

WATER SYSTEMS

SUPPLEMENT TO REGIONAL STANDARD DRAWINGS ("W" SERIES)

NOTES

All materials used must be on the City of San Diego Water Department's "Approved Materials List."

DRAWING WA-02

- ITEM NO.** (12) Delete and substitute with the following: "Copper Tubing or PE 200 for 1 inch, PVC (iron pipe size) for 2 inches."
- (13) Delete and substitute with the following: "90° ELL. (No sweat joints allowed)."

DRAWING WB-01

- NOTES** Add: 10. Delete End of Main Detail and use SDW-106 for End of Main Blow-off.
- ITEM NO.** (10) Delete and substitute with the following: "90° ELL. (No sweat joints allowed)."
- (12) Delete and substitute with the following: "Bronze corporation stop (install with key on side and open tap)."

DRAWING WB-02

- ITEM NO.** (10) Delete and substitute with the following: "Use steel pipe only."
- (11) Delete and substitute with the following: "Valve Well Frame and cover." (See Standard Drawings WV-01, WV-02).

DRAWING WB-03

- ITEM NO.** (7) Delete and substitute with the following: "Flange x Flange 90° Bend."
- (8) Delete and substitute with the following: "Cast Iron Pipe, Ductile Iron or C-900 PVC."

SHT. 1 OF 4

REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO - STANDARD DRAWING	CITY OF SAN DIEGO STANDARDS COMMITTEE <i>M. Daniel</i> 12/16/16 COORDINATOR R.C.E. 65271 DATE
ORIGINAL		M. Rollinger	5-20-92		
NOTES	JS	A. Oskoui	1206	SUPPLEMENT TO REGIONAL STANDARD DRAWING ("W" SERIES)	DRAWING NUMBER SDW-100

DRAWING WB-04

NOTES Add: 5. "See Standard Drawing SDW-106 for end of main detail."

ITEM NO. (4) Delete and substitute with the following: "Bronze service clamp (double strap). Size x 50mm (2") service saddle."

DRAWING WF-01

NOTES Add: 9. "6-inches long Cast iron extension spool connected to base of fire hydrant with shear bolt (ASTM A307) . Shear bolts shall be 3/4 inch NC thread, 3-1/4 inch minimum length (3/164 inch diameter hole 2 inches deep in bolt, galvanized after boring. The hole shall be filled with grease before installation). Bolts shall face up.

DRAWING WF-04

NOTES Add: 8. "Concrete apron shall be required where the fire hydrant is installed in an unpaved location. The apron shall be 4 inch thick (520-C-2500) concrete.

Add: 9. "When distance from hydrant to the top or toe of slope or walls is less than 2 feet, special hydrant installation detail shall be shown on the plans."

Add: 10. For Type A Fire Hydrants the distance from the face of the curb to the center line of the Fire Hydrant shall be 6 feet.

DRAWING WP-01

NOTES Add: 8. "Electrically bond service tape and main tape together. Use only 6 inch tape at 4 inches below pavement section. Tape shall extend within meter box itself to allow markout by continuity tester."

SHT. 2 OF 4

REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO - STANDARD DRAWING	CITY OF SAN DIEGO STANDARDS COMMITTEE <i>M. Haseli</i> 12/16/06 COORDINATOR R.C.E. 65271 DATE
ORIGINAL		M. Rollinger	5-20-92		
NOTES	JS	A. Oskoui	1206	SUPPLEMENT TO REGIONAL STANDARD DRAWING ("W" SERIES)	DRAWING NUMBER SDW-100

DRAWING WP-02

NOTES 2. Delete and substitute with the following: "For trenching on improved streets see Standard Drawings SDG-107 and SDG-108 for resurfacing details."

DRAWING WR-01

NOTES Add: 11. Dimension from slab to bottom of backflow device to be "12" minimum to 18" maximum".

 12. Location must be approved by Water Department, Customer Support Division, Meter Services and shown on plans.

 13. All risers, elbows and underground piping shall be type (L) or (M) copper, brass or Water Department approved material. Brass unions are acceptable.

DRAWING WS-01

NOTES Add: 10. "Bronze pipe saddles are required for all taps into polyvinyl chloride (PVC) pipe. Top taps are not permitted."

ITEM NO. (4) Delete and substitute with the following: Use copper tubing type (K) soft for 1 inch services only. No intermediate joints permitted within the first 60 feet from the main. For lengths longer than 60 feet, use flare joint union or lok-pac fitting with locking clamp and stainless steel bolt only. No sweat joints are allowed.

 (5) Delete and substitute with the following: "Bronze angle meter stop with locking device and meter coupling attached. "Furnish and install bronze property valve. Use spacer for meter."

DRAWING WS-02

NOTES: Add: 10. "Top taps not permitted. Any glue joint shall be beveled prior to assembly."

ITEM NO. (1) Delete and substitute with the following: "Size x 50mm (2") Bronze service saddle (double strap)".

SHT. 3 OF 4

REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO - STANDARD DRAWING	CITY OF SAN DIEGO STANDARDS COMMITTEE <i>W. Wadi</i> 12/16/6 COORDINATOR R.C.E. 65271 DATE
ORIGINAL		M. Rollinger	5-20-92		
NOTES	JS	A. Oskoui	1206	SUPPLEMENT TO REGIONAL STANDARD DRAWING ("W" SERIES)	DRAWING NUMBER SDW-100

DRAWING WT-01

NOTES

- Add: 3. "A minimum of 6 inches of concrete shall be poured on virgin or compacted soil beneath each installation."
- Add: 4. "Tee shall be concrete blocked a minimum of 6 inches on all three sides."
- Add: 5. "Use 12 inches – 18 inches length of pipe between the end cap and the last joint as a bond breaker on dead end blocking."

DRAWING WV-03

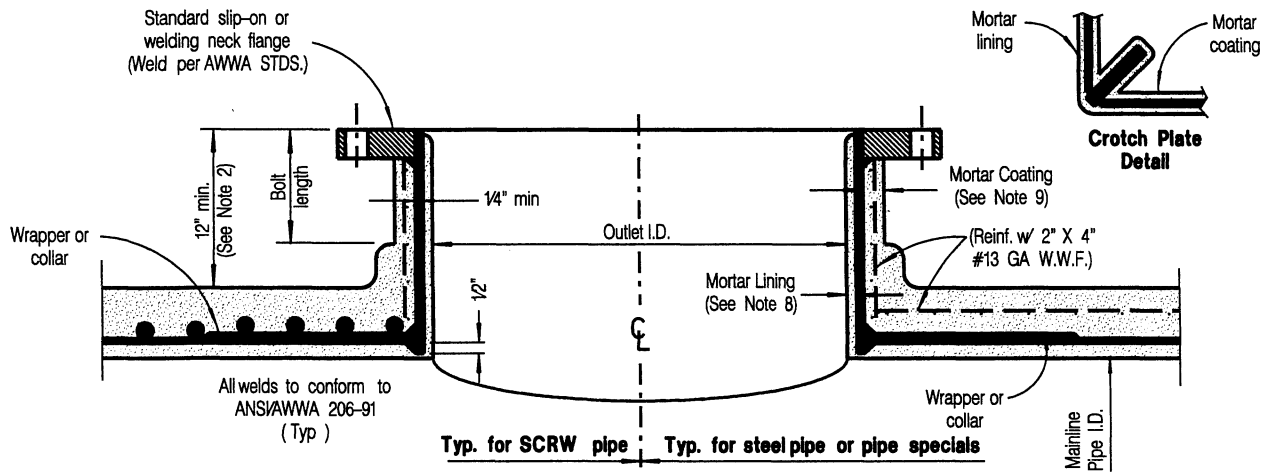
NOTES

Add: 8.

COLOR	GATE WELL LIDS USED FOR:
YELLOW	BUTTERFLY VALVES
WHITE	GATE VALVES

SHT. 4 OF 4

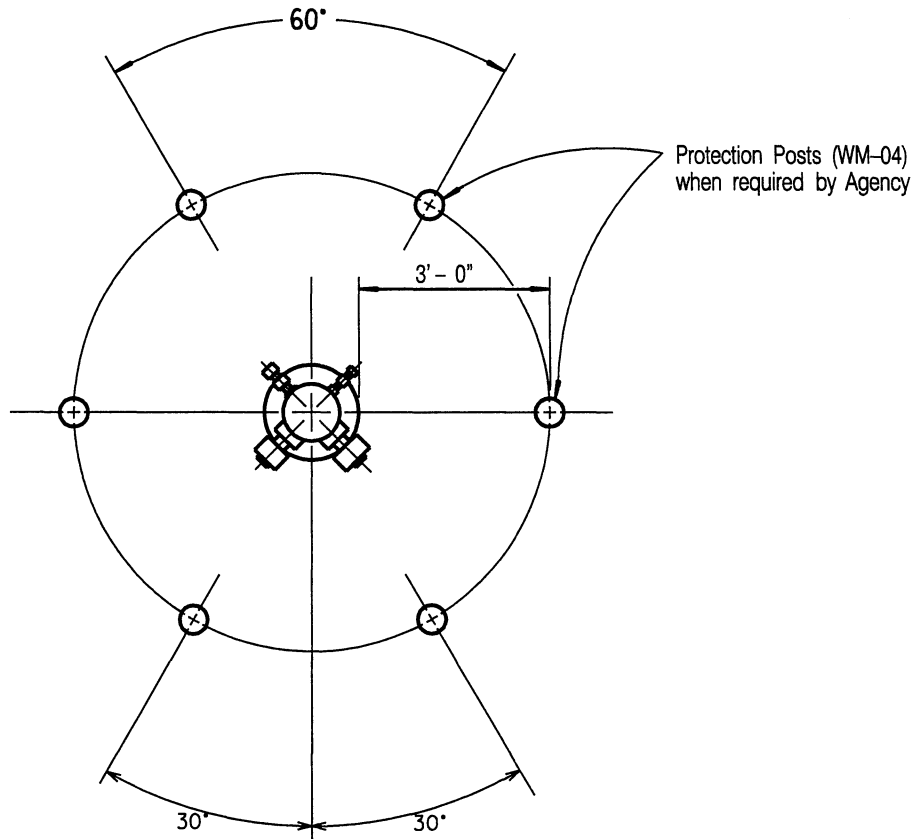
REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO - STANDARD DRAWING	CITY OF SAN DIEGO STANDARDS COMMITTEE <i>A. Oskoui</i> 12/16/16 COORDINATOR R.C.E. 65271 DATE
ORIGINAL		M. Rollinger	5-20-92		
NOTES	JS	A. Oskoui	1206	SUPPLEMENT TO REGIONAL STANDARD DRAWING ("W" SERIES)	DRAWING NUMBER SDW-100



OUTLET REINFORCING			
Ratio of Outlet I.D. to pipe I.D.	Pipe Class	Angle between outlet axis and mainline axis	Type of Reinforcing
0.2 AND LESS	All All	0° to 75° 75° to 90°	Wrapper Collar
0.2 TO 0.6	Under 150 Under 150 150 and over	0° to 75° 75° to 90° 0° to 90°	Wrapper Collar Wrapper
0.6 TO 1.0	Under 150 150 and over	0° to 90° 0° to 90°	Wrapper 1 Pl. Crotch
1.0	Under 150 150 and over	0° to 90° 0° to 90°	Wrapper 2 Pl. Crotch

- NOTES:**
- Collar O.D. or wrapper width shall be equal to twice the length of the opening in the mainline pipe measured along the pipe axis. Thickness shall be equal to that specified for pipe specials.
 - If a crotch plate is required, the outlet length shall be adjusted to clear the maximum length of bolt used for flange.
 - Outlets less than 3-inches in dia. may be installed without collars providing that rod reinforcing is not cut and outlets are welded to rods.
 - Reinforcing for outlets on pipe, other than SCRW pipe or steel pipe, shall be as shown on design drawings or submitted for approval.
 - Nozzle fabrication details are typical for all sizes of outlets.
 - Repeat Note 1 from SDW-103
 - Flanges shall conform to AWWA C207 and drilling shall match the above flange drilling.
 - Minimum lining thickness for outlets shall be:
 - 1/4-inch for 8-inch I.D. and less
 - 1/2-inch for 10-inch I.D. through 16-inch I.D.
 - 3/4-inch for 18-inch I.D. and greater
 - Coating thickness for outlets shall be:
 - 3/4-inch for 16-inch I.D. and less
 - 1 1/4-inch for 18-inch I.D. and greater
 Specified coating thickness shall be reduced by 50% for the distance of one bolt length back from the flange face.
 - Reinforcement of fittings, collar, wrapper and crotch plate design shall conform to M-11, Steel Pipe-Guide for Design and Installation 1989 Edition.

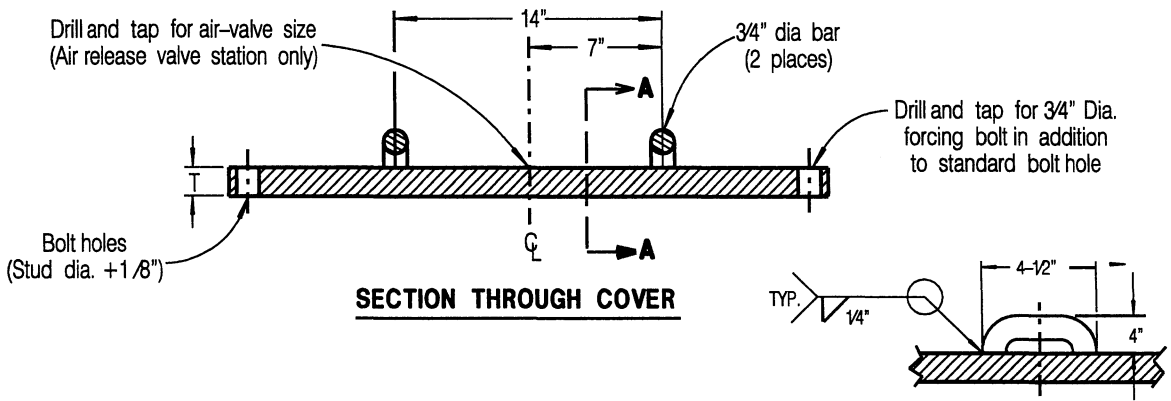
REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO - STANDARD DRAWING	CITY OF SAN DIEGO STANDARDS COMMITTEE <i>George L. Perkins</i> COORDINATOR R.C.E. 25902 12-23-94 DATE
ORIGINAL		H. Horn	5-6-80		
		J.P. Casey	6-3-83	TYPICAL OUTLET FOR SCRW PIPE STEEL PIPE AND PIPE SPECIALS	DRAWING NUMBER SDW-101
		J.P. Casey	8-23-86		



NOTE:

Number of posts to be determined by Engineer.

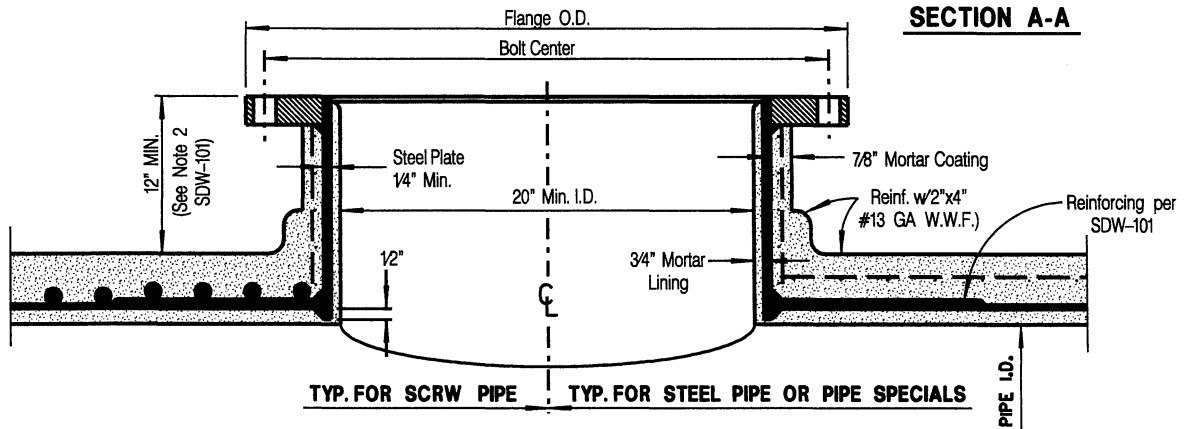
REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO - STANDARD DRAWING	CITY OF SAN DIEGO STANDARDS COMMITTEE	
ORIGINAL		W.J. Tomas	5-18-75			FIRE HYDRANT PROTECTION POSTS
		J.P. Casey	6-3-83	12-23-84 DATE		
				DRAWING	SDW-102	
				NUMBER		



HANDLE DETAIL

(Typical 2 Places)

SECTION A-A



SECTION ON PIPE AXIS

TYPE	PRESSURE RANGE (P.S.I.)	FLANGE		BOLT CENTER	NO. OF BOLTS	STUD DIA. & LENGTH	THICKNESS (T)
		I.D.	O.D.				
175	0 - 175	22"	29-1/2"	27-1/4"	20	6"x 1-1/4"	1-3/16"
250	175 - 250	22"	33"	29-1/4"	24	7"x 1-1/2"	1-11/16"
325	250 - 325	22"	33"	29-1/4"	24	7"x 1-1/2"	1-7/8"

FURNISH: Required stud bolts w/full length thread & two (2) hex nuts each 1/16" thick full face gasket and 3/4 inch dia. stainless steel forcing bolt on D.C.

- NOTES:**
1. Apply two (2) coats of coal-tar epoxy 16 mils total (min) to all exposed metal surfaces. Amercoat 78 or Kop-coat 300 M or equal meeting U.S. Public Health Standards are approved for such application per manufacturer's standards.
 2. Details of manholes on pipelines less than 24 inches in diameter shall be shown on design drawings or submitted for approval.
 3. Manholes shall be beveled during fabrication, so that they are true to vertical upon installation.
 4. All welds to conform to ANSI/AWWA C206 - 91

REVISION	BY	APPROVED	DATE
ORIGINAL		H. Horn	5-8-80
		J.P. Casey	6-8-83
		J.P. Casey	8-22-86

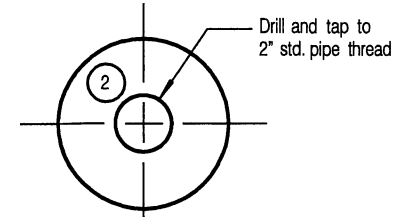
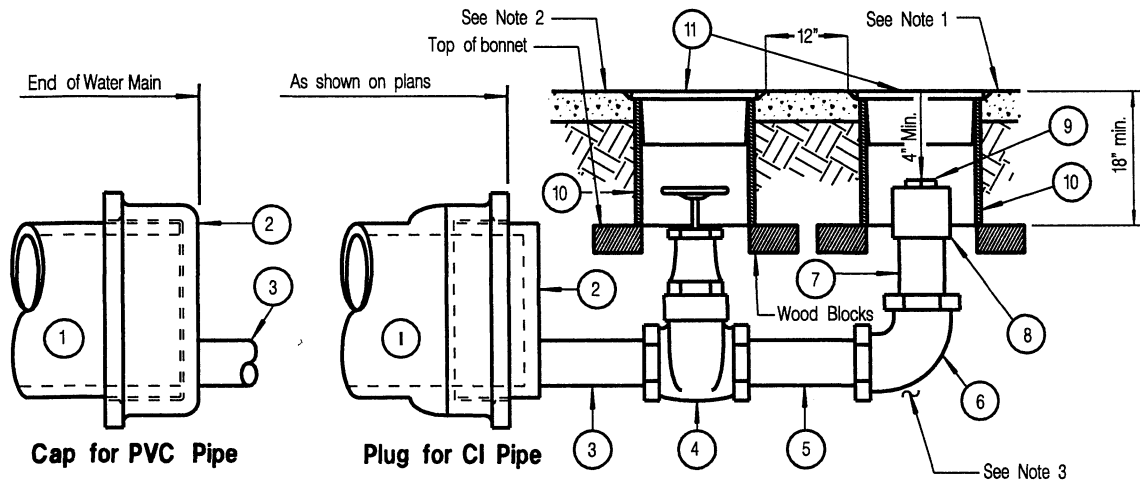
CITY OF SAN DIEGO - STANDARD DRAWING

CITY OF SAN DIEGO
STANDARDS COMMITTEE

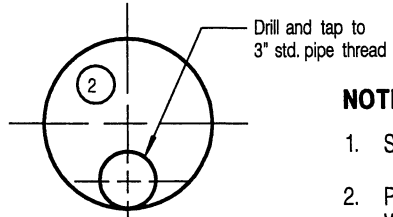
George J. ... 12-23-94
COORDINATOR R.C.E. 25902 DATE

ACCESS MANHOLE

DRAWING NUMBER **SDW-103**



Concentric plug drilled for 2" Blow-off for 3"-8" Mains



Eccentric plug drilled for 3" Blow-off for 10"-20" Mains

- NOTES:**
1. Set to finish grade
 2. Provide concrete pads per WW-01, WW-02, WW-03
 3. For Thrust Blocks, see WT-01

SCHEDULE				
ITEM	STD. DWG. NUMBER	SIZE AND DESCRIPTION		
1	WP-02	3" - 8" Incl.	10" - 20" Incl.	
2		Main size x 2"	Main size x 3"	
3		2" x 8"	3" x 8"	
4		2"	3"	
5		As needed	As needed	
6	WT-01	2"	3"	
7		2" x Variable to Grade Minus 4"	3" x Variable to Grade Minus 4"	
8		2"	3"	
9		2"	3"	
10	WW-01,02,03	8" x Variable to Grade minus 3/4"	8" x Variable to Grade minus 3/4"	
11	WW-01,02,03	8"	8"	

REVISION	BY	APPROVED	DATE
ORIGINAL		J. Mueller	3-3-83
		J.P. Casey	6-3-83
		J.P. Casey	8-26-86
NOTES	AO	F. Belock	04-96
NOTES	SM	A. Oskoui	12-03
NOTES	JS	A. Oskoui	1206

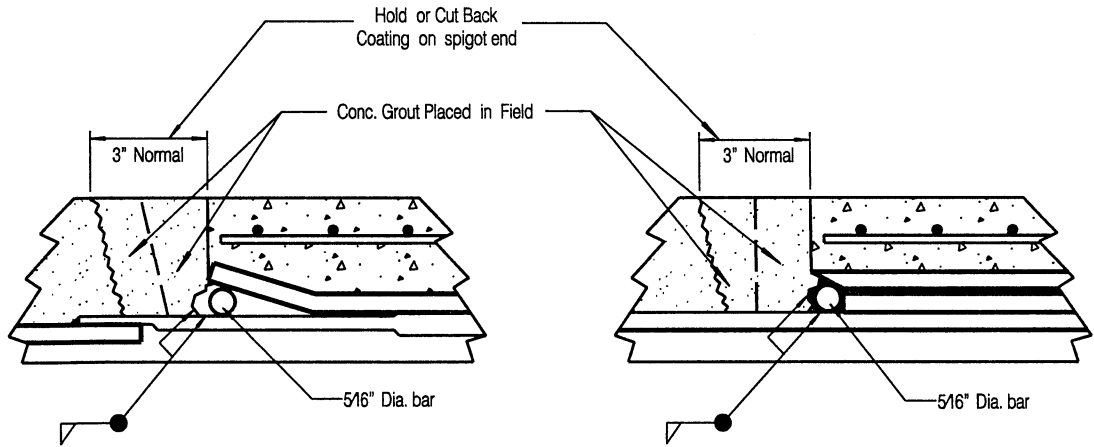
CITY OF SAN DIEGO - STANDARD DRAWING

**BLOW-OFF ASSEMBLIES
AT THE END OF
PVC AND CAST IRON MAINS**

CITY OF SAN DIEGO
STANDARDS COMMITTEE

Handwritten: 12/16/06
COORDINATOR R.C.E. 65271 DATE

DRAWING NUMBER **SDW-106**

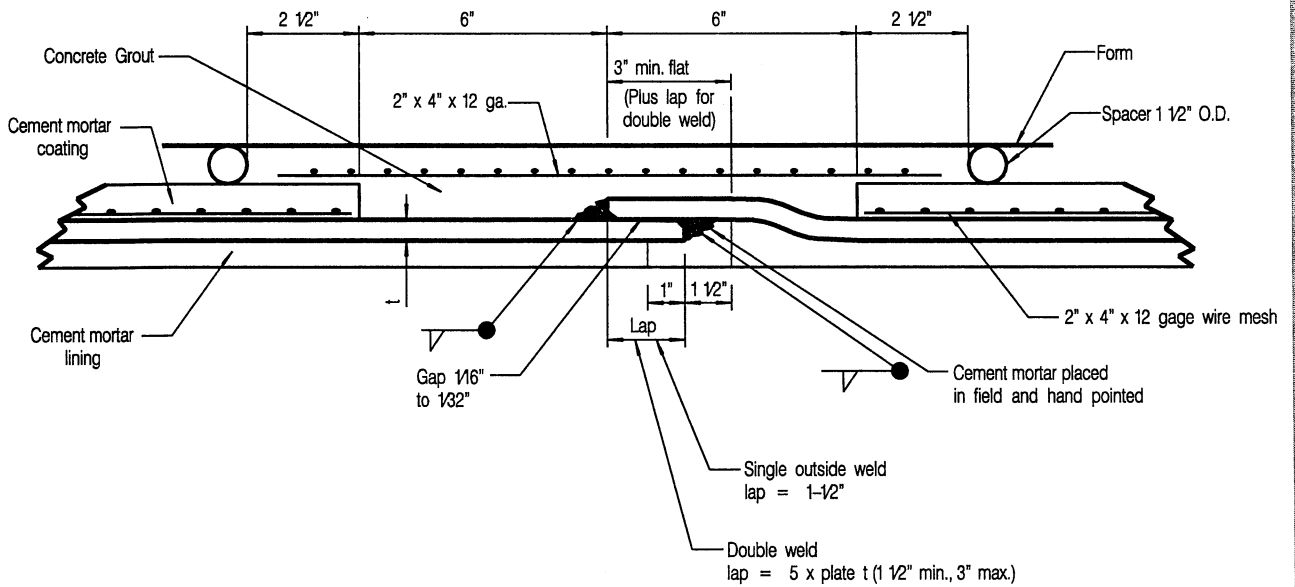


WELDED BELL AND SPIGOT RINGS

FORMED BELL AND WELDED SPIGOT RING

NOTE:

See Std. Dwg. SDW-111 for full details of above joints.



SLIP JOINT

NOTES:

1. All welds to conform to ANSI/AWWA C206 - 91

REVISION	BY	APPROVED	DATE
ORIGINAL		H. Hom	5-6-80
		J.P. Casey	6-3-83

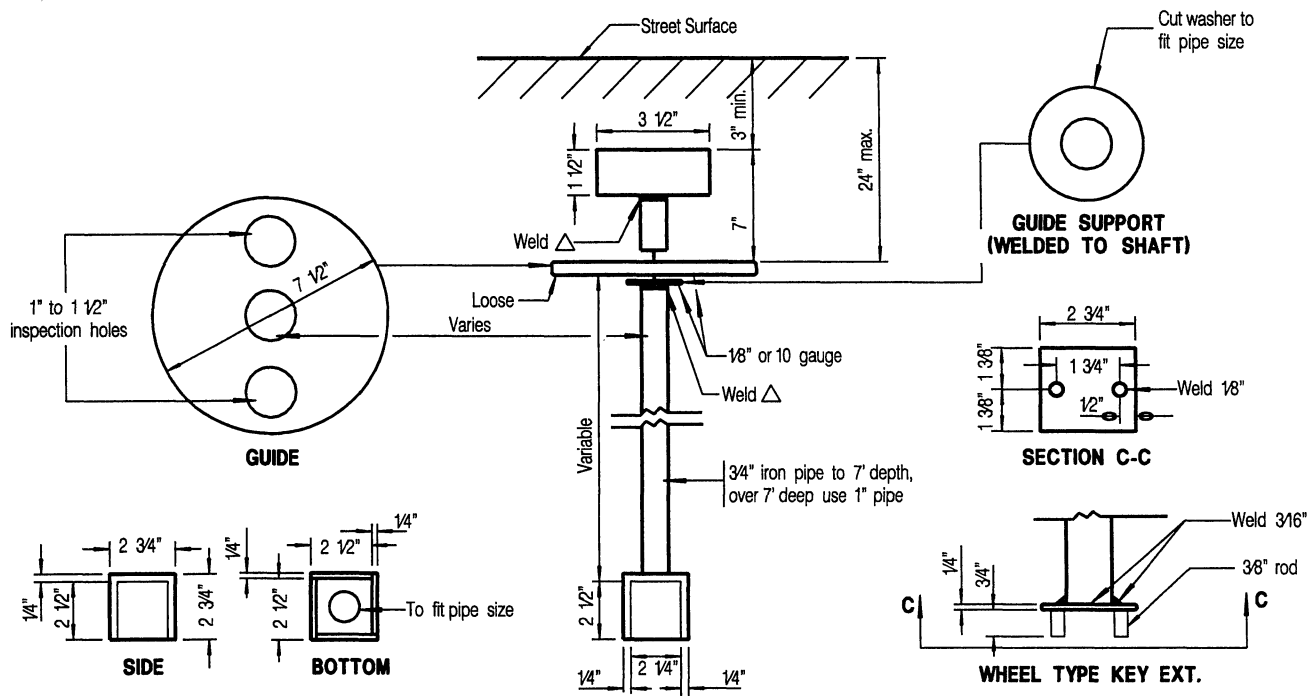
CITY OF SAN DIEGO - STANDARD DRAWING

FIELD WELDED JOINTS

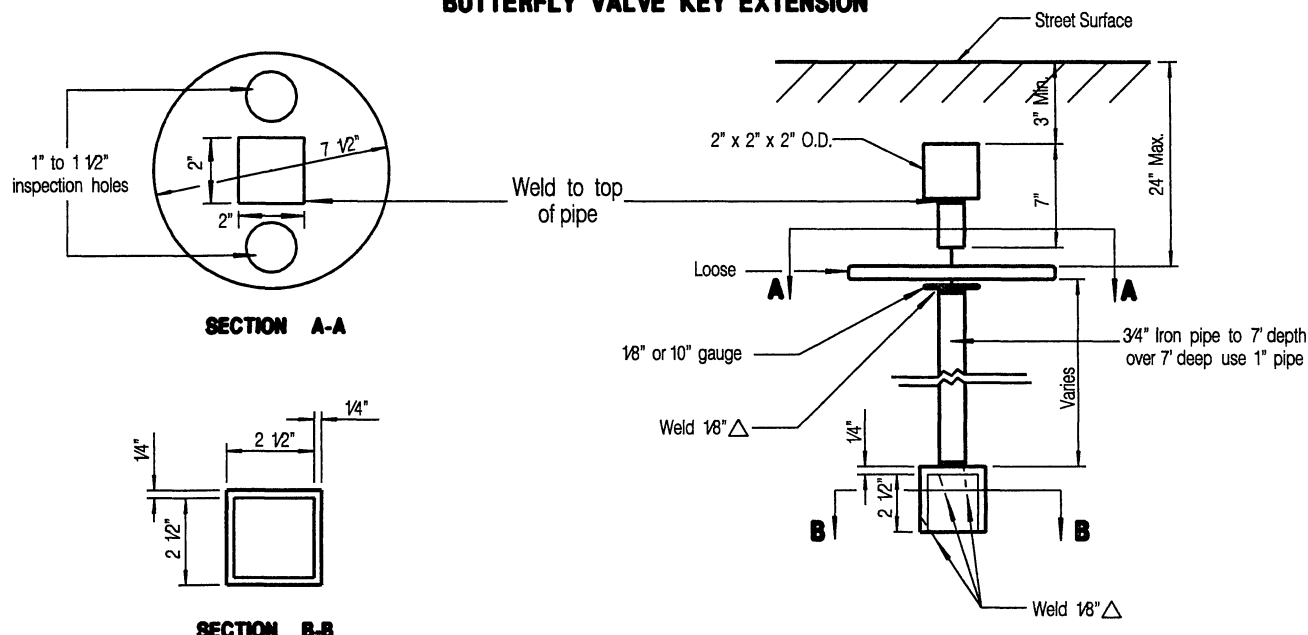
CITY OF SAN DIEGO
STANDARDS COMMITTEE

George J. Bohlen 12-23-94
COORDINATOR R.C.E. 25902 DATE

DRAWING NUMBER **SDW-108**



BUTTERFLY VALVE 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 twenty-five inches (25") or more below ground or pavement surface.
 2. Paint all finished surfaces with asphalt varnish.
 3. Materials and Workmanship shall be as required by Sections 206 and 304 of Std. Specs.
 4. For valve box and cover, see WV-01,WV-02,WV-03
 5. All welds to conform to ANSI/AWWA C206 - 91

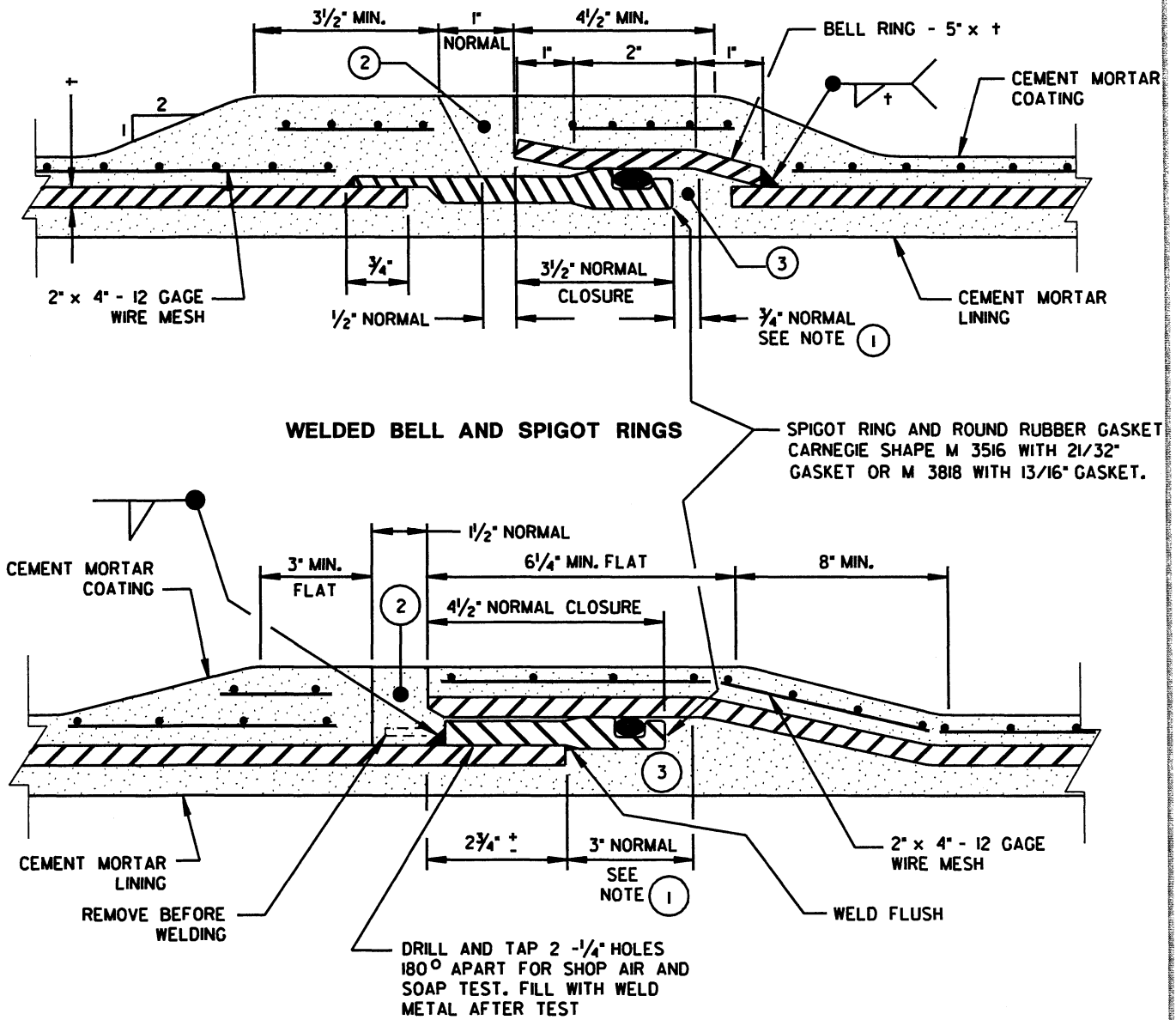
REVISION	BY	APPROVED	DATE
ORIGINAL		H. Horn	5-6-90
		J.P. Casey	6-3-83
		J.P. Casey	8-22-86
NOTES	AO	A. Oskoui	12/03
NOTES	JS	A. Oskoui	12/06

CITY OF SAN DIEGO - STANDARD DRAWING

VALVE KEY EXTENSIONS

CITY OF SAN DIEGO
STANDARDS COMMITTEE
M. [Signature] 12/16/96
COORDINATOR R.C.E. 65271 DATE

DRAWING NUMBER **SDW-109**

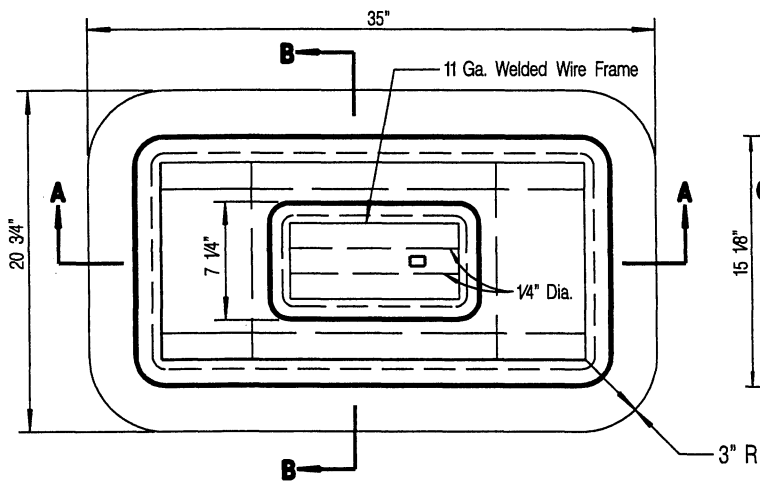


FORMED BELL END AND WELDED SPIGOT RING

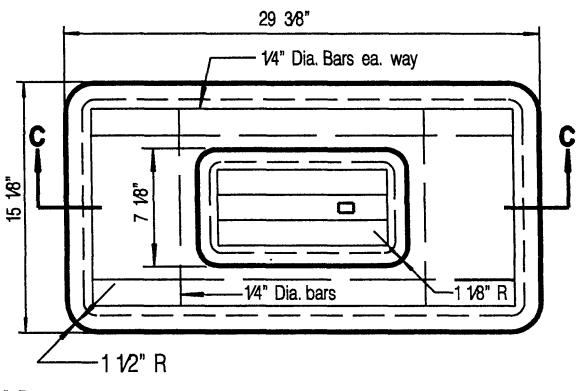
NOTES:

- ① MAXIMUM FIELD DEFLECTION IN A JOINT IS $\frac{3}{8}$ " PULL AND $\frac{3}{8}$ " PUSH, THE PULL TO BE UTILIZED FIRST.
- ② CONCRETE GROUT PLACED IN FIELD.
- ③ CEMENT MORTAR PLACED IN FIELD AND HAND POINTED.
- 4 TOLERANCE BETWEEN BELL ID AND SPIGOT OD TO BE $\frac{1}{32}$ " TO $\frac{1}{16}$ " ON THE DIAMETER.
- 5 ALL WELDS TO CONFORM TO ANSI/AWWA C206 - 91.

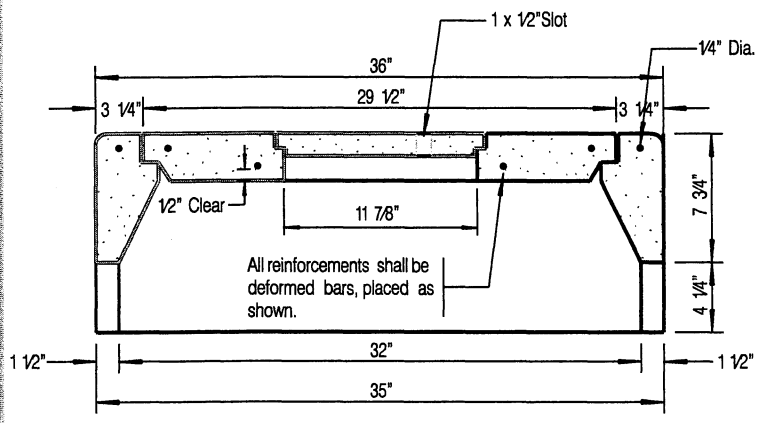
REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO - STANDARD DRAWING	CITY OF SAN DIEGO STANDARDS COMMITTEE <i>D. Wade</i> 12/14/6 COORDINATOR R.C.E. 65271 DATE
ORIGINAL		H. Horn	5-6-90		
		J.P. Casey	6-3-83		
NOTES	SM	A. Oskoui	12-03		
NOTES	JS	A. Oskoui	1206		



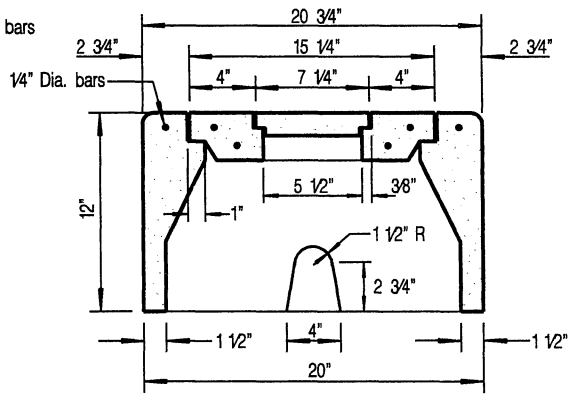
PLAN



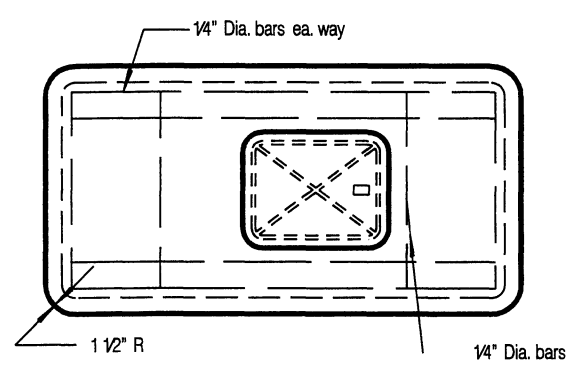
COVER W/ CONC. READING LID



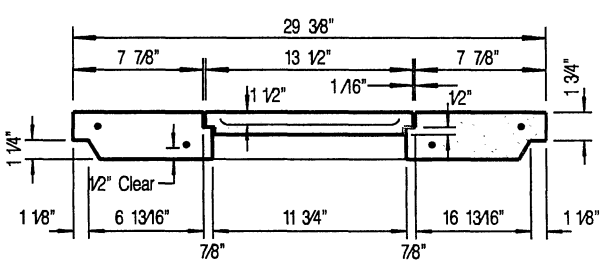
SECTION A-A



SECTION B-B



COVER W/ C.I. READING LID



SECTION C-C

NOTE: Unless otherwise indicated on the detail plans and/or specified in special conditions Covers with Concrete reading lid shall be used.

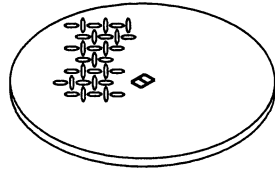
REVISION	BY	APPROVED	DATE
ORIGINAL		H. Hom	5-6-90
		J.P. Casey	6-3-83

CITY OF SAN DIEGO - STANDARD DRAWING

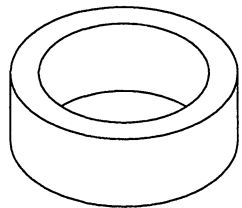
**CONCRETE WATER METER BOX
FOR 1 1/2" OR 2" WATER METER**

CITY OF SAN DIEGO
STANDARDS COMMITTEE
George J. ... 12-23-94
COORDINATOR R.C.E. 25902 DATE

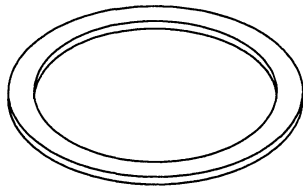
DRAWING NUMBER **SDW-113**



Weld top of cap to pipe

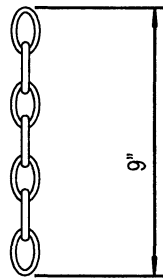


Weld plate ring to underside of cover

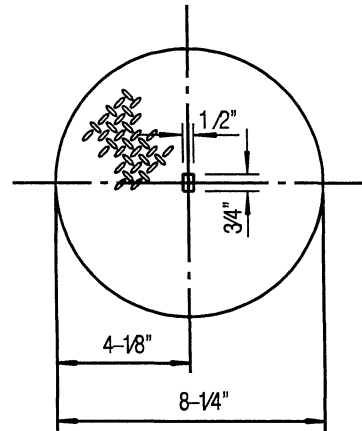


Weld chain to inside of cap's pipe and to underside of cover

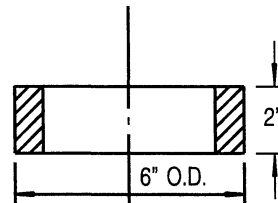
Hot dipped galvanized steel chain



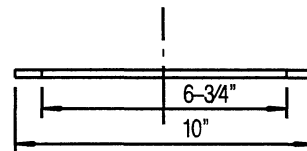
1/4" x 9" Chain



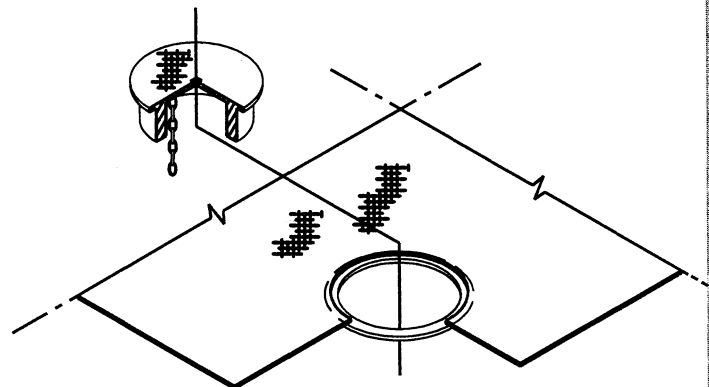
1/4" Floor Plate



3/16" Steel pipe



1/8" Steel Plate Ring



COVER (Typ.)

NO SCALE

NOTES:

1. 8-1/4 inches floor plate shall be cut out of the cover and the opening shall be finished for tight fit.
2. Read hole in cover shall be centered over each meter register.

REVISION	BY	APPROVED	DATE
ORIGINAL		T. Mueller	2-4-86
		J.P. Casey	8-22-86

CITY OF SAN DIEGO - STANDARD DRAWING

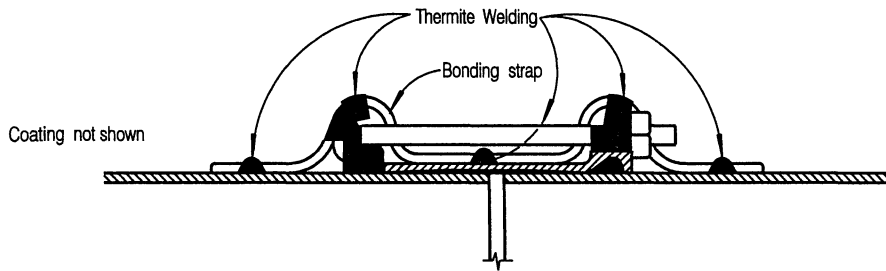
**READ HOLE
CAP & CHAIN DETAIL
(For Metal Meter Vault Covers)**

CITY OF SAN DIEGO
STANDARDS COMMITTEE

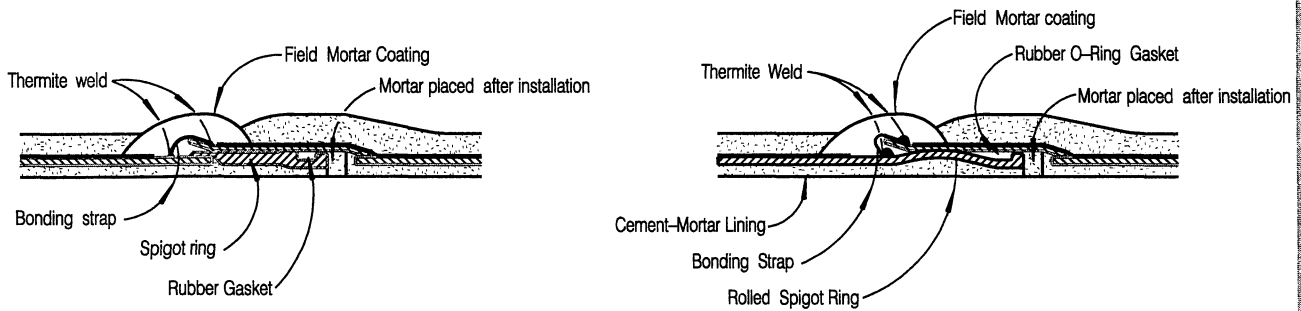
Henry J. ... 12-23-94
COORDINATOR R.C.E. 25902 DATE

DRAWING
NUMBER

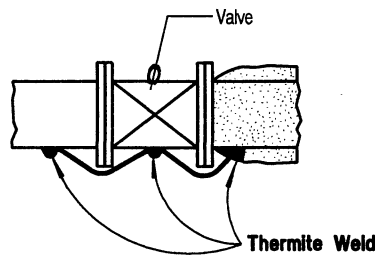
SDW-115



Bonding Strap Installed on Sleeve-Type Coupling



Bonding Strap for Bell and Spigot Rubber-Gasketed Joint



Bonding Strap Installed on Valve

NOTES:

1. Remove coating and clean approx. 2 inch area to a bright metal surface for welding.
2. The exact type, size and number of bonding wire / strap shall be determined by pipe size and type.
3. Where not protected by cement mortar coating, thermite weld shall be covered with cold applied coal tar solution.

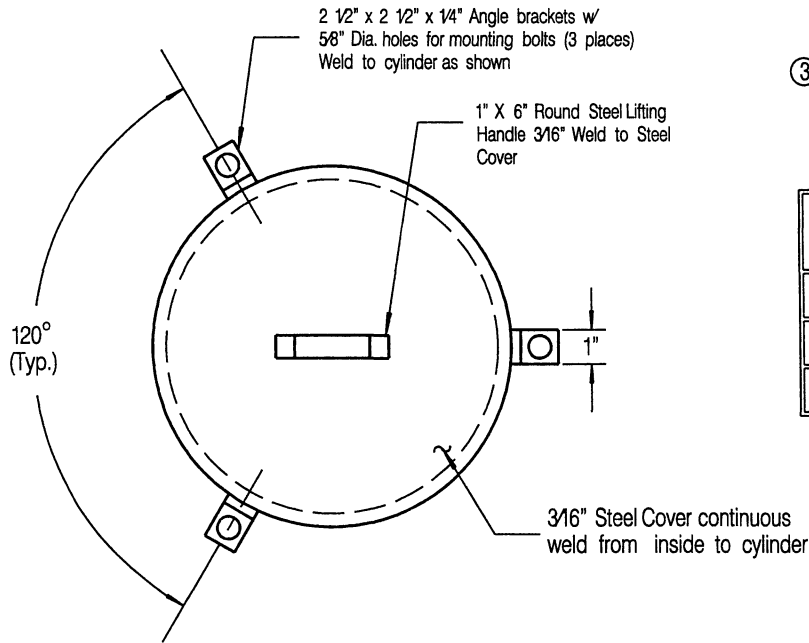
REVISION	BY	APPROVED	DATE
ORIGINAL		T. Mueller	2-12-86
		J.P. Casey	8-22-86

CITY OF SAN DIEGO - STANDARD DRAWING

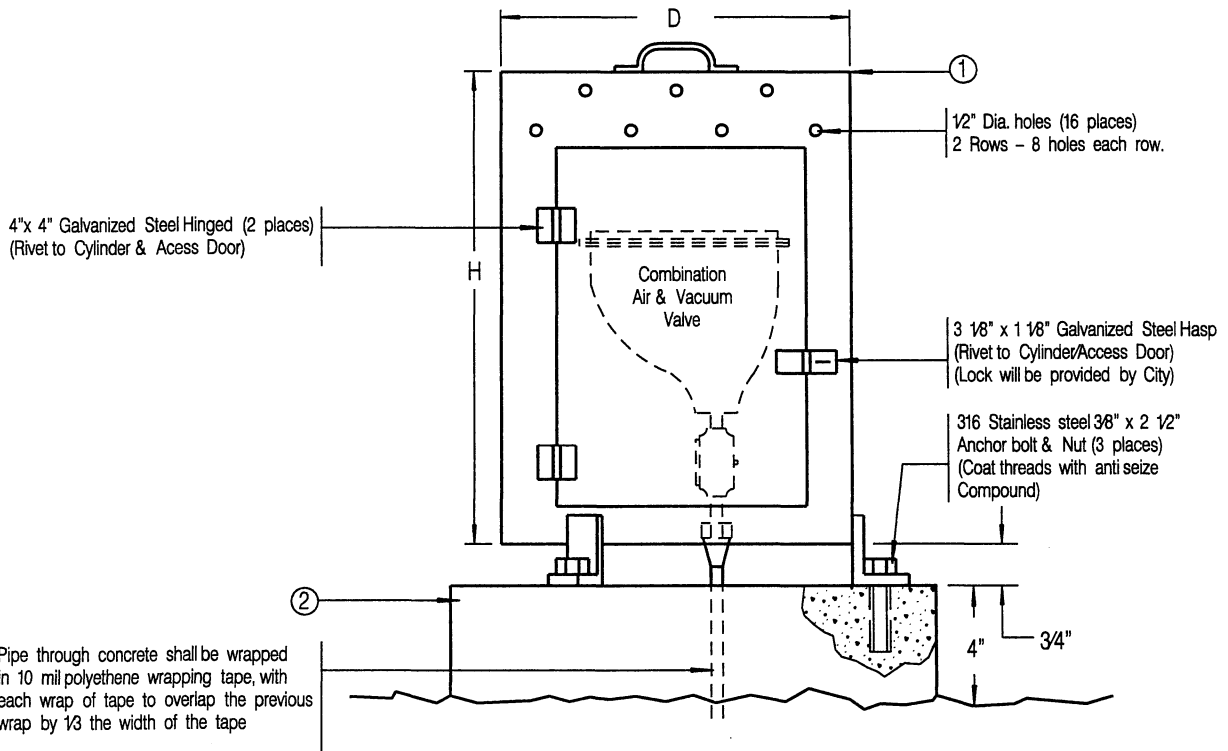
**BONDING STRAP FOR
STEEL AND SCRW PIPE**

CITY OF SAN DIEGO
STANDARDS COMMITTEE
George F. Perkins 12-23-94
COORDINATOR R.C.E. 25902 DATE

DRAWING NUMBER **SDW-116**



Valve Size	D	H
1" & 2"	16"	24"
4"	24"	30"
6"	30"	36"



- ① 316 inch steel enclosure with access door, misc. hardware. Cabinet and hardware should be zinc rich epoxy powder primer (2-3 mil Dry Film Thickness) and polyester powder top coat (2-3 mil Dry Film Thickness).
- ② 3' x 3' x 4" Concrete pad (520-C-2500 Concrete)
- ③ D and H changes only with approval of Water Department, Operations Division Engineer.

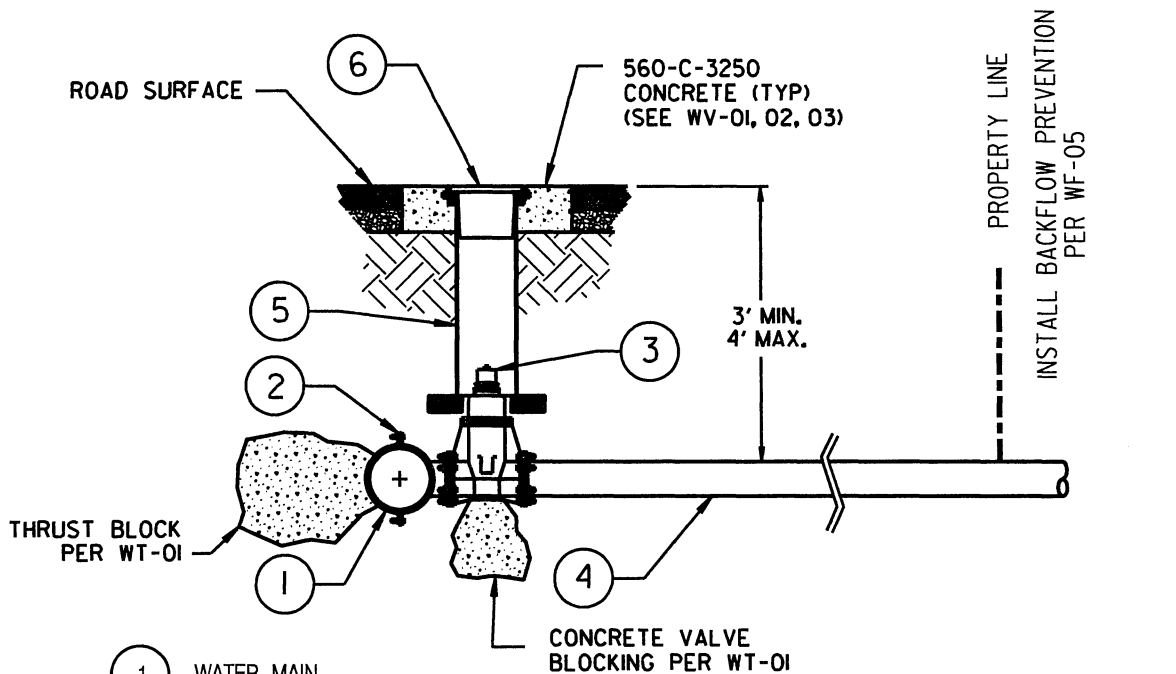
REVISION	BY	APPROVED	DATE
ORIGINAL		M. Rollinger	5-20-92
NOTES	JS	A. Oskoui	1206

CITY OF SAN DIEGO - STANDARD DRAWING

AIR AND VACUUM VALVE ENCLOSURE

CITY OF SAN DIEGO
STANDARDS COMMITTEE
M. Rollinger 12/16/6
COORDINATOR R.C.E. 65271 DATE

DRAWING
NUMBER **SDW-117**



- 1 WATER MAIN
- 2 FLANGED TAPPING SLEEVE OR TEE (NO SIZE-ON-SIZE TAPS ALLOWED) (4 X 4, 6 X 6, ETC.). NO EXTENSIONS ALLOWED.
- 3 FULL RESILIENT SEAT GATE VALVE . SIZE OF VALVE SHALL MATCH SIZE OF FIRE SERVICE (4-INCH MINIMUM DIAMETER) . SEE NOTE #1.
- 4 4-INCH OR LARGER DIAMETER OF PIPE (DUCTILE IRON OR PVC PER APPROVED MATERIALS LIST).
- 5 VALVE WELL PER WV-01, WV-02.
- 6 VALVE WELL COVER PER WV-03.

- NOTES:
1. FOR SMALLER FIRE SERVICE REQUIREMENTS, USE REDUCER AT PROPERTY LINE.
 2. CONSTRUCT WATER MAIN & FIRE SERVICE PER SDW-100, SDW-109 & WV-01, WV-03, WT-01, & WP-02 (ALSO USE WP-01 WHEN REQUIRED).
 3. FOR CORROSION CONTROL REQUIREMENTS, SEE WATER DEPARTMENT DESIGN GUIDE.

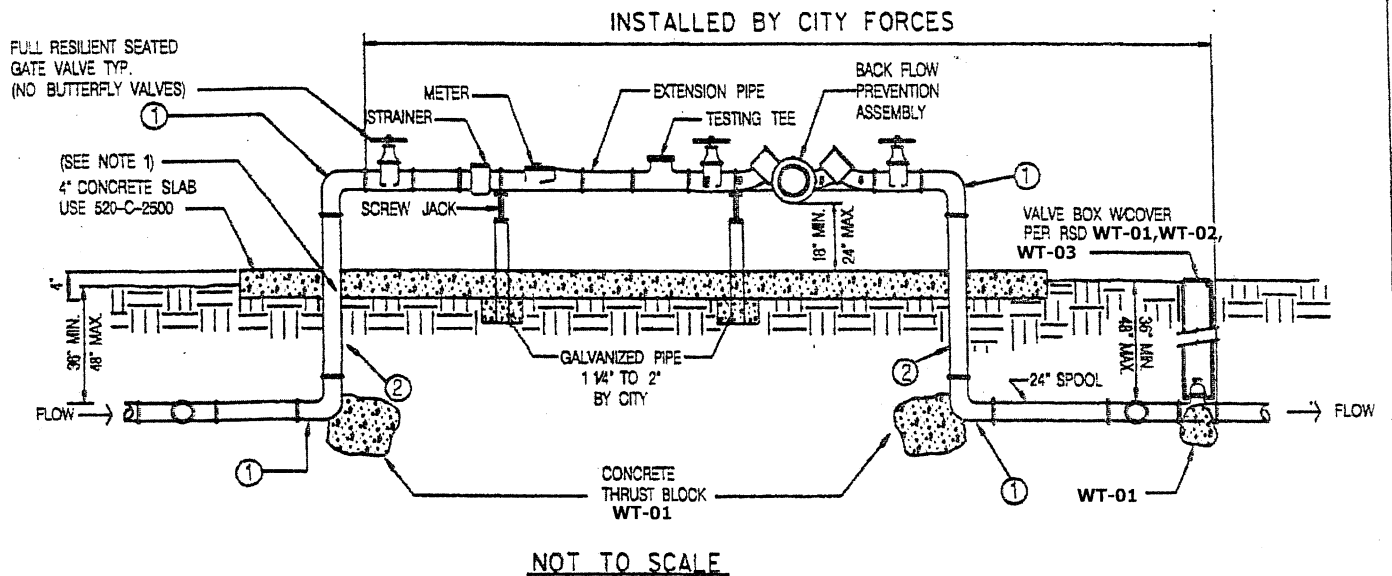
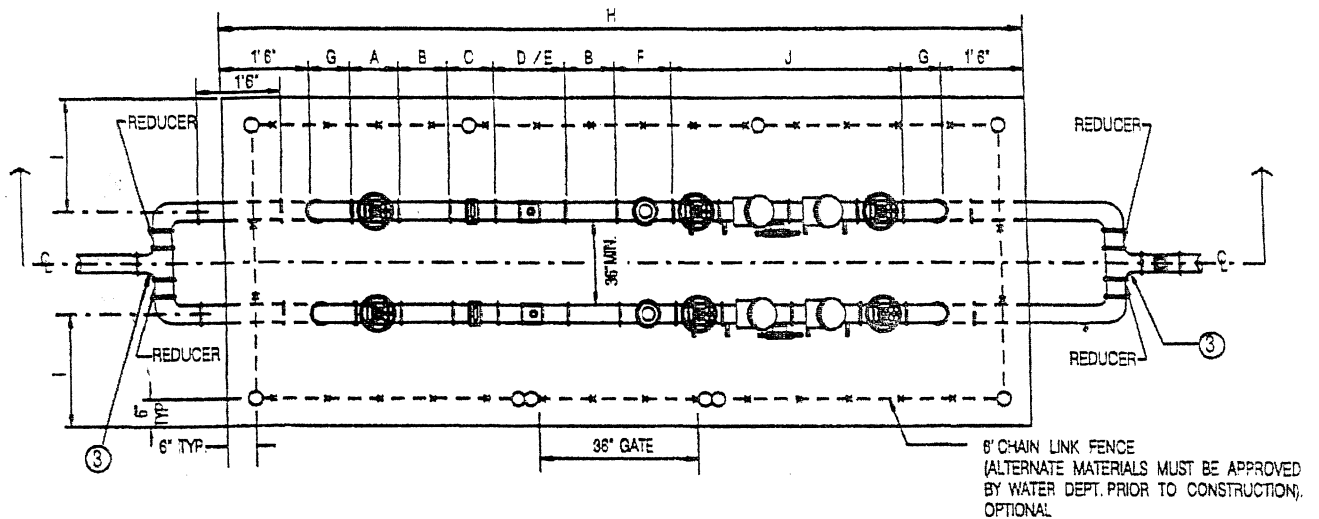
REVISION	BY	APPROVED	DATE
ORIGINAL			
NOTES	AO	F. Belock	4-96
NOTES	JS	A. Oskoui	1206

CITY OF SAN DIEGO - STANDARD DRAWING

FIRE SERVICE CONNECTION

CITY OF SAN DIEGO
STANDARDS COMMITTEE
M. Haeili 12/16/06
COORDINATOR R.C.E. 65271 DATE

DRAWING NUMBER **SDW-118**



NOT TO SCALE

NOTES:

1. ALL BURIED DUCTILE IRON PIPE, FITTINGS, VALVES AND APPURTENANCES SHALL BE COATED WITH A DIELECTRIC COATING, A LIQUID EPOXY COATING SYSTEM PER AWWA C-210 AT 24 MILS MIN. DRY FILM THICKNESS (MDFT), OR A COLD APPLIED THREE-PART SYSTEM PETROLEUM WAX TAPE PER AWWA C-217, OR A 100% POLYURETHANE COATING OF 24 MILS (MDFT) SUITABLE.
2. ANY CHANGES MUST HAVE WATER DEPARTMENT APPROVAL.
3. PIPING TO BE SYMMETRICAL TO SLAB CENTERLINE.
4. SUPPLY PIPE IS ONE COMMERCIAL SIZE LARGER THAN PROPOSED METER.
5. CONCRETE SLAB AND FENCE WILL BE INSTALLED BY CONTRACTOR.

- ① 90° FLANGED DUCTILE IRON ELBOW (TYP).
- ② FLANGED DUCTILE IRON SPOOL. BOTH ENDS SHALL BE FLANGED (UNI-FLANGE SHALL NOT BE USED).
- ③ DIAMETER OF TEE IS EQUAL TO THE DIAMETER OF THE SUPPLY PIPE.


SHEET 1 OF 2

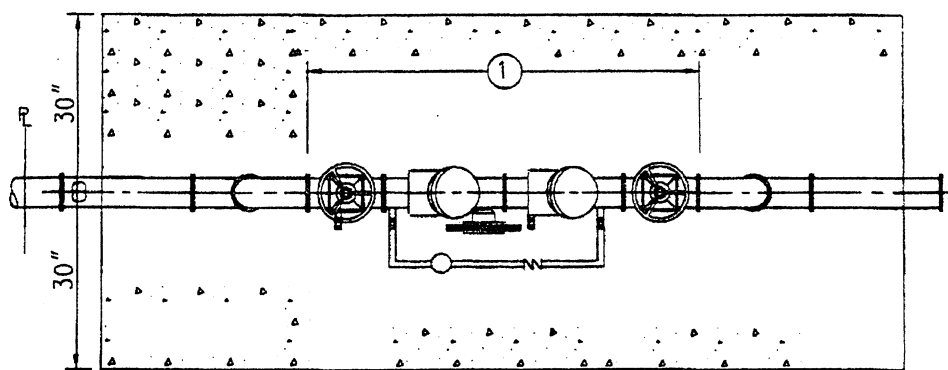
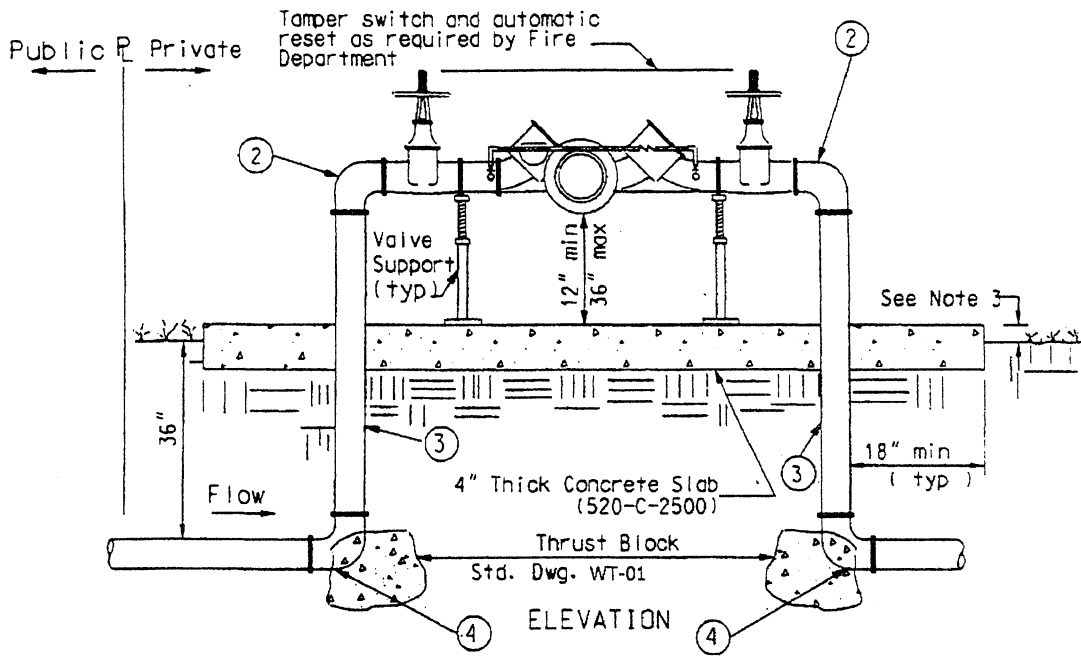
REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO - STANDARD DRAWING	CITY OF SAN DIEGO STANDARDS COMMITTEE
ORIGINAL	J2C			DUAL ABOVE GROUND METER AND BACKFLOW PREVENTION ASSEMBLIES	<i>M. Hadi: 12/16/6</i>
REVISION	SM	A. Oskoui	12/03		COORDINATOR R.C.E. 65271
NOTES	JS	A. Oskoui	12/06		DRAWING NUMBER
					SDW-119

LTR. CODE	PART DESCRIPTION	METER SIZE				
		3"	4"	6"	8"	10"
A	GATE VALVE	8"	9"	10 1/2"	11 1/2"	1' - 1"
B	PIPE EXTENSION	1' - 0"	1' - 0"	1' - 0"	1' - 0"	1' - 0"
C	STRAINER *	7"	9"	9"	10"	1' - 0"
D	TURBINE WATER METER *	1' - 0"	1' - 2"	1' - 6"	1' - 9"	2' - 2"
E	COMPOUND METER *	1' - 5"	2' - 0"	2' - 5"	3' - 1"	4' - 7"
F	TESTING TEE	11"	1' - 1"	1' - 4"	1' - 6"	1' - 10"
G	90 DEG. ELBOW (SHORT)	5 1/2"	6 1/2"	8"	9"	11"
H	OVERALL SLAB LENGTH *	11' - 10"	12' - 11"	14' - 9"	16' - 3"	18' - 10"
I	SLAB TO CL PIPE	3' - 0"	3' - 0"	3' - 0"	3' - 0"	3' - 6"
J	BACKFLOW *	3' - 2"	3' - 4"	4' - 1/2"	4' - 4 1/2"	4' - 7 1/2"

- NOTES: INDIVIDUAL DIMENSIONS MAY VARY PER MANUFACTURER
OVERALL DIMENSIONS INCREASE WITH USE OF THESE COMPONENTS

SHEET 2 OF 2

REVISION	By	Approved	Date	CITY OF SAN DIEGO - STANDARD DRAWING	CITY OF SAN DIEGO STANDARDS COMMITTEE
	J2C				
REVISION	SM	Oskoui	12/03	DUAL ABOVE GROUND METER AND BACKFLOW PREVENTION ASSEMBLIES	 Chairperson RCE 64572 DATE 12-9-03
				DRAWING NUMBER	SDW-119

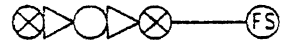


PLAN

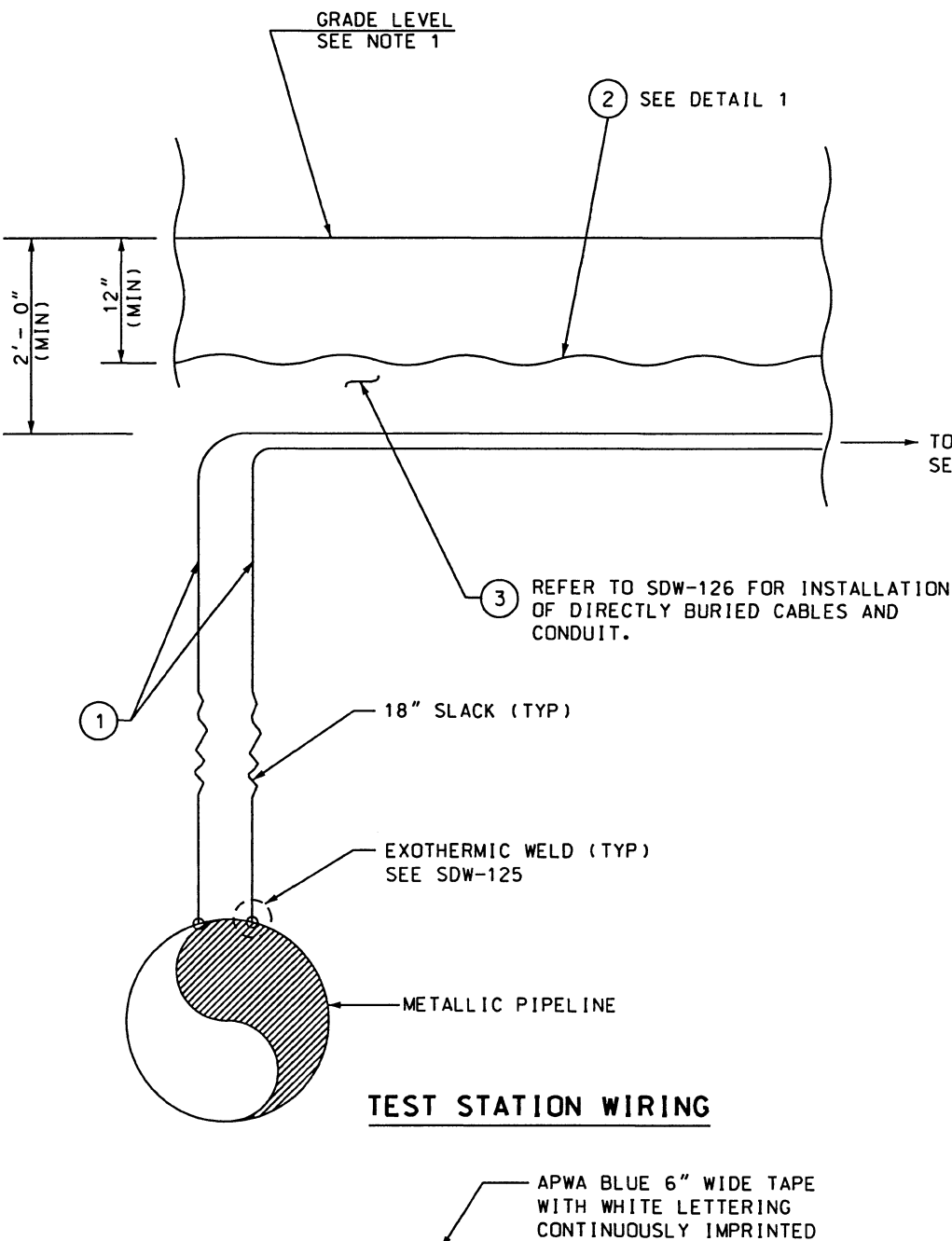
NOTES:

1. Backflow preventer assembly shall be tested upon installation by a certified backflow assembly tester. Contractor shall provide the Engineer with written test results completed by a certified backflow tester prior to backflow preventer assembly's acceptance by the Engineer.
2. All pipe below grade shall be wrapped as required by agency.
3. Concrete pad to be 2" above grade unless installed in lawn area where it will be at 1" above grade. Slope to drain.
4. Valve supports as required by agency.
- ① Reduced Pressure Principle Detection Assembly shall be included in the latest edition of the "Approved for Service Isolation California Public Water Systems" issued by the State of California Department of Health Services, Office of Drinking Water.
- ② 90° Flanged Cast Iron or Ductile Iron Elbow (typ)
- ③ Flanged Ductile Iron Spool. Both ends shall be flanged (uni-flange shall not be used)
- ④ 90° Ductile Iron Flanged Elbow
- 5 Location must be approved by Water Department, Water Operations Division, Meter/Backflow Group and shown on plans.

LEGEND ON PLANS



REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO - STANDARD DRAWING	CITY OF SAN DIEGO STANDARDS COMMITTEE
ORIGINAL	LEC	J. NAVARRO	6/00		
				BACKFLOW PREVENTER REDUCED PRESSURE PRINCIPLE DETECTOR ASSEMBLY FOR FIRE SERVICE-3" AND LARGER	<i>Hor. Rubin</i> 8/9/00 DATE
					DRAWING NUMBER
					SDW-120



- MATERIALS:**
- ① CABLE AWG #8
COPPER ASTM B3
STRANDED ASTM B8
INSULATION ASTM D1248
TYPE 1, CLASS C,
GRADE 5.
 - ② POLYETHYLENE WARNING
TAPE. SEE DETAIL 1.
 - ③ SAND: 50 SIEVE
COMPLIES TO
SSPWC-200-1.5

- NOTES:**
1. IN PAVED, CITY-OWNED ROADWAYS, THE REPAIR OF THE ROAD SURFACE SHALL BE PER APPLICABLE SDRSD SDG-117 OR SDG-118. IN STATE HIGHWAYS, CONFORM TO APPLICABLE CALTRANS STANDARDS.
 2. FOR LOCATION OF TEST STATION, USE REGIONAL STD DWG WS-03. EXACT LOCATION SHALL BE APPROVED BY CORROSION ENGINEER.
 3. AT ROADWAYS, USE SDW-129 AND AT UNDEVELOPED AREAS USE SDW-127.
 4. FOR INSTALLATION OF DIRECTLY BURIED CABLES & CONDUIT SEE SDW-126.

CAUTION CAUTION
BURIED CATHODIC PROTECTION LINE BELOW
CALL 619-515-3525

DETAIL 1
 BURIED TAPE
 NTS

Revision	By	Approved	Date
Original	BM	A.Oskoui	12/03
Notes	BM	A.Oskoui	12/06

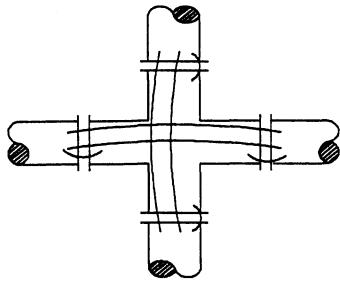
CITY OF SAN DIEGO - STANDARD DRAWING

**AT-GRADE CATHODIC PROTECTION
 TEST STATION
 INSTALLATION FOR ROADWAYS**

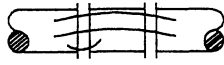
CITY OF SAN DIEGO
 STANDARDS COMMITTEE

A. Oskoui 12/16/06
 Coordinator R.C.E. 65271 Date

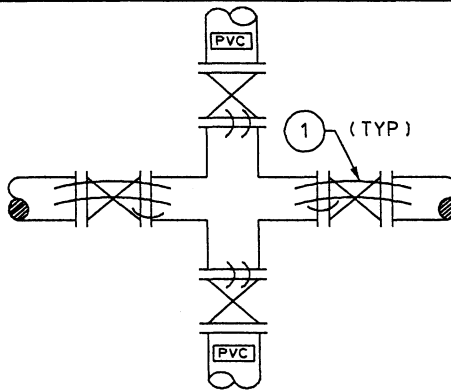
**DRAWING
 NUMBER SDW-121**



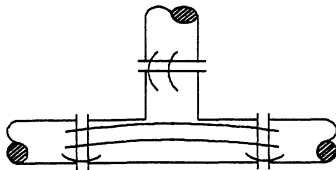
CROSS



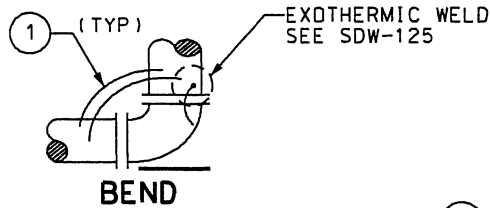
SPOOL



VALVE CROSSING

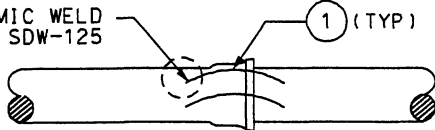


TEE

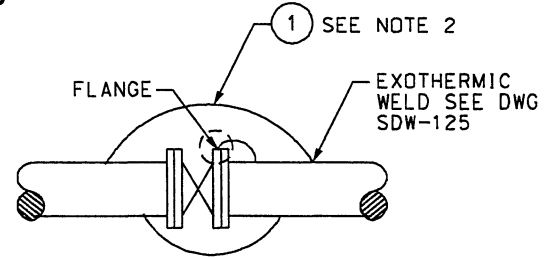


BEND

EXOTHERMIC WELD
SEE DWG SDW-125



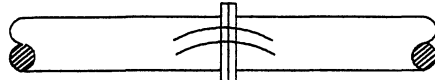
BELL AND SPIGOT PIPE JOINT



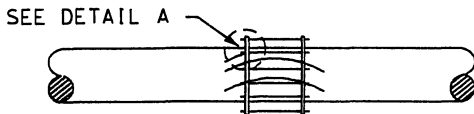
BOND ACROSS FLANGES



FLANGED VALVE



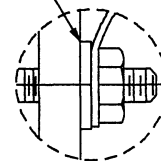
FLANGED OR MECHANICAL PIPE JOINT



FLEXIBLE COUPLING PIPE JOINT

SEE DETAIL A

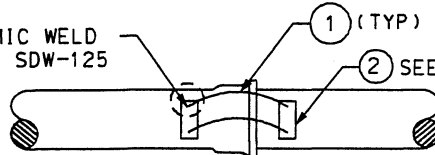
BOND WIRE W/ LUG
COATED WITH
BITUMASTIC



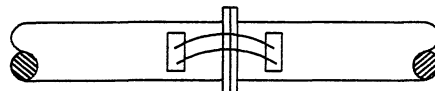
DETAIL A

WIRE CONNECTION TO
FLANGE BOLT
SEE NOTE 5

EXOTHERMIC WELD
SEE DWG. SDW-125



NON-MORTAR LINED



NON-MORTAR LINED

MATERIALS:

- ① BOND CABLE: AWG #6
COPPER ASTM B3
STRANDED ASTM B8
INSULATED ASTM D1248
TYPE 1, CLASS C
GRADE 5.
- ② STEEL PLATE: 1/8"
THICK. WELD TO THE
PIPE.

NOTES:

- 1. ALL BOND CABLE SHALL BE INSTALLED AT MINIMUM LENGTH.
- 2. BOND CABLES SHALL NOT BE INSTALLED ACROSS INSULATING JOINTS.
- 3. ONE ADDITIONAL CABLE SHALL BE REQUIRED FOR PIPE DIAMETERS FROM 36" TO 48" AND 2 MORE FOR DIAMETERS LARGER THAN 48".
- 4. WELD BEFORE APPLYING INTERNAL COATING.
- 5. ONLY AT THE APPROVAL OF CITY'S CORROSION ENGINEER.
- 6. REFER TO SDW-116, FOR SCRW PIPE BOND DETAIL

Revision	By	Approved	Date
Original	BM	A.Oskoui	12/03
Notes	BM	A.Oskoui	12/06

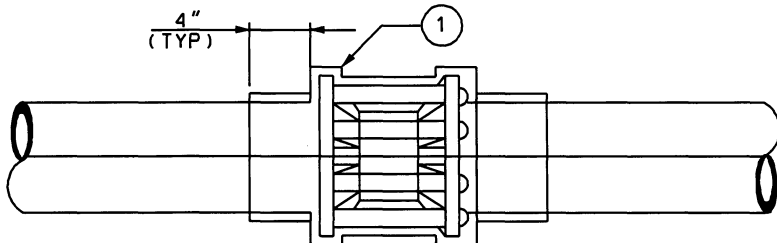
CITY OF SAN DIEGO - STANDARD DRAWING

JOINT BONDING OF NON-WELDED
PIPE JOINTS & FITTINGS

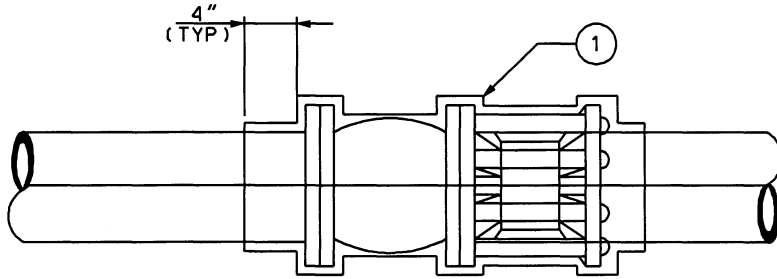
CITY OF SAN DIEGO
STANDARDS COMMITTEE

A. Oskoui 12/14/6
Coordinator R.C.E. 65271 Date

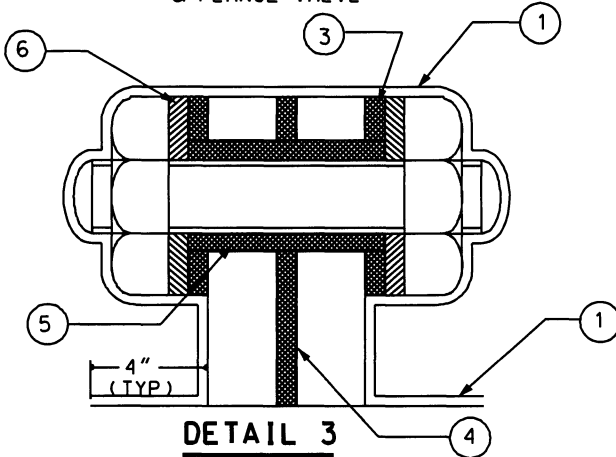
Drawing Number **SDW-122**



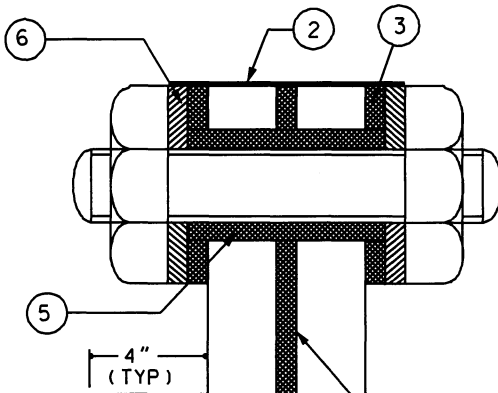
DETAIL 1
MECHANICAL
COUPLING



DETAIL 2
MECHANICAL COUPLING
& FLANGE VALVE



DETAIL 3
INSULATING FLANGE JOINTS,
UNDERGROUND INSTALLATION



DETAIL 4
INSULATING FLANGE JOINTS,
ABOVE-GROUND INSTALLATION

MATERIALS:

- ① PROTECTIVE COATING:
3-PARTS PETROLATUM AWWA
C217 OR APPROVED EQUAL.
- ② TAPE: WRAPAROUND 3"
WIDE, 0.050" THICK.
CROSS LINKED POLYOLEFIN.
HEAT SHRINKABLE.
PRECOATED WITH HOT MELT-
ADHESIVE.
- ③ WASHER: INSULATING
EPOXY GLASS
- ④ GASKET: 1/8" THICK EPOXY
GLASS INSULATING
MATERIALS WITH NEOPRENE
SEALING ELEMENT.
- ⑤ SLEEVE: INSULATING EPOXY
GLASS. 1/32" THICK.
ID=BOLT DIAMETER + 1/64.
- ⑥ WASHER: STEEL. 1/8"
THICK.

NOTES:

- 1. WHEREVER POSSIBLE,
INSULATING FLANGE
ASSEMBLIES SHOULD BE
ASSEMBLED PRIOR TO
INSTALLATION & TESTED
ELECTRICALLY USING GAS
ELECTRONIC TOOL OR
APPROVED EQUAL TO INSURE
THAT THE INSTALLATION IS
EFFECTIVE.
- 2. WRAP FLANGE ASSEMBLY AS
SHOWN WITH 3-PART PETRO-
LATUM TAPE PER AWWA C217.
- 3. INSULATING FLANGE BOLT
HOLE DIAMETER SHOULD BE
1/8" BIGGER THAN THE
INSULATING SLEEVE OD.
- 4. RECOMMENDED FLANGE
INSTALLATION PROCEDURE:
-CLEAN & INSPECT PIPE
FLANGE FACES. APPLY NON-
CONDUCTIVE LUBRICANT TO
ALL THREADS.
-INSTALL THE GASKET, ALIGN
FLANGES & GASKETS.
-USE ALIGNMENT PIN IN TWO
DIAMETRICALLY OPPOSITE
BOLT HOLES.
-INSERT INSULATING SLEEVES
INTO BOLT HOLES.
-INSERT THE BOLT WITH BOTH
INSULATING WASHERS.
-TIGHTEN TWO DIAMETRICALLY
OPPOSITE BOLTS TO 30%
TOTAL TORQUE.
-TIGHTEN ALL BOLTS TO 50%
AFTER REPLACING TWO
ALIGNMENT PINS WITH BOLTS
AND TO 100% OF FINAL
TORQUE VALUE.

Revision	By	Approved	Date
Original	BM	A.Oskoui	12/03
Notes	BM	A.Oskoui	12/06

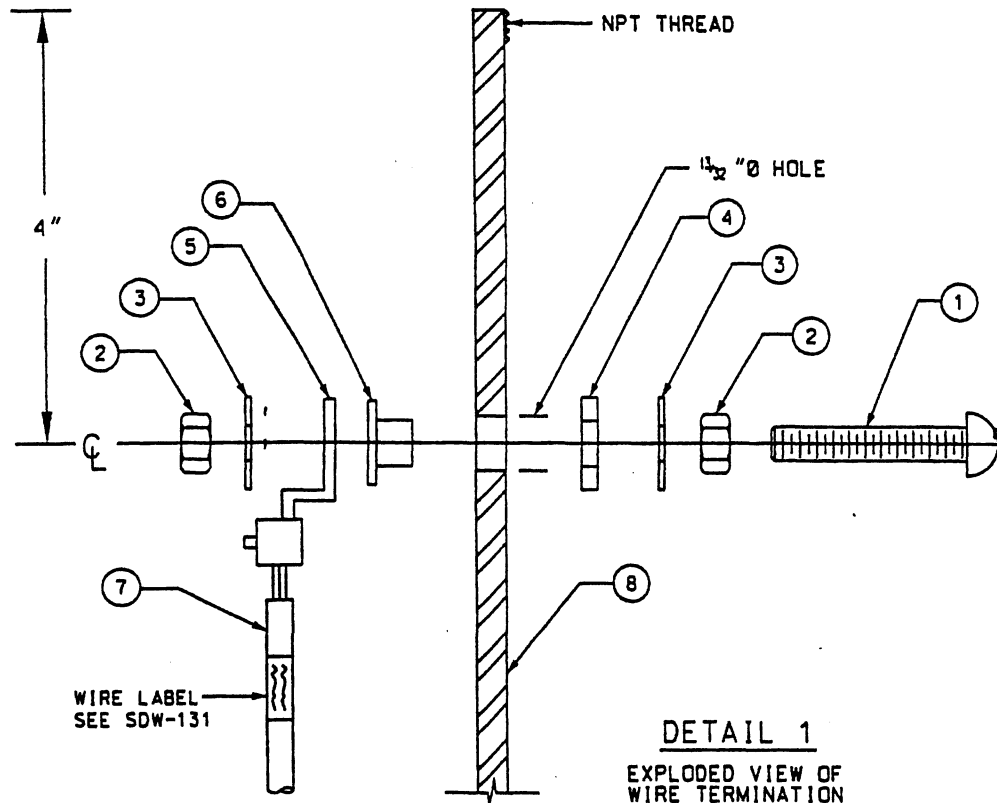
CITY OF SAN DIEGO - STANDARD DRAWING

INSULATING FLANGE AND MECHANICAL
JOINTS EXTERNAL PROTECTION

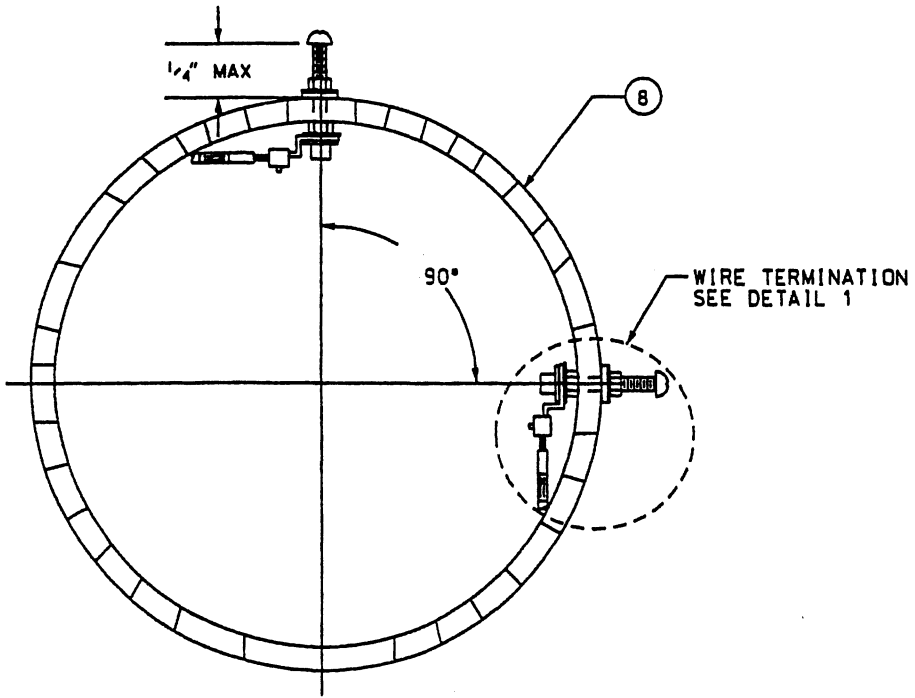
CITY OF SAN DIEGO
STANDARDS COMMITTEE

W. H. Hall 12/16/06
Coordinator R.C.E. 65271 Date

DRAWING NUMBER **SDW-123**



- MATERIALS:**
- ① SCREW: MACHINE BRASS. ROUND HEAD SLOTTED. 1/4" - 20T 1 1/2" LONG
 - ② NUT: BRASS 1/4" 20 THREADS.
 - ③ WASHER: BRASS 1/4"
 - ④ WASHER, INSULATION NYLON. 0.719" OD, 0.281" ID, 0.062" THICK NATURAL.
 - ⑤ LUG: OFFSET TONGUE SOLDERNESS. COPPER.
 - ⑥ WASHER: INSULATING. SHOULDER. NYLON. NATURAL. 0.260" OD. 0.625" OD FLANGE. 0.342" OD SHANK. 0.065" FLANGE THK. 0.270" SHANK THK.
 - ⑦ CABLE: AWG #8, COPPER ASTM B3. STRANDED ASTM B8. INSULATED ASTM D1248 TYPE 1. CLASS C. GR. 5.
 - ⑧ PIPE: 4" DIAMETER SCH 40 ASTM A53. GALVANIZED.



POST-MOUNTED TEST STATION
WIRE TERMINATION DETAIL

- NOTES:**
- 1. MOUNT WIRE TERMINATIONS AT 90 DEGREE ORIENTATION, FOR MORE THAN 4-WIRES. MOUNT WIRE TERMINATIONS 4" BELOW.
 - 2. OFFSET MACHINE SCREW HEAD BY 3/4" FROM PIPE EXTERIOR WALL.
 - 3. TAG WIRE WITH LINE NAME, PIPE SIZE, MATERIALS AND STATION USING SELF-ADHESIVE LABELS. LABELS SHALL BE WRAPPED AROUND THE INSULATION AND ENCASED WITH CLEAR HEAT-SHRINK SEE SDW-131

Revision	By	Approved	Date
Original		Oskoui	12/08

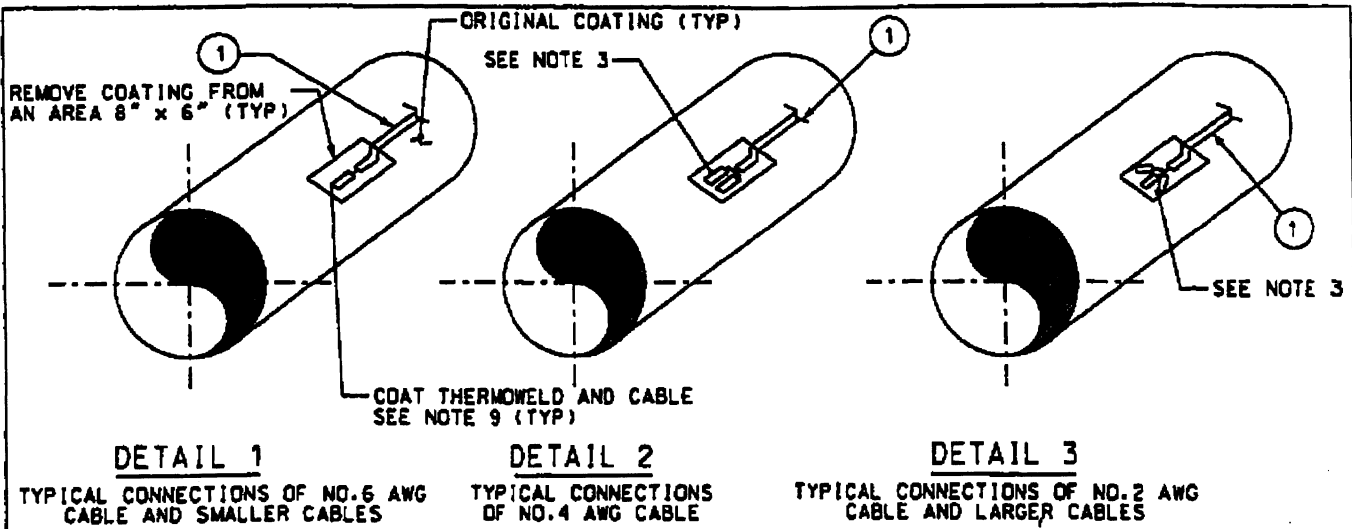
CITY OF SAN DIEGO - STANDARD DRAWING

POST-MOUNTED TEST STATION
WIRE TERMINATION DETAIL

CITY OF SAN DIEGO
STANDARDS COMMITTEE

R. G. 12-9-03
Chairperson RCE 4572 Date

DRAWING NUMBER **SDW-124**



DETAIL 1

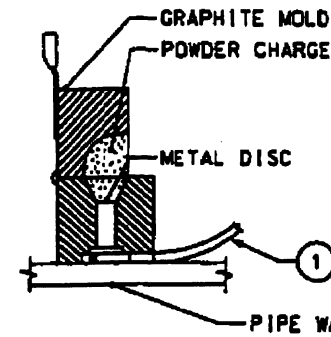
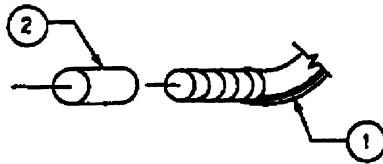
TYPICAL CONNECTIONS OF NO. 6 AWG CABLE AND SMALLER CABLES

DETAIL 2

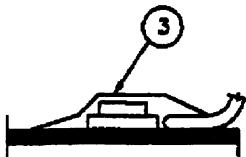
TYPICAL CONNECTIONS OF NO. 4 AWG CABLE

DETAIL 3

TYPICAL CONNECTIONS OF NO. 2 AWG CABLE AND LARGER CABLES



EXOTHERMIC CONNECTION DETAIL



EXOTHERMIC CONNECTION SECTION

MATERIALS:

- ① CABLE: AWG SIZE, ASTM B3/B8 ASTM D-1248, TYP1 1, CLASS C, GR.5 INSULATION
- ② SLEEVE: ADAPTER
- ③ APPROVED PRIMER & WELD CAP OR MORTAR OVER WELD LOCATION

NOTES:

1. CLEAN AREA OF STEEL SURFACE APPROXIMATELY 2" x 2" FOR EACH THERMOWELD CONNECTION. WIRE BRUSH FILE AND SCRAPE TO OBTAIN SSPC-SP-5 WHITE METAL SURFACE FINISH.
2. SELECT PROPER MOLD BASED ON STRUCTURE GEOMETRY, ORIENTATION AND MATERIAL TYPE.
3. STRIP CABLE END AND TWIST TO FIT THERMOWELD MOLD. CABLE SIZES LARGER THAN 6 AWG SHALL BE THERMOWELDED BY TWISTING CONDUCTORS INTO GROUPS APPROXIMATELY NUMBER 6 AWG CABLE SIZE. MINIMUM SPACING BETWEEN WELDS WILL BE DETERMINED BY MOLD GEOMETRY, NOMINALLY 3".
4. HOLD MOLD FIRMLY AGAINST PIPE WITH OPENING AWAY FROM THE OPERATOR. IGNITE WITH FLINT GUN.
5. REMOVE ALL WELD SLAG, SPLATTER, SHARP EDGES AND BURRS WITH CHIP HAMMER AND METAL FILE.
6. TEST STRENGTH OF CONNECTION BY LIGHTLY TAPPING WITH 1 LB HAMMER, AND PULL WITH 5 LB FORCE ON CABLE.
7. WIPE PIPE SURFACE WITH CLEAN, OIL FREE RAGS TO REMOVE ANY LOOSE DUST.
8. PRIME CLEANED SURFACE WITH APPROVED PRIMER.
9. COAT THERMOWELD AND 6" OF CABLE TAIL WITH COMPATIBLE COATING, SUCH THAT ALL CORNERS ARE FILLED. THE COATING SHALL EXTEND FOR AT LEAST 2" AROUND THE THERMOWELD AREA.
10. THERMOWELD CARTRIDGE SIZE SHALL BE COMPATIBLE TO STEEL MATERIALS. MULTIPLE POWDER CARTRIDGE CHARGERS SHALL NOT BE USED. IF A THERMOWELD MUST BE REPEATED, A NEW PIPE SURFACE MUST BE PREPARED AT LEAST 3" FROM THE ORIGINAL WELD ATTEMPT. MORE THAN ONE WELD ATTEMPT ON THE SAME SPOT SHALL NOT BE PERMITTED.
11. IN NON-CONCRETE LINED PIPES, ALL EXOTHERMIC WELDS SHALL BE MADE IN A STEEL PAD.

CABLE STRAND DETAILS

CABLE NO. OF SIZE	NO. OF STRANDS	NO. OF EXOTHERMIC GROUPS PER CABLE CONNECTION	CABLE STRANDS PER GROUP
8	19	1	19
6	7	1	7
	19		19
4	7	2	3-4
	19		10-9
2	7	3	3-2-2
	19		7-6-6

Revision	By	Approved	Date
Original		A.Oskoui	12/03

CITY OF SAN DIEGO - STANDARD DRAWING

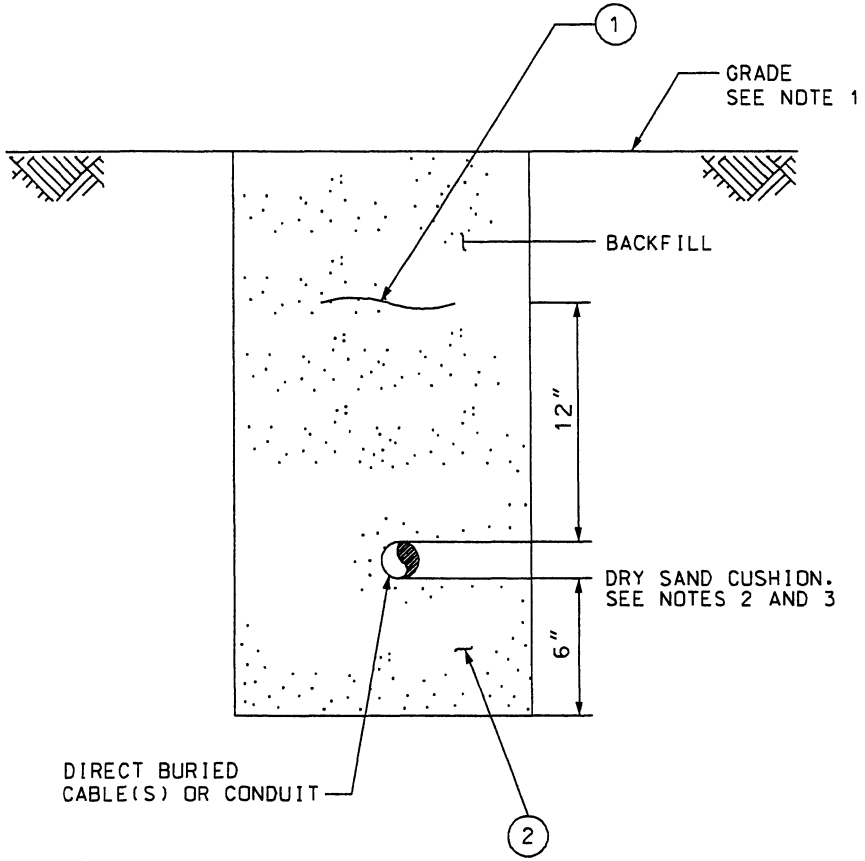
EXOTHERMIC WELDING OF CABLES AND COATING OF WELDING

CITY OF SAN DIEGO STANDARDS COMMITTEE

R. G. 12-9-03
Chairperson RCE 6/17/02 Date

DRAWING NUMBER SDW-125

- MATERIALS:**
- ① POLYETHYLENE WARNING TAPE. REFER TO DETAIL 1 ON SDW-121.
 - ② SAND: 50 SIEVE COMPLIES TO SSPWC 200-1.5



CABLE(S) AND CONDUIT TRENCH SECTION

- NOTES:**
- 1. IN PAVED, CITY-OWNED ROADWAYS, THE REPAIR OF THE ROAD SURFACE SHALL BE PER APPLICABLE SDRSD SDG-117 OR SDG-118. IN STATE HIGHWAYS, CONFORM TO APPLICABLE CALTRANS STANDARDS.
 - 2. CLEAN SHARP STONES AND RUBBLE FROM THE BOTTOM OF DITCH.

Revision	By	Approved	Date
Original	BM	A.Oskoui	12/03
Notes	BM	A.Oskoui	12/06

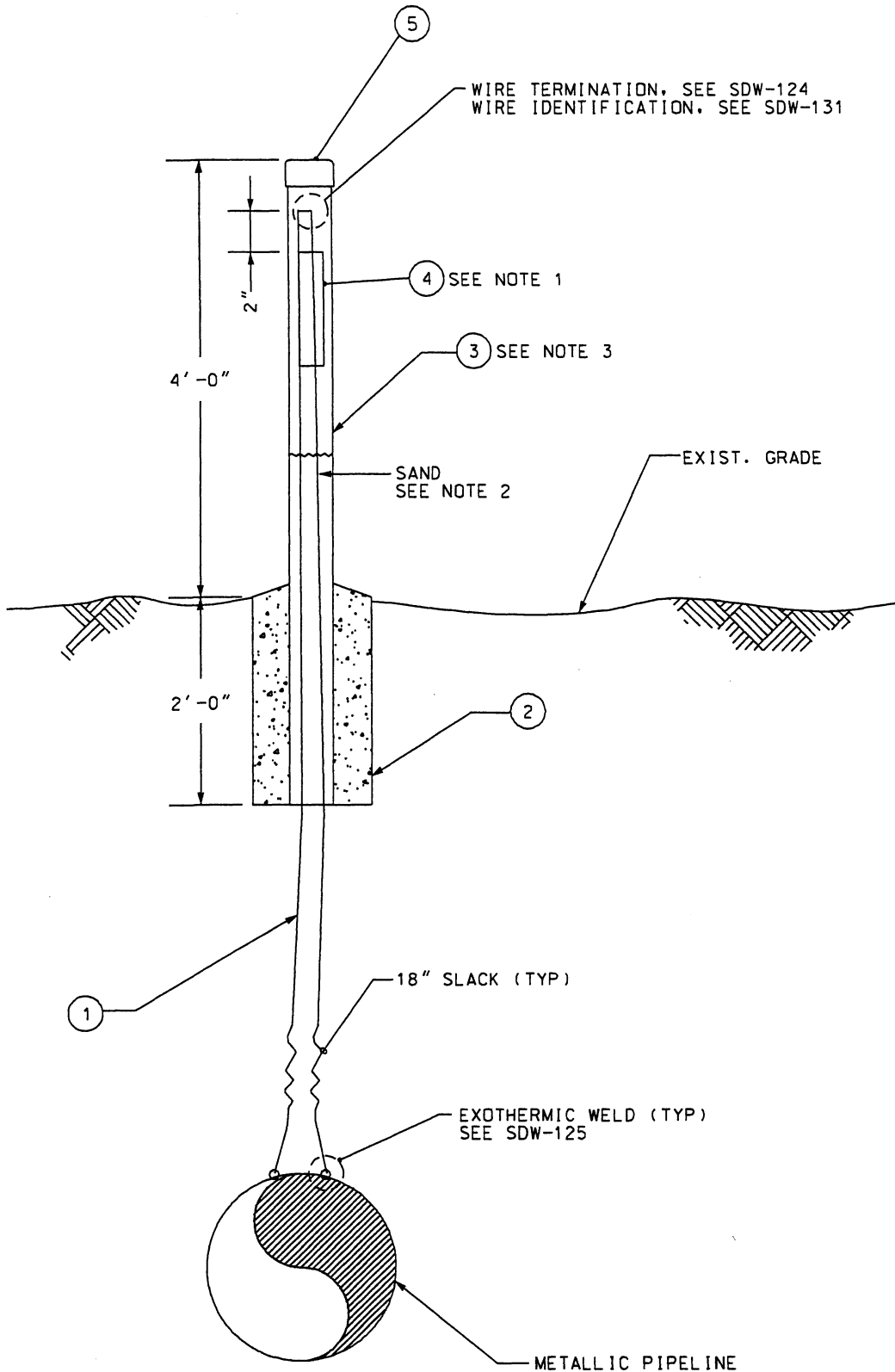
CITY OF SAN DIEGO - STANDARD DRAWING

INSTALLATION OF DIRECTLY BURIED CABLES AND CONDUIT

CITY OF SAN DIEGO
STANDARDS COMMITTEE

W. H. H. H. 12/16/06
Coordinator R.C.E. 65271 **Dore**

DRAWING NUMBER **SDW-126**



- MATERIALS:**
- ① CABLE: AWG #8 COPPER ASTM B3 STRANDED ASTM B8 INSULATION ASTM D 1248 TYPE 1, CLASS C, GR. 5.
 - ② FOOTING: CONCRETE 12" DIA., SSPWC 295-C-17.
 - ③ PIPE: 4" DIAMETER, SCH 40, ASTM A 53 GALVANIZED.
 - ④ DECAL: SEE SDW-132.
 - ⑤ CAP: THREADED 4" DIAMETER GALVANIZED.

- NOTES:**
- 1. PLACE TWO DECALS, ONE FACING ROADWAY.
 - 2. FILL THE PIPE WITH 50 SIEVE SAND FROM BOTTOM OF CONCRETE FOOTING TO 12" ABOVE GRADE.
 - 3. THIS POST-MOUNTED STATION IS FOR USE ONLY IN AREAS WITH NO VEHICULAR TRFFIC.

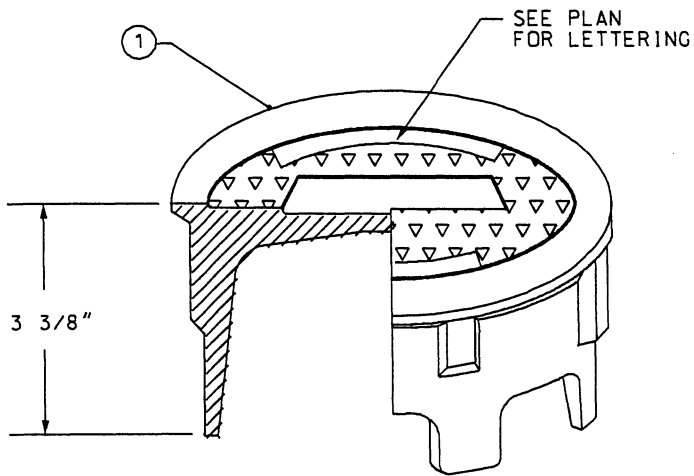
POST-MOUNTED TEST STATION

Revision	By	Approved	Date
Original	BM	A.Oskoui	12/03
Notes	BM	A.Oskoui	12/06

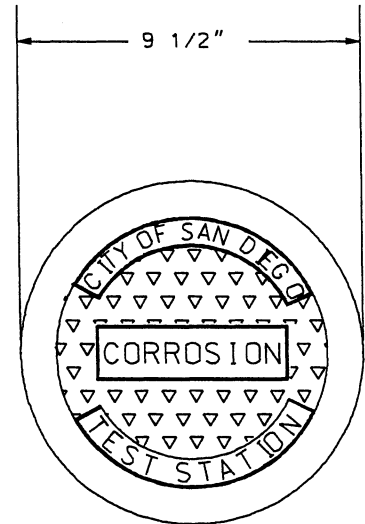
CITY OF SAN DIEGO - STANDARD DRAWING

ABOVE GRADE CATHODIC PROTECTION TEST STATION INSTALLATION FOR UNDEVELOPED AREAS

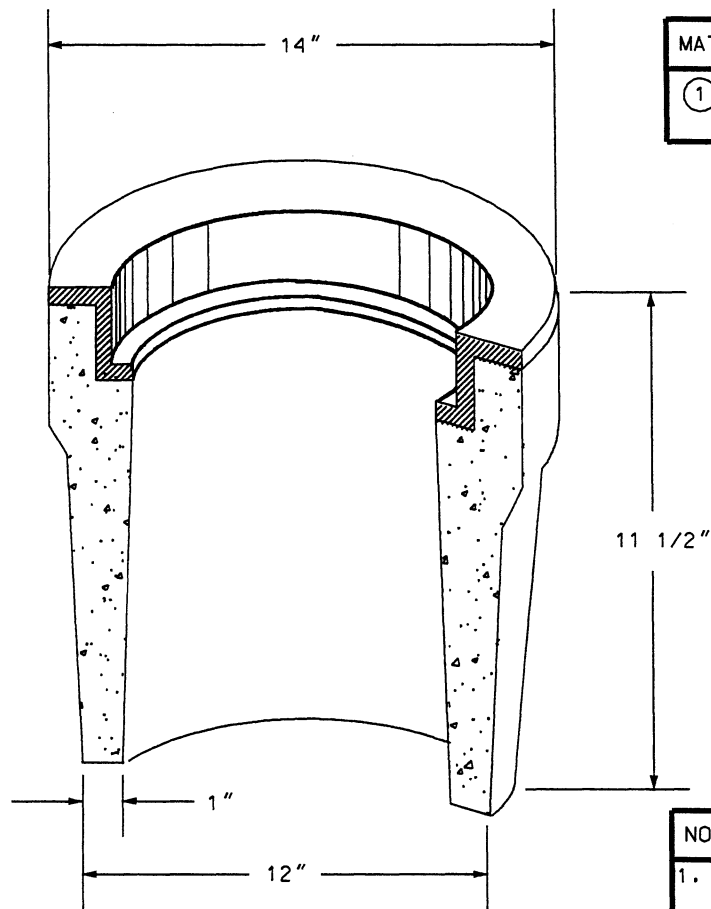
CITY OF SAN DIEGO STANDARDS COMMITTEE
W. Haddi 12/16/6
 Coordinator R.C.E. 65271 **Date**
DRAWING NUMBER SDW-127



TEST BOX COVER ISOMETRIC



TEST BOX COVER PLAN



TEST BOX ISOMETRIC SECTION

MATERIALS:
 ① COVER: ASTM A 48 CLASS 30.

NOTES:
 1. COVER WEIGHT: 12 LB.
 2. BODY WEIGHT: 58 LB.
 3. THE COVER SHALL HAVE CASTED MARKING IN 1/2" HIGH RAISED LETTERS.

Revision	By	Approved	Date
Original	BM	A.Oskoui	12/03
Notes	BM	A.Oskoui	12/06

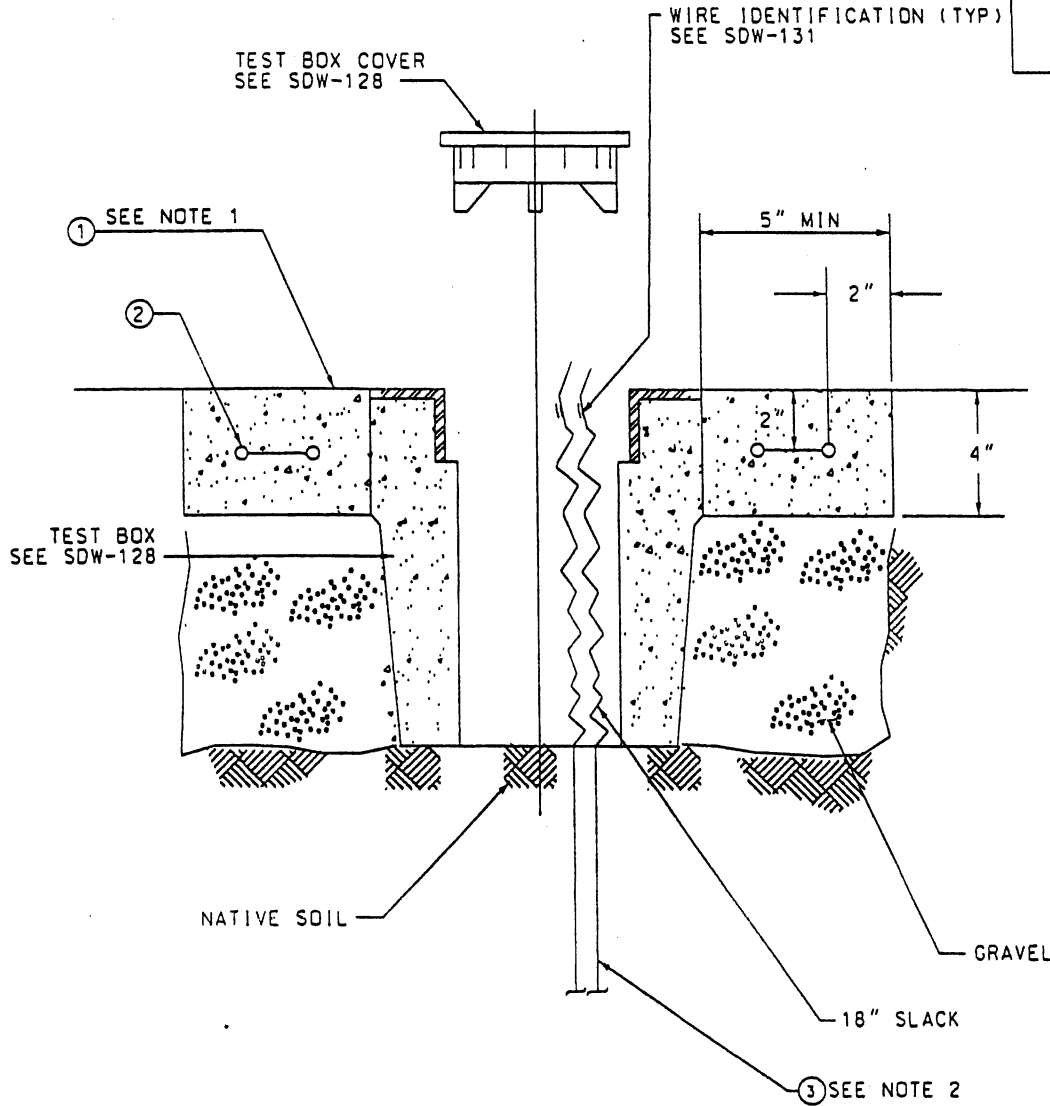
CITY OF SAN DIEGO - STANDARD DRAWING

**AT-GRADE
 CONCRETE TEST BOX**

**CITY OF SAN DIEGO
 STANDARDS COMMITTEE**
A. Oskoui 12/16/06
 Coordinator R.C.E. 65271 Date
DRAWING NUMBER SDW-128

MATERIALS:

- ① CONCRETE: 2' X 2' X 4" THK. PER SSPWC 330-C-23.
- ② REINFORCING FABRIC 4" X 4" GAUGE 10 WIRE.
- ③ CABLE: REFER TO NOTE 2.



TEST STATION SECTION

NOTES:

- 1. SLOPE CONCRETE PAD AWAY FROM COVER.
- 2. FOR CONTINUATION OF CABLES, REFER TO SDW-127 OR SDW-130, AS APPLICABLE.

Revision	By	Approved	Date
Original		Oskoui	12/03

CITY OF SAN DIEGO - STANDARD DRAWING

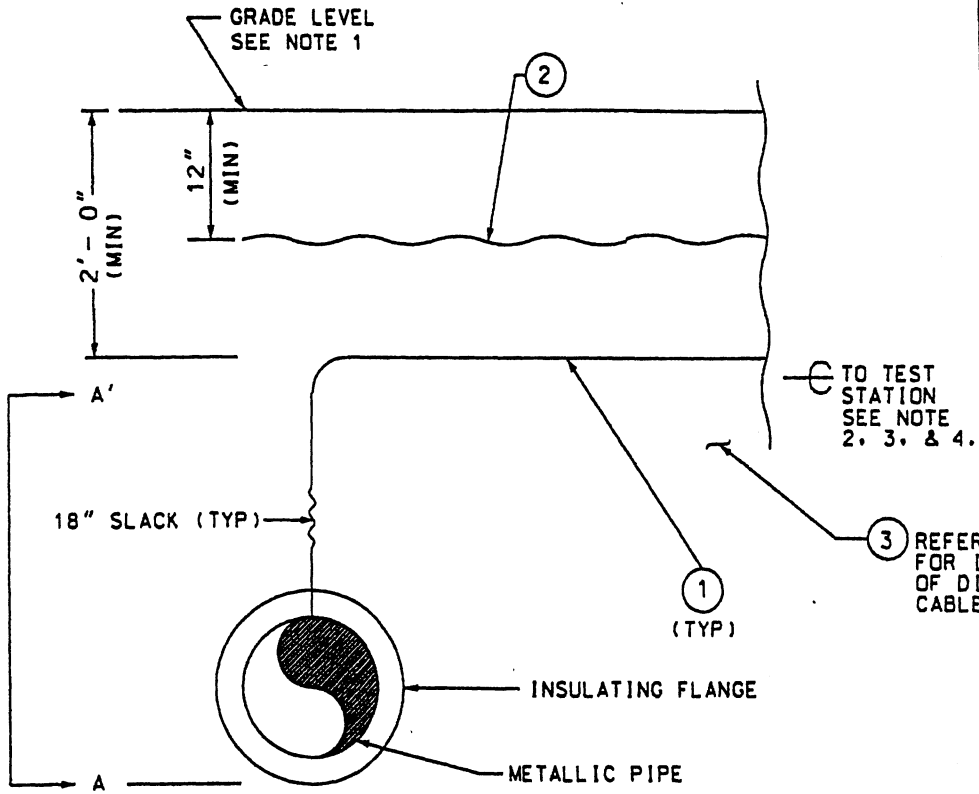
AT-GRADE CATHODIC PROTECTION TEST STATION WIRING DIAGRAM FOR ROADWAYS

CITY OF SAN DIEGO STANDARDS COMMITTEE

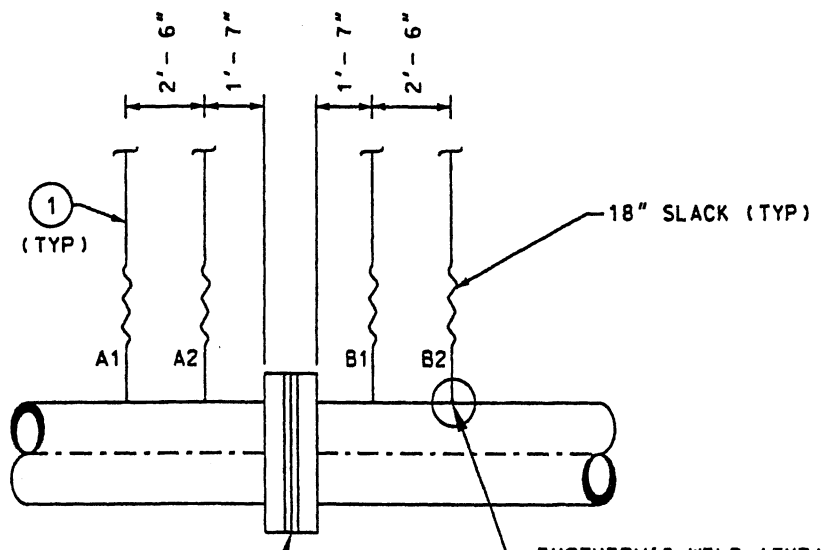
Rh 12-9-03
Chairperson RCE 6492 Date

DRAWING NUMBER SDW-129

- MATERIALS:**
- ① CABLE: AWG #2, COPPER ASTM B3, STRANDED ASTM B8, INSULATED PER ASTM D1248, TYPE 1 CLASS C, GRADE 5.
 - ② POLYETHYLENE WARNING TAPE, SEE DETAIL 1 SDW-121.
 - ③ SAND: 50 SIEVE COMPLIES TO SSPWC 200-1.5.



SECTION



ELEVATION 'A'-A

- NOTES:**
1. IN PAVED, CITY OWNED ROADWAYS, THE REPAIR OF THE ROAD SURFACE SHALL BE PER APPLICABLE TO SDRSD SDG-117 OR SDG-118. IN STATE HIGHWAYS, CONFORM TO APPLICABLE CALTRANS STANDARD.
 2. FOR LOCATION, OF TEST STATION, USE REGIONAL STD DWG W15. EXACT LOCATION SHALL BE APPROVED BY CORROSION ENGR.
 3. AT ROADWAYS, USE SDW-129 & AT UNDEVELOPED AREAS USE SDW-127.
 4. FOR INSTALLATION OF DIRECTLY BURIED CABLES & CONDUIT SEE SDW-126.

Revision	By	Approved	Date
Original	Oskoui		12/03

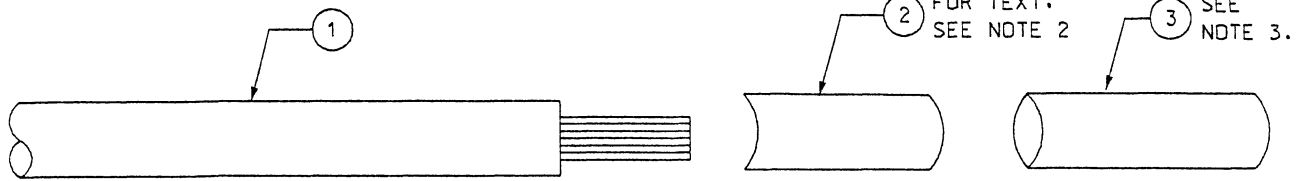
CITY OF SAN DIEGO - STANDARD DRAWING

INSULATING FLANGE FOUR-WIRE
TEST STATION INSTALLATION

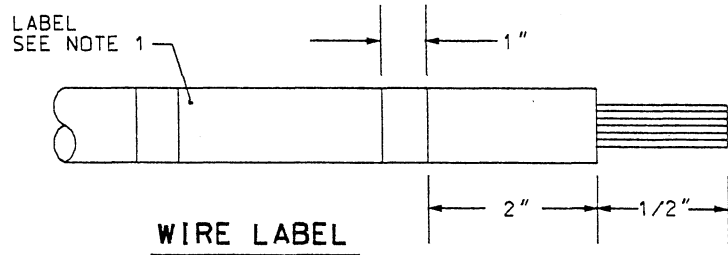
CITY OF SAN DIEGO
STANDARDS COMMITTEE

R. G. 12-9-03
Chairperson RCE 84572 Date

DRAWING NUMBER SDW-130



WIRE LABEL DETAIL STATION



WIRE LABEL

LEGEND

PIPE MATERIAL

- CCI - COATED CAST IRON
- CDI - COATED DUCTILE IRON
- SCRC - STEEL CYLINDER REINFORCED CONCRETE
- PSCS - PRE-STRESSED CONCRETE-STEEL CYLINDER
- RCCP - REINFORCED CONCRETE CYLINDER PIPE (W/D STEEL)
- SCRW - STEEL CYLINDER REINFORCED ROD WRAPPED
- CMLC - CEMENT MORTAR LINED-COATED STEEL CYLINDER
- CMLCT - CEMENT MORTAR LINED-COATED-TAPED STEEL CYLINDER
- CSTL - COATED STEEL CYLINDER

CPTS# (CATHODIC PROTECTION TEST STATION NUMBERING)

CPTS#1, 2, 3,N

TYPE OF INSTALLATION

- 2WTS - 2-WIRE TEST STATION
EXAMPLE: CPTS#1, 2WTS, 180+00, 30, DTAY 2, CSTL
- 4WIJTS - 4-WIRE INSULATING JOINT TEST STATION
EXAMPLE: CPTS#2, 4WIJTS, 180+00, 30, DTAY 2, CSTL, NORTH OR SOUTH OR EAST OR WEST FOR WIRE TAGS
- 6WTS - 6-WIRE TEST STATION
EXAMPLE: STRUCTURE#1 - CPTS#3, 6WTS, 180+00, 30, DTAY 2, CSTL NORTH OR SOUTH OR EAST OR WEST FOR WIRE TAGS
STRUCTURE#2 - CPTS#3, 6WTS, 120+60, 24, MIDCITY, SCRW NORTH OR SOUTH OR EAST OR WEST FOR WIRE TAGS
STRUCTURE#3 - CPTS#3, 6WTS, 101+25, 54, TRDJAN, RCCP, NORTH OR SOUTH OR EAST OR WEST FOR WIRE TAGS
- CTS - CURRENT TEST STATION
EXAMPLE: CPTS#10, CTS, 180+00, 200 FT., DTAY 2, CSTL, NORTH OR SOUTH OR EAST OR WEST FOR WIRE TAGS
- CSGTS - CASING TEST STATION
EXAMPLE: CPTS#12, CSGTS, 180+00, 30, DTAY 2, CSTL NORTH OR SOUTH OR EAST OR WEST FOR WIRE TAGS
- ASTA - ANODE STATION
EXAMPLE: ANODE#1, 2, 3,N FOR ANODE WIRES;
30, DTAY 2, CSTL, 180+00, CPTS#6 FOR STRUCTURE WIRE
- BSTA - BOND STATION
EXAMPLE: CPTS#18, BSTA, 30, DTAY 2, CSTL, 180+00;
54, DTAY 3, SCRW, 65+20
- FXSTA - FOREIGN CROSSING STATION
EXAMPLE: CPTS#4, FXSTA; 30, DTAY 2, CSTL, 180+00; 24 SDGE

- MATERIALS:**
- ① CABLE: AWG ASTM B8 & B3.
 - ② LABEL: FILE FOLDER, SELF ADHESIVE WHITE 2/3" X 3 1/16".
 - ③ SLEEVE: HEAT SHRINK, ADHESIVE LINED POLYDLEFIN, CLEAR THIN WALL TUBING.

- NOTES:**
1. CABLES SHALL BE TAGGED USING TIMES ROMAN 10 POINT FONT.
 2. TEXT SHALL BE PRESENTED IN THE FOLLOWING ORDER:
 - . CPTS #
 - . TYPE OF INSTALLATION
 - . STATIONING
 - . PIPE DIAMETER
 - . FACILITY NAME
 - . PIPE MATERIAL
 - . WIRE DIRECTIONAL ORIENTATION
 - . NDRTH
 - . SOUTH
 - . EAST
 - . WEST
 3. PLACE SLEEVE AFTER ATTACHMENT OF LABEL TO CABLE.

Revision	By	Approved	Date
Original		A.Oskoui	12/03
Notes	BM	A.Oskoui	12/06

CITY OF SAN DIEGO - STANDARD DRAWING

WIRE IDENTIFICATION

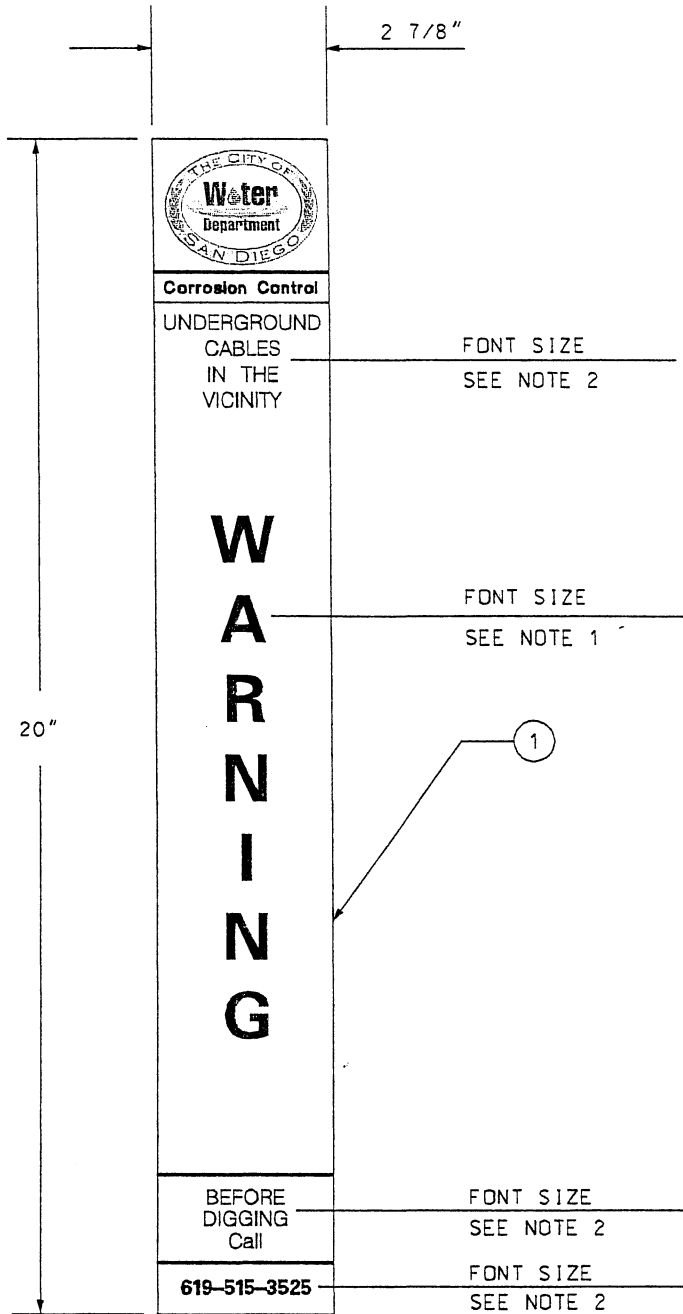
CITY OF SAN DIEGO
STANDARDS COMMITTEE

A. Oskoui 12/16/06
Coordinator R.C.E 65271 Date

DRAWING NUMBER SDW-131

MATERIALS:

① DECAL: APWA BLUE, WITH WHITE REFLECTIVE LETTERS. DECAL MATERIAL SHALL BE UV RESISTANT PREMIUM GRADE CAST VINYL SHEETING WITH AGGRESSIVE ADHESIVE AND UNDER PROTECTIVE LAMINATE.



DECAL ELEVATION

NOTES:

1. 1" TEXT BOLD
 2. 1/4" TEXT BOLD

Revision	By	Approved	Date
Original	BM	A.Oskoui	12/03
Notes	BM	A.Oskoui	12/06

CITY OF SAN DIEGO - STANDARD DRAWING

POST-MOUNTED CATHODIC PROTECTION WARNING DECAL

CITY OF SAN DIEGO STANDARDS COMMITTEE

M. Hance 12/16/16
 Coordinator R.C.E. 65271 Date

DRAWING NUMBER **SDW-132**

ANODES

AV Vertical AH Horizontal
Where X:

- | | |
|-------------------------------|-------------------------------|
| AV1 - Al (Aluminum) | AH1 - Al (Aluminum) |
| AV2 - Pm (Polymeric) | AH2 - Pm (Polymeric) |
| AV3 - Pt (Platinum) | AH3 - Pt (Platinum) |
| AV4 - Fe (Scrap Iron) | AH4 - Fe (Scrap Iron) |
| AV5 - Gr (Graphite) | AH5 - Gr (Graphite) |
| AV6 - Ci (HS C Iron) | AH6 - Ci (HS C Iron) |
| AV7 - Zn (Zinc) | AH7 - Zn (Zinc) |
| AV8 - Mg (Magnesium) | AH8 - Mg (Magnesium) |
| AV9 - MMO (Mixed Metal Oxide) | AH9 - MMO (Mixed Metal Oxide) |

CABLES (CB)

- | | | |
|-----|--|---------------------|
| CB1 | | Positive |
| CB2 | | Positive in Conduit |
| CB3 | | Negative |
| CB4 | | Negative in Conduit |

CABLE CONNECTION (CC)

- | | | |
|-----|--|-----------------|
| CC1 | | Exothermic Weld |
| CC2 | | Splice Tee |
| CC3 | | Straight Splice |

CASING (CS)

- | | | |
|-----|--|--------------------|
| CS1 | | Unprotected Casing |
| CS2 | | Protected Casing |

ANODE GROUNDBEDS (AG)

- | | | |
|-----|--|---------------------------|
| AG1 | | Deep Anode Well |
| AG2 | | Polymeric or Platinum |
| AG3 | | Conventional - Vertical |
| AG4 | | Conventional - Horizontal |

JUNCTION BOX (JB)

- JB Where X:
- JBN - Negative Cables
 - JBP - Positive Cables
 - JBR - Resistor
 - JBD - Diode
 - JBA - Galvanic Anode Shunts
 - JBI - Impressed Anode Shunts
 - JBS - Cable Splice

INSULATING JOINTS (IJ)

- | | | |
|------|--|---|
| IJ1 | | Dielectrically Insulated Flange Joint |
| IJ2 | | Non-Dielectrically Insulated Flange Joint |
| IJ3 | | Flanged insulating Protective Device |
| IJ4 | | Bonded Insulated Flange Joint |
| IJ5 | | Insulated Flange w/Adjustable Resistance |
| IJ6 | | Gate Valve Insulated Flange Joint |
| IJ7 | | Butterfly Valve Insulated Flange Joint |
| IJ8 | | MOV Insulated Flange Joints |
| IJ9 | | Monolithic Insulating Joint |
| IJ10 | | Bonded Mechanical Coupling |
| IJ11 | | Dielectrically Insulated Union |
| IJ12 | | Bonded Dielectric Union |
| IJ13 | | Dielectrically Insulated Coupling |

RECTIFIERS (RE)

- | | | |
|-----|--|------------------|
| RE1 | | Pedestal Mounted |
| RE2 | | Post Mounted |

REFERENCE CELL (RC)

- | | | |
|-----|--|-----------------------------|
| RC1 | | Copper-Copper Sulfate Cell |
| RC2 | | 99.9% High Purity Zinc Cell |
| RC3 | | Silver-Silver Chloride Cell |

TEST STATION (TS)

- Above Grade At Grade Where X:
- TS1 - IR-Free Coupon
 - TS2 - 2-Wires Station
 - TS3 - Foreign Crossing Station
 - TS4 - 4-Wires Station
 - TS5 - Calibrating Station
 - TS6 - 6-Wires Station
 - TS7 - Interference Current
 - TS8 - 8-Wires Station
 - TS9 - Electrical Resistance Probe

Revision	By	Approved	Date
Original	BM	A.Oskoui	12/03
Notes	BM	A.Oskoui	12/06

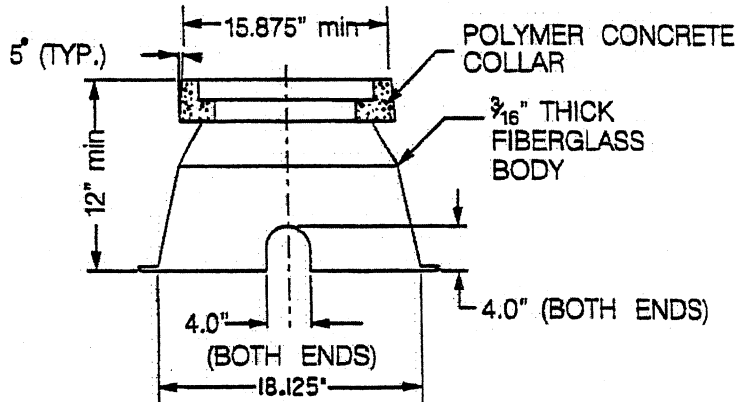
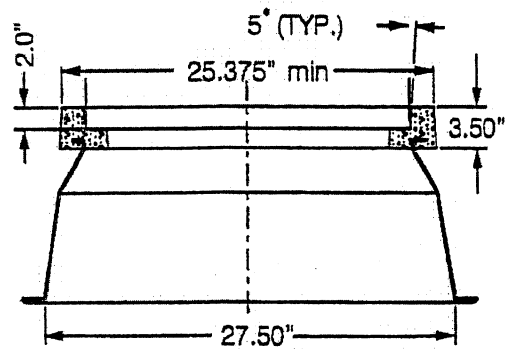
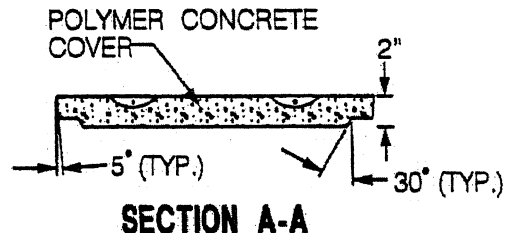
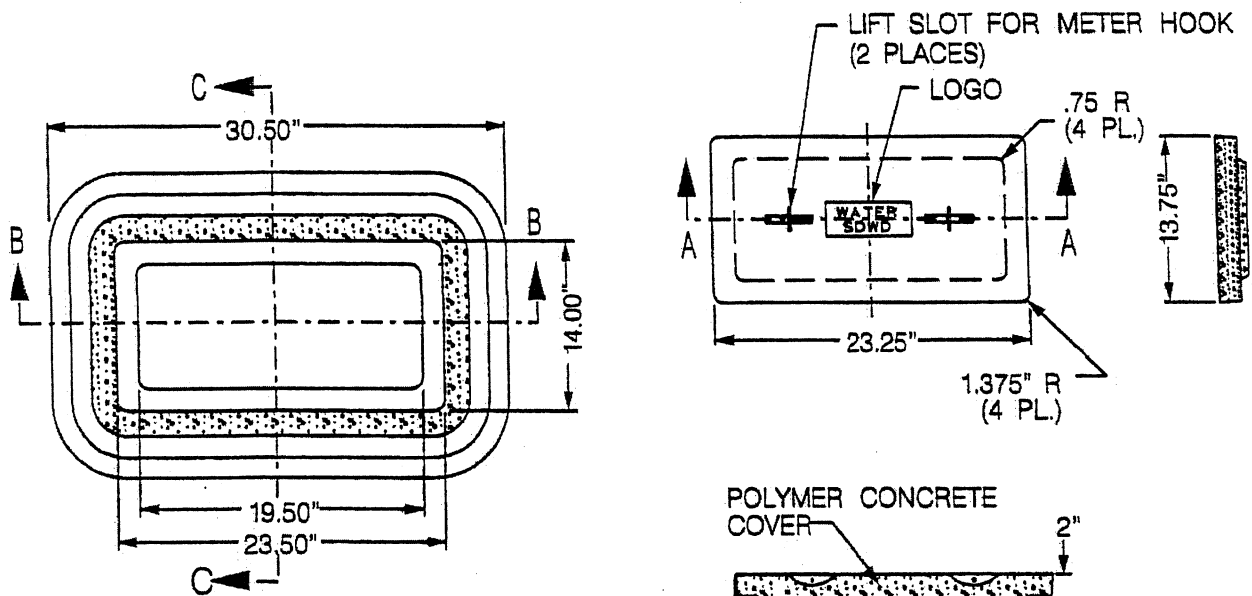
CITY OF SAN DIEGO - STANDARD DRAWING

**SYMBOLS
CATHODIC PROTECTION**

CITY OF SAN DIEGO
STANDARDS COMMITTEE

A. Osakou 12/16/06
Coordinator R.C.E 65271 Date

DRAWING NUMBER **SDW-133**

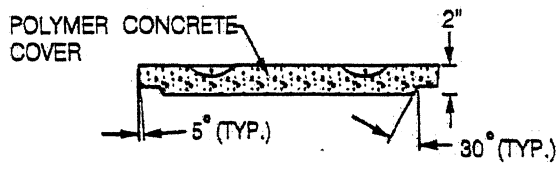
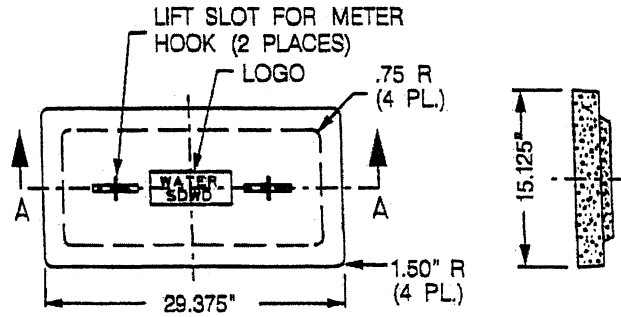
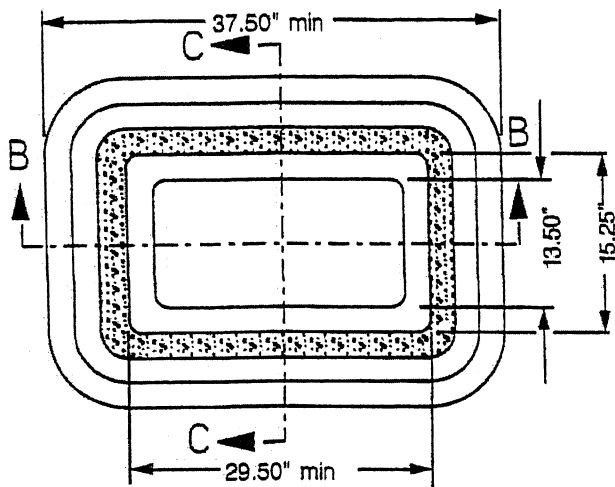


NOT TO SCALE

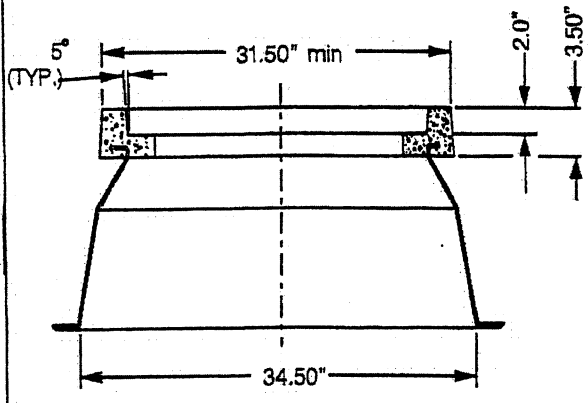
NOTE:

1. METER BOX COLLAR AND COVER SHALL BE OF POLYMER CONCRETE REINFORCED WITH CONTINUOUS LAYERS OF WOVEN FIBERGLASS.
2. BOX AND COVER SHALL WITHSTAND A-16 LOADINGS (ASTM C857-95)
3. LOGO = SDWD WATER
4. FOR COVER DETAIL WITH READER LID, SEE SDW-136
5. SEE SDW-137 FOR INSTALLATION PROCEDURE.

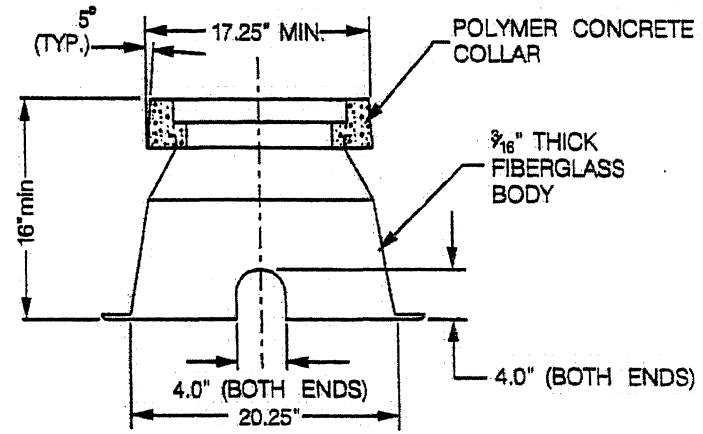
Revision	By	Approved	Date	CITY OF SAN DIEGO - STANDARD DRAWING	CITY OF SAN DIEGO STANDARDS COMMITTEE
Original	SMS	A.Oskoui	12/03		
				DRAWING NUMBER	SDW-134



SECTION A-A



SECTION B-B



SECTION C-C

NOT TO SCALE

NOTE:

1. METER BOX COLLAR AND COVER SHALL BE OF POLYMER CONCRETE REINFORCED WITH CONTINUOUS LAYERS OF WOVEN FIBERGLASS.
2. BOX AND COVER SHALL WITHSTAND A-16 LOADINGS (ASTM C857-95)
3. LOGO = SDWD WATER
4. FOR COVER DETAIL WITH READER LID, SEE SDW-136
5. SEE SDW-137 FOR INSTALLATION PROCEDURE.

Revision	By	Approved	Date
Original	SMS	A.Oskoui	12/03

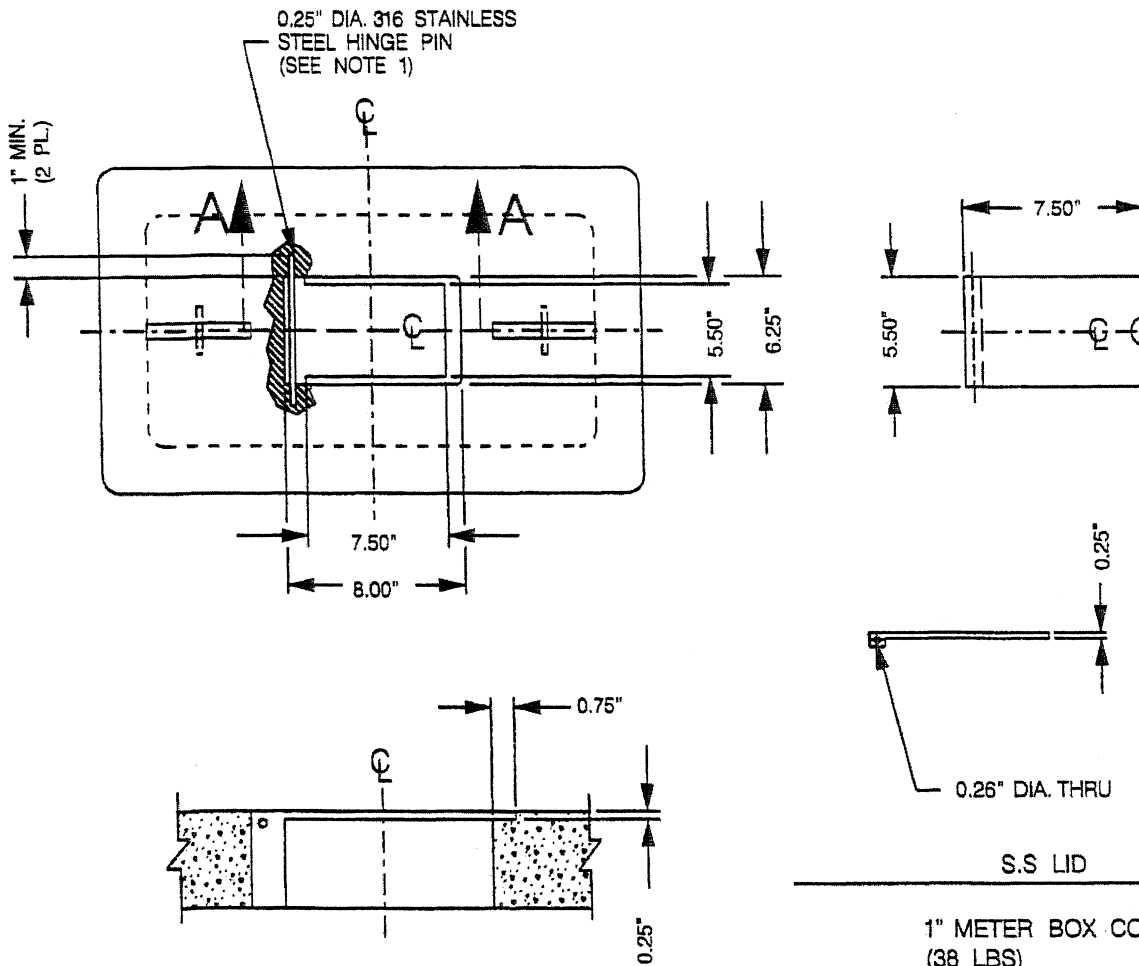
CITY OF SAN DIEGO - STANDARD DRAWING

POLYMER CONCRETE WITH LAYER OF WOVEN FIBERGLASS WATER METER BOX FOR 2" WATER SERVICE

CITY OF SAN DIEGO
STANDARDS COMMITTEE

R. [Signature] 12-9-03
Chairperson FCE 64512 Date

DRAWING NUMBER **SDW-135**



SECTION A-A

1" METER BOX COVER
(38 LBS)

2" METER BOX COVER
(43 LBS)

NOT TO SCALE

NOTE:

1. CAST IRON LID & 316 STAINLESS STEEL HINGE PIN TO OPEN LESS THAN 90 DEGREES SHALL BE ASSEMBLED AND MOLDED INTO METER BOX COVER DURING MANUFACTURE.
2. SEE SDW-134 OR SDW-135 FOR DIMENSIONS OF METER BOX COVER.
3. LID SHALL WITHSTAND A-10 LOADINGS (ASTM C857-95)

Revision	By	Approved	Date
Original	SMS	A.Oskoui	12/03

CITY OF SAN DIEGO - STANDARD DRAWING

METER BOX COVER WITH READER LID

CITY OF SAN DIEGO
STANDARDS COMMITTEE

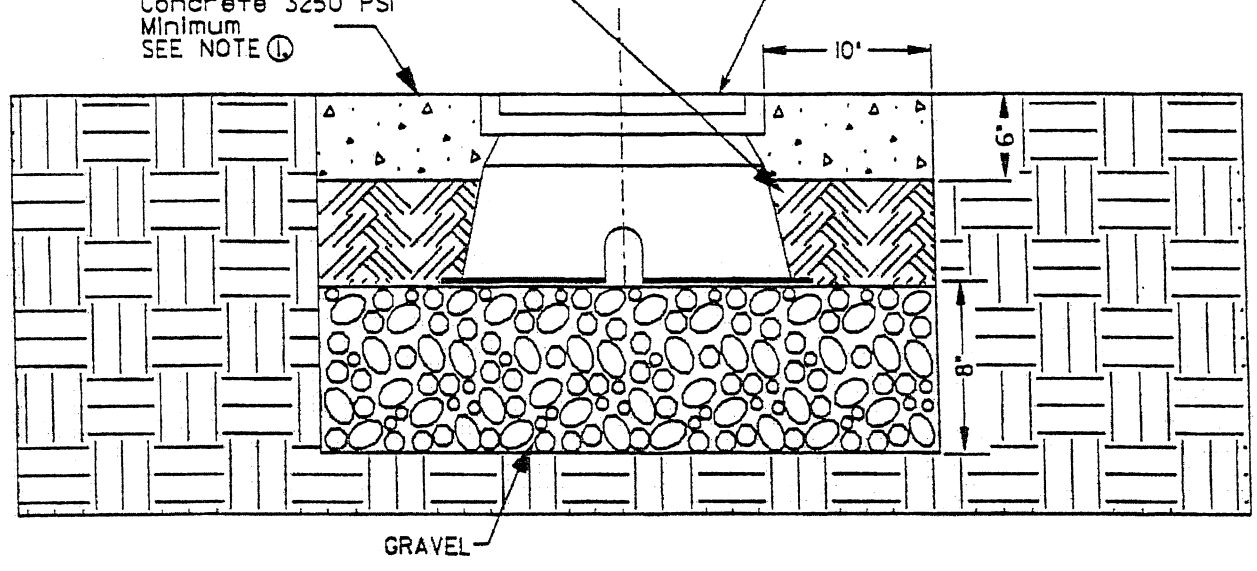
Chairperson RCE 64572 Date

DRAWING NUMBER **SDW-136**

Fill @ 95% RELATIVE
Compaction

Concrete 3250 PSI
Minimum
SEE NOTE ①

SEE SDW-135
METER BOX



NOT TO SCALE

INSTALLATION PROCEDURE FOR METER BOXES IN AREAS WHICH ARE SUBJECT TO HEAVY TRAFFIC INCLUDING DRIVEWAYS, PARKING LOTS AND ALLEYS

STEP 1. PREPARE THE EXCAVATION APPROXIMATELY 8 INCHES DEEPER THAN THE DEPTH OF THE BOX, THEN ADD 8 INCHES OF GRAVEL.

STEP 2. PLACE BOX IN HOLE WITH TOP AT GRADE LEVEL.

STEP 3. BACKFILL AND COMPACT TO 95% RELATIVE COMPACTION MINIMUM.

NOTE

① CONCRETE IS REQUIRED TO BE 3250 PSI MINIMUM STRENGTH AND PLACED AT STREET GRADE.

Revision	By	Approved	Date
Original	SMS	A.Oskou	12/03

CITY OF SAN DIEGO - STANDARD DRAWING

INSTALLATION PROCEDURE FOR HEAVY TRAFFIC METER BOX

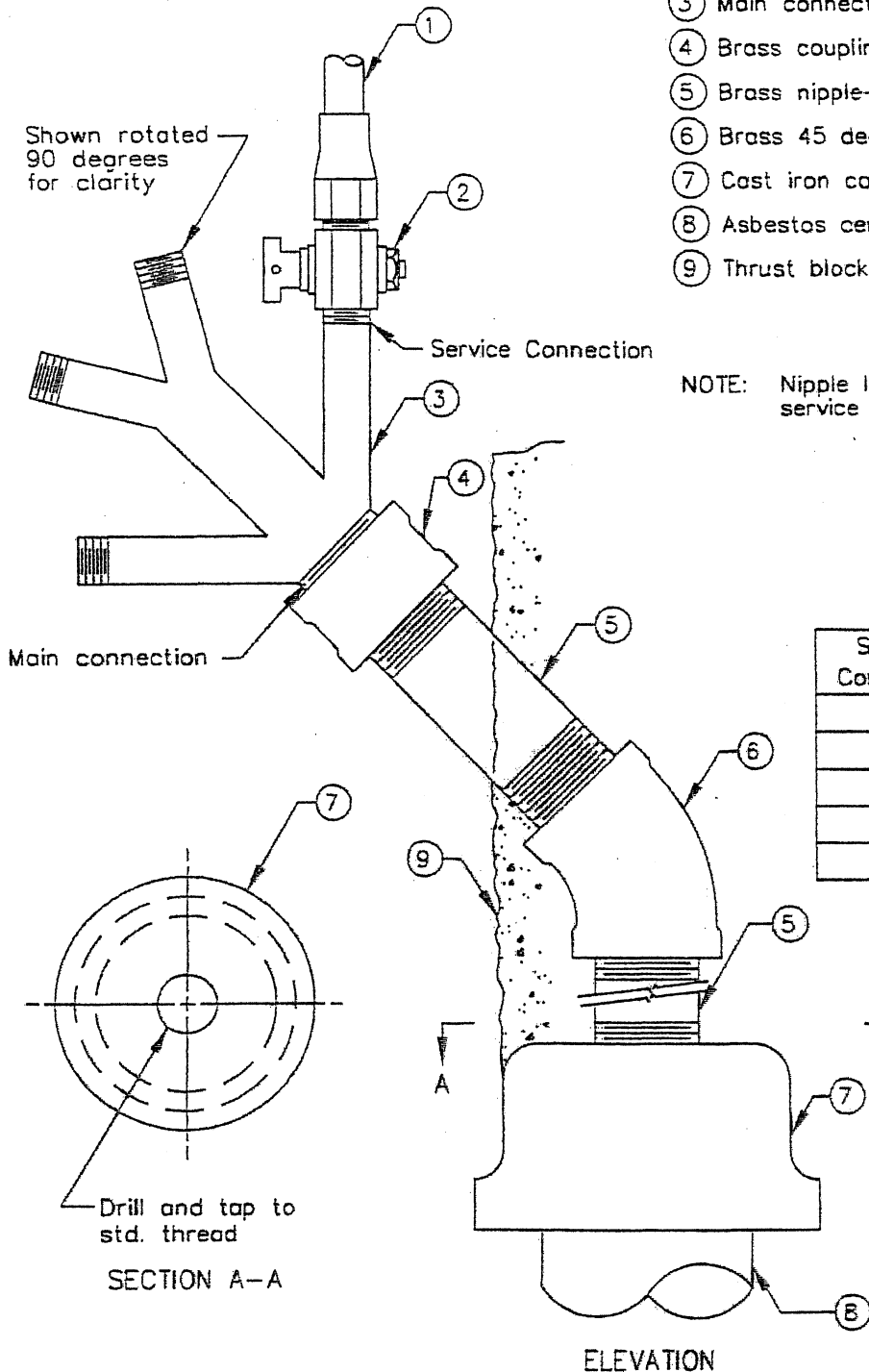
CITY OF SAN DIEGO
STANDARDS COMMITTEE

[Signature] 12-9-03
Chairperson RCE 84572 Date

DRAWING NUMBER **SDW-137**

- ① 25mm(1") Water service per Std. Dwg WS-01
- ② 25mm (1") Curb stop
- ③ Main connection X multiple branch connection
- ④ Brass coupling or 45 degree elbow
- ⑤ Brass nipple-102mm(4") min. length
- ⑥ Brass 45 degree elbow
- ⑦ Cast iron cap
- ⑧ Asbestos cement pipe
- ⑨ Thrust block per Std. Dwg WT-01

Shown rotated
90 degrees
for clarity



NOTE: Nipple lengths to be sufficient to allow service connection to clear thrust block.

Service Connection	Main Connection Item 5
2	32mm (1 1/4")
3	38mm (1 1/2")
4	51mm (2")
6	64mm (2 1/2")
8	76mm (3")

Revision	By	Approved	Date
Original	JS	A.Oskoui	12/06

CITY OF SAN DIEGO - STANDARD DRAWING

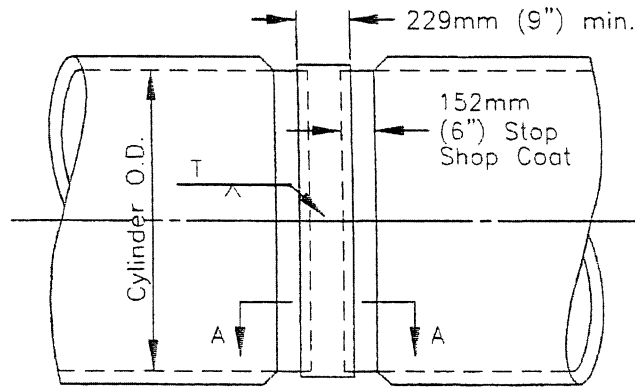
MULTIPLE SERVICE ASSEMBLY
DEAD END MAIN

CITY OF SAN DIEGO
STANDARDS COMMITTEE

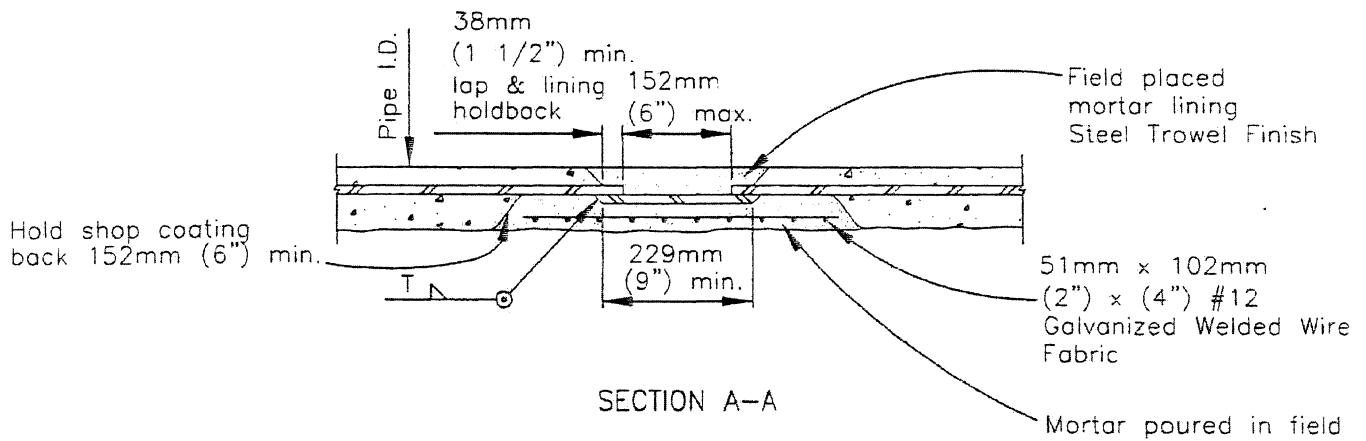
K. W. Neal 12/16/6

Coordinator R.C.E 65271 Date

DRAWING
NUMBER SDW-138



ELEVATION



NOTE:

Contractor shall provide handholes as required to complete the work

Revision	By	Approved	Date
Original	JS	A.Oskoui	12/06

CITY OF SAN DIEGO - STANDARD DRAWING

SPLIT BUTT STRAP

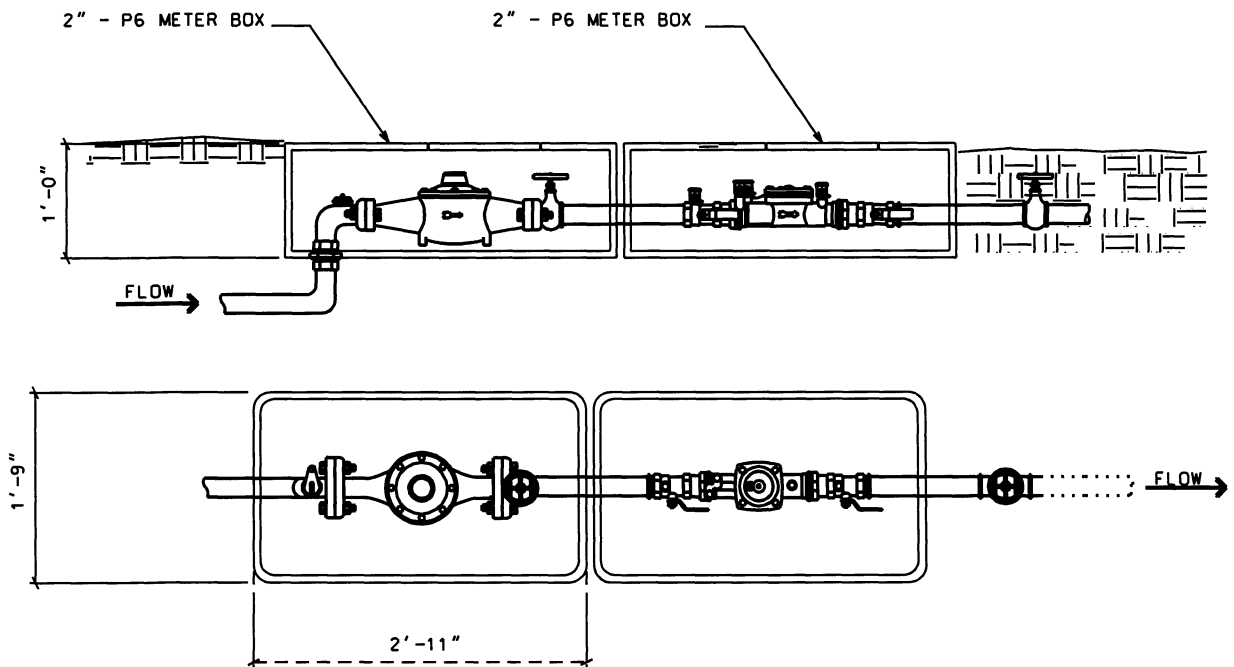
City of San Diego
Standards Committee

H. Hadi 12/16/06
Coordinator R.C.E 65271 Date

DRAWING NUMBER **SDW-139**

NOTE:

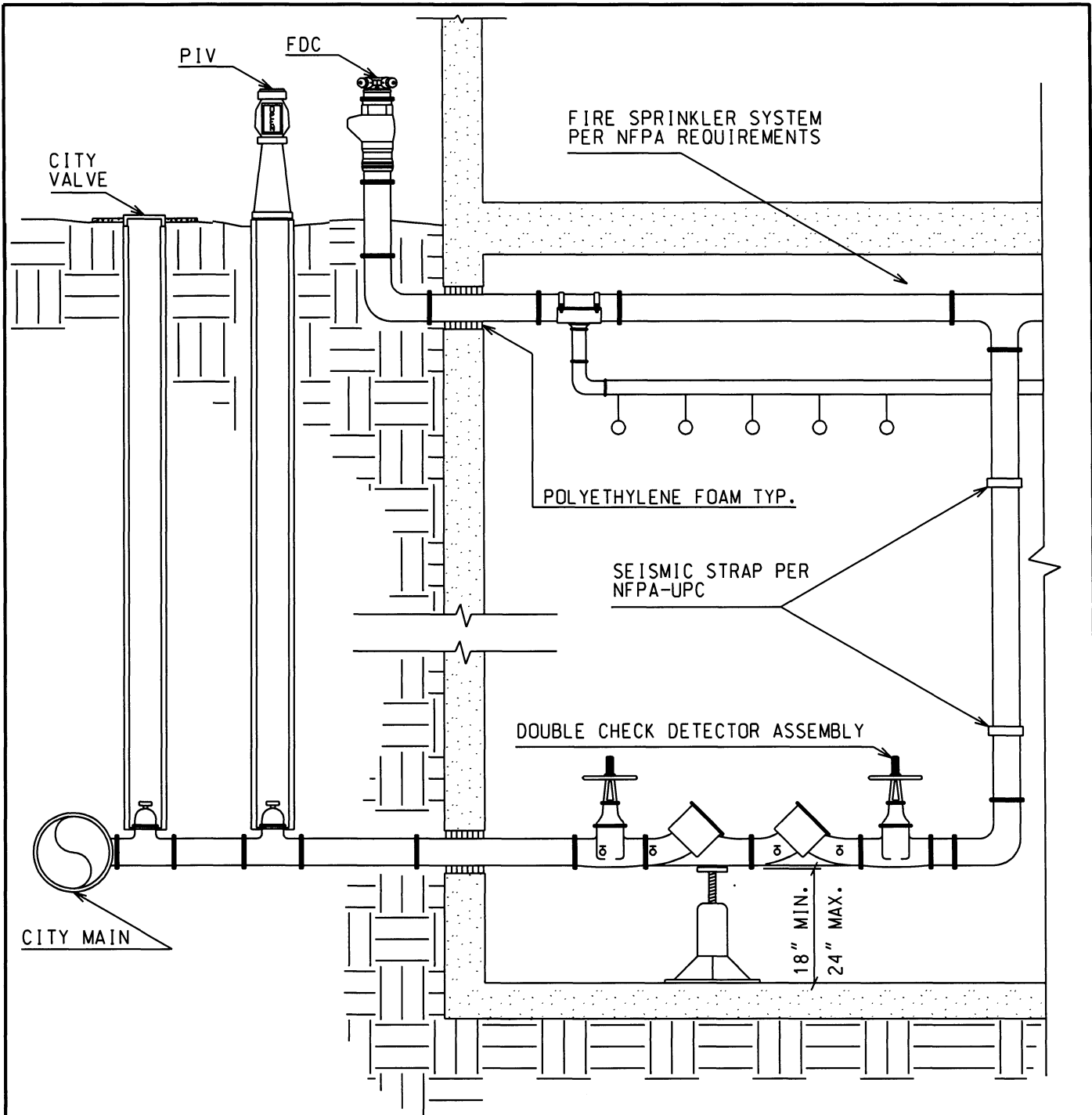
SEE SDRSD WR-01 FOR COMPLETE
BACKFLOW INSTALLATION REQUIREMENTS



NOTES:

1. Backflow preventer assembly shall be tested upon installation by a certified backflow device tester. Contractor shall provide the Engineer with written test results completed by a certified backflow tester prior to backflow preventer assembly's acceptance by the Engineer.
2. All metal in contact with concrete pipe shall be polyethylene wrapped using 2" wide plastic backed adhesive tape min. 8 mils. thick with 1/2" overlap.
3. Concrete pad to be 51mm (2") above grade unless in lawn area where it will be at 25mm (1") above grade. Concrete pad shall be 102mm (4") thick and 457mm (18") wide (min.) 308kgM -C 3 -17Mpa (520-C-2500). (Optional with Water Department approval).
4. Factory assembled Reduced Pressure Principle Assembly/Double Check Assembly shall be included in the latest edition of the "Approved for Service Isolation in California Public Water Systems issued by the State of California Department of Health services, Office of drinking Water.
5. Regulator may be installed upstream of the backflow preventer assembly when water pressure exceeds backflow preventer assembly rating.
6. Wye strainer and regulator, when required, shall be located downstream of the #2 shutoff valve.
7. Protective enclosure for backflow preventer assembly shall be used at the discretion of the property owner.
8. Locate preventer assembly as close to meter as practical as approved by the agency.
9. All risers, elbows and underground piping shall be M or L copper, brass, or Water Department approved material.

REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO - STANDARD DRAWING	CITY OF SAN DIEGO STANDARDS COMMITTEE <i>W.H. Noel: 12/16/06</i> COORDINATOR R.C.E 65271 DATE
ORIGINAL					
REVISED				WATER METER WITH 2" AND SMALLER DOUBLE CHECK VALVE ASSEMBLY	DRAWING NUMBER SDW-140
REVISED	MIC		9-06		
NOTES	JS	A.Oskoui	12/06		



NOTES:

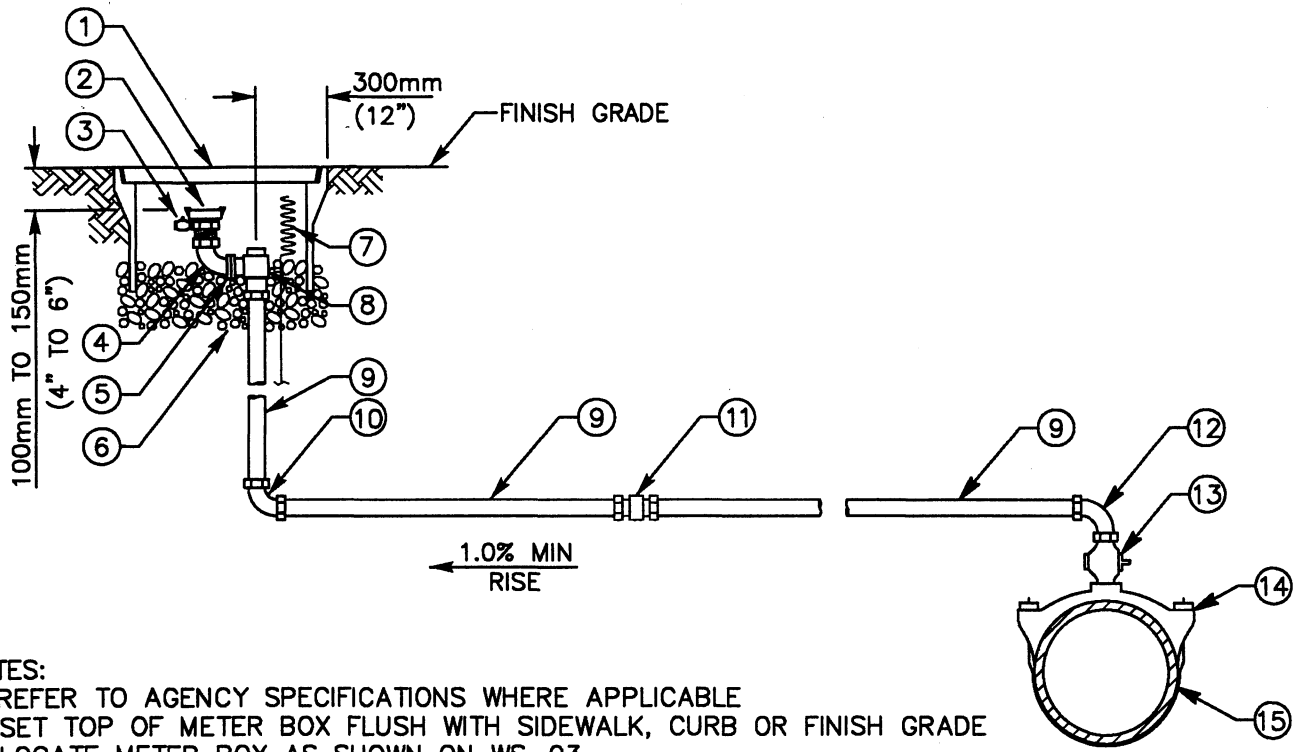
1. SEE CITY OF SAN DIEGO STANDARD DRAWING SDW-120 FOR COMPLETE INSTALLATION REQUIREMENTS.
2. LOCATION MUST BE APPROVED BY WATER DEPARTMENT, WATER OPERATIONS DIVISION, METER/BACKFLOW GROUP AND SHOWN ON PLANS.

REVISION	BY	APPROVED	DATE
ORIGINAL			
REVISED	MIC		8/06
REVISED			
NOTES	JS	A.Oskoui	12/06

CITY OF SAN DIEGO - STANDARD DRAWING

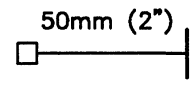
**BACKFLOW PREVENTER
DOUBLE CHECK DETECTOR ASSEMBLY
FOR FIRE SERVICE 3" AND LARGER**

CITY OF SAN DIEGO STANDARDS COMMITTEE		
<i>H. Hadi: 12/16/06</i>		
COORDINATOR	R.C.E. 65271	DATE
DRAWING NUMBER	SDW-141	



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) SET TOP OF METER BOX FLUSH WITH SIDEWALK, CURB OR FINISH GRADE
- 3) LOCATE METER BOX AS SHOWN ON WS-03
- 4) INSTALL WARNING/IDENTIFICATION TAPE AS SHOWN ON WP-01
- 5) MANUAL AIR VALVE INSTALLATION AT END OF MAIN TO BE SADDLED 24" FROM END CAP
- 6) MANUAL AIR VALVE ASSEMBLIES INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DESCRIBED IN AGENCY'S SPECIFICATIONS
- 7) ON STEEL MAINS USE WELD ON COUPLINGS, ON DUCTILE IRON MAINS USE DUCTILE IRON SERVICE SADDLES (INSULATING BUSHINGS ARE REQUIRED)
- 8) CAM & GROOVE ADAPTER SHALL BE DRILLED AND TAPPED AS REQUIRED FOR THE PRESSURE RELEASE PET COCK
- 9) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST



LEGEND ON PLANS

ITEM NO	SIZE AND DESCRIPTION	ITEM NO	SIZE AND DESCRIPTION
①	POLYMER METER BOX WITH LID 430mm x 760mm (17" x 30"), SEE NOTE 3	⑧	50mm (2") BRONZE COMP x FLG ANGLE METER STOP WITH LOCK WING
②	50mm (2") CAM & GROOVE ADAPTER x MIPT WITH LOCKING DUST CAP, SEE NOTE 8	⑨	50mm (2") x REQUIRED LENGTH COPPER PIPE TYPE "K" RIGID OR SOFT
③	6mm (1/4") PRESSURE PET COCK	⑩	50mm (2") 90° BRONZE COMPRESSION ELL
④	50mm (2") 90° BRONZE MIPT x FIPT ELL	⑪	50mm (2") BRONZE COMPRESSION COUPLING COPPER TO COPPER (IF REQUIRED)
⑤	50mm (2") OVAL METER FLANGE FLG x FIPT, WITH GASKET	⑫	50mm (2") 90° BRONZE FIPT x COMP ELL
⑥	10mm (3/8") ROCK 100mm TO 150mm (4" TO 6") DEEP	⑬	50mm (2") BRONZE MIPT x MIPT CORPORATION STOP
⑦	TRACER WIRE (AS REQUIRED), SEE WP-01	⑭	SIZE x 50mm (2") SERVICE SADDLE
		⑮	WATER MAIN

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Replaced W-03		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

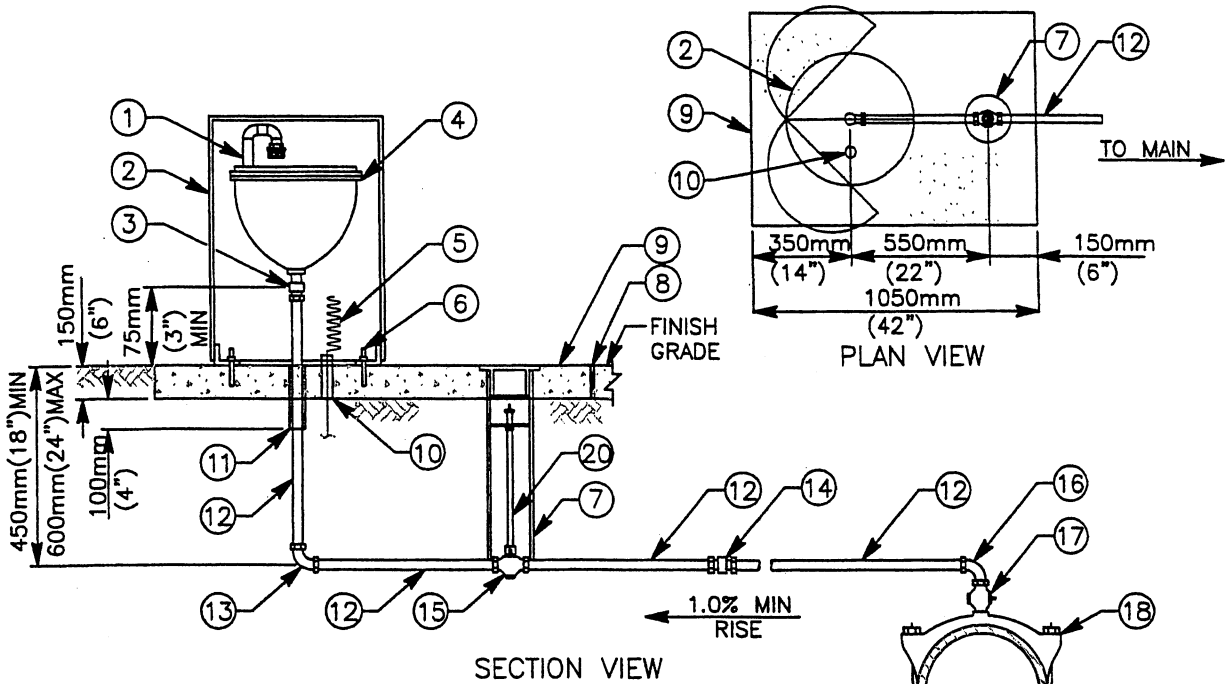
50mm (2") MANUAL AIR VALVE

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/28/2004

Chairperson R.C.E. 19246 Date

DRAWING NUMBER **WA-01**



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) NO DIPS OR LOW SPOTS WILL BE ALLOWED IN PIPING INSTALLATION
- 3) LOCATE ENCLOSURE AS SHOWN ON WA-06
- 4) INSTALL WARNING/IDENTIFICATION TAPE AS SHOWN ON WP-01
- 5) AIR & VACUUM VALVES INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DESCRIBED IN AGENCY'S SPECIFICATIONS
- 6) ON STEEL MAINS USE WELD ON COUPLINGS, ON DUCTILE IRON MAINS USE DUCTILE IRON SERVICE SADDLES (INSULATING BUSHINGS ARE REQUIRED)
- 7) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST

LEGEND ON PLANS

ITEM NO	SIZE AND DESCRIPTION	ITEM NO	SIZE AND DESCRIPTION
①	50mm (2") PVC SCH 80 CLOSE NIPPLE & 2-SCH 80 STREET ELLS & INSECT SCREEN	⑪	50mm (2") x 13mm (1/2") BLACK FOAM SLEEVE
②	VALVE ENCLOSURE	⑫	50mm (2") x REQUIRED LENGTH COPPER PIPE TYPE "K" RIGID OR SOFT
③	50mm (2") MIPT x COMPRESSION ADAPTER	⑬	50mm (2") 90° BRONZE COMPRESSION ELL
④	50mm (2") AUTOMATIC COMBINATION AIR RELEASE & AIR/VACUUM VALVE	⑭	50mm (2") BRONZE COMPRESSION COUPLING COPPER TO COPPER (IF REQUIRED)
⑤	TRACER WIRE (AS REQUIRED), SEE WP-01	⑮	50mm (2") COMP BALL VALVE W/ TEE HEAD
⑥	13mm x 75mm (1/2" x 3") STAINLESS STEEL DROP-IN ANCHORS (3 EA @ 120° APART)	⑯	50mm (2") 90° BRONZE FIPT x COMP ELL
⑦	100mm (4") SDR 35 SEWER PIPE GATE WELL WITH CAP	⑰	50mm (2") BRONZE MIPT x MIPT CORPORATION STOP
⑧	COLD JOINT STRIP	⑱	SIZE x 50mm (2") SERVICE SADDLE
⑨	1050mm x 750mm x 150mm THICK (3'-6" x 2'-6" x 6" THICK) CONCRETE SLAB	⑲	WATER MAIN
⑩	25mm (1") PVC CONDUIT FOR TRACER WIRE INSTALLED 50mm (2") ABOVE SLAB	⑳	VALVE STEM EXTENSION, SEE WV-05

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Replaced W-04		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

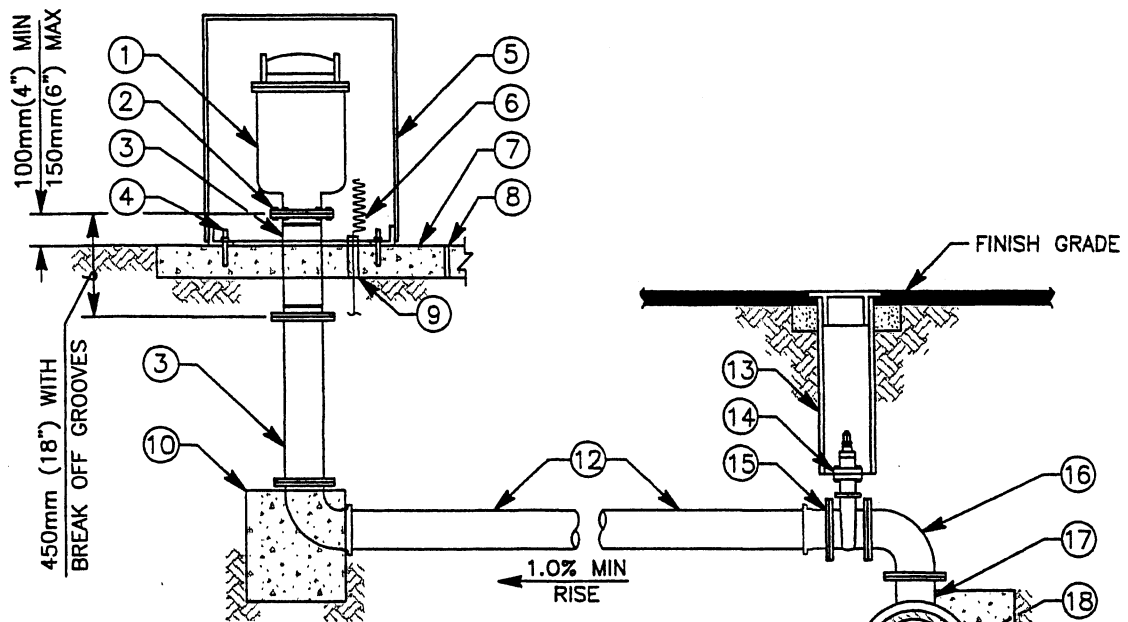
50mm (2") AUTOMATIC COMBINATION AIR RELEASE & AIR/VACUUM VALVE INSTALLATIONS

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/23/2004

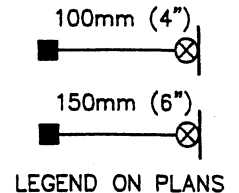
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **WA-02**



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) NO DIPS OR LOW SPOTS WILL BE ALLOWED IN PIPING INSTALLATION
- 3) LOCATE ENCLOSURE AS SHOWN ON WA-06
- 4) INSTALL WARNING/IDENTIFICATION TAPE AS SHOWN ON WP-01
- 5) BREAK-AWAY BOLTS SHALL BE 15.6mm x 75mm (5/8" x 3") WITH 9.4mm (3/8") HOLE DRILLED IN THE SHAFT OF THE BOLT. INSTALL WITH NUTS ON TOP OF THE FLANGE. BOLT SHAFT SHALL BE FILLED WITH SILICONE SEALANT
- 6) AIR & VACUUM VALVES INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DESCRIBED IN AGENCY'S SPECIFICATIONS
- 7) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST



ITEM NO	SIZE AND DESCRIPTION	ITEM NO	SIZE AND DESCRIPTION
①	100mm (4") OR 150mm (6") AUTOMATIC COMBINATION AIR RELEASE & AIR/VACUUM VALVE ASSEMBLY	⑩	CONCRETE THRUST/ANCHOR BLOCK SEE WT-01
②	BREAK-AWAY BOLTS, SEE NOTE 5	⑪	100mm (4") OR 150mm (6") FLG x MJ/PO 90° BEND
③	100mm (4") OR 150mm (6") FLANGED 8-BOLT DUCTILE IRON PIPE x REQ'D LENGTH (MAX OF 2 SPOOLS)	⑫	100mm (4") OR 150mm (6") C-900 PVC PIPE
④	13mm x 75mm (5/8" x 3") STAINLESS STEEL DROP-IN ANCHORS (3 EA @ 120° APART)	⑬	GATE WELL WITH CAP SEE WV-01 OR WV-02
⑤	VALVE ENCLOSURE	⑭	100mm (4") OR 150mm (6") FLG x MJ/PO/FLG RWGV
⑥	TRACER WIRE (AS REQUIRED), SEE WP-01	⑮	100mm (4") OR 150mm (6") FLG x MJ/PO ADAPTER (IF REQUIRED)
⑦	1050mm x 1050mm x 150mm THICK (42" x 42" x 6" THICK) CONCRETE SLAB	⑯	100mm (4") OR 150mm (6") FLANGE 90° BEND
⑧	COLD JOINT STRIP	⑰	SIZE x 100mm (4") OR 150mm (6") MJ/PO/FLG x FLG TEE
⑨	25mm (1") PVC CONDUIT FOR TRACER WIRE INSTALLED 50mm (2") ABOVE SLAB	⑱	WATER MAIN

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Replaced W-05		J. Tomasulo	10/04

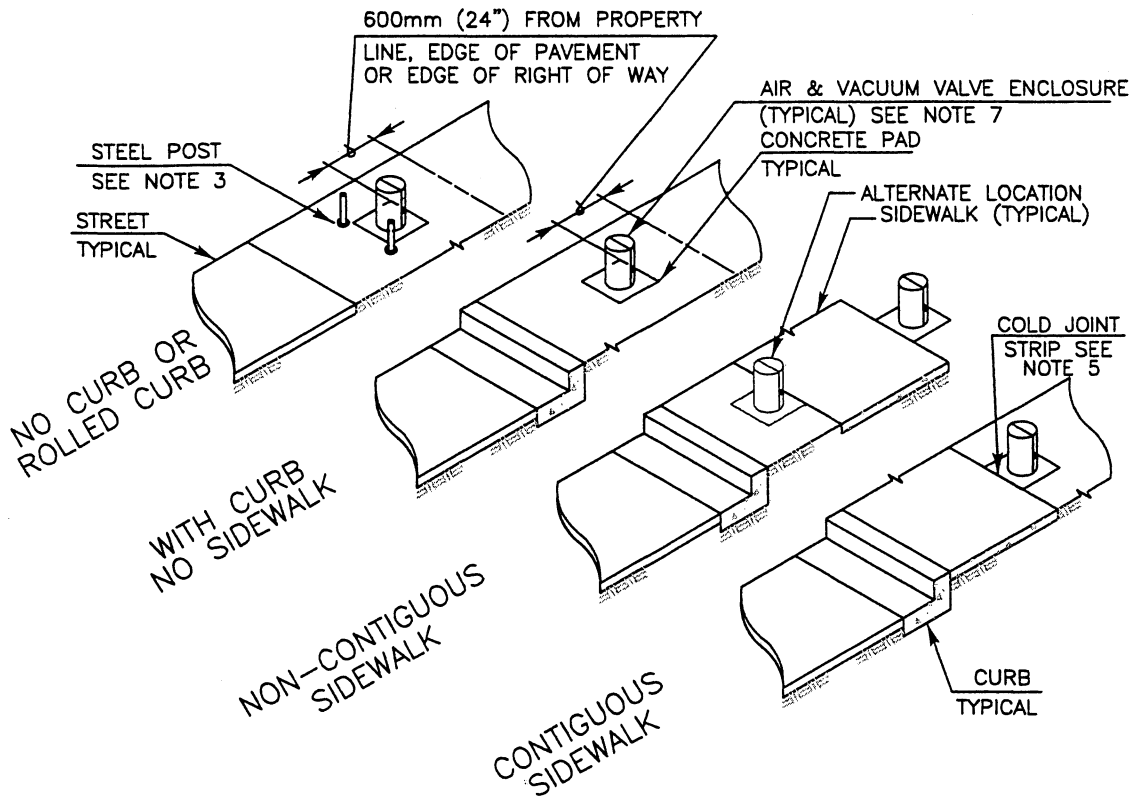
SAN DIEGO REGIONAL STANDARD DRAWING

**100mm (4") & 150mm (6")
AUTOMATIC COMBINATION AIR RELEASE &
AIR/VACUUM VALVE INSTALLATIONS**

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/23/2004
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **WA-04**



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) REFER TO WA-02 AND WA-04
- 3) PROTECTION POSTS SHALL BE INSTALLED AS CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER PER WM-04
- 4) AN EASEMENT MAY BE NEEDED DEPENDING ON LOCATION OF ENCLOSURE
- 5) IF THE CONCRETE SLAB IS TO BE INSTALLED ADJACENT TO A CONCRETE CURB OR SIDEWALK A COLD JOINT STRIP SHALL BE INSTALLED
- 6) AIR & VACUUM VALVES & APPURTENANCES INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DESCRIBED IN THE AGENCY'S SPECIFICATIONS
- 7) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Replaced W-14		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

AIR & VACUUM VALVE ENCLOSURE LOCATIONS

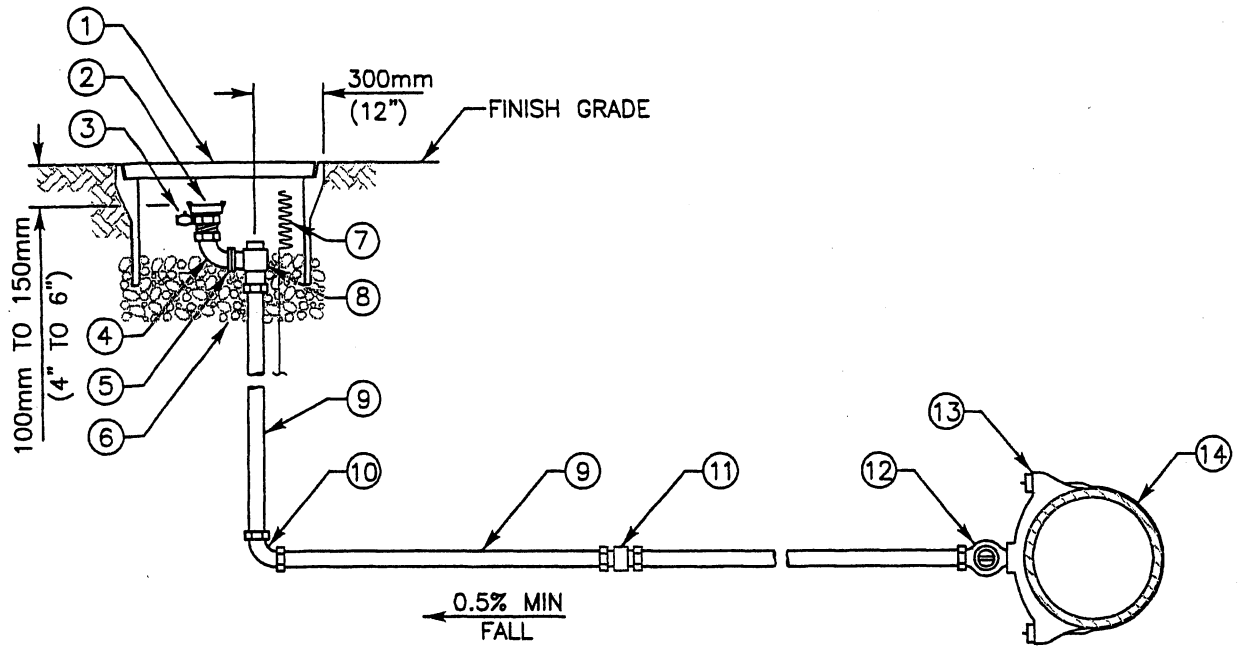
RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/28/2004

Chairperson R.C.E. 19246 Date

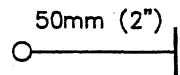
DRAWING NUMBER **WA-06**

SEE SDW-117



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) SET TOP OF METER BOX FLUSH WITH SIDEWALK, CURB OR FINISH GRADE
- 3) LOCATE METER BOX AS SHOWN ON WS-03
- 4) INSTALL WARNING/IDENTIFICATION TAPE AS SHOWN ON WP-01
- 5) FOR BLOW-OFF INSTALLATION AT END OF MAIN SEE WB-04
- 6) BLOW-OFF ASSEMBLIES INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DESCRIBED IN AGENCY'S SPECIFICATIONS
- 7) ON STEEL MAINS USE WELD ON COUPLINGS, ON DUCTILE IRON MAINS USE DUCTILE IRON SERVICE SADDLES (INSULATING BUSHINGS ARE REQUIRED)
- 8) CAM & GROOVE ADAPTER SHALL BE DRILLED AND TAPPED AS REQUIRED FOR THE PRESSURE PET COCK
- 9) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST



LEGEND ON PLANS

ITEM NO	SIZE AND DESCRIPTION	ITEM NO	SIZE AND DESCRIPTION
①	POLYMER METER BOX WITH LID 430mm x 760mm (17" x 30"), SEE NOTE 3	⑧	50mm (2") BRONZE COMP x FLG ANGLE METER STOP WITH LOCK WING
②	50mm (2") CAM & GROOVE ADAPTER x MIPT WITH LOCKING DUST CAP, SEE NOTE 8	⑨	50mm (2") x REQUIRED LENGTH COPPER PIPE TYPE "K" RIGID OR SOFT
③	6mm (1/4") PRESSURE PET COCK	⑩	50mm (2") 90° BRONZE COMPRESSION ELL
④	50mm (2") 90° BRONZE MIPT x FIPT ELL	⑪	50mm (2") BRONZE COMPRESSION COUPLING COPPER TO COPPER (IF REQUIRED)
⑤	50mm (2") OVAL METER FLANGE FLG x FIPT, WITH GASKET	⑫	50mm (2") BRONZE MIPT x COMP CORPORATION STOP
⑥	10mm (3/8") ROCK 100mm TO 150mm (4" TO 6") DEEP	⑬	SIZE x 50mm (2") SERVICE SADDLE
⑦	TRACER WIRE (AS REQUIRED), SEE WP-01	⑭	WATER MAIN

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Replaced W-06		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

50mm (2") BLOW-OFF INSTALLATION

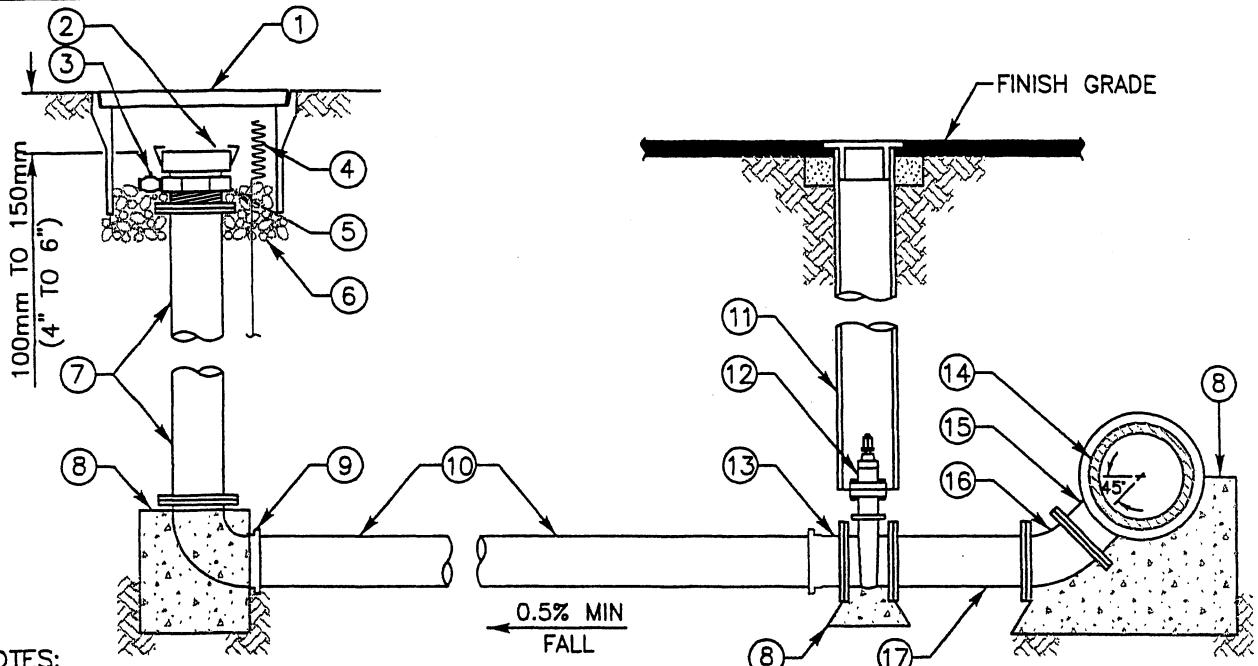
RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/28/2004

Chairperson R.C.E. 19246 Date

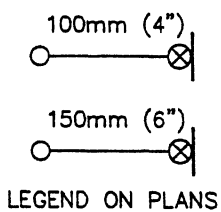
DRAWING NUMBER **WB-01**

SEE SDW-100



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) SET TOP OF METER BOX FLUSH WITH SIDEWALK, CURB OR FINISH GRADE
- 3) LOCATE METER BOX AS SHOWN ON WS-03
- 4) INSTALL WARNING/IDENTIFICATION TAPE AS SHOWN ON WP-01
- 5) FOR BLOW-OFF INSTALLATION AT END OF MAIN SEE WB-04
- 6) BLOW-OFF ASSEMBLIES INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DESCRIBED IN AGENCY'S SPECIFICATIONS
- 7) 45° BEND SHALL BE USED FOR MAINS UP TO 750mm (30"). 90° BEND SHALL BE USED FOR MAINS IN EXCESS OF 750mm (30") AS DIRECTED BY THE ENGINEER
- 8) CAM & GROOVE ADAPTER SHALL BE DRILLED AND TAPPED AS REQUIRED FOR THE PRESSURE PET COCK
- 9) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST



ITEM NO	SIZE AND DESCRIPTION	ITEM NO	SIZE AND DESCRIPTION
①	POLYMER METER BOX WITH LID 430mm x 760mm (17" x 30"), SEE NOTE 3	⑨	100mm (4") OR 150mm (6") FLG x MJ/PO 90° BEND
②	100mm (4") OR 150mm (6") CAM & GROOVE ADAPTER x MIPT WITH LOCKING DUST CAP, SEE NOTE 8	⑩	100mm (4") OR 150mm (6") C-900 PVC PIPE
③	6mm (1/4") PRESSURE PET COCK	⑪	GATE WELL WITH CAP SEE WV-01 OR WV-02
④	TRACER WIRE (AS REQUIRED), SEE WP-01	⑫	100mm (4") OR 150mm (6") FLG x MJ/PO/FLG RWGV
⑤	100mm (4") OR 150mm (6") FLANGED COMPANION x FIPT	⑬	100mm (4") OR 150mm (6") FLG x MJ/PO ADAPTER (IF REQUIRED)
⑥	10mm (3/8") ROCK 100mm TO 150mm (4" TO 6") DEEP	⑭	WATER MAIN
⑦	100mm (4") OR 150mm (6") FLG DI PIPE x REQUIRED LENGTH (MAXIMUM OF 2 SPOOLS)	⑮	SIZE x 100mm (4") OR 150mm (6") MJ/PO/FLG x FLG TEE
⑧	CONCRETE THRUST BLOCK SEE WT-01	⑯	100mm (4") OR 150mm (6") FLANGED 45° BEND
		⑰	100mm (4") OR 150mm (6") x 600mm (24") FLG DI SPOOL

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Replaced W-08		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

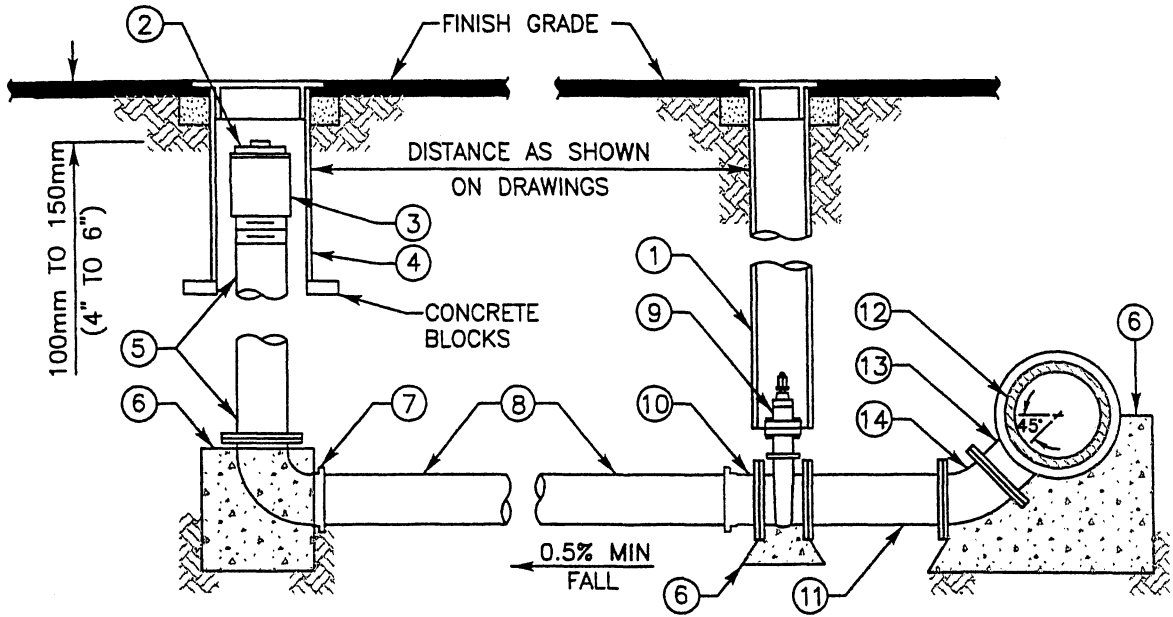
**100mm (4") & 150mm (6")
BLOW-OFF INSTALLATION TYPE A**

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/28/2004
Chairperson R.C.E. 19246 Date

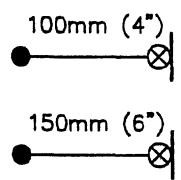
DRAWING NUMBER **WB-02**

SEE SDW-100



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) FOR BLOW-OFF INSTALLATION AT END OF MAIN SEE WB-04
- 3) BLOW-OFF ASSEMBLIES INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DESCRIBED IN AGENCY'S SPECIFICATIONS
- 4) ON STEEL MAINS USE WELD ON COUPLINGS, ON DUCTILE IRON MAINS USE DUCTILE IRON SERVICE SADDLES (INSULATING BUSHINGS ARE REQUIRED)
- 5) 45° BEND SHALL BE USED FOR MAINS UP TO 750mm (30"). 90° BEND SHALL BE USED FOR MAINS IN EXCESS OF 750mm (30") AS DIRECTED BY THE ENGINEER
- 6) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST



LEGEND ON PLANS

ITEM NO	SIZE AND DESCRIPTION	ITEM NO	SIZE AND DESCRIPTION
①	GATE WELL WITH CAP SEE WV-01 OR WV-02	⑧	100mm (4") OR 150mm (6") C-900 PVC PIPE
②	GALVANIZED IRON PLUG	⑨	100mm (4") OR 150mm (6") FLG x MJ/PO/FLG RWGV
③	GALVANIZED IRON COUPLING, THREADED	⑩	100mm (4") OR 150mm (6") FLG x MJ/PO ADAPTER (IF REQUIRED)
④	250mm (10") STEEL GATE WELL WITH CAP	⑪	100mm (4") OR 150mm (6") x 600mm (24") FLG DI SPOOL
⑤	100mm (4") OR 150mm (6") FLG DI PIPE x REQUIRED LENGTH (MAXIMUM OF 2 SPOOLS)	⑫	WATER MAIN
⑥	CONCRETE THRUST BLOCK SEE WT-01	⑬	SIZE x 100mm (4") OR 150mm (6") MJ/PO/FLG x FLG TEE
⑦	100mm (4") OR 150mm (6") FLG x MJ/PO 90° BEND	⑭	100mm (4") OR 150mm (6") FLANGED 45° BEND, SEE NOTE 5

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Replaced W-09		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

100mm (4") & 150mm (6")

BLOW-OFF ASSEMBLIES IN STREET

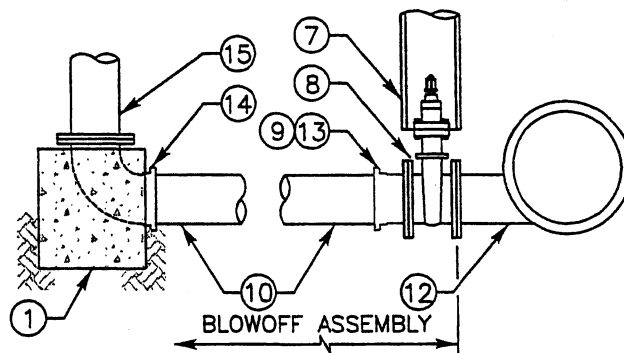
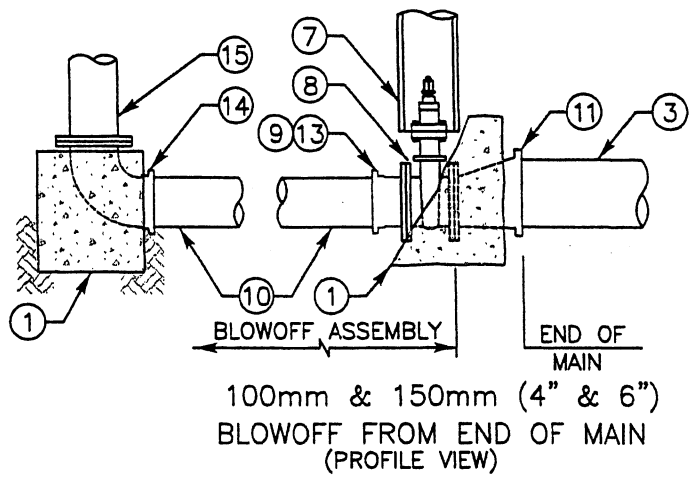
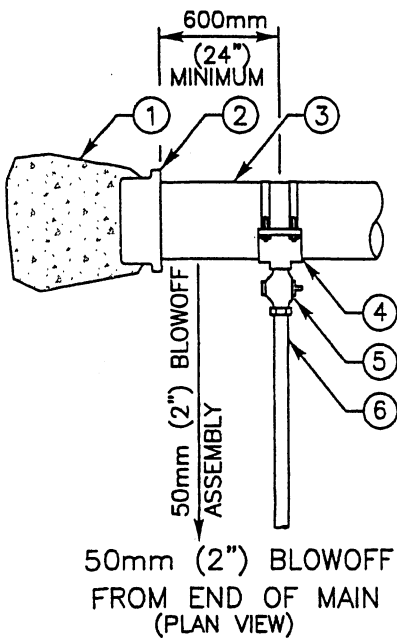
TYPE B

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/23/2004

Chairperson R.C.E. 19246 Date

DRAWING NUMBER **WB-03**



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) BLOW-OFF ASSEMBLIES INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DESCRIBED IN AGENCY'S SPECIFICATIONS
- 3) FOR 2" BLOW-OFFS ON STEEL MAINS USE WELD ON COUPLINGS, ON DUCTILE IRON MAINS USE DUCTILE IRON SERVICE SADDLES (INSULATING BUSHINGS ARE REQUIRED)
- 4) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST

100mm & 150mm (4" & 6")
BLOWOFF FROM STEEL MAIN
(PROFILE VIEW)

ITEM NO	SIZE AND DESCRIPTION	ITEM NO	SIZE AND DESCRIPTION
①	CONCRETE THRUST BLOCKS SEE WT-01	⑧	FLG x MJ/PO/FLG RWGV
②	DI END CAP	⑨	FLG x MJ/PO ADAPTER (IF REQUIRED)
③	WATER MAIN	⑩	C-900 PVC PIPE
④	SIZE x 50mm (2") SERVICE SADDLE	⑪	FLG x MJ/PO ECCENTRIC DI REDUCER
⑤	50mm (2") BRONZE MIPT x COMP CORPORATION STOP	⑫	MAIN SIZE x BLOWOFF SIZE FLANGE MANUFACTURED STEEL TANGENTIAL OUTLET
⑥	50mm (2") x REQ'D LENGTH COPPER PIPE TYPE "K" RIGID OR SOFT	⑬	FLG x MJ/PO BEND (IF REQUIRED)
⑦	GATE WELL WITH CAP SEE WV-01 & WV-02	⑭	FLG x MJ/PO 90° BEND
		⑮	FLG DI PIPE x REQUIRED LENGTH (MAXIMUM OF 2 SPOOLS)

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Replaced W-07		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

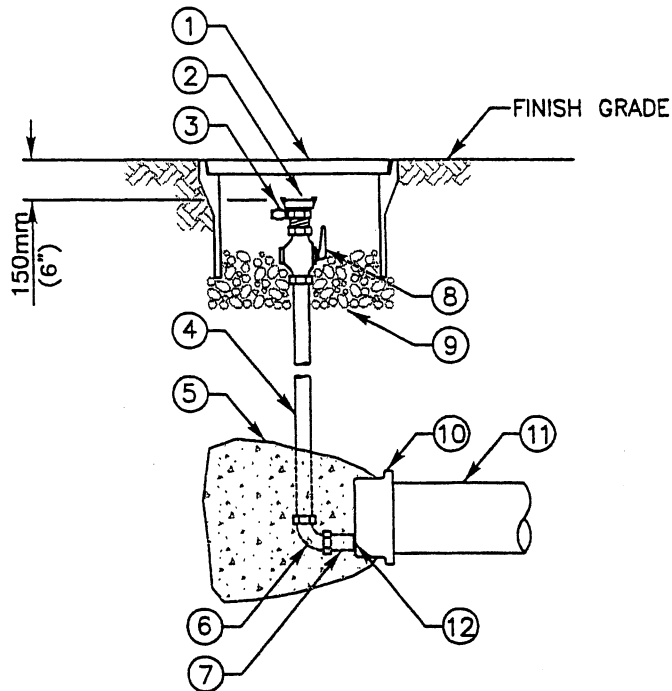
BLOW-OFF INSTALLATION FROM END OF MAINS AND FROM STEEL MAINS

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/28/2004
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **WB-04**

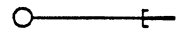
SEE SDW-100



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) SET TOP OF METER BOX 50mm (2") ABOVE FINISH GRADE
- 3) BLOW-OFF ASSEMBLIES INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DESCRIBED IN AGENCY'S SPECIFICATIONS
- 4) THE CONSTRUCTION OF A TEMPORARY BLOW-OFF FOR THE USE OF TESTING AND FLUSHING OF NEW MAINS ONLY
- 5) CAM & GROOVE ADAPTER SHALL BE DRILLED AND TAPPED AS REQUIRED FOR THE PRESSURE PET COCK
- 6) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST

TEMP 50mm (2")



LEGEND ON PLANS

ITEM NO	SIZE AND DESCRIPTION	ITEM NO	SIZE AND DESCRIPTION
①	POLYMER METER BOX WITH LID 430mm x 760mm (17" x 30")	⑥	50mm (2") 90° BRONZE IRON PIPE THREAD BY COMPRESSION ELL
②	50mm (2") CAM & GROOVE ADAPTER x MIPT WITH LOCKING DUST CAP, SEE NOTE 5	⑦	50mm (2") CLOSE NIPPLE IPT
③	6mm (1/4") PRESSURE PET COCK	⑧	50mm (2") COMPRESSION x FIPT BALL VALVE WITH HANDLE
④	50mm (2") x REQUIRED LENGTH COPPER PIPE TYPE "K" RIGID OR SOFT	⑨	10mm (3/8") ROCK 150mm (6") DEEP
⑤	CONCRETE THRUST BLOCK SEE WT-01	⑩	DI END CAP WITH 63mm (2.5") FIPT OUTLET
		⑪	WATER MAIN
		⑫	NYLON DIELECTRIC BUSHING

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Replaced W-07		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

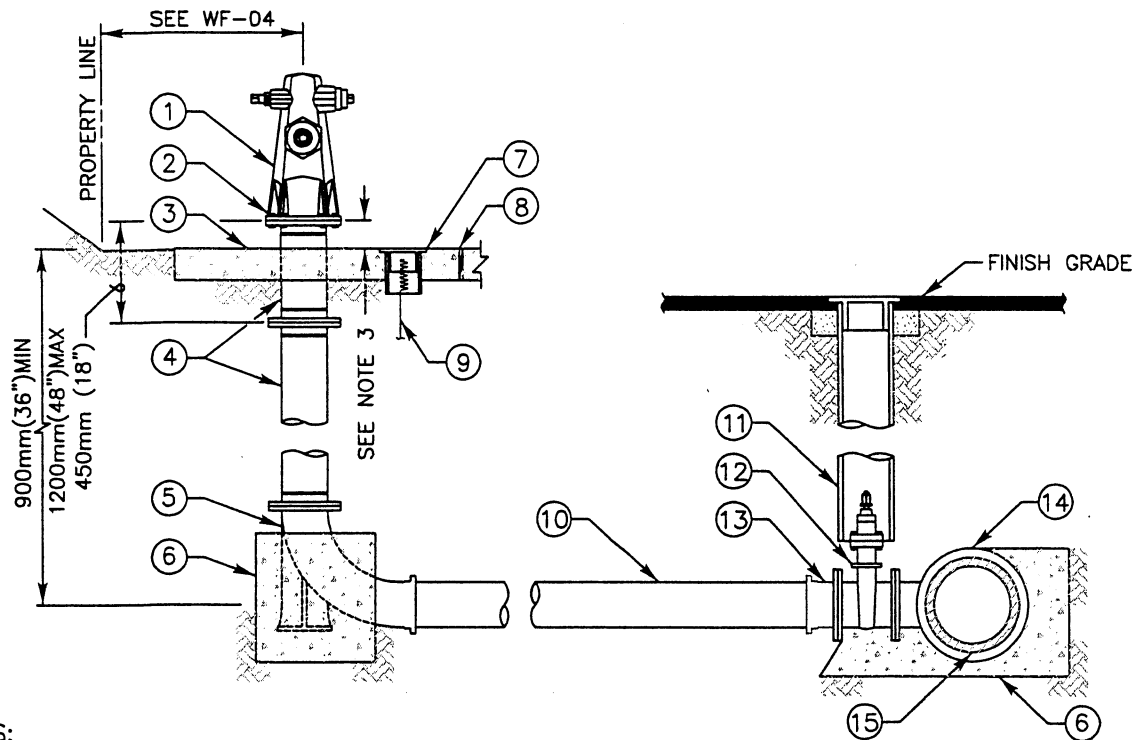
**TEMPORARY 50mm (2") BLOW-OFF
INSTALLATION**

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/28/2004

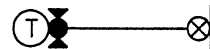
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **WB-05**



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) THE NUMBER OF OUTLETS SHALL BE AS SHOWN ON PLANS
- 3) FIRE HYDRANT FLANGE SHALL BE 150mm ± 25mm (6" ± 1") ABOVE TOP OF CURB OR SPLASH PAD SEE PLANS FOR ELEVATION
- 4) LOCATE FIRE HYDRANT AS SHOWN ON WF-04
- 5) INSTALL WARNING/IDENTIFICATION TAPE AS SHOWN ON WP-01
- 6) FIRE HYDRANT FLANGE BOLTS SHALL BE BREAK AWAY BOLTS INSTALLED WITH NUTS ON TOP OF THE FLANGE. BOLT SHAFT SHALL BE FILLED WITH SILICONE SEALANT
- 7) CONNECTIONS TO STEEL MAINS WILL BE MADE IN ACCORDANCE WITH AGENCY'S SPECIFICATIONS
- 8) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST



LEGEND ON PLANS

ITEM NO	SIZE AND DESCRIPTION	ITEM NO	SIZE AND DESCRIPTION
①	150mm (6") FIRE HYDRANT SEE NOTE 2	⑧	COLD JOINT STRIP
②	BREAK-AWAY BOLTS, SEE NOTE 6	⑨	TRACER WIRE (AS REQUIRED) PER WP-01
③	1200mm x 1200mm x 150mm THICK (4' x 4' x 6" THICK) CONCRETE SPLASH PAD	⑩	150mm (6") C-900 PVC PIPE
④	150mm (6") FLANGE DI HYDRANT EXTENSION SPOOL(S) WITH BREAK OFF GROOVES (MAXIMUM OF 2 SPOOLS)	⑪	GATE WELL WITH CAP SEE WV-01 OR WV-02
⑤	150mm x 400mm (6" x 16") LONG RADIUS FLG x MJ/PO BURY ELL	⑫	150mm (6") FLG x MJ/PO/FLG RWGV
⑥	CONCRETE THRUST BLOCK SEE WT-01	⑬	150mm (6") FLG x MJ/PO ADAPTER (IF REQUIRED)
⑦	TRACER WIRE ACCESS PORT, 100mm (4") x 200mm 8" LONG SDR 35 SEWER PIPE W/ CAP (AS-REQUIRED)	⑭	SIZE x 150mm (6") MJ/PO/FLG x FLG TEE
		⑮	WATER MAIN

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Replaced W-10		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

150mm (6") FIRE HYDRANT INSTALLATION

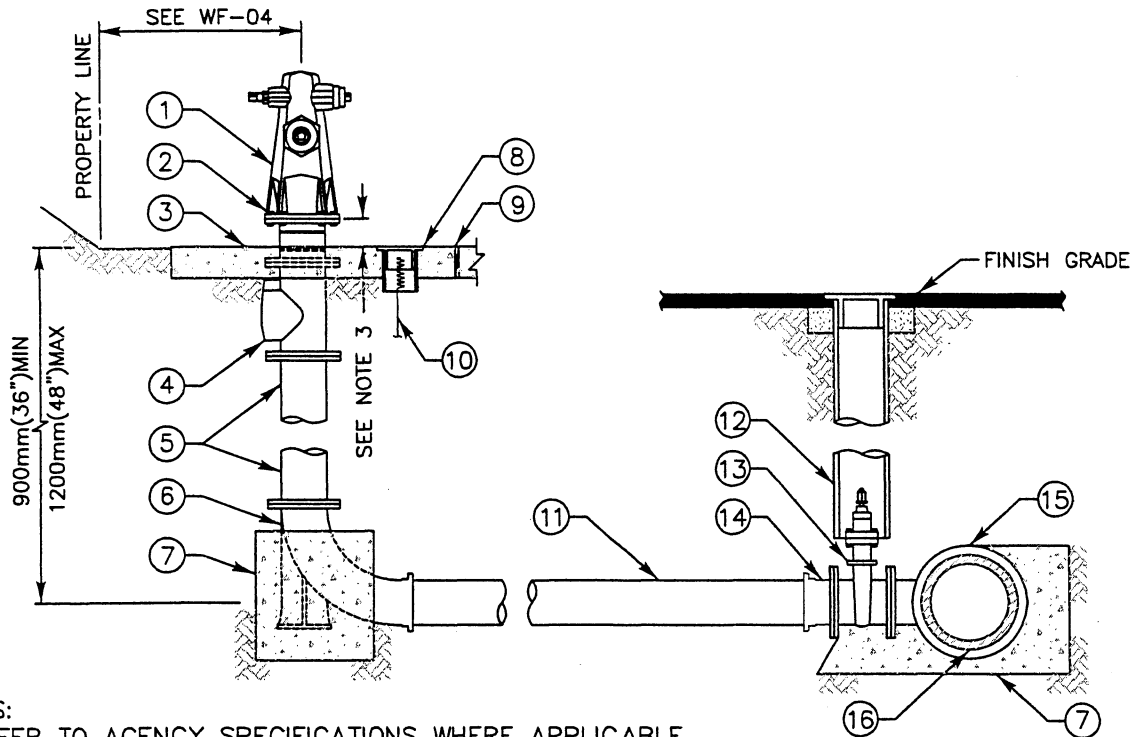
RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/28/2004

Chairperson R.C.E. 19246 Date

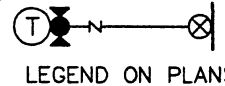
DRAWING NUMBER **WF-01**

SEE SDW-100



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) THE NUMBER OF OUTLETS SHALL BE AS SHOWN ON PLANS
- 3) TOP FLANGE OF BREAK-OFF CHECK VALVE SHALL BE SET WITHIN THE CONCRETE PAD. BREAK OFF GROOVE, MINIMUM OF ONE, SHALL BE PLACED ABOVE THE PAD
- 4) LOCATE FIRE HYDRANT AS SHOWN ON WF-04
- 5) INSTALL WARNING/IDENTIFICATION TAPE AS SHOWN ON WP-01
- 6) FIRE HYDRANT FLANGE BOLTS SHALL BE A307 ZINC-PLATED BOLTS INSTALLED WITH NUTS ON TOP OF THE FLANGE. BREAK AWAY BOLTS SHALL NOT BE USED
- 7) CONNECTIONS TO STEEL MAINS WILL BE MADE IN ACCORDANCE WITH AGENCY'S SPECIFICATIONS
- 8) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST



ITEM NO	SIZE AND DESCRIPTION	ITEM NO	SIZE AND DESCRIPTION
①	150mm (6") FIRE HYDRANT SEE NOTE 2	⑨	COLD JOINT STRIP
②	BOLTS, SEE NOTE 6	⑩	TRACER WIRE (AS REQUIRED) PER WP-01
③	1200mm x 1200mm x 200mm THICK (4' x 4' x 8" THICK) CONCRETE SPLASH PAD	⑪	150mm (6") C-900 PVC PIPE
④	150mm (6") BREAK-OFF CHECK VALVE	⑫	GATE WELL WITH CAP SEE WV-01 OR WV-02
⑤	150mm (6") FLANGE DI SPOOL(S) (MAXIMUM OF 2 SPOOLS) NO GROOVES	⑬	150mm (6") FLG x MJ/PO/FLG RWGV
⑥	150mm x 400mm (6" x 16") LONG RADIUS FLG x MJ/PO BURY ELL	⑭	150mm (6") FLG x MJ/PO ADAPTER (IF REQUIRED)
⑦	CONCRETE THRUST BLOCK SEE WT-01	⑮	SIZE x 150mm (6") MJ/PO/FLG x FLG TEE
⑧	TRACER WIRE ACCESS PORT, 100mm (4") x 200mm 8" LONG SDR 35 SEWER PIPE W/ CAP (AS-REQUIRED)	⑯	WATER MAIN

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Replaced W-10		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

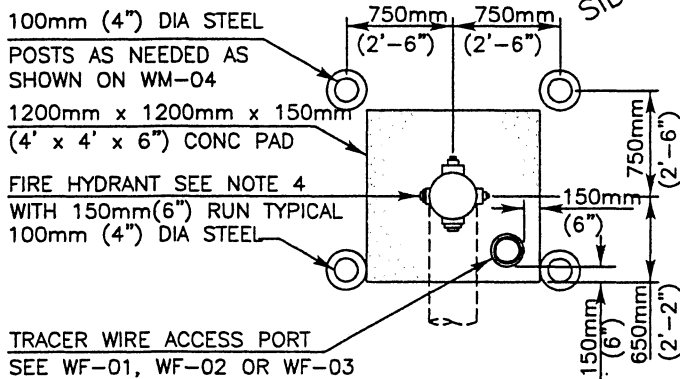
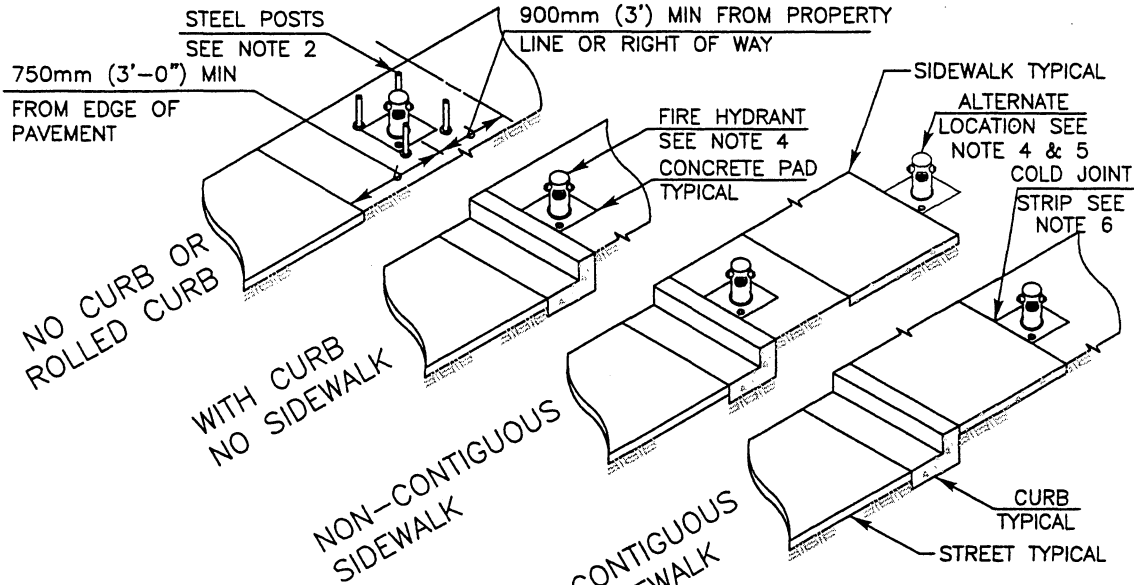
**150mm (6") FIRE HYDRANT
INSTALLATION WITH BREAK-OFF
CHECK VALVE**

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

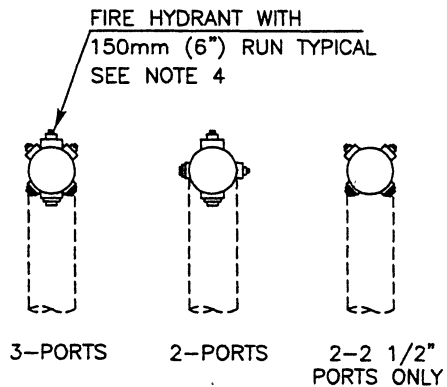
T. Stanton 10/28/2004

Chairperson R.C.E. 19246 Date

DRAWING NUMBER **WF-02**



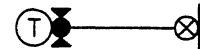
PROTECTION POST LOCATIONS



PORT ORIENTATION

NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) PROTECTION POSTS SHALL BE INSTALLED AS CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER PER WM-04
- 3) LOCATE FIRE HYDRANT AS SHOWN ABOVE OR AS DIRECTED BY THE ENGINEER
- 4) FIRE HYDRANTS SHALL BE INSTALLED WITH THE LARGEST PORT PERPENDICULAR TO THE STREET
- 5) AN EASEMENT MAY BE NEEDED DEPENDING ON LOCATION OF FIRE HYDRANT
- 6) IF THE CONCRETE SLAB IS TO BE INSTALLED ADJACENT TO A CONCRETE CURB OR SIDEWALK A COLD JOINT STRIP SHALL BE INSTALLED
- 7) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST



LEGEND ON PLANS

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Replaced W-11		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

FIRE HYDRANT LOCATIONS AND PORT ORIENTATION

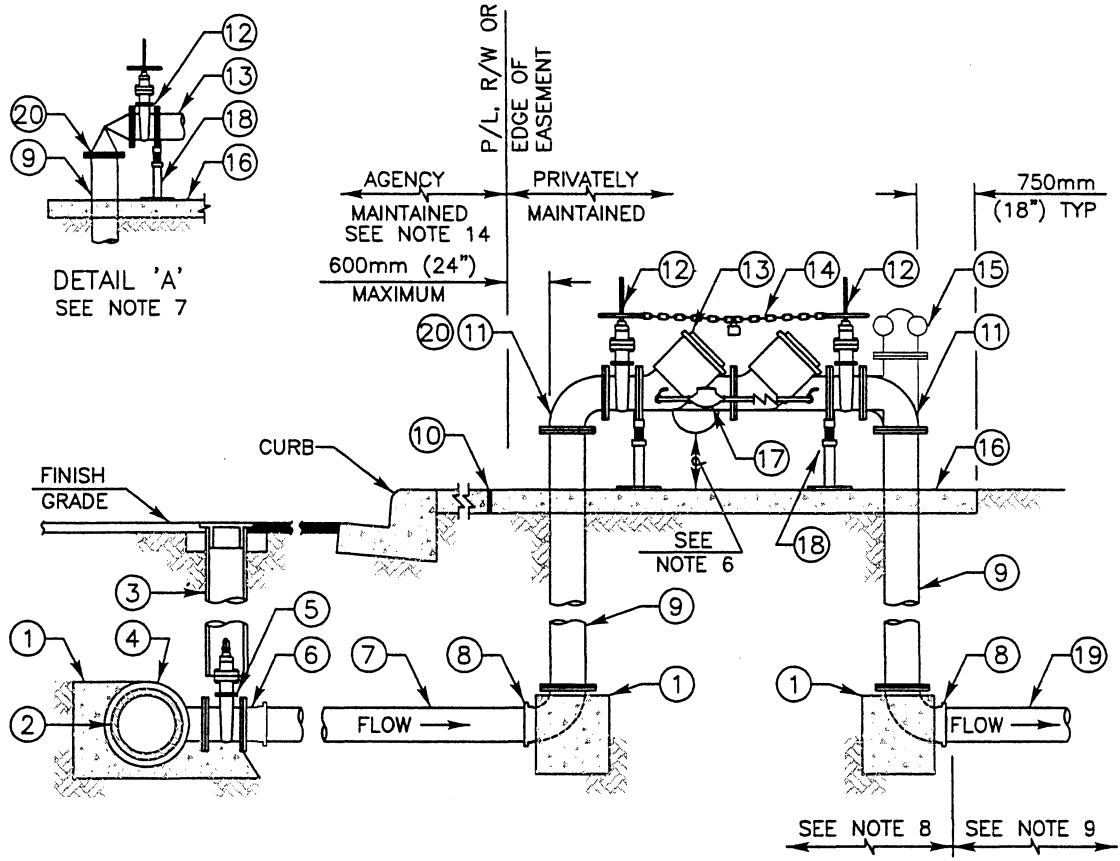
RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/28/2004

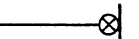
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **WF-04**

SEE SDW-100



FOR NOTES REGARDING THE INSTALLATION OF
FIRE SERVICES SEE WF-05 SHEET 2 OF 2

RPFS 
LEGEND ON PLANS

ITEM NO	SIZE AND DESCRIPTION	ITEM NO	SIZE AND DESCRIPTION
①	CONCRETE THRUST BLOCK SEE WT-01	⑬	RPDA UNLESS OTHERWISE SPECIFIED BY AGENCY OF JURISDICTION SEE NOTE 4
②	WATER MAIN	⑭	CHAIN WITH KNOX LOCK SEE NOTE 4
③	GATE WELL WITH CAP SEE WV-01 OR WV-02	⑮	FLANGED TEE WITH "FDC" SEE NOTE 4
④	SIZE x SIZE MJ/PO/FLG x FLG TEE	⑯	CONCRETE SLAB AS REQUIRED BY AGENCY OF JURISDICTION. MINIMUM 100mm (4") THICK x 900mm (36") WIDE x AS REQUIRED
⑤	FLG x MJ/PO/FLG RWGV	⑰	19mm (3/4") BYPASS, METER & RP DEVICE
⑥	FLG x MJ/PO ADAPTER (IF REQUIRED)	⑱	ADJUSTABLE VALVE SUPPORT
⑦	C-900 PVC PIPE	⑳	PVC OR DI PIPE SEE NOTE 9
⑧	MJ/PO x FLG 90° BEND		
⑨	FLANGED DUCTILE IRON PIPE		
⑩	COLD JOINT STRIP		
⑪	FLANGED 90° BEND, SEE NOTE 7		
⑫	FLANGED OS&Y RWGV WITH HAND WHEEL		

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Replaced W-26		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING


100mm (4") AND LARGER FIRE
SERVICE INSTALLATION

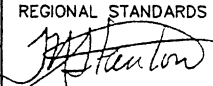
RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE
T. Stanton 10/28/2004
Chairperson R.C.E. 19246 Date
DRAWING NUMBER **WF-05** (1 OF 2)

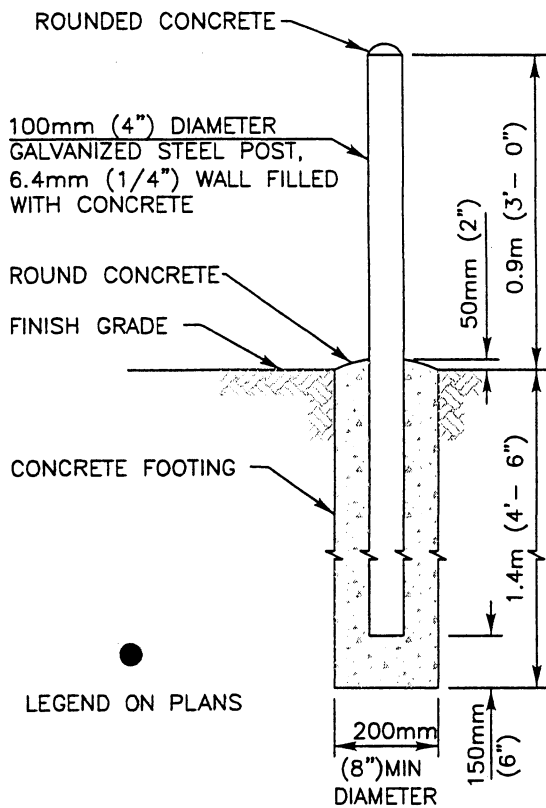
NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) INSTALL WARNING/IDENTIFICATION TAPE AS SHOWN ON WP-01
- 3) LOCATION OF FIRE SERVICES SHALL BE AS DIRECTED BY THE FIRE DEPARTMENT OF JURISDICTION. FIRE SERVICES SHOULD BE LOCATED IN SUCH A MANNER THAT WILL ALLOW THE DEVICE TO BE READILY ACCESSIBLE FOR INSPECTION, REPAIR, AND USAGE
- 4) TAMPER SWITCH, AUTOMATIC RESET, CHAIN WITH KNOX LOCK, AND FIRE DEPARTMENT CONNECTION ("FDC") SHALL BE AS REQUIRED BY THE FIRE DEPARTMENT OF JURISDICTION
- 5) BALL VALVE TEST COCKS SHALL BE PROVIDED AND LOCATED PER THE MANUFACTURES RECOMMENDATIONS AND THE REQUIREMENTS OF THE WATER AGENCY STANDARDS
- 6) INSTALL FIRE SERVICES SO THAT THE DISTANCE BETWEEN THE BOTTOM OF THE RELIEF DIAPHRAM AND THE CONCRETE SLAB OR FINISH GRADE IS 300mm (12") MINIMUM AND 600mm (24") MAXIMUM
- 7) INSTALL AN ANGLE PRESSURE REDUCING VALVE IN LIEU OF THE FIRST 90° BEND WHEN SYSTEM STATIC PRESSURE EXCEEDS 1.03 MPa (150 PSI) OR WHEN RECOMMENDED BY THE BACKFLOW MANUFACTURER
- 8) INSTALL PIPE AND RELATED APPURTENANCES IN THIS AREA PER THE REQUIREMENTS OF THE WATER AGENCY STANDARDS
- 9) INSTALL PIPE AND RELATED APPURTENANCES IN THIS AREA AS REQUIRED BY THE FIRE DEPARTMENT OF JURISDICTION
- 10) ABOVE GROUND APPURTENANCES SHALL BE PAINTED AND IDENTIFIED AS CALLED FOR BY THE FIRE DEPARTMENT OF JURISDICTION
- 11) TESTING SHALL BE CONDUCTED AS CALLED FOR IN AGENCY'S SPECIFICATIONS PRIOR TO ACCEPTANCE BY THE DISTRICT
- 12) CONNECTIONS TO STEEL MAINS SHALL BE IN ACCORDANCE WITH AGENCY'S SPECIFICATIONS
- 13) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST
- 14) AGENCY RESPOSIBILITY ENDS AT EDGE OF PROPERTY LINE, RIGHT OF WAY, OR EASEMENT.

FOR DETAILS REGARDING THE INSTALLATION OF
FIRE SERVICES SEE WF-05 SHEET 1 OF 2

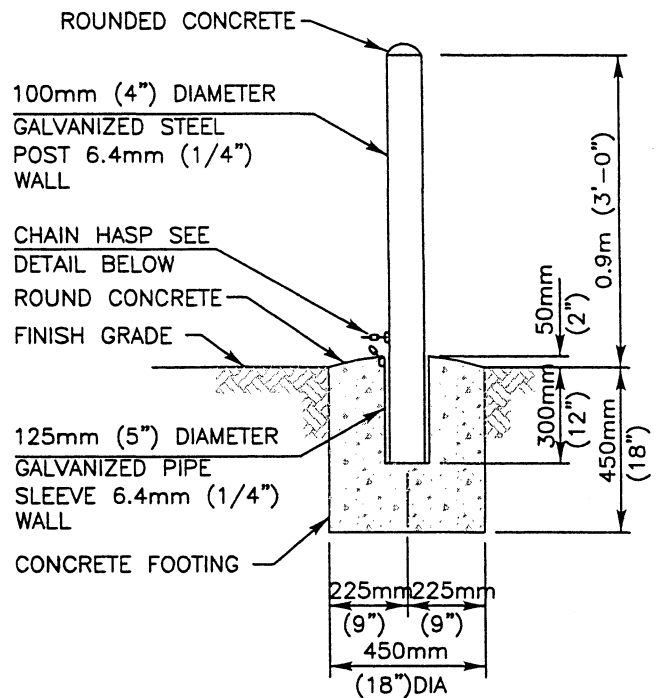
RPFS 
LEGEND ON PLANS

Revision	By	Approved	Date	SAN DIEGO REGIONAL STANDARD DRAWING 100mm (4") AND LARGER FIRE SERVICE INSTALLATION NOTES	RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE
ORIGINAL		Kercheval	12/75		 10/28/2004
Add Metric		T. Stanton	03/03		Chairperson R.C.E. 19246 Date
Replaced W-26		J. Tomasulo	10/04		DRAWING NUMBER WF-05 (2 OF 2)



LEGEND ON PLANS

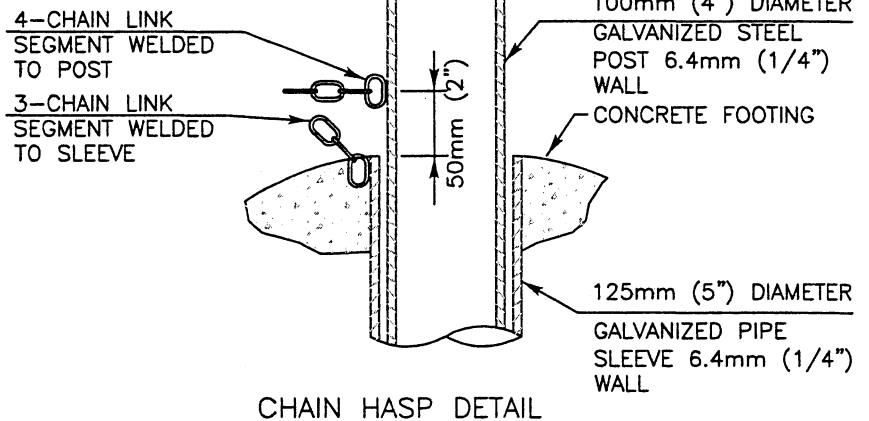
PROTECTION POST TYPE "A"



DEMOUNTABLE PROTECTION POST TYPE "B"

⊙

LEGEND ON PLANS



CHAIN HASP DETAIL

NOTES:

- 1) TYPE "A" AND TYPE "B" PROTECTION POSTS SHALL BE INSTALLED WHERE INDICATED ON THE APPROVED PLANS OR AS DIRECTED BY THE ENGINEER. SDG&E REQUIREMENTS DICTATE IN AREAS OF SDG&E EQUIPMENT
- 2) CHAIN TO BE 6.4mm (1/4") PROOF COIL CHAIN GALVANIZED STEEL. WELD 4-LINK SEGMENT TO POST AND 3-LINK SEGMENT TO SLEEVE
- 3) TYPE "A" AND TYPE "B" PROTECTION POSTS SHALL BE COATED USING SAFETY YELLOW IN ACCORDANCE WITH AGENCY'S STANDARDS

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Replaced W-16		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

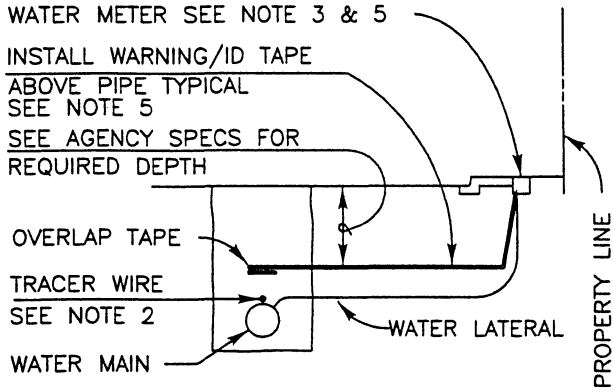
RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/28/2004

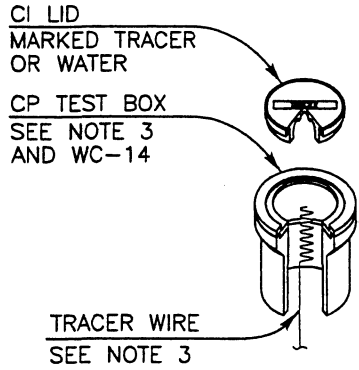
Chairperson R.C.E. 19246 Date

PROTECTION POST INSTALLATION

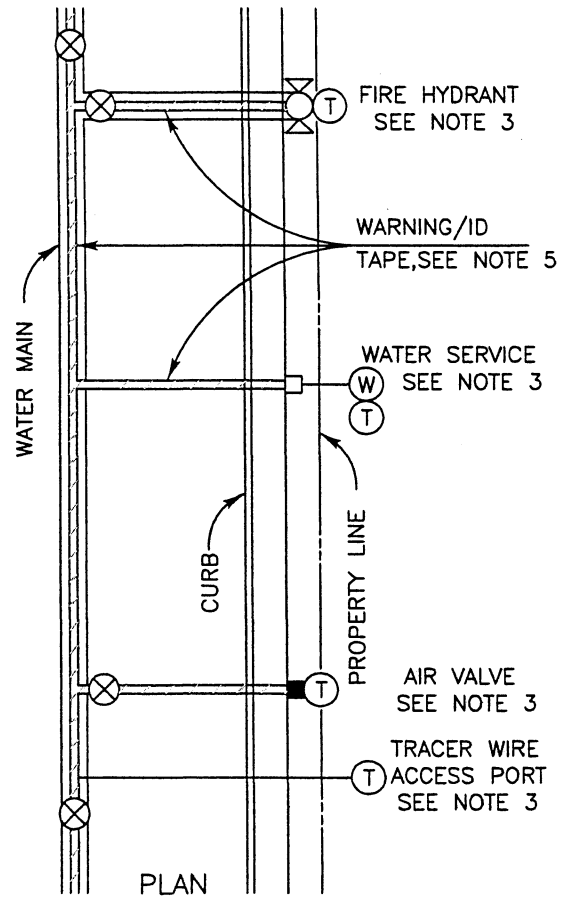
DRAWING NUMBER WM-04



SECTION AT WATER LATERALS



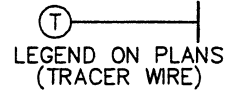
TRACER WIRE ACCESS PORT (CP BOX) DETAIL



PLAN

NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) WHERE SPECIFIED, TRACER WIRE AND OR WARNING ID TAPE, TO RUN CONTINUOUSLY ALONG THE ENTIRE LENGTH OF WATER MAINS. WIRE SHALL BE SECURED TO THE PIPE AND MAINTAINED ON PIPE CENTERLINE DURING TRENCH BACKFILL
- 3) TRACER WIRE ACCESS PORTS SHALL BE INSTALLED WITHIN THE CONCRETE SPLASH PAD OF ALL FIRE HYDRANTS IN ACCORDANCE WITH THE STANDARD DRAWINGS. TRACER WIRE MAY TERMINATE WITHIN METER BOX, BLOWOFF BOX OR AIR VALVE PER AGENCY'S SPECIFICATIONS. TRACER WIRE MAY TERMINATE IN A CP TEST BOX ONLY IF NO OTHER APPURTENANCE EXISTS WITHIN THE REQUIRED 305m (1,000') INTERVAL. ALL BURIED WIRES THAT REQUIRE TRENCHING TO A TEST BOX LOCATION SHALL BE INSTALLED, WITHOUT SPLICE, IN A CONDUIT IN THE TRENCH AT A MINIMUM DEPTH OF 600mm (24")
- 4) WIRE SPLICE CONNECTORS SHALL BE SILICONE FILLED TYPE
- 5) WARNING/IDENTIFICATION TAPE SHALL BE INSTALLED ABOVE THE PIPE AS SPECIFIED AND RUN CONTINUOUSLY ALONG THE ENTIRE LENGTH OF THE PIPE AND ALL RELATED APPURTENANCES
- 6) FOR PIPE BEDDING AND TRENCH BACKFILL SEE WP-02
- 7) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST



Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Replaced W-25		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

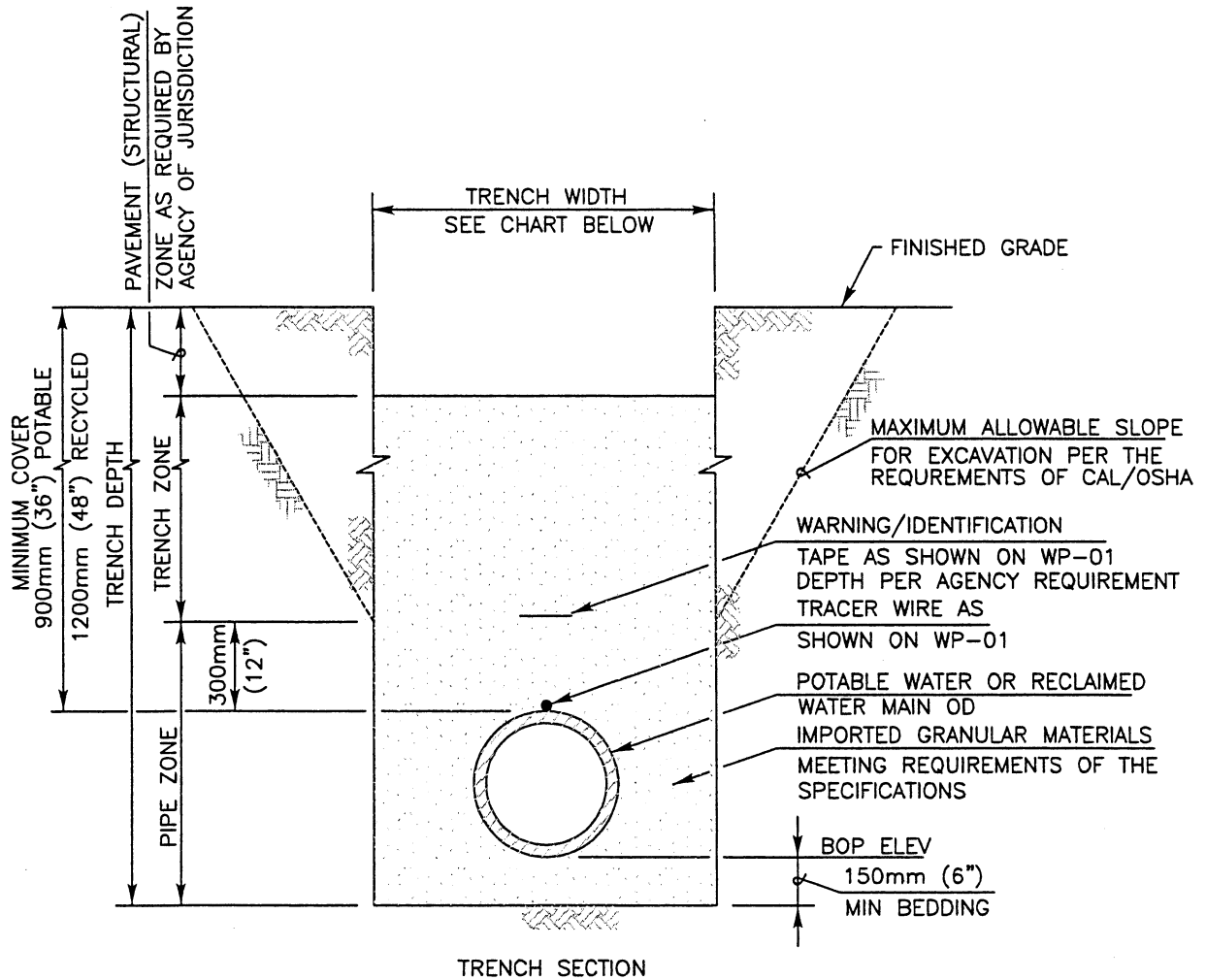
WARNING/IDENTIFICATION TAPE AND TRACER WIRE INSTALLATIONS

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/28/2004
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **WP-01**

SEE SDW-100



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) PAVING OR PAVEMENT REPAIR TO BE DONE IN ACCORDANCE TO CITY OR COUNTY STANDARDS
- 3) EXCAVATE BELL HOLES AT EACH PIPE JOINT TO PERMIT PROPER ASSEMBLY AND INSPECTION OF THE ENTIRE JOINT
- 4) ALL PIPELINE TRENCHES SHALL BE EXCAVATED SO THAT THE DISTANCE BETWEEN TRENCH WALLS AT THE TOP OF PIPE SHALL BE AS SHOWN BELOW:

TRENCH WIDTH

NOMINAL PIPE INSIDE DIAMETER	MINIMUM DISTANCE	MAXIMUM DISTANCE
100mm (4") & SMALLER	450mm (18")	700mm (28")
150mm & 200mm (6" & 8")	600mm (24")	800mm (32")
250mm & 300mm (10" & 12")	700mm (28")	900mm (36")
400mm THRU 900mm (16" THRU 36")	OD PLUS 600mm(24")	OD PLUS 900mm(36")

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Replaced W-21		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

PIPE BEDDING AND TRENCH BACKFILL FOR POTABLE AND RECYCLED WATER MAINS

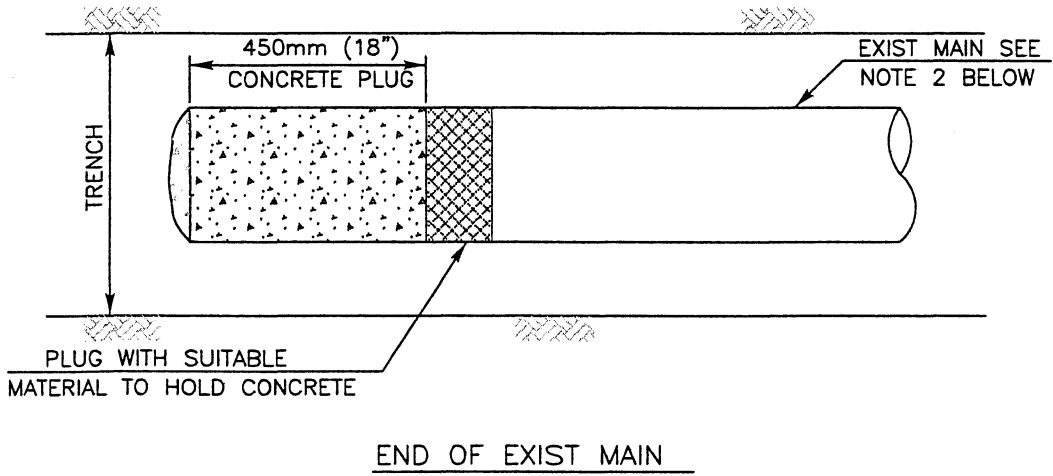
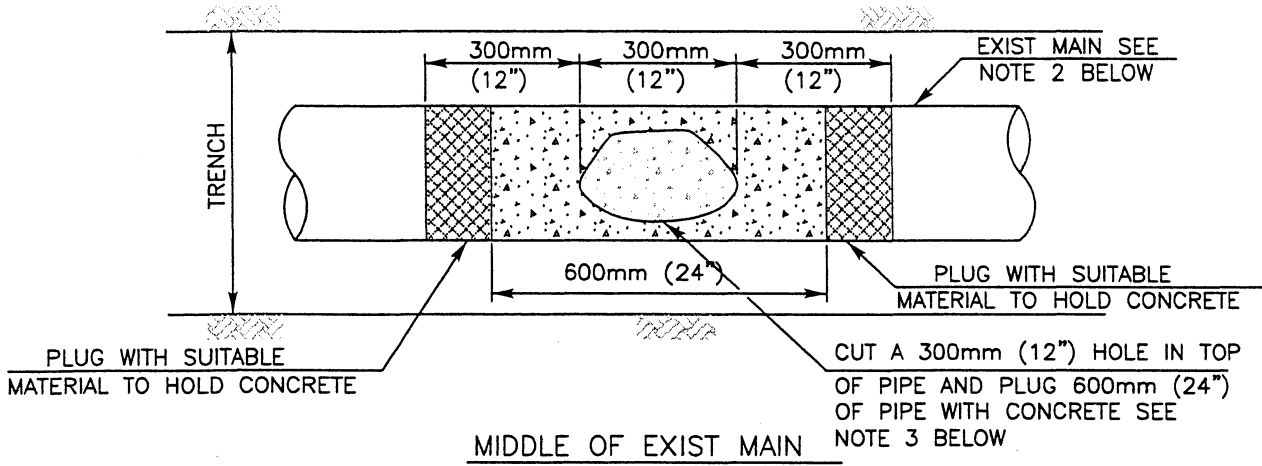
RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/28/2004

Chairperson R.C.E. 19246 Date

DRAWING NUMBER **WP-02**

SEE SDW-100



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) WATER AND RECYCLED WATER MAINS AND SEWER LATERALS 100mm (4") DIAMETER AND SMALLER SHALL HAVE A SHORT SECTION OF PIPE REMOVED AND PIPE ENDS ENCASED IN CONCRETE
- 3) EXISTING MAIN TO BE PLUGGED WITH CONCRETE OR PRESSURE GROUTED AT INTERVALS OF ABOUT 61m (200') OR AS DIRECTED BY THE ENGINEER
- 4) EXISTING MAINS 400mm (16") AND LARGER REQUIRE THE ENTIRE LENGTH OF THE PIPE TO BE FILLED BY PRESSURE GROUTING OR BY BLOWN SAND
- 5) EXISTING VALVES SHALL BE TURNED TO THE CLOSED POSITION. REMOVE GATE WELL AND REPLACE WITH COMPACTED BACKFILL
- 6) FOR ABANDONMENT OF MANHOLES SEE SM-08
- 7) PRIOR AGENCY APPROVAL REQUIRED FOR CUTTING AND PLUGGING

Revision	By	Approved	Date
ORIGINAL		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

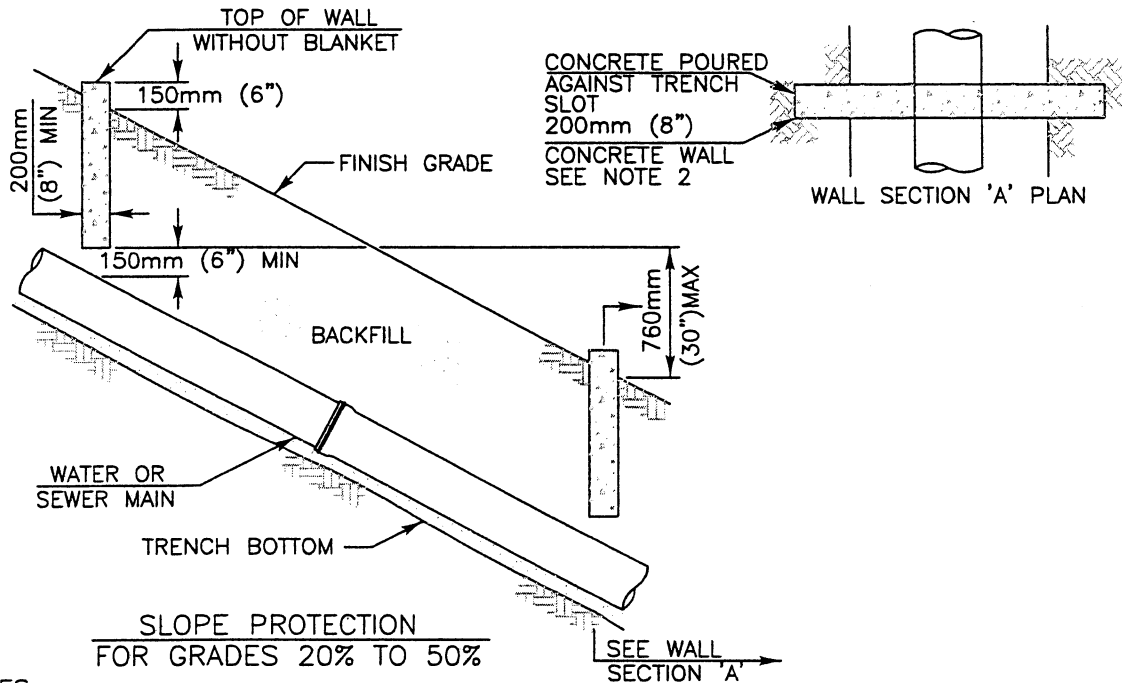
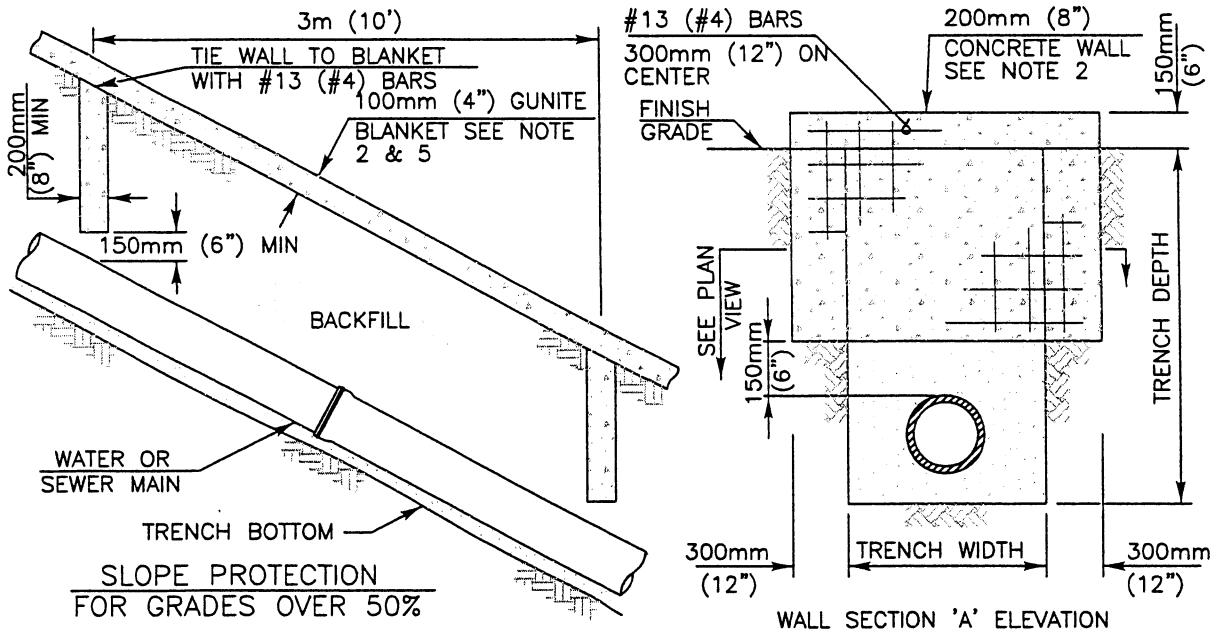
**CUTTING AND PLUGGING ABANDONED WATER,
RECYCLED WATER AND SEWER MAINS**

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

R. C. E. 10/28/2004

Chairperson R.C.E. 19246 Date

DRAWING NUMBER **WP-03**



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) THE DETAILS SHOWN REPRESENT THE MINIMUM REQUIRED. THE ENGINEER OF WORK IS REQUIRED TO PROVIDE A SUBMITTAL TO THE AGENCY OF JURISDICTION FOR REVIEW AND APPROVAL BY THE AGENCY'S ENGINEER PRIOR TO INSTALLATION
- 3) WALLS SHALL BE REINFORCED CONCRETE OR 200mm x 200mm x 400mm (8" x 8" x 16") CONCRETE BLOCK, REINFORCED AND ALL CORES FILLED WITH GROUT SEE SPECIFICATIONS
- 4) FOR GRADES OVER 50%, SLOPE PROTECTION SHALL ALSO INCLUDE AC PAVING, CONCRETE SLAB OR GUNITITE BLANKET PLACED OVER THE PIPELINE ALIGNMENT
- 5) 100mm (4") GUNITITE BLANKET WITH 150mm (6") SQUARE x 10 GAGE WIRE FABRIC AT THE ENGINEERS DISCRETION

LEGEND ON PLANS

Revision	By	Approved	Date
ORIGINAL		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

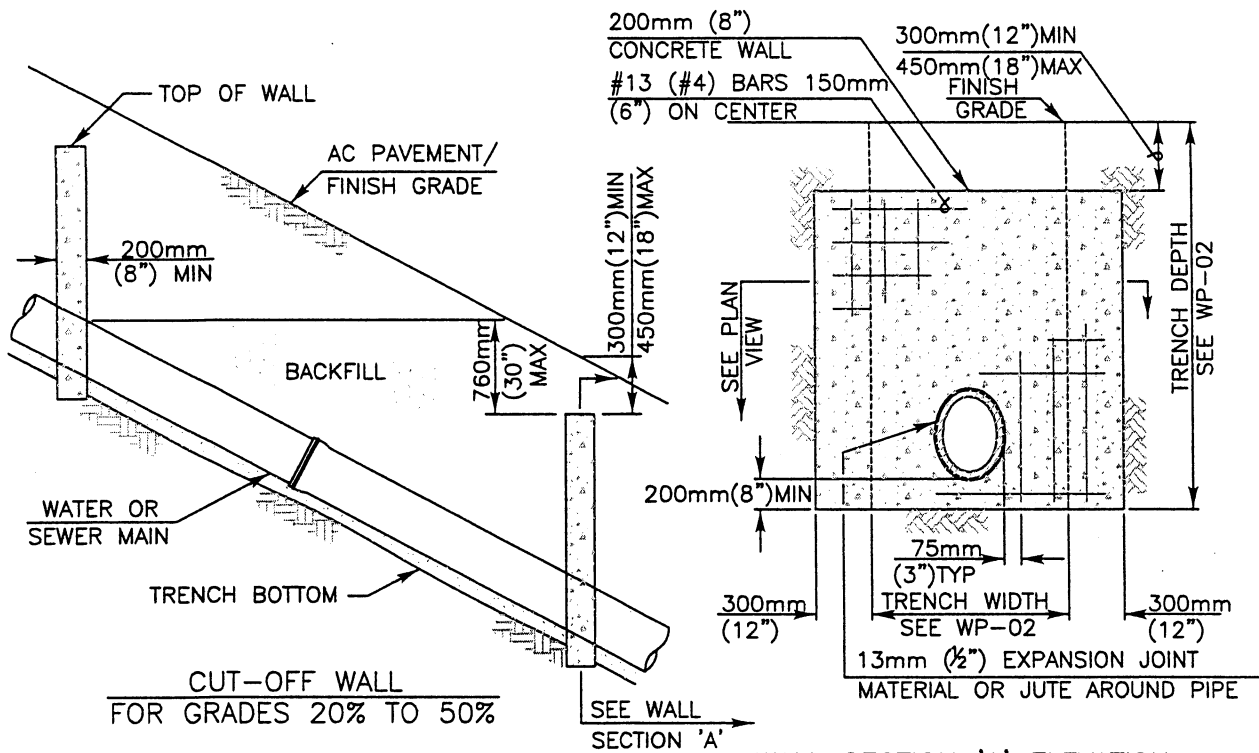
SLOPE PROTECTION INSTALLATIONS

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

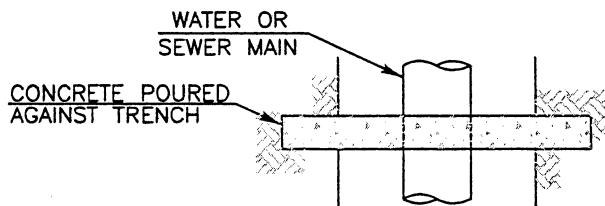
J. Steinton 10/28/2004

Chairperson R.C.E. 19246 Date

DRAWING NUMBER WP-05



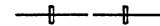
WALL SECTION 'A' ELEVATION



WALL SECTION 'A' PLAN

NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) FOR USE AS TRENCH BACKFILL STABILIZATION IN TRAVELED AREAS
- 3) THE DETAILS SHOWN REPRESENT THE MINIMUM REQUIRED. THE ENGINEER OF WORK IS REQUIRED TO PROVIDE A SUBMITTAL TO THE AGENCY OF JURISDICTION FOR REVIEW AND APPROVAL BY THE AGENCY'S ENGINEER PRIOR TO INSTALLATION
- 4) WALLS SHALL BE REINFORCED CONCRETE OR 200mm x 200mm x 400mm (8" x 8" x 16") CONCRETE BLOCK, REINFORCED AND ALL CORES FILLED WITH GROUT SEE SPECIFICATIONS
- 5) FOR GRADES OVER 50% SEE WP-05/SP-05



LEGEND ON PLANS

Revision	By	Approved	Date
ORIGINAL		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

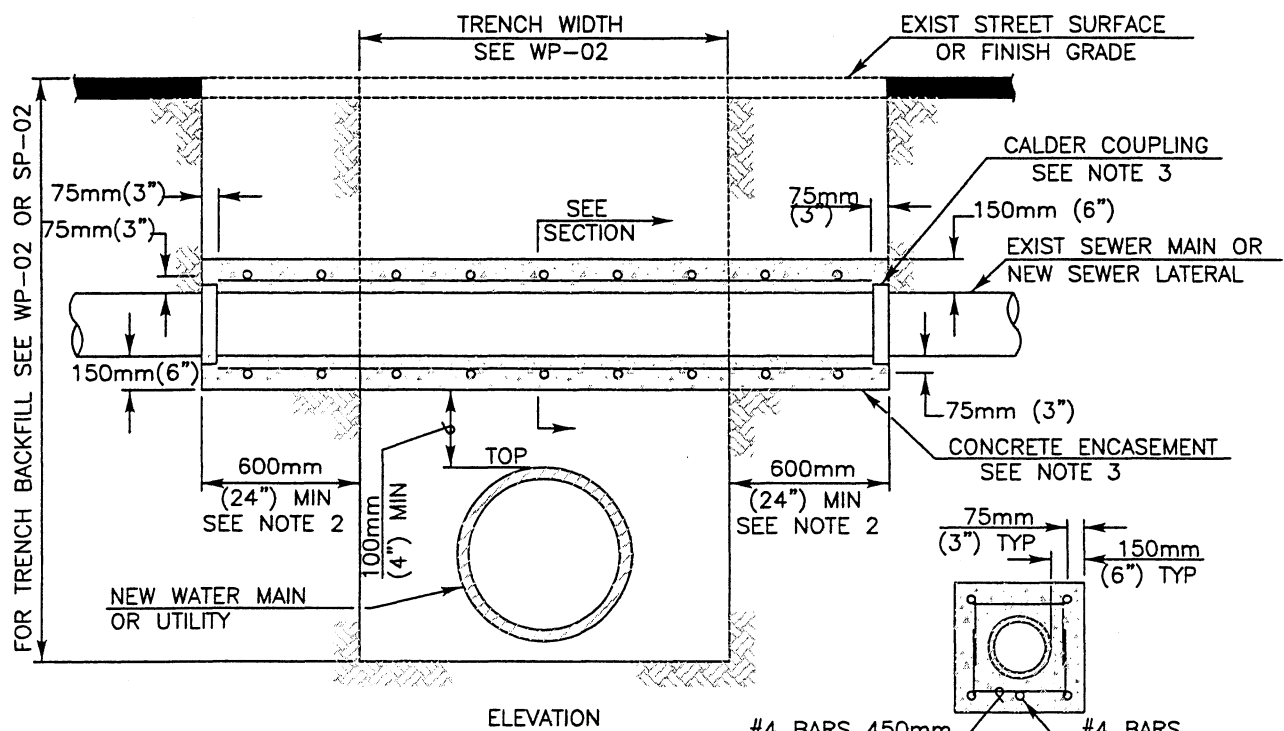
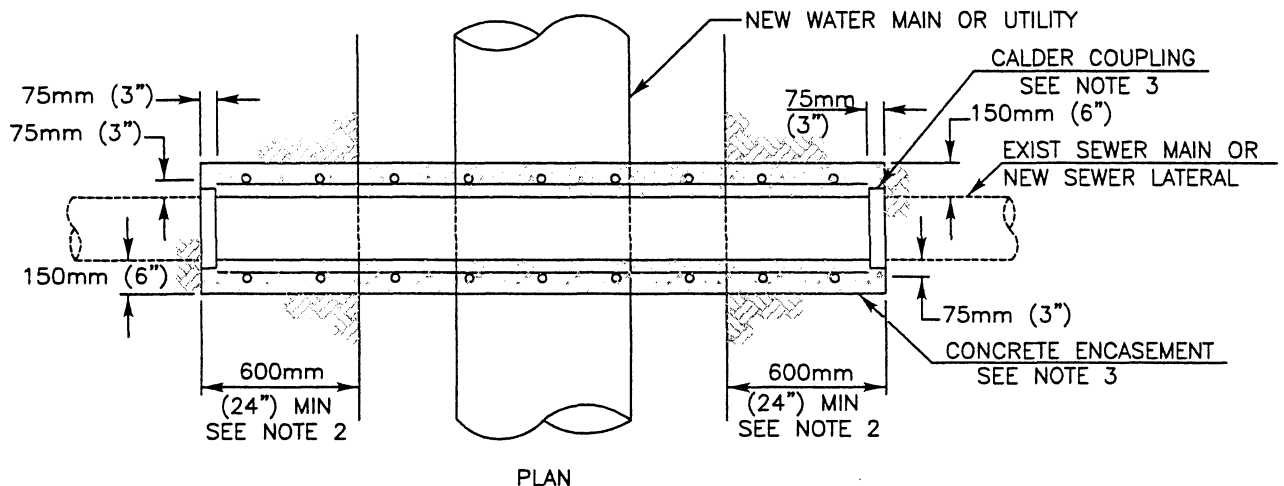
CUT-OFF WALL INSTALLATION IN TRAVELED AREAS

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

M. Stenton 10/28/2004

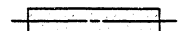
Chairperson R.C.E. 19246 Date

DRAWING NUMBER WP-07



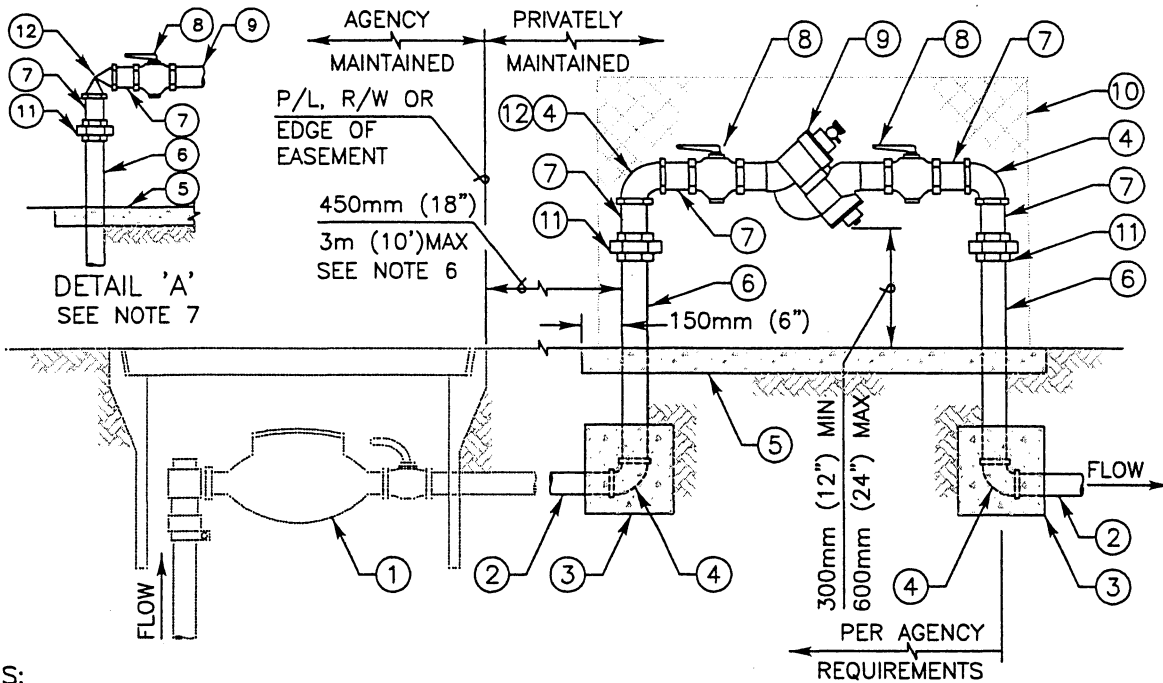
NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS FOR PROTECTION OF EXISTING FACILITIES
- 2) ENCASEMENT SHALL EXTEND TO FIRST JOINT BEYOND BOTH SIDES OF TRENCH [600mm (24") MIN 1200mm (48") MAX OF SUITABLE NATIVE SUPPORT BEYOND EDGE OF TRENCH].
- 3) CONCRETE ENCASEMENT REQUIRED FOR SEWER MAINS ONLY. CALDER COUPLINGS REQUIRED FOR SEWER LATERALS ONLY. SEWER LATERALS TO BE REPLACED WITH SCH. 80 PVC WITH NO INTERMEDIATE JOINTS.
- 4) FOR PIPE BEDDING AND TRENCH BACKFILL SEE WP-02 OR SP-02.



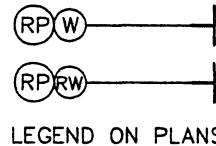
LEGEND ON PLANS

Revision	By	Approved	Date	SAN DIEGO REGIONAL STANDARD DRAWING		RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE	
ORIGINAL		J. Tomasulo	10/04			<i>[Signature]</i> 10/28/2004	
				PIPE SUPPORT FOR UNDERCUT SEWER MAINS OR SEWER LATERALS		Chairperson R.C.E. 19246 Date	
						DRAWING NUMBER	WP-09



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) INSTALL WARNING/IDENTIFICATION TAPE AS SHOWN ON WP-01
- 3) LOCATE BACKFLOW PREVENTION DEVICE (BPD) IN SUCH A MANNER THAT WILL ALLOW THE DEVICE TO BE READILY ACCESSIBLE FOR INSPECTION AND REPAIR
- 4) STRAINERS SHALL NOT BE INSTALLED PRIOR TO THE FIRST SHUT-OFF VALVE
- 5) ALL ABOVE GROUND PIPING, UNIONS, ELBOWS, & NIPPLES SHALL BE SOLDERED OR THREADED BRASS
- 6) INSTALL A CASING ENCASED IN CONCRETE WHEN THE DISTANCE BETWEEN THE METER BOX AND THE RISER TO THE BPD EXCEEDS 450mm (18")
- 7) INSTALL AN ANGLE PRESSURE REDUCING VALVE IN LIEU OF THE FIRST 90° ELL WHEN SYSTEM PRESSURE EXCEEDS 1.03 MPa (150 PSI) PER AGENCY SPECIFICATIONS
- 8) TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH AGENCY SPECIFICATIONS PRIOR TO ACCEPTANCE
- 9) BPD & APPURTENANCES INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DESCRIBED IN AGENCY SPECIFICATIONS
- 10) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST



ITEM NO	SIZE AND DESCRIPTION	ITEM NO	SIZE AND DESCRIPTION
①	METER BOX & METER ASSEMBLY SEE WS-01 & WS-02	⑥	BRASS OR COPPER PIPE SEE NOTE 5
②	SCH 80 PVC, BRASS OR COPPER PIPE	⑦	75mm (3") LONG NIPPLE SEE NOTE 5
③	CONCRETE THRUST BLOCK SEE WT-01	⑧	BALL VALVE "SHUT-OFF"
④	90° ELL SEE NOTES 5 & 7	⑨	REDUCED PRESSURE BACKFLOW DEVICE
⑤	CONCRETE SLAB, MINIMUM 100mm (4") THICK x 450mm (18") WIDE	⑩	ENCLOSURE (OPTIONAL)
		⑪	UNION SEE NOTE 5
		⑫	ANGLE PRV SEE NOTES 5 & 7

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Replaced W-27		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

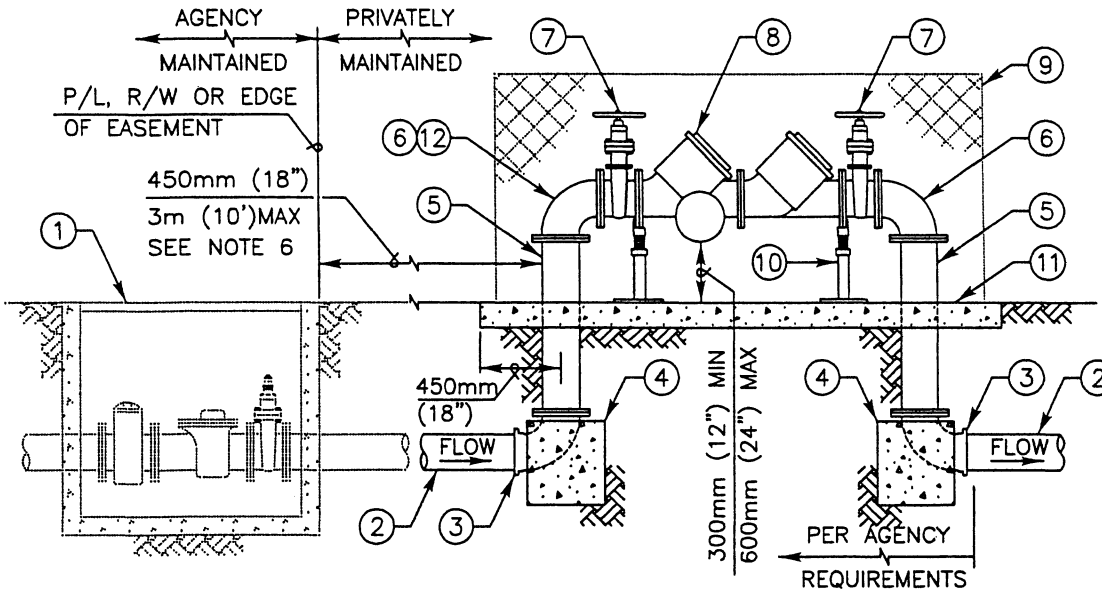
**19mm THRU 50mm (3/4" THRU 2")
REDUCED PRESSURE BACKFLOW
PREVENTION DEVICE**

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/28/2004

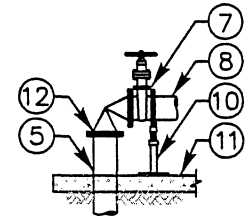
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **WR-01**

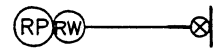
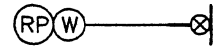


NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) INSTALL WARNING/IDENTIFICATION TAPE AS SHOWN ON WP-01
- 3) LOCATE BACKFLOW PREVENTION DEVICE (BPD) IN SUCH A MANNER THAT WILL ALLOW THE DEVICE TO BE READILY ACCESSIBLE FOR INSPECTION AND REPAIR.
- 4) STRAINERS SHALL NOT BE INSTALLED PRIOR TO THE FIRST SHUT-OFF VALVE
- 5) INSTALL A CASING ENCASED IN CONCRETE WHEN THE DISTANCE BETWEEN THE METER BOX AND THE RISER TO THE BPD EXCEEDS 450mm (18")
- 6) INSTALL AN ANGLE PRESSURE REDUCING VALVE IN LIEU OF THE FIRST 90° ELL WHEN SYSTEM PRESSURE EXCEEDS 1.03 MPa (150 PSI) PER AGENCY SPECIFICATIONS
- 7) TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH AGENCY SPECIFICATIONS PRIOR TO ACCEPTANCE
- 8) BPD & APPURTENANCES INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DESCRIBED IN AGENCY SPECIFICATIONS
- 9) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST



DETAIL 'A'
SEE NOTE 7



LEGEND ON PLANS

ITEM NO	SIZE AND DESCRIPTION	ITEM NO	SIZE AND DESCRIPTION
①	METER VAULT & METER ASSEMBLY SEE WS-04	⑦	FLANGED RESILIENT WEDGE GATE VALVE
②	PVC OR DUCTILE IRON PIPE	⑧	REDUCED PRESSURE BACKFLOW DEVICE
③	FLG x FLG OR MJ/PO x FLG 90° BEND	⑨	ENCLOSURE (OPTIONAL)
④	CONCRETE THRUST BLOCK SEE WT-01	⑩	ADJUSTABLE VALVE SUPPORT
⑤	FLANGED DUCTILE IRON PIPE	⑪	CONCRETE SLAB, MINIMUM 100mm (4") THICK x 900mm (36") WIDE
⑥	FLANGED 90° BEND, SEE NOTE 6	⑫	FLANGED ANGLE PRESSURE REDUCING VALVE SEE NOTE 6

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Replaced W-28		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

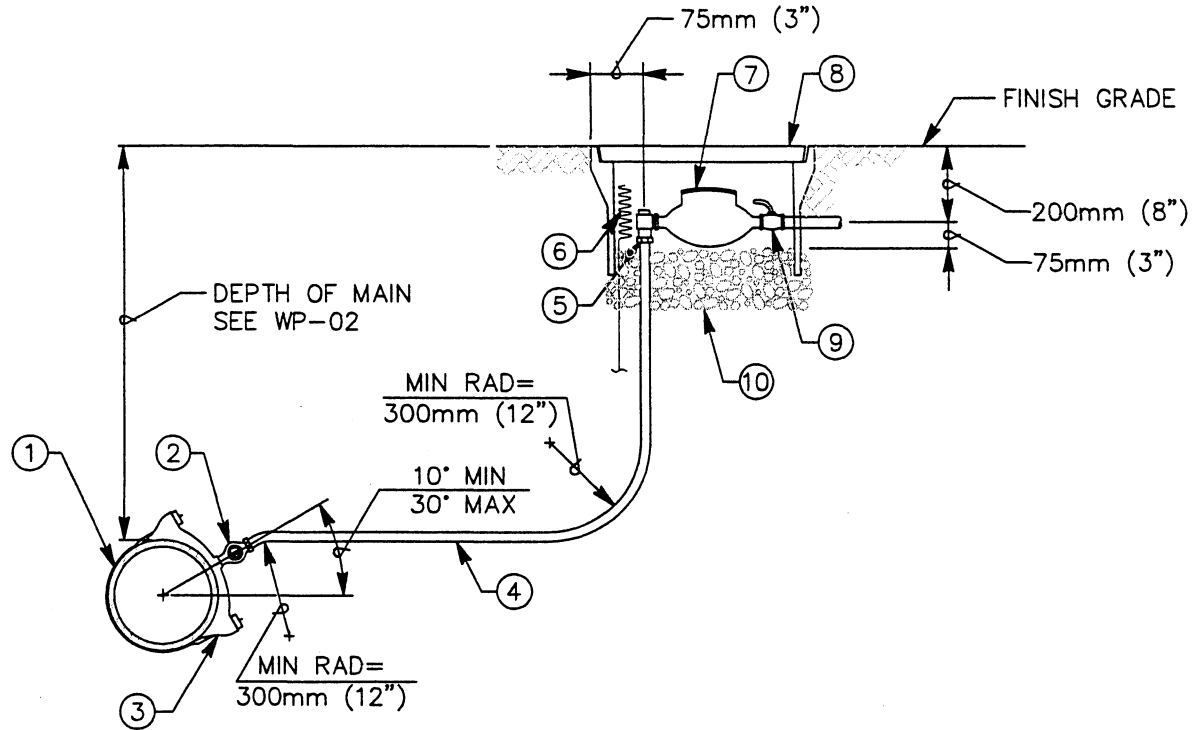
100mm (3") AND LARGER REDUCED PRESSURE BACKFLOW PREVENTION DEVICE

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/28/2004

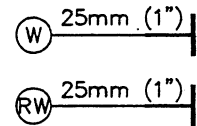
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **WR-02**



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) INSTALL CORPORATION STOP WITH KEY IN THE SIDE POSITION
- 3) SET TOP OF METER BOX FLUSH WITH SIDEWALK, CURB, OR FINISH GRADE
- 4) LOCATE METER BOX AS SHOWN ON WS-03
- 5) INSTALL WARNING/IDENTIFICATION TAPE AS SHOWN ON WP-01
- 6) WATER LATERALS INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DESCRIBED IN AGENCY SPECIFICATIONS
- 7) SILVER SOLDER JOINTS SHALL NOT BE USED
- 8) ON STEEL MAINS USE WELD ON COUPLINGS, ON DUCTILE IRON MAINS USE DUCTILE IRON SERVICE SADDLES (INSULATING BUSHINGS ARE REQUIRED)
- 9) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST



LEGEND ON PLANS

ITEM NO	SIZE AND DESCRIPTION	ITEM NO	SIZE AND DESCRIPTION
①	WATER MAIN	⑦	WATER METER FURNISHED & INSTALLED BY THE WATER AGENCY OF JURISDICTION
②	25mm (1") BRONZE CORPORATION STOP	⑧	METER BOX WITH LID, 250mm x 500mm (10" x 20")
③	SIZE x 25mm (1") SERVICE SADDLE	⑨	CUSTOMER SHUT-OFF VALVE (LOCKABLE) FURNISHED AND INSTALLED BY THE WATER AGENCY OF JURISDICTION
④	25mm (1") x REQUIRED LENGTH COPPER PIPE TYPE "K" SOFT	⑩	10mm (3/8") ROCK, 100mm TO 150mm (4" TO 6") DEEP
⑤	25mm (1") BRONZE ANGLE METER STOP WITH LOCKWING		
⑥	TRACER WIRE (AS REQUIRED), SEE WP-01		

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Replaced W-01		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

25mm (1") WATER SERVICE INSTALLATION

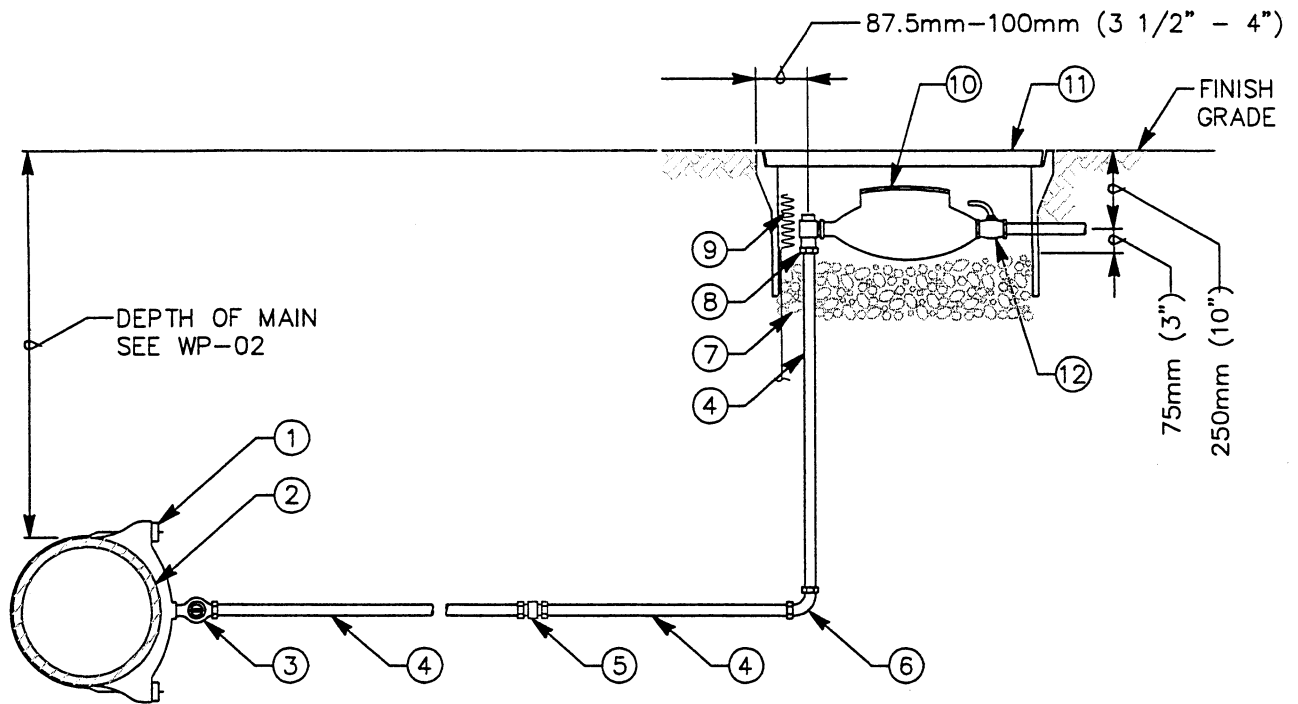
RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/28/2004

Chairperson R.C.E. 19246 Date

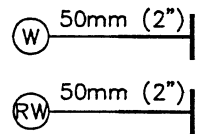
DRAWING NUMBER **WS-01**

SEE SDW-100



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE.
- 2) INSTALL CORPORATION STOP WITH KEY IN THE SIDE POSITION
- 3) SET TOP OF METER BOX FLUSH WITH SIDEWALK, CURB, OR FINISH GRADE
- 4) LOCATE METER BOX AS SHOWN ON WS-03
- 5) INSTALL WARNING/IDENTIFICATION TAPE AS SHOWN ON WP-01
- 6) WATER LATERALS INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DESCRIBED IN AGENCY SPECIFICATIONS
- 7) SILVER SOLDER JOINTS SHALL NOT BE USED
- 8) ON STEEL MAINS USE WELD ON COUPLINGS, ON DUCTILE IRON MAINS USE DUCTILE IRON SERVICE SADDLES (INSULATING BUSHINGS ARE REQUIRED)
- 9) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST

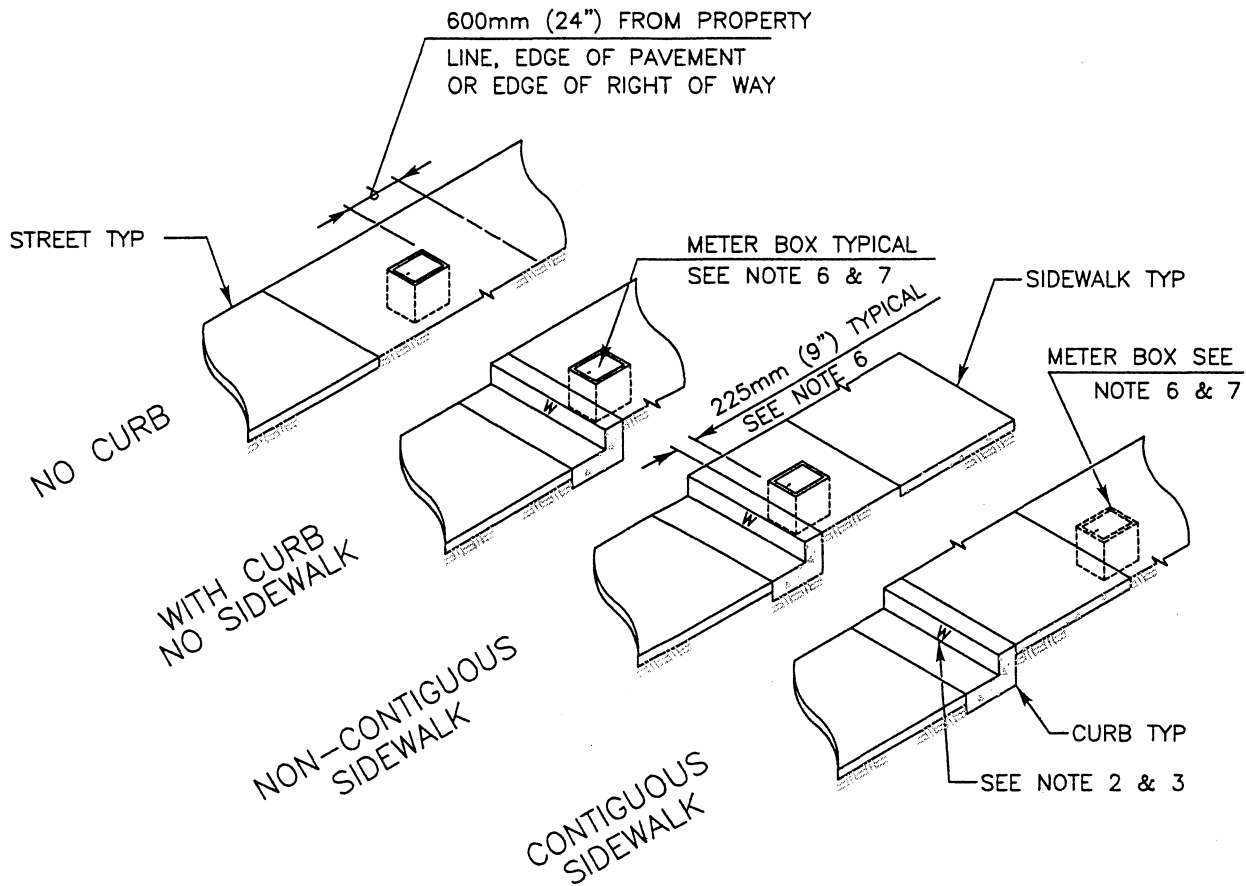


LEGEND ON PLANS

ITEM NO	SIZE AND DESCRIPTION	ITEM NO	SIZE AND DESCRIPTION
①	SIZE x 50mm (2") SERVICE SADDLE	⑦	10mm (3/8") ROCK, 100mm x 150mm (4" TO 6") DEEP
②	WATER MAIN	⑧	50mm (2") BRONZE ANGLE METER STOP WITH LOCKWING
③	50mm (2") BRONZE CORPORATION STOP	⑨	TRACER WIRE (AS REQUIRED), SEE WP-01
④	50mm (2") x REQUIRED LENGTH COPPER PIPE TYPE "K" SOFT/RIGID OR UNLESS OTHERWISE SPECIFIED BY AGENCY OF JURISDICTION	⑩	WATER METER FURNISHED AND INSTALLED BY THE WATER AGENCY OF JURISDICTION
⑤	50mm (2") BRONZE COMPRESSION COUPLING COPPER TO COPPER (IF REQUIRED)	⑪	METER BOX WITH LID, 425mm x 750mm (17"x 30")
⑥	50mm (2") BRONZE COMPRESSION ELL	⑫	CUSTOMER SHUT-OFF VALVE (LOCKABLE)

Revision	By	Approved	Date	SAN DIEGO REGIONAL STANDARD DRAWING	RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE <i>T. Stanton</i> 10/28/2004 Chairperson R.C.E. 19246 Date
ORIGINAL		Kercheval	12/75		
Add Metric		T. Stanton	03/03		
Replaced W-02		J. Tomasulo	10/04		
				50mm (2") WATER SERVICE INSTALLATION	DRAWING NUMBER WS-02

SEE SDW-100



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) STAMP OR CHISEL A 50mm (2") HIGH 'W' IN CURB FACE TO IDENTIFY POTABLE WATER SERVICE LOCATION
- 3) STAMP OR CHISEL A 50mm (2") HIGH 'RW' IN CURB FACE TO IDENTIFY RECYCLED WATER SERVICE LOCATION
- 4) METER BOXES ARE NOT TO BE INSTALLED IN DRIVEWAYS, SIDEWALKS OR WITHIN PAVED ROADWAYS
- 5) MULTIPLE METER BOXES SHALL BE INSTALLED WITH A MINIMUM OF 225mm (9") BETWEEN BOXES
- 6) METER BOX SHALL BE INSTALLED 225mm (9") FROM THE BACK OF BERM, CURB, OR SIDEWALK (TYP)
- 7) AN EASEMENT MAY BE NEEDED DEPENDING ON LOCATION OF METER BOX
- 8) METER BOXES INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DESCRIBED IN AGENCY'S SPECIFICATIONS
- 9) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Replaced W-15		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

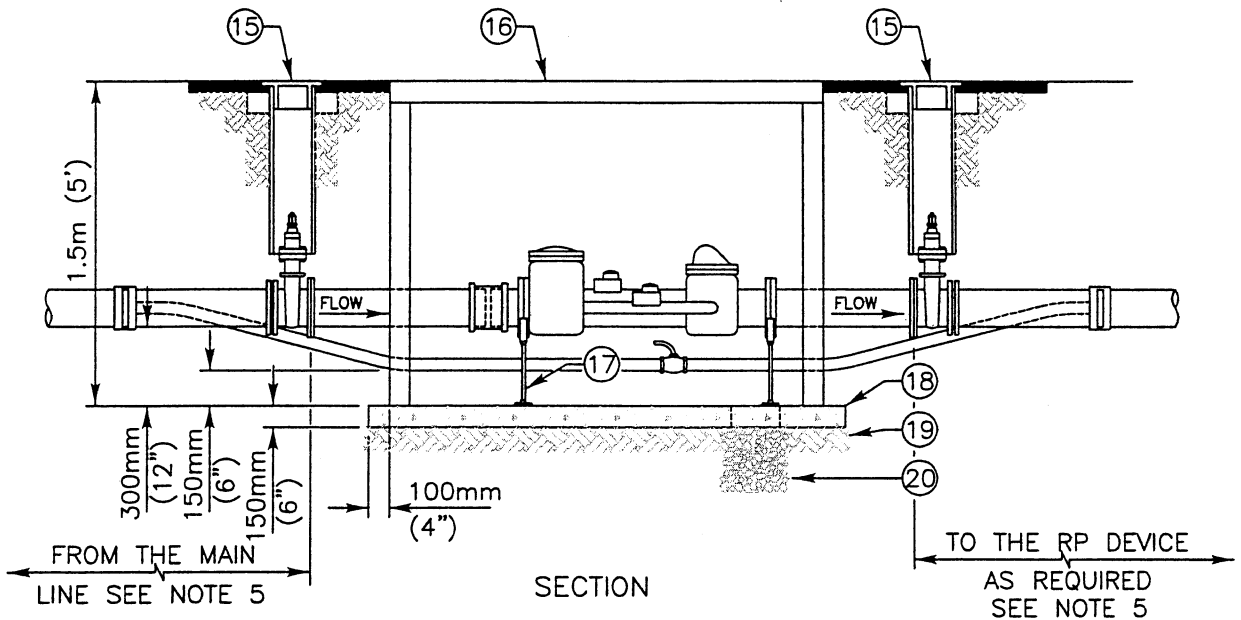
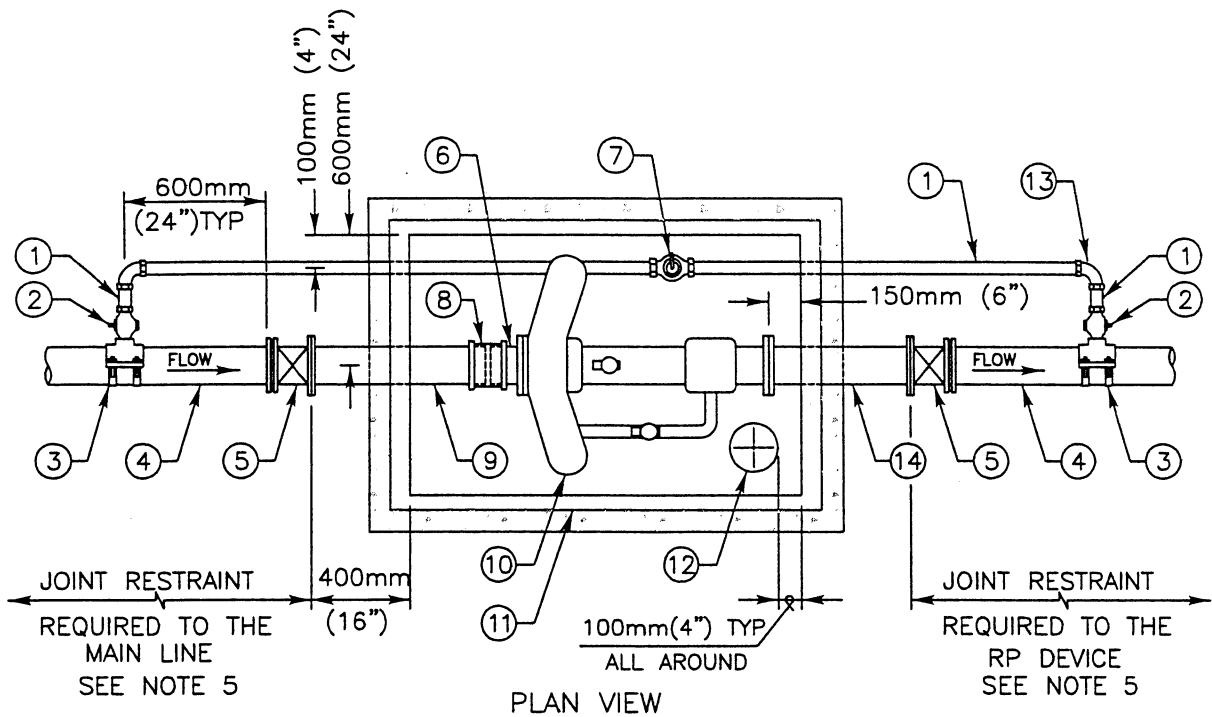
METER BOX LOCATIONS FOR WATER AND RECYCLED WATER APPURTENANCES

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/28/2004

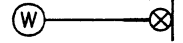
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **WS-03**



FOR MATERIAL DESCRIPTIONS AND NOTES SEE WS-04 (2 OF 2)

(INDICATE SIZE)



LEGEND ON PLANS

Revision	By	Approved	Date
ORIGINAL		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

**100mm (4") OR 150mm (6")
FIRELINE/MASTER METER INSTALLATION**

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

J. Stenton 10/23/2004
Chairperson R.C.E. 19246 Date

Chairperson R.C.E. 19246 Date

DRAWING NUMBER **WS-04** (1 OF 2)

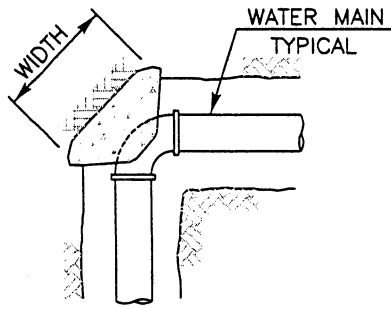
FOR DRAWING OF THE METER INSTALLATION SEE WS-04 (SHEET 1 OF 2)

NOTES:

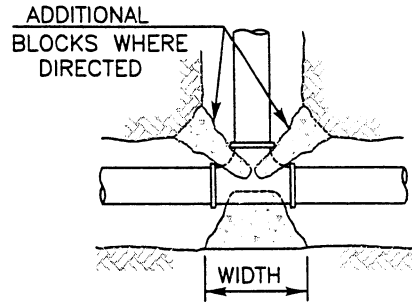
- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) TO BE USED WHERE BOTH DOMESTIC SERVICE AND FIRE PROTECTION ARE INSTALLED ON THE SAME PRIVATE SYSTEM
- 3) LOCATION OF METER SHALL BE APPROVED BY THE DISTRICT ENGINEER PRIOR TO INSTALLATION IN ACCORDANCE WITH STANDARD DWG WS-06
- 4) 200mm (8") OR 250mm (10") METERS TO BE DESIGNED BY AN ENGINEER AND SUBMITTED FOR AGENCY'S APPROVAL AS NEEDED ON A CASE-BY-CASE BASIS
- 5) JOINT RESTRAINT SHALL BE IN ACCORDANCE WITH AGENCY SPECIFICATIONS
- 6) METERS SHALL BE FURNISHED AND INSTALLED BY THE AGENCY OF JURISDICTION
- 7) 100mm (4") METER REQUIRES A 1200mm x 1500mm (48" x 60") VAULT
150mm (6") METER REQUIRES A 1200mm x 1800mm (48" x 72") VAULT
- 8) IN AREAS WHERE GROUND WATER IS PRESENT THE AGENCY'S ENGINEER MAY REQUIRE A SEALED SUMP TO BE CONSTRUCTED
- 9) CONNECTIONS TO STEEL WATER MAINS SHALL BE IN ACCORDANCE WITH AGENCY SPECIFICATIONS
- 10) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST

ITEM NO	SIZE AND DESCRIPTION	ITEM NO	SIZE AND DESCRIPTION
①	50mm (2") x REQUIRED LENGTH TYPE "K" COPPER PIPE	⑪	FRP VAULT WITH HINGED ACCESS DOOR, SEE NOTE 7
②	50mm (2") BRONZE CORPORATION STOP	⑫	300mm (12") DIAMETER x 150mm (6") LONG PVC PIPE
③	LINE SIZE x 50mm (2") SERVICE SADDLE	⑬	50mm (2") 90° COMPRESSION ELL (TYPICAL)
④	100mm (4") OR 150mm (6") PVC PIPE	⑭	LINE SIZE x 600mm (24") LONG FLANGED DUCTILE-IRON SPOOL
⑤	100mm (4") OR 150mm (6") FLG x MJ RWGV MECHANICALLY RESTRAINED, SEE NOTE 5	⑮	200mm (8") GATE WELL. SEE WV-01 & WV-02
⑥	LINE SIZE x 150mm (6") LONG FLG x PE DUCTILE-IRON SPOOL	⑯	HINGED VAULT ACCESS DOOR
⑦	50mm (2") COMPRESSION, LOCKABLE BALL VALVE	⑰	ADJUSTABLE PIPE SUPPORT (TYPICAL)
⑧	100mm (4") OR 150mm (6") FLEXIBLE COUPLING	⑱	150mm (6") CLASS "B" CONCRETE FLOOR WITH #3 BARS @ 300mm (12") C.C.
⑨	LINE SIZE x 750mm (30") LONG FLG x PE DUCTILE-IRON SPOOL	⑲	150mm (6") DG BASE COMPACTED TO 90%
⑩	100mm (4") OR 150mm (6") FIRELINE METER SEE NOTE 6	⑳	300mm (12") DIAMETER x 300mm (12") DEEP, 19mm (3/4") GRAVEL SUMP, SEE NOTE 8

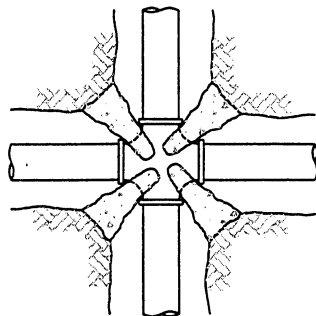
Revision	By	Approved	Date	SAN DIEGO REGIONAL STANDARD DRAWING	RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE
ORIGINAL		J. Tomasulo	10/04		<i>[Signature]</i> 10/28/2004
				100mm (4") OR 150mm (6") FIRELINE/MASTER METER INSTALLATION	Chairperson R.C.E. 19246 Date
					DRAWING NUMBER WS-04 (2 OF 2)



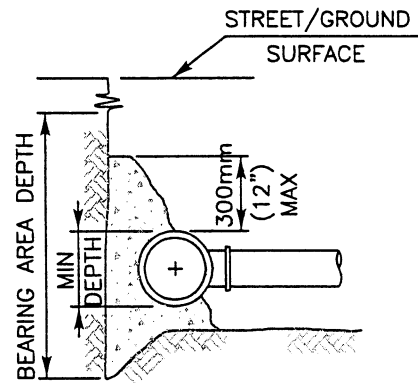
BEND



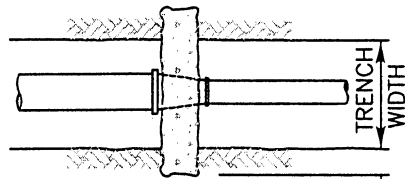
TEE PLAN



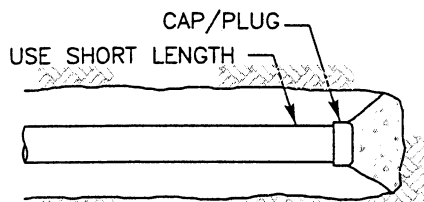
CROSS



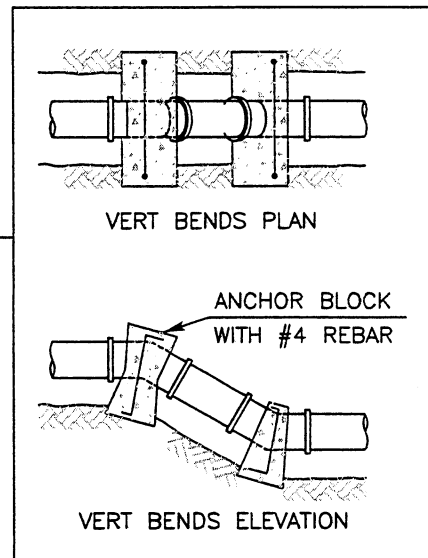
TEE ELEVATION



450mm (18") MINIMUM INTO NATIVE MATERIAL REDUCER



END CAP



NOTES:

- 1) FOR ADDITIONAL THRUST BLOCKS, ANCHOR BLOCKS AND NOTES SEE WT-01 (2 OF 3) & (3 OF 3)
- 2) THE ANCHOR BLOCKS ON VERTICAL BENDS REQUIRE AGENCY APPROVAL

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Repl. W-17 through W-22		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

CONCRETE THRUST AND ANCHOR BLOCK INSTALLATIONS

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

J. Stanton 10/28/2004

Chairperson R.C.E. 19246 Date

DRAWING NUMBER **WT-01** (1 OF 3)

SEE SDW-100

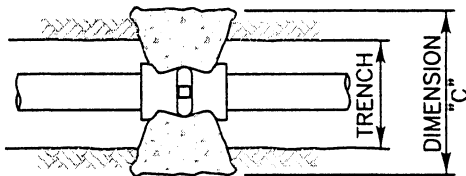
VALVE SUPPORT BLOCK

VALVE SIZE	DIMENSION "A"	DIMENSION "B"
100mm(4")	300mm(12")	300mm(12")
150mm(6")	300mm(12")	300mm(12")
200mm(8")	325mm(13")	350mm(14")
250mm(10")	350mm(14")	400mm(16")
300mm(12")	375mm(15")	450mm(18")

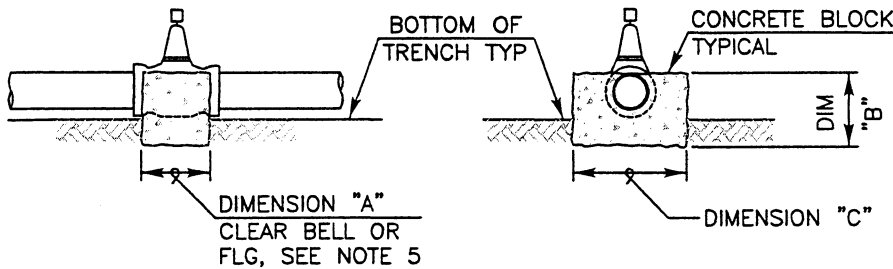
DIMENSION "C" = TRENCH WIDTH PLUS TWO TIMES THE PIPE DIAMETER

THRUST AND ANCHOR BLOCKS

MINIMUM BEARING AREA IN SQUARE METERS (SQUARE FOOT) SEE NOTE 2				
MAIN SIZE	TEES	90° BEND	45° BEND	22½° BEND
100mm(4")	0.4(4)	0.5(5)	0.3(3)	0.1(1.5)
150mm(6")	0.7(8)	0.9(10)	0.5(5)	0.2(2.5)
200mm(8")	1.1(12)	1.5(16)	0.8(9)	0.4(4.5)
250mm(10")	1.6(17)	2.2(24)	1.2(13)	0.6(6.5)
300mm(12")	2.2(24)	3.1(33)	1.8(19)	0.9(9.5)



VALVE SUPPORT PLAN



VALVE SUPPORT ELEVATION

NOTES:

- REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- BEARING AREA BASED ON SOIL BEARING VALUE OF 71,821 kPa (1500 PSF) AND 1551 kPa (225 PSI) LINE PRESSURE AND A MINIMUM OF 900mm (36") COVER
FOR BEARING= 47,880 kPa (1000 PSF), 1.5 x AREA SHOWN
FOR BEARING= 23,940 kPa (500 PSF), 3.0 x AREA SHOWN
- DESIGN ENGINEER SHALL DETERMINE SIZES, REFER TO AGENCY SPECIFICATIONS FOR THRUST AND ANCHOR BLOCK SIZING
- THRUST BLOCKS SHALL BE CENTERED ON THE FITTING SO THAT THE BEARING AREA IS EXACTLY OPPOSITE THE RESULTANT DIRECTION OF THRUST
- CONCRETE SHALL BE PLACED SO THAT FITTINGS AND VALVES WILL BE ACCESSABLE FOR REPAIR OR REPLACEMENT
- ALL THRUST AND ANCHOR BLOCKS SHALL BE POURED AGAINST WETTED UNDISTURBED SOIL
- FOR MINIMUM CONCRETE CURING TIME REFER TO AGENCY SPECIFICATIONS
- FOR ADDITIONAL THRUST BLOCKS SEE WT-01 (1 OF 3) & (3 OF 3)

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Repl. W-17 through W-22		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

CONCRETE THRUST AND ANCHOR BLOCK INSTALLATIONS

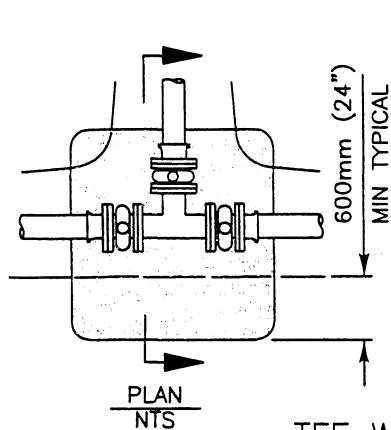
RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/28/2004

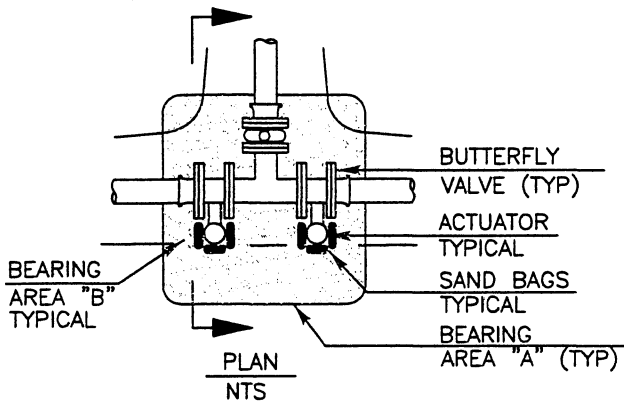
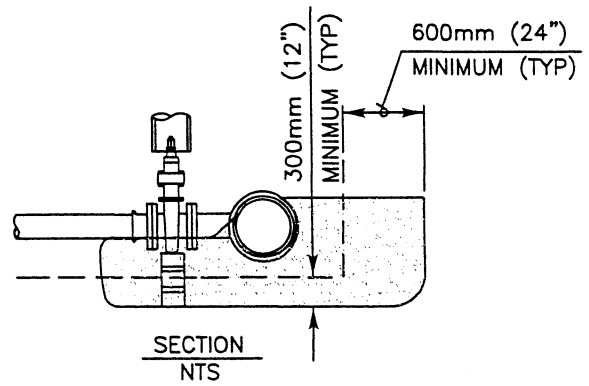
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **WT-01** (2 OF 3)

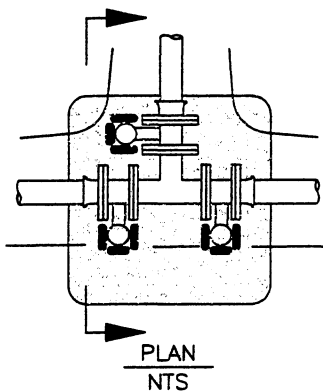
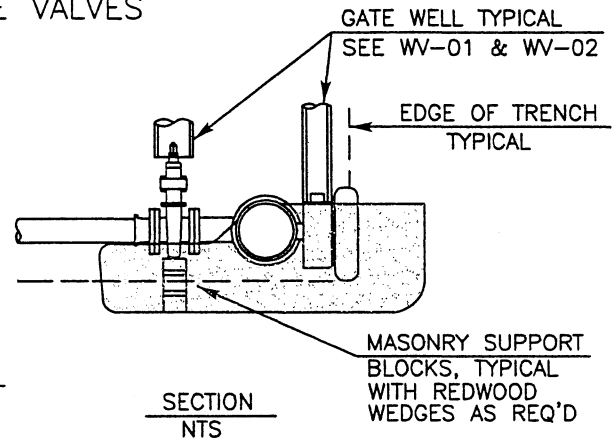
SEE SDW-100



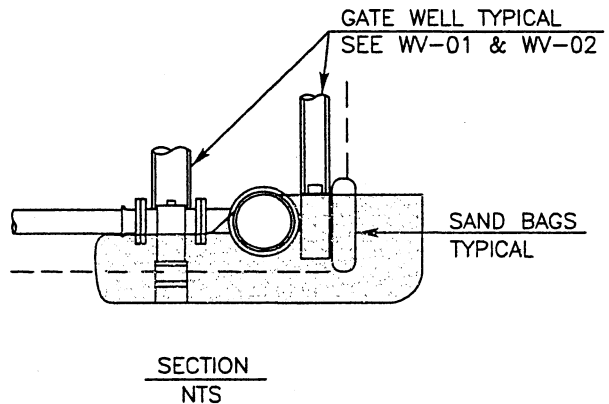
TEE WITH GATE VALVES



TEE WITH BUTTERFLY VALVES ON MAIN



TEE WITH BUTTERFLY VALVES



NOTES:

- 1) BEARING AREA "B" MUST BE EQUAL TO OR GREATER THAN THE AREA REQUIRED FOR A 90° ELBOW INSTALLATION
- 2) INSTALL SAND BAGS AROUND BUTTERFLY VALVE ACTUATOR TO ISOLATE IT FROM CONCRETE
- 3) BFV'S INSTALLED AT CROSSES OR TEES REQUIRE A FLANGED DUCTILE IRON SPOOL TO BE INSTALLED BETWEEN THE FITTING AND VALVE IN ACCORDANCE WITH THE AGENCY SPECIFICATIONS

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Repl. W-17 through W-22		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

CONCRETE THRUST AND ANCHOR BLOCK INSTALLATIONS

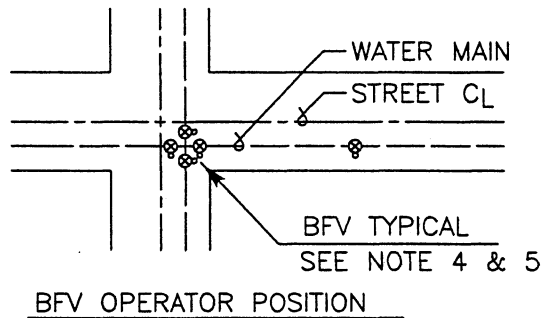
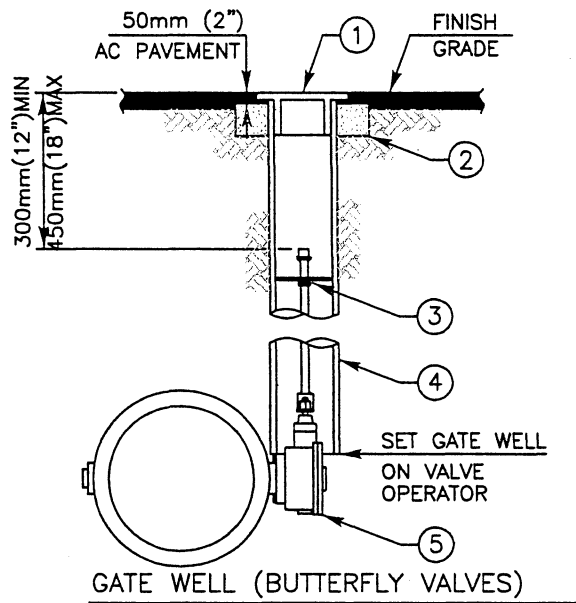
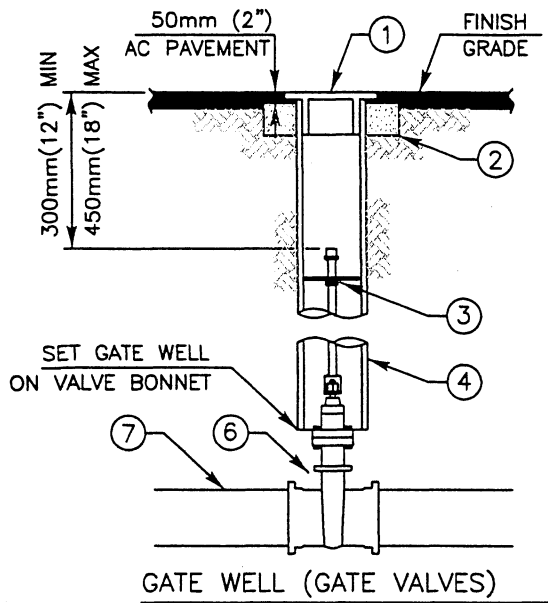
RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/28/2004

Chairperson R.C.E. 19246 Date

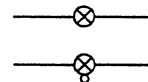
DRAWING NUMBER **WT-01** (3 OF 3)

SEE SDW-100



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) VALVES DEEPER THAN 1.5m (5') REQUIRE A VALVE STEM EXTENSION
- 3) EXTENSION STEMS SHALL NOT BE ATTACHED/BOLTED TO OPERATING NUT
- 4) GATE WELL AND CAP SHALL BE SET SO THAT NO MORE THAN TWO 25mm (1") ADJUSTMENT RINGS ARE USED
- 5) BFV OPERATORS TO BE LOCATED TO THE CURBLINE SIDE OF WATER MAIN
- 6) BFV'S INSTALLED AT CROSSES OR TEES REQUIRE A FLANGED DUCTILE IRON SPOOL TO BE INSTALLED BETWEEN THE FITTING AND VALVE IN ACCORDANCE WITH THE AGENCY'S SPECIFICATIONS
- 7) GATE WELLS AND CAPS SHALL BE IDENTIFIED AS DESCRIBED ON WV-03
- 8) FOR INLINE VALVE ANCHOR BLOCK INSTALLATION SEE WT-02
- 9) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST



LEGEND ON PLANS

ITEM NO	SIZE AND DESCRIPTION	ITEM NO	SIZE AND DESCRIPTION
①	GATE WELL WITH CAP SEE NOTE 7	④	200mm (8") PVC CL 200, C-900 PIPE x REQUIRED LENGTH GATE WELL SEE NOTE 7
②	150mm (6") HIGH x 150mm (6") WIDE COMPACTED ASPHALT-CONCRETE RING	⑤	BUTTERFLY VALVE
③	VALVE STEM EXTENSION SEE NOTES 2 & 3	⑥	RESILIENT WEDGE GATE VALVE
		⑦	WATER MAIN

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Repl. W-12A and W-12B		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

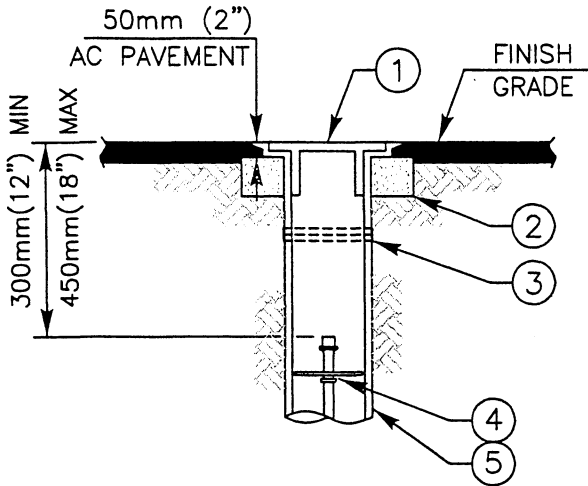
GATE WELL CAP INSTALLATION, FOR VALVES 100mm (4") AND LARGER

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

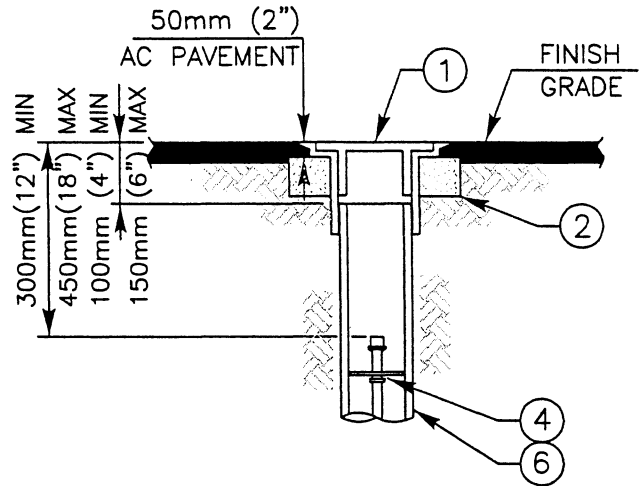
T. Stanton 10/28/2004

Chairperson R.C.E. 19246 Date

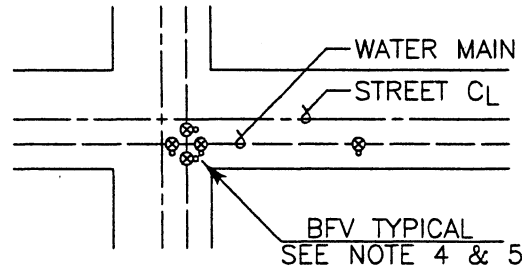
DRAWING NUMBER **WV-01**



8" GATE WELL TYPE A



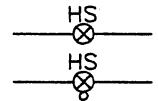
6" GATE WELL TYPE B



BFV OPERATOR POSITION

NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) VALVES DEEPER THAN 1.5m (5') REQUIRE A VALVE STEM EXTENSION
- 3) EXTENSION STEMS SHALL NOT BE ATTACHED/BOLTED TO OPERATING NUT
- 4) GATE WELL AND CAP SHALL BE SET SO THAT NO MORE THAN TWO 25mm (1") ADJUSTMENT RINGS ARE USED
- 5) BFV OPERATORS TO BE LOCATED TO THE CURBLINE SIDE OF WATER MAIN
- 6) BFV'S INSTALLED AT CROSSES OR TEES REQUIRE A FLANGED DUCTILE IRON SPOOL TO BE INSTALLED BETWEEN THE FITTING AND VALVE IN ACCORDANCE WITH THE AGENCY'S SPECIFICATIONS
- 7) GATE WELLS AND CAPS SHALL BE IDENTIFIED AS DESCRIBED ON WV-03
- 8) FOR INLINE VALVE ANCHOR BLOCK INSTALLATION SEE WT-02
- 9) GATE WELL TYPE AS APPROVED BY AGENCY
- 10) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST



LEGEND ON PLANS

ITEM NO	SIZE AND DESCRIPTION	ITEM NO	SIZE AND DESCRIPTION
①	GATE WELL WITH CAP SEE NOTE 7	④	VALVE STEM EXTENSION SEE NOTES 2 & 3
②	150mm (6") HIGH x 150mm (6") WIDE COMPACTED ASPHALT-CONCRETE RING	⑤	200mm (8") PVC CL 200, C-900 PIPE x REQUIRED LENGTH GATE WELL SEE NOTE 7
③	CAULDER COUPLING	⑥	150mm (6") PVC CL 200, C-900 PIPE x REQUIRED LENGTH GATE WELL SEE NOTE 7

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Repl. W-12A and W-12B		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

**GATE WELL CAP & CAN INSTALLATION,
FOR VALVES 100mm (4") AND LARGER**

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/28/2004
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **WV-02**



RECYCLED
WATER



POTABLE
WATER

GATE WELL LIDS
SEE NOTE 2 BELOW

COLOR	GATE WELL LIDS USED FOR:
RED	NORMALLY CLOSED SYSTEM VALVES (NCV)
PURPLE	RECYCLED WATER VALVES: LINE VALVES & AIR VALVES
YELLOW	POTABLE WATER VALVES: LINE VALVES, FIRE SERVICES, & AIR VALVES
WHITE	FIRE HYDRANTS

GATE WELL LID COLORS
SEE NOTE 5 BELOW

COLOR	GATE WELL AND LIDS USED FOR:
RED	NORMALLY CLOSED SYSTEM VALVES (NCV)
WHITE	RESILIENT WEDGE GATE VALVES
GREEN	BUTTERFLY VALVES

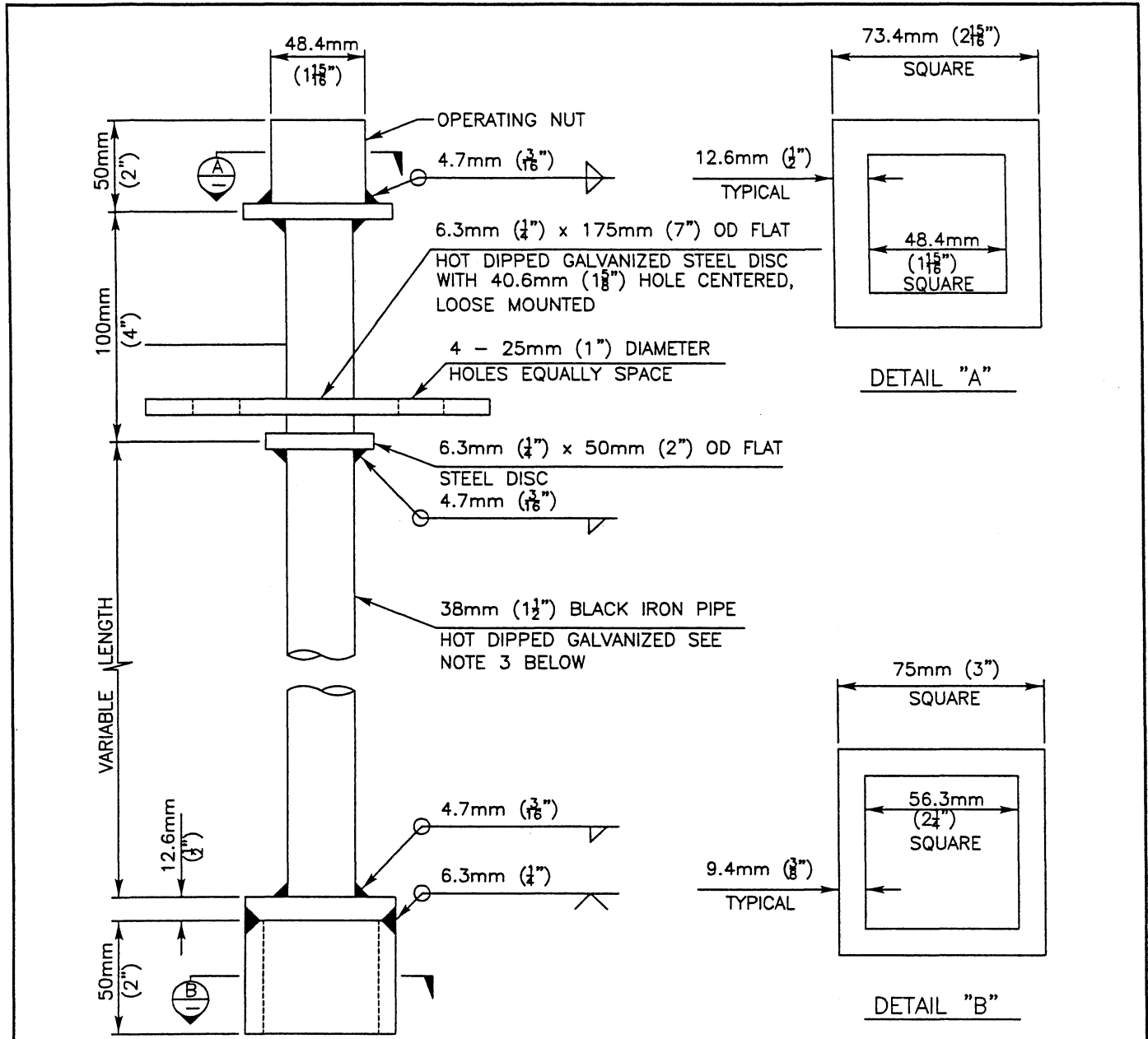
PAINTED IDENTIFICATION MARKING
SEE NOTE 4 BELOW

NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) GATE WELL LIDS SHALL BE CAST WITH THE "AGENCY NAME" AND THE WORD "WATER" FOR USE WITH POTABLE WATER SYSTEMS AND "RECYCLED" FOR USE WITH RECYCLED WATER SYSTEMS. LIDS SHALL INCLUDE A 25mm (1") LIFTING SLOT
- 3) PVC GATE WELLS SHALL BE MANUFACTURED IN WHITE OR BLUE FOR USE WITH POTABLE WATER, AND PURPLE FOR USE WITH RECYCLED WATER
- 4) THE INSIDE PORTIONS OF THE GATE WELL LID AND PVC GATE WELL SHALL BE IDENTIFIED WITH A PAINTED IDENTIFICATION MARKING.
- 5) THE TOP EXTERIOR PORTION OF GATE WELL LIDS SHALL BE PAINTED WITH COLORS TO IDENTIFY THE USE OF THE VALVE INSTALLED, AS SHOWN ABOVE
- 6) INSTALLATION FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED AS DESCRIBED IN AGENCY'S SPECIFICATIONS AND AS NOTED ABOVE
- 7) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST

Revision	By	Approved	Date	SAN DIEGO REGIONAL STANDARD DRAWING	RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE
ORIGINAL		Kercheval	12/75		GATE WELL IDENTIFICATION
Add Metric		T. Stanton	03/03	Chairperson R.C.E. 19246 Date	
Repl. W-12A and W-12B		J. Tomasulo	10/04	DRAWING NUMBER	
				WV-03	

SEE SDW-100



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE AND STANDARD DRAWINGS WV-01 AND WV-02
- 2) STEEL EXTENSION STEMS SHALL BE USED ONLY WHERE THE MAXIMUM LENGTHS OF THE EXTENSION EXCEEDS 2.4m (8') AND AT THE REQUEST OF THE AGENCY'S ENGINEER
- 3) EXTENSION STEMS SHALL BE ROUND OR SQUARE STEEL TUBING OF SOLID DESIGN (NO PINNED COUPLINGS PERMITTED)
- 4) VALVES DEEPER THAN 1.5m (5') REQUIRE A VALVE STEM EXTENSION
- 5) EXTENSION STEMS SHALL NOT BE ATTACHED/BOLTED TO OPERATING NUT OF THE VALVE
- 6) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST

Revision	By	Approved	Date
ORIGINAL		G.Parkinson	5/92
Add Metric		T. Stanton	03/03
Replaced W-13		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

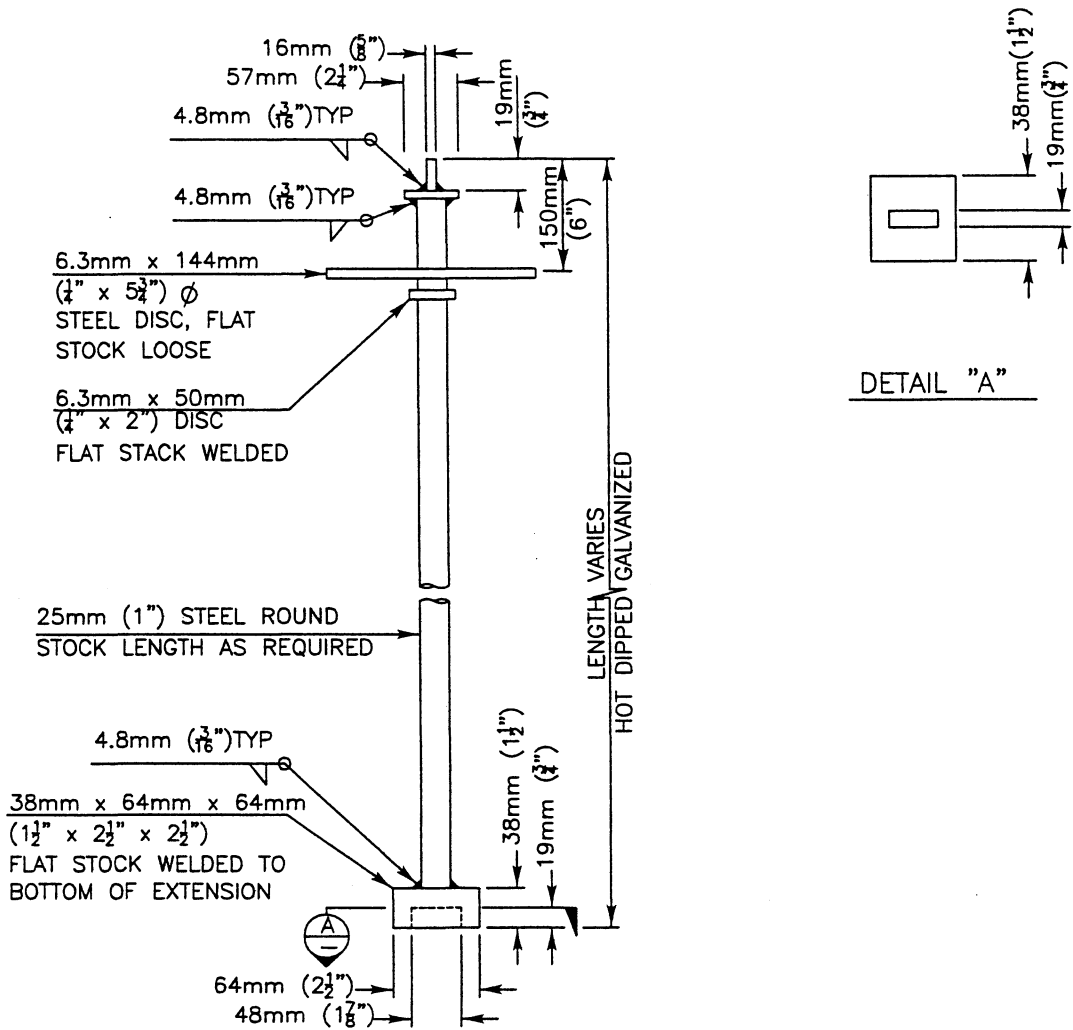
STEEL VALVE STEM EXTENSION FOR VALVES 100mm (4") AND LARGER

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/28/2004

Chairperson R.C.E. 19246 Date

DRAWING NUMBER **WV-04**



NOTES:

- 1) REFER TO AGENCY SPECIFICATIONS WHERE APPLICABLE
- 2) EXTENSION STEMS SHALL BE ROUND STEEL TUBING OF SOLID DESIGN (NO PINNED COUPLINGS PERMITTED)
- 3) VALVES DEEPER THAN 1.5m (5') AND 2" AIR VALVES REQUIRE A VALVE STEM EXTENSION OR AS REQUIRED BY THE AGENCY OF JURISDICTION
- 4) EXTENSION STEMS SHALL NOT BE ATTACHED/BOLTED TO OPERATING NUT OF THE VALVE
- 5) MATERIALS SHALL BE SELECTED FROM THE AGENCY'S APPROVED MATERIALS LIST

Revision	By	Approved	Date
ORIGINAL		G.Parkinson	5/92
Add Metric		T. Stanton	03/03
Replaced W-13		J. Tomasulo	10/04

SAN DIEGO REGIONAL STANDARD DRAWING

STEEL VALVE STEM EXTENSION FOR VALVES 50mm (2") AND SMALLER

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 10/28/2004

Chairperson R.C.E. 19246 Date

DRAWING NUMBER WV-05