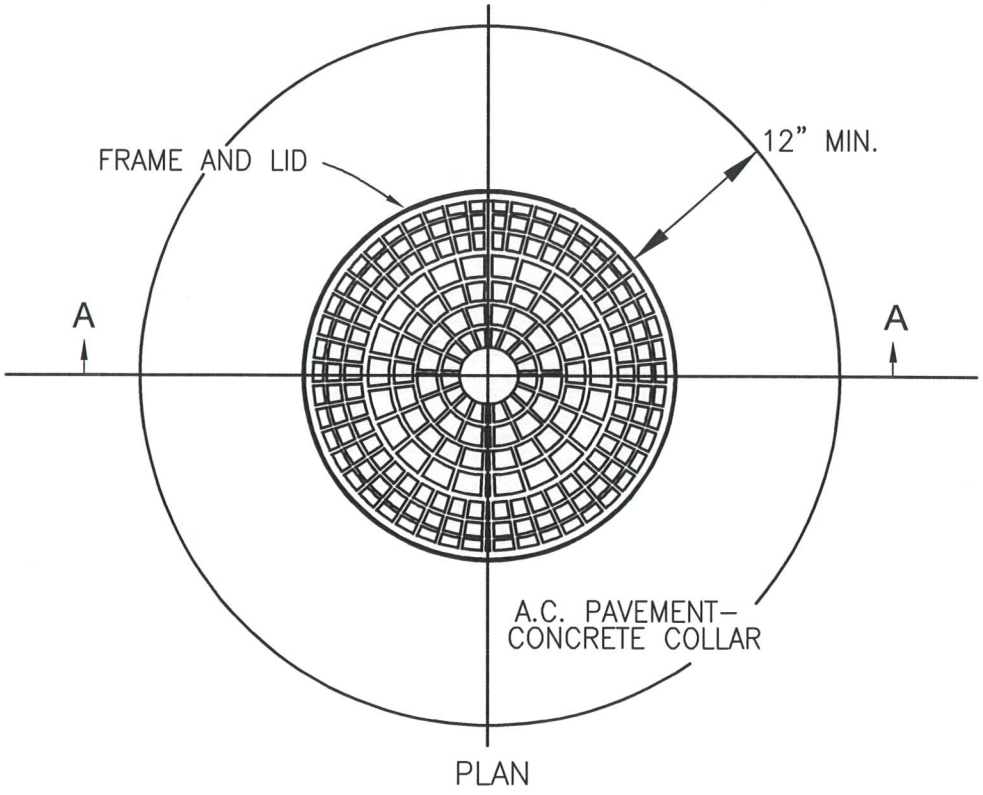
CITY OF FONTANA DESIGN STANDARDS

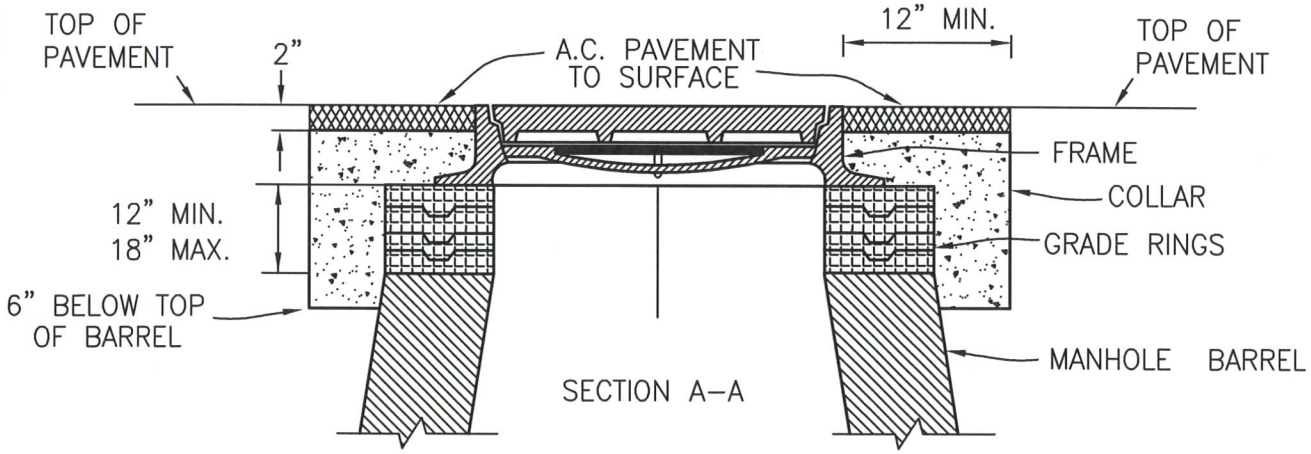
Link to Location on City Website:
https://www.fontanaca.gov/3483/Design-and-Construction-Standards

SECTION 2000 - SEWER

STD #	SHEETS		DATE APPROVED
2000	2	Standard Manhole Frame, Cover & Collar	7/20/2023
2001	2	Standard Manhole Cast in Place for Sewer	1/8/2008
2002	1	Standard Drop Manhole for 6" to 36" Pipe	10/18/2006
2003	1	Typical Sewer Manhole Bases	5/12/2016
2004	1	Sewer Terminal Cleanout	10/18/2006
2005	1	Sewer Lateral Cleanout	12/15/2014
2006	1	Concrete Sewer Cleanout Box	10/18/2006
2007	1	Plastic Sewer Cleanout Box	10/18/2006
2008	2	Sewer Saddle	10/18/2006
2009	2	Pipe Bedding Detail for PVC and VCP Sewers	10/20/2020



PLAN



SECTION A–A

NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
GIA LAM KIM
No. 62296
CIVIL
STATE OF CALIFORNIA

APPROVED BY:

CITY ENGINEER DATE

GIA LAM KIM

DRAWN BY: DT

REVISION NO. 2

CITY OF FONTANA

STANDARD MANHOLE FRAME, COVER AND CONCRETE COLLAR

STD. PLAN NO. 2000 | DWG. 1/2

NOTES:

1. MANHOLE FRAME AND COVER SHALL BE LONG BEACH IRON WORKS, LB 1170A OR APPROVED EQUAL
2. ASPHALT SURROUNDING THE FRAME SHALL BE PLACED TO A DEPTH OF 2" BELOW FINISHED SURFACE AND 12" MINIMUM WIDTH.
3. GRADE RINGS ARE ALLOWED FOR A MINIMUM OF 12" AND A MAXIMUM OF 18" FROM TOP OF MANHOLE BARREL.
4. CONCRETE COLLAR SHALL BE PLACED FROM 2" BELOW TOP OF MANHOLE FRAME TO 6" BELOW TOP OF BARREL. COLLAR SHALL COMPLETELY ENCAPSULATE ALL GRADE RINGS. CONCRETE SHALL BE 560-C-3250.
5. ACCELERATING ADMIXTURES MAY BE USED AT THE REQUEST OF THE CONTRACTOR OR CITY. ACCELERATING ADMIXTURES SHALL BE DURASET 4, POLARSET, OR APPROVED EQUAL AND SHALL CONFORM TO ASTM C494 OR ASTM D98 PER GREENBOOK SECTION 201-1.2.4 ITEM B.

REGISTERED PROFESSIONAL ENGINEER
GIA LAM KIM
No. 62296
CIVIL
STATE OF CALIFORNIA

APPROVED BY:

JK 7/20/23

CITY ENGINEER DATE

GIA LAM KIM

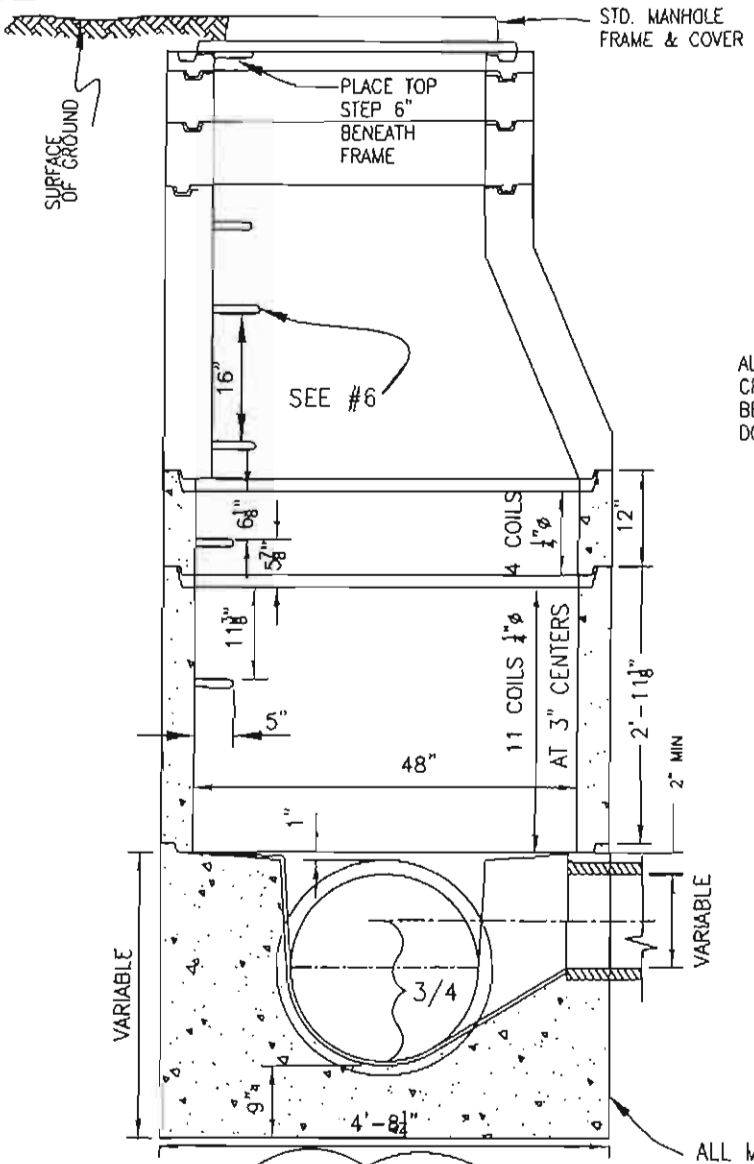
DRAWN BY: DT

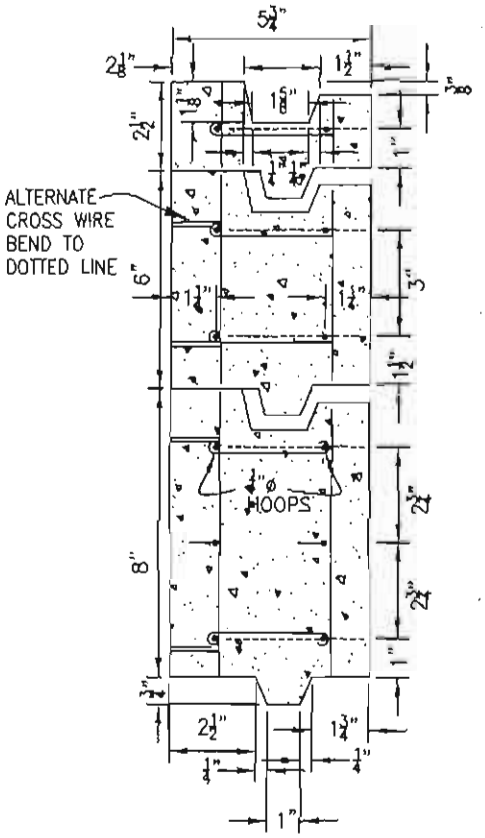
REVISION NO. 2

CITY OF FONTANA

STANDARD MANHOLE FRAME, COVER AND CONCRETE COLLAR

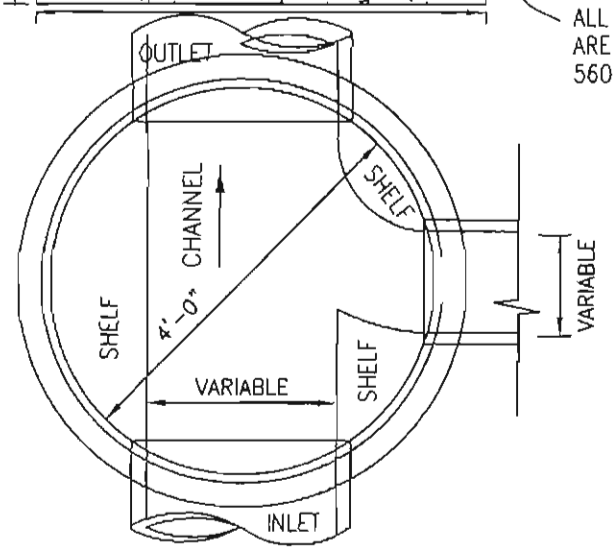
STD. PLAN NO. 2000 | DWG. 2/2

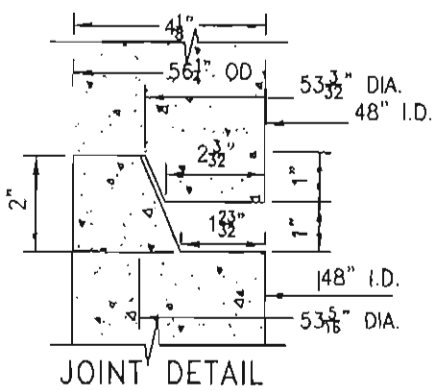




SECTION OF TOP RINGS (PRE-CAST R.C.)

ALL MANHOLE BOTTOMS ARE POUR IN PLACE USING 560-C-3250 CONCRETE





JOINT DETAIL

REGISTERED PROFESSIONAL ENGINEER
RICARDO SANDOVAL
No. 51152
EXP. 9/30/09
CIVIL
STATE OF CALIFORNIA

APPROVED BY: 1-8-08

CITY ENGINEER DATE

RICARDO SANDOVAL

REVIEWED BY: DG

DATE OF LAST REVISION: 12/03/07

CITY OF FONTANA

STANDARD CAST IN PLACE MANHOLE FOR SEWER

07/10/06

STD. PLAN NO. 2001 | SHT 1 OF 2

NOTES:

1. SEE STANDARD DETAILS NOS. 2002 & 2003 FOR DROP & TYPICAL SEWER MANHOLE BASES DETAILS.
2. ECCENTRIC CONE MAY BE USED IN LIEU OF CONCENTRIC CONES.
3. THE LOWEST MANHOLE STEP SHALL BE PLACED NOT LESS THAN 16", NOT MORE THAN 24" ABOVE SHELF.
4. THE UPPER MANHOLE STEP SHALL BE PLACED BETWEEN THE TOP OF THE MANHOLE AND THE MANHOLE COVER FRAME AND SHALL PROJECT NOT MORE THAN 3" INSIDE MANHOLE.
4. ALL JOINTS SHALL BE MORTARED.
5. 3/4" DIAMETER GALVANIZED IRON STEP OR PLASTIC STEPS PER ASTM A-82, ASTM C-478, ASTM TYPE II GRADE 43758.

REGISTERED PROFESSIONAL ENGINEER
RICARDO SANDOVAL
No. 51152
EXP. 9/30/09
CIVIL
STATE OF CALIFORNIA

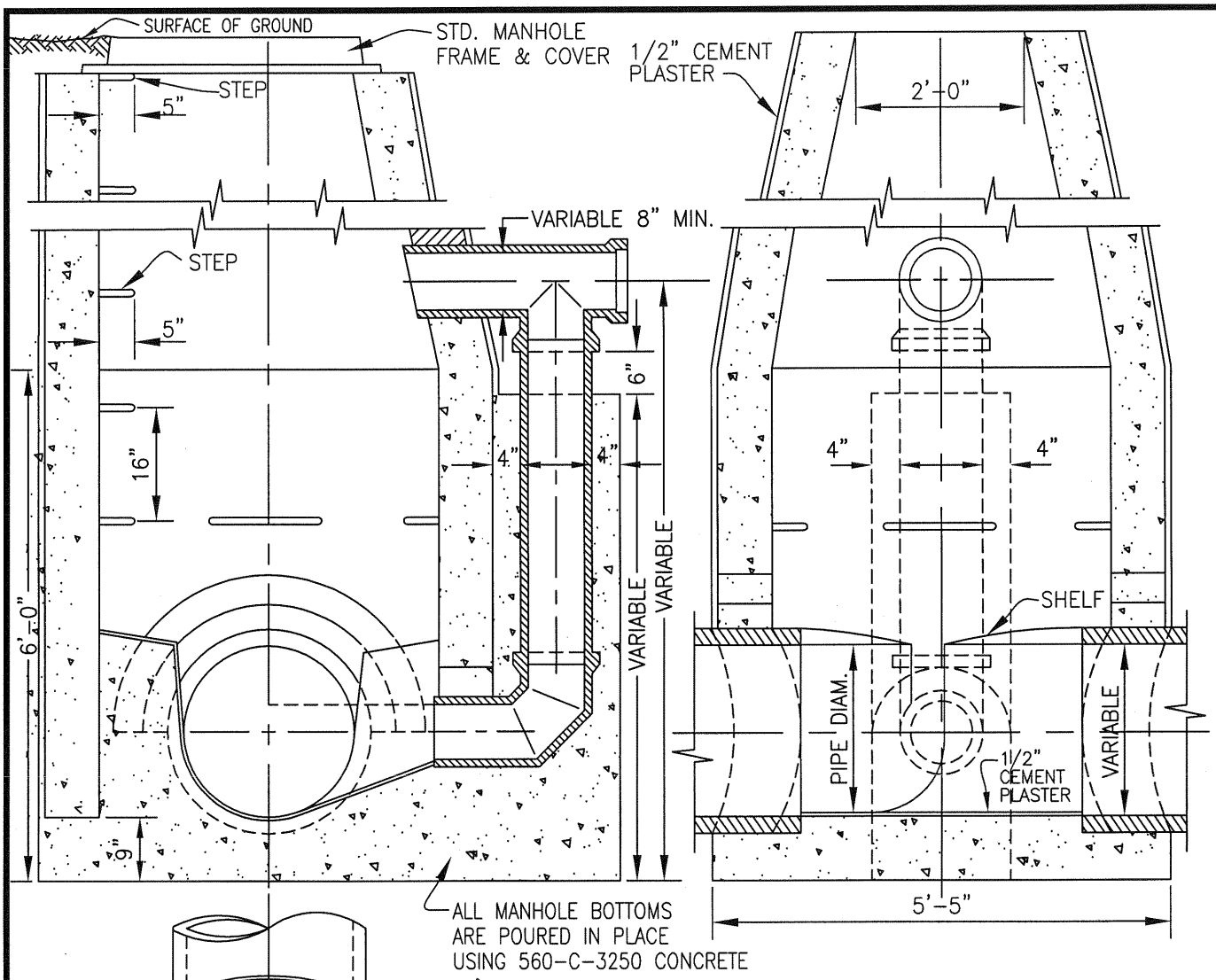
APPROVED BY: 1-8-08
CITY ENGINEER DATE
RICARDO SANDOVAL
REVIEWED BY: JPG
DATE OF LAST REVISION: 12/03/07

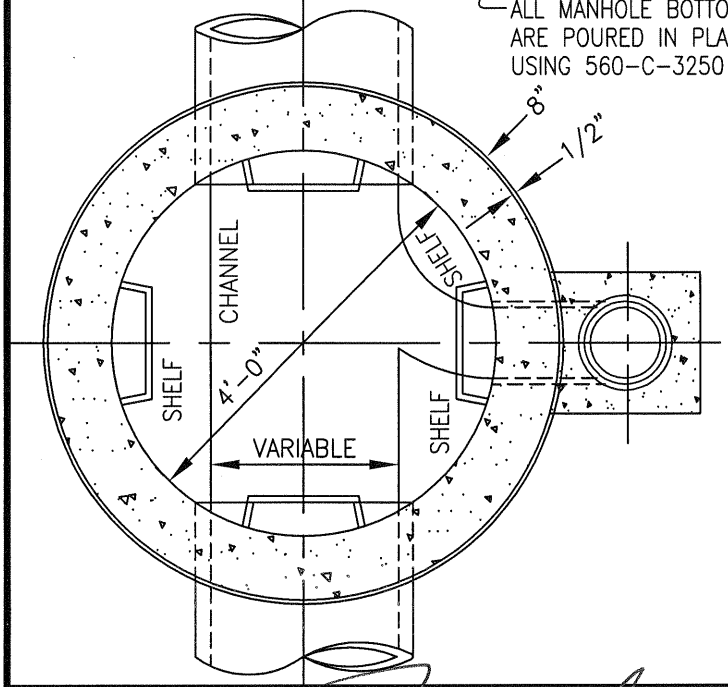
CITY OF FONTANA

STANDARD CAST IN PLACE MANHOLE FOR SEWER

07/10/06

STD. PLAN NO. 2001 | SHT 2 OF 2





NOTES:

1. FOR 15" SEWERS AND LARGER, TURN 8" ARCH OVER PIPE.
2. FOR 12" SEWERS AND UNDER, TURN 4" ARCH OVER PIPE.
3. THE LOWEST MANHOLE STEP SHALL BE PLACED NOT LESS THAN 16", NOT MORE THAN 24" ABOVE SHELF.
4. THE UPPER MANHOLE STEP SHALL BE PLACED BETWEEN THE TOP OF THE MANHOLE AND THE MANHOLE COVER FRAME AND SHALL PROJECT NOT MORE THAN 5" INSIDE MANHOLE.

REGISTERED PROFESSIONAL ENGINEER
RICARDO SANDOVAL
No. 51152
EXP. 9/30/07
CIVIL
STATE OF CALIFORNIA

APPROVED BY: _____ 10.18.06
CITY ENGINEER — DATE
RICARDO SANDOVAL

REVIEWED BY: DG

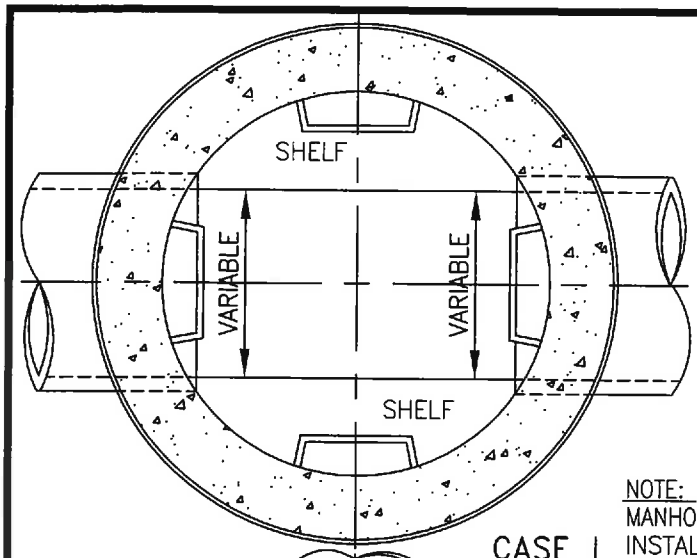
REVISION NUMBER: _____

CITY OF FONTANA

STANDARD DROP MANHOLE FOR 6" TO 36" PIPE

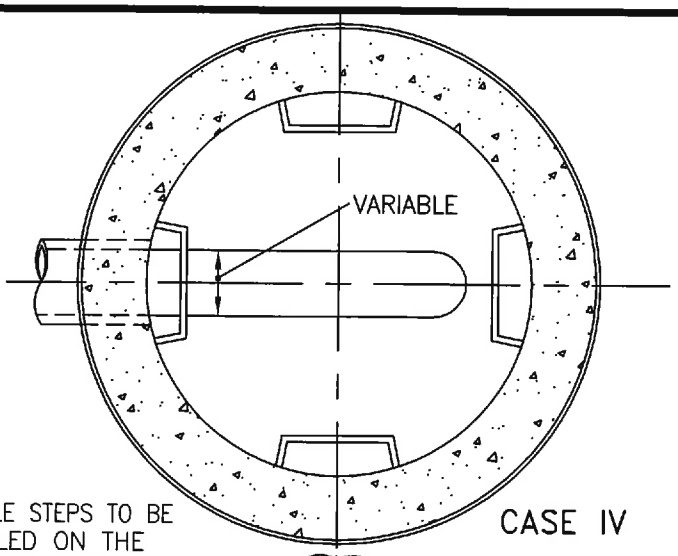
07/10/06

STD. PLAN NO. **2002** | SHT **1** OF **1**

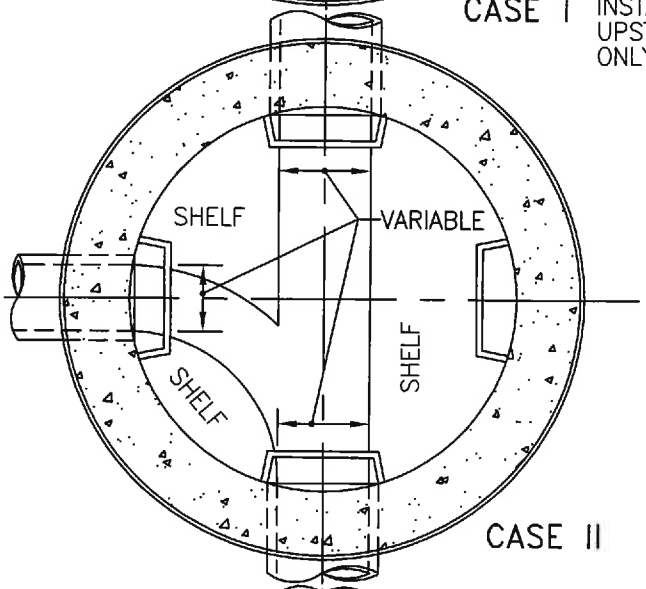


CASE I

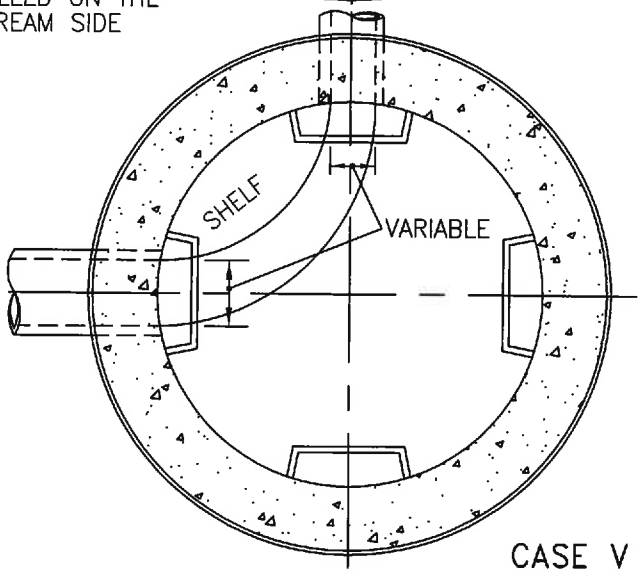
NOTE:
MANHOLE STEPS TO BE INSTALLED ON THE UPSTREAM SIDE ONLY



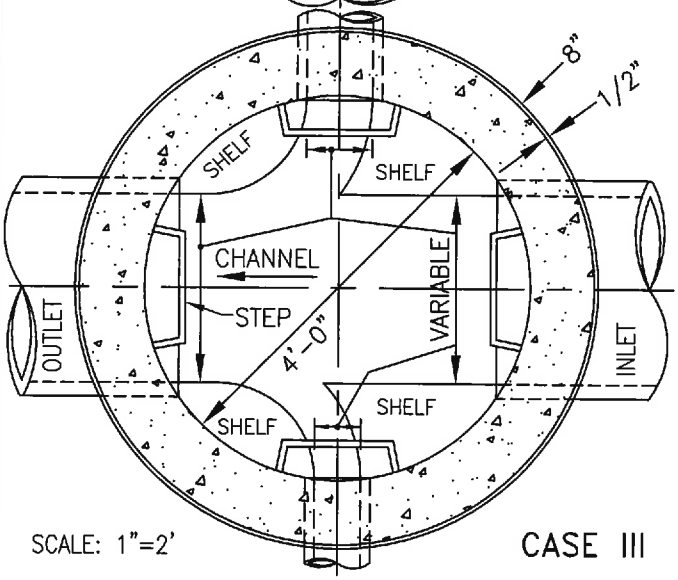
CASE IV



CASE II



CASE V



SCALE: 1"=2'

CASE III

REGISTERED PROFESSIONAL ENGINEER
RICARDO SANDOVAL
No. 51152
CIVIL
STATE OF CALIFORNIA

APPROVED BY: 5.12.16

CITY ENGINEER DATE

RICARDO SANDOVAL

REVIEWED BY: JK

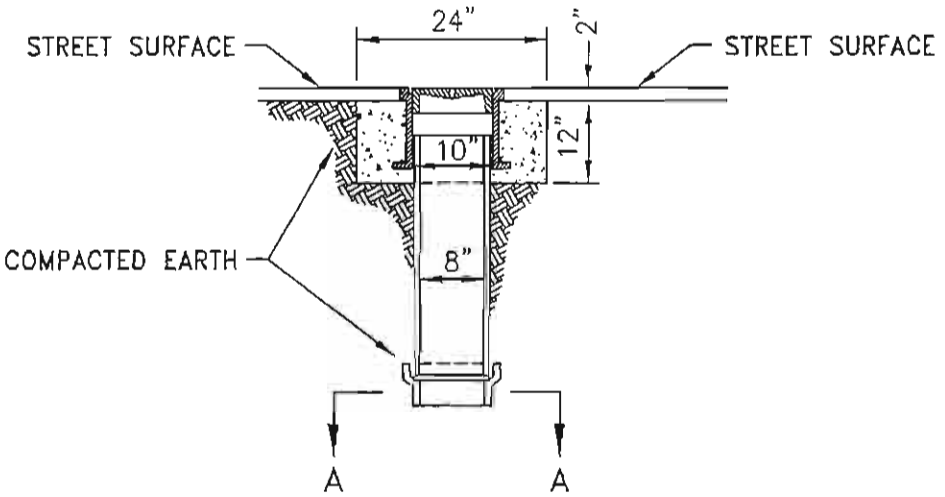
REVISION NUMBER: **05/12/16**

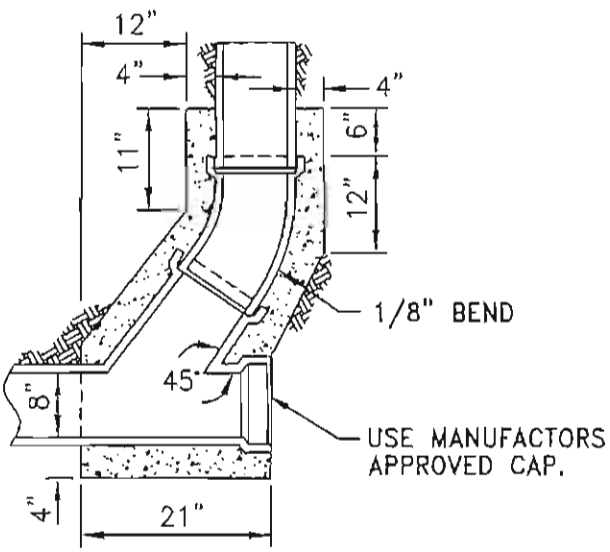
CITY OF FONTANA

TYPICAL SEWER MANHOLE BASES

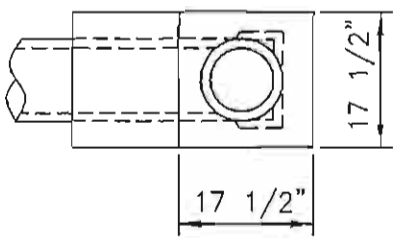
07/10/06

STD. PLAN NO. **2003** SHT **1** OF **1**





SECTIONAL ELEVATION



SECTION A–A

NOTES:

1. CLEANOUT FRAME & COVER, ALHAMBRA FOUNDRY NO. A-1240 OR EQUAL.
2. 3250 PSI P.C.C. TO BE USED IN ALL SEWER CONSTRUCTION.
3. THE MAXIMUM DISTANCE TO MANHOLE DOWNSTREAM SHALL BE 150'.

NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
RICARDO SANDOVAL
No. 51152
EXP. 9/30/07
CIVIL
STATE OF CALIFORNIA

APPROVED BY: 10-18-06
CITY ENGINEER DATE
RICARDO SANDOVAL

REVIEWED BY: DG

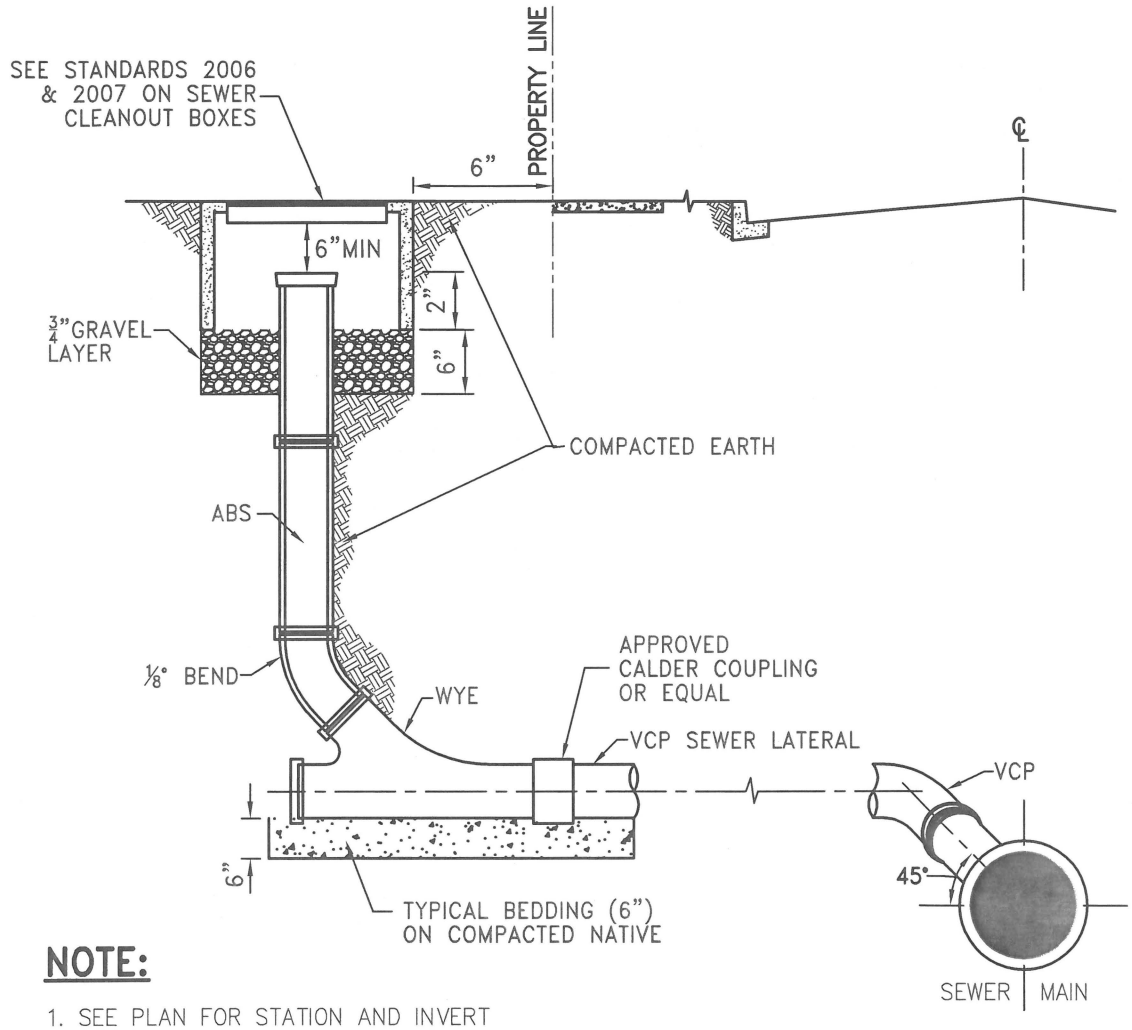
DATE OF LAST REVISION: _____

CITY OF FONTANA

SEWER TERMINAL CLEANOUT

07/10/06

STD. PLAN NO. **2004** | SHT 1 OF 1



NOTE:

1. SEE PLAN FOR STATION AND INVERT ELEVATION.

CONSTRUCTION NOTES:

1. RESIDENTIAL SEWER SHALL BE 4" MINIMUM, ABS OR APPROVED EQUAL.
2. ALL APARTMENT, COMMERCIAL SEWER CONNECTIONS SHALL BE 6" V.C.P. SEWER LATERAL WITH ABS RISER.
3. BACKFILL SHOULD BE UNIFORMLY GRADED AND FREE OF ROCKS, STONES, ETC. GREATER THAN TWO (2) INCHES IN DIAMETER.
4. CONCRETE BOX SHALL BE INSTALLED WHENEVER LATERAL RISER WILL BE IN A CONCRETE AREA, ie, DRIVEWAY. SEE STANDARD 2006.
5. PLASTIC BOX SHALL BE INSTALLED WHENEVER LATERAL RISER WILL BE IN LANDSCAPE AREA. SEE STANDARD 2007.
6. JIM CAP BAND AND SEAL CAP. NO SCREW CAPS.
7. AFTER SEWER CONNECTION IS MADE VIDEO INSPECTION WILL BE REQUIRED FOR SUBMITTAL AND APPROVAL. VIDEO FOOTAGE SHALL PROVIDE CLEAR VIEW OF INSIDE DIAMETER OF PIPE, WITH THE ABILITY TO IDENTIFY CRACKS, OFFSETS, SAGS, OR IMPERFECTIONS.
8. BACKFILL WITH STD. ~~1008~~

NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
RICARDO SANDOVAL
No. 51152
CIVIL
STATE OF CALIFORNIA

APPROVED BY: 12-15-14

CITY ENGINEER DATE
RICARDO SANDOVAL

REVIEWED BY: J.W.

REVISION NUMBER: 2

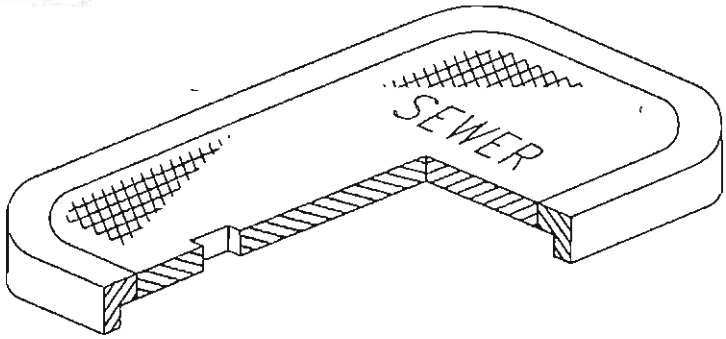
CITY OF FONTANA

SEWER LATERAL CLEANOUT

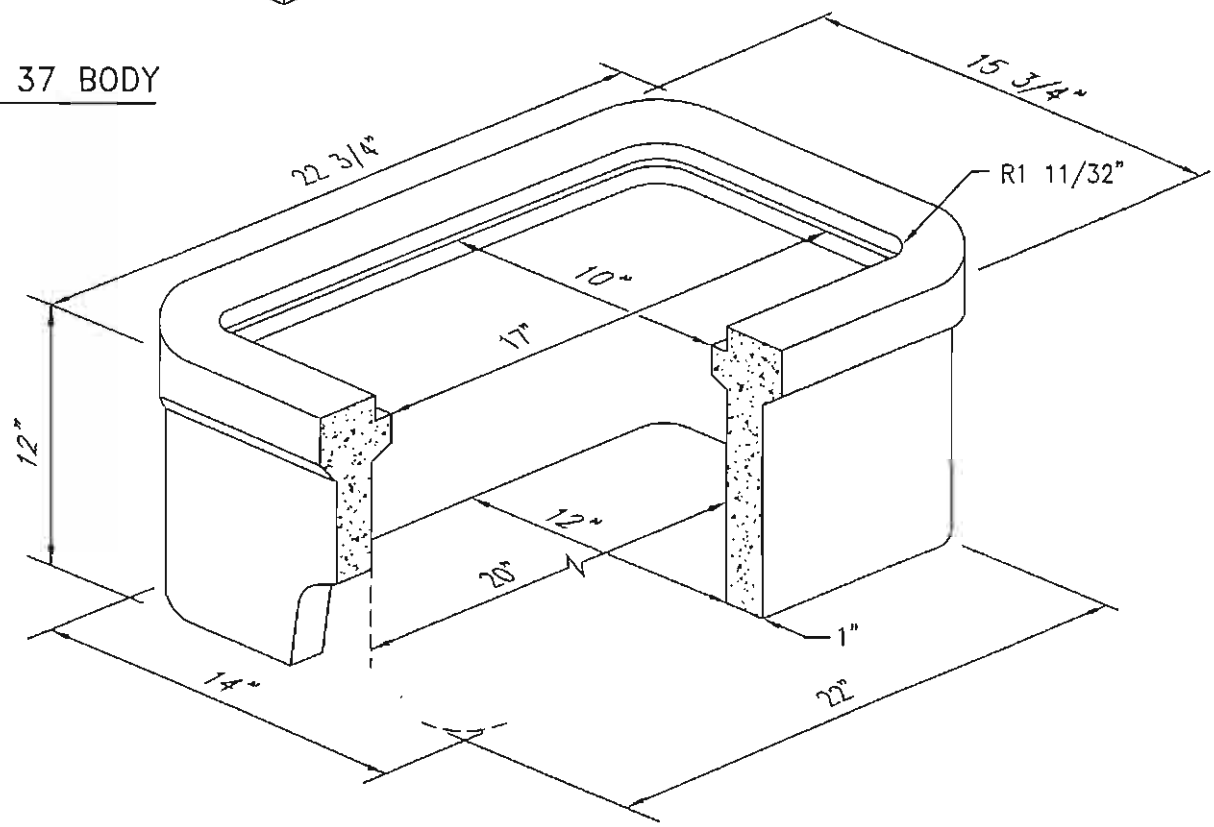
12/9/2014

STD. PLAN NO. 2005 | **SHT 1 OF 1**

NO. 37-T CAST IRON
TRAFFIC COVER



NO. 37 BODY



1. THE CLEANOUT BOX TO BE A BROOKS NO. 37 WITH CAST IRON COVER OR EQUAL.
2. BOX TO BE INSTALLED TO ALLOW MAXIMUM ACCESS TO PROPERTY LINE CLEANOUT.
3. THIS CONCRETE BOX IS TO BE INSTALLED WHENEVER THE V.C.P. LATERAL RISER WILL BE IN A CONCRETE AREA, ie. DRIVEWAY, SIDEWALK.

NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
RICARDO SANDOVAL
No. 51152
EXP. 9/30/07
CIVIL
STATE OF CALIFORNIA

APPROVED BY: Ricardo Sandoval 10-18-06
CITY ENGINEER DATE
RICARDO SANDOVAL
REVIEWED BY: DG
REVISION NUMBER: _____

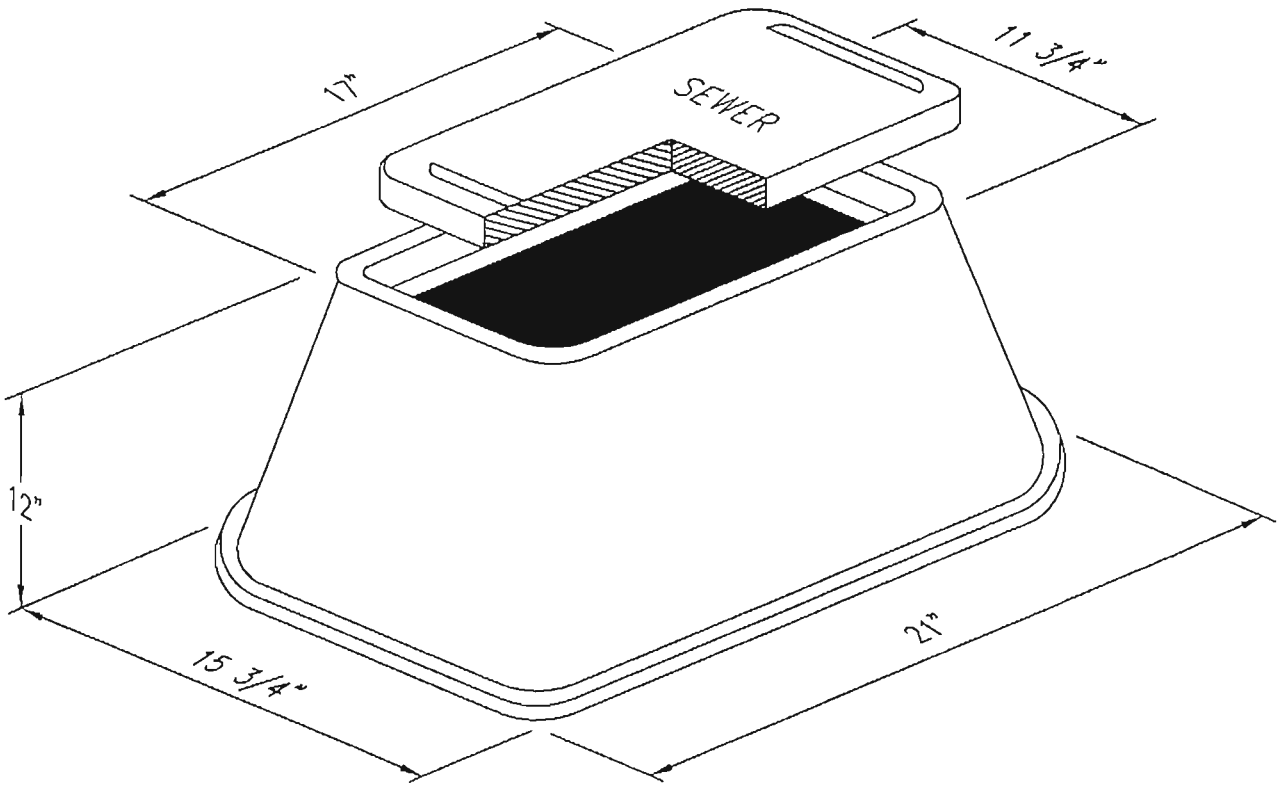
CITY OF FONTANA

CONCRETE
SEWER CLEANOUT BOX

07/10/06

STD. PLAN NO. 2006 | SHT 1 OF 1

1419 OR 1419T SERIES COVER



1419 SERIES BODY

1. THE CLEANOUT BOX TO BE A BROOKS NO. 1419 SERIES WITH PLASTIC COVER OR EQUAL.
2. BOX TO BE INSTALLED TO ALLOW MAXIMUM ACCESS TO PROPERTY LINE CLEANOUT.
3. THIS PLASTIC BOX IS TO BE INSTALLED WHENEVER THE V.C.P. LATERAL RISER WILL BE IN A LANDSCAPE AREA.

NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
RICARDO SANDOVAL
No. 51152
EXP. 9/30/07
CIVIL
STATE OF CALIFORNIA

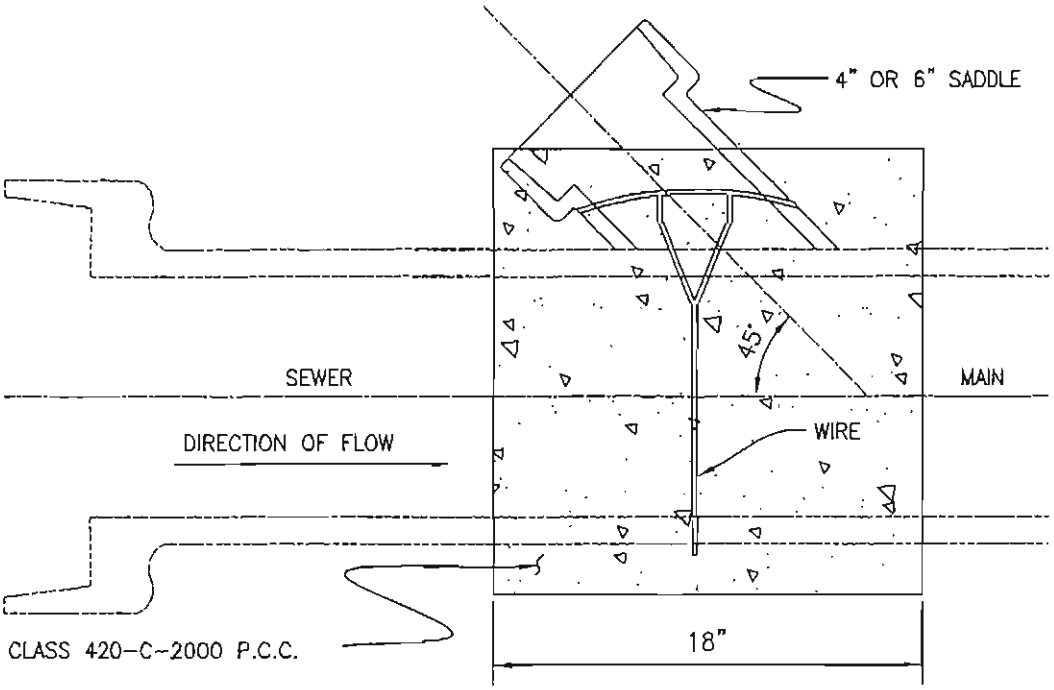
APPROVED BY: 10-18-06
CITY ENGINEER DATE
RICARDO SANDOVAL
REVIEWED BY: DG
REVISION NUMBER: _____

CITY OF FONTANA

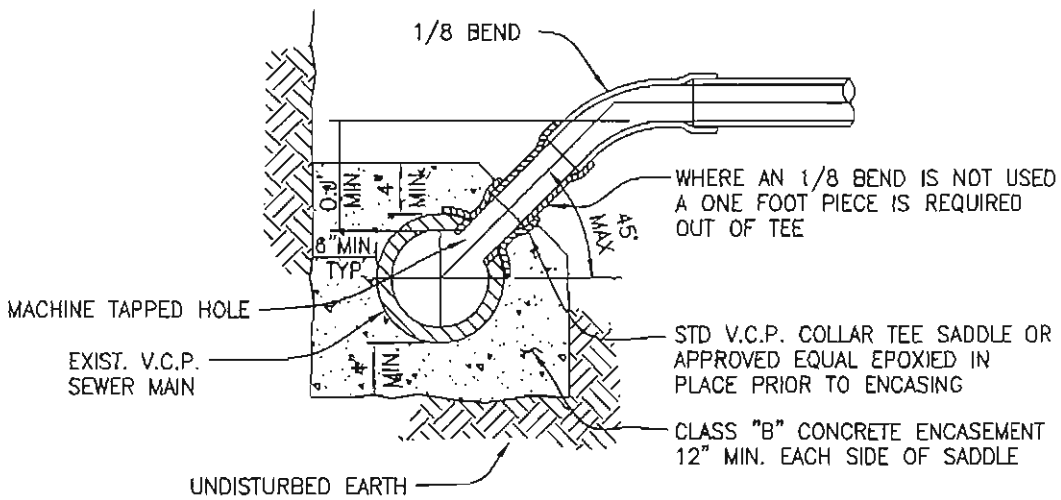
PLASTIC SEWER CLEANOUT BOX

07/10/06

STD. PLAN NO. **2007** | SHT **1** OF **1**



PLAN VIEW



V.C.P. SADDLE CONNECTION

NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
RICARDO SANDOVAL
No. 51152
EXP. 9/30/07
CIVIL
STATE OF CALIFORNIA

APPROVED BY: 10-18-06
CITY ENGINEER DATE
RICARDO SANDOVAL
REVIEWED BY: DG
REVISION NUMBER: _____

CITY OF FONTANA

SEWER SADDLE

07/10/06

STD. PLAN NO. 2008 | SHT 1 OF 2

NOTES:

1. A WYE OR TEE SADDLE SHALL BE INSTALLED BY CUTTING A NEAT HOLE CONFORMING TO THE INSIDE DIAMETER OF THE SADDLE WHEN USING A SADDLE WITHOUT COLLAR AS SHOWN IN EPOXY RESIN JOINT DETAIL. WHEN USING A SADDLE WITH COLLAR THE DIAMETER OF THE HOLE SHALL BE OUTSIDE DIAMETER PLUS 1/8" AS SHOWN IN CEMENT COLLAR JOINT DETAIL.

2. BROKEN PIECES FROM CUTTING OF THE MAIN LINE SEWER MUST BE EXTRACTED CAREFULLY PRIOR TO PLACEMENT OF THE SADDLE.

3. THE SADDLE SHALL BE CEMENTED INTO PLACE USING CLASS "D" CEMENT MORTAR OR OTHER CEMENTING AGENT APPROVED BY THE DEPARTMENT. THE SADDLE SHALL BE HELD SECURELY IN PLACE WHILE THE CEMET OR OTHER APPROVED CEMENTING AGENT SETS. THE INSIDE OF THE JOINT BETWEEN PIPE AND SADDLE SHALL BE FILLED WITH CEMENTING MATERIAL AND NEATLY ROUNDED.

REGISTERED PROFESSIONAL ENGINEER
RICARDO SANDOVAL
No. 51152
EXP. 9/30/07
CIVIL
STATE OF CALIFORNIA

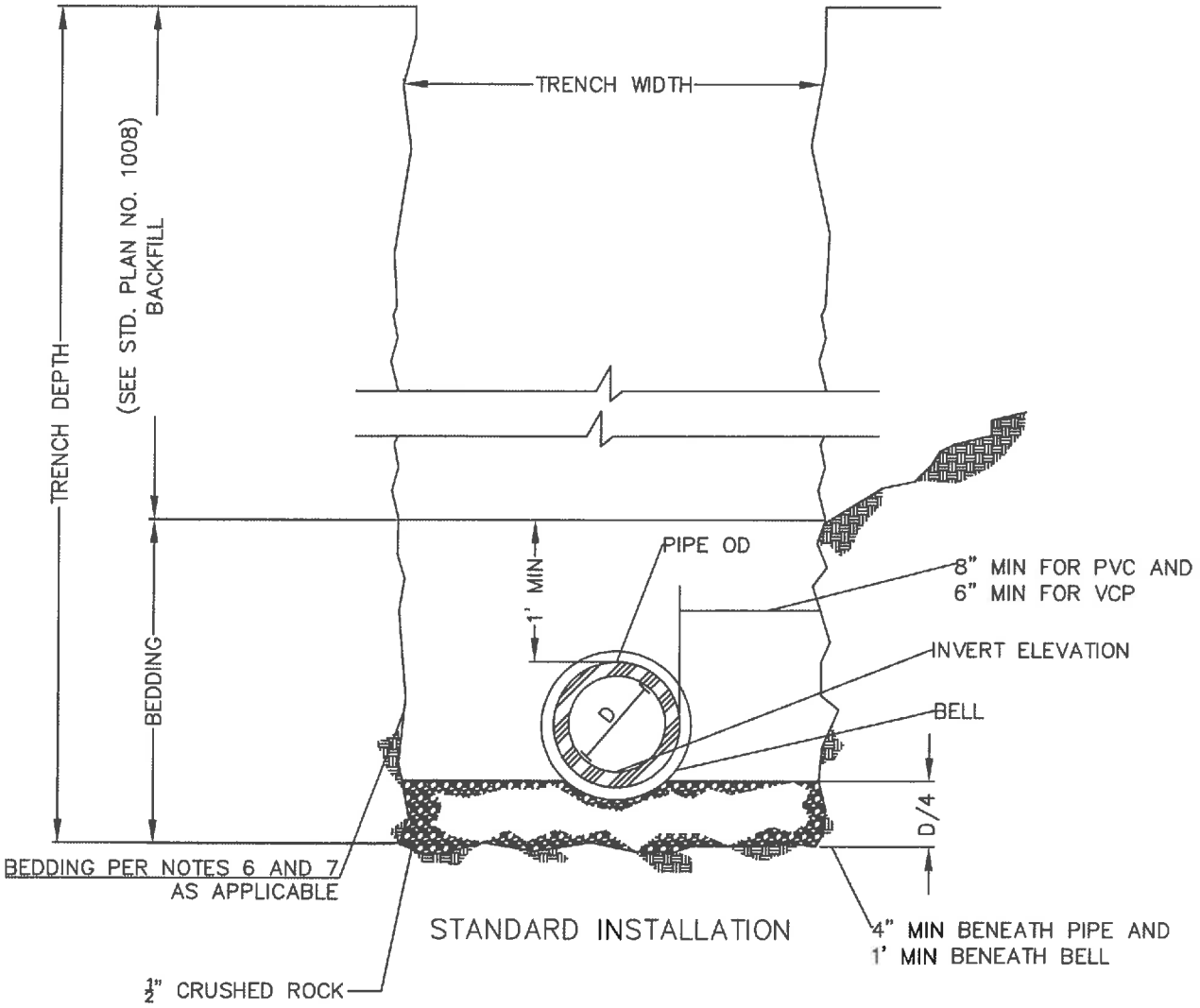
APPROVED BY: 10.18.06
CITY ENGINEER DATE
RICARDO SANDOVAL
REVIEWED BY: DG
REVISION NUMBER: _____

CITY OF FONTANA

SEWER SADDLE

07/10/06

STD. PLAN NO. 2008 | SHT 2 OF 2



STANDARD INSTALLATION

NOTES

1. FOR TRENCH RESURFACING IN IMPROVED STREETS SEE STANDARD DRAWING 1008.

2. DEPTH OF COVER, FROM THE TOP OF PIPE TO FINISH GRADE, FOR THE PVC SDR 26 SEWER MAIN SHALL BE A MINIMUM OF 5' AND A MAXIMUM OF 20'. FOR DEPTHS LESS THAN 5' AND GREATER THAN 20', A SPECIAL DESIGN APPROVED BY THE CITY ENGINEER IS REQUIRED.

3. ALL PVC SEWER PIPES TO BE SDR–26 AND ALL VCP SEWER PIPES TO BE EXTRA STRENGTH.

REGISTERED PROFESSIONAL ENGINEER
RICARDO SANDOVAL
No. 51152
CIVIL
STATE OF CALIFORNIA

APPROVED BY: _____
10-20-20
CITY ENGINEER DATE
RICARDO SANDOVAL

REVIEWED BY: _____

DRAWN BY: JP

CITY OF FONTANA

PIPE BEDDING DETAIL FOR PVC AND VCP SEWERS

STD. PLAN NO. 2009 | DWG. 1/2

NOTES

4. PVC – USE ELASTOMERIC GASKET JOINT PER GB207–17.3.2.

5. VCP – USE TYPE "G" JOINTS PER GB306–7.4.2.3.

6. VCP BEDDING SHALL BE SAND, GRAVEL, OR CRUSHED AGGREGATE HAVING A SAND EQUIVALENT OF NOT LESS THAN 30 OR A COEFFICIENT OF PERMEABILITY GREATER THAN 1.5" PER HOUR PER GREENBOOK SECTION 217–1.

9. PVC BEDDING SHALL BE CRUSHED ROCK WITH A MAXIMUM GRADATION OF $\frac{1}{2}$" PER GREENBOOK SECTION 217–1.2 AND CONFORMING TO TABLE 200–1.2.1 (A).

REGISTERED PROFESSIONAL ENGINEER
RICARDO SANDOVAL
No. 51152
CIVIL
STATE OF CALIFORNIA

APPROVED BY: 10-20-20
CITY ENGINEER DATE
RICARDO SANDOVAL

REVIEWED BY: _____

DRAWIN BY: JP

CITY OF FONTANA

PIPE BEDDING DETAIL FOR PVC AND VCP SEWERS

STD. PLAN NO. 2009 | DWG. 2/2