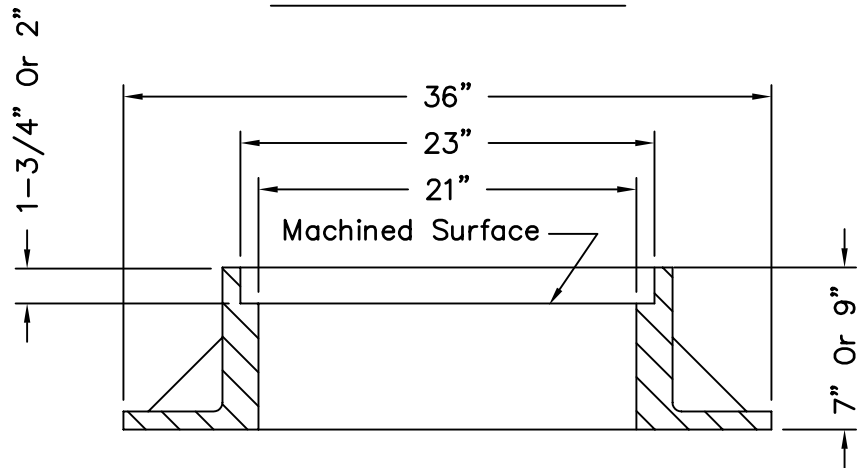
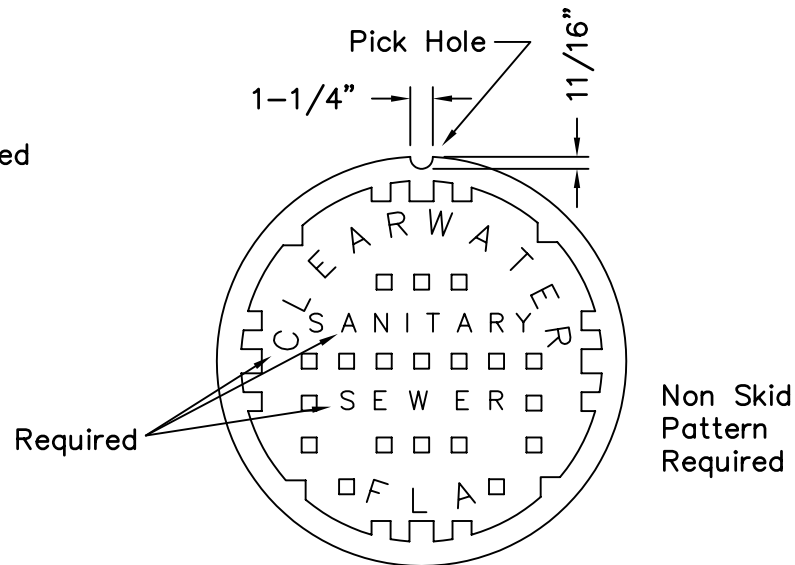


RING - HALF PLAN

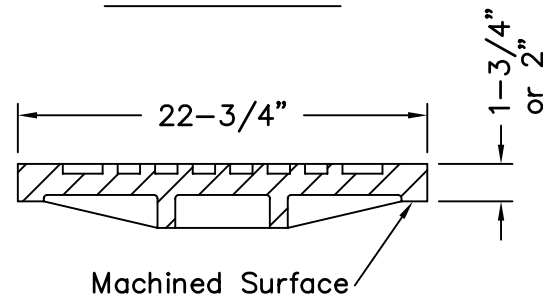


RING - SECTION

Minimum Weight 7" 232 lbs.
9" 278 lbs.



SOLID COVER



SOLID COVER SECTION

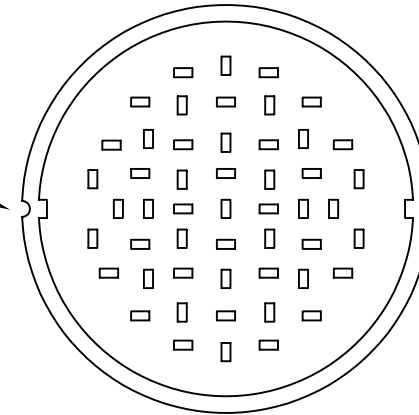
Minimum Weight 128 lbs.

NOTES

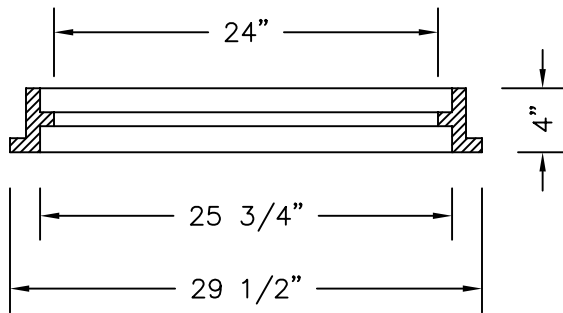
1. Where roadway base is 8" or thicker use 9" ring, all other cases 7" ring is permissible.
2. Manufacturers model of storm ring and cover to be approved by City Engineer.

				CITY OF CLEARWATER, FLORIDA		
				ENGINEERING		DEPARTMENT
				REDRAWN BY Novo	DATE 8/91	
1	9/25/96	Deleted Sheets 2 & 3	W.J.S.	CHECKED BY W.J.S.	SANITARY SEWER MANHOLE COVER	
REV.	DATE	DESCRIPTION	APP.	DESIGNED BY D.G.B.	INDEX NO. 301	
						1 OF 2

2 Non-Penetrating
Pick Holes

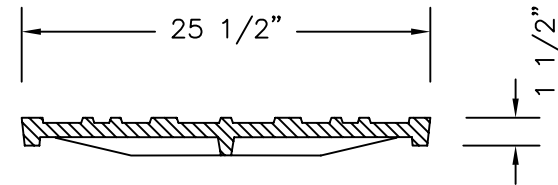


SOLID COVER



RING - SECTION

Weight 85 lbs.



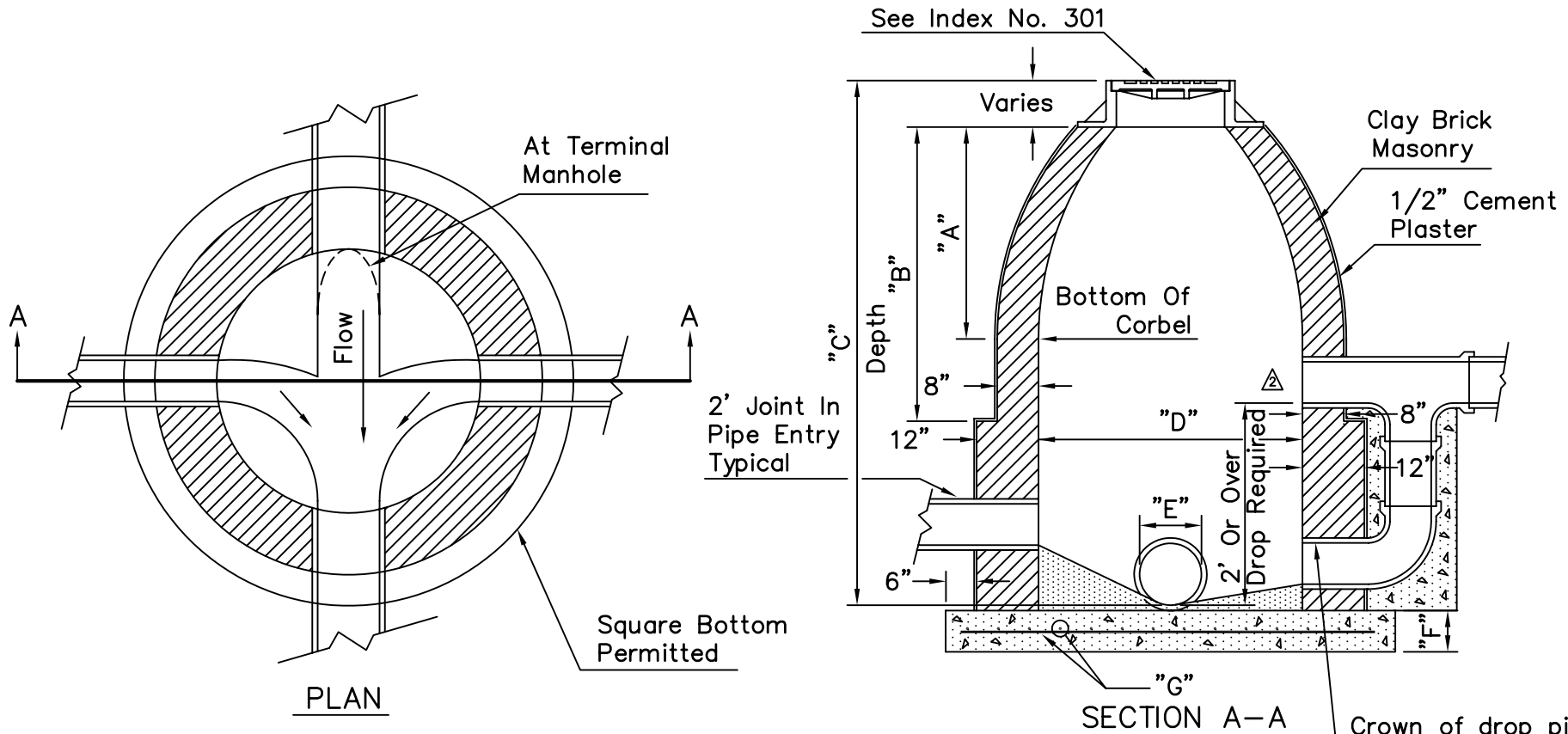
SOLID COVER SECTION

Weight 120 lbs.

NOTES

1. U.S. Foundry No. 117 Ring And BL Cover, Or Equal.

				CITY OF CLEARWATER, FLORIDA	
				ENGINEERING	DEPARTMENT
				REDRAWN BY Novo	DATE 4/95
				CHECKED BY R.C.S.	INDEX NO. 301
REV.	DATE	DESCRIPTION	APP.	DESIGNED BY U.S.Foundry	2 OF 2

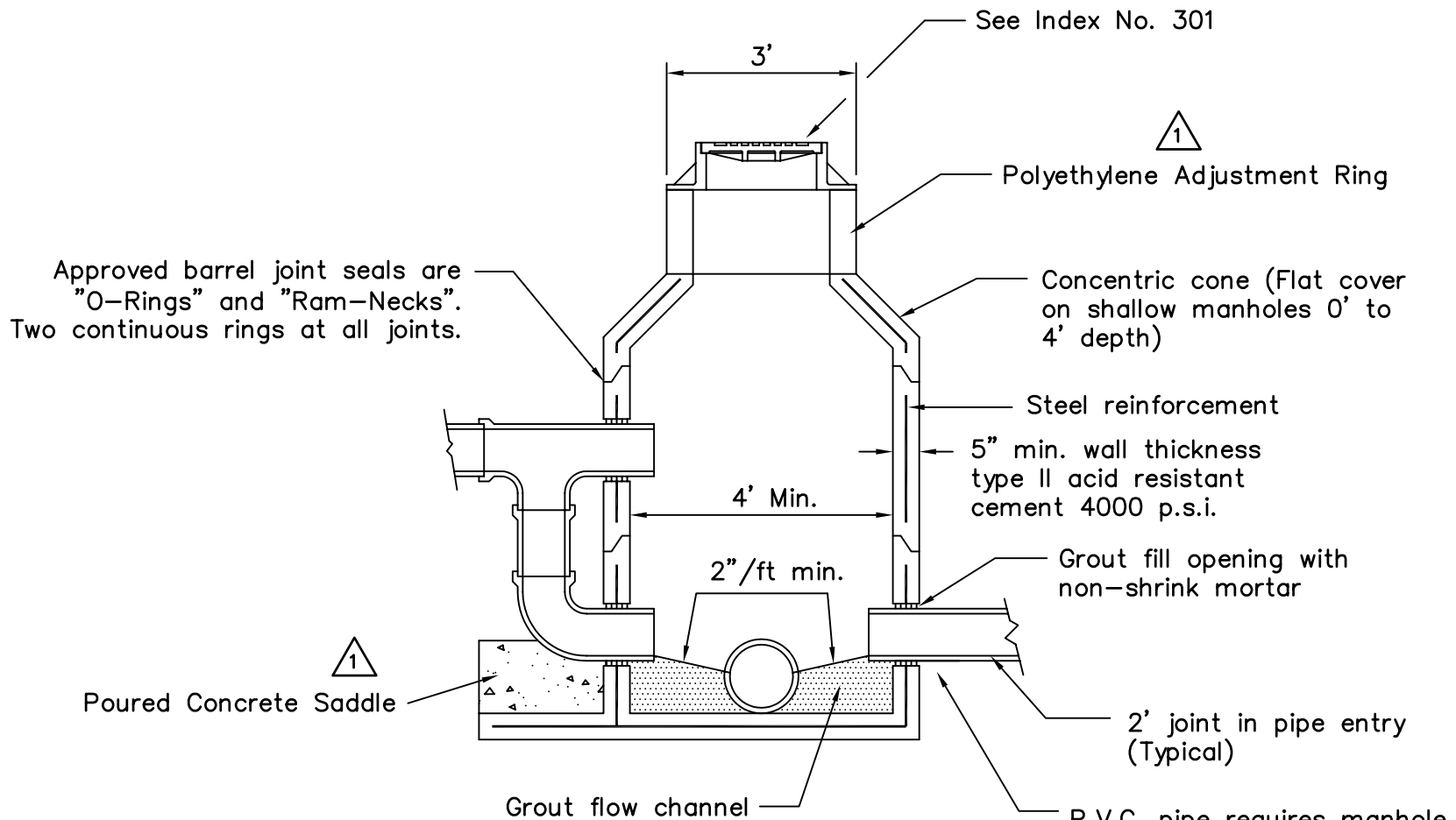


	A	B	C	D	E	F	G
Shallow 0'- 4'	2'-6"		4' Max	3'-6"	24" Max	8"	#3 at 12" E.W.
Standard 4.1'- 6'	3'-6"		6' Max	4'	30" Max	8"	#5 at 10" E.W.
Deep 6.1'- 10'	3'-6"	7'	10'	4'	36" Max	12"	#5 at 10" E.W.
Deep 10.1'- 14'	3'-6"	7'	14'	5'	36" Max	12"	#5 at 10" E.W.

NOTES:

1. All concrete to be 3000 p.s.i. with fiber mesh reinforcing.
2. P.V.C. pipe entry requires manhole adapter coupling by Flo Control Inc., or approved water stop coupling.
3. Manholes shall have a water proof Bituminous Coating on the exterior & interior. Koppers bitumastic black solution 300M, or Proco EP-214.

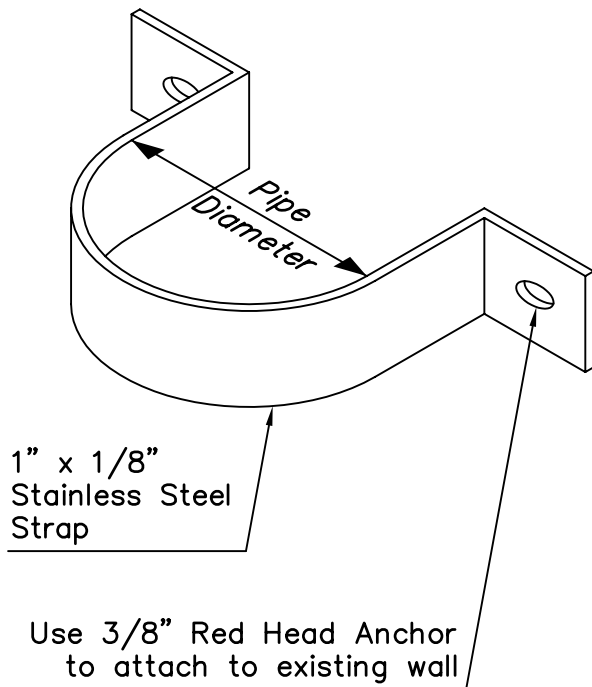
CITY OF CLEARWATER, FLORIDA						
ENGINEERING			DEPARTMENT			
△	7/28/05	Removed Brick	L.M.	REDRAWN BY Novo	BRICK MASONRY	DATE 8/91
1	4/9/02	Rev. Notes	R.G.	CHECKED BY W.J.S.	MANHOLE DETAIL	INDEX NO. 302
REV.	DATE	DESCRIPTION	APP.	DESIGNED BY D.G.B.	SANITARY SEWER	
					OUTSIDE DROP	1 OF 3



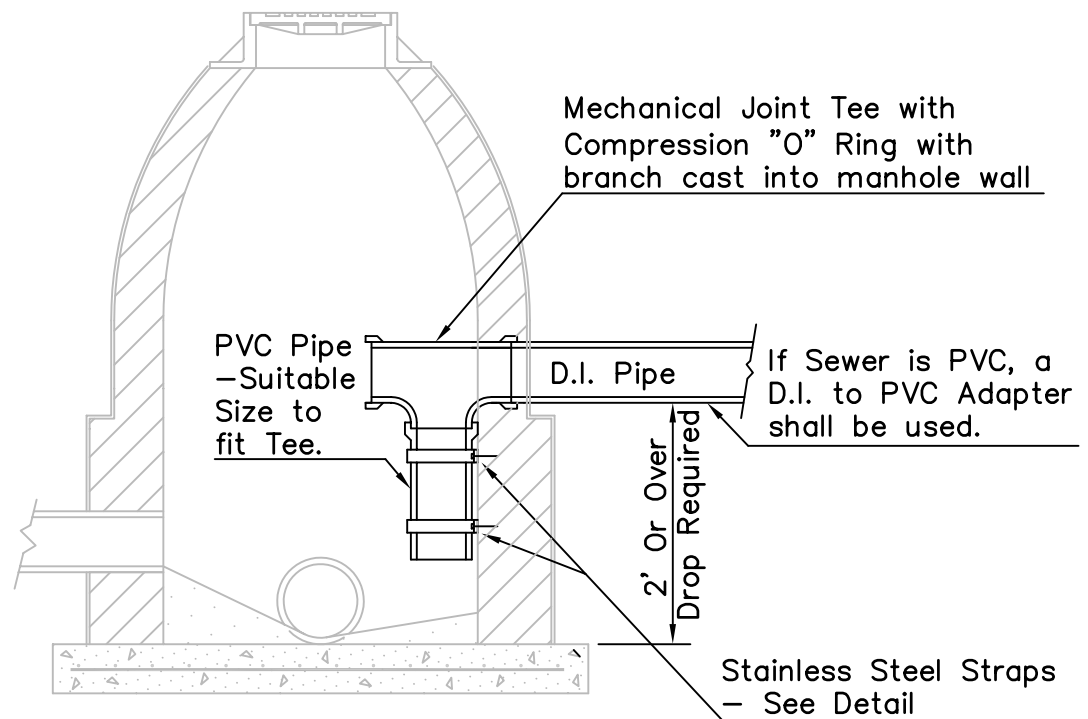
NOTES

1. Precast manhole drop may be approved by City Engineer. Shop drawing submittal required.
2. Drop required when 2' or over.
3. Manholes shall have an exterior coating of at least 15 mils dry thickness PROCO EP214-351 Epoxi-Mastic or Koppers bitumastic black solution 300M. Interior shall be AGRU SUREGRIP® HDPE or PP-R Liner with a minimum thickness of 2 mm.

				CITY OF CLEARWATER, FLORIDA	
				ENGINEERING	DEPARTMENT
				REDRAWN BY Novo	PRECAST
				CHECKED BY W.J.S.	SANITARY MANHOLE
				DESIGNED BY T.C.J.	DETAIL
					OUTSIDE DROP
					DATE 9/91
1	6/04	Changes per Pub. Util.	R.S.F.		INDEX NO. 302
REV.	DATE	DESCRIPTION	APP.		2 OF 3



STRAP DETAIL

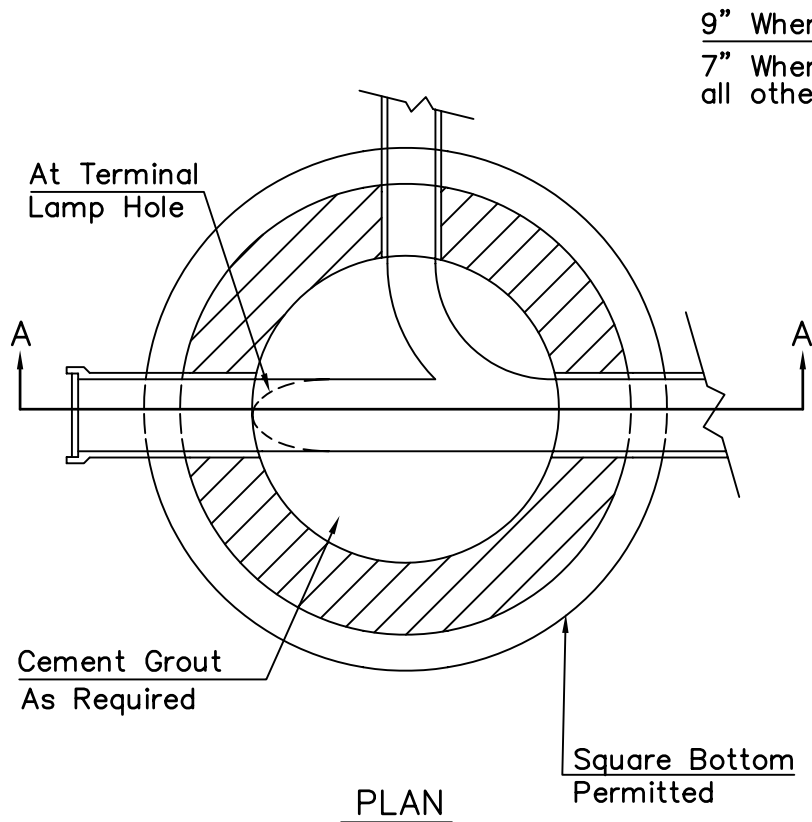


SECTION A-A

NOTES

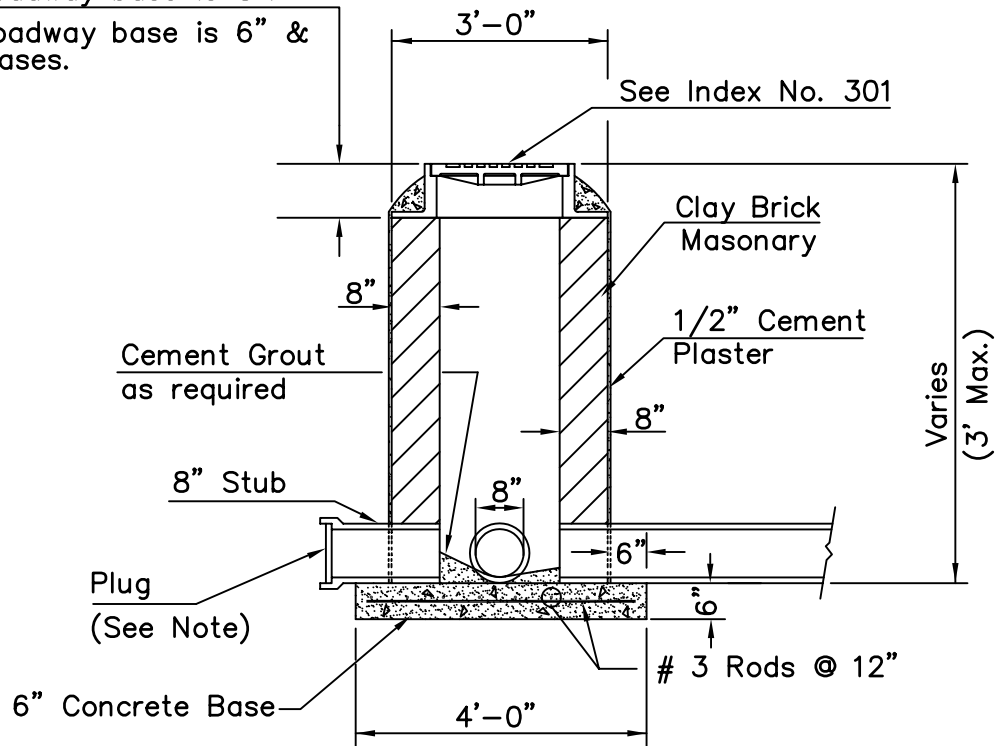
1. P.V.C. pipe entry requires manhole adapter coupling by Flo Control Inc., or approved water stop coupling.

				CITY OF CLEARWATER, FLORIDA		
				ENGINEERING		DEPARTMENT
				REDRAWN BY Novo	INSIDE DROP	DATE 8/91
				CHECKED BY W.J.S.	DETAIL	INDEX NO. 302
				DESIGNED BY D.G.B.	SANITARY SEWER	3 OF 3
REV.	DATE	DESCRIPTION	APP.			



9" When roadway base is 8".

7" When roadway base is 6" & all other cases.



NOTES:

Lamp holes shall have a waterproof bituminous coating on the exterior, Koppers Bitumastic Black 300M, or Proco EP-214.

Plug to be plastic with "O" ring or VC with "O" ring.

P.V.C. pipe entry requires transite manhole coupling accessory by Johns Manville or equal approved water stop coupling.

				CITY OF CLEARWATER, FLORIDA	
				ENGINEERING	DEPARTMENT
				REDRAWN BY Ag	DATE 11/07/95
				CHECKED BY W.J.S.	INDEX NO. 303
REV.	DATE	DESCRIPTION	APP.	DESIGNED BY T.C.J.	1 OF 1

⚠
 CLEANOUT PLUG
 CHARLOTTE Pipe And Foundry Company
 Part No. 106 Or Equal

See NOTE For Traffic Bearing Cover.

Concrete Pad 8"
 Thick x 1'-6" Sq.

⚠
 FEMALE ADAPTER
 CHARLOTTE Pipe And Foundry Company
 Part No. 101 Or Equal

⚠
 TWO-WAY CLEANOUT
 CHARLOTTE Pipe And Foundry Company
 Part No. 448 Or Equal

Sewer Lateral

CLEANOUT DETAIL

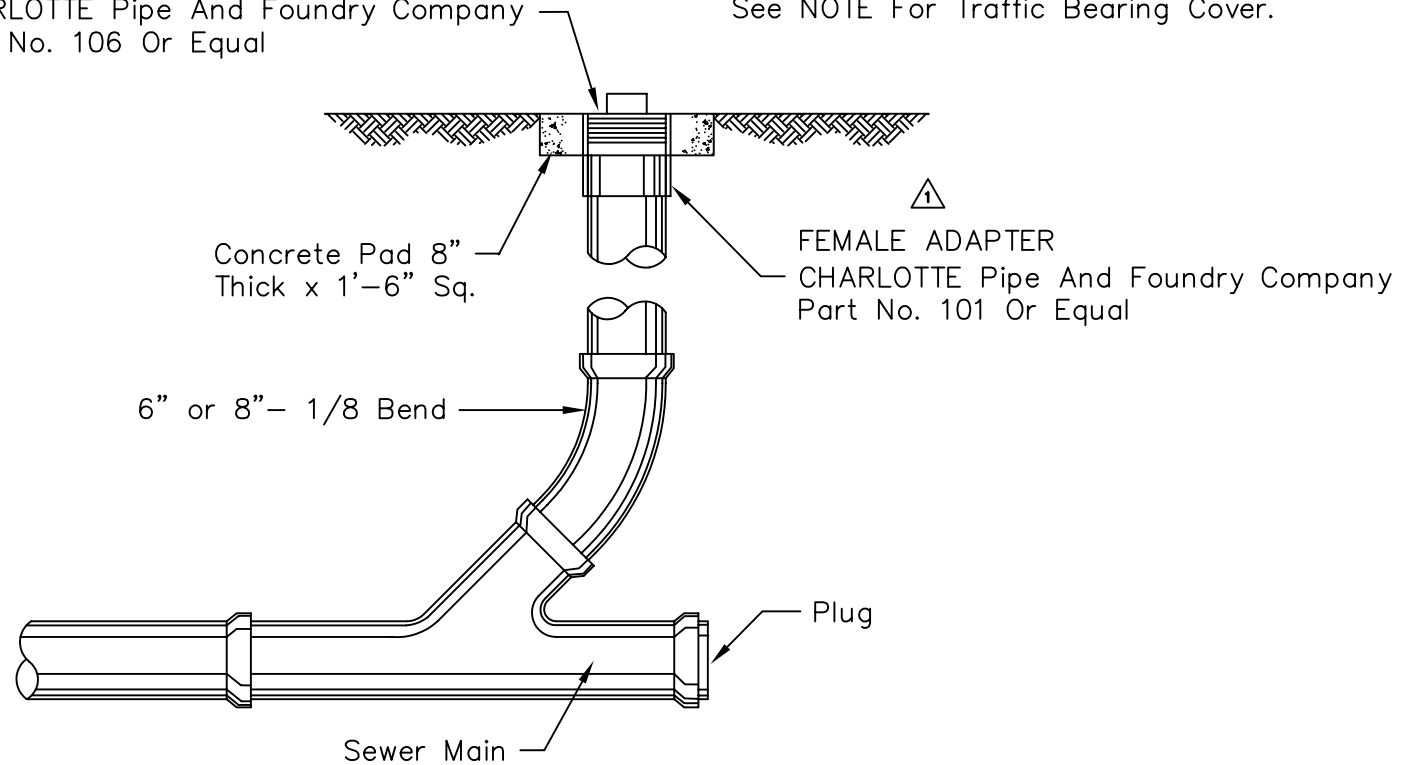
N.T.S.

⚠
 NOTE: Cleanout Plug Cover To Be
 U.S. Foundry 7623 Or Equal.

				CITY OF CLEARWATER, FLORIDA	
				ENGINEERING	DEPARTMENT
				REDRAWN BY Ag	STANDARD
				CHECKED BY W.J.S.	CLEAN OUT
				APPROVED BY T.C.J.	(Sanitary)
				DATE	11/07/95
⚠	3/04	Revised Per Utilities	R.S.F.	INDEX NO.	304
REV.	DATE	DESCRIPTION	APP.	1 OF 2	

⚠
 CLEANOUT PLUG
 CHARLOTTE Pipe And Foundry Company
 Part No. 106 Or Equal

See NOTE For Traffic Bearing Cover.

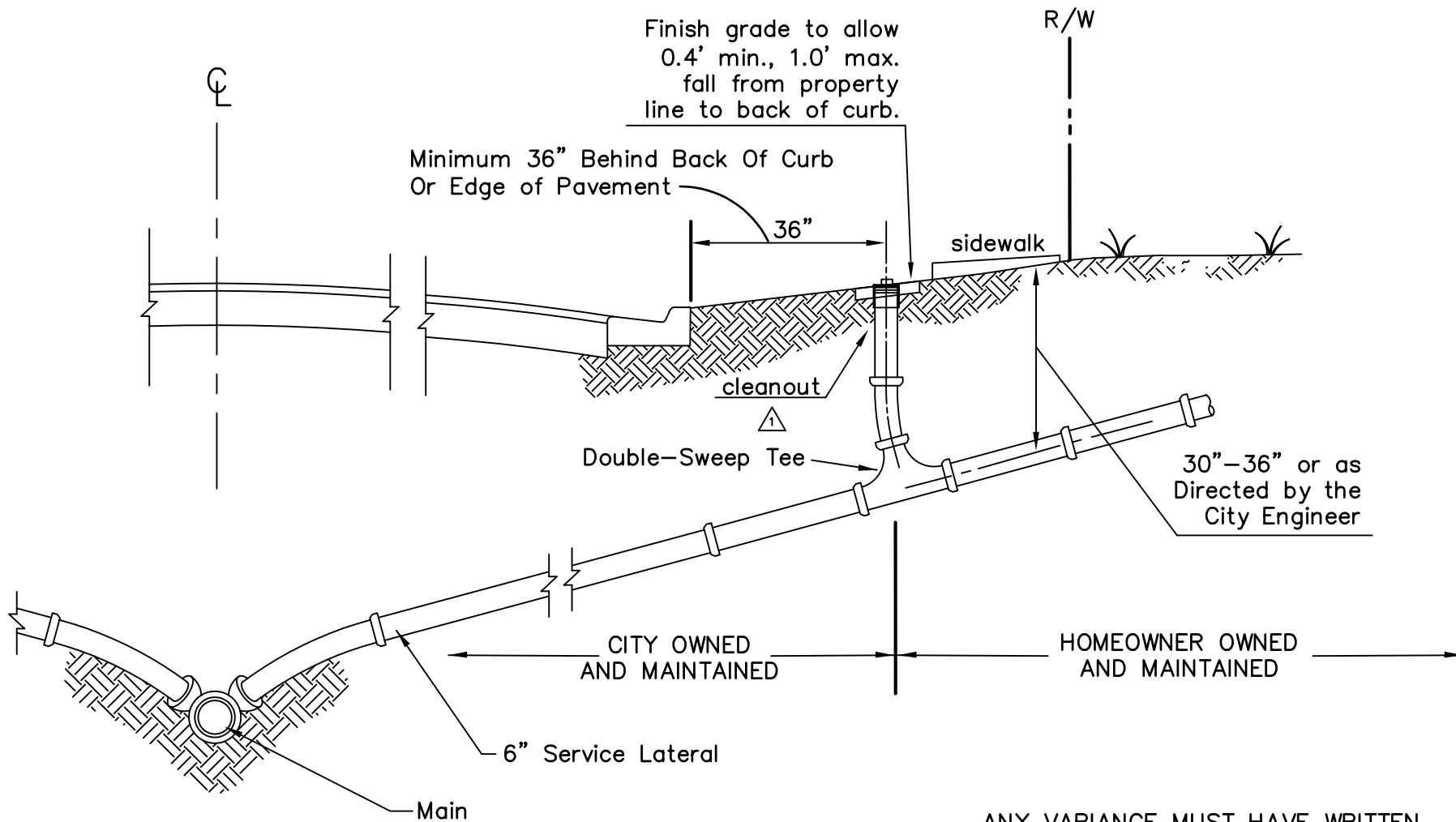


TERMINAL CLEANOUT DETAIL

N.T.S.

⚠
 NOTE: Cleanout Plug Cover To Be
 U.S. Foundry 7623 Or Equal.

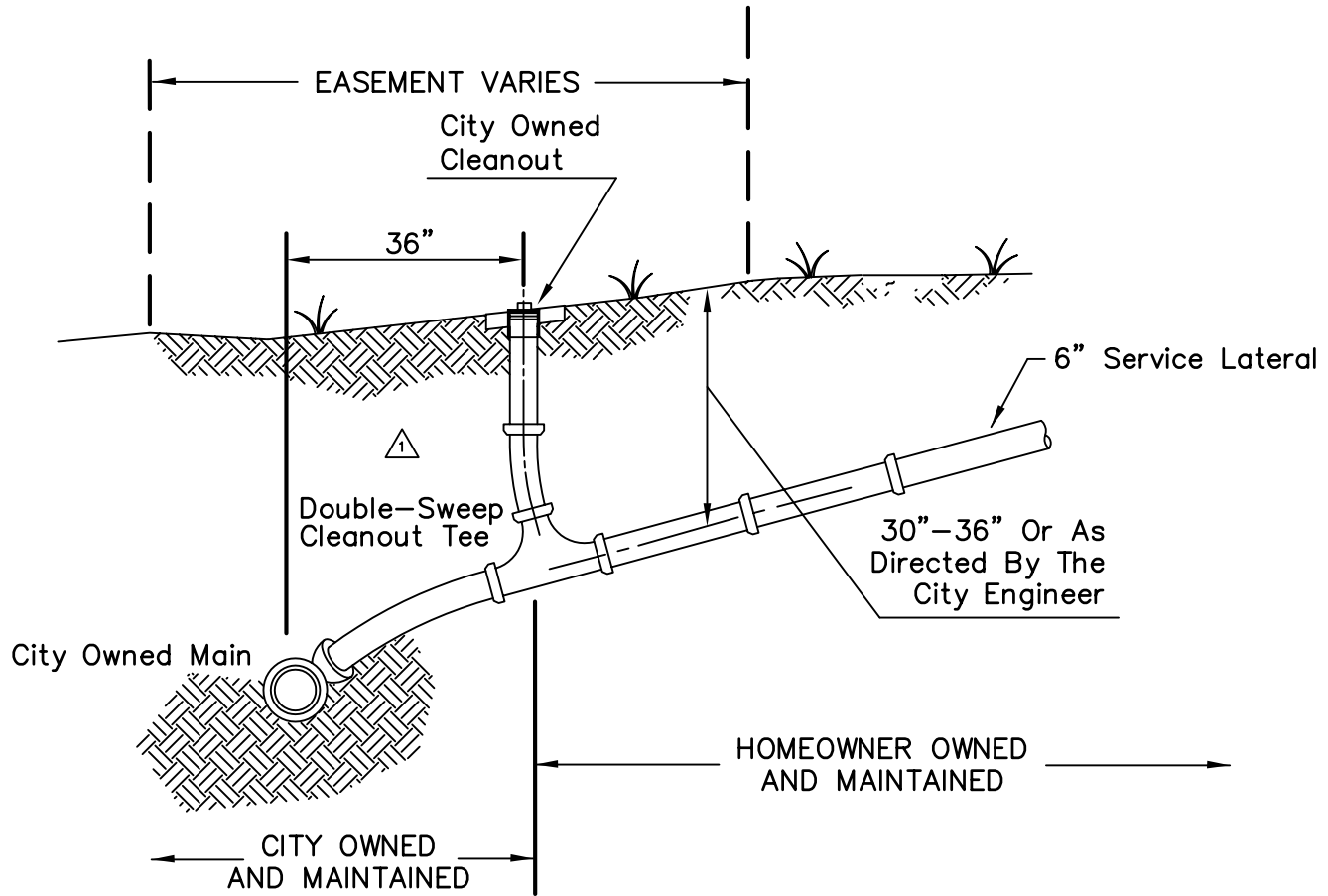
				CITY OF CLEARWATER, FLORIDA	
				ENGINEERING	DEPARTMENT
				REDRAWN BY Ag	STANDARD
				CHECKED BY W.J.S.	TERMINAL END
				APPROVED BY T.C.J.	CLEAN OUT (Sanitary)
⚠	3/04	Revised Per Utilities	R.S.F.		DATE 11/07/95
REV.	DATE	DESCRIPTION	APP.		INDEX NO. 304
					2 OF 2



SECTION

ANY VARIANCE MUST HAVE WRITTEN APPROVAL OF THE CITY ENGINEER.

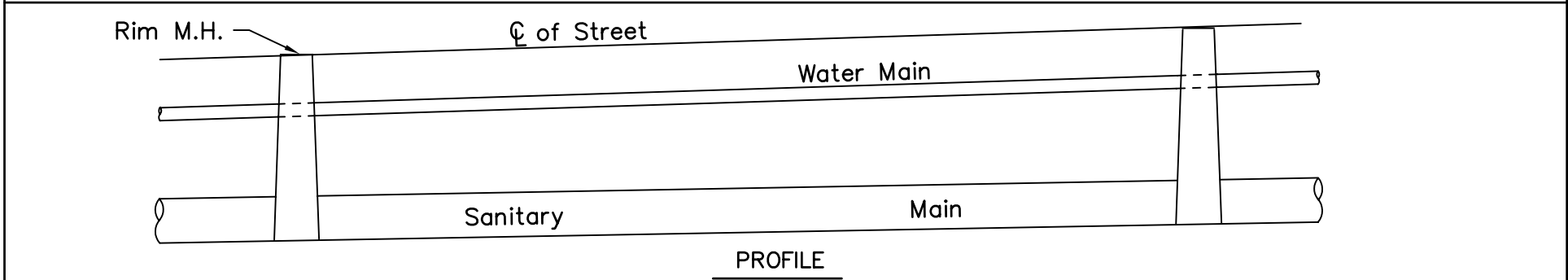
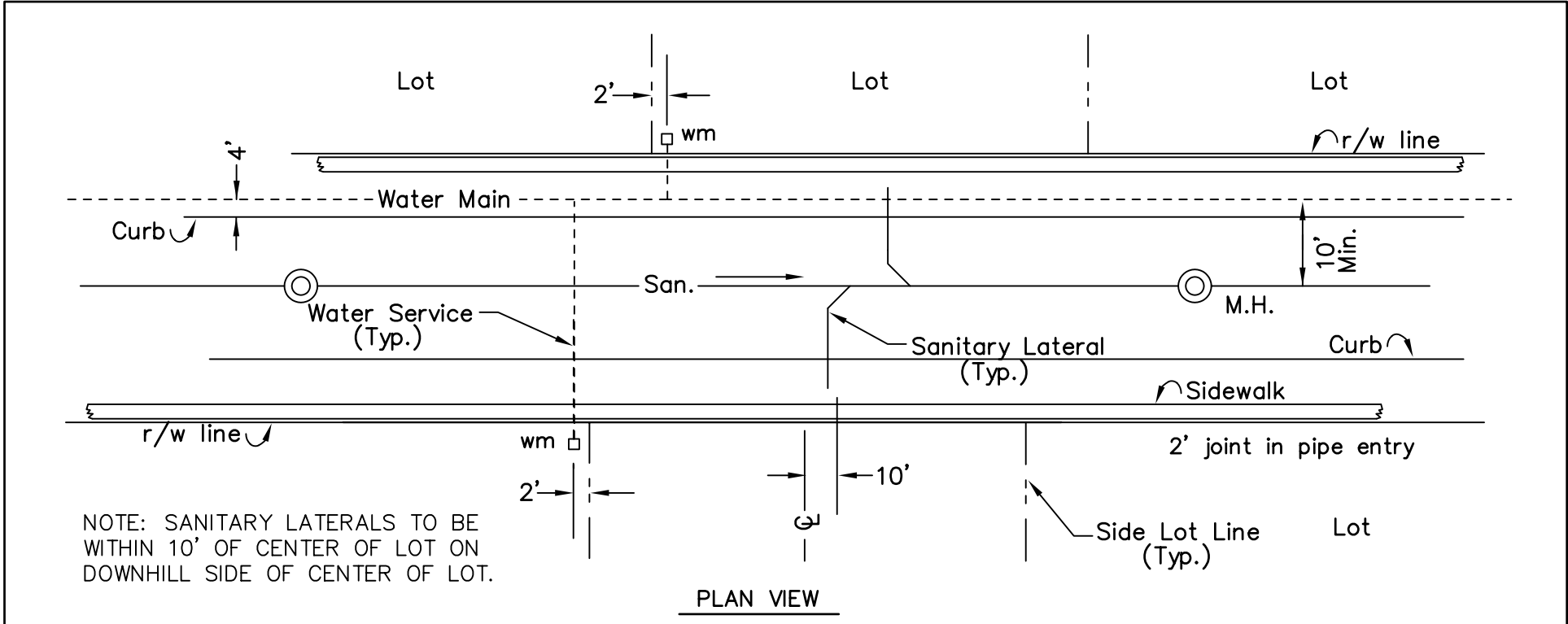
				CITY OF CLEARWATER, FLORIDA PUBLIC WORKS ADMINISTRATION ENGINEERING		
2	3/04	Revised Per Utilities		REDRAWN BY D.King	STREET LATERAL	DATE 10/17/02
⚠	7/03	Move C.O. Into R/W		CHECKED BY	DETAIL	INDEX NO. 305
REV.	DATE	DESCRIPTION	APP.	DESIGNED BY R.S.F.		1 OF 3



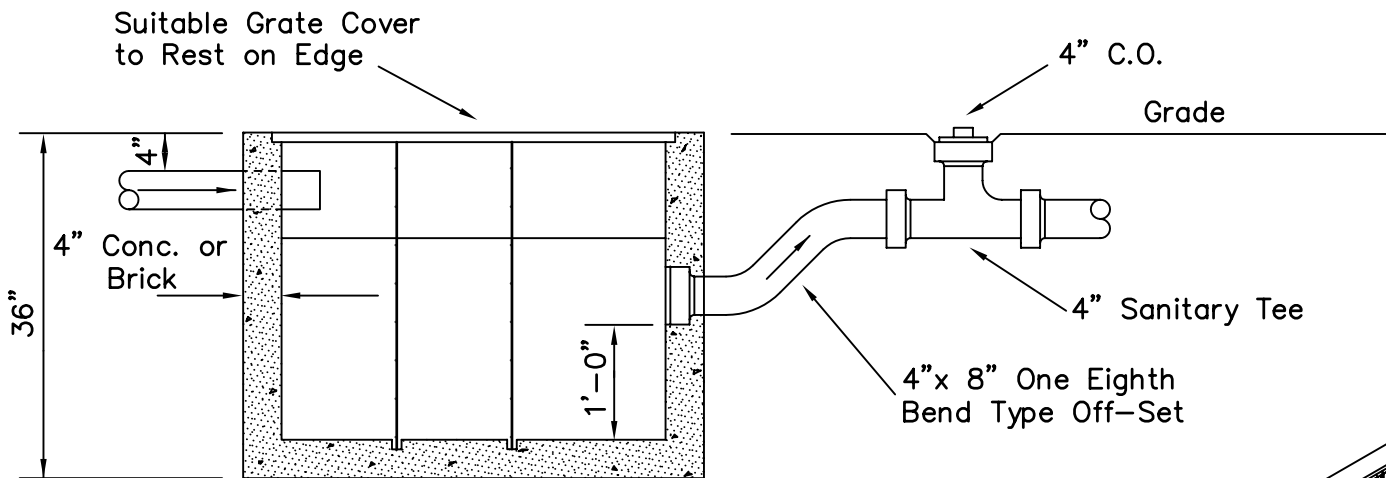
SECTION

ANY VARIANCE MUST HAVE WRITTEN APPROVAL OF THE CITY ENGINEER.

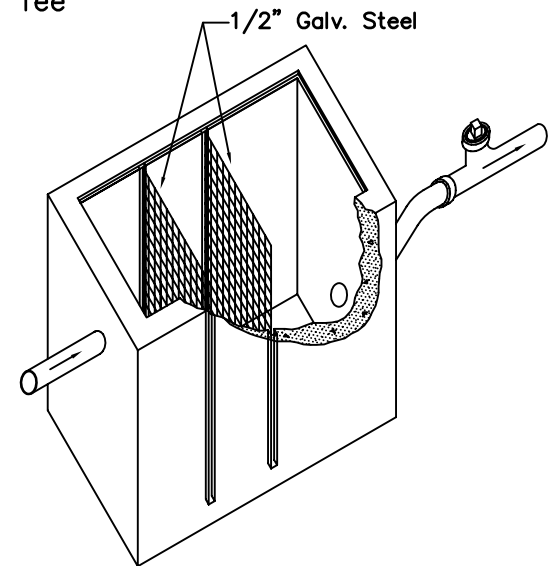
				CITY OF CLEARWATER, FLORIDA PUBLIC WORKS ADMINISTRATION ENGINEERING	
				REDRAWN BY D.King	EASEMENT AREA
				CHECKED BY	LATERAL DETAIL
				DESIGNED BY R.S.F.	
					DATE 10/17/02
					INDEX NO. 305
					2 OF 3
△	3/04	Revised Per Utilities			
REV.	DATE	DESCRIPTION	APP.		



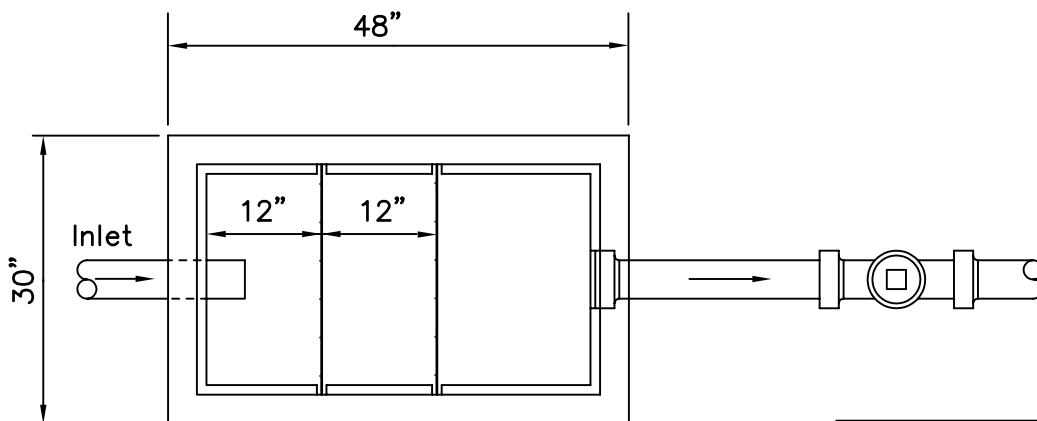
				CITY OF CLEARWATER, FLORIDA	
				ENGINEERING	DEPARTMENT
				REDRAWN BY B.V.D.	DATE 06/30/94
				CHECKED BY	INDEX NO. 305
REV.	DATE	DESCRIPTION	APP.	APPROVED BY G.C.H.	3 OF 3



SECTION

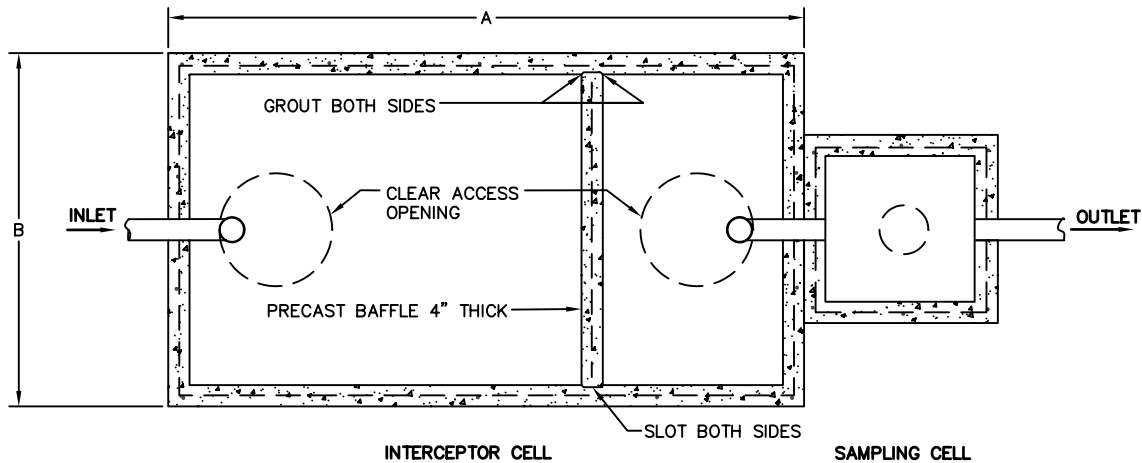


TYPICAL SAND or LINT TRAP



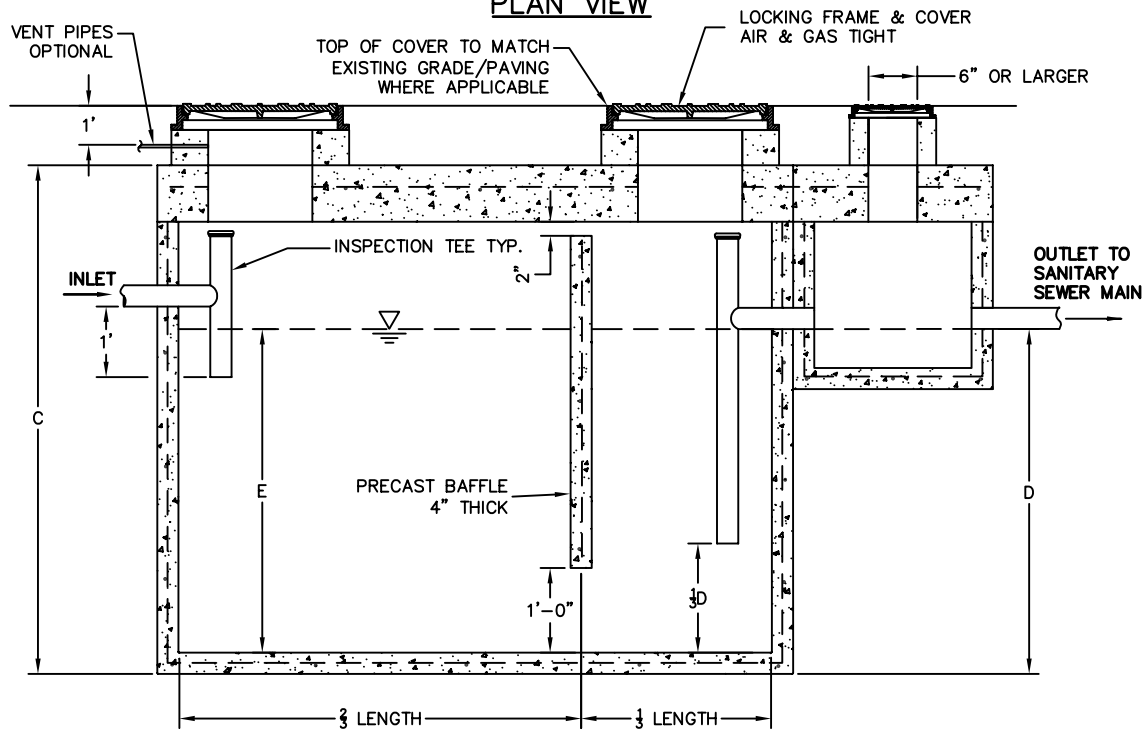
PLAN

				CITY OF CLEARWATER, FLORIDA	
				ENGINEERING	DEPARTMENT
				REDRAWN BY J.C.J.	SAND or LINT TRAP DATE 3/93
				CHECKED BY	for SERVICE STATIONS INDEX NO. 306
REV.	DATE	DESCRIPTION	APP.	DESIGNED BY	or LAUNDROMATS
					1 OF 1



INTERCEPTOR CELL SAMPLING CELL

PLAN VIEW



INTERCEPTOR CELL SAMPLING CELL

SECTION VIEW

INTERCEPTOR CELL SIZING CHART					
GALLON CAPACITY	A	B	C	D	E
750	7'-0"	4'-8"	7'-0"	4'-3"	3'-11"
1000	9'-0"	5'-0"	7'-2"	4'-2"	3'-10"
1250	9'-0"	5'-0"	7'-2"	5'-2"	4'-10"

General Notes:

1. The interceptor system may consist of multiple interceptor cells, if required greater than 1250 gallon capacity.
2. One sampling cell per system shall be installed at outfall to main.
3. Concrete wall coating taking into consideration the water-oil mix.
4. Contractor to supply & install all piping and sanitary tee's, clean-outs for cleaning toward and away from interceptor (alternate dual sweep clean-outs).
5. Contractor shall assure 2,500 PSI minimum soil bearing capacity @ bedding elevation.

NOTES:

1. Concrete: 4500psi @ 28 day.
2. Rebar: ASTM A615 Grade 60.
3. Mesh: ASTM A815 Grade 65.
4. Design: ACI3 18-83 Building Code
ASTM C857 Minimum Structural Design Loading for Underground Precast Concrete Utility Structures
5. Loads: H-20 truck wheels w/30% impact per AASHTO.
6. Fill w/clean water prior to start up of system.
7. Gray water only, black water shall be carried by separate sewer.

CITY OF CLEARWATER, FLORIDA ENGINEERING DEPARTMENT		
REDRAWN BY E.A.	GREASE INTERCEPTOR 750-1250 GALLON	DATE 01/02
CHECKED BY P.D.		INDEX NO. 307
DESIGNED BY D.S.		1 OF 1