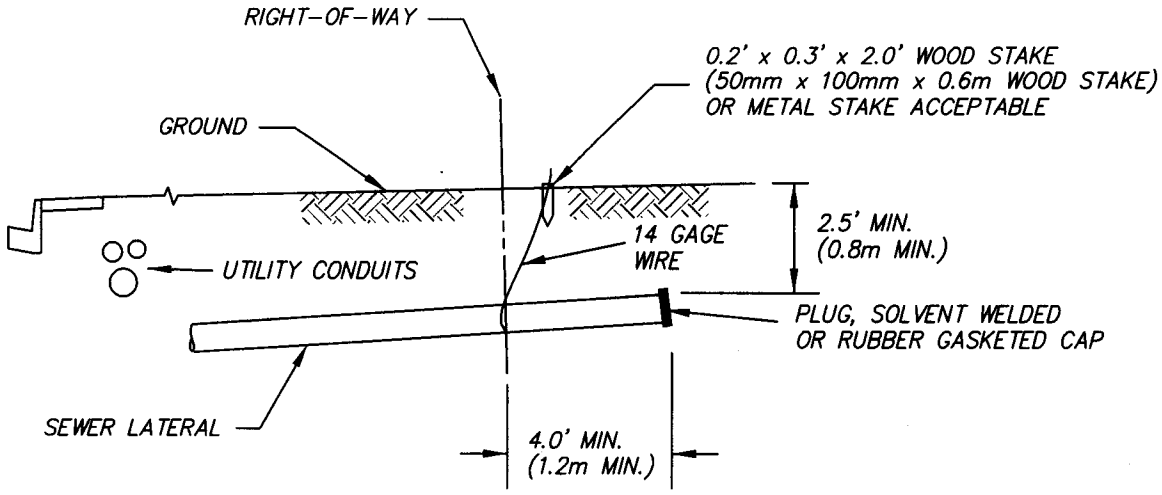


NOTES:

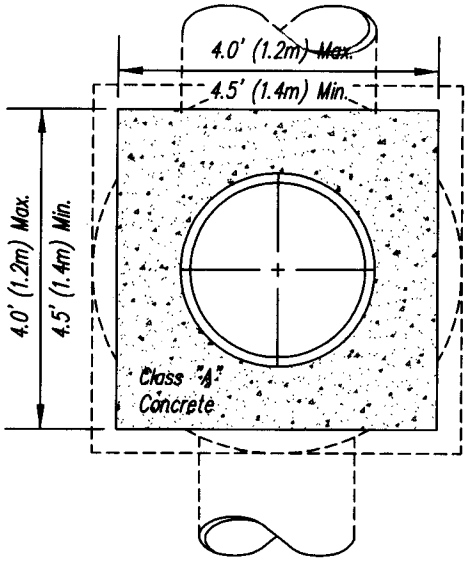
1. STAMP "S" INTO CURB FACE OVER SEWER LATERAL.

2. ENSURE 5.0' (1.5m) MINIMUM COVER AND 7.0' (2.1m) MAXIMUM COVER AT PROPERTY LINE AND 5.3' (1.6m) MINIMUM AT FLOWLINE.

3. LATERALS LOCATED SO NOT TO CONFLICT WITH UTILITIES.

FILENAME: SW-1REV

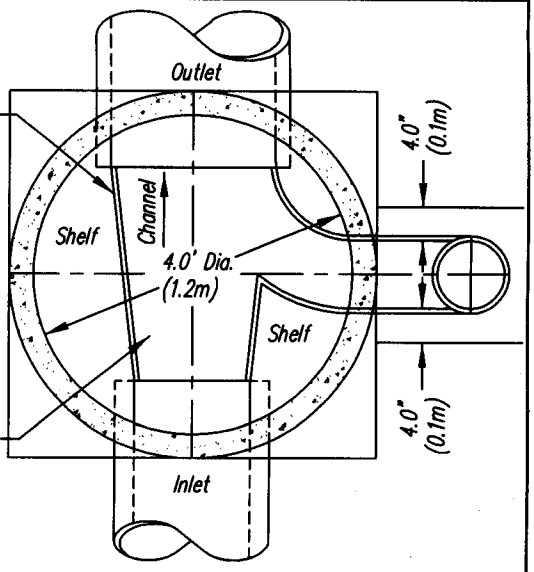
	STANDARD SEWER LATERAL MARKER	DATE 6/2/99 DRAWN JCU CHECKED M. SHAW SCALE N.T.S.
APPROVED CITY ENGINEER	CITY OF BAKERSFIELD CALIFORNIA PUBLIC WORKS DEPARTMENT	SHEET NO. SW-1



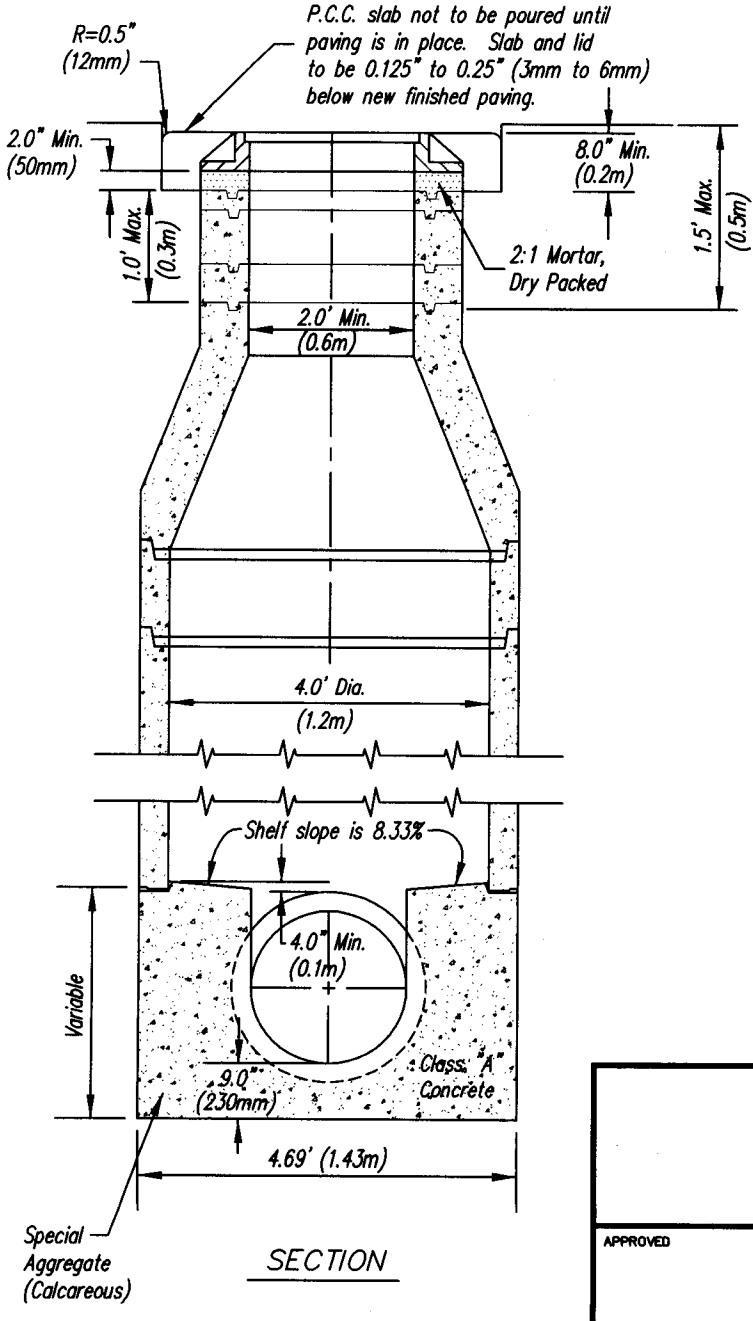
PLAN AT SURFACE

Where incoming and outgoing sewers in a manhole vary in size, extend lower halves of sewers 8.0" (0.2m) beyond inside of wall and shape transition channel between ends of lower halves of pipes.

Where incoming and outgoing sewers in a manhole are of the same diameter, the top half of pipe shall only be removed between walls and the broken edges shall be plastered smooth with cement mortar.



PLAN AT BOTTOM



SECTION

NOTES:

1. All work shall conform to the applicable sections of the specifications entitled "Standard Specifications, State of California, Department of Transportation", approved current edition.

2. All unlined manhole joints shall be filled with Kent seal or approved black mastic equal. Inside of manholes must be mortared and neatly raked or wiped on inside of pipe.

3. Pre cast reinforced manhole sections shall be constructed in accordance with the provisions of ASTM C-478, current edition.

4. All sewer manholes, for sewer lines larger than 18" (0.46m) in diameter, shall be lined with "T-Lock" or approved equal.

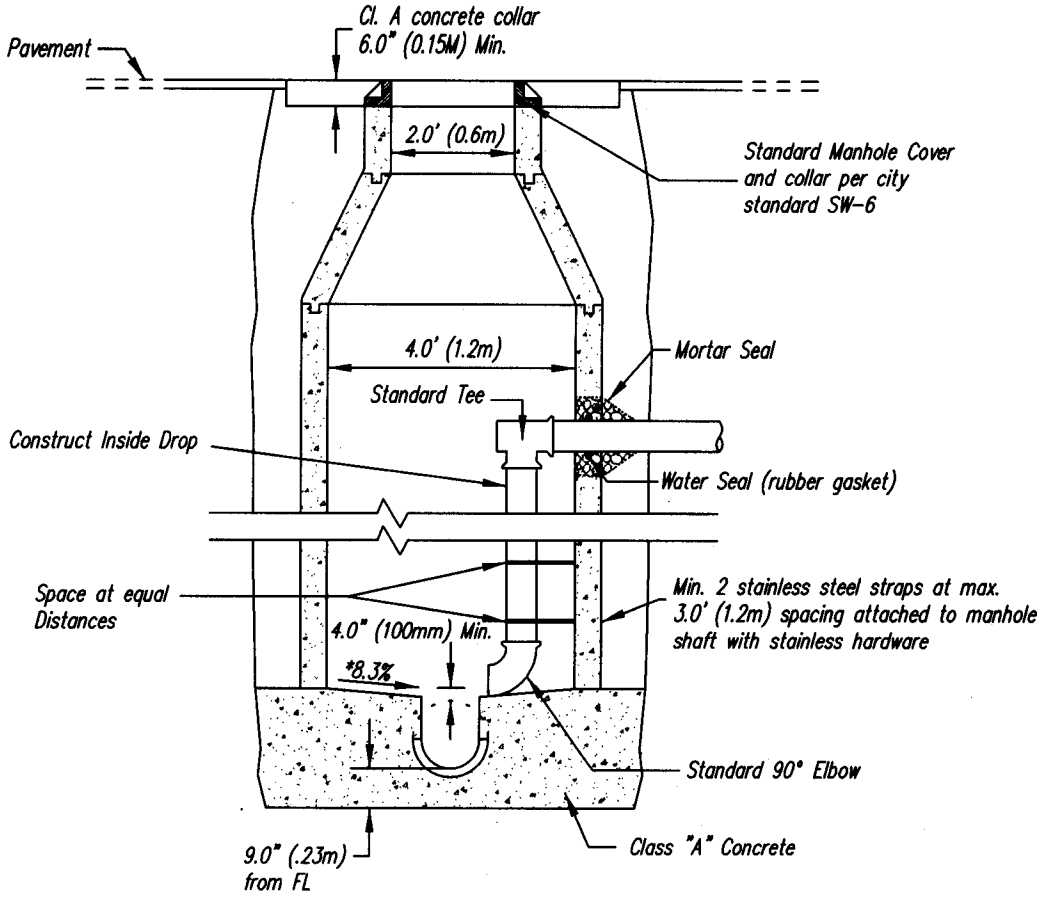
5. Concrete pad shall be cured with a white pigmented curing compound as per section 90-7.01B of the standard specifications.

6. See standard drawing SW-6 for frame, cover, and drop manhole details.

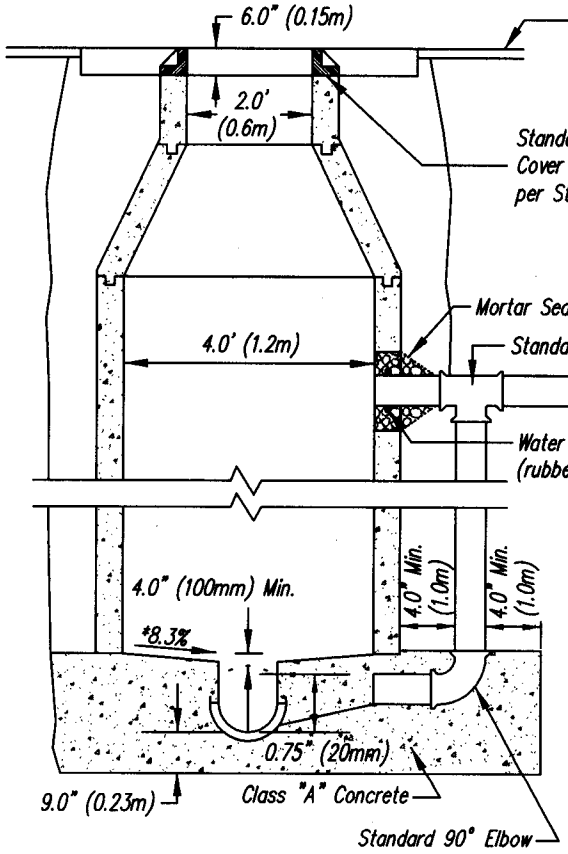
7. All channels shall be smooth finished with steel trowel. Shelf shall be broom finished for slip resistance.

FILENAME: SW-2REV

	STANDARD MANHOLE TYPE "A"	DATE 6/2/99 DRAWN JCU CHECKED M. SHAW SCALE N.T.S. SHEET NO. SW-2
APPROVED CITY ENGINEER	CITY OF BAKERSFIELD CALIFORNIA PUBLIC WORKS DEPARTMENT	



INSIDE DROP



OUTSIDE DROP

NOTES:

1. All work shall conform to the applicable sections of the specifications entitled "Standard Specifications, State of California, Department of Transportation", adopted current edition.

2. Drop manholes will only be allowed with the approval of the City Engineer.

3. All manholes shall conform to Sec. 3.2.3 of the manual text.

4. Drop manhole is only allowed if drop distance is 30" (0.76m) or greater.

* Maximum slope allowed inside manhole.

FILENAME: SW-3REV

APPROVED

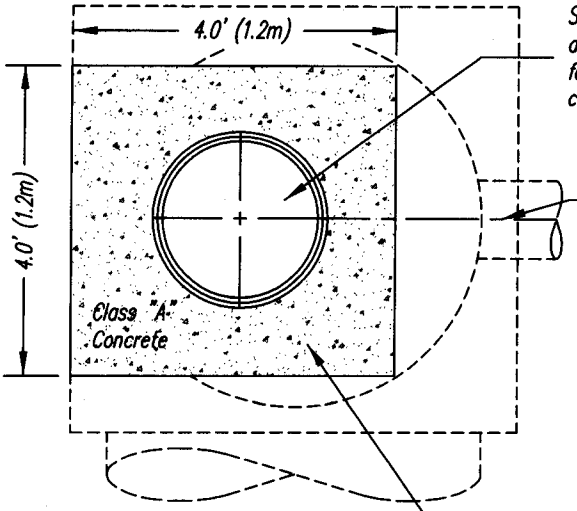
CITY ENGINEER

STANDARD
MANHOLE TYPE "A"
INSIDE AND
OUTSIDE DROP

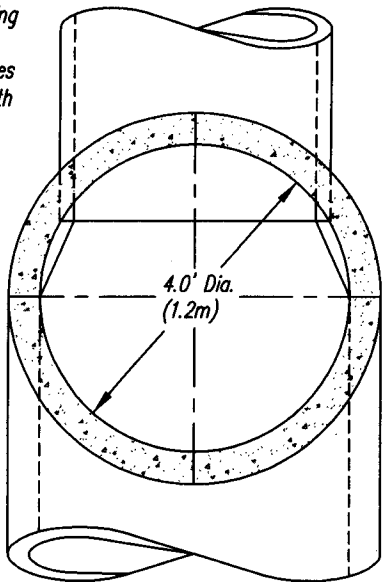
CITY OF BAKERSFIELD
CALIFORNIA

PUBLIC WORKS DEPARTMENT

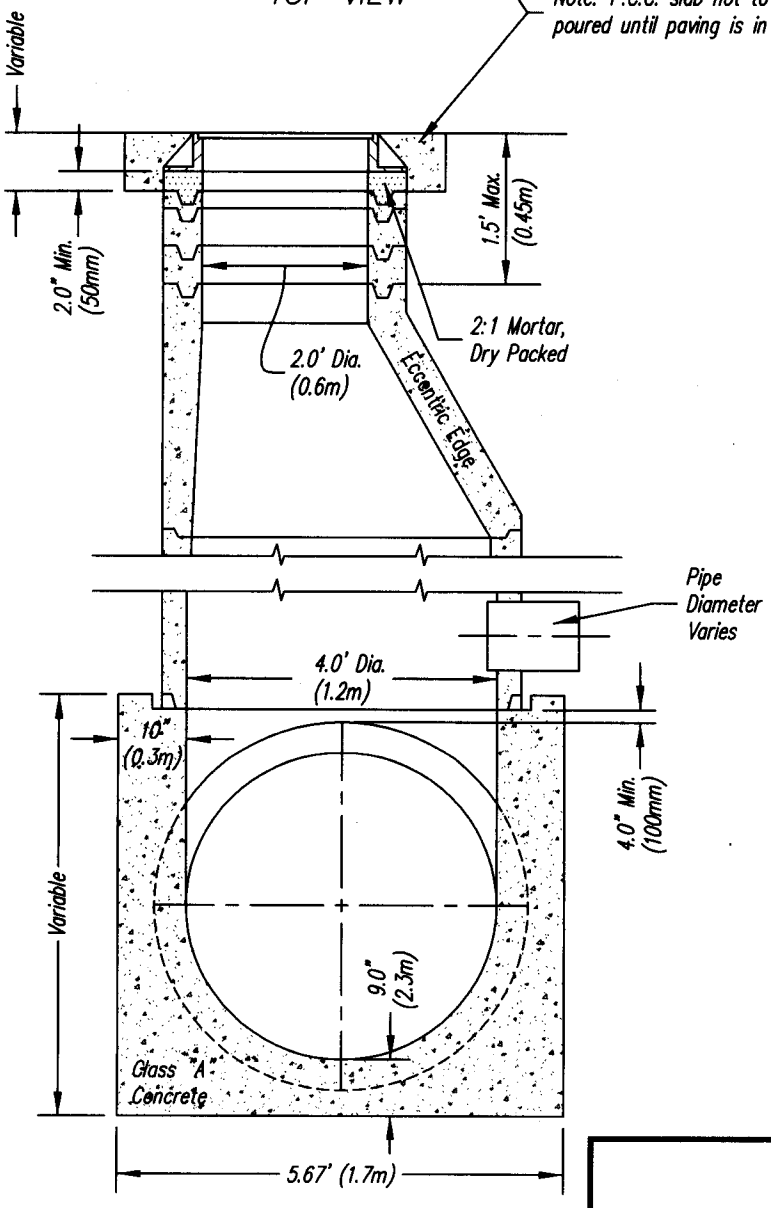
DATE	6/2/99
DRAWN	JCU
CHECKED	M. SHAW
SCALE	N.T.S.
SHEET NO.	SW-3



TOP VIEW



SECTION



MANHOLE SECTION

NOTES:

1. All work shall conform to the applicable sections of the specifications entitled "Standard Specifications, State of California, Department of Transportation", approved current edition.

2. Mortar shall consist of one part Portland Cement and two parts of clean, well graded sand.

3. Joints shall be filled with mortar and neatly cleaned or wiped on inside of pipe.

4. Pre cast reinforced manhole sections shall be constructed in accordance with the provisions of ASTM C-478, current edition.

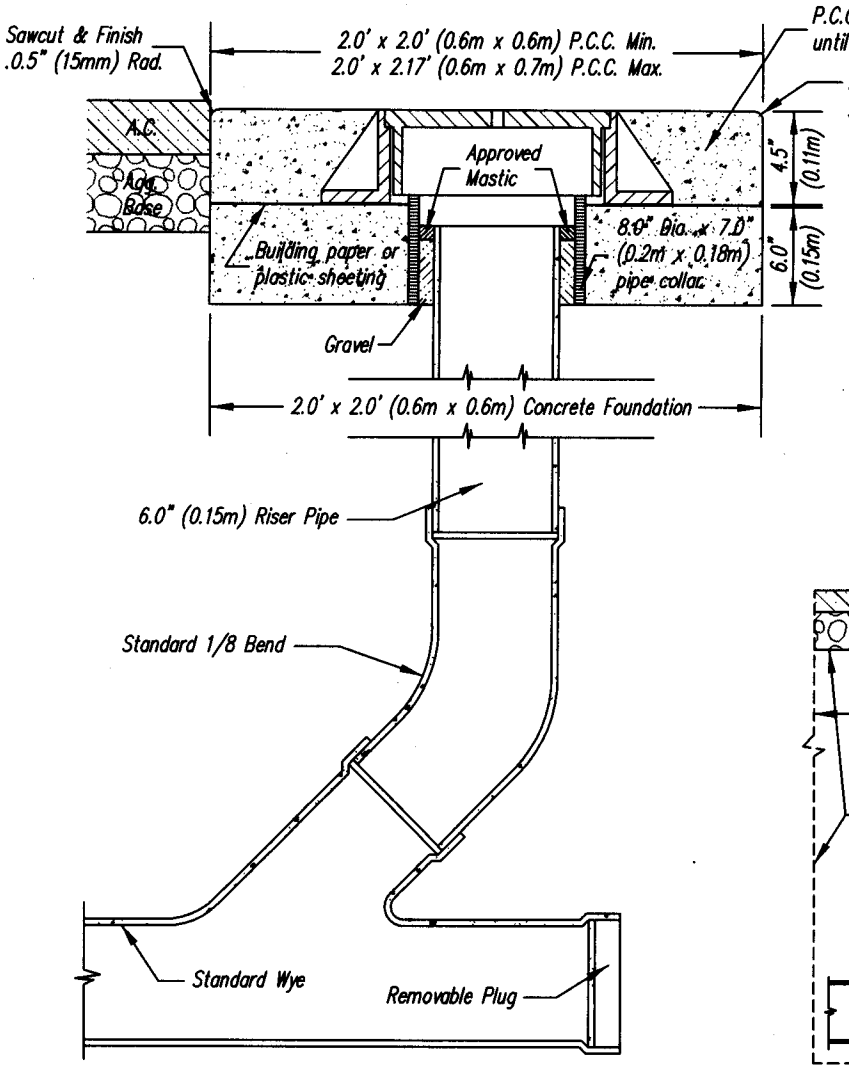
5. Eccentric side should be installed in the upstream direction of the main line whenever possible or as directed by the City Engineer.

6. All transitions between pipe inverts shall be a smooth warped surface.

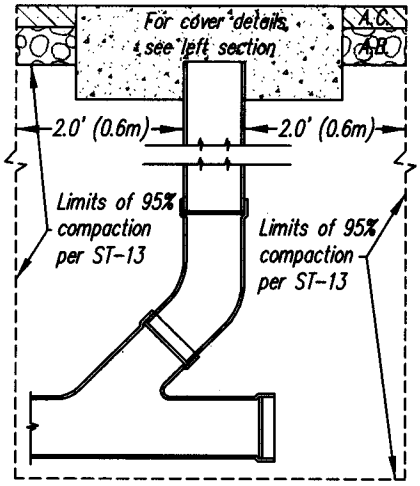
7. All sewer manholes, for sewer lines larger than 18" (0.46m) in diameter, shall be lined with "T-Lock" or approved equal

FILENAME: SW-4REV

	STANDARD MANHOLE TYPE "B"	DATE 6/2/99 DRAWN JCU CHECKED M. SHAW SCALE N.T.S.
APPROVED CITY ENGINEER	CITY OF BAKERSFIELD CALIFORNIA PUBLIC WORKS DEPARTMENT	SHEET NO. SW-4



CLEANOUT SECTION



COMPACTION DETAIL

NOTES:

1. All work shall conform to the applicable sections of the specifications entitled "Standard Specifications, State of California, Business and Transportation Agency, Department of Transportation", approved current edition.

2. Pipe material shall meet 1.4.2

3. All concrete shall be Class "A".

4. Cleanout frame and cover shall conform to the City of Bakersfield standard SW-6.

5. Concrete shall have no additives unless prior written approval is obtained from the City Engineer.

6. Concrete shall be cured with a white pigmented curing compound per Sec. 90-7.01B of the standard specs.

7. Top of slab shall be troweled smooth and given a light broom finish.

8. 95% relative compaction is required per city std. ST-13.

9. Building paper or plastic shall be placed between the 0.5' (0.15m) concrete foundation and 4.5" (0.12m) slab.

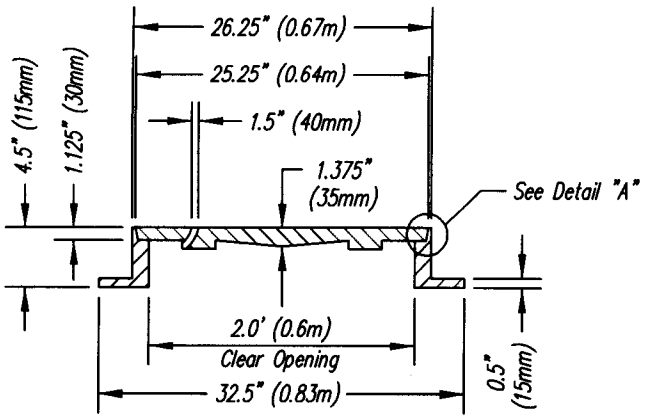
10. Fill cavity between pipe and collar with gravel to within 0.5" (15mm) of top of pipe. Caulk remaining 0.5" (15mm) with approved mastic to top of pipe for water tight seal.

11. Collar shall be VCP, ABS, or PVC pipe.

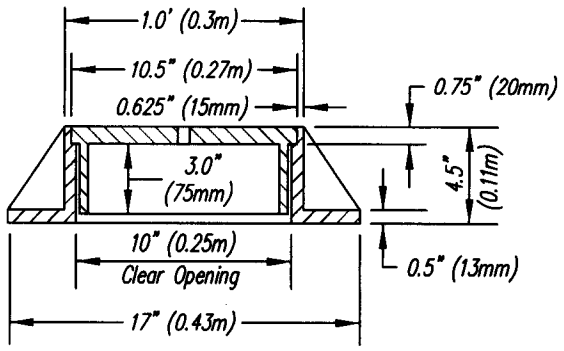
12. Finished PCC slab to be 0.125' (3mm) min. and 0.25" (6mm) max. below finished paving surface.

FILENAME: SW-5REV

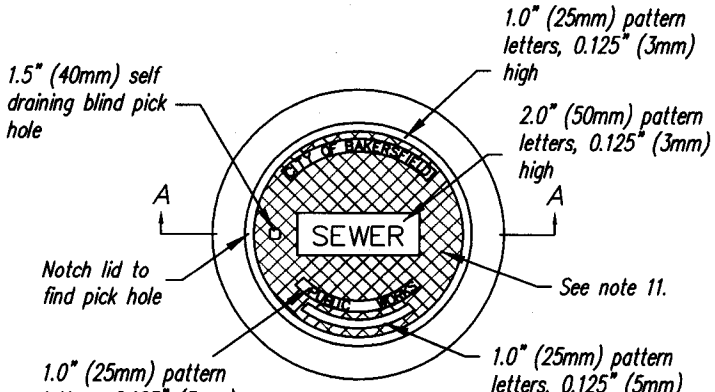
	STANDARD STANDARD EIGHT INCH CLEANOUT	DATE 6/2/99 DRAWN JCU CHECKED M. SHAW SCALE N.T.S.
APPROVED CITY ENGINEER	CITY OF BAKERSFIELD CALIFORNIA PUBLIC WORKS DEPARTMENT	SHEET NO. SW-5



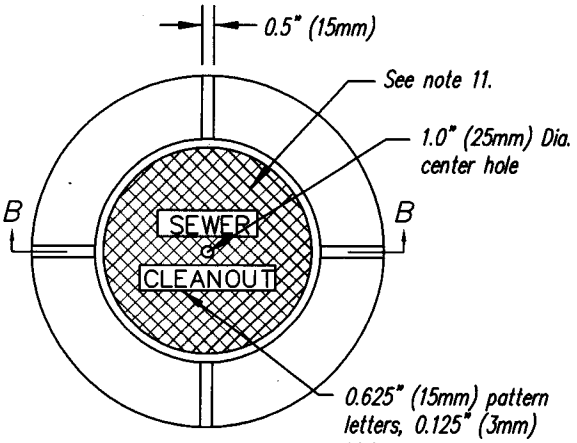
SECTION A–A



SECTION B–B



MANHOLE



CLEANOUT

NOTES:

1. All frames and covers shall be tested for accuracy of fit and shall be marked in sets prior to delivery.

2. The seats of frames and bearing faces of the covers shall be machined for a smooth non-rocking fit between the two castings.

3. Castings shall be thoroughly cleaned and dipped twice in a quick-drying, jet-black asphaltic compound to provide a protective coating.

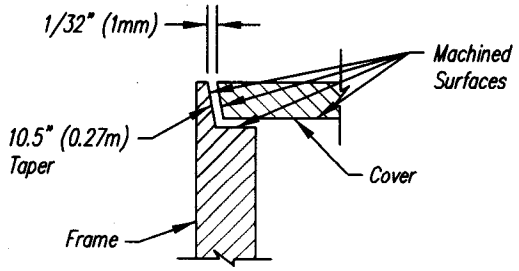
4. All frames and covers shall be gray cast iron, free from warps, cracks, holes, swells and cold-shot, and shall have a workmanlike finish. Highway loading should be HS 20-44.

5. Casting shall conform to the provisions of the specifications for gray-iron castings, serial designation ASTM: A-48 (latest revision), Class No. 30B.

6. The name of the manufacturing company shall be on the underside of the cover.

7. Manhole frame shall weigh not less than 120 lbs. (54kg) nor more than 250 lbs. (113kg). The cover shall weigh not less than 120 lbs. (54kg) nor more than 200 lbs. (91kg).

8. Manhole covers shall have a self draining blind pick hole unless otherwise approved by the City Engineer.



DETAIL "A"

9. The 2.0" (50mm) pattern letters on the manhole covers shall have one of the following designations: DRAIN or SEWER

10. Assembly shall be designed for highway loading of HS 20-44.

11. 2.0" x 1.0" (50mm x 25mm) diamond mat 0.125" (5mm) deep.

FILENAME: SW-6REV

APPROVED

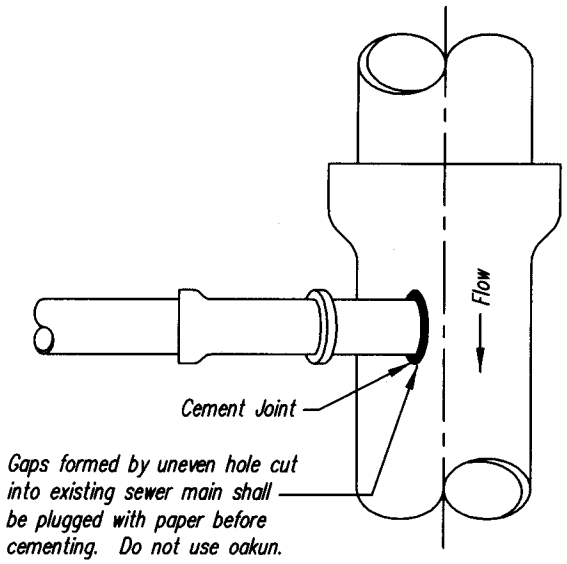
CITY ENGINEER

STANDARD
FRAMES AND COVERS FOR MANHOLES & CLEANOUTS

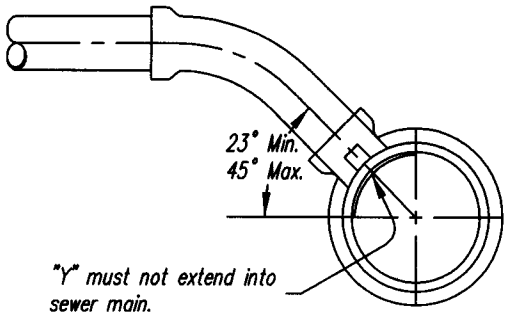
CITY OF BAKERSFIELD
CALIFORNIA

PUBLIC WORKS DEPARTMENT

DATE 6/2/99
DRAWN JCU
CHECKED M. SHAW
SCALE N.T.S.
SHEET NO. SW-6



PLAN VIEW



ELEVATION

NOTES:

1. For pipes 6.0" (0.15m) to 1.0' (0.3m) in diameter, a licensed contractor who has the proper equipment and permits is considered an approved agent and may core into the city's lines or remove a section and construct a wye or tee. For pipes 18" (0.46m) or larger, a manhole must be constructed where corings are made. The city inspector must observe the installation of saddles to cores.

2. Vitrified clay pipe saddles shall be extra strength clay pipe and shall conform to the requirements of the West Coast Standards of the clay pipe institute.

3. VCP saddles may have either lugs or collars.

4. The bell shall be true, circular and concentric with the bore of the pipe and shall be scored on the inside of its entire depth.

5. Openings in existing sewer shall be made only large enough to admit all of saddle fitting. Lugs or collars not resting on pipe shall be blocked up and sealed with epoxy glue.

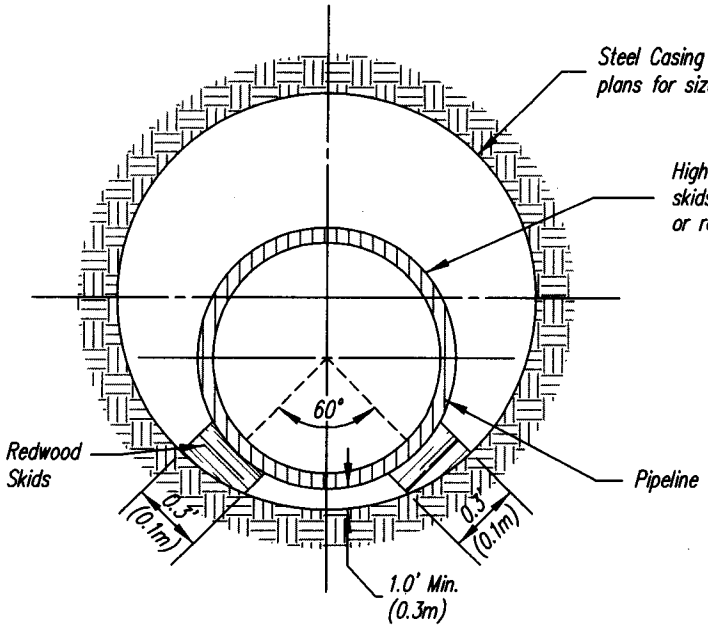
6. All installations shall be inspected by the Public Works Department of the City of Bakersfield prior to backfill.

7. For PVC and ABS pipe, fittings shall be injection molded and shall be installed in line on new pipelines; cut-in fittings are not permitted on new subdivisions or new new main lines.

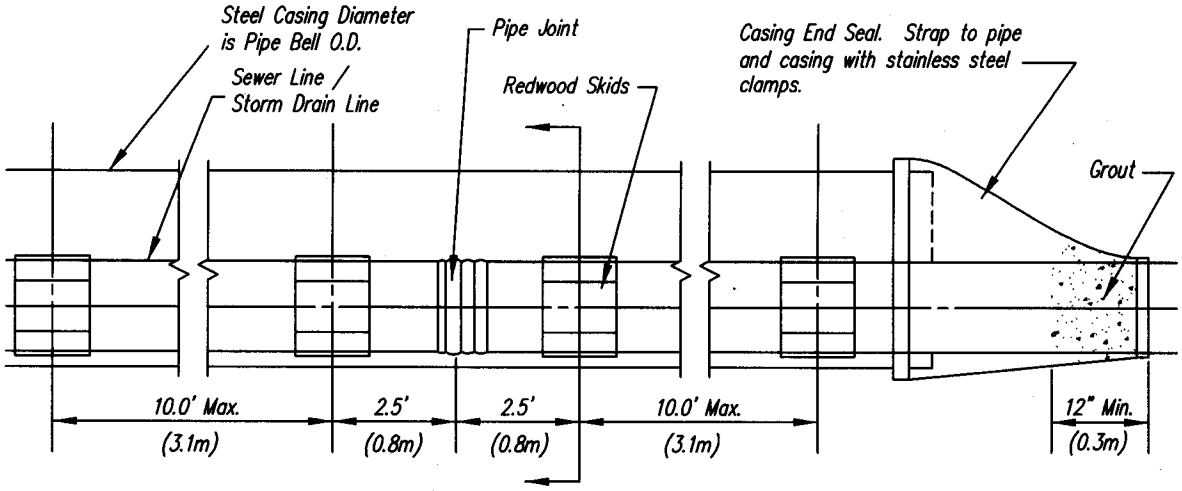
8. PVC or ABS saddles shall be rubber gasketed and shall be fastened by stainless steel bands.

FILENAME: SW-7REV

	STANDARD SEWER PIPE CONNECTION	DATE 6/2/99 DRAWN JCU CHECKED M. SHAW SCALE N.T.S.
APPROVED CITY ENGINEER	CITY OF BAKERSFIELD CALIFORNIA PUBLIC WORKS DEPARTMENT	SHEET NO. SW-7



SECTION A–A
PIPE CASING



SECTION DETAIL
PIPE BORING

NOTES:

1. Casing shall be installed by the bore, jack, and/or tunnel method.

2. Installation shall be as recommended by the pipe manufacturer.

3. All casing sections shall be joined by continuous process.

4. Fill void between carrier pipe and casing with sand slurry. If sand is used, compact by use of air blowing sand equipment or as directed by the City Engineer.

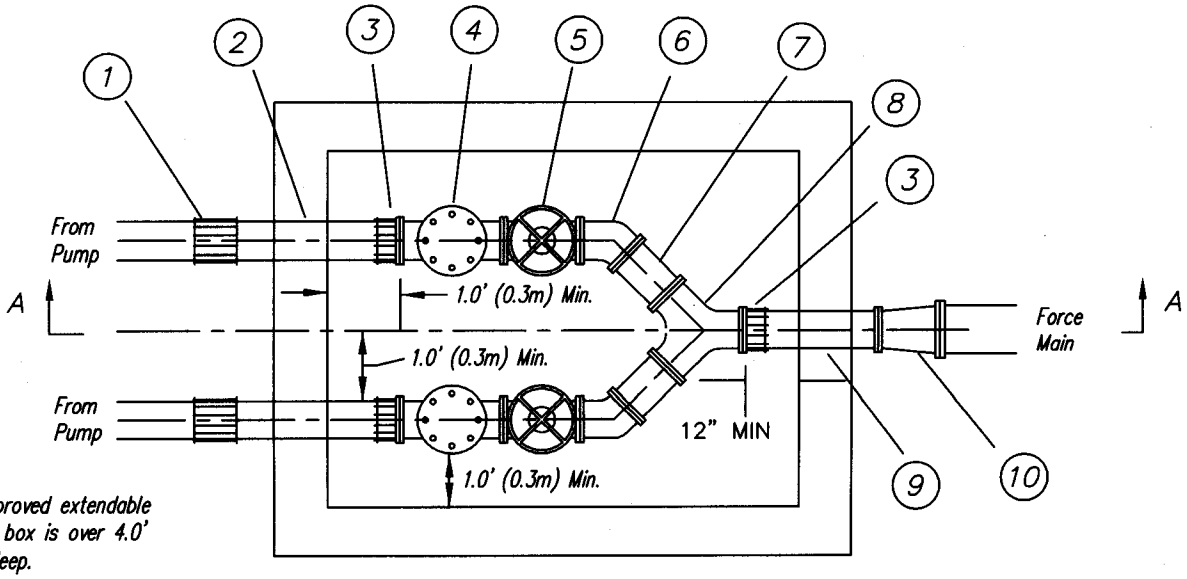
5. Redwood skids shall be construction grade.

6. Redwood skids shall be veed to fit contour of pipe.

7. Redwood skids shall be strapped to the pipe with strapping or approved wire bands.

FILENAME: SW-8REV

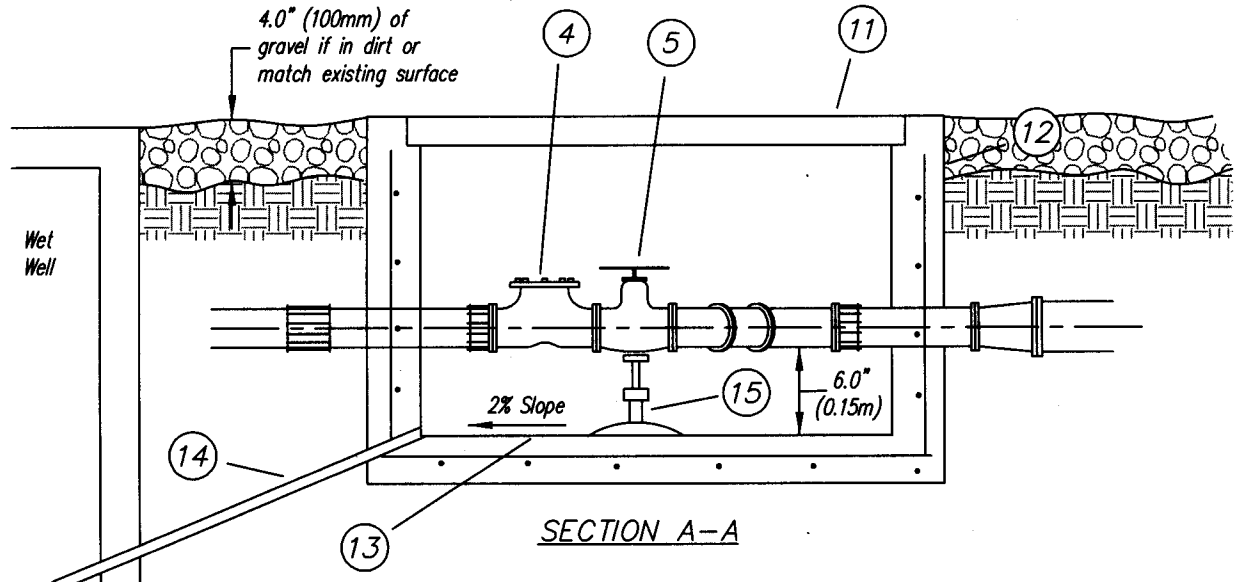
	STANDARD SEWER LINE IN PIPE CASING	DATE 6/2/99 DRAWN JCU CHECKED M. SHAW SCALE N.T.S.
APPROVED CITY ENGINEER	CITY OF BAKERSFIELD CALIFORNIA PUBLIC WORKS DEPARTMENT	SHEET NO. SW–8



Osha approved extendable ladder if box is over 4.0' (1.2m) deep.

See Standard Special Provisions for specifications.

PLAN VIEW



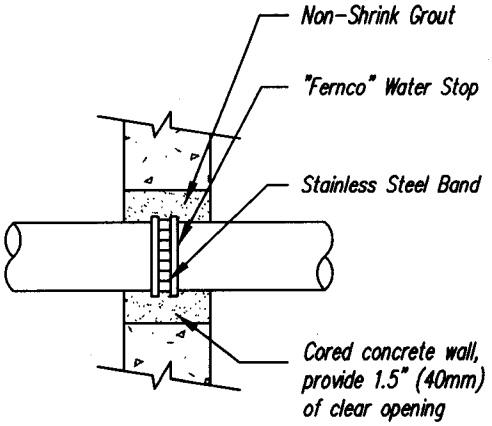
SECTION A–A

KEY TO CIRCLED REFERENCES

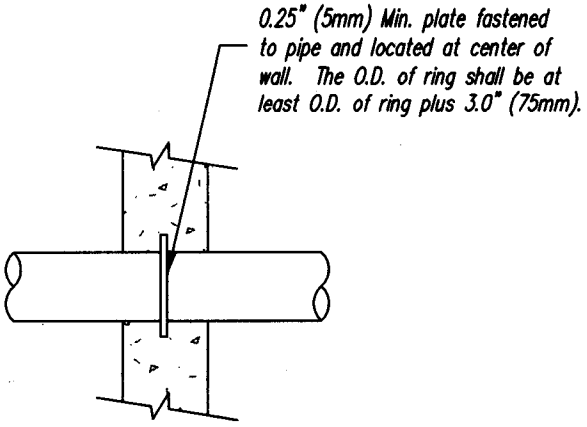
1. Flexable Coupling Adaptor
2. Ductile Iron Pipe with Epoxy Coating – Plain Ends
3. Flanged Coupling Adaptor
4. Swing Check Valve, Flanged Ends
5. Plug Valve, Flanged Ends
6. 45° Elbow, Flanged Ends
7. Pipe – Flanged Ends
8. Flanged Wye
9. Pipe – Flanged End & Plain End
10. Concentric Reducer
11. Access Cover with Frame & Hinges See Approved Specifications
12. Reinforced Concrete Valve Box, Pre-Cast or Cast-in-Place. Design to be Approved by the City Engineer.
13. 2 Coats #50 Bitumastic, See Approved Specifications
14. 2.0" (50mm) Schedule 80 PVC Drain Pipe Extended to Bottom of Wet Well
15. Adjustable Pipe Support Stand

FILENAME: SW-9REV

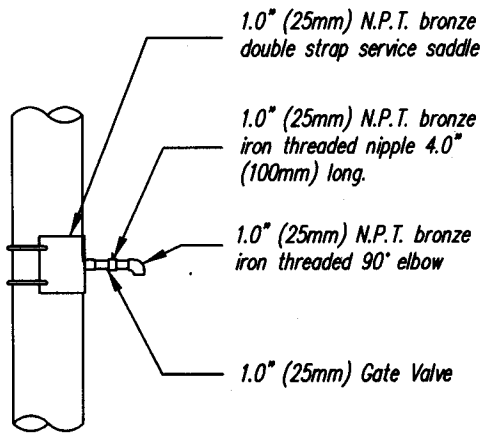
	STANDARD TYPICAL SEWER PUMPING STATION VALVE BOX	DATE 6/2/99 DRAWN JCU CHECKED M. SHAW SCALE N.T.S.
APPROVED CITY ENGINEER	**CITY OF BAKERSFIELD** **CALIFORNIA** PUBLIC WORKS DEPARTMENT	SHEET NO. SW–9



(A) WATER STOP DETAIL
NTS



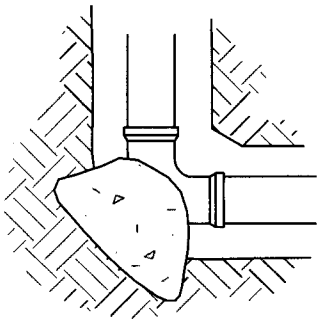
(B) CUT-OFF RING DETAIL
NTS



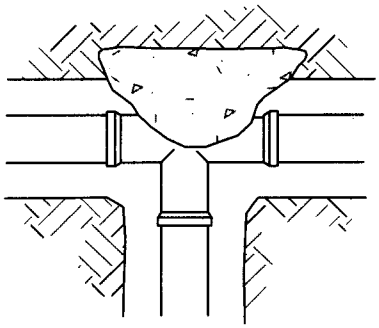
(C) WASH DOWN DETAIL
NTS

FILENAME: SW-10REV

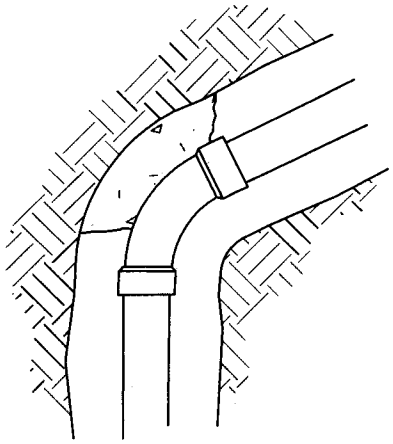
	STANDARD MISCELLANEOUS PUMPING STATION DETAILS	DATE 6/2/99
		DRAWN JCU
		CHECKED M. SHAW
		SCALE N.T.S.
APPROVED		SHEET NO.
CITY ENGINEER	CITY OF BAKERSFIELD CALIFORNIA	SW-10
	PUBLIC WORKS DEPARTMENT	



90° ELL



TEE



45° ELL

THRUST BLOCK DETAILS N.T.S.

NOTES:

1. All valves, fittings, and directional changes are to be held in place by concrete thrust blocks.

2. Bearing areas indicated are based on allowable soil pressure of 1500 psf (71.82 kPa).

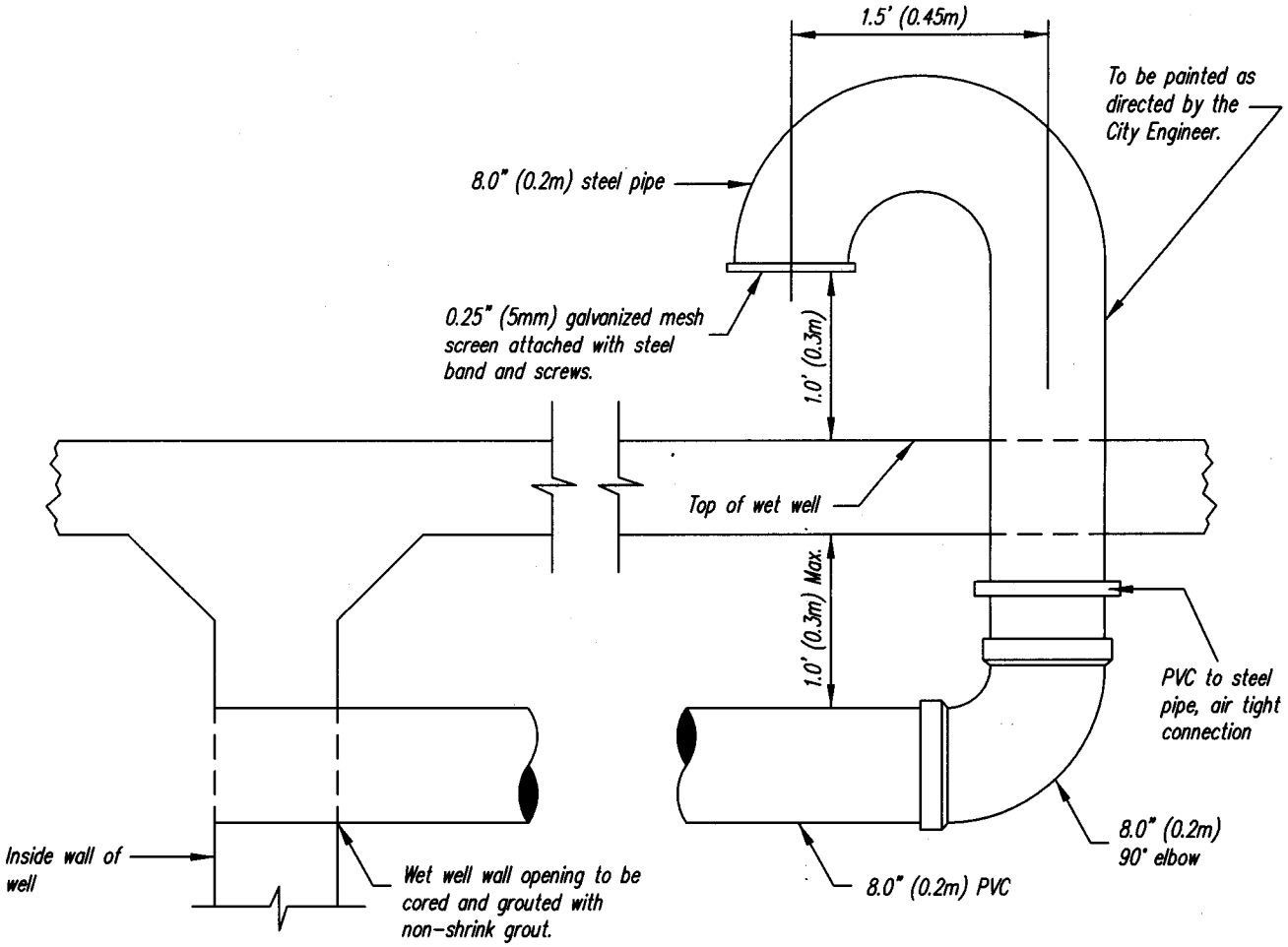
3. Concrete is not to bear against pipe. Thrust block to only be in contact with the fitting.

* 1 s.f. (square foot) = 0.0929 s.m. (square meters)

THRUST BLOCK SCHEDULE				
BEARING AREA IN SQUARE FEET*				
PIPE SIZE	TEE OR PLUG	90° ELL	45° ELL	22.5° ELL
4.0" (100mm)	2	2	2	1
6.0" (0.15m)	3	4	2	2
8.0" (0.2m)	5	7	4	2
10" (0.25m)	8	11	6	3
12" (0.3m)	11	16	8	4
16" (0.4m)	14	20	10	5

FILENAME: SW-11REV

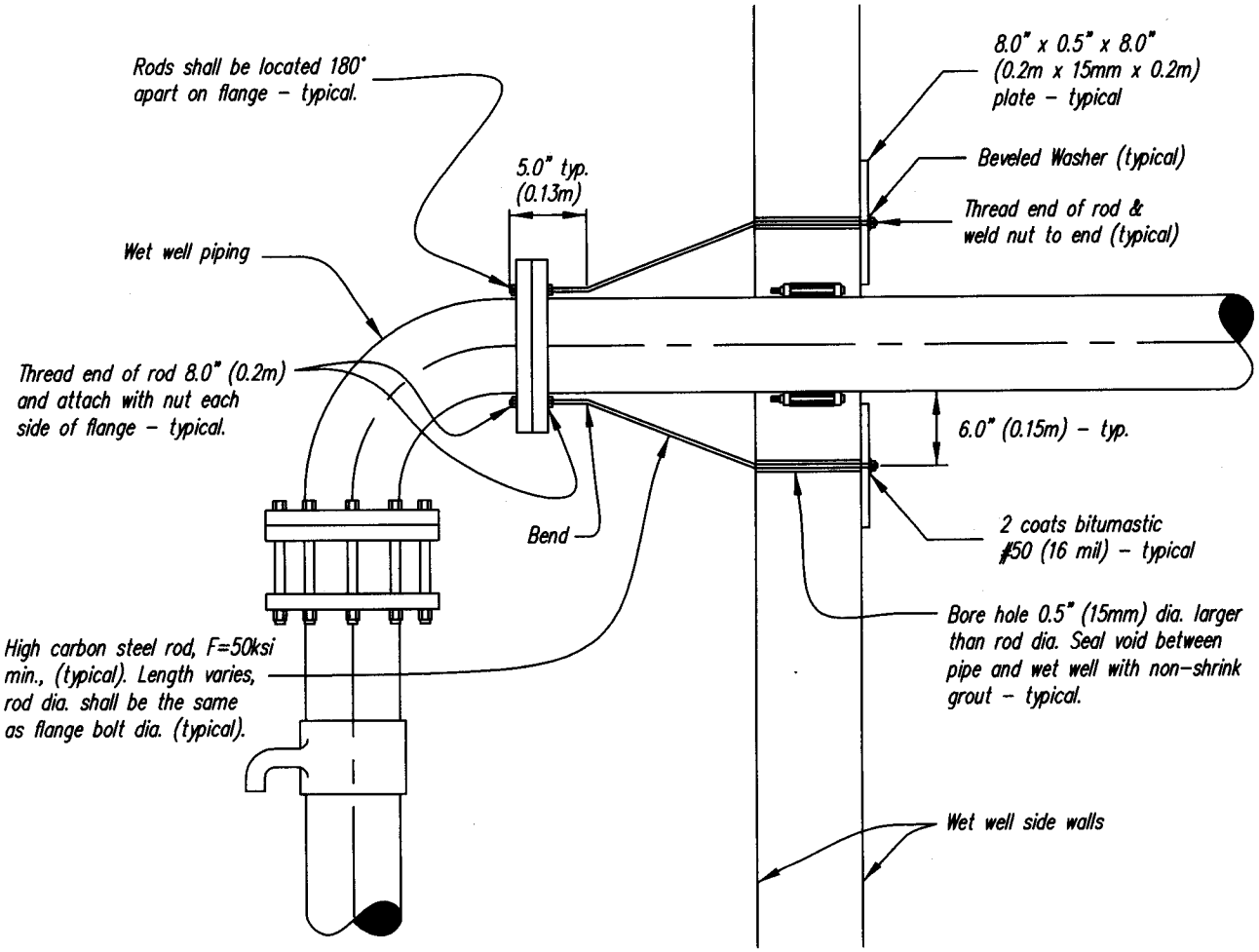
	STANDARD PUMPING STATION THRUST BLOCKS	DATE 6/2/99 DRAWN JCU CHECKED M. SHAW SCALE N.T.S.
APPROVED CITY ENGINEER	CITY OF BAKERSFIELD CALIFORNIA PUBLIC WORKS DEPARTMENT	SHEET NO. SW-11



PLAN VIEW

FILENAME: SW-12REV

	STANDARD PUMPING STATION AIR VENT DETAIL	DATE 6/2/99 DRAWN JCU CHECKED M. SHAW SCALE N.T.S.
APPROVED CITY ENGINEER	CITY OF BAKERSFIELD CALIFORNIA PUBLIC WORKS DEPARTMENT	SHEET NO. SW-12

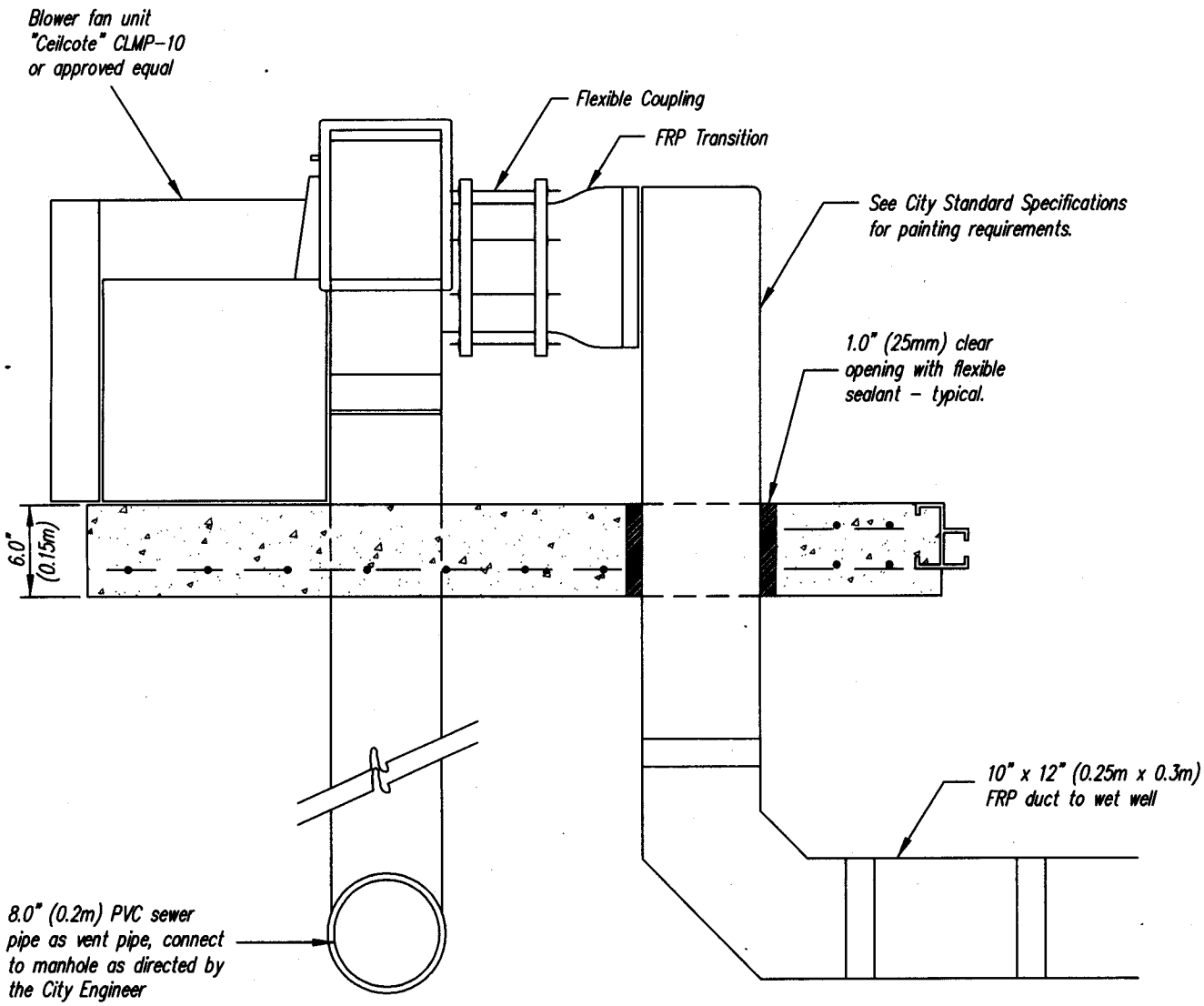


NOTES:

1. Except for piping. All metal work within the wet well shall be stainless steel.

FILENAME: SW-13REV

	STANDARD PUMPING STATION PIPE RESTRAINT ASSEMBLY	DATE 6/2/99
		DRAWN JCU
		CHECKED M. SHAW
		SCALE N.T.S.
APPROVED	CITY OF BAKERSFIELD CALIFORNIA	SHEET NO. SW-13
CITY ENGINEER	PUBLIC WORKS DEPARTMENT	

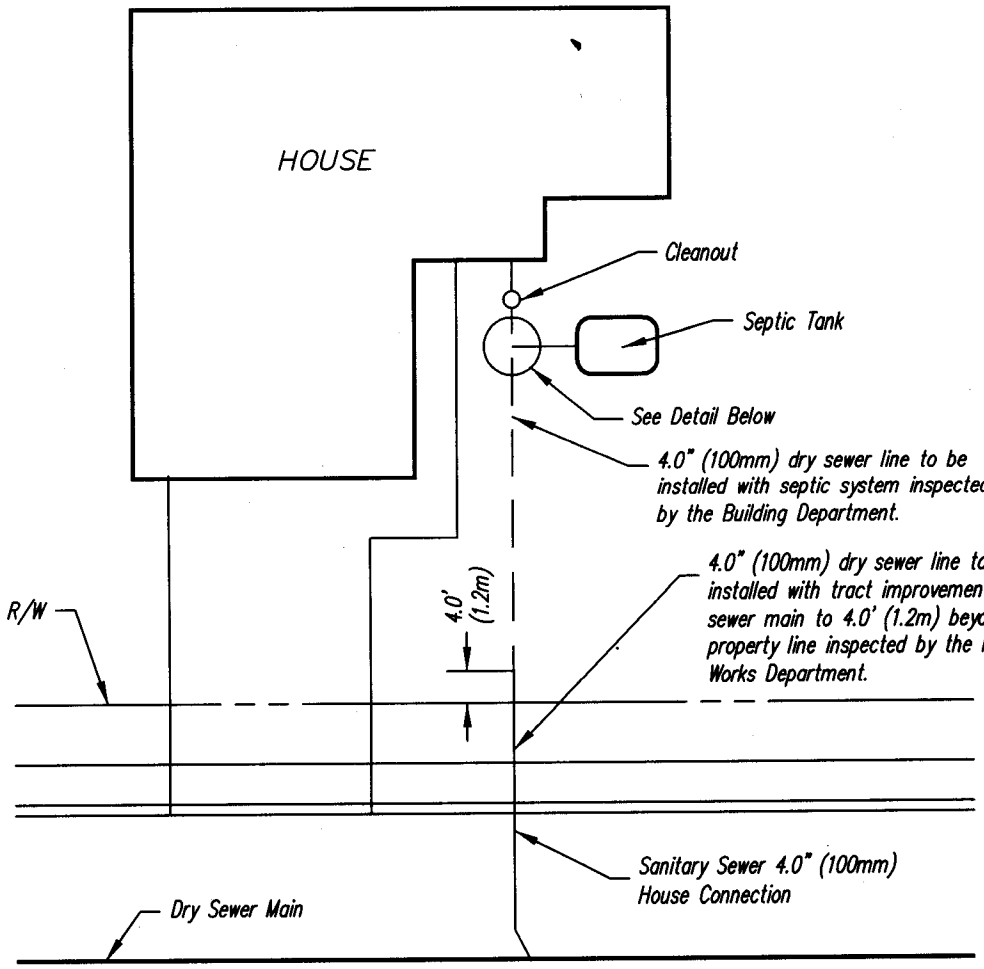


NOTES:

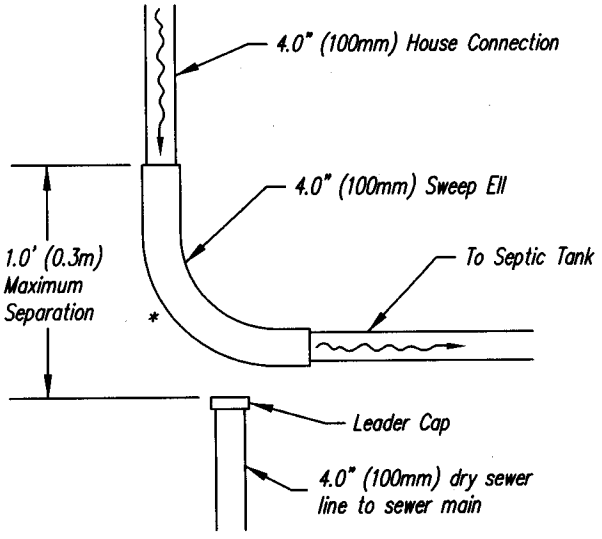
1. All hardware for the blower assembly and FRP duct shall be stainless steel.

FILENAME: SW-14REV

	STANDARD PUMPING STATION BLOWER FAN	DATE 6/2/99 DRAWN JCU CHECKED M. SHAW SCALE N.T.S. SHEET NO.
APPROVED CITY ENGINEER	CITY OF BAKERSFIELD CALIFORNIA PUBLIC WORKS DEPARTMENT	SW-14



PLAN



DETAIL

* The 4.0" (100mm) line from the P.L. to the house should be installed by the house plumber. The septic tank company will then remove a one foot section and install a 4.0" (100mm) sweep ell to septic tank.

* Maintain a 0.25" per 1.0' (20mm per 1.0m) gradient to street.

FILENAME: SW-15

	STANDARD DRY SEWER HOUSE CONNECTION	DATE 2/17/99 DRAWN JCU CHECKED M. SHAW SCALE N.T.S.
APPROVED CITY ENGINEER	CITY OF BAKERSFIELD CALIFORNIA PUBLIC WORKS DEPARTMENT	SHEET NO. SW-15