

**NOTES:**

1. INSTALL CORPORATION STOP PERPENDICULAR TO PIPE AXIS.
2. COPPER SERVICE SHALL BE NO MORE THAN 3" ABOVE THE MAIN.
3. ALL SOLDER TO BE SILVER SOLDER.
4. STAMP "W" FOR DOMESTIC ON CURB FACE OPPOSITE METER AND "1" FOR RECLAIMED.

ITEM	NO.	DESCRIPTION	SPECS
1	1	CONC. METER BOX	
2	1	BRONZE ANGLE METER STOP W/ LOCKWING	SEE CITY
3	1	COPPER WATER SERVICE TUBE-TYPE K, SOFT ANNEALED	APPROVED
4	1	BRONZE CORP STOP WITH TAIL PIECE	MATERIALS LIST
5	1	BRONZE SERVICE CLAMP, SINGLE FLAT STRAP (A.C. OR P.V.C.)	
6		USE ALL FLARE CONNECTIONS	

REVISION	BY	APPROVED	DATE
REDRAWN	MR	S. CROSBY	03/13

**CITY OF POWAY STANDARD DRAWING**

**1" WATER  
 SERVICE ASSEMBLIES**

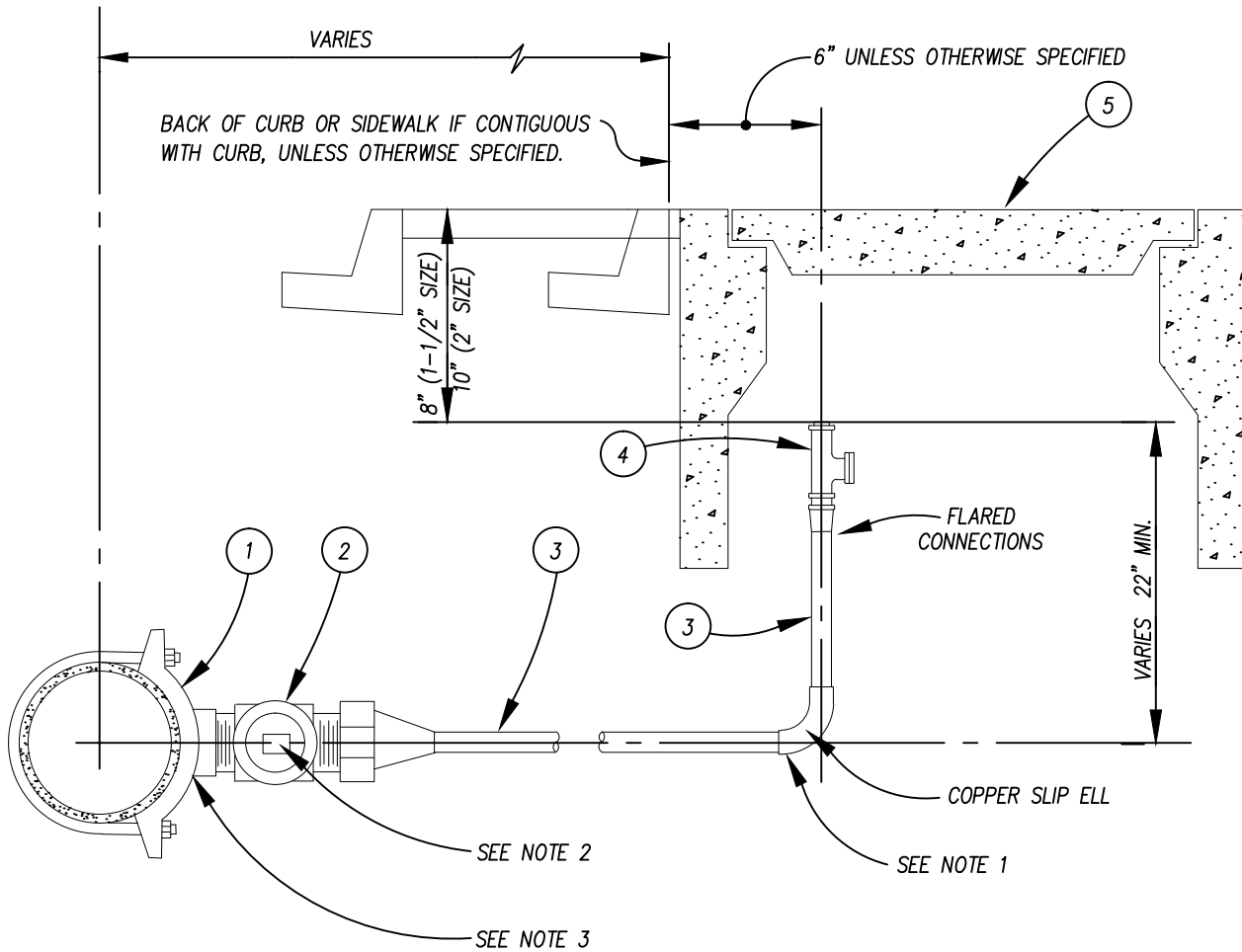
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CITY ENGINEER  
 R.C.E. 41975

DRAWING  
 NUMBER

*3/18/13*  
 DATE

PW-1



NOTES:

1. SILVER SOLDER REQUIRED.
2. INSTALL CORP STOP PERPENDICULAR TO PIPE AXIS.
3. STAMP "W" FOR DOMESTIC SERVICE ON CURB FACE OPPOSITE METER, "R" FOR RECLAIMED.
4. IF SERVICE IS FOR RESIDENTIAL THEN AMS WILL BE 8"-10" ON BOTH 1 1/2" OR 2".

ITEM	NO.	DESCRIPTION	SPECS
1	1	DOUBLE STRAP BRONZE SERVICE CLAMP	
2	1	CORP. STOP WITH TAIL PIECE	SEE CITY
3	1	COPPER WATER SERVICE TUBE-TYPE K, SOFT ANNEALED	APPROVED
4	1	BRONZE ANGLE METER STOP W/ LOCKWING	MATERIALS LIST
5	1	CONCRETE METER BOX	

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**CITY OF POWAY STANDARD DRAWING**

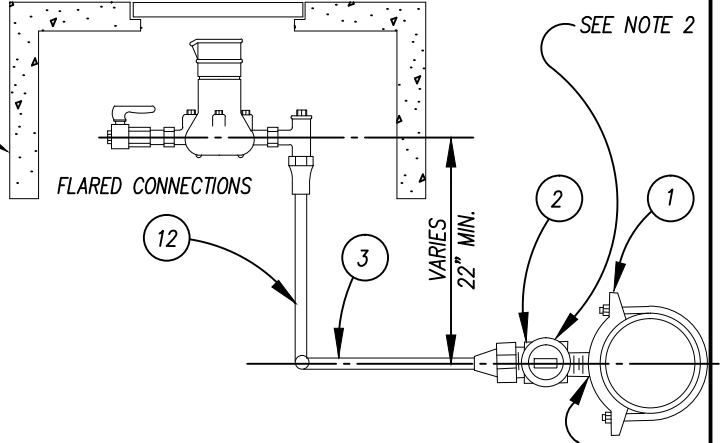
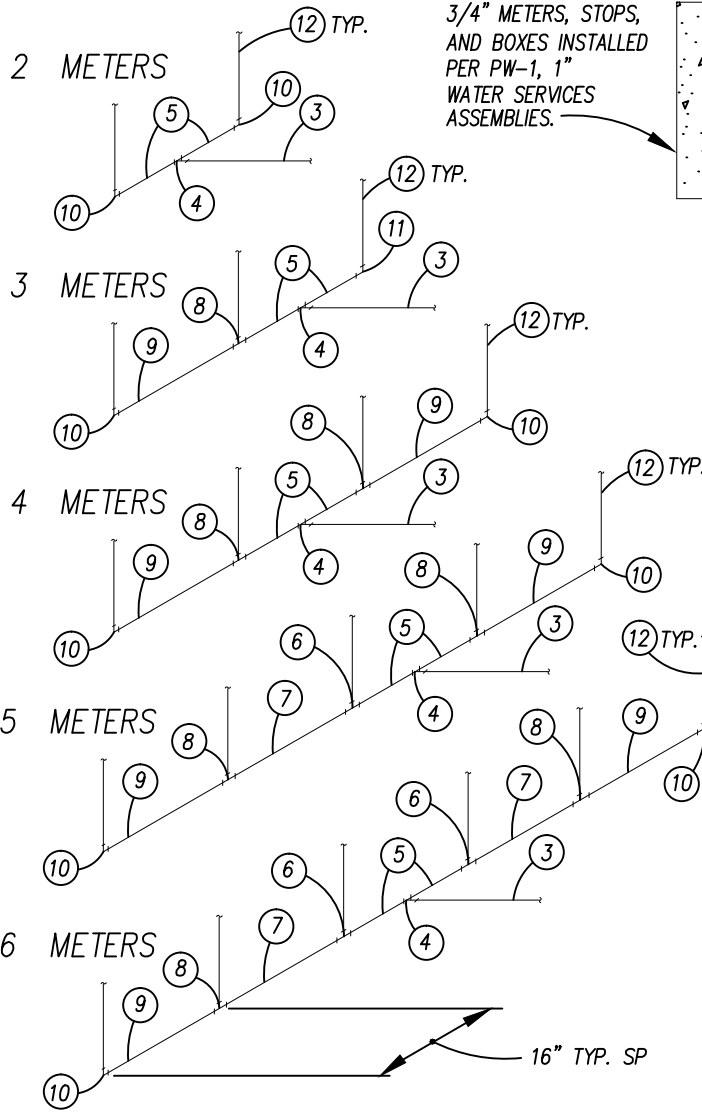
1 1/2" AND 2" WATER  
 SERVICE ASSEMBLIES

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 CITY ENGINEER  
 R.C.E. 41975

3/18/13  
 DATE

DRAWING  
 NUMBER PW-2.1



- NOTES:  
 1. SILVER SOLDER REQUIRED.  
 2. INSTALL CORP. STOP PERPENDICULAR TO PIPE AXIS.  
 3. APPROVED BY PUBLIC WORKS ONLY

ITEM	SIZE FITTING / NO. OF METERS				
	2 METERS	3 METERS	4 METERS	5 METERS	6 METERS
1	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
2	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
3	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
4	3/4"x3/4"x1"	1"x1"x1 1/2"	1"x1"x1 1/2"	1 1/2"	1 1/2"
5	3/4"x6"	1"x6"	1"x5 1/2"	1 1/2"x5"	1 1/2"x5"
6	—	—	—	1 1/2"x1"x3/4"	1 1/2"x1"x3/4"
7	—	—	—	1"x14"	1"x14"
8	—	1"x3/4"x3/4"	1"x3/4"x3/4"	1"x3/4"x3/4"	1"x3/4"x3/4"
9	—	3/4"x14"	3/4"x14"	3/4"x14"	3/4"x14"
10	3/4"	3/4"	3/4"	3/4"	3/4"
11	—	1"x3/4"	—	—	—
12	3/4"	3/4"	3/4"	3/4"	3/4"

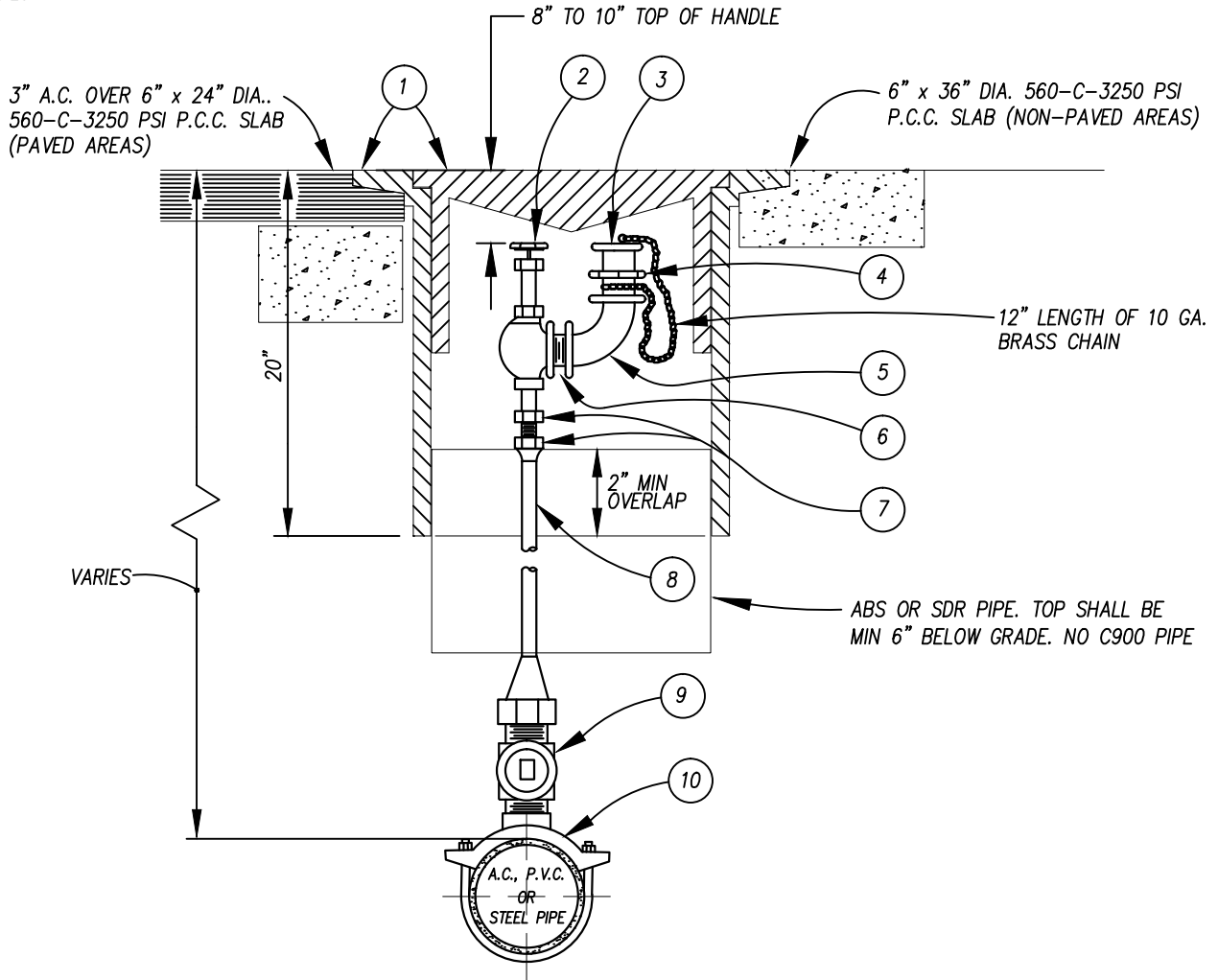
ITEM	NO.	DESCRIPTION	SPECS
1	1	DOUBLE STRAP BRONZE SERVICE CLAMP	
2	1	CORP. STOP WITH TAIL PIECE	
3	1	COPPER WATER SERVICE, TYPE K, SOFT (ANNEALED)	
4	1	SILVER SOLDER JOINT TEE	
5	2	COPPER WATER SERVICE TUBE, TYPE K, SOFT (ANNEALED)	SEE CITY
6	VARIES	SILVER SOLDER JOINT RED. TEE	APPROVED
7	VARIES	COPPER WATER SERVICE TUBE, TYPE K, SOFT (ANNEALED)	MATERIALS LIST
8	VARIES	SILVER SOLDER JOINT RED. TEE	
9	VARIES	COPPER WATER SERVICE TUBE, TYPE K, SOFT (ANNEALED)	
10	1 OR 2	SILVER SOLDER JOINT BEND	
11	0 OR 1	SILVER SOLDER JOINT RED. BEND	
12	1/MTR	COPPER WATER SERVICE TUBE RISER, TYPE K, SOFT (ANNEALED)	

REVISION	BY	APPROVED	DATE
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**CITY OF POWAY STANDARD DRAWING**

MULTIPLE  
 WATER SERVICE ASSEMBLY

APPROVED	
CITY ENGINEER R.C.E. 41975	3/18/13 DATE
DRAWING NUMBER	PW-2.3



NOTES:

1. INSTALL CORPORATION STOP PERPENDICULAR TO PIPE AXIS.

ITEM	NO.	DESCRIPTION	SPECS
1	1	12" C.I. VALVE BOX AND COVER MARKED "POWAY WATER"	
2	1	1" BRZ. ANGLE VALVE W/ BRZ. HANDWHEEL & COMP. DISC	
3	1	1 1/2" HOSE THREAD CAP W/ CHAIN LUG.	
4	1	1 1/2" MALE HOSE NIPPLE	SEE CITY
5	1	1 1/2" x 1" 90° REDUCING ELBOW	APPROVED
6	1	1" CLOSE NIPPLE	MATERIALS LIST
7	1	1" BRONZE COUPLING (FLARE & MALE NPT)	
8	1	1" COPPER WATER SERVICE TUBE, TYPE K, (SOFT ANNEALED)	
9	1	1" CORP. STOP WITH TAIL PIECE	
10	1	DOUBLE STRAP BRONZE SERVICE CLAMP	

REVISION	BY	APPROVED	DATE
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**CITY OF POWAY STANDARD DRAWING**

MANUAL AIR  
 RELEASE ASSEMBLY

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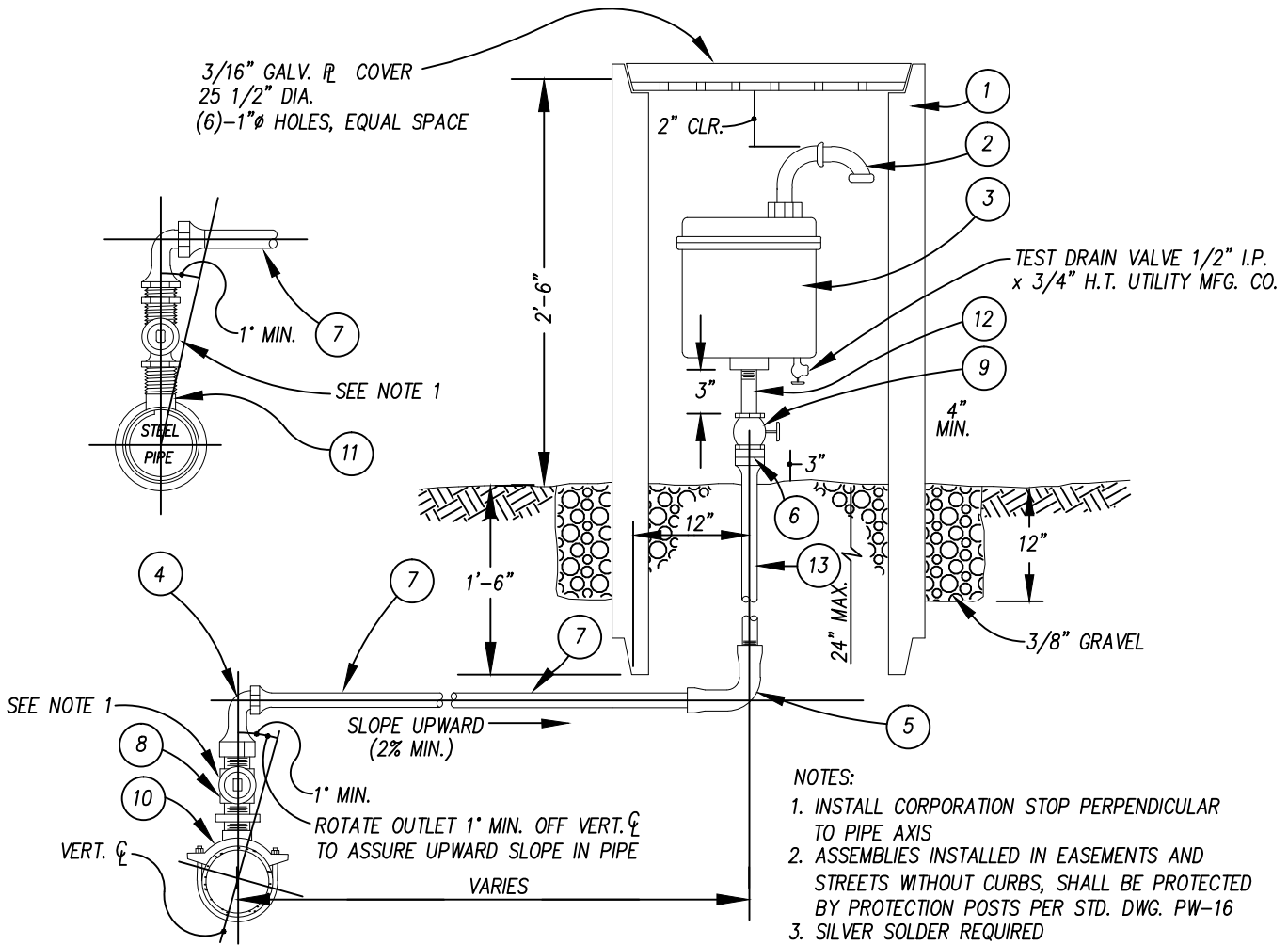
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 R.C.E. 41975

3/18/13  
 DATE

DRAWING  
 NUMBER

PW-3






ITEM	DESCRIPTION
1	24" I.D. x 4' REINFORCED CONCRETE PIPE
2	90° STREET ELLS
3	COMBINATION AIR RELEASE AND AIR VACUUM VALVE
4	90° FLARE X FEMALE NPT ADAPTER
5	90° ELL, SLIP
6	FLARE x FEMALE NPT ADAPTER
7	COPPER TUBING
8	BRONZE CORP STOP AND 1/4 BEND
9	BRONZE GATE VALVE
10	BRONZE DOUBLE STRAP SERVICE STRAP
11	APPROPRIATE CLAMP (PVC OR AC)
12	BRASS PIPE NIPPLE
13	FLARE X MIP ADAPTER

REVISION	BY	APPROVED	DATE
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**CITY OF POWAY STANDARD DRAWING**

**AIR & VACUUM VALVE  
 ASSEMBLY**

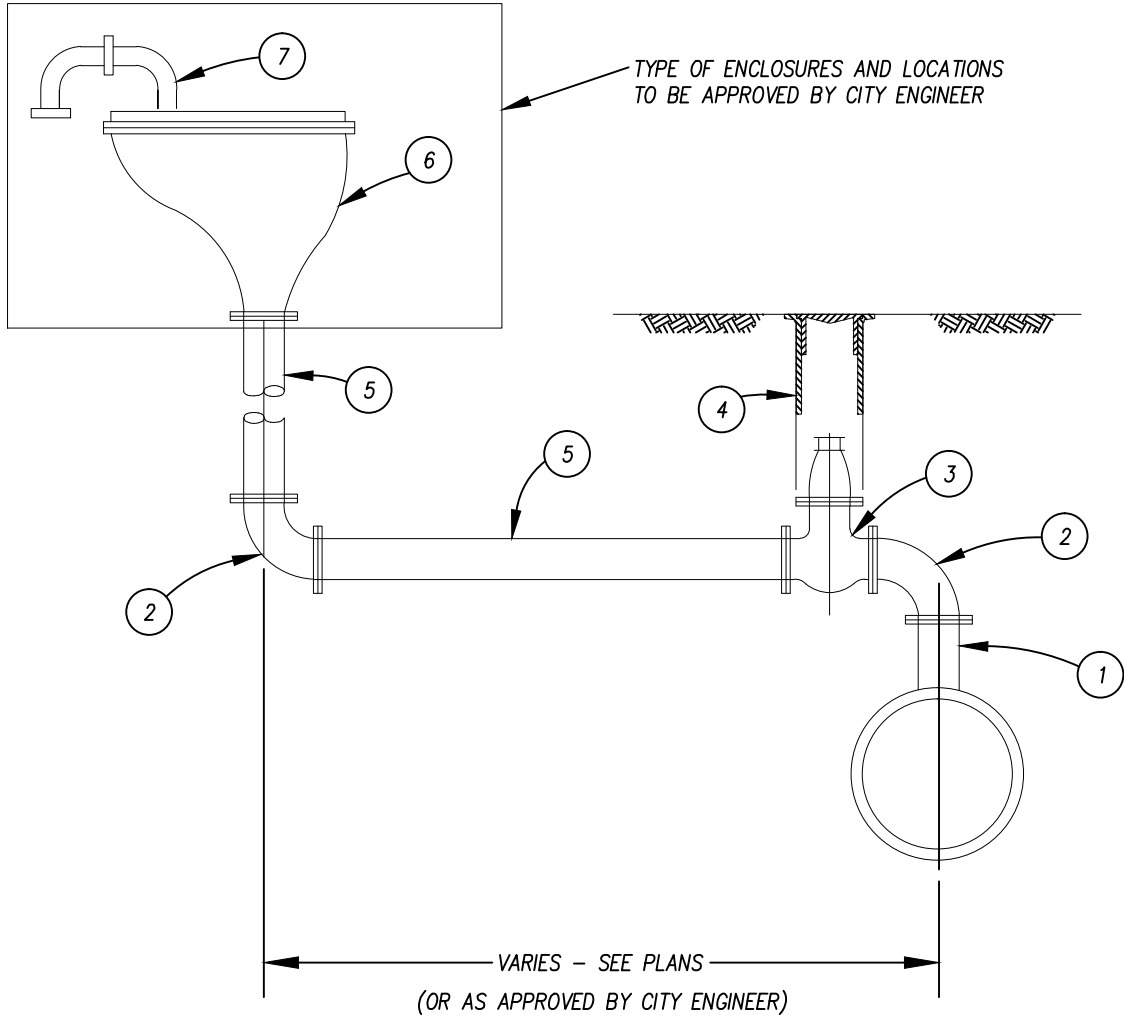
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CITY ENGINEER  
 R.C.E. 41975

3/18/13  
 DATE

DRAWING NUMBER PW-4



- 1 FLANGED OUTLET, CEMENT LINED AND COATED STEEL
- 2 FLANGED, 90° ELL, CEMENT LINED AND COATED STEEL
- 3 VALVE
- 4 VALVE WELL AND CAP (PER PW-12)
- 5 STEEL PIPE, CEMENT LINED AND COATED
- 6 AIR AND VACUUM VALVE
- 7 2-90° ELLS (NOT REQUIRED WITH ABOVE GROUND METAL ENCLOSURES)

LEGEND ON PLANS



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**CITY OF POWAY STANDARD DRAWING**

4" AND 6" AIR AND VACUUM VALVES

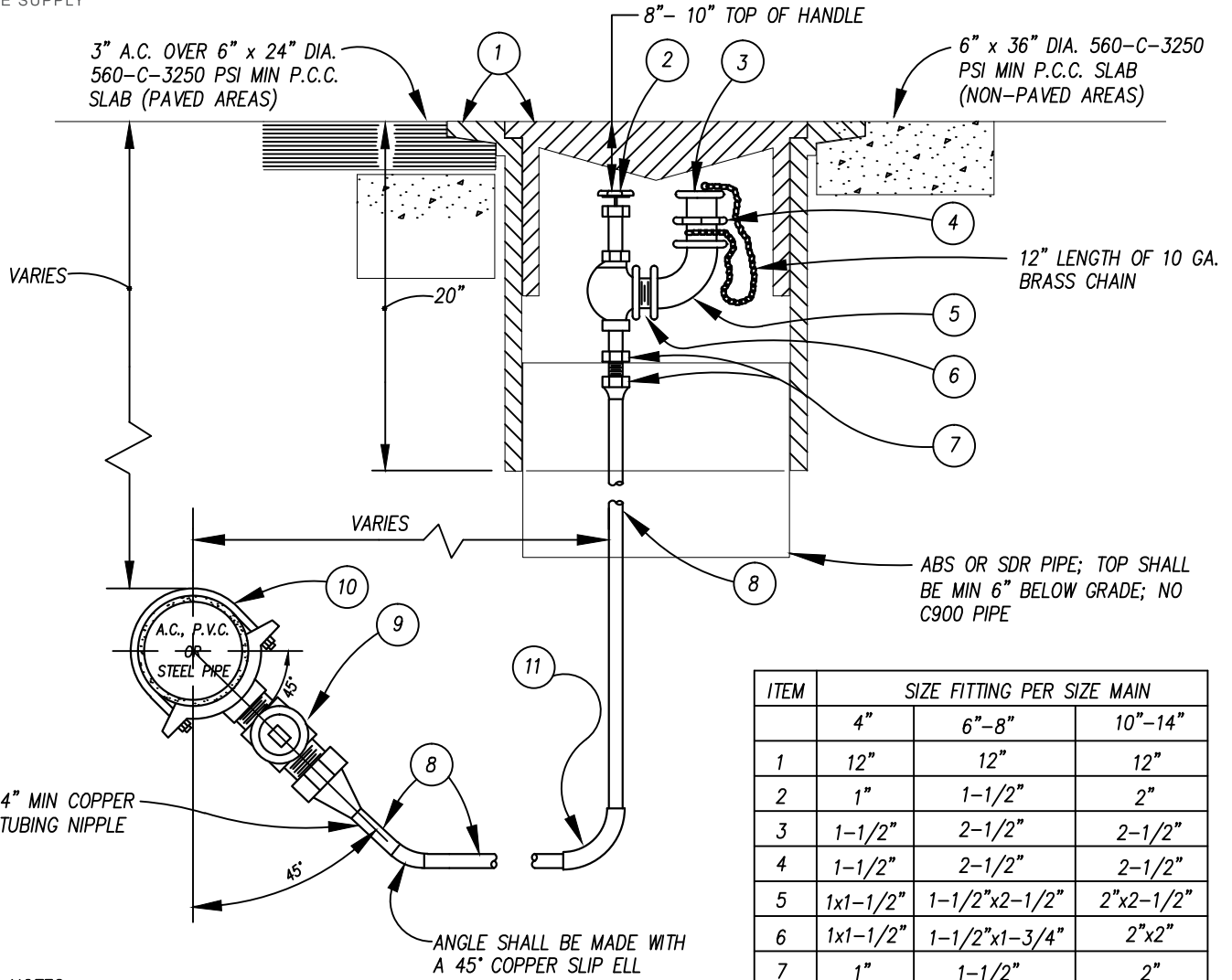
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 R.C.E. 41975

3/18/13  
 DATE

DRAWING  
 NUMBER

PW-5



ITEM	SIZE FITTING PER SIZE MAIN		
	4"	6"-8"	10"-14"
1	12"	12"	12"
2	1"	1-1/2"	2"
3	1-1/2"	2-1/2"	2-1/2"
4	1-1/2"	2-1/2"	2-1/2"
5	1x1-1/2"	1-1/2"x2-1/2"	2"x2-1/2"
6	1x1-1/2"	1-1/2"x1-3/4"	2"x2"
7	1"	1-1/2"	2"
8	1"	1-1/2"	2"
9	1"	1-1/2"	2"

- NOTES:  
 1. INSTALL CORPORATION STOP 45° TO PIPE AXIS.  
 2. ALL SOLDER TO BE SILVER


ITEM	NO.	DESCRIPTION	SPECS
1	1	12" C.I. VALVE BOX AND COVER MARKED "POWAY WATER"	
2	1	BRZ. ANGLE VALVE W/ BRZ. HANDWHEEL & COMP. DISC	
3	1	HOSE THREAD CAP W/ CHAIN LUG.	
4	1	MALE HOSE NIPPLE	SEE CITY
5	1	90° REDUCING ELBOW	APPROVED
6	1	CLOSE NIPPLE	MATERIALS LIST
7	1	1" BRONZE COUPLING (FLARE & MALE NPT)	
8	1	COPPER WATER SERVICE TUBE TYPE K, (SOFT ANNEALED)	
9	1	CORP. STOP WITH TAIL PIECE	
10	1	DOUBLE STRAP BRONZE SERVICE CLAMP (A.C. PIPE)	
11	1	MIN. R=12 X (I.D.) <sup>2</sup> OR COPPER SLIP ELL	

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**CITY OF POWAY STANDARD DRAWING**

BLOW-OFF ASSEMBLY  
 14" DIA AND SMALLER

APPROVED

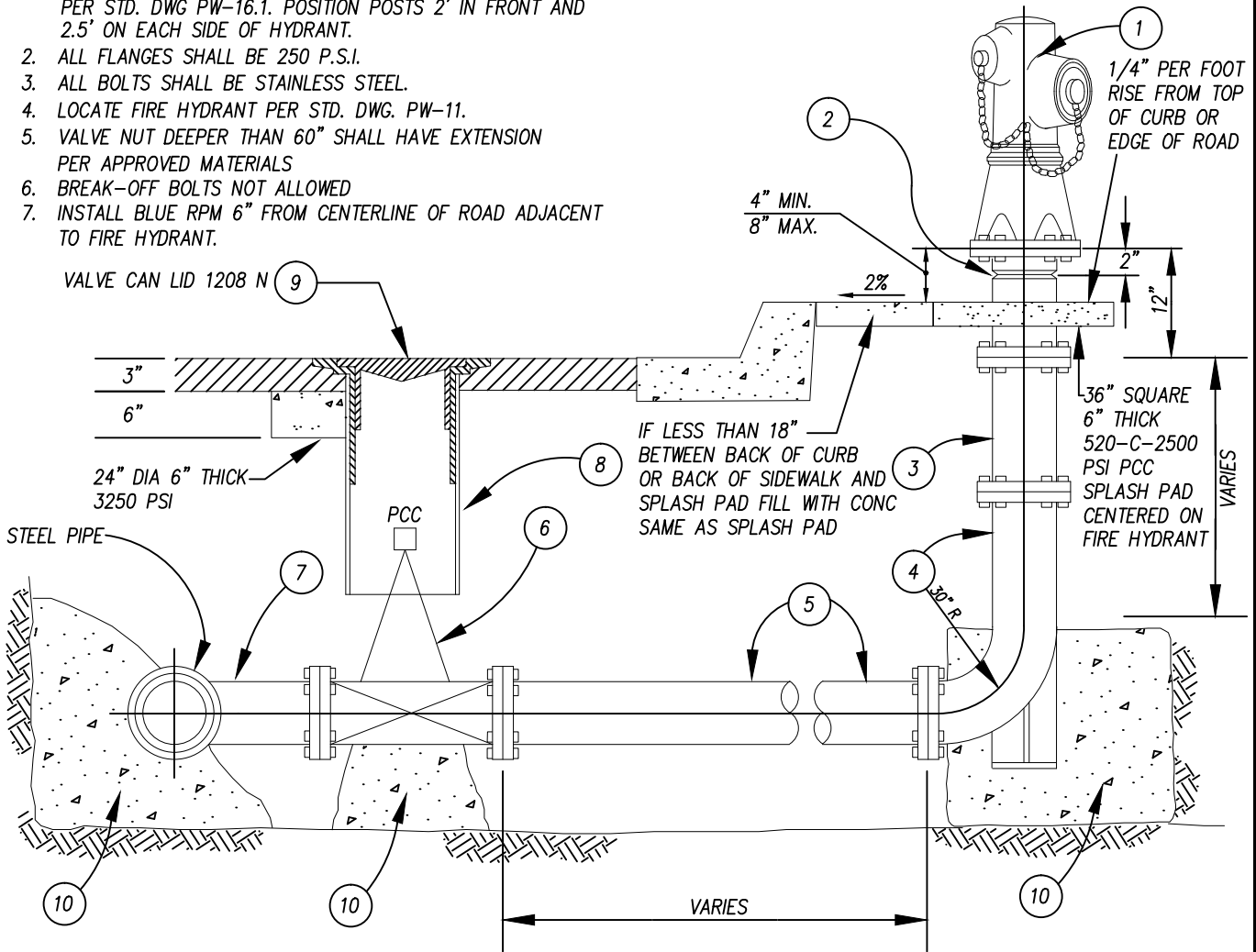
  
 CITY ENGINEER  
 R.C.E. 41975

3/18/13  
 DATE

DRAWING NUMBER PW-6

**NOTES:**

1. FIRE HYDRANTS LOCATED IN EASEMENTS OR ON STREETS WITHOUT CURBS SHALL BE PROTECTED WITH GUARD POSTS PER STD. DWG PW-16.1. POSITION POSTS 2' IN FRONT AND 2.5' ON EACH SIDE OF HYDRANT.
2. ALL FLANGES SHALL BE 250 P.S.I.
3. ALL BOLTS SHALL BE STAINLESS STEEL.
4. LOCATE FIRE HYDRANT PER STD. DWG. PW-11.
5. VALVE NUT DEEPER THAN 60" SHALL HAVE EXTENSION PER APPROVED MATERIALS
6. BREAK-OFF BOLTS NOT ALLOWED
7. INSTALL BLUE RPM 6" FROM CENTERLINE OF ROAD ADJACENT TO FIRE HYDRANT.




ITEM	NO.	DESCRIPTION	REMARKS
1	1	6" FIRE HYDRANT	PER POWAY'S APPROVED MATERIALS LIST
2	1	HYDRANT RISER - BREAK-OFF SPOOL W/ CHECK VALVE	SCORED (NOT MOLDED), CEMENT LINED
3	1	HYDRANT SPOOL 6" CAST IRON	LENGTH AS REQUIRED - CEMENT LINED
4	1	6" HYDRANT BURY ELL	FLANGED BY FLANGE - CEMENT LINED
5	1	6-5/8" O.D. STEEL PIPE, 10 GA. W/ SLIP-ON FLANGES	CEMENT LINED AND COATED
6	1	6" GATE VALVE - FLANGE BY FLANGE	PER POWAY'S APPROVED MATERIALS LIST
7	1	6" FLANGED OUTLET	CEMENT LINED AND COATED
8	1	PIPE SLIP JOINT, SDR-35 PVC, VALVE BOX ASSEMBLY	SEE STD. DWG PW-12
9	1	8" C.I. VALVE BOX AND COVER MARKED "POWAY WATER"	SEE STD. DWG PW-12
10	3	PCC THRUST BLOCKS 2000 PSI	SEE STD. DWG PW-17.1 & 17.2 FOR BEARING AREA

REVISION	BY	APPROVED	DATE
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**CITY OF POWAY STANDARD DRAWING**

CLASS 300 INSTALLATION  
 FIRE HYDRANT ASSEMBLY

APPROVED



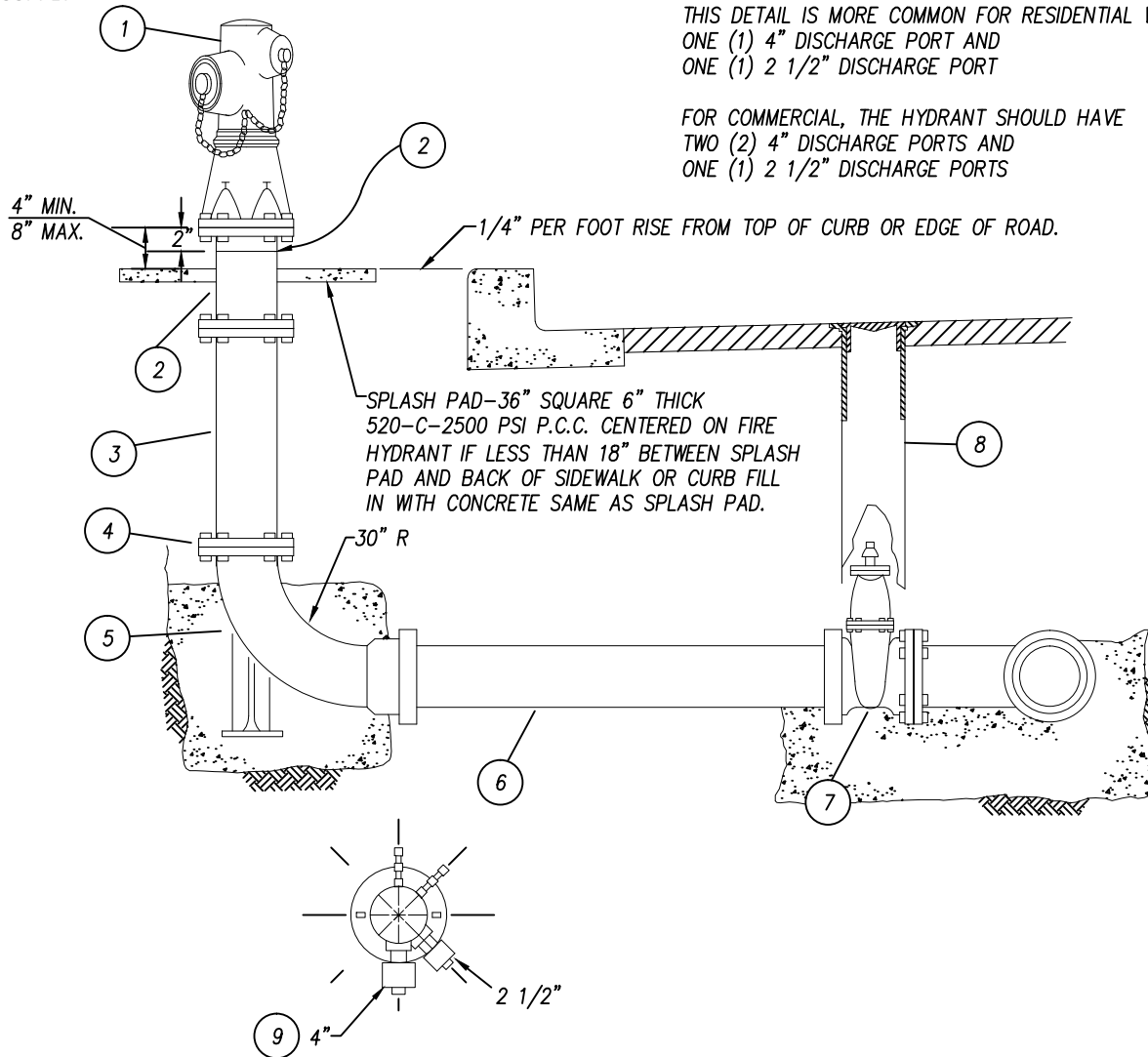
CITY ENGINEER  
 R.C.E. 41975

DATE  
 3/18/13

DRAWING NUMBER  
 PW-8

THIS DETAIL IS MORE COMMON FOR RESIDENTIAL WITH  
 ONE (1) 4" DISCHARGE PORT AND  
 ONE (1) 2 1/2" DISCHARGE PORT

FOR COMMERCIAL, THE HYDRANT SHOULD HAVE  
 TWO (2) 4" DISCHARGE PORTS AND  
 ONE (1) 2 1/2" DISCHARGE PORTS



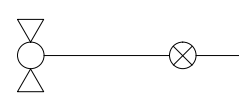
PLAN VIEW CURB FACE

- (1) FIRE HYDRANT
- (2) 12" LONG BREAK-OFF SPOOL W/ CHECK VALVE
- (3) 6" EXTENSION SPOOL
- (4) 3/4" x 3" HEX. HEAD MACHINE BOLTS AND NUTS, TYPICAL ALL BOLTS AND NUTS TO BE STAINLESS STEEL (MARKED 316)
- (5) 6" HYDRANT ELL - SHORT RADIUS 6" x 30"(LENGTH)
- (6) 6" STEEL OR PVC PIPE
- (7) 6" VALVE
- (8) VALVE WELL INSTALLATION (SEE PW-12)
- (9) 4" PORT TO FACE HYDRANT VALVE OR PER FIRE DEPT

NOTES:

- 1. ITEMS 2, 3 & 6 MAY BE CEMENT LINED AND COATED FLANGED STEEL PIPE WHERE PERMITTED BY AGENCY
- 2. VALVE NUT DEEPER THAN 60" SHALL HAVE EXTENSION PER APPROVED MATERIALS
- 3. BREAK-OFF BOLTS NOT ALLOWED
- 4. INSTALL BLUE RPM 6" FROM CENTERLINE OF ROAD ADJACENT TO FIRE HYDRANT

LEGEND ON PLANS



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CITY OF POWAY STANDARD DRAWING

6" FIRE HYDRANT

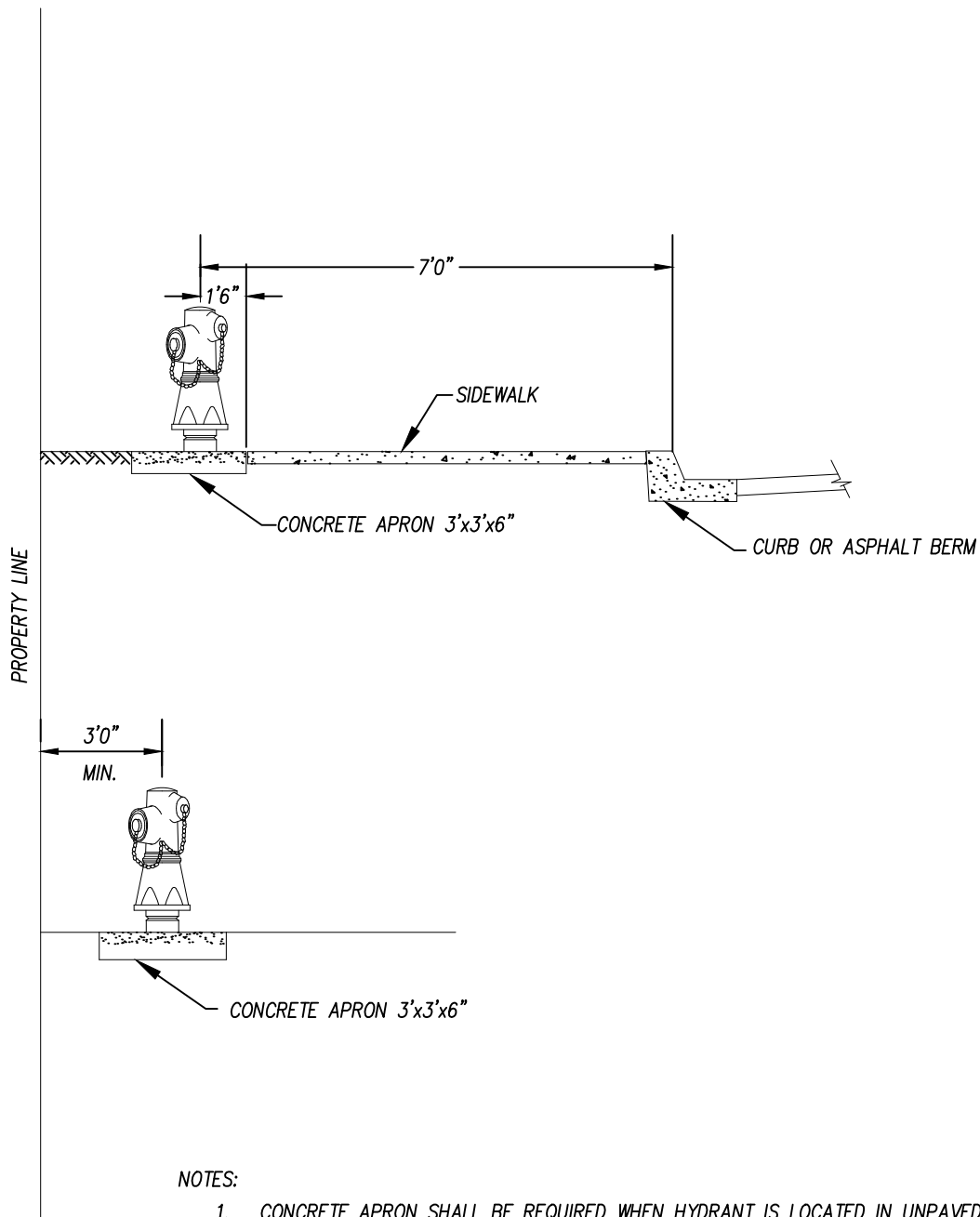
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 R.C.E. 41975

3/18/13  
 DATE

DRAWING  
 NUMBER

PW-10



NOTES:

1. CONCRETE APRON SHALL BE REQUIRED WHEN HYDRANT IS LOCATED IN UNPAVED AREAS. APRON SHALL BE 6" THICK 520-C-2500 CONCRETE.
2. WHEN DISTANCE FROM HYDRANT TO THE TOP OR TOE OF SLOPE IS LESS THAN 2'0" SPECIAL HYDRANT INSTALLATION WILL BE REQUIRED BY AGENCY.
3. WHERE HYDRANT IS NOT PROTECTED BY A VERTICAL FACE OF CURB, PROTECTION POSTS ARE REQUIRED. SEE STANDARD DRAWING PW-16.1 FOR DETAILS.
4. THE CENTERLINE OF THE HYDRANT SHALL BE LOCATED 5' MINIMUM FROM CURB RETURN AND MINIMUM 3'6" FROM DRIVEWAY OR ANY FIXED OBSTRUCTION.
5. INSTALL BLUE RPM 6" FROM CENTERLINE OF ROAD ADJACENT TO FIRE HYDRANT.

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CITY OF POWAY STANDARD DRAWING

FIRE HYDRANT LOCATIONS

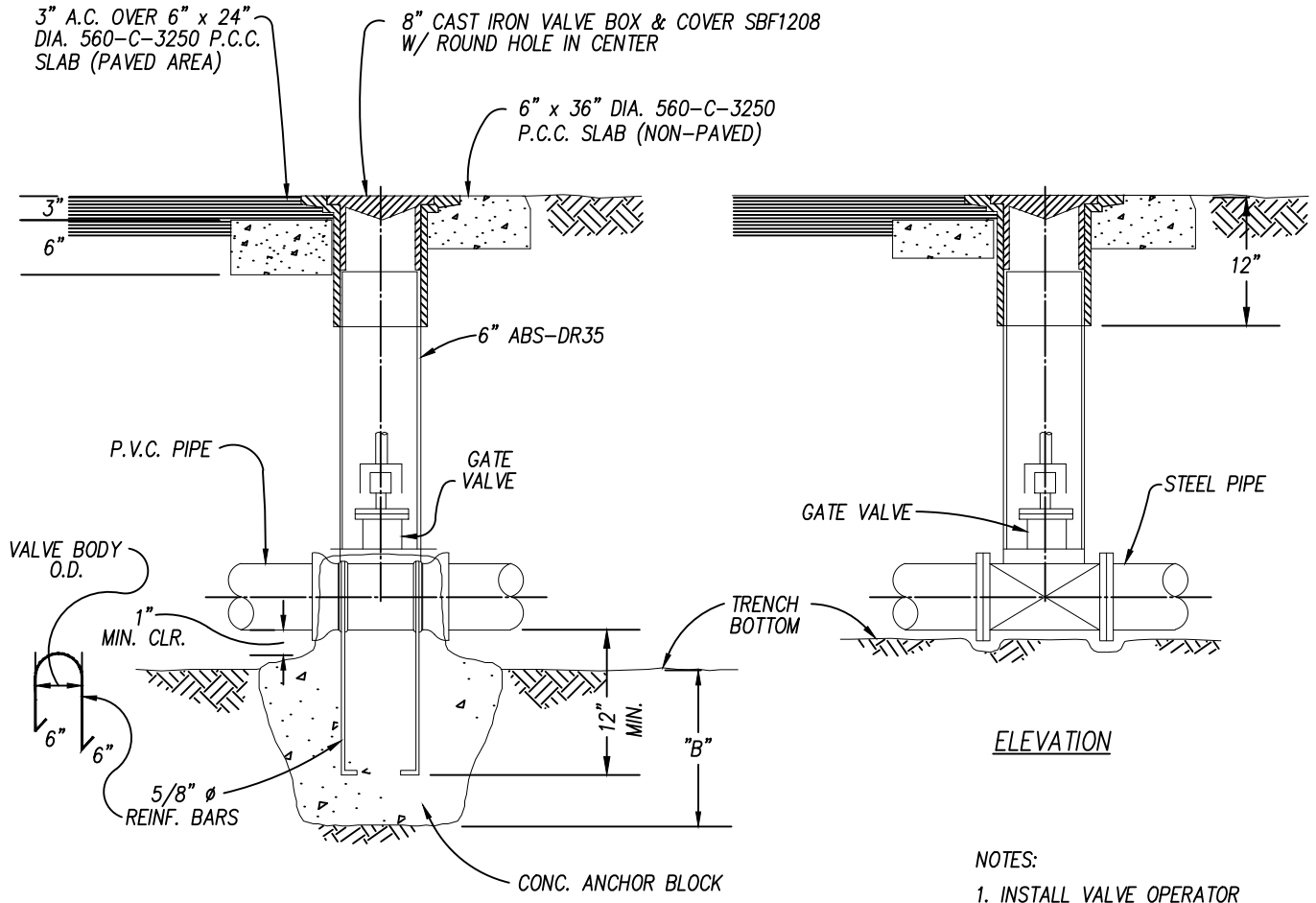
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 R.C.E. 41975

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 NUMBER

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 DATE

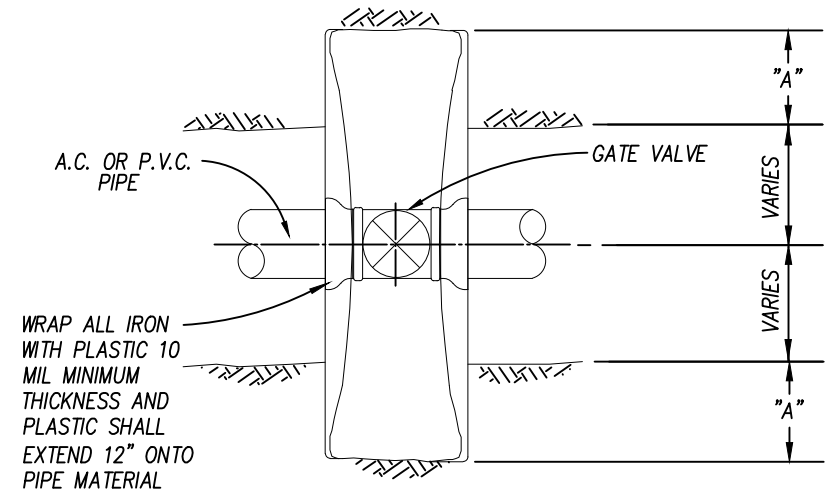
PW-11



ELEVATION

ELEVATION

- NOTES:
1. INSTALL VALVE OPERATOR EXTENSION PER PW-13.
  2. WATER VALVE CAN LIDS SHALL BE PAINTED TRAFFIC WHITE FOR DOMESTIC AND PURPLE FOR RECLAIMED. 2 COATS OF PAINT.



PLAN


CONCRETE ANCHOR BLOCK SCHEDULE		
PIPE SIZE	"A"	"B"
4"	12"	-
6"	12"	8"
8"	15"	12"
10"	24"	12"

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**CITY OF POWAY STANDARD DRAWING**

GATE VALVE, FLANGE OUTLET AND CAP ASSEMBLIES

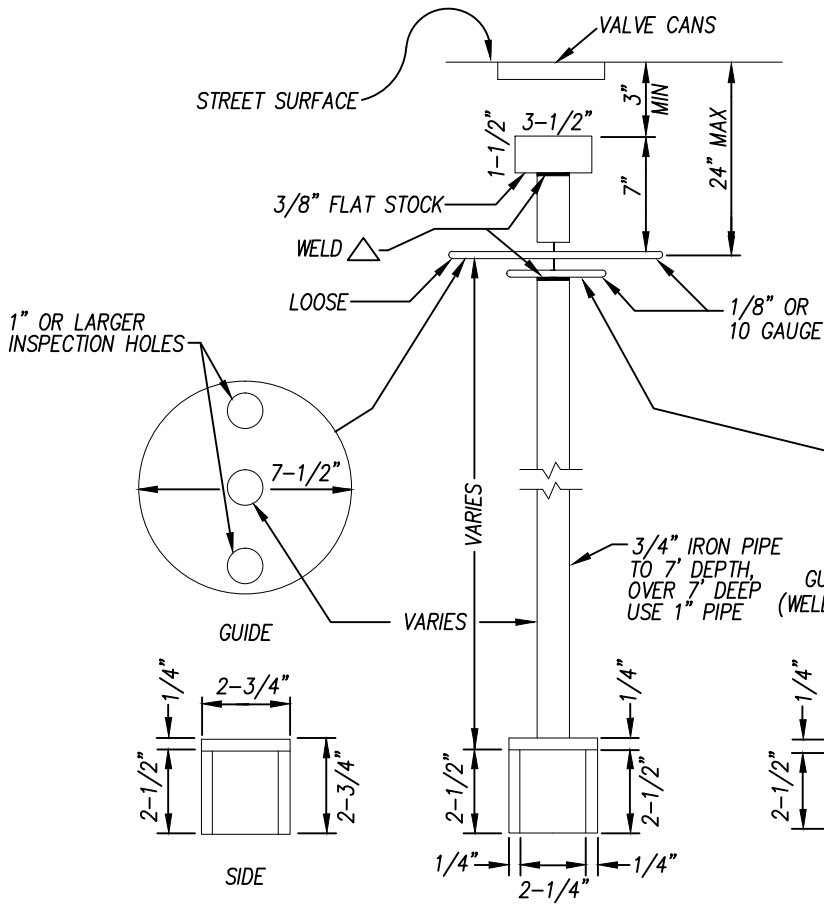
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R.C.E. 41975

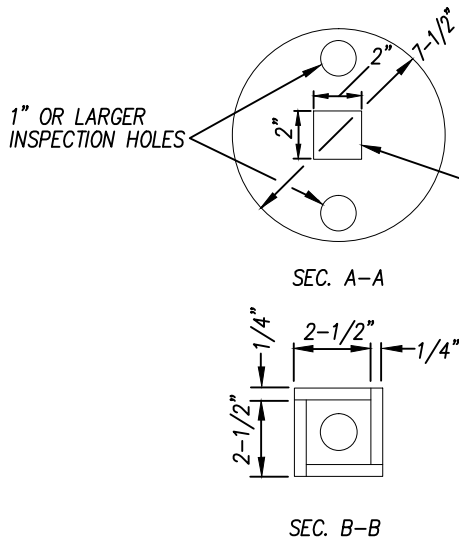
3/18/13  
DATE

DRAWING NUMBER PW-12

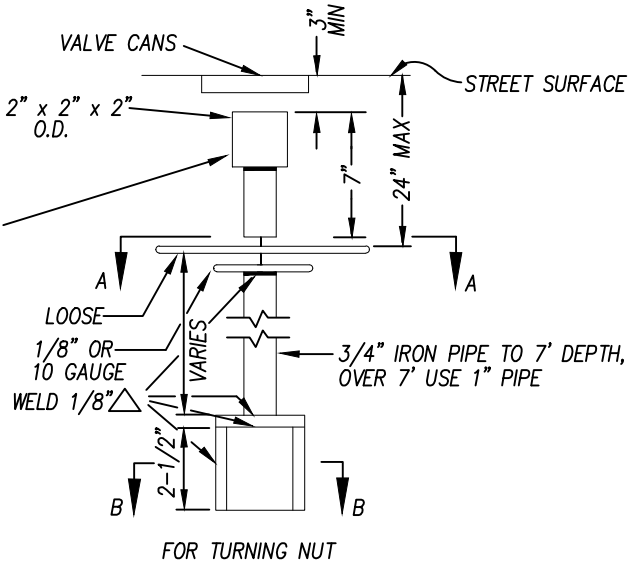


BUTTERFLY VALVE KEY EXTENSION

WHEEL TYPE KEY EXTENSION



GATE VALVE KEY EXTENSION



- NOTES:
1. VALVE KEY EXTENSIONS SHALL BE INSTALLED:
    - A) FOR ALL BUTTERFLY VALVES, AND
    - B) FOR ALL GATE VALVES WHEN TOP OF GATE VALVE NUT IS 60" OR MORE BELOW GROUND OR PAVEMENT SURFACE.
  2. PAINT ALL GALVANIZED FINISHED SURFACES WITH ASPHALT VARNISH.
  3. MATERIALS & WORKMANSHIP SHALL BE AS REQUIRED BY SECTIONS 206 AND 304 OF STD. SPECS.

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CITY OF POWAY STANDARD DRAWING

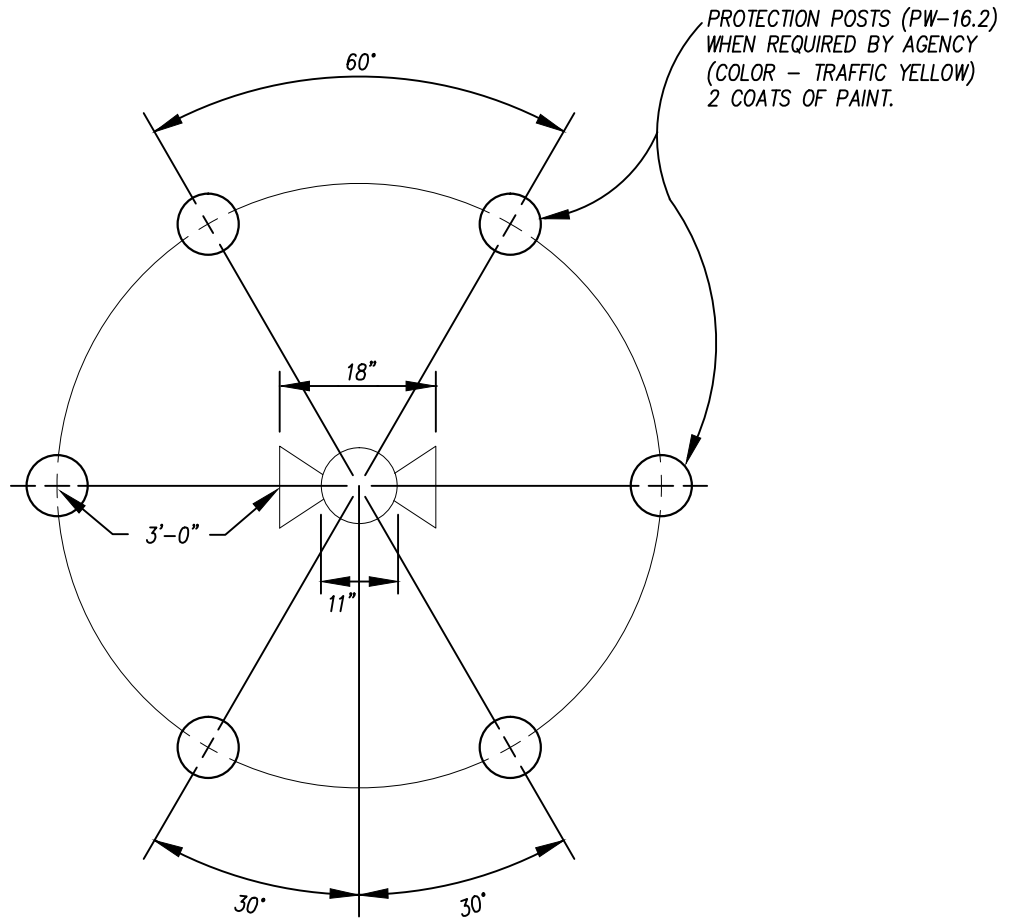
VALVE KEY EXTENSIONS

APPROVED

*[Signature]* 3/18/13  
 CITY ENGINEER DATE  
 R.C.E. 41975

DRAWING NUMBER PW-13





NOTE: NUMBER OF POSTS TO  
 BE DETERMINED BY ENGINEER

REVISION	BY	APPROVED	DATE
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**CITY OF POWAY STANDARD DRAWING**

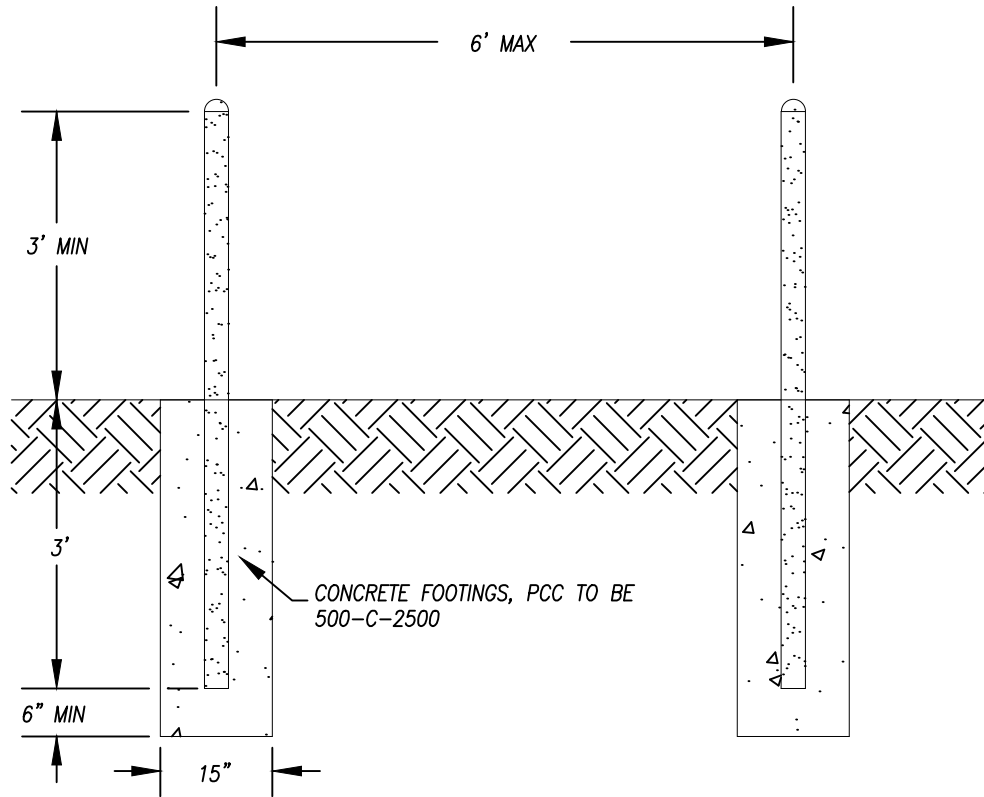
FIRE HYDRANT  
 PROTECTION POSTS

APPROVED

CITY ENGINEER  
 R.C.E. 41975

DRAWING NUMBER PW-16.1

3/18/13  
 DATE



NOTES:

1. POSTS SHALL BE PAINTED TRAFFIC YELLOW.
2. PROTECTION POSTS ARE REQUIRED FOR ALL FIRE HYDRANTS, FDCs, PIVs, AND ABOVE GROUND STORAGE TANKS LOCATED LESS THAN 4' FROM A CURB.
3. POSTS SHALL BE LOCATED NOT LESS THAN 3' FROM ABOVE GROUND STORAGE TANKS.
4. POSTS SHALL BE LOCATED NOT LESS THAN 2' FROM FDCs AND PIVs.
5. POSTS SHALL BE CONSTRUCTED OF CONCRETE FILLED SCHEDULE 40 STEEL, ±4" IN DIAMETER, WITH CONCRETE CAP. CONCRETE SHALL BE CLASS 500-C-2500.

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DELETE NOTE	DS	FDC	9/7/07
REDRAWN	MR	S. CROSBY	03/13

CITY OF POWAY STANDARD DRAWING

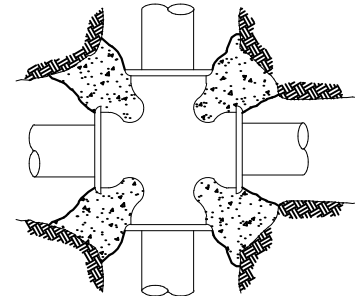
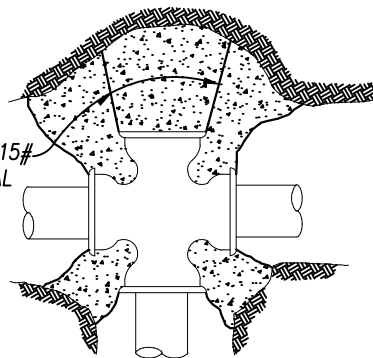
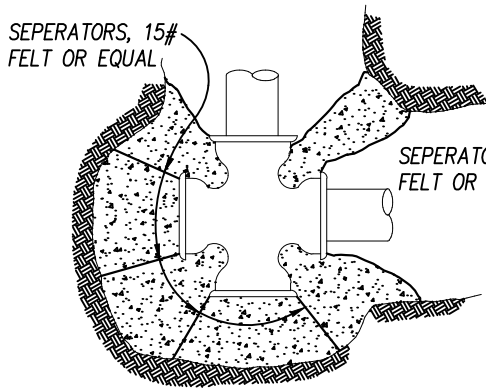
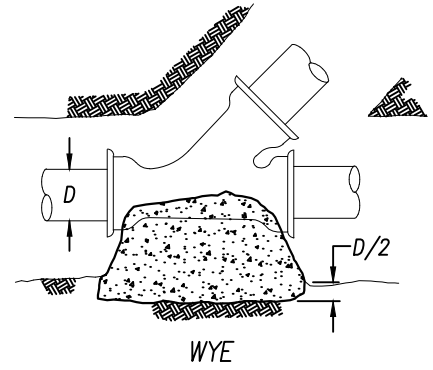
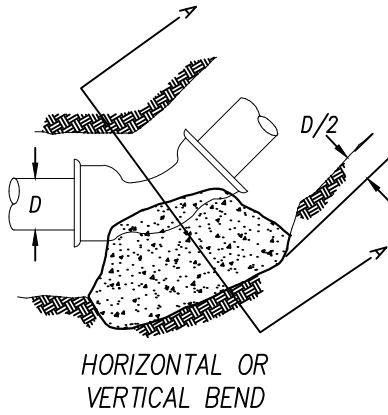
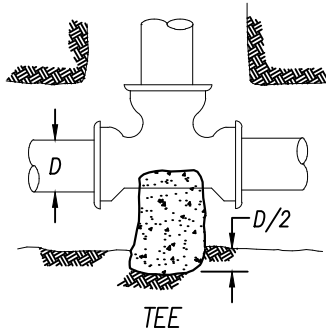
FIRE HYDRANT PROTECTION  
 POST DETAIL

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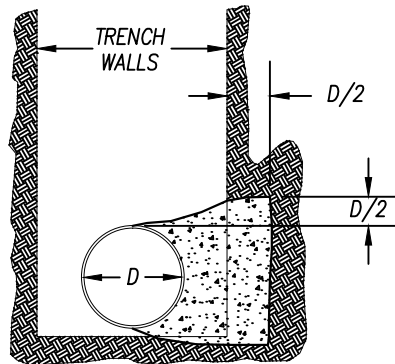
  
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3/18/13  
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DRAWING NUMBER PW-16.2



CROSS BLOCKING



SECTION A-A

NOTES

1. CONCRETE SHALL BE 450C-2000 OR 565E-2000P.
2. SEE STANDARD DRAWING W-18 FOR BEARING AREAS.
3. BOND BREAKER IS REQUIRED ON DEAD END BLOCKING AND SHALL BE #15 BUILDING FELT.
4. TAPPED CAPS ARE NOT ALLOWED.
5. A MINIMUM OF 6" OF CONCRETE SHALL BE PLACED BENEATH EACH FITTING.
6. ALL IRON IS TO BE WRAPPED IN PLASTIC SHEETING MINIMUM 10 MILS THICK

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CITY OF POWAY STANDARD DRAWING

CONCRETE THRUST BLOCKS

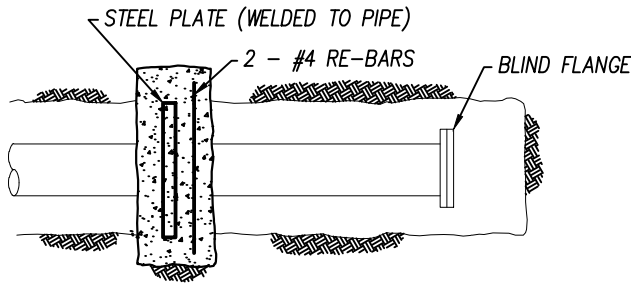
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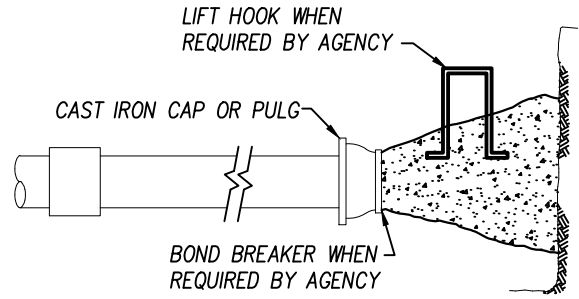
3/18/13  
 DATE

PW-17.1

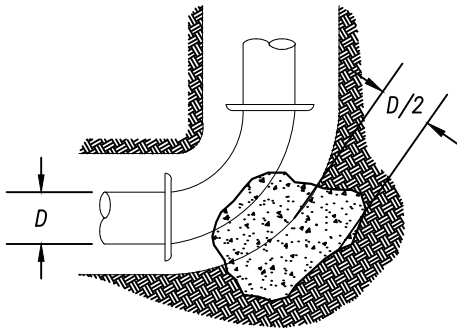


STEEL PIPE  
PLAN

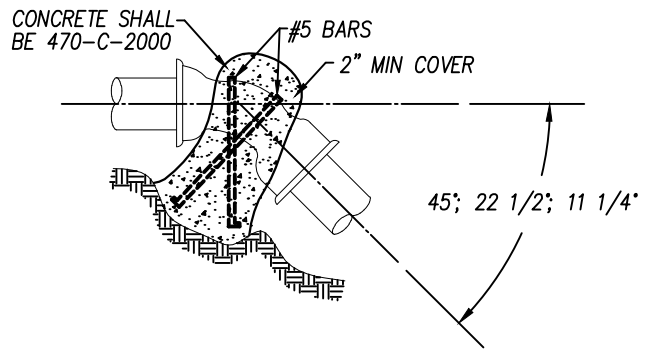
DEAD END BLOCKING



A.C. PIPE  
ELEVATION



90° BEND



ANCHOR BLOCK  
(VERTICAL BEND ONLY)

NOTES:

1. CONCRETE THRUST BLOCKING SHALL NOT COVER UNDERGROUND SWING CHECK VALVE INSPECTION PORT.
2. INDICATE PIPE TYPE, SIZE, AND DIAMETER.
3. THRUST BLOCKS SHALL BE INSTALLED IN ACCORDANCE WITH SDRSD W-17 & W-18 AND THE CITY OF POWAY SPECIFICATIONS.
4. ALL BOLTS AND NUTS TO BE STAINLESS STEEL (316).
5. ALL UNDERGROUND FITTINGS TO BE WRAPPED IN 10 MIL PLASTIC. PLASTIC SHALL EXTEND 12" ONTO PIPE MATERIAL.
6. ALL MATERIALS SHALL BE FM/UL LISTED AND SHALL BE APPROVED BY THE FIRE MARSHAL PRIOR TO INSTALLATION.
7. ANCHOR BLOCK - CITY OF POWAY APPROVED JOINT RESTRAINT ASSEMBLY REQUIRED.
  - A. INCREASE VOLUMES SHOWN IN PROPORTION TO PRESSURES EXISTING WHEN PRESSURE TESTING PIPELINE.
  - B. SPECIAL DESIGN REQUIRED.

ANCHOR BLOCK			
PIPE NOMINAL DIA	CUBIC FT OF CONCRETE REQUIRED PER 100PSI PRESSURE (SEE NOTE 7A)		
	45°	22 1/2°	11 1/4°
4	7	4	2
6	15	8	4
8	27	14	7
10	SEE 7B	21	11
12	SEE 7B	SEE 7B	16

REVISION	BY	APPROVED	DATE
REDRAWN	MR	S. CROSBY	03/13

CITY OF POWAY STANDARD DRAWING

CONCRETE THRUST BLOCKS  
AND ANCHOR BLOCKS

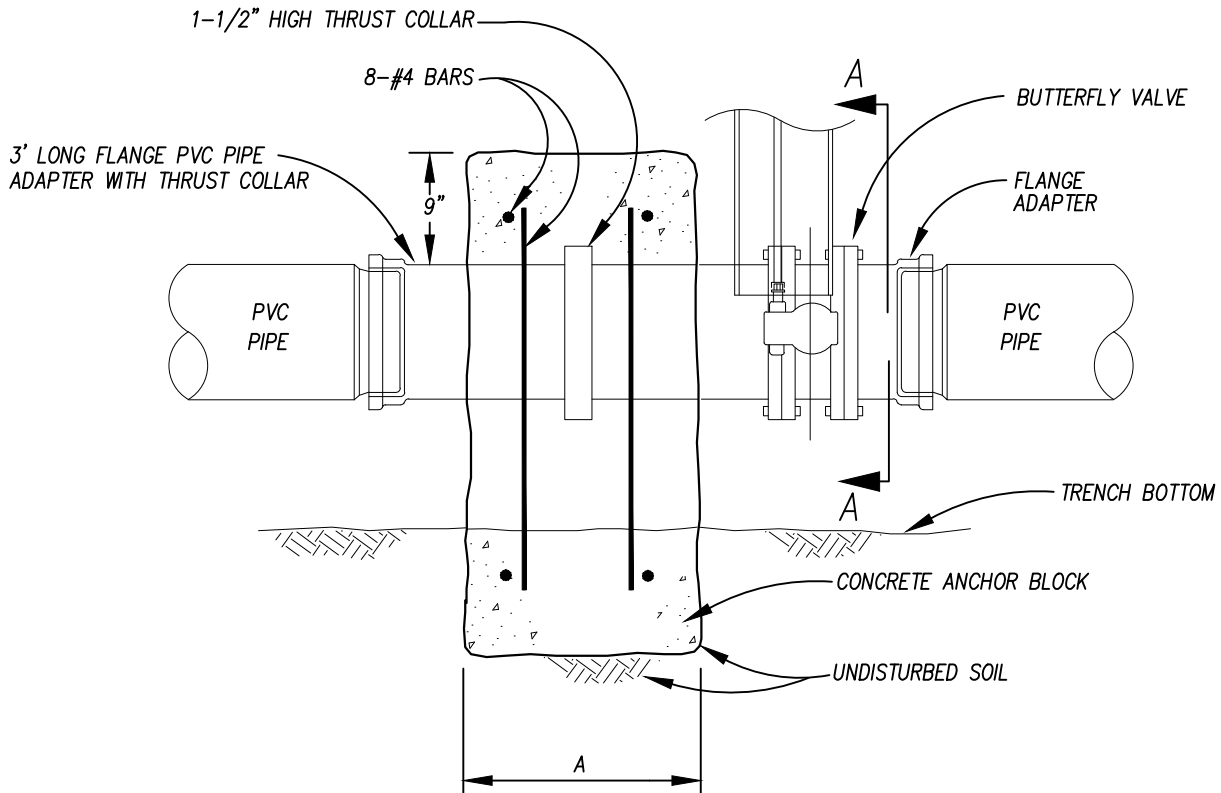
APPROVED

  
 CITY ENGINEER  
 R.C.E. 41975

3/18/13  
DATE

DRAWING  
NUMBER

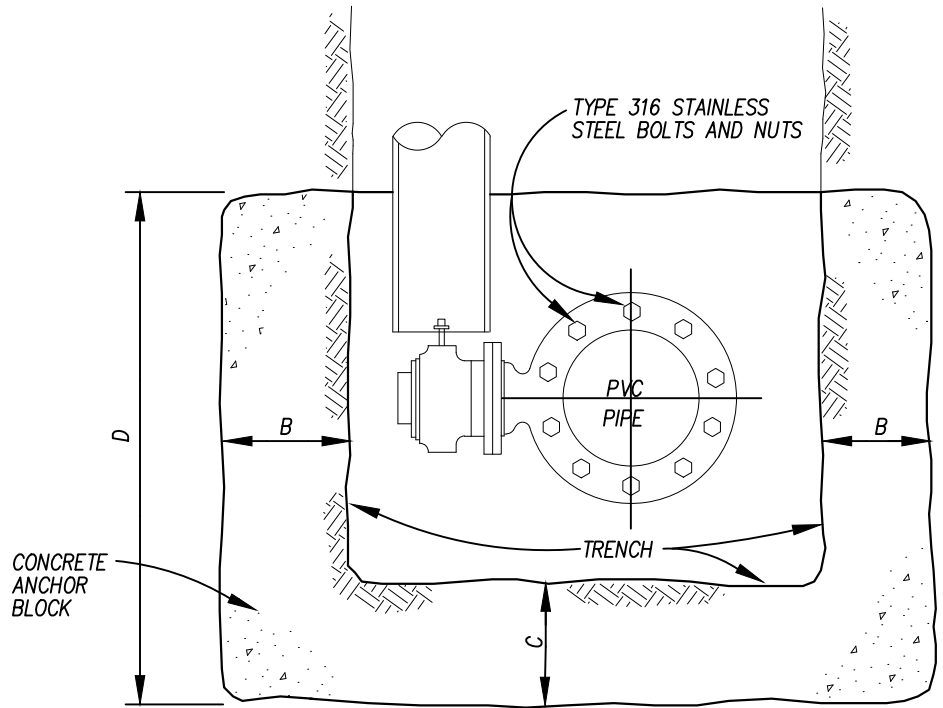
PW-17.2



CONCRETE ANCHOR BLOCK SCHEDULE				
PIPE SIZE	CL 150			
	A	B	C	D
12"	21"	26"	12"	36"
14"	24"	30"	15"	45"
16"	24"	36"	15"	48"
18"	24"	45"	18"	51"

**NOTES:**

1. WRAP ALL IRON WITH 10 MIL THICK PLASTIC SHEETING.
2. THIS DRAWING IS NOT APPLICABLE TO STEEL PIPE INSTALLATIONS.



SECTION A-A

REVISION	BY	APPROVED	DATE
REDRAWN	MR	S. CROSBY	03/13

**CITY OF POWAY STANDARD DRAWING**

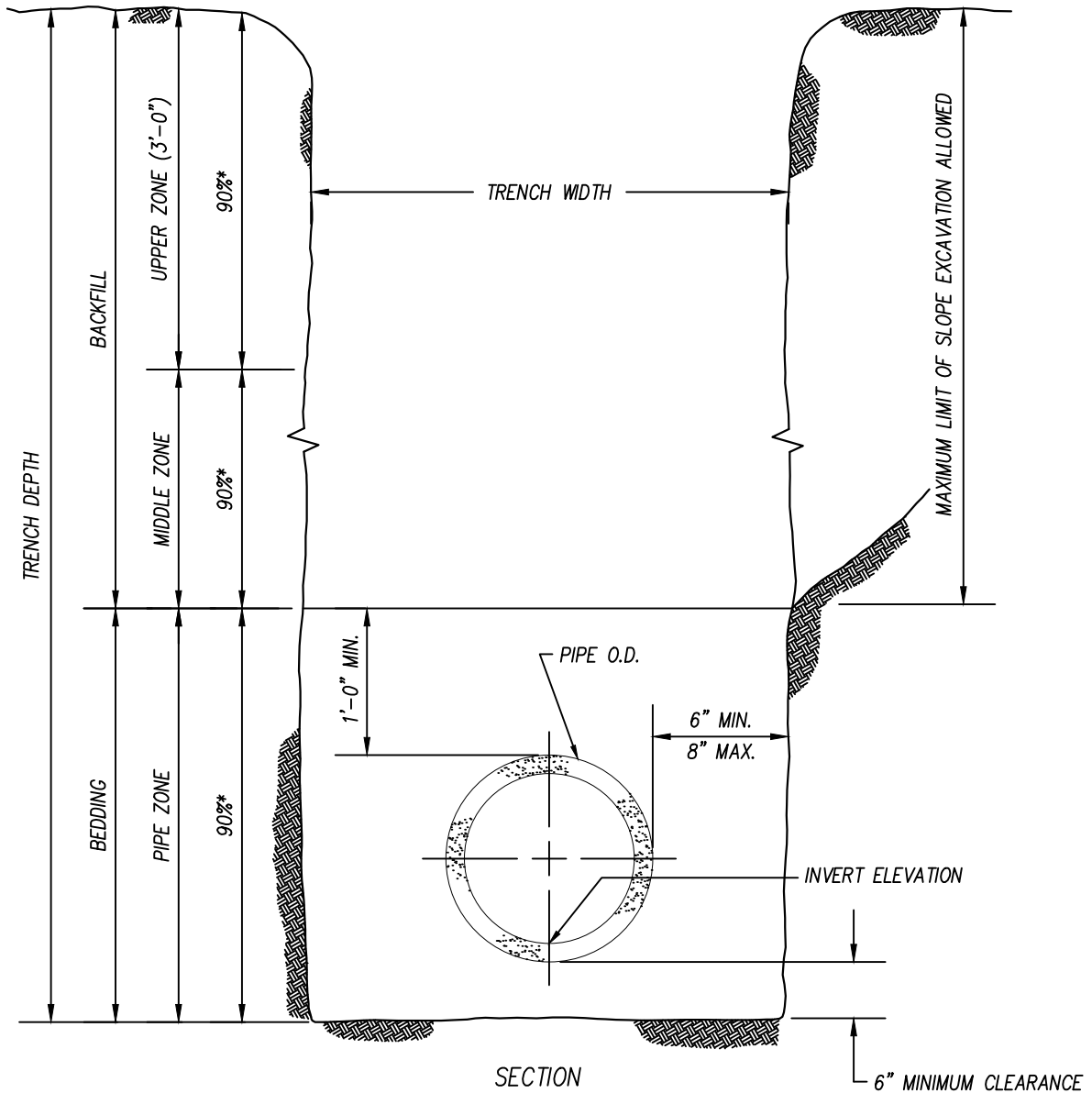
CONCRETE ANCHOR BLOCK FOR  
 BUTTERFLY VALVE ASSEMBLY  
 12-INCH AND LARGER

APPROVED

  
 CITY ENGINEER  
 R.C.E. 41975

3/18/13  
 DATE

DRAWING NUMBER PW-19.2



**NOTES**

1. FOR TRENCHING ON IMPROVED STREETS SEE SDRSD G-24A (TYPE A) AND G-24B FOR RESURFACING DETAILS. TOP 12" SHALL BE 95% R.C.
2. (\*) INDICATES MINIMUM RELATIVE COMPACTION.
3. BEDDING MATERIAL SHALL BE GRANULAR WITH A SAND EQUIVALENT (SE) OF NOT LESS THAN 30 AND AN EXPANSION COEFFICIENT, WHEN SATURATED WITH WATER, OF NOT MORE THAN 0.5 OF ONE PERCENT (0.5%). THE SAND MATERIAL MUST PASS 100% OF #4 SIEVE SIZE

SIEVE SIZE	PERCENT PASSING
#4	100
#8	75 - 100
#200	0 - 15

REVISION	BY	APPROVED	DATE
REDRAWN	MR	S. CROSBY	03/13

**CITY OF POWAY STANDARD DRAWING**

PIPE BEDDING AND TRENCH BACKFILL  
 FOR WATER MAINS

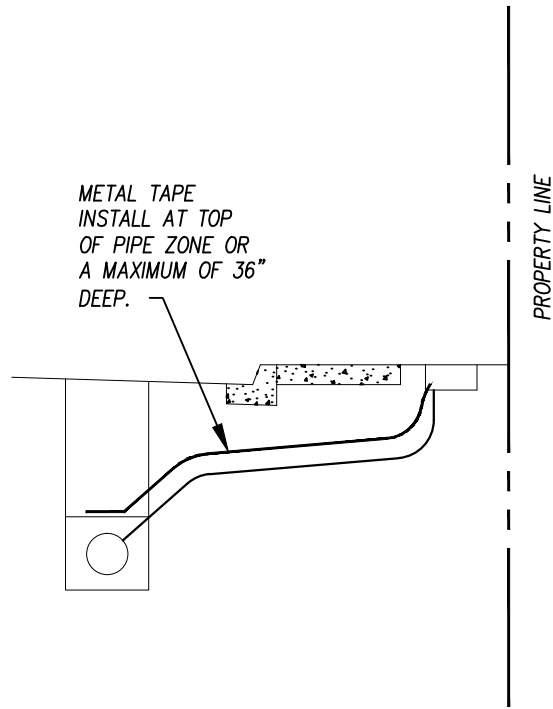
APPROVED

  
 CITY ENGINEER  
 R.C.E. 41975

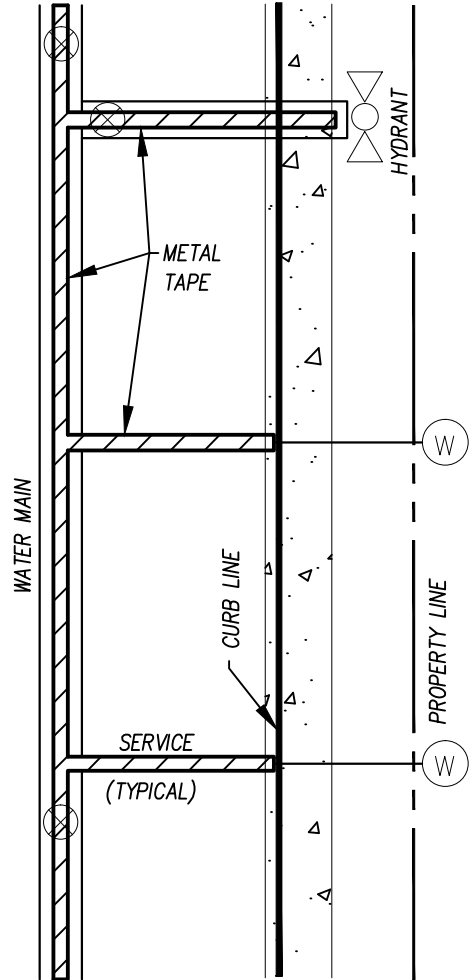
3/18/13  
 DATE

DRAWING  
 NUMBER

PW-21



SECTION



PLAN

NOTES:

1. ALL TAPE TO BE 3" METALLIC - BLUE IN COLOR AND "WATER LINE BELOW" PRINTED CONTINUOUSLY.
2. ADEQUATELY BOND SERVICE TAPE TO ENSURE ELECTRICAL CONTINUITY.
3. TAPE SHALL EXTEND INTO SERVICE BOX OR WELL CASING TO ALLOW FOR MARK-OUT BY CONTINUITY TESTER.

REVISION	BY	APPROVED	DATE
REDRAWN	MR	S. CROSBY	03/13

**CITY OF POWAY STANDARD DRAWING**

METALLIC TAPE LOCATOR  
 FOR NON-METALLIC WATER PIPE

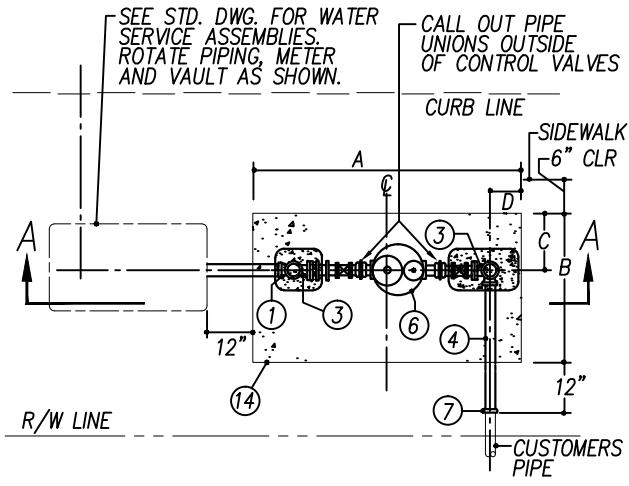
APPROVED

CITY ENGINEER  
 R.C.E. 41975

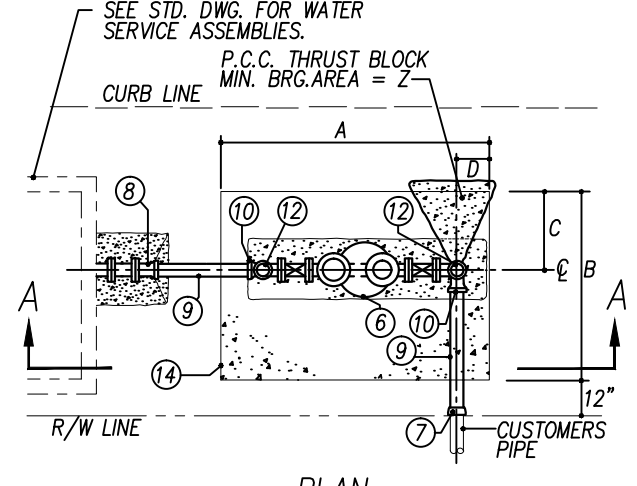
DRAWING  
 NUMBER

*3/18/13*  
 DATE

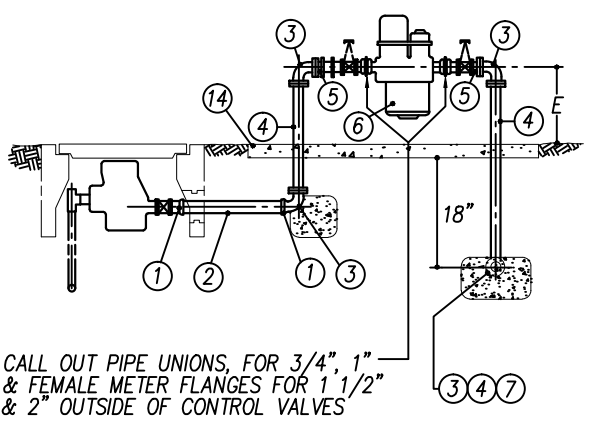
PW-25



PLAN



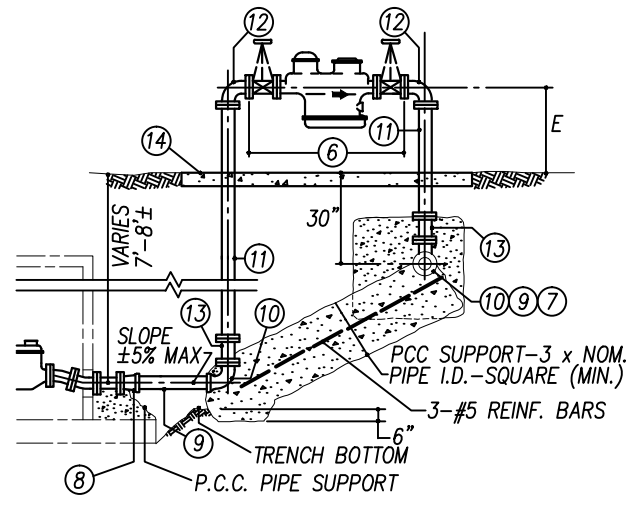
PLAN



NOTE: SILVER SOLDER REQUIRED

SECTION A-A

3/4", 1-1/2" AND 2" ASSEMBLY



SECTION A-A

3", 4" AND 6" ASSEMBLY


EQUIPMENT SCHEDULE			SIZES-DIMENSIONS								
ITEM	REQ.	DESCRIPTION	SPECIFICATIONS	REF.	3/4"	1"	1-1/2"	2"	3"	4"	6"
1	2	COPPER ADAPTER, S.J. x MALE N.P.T.		A	3'-0"	3'-0"	4'-0"	4'-0"	6'-6"	6'-6"	8'-6"
2	-	TYPE "K" HARD COPPER TUBE		B	2'-0"	2'-0"	2'-6"	2'-6"	4'-0"	4'-0"	4'-6"
3	4	COPPER C X C ELL		C	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	1'-6"	2'-0"
4	-	BRASS PIPE, THREADED		D	3"	3-1/2"	5-1/2"	5'-0"	14"	10"	12"
5	2	BRASS CLOSE NIPPLE		E	1'-6"	1'-6"	1'-6"	2'-0"	2'-0"	2'-0"	2'-6"
6	1	REDUCED PRESS. BACKFLOW PREVENTER									
7	1	TEMPORARY CAP		Z	-	-	-	-	5 S.F.	5 S.F.	9 S.F.
8	1	ADAPTER, C.I. FIG x R.T.		1-5	3/4"	1"	1-1/2"	2"	-	-	-
9	-	A.C. OR P.V.C. - 150 PIPE	STD. 3'-3" LENGTH M.O.A.	6	3/4"	1"	1-1/2"	2"	3"	4"	6"
10	2	90° FIG. x R.T. C.I. BEND		7	3/4"	1"	1-1/2"	2"	4"	4"	6"
11	2	FIG. C.I. SPOOL	INTEGRALLY CAST FLANGES	8-10	-	-	-	-	4"	4"	6"
12	2	90° FIG. C.I. BEND		11&12	-	-	-	-	3"	4"	6"
13	2	FIG. C.I. REDUCER		13	-	-	-	-	4" x 3"	-	-
14	1	2'X 3'X 4" CONCRETE SPLASH PAD	SEE TABLE	14	W101+100T	W201+200T	W202+200T	GV-200	GV-300		

REVISION	BY	APPROVED	DATE
REDRAWN	MR	S. CROSBY	03/13

**CITY OF POWAY STANDARD DRAWING**

REDUCED PRESSURE BACKFLOW  
 PREVENTER ASSEMBLY

APPROVED

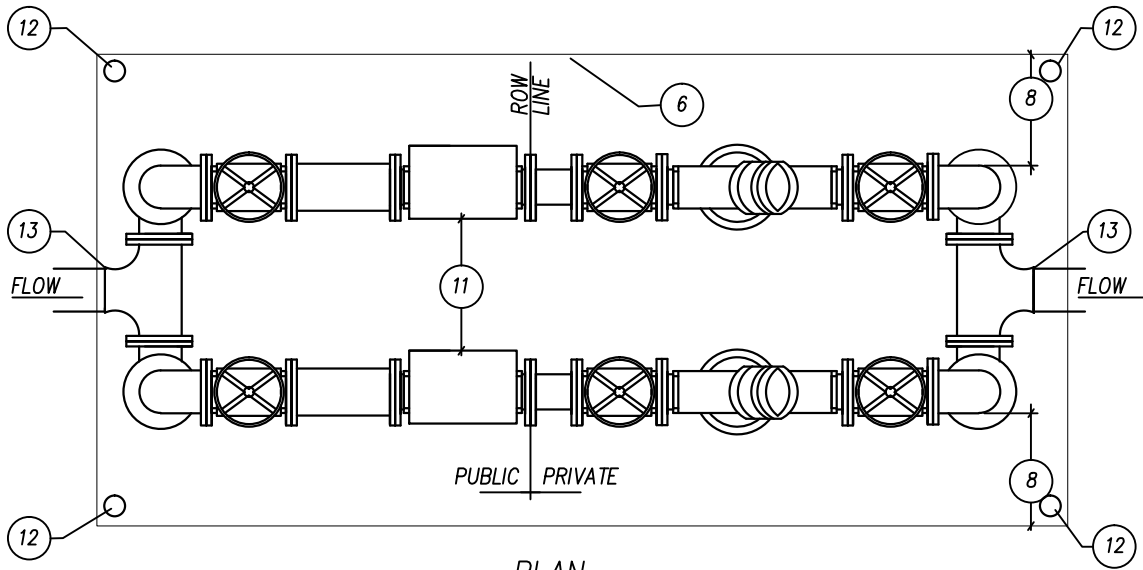


CITY ENGINEER  
 R.C.E. 41975

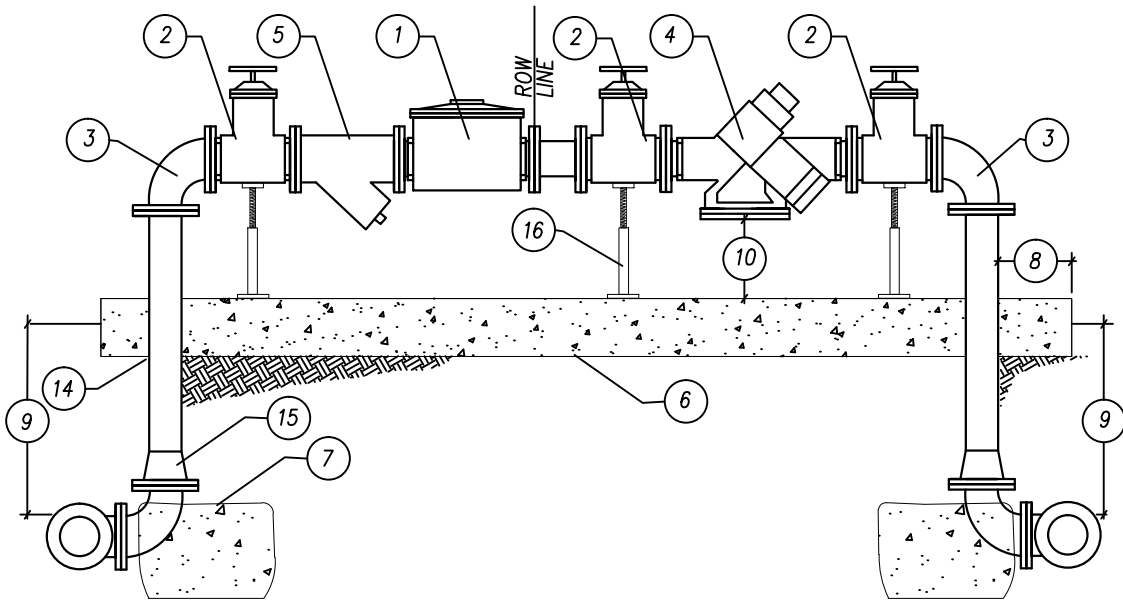
DATE  
 3/18/13

DRAWING NUMBER  
 PW-26





PLAN  
 NOT TO SCALE



ELEVATION  
 NOT TO SCALE

**NOTES:**


1. IF UNINTERRUPTIBLE SERVICE IS NEEDED, THEN A BYPASS MAY BE INSTALLED WITH CITY APPROVAL. BYPASS MUST BE PROTECTED BY BACKFLOW PREVENTER.
2. SEE PW-27.1 FOR ADDITIONAL NOTES AND MATERIALS DATA.

REVISION	BY	APPROVED	DATE
ADDED NOTE	DS	FDC	9/7/07
REDRAWN	MR	S. CROSBY	03/13

**CITY OF POWAY STANDARD DRAWING**

**3" & LARGER WATER METER/  
 BACKFLOW PREVENTER INSTALLATION**

APPROVED



CITY ENGINEER  
 R.C.E. 41975

3/18/13  
 DATE

DRAWING NUMBER PW-27

**NOTES:**

1. 48" CHAIN LINK FENCE WITH BLACK EPOXY COATED FINISH IS OPTIONAL.
2. PAINT AS PER POWAY STANDARD
3. FLANGE BOLTS ARE TO BE 316 STAINLESS STEEL.
4. LOCATE BACKFLOW PREVENTION DEVICE IN SUCH A MANNER THAT WILL ALLOW THE DEVICE TO BE READILY ACCESSIBLE FOR INSPECTION AND REPAIR.
5. TESTING SHALL BE CONDUCTED PRIOR TO ACCEPTANCE BY PUBLIC WORKS.
6. MATERIALS SHALL BE SELECTED FROM THE CITY OF POWAY'S APPROVED MATERIALS LIST.

ITEM	NO.	DESCRIPTION	SPECS
1	-	WATER METER	SINGLE READ COMPOUND (SUPPLIED BY THE CITY OF POWAY) (INSTALLED BY CONTRACTOR)
2	-	WEDGE VALVE	RER APPROVED MATERIALS LIST
3	-	90° ELBOW	CAST IRON
4	-	BACKFLOW PREVENTER	PER APPROVED MATERIAL LIST
5	-	STRAINER	
6	-	CONCRETE PAD	6" THICK (2,500 PSI)
7	-	THRUST BLOCK	PW-17.1
8	-	6"	
9	-	36" MIN.	
10	-	12" MIN., 24" MAX.	
11	-	18" MIN., 30" MAX.	
12	-	PROTECTION POSTS	PW-16.2
13	-	PUSH-ON T	CAST IRON (MUST BE SIZE OF SERVICE)
14	-	PIPE PENETRATION	WRAP IN 10 MIL VISQUEEN
15	-	FLXFL REDUCER	
16	-	ADJUSTABLE VALVE SUPPORT	
<b>UNINTERRUPTABLE SERVICE EQUIVALENTS</b>			
		SERVICE SIZE	METERS REQUIRED
		3"	2 - 2" METERS
		4"	2 - 3" METERS
		6"	2 - 4" METERS
		8"	2 - 6" METERS
		10"	2 - 8" METERS

REVISION	BY	APPROVED	DATE
REDRAWN	MR	S. CROSBY	03/13

**CITY OF POWAY STANDARD DRAWING**

3" & LARGER WATER METER/  
 BACKFLOW PREVENTER INSTALLATION

APPROVED

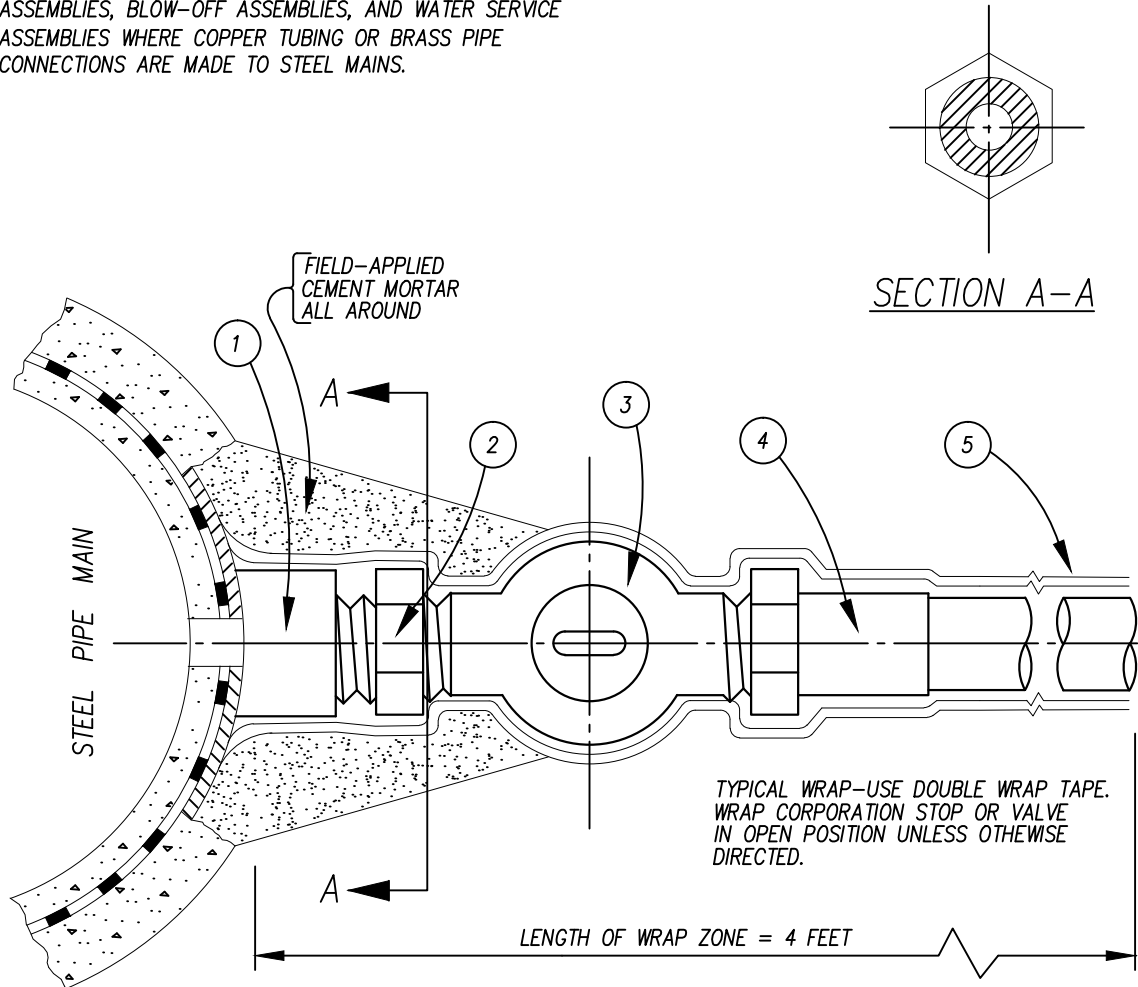
*[Signature]* 3/18/13  
 DATE

CITY ENGINEER  
 R.C.E. 41975

DRAWING NUMBER PW-27.1

**NOTES:**

DIELECTRIC CONNECTIONS SHALL BE REQUIRED ON ALL AIR AND VACUUM VALVE ASSEMBLIES, MANUAL AIR RELEASE ASSEMBLIES, BLOW-OFF ASSEMBLIES, AND WATER SERVICE ASSEMBLIES WHERE COPPER TUBING OR BRASS PIPE CONNECTIONS ARE MADE TO STEEL MAINS.




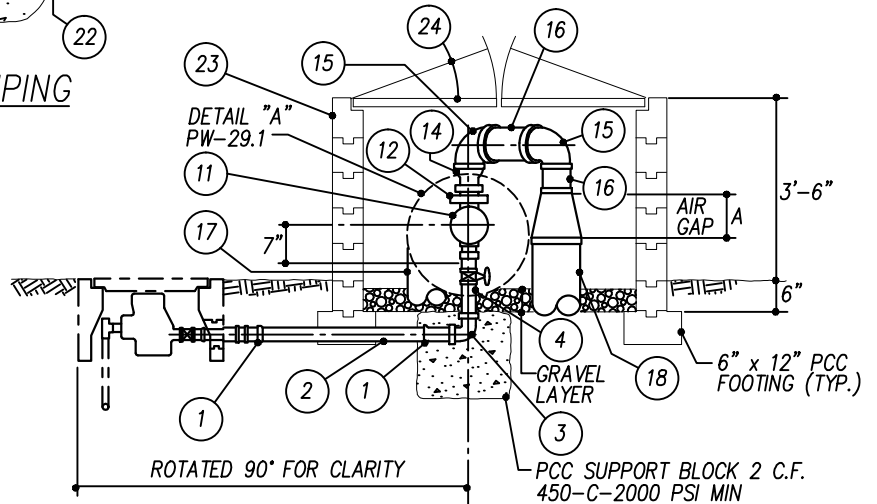
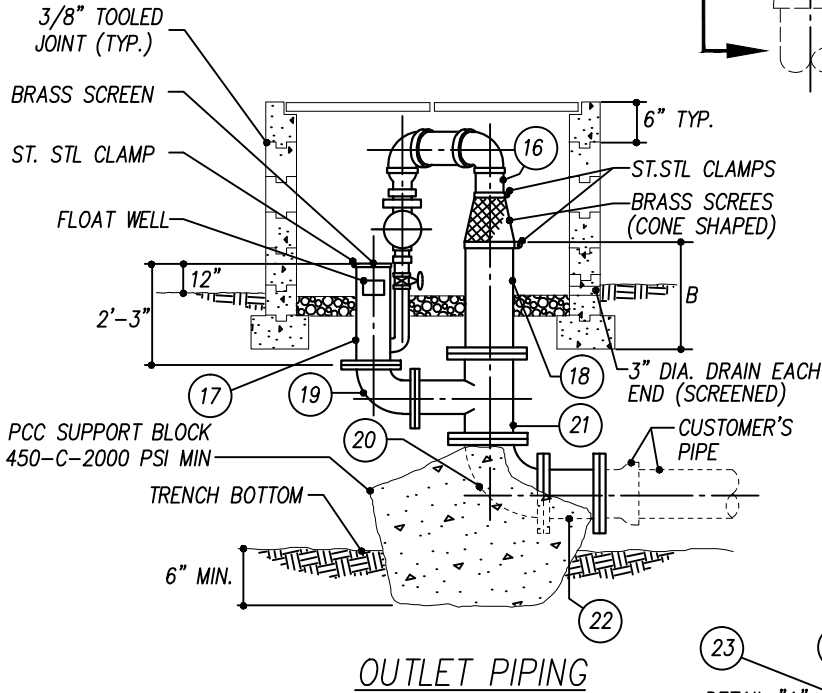
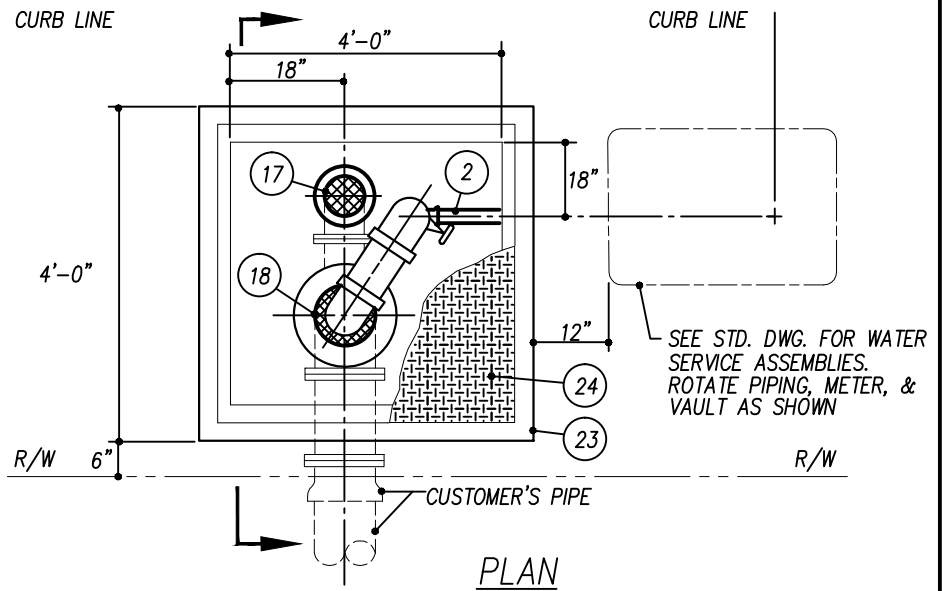
<u>COPPER TUBING</u>	<u>VALVE OR CORP. STOP</u>	<u>STEEL COUPLING</u>	<u>INSULATING BUSHING</u>
3/4"	3/4"	1"	3/4"x1"
1"	1"	1-1/2"	1"x1-1/2"
1-1/2"	1-1/2"	2"	1-1/2"x2"
2"	2"	2-1/2"	2"x2-1/2"

<u>ITEM</u>	<u>NO.</u>	<u>DESCRIPTION</u>	<u>SPECS</u>
1	1	1/2 LENGTH OF EXTRA STRONG PIPE COUPLING	SEE CITY APPROVED MATERIALS LIST
2	1	INSULATING BUSHING-NPT	
3	1	CORPORATION STOP-MALE NPT x FLARE NUT	
4	1	CORPORATION STOP FLARE NUT	
5	1	PVC TAPE (10 MILL, PRESSURE SENSITIVE)	

REVISION	BY	APPROVED	DATE
REDRAWN	MR	S. CROSBY	03/13

**CITY OF POWAY STANDARD DRAWING**  
 DIELECTRIC CONNECTION  
 TO STEEL MAIN

APPROVED  
  
 CITY ENGINEER  
 R.C.E. 41975  
 DATE 3/18/13  
 DRAWING NUMBER PW-28



NOTE: SILVER SOLDER REQUIRED

REVISION	BY	APPROVED	DATE
REDRAWN	MR	S. CROSBY	03/13

**CITY OF POWAY STANDARD DRAWING**

**AIR GAP SEPARATOR ASSEMBLIES**

APPROVED

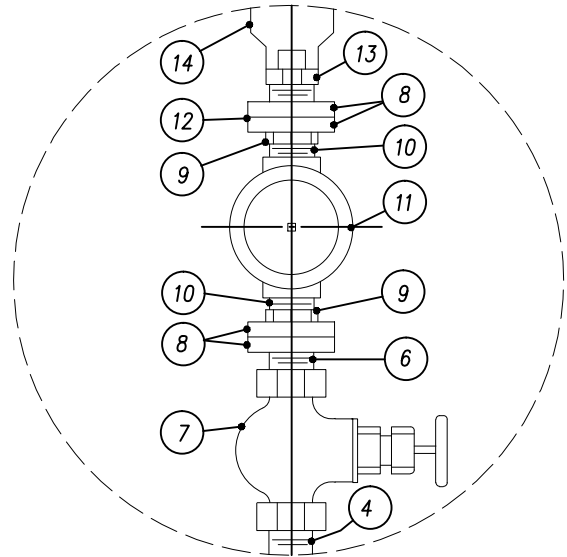
*[Signature]*  
 CITY ENGINEER  
 R.C.E. 41975

3/18/13  
 DATE

DRAWING NUMBER PW-29

SIZES-DIMENSIONS

REF.	3/4"	1"	1-1/2"	2"
A	6"	8"	12"	12"
B	2'-3"	2'-3"	2'-1"	2'-0"
1 THRU 7	3/4"	1"	1-1/2"	2"
8	3/4" - 4 REG	1"-2 REG	1-1/2" -2 REG	2" - 2 REG
9	-	-	-	-
10	3/4"	-	-	-
11	3/4" SCR.	1" FIG.	1-1/2" FIG	2" FIG.
12	3/4"	1"	1-1/2"	2"
13	3/4" x 1"	1"	1-1/2"	2"
14	1" x 3"	1" x 4"	2" x 6" *	2" x 6"
15 & 16	3"	4"	6"	6"
17 & 19	8"	8"	8"	8"
18 ,20, 22	8"	8"	10"	12"
21	8"	8"	10"x10"x8"	12"x12"x8"



DETAIL A

\* WITH 1-1/2" x 2" FLUSH, BRONZE BUSHING

EQUIPMENT SCHEDULE

ITEM	REQ.	DESCRIPTION	SPECIFICATIONS
1	2	COPPER ADAPTER, S.J. x MALE N.P.T.	
2	-	TYPE "K" SOFT COPPER TUBE	
3	1	BRONZE 90° SCREWED ELL	
4	-	BRASS PIPE, THREADED	
5	1	BRONZE UNION, SCREWED	
6&10	-	BRASS CLOSE NIPPLE	
7	1	BRONZE GLOBE VALVE, SCREWED	
8	-	#150 BRONZE FLANGE, SCREWED	SEE TABLE
9	2	BRONZE BUSHING, OUTSIDE HEAD-SCREWED	
11	1	FLOAT VALVE	
12	1	ORIFICE PLATE, PADDLE TYPE	SEE STD. SPECS FOR BORING DIA.
13	1	COPPER ADAPTER, FTG.x MALE N.P.T.	
14	1	COPPER FTG. ADAPTER, FTG. x S.J.	
15	2	COPPER 90° ELL, S.J.	
16	-	TYPE "K" HARD COPPER TUBE	
17&18	1	C.I.P. FIG. ONE END	
19&20	1	FIG. 90° C.I. BEND	
21	1	FIG. C.I. TEE	
22	1	FIG. C.I. SPOOL, 12" LONG	INTEGRALLY CAST FLANGES
23	-	PRECAST CONCRETE VAULT	"QUICKSET" TV-3013
24	-	HINGED COVER, PARKWAY TYPE	"QUICKSET" GPB-3100

REVISION	BY	APPROVED	DATE
NEW DWG	MR	S. CROSBY	03/13

**CITY OF POWAY STANDARD DRAWING**

AIR GAP SEPARATOR ASSEMBLIES  
 NOTES AND DETAILS

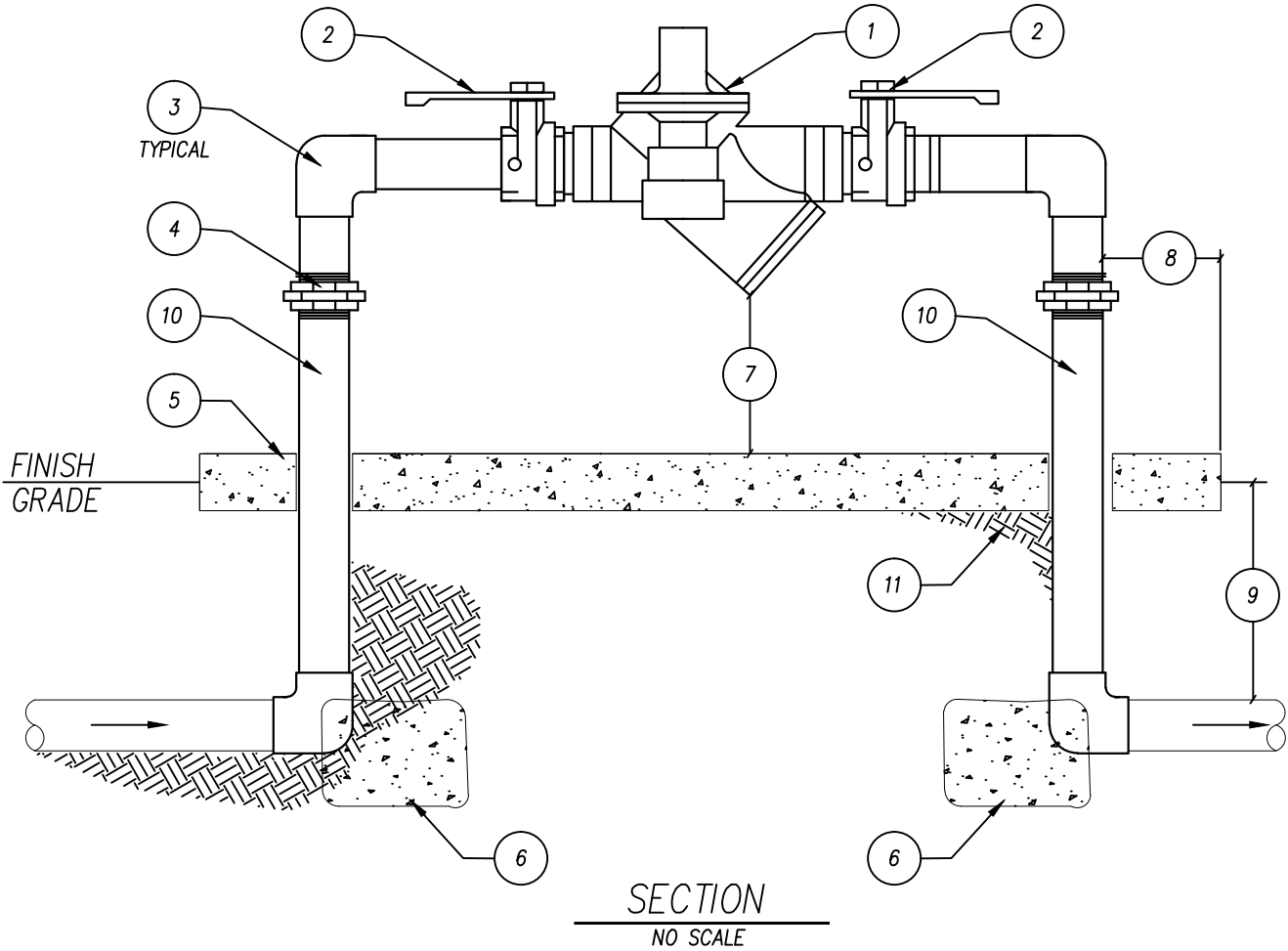
APPROVED

  
 CITY ENGINEER  
 R.C.E. 41975

3/18/13  
 DATE

DRAWING  
 NUMBER

PW-29.1



**NOTES:**

1. LOCATE BACKFLOW PREVENTER WITHIN 12" OF WATER METER OR PER ENGINEER'S DIRECTION.
2. ALL METAL JOINTS MUST BE SILVER SOLDERED.

ITEM	NO.	DESCRIPTION	SPECS
1	-	BACKFLOW PREVENTER	PER APPROVED MATERIALS LIST
2	-	BALL VALVE	PER APPROVED MATERIALS LIST
3	-	90° ELBOW	BRASS OR COPPER
4	-	UNION	BRASS OR COPPER
5	-	CONCRETE PAD	6" THICK (520-C-2500 PSI); SEE PW-26
6	-	THRUST BLOCK	PW-17.1 FOR 1 1/2" AND LARGER
7	-	12" MIN., 24" MAX.	
8	-	6"	
9	-	12" MIN.	
10	-	RISER	BRASS OR COPPER; WRAPPED WITH PLASTIC TAPE THROUGH CONCRETE
11	-	SUBGRADE	COMPACTED 90%

REVISION	BY	APPROVED	DATE
ADDED NOTE	DS		
REDRAWN	MR	S. CROSBY	03/13

**CITY OF POWAY STANDARD DRAWING**

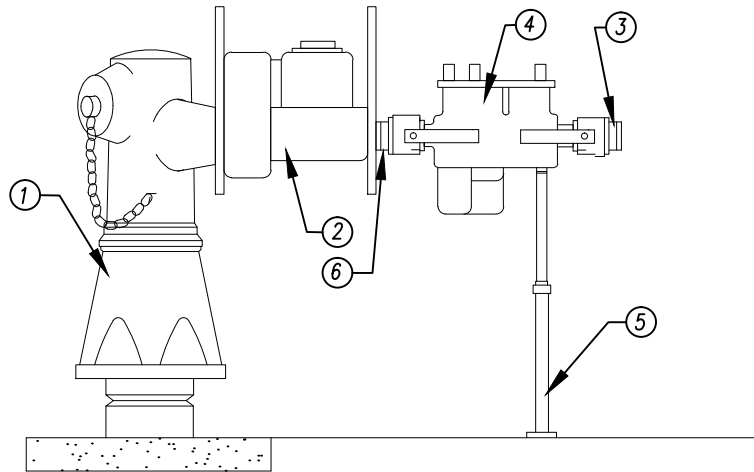
**2" & SMALLER BACKFLOW  
 PREVENTER INSTALLATION**

APPROVED

  
 CITY ENGINEER  
 R.C.E. 41975

3/18/13  
 DATE

DRAWING NUMBER PW-30



ELEVATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR BACKFLOW PREVENTION BY INSTALLING A REDUCED PRESSURE PRINCIPLE PREVENTION ASSEMBLY (R.P.). THE CONTRACTOR MUST HAVE THE R.P. ASSEMBLY TESTED FOR COMPLIANCE. THE TEST MUST BE MAILED/EMAILED TO THE CITY'S CROSS-CONNECTION CONTROL DEPARTMENT OR THE PROJECT INSPECTOR WITHIN FIVE DAYS AFTER INSTALLATION. FAILURE TO DO SO CAN RESULT IN TERMINATION OF SERVICE. ANY QUESTIONS CONTACT CITY CROSS-CONNECTION CONTROL DEPARTMENT (858) 668-4744 OR (858) 668-4735.

ITEM	NO.	DESCRIPTION	REMARKS
1	1	FIRE HYDRANT	
2	1	CONSTRUCTION WATER METER	SUPPLIED BY THE CITY OF POWAY
3	1	MALE FIRE HOSE CONNECTION	
4	1	REDUCED PRESSURE BACKFLOW PREVENTER	SUPPLIED BY CUSTOMER
5	1	ADJUSTABLE PIPE SUPPORT	
6	1	FEMALE FIRE THREAD CONNECTION	

REVISION	BY	APPROVED	DATE
EDIT	DS		
REDRAWN	MR	S. CROSBY	03/13

**CITY OF POWAY STANDARD DRAWING**

CONSTRUCTION METER  
 BACKFLOW ASSEMBLY

APPROVED

  
 CITY ENGINEER  
 R.C.E. 41975

3/18/13  
 DATE

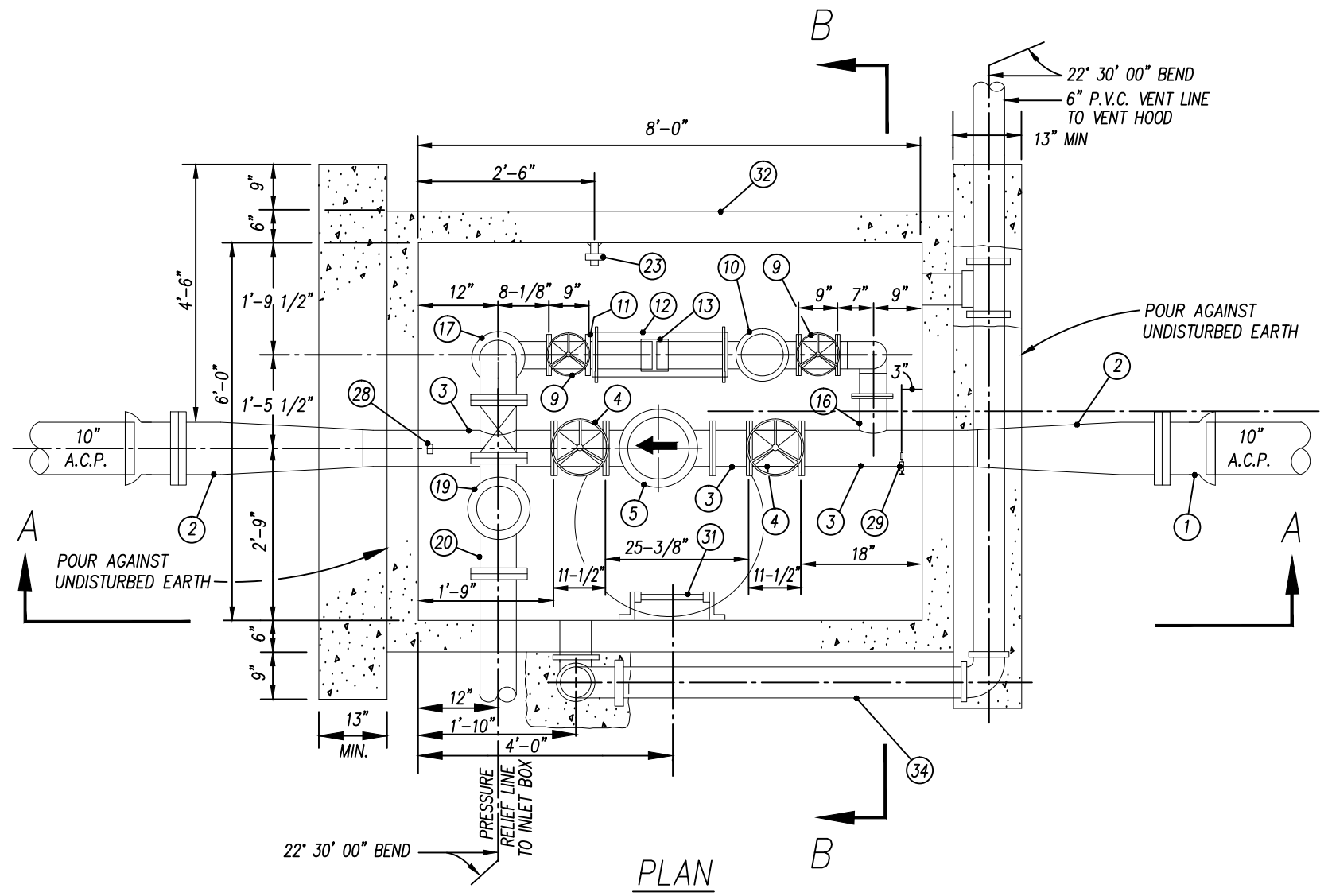
DRAWING NUMBER PW-30.1

REVISION	BY	APPROVED	DATE
REDRAWN	MR	S. GROSSBY	03/13

**CITY OF POWAY STANDARD DRAWING**

**PRESSURE REGULATING STATION**

**PLAN VIEW**



**PLAN**

**NOTES:**

1. SECTION A-A LOCATED ON POWAY STD. DWG. PW-31.2
2. SECTION B-B LOCATED ON POWAY STD. DWG. PW-31.3
3. STEEL PIPE AND FITTINGS SHALL BE 10 GA. STEEL WALL THICKNESS UNLESS OTHERWISE NOTED
4. ALL FERROUS VAULT PIPING TO BE CEMENT OR EPOXY
5. ALL FLANGES SHALL BE CLASS 150
6. SEE POWAY STD. DWG. PW-31.4 AND PW-31.5 FOR EQUIPMENT SCHEDULE AND ADDITIONAL DETAILS
7. SEE SECTION A-A FOR REINFORCEMENT DETAILS

APPROVED	CITY ENGINEER	DATE
	R.C.E. 41975	3/18/13
DRAWING NUMBER	PW-31.1	

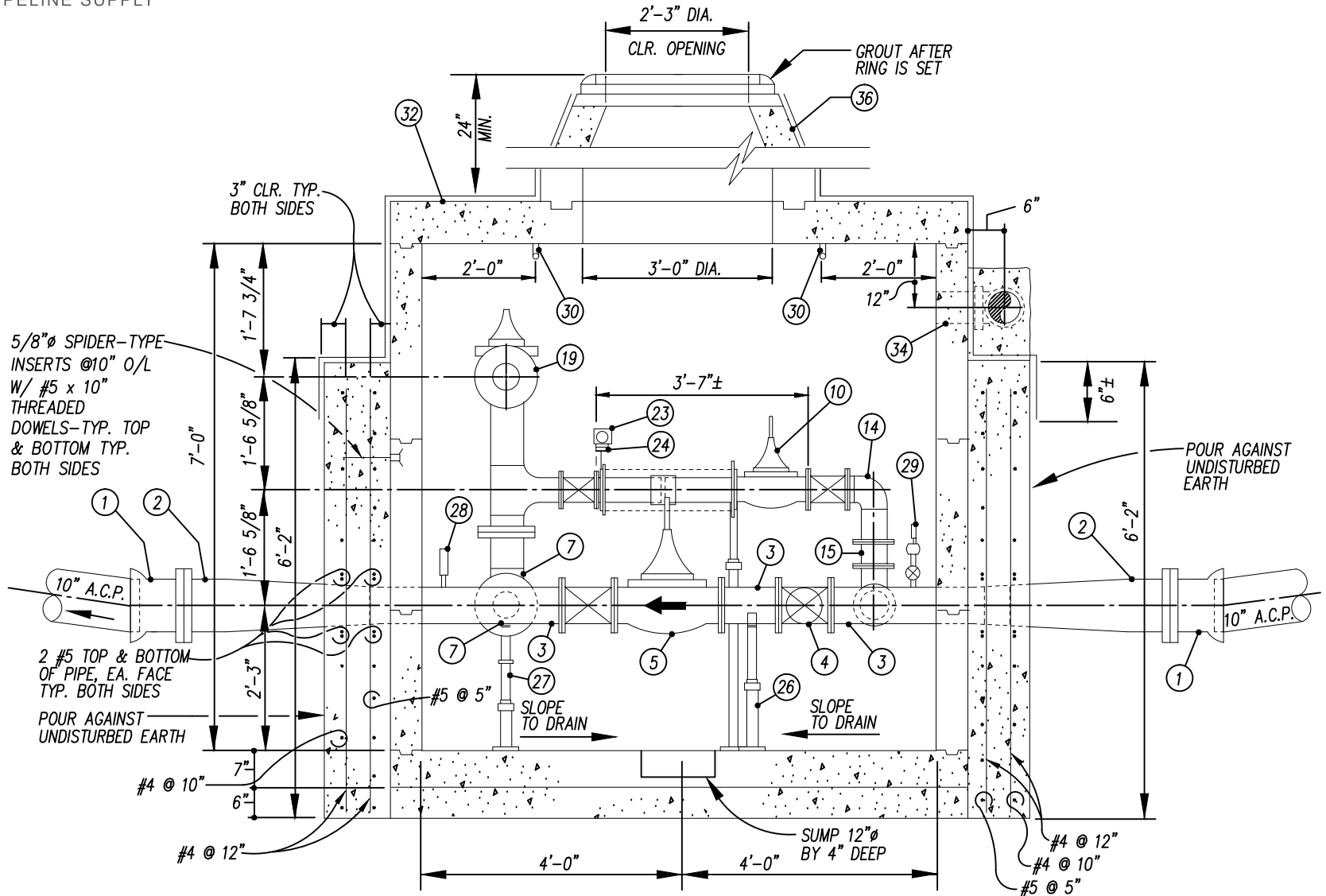


REVISION	DATE	APPROVED	BY
MR	03/13	S GROSSBY	

**CITY OF POWAY STANDARD DRAWING**

**PRESSURE REGULATING STATION**

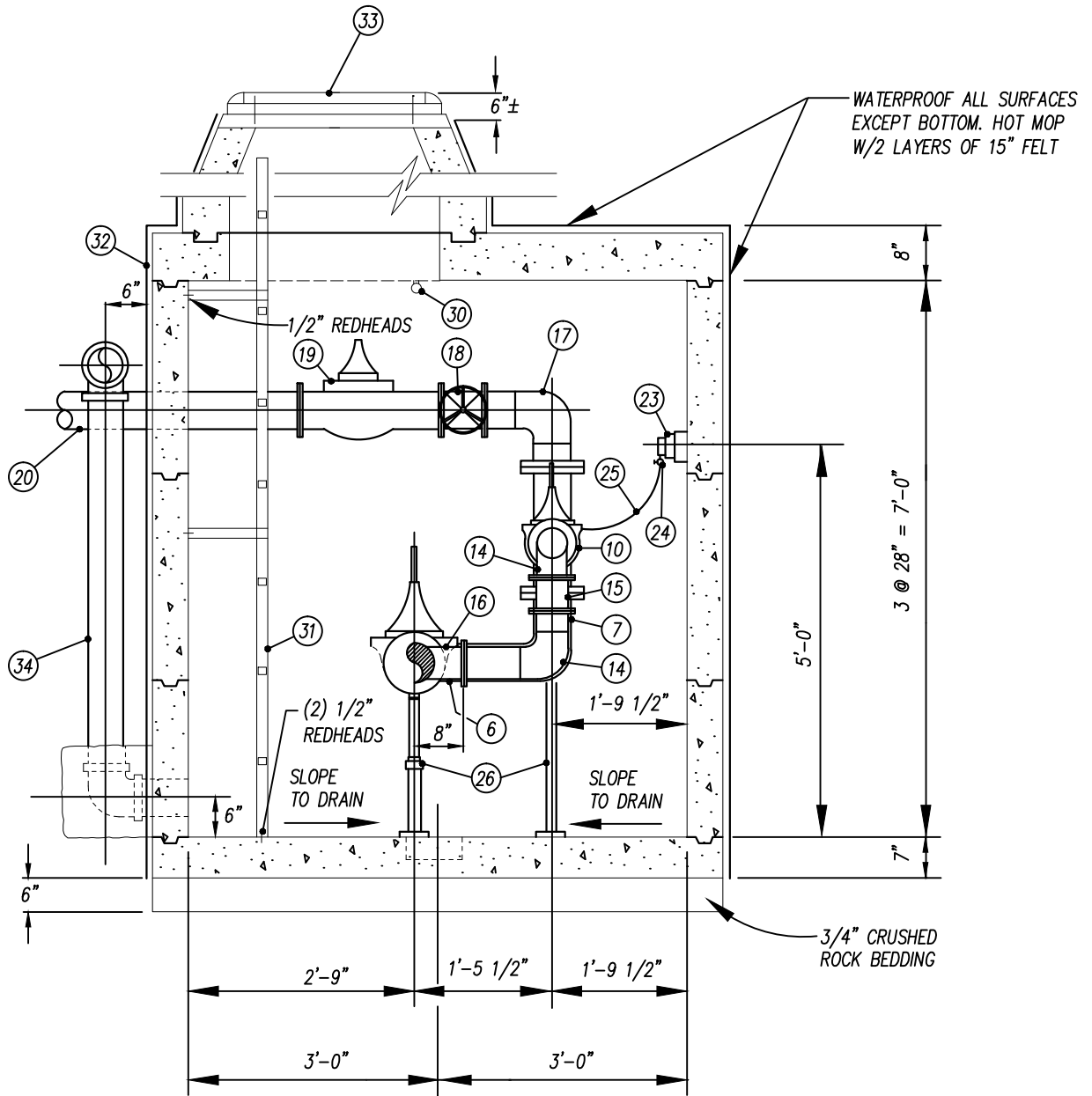
**SECTION A-A**



- NOTES:
1. PLAN VIEW LOCATED ON POWAY STD. DWG PW-31.1
  2. SECTION B-B LOCATED ON POWAY STD. DWG PW-31.3
  3. STEEL PIPE AND FITTINGS SHALL BE 10 GA. STEEL WALL THICKNESS UNLESS OTHERWISE NOTED.
  4. ALL FERROUS VAULT PIPING TO BE CEMENT OR EPOXY.
  5. ALL FLANGES SHALL BE CLASS 150
  6. SEE POWAY STD. DWG PW-31.4 AND PW-31.5 FOR EQUIPMENT SCHEDULE AND ADDITIONAL DETAILS.

SECTION A-A

APPROVED	CITY ENGINEER
	R.C.E. 41975
DATE	3/18/13
DRAWING NUMBER	PW-31.2



SECTION B-B

NOTES:

1. PLAN VIEW LOCATED ON POWAY STD. DWG. PW-31.1
2. SECTION A-A LOCATED ON POWAY STD. DWG PW-31.2
3. STEEL PIPE AND FITTINGS SHALL BE 10 GA. STEEL WALL THICKNESS UNLESS OTHERWISE NOTED.
4. ALL FERROUS VAULT PIPING TO BE CEMENT OR EPOXY.
5. ALL FLANGES SHALL BE CLASS 150.
6. SEE POWAY STD. DWG. PW-31.4 AND PW-31.5 FOR EQUIPMENT SCHEDULE AND ADDITIONAL DETAILS.

REVISION	BY	APPROVED	DATE
REDRAWN	MR	S. CROSBY	03/13

**CITY OF POWAY STANDARD DRAWING**

PRESSURE REGULATING STATION  
 SECTION B-B

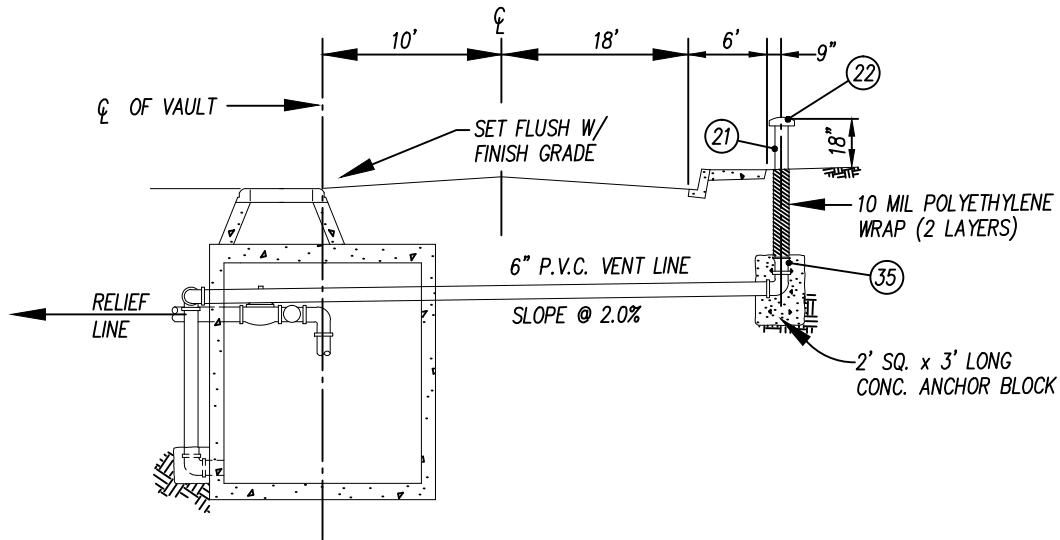
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CITY ENGINEER  
 R.C.E. 41975

DRAWING  
 NUMBER

3/18/13  
 DATE

PW-31.3



## VENTILATION – LINE PROFILE

### EQUIPMENT SCHEDULE

ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	10" CAST IRON FLANGE x AC ADAPTER	19	6" PRESSURE RELIEF VALVE, CLAYTON MODEL 51G-01, EPOXY COATED
2	10" x 8" STEEL PIPE REDUCER, CEMENT LINED AND COATED, FLANGE x PE	20	6" x 10 GA. WELDED STEEL PIPE, CEMENT LINED OUTSIDE OF PIPE, TO BE CEMENT COATED OUTSIDE OF VAULT AND BARE INSIDE OF VAULT
3	8-5/8" O.D. x 10 GA. STEEL PIPE, CEMENT LINED. OUTSIDE OF PIPE TO BE CEMENT COATED OUTSIDE OF VAULT AND BARE INSIDE OF VAULT	21	6" STANDARD WEIGHT GALVANIZED STEEL PIPE
4	8" GATE VALVE W/ HANDWHEEL	22	MUSHROOM TYPE HOOD-ALHAMBRA FOUNDRY #A-2163
5	8" PRESSURE REDUCING VALVE, CLAYTON MODEL 90G-01, EPOXY COATED	23	FLOW INDICATOR
6	6" STEEL FLANGED OUTLET	24	3" VALVE BRASS MANIFOLD
7	SHORT RADIUS STANDARD WEIGHT STEEL 90° ELBOW W/ BASE (2" PIPE W/ 1/4" STEEL P)	25	3/8" O.D. REFRIGERATION TUBING
8	6" x 6" x 4" STANDARD WEIGHT STEEL TEE	26	ADJUSTABLE PIPE SUPPORT, GRINNEL #264
9	4" GATE VALVE W/ HANDWHEEL	27	2" PIPE SUPPORT W/ ADJUSTABLE COUPLING AND FLOOR FLANGE
10	4" PRESSURE REDUCING AND FLOW CONTROL VALVE, CLAYTON MODEL 49G-01, EPOXY COATED	28	3-1/2" PRESSURE GAGE W/ GAGE COCK. 0-200 PSI, MARSH TYPE I USG
11	4" ORIFICE PLATE	29	HOSE BIBB AND PRESSURE GAGE - SEE DETAIL
12	4" HARNESS-SEE DETAIL	30	3/4"Ø SPIDER TYPE ANCHOR INSERT W/ 3/4"Ø SHANK, GALVANIZED WELDLESS EYEBOLT
13	4" FLEX. COUPLING	31	GALVANIZED LADDER-ALHAMBRA FOUNDRY #A-3400
14	4" SHORT RADIUS STANDARD WEIGHT STEEL 90° ELBOW	32	PRE-CAST UTILITY VAULT
15	4" STANDARD WEIGHT STEEL PIPE SPOOL	33	MANHOLE FRAME AND COVER-ALHAMBRA FOUNDRY #A-1105 WITH CAP SCREWS AND NEOPRENE RING SEAL
16	4" STEEL FLANGED OUTLET	34	6" SCH. 40 P.V.C. PIPE AND FITTINGS (VENTS)
17	6" SHORT RADIUS STANDARD WEIGHT STEEL 90° ELBOW	35	6" SCH. 40 P.V.C. FEMALE ADAPTER
18	6" GATE VALVE W/ HANDWHEEL	36	PRE-CAST REINFORCED CONCRETE NECKING AND GRADE RINGS

REVISION	BY	APPROVED	DATE
NEW DWG	MR	S. CROSBY	03/13

## CITY OF POWAY STANDARD DRAWING

### PRESSURE REGULATING STATION EQUIPMENT SCHEDULE AND DETAILS

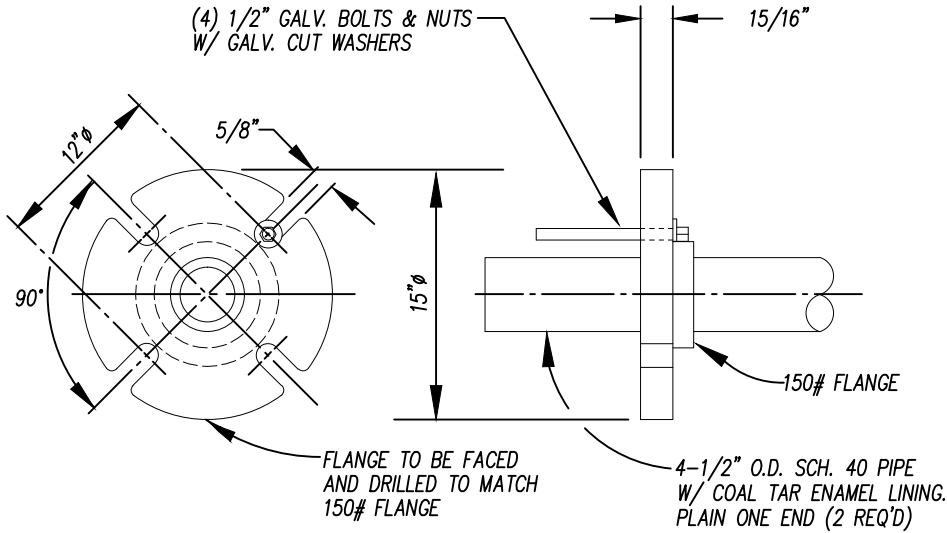
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R.C.E. 41975

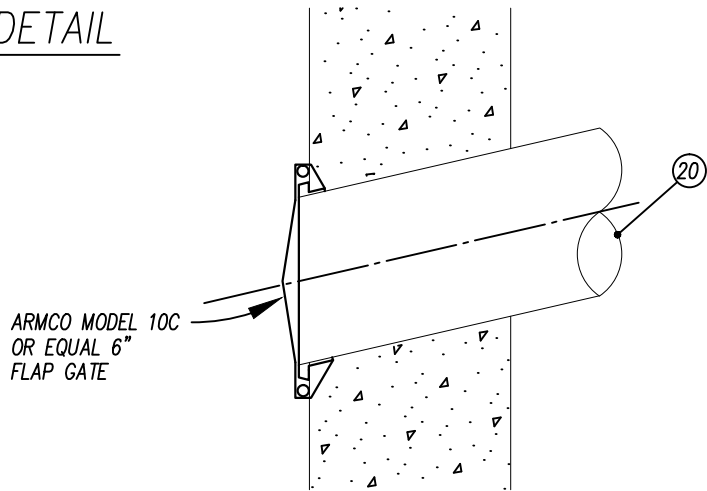
3/18/13  
DATE

DRAWING  
NUMBER

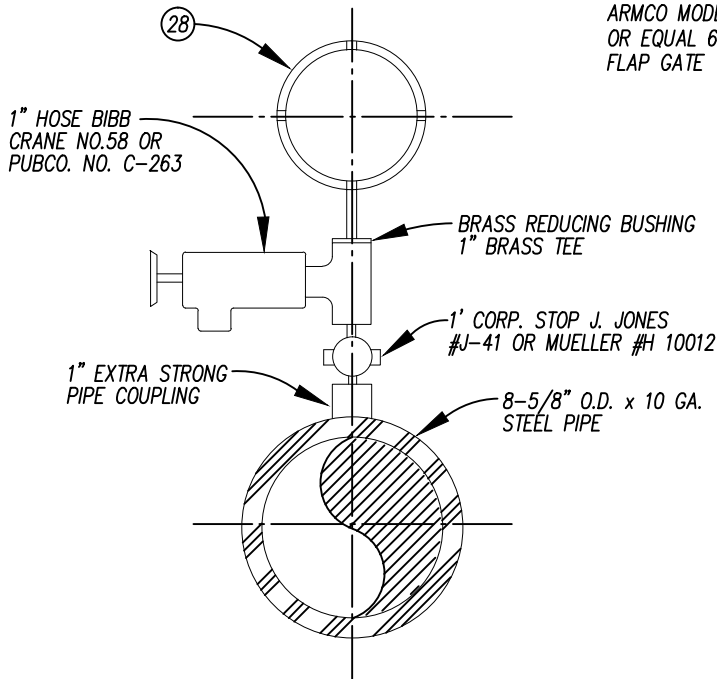
PW-31.4



HARNESS DETAIL



FLAP GATE FOR PRESSURE RELIEF LINE DETAIL



HOSE BIBB DETAIL

NOTE:  
 SEE POWAY STD. DWG. PW-31.4 FOR  
 EQUIPMENT SCHEDULE.

REVISION	BY	APPROVED	DATE
NEW DWG	MR	S. CROSBY	03/13

**CITY OF POWAY STANDARD DRAWING**

PRESSURE REGULATING STATION  
 DETAILS

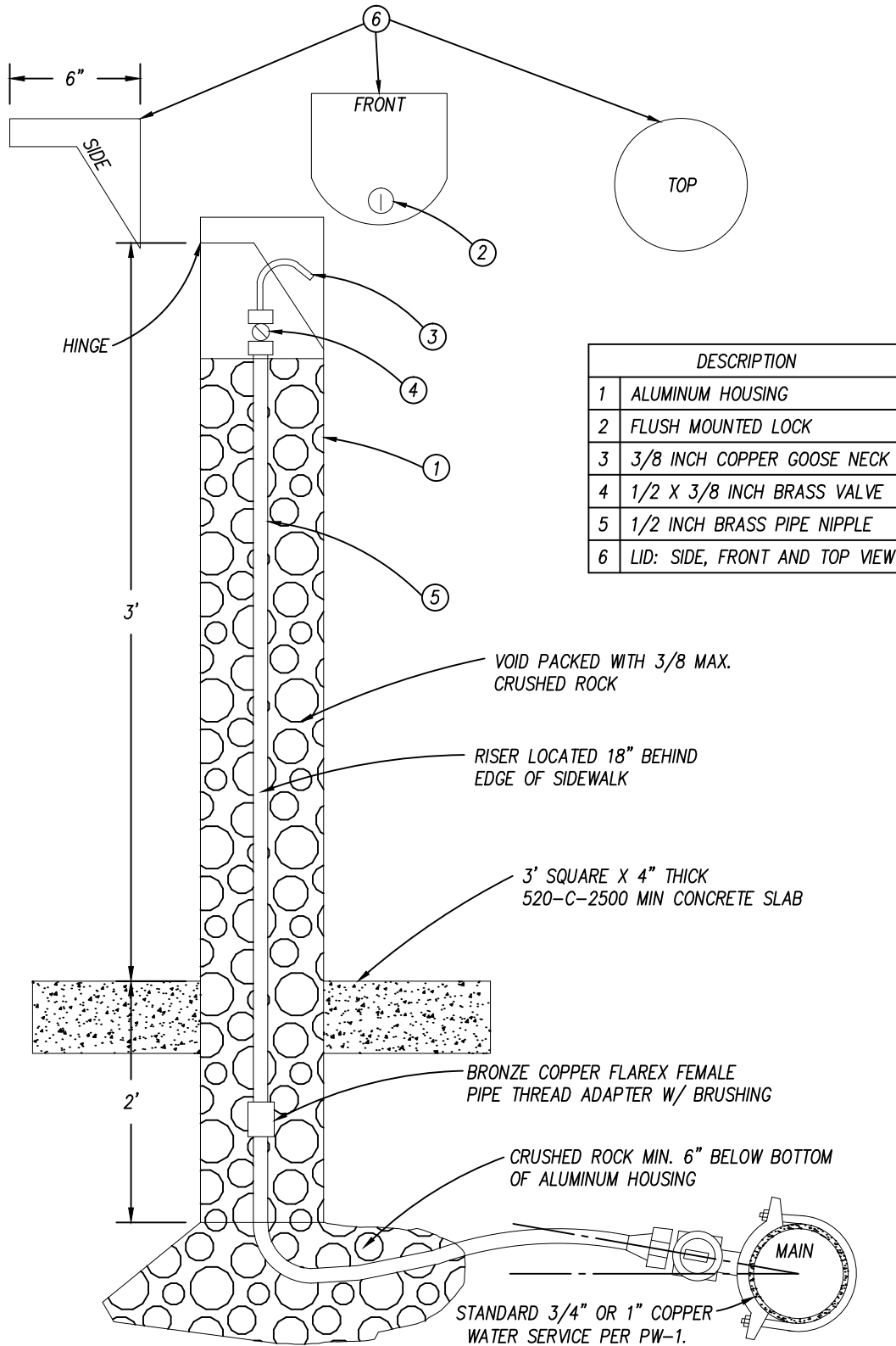
APPROVED

  
 CITY ENGINEER  
 R.C.E. 41975

3/18/13  
 DATE

DRAWING  
 NUMBER

PW-31.5



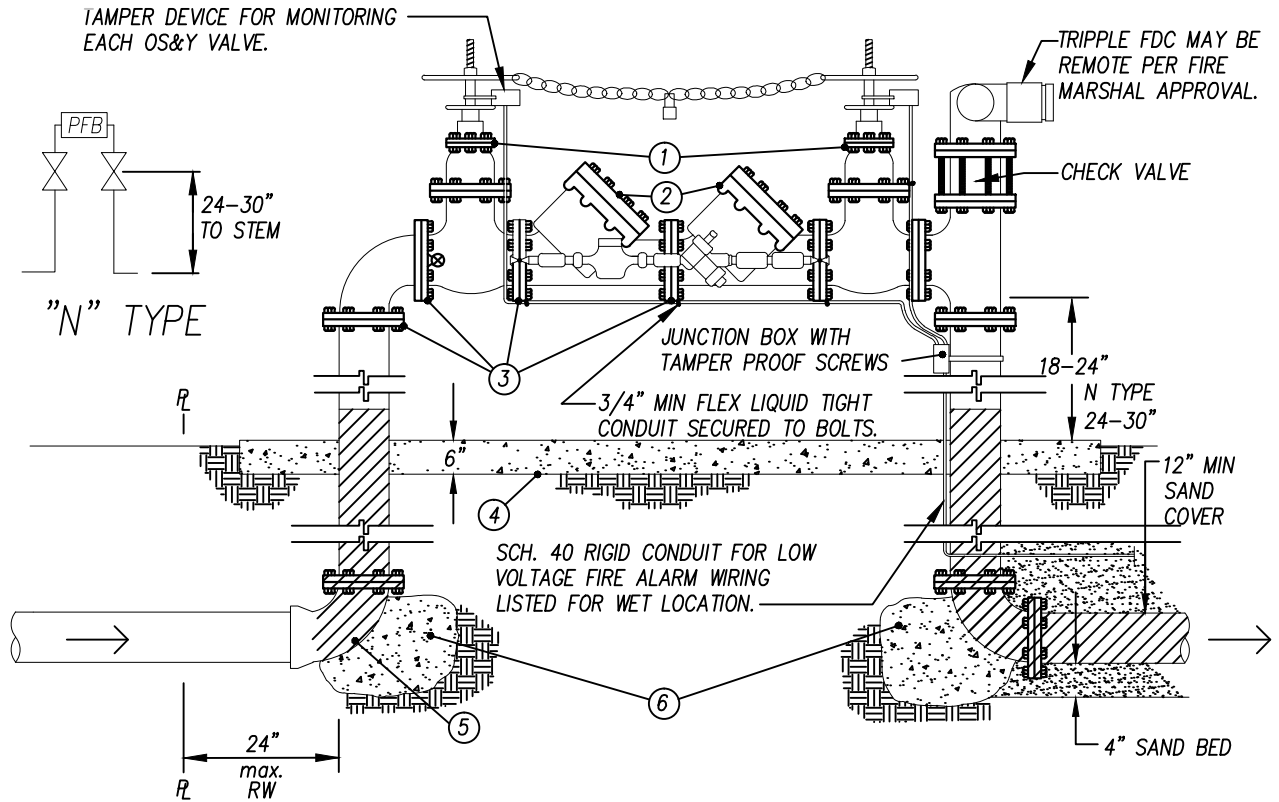
DESCRIPTION	
1	ALUMINUM HOUSING
2	FLUSH MOUNTED LOCK
3	3/8 INCH COPPER GOOSE NECK
4	1/2 X 3/8 INCH BRASS VALVE
5	1/2 INCH BRASS PIPE NIPPLE
6	LID: SIDE, FRONT AND TOP VIEW

REVISION	BY	APPROVED	DATE
REDRAWN	MR	S. CROSBY	03/13

**CITY OF POWAY STANDARD DRAWING**

**1" WATER SAMPLING ASSEMBLY**

APPROVED	
	3/18/13
CITY ENGINEER R.C.E. 41975	DATE
DRAWING NUMBER	PW-32



**GENERAL NOTES:**

- A. MATERIALS SHALL BE UL LISTED FOR FIRE SERVICE.
- B. MATERIALS SHALL BE INSPECTED PRIOR TO INSTALLATION.
- C. 316 ST. STEEL NUTS AND BOLTS.
- D. LOCATION OF BACKFLOW AND FDC SHALL BE APPROVED BY FIRE DEPARTMENT PRIOR TO PLACEMENT.
- E. WRAP BOLTS WITH 10 MIL PLASTIC SHEATHING PRIOR TO PLACEMENT OF THRUST BLOCKS.
- F. FOR STREET VALVE INFORMATION SEE POWAY STD. DWG PW-12.
- G. ANY MODIFICATION TO FIRE DEPARTMENT REQUIREMENTS MUST HAVE WRITTEN APPROVAL FROM THE FIRE DEPARTMENT.

**NOTES:**

- ① O.S.&Y. GATE VALVE WITH FULL ENCAPSULATED RESILIENT SEAT APPROVED EQUAL CONFORMING TO LATEST EDITION AWWA STANDARD C509.
- ② U.S.C. APPROVED BACKFLOW PREVENTER ASSEMBLY WITH 3/4" NON-VALVED BYPASS METER ASSEMBLY BACKFLOW. SUPPORT ASSEMBLY PER MANUFACTURER'S RECOMMENDATIONS.
- ③ ALL RISERS AND ABOVE GROUND MAINLINE FITTINGS SHALL BE DUCTILE IRON FLANGE TYPE, EPOXY COATED INSIDE OR CEMENT MORTAR LINED.
- ④ CONCRETE SLAB, 520-C-2500 PSI MIN. PROTECTION POST MAY BE REQUIRED.
- ⑤ PO x FI 90°
- ⑥ PCC THRUST BLOCKS, SIZE AS REQUIRED FOR SOIL TYPE. (SEE POWAY STD. DWG. PW-17.1 & 17.2) 450-C-2000 PSI MIN.

REVISION	BY	APPROVED	DATE
REDRAWN	MR	S. CROSBY	03/13

**CITY OF POWAY STANDARD DRAWING**

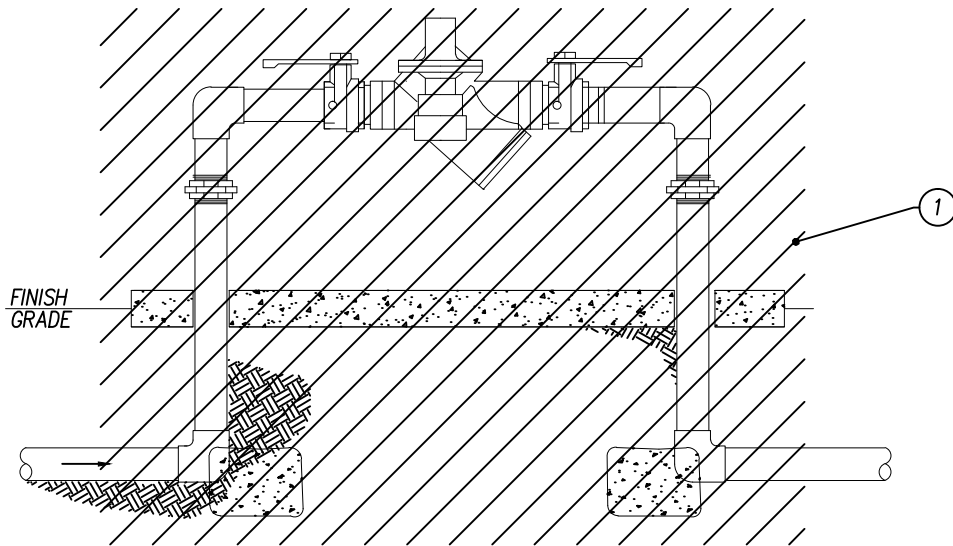
**DOUBLE CHECK DETECTOR  
 BACKFLOW PREVENTOR**

APPROVED

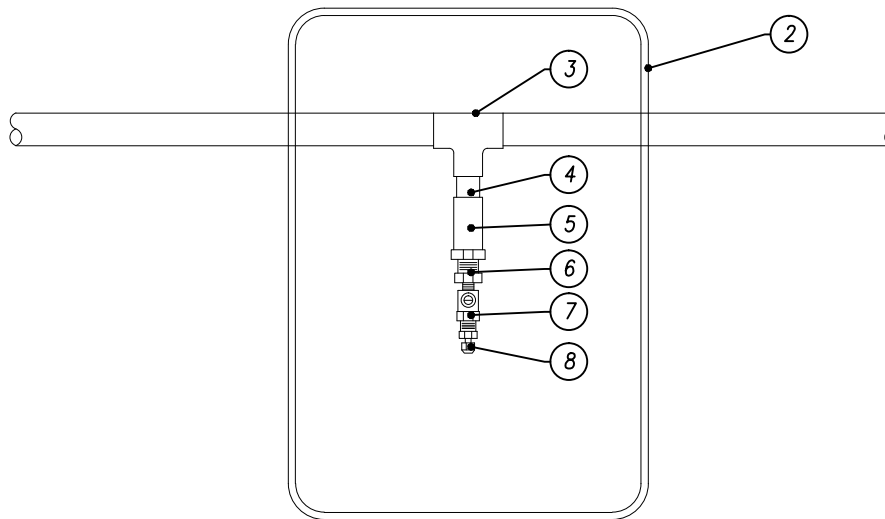
*[Signature]*  
 CITY ENGINEER  
 R.C.E. 41975

3/18/13  
 DATE

DRAWING NUMBER PW-33



DEMOLITION SECTION  
 NO SCALE



RE-WORK PLAN  
 NO SCALE

ITEM	NO.	DESCRIPTION	SPECS
1	-	REMOVE EXISTING DEVISE AND CONCRETE	PER APPROVED MATERIALS LIST
2	-	VALVE BOX	12"X17" PLASTIC
3	-	FULL SIZE TO 3/4" TEE	COPPER
4	-	3/4" NIPPLE	COPPER
5	-	3/4" TO 3/4" THREADED	COPPER
6	-	3/4" TO 1/8"	COPPER
7	-	1/8" BALL VALVE OR TEST COCK	BRASS
8	-	1/8" COMPRESSION FITTING	COPPER

REVISION	BY	APPROVED	DATE
REDRAWN	MR	S. CROSBY	03/13

**CITY OF POWAY STANDARD DRAWING**

BACKFLOW PRESSURE  
 TEST STATION

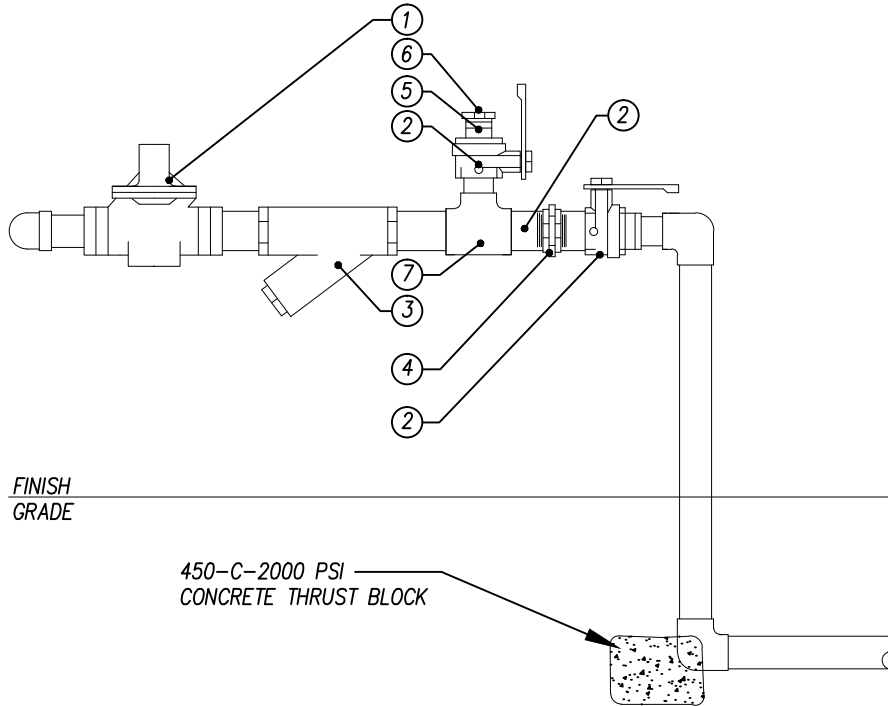
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 CITY ENGINEER  
 R.C.E. 41975

3/18/13  
 DATE

DRAWING  
 NUMBER

PW-34



SECTION  
 NO SCALE

ITEM	NO.	DESCRIPTION	SPECS
1	-	PRESSURE REGULATOR	OWNER SUPPLIED
2	-	1" BALL VAVE	BRASS
3	-	STRAINER	OWNER SUPPLIED
4	-	UNION	COPPER
5	-	1" THREADED NIPPLE	COPPER
6	-	THREADED CAP	BRASS
7	-	FULL SIZE TO 1" TEE	COPPER

REVISION	BY	APPROVED	DATE
ADDED NOTES	DS	FDC	9/7/07
REDRAWN	MR	S. CROSBY	03/13

**CITY OF POWAY STANDARD DRAWING**

POTABLE WATER SERVICE  
 LINE BYPASS DETAIL

APPROVED

CITY ENGINEER  
 R.C.E. 41975

DRAWING  
 NUMBER

3/18/13  
 DATE

PW-35