

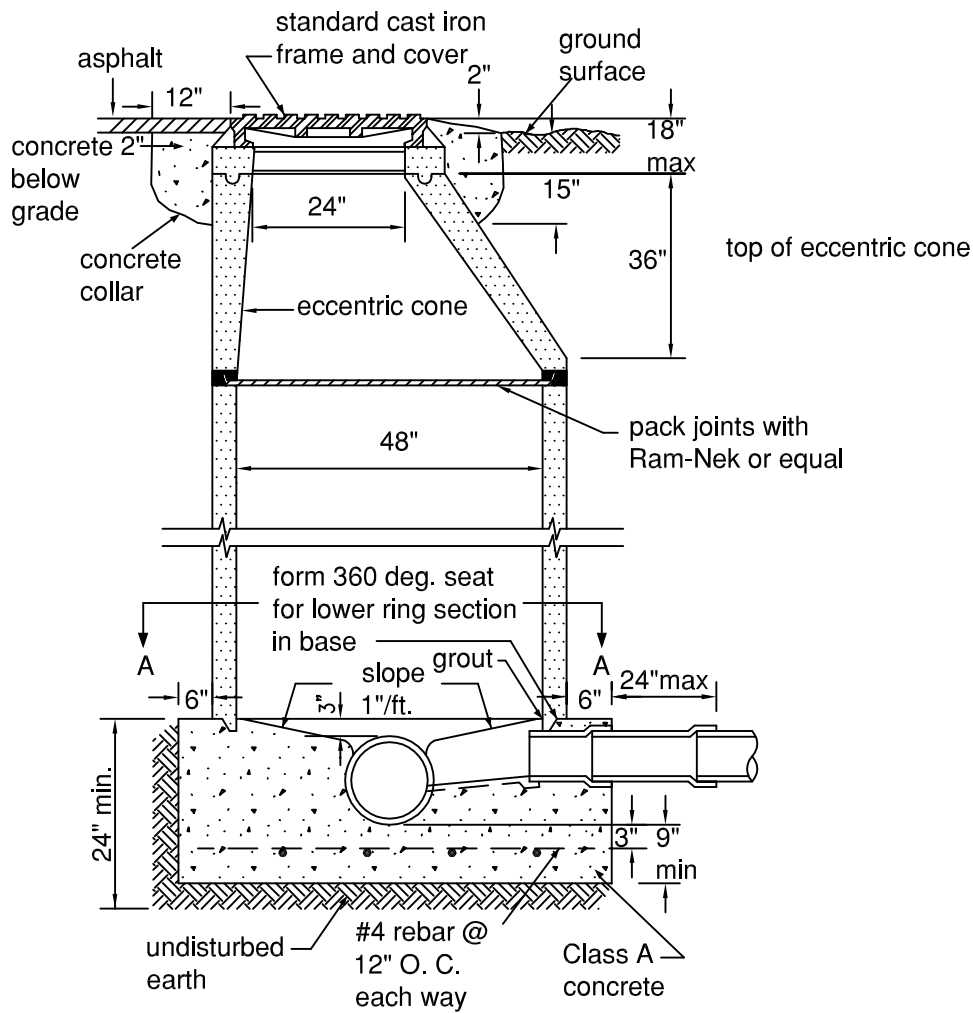
Sewer

CITY/EMID STANDARD DETAILS

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NOTES:

1. All manholes to be set flush with finish grade.
2. Provide a minimum slope of 1" per foot across manhole when line bends/or pipe diameter changes.
3. Cement shall be Type V.
4. Concrete shall be Class A.
5. All joints shall be made water-tight with neoprene gaskets or Ram-Nek.
6. Minimum crown elevation of small diameter inlet pipe shall be no less than the crown elevation of the outlet pipe.
Maximum drop from invert of inlet pipe to crown of outlet pipe shall be 1'.
7. Lay pipe through manhole when possible.
8. Top half of pipe to be removed within manhole. Trim off to neat line and finish off with grout to leave smooth finish.
9. Provide two joints at all entry points to manhole.
10. Provide 6" of $\frac{3}{4}$ " "Crushed" Drain Rock under PCC foundation if water is present in excavation.

ESTERO MUNICIPAL IMPROVEMENT DISTRICT
CITY OF FOSTER CITY, CALIFORNIA

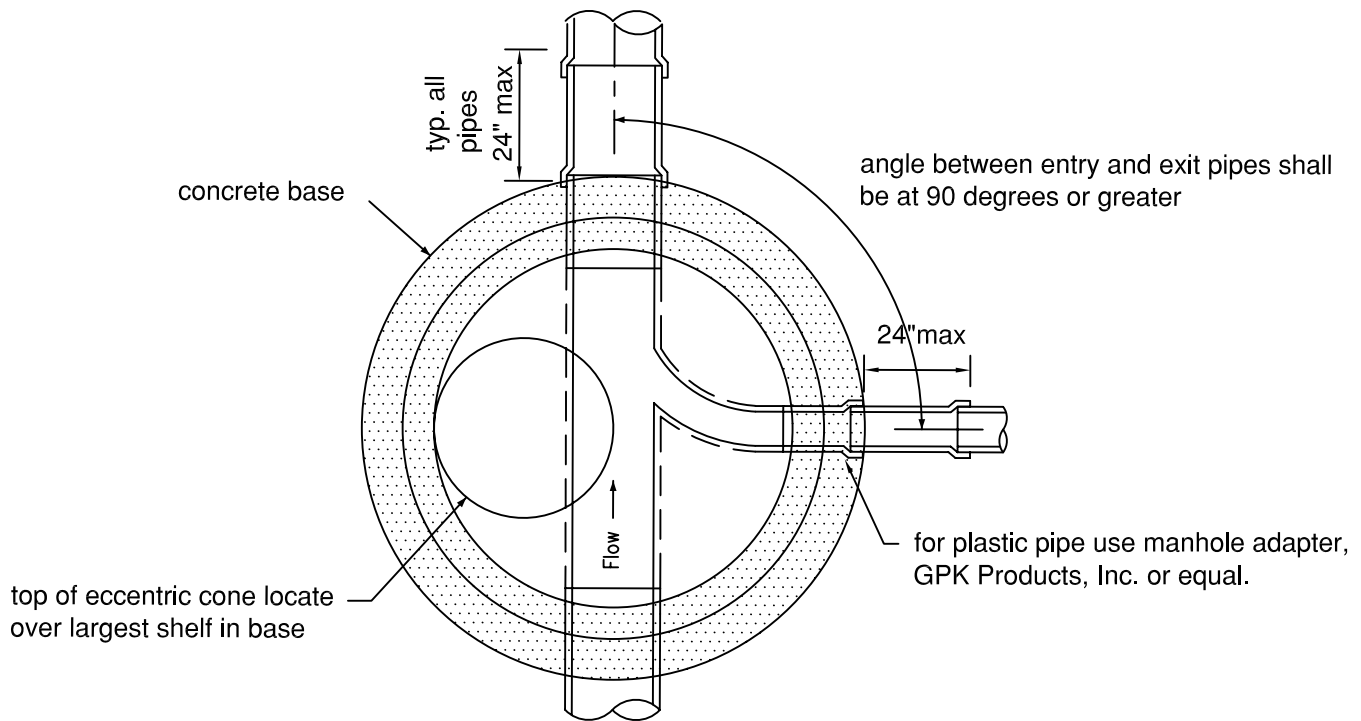
SEWER
TYPE I MANHOLE (PIPES 6" TO 21")

Rev.	Date	Description
DWN:		Dwg. Sewers 01
CHK:		

APPROVED: _____
CITY/DISTRICT ENGINEER

APPROVED: _____
DEPARTMENT SUPERNTENDENT

SCALE: NONE
DATE: Nov. 2007



SECTION A-A
FROM SEWERS 01

NOTES:

1. All manholes must pass the vacuum test per specification in accordance to ASTM Designation C1244 (Latest Version).
2. The test shall be done after assembly of the manhole, but before backfill.
3. All lift holes shall be filled with non-shrink grout.
4. All pipes entering the manhole shall be plugged. Taking care to secure the plug from being drawn into the manhole.
5. The test head shall be placed inside the top of the cone section and the seal inflated in accordance with the manufacturer's recommendation.
6. A vacuum of 10# of mercury (approx. 5 PSI) shall be drawn and the vacuum shut off with the valves closed.
7. The time shall be measured for the vacuum to drop to 9#. The manhole shall pass if the time is greater than 60 sec. for a 48" manhole, 75 sec. for a 60", and 90 sec. for a 72".
8. If the manhole fails the initial test, necessary repairs shall be made with a non-shrink grout while the vacuum is being drawn. Retesting shall proceed until a satisfactory test is obtained.
9. The contractor is to perform the test and supply all test equipment.
10. Prior to performing the test the following should be completed:
 - a. Joints shall be mortared inside and out.
 - b. The entire interior of the manhole shall be coated with Xypex, or approved equal.
 - c. Coat all exterior manholes located below grade with bitumastic sealer.

ESTERO MUNICIPAL IMPROVEMENT DISTRICT
CITY OF FOSTER CITY, CALIFORNIA

SEWER
TYPE I MANHOLE (PIPES 6" TO 21")

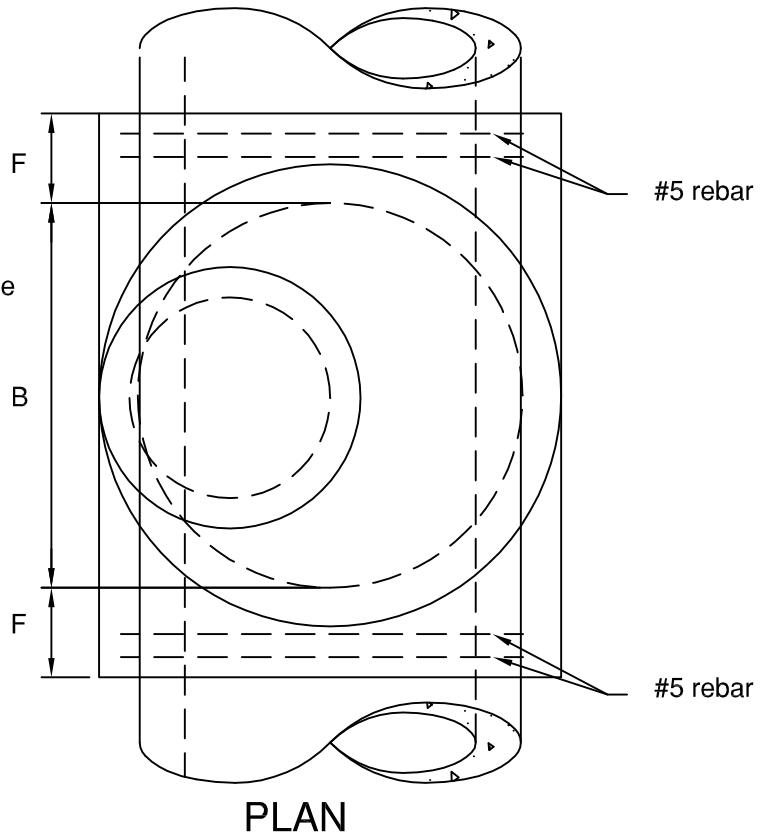
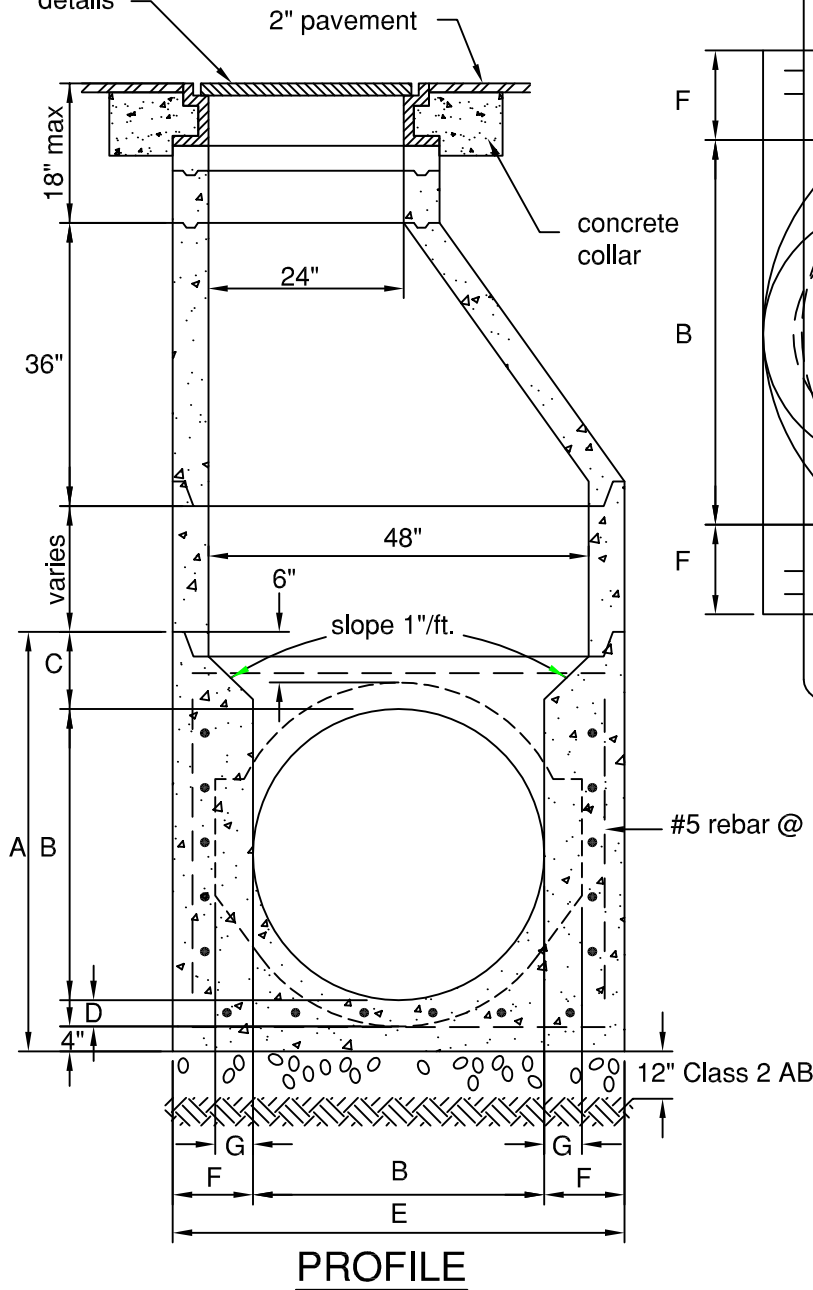
Rev.	Date	Description
DWN:		Dwg. Sewers 02
CHK:		

APPROVED: _____
CITY/DISTRICT ENGINEER

APPROVED: _____
DEPARTMENT SUPERINTENDENT

SCALE: NONE
DATE: Nov. 2007

see type 1 manhole
drawing for barrel and top
details



DIA.	A	B	C	D	E	F	G
24"	40"	24"	9"	3"	56"	16"	3"
27"	43"	27"	9"	3"	56"	14.5"	3"
30"	46"	30"	9"	3"	56"	13"	3"
36"	53"	36"	9.5"	3.5"	56"	10"	3"
42"	60"	42"	10"	4"	60"	9"	4"
48"	68"	48"	11"	5"	66"	9"	5"

NOTES:

1. All reinforced steel shall be 2" clear from outside wall.
2. All reinforced steel overlap shall be 16" minimum.

ESTERO MUNICIPAL IMPROVEMENT DISTRICT
CITY OF FOSTER CITY, CALIFORNIA

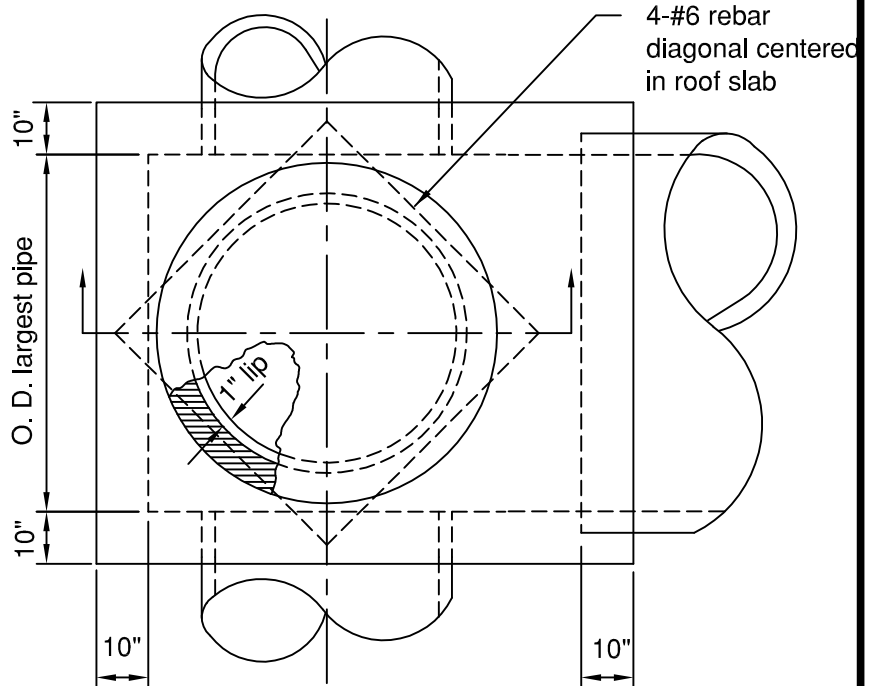
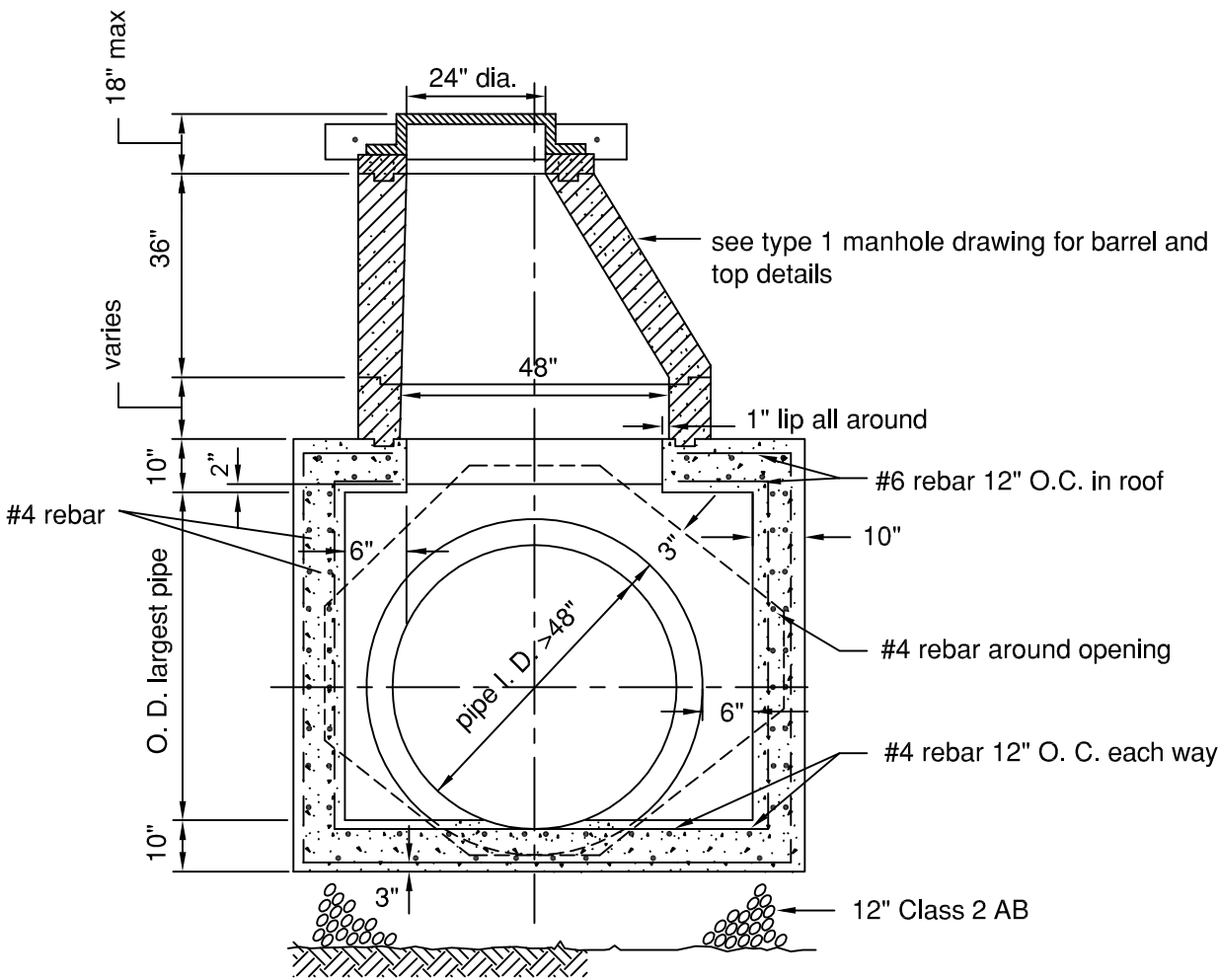
SEWER
TYPE II MANHOLE (PIPES 24" TO 48")

Rev.	Date	Description
DWN:		Dwg. Sewers 03
CHK:		

APPROVED: _____
CITY/DISTRICT ENGINEER

APPROVED: _____
DEPARTMENT SUPERINTENDENT

SCALE: NONE
DATE: Nov. 2007



NOTES:

1. All reinforced steel shall be 2" clear from outside wall.
2. All reinforced steel over lap shall be 16" minimum.

ESTERO MUNICIPAL IMPROVEMENT DISTRICT
CITY OF FOSTER CITY, CALIFORNIA

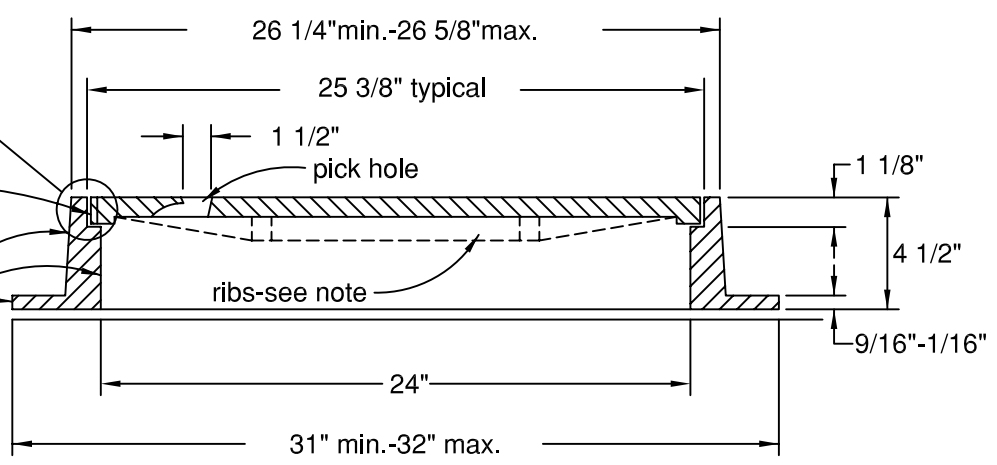
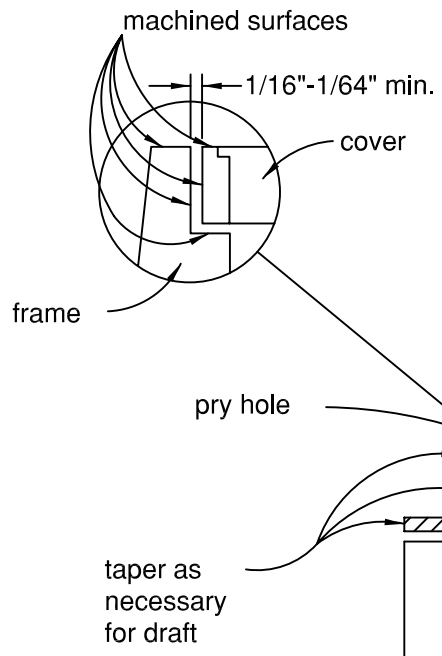
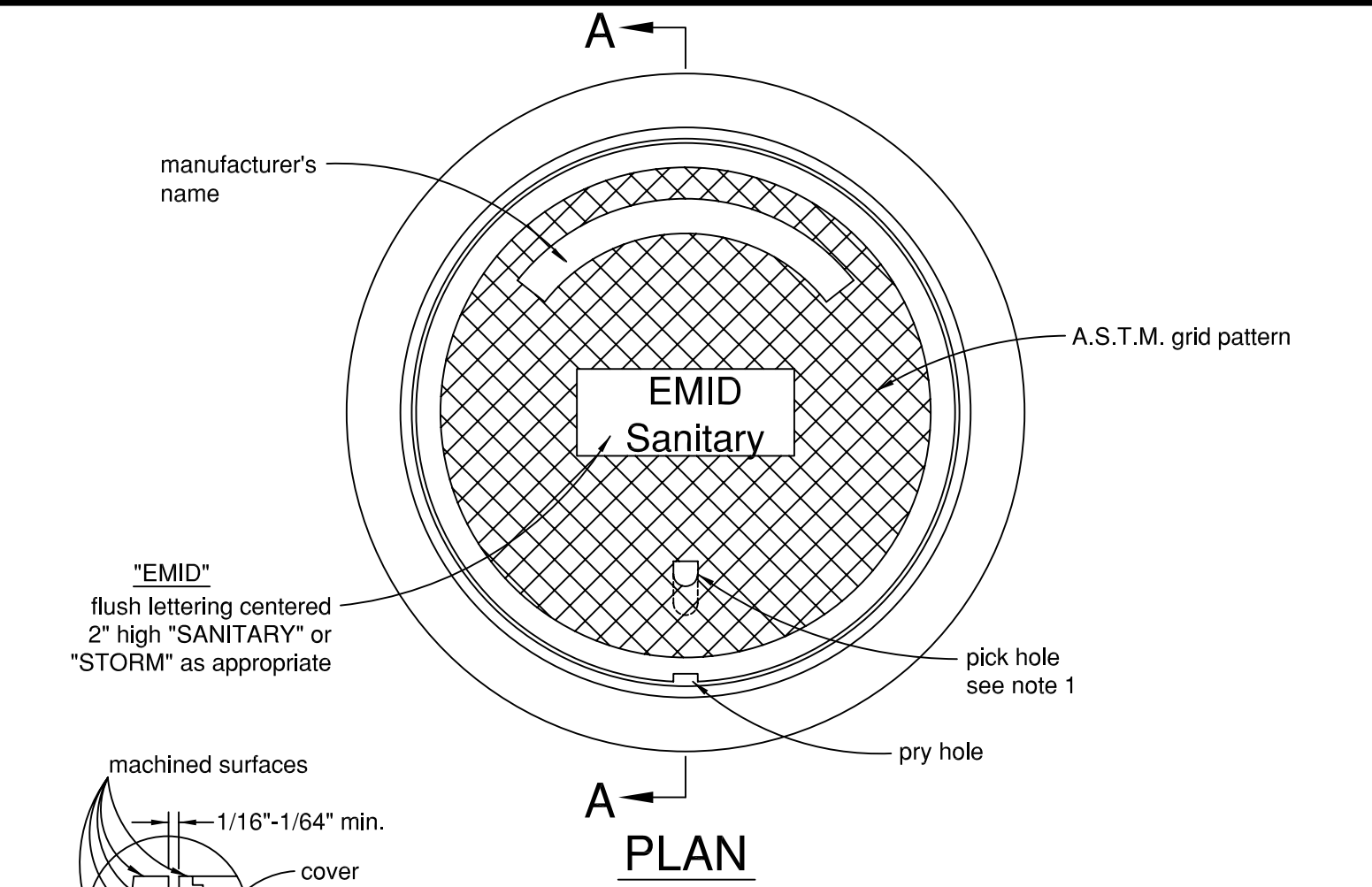
SEWER
TYPE III MANHOLE (PIPES LARGER THAN 48")

Rev. Date	Description
DWN:	Dwg. Sewers 04
CHK:	

APPROVED: _____
CITY/DISTRICT ENGINEER

APPROVED: _____
DEPARTMENT SUPERINTENDENT

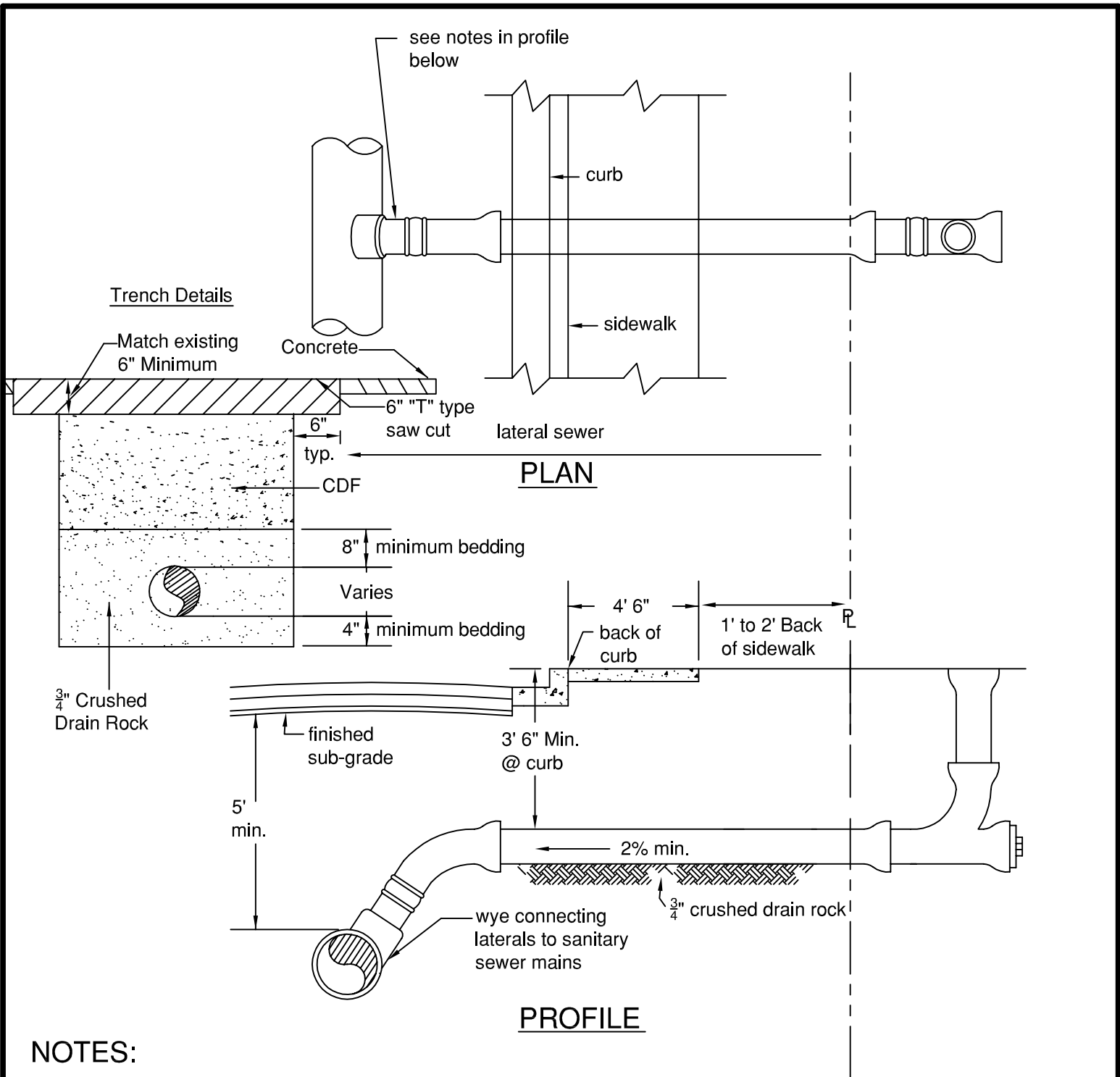
SCALE: NONE
DATE: Nov. 2007



NOTES: **SECTION A-A**

1. Cover may be furnished with or without ribs, but must be designed for H-20 highway loading. Pick holes shall fit standard pick and be formed such that bars or sticks can not fall through.
2. Frame and cover may be Phoenix Iron Works No. 1090, D & L Supply No. A-102 or approved equal.

ESTERO MUNICIPAL IMPROVEMENT DISTRICT CITY OF FOSTER CITY, CALIFORNIA				
SEWER MANHOLE FRAME & COVER		Rev. Date	Description	
		DWN:	Dwg. Sewers 05	
		CHK:		
APPROVED: _____	APPROVED: _____	SCALE: NONE		
CITY/DISTRICT ENGINEER	DEPARTMENT SUPERINTENDENT	DATE: Nov. 2007		



NOTES:

1. When a sewer lateral is installed in advance of the house sewer, it shall be terminated at or near the property line and it shall be the responsibility of the developer to mark the location of the plugged end.
2. Swimming pool drains shall not be connected to sanitary sewer (side) laterals.
3. Pipe shall be PVC (SDR 26) or VCP (SDR 17) or HDPE.
4. Pipe bedding shall be 3/4" crushed drainrock.
5. Backfill shall be CDF.
6. A concrete pipe cap shall be installed of less than 30" of cover.

ESTERO MUNICIPAL IMPROVEMENT DISTRICT
CITY OF FOSTER CITY, CALIFORNIA

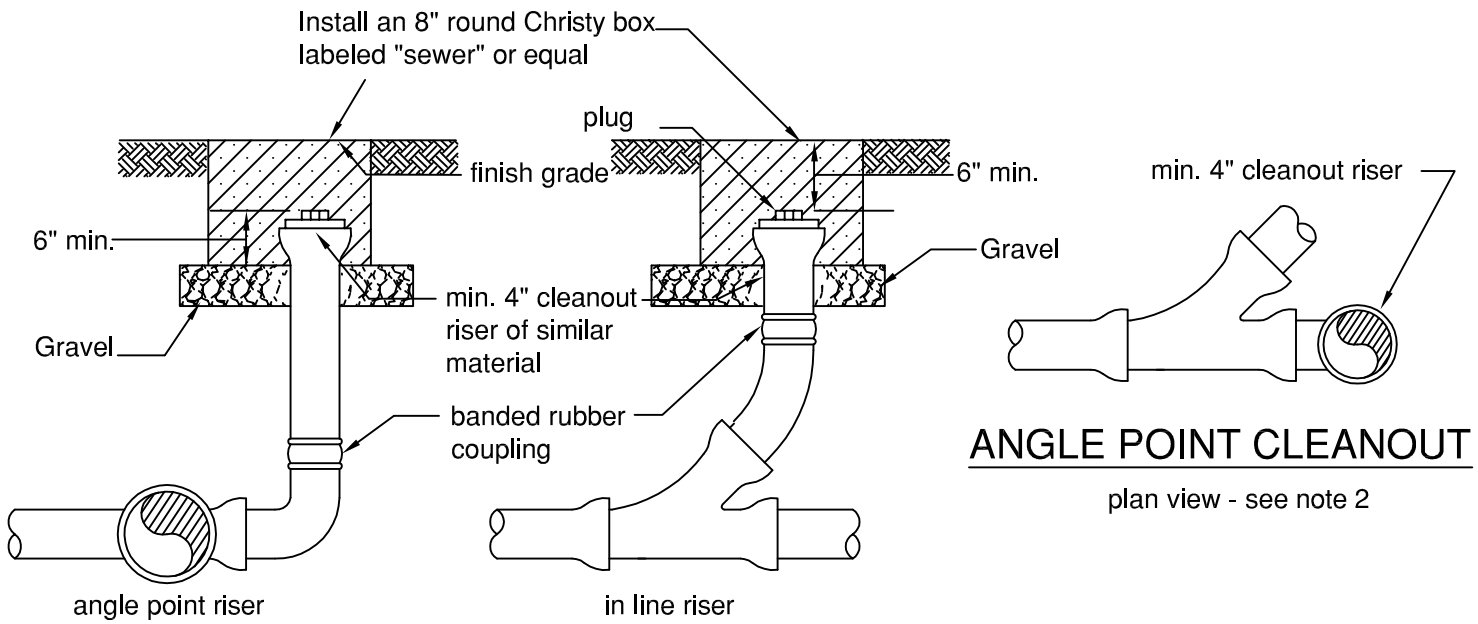
SEWER
SANITARY SEWER SIDE LATERAL

Rev. Date	Description
DWN:	Dwg. Sewers 06
CHK:	

APPROVED: _____
CITY/DISTRICT ENGINEER

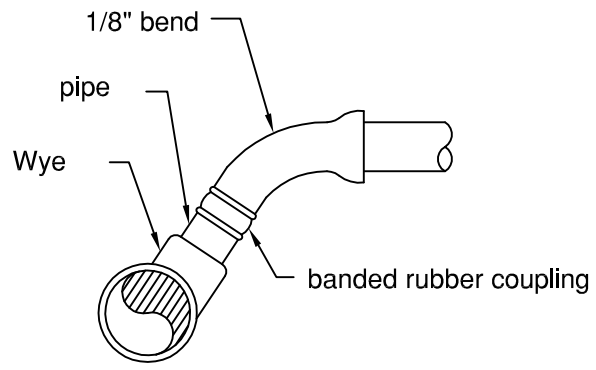
APPROVED: _____
DEPARTMENT SUPERINTENDENT

SCALE: NONE
DATE: Nov. 2007

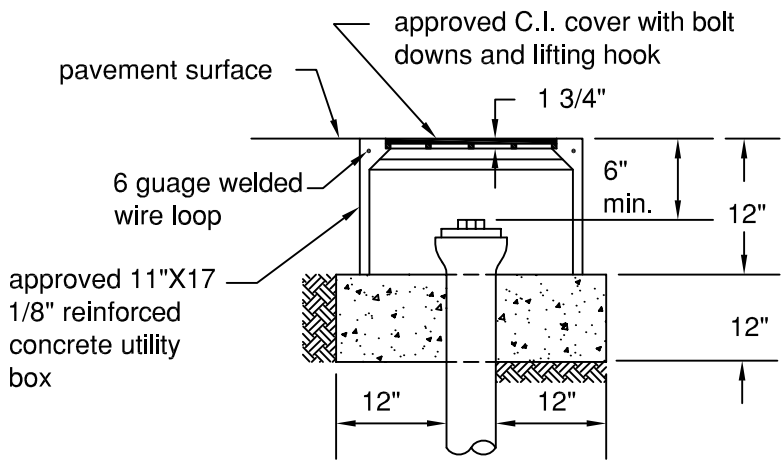


CLEANOUT RISER

see note 1



SADDLE CONNECTION

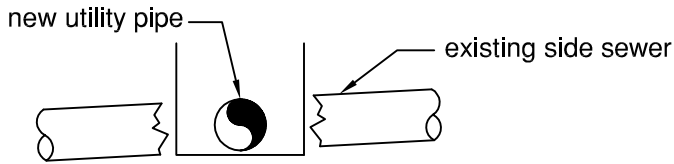


CLEANOUT RISER IN ROADWAY

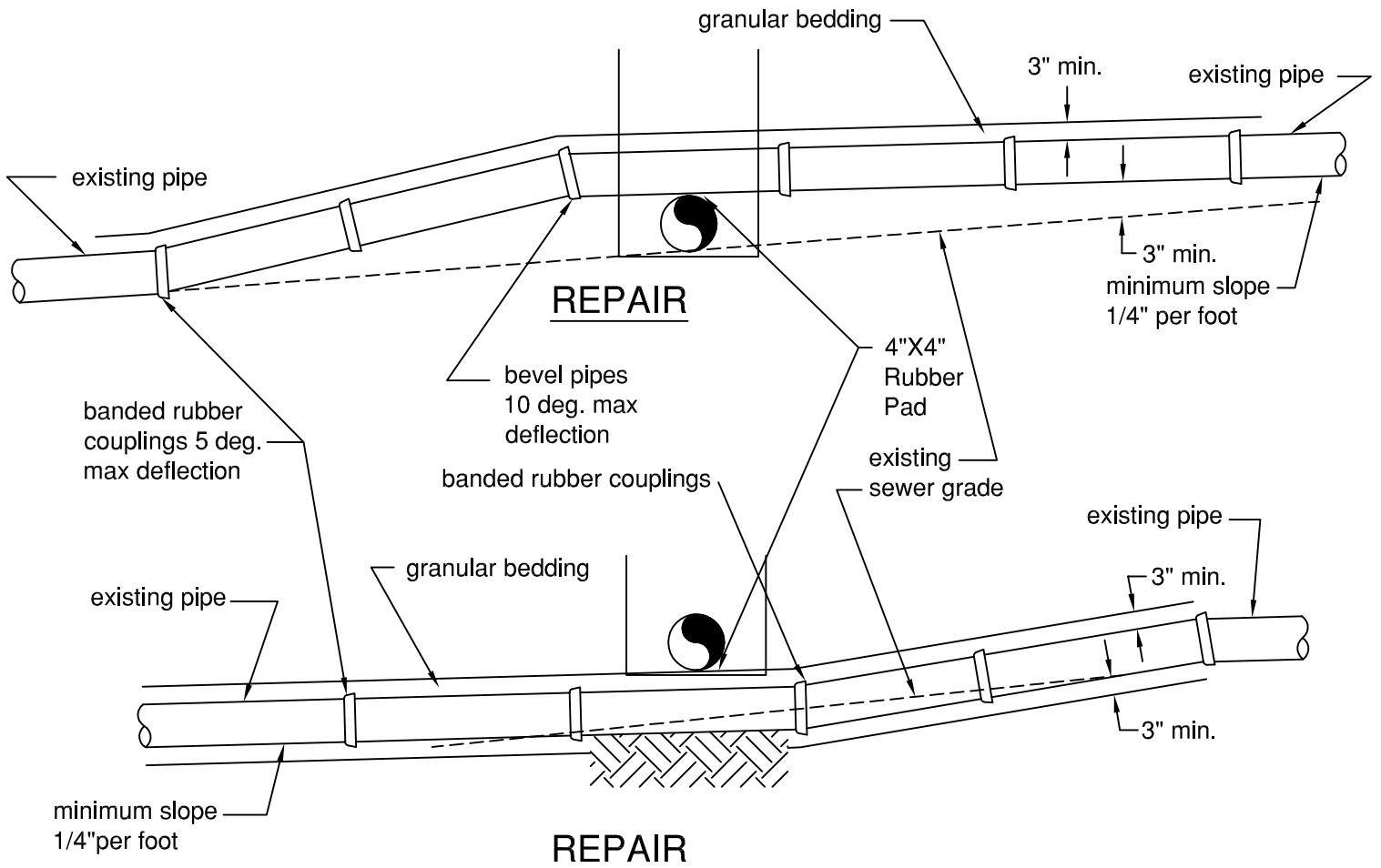
NOTES:

1. If cleanout is not installed prior to installation of side sewer, it shall be the same size as the side sewer.
2. Angle point cleanout required in a side sewer deflections shall be 45 degrees or greater.
3. Pipe shall be PVC (SDR 26) or VCP (SDR 17) or HDPE.
4. See Sewers 09 for additional notes.
5. Pipe Bedding Shall be $\frac{3}{4}$ " crushed drainrock.
6. Backfill shall be CDF.
7. A concrete pipe cap shall be installed if less than 30" of cover.

ESTERO MUNICIPAL IMPROVEMENT DISTRICT CITY OF FOSTER CITY, CALIFORNIA					
SEWER		Rev. Date	Description		
SEWER LATERAL WITH BRANCH CONNECTIONS		DWN:	Dwg. Sewers 07		
		CHK:			
APPROVED: _____	APPROVED: _____	SCALE: NONE			
CITY/DISTRICT ENGINEER	DEPARTMENT SUPERINTENDENT			DATE: Nov. 2007	



BREAK OR CONFLICT



SIMPLE SIDE SEWER BREAK WITH CONFLICT IN GRADE

NOTE:

- 1. See Sewers 09, for additional notes.

ESTERO MUNICIPAL IMPROVEMENT DISTRICT
CITY OF FOSTER CITY, CALIFORNIA

SEWER
SANITARY SEWER LATERAL REPAIRS

Rev. Date	Description
DWN:	Dwg. Sewers 08
CHK:	

APPROVED: _____
CITY/DISTRICT ENGINEER

APPROVED: _____
DEPARTMENT SUPERINTENDENT

SCALE: NONE
DATE: Nov. 2007

ADDITIONAL NOTES FOR Sewers 07 and 08

REPAIR AND/OR RELOCATION PROCEDURE

1. Notify City of Foster City 48 hours in advance of work.
2. Trim side sewer pipe to a clean cut, undamaged end, a minimum of 18" into trench wall. Cut piece of new ductile iron pipe, coal tar epoxy lined and polyethylene wrapped, of equal diameter to fit space between trimmed ends with a maximum clearance of 1/4" at each end. Remove pipe stop ring from one banded rubber coupling and install the coupling on the upstream end of the side sewer. Then place another banded rubber coupling on the downstream end. Place an adapter ring of the proper size on each end of the pipe replacement section, then insert one end in the coupling on the downstream end. Align pipes at upstream end and slide coupling downstream, centering it over the joint. Tighten coupling bands.
3. Repair shall be made as shown herein. Repair may be made with the same type of pipe as the existing sewer. When O. D.'s are within 1 inch of each other, there shall be a 4" X 4" pad of 35-45 durometer rubber placed snugly between the pipes.
4. When new utility pipe or conduit conflicts with sewer grade line, the utility pipe or conduit shall be raised or lowered, if possible, to miss the sewer line. If not possible to move the utility line, written permission shall be acquired from the City of Foster City/EMID and the sewer line relocated in accordance with one of the details above. When O. D. of pipes are within 1" of each other, there shall be a 4" X 4" pad of 35-45 durometer rubber placed snugly between the pipes.

NOTES:

1. Alterations of sewer grades will be permitted only after written permission has been received from the City Engineer. All repairs shall be made by a licensed contractor at the expence of those responsible for damage, unless otherwise approved.
2. Minimum clearances between sanitary sewers and water system pipes shall conform to the latest requirements of the State of California, Department of Health Services, "Sanitary Engineering Section, California Health and Safety Code and California Administrative Code 22, Requiring separation between water mains and sanitary sewers (10 feet horizontal and 1 foot vertical)".

ESTERO MUNICIPAL IMPROVEMENT DISTRICT
CITY OF FOSTER CITY, CALIFORNIA

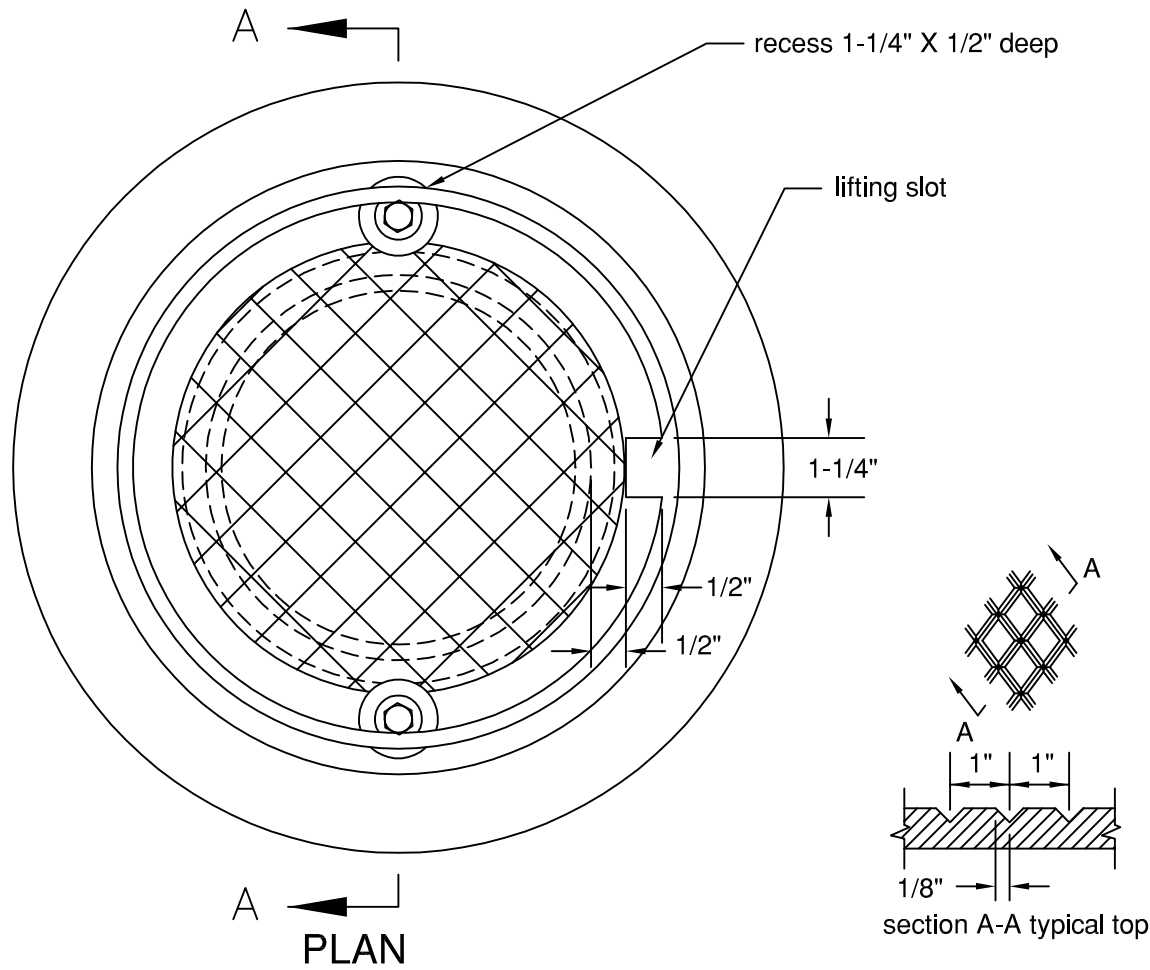
SEWER
SANITARY SEWER LATERAL REPAIRS

Rev.	Date	Description
DWN:		Dwg. Sewers 09
CHK:		

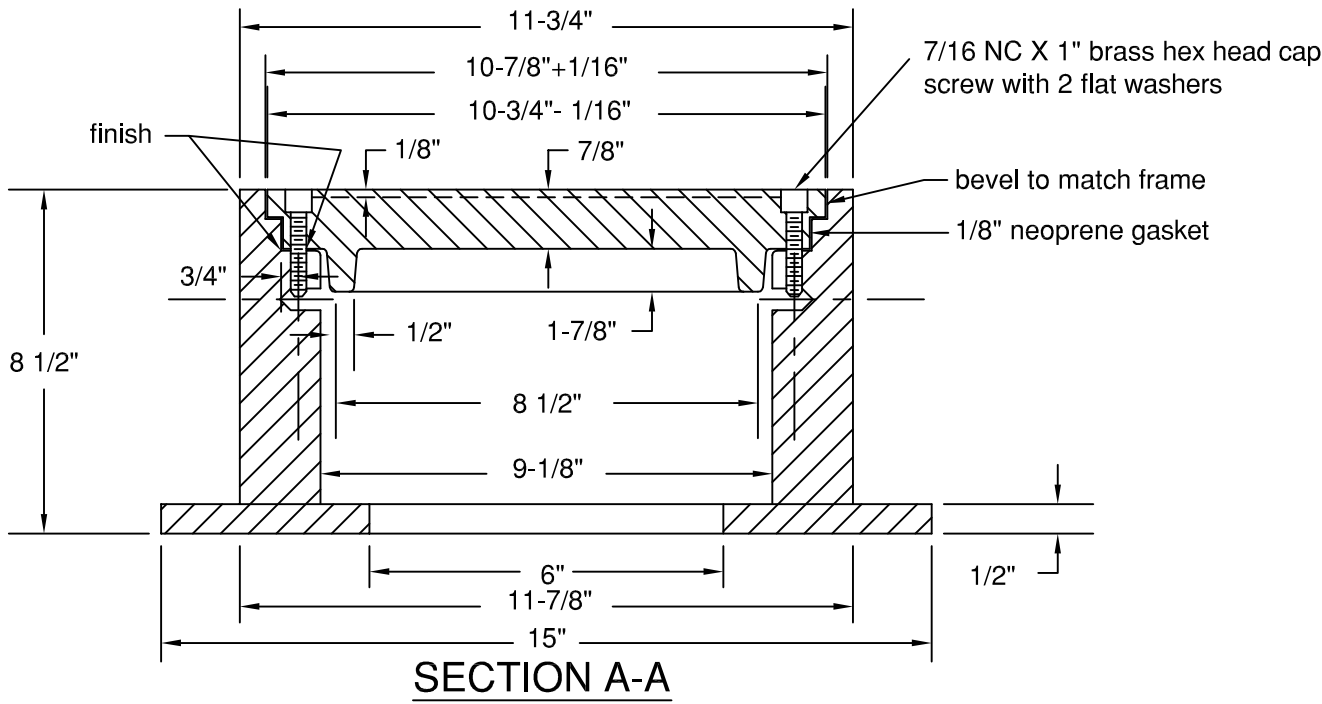
APPROVED: _____
CITY/DISTRICT ENGINEER

APPROVED: _____
DEPARTMENT SUPERINTENDENT

SCALE: NONE
DATE: Nov. 2007



PLAN



SECTION A-A

ESTERO MUNICIPAL IMPROVEMENT DISTRICT
CITY OF FOSTER CITY, CALIFORNIA

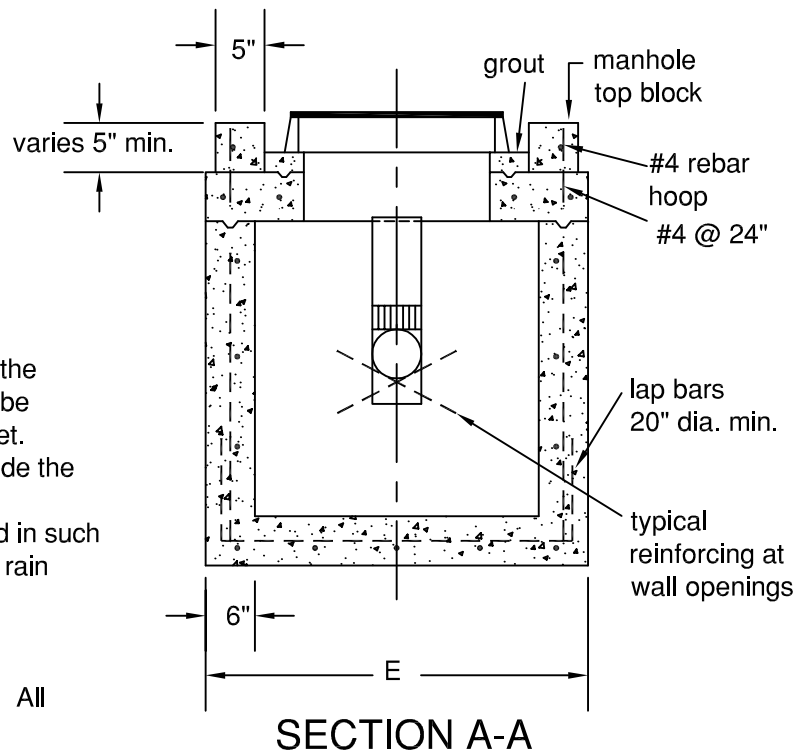
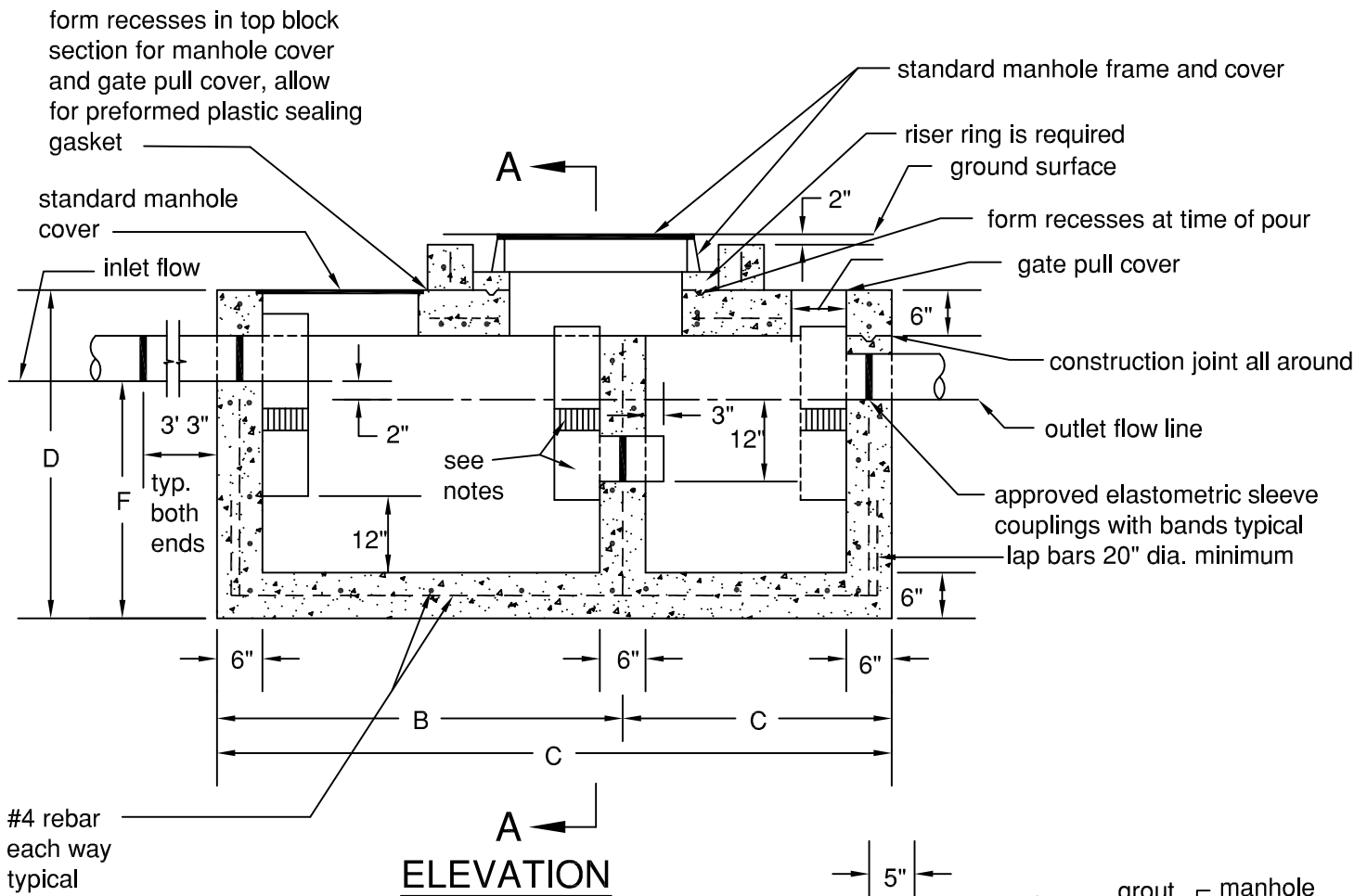
SEWER
GATE PULL FRAME AND COVER

Rev.	Date	Description
DWN:		NO. Sewers 10
CHK:		

APPROVED: _____
CITY/DISTRICT ENGINEER

APPROVED: _____
DEPARTMENT SUPERVISOR

SCALE: NONE
DATE: Nov. 2007



NOTES:

1. A Hygi-sept concrete grease interceptor manufactured by the Nottingham Co. of Castroville, CA of equal capacity may be substituted for a cast in place tank as detailed on this sheet.
2. The grease interceptor shall be located and installed outside the building.
3. The grease interceptor shall be located and/or constructed in such a manner as to exclude the entrance of surface, storm, or rain water.
4. For size and dimensions see Sewers 12 detail.
5. Structure is not designed for vehicle traffic.
6. All exposed interior couplings shall be "no-hub" couplings. All interior fittings shall be "no-hub" PVC or approved equal.
7. Standard cleanout required within 3' of the outlet of the grease interceptor.

ESTERO MUNICIPAL IMPROVEMENT DISTRICT
CITY OF FOSTER CITY, CALIFORNIA

SEWER

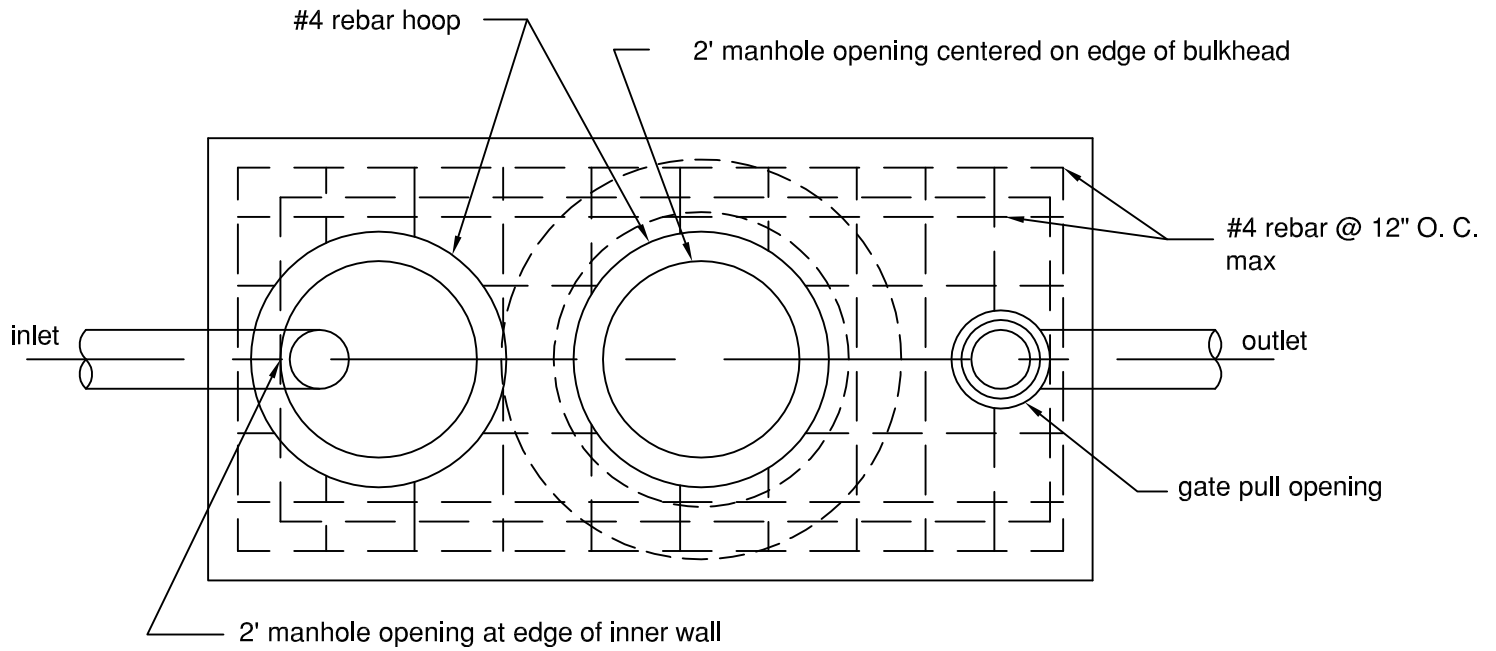
SANITARY SEWER GREASE INTERCEPTOR

APPROVED: _____
CITY/DISTRICT ENGINEER

APPROVED: _____
DEPARTMENT SUPERINTENDENT

Rev.	Date	Description
DWN:		Dwg. Sewers 11
CHK:		

SCALE: NONE
DATE: Nov. 2007



TOP BLOCK SECTION

DIMENSIONS IN FEET							
GALLON CAP.	350	750	1000	1500	2000	2500	3000
A	8.0	9.0	9.0	9.0	16.5	16.5	16.5
B	4.75	6.0	6.0	6.0	11.0	11.0	11.0
C	3.25	3.0	3.0	3.0	5.5	5.5	5.5
D	4.0	4.5	5.25	6.5	5.25	6.0	6.5
E	4.0	6.0	6.0	6.5	6.0	6.0	6.5
F	3.0	3.5	4.25	5.5	4.25	5.0	5.5

NOTE:

Dimensions for Sewers 11 detail.

ESTERO MUNICIPAL IMPROVEMENT DISTRICT
CITY OF FOSTER CITY, CALIFORNIA

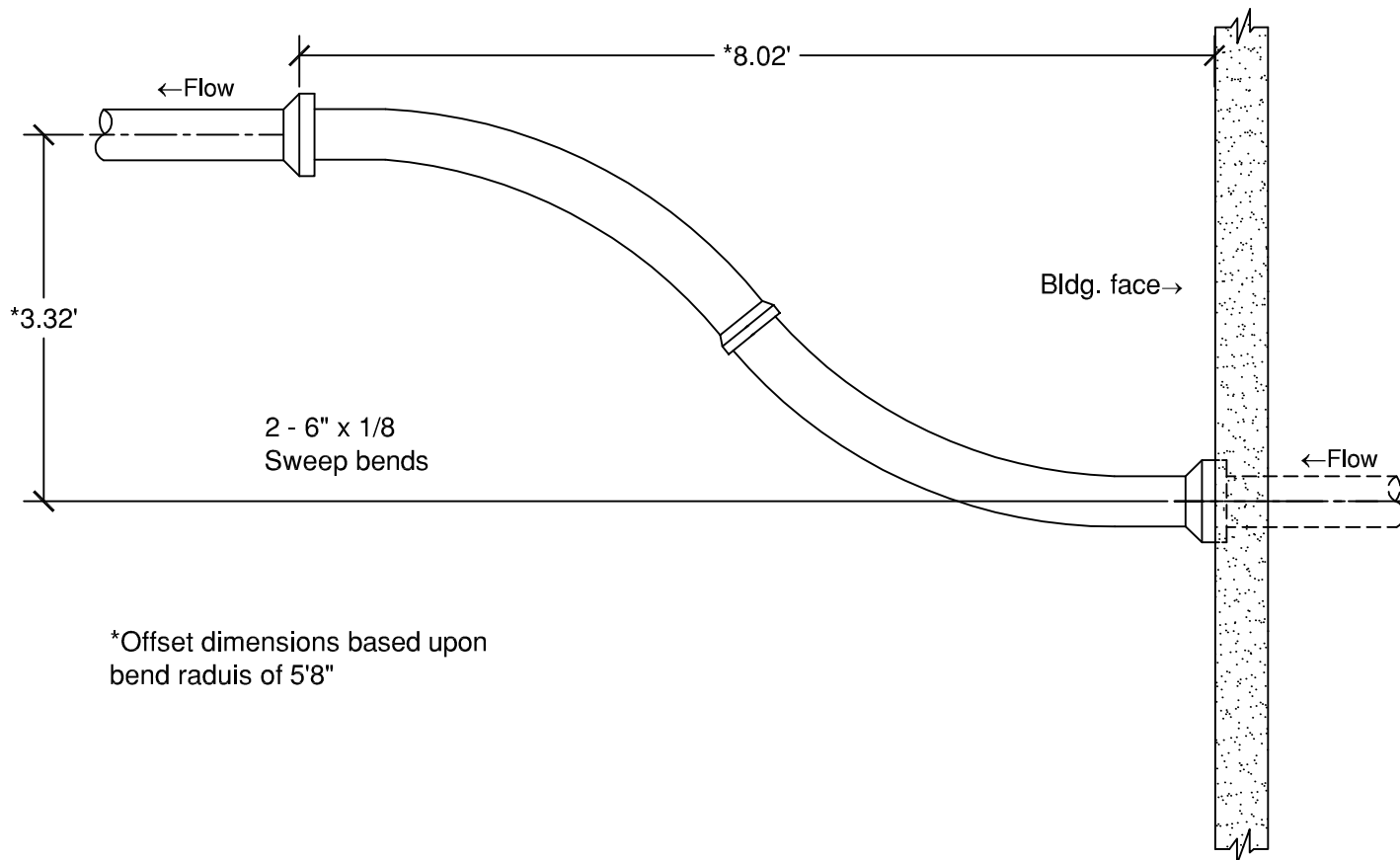
SEWER

SANITARY SEWER GREASE INTERCEPTOR

Rev. Date	Description
DWN:	NO. Sewers 12
CHK:	
APPROVED: _____	SCALE: NONE
CITY/DISTRICT ENGINEER	DATE: Nov. 2007

APPROVED: _____
CITY/DISTRICT ENGINEER

APPROVED: _____
DEPARTMENT SUPERINTENDENT



*Offset dimensions based upon bend radius of 5'8"

ESTERO MUNICIPAL IMPROVEMENT DISTRICT
CITY OF FOSTER CITY, CALIFORNIA

SEWERS

SANITARY SEWER SETTLEMENT JOINT DETAIL

Rev.	Date	Description
DWN:		NO. Sewers 13
CHK:		

APPROVED: _____
CITY/DISTRICT ENGINEER

APPROVED: _____
DEPARTMENT SUPERVISOR

SCALE:
DATE: Nov. 2007