NOTES:

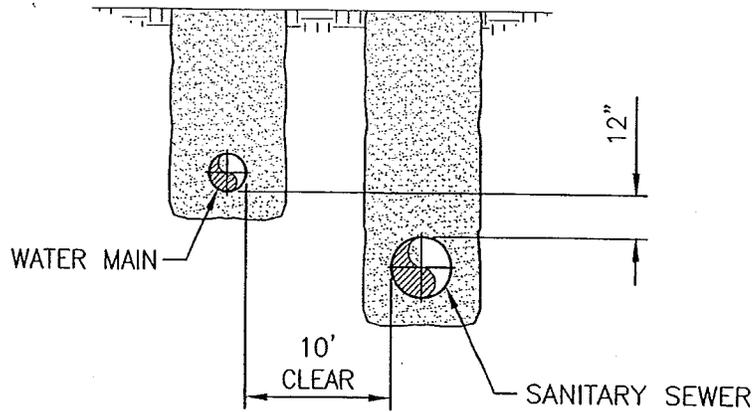
1. ALL VALVES AND FITTINGS SHALL BE BRASS AND MUELLER UNLESS OTHERWISE NOTED.
2. SEE STANDARD DRAWING 5-05 FOR THE DETAILS OF THE CONNECTION TO THE WATER MAIN.
3. THE SERVICE LINE SHALL BE ENCASED IN SAND TO A DEPTH OF 3" BELOW AND 6" ABOVE THE PIPE. THE SAND SHALL HAVE A MINIMUM SAND EQUIVALENCY OF 30.
4. SEE STANDARD DRAWING 5-26 FOR WATER QUALITY SAMPLING STATION.



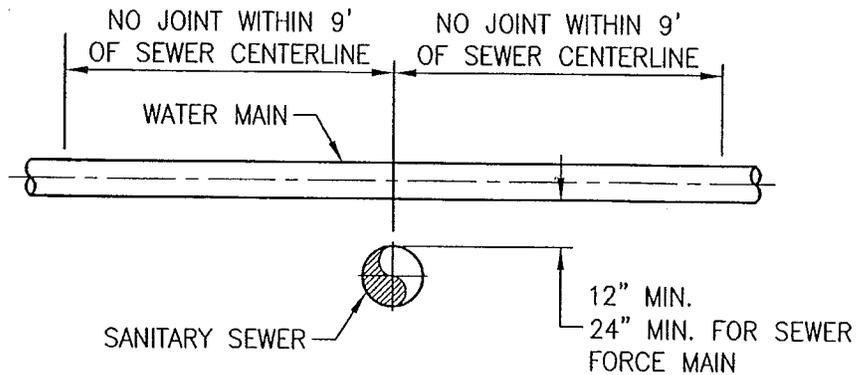
DRAWING NO.: 5-28
 DATE: 09/09/03
 SCALE: NONE
 APPROVED BY: *Paul W. ...* R.C.E. C59003
 DEPUTY DIRECTOR OF PUBLIC WORKS
 ENGINEERING SERVICES

**CITY OF VACAVILLE
STANDARD DRAWING**

**WATER QUALITY
SAMPLING STATION CONNECTION
(STANDARD INSTALLATION COMBINED WITH
1" DOMESTIC SERVICE)**



PARALLEL CONSTRUCTION



PERPENDICULAR CONSTRUCTION

NOTES:

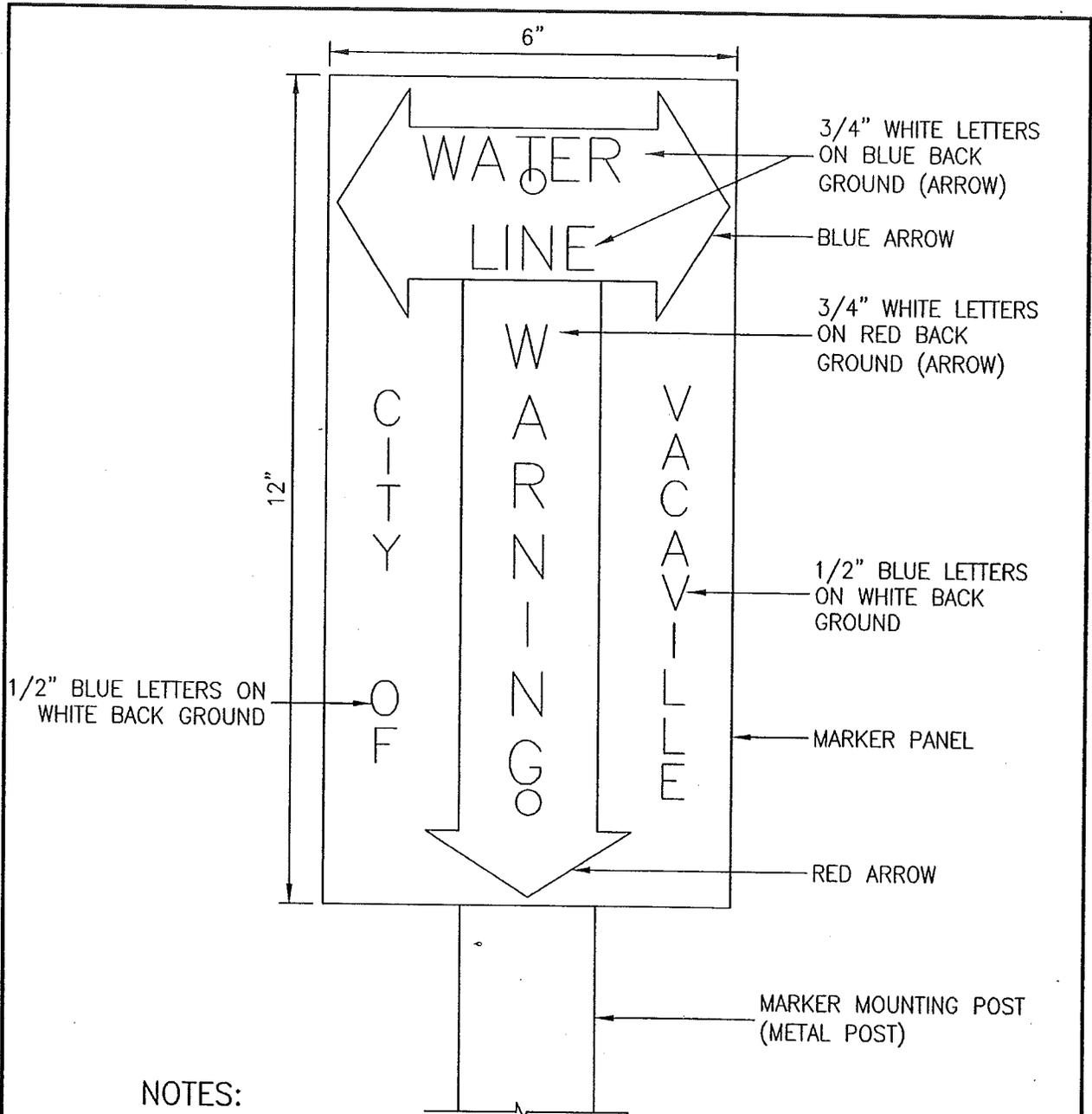
1. FOR WATER MAIN CROSSING A SEWER LINE, INSTALL CROSSING AS CLOSE TO PERPENDICULAR AS POSSIBLE.
2. ADDITIONAL SPECIAL PROVISIONS FOR SEPARATION OF WATER MAINS AND SEWER PER THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES "CALIFORNIA WATERWORKS STANDARDS", SECTION 64630, TITLE 22, CAC.



DRAWING NO.: 5-29
 DATE: 09/09/03
 SCALE: NONE
 APPROVED BY: *Paul A. Horn*
 R.C.E. C59003
 DEPUTY DIRECTOR OF PUBLIC WORKS
 ENGINEERING SERVICES

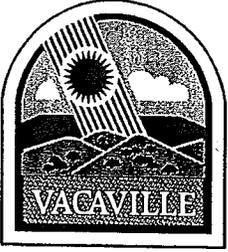
CITY OF VACAVILLE
 STANDARD DRAWING

**SEPARATION OF WATER
 AND SEWER LINES**



NOTES:

1. MARKER PANEL SHALL BE 6"x12"x0.080" ALUMINUM
2. THE MARKER MOUNTING POST AND THE ATTACHING OF THE MARKER PANEL TO THE MARKER MOUNTING POST SHALL CONFORM TO THE REQUIREMENTS OF SECTION 82, MARKERS AND DELINEATORS, OF THE STATE STANDARD SPECIFICATIONS FOR METAL POSTS, HARDWARE, AND INSTALLATION.

	DRAWING NO.: 5-30	CITY OF VACAVILLE STANDARD DRAWING
	DATE: 09/09/03	
	SCALE: NONE	
	APPROVED BY: <i>Paul How</i> <small>R.C.E. C59003</small> <small>DEPUTY DIRECTOR OF PUBLIC WORKS ENGINEERING SERVICES</small>	