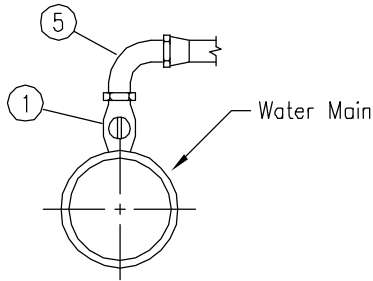
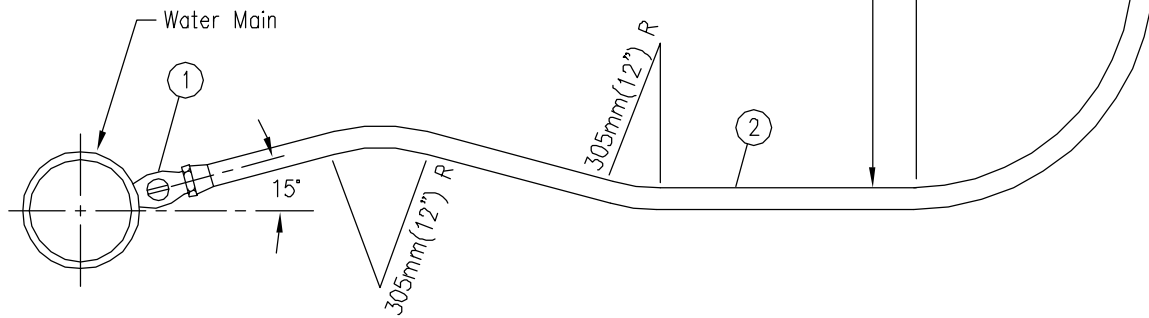
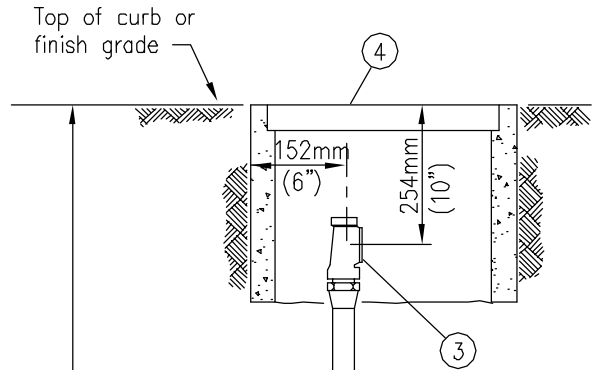


NOTES

1. Service clamp and gasket required on 102mm(4") A.C. pipe.
2. Tap not permitted in milled sections of A.C. pipe.

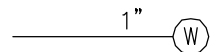


TOP TAP
(where permitted by Agency)



- ① Bronze Corporation Stop (installed with key on side and open tap) and Adapter as required by Agency.
Note: On steel mains use clamp or weld on coupling as required by Agency.
Install insulating bushing as required by Agency.
- ② Copper Tubing or Plastic Pipe (no intermediate joints permitted without approval of the Agency).
- ③ Bronze Angle Service Stop with Locking Device and Meter Coupling attached.
- ④ Meter Box (see Standard Drawing W-15 for location).
- ⑤ 90° Ell

LEGEND ON PLANS



Revision	By	Approved	Date
ORIGINAL		A.Kercheval	12/75
Add Metric		T. Stanton	03/03

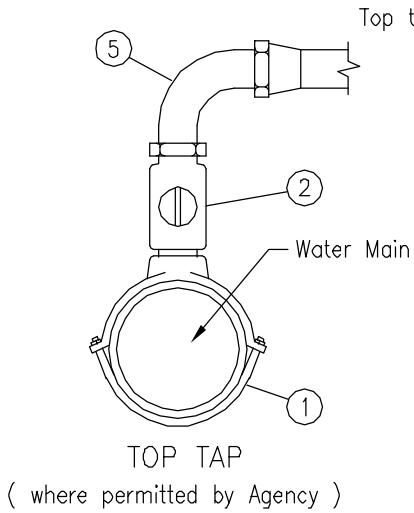
SAN DIEGO REGIONAL STANDARD DRAWING

25mm (1") WATER SERVICE

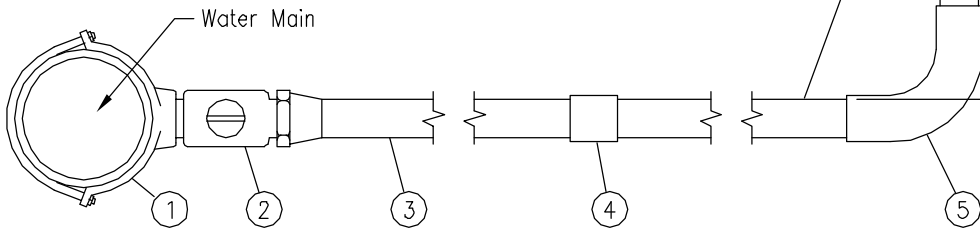
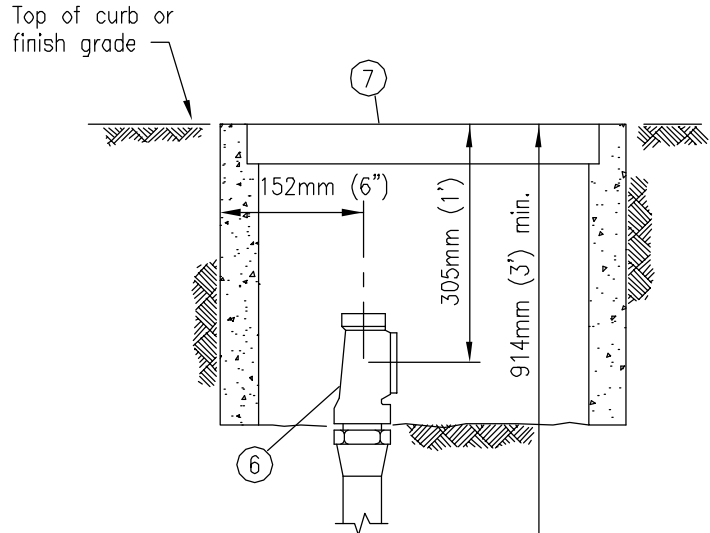
RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 3/03/03
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-1**

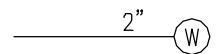


NOTE
Silver Soldered Joints may be used where approved by the Agency.



- ① Bronze Service Clamp (double strap). On steel mains use clamp or weld on coupling as required by Agency. Install insulating bushing as required by Agency.
- ② Bronze Corporation Stop (installed with key on side and open tap).
- ③ Copper Tubing or Plastic Pipe except where otherwise specified by the Agency.
- ④ Coupling as required by Agency when service is 6.1m (20') or longer, except on Polyethylene Pipe.
- ⑤ 90° Ell
- ⑥ Bronze Angle Service Stop with Locking Device and adaptable to 38mm (1-1/2") and 2" Meter Flange.
- ⑦ Meter Box (see Standard Drawing W-15 for location).

LEGEND ON PLANS



Revision	By	Approved	Date
ORIGINAL		A.Kercheval	12/75
Add Metric		T. Stanton	03/03

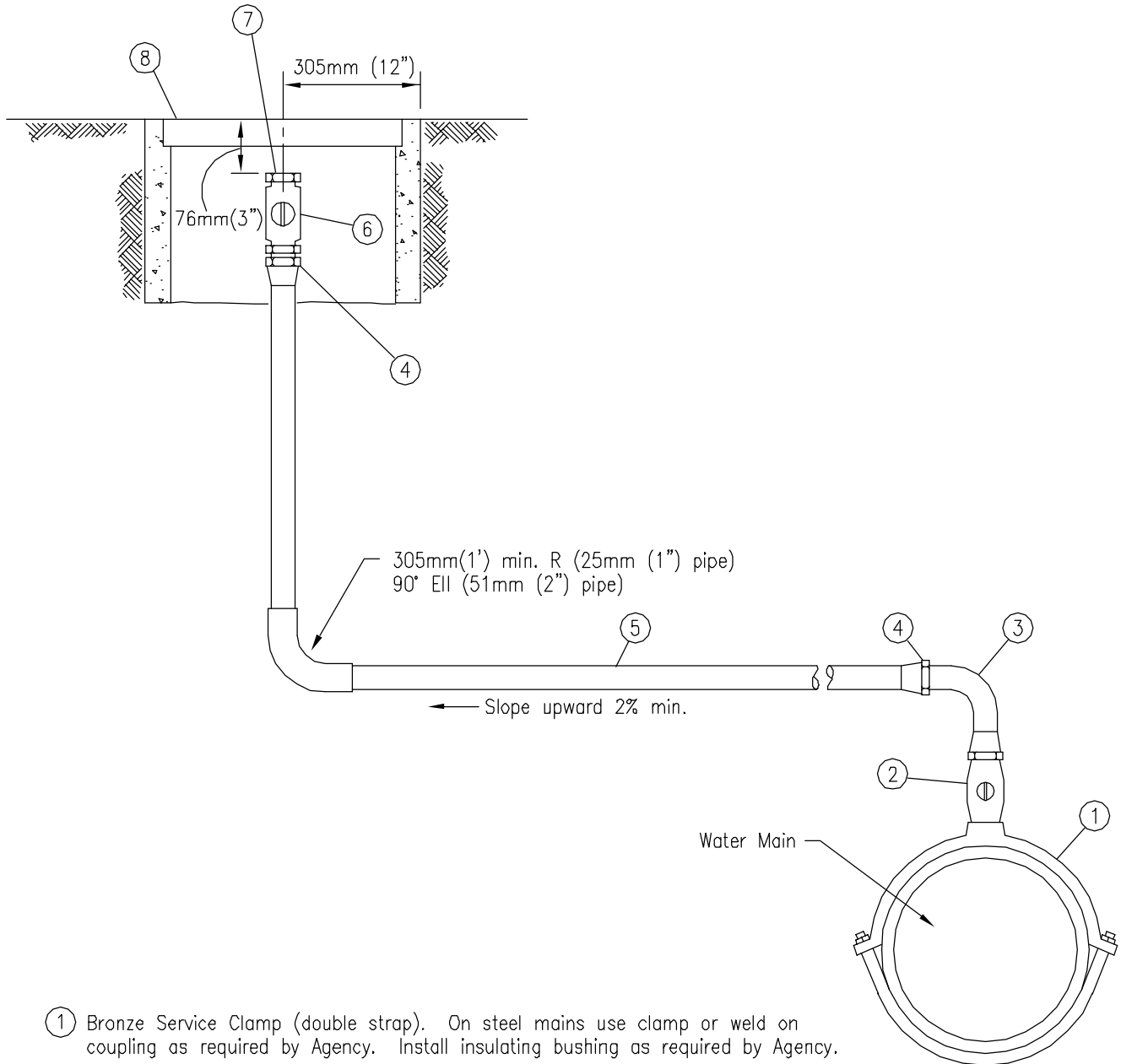
SAN DIEGO REGIONAL STANDARD DRAWING

**38mm(1 1/2") AND 51mm(2")
WATER SERVICES**

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

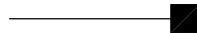
T. Stanton 3/01/003
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-2**



- ① Bronze Service Clamp (double strap). On steel mains use clamp or weld on coupling as required by Agency. Install insulating bushing as required by Agency.
- ② Bronze Corporation Stop
- ③ 90° Brass Street Ell.
- ④ Pipe to Tubing Adapter.
- ⑤ Copper Tubing.
- ⑥ Ball Valve.
- ⑦ Brass Plug.
- ⑧ Meter Box (see Standard Drawing W-15 for location).

LEGEND ON PLANS



Revision	By	Approved	Date
ORIGINAL		A.Kercheval	12/75
Add Metric		T. Stanton	03/03

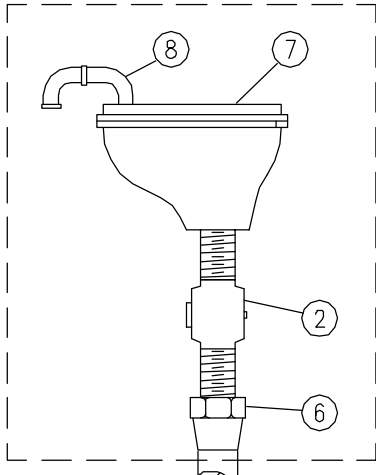
SAN DIEGO REGIONAL STANDARD DRAWING

**MANUAL AIR RELEASES
25mm (1") AND 51mm (2")**

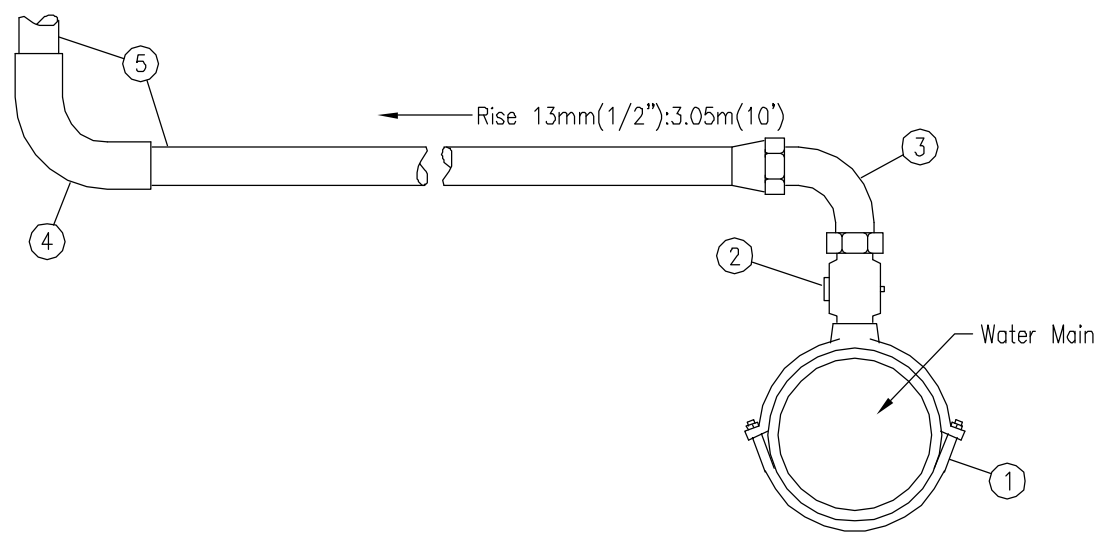
RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 5/10/2005
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-3**



See Standard Drawing W-14, for type and location of enclosures.



- ① Double Strap Bronze Service Clamp. On steel mains use clamp or weld on coupling as required by Agency. Install insulating bushing as required by Agency.
- ② Corporation Stop
- ③ Pipe x Tubing 90° Ell.
- ④ 90° Sweat Ell.
- ⑤ Copper Tubing.
- ⑥ Female Adapter.
- ⑦ Air and Vacuum Valve.
- ⑧ 2-90° Ell (not required in above metal ground enclosures).

LEGEND ON PLANS



Revision	By	Approved	Date
ORIGINAL		A.Kercheval	12/75
Add Metric		T. Stanton	03/03

SAN DIEGO REGIONAL STANDARD DRAWING

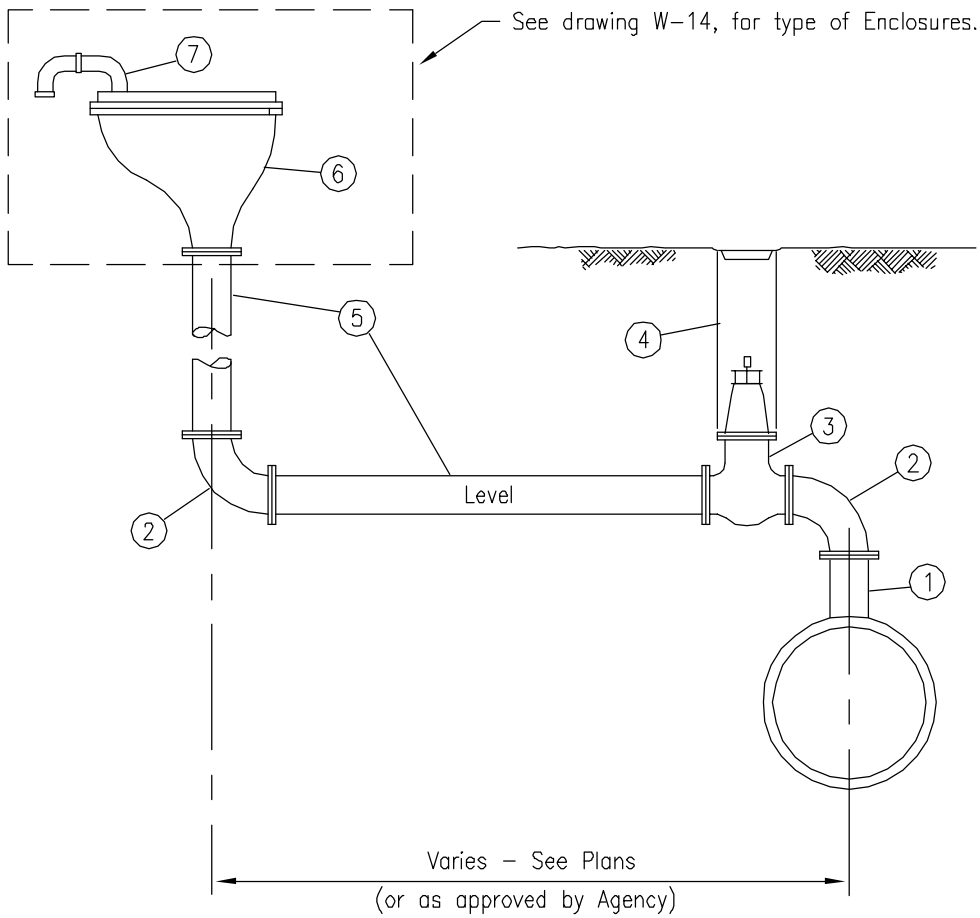
25mm (1") AND 51mm (2")

AIR AND VACUUM VALVES

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

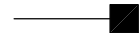
T. Stanton 3/03/03
 Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-4**



- ① Flanged Outlet, Cement Lined and Coated Steel.
- ② Flanged, 90° Ell, Cement Lined Coated Steel.
- ③ Valve
- ④ Valve Well and Cap (see Standard Drawing W-12).
- ⑤ Steel Pipe, Cement Lined and Coated.
- ⑥ Air and Vacuum Valve.
- ⑦ 2-90° Ell (not required in above metal ground enclosures).

LEGEND ON PLANS



Revision	By	Approved	Date
ORIGINAL		A.Kercheval	12/75
Add Metric		T. Stanton	03/03

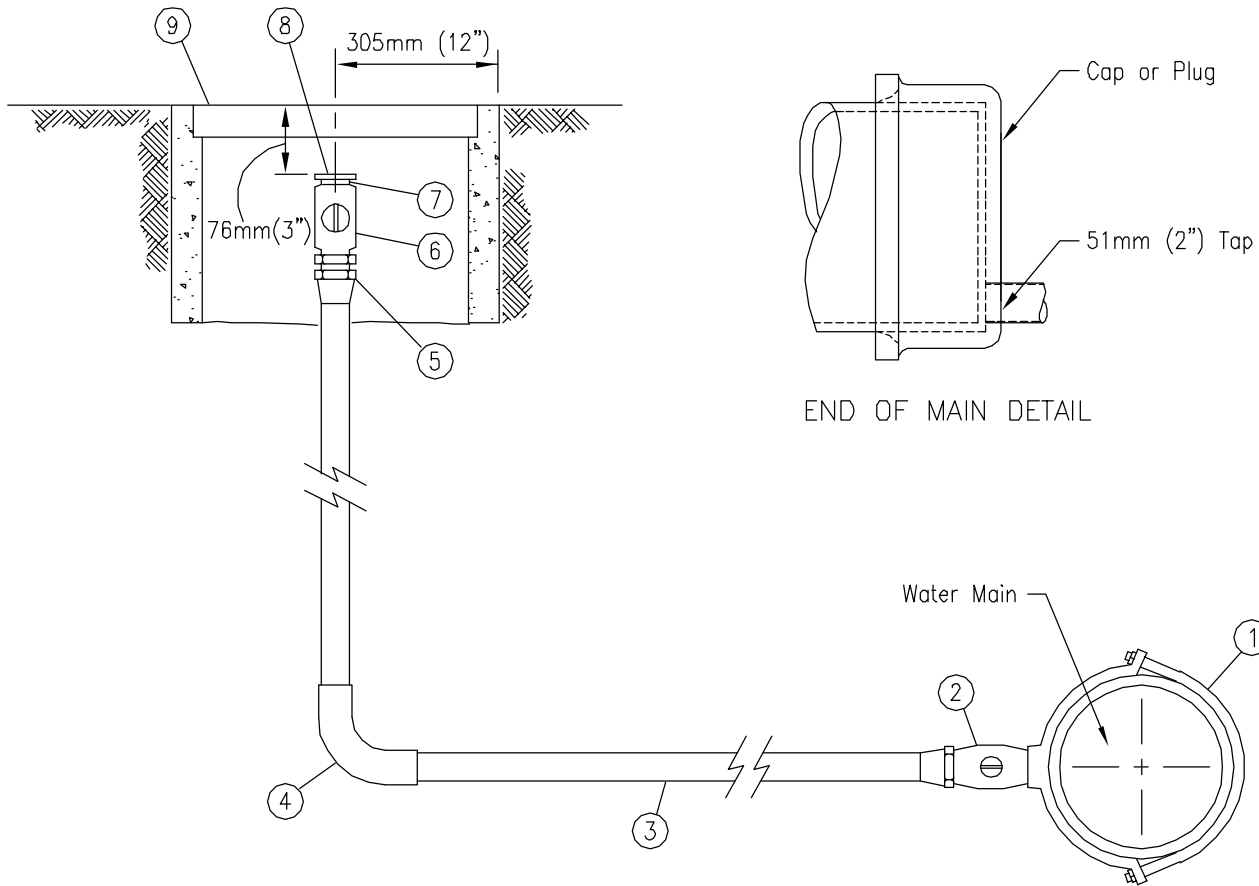
SAN DIEGO REGIONAL STANDARD DRAWING

**102mm (4") AND 152mm (6")
AIR AND VACUUM VALVES**

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 3/03/03
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-5**



- ① Bronze Service Clamp (double strap). On steel mains use clamp or weld on coupling as required by Agency. Install insulating bushing as required by Agency.
- ② Bronze Corporation Stop (installed with key on side and open tap) and adaptor as required by Agency
- ③ Copper Tubing.
- ④ 90° Ell
- ⑤ Pipe to Tubing Adapter.
- ⑥ Ball Valve.
- ⑦ Brass 51mm (2'') Iron Pipe Thread x 64mm (2-1/2'') Hose Pipe Thread Adaptor.
- ⑧ 64mm (2-1/2'') Hose Cap with chain, Brass.
- ⑨ Meter Box (see Standard Drawing W-15 for location).

LEGEND ON PLANS



Revision	By	Approved	Date
ORIGINAL		A.Kercheval	12/75
Add Metric		T. Stanton	03/03

SAN DIEGO REGIONAL STANDARD DRAWING

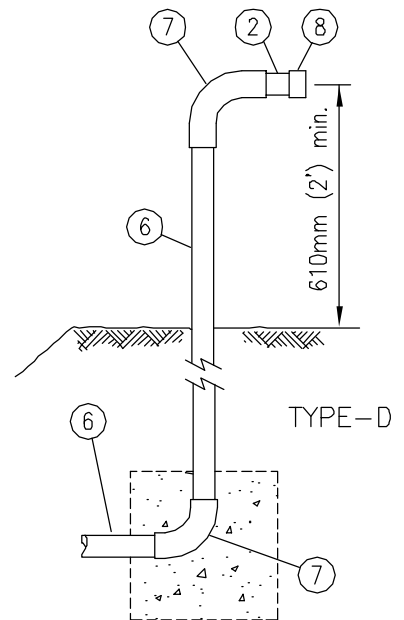
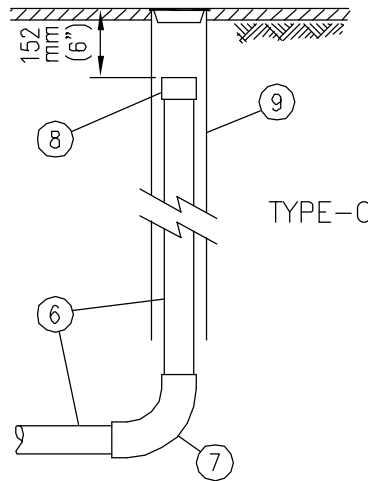
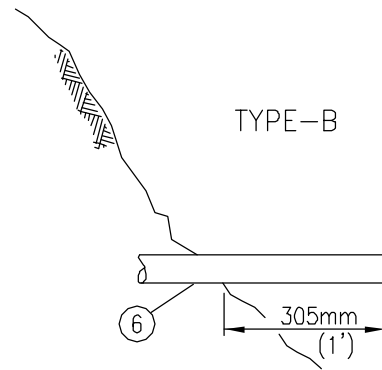
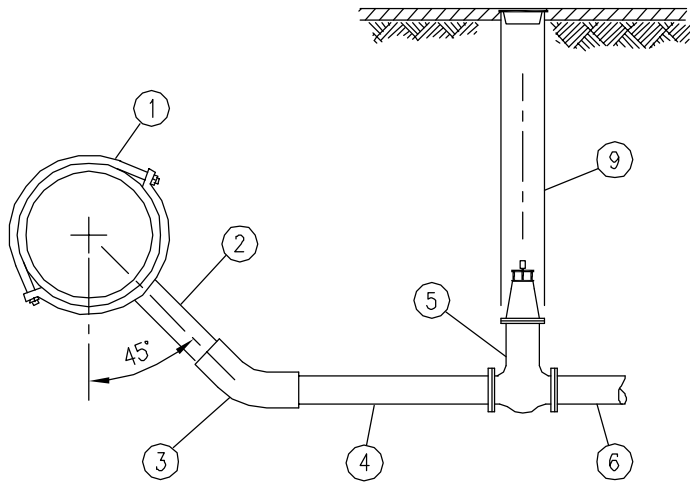
51mm(2'') BLOW-OFF ASSEMBLY - TYPE A

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 5/10/2005

Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-6**



- ① Bronze Service Clamp (double strap). On steel mains use coupling as required by Agency. Install insulating bushing as required by Agency.
- ② 51mm (2") Nipple (51mm (2") x 76mm (3"))
- ③ 45° Ell
- ④ 51mm (2") Nipple (51mm (2") x 152mm (6"))
- ⑤ 51mm (2") Valve.
- ⑥ 51mm (2") Pipe
- ⑦ 90° Ell
- ⑧ 51mm (2") Threaded Cap.
- ⑨ Valve Well Installation, See Standard Drawing W-12.

NOTES

- 1. Type of installation and materials to be specified by Agency.
- 2. See Standard Drawing W-6 for end of main detail.

LEGEND ON PLANS



Revision	By	Approved	Date
ORIGINAL		A.Kercheval	12/75
Add Metric		T. Stanton	03/03

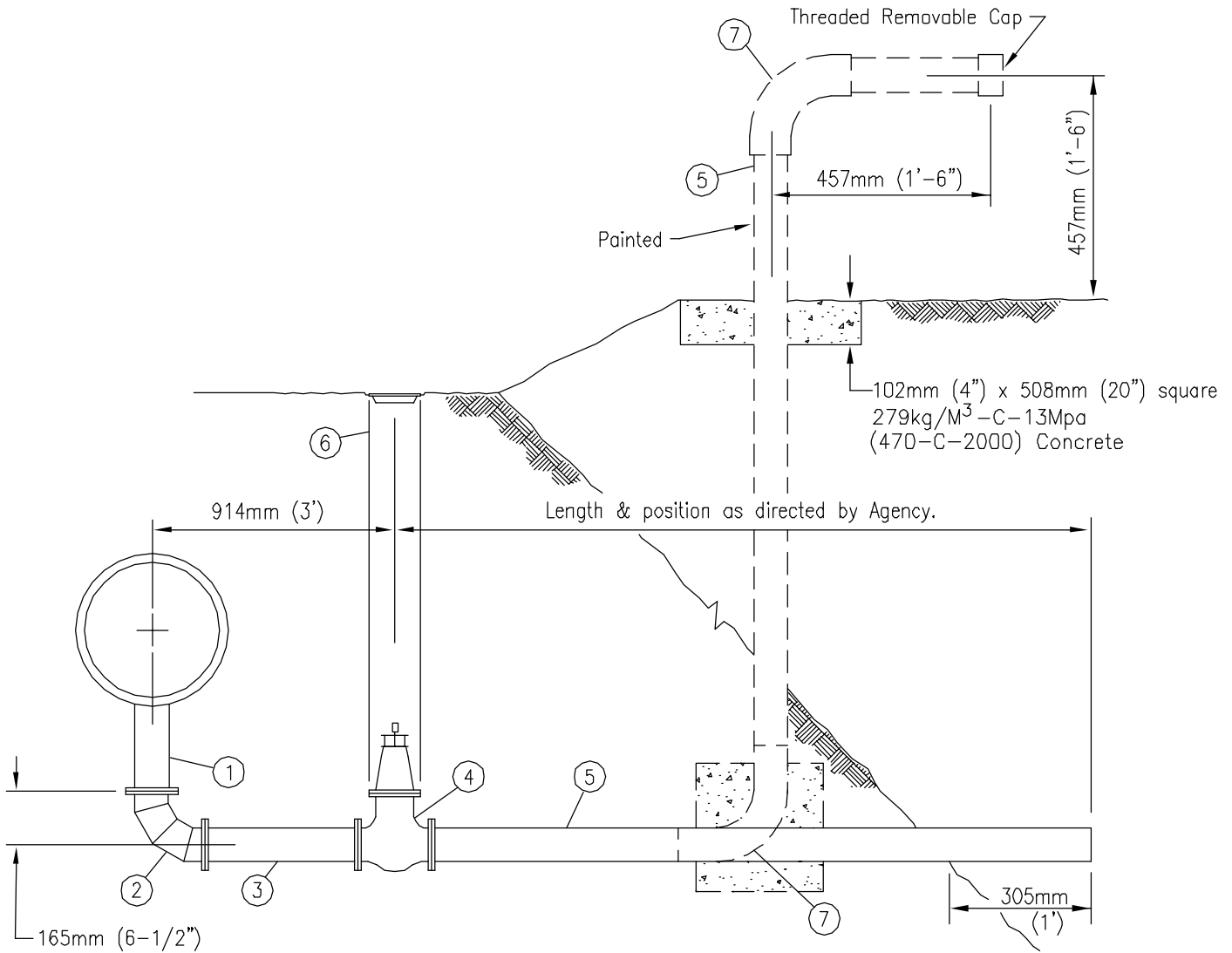
SAN DIEGO REGIONAL STANDARD DRAWING

**51mm (2") BLOW-OFF ASSEMBLIES
TYPES B, C AND D**

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 51018005
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-7**



- ① Flanged Tee or Welded Saddle.
- ② Short Radius 90° Flanged Bend, Cement Lined and Coated.
- ③ Steel Pipe, Cement Lined and Coated.
- ④ Flanged Valve.
- ⑤ Steel Pipe (or P.V.C. Schedule 80 Pipe Where Permitted by Agency).
- ⑥ Valve Well (See Standard Drawing W-12).
- ⑦ 90° Bend (Same Material as Item 5).

LEGEND ON PLANS



Revision	By	Approved	Date
ORIGINAL		A.Kercheval	12/75
Add Metric		T. Stanton	03/03

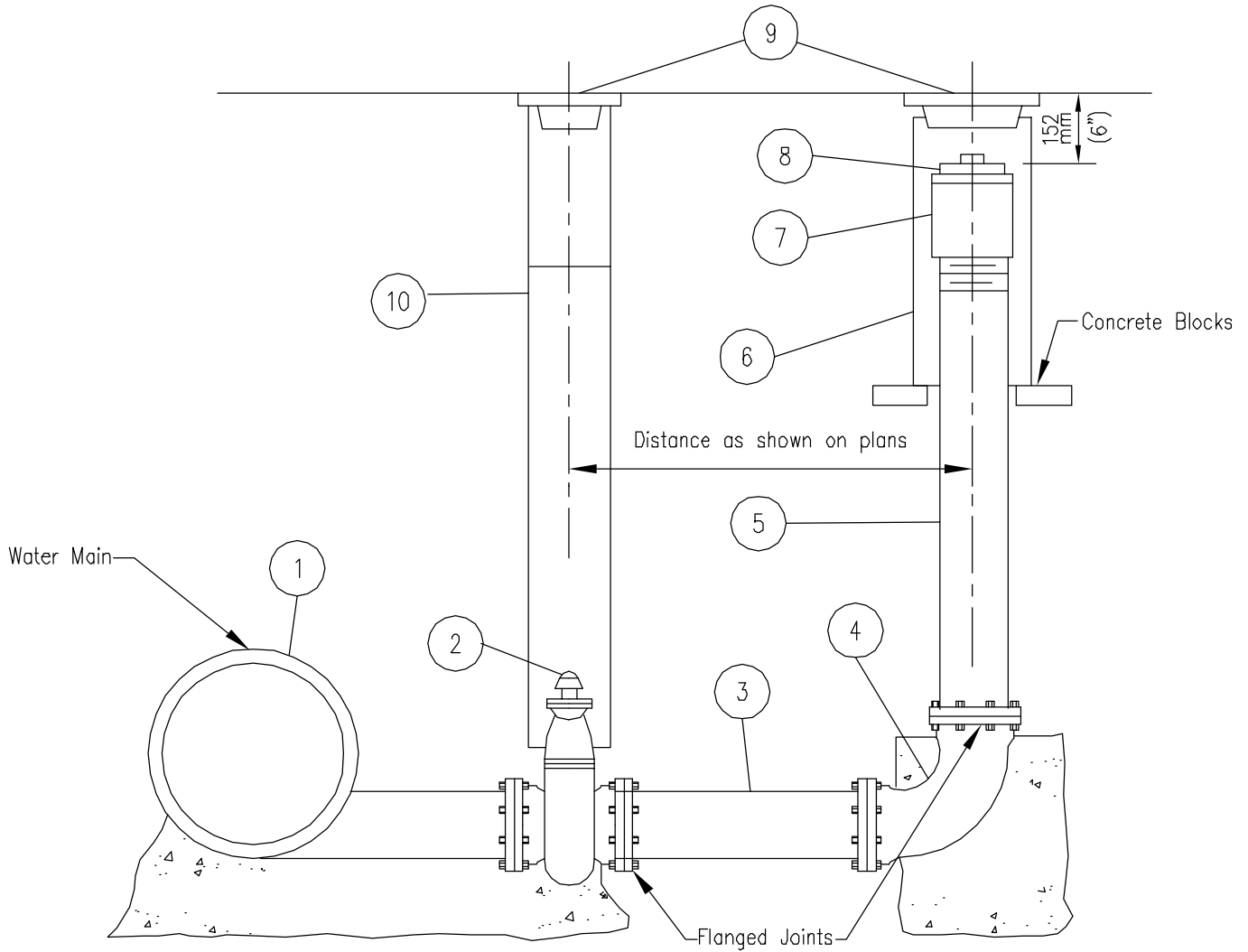
SAN DIEGO REGIONAL STANDARD DRAWING

**102mm (4") AND 152mm (6")
BLOW-OFF ASSEMBLIES TYPE A**

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

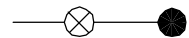
T. Stanton 3/03/03
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-8**



- ① Main Size x Flanged Outlet, cement lined and coated.
- ② Flanged Gate Valve (F x RT for A.C. Pipe).
- ③ Cast Iron Pipe or A.C. Pipe (1.98m (6 1/2') min for A.C. Pipe).
- ④ F x F 90° Bend (F x RT for A.C. Pipe).
- ⑤ Galvanized Iron Pipe, threaded and flanged.
- ⑥ 254mm (10") Class 200 A.C. Pipe Gate Well.
- ⑦ Galvanized Iron Coupling, threaded.
- ⑧ Galvanized Iron Plug.
- ⑨ Gate Well Cap with 102mm (4") skirt.
- ⑩ Valve Well (see Standard Drawing W-12).

LEGEND ON PLANS



Revision	By	Approved	Date
ORIGINAL		A.Kercheval	12/75
Add Metric		T. Stanton	03/03

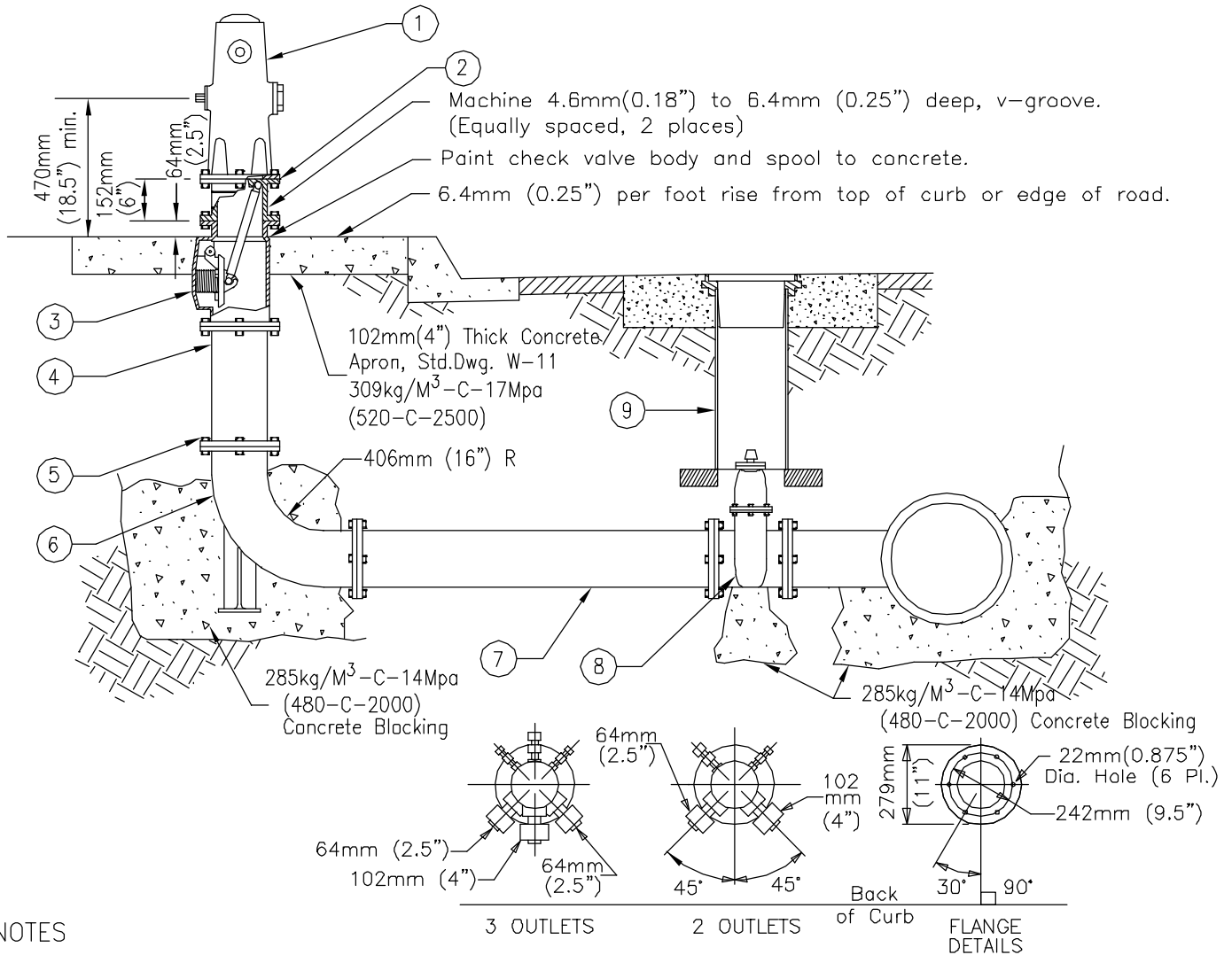
SAN DIEGO REGIONAL STANDARD DRAWING

**102mm (4") AND 152mm (6")
BLOW-OFF ASSEMBLIES TYPE B**

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 3/03/03
Chairperson R.C.E. 19246 Date

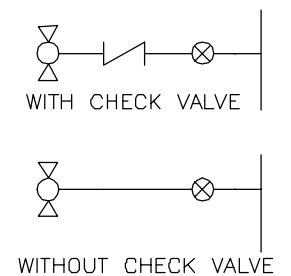
DRAWING NUMBER **W-9**



NOTES

1. Items (4) & (7) may be cement lined and coated steel pipe where permitted.
2. Extension Spool callouts (3) & (4) maybe combined as one spool.
- (1) Fire Hydrant
- (2) 152mm (6") Extension Spool (Double Machine Grooved)
- (3) Break-Off Check Valve Body or Extension Spool as required by agency or shown on plans
- (4) Extension spool
- (5) 19mm (.75") X 76mm (3") Hex Head Machine Bolts and Nuts (Typical)
- (6) Hydrant Ell
- (7) Polyvinyl Chloride (PVC) or Ductile Iron (DI) Pipe
- (8) Valve with Concrete Support, Std. Dwg. W-19 (Type A)
- (9) Valve Well and Cover, Std. Dwgs. W-12A & W-12B
- (10) See Std. Dwg. W-11 for fire hydrant locations and M-19 for fire hydrant marker location as required by agency.

LEGEND ON PLANS



Revision	By	Approved	Date
ORIGINAL		R. Munoz	3/97
Add Metric		T. Stanton	03/03

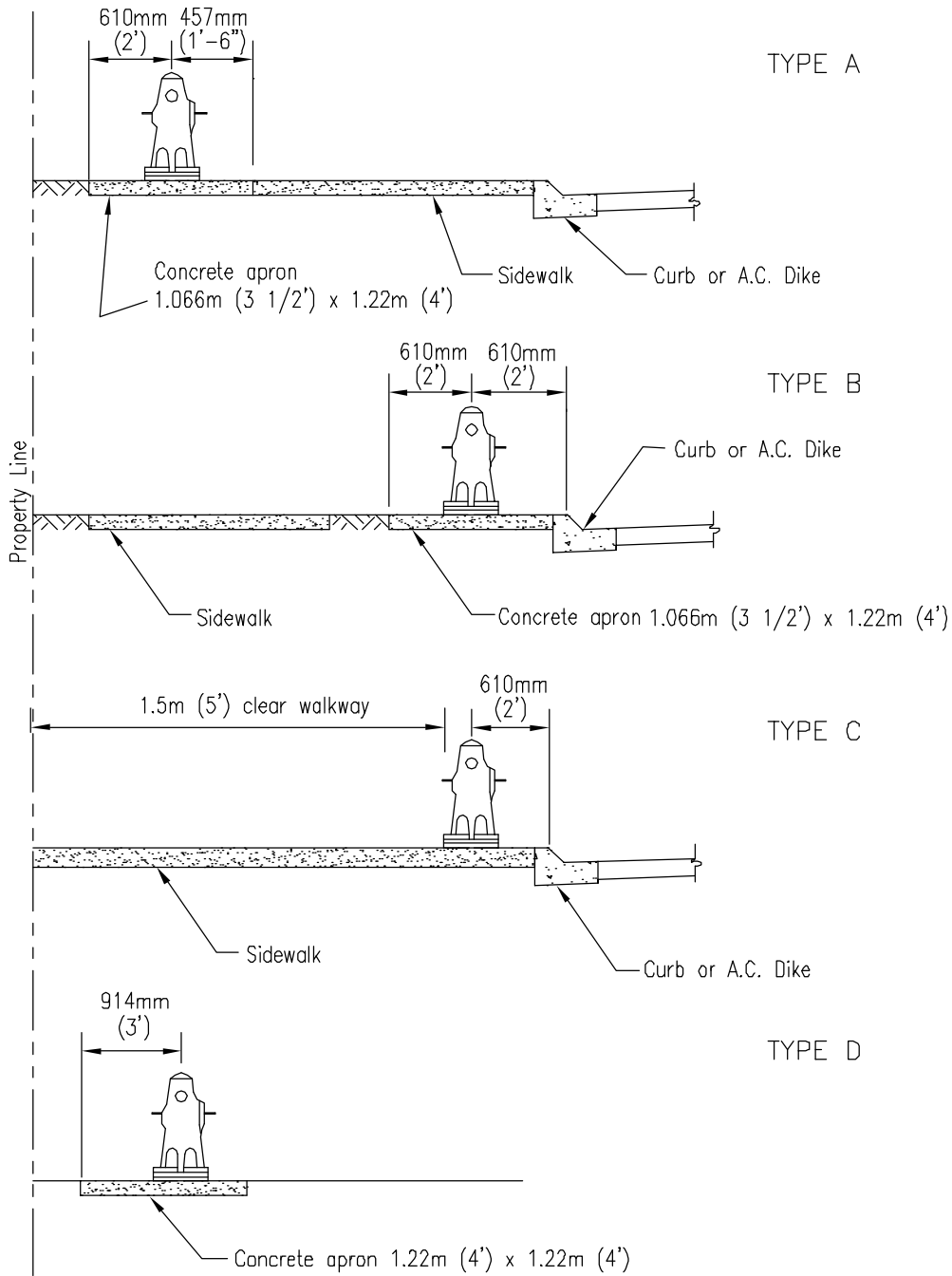
SAN DIEGO REGIONAL STANDARD DRAWING

FIRE HYDRANT INSTALLATION

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 5/01/003
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-10**



NOTES

1. Apron, where required by Agency, shall be 4" thick 309kg/M³-C-17Mpa (520-C-2500) concrete.
2. When distance from hydrant to the top or toe of slope is less than 610mm (2'), special hydrant installation will be required by Agency.
3. Where hydrant is not protected by a vertical face of curb, protective posts are required. See Standard Drawing W-16 for details.
4. The centerline of the hydrant shall be located 1.5m (5') minimum from curb return and minimum 1.066m (3'-6") from driveway, pedestrian ramp or any fixed obstruction.

Revision	By	Approved	Date
ORIGINAL		A.Kercheval	12/75
Add Metric		T. Stanton	03/03

SAN DIEGO REGIONAL STANDARD DRAWING

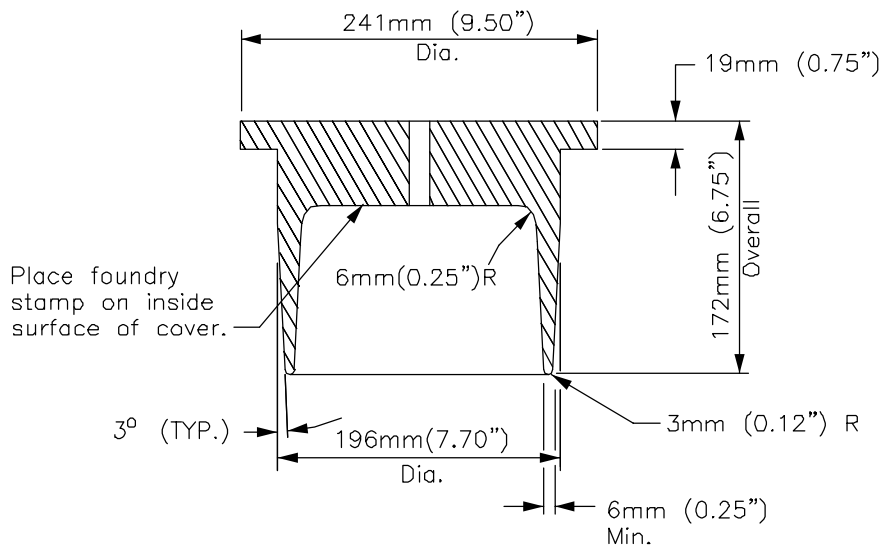
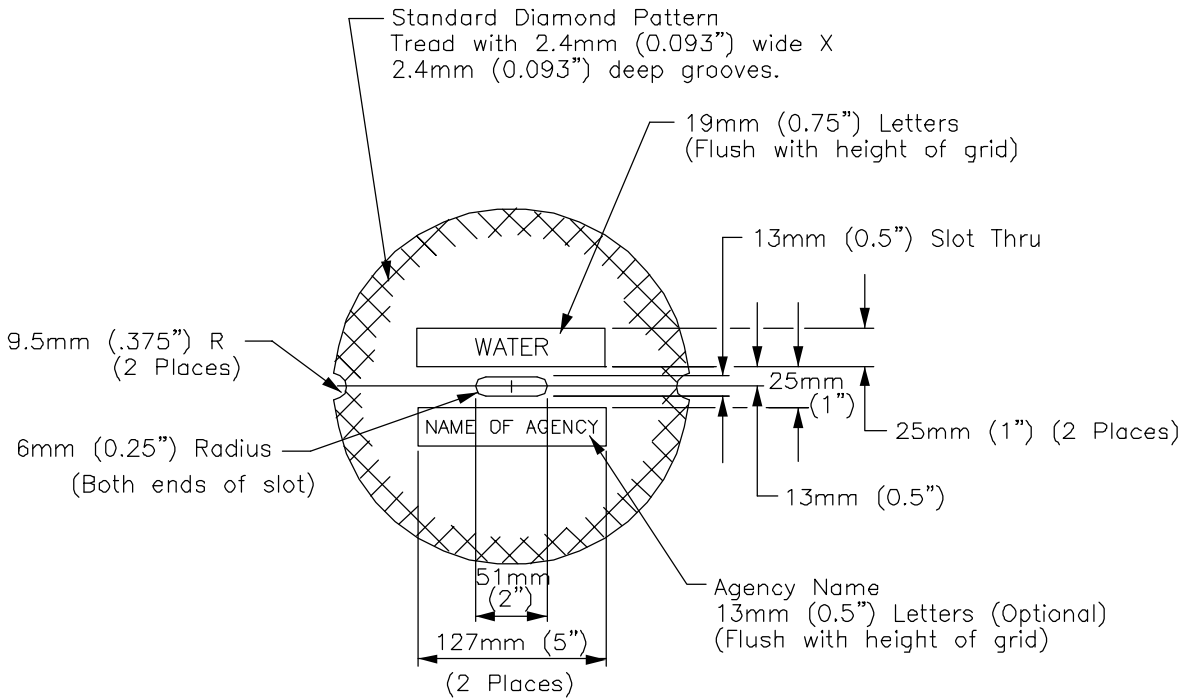
FIRE HYDRANT LOCATIONS

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 3/03/03

Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-11**



CAST IRON
VALVE WELL COVER
(18.4kg (40 lbs.) min.)

VALVE WELL COVER PAINT CHART			
VALVE CONDITION	BUTTERFLY VALVES	GATE VALVES	BLOW-OFF VALVES
PERMANENTLY CLOSED	RED	RED	-
TEMPORARILY CLOSED	YELLOW w/RED DOT	WHITE w/RED DOT	ALUMINUM
PERMANENTLY OPEN	YELLOW	WHITE	-

Revision	By	Approved	Date
ORIGINAL		G.Parkinson	2/95
Add Metric			11/02

SAN DIEGO REGIONAL STANDARD DRAWING

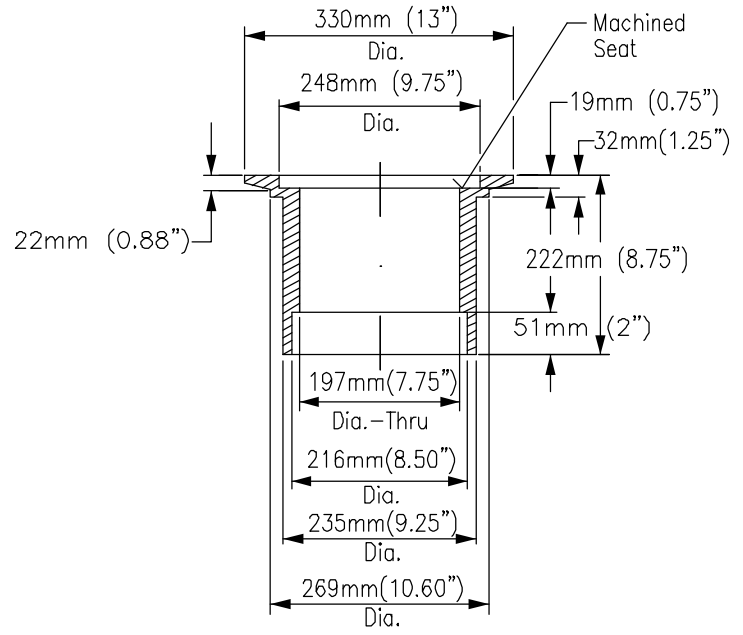
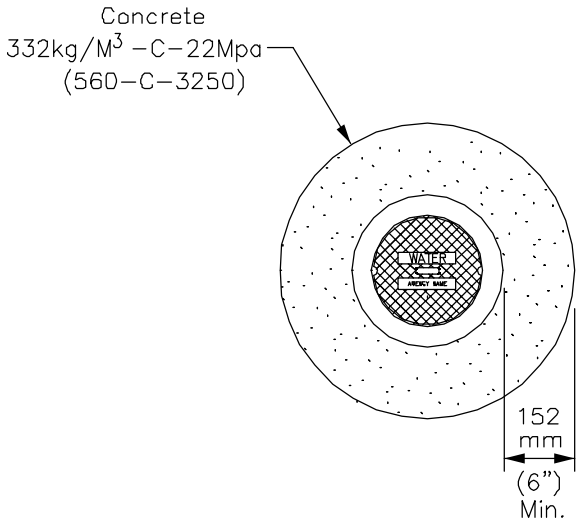
VALVE WELL COVER

RECOMMENDED BY THE SAN DIEGO
REGIONAL STANDARDS COMMITTEE

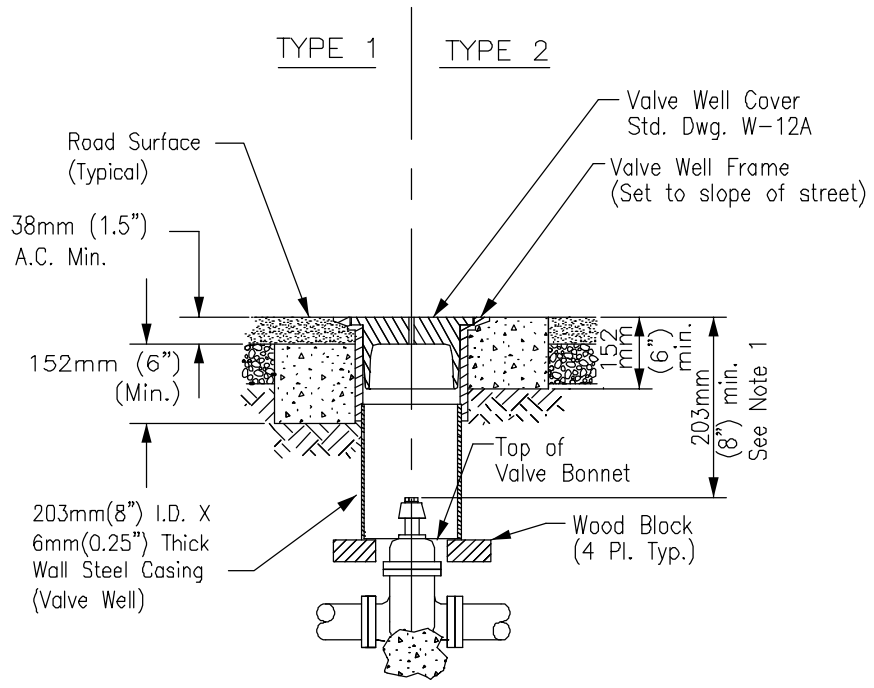
J. Stanton 31018003

Chairperson R.C.E. 19246 Date

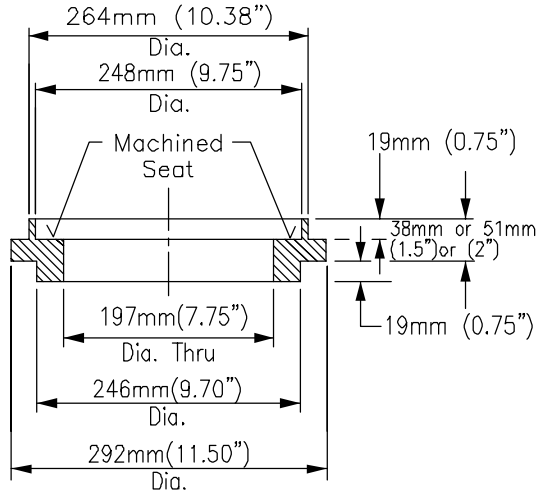
DRAWING
NUMBER **W-12A**



CAST IRON VALVE WELL FRAME



VALVE WELL AND FRAME
For New Installations



CAST IRON RISER RING
For Retrofitting and Overlay Projects

NOTES

1. Provide valve key extension for all butterfly valves. For gate valves, provide valve key extension where this dimension exceeds 635mm (25").
2. The surface of the valve well cover shall match the street cross slope and profile.
3. See Standard Drawing W-13 for valve stem extension when required by agency.

Revision	By	Approved	Date
ORIGINAL		G.Parkinson	2/95
Add Metric		T. Stanton	03/03

SAN DIEGO REGIONAL STANDARD DRAWING

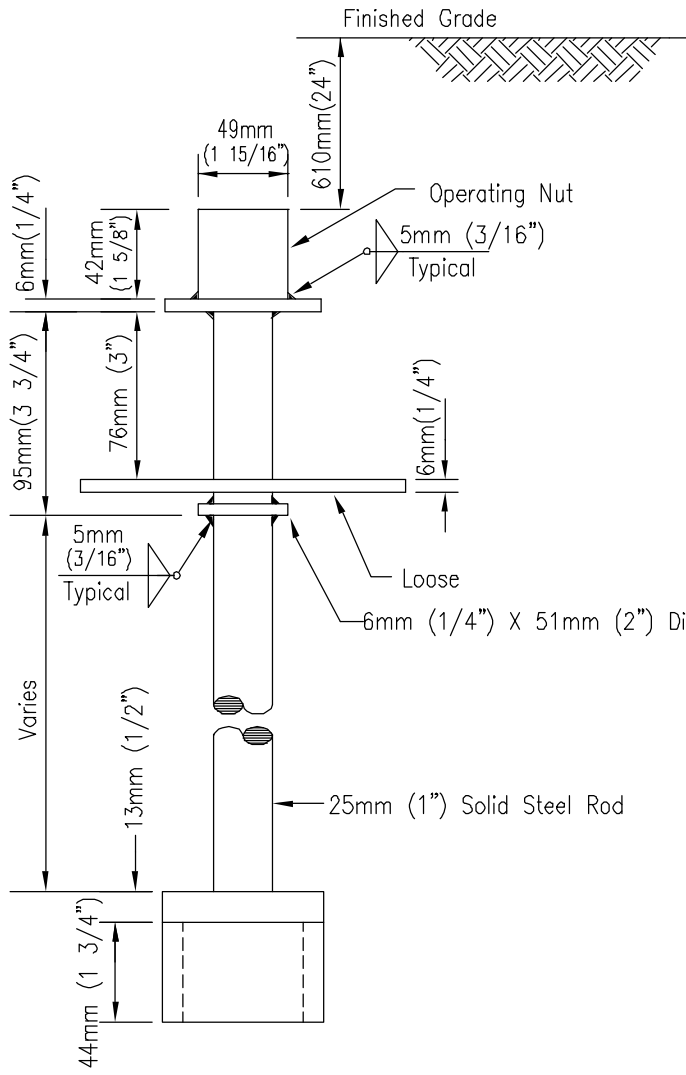
VALVE WELL FRAME
AND ASSEMBLY

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

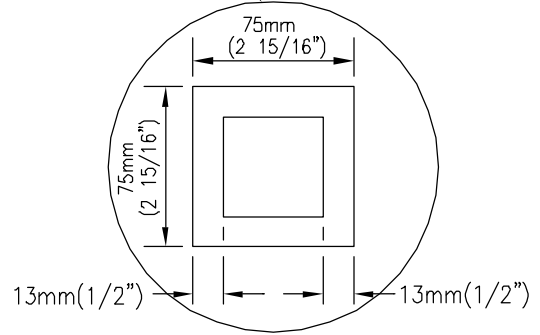
T. Stanton 3/01/2003
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-12B**

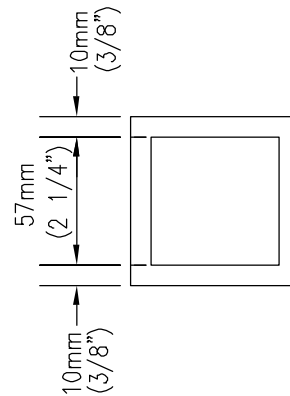
Diameter varies. Make
6mm (1/4") less than I.D.
of can.



ELEVATION



TOP VIEW



BOTTOM VIEW

NOTES

1. Extension to be used when top of operating nut is 1.5m (5') or more below finish grade.
2. Paint all finished surfaces with asphalt varnish.

Revision	By	Approved	Date
ORIGINAL	G.Parkinson		5/92
Add Metric	T. Stanton		03/03

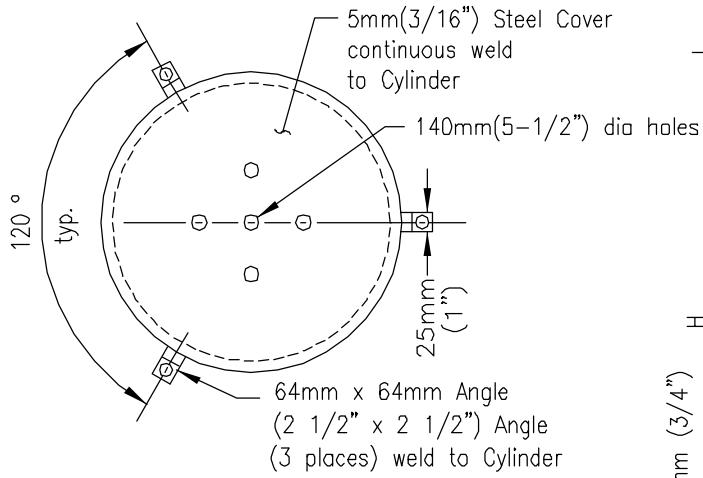
SAN DIEGO REGIONAL STANDARD DRAWING

VALVE STEM EXTENSION

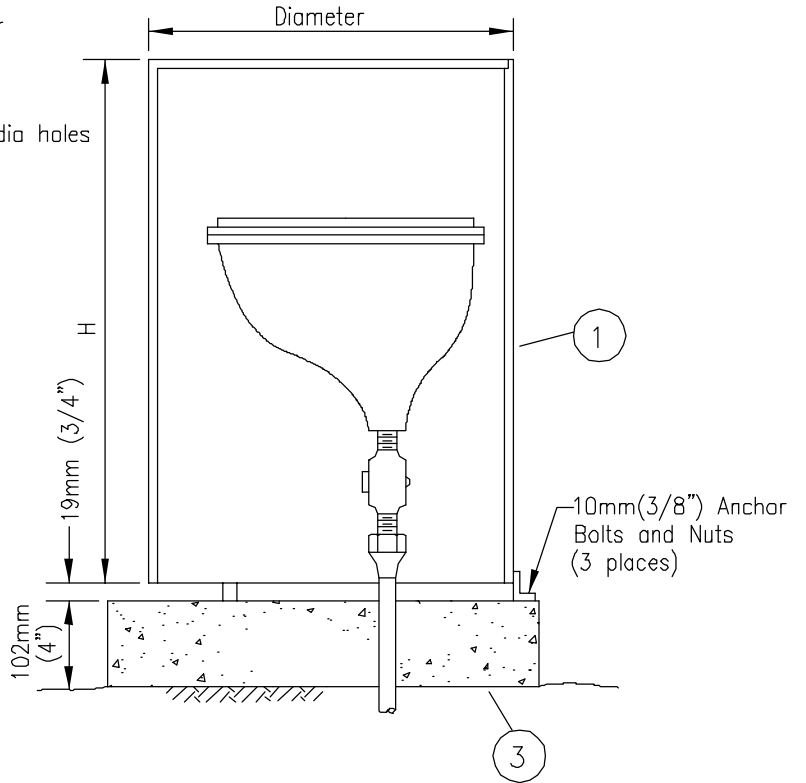
RECOMMENDED BY THE SAN DIEGO
REGIONAL STANDARDS COMMITTEE

T. Stanton 5/01/2003
Chairperson R.C.E. 19246 Date

DRAWING
NUMBER **W-13**

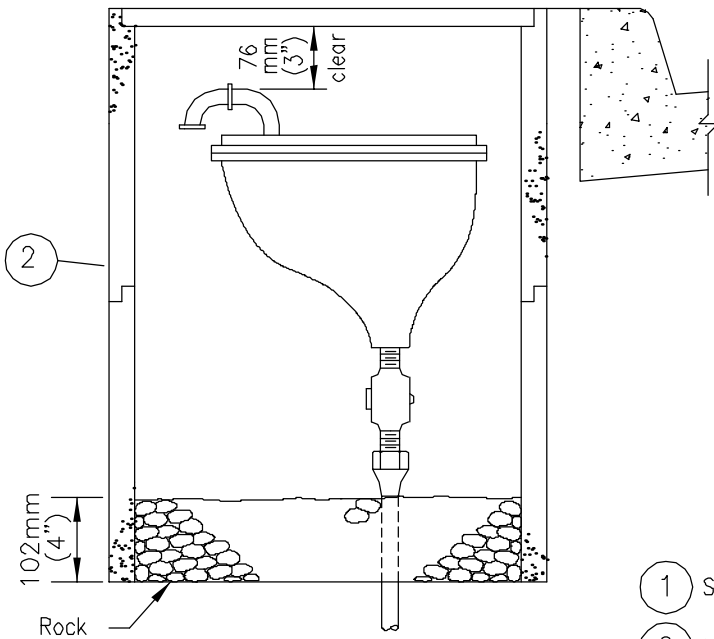


PLAN

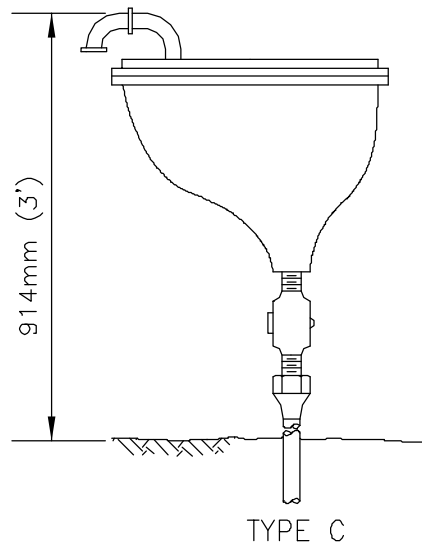


TYPE A

Valve Size	Dia	H	Valve Size	Dia	H
25mm & 51mm	356 mm	610 mm	(1" & 2")	(14")	(24")
102mm	356 mm	762 mm	(4")	(14")	(30")
152mm	406 mm	914 mm	(6")	(16")	(36")



TYPE B



TYPE C

- 1 Steel enclosure, paint as specified by Agency.
- 2 Meter box, see Standard Drawing W-15 for location.
- 3 610mm (2') x 610mm (2') pad,
279kg/M³-C-13Mpa (470-C-2000) Concrete

Revision	By	Approved	Date
ORIGINAL		A.Kercheval	12/75
Add Metric		T. Stanton	03/03

SAN DIEGO REGIONAL STANDARD DRAWING

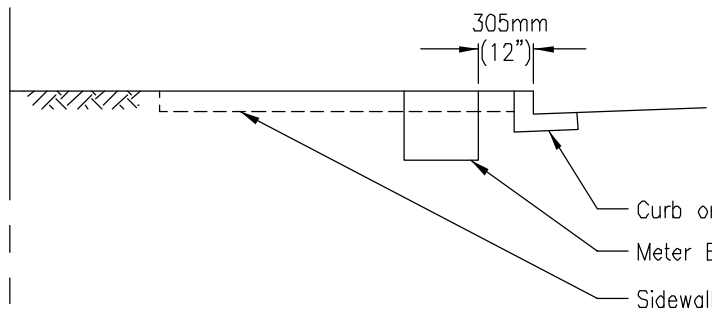
AIR AND VACUUM VALVE ENCLOSURES

RECOMMENDED BY THE SAN DIEGO
REGIONAL STANDARDS COMMITTEE

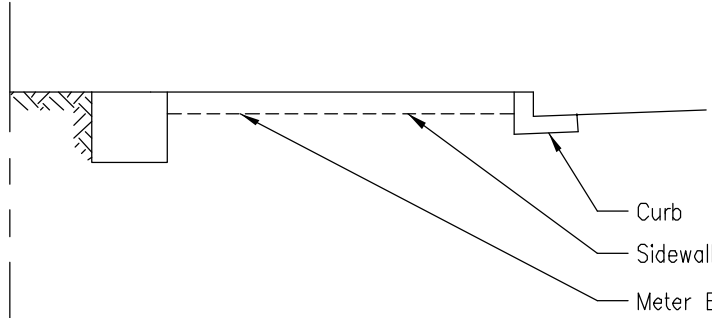
T. Stanton 51018003

Chairperson R.C.E. 19246 Date

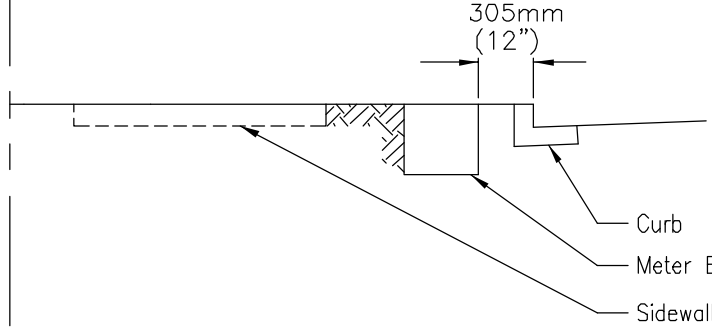
DRAWING
NUMBER **W-14**



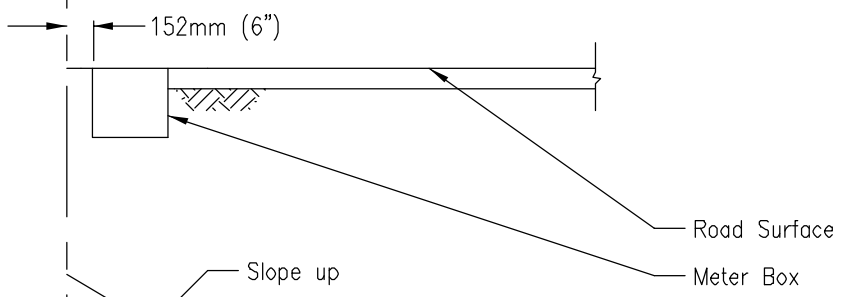
TYPE *A1
WITH OR WITHOUT COMMERCIAL
OR RESIDENTIAL SIDEWALK



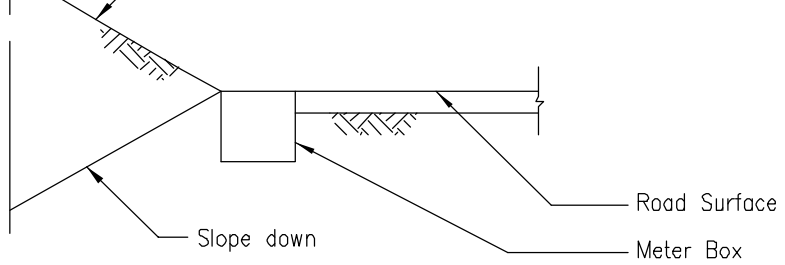
TYPE *A2
CONTIGUOUS SIDEWALK



TYPE B
NON-CONTIGUOUS SIDEWALK



TYPE C
NO CURB



TYPE D
NO CURB

* Agency to determine alternate

NOTE:
Meter boxes shall not be located within driveways.

Revision	By	Approved	Date
ORIGINAL	A.Kercheval		12/75
Add Metric	T. Stanton		03/03

SAN DIEGO REGIONAL STANDARD DRAWING

WATER METER LOCATIONS

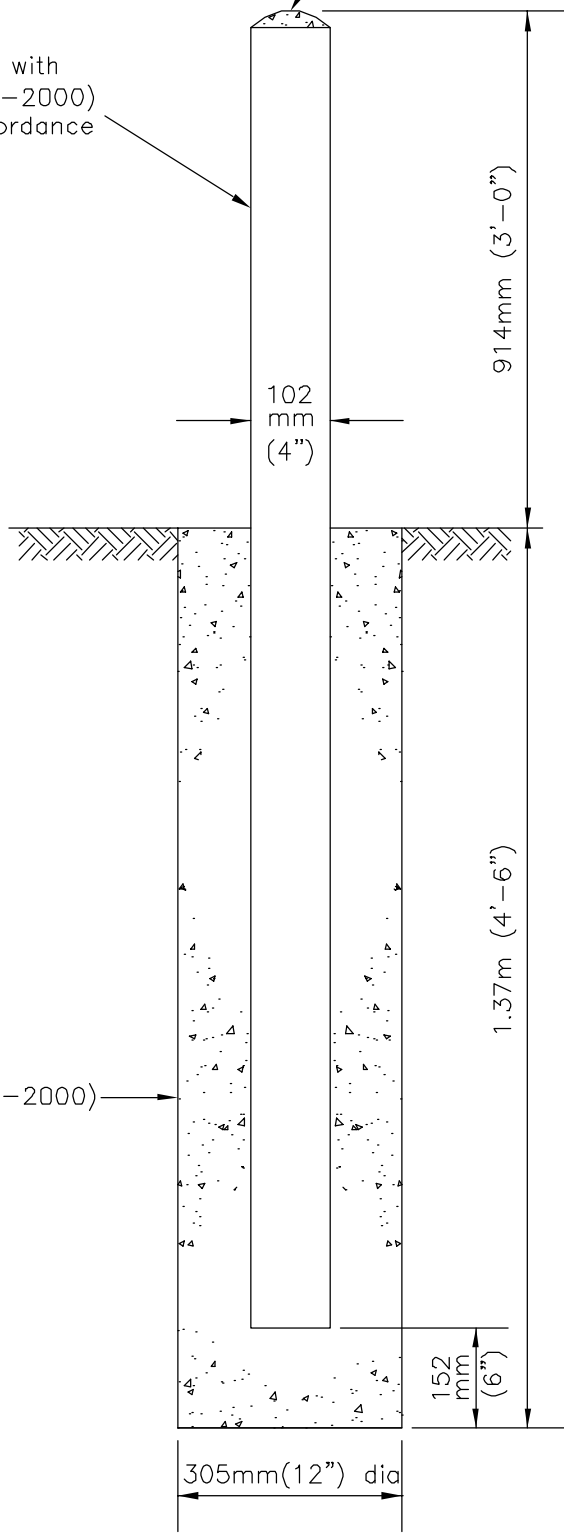
RECOMMENDED BY THE SAN DIEGO
REGIONAL STANDARDS COMMITTEE

T. Stanton 3/03/03
Chairperson R.C.E. 19246 Date

DRAWING
NUMBER **W-15**

102mm (4") steel pipe filled with 279kg/M -C-13Mpa (470-C-2000) concrete and painted in accordance with Agency requirements.

Rounded Concrete



279kg/M -C-13Mpa (470-C-2000)

Revision	By	Approved	Date
ORIGINAL		A.Kercheval	12/75
Add Metric		T. Stanton	03/03

SAN DIEGO REGIONAL STANDARD DRAWING

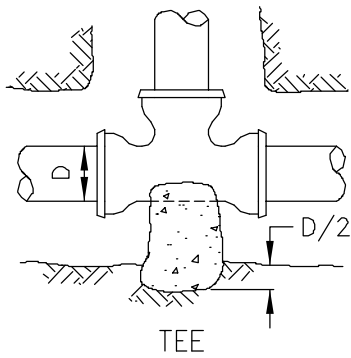
PROTECTION POST

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

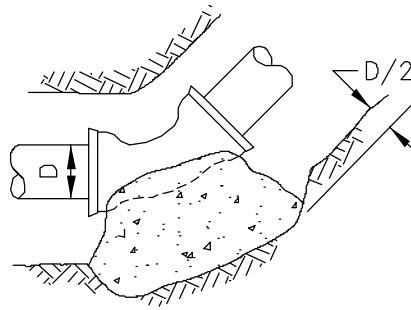
T. Stanton 3/03/03

Chairperson R.C.E. 19246 Date

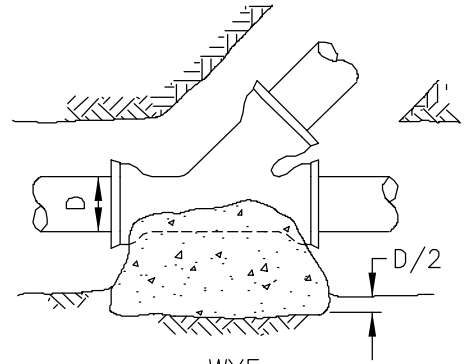
DRAWING NUMBER **W-16**



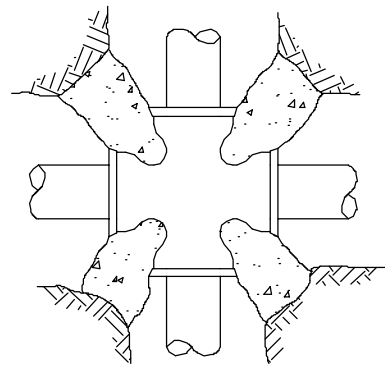
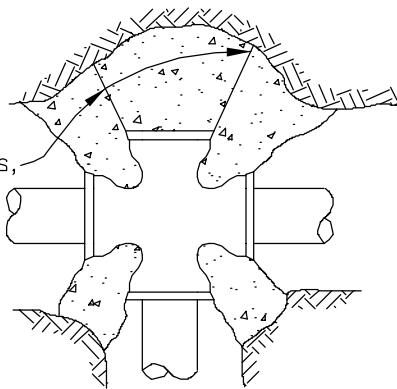
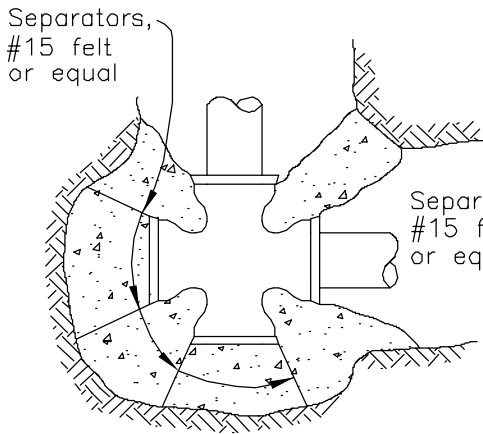
TEE



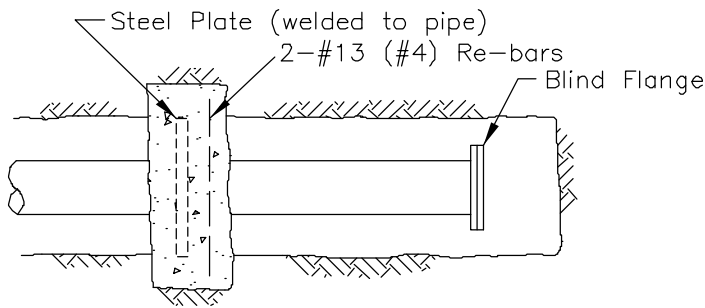
HORIZONTAL OR VERTICAL BEND



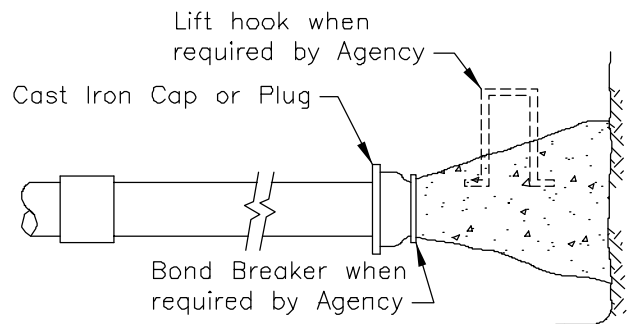
WYE



CROSS BLOCKING



STEEL PIPE PLAN



A.C. PIPE ELEVATION

DEAD END BLOCKING

NOTES

1. Concrete shall be 279kg/M³-C-13Mpa (470-C-2000).
2. See Standard Drawing W-18 for bearing areas.

Revision	By	Approved	Date
ORIGINAL		A.Kercheval	12/75
Add Metric		T. Stanton	03/03

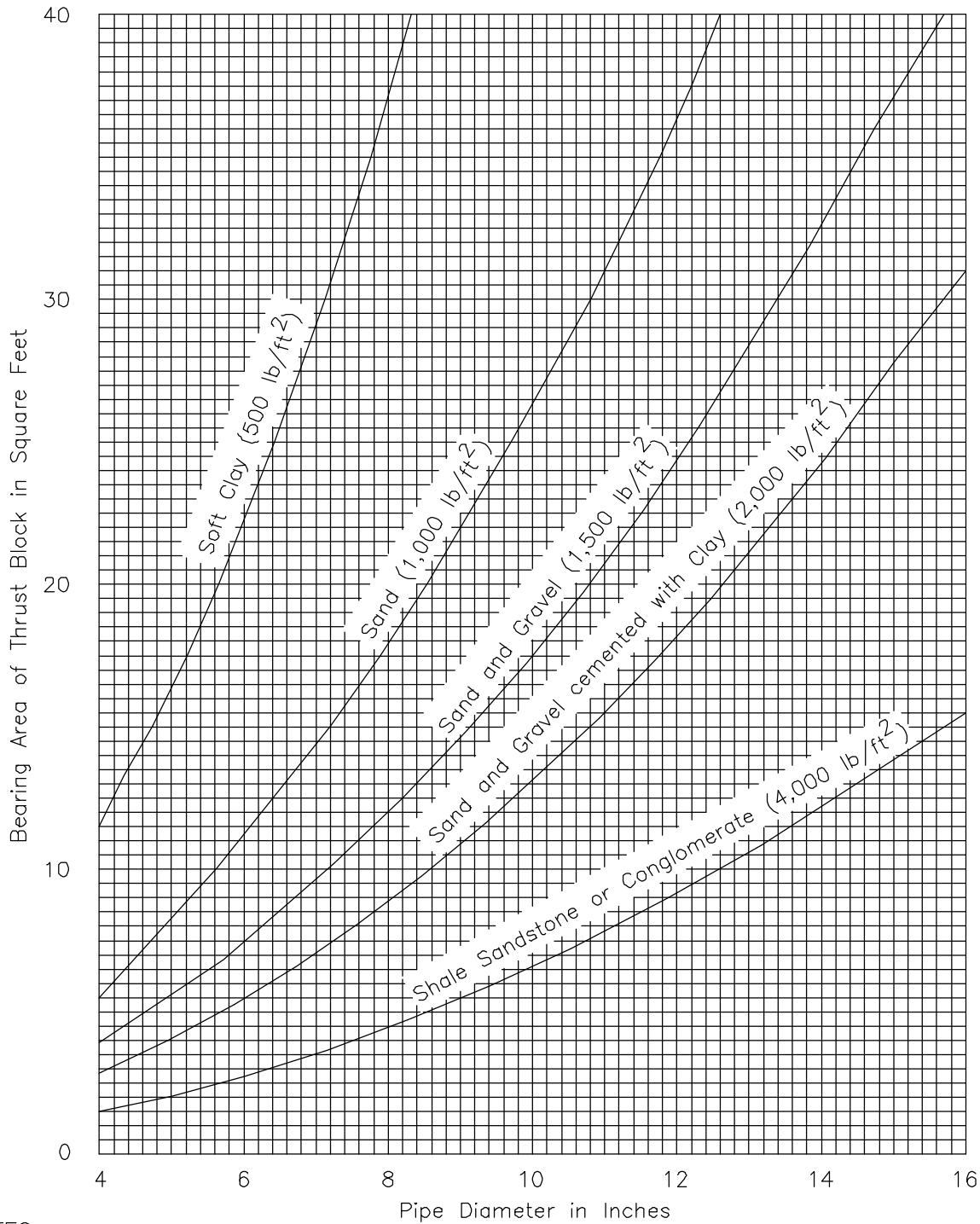
SAN DIEGO REGIONAL STANDARD DRAWING

CONCRETE THRUST BLOCKS

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 31018003
 C.C.C.C.D. Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-17**



NOTES

- Based on 225 psi test pressure and bearing values of dry soils.
- Values from curves are for tees and dead ends, i.e.; straight line thrust.
 - For 90° bend: 1.4 value from curve.
 - For 45° bend: 0.8 value from curve.
 - For 22 1/2° bend: 0.4 value from curve.
- For conditions not covered by curves, special thrust blocks must be computed and approved.

Revision	By	Approved	Date
ORIGINAL		A.Kercheval	12/75
Add Metric		T. Stanton	03/03

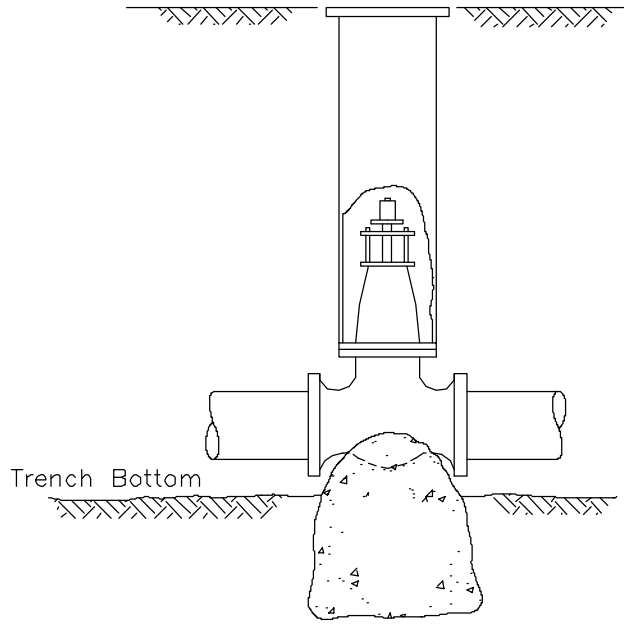
SAN DIEGO REGIONAL STANDARD DRAWING

THRUST BLOCK BEARING AREAS

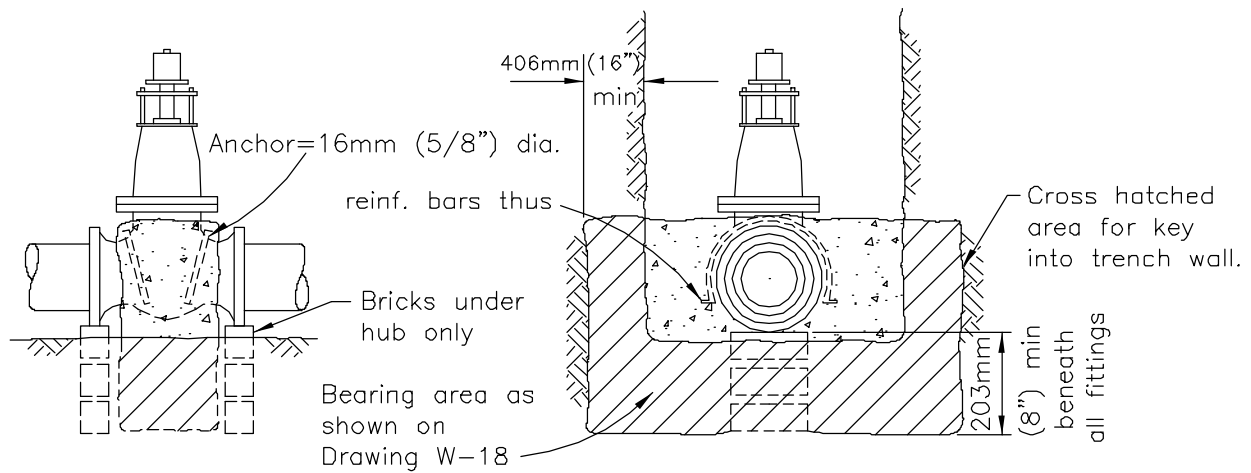
RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 3/03/03
 Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-18**



TYPE-A SUPPORT BLOCK



TYPE-B THRUST BLOCK

NOTE
Concrete shall be 279kg/M³-C-13Mpa (470-C-2000).

Revision	By	Approved	Date
ORIGINAL		A.Kercheval	12/75
Add Metric		T. Stanton	03/03

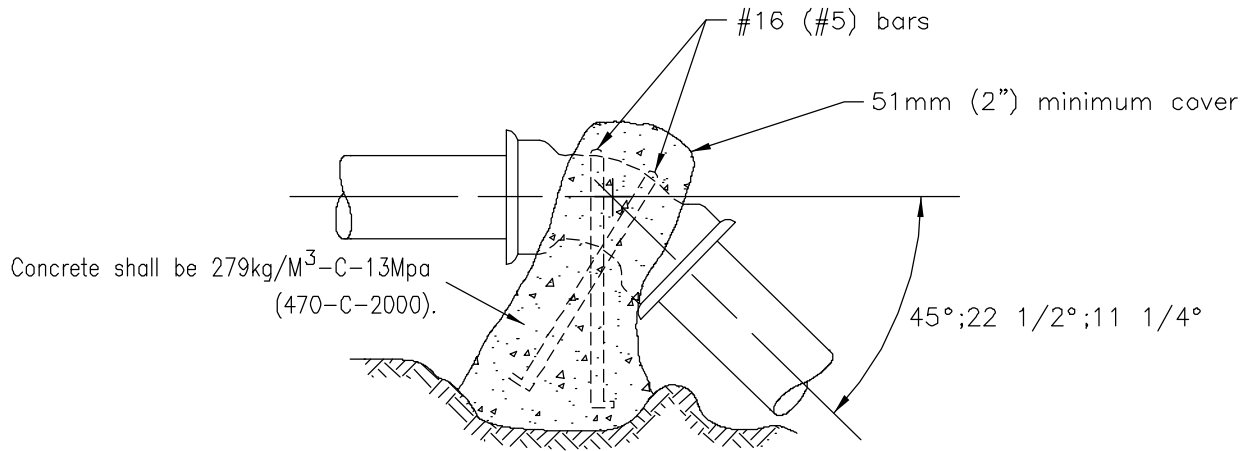
SAN DIEGO REGIONAL STANDARD DRAWING

CONCRETE VALVE BLOCKING

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 3/01/2003
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-19**



Pipe Nominal Dia	Cubic Ft. Of Concrete Required per 100 P.S.I. Pressure*		
	45°	22 1/2°	11 1/4°
4	7	4	2
6	15	8	4
8	27	14	7
10	* *	21	11
12	* *	* *	16

- * Increase volumes shown in proportion to pressures existing when pressure testing pipeline.
- * * Special design required.

Revision	By	Approved	Date
ORIGINAL		A.Kercheval	12/75
Add Metric		T. Stanton	03/03

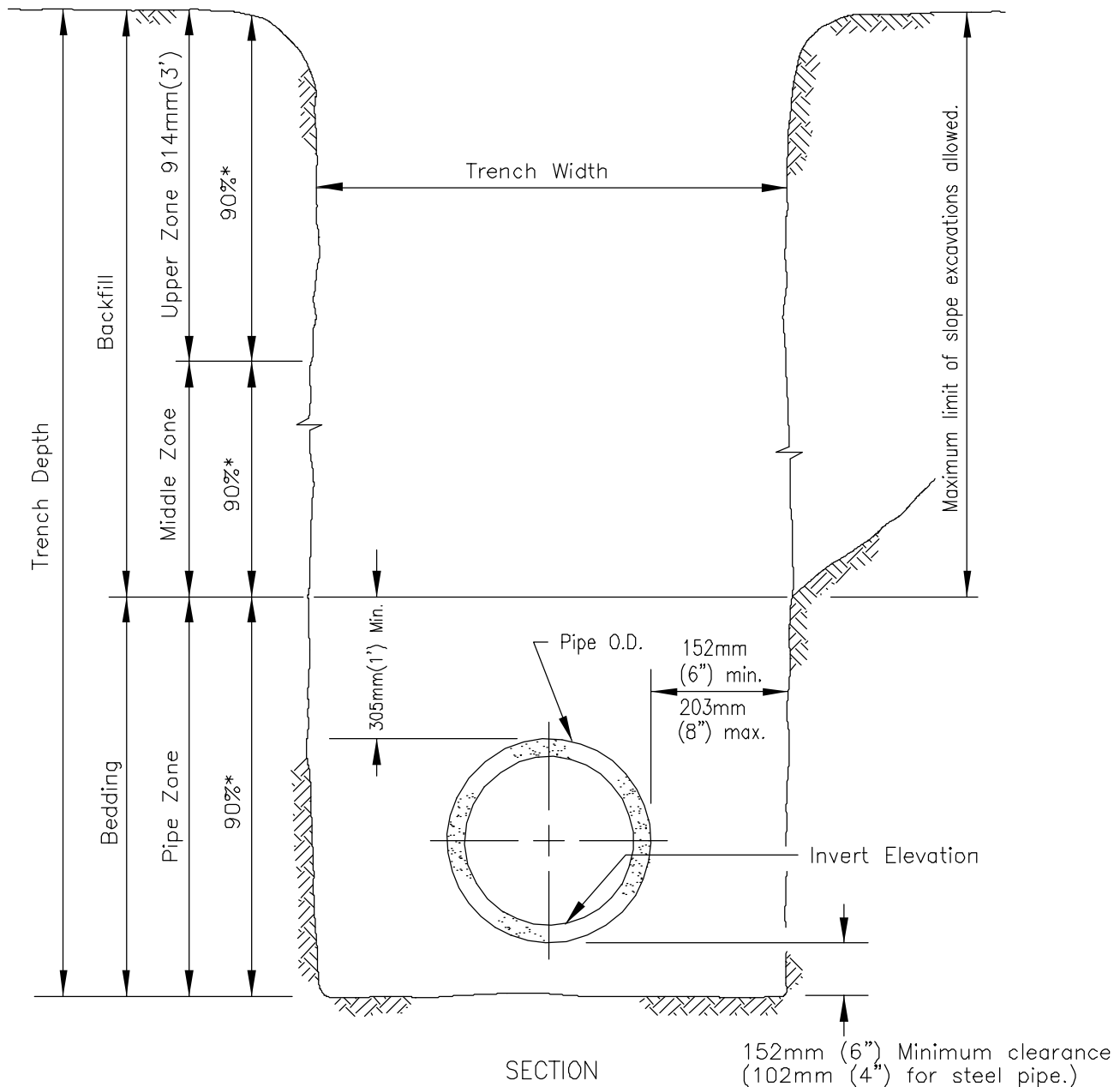
SAN DIEGO REGIONAL STANDARD DRAWING

**ANCHOR BLOCK
(VERTICAL BEND ONLY)**

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 3/01/2003
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-20**



SECTION

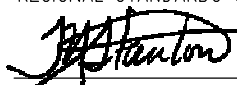
NOTES

1. For trenching on improved streets see standard drawing G-24 or G-25 for resurfacing details.
2. (*) indicates minimum relative compaction.
3. Bedding material shall either be sand, gravel, crushed aggregate or native free draining granular material having a sand equivalent (SE) of not less than (50) and an expansion coefficient, when saturated with water, of not more than 0.5 of one percent (0.5%).

Revision	By	Approved	Date
ORIGINAL		A.Kercheval	12/75
Add Metric		T. Stanton	03/03

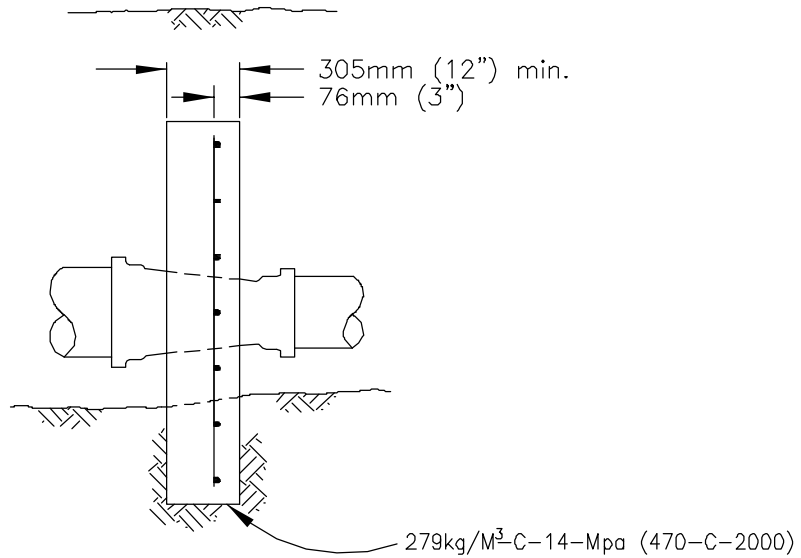
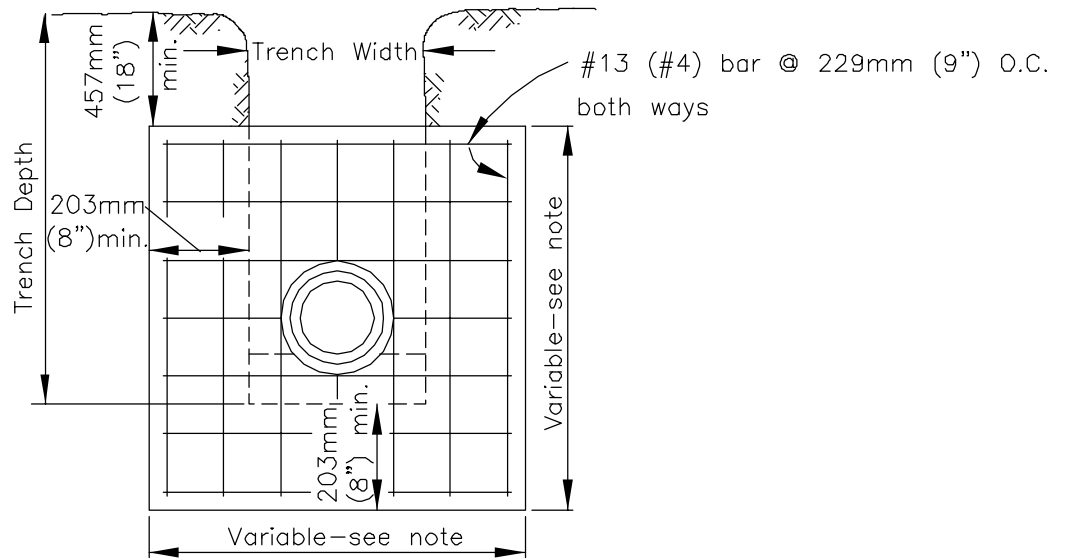
SAN DIEGO REGIONAL STANDARD DRAWING
PIPE BEDDING AND TRENCH BACKFILL
FOR WATER MAINS

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE



 Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-21**



NOTE

Bearing area shall be the difference between the bearing areas required for thrust anchorage of mains on each side of reducer as found from Standard Drawing W-18, plus the area of the trench opening, except that minimum dimensions shown shall be adhered to.

Revision	By	Approved	Date
ORIGINAL		D. Solomon	7/79
Add Metric		T. Stanton	03/03

SAN DIEGO REGIONAL STANDARD DRAWING

**THRUST ANCHOR FOR
WATER MAIN REDUCER - 4" THRU 16"**

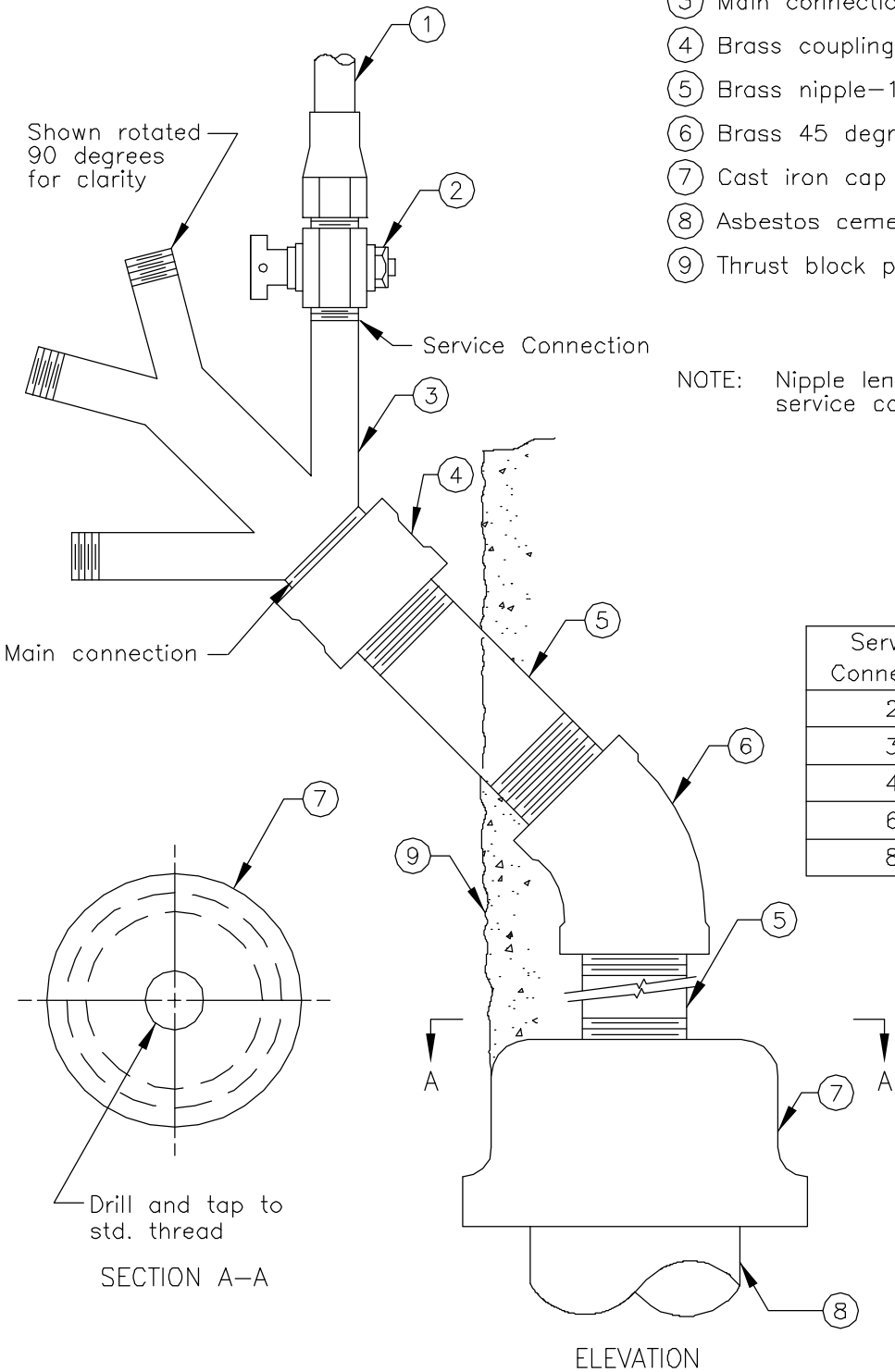
RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 3/03/03
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-22**

- ① 25mm(1") Water service per Std. Dwg W-1
- 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 W-17

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		D. Solomon	7/79
Add Metric		T. Stanton	03/03

SAN DIEGO REGIONAL STANDARD DRAWING

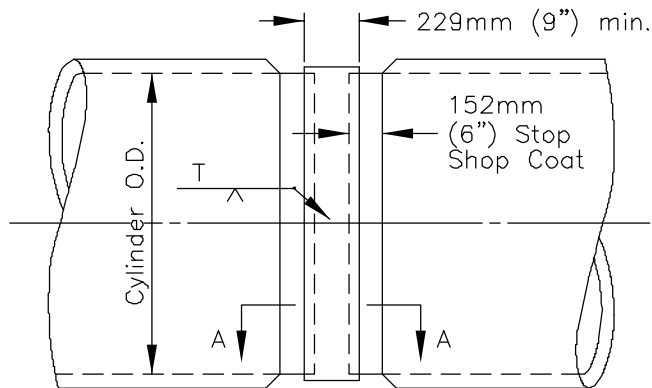
MUTIPLE SERVICE ASSEMBLY

DEAD END MAIN

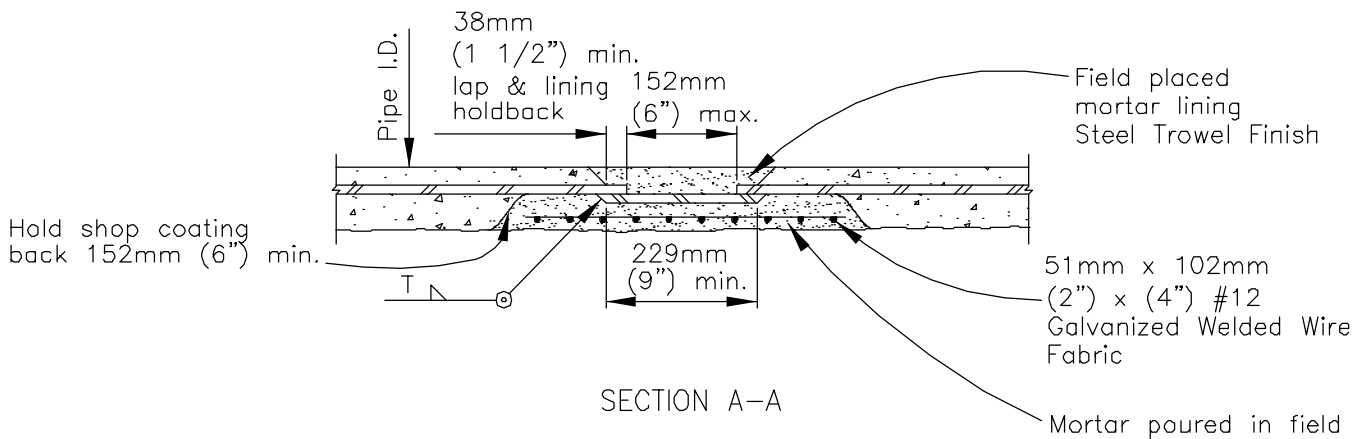
RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 51018003
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-23**



ELEVATION



NOTE:

Contractor shall provide handholes as required to complete the work

Revision	By	Approved	Date
ORIGINAL		D. Solomon	7/79
Add Metric		T. Stanton	03/03

SAN DIEGO REGIONAL STANDARD DRAWING

SPLIT BUTT STRAP

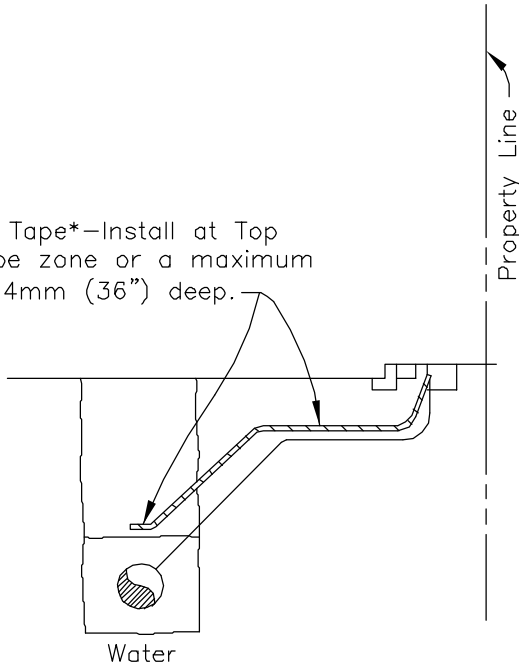
RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 31018003

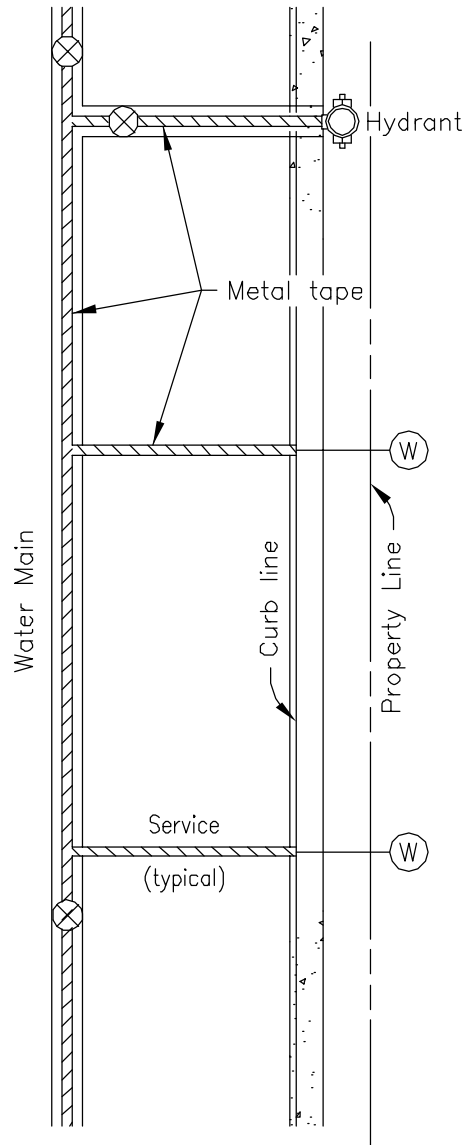
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-24**

Metal Tape*—Install at Top of pipe zone or a maximum of 914mm (36") deep.



SECTION



PLAN

NOTES

- * 1. Use 51mm (2") tape for depths of 762mm (30") or less.
- 2. Use 76mm (3") tape for depths greater than 762 (30").
- 3. Adequately bond service tape to main tape to insure electrical continuity.
- 4. Tape shall extend into service box or well casing to allow for mark-out by continuity tester.

Revision	By	Approved	Date
ORIGINAL		M. Bahmanian	4/86
Add Metric		T. Stanton	03/03

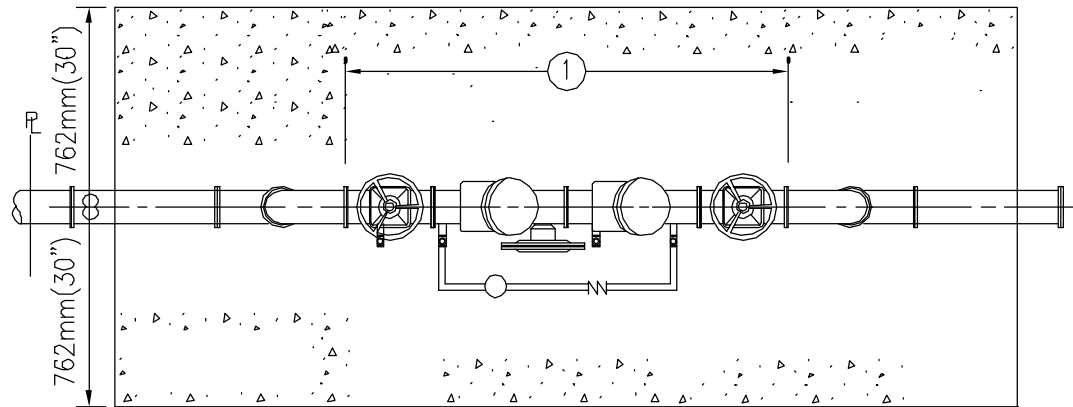
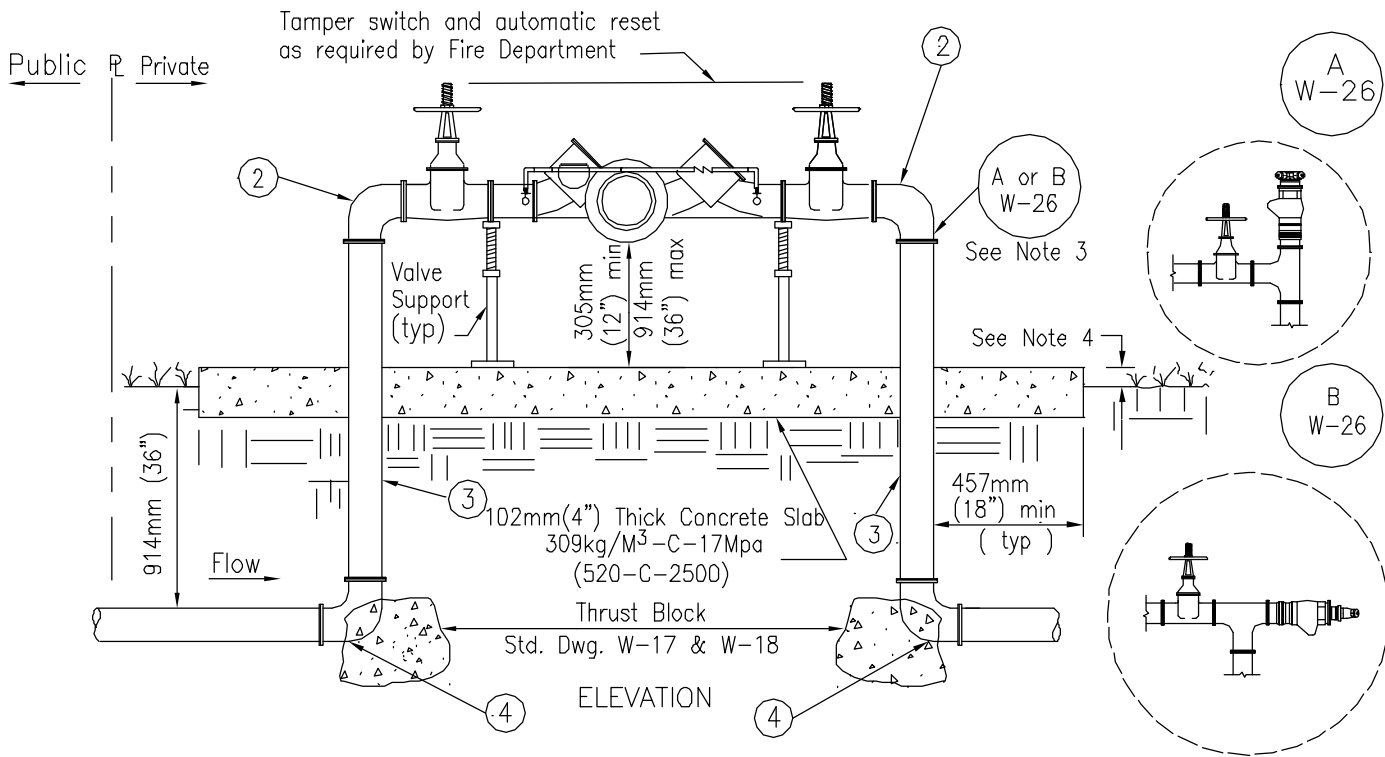
SAN DIEGO REGIONAL STANDARD DRAWING

**METALLIC TAPE LOCATOR
FOR NON-METALLIC WATER PIPE**

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 51018003
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-25**



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. Elbow may be replaced with Fire Department connection as required by the Fire Department.
4. Concrete pad to be 51mm (2") above grade unless installed in lawn area where it will be at 25mm (1") above grade. Slope to drain.
5. 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

W-26 A or B Alternative installations for Fire Department connection.

LEGEND ON PLANS



Revision	By	Approved	Date
ORIGINAL	R. Munoz		3/97
Add Metric	T. Stanton		03/03

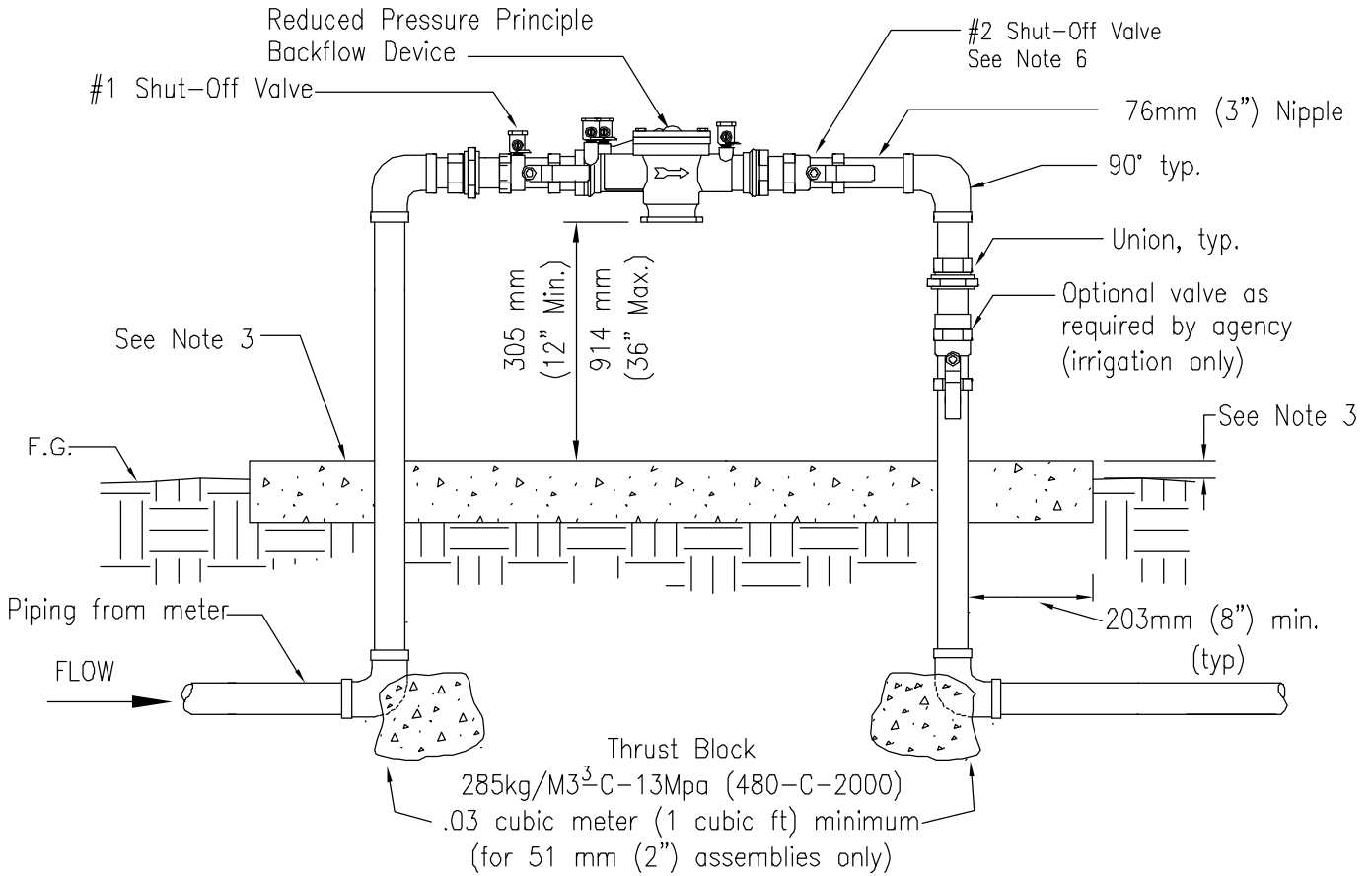
SAN DIEGO REGIONAL STANDARD DRAWING

BACKFLOW PREVENTER REDUCED PRESSURE PRINCIPLE DETECTOR ASSEMBLY FOR FIRE SERVICE - 76mm (3") AND LARGER

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 3/03/03
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-26**



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 pipe below grade shall be wrapped as required by agency.
3. Concrete pad to be 51mm(2") above grade unless installed in lawn area where it will be at 25mm(1") above grade. Concrete pad shall be 102mm (4") thick and 457mm(18") wide (min) 308kg/M³C-17Mpa (520-C-2500) slope to drain.
4. Reduced Pressure Principle 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 downstream regulator, when required, shall be located downstream of the #2 shut off 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.

LEGEND ON PLANS =

Revision	By	Approved	Date
ORIGINAL	R. Munoz		3/97
Add Metric	T. Stanton		03/03

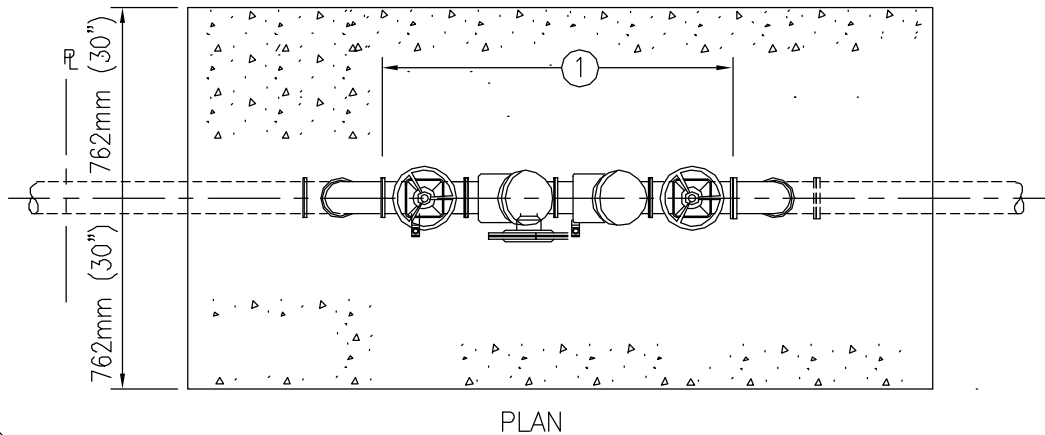
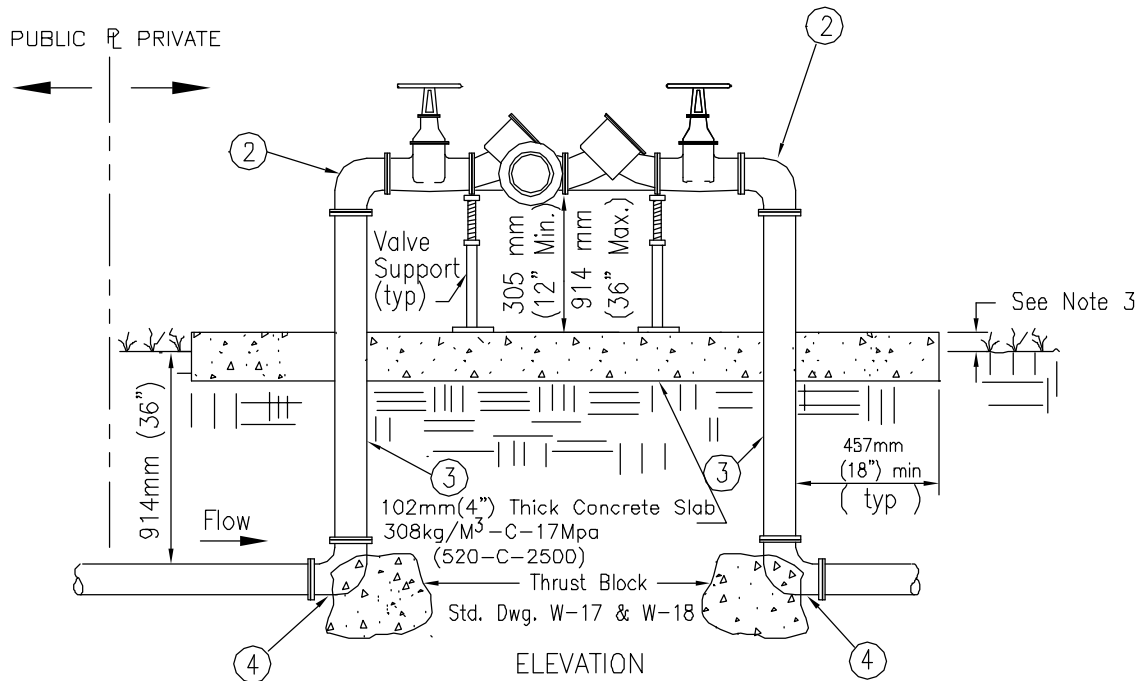
SAN DIEGO REGIONAL STANDARD DRAWING

BACKFLOW PREVENTER REDUCED PRESSURE PRINCIPLE ASSEMBLY 51mm (2") AND SMALLER

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

 3/01/2003
 Chairperson R.C.E. 19246 Date

DRAWING NUMBER **W-27**



NOTES

1. Backflow assembly shall be tested upon installation by a certified backflow assembly tester.
 2. All pipe below grade shall be wrapped as required by agency.
 3. Concrete pad to be 51mm(2") above grade unless installed in lawn area where it will be at 25mm (1") above grade. Slope to drain.
 4. Protective enclosure for backflow preventer assembly shall be used at the discretion of the property owner.
- 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

LEGEND ON PLANS



Revision	By	Approved	Date
ORIGINAL		R. Munoz	3/97
Add Metric		T. Stanton	03/03

SAN DIEGO REGIONAL STANDARD DRAWING

BACKFLOW PREVENTER REDUCED
PRESSURE PRINCIPLE DETECTOR ASSEMBLY
76mm (3") AND LARGER

RECOMMENDED BY THE SAN DIEGO
REGIONAL STANDARDS COMMITTEE

T. Stanton 3/01/2003
Chairperson R.C.E. 19246 Date

DRAWING
NUMBER W-28