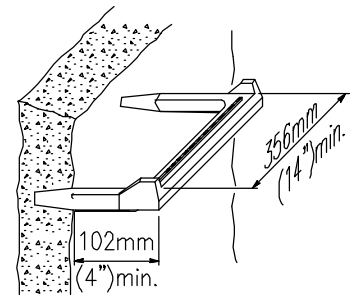
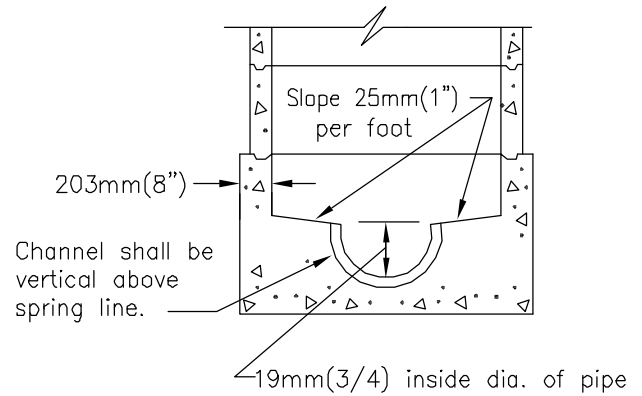


SECTION A-A



STEP DETAIL

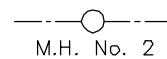


SECTION B-B

NOTES

1. Manhole frame and all joints shall be set in Class "C" mortar.
2. All precast components shall be manufactured in accordance with ASTM C-478.
3. Vertical wall of cone shall be on the upstream side of the manhole.
4. Concrete base shall be 332kg/M³ -C-22Mpa(560-C-3250) concrete.
5. Approved water stop required for plastic pipe connectors.
6. Precast sections shall be used within dimension "A" as required, in order of preference listed:
 - A) Cone (notched for pipe if dimension "A" is less than 914mm(3').
 - B) 152mm(6") to 457mm(18") of 914mm(3') diameter grade rings and/or risers.
 - C) 1.5m(5') diameter shaft variable height.
 - D) Top step shall be 381mm(15") maximum from top of frame and cover.
7. Flexible pipe joints shall be required within 305mm(12") of inside face of manhole, except for plastic pipe.
8. All patching within manhole base shall be epoxy mortar.
9. Prior approval of precast base is required by the Agency.

LEGEND ON PLANS



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

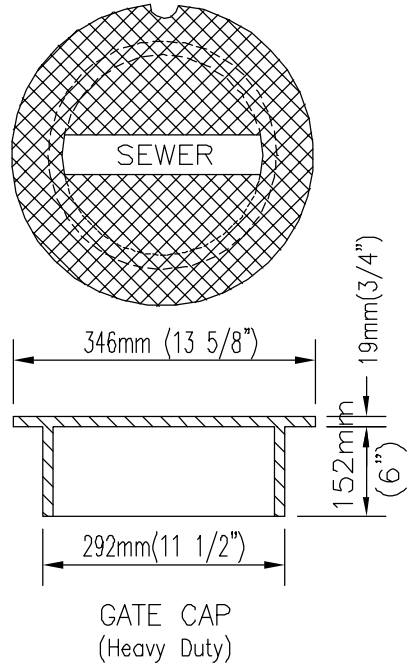
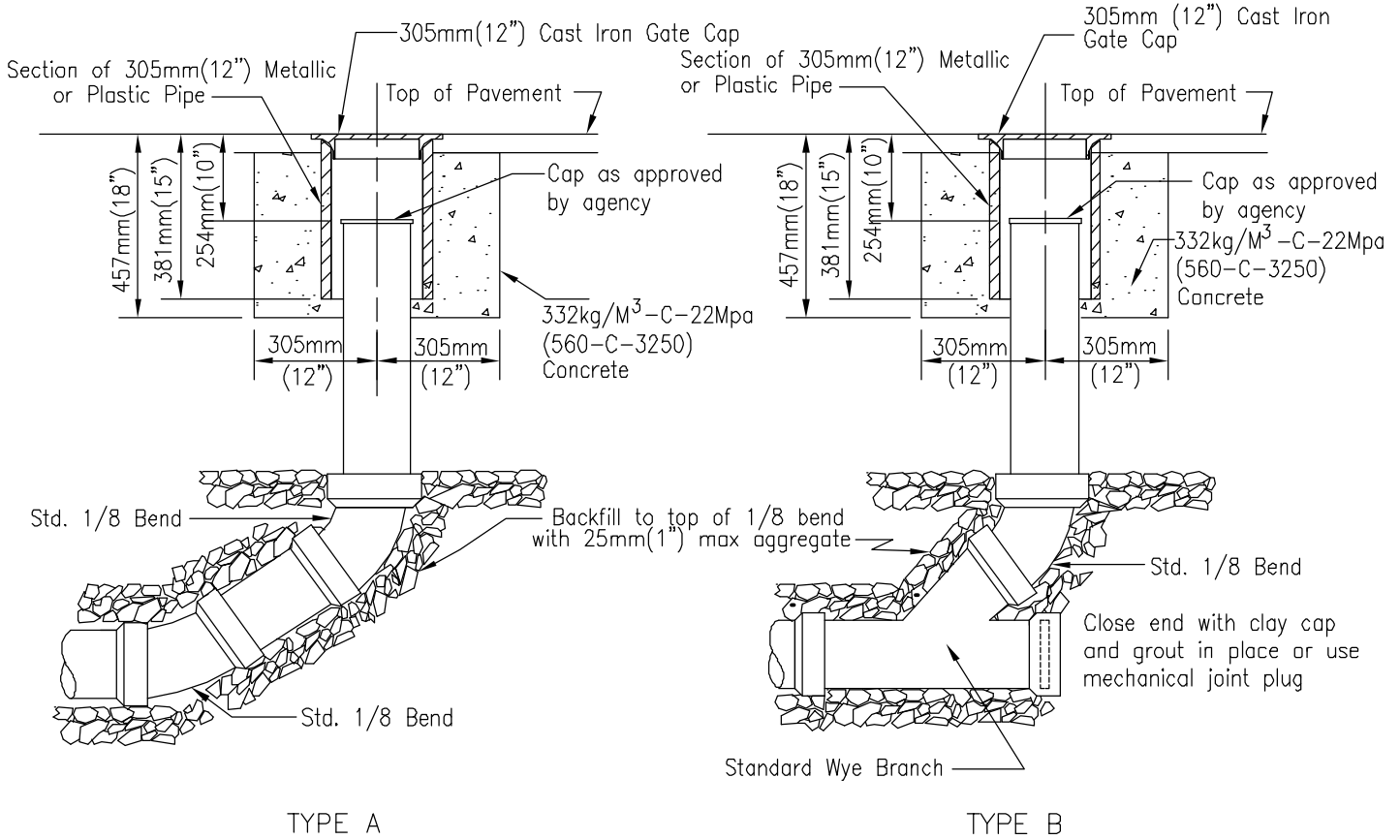
SAN DIEGO REGIONAL STANDARD DRAWING

MANHOLE 1.5m(5')x 914mm(3') DIAMETER

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 3/01/0005
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **S-2**



NOTES

1. Gate cap shall be labeled "Sewer".
2. Cleanouts may be used for either V.C.P. or plastic (PVC) sewer mains.
3. Riser to be same diameter as sewer main.

Revision	By	Approved	Date
ORIGINAL	R. Munoz		4/97
Add Metric	T. Stanton		03/03

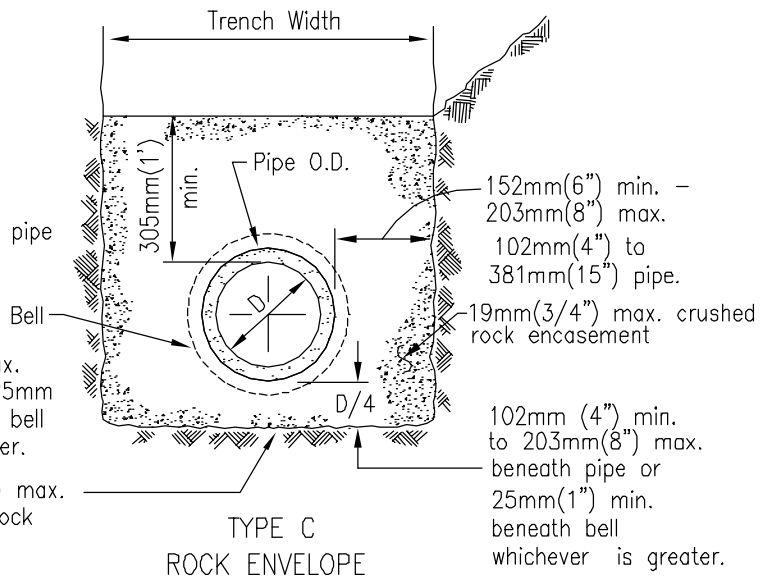
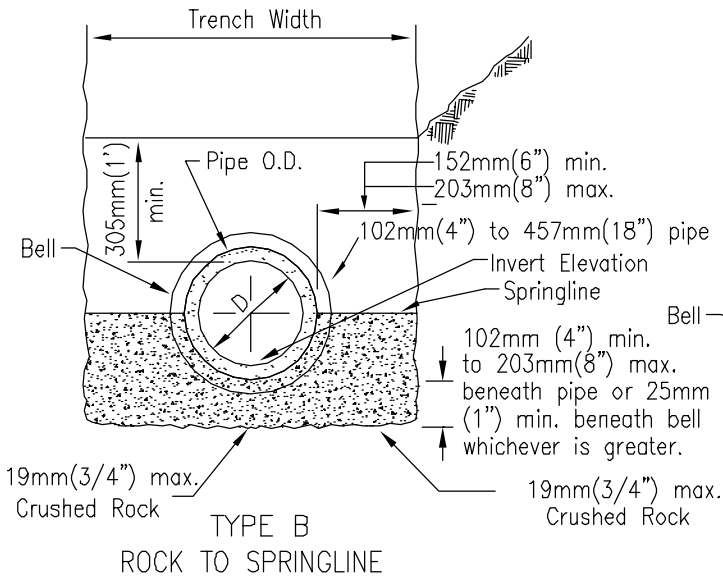
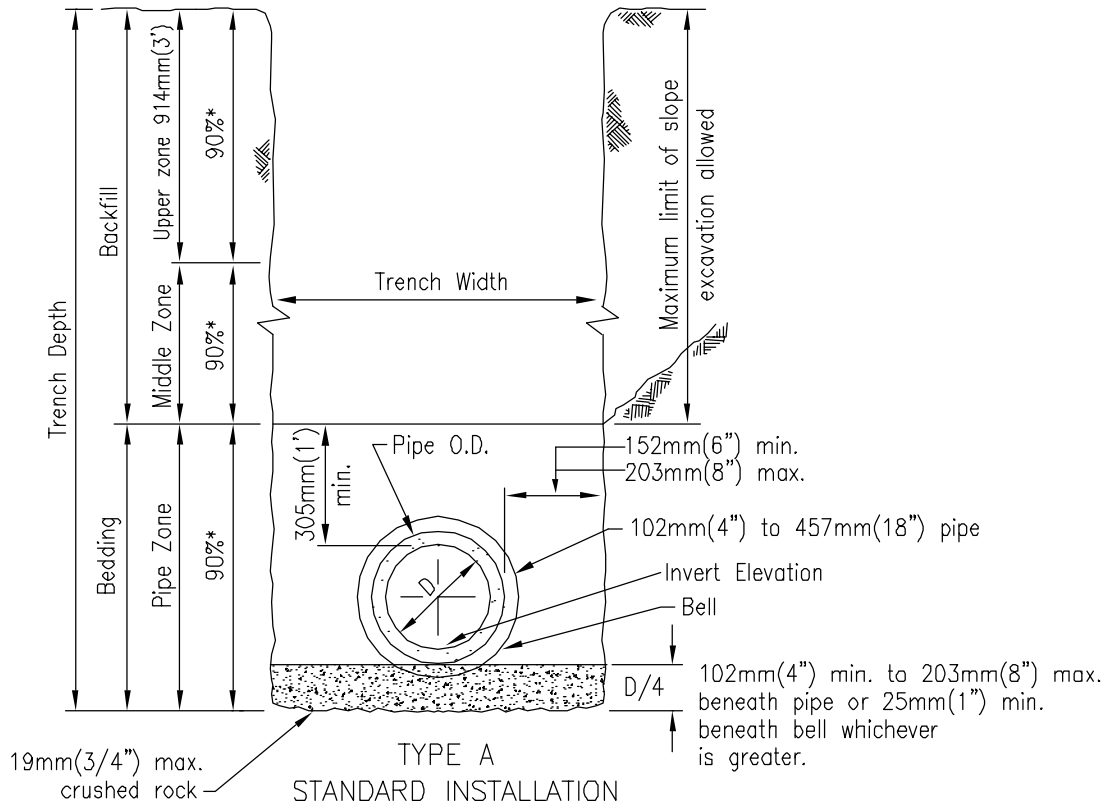
SAN DIEGO REGIONAL STANDARD DRAWING

**SEWER MAIN CLEANOUT
(203mm(8") DIAMETER MAXIMUM)**

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

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

DRAWING NUMBER **S-3**



NOTES

1. For trenching in improved streets, see Standard Drawings G-24 or G-25 for trench resurfacing.
2. (*) indicates minimum relative compaction.
3. Minimum depth of cover from the top of pipe to finish grade for all sanitary sewer installations shall be 914mm(3') For cover less than 914mm(3'), see Standard Drawing S-7 for concrete encasement.
4. See Type A installation for details not shown for Types B and C.

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

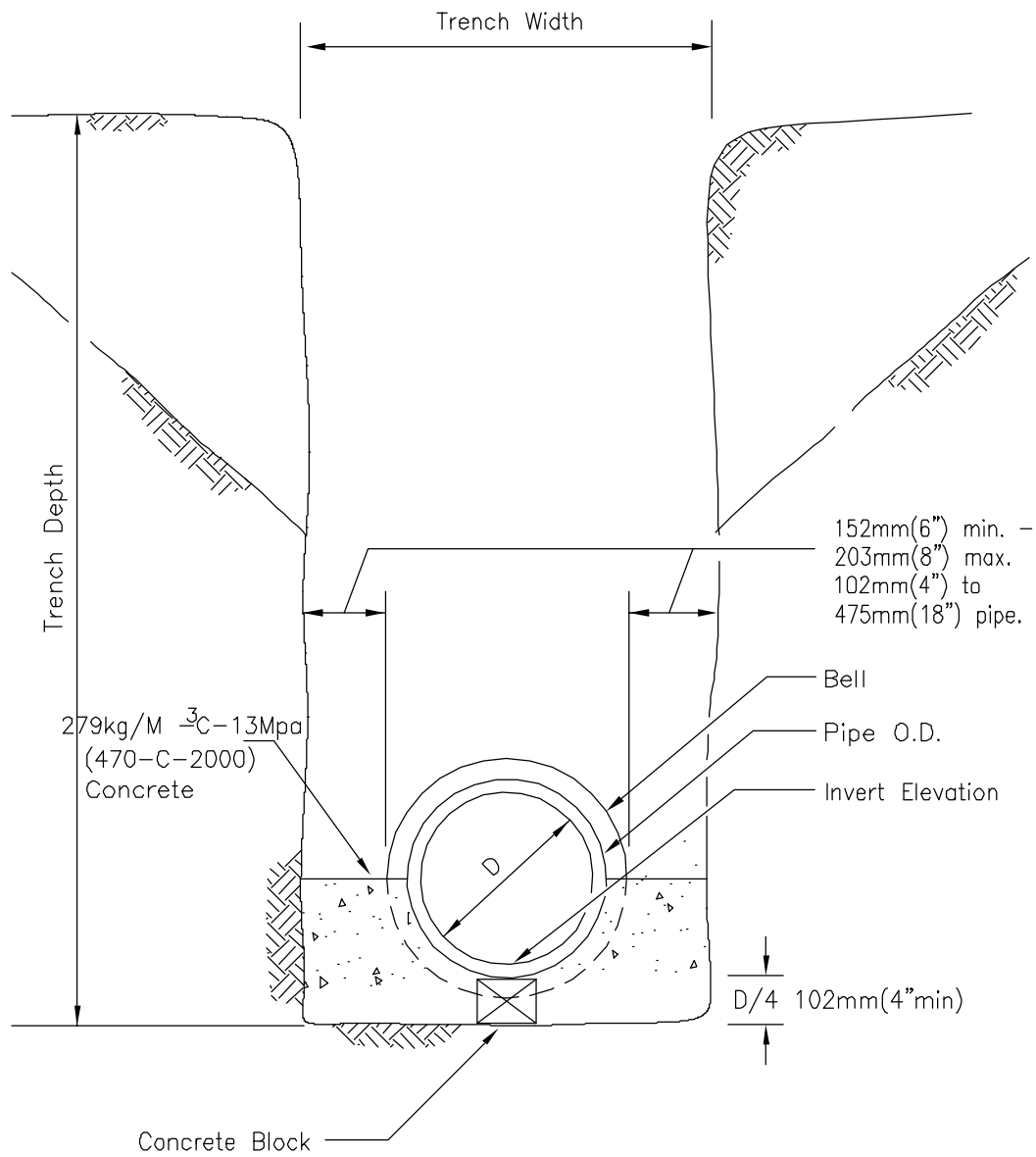
SAN DIEGO REGIONAL STANDARD DRAWING

**PIPE BEDDING AND TRENCH BACKFILL
FOR SEWERS**

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

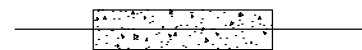
T. Stanton 31018005
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **S-4**



SECTION

LEGEND ON PLANS



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

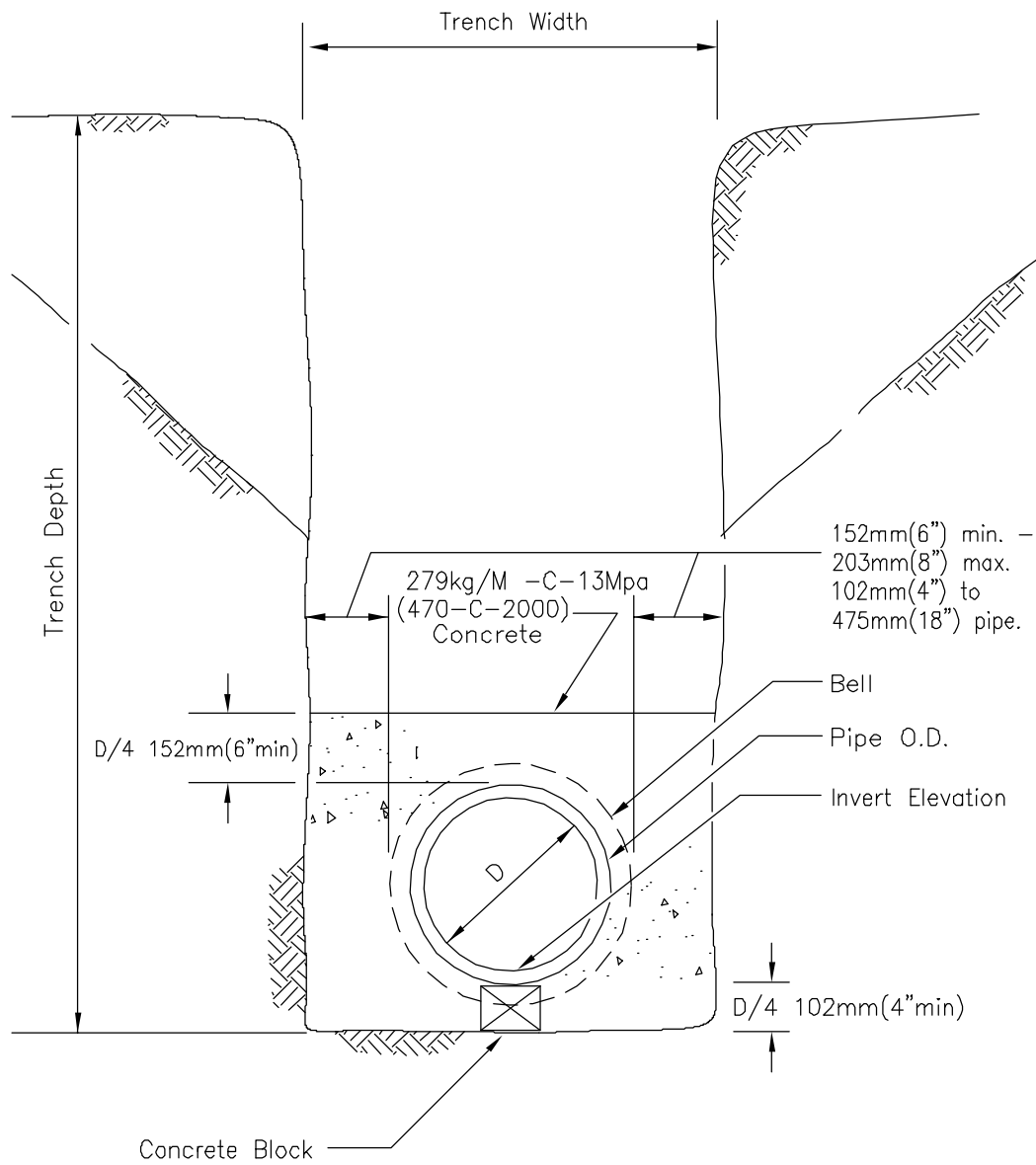
SAN DIEGO REGIONAL STANDARD DRAWING

CONCRETE CRADLE

RECOMMENDED BY THE SAN DIEGO
REGIONAL STANDARDS COMMITTEE

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

DRAWING
NUMBER **S-6**

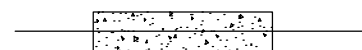


SECTION

NOTE

Encase pipe to the nearest flexible joint.

LEGEND ON PLANS



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

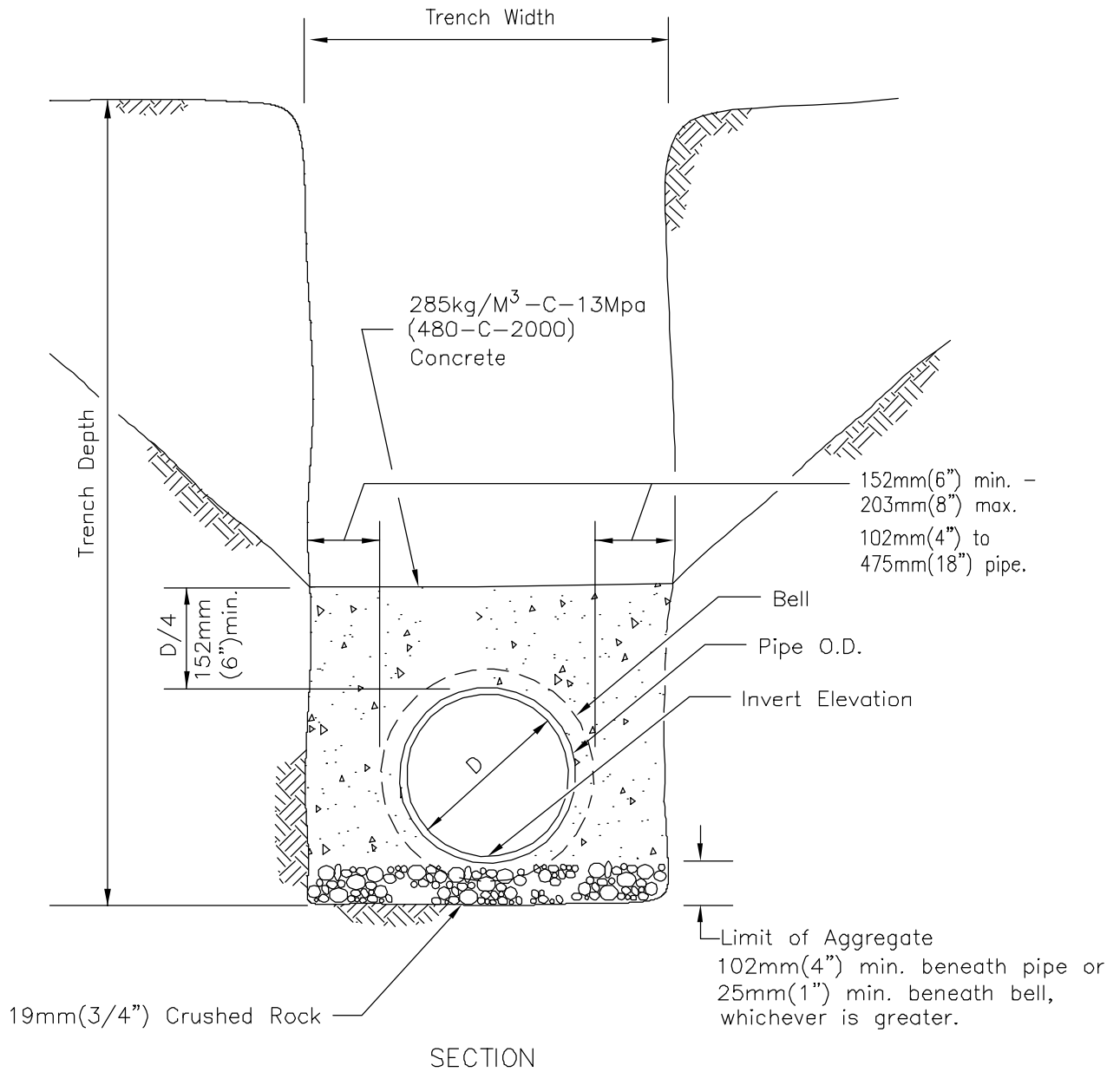
SAN DIEGO REGIONAL STANDARD DRAWING

CONCRETE ENCASEMENT

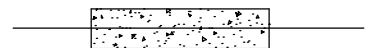
RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

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

DRAWING NUMBER **S-7**



LEGEND ON PLANS



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

SAN DIEGO REGIONAL STANDARD DRAWING

CONCRETE BACKFILL

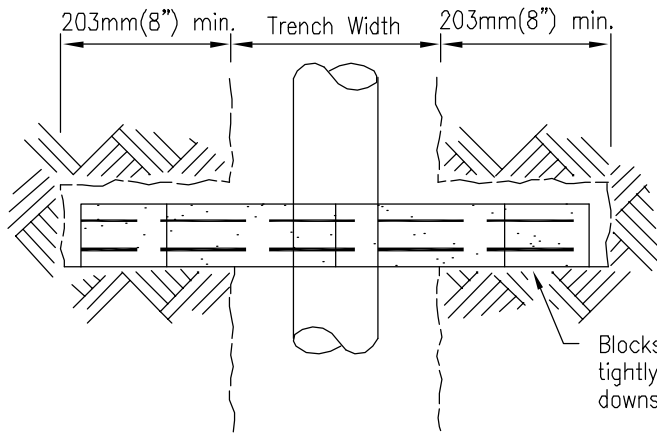
RECOMMENDED BY THE SAN DIEGO
REGIONAL STANDARDS COMMITTEE

T. Stanton 3/03/03

Chairperson R.C.E. 19246 Date

DRAWING
NUMBER

S-8

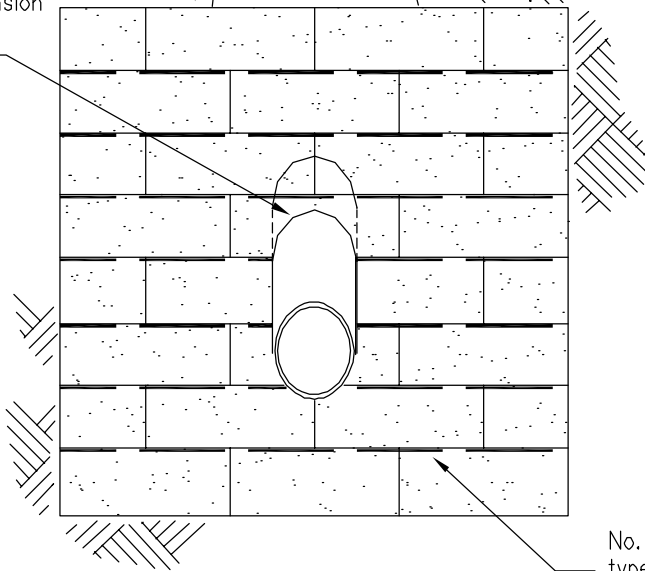


Blocks to be laid as tightly as possible to downstream side of notch.

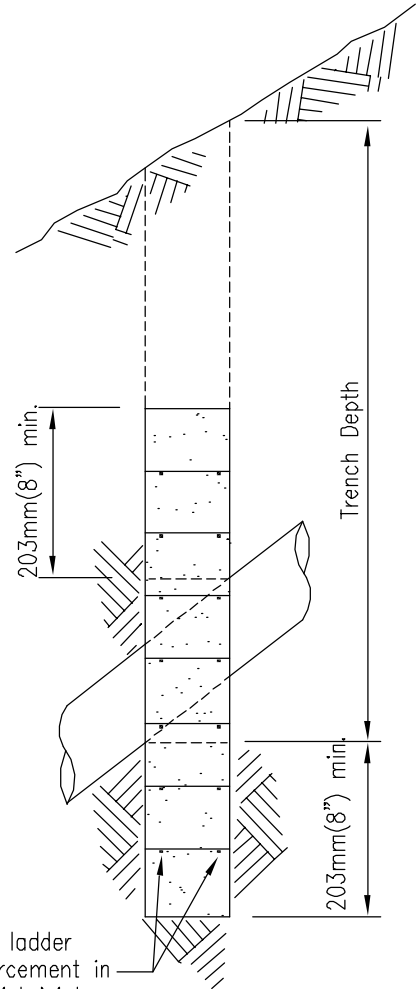
PLAN

203mm(8") x 203mm(8") x 406mm(16") Concrete Block. Fill cores with grout.

13mm(1/2") expansion joint material or jute around pipe.



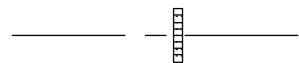
FRONT ELEVATION



No. 9 wire ladder type reinforcement in all horizontal joints.

SIDE ELEVATION

LEGEND ON PLANS



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

SAN DIEGO REGIONAL STANDARD DRAWING

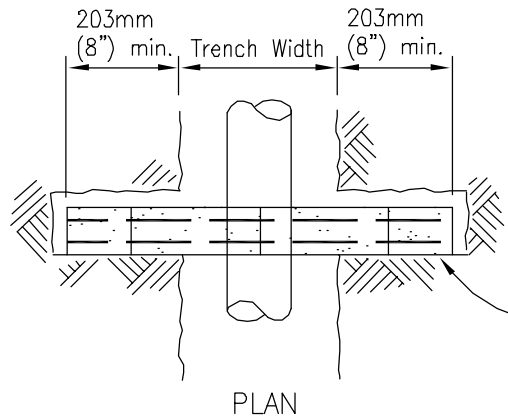
CONCRETE ANCHOR

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 3/03/03

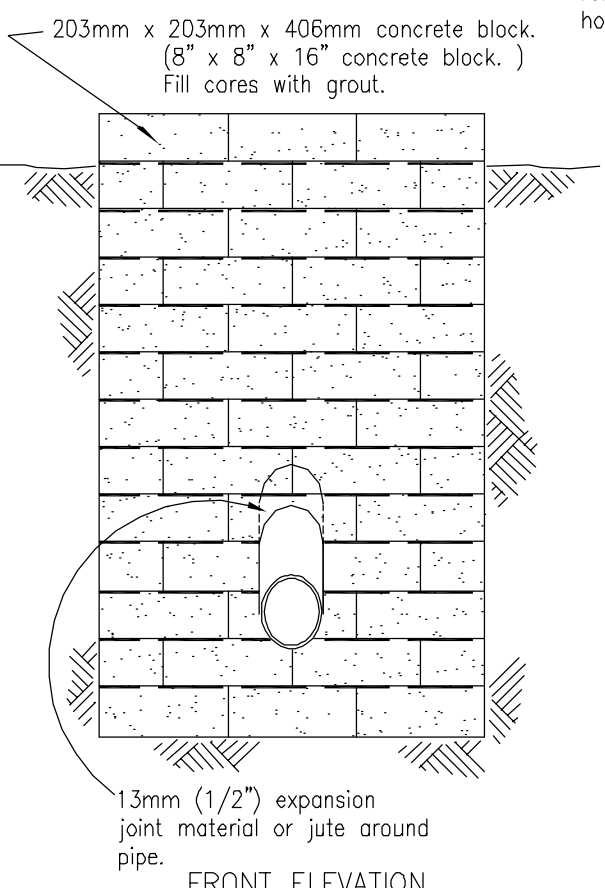
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **S-9**

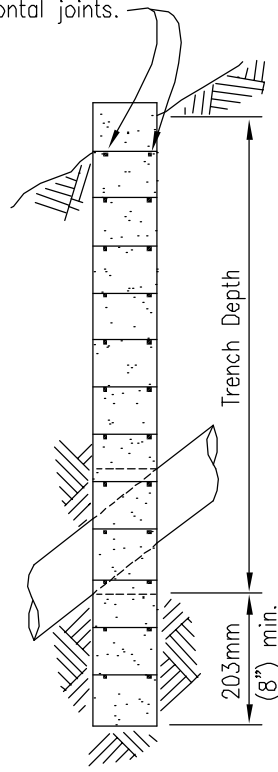


Blocks to be laid tightly as possible to downstream side of notch.

- NOTES
Type B:
1. No vertical joints permitted.
 2. Horizontal joints must overlay by 2 corrugations.
 3. Corrugations to run horizontally.
 4. Front Elevation and Plan views similar to Type A.



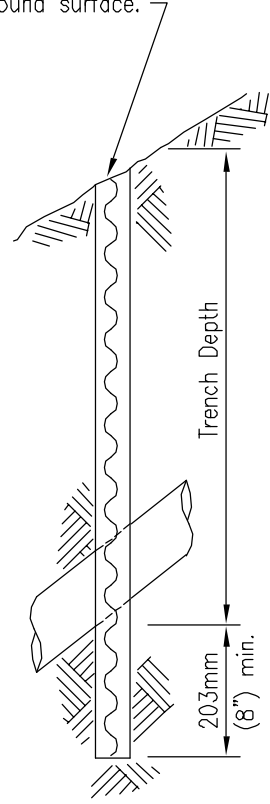
No. 9 wire ladder type reinforcement in all horizontal joints.



SIDE ELEVATION

TYPE A

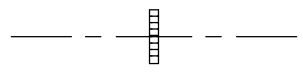
Galvanized Corrugated Sheet Metal 18 Gage or heavier to be laid as tightly as possible to downstream side of notch. Make flush with ground surface.



ELEVATION

TYPE B

LEGEND ON PLANS



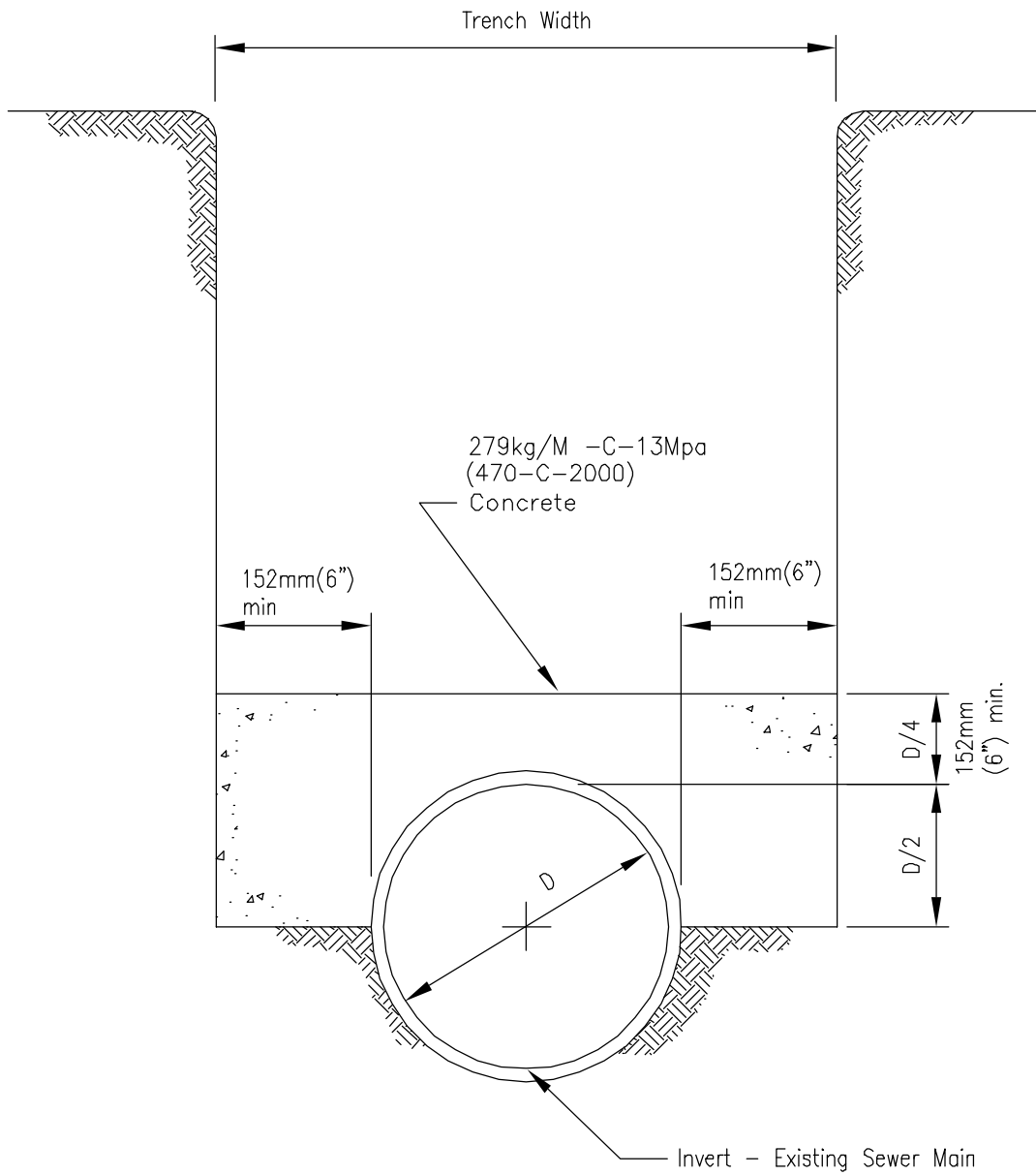
Revision	By	Approved	Date
ORIGINAL		A.Kercheval	12/75
Add Metric		T. Stanton	03/03

SAN DIEGO REGIONAL STANDARD DRAWING

CUTOFF WALL

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE
T. Stanton 51018005
Chairperson R.C.E. 19246 Date

DRAWING NUMBER **S-10**



SECTION

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

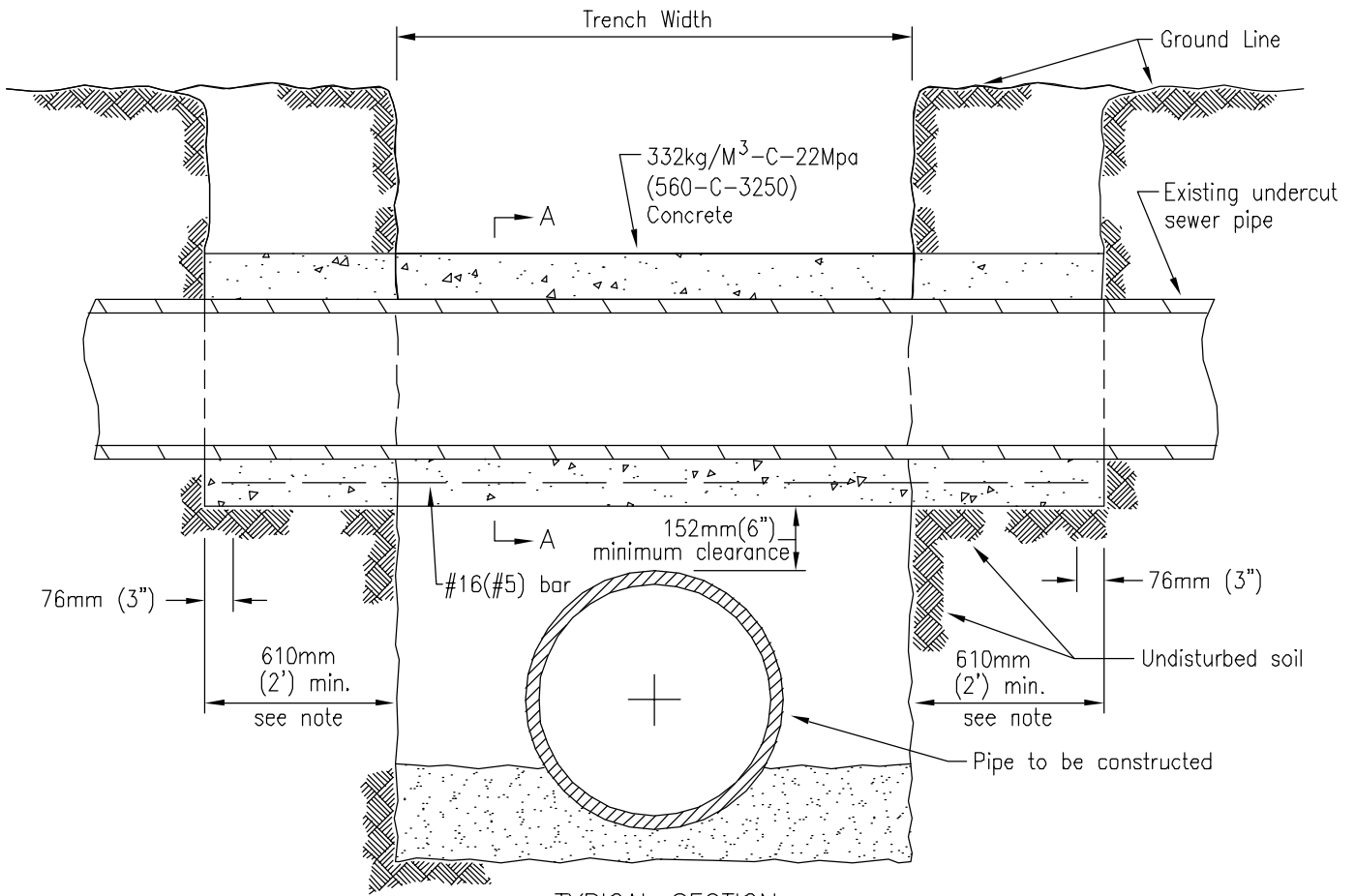
SAN DIEGO REGIONAL STANDARD DRAWING

**CONCRETE PROTECTION
FOR EXISTING SEWER PIPE**

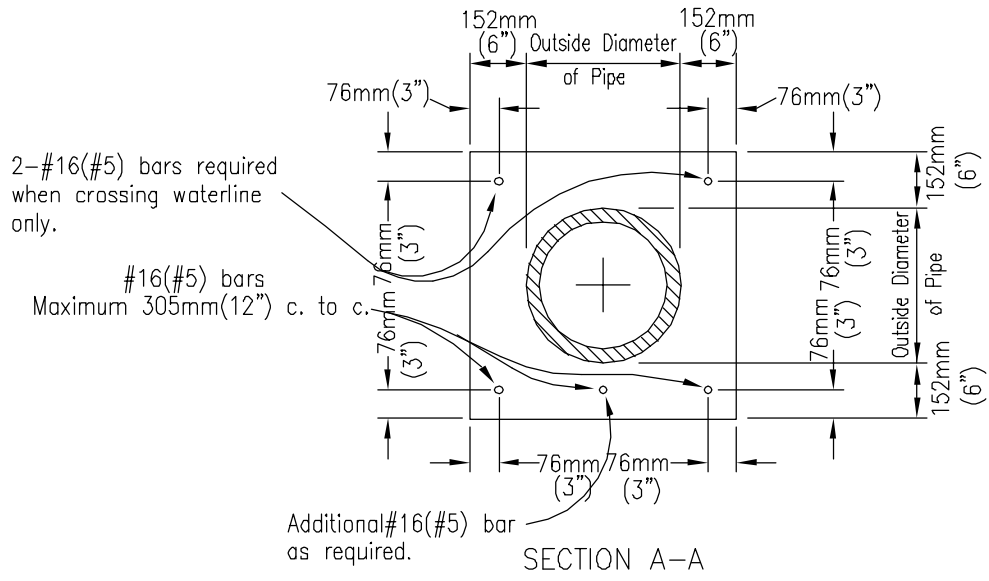
RECOMMENDED BY THE SAN DIEGO
REGIONAL STANDARDS COMMITTEE

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

DRAWING
NUMBER **S-11**



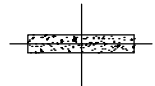
TYPICAL SECTION



SECTION A-A

NOTE
 For water line construction encasement shall extend to first joint beyond 610mm(2') at both sides of trench or to a distance of 1.2m(4'), whichever is less.

LEGEND ON PLANS



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

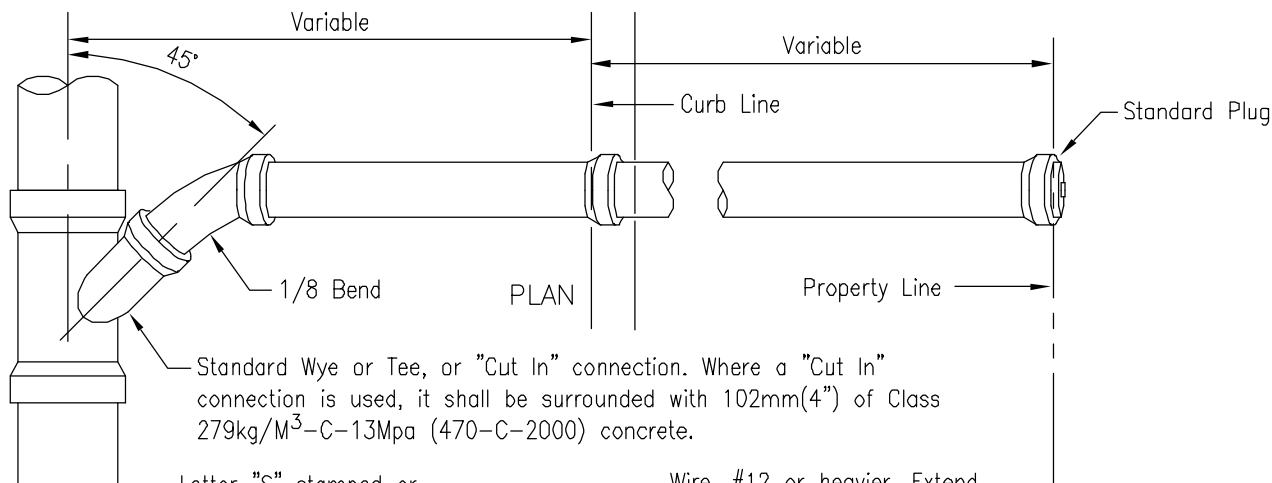
SAN DIEGO REGIONAL STANDARD DRAWING

**CONCRETE SUPPORT
 FOR UNDERCUT SEWER PIPE**

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 5/10/18005
 Chairperson R.C.E. 19246 Date

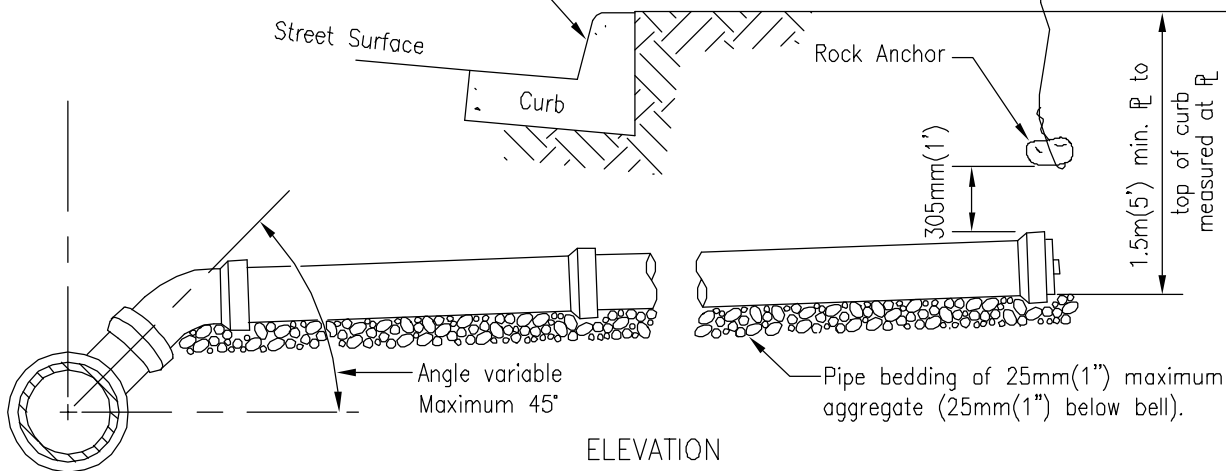
DRAWING NUMBER **S-12**



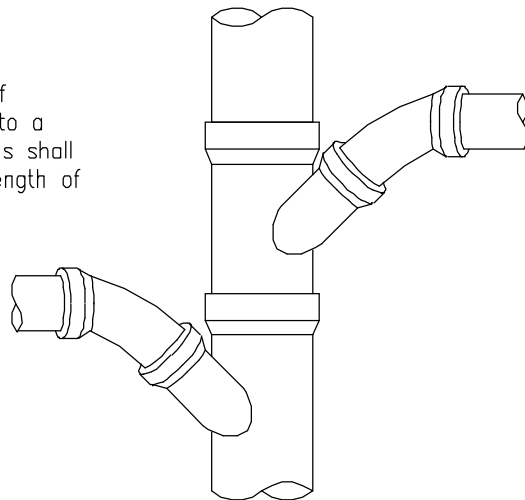
Standard Wye or Tee, or "Cut In" connection. Where a "Cut In" connection is used, it shall be surrounded with 102mm(4") of Class 279kg/M³-C-13Mpa (470-C-2000) concrete.

Letter "S" stamped or chiseled in face of curb not less than 38mm(1 1/2") high and 5mm(3/16") deep.

Wire, #12 or heavier. Extend 610mm(2') to 914mm(3') above ground at time of backfill.



Detail showing the manner of connecting opposite laterals to a sewer main. Two connections shall not be made in the same length of pipe.



NOTES

1. In no case shall a lateral connect to the sewer main directly on top of the pipe.
2. Sewer laterals shall have a minimum slope of 2%.
3. All joints on sewer lateral pipe shall be compression type or approved solvent weld.
4. Lateral shall extend to property line unless otherwise shown on plans.

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

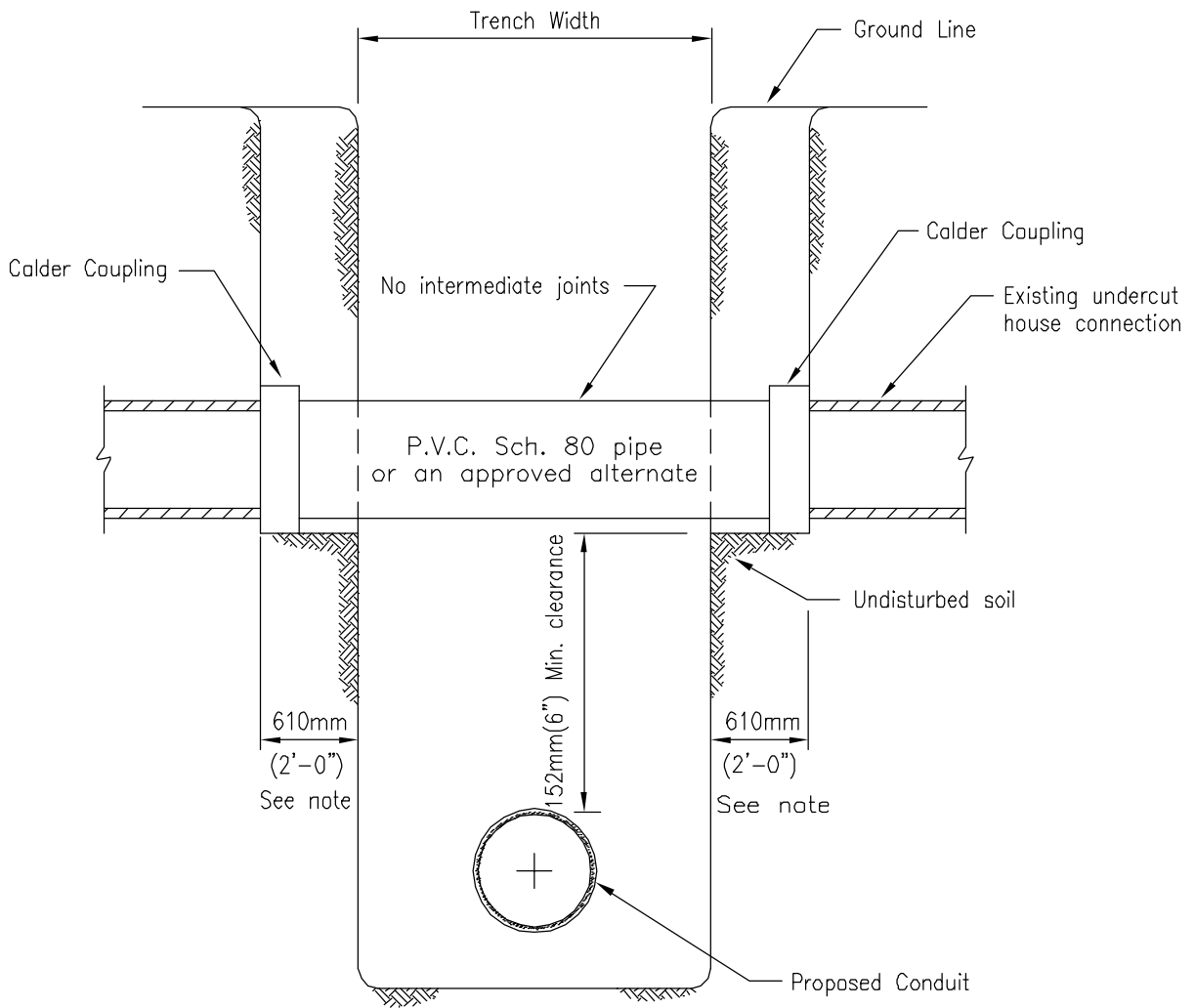
SAN DIEGO REGIONAL STANDARD DRAWING

HOUSE CONNECTION
(SEWER LATERAL)

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

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

DRAWING NUMBER **S-13**



SECTION

NOTE

For water line construction, repair pipe shall extend to first joint beyond 610mm(2') at both sides of trench or to a distance of 1.22m (4'), whichever is less.

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

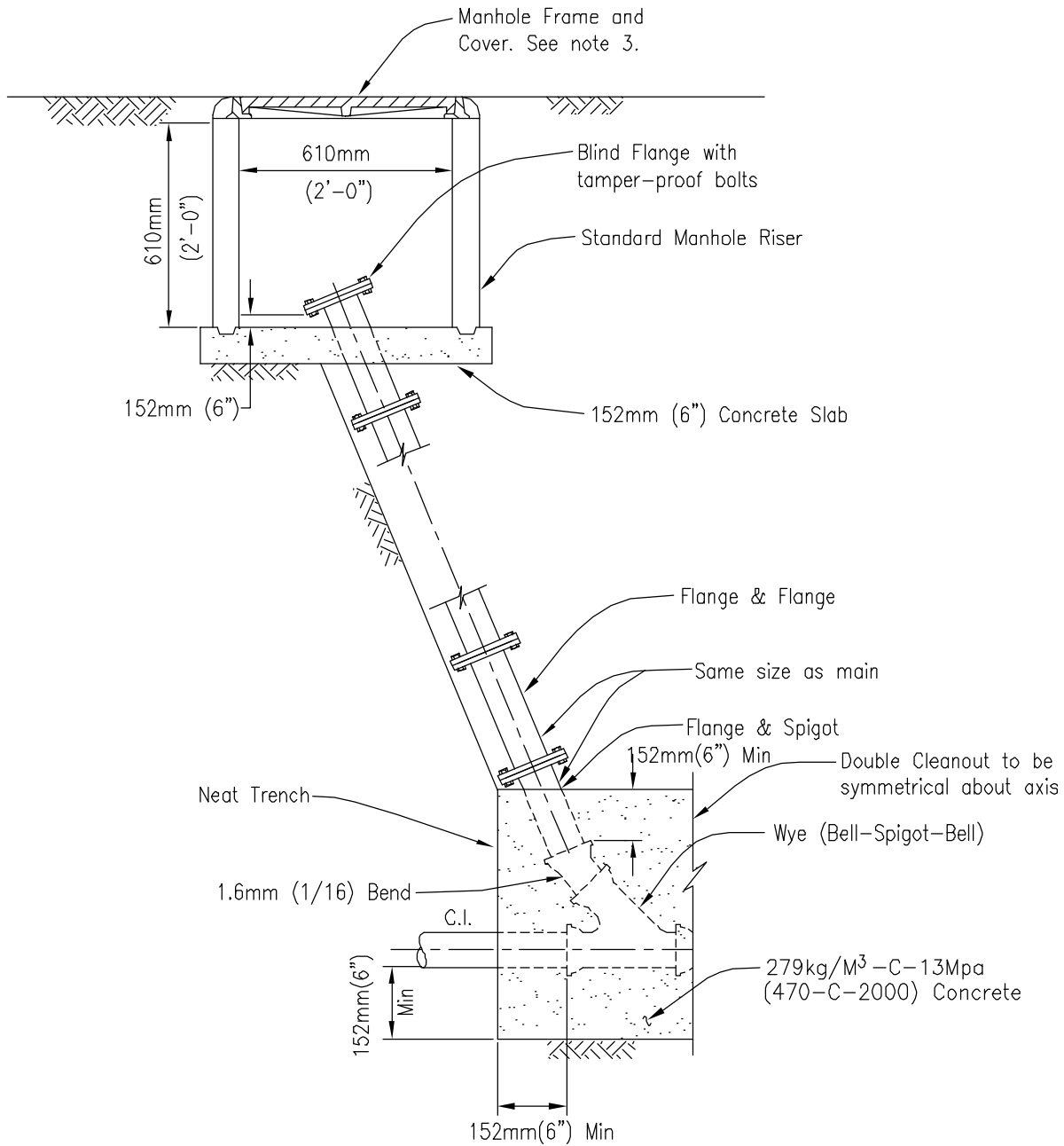
SAN DIEGO REGIONAL STANDARD DRAWING

HOUSE CONNECTION SEWER REPAIR

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

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

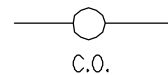
DRAWING NUMBER **S-15**



NOTES

1. Similar polyvinyl chloride components may be used in accordance with A.S.T.M. Standard Specification D-3033.
2. Concrete slab shall be 332kg/M³-C-22Mpa (560-C-3250) concrete.
3. Use heavy duty manhole frame and cover, Standard Drawing M-1, in areas subject to vehicular traffic; use light duty manhole frame and cover, Standard Drawing M-2, in all other locations.

LEGEND ON PLANS



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

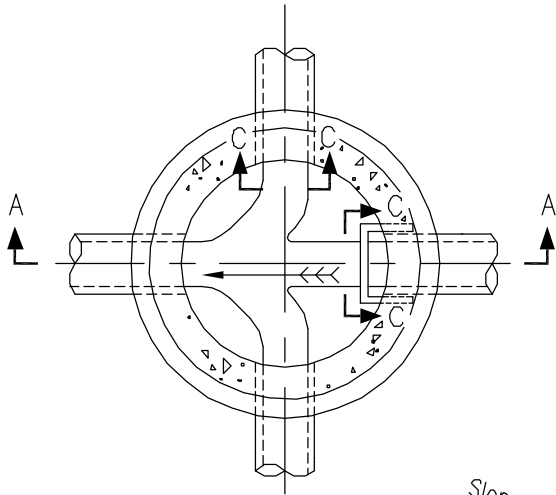
SAN DIEGO REGIONAL STANDARD DRAWING

CLEANOUT - SEWER FORCE MAIN

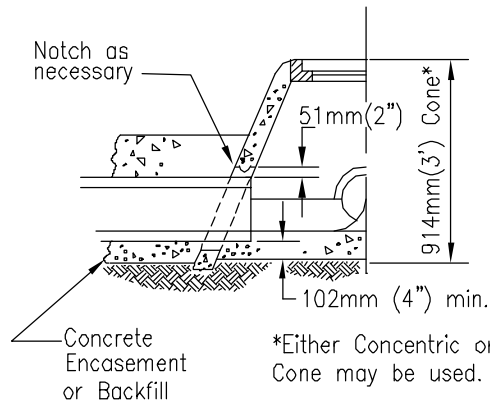
RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

T. Stanton 5/10/2003
 Chairperson R.C.E. 19246 Date

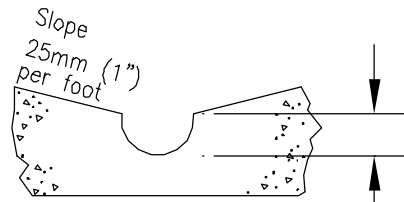
DRAWING NUMBER **S-16**



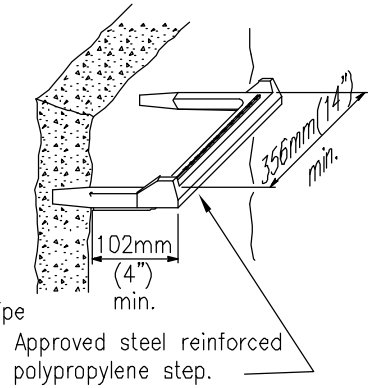
SECTION B-B



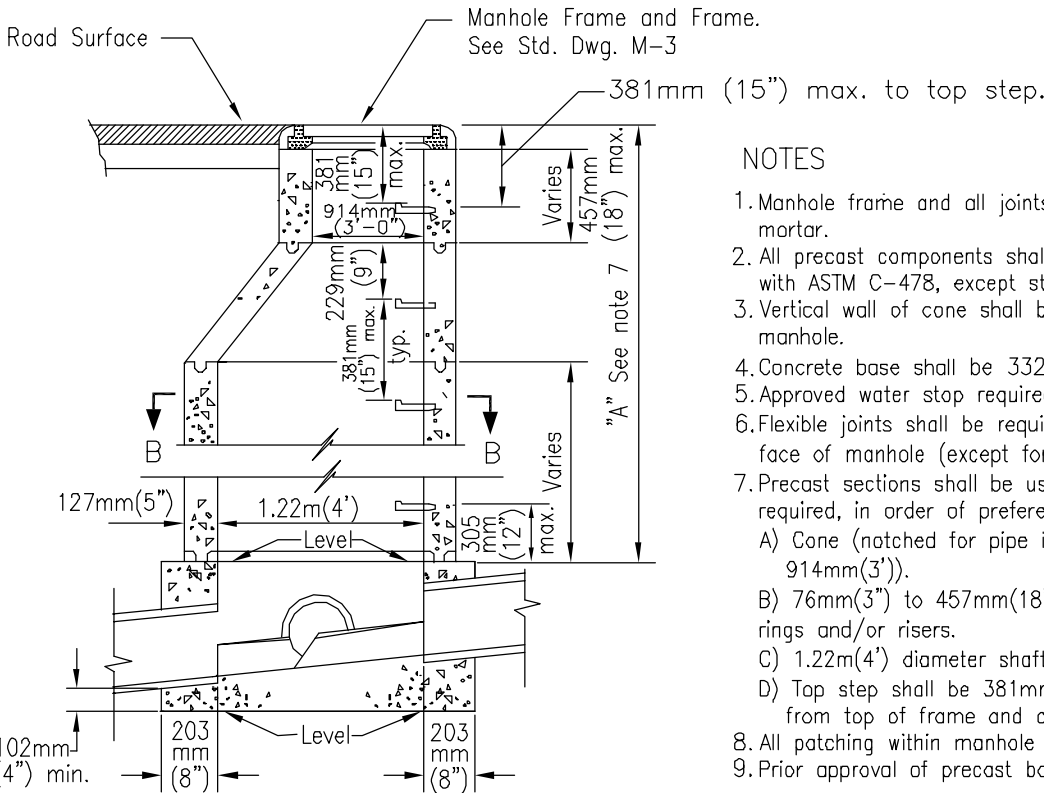
HALF SECTION SHALLOW MANHOLE



SECTION C-C



STEP DETAIL

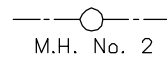


SECTION A-A

NOTES

1. Manhole frame and all joints shall be set in Class "C" mortar.
2. All precast components shall be manufactured in accordance with ASTM C-478, except step spacing.
3. Vertical wall of cone shall be on the upstream side of the manhole.
4. Concrete base shall be 332kg/M³-C-22Mpa(560-C-3250).
5. Approved water stop required for plastic pipe connections.
6. Flexible joints shall be required within 305mm(12") of inside face of manhole (except for plastic pipe).
7. Precast sections shall be used within dimension "A" as required, in order of preference listed:
 - A) Cone (notched for pipe if dimension "A" is less than 914mm(3')).
 - B) 76mm(3") to 457mm(18") of 914mm(3') diameter grade rings and/or risers.
 - C) 1.22m(4') diameter shaft variable height.
 - D) Top step shall be 381mm(15") maximum from top of frame and cover.
8. All patching within manhole base shall be epoxy mortar.
9. Prior approval of precast base is required by the Agency.

LEGEND ON PLANS



M.H. No. 2

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

SAN DIEGO REGIONAL STANDARD DRAWING

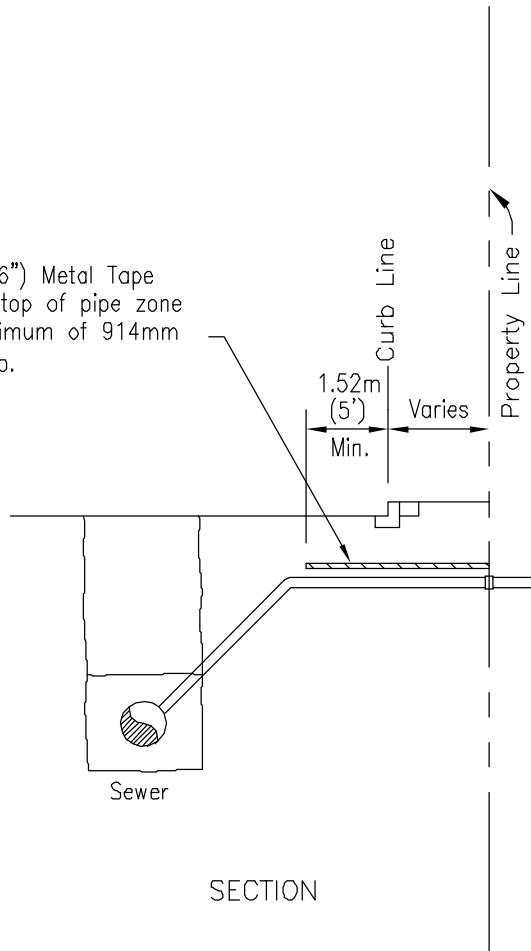
MANHOLE - 1.2m(4') x 914mm(3') DIAMETER
(FOR 381mm(15") MAXIMUM DIAMETER)

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

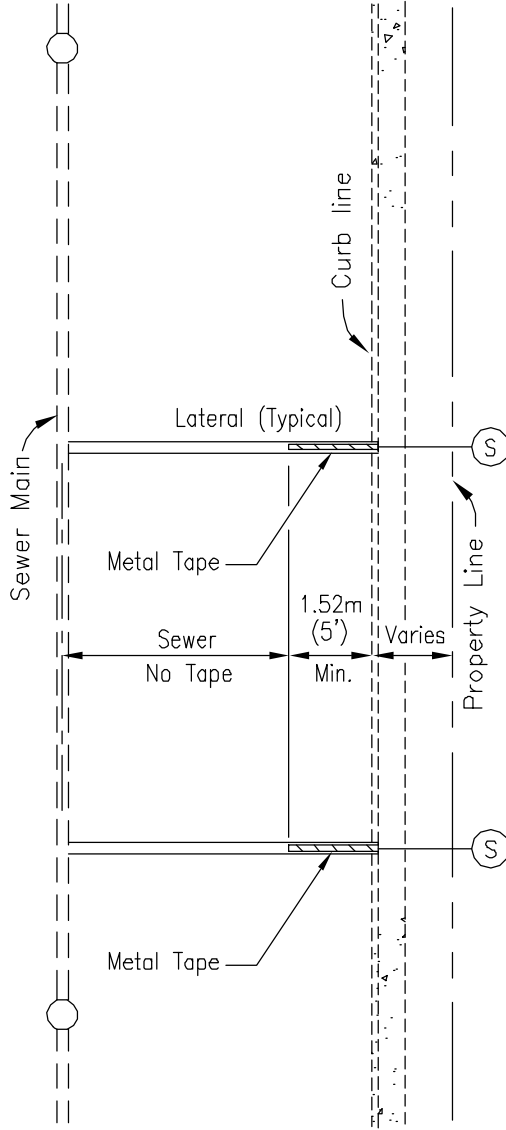
T. Stanton 3/01/0005
Chairperson R.C.E. 19246 Date

DRAWING NUMBER S-17

152mm (6") Metal Tape
 Install at top of pipe zone
 or a maximum of 914mm
 (36") deep.



SECTION



PLAN

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 SEWER PIPE**

RECOMMENDED BY THE SAN DIEGO
 REGIONAL STANDARDS COMMITTEE

T. Stanton 31018003

Chairperson R.C.E. 19246 Date

DRAWING NUMBER **S-19**