

CITY OF OCEANSIDE
WATER UTILITIES DEPARTMENT

WATER STANDARD DRAWINGS

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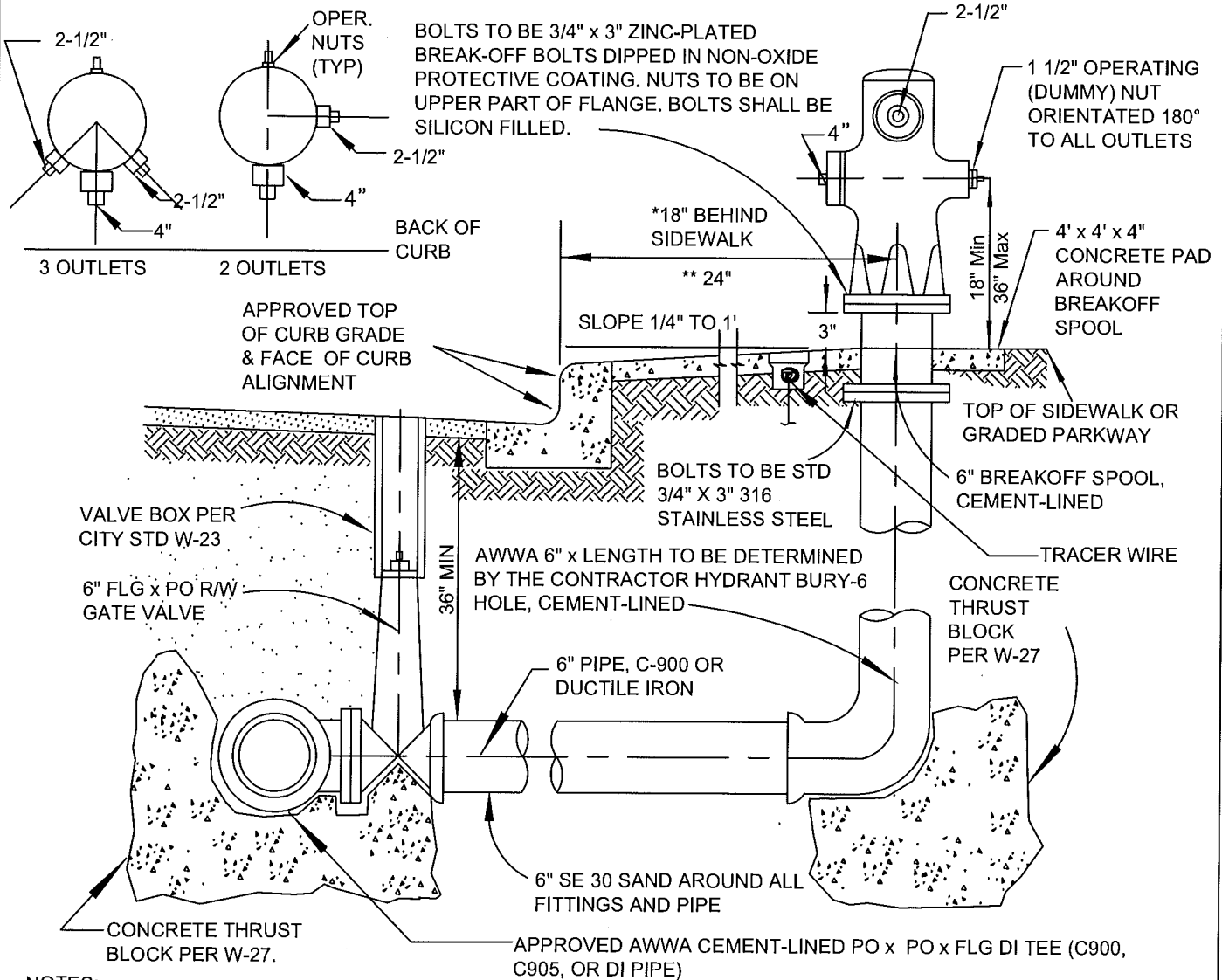
CITY OF OCEANSIDE
WATER UTILITIES DEPARTMENT

WATER STANDARD DRAWINGS

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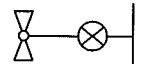
APPROVED FIRE HYDRANT MODELS			
TYPE	OUTLETS	JAMES JONES	AVK
SINGLE FAMILY	1-2 1/2", 1-4"	MODEL J - 4040	AVK - 2470
MULTI FAMILY	2-2 1/2", 1-4"	MODEL J - 4060	AVK - 2490
COMMERCIAL	2-2 1/2", 1-4"	MODEL J - 4060	AVK - 2490
INDUSTRIAL	2-2 1/2", 1-4"	MODEL J - 4060	AVK - 2490



NOTES:

1. FINISH WITH APPROVED FIRE HYDRANT MARINE YELLOW 1000 PAINT, MANUFACTURED BY PROLINE.
2. ALL BURIED NUTS AND BOLTS TO BE STAINLESS STEEL.
3. PLACE DETECTOR TAPE MARKED "WATER" 1 FOOT ABOVE PIPE ALONG ENTIRE RUN.
4. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE ENCASED WITH 2 LAYERS OF 8 MIL POLYETHYLENE.
5. CHECK VALVE TYPE FIRE HYDRANTS SHALL BE REQUIRED AT DISCRETION OF WATER UTILITIES DEPT.
6. PLACE TRACER WIRE AT EVERY 600' OR EVERY OTHER FIRE HYDRANT. BOX SHALL BE CONCRETE BODY WITH H-20 CAST IRON LID LABELED "WTR TRACER."

* WHEN HYDRANT IS LOCATED BEHIND THE SIDEWALK.
 ** WHEN HYDRANT IS LOCATED IN A PLANTED PARKWAY.



LEGEND ON PLANS

Revision	By	Approved	Date
07/08/04	AC		
03/15/05	AC		
06/04/07	AC		
12/01/11	DW		
04/10/12	DW		
01/04/16	MU		

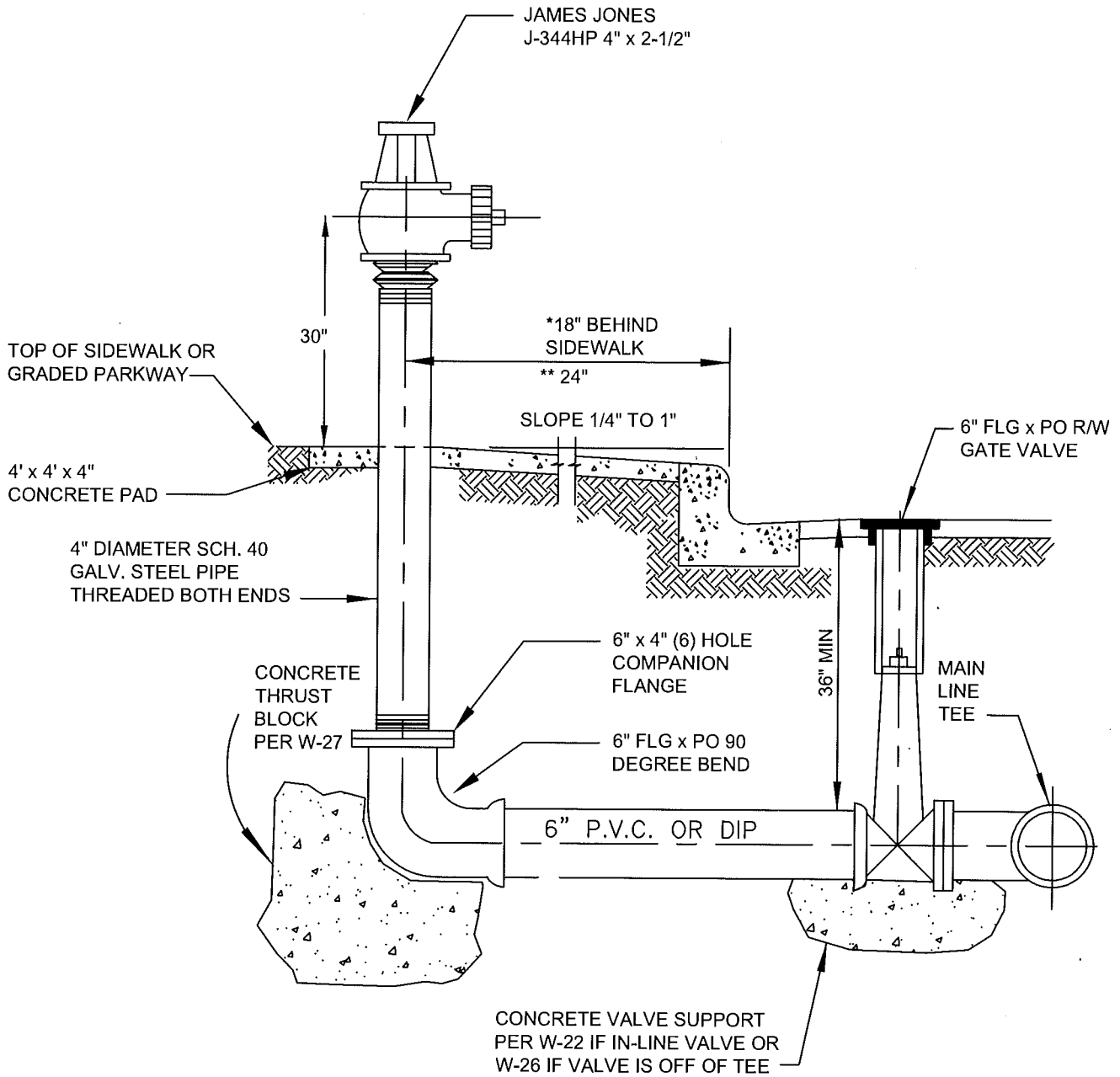
CITY OF OCEANSIDE

FIRE HYDRANT

CITY ENGINEER Date

STANDARD DRAWING NO.

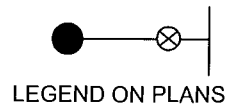
W-1



NOTES:

1. FINISH WITH APPROVED FIRE HYDRANT MARINE YELLOW 1000 PAINT, MANUFACTURED BY PROLINE.
2. ALL BURIED NUTS AND BOLTS TO BE TYPE 316 STAINLESS STEEL.
3. PLACE DETECTOR TAPE MARKED "WATER" 1 FOOT ABOVE PIPE ALONG ENTIRE RUN.
4. ALL DUCTILE IRON PIPE, FITTINGS, AND GALVANIZED RISER SHALL BE ENCASED WITH 2 LAYERS OF 8 MIL POLYETHYLENE.
5. ENCASE ALL FERROUS METALS IN 6" OF SE 30 SAND AFTER WRAPPING.

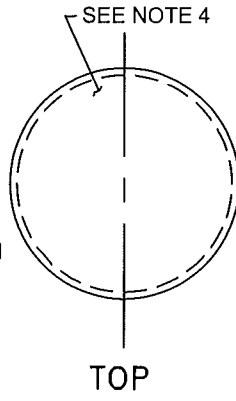
* WHEN BLOW-OFF IS LOCATED BEHIND THE SIDEWALK.
 ** WHEN BLOW-OFF IS LOCATED IN A PLANTED PARKWAY.



Revision	By	Approved	Date	CITY OF OCEANSIDE	
09/11/00	kal				
10/16/02	DW				
08/04/04	AC				
06/04/07	AC				
01/04/16	MU				
				STANDARD BLOW-OFF	CITY ENGINEER _____ Date _____ STANDARD DRAWING NO. W-2

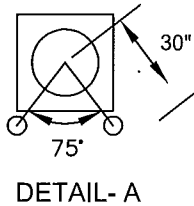
BILL OF MATERIALS

1. BRASS SERVICE SADDLE AND CORPORATION STOP PER SECTION 2.12.
2. 2" MIP X FIP THREADED 90° BRASS ELBOW.
3. 2" MIP X FIP BALL VALVE WITH 2" OPERATING NUT ADAPTER. PER SECTION 2.12.
4. 2" COPPER TO M.I.P. ADAPTER.
5. 2" TYPE "K" COPPER TUBING (RIGID).
6. 2" A.R.I. MODEL D-040-NS AIR VALVE W/ SCREEN
7. 2" TYPE "K" COPPER 90° ELBOW.
8. 2" BALL VALVE JAMES JONES J-1900 PER SECTION 2.12.
9. VALVE BOX AND COVER PER W-23 WITH BOTTOM SUPPORT.

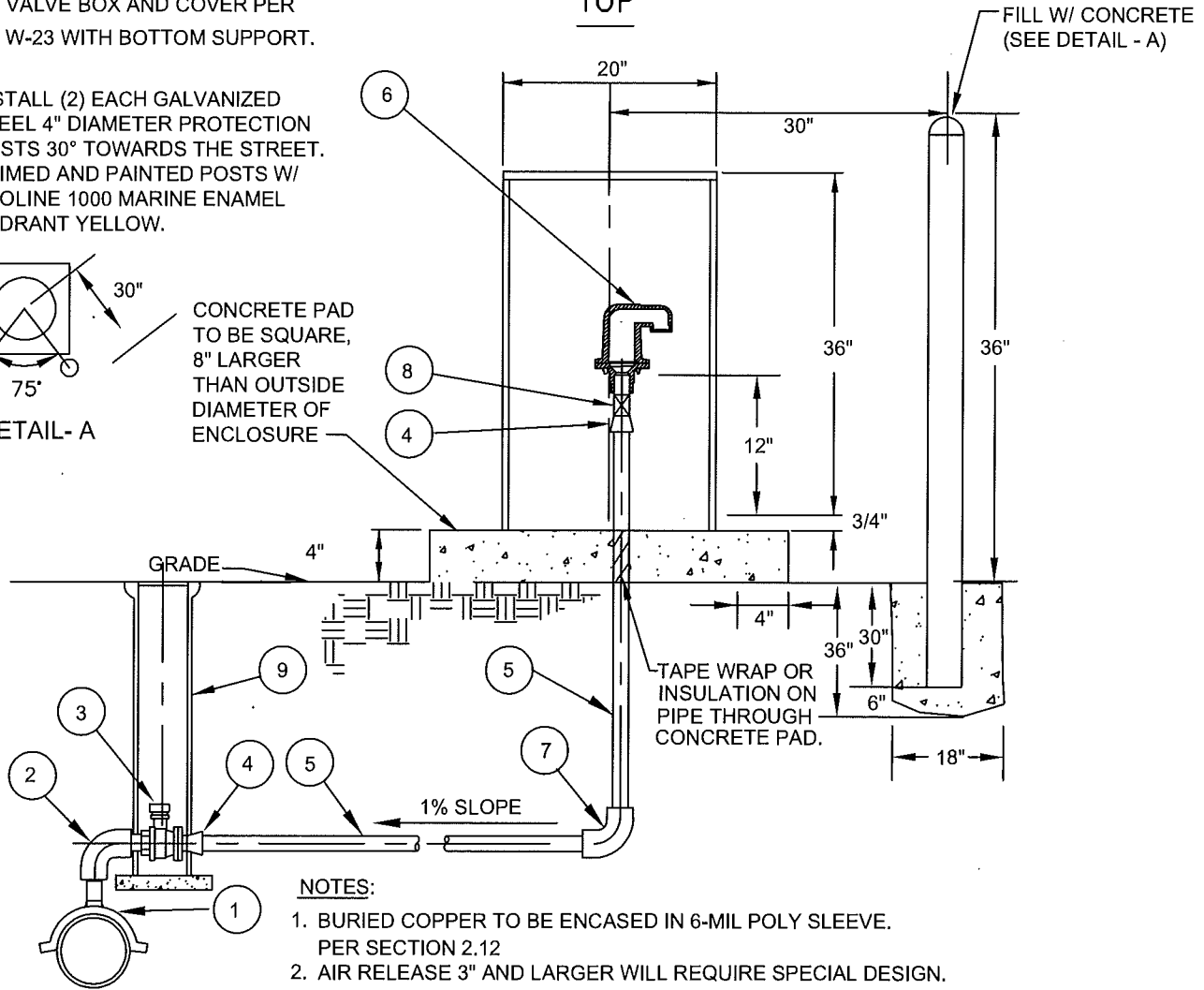


TOP

INSTALL (2) EACH GALVANIZED STEEL 4" DIAMETER PROTECTION POSTS 30° TOWARDS THE STREET. PRIMED AND PAINTED POSTS W/ PROLINE 1000 MARINE ENAMEL HYDRANT YELLOW.



CONCRETE PAD TO BE SQUARE, 8" LARGER THAN OUTSIDE DIAMETER OF ENCLOSURE



FILL W/ CONCRETE (SEE DETAIL - A)

TAPE WRAP OR INSULATION ON PIPE THROUGH CONCRETE PAD.

NOTES:

1. BURIED COPPER TO BE ENCASED IN 6-MIL POLY SLEEVE. PER SECTION 2.12
2. AIR RELEASE 3" AND LARGER WILL REQUIRE SPECIAL DESIGN.
3. ALL COPPER JOINTS TO BE SILVER SOLDER.
4. ENCLOSURE SHALL BE ARMORCAST MODEL #P6002002-SND (20"X36") OR PIPELINE PRODUCTS #VCAS 1830-SM (18"X30")
5. SERVICES TO BE ENCASED IN 6" SE 30 SAND.
6. ALL BOLTS, NUTS, AND WASHERS TO BE TYPE 316 SS

Revision	By	Approved	Date
10/16/02	DW		
07/08/04	AC		
06/04/07	AC		
03/05/08	DW		
09/22/10	DW		
01/04/16	MU		

CITY OF OCEANSIDE

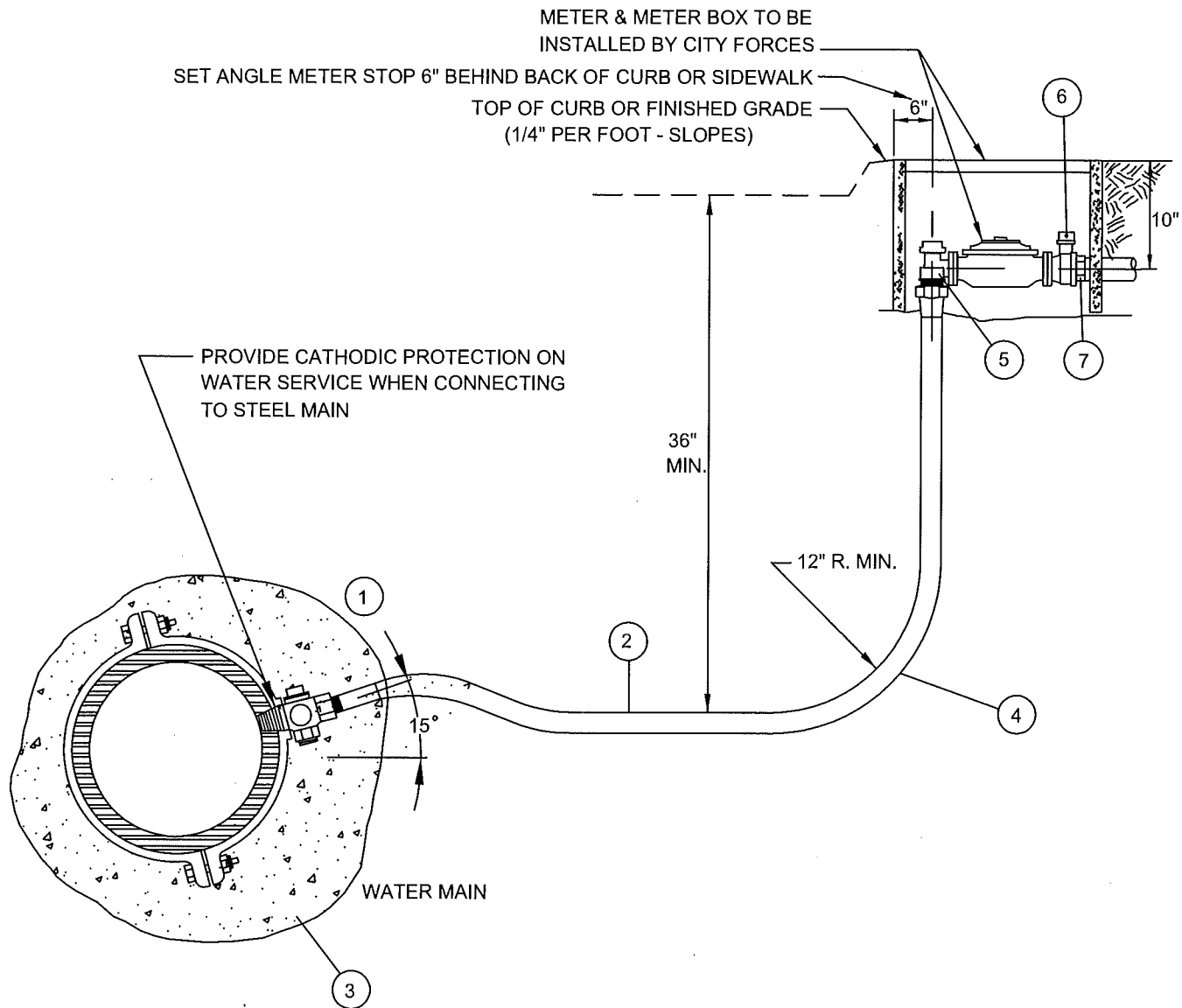
2" AIR VALVES

CITY ENGINEER Date

STANDARD

DRAWING NO.

W-3

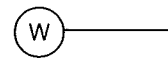


BILL OF MATERIALS:

1. SERVICE SADDLE AND CORPORATION STOP PER SECTION 2.12
2. COPPER TUBING SHALL BE TYPE "K" SEAMLESS SOFT. (NO JOINTS PERMITTED).
3. SERVICES TO BE ENCASED IN 6" SE 30 SAND.
4. BURIED COPPER TO BE ENCASED IN 6 MIL POLY WRAP SLEEVE PER SECTION 2.12.
5. ANGLE STOP PER SECTION 2.12.
6. BALL VALVE FURNISHED AND INSTALLED BY CITY FORCES.
7. M.I.P. X FEMALE SLIP PVC ADAPTER FURNISHED AND INSTALLED BY CITY FORCES.

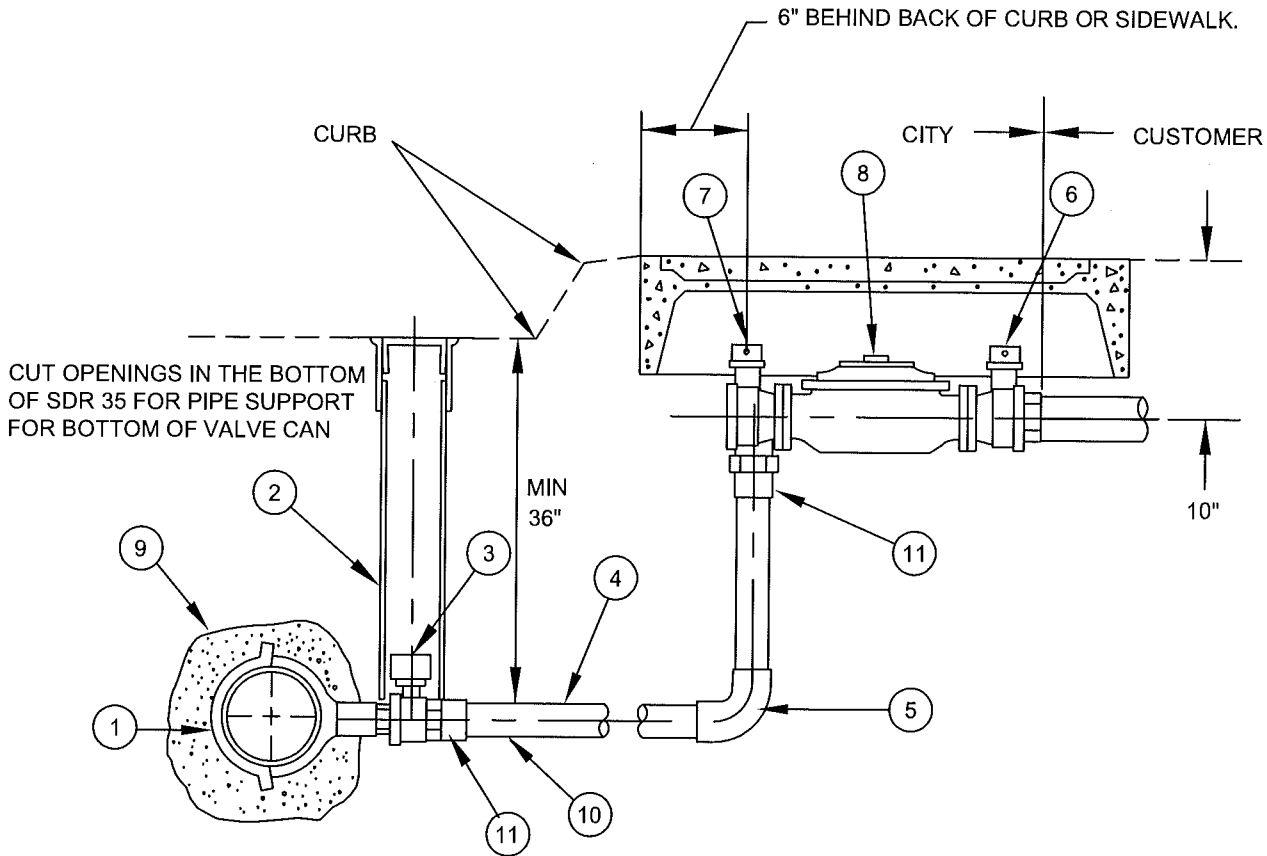
NOTES:

1. TAPS INTO TOP OF WATER MAIN ARE NOT PERMITTED.
2. HOT TAPS BY CITY APPROVED CONTRACTORS ONLY.
3. WATER PORT HOLE CENTERS TO BE INSTALLED 10" BELOW TOP OF METER BOX.
4. THE USE OF BUSHINGS, COUPLINGS, AND REDUCERS ON WATER SERVICE LINES IS STRICTLY PROHIBITED.



LEGEND ON PLAN

Revision	By	Approved	Date	CITY OF OCEANSIDE			
11/07/00	kal					1" WATER SERVICE	
09/16/02	DW			CITY ENGINEER	Date		
07/08/04	AC			STANDARD DRAWING NO. W-4			
03/05/08	DW						
01/04/16	MU						



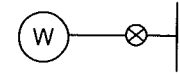
BILL OF MATERIALS:

1. BRONZE SERVICE SADDLE.
2. VALVE BOX & COVER PER W-23 WITH BOTTOM SUPPORT.
3. 1 1/2" OR 2" M.I.P. X F.I.P. BALL VALVE W/2" G.V. OPERATING NUT ADAPTER.
4. 1 1/2" OR 2" TYPE "K" COPPER TUBING (RIGID).
5. 1 1/2" OR 2" COPPER TO COPPER 90° ELBOW.
6. 1 1/2" OR 2" F.I.P. X METER FLANGE BALL VALVE FURNISHED AND INSTALLED BY CITY FORCES.
7. 1 1/2" OR 2" ANGLED BALL FLANGED METER VALVE.
8. 1 1/2" OR 2" WATER METER FURNISHED AND INSTALLED BY CITY FORCES.
9. BURIED COPPER TO BE ENCASED IN 6" SE 30 SAND.
10. BURIED COPPER TO BE WRAPPED IN 6 MIL POLYWRAP SLEEVE.
11. M.I.P. X COPPER ADAPTER.

NOTES:

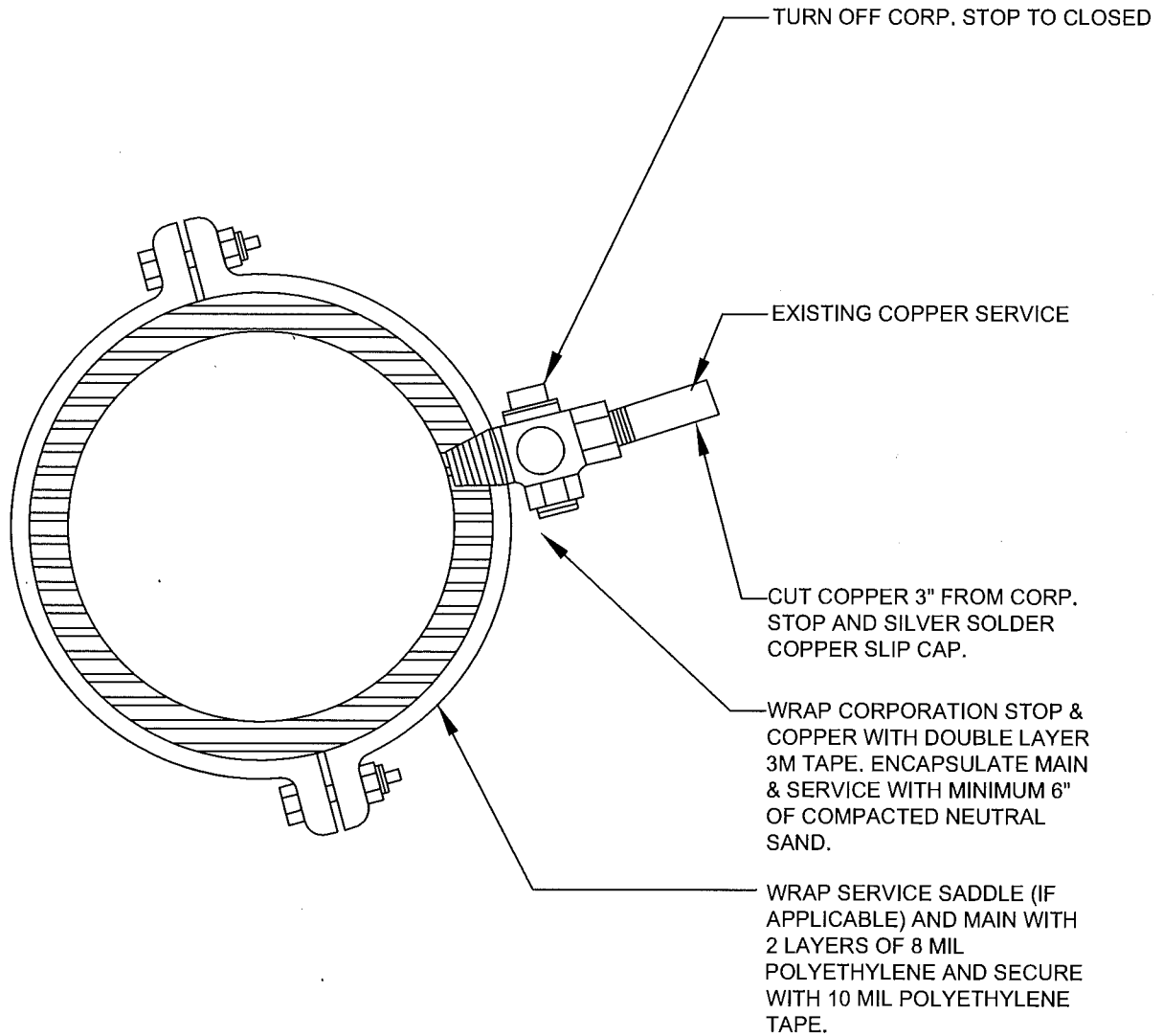
1. ALL MATERIALS SHALL BE PER SECTION 2.12
2. METER BOX & METERS INSTALLED BY CITY FORCES AT CONTRACTOR'S EXPENSE.

WHEN REDUCING PIPE SIZE, NO BUSHINGS OR REDUCERS WITH THREAD.
 COPPER REDUCERS WITH SILVER SOLDER. ALL JOINTS SILVER SOLDER.
 WATER PORT HOLE CENTERS TO BE INSTALLED 10" BELOW TOP OF METER BOX.



LEGEND ON PLAN

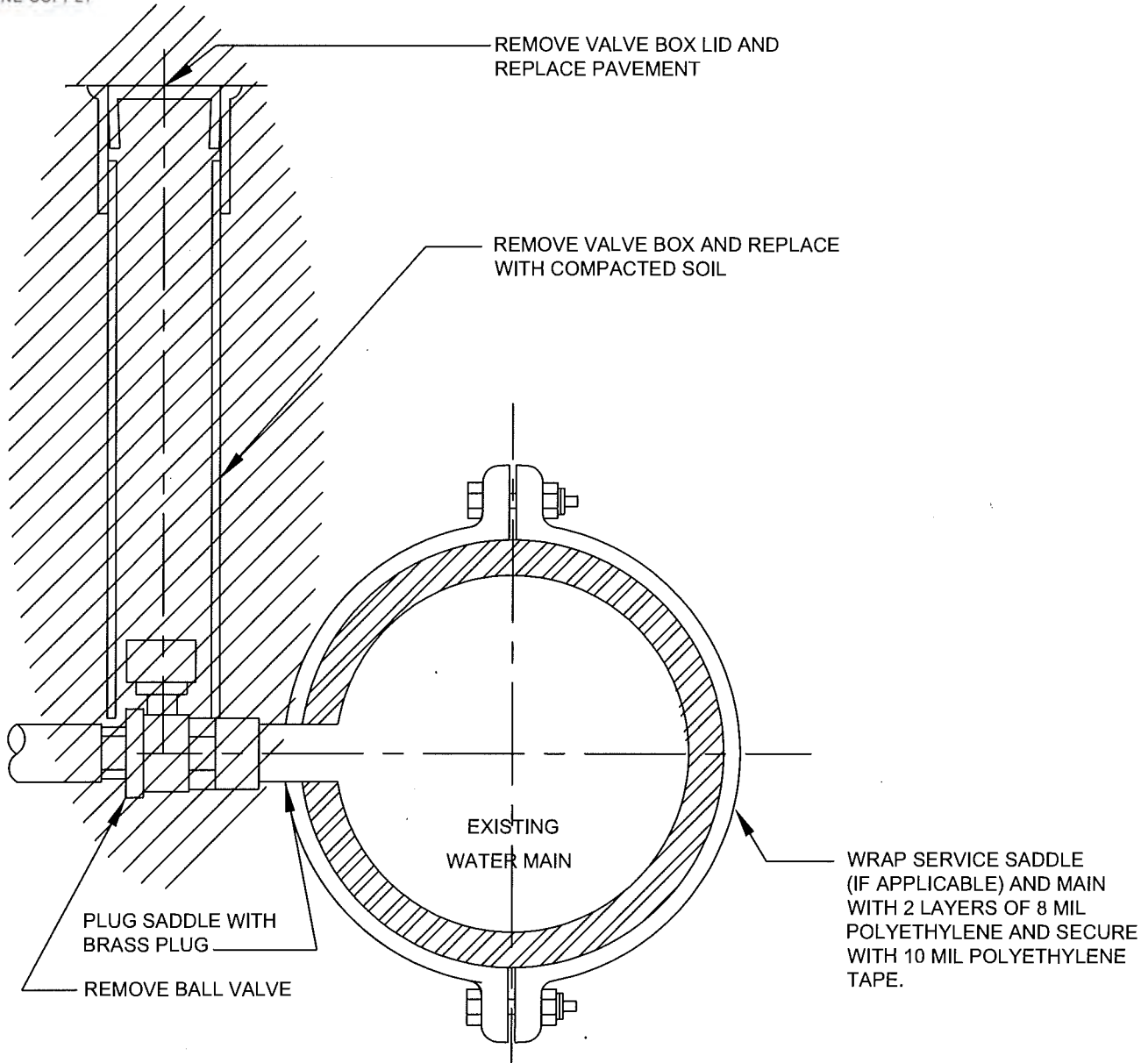
Revision	By	Approved	Date	CITY OF OCEANSIDE	
11/06/00	kal			STANDARD 1 1/2" & 2" METER SERVICE	CITY ENGINEER
09/16/02	DW				Date
07/08/04	AC				STANDARD DRAWING NO.
06/04/07	AC				W-5
12/01/11	DW				
01/04/16	MU				



NOTES :

1. WATER METER BOX TO BE REMOVED:
 - A. PARKWAY - FILL & COMPACT HOLE WITH CLEAN DIRT AND GRADE LEVEL.
 - B. SIDEWALK - REMOVE AND REPLACE CONCRETE INCLUDING CURB AND GUTTER FROM SCORE TO SCORE.
2. PLUG FOR CORPORATION STOP MUST BE INSPECTED BY REPRESENTATIVE OF THE WATER UTILITIES DEPARTMENT FOR INTEGRITY.
3. CITY FORCES TO REMOVE EXISTING WATER METER.
4. PLUG ENDS OF ABANDONED COPPER SERVICE, ABANDON-IN PLACE, UNLESS NOTED OTHERWISE.

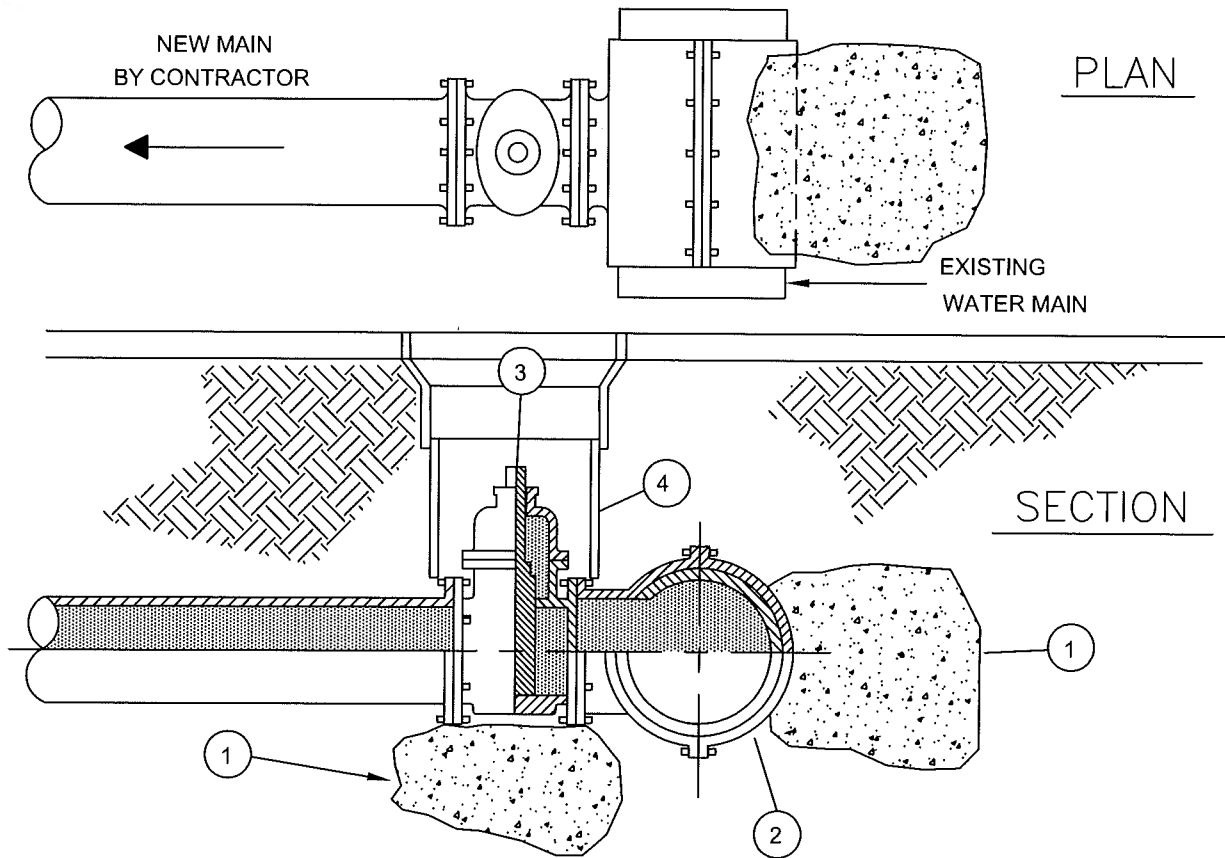
Revision	By	Approved	Date	CITY OF OCEANSIDE	
11/07/00	kal				
06/14/01	DW			3/4" OR 1" WATER METER SERVICE ABANDONMENT	CITY ENGINEER _____ Date _____
09/16/02	DW				STANDARD DRAWING NO. W-6a
06/04/07	AC				
01/04/16	MU				



NOTES :

1. WATER METER BOX TO BE REMOVED:
 - A. PARKWAY - FILL & COMPACT HOLE WITH CLEAN DIRT AND GRADE LEVEL.
 - B. SIDEWALK - REMOVE AND REPLACE CONCRETE INCLUDING CURB AND GUTTER FROM SCORE TO SCORE.
2. CONTACT WATER UTILITIES DEPARTMENT TO COORDINATE WATER MAIN SHUTDOWN FOR 1 1/2" OR 2" BALL VALVE REMOVAL.
3. ABANDONMENT OF SERVICE MUST BE INSPECTED BY REPRESENTATIVE OF THE WATER UTILITIES DEPARTMENT FOR INTEGRITY.
4. CITY FORCES TO REMOVE EXISTING WATER METER.
5. PLUG ENDS OF ABANDONED COPPER SERVICE. ABANDON-IN PLACE, UNLESS NOTED OTHERWISE.

Revision	By	Approved	Date	CITY OF OCEANSIDE	
11/07/00	kal				
06/14/01	DW			1 1/2" OR 2" WATER METER SERVICE ABANDONMENT	CITY ENGINEER _____ Date
09/16/02	DW				STANDARD DRAWING NO. W-6b
06/04/07	AC				
01/04/16	MU				



BILL OF MATERIALS:

1. THRUST BLOCK PER W-27.
2. TAPPING SLEEVE (SEE NOTES BELOW).
3. GATE VALVE SHALL BE FLANGE BY FLANGE. IF FL X RT USE TAPPING VALVE WITH THRUST BLOCK.
4. VALVE BOX PER W-23.

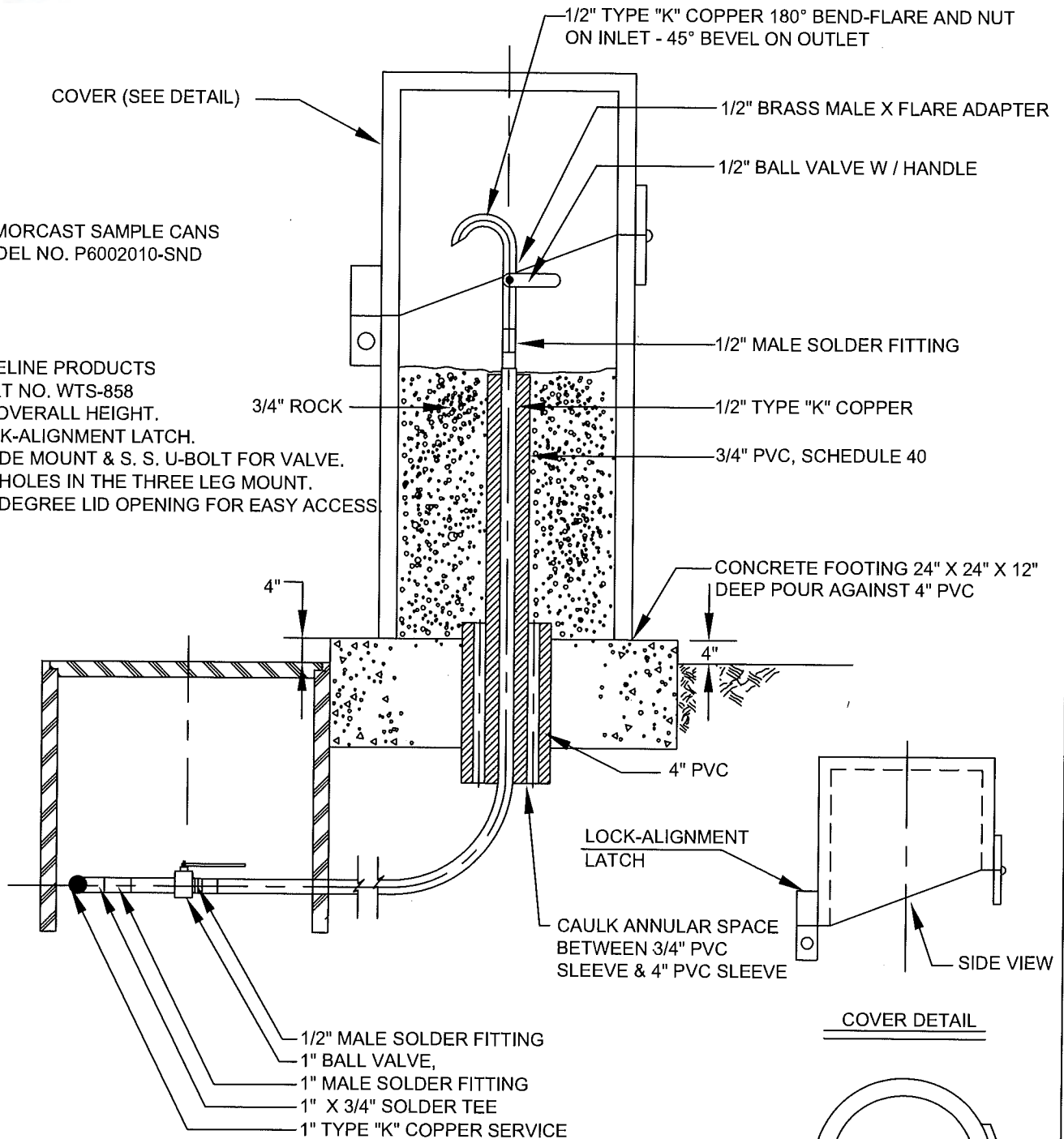
TYPE OF TAPPING SLEEVES TO BE USED

AC PIPE: 4"-12" H-619 MUELLER MJ.
 ALL PIPE MATERIAL EXCEPT COATED STEEL PIPE: 12"-30" SMITH-BLAIR 622 CARBON STEEL TAPPING SLEEVE.
 CAST IRON PIPE: 4"-24" H-615 MUELLER MJ.
 DUCTILE IRON PIPE: 4"-24" H-615 MUELLER MJ.
 PVC C900 PIPE: 4"-12" H-615 MUELLER M/J.
 ALL CEMENT-COATED STEEL CYLINDER PIPE: KOPPL PIPELINE SERVICES FABRICATED TAPPING SLEEVE ONLY.
 INSTALLED AND TAPPED BY KOPPL PIPELINE SERVICES OR INTERNATIONAL FLOW TECHNOLOGIES.

NOTES:

1. PIPE, FITTINGS, VALVES, AND NUTS & BOLTS WILL BE COATED AND WRAPPED PER SECTION 2.12.
2. NO SIZE-ON-SIZE HOT TAPS WILL BE PERMITTED.
3. FOR 3" HOT TAPS, USE A 4" TAPPING SLEEVE AND REDUCER.
4. HOT TAPS ON PIPES OVER 30" SHALL BE SUBMITTED FOR REVIEW AND APPROVAL.
5. NO WELD-ON NOZZLES WILL BE PERMITTED.

Revision	By	Approved	Date	CITY OF OCEANSIDE			
11/07/00	kal			STANDARD HOT-TAP CONNECTION, 3" & LARGER			
08/06/04	AC					CITY ENGINEER	Date
06/04/07	AC					STANDARD DRAWING NO.	W-7
01/04/16	MU						



ARMORCAST SAMPLE CANS
 MODEL NO. P6002010-SND

PIPELINE PRODUCTS
 PART NO. WTS-858

- * 36" OVERALL HEIGHT.
- * LOCK-ALIGNMENT LATCH.
- * INSIDE MOUNT & S. S. U-BOLT FOR VALVE.
- * 1/2" HOLES IN THE THREE LEG MOUNT.
- * 180 DEGREE LID OPENING FOR EASY ACCESS

NOTES:

1. WATER SAMPLING LINE TEE TO BE INSTALLED PRIOR TO METER.
2. ALL COPPER JOINTS TO BE SILVER SOLDERED
3. ALL COPPER TO BE ENCASED IN 6 MIL POLY WRAP AND 6" OF SE 30 SAND PER SECTION 2.12.

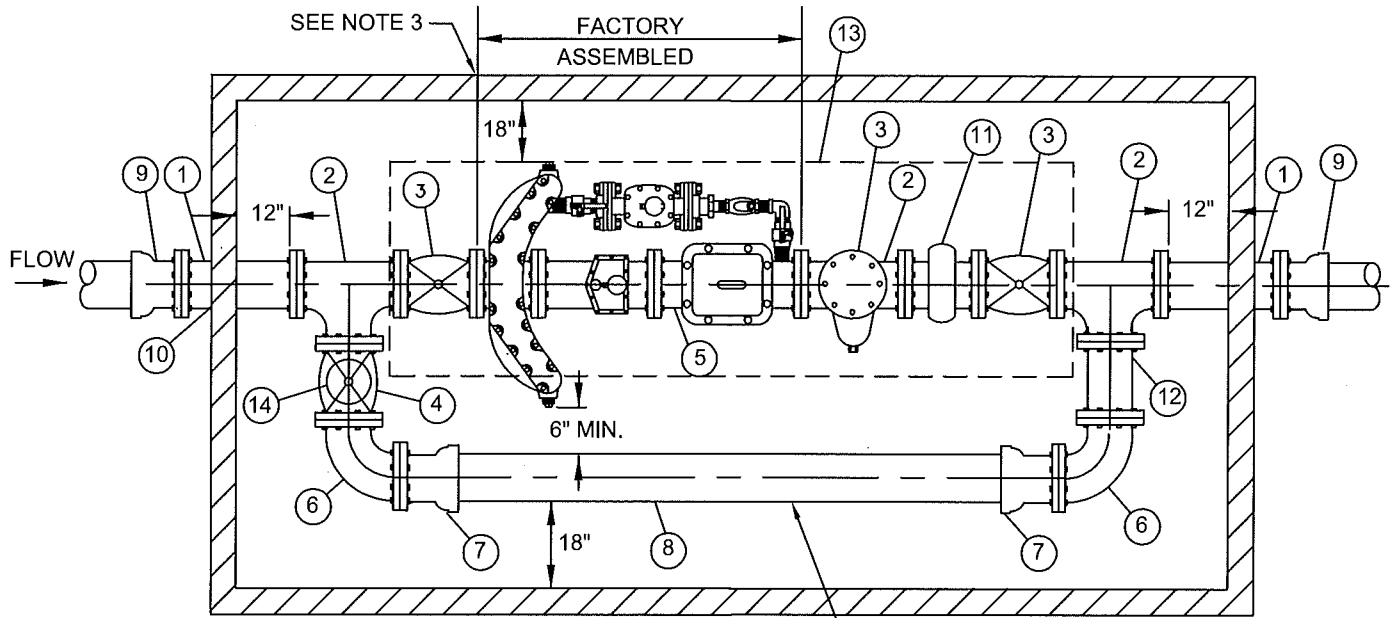
8 5/8" OUTSIDE DIA.

Revision	By	Approved	Date
10/16/02	DW		
08/29/04	AC		
06/04/07	AC		
09/22/10	DW		
12/01/11	DW		
01/04/16	MU		

CITY OF OCEANSIDE

WATER SAMPLING STATION

CITY ENGINEER _____ Date _____
 STANDARD DRAWING NO. **W-8**



BYPASS PIPE AND VALVES SHALL BE SAME SIZE AS METER. BYPASS VALVE #4 TO BE CLOSED AFTER INSTALLATION & LOCKING CAP INSTALLED, SEE #14.

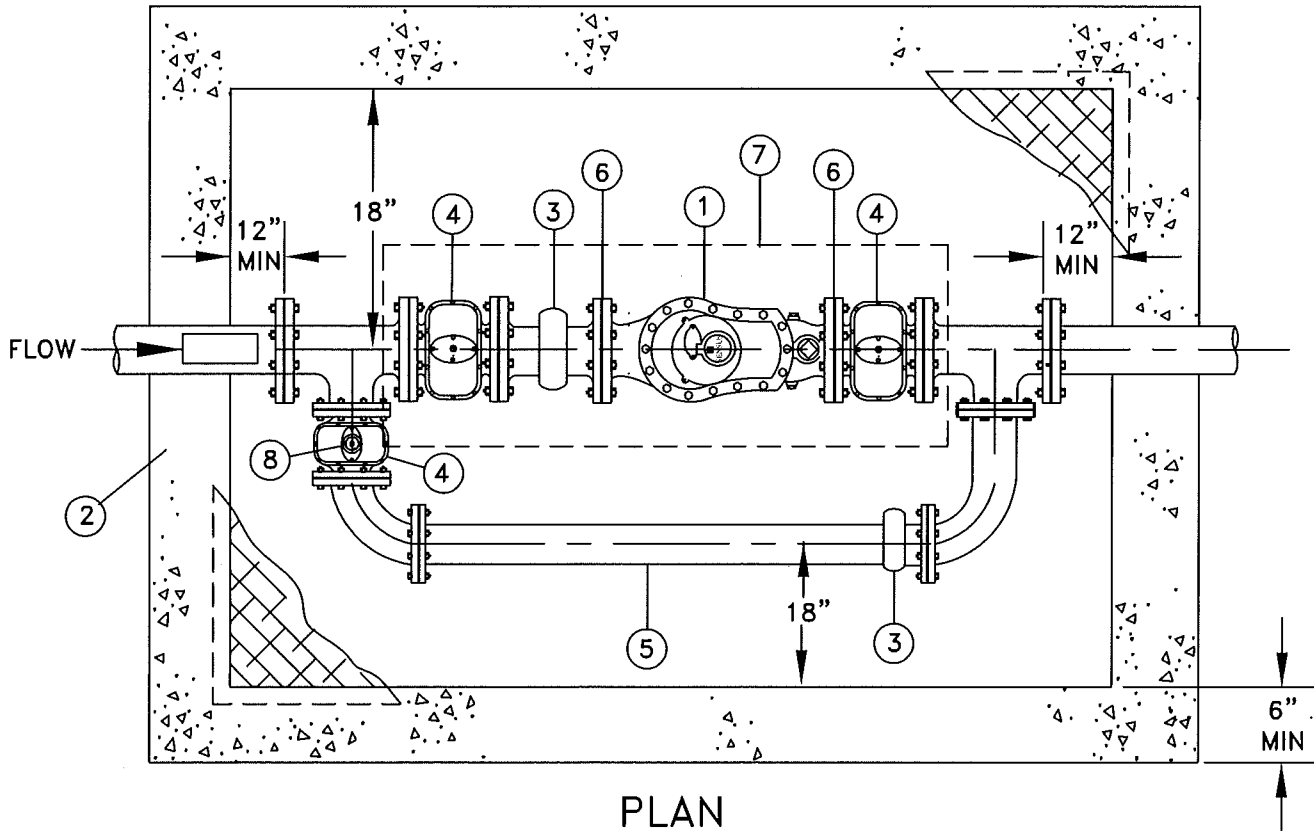
BILL OF MATERIALS:

1. 18" LONG FLANGED DUCTILE IRON SPOOL.
2. FLANGED DUCTILE IRON TEE WITH OUTLET.
3. FLANGED RESILIENT WEDGE (RW) GATE VALVE, WITH FACTORY FUSION-BONDED EPOXY INSIDE WEDGE TO BE RUBBER ENCAPSULATED DUCTILE IRON WITH 2" SQUARE OPERATING NUT.
4. RW GATE VALVE. EPOXY & WEDGE SAME AS #3. (CLOSED VALVE)
5. FACTORY ASSEMBLED COMPACT FIRE FLOW METER MANUFACTURED BY SENSUS.
6. 90° FLANGED DUCTILE IRON ELBOW.
7. FLANGED DUCTILE IRON SPOOL (L=VARIES)
8. PVC PIPE C900 CLASS 200
9. FLANGE X PUSH ON ADAPTER.
10. APPROVED SEALANT AROUND PIPE OPENINGS. NON-SHRINK GROUT IF ABOVE WATER TABLE AND LINK SEAL IF BELOW.
11. VICTAULIC COUPLING W/ 2 EACH 6" FLG X VIC GROOVE SPOOLS.
12. FLANGED SPOOL
13. BILCO 2 PIECE OR USF 2 PIECE ALUMINUM DIAMOND PLATE HATCH. THE HATCH MUST COVER THE LIMITS OF EITHER SIDE OF THE RW GATE VALVE ON THE MAIN LINE. RATING OF HATCH WILL BE MADE ON A CASE BY CASE BASIS, APPROVED BY THE WATER UTILITIES DEPARTMENT.
14. PIPELINE PRODUCTS GVL-200 LOCKING GATE VALVE CAP.

NOTES:

1. VAULT DEPTH NOT TO EXCEED 5'-0" FROM TOP OF VAULT TO FLOOR.
2. SERVICES 6" AND LARGER REQUIRE SPECIAL DESIGN.
3. VAULT SHALL BE PRECAST. ALL CALCULATIONS AND SHOP DRAWINGS MUST BE SUBMITTED TO THE WATER UTILITIES DEPT. FOR REVIEW AND APPROVAL.

Revision	By	Revision	By	CITY OF OCEANSIDE	
08/06/04	AC				
04/13/05	DW			STANDARD FIRE FLOW MASTER METER	CITY ENGINEER Date
06/04/07	AC				STANDARD DRAWING NO. W-9
09/22/10	DW				
12/13/11	DW				
01/04/16	MU				



PLAN

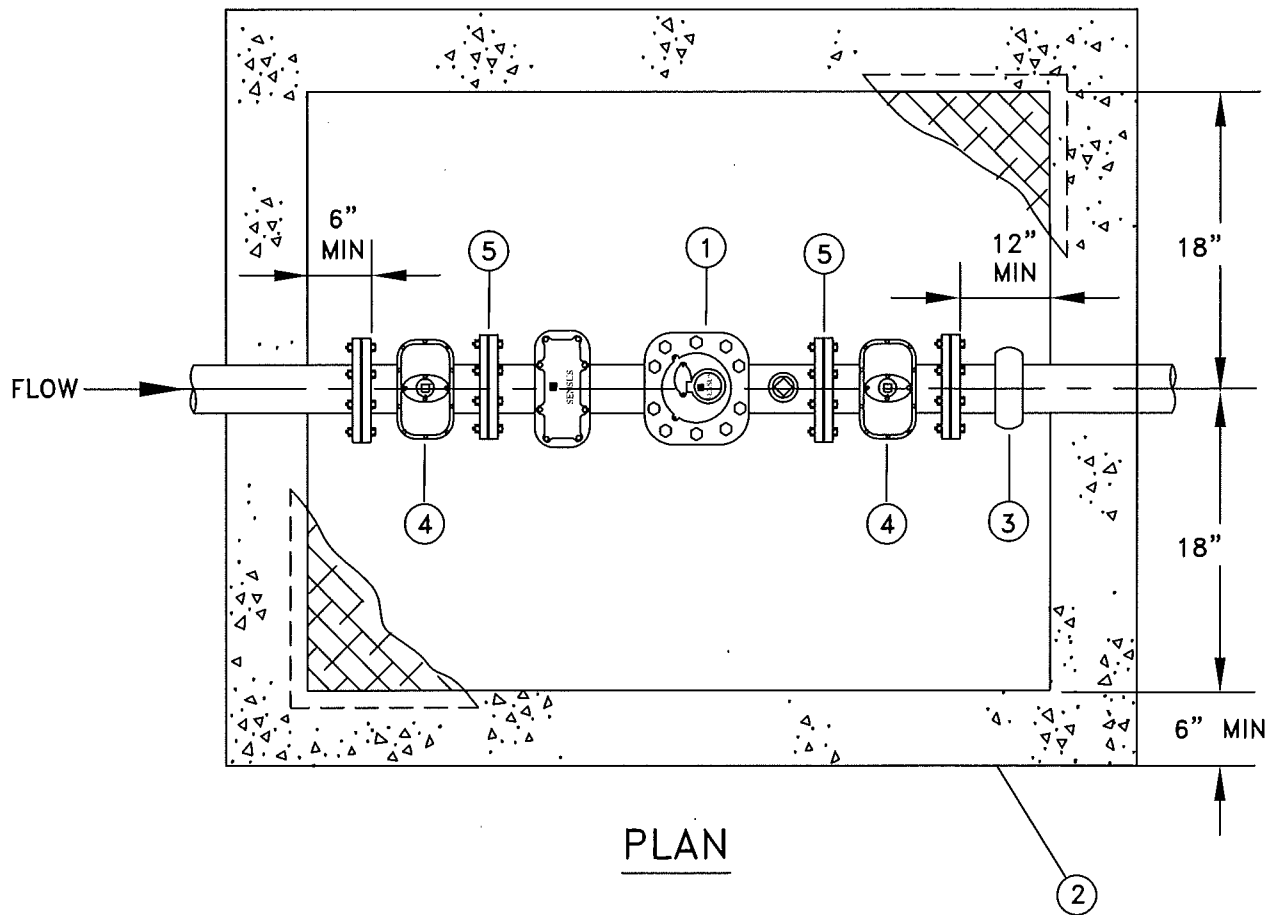
BILL OF MATERIALS:

1. MASTER METER SRH COMPOUND METER WITH BUILT IN TEST OUTLET (APPROXIMATELY 20" LONG).
2. VAULT FRAME AND COVER PER STANDARD DWG W-19 AND W-20
3. VICTAULIC COUPLING.
4. RESILIENT WEDGE GATE VALVE, FLANGE X FLANGE WITH 2" OPERATING NUT (CLOSED VALVE).
5. MAINLINE BY-PASS (MAIN LINE SIZE).
6. SUPPORT METER WITH VALVE SUPPORTS PER STANDARD DWG W-18.
7. BILCO 2 PIECE OR USF 2 PIECE ALUMINUM DIAMOND PLATE HATCH. THE HATCH MUST COVER THE LIMITS OF EITHER SIDE OF THE RWGV ON THE MAIN LINE. RATING OF THE HATCH WILL BE MADE ON A CASE-BY-CASE BASIS, APPROVED BY THE WATER UTILITIES DEPARTMENT.
8. PIPELINE PRODUCTS GVL-200 LOCKING GATE VALVE CAP.

NOTES:

1. VAULT DEPTH NOT TO EXCEED 5'-0" FROM TOP OF VAULT TO FLOOR.
2. SERVICES 6" AND LARGER REQUIRE SPECIAL DESIGN.
3. VAULT SHALL BE PRECAST. ALL CALCULATIONS AND SHOP DRAWINGS MUST BE SUBMITTED TO THE WATER UTILITIES DEPARTMENT FOR REVIEW AND APPROVAL.

Revision	By	Approved	Date	CITY OF OCEANSIDE 3" & 4" COMPOUND METER FOR COMMERCIAL/INDUSTRIAL/ MULTI-FAMILY SERVICE	CITY ENGINEER Date
06/07/01	DW				
10/16/02	DW				
06/04/07	AC				
09/22/10	DW				
12/01/11	DW				
01/04/116	MU				



PLAN

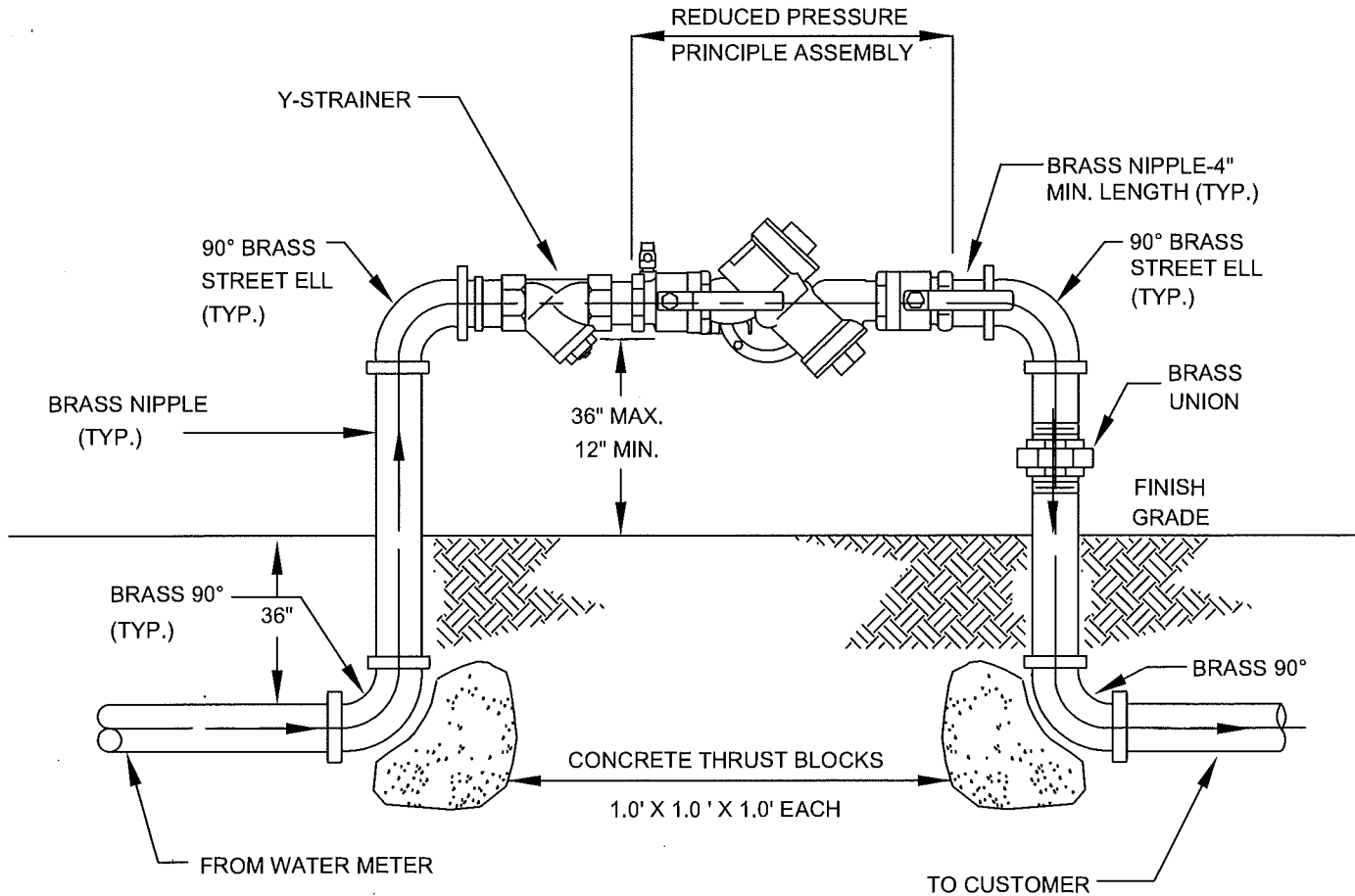
BILL OF MATERIALS:

1. SENSUS SERIES "W" COMPOUND METER WITH BUILT IN STRAINER & TEST OUTLET APPROXIMATELY 23" LONG.
2. VAULT FRAME AND COVER PER STANDARD DWG W-19 AND W-20.
3. VICTAULIC COUPLING.
4. RESILIENT WEDGE GATE VALVE, FLANGE X FLANGE WITH 2" OPERATING NUT.
5. SUPPORT METER WITH VALVE SUPPORTS PER STANDARD DWG W-18.

NOTES:

1. VAULT DEPTH NOT TO EXCEED 5'-0" FROM TOP OF VAULT TO FLOOR.
2. VAULT SHALL BE PRECAST. ALL CALCULATIONS AND SHOP DRAWINGS MUST BE SUBMITTED TO THE WATER UTILITIES DEPT. FOR REVIEW AND APPROVAL.
3. SERVICES 6" AND LARGER REQUIRE SPECIAL DESIGN.

Revision	By	Approved	Date	CITY OF OCEANSIDE 3" & 4" COMPOUND-METER FOR IRRIGATION SERVICE		
04/26/01	kal				CITY ENGINEER	Date
06/07/01	DW					
10/16/02	DW					
01/04/16	MU				STANDARD DRAWING NO.	W-11

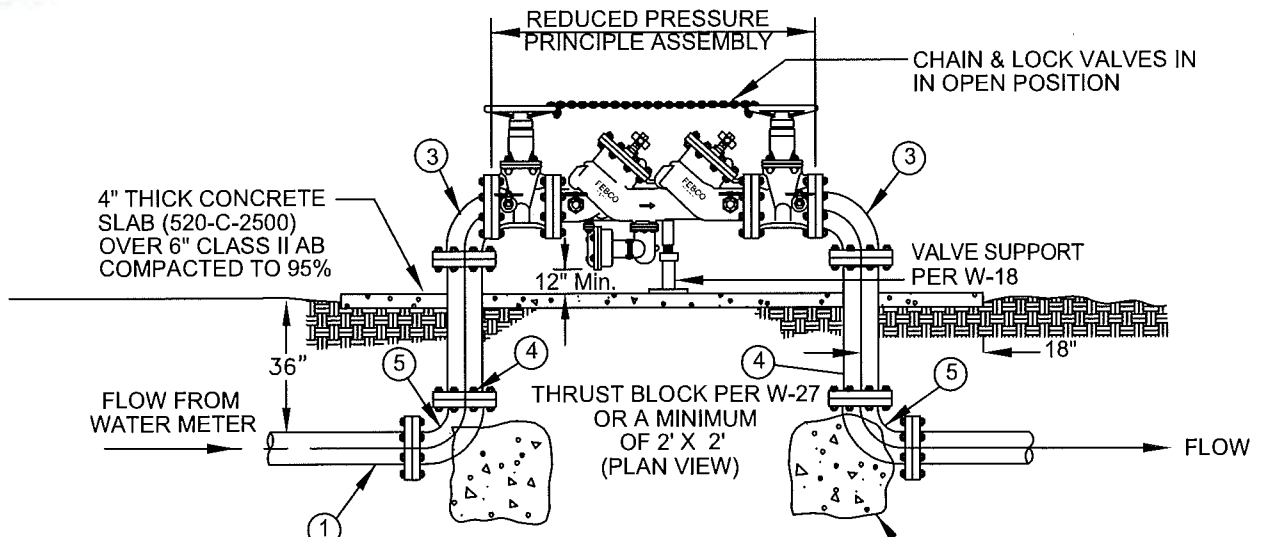


NOTES:

1. ASSEMBLY TO BE APPROVED BY THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD OFFICE OF DRINKING WATER AND CITY OF OCEANSIDE WATER UTILITIES DEPARTMENT.
2. ASSEMBLY SHALL BE ON STATE OF CALIFORNIA LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES FOUND ON UNIVERSITY OF SOUTHERN CALIFORNIA'S FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH.
3. ASSEMBLY SHALL BE INSTALLED IMMEDIATELY DOWNSTREAM OF THE METER WITHIN 18".
4. NO CONNECTIONS BETWEEN THE METER AND ASSEMBLY ARE PERMITTED.
5. RED BRASS FROM METER THROUGH RP ASSEMBLY.
6. ALL BURIED BRASS TO BE WRAPPED IN 6 MIL POLYETHYLENE WRAP PER SECTION 2.12.
7. WHEN DISTANCE BETWEEN THE METER BOX AND THE RISER TO THE ASSEMBLY EXCEEDS 18", PROVIDE PVC SLEEVE 2 TIMES THE DIAMETER OF THE WORKING PIPE OR INSTALL A CASING ENCASED IN CONCRETE. INSPECTION IS REQUIRED PRIOR TO BACKFILL.

THIS ASSEMBLY SHALL BE INSPECTED BY THE WATER UTILITIES DEPARTMENT. AFTER WATER UTILITIES DEPARTMENT'S APPROVAL, ASSEMBLY SHALL BE TESTED BY A TESTER ON THE CITY'S APPROVED TESTER LIST. THE DEVELOPER/OWNER IS RESPONSIBLE FOR THE COST OF TESTING THE ASSEMBLY. THEREAFTER, THE ASSEMBLY SHALL BE TESTED ANNUALLY AT THE OWNER'S EXPENSE. THE TEST REPORT IS TO BE SUBMITTED TO THE CITY WATER UTILITIES DEPARTMENT, CROSS CONNECTION CONTROL AT PHONE # 760-435-5800.

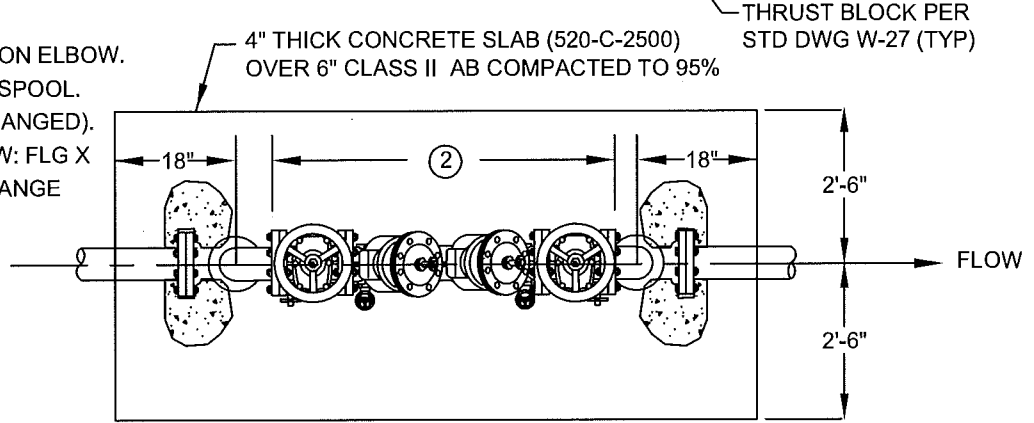
Revision	By	Approved	Date	CITY OF OCEANSIDE	
06/07/01	DW			REDUCED PRESSURE PRINCIPLE ASSEMBLY (2" & SMALLER)	
08/28/04	AC				
06/04/07	AC				
09/23/10	DW				
12/01/11	DW				
01/04/16	MU				
				CITY ENGINEER	Date
				STANDARD	W-12
				DRAWING NO.	



ELEVATION VIEW

BILL OF MATERIALS:

1. PRIVATE WATER MAIN.
2. FACTORY ASSEMBLED.
3. 90° FLANGED DUCTILE IRON ELBOW.
4. FLANGED DUCTILE IRON SPOOL. (BOTH ENDS SHALL BE FLANGED).
5. 90°, DUCTILE IRON ELBOW: FLG X FLG OR FLG X P.O. UNI-FLANGE SHALL NOT BE USED.



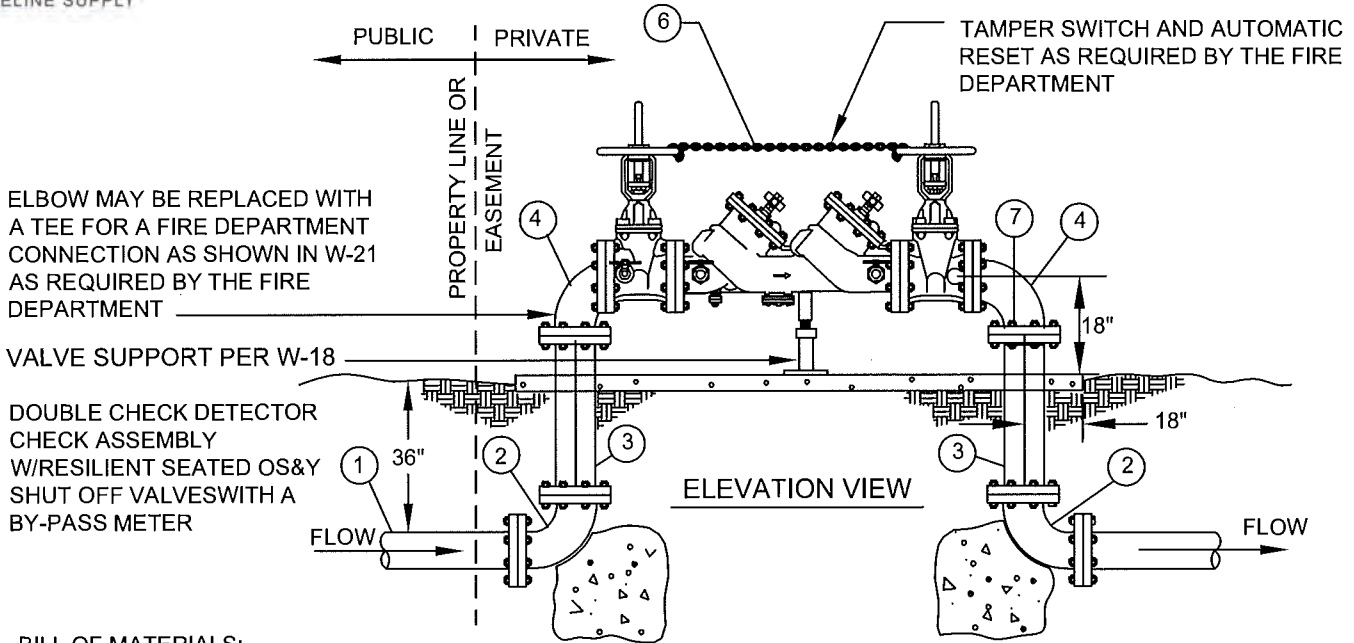
PLAN VIEW

NOTES:

1. ASSEMBLY TO BE APPROVED BY THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD OFFICE OF DRINKING WATER AND CITY OF OCEANSIDE WATER UTILITIES DEPARTMENT.
2. ASSEMBLY SHALL BE ON STATE OF CALIFORNIA LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES FOUND ON UNIVERSITY OF SOUTHERN CALIFORNIA'S FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH.
3. ASSEMBLY SHALL BE INSTALLED DOWNSTREAM OF THE METER WITHIN 18".
4. NO CONNECTIONS BETWEEN THE METER AND THE ASSEMBLY ARE PERMITTED.
5. NUTS, BOLTS, AND WASHERS SHALL BE TYPE 316 STAINLESS STEEL.
6. WHEN THE DISTANCE BETWEEN THE METER BOX AND THE RISER TO THE ASSEMBLY EXCEEDS 18", PROVIDE PVC SLEEVE 2 TIMES THE DIAMETER OF THE WORKING PIPE OR INSTALL A CASING ENCASED IN CONCRETE. INSPECTION IS REQUIRED PRIOR TO BACKFILL.

THIS ASSEMBLY SHALL BE INSPECTED BY THE WATER UTILITIES DEPARTMENT. AFTER WATER UTILITIES DEPARTMENT'S APPROVAL, ASSEMBLY SHALL BE TESTED BY A TESTER ON THE CITY'S APPROVED TESTER LIST. THE DEVELOPER/OWNER IS RESPONSIBLE FOR THE COST OF TESTING THE ASSEMBLY. THEREAFTER, THE ASSEMBLY SHALL BE TESTED ANNUALLY AT THE OWNER'S EXPENSE. THE TEST REPORT IS TO BE SUBMITTED TO THE CITY WATER UTILITIES DEPARTMENT, CROSS CONNECTION CONTROL AT PHONE NUMBER 760-435-5800

Revision	By	Approved	Date	CITY OF OCEANSIDE	
04/05/01	kal				CITY ENGINEER Date
06/08/01	DW				STANDARD
09/17/02	DW				DRAWING NO. W-13
07/08/04	AC				
06/04/07	AC				
01/04/16	MU				



ELBOW MAY BE REPLACED WITH A TEE FOR A FIRE DEPARTMENT CONNECTION AS SHOWN IN W-21 AS REQUIRED BY THE FIRE DEPARTMENT

VALVE SUPPORT PER W-18

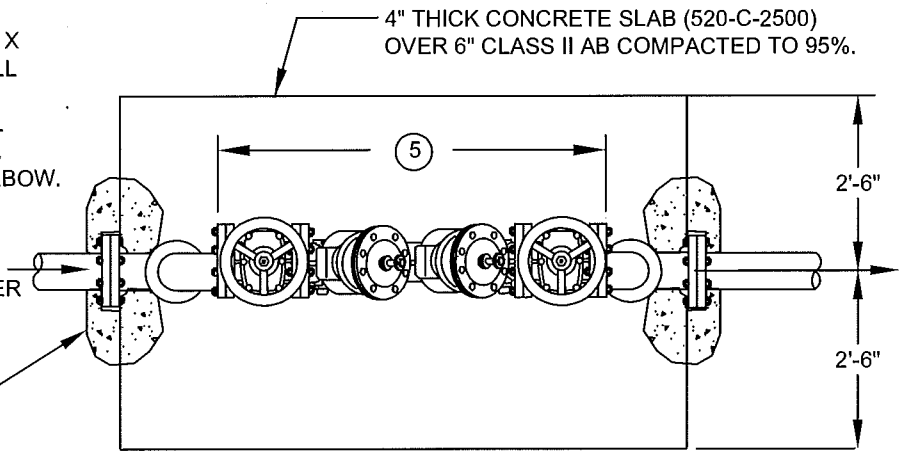
DOUBLE CHECK DETECTOR CHECK ASSEMBLY W/RESILIENT SEATED OS&Y SHUT OFF VALVES WITH A BY-PASS METER

ELEVATION VIEW

BILL OF MATERIALS:

1. PUBLIC WATER MAIN.
2. 90°, DUCTILE IRON ELBOW: FLG X FLG; FLG X PO; (UNI-FLANGE SHALL NOT BE USED).
3. FLANGED DUCTILE IRON SPOOL (BOTH ENDS SHALL BE FLANGED).
4. 90°, FLANGED DUCTILE IRON ELBOW.
5. FACTORY ASSEMBLED.
6. CHAIN & LOCK VALVES IN OPEN POSITION
7. NUTS, BOLTS AND WASHERS PER TYPE 316 SS

THRUST BLOCK PER CITY STANDARD DRAWING W-27 OR A MINIMUM OF 2' X 2' (PLAN VIEW)



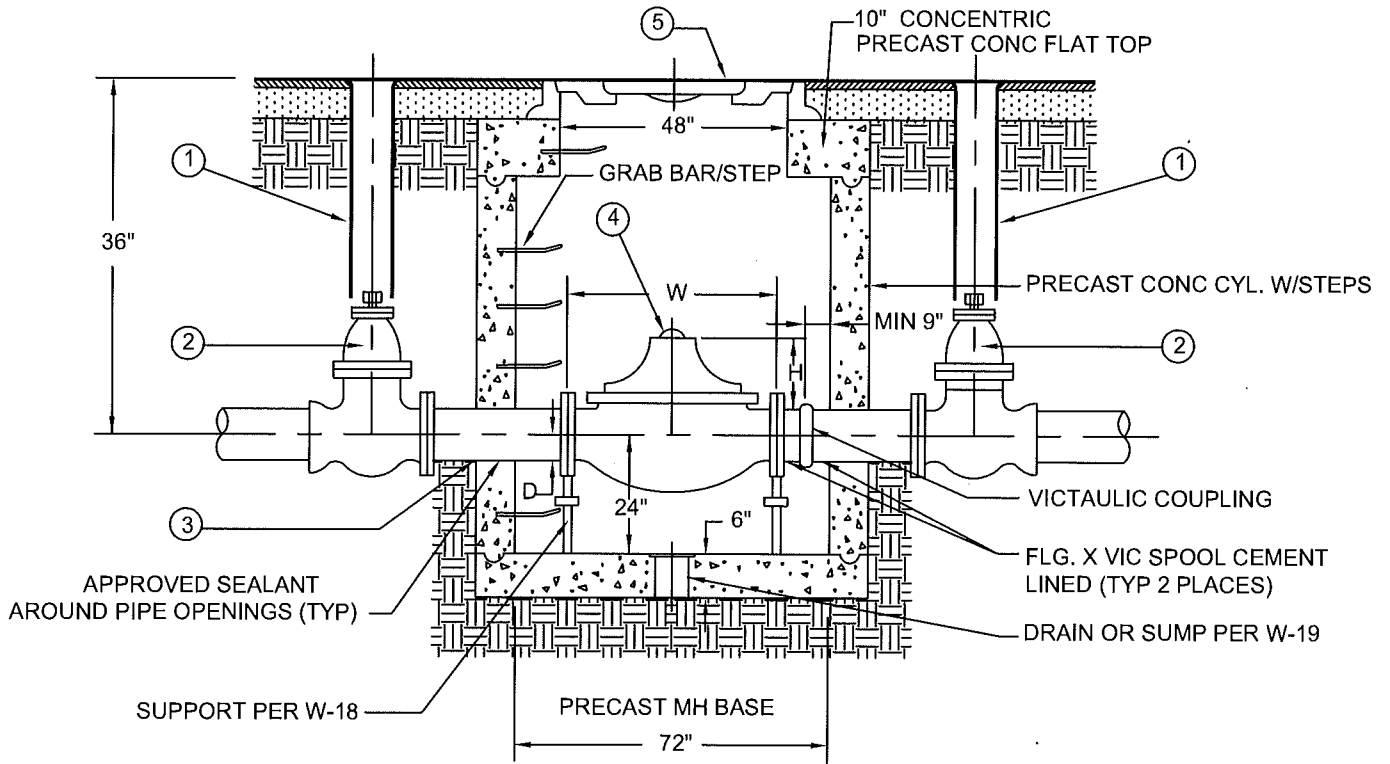
PLAN VIEW

NOTES:

1. ASSEMBLY TO BE APPROVED BY THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD OFFICE OF DRINKING WATER AND CITY OF OCEANSIDE WATER UTILITIES DEPARTMENT.
2. ASSEMBLY SHALL BE ON STATE OF CALIFORNIA LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES FOUND ON UNIVERSITY OF SOUTHERN CALIFORNIA'S FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH.
3. ASSEMBLY SHALL BE INSTALLED IMMEDIATELY DOWNSTREAM OF THE METER WITHIN 18".
4. NO CONNECTIONS BETWEEN THE METER AND THE ASSEMBLY ARE PERMITTED.
5. NUTS, BOLTS, AND WASHERS SHALL BE TYPE 316 STAINLESS STEEL.
6. WHEN DISTANCE BETWEEN THE METER BOX AND THE RISER TO THE ASSEMBLY EXCEEDS 18", PROVIDE PVC SLEEVE 2 TIMES THE DIAMETER OF THE WORKING PIPE OR INSTALL A CASING ENCASED IN CONCRETE. INSPECTION IS REQUIRED PRIOR TO BACKFILL.

THIS ASSEMBLY SHALL BE INSPECTED BY THE WATER UTILITIES DEPARTMENT. AFTER WATER UTILITIES DEPARTMENT'S APPROVAL, ASSEMBLY SHALL BE TESTED BY A TESTER ON THE CITY'S APPROVED TESTER LIST. THE DEVELOPER/OWNER IS RESPONSIBLE FOR THE COST OF TESTING THE ASSEMBLY. AFTER THERE, THE ASSEMBLY SHALL BE TESTED ANNUALLY AT THE OWNER'S EXPENSE. THE TEST REPORT IS TO BE SUBMITTED TO THE CITY WATER UTILITIES DEPARTMENT, CROSS CONNECTION CONTROL AT PHONE NUMBER 760-435-5800.

Revision	By	Approved	Date	CITY OF OCEANSIDE	
03/19/01	kal			DOUBLE CHECK - DETECTOR CHECK ASSEMBLY	
06/08/01	DW				
10/16/02	DW				
07/08/04	AC				
01/04/16	MU			CITY ENGINEER Date	
				STANDARD DRAWING NO. W-14	



NO.	QTY	FITTINGS
①	2	STD. 6" VALVE CAN AND COVER PER STANDARD DRAWING W-23
②	2	STD. RESILIENT WEDGE GATE VALVE FLG X PO
③	1	FLANGED D.I.P. CEMENT LINED SPOOL
④	1	NON-SLAM CHECK VALVE CLA-VAL 81G-02 GLOBE**
⑤	1	TWO CONCENTRIC MANHOLE COVERS WITH 48" AND 22" OPENINGS

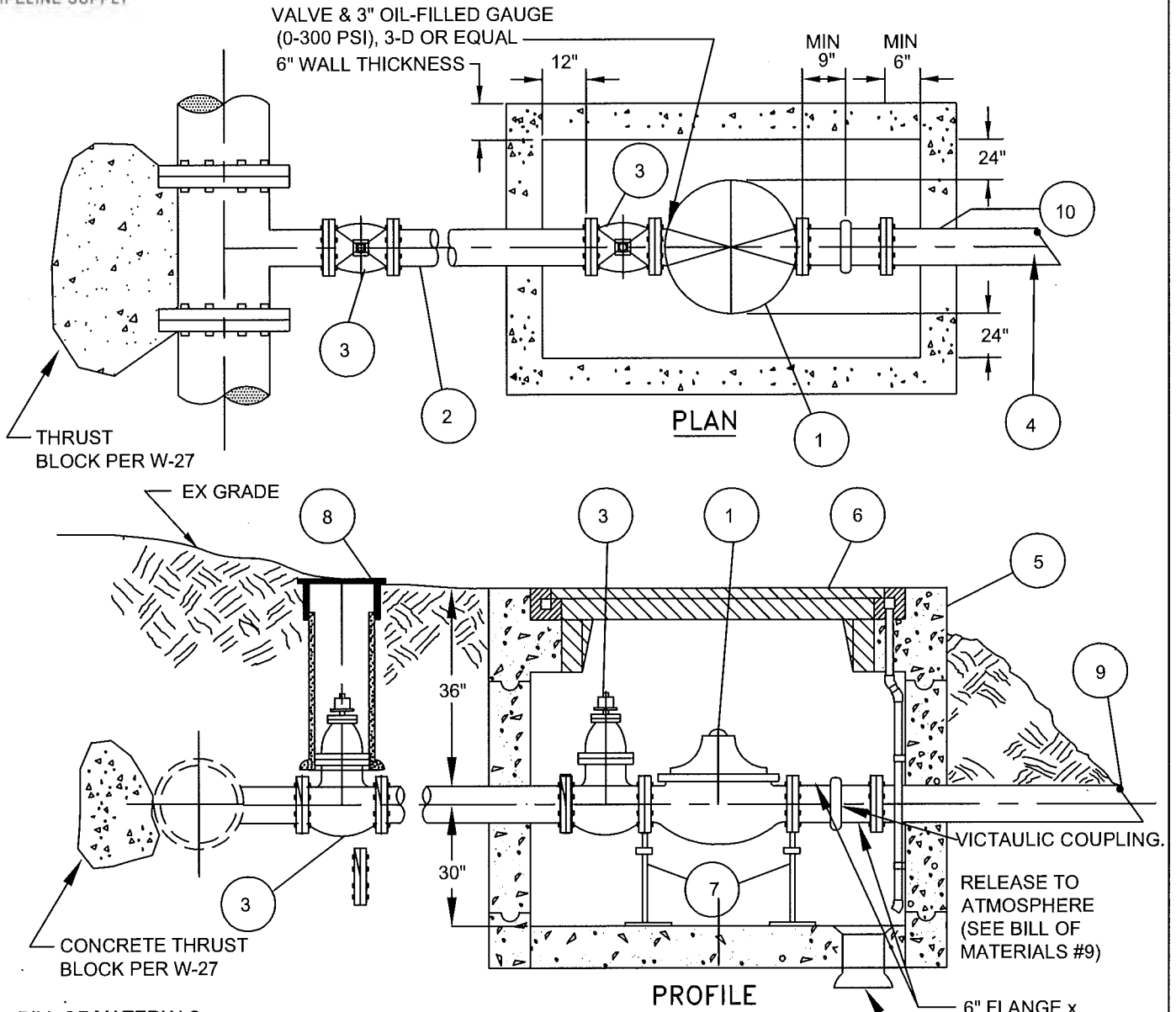
**FACTORY FUSION - BONDED EPOXY COATING INSIDE AND OUT W/STAINLESS STEEL TRIM

VALVE SIZE	W	H	D
6"	21"	13 5/8"	6"
8"	26 3/8"	15 1/4"	7 5/8"
10"	31 1/8"	17"	9 1/4"
12"	35 1/2"	21"	10 3/4"

NOTES:

1. PAINT VALVES & PIPE PER STANDARD DWG W-17.
2. COAT INTERIOR WITH SANCON 100 OR ZEBRON.
3. WATERPROOF EXTERIOR AS REQUIRED.
4. VALVE SUPPORTS (PER W-18) TO BE INSTALLED AT BOTH ENDS OF THE CHECK VALVE.
5. CHECK VALVE TO BE CENTERED HORIZONTALLY UNDER CONCENTRIC MANHOLE COVERS.

Revision	By	Approved	Date	CITY OF OCEANSIDE			
11/09/00	kal					CHECK VALVE	
06/08/01	DW			CITY ENGINEER	Date		
10/16/02	DW			STANDARD	W-15		
07/08/04	AC			DRAWING NO.			
01/04/16	MU						



BILL OF MATERIALS:

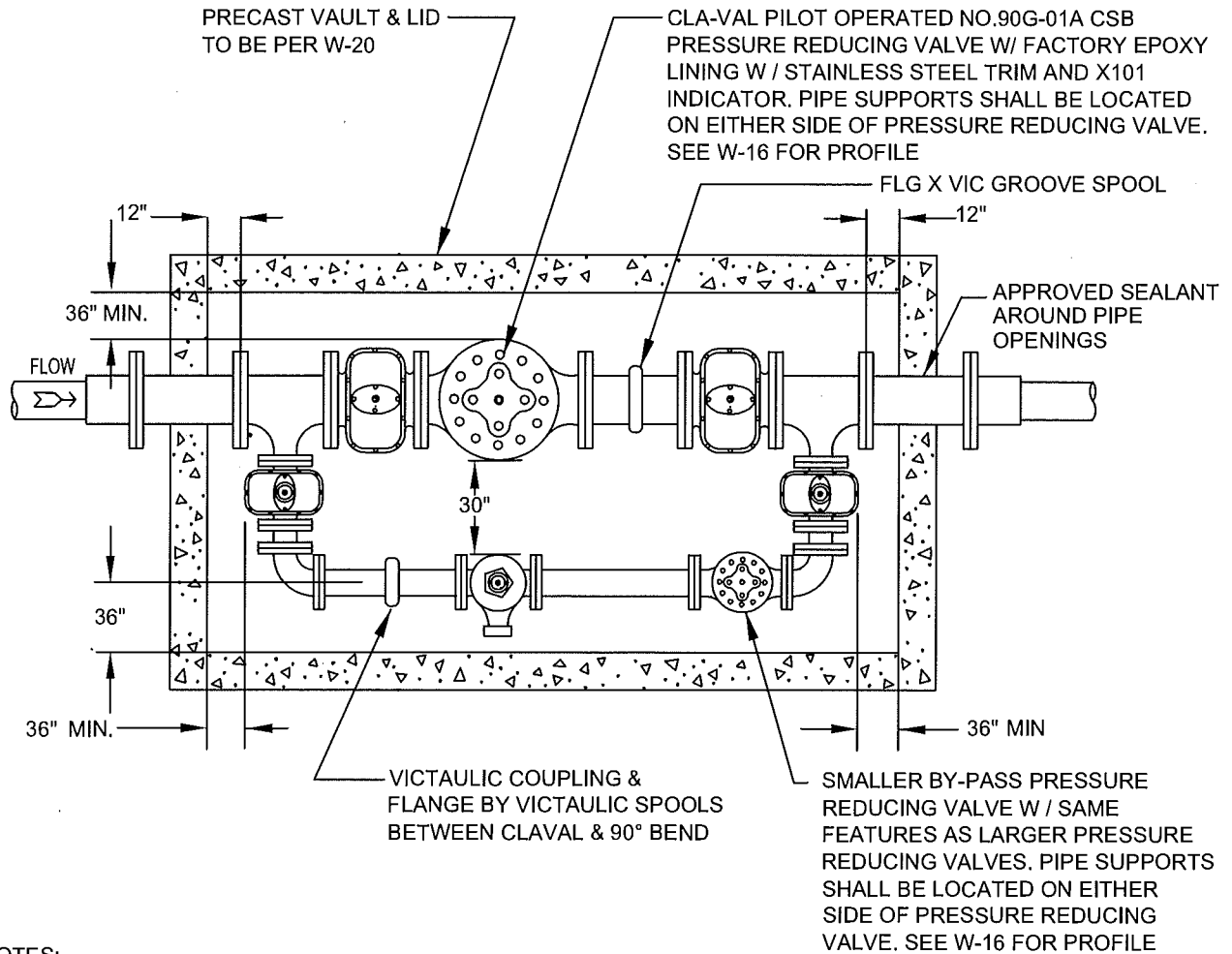
1. PRESSURE RELIEF VALVE CLA-VAL 50G-01 WITH FACTORY FUSION-BONDED EPOXY COATING INSIDE AND OUT WITH STAINLESS STEEL TRIM.
2. DUCTILE IRON FLANGED SPOOL, LENGTH AS REQUIRED.
3. FLANGED RESILIENT WEDGE GATE VALVE) W/FACTORY FUSION-BONDED EPOXY COATING INSIDE. WEDGE TO BE URETHANE RUBBER ENCAPSULATED DUCTILE IRON.
4. DIP CL 150 OR PVC C900 CL 150, LENGTH 10'-15' TO DAYLIGHT OR DISCHARGE TO BE DESIGNED FOR A SPECIFIC SITE CONDITION. DIP TO BE WRAPPED PER SECTION 2.12.
5. PRE-CAST VAULT PER STANDARD DWG W-19.
6. COVER PER STANDARD DWG W-20.
7. VALVE SUPPORT PER STANDARD DWG NO. W-18.
8. VALVE BOX PER STANDARD DWG NO. W-23.
9. FLAP GATE VALVE. IF DISCHARGE PIPE IS RELEASED TO STORM DRAIN, IT MUST BE AIR-GAPPED AND DIFFUSED.
10. APPROVED SEALANT AROUND PIPE OPENINGS.

NOTES:

1. SCADA DESIGN MUST BE SUBMITTED TO THE WATER UTILITIES DEPARTMENT FOR APPROVAL.
2. PAINT VALVES & PIPE PER W-17.

Revision	By	Approved	Date	CITY OF OCEANSIDE			
11/06/00	kal						
06/11/01	DW			RELIEF VALVE			
10/18/02	DW					CITY ENGINEER	Date
07/08/04	AC					STANDARD	W-16
01/04/16	MU					DRAWING NO.	

BASIC LAYOUT FOR A STANDARD PRESSURE REGULATOR OR PRESSURE REGULATING VALVE & VAULT



NOTES:

1. EACH PRESSURE REGULATOR STATION SHALL BE DESIGNED AND SUBMITTED FOR APPROVAL BY THE WATER UTILITIES DEPARTMENT ON A CASE-BY-CASE BASIS.
2. REGULATOR MUST BE PROVIDED WITH AN EJECTOR WITH TEST COCKS ON ALL VALVES AND 3" OIL-FILLED GAUGE (0-300 PSI), 3-D OR EQUAL.
3. REGULATOR AND ALL PIPING WITHIN THE VAULT SHALL BE PAINTED WITH ALUMINUM INDUSTRIAL PAINT. EXTERIOR SURFACES SHALL BE CLEANED AND PRIMED WHERE NECESSARY WITH SHERWIN WILLIAM PAINT, "DAPPER TAN SW 6144" COLOR, BASE COAT-SW MACROPOXY HS 646 APPLIED @ 5.0 TO 6.0 MILS; INTERMEDIATE COAT-SW MACROPOXY HS 646 APPLIDE @ 5.0 TO 6.0 MILS.
4. COAT INTERIOR OF VAULT WITH SANCON 100 OR ZEBRON.
5. WATERPROOF EXTERIOR AS REQUIRED.
6. VALVE SUPPORTS PER W-18 TO BE INSTALLED AT BOTH ENDS OF PRESSURE REGULATORS.
7. SCADA AND ELECTRICAL DESIGN MUST BE SUBMITTED TO THE WATER UTILITIES DEPARTMENT. FOR REVIEW AND APPROVAL.

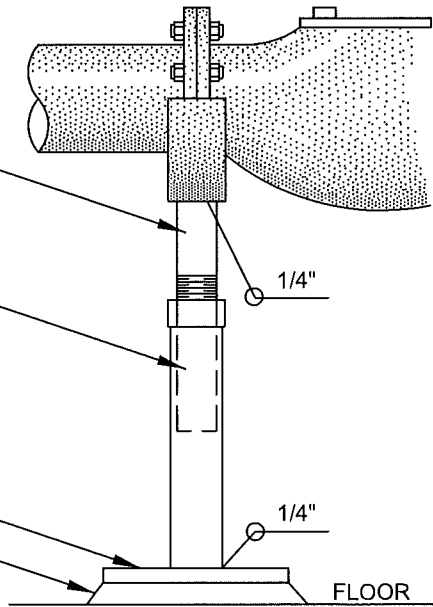
Revision	By	Approved	Date	CITY OF OCEANSIDE	
10/22/02	DW				
07/16/04	AC			STANDARD PRESSURE REDUCING VALVE CONNECTION	CITY ENGINEER Date
09/22/10	DW				STANDARD
12/01/11	DW				DRAWING NO. W-17
04/19/12	DW				
01/04/16	MU				

2" POLISHED ALUMINUM

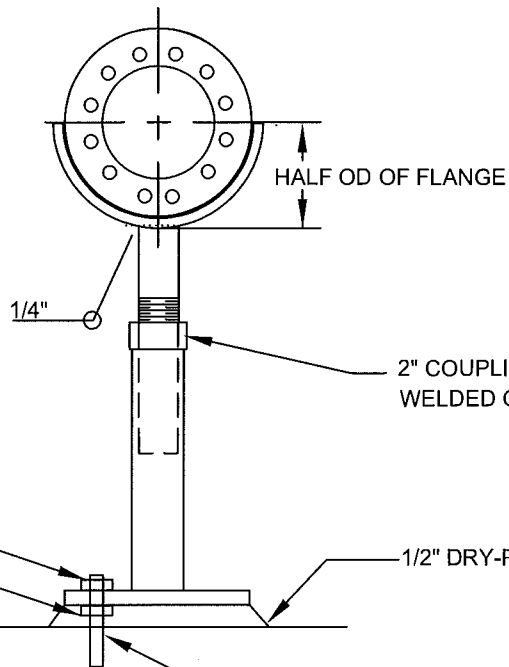
2 1/2" POLISHED ALUMINUM

10" x 10" x 1/2" P.L.

BOTTOM OF SUPPORT
 BASE 1/2" ABOVE
 FLOOR - DRY PACK
 VOID



CRADLE SUPPORT THE WIDTH OF BOTH FLANGES. 1/8" X 2" NEOPRENE PAD PLACED BETWEEN THE PIPE AND THE CRADLE SUPPORT. NO METAL TO METAL CONTACT SHALL BE MADE



2" COUPLING (NOT TO BE WELDED ON TO 2 1/2" PIPE))

S.S. NUT TOP & BOTTOM OF BASE PLATE.

1/2" DRY-PACK PAD.

NOTES:

1. PAINT PER W-17.
2. ADJUSTABLE PIPE SUPPORT SHALL BE MANUFACTURED BY GRINNEL, TOLCO, OR APPROVED EQUAL.

TYPE 316 S.S. HILTI OR EQUAL SLEEVE ANCHORS
 4 EACH REQUIRED

VALVE SUPPORT DETAIL
 NOT TO SCALE

Revision	By	Approved	Date
11/08/00	kal		
10/16/02	DW		
07/12/04	AC		
09/22/10	DW		
01/04/16	MU		

CITY OF OCEANSIDE

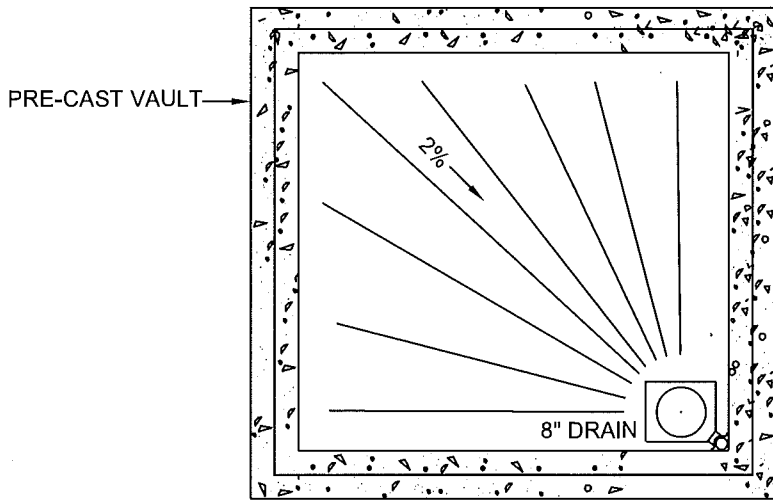
VALVE SUPPORT

CITY ENGINEER Date

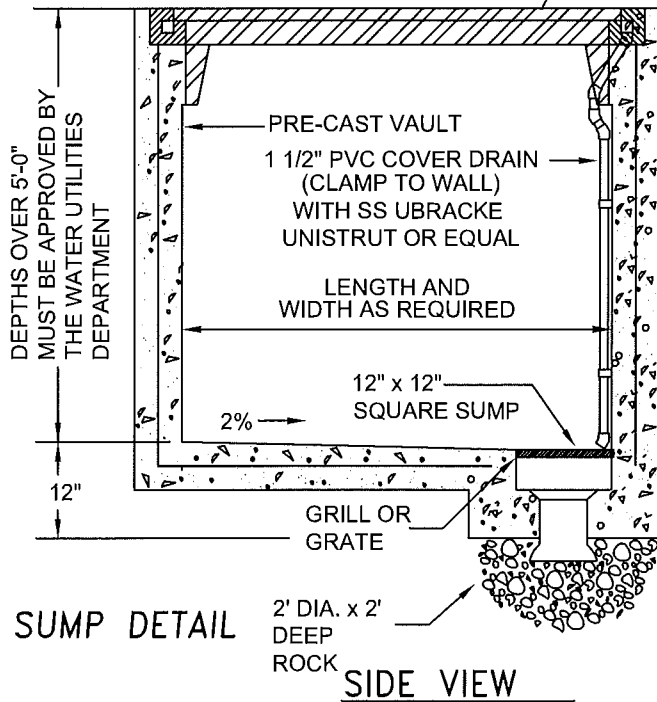
STANDARD
 DRAWING NO.

W-18

TOP VIEW



FULL OPENING BILCO OR USF LID SIZE AS REQUIRED
 COVER W/FRAME DETAIL (PER W-20)

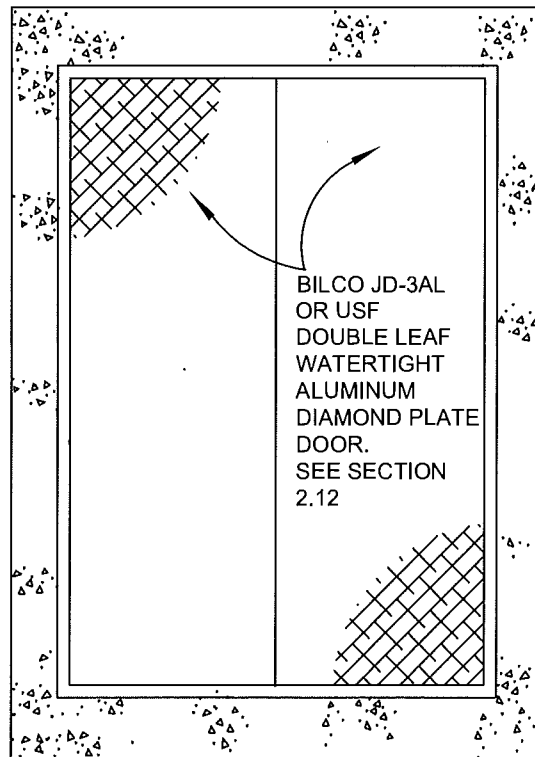
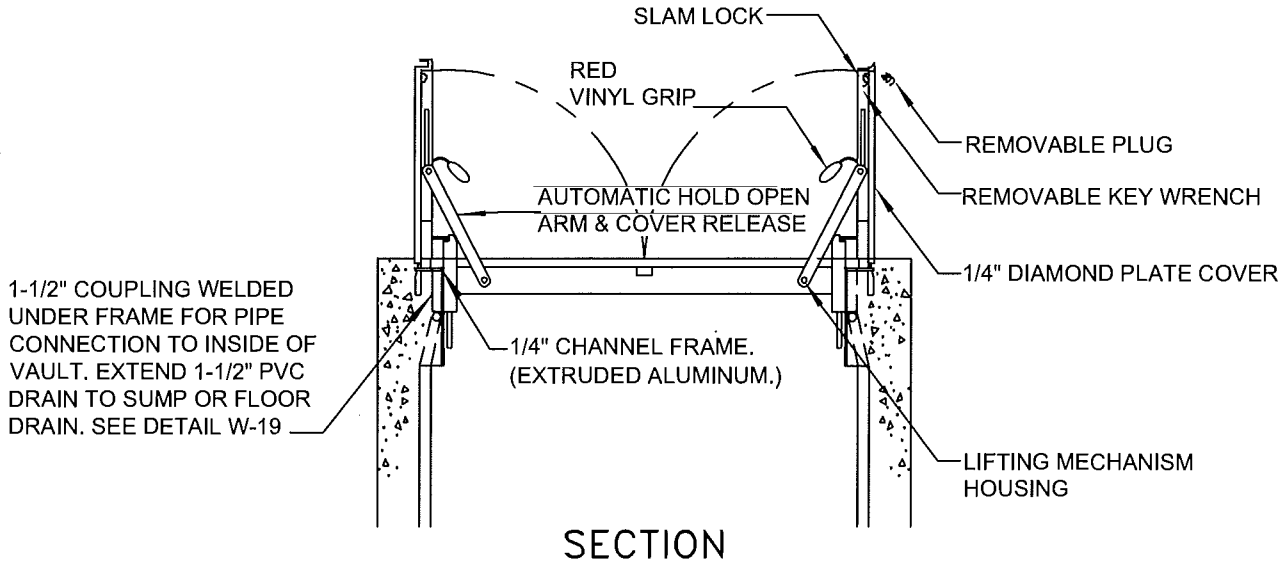


GENERAL NOTES

1. CONSTRUCT DRAIN FOR VAULTS IN WET LOCATIONS. SUMP FOR DRY AREAS.
2. USE STANDARD CAST FLOOR DRAIN W/GRILL COVER PLATE.
3. PLACE SUMP OR DRAIN IN LOWEST CORNER.
4. FINISH FLOOR SHALL HAVE A NEGATIVE SLOPE TOWARD SUMP OR DRAIN (2%).
5. GUARD POSTS PER W-3 AS REQUIRED.
6. FILL "PICKHOLES" WITH NON-SHRINK EPOXY GROUT.
7. COAT INTERIOR OF VAULT WITH SANCON 100 OR ZEBRON.
8. WATERPROOF EXTERIOR AS REQUIRED.
9. ALL VAULTS TO BE LOCATED OUTSIDE OF ROADWAY.
10. VAULT TO PROVIDE CLEAR OPENING FROM WALL TO WALL.

1. ALL VAULTS, MANHOLES, PITS, ETC. SHALL BE DESIGNED PER ALL CURRENT APPLICABLE CODES AND REGULATIONS: TITLE 8, CALIFORNIA CODE OF REGULATIONS, CAL/OSHA, ANSI, ETC. FOR "CONFINED SPACE" AND "FALL PROTECTION".
2. ALL VAULTS, MANHOLES, PITS, ETC. SHALL BE CERTIFIED AT THE TIME OF CONSTRUCTION THAT THEY MEET ALL CURRENT APPLICABLE CODES AND REGULATIONS FOR "CONFINED SPACE" AND "FALL PROTECTION".
3. EACH VAULT SHALL BE DESIGNED AND SUBMITTED FOR APPROVAL BY THE WATER UTILITIES DEPARTMENT ON A CASE-BY-CASE BASIS.

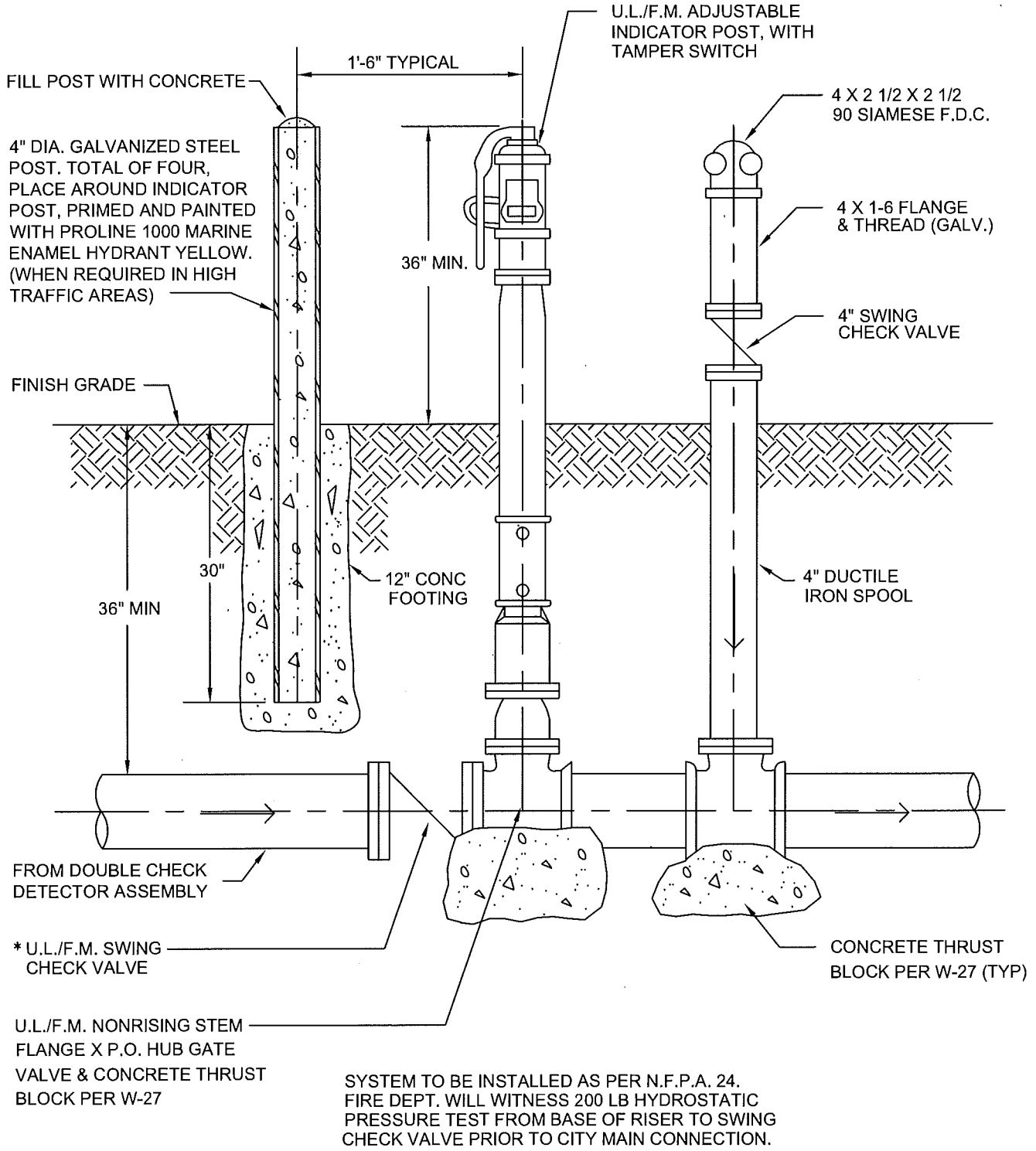
Revision	By	Approved	Date	CITY OF OCEANSIDE		
11/06/00	kal					
10/16/02	DW				CITY ENGINEER Date	
07/14/04	AC			STANDARD VAULT	STANDARD	
06/04/07	AC				DRAWING NO.	W-19
01/04/16	MU					



NOTES:

1. HATCH COVER DRAIN SHALL BE PLUMBED TO SUMP.
2. FOR VAULTS IN TRAFFIC AREAS, SUBMIT TRAFFIC RATED COVERS FOR REVIEW AND APPROVAL TO WATER UTILITIES DEPARTMENT.

Revision	By	Approved	Date	CITY OF OCEANSIDE	
09/05/00	kal				
10/16/02	DW				CITY ENGINEER Date
07/13/04	AC			VAULT FRAME AND COVER	STANDARD DRAWING NO.
06/04/07	AC				W-20
01/04/16	MU				



SYSTEM TO BE INSTALLED AS PER N.F.P.A. 24. FIRE DEPT. WILL WITNESS 200 LB HYDROSTATIC PRESSURE TEST FROM BASE OF RISER TO SWING CHECK VALVE PRIOR TO CITY MAIN CONNECTION.

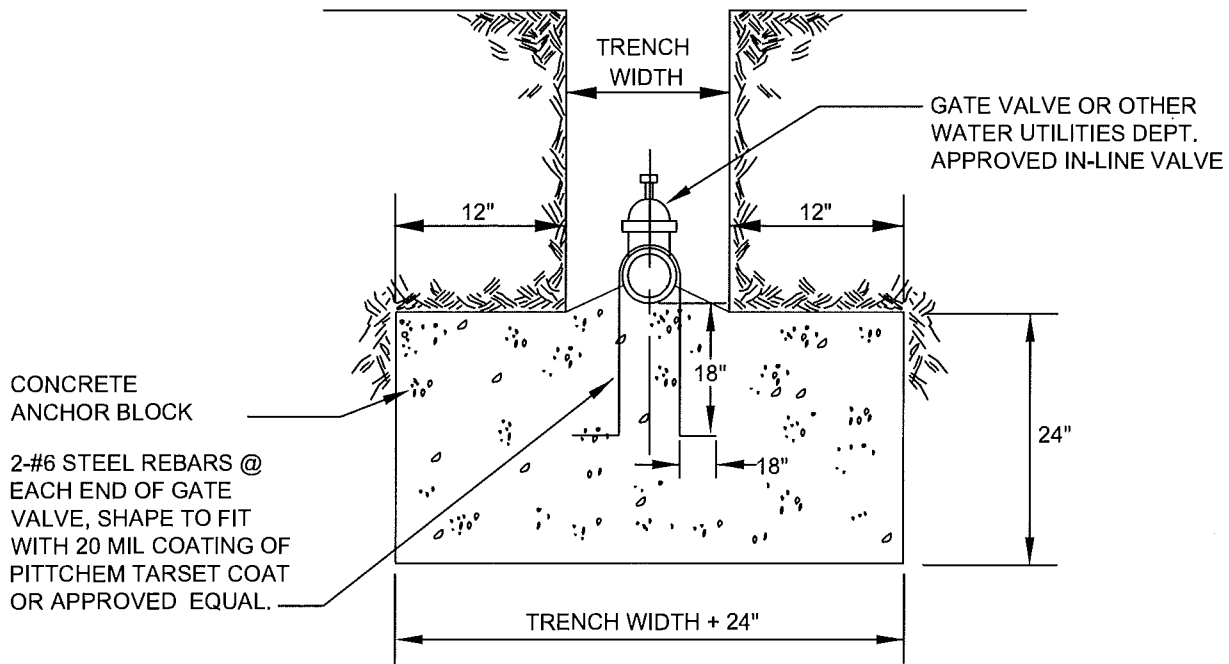
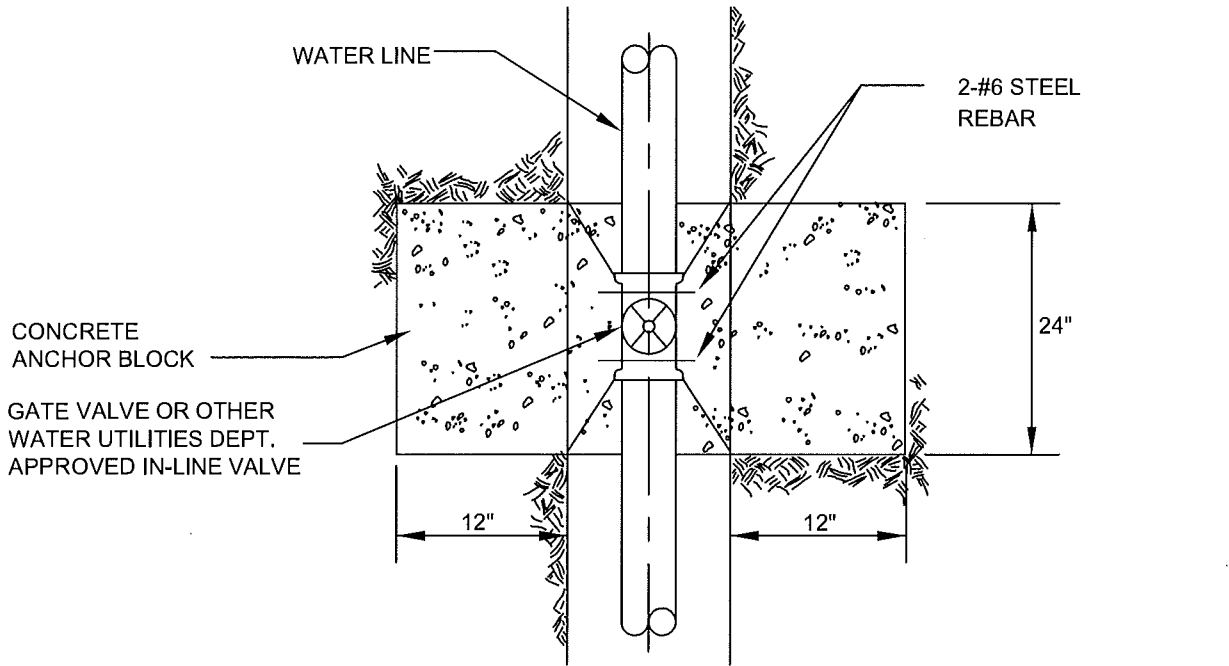
* REQUIRED WITH ON-SITE HYDRANT(S) ONLY

Revision	By	Approved	Date
11/07/00	kal		
06/11/01	DW		
09/18/02	DW		
08/29/04	AC		
09/22/10	DW		
01/04/16	MU		

CITY OF OCEANSIDE

**STANDARD POST INDICATOR VALVE
 INSTALLATION WITH
 FIRE DEPARTMENT CONNECTION**

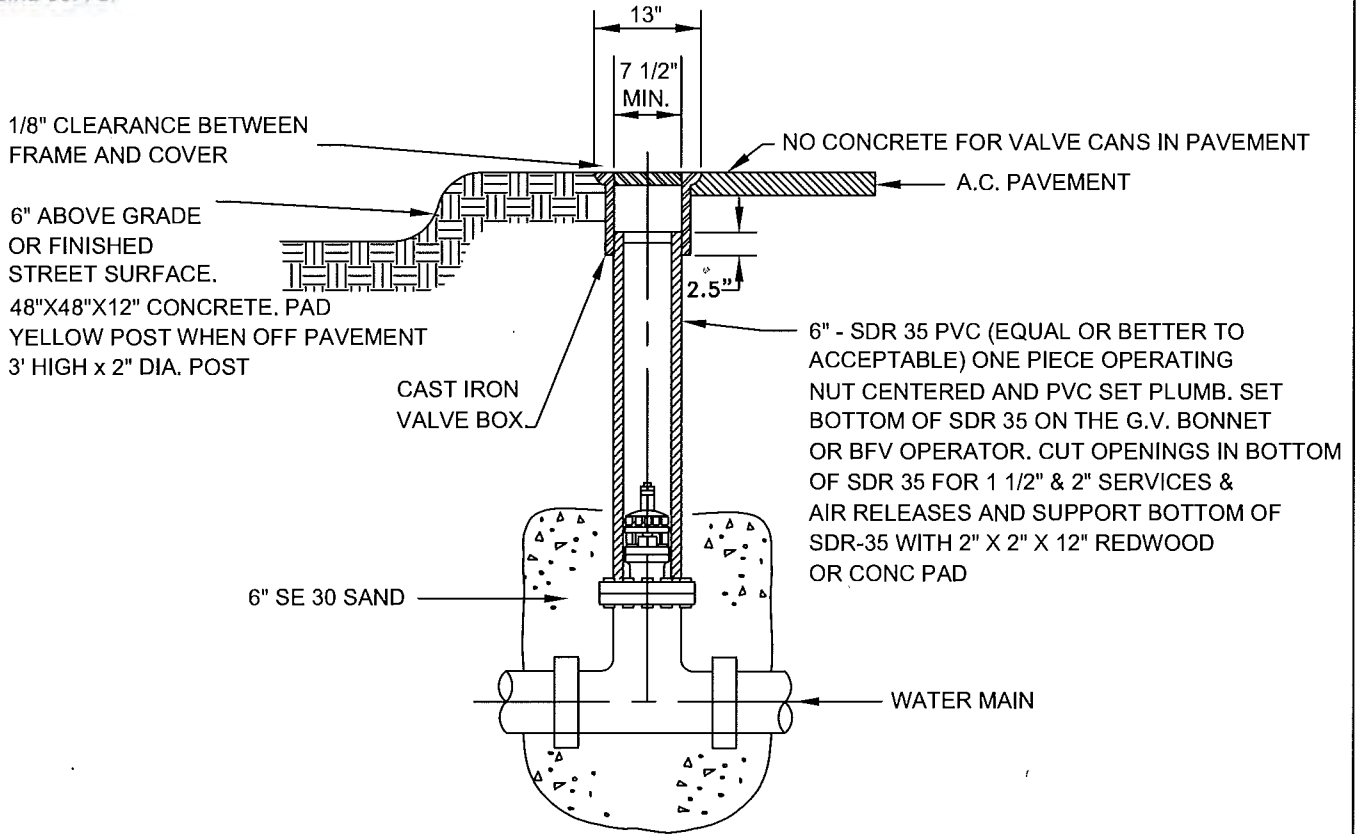
CITY ENGINEER	Date
STANDARD	W-21
DRAWING NO.	



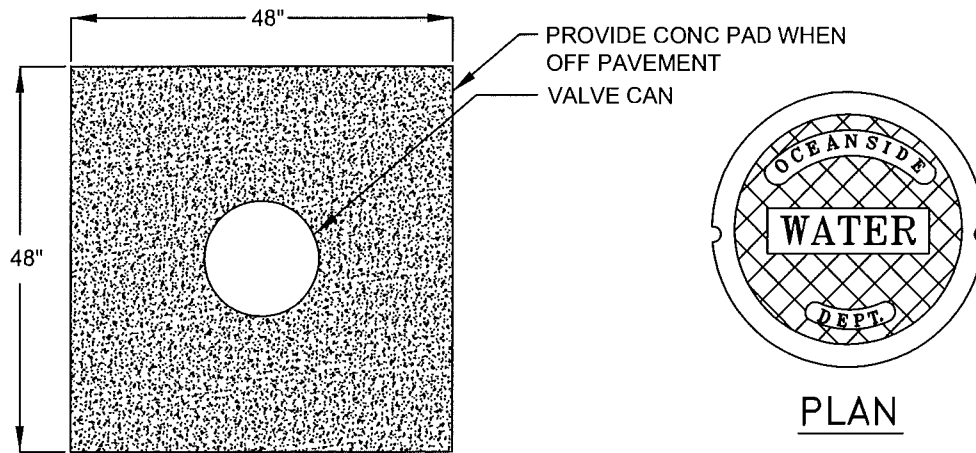
NOTES:

1. ALL NUTS & BOLTS TO BE TYPE 316 STAINLESS STEEL.
2. APPLY ANTI-SEIZE TO ALL S.S. BOLT THREADS.
3. ALL VALVES AND FITTINGS TO BE WRAPPED WITH 2 LAYERS OF 6 MIL POLYETHYLENE.
4. ALL FLANGE TO BE BE PRIMED AND WRAPPED WITH WAX-TAPE.
5. ALL CONCRETE TO BE 560-C-3250

Revision	By	Approved	Date	CITY OF OCEANSIDE	
11/08/00	kal				
09/18/02	DW				
08/29/04	AC				
01/04/16	MU				
				LINE VALVE INSTALLATION	CITY ENGINEER _____ Date _____ STANDARD DRAWING NO. W-22



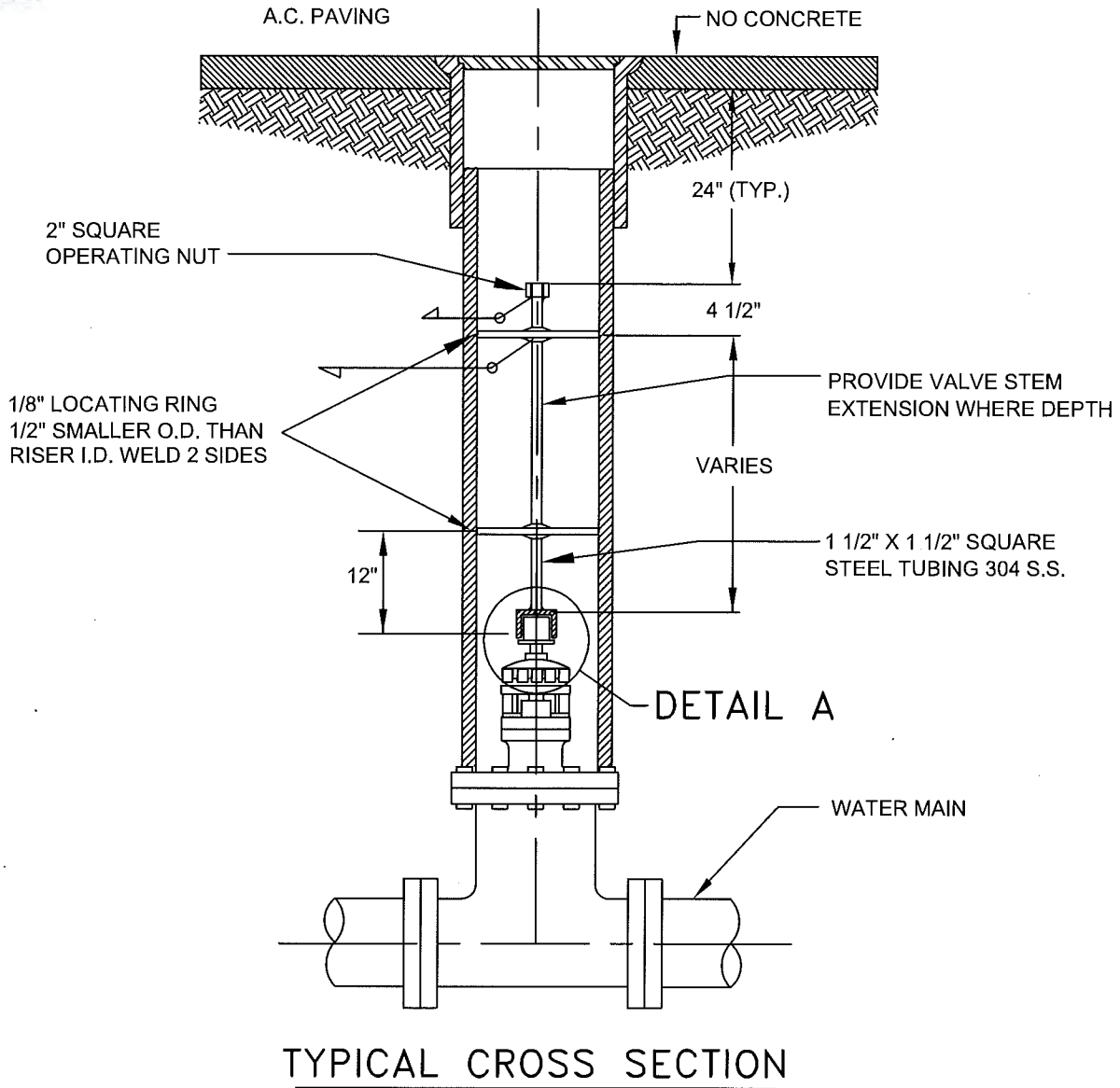
TYPICAL CROSS SECTION



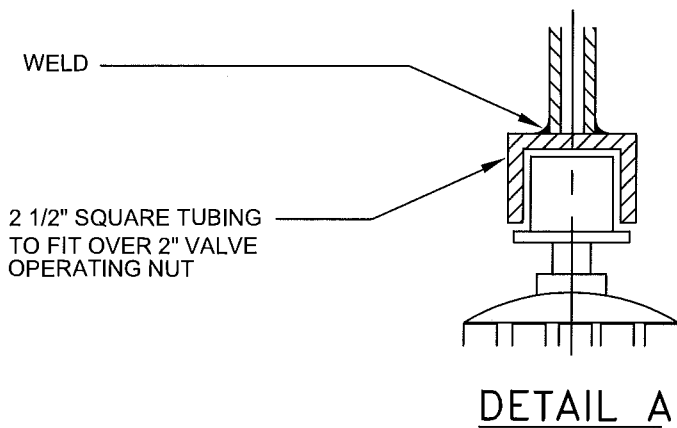
NOTES:

1. ON STREETS WITH A SPEED LIMIT OVER 35 MPH USE SBF 1208N
2. WHERE DEPTH TO OPERATOR NUT EXCEEDS 9' PROVIDE VALVE STEM EXTENSION PER W-24
3. COVER WITH CITY OF OCEANSIDE WATER DEPARTMENT CASTED ON TOP BY SOUTH BAY FOUNDRY FRAME AND COVER SBF IZ08 FOR SPEEDS 35 MPH OR LESS.
4. COVER FOR PRIVATE WATER VALVES SHALL BE LABELED " PRIVATE WATER " CASTED ON TOP.

Revision	By	Approved	Date	CITY OF OCEANSIDE		
06/14/01	DW			VALVE BOX AND COVERS		
10/22/02	DW				CITY ENGINEER	Date
06/04/07	AC				STANDARD DRAWING NO. W-23	
03/05/08	DW					
09/22/10	DW					
01/04/16	MU					



TYPICAL CROSS SECTION



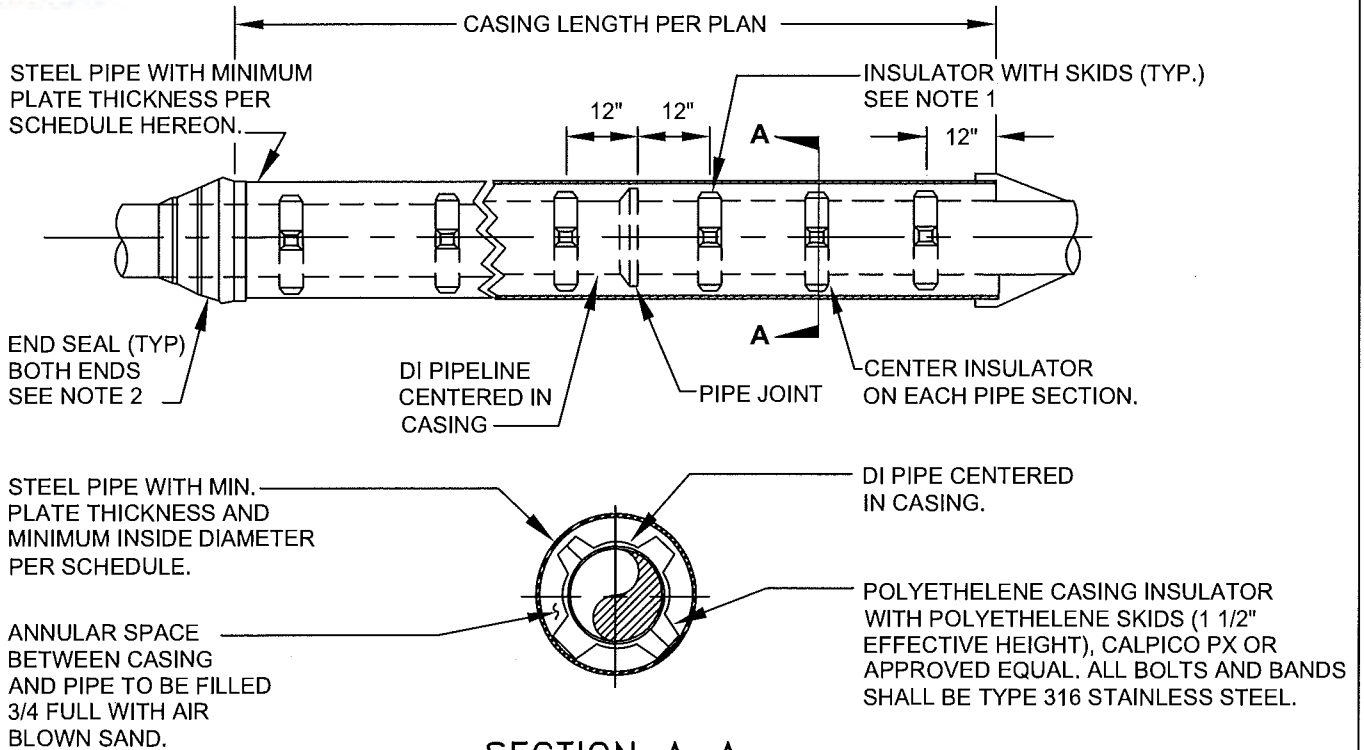
DETAIL A

Revision	By	Approved	Date
10/31/00	kal		
06/14/01	DW		
10/18/02	DW		
07/19/04	AC		
03/05/08	DW		
01/04/16	MU		

CITY OF OCEANSIDE

VALVE STEM EXTENSION

CITY ENGINEER	Date
STANDARD	
DRAWING NO.	W-24



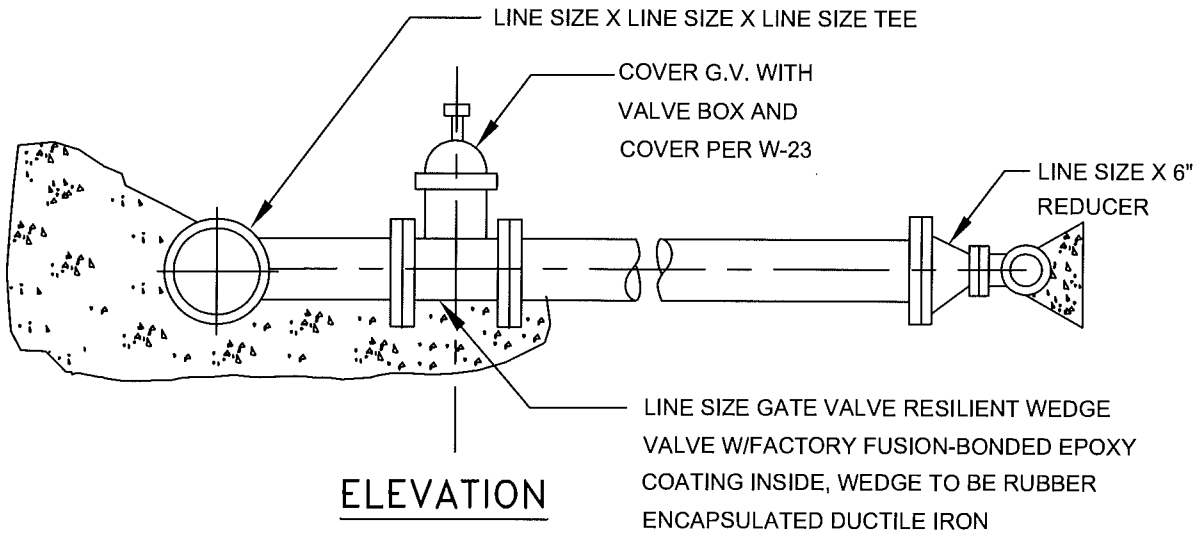
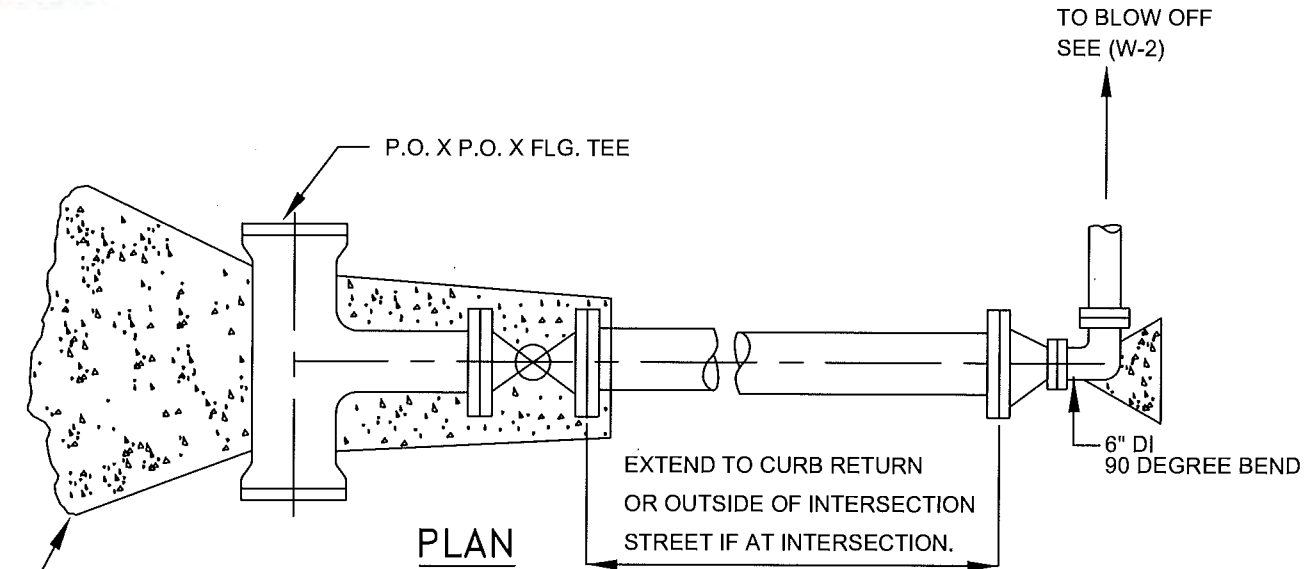
SECTION A-A

NOTES:

1. SPACING BETWEEN THE CASING INSULATORS SHALL BE PER THE MANUFACTURERS RECOMMENDATIONS EXCEPT THAT THERE SHALL BE AT LEAST 3 CASING INSULATORS PER PIPE SECTION, ONE 12" FROM EACH JOINT AND ONE CENTERED. ADDITIONALLY, ONE INSULATOR SHALL BE INSTALLED 12" FROM EACH END OF THE CASING.
2. BOTH ENDS OF THE CASING BETWEEN THE CASING AND CARRIER PIPE MUST BE SEALED WATERTIGHT USING CONCRETE OR A HEAT SHRINK WRAP AROUND SEAL SUCH AS MANUFACTURED BY PIPELINE SEAL AND INSULATOR LTD. OR APPROVED EQUAL. BANDS SHALL BE TYPE 316 STAINLESS STEEL.
3. ALL STEEL CASING PIPE JOINTS SHALL BE WELDED FULL CIRCUMFERENCE.
4. SIZE AND THICKNESS OF CASING SHALL BE AS SHOWN IN SCHEDULE.
5. CASING INSTALLATION METHOD SHALL BE APPROVED BY THE CITY ENGINEER AND THE WATER UTILITIES DEPARTMENT IF CARRIER PIPE MATERIAL IS DIFFERENT THIS MUST BE SUBMITTED AND APPROVED BY WATER UTILITIES DEPT.
6. THE STEEL CASING SHALL BE LINED AND COATED WITH HOT APPLIED COAL TAR ENAMEL PER AWWA C203. ENAMEL SHALL BE AWWA TYPE II.

SCHEDULE STEEL CASING FOR PIPELINES		
CARRIER PIPE NOMINAL SIZE (INCHES)	CASING WALL THICKNESS (INCH)	MINIMUM CASING O.D. (INCHES)
8	3/8	20
10	3/8	22
12	3/8	24
14	7/16	26
15	7/16	26
16	1/2	30
18	1/2	32
20	1/2	34
21	1/2	34
24	1/2	42
27	5/8	42
30	5/8	48

Revision	By	Approved	Date	CITY OF OCEANSIDE STEEL CASING DETAIL		
03/02/01	kal				CITY ENGINEER	Date
10/18/02	DW				STANDARD	
08/30/04	AC				DRAWING NO.	W-25
04/04/07	AC					
09/22/10	DW					
01/04/16	MU					



NOTES:

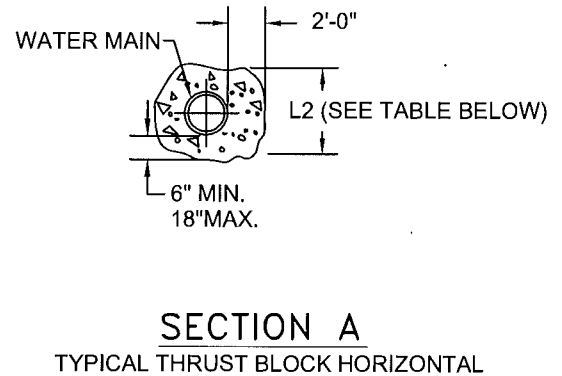
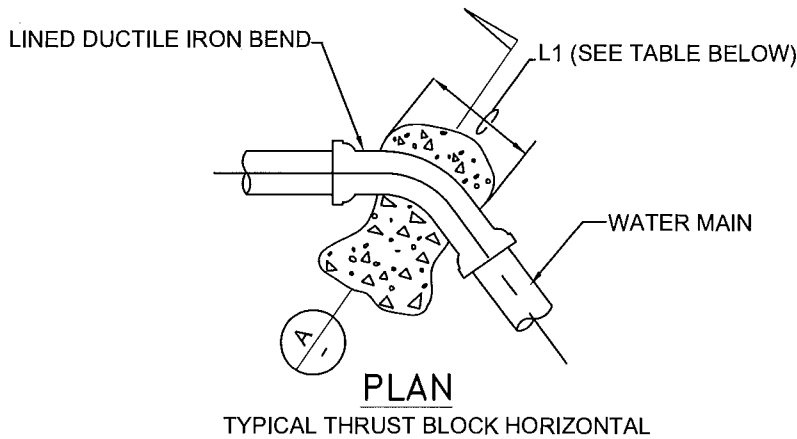
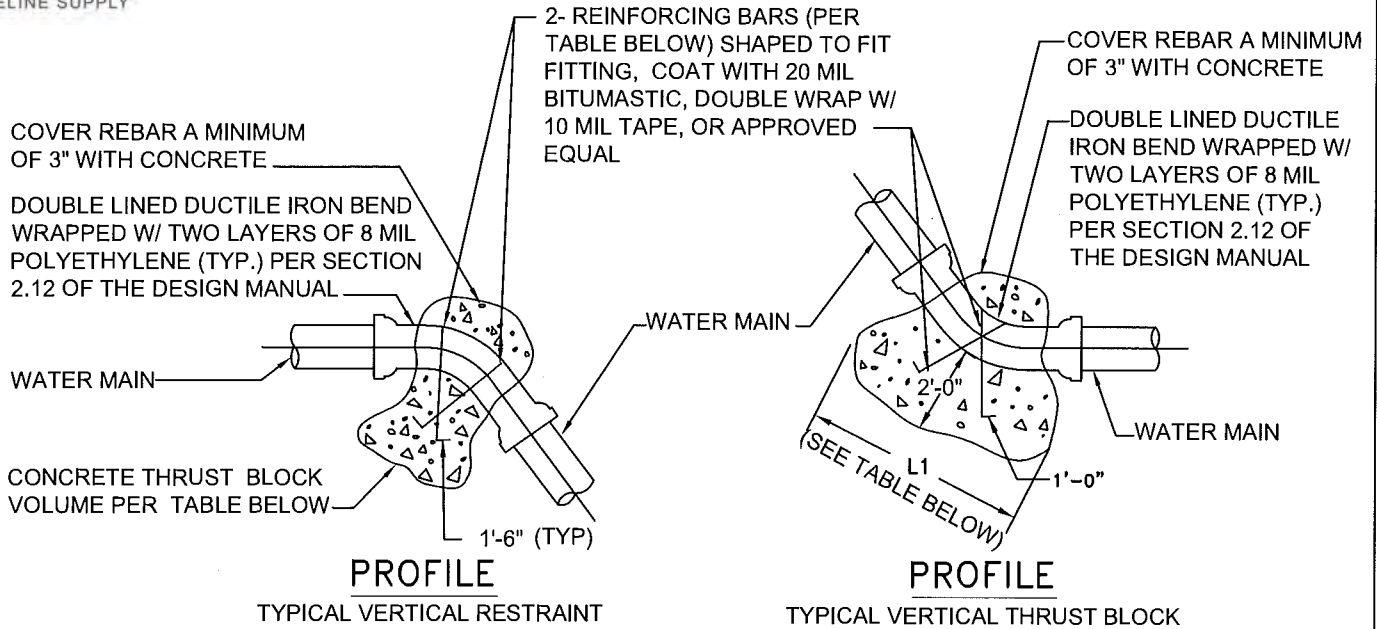
1. ALL NUTS & BOLTS TO BE TYPE 316 STAINLESS STEEL.
2. APPLY ANTI-SEIZE TO ALL S.S. BOLT THREADS.
3. ALL VALVES AND FITTINGS TO BE WRAPPED WITH 2 LAYERS OF 8 MIL POLYETHYLENE.
4. ALL FLANGES TO BE PRIMED AND WRAPPED WITH WAX-TAPE.

Revision	By	Approved	Date
11/06/00	kal		
06/14/01	DW		
09/18/02	DW		
07/19/04	AC		
01/04/16	MU		

CITY OF OCEANSIDE

**GATED OUTLET ON WATER MAIN
FOR FUTURE USE**

CITY ENGINEER	Date
STANDARD DRAWING NO.	W-26



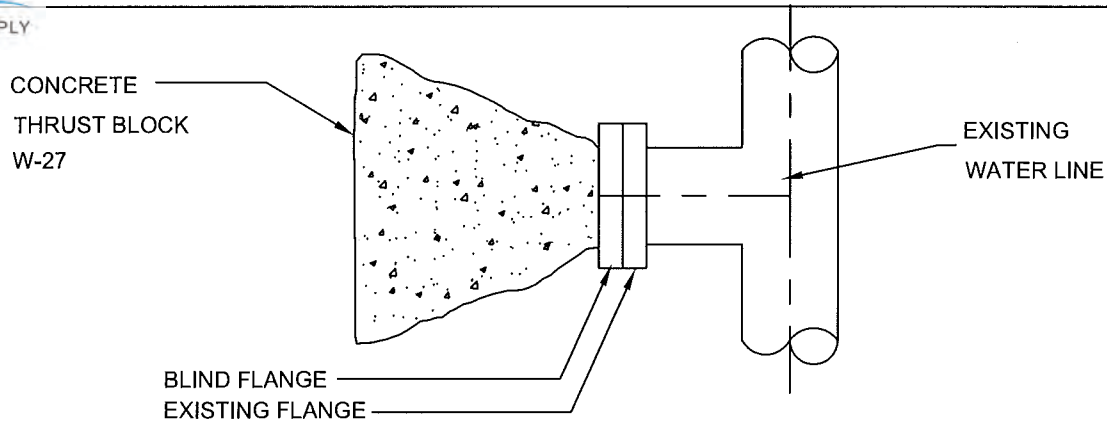
NOTES:

1. BEARING SURFACE OF ALL THRUST BLOCKS TO BE POURED AGAINST FIRM UNDISTURBED EARTH (FULL BEARING STRENGTH).
2. ALL CONCRETE TO BE 560-C-3250 (6-SACK CONCRETE MIX)
3. SPECIAL DESIGN REQUIRED FOR PRESSURES EXCEEDING 200 PSI, SOIL PRESSURES LESS THAN 2000 PSF, AND FOR FITTINGS LARGER THAN 12" DIAMETER.

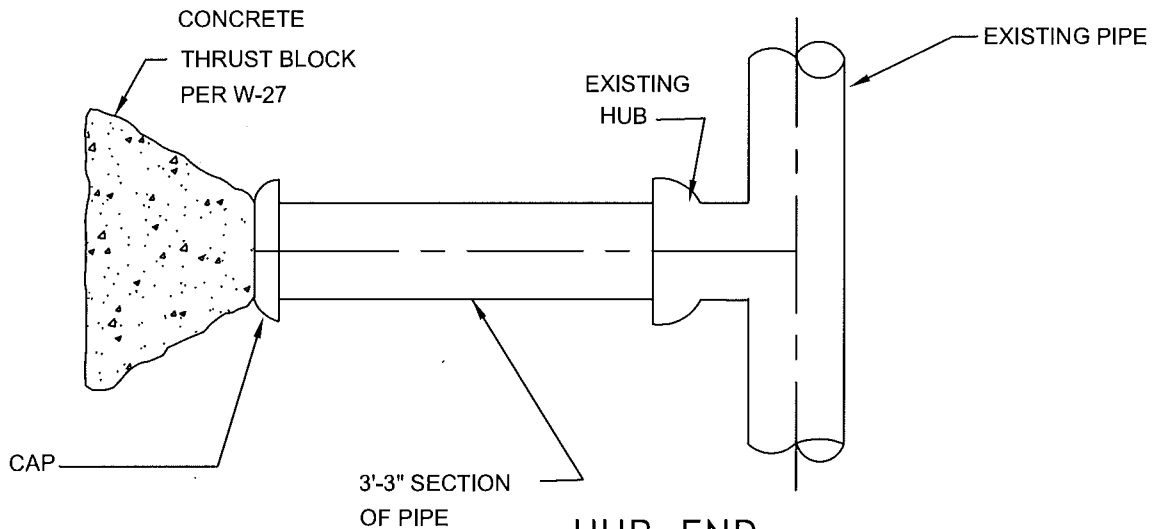
THRUST BLOCK DIMENSIONS															
PIPE SIZE.	0° TO 11 1/4°			11 1/4° TO 22 1/2°			22 1/2° TO 45°			45° TO 90°			DEAD ENDS & TEES		PIPE SIZE.
	HORIZ. L1 L2	VERT. VOL. CY	VERT. REBAR	HORIZ. L1 L2	VERT. VOL. CY	VERT. REBAR	HORIZ. L1 L2	VERT. VOL. CY	VERT. REBAR	HORIZ. L1 L2	VERT. VOL. CY	VERT. REBAR	HORIZ. L1 L2	VERT. VOL. CY	
6"	1.0 x 1.0	0.4	#6	1.0 x 1.5	0.8	#6	1.5 x 2.0	1.5	#6	2.0 x 3.0	2.7	#6	2.0 x 2.0	1.9	6"
8"	1.0 x 1.5	0.6	#6	1.5 x 2.0	1.3	#6	2.0 x 3.0	2.5	#6	3.0 x 3.5	4.7	#6	2.5 x 3.0	3.3	8"
10"	1.0 x 2.0	1.1	#6	2.0 x 2.0	2.1	#6	3.0 x 3.0	4.1	#6	4.0 x 4.0	7.6	#8	3.0 x 4.0	5.4	10"
12"	1.5 x 2.0	1.5	#6	2.0 x 2.0	3.0	#6	3.0 x 4.0	5.9	#6	4.5 x 5.0	10.8	#8	4.0 x 4.0	7.6	12"
14"	2.0 x 2.0	2.0	#6	3.0 x 3.0	4.0	#6	4.0 x 4.0	8.0	#8	6.0 x 5.5	14.7	#8	4.5 x 5.0	10.4	14"
16"	2.0 x 3.0	2.6	#6	3.0 x 3.5	5.2	#6	4.5 x 5.0	10.3	#8	7.0 x 5.5	19.0	#10	5.0 x 5.5	13.4	16"

TABLE BASED ON 200 PSI PRESSURE AND 2000 PSF ALLOWABLE SOIL BEARING PRESSURE.

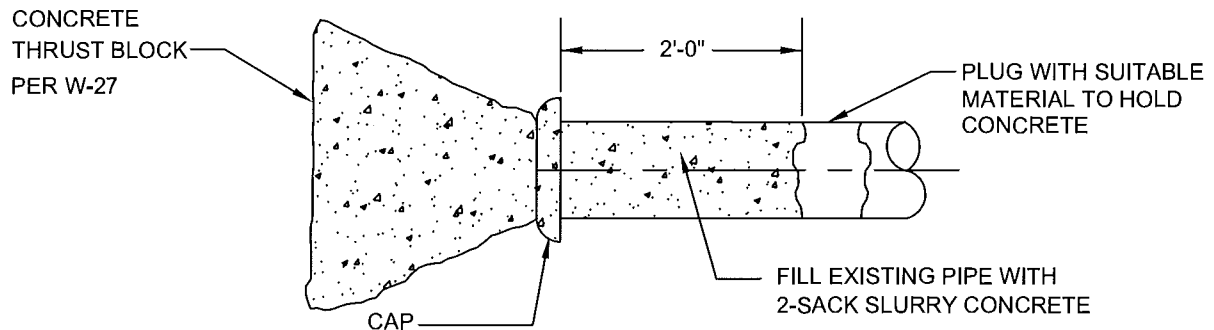
Revision	By	Approved	Date	CITY OF OCEANSIDE	
09/11/00	kal				
07/19/04	AC			CITY ENGINEER	Date
03/16/05	AC			STANDARD	W-27
04/14/05	DW			DRAWING NO.	
06/04/07	AC				
01/04/16	MU				



FLANGED OUTLET



HUB END

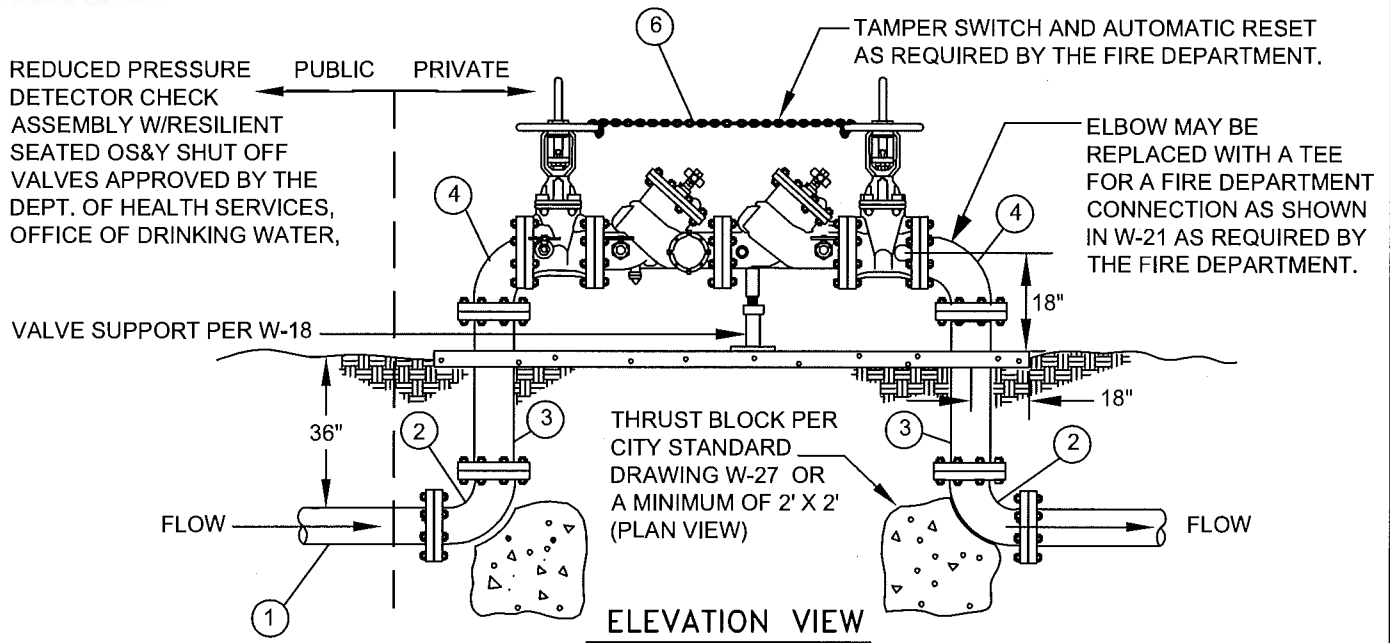


END OF PIPE

NOTES:

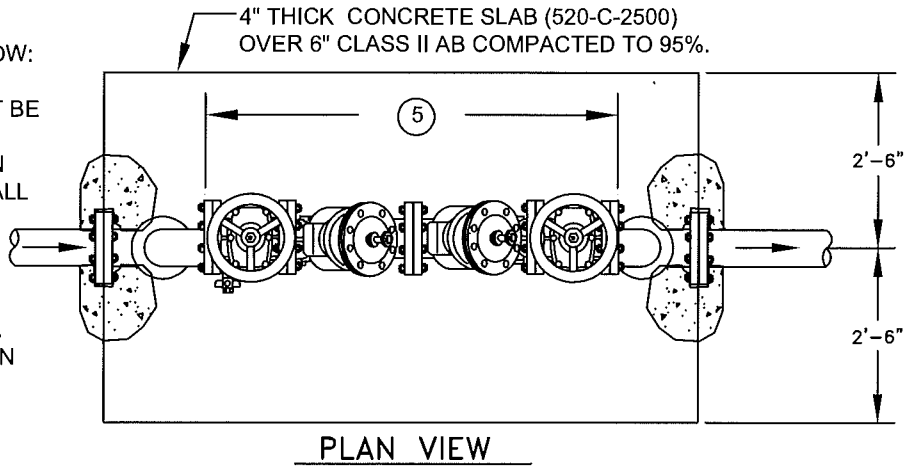
- ALL LARGER THAN 2" SERVICE CONNECTIONS MUST BE ABANDONED BY THE PROCEDURES SET BELOW.
1. IF THERE IS A LARGER THAN 2" GATE VALVE, THEN THE GATE VALVE MUST BE REMOVED AND THE SADDLE PLUGGED WITH A BRASS PLUG.
 2. IN THE CASE OF A BRANCH LINE ABOVE 2", THE VALVE IS TO BE REMOVED AND A BLIND FLANGE OR CAP INSTALLED.
 3. THE SADDLE PLUG, BLIND FLANGE, OR CAP MUST BE INSPECTED FOR INTEGRITY BY A REPRESENTATIVE OF THE WATER UTILITIES DEPARTMENT.
 4. WRAP SERVICE SADDLE (IF APPLICABLE) WITH 2 LAYERS OF 8 MIL POLYETHYLENE AND SECURE WITH 10 MIL POLYETHYLENE TAPE.
 5. CONTACT WATER UTILITIES DEPARTMENT TO INSPECT ABANDONMENT PRIOR TO BACKFILL.

Revision	By	Approved	Date	CITY OF OCEANSIDE WATER LINE ABANDONMENT LARGER THAN 2"	CITY ENGINEER Date STANDARD DRAWING NO. W-28
11/07/00	kal				
06/14/01	DW				
09/16/04	AC				
01/04/16	MU				



BILL OF MATERIALS:

1. PUBLIC WATER MAIN.
2. 90°, DUCTILE IRON ELBOW: FLG X FLG OR FLG X PO; (UNI-FLANGE SHALL NOT BE USED).
3. FLANGED DUCTILE IRON SPOOL (BOTH ENDS SHALL BE FLANGED).
4. 90°, FLANGED DUCTILE IRON ELBOW.
5. FACTORY ASSEMBLED WITH A BY-PASS METER.
6. CHAIN & LOCK VALVES IN OPEN POSITON

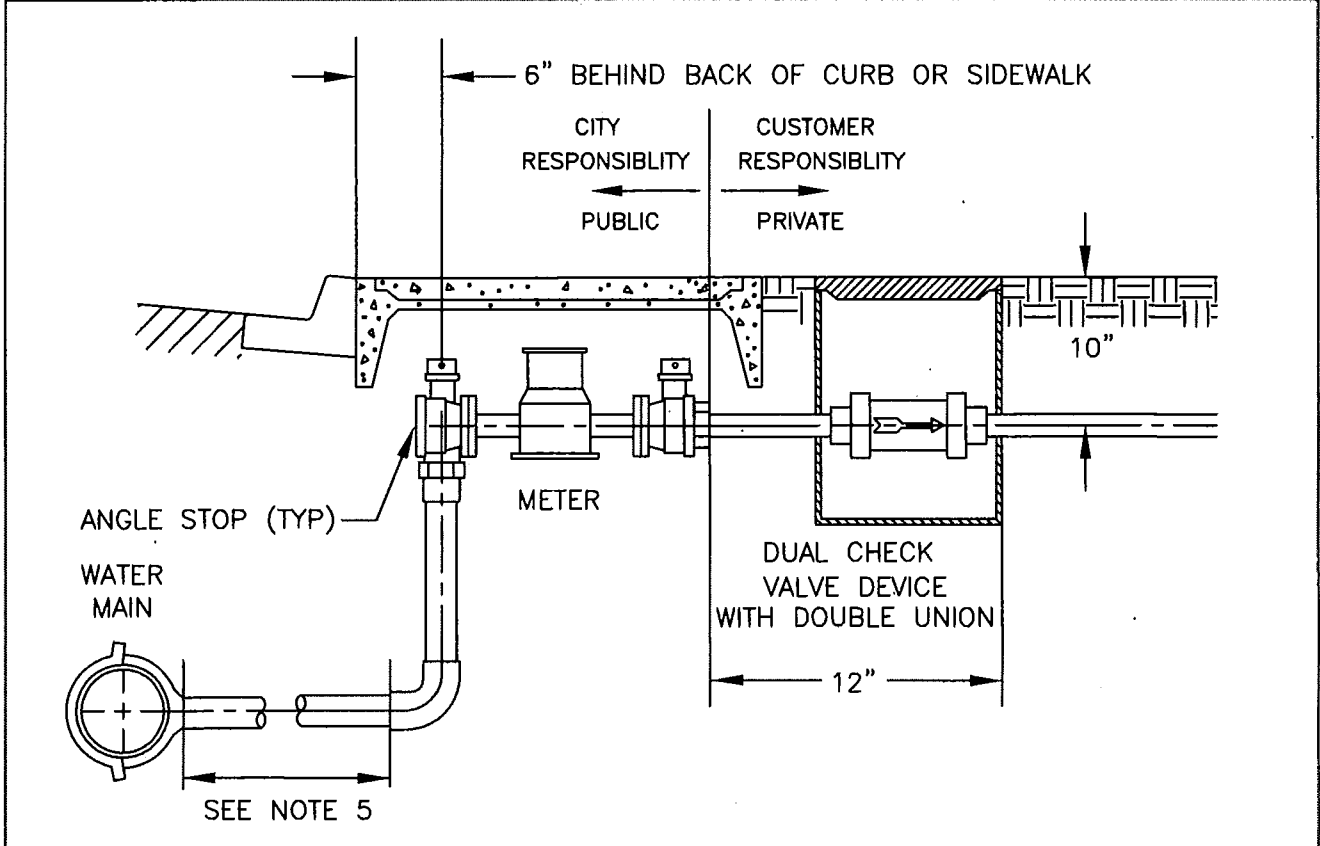
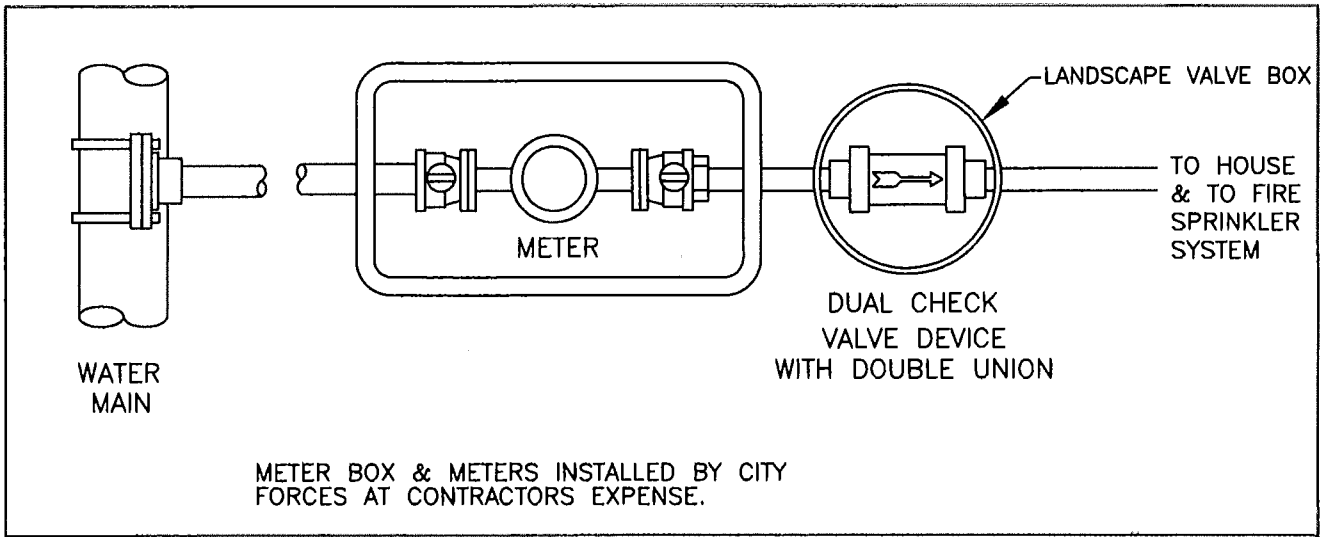


NOTES:

1. ASSEMBLY TO BE APPROVED BY THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD OFFICE OF DRINKING WATER AND CITY OF OCEANSIDE WATER UTILITIES DEPARTMENT.
2. ASSEMBLY SHALL BE ON STATE OF CALIFORNIA LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES FOUND ON UNIVERSITY OF SOUTHERN CALIFORNIA'S FOUNDATION FOR CROSS-CONNECTION CONTROL HYDRAULIC RESEARCH.
3. ASSEMBLY SHALL BE INSTALLED DOWNSTREAM OF THE METER WITHIN 18".
4. NO CONNECTIONS BETWEEN THE METER AND THE ASSEMBLY ARE PERMITTED.
5. NUTS, BOLTS, AND WASHERS SHALL BE TYPE 316 STAINLESS STEEL.
6. WHEN THE DISTANCE BETWEEN THE METER BOX AND THE RISER TO THE ASSEMBLY EXCEEDS 18", PROVIDE PVC SLEEVE 2 TIMES THE DIAMETER OF THE WORKING PIPE OR INSTALL A CASING ENCASED IN CONCRETE. INSPECTION IS REQUIRED PRIOR TO BACKFILL.

THIS ASSEMBLY SHALL BE INSPECTED BY THE WATER UTILITIES DEPARTMENT. AFTER WATER UTILITIES DEPARTMENT'S APPROVAL, ASSEMBLY SHALL BE TESTED BY A TESTER ON THE CITY'S APPROVED TESTER LIST. THE DEVELOPER/OWNER IS RESPONSIBLE FOR THE COST OF TESTING THE ASSEMBLY. THEREAFTER, THE ASSEMBLY SHALL BE TESTED ANNUALLY AT THE OWNER'S EXPENSE. THE TEST REPORT IS TO BE SUBMITTED TO THE CITY WATER UTILITIES DEPARTMENT, CROSS CONNECTION CONTROL AT PHONE NUMBER 760-435-5800.

Revision	By	Approved	Date	CITY OF OCEANSIDE	
08-28-09	DW			REDUCED PRESSURE - DETECTOR CHECK ASSEMBLY	
01-04-16	MU				
				CITY ENGINEER	Date
				STANDARD	W-29
				DRAWING NO.	



NOTES:

1. DEVICE SHALL BE INSTALLED IMMEDIATELY DOWNSTREAM OF THE METER WITHIN 12".
2. NO CONNECTION BETWEEN THE METER AND ASSEMBLY IS PERMITTED.
3. BRASS FROM METER THROUGH DUAL CHECK VALVE ASSEMBLY.
4. BURIED COPPER TYPE "K" TO BE WRAPPED IN 6 MIL POLYETHYLENE PER SECTION 2.12.
5. NO COUPLINGS ALLOWED FOR WATER SERVICES LESS THAN 1-1/2".

Revision	By	Approved	Date
03/27/12	DW		
04/21/15	MU	<i>[Signature]</i>	4/21/15

CITY OF OCEANSIDE

**RESIDENTIAL FIRE SPRINKLER
 DUAL CHECK VALVE DEVICE**

[Signature] 4.22.15
 CITY ENGINEER Date

STANDARD DRAWING NO. **W-30**