

SEWERAGE SYSTEMS

SEWERAGE SYSTEMS

S

SUPPLEMENT TO REGIONAL STANDARD DRAWINGS ("S" SERIES)

NOTES All material used must be on the City of San Diego MWWD "Approved Materials List."


DRAWING S-4

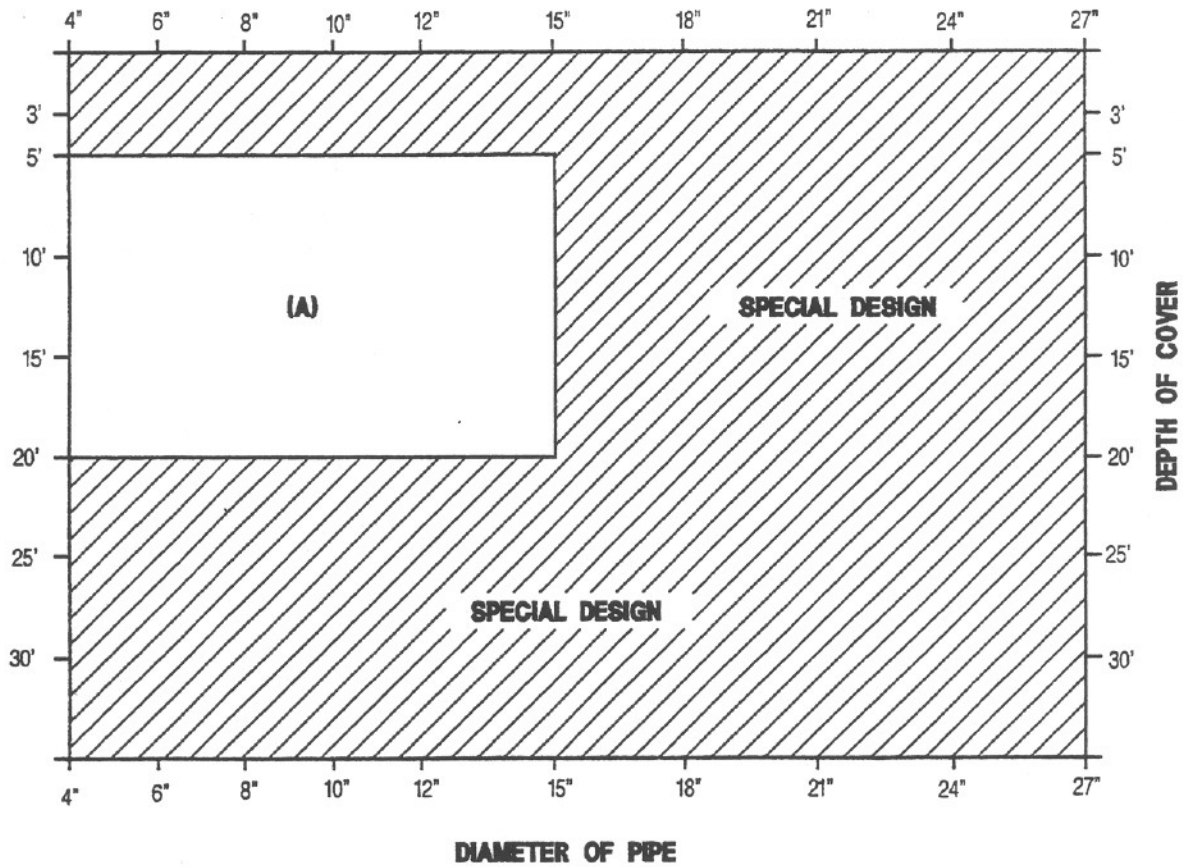
NOTES Amend note 1 to read: "For trenching in improved streets, use Standard Drawings SDG-107 and SDG-108 for trench resurfacing."

Add: 5. "All sanitary sewer pipes shall be bedded using a Type C rock envelope with 3/8 inch max. crushed rock (in lieu of 3/4 inch max.). Side wall clearance for pipe size encasement larger than 15 inches shall be 12 inches maximum or as specified on plans."

DRAWING S-10

Unless otherwise noted, Type "A" shall be used.

REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO - STANDARD DRAWING	CITY OF SAN DIEGO STANDARDS COMMITTEE  Chairperson R.C.E. 64572
ORIGINAL		M. Rollinger	5-20-92		
NOTES	SM	Oskoui	12/03	SUPPLEMENT TO REGIONAL STANDARD DRAWING ("S" SERIES)	DRAWING NUMBER SDS-100



(A) SDR - 35 or pipe stiffness of 46 PSI per ASTM D2412

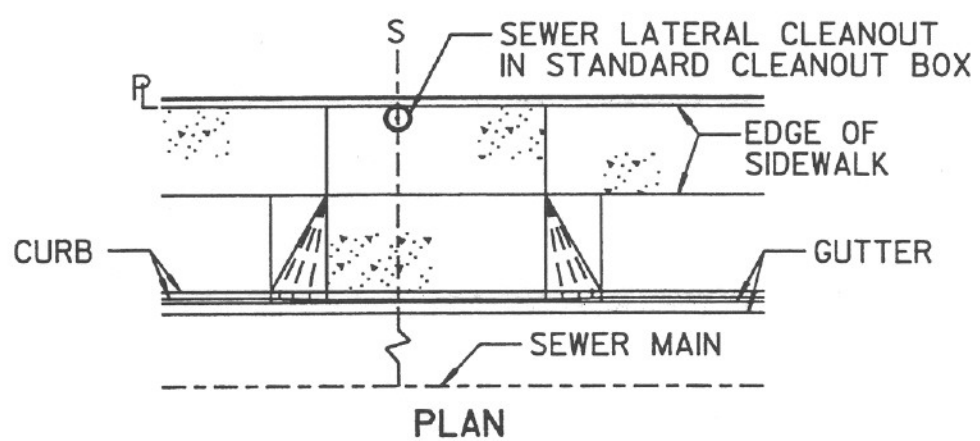
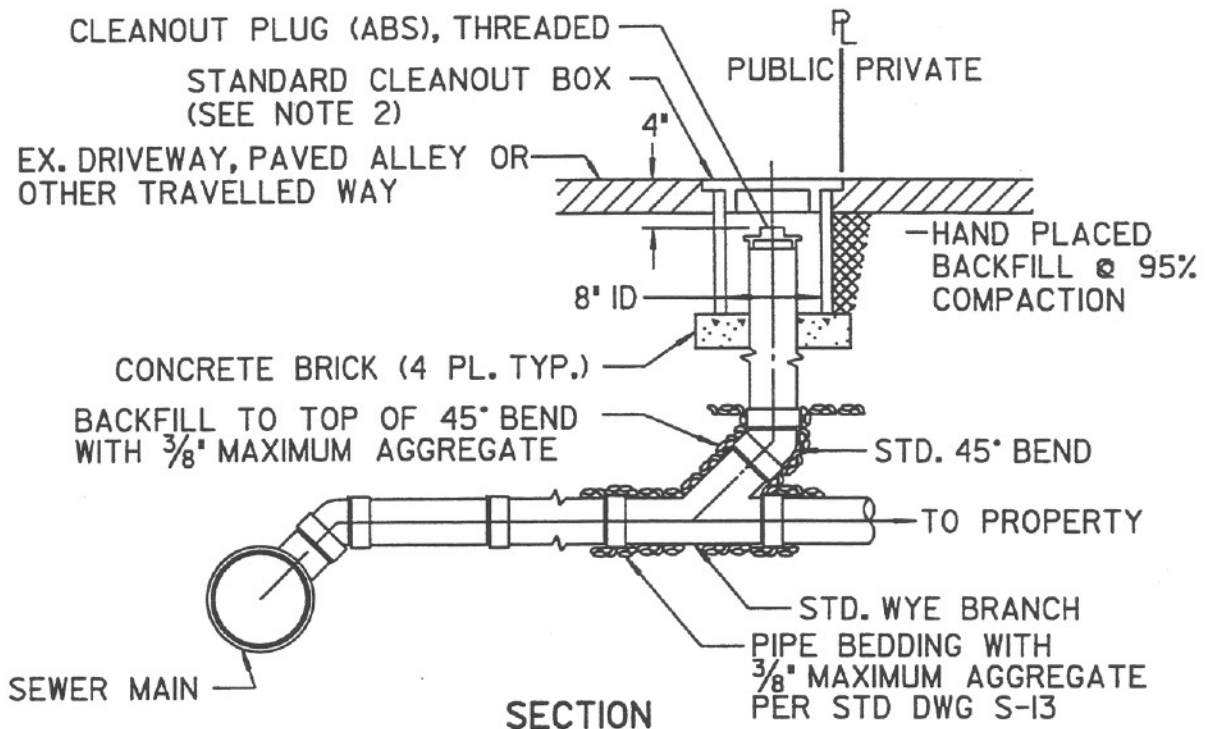
NOTE:

1. This standard drawing shall be used only where existing soil conditions are stable. Stable soil is defined as standard penetration test blow count equal to or greater than 13 blows per foot or shear strength greater than 750 psf. Obtained from unconfined compression test.
2. Standard design assumption : $K_b = .110$, $D_L = 1.0$, $E' = 750$ psi
 $W_c = \text{Prism load @ } W = 125 \text{ lbft}^3$
3. Bedding requirements per Regional Drawing S-4 Type C and SDS-100
4. Installations in ground water shall require a special design.

Design Ref. : ASCE Manuals and reports on Engineering Practice - No. 60 "Gravity Sanitary Sewer Design and Construction."

REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO - STANDARD DRAWING	CITY OF SAN DIEGO STANDARDS COMMITTEE <i>James L. ...</i> 12-23-94 COORDINATOR R.C.E. 25902 DATE
ORIGINAL		J. Mueller	6-15-83		
		J.P. Casey	8-26-86	PERMISSIBLE DEPTH OF COVER FOR PVC PIPE	DRAWING NUMBER SDS-101
		J.P. Casey	11-8-88		

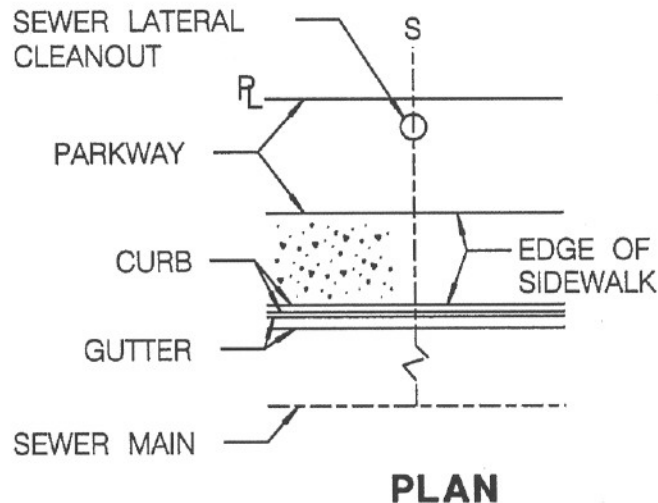
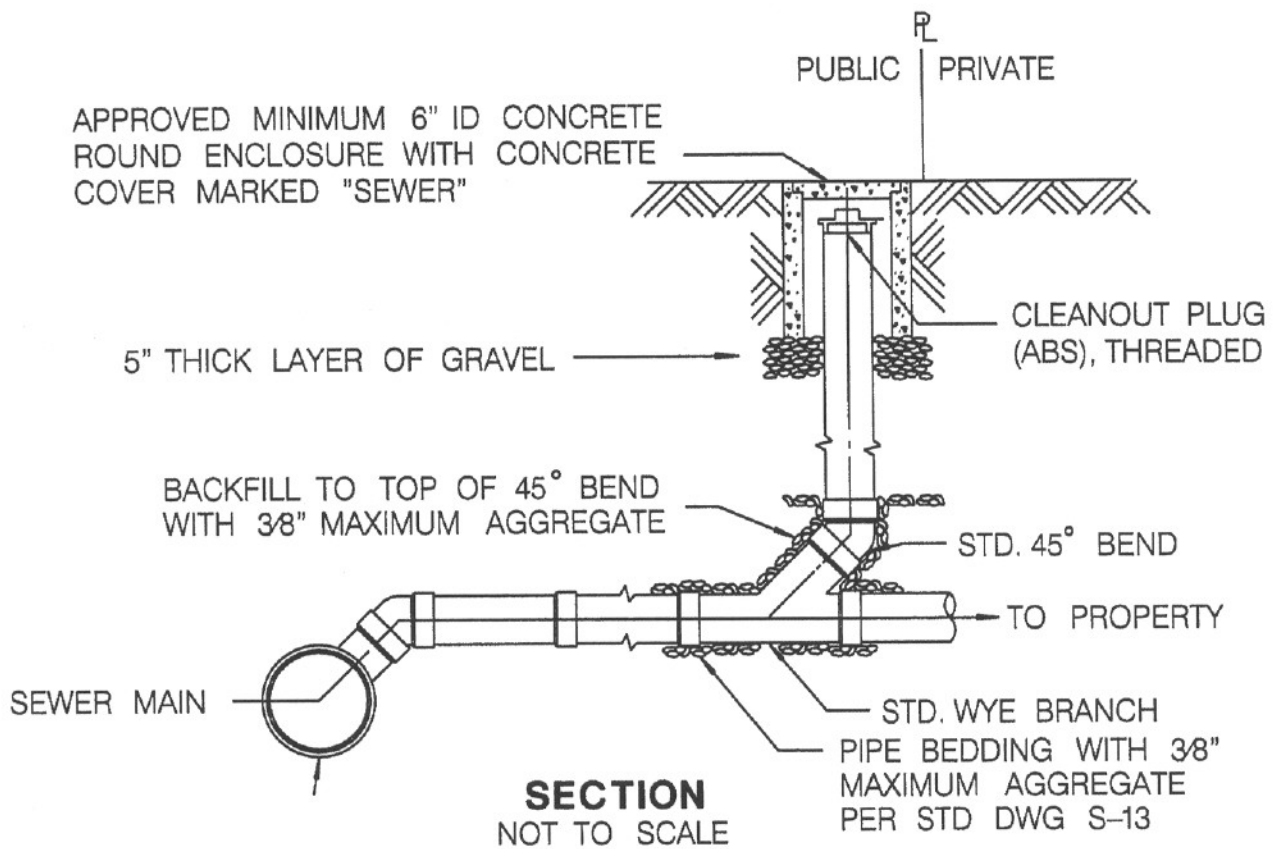
REVISED 9/30/94



- NOTES:
 1. RISER AND CLEANOUT PLUG SHALL BE SAME DIAMETER AS SEWER LATERAL.
 2. CLEANOUT SHALL BE PLACED INSIDE A STANDARD CLEANOUT BOX (SEE S-3, TYPE B CLEANOUT BOX) WITH CAST IRON LID MARKED 'CLEANOUT', OR EQUAL. EQUAL.

(NO SCALE)

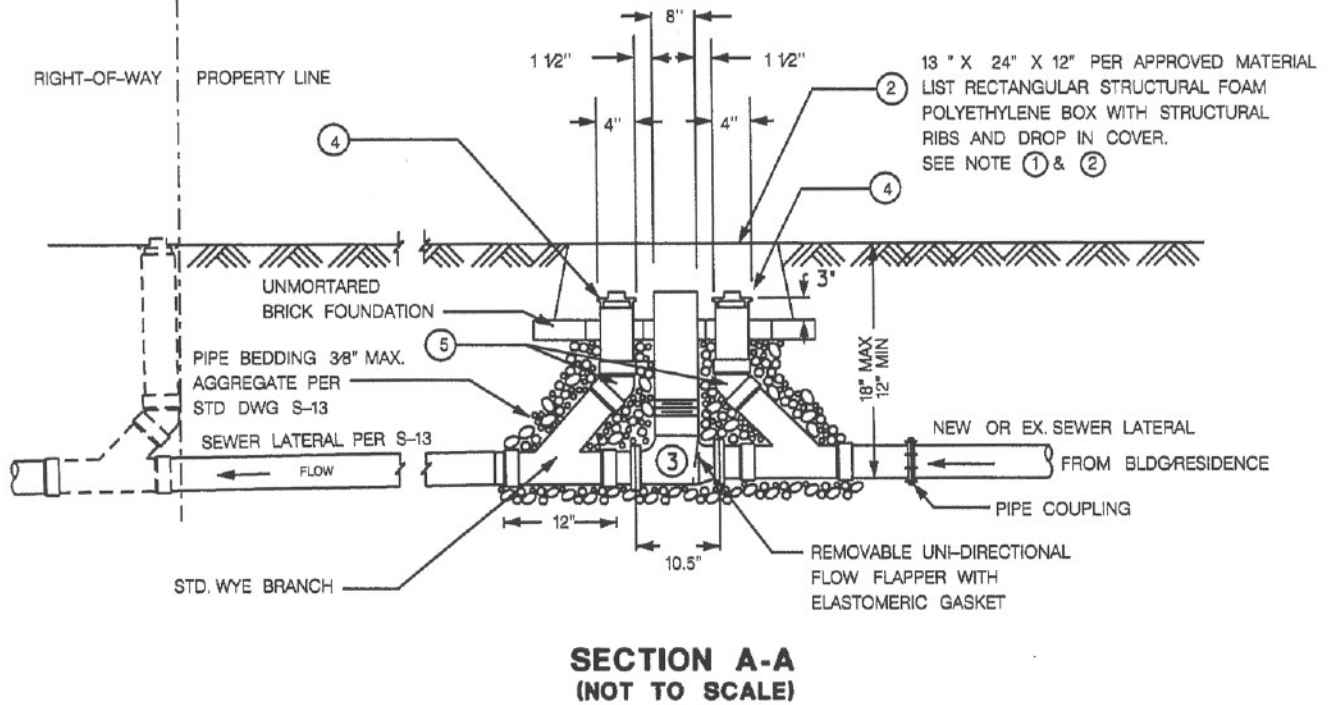
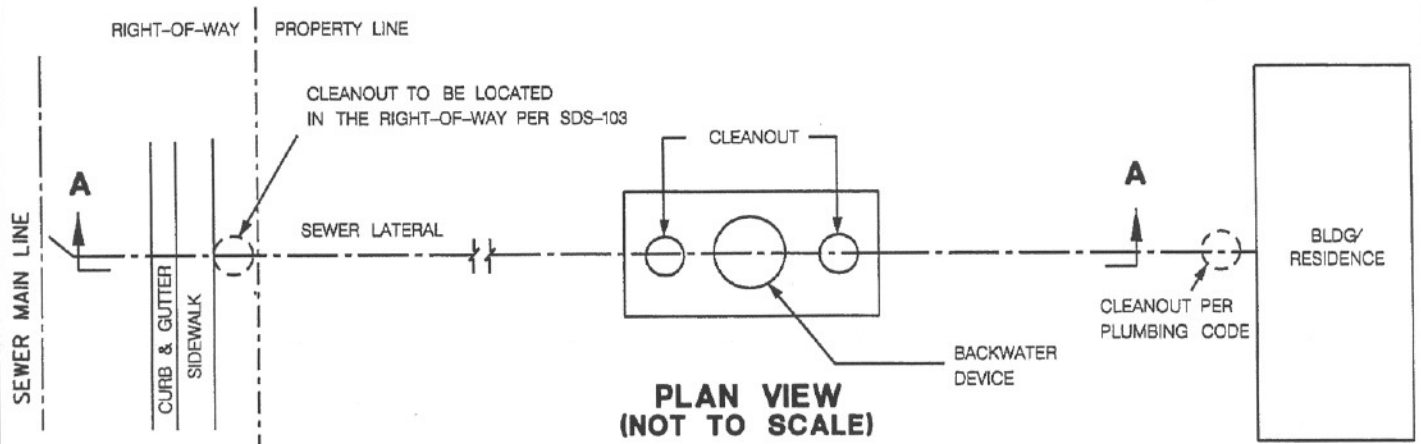
Revision	By	Approved	Date	CITY OF SAN DIEGO - STANDARD DRAWING SEWER LATERAL CLEANOUT (IN DRIVEWAY, PAVED ALLEY, SIDE WALK, OR OTHER AREA SUBJECT TO TRAFFIC)	CITY OF SAN DIEGO STANDARDS COMMITTEE <i>Hon. Rubin</i> 8/10/00 Chairman R.C.E. Date C-35390 DRAWING NUMBER SDS-102



NOTES:

1. RISER AND CLEANOUT PLUG SHALL BE SAME DIAMETER AS SEWER LATERAL.
2. CLEANOUT SHALL BE LOCATED WITHIN CITY RIGHT OF WAY, BEHIND THE SIDEWALK.

Revision	By	Approved	Date	CITY OF SAN DIEGO - STANDARD DRAWING	CITY OF SAN DIEGO STANDARDS COMMITTEE
DETAIL	SMS	Oskoui	12/03		
				DRAWING NUMBER SDS-103	



Notes:

- ① WHEN BACKWATER DEVICE IS INSTALLED IN THE DRIVEWAY, SEE PAGE 2
- ② INSTALL VALVE BOX SO THAT IT IS FLUSH WITH EXISTING PAVEMENT SURFACE OR 1" ABOVE GROUND COVER.
- ③ PVC BACKWATER DEVICE AND ATTACHED PARTS SHALL BE PER THE APPROVED MATERIAL LIST.
- ④ CLEANOUT PLUG (ABS) THREADED.
- ⑤ STANDARD 45° BEND.
- ⑥ OVERSIZED POP-UP CAP.
- ⑦ THREADED PLUG.

SHEET 1 OF 2

Revision	By	Approved	Date
DETAIL	C9S	Oskoui	12/03

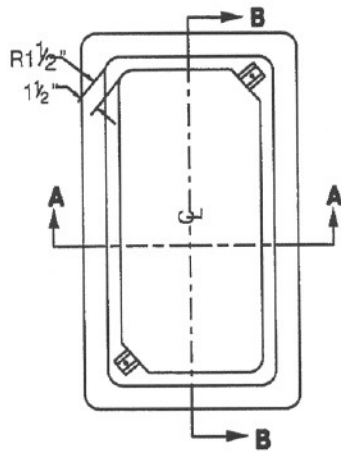
CITY OF SAN DIEGO - STANDARD DRAWING

4" BACKWATER DEVICE

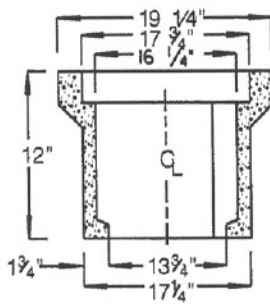
CITY OF SAN DIEGO
STANDARD COMMITTEE

R. G. 12-9-03
Chairperson RCE 64672 Date

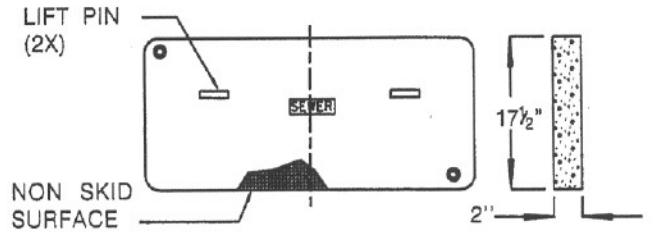
DRAWING NUMBER **SDS-104**



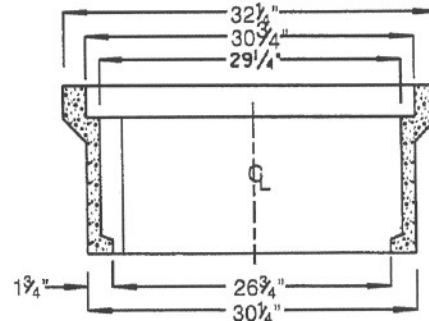
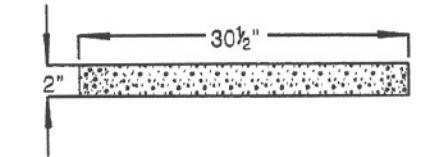
TOP VIEW



SECTION A-A



POLYMER CONCRETE COVER



SECTION B-B

(2X) HEX HEAD BOLTDOWN

LIFT PIN

POLYMER CONCRETE COVER

NON SKID SURFACE

RPM BOX

DETAIL-A

FLOATING NUT

UNISTRUT CHANNEL

DETAIL-A

POLYMER CONCRETE BOX

NOT TO SCALE

NOTE:

1. THE BOX & COVER IS 10K LOAD RATED.

SHEET 2 OF 2

Revised	By	Approved	Date
DETAIL	SMS	Oskoui	12/03

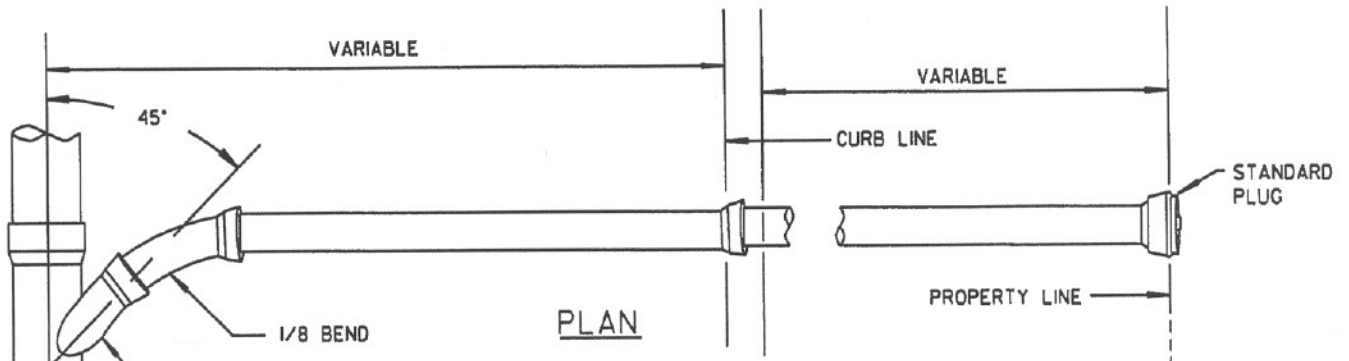
CITY OF SAN DIEGO - STANDARD DRAWING

4" BACKWATER DEVICE

CITY OF SAN DIEGO
STANDARDS COMMITTEE

Bl... 12-9-03
Chairperson RCE 64572 Date

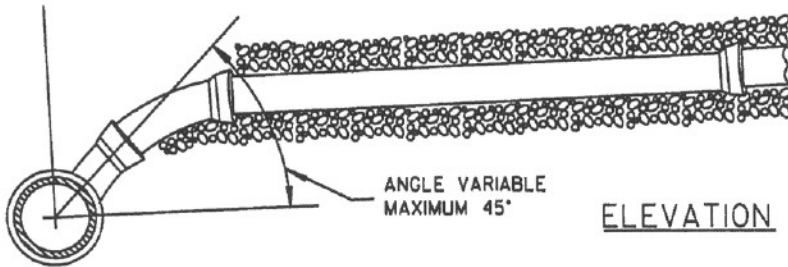
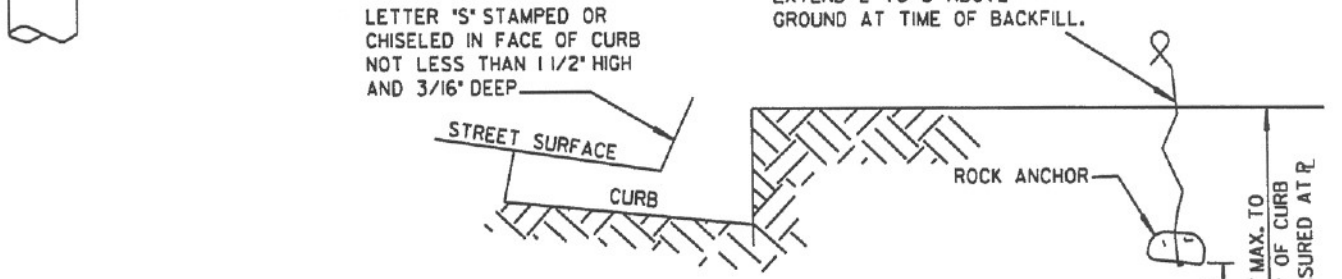
DRAWING NUMBER **SDS-104**



STANDARD WYE OR TEE, OR 'CUT IN' CONNECTION. WHERE A 'CUT IN' CONNECTION IS USED, IT SHALL BE SURROUNDED WITH 4" OF CLASS 470-C-2000 CONCRETE.

LETTER 'S' STAMPED OR CHISELED IN FACE OF CURB NOT LESS THAN 1 1/2" HIGH AND 3/16" DEEP

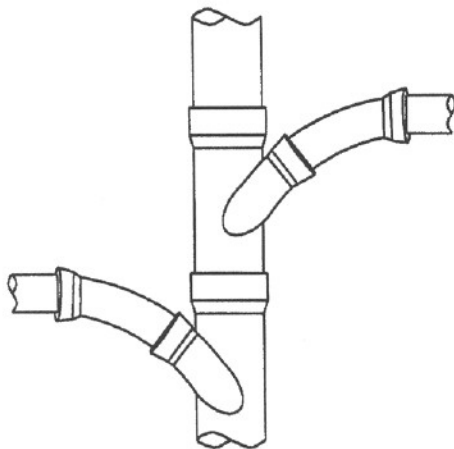
WIRE, #12 OR HEAVIER. EXTEND 2' TO 3' ABOVE GROUND AT TIME OF BACKFILL.



ELEVATION

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
5. DO NOT TAP HOLE AND INSERT LATERAL PIPE DIRECTLY INTO MAIN. ALL CONNECTIONS SHALL BE MADE USING A SADDLE OR WYE CUT IN.
6. SEWER LATERAL SHALL HAVE 6 INCH METAL TAPE WITH GREEN LETTERING INDICATING 'SEWER' INSTALLED ABOVE THE ALIGNMENT OF THE PIPE FROM SEWER MAIN TO PROPERTY LINE, AT A MINIMUM 12 INCHES FROM THE FINISH GRADE AND A MINIMUM OF 12 INCHES FROM THE TOP OF PIPE.



DETAIL SHOWING THE MANNER OF CONNECTING OPPOSITE LATERALS TO A SEWER MAIN. TWO CONNECTIONS SHALL NOT BE MADE IN THE SAME LENGTH OF PIPE.

LEGENDS ON PLANS



Revision	By	Approved	Date
DETAIL	JFP	Oskoui	12/03

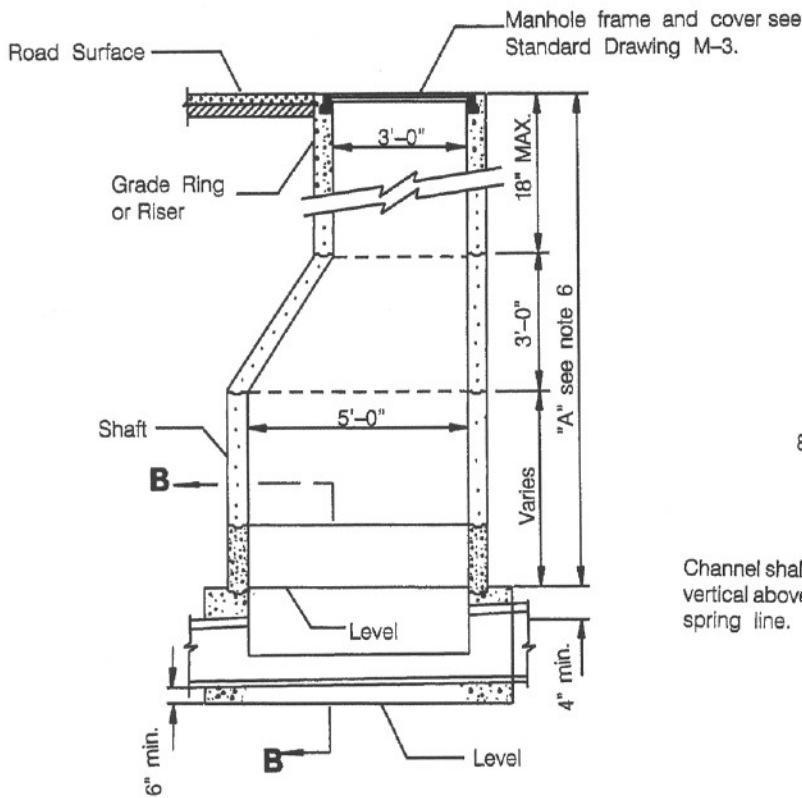
CITY OF SAN DIEGO - STANDARD DRAWING

HOUSE CONNECTION
(SEWER LATERAL)

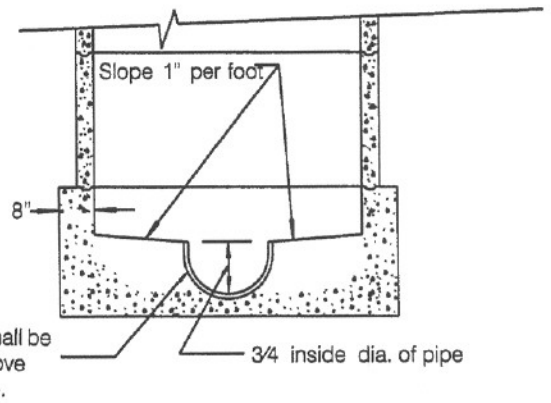
CITY OF SAN DIEGO
STANDARDS COMMITTEE

Blah 12-9-03
Chairperson RCE 64572 Date

DRAWING NUMBER SDS-105



SECTION A-A



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 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 3 ft.)
 - B) 6" to 18" of 3' diameter grade rings and/or risers.
 - C) 5 ft. diameter shaft variable height.
7. Flexible pipe joints shall be required within 12 inches 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
DETAIL	SMS	Oskoui	12/03

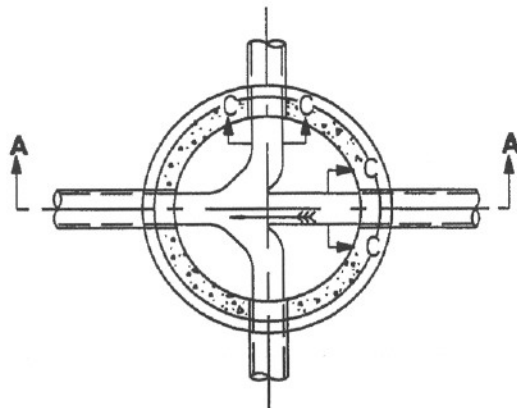
CITY OF SAN DIEGO - STANDARD DRAWING

MANHOLE 5' X 3' DIAMETER

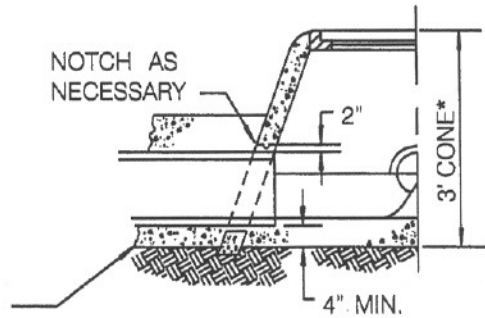
CITY OF SAN DIEGO
STANDARDS COMMITTEE

R. L. H. 12-9-03
Chairperson RCE 64572 Date

DRAWING NUMBER **SDS-106**

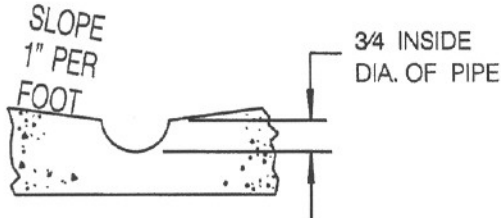


SECTION B-B



CONCRETE
ENCASEMENT
OR BACKFILL

* EITHER CONCENTRIC OR
ECCENTRIC CONE MAY BE USED

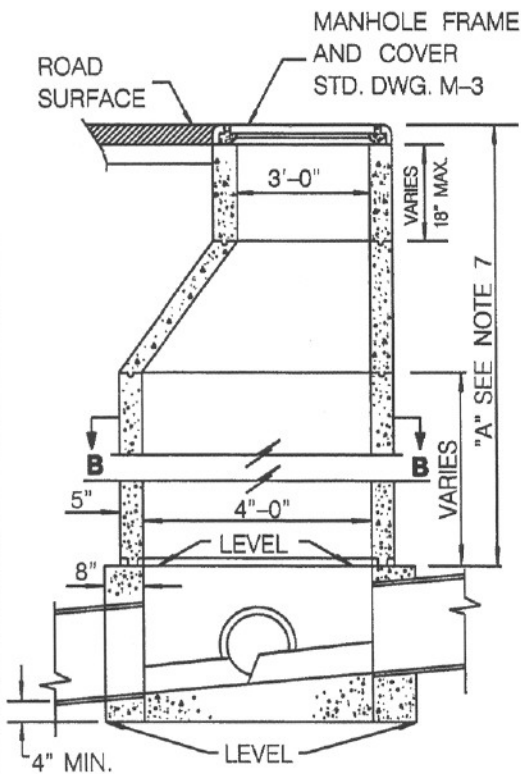


SECTION C-C

HALF SECTION SHALLOW MANHOLE

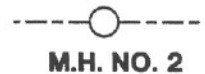
NOTES

1. ALL RISER JOINTS SHALL BE EPOXY MORTARED.
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 560-C-3250.
5. APPROVED WATER STOP REQUIRED FOR PLASTIC PIPE CONNECTIONS.
6. FLEXIBLE JOINTS SHALL BE REQUIRED WITHIN 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 3FT.
 - B) 3" TO 18" OF 3" DIAMETER GRADE RINGS AND /OR RISERS.
 - C) 4FT. DIAMETER SHAFT VARIABLE HEIGHT.
8. ALL PATCHING WITHIN MANHOLE BASE SHALL BE EPOXY MORTAR.
9. PRIOR APPROVAL OF PRECAST BASE IS REQUIRED BY THE AGENCY.
10. MANHOLES SERVING 18 INCH DIAMETER PIPE AND LARGER SHALL USE PRECAST RISERS LINED WITH WHITE PVC SHEETS IMBEDDED WITH LOCKING EXTENSIONS TO THE CONCRETE WALL. THE BASE AND ALL REMAINING EXPOSED CONCRETE SHALL BE COATED WITH AN APPROVED POLYURETHANE COATING.



SECTION A-A

LEGEND ON PLANS



Revision	By	Approved	Date
DETAIL	JFP	Oskoui	12/03

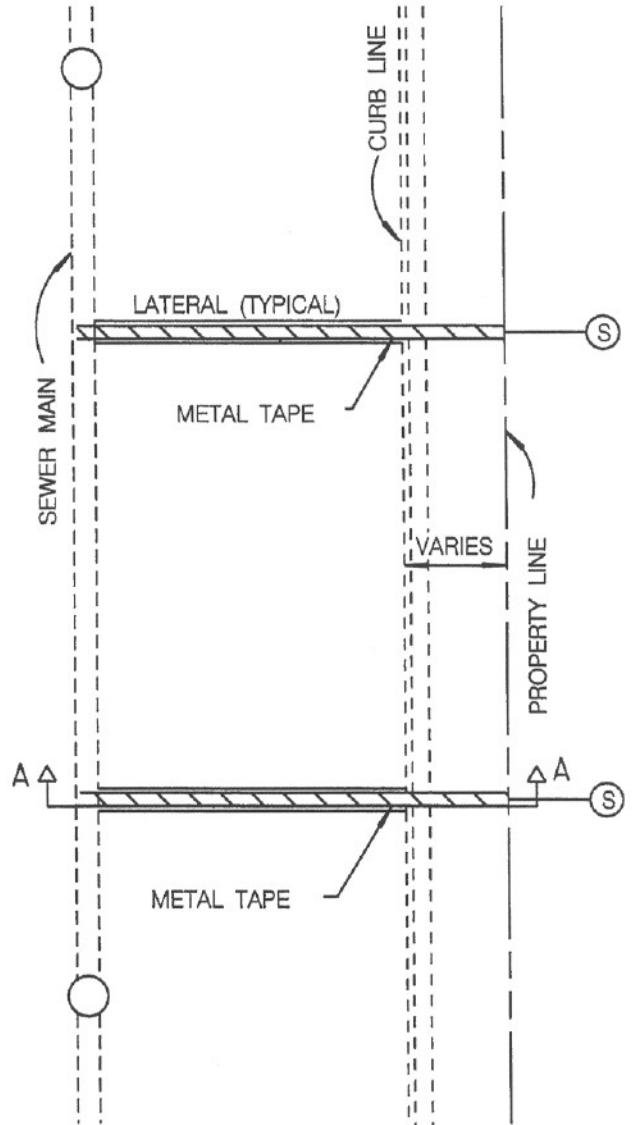
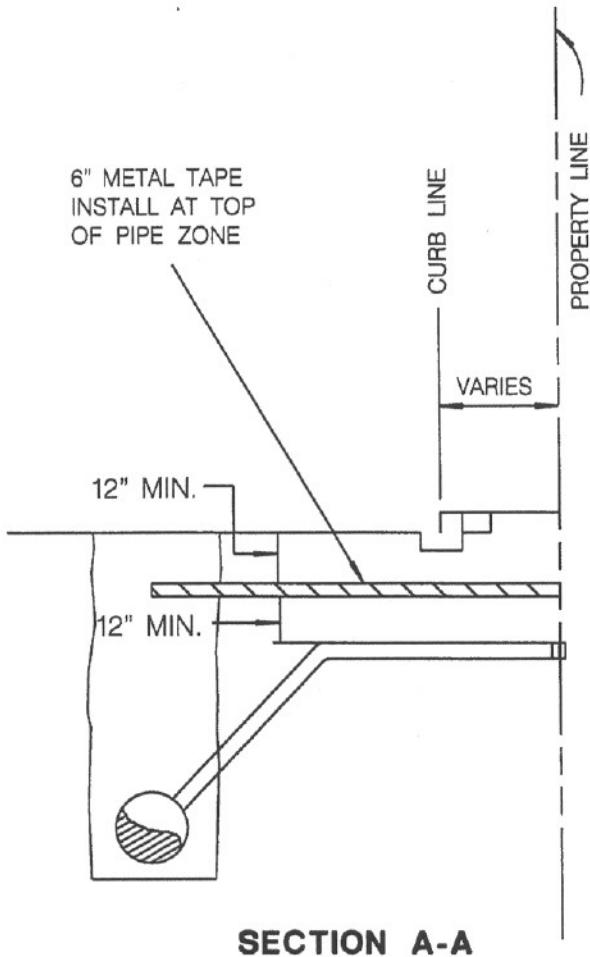
CITY OF SAN DIEGO - STANDARD DRAWING

**MANHOLE - 4' X 3' DIAMETER
(FOR 15" MAXIMUM DIAMETER PIPE)**

CITY OF SAN DIEGO
STANDARDS COMMITTEE

R. L. H. 12-9-03
Chairperson RCE 64572 Date

DRAWING
NUMBER **SDS-107**



NOTE

METAL TAPE SHALL BE INSTALLED ABOVE TOP OF PIPE (ZONE) APPROXIMATELY 12" BELOW PAVEMENT SECTION.

PLAN

REVISION	BY	APPROVED	DATE
DETAIL	SMS	Oskoui	12/03

CITY OF SAN DIEGO - STANDARD DRAWING

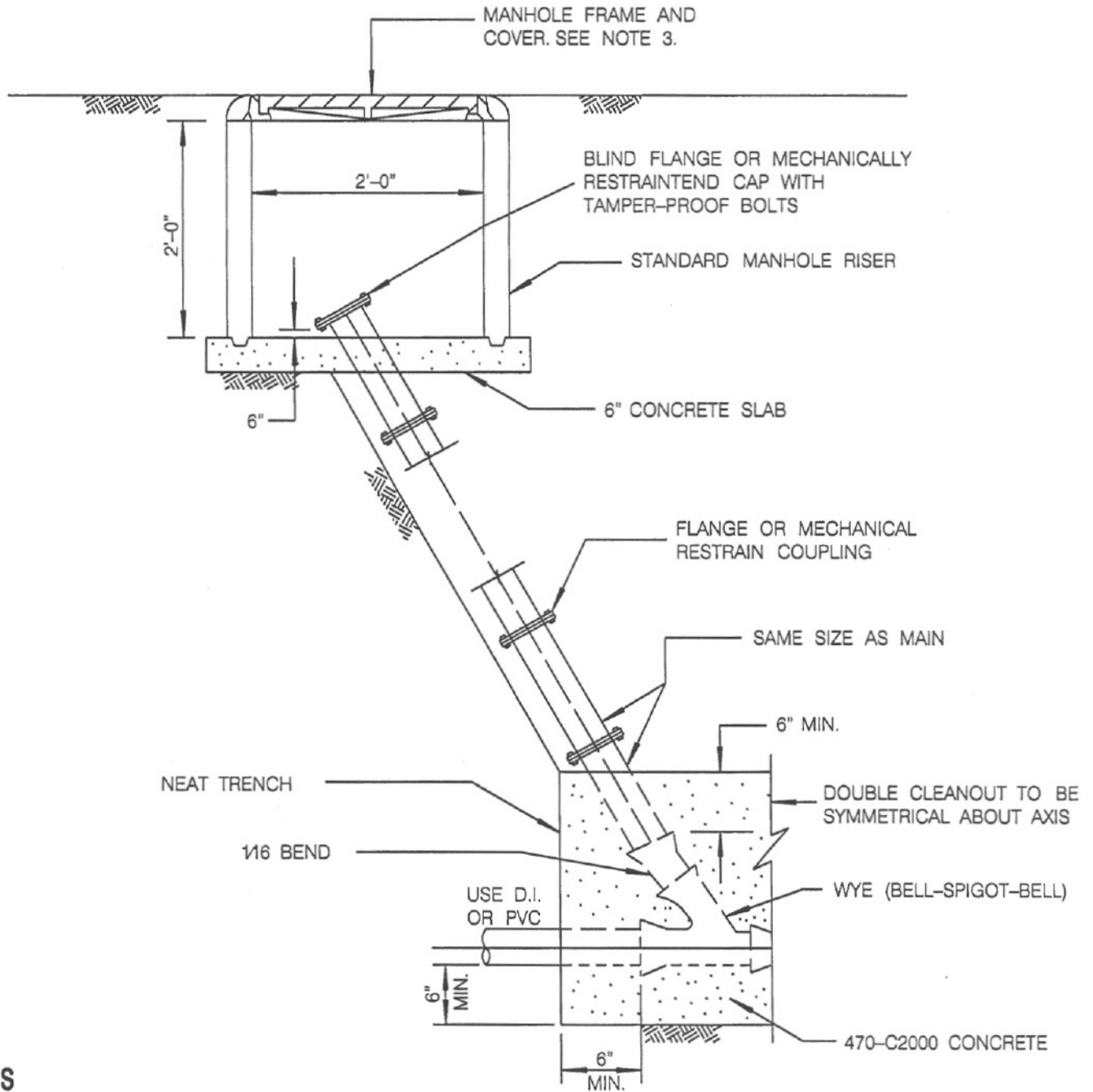
**METALLIC TAPE LOCATOR
FOR NON-METALLIC SEWER PIPE**

CITY OF SAN DIEGO
STANDARDS COMMITTEE

R. L. H. 12-9-03
Chairperson RCE 84572 Date

DRAWING
NUMBER

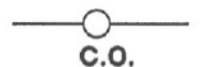
SDS-108



NOTES

1. SIMILAR POLYVINLYL CHLORIDE COMPONENTS MAY BE USED IN ACCORDANCE WITH A.S.T.M. STANDARD SPECIFICATION D-2241 AND D-3139.
2. CONCRETE SLAB SHALL BE 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.
4. MINIMUM PIPE PRESSURE CLASS 200.

LEGEND ON PLANS



Revision	By	Approved	Date
DETAIL	JFP	Oskoui	12/03

CITY OF SAN DIEGO - STANDARD DRAWING

CLEANOUT - SEWER FORCE MAIN

CITY OF SAN DIEGO
STANDARDS COMMITTEE

R. Blah 12-9-03
Chairperson RCE 64572 Date

DRAWING NUMBER **SDS-109**