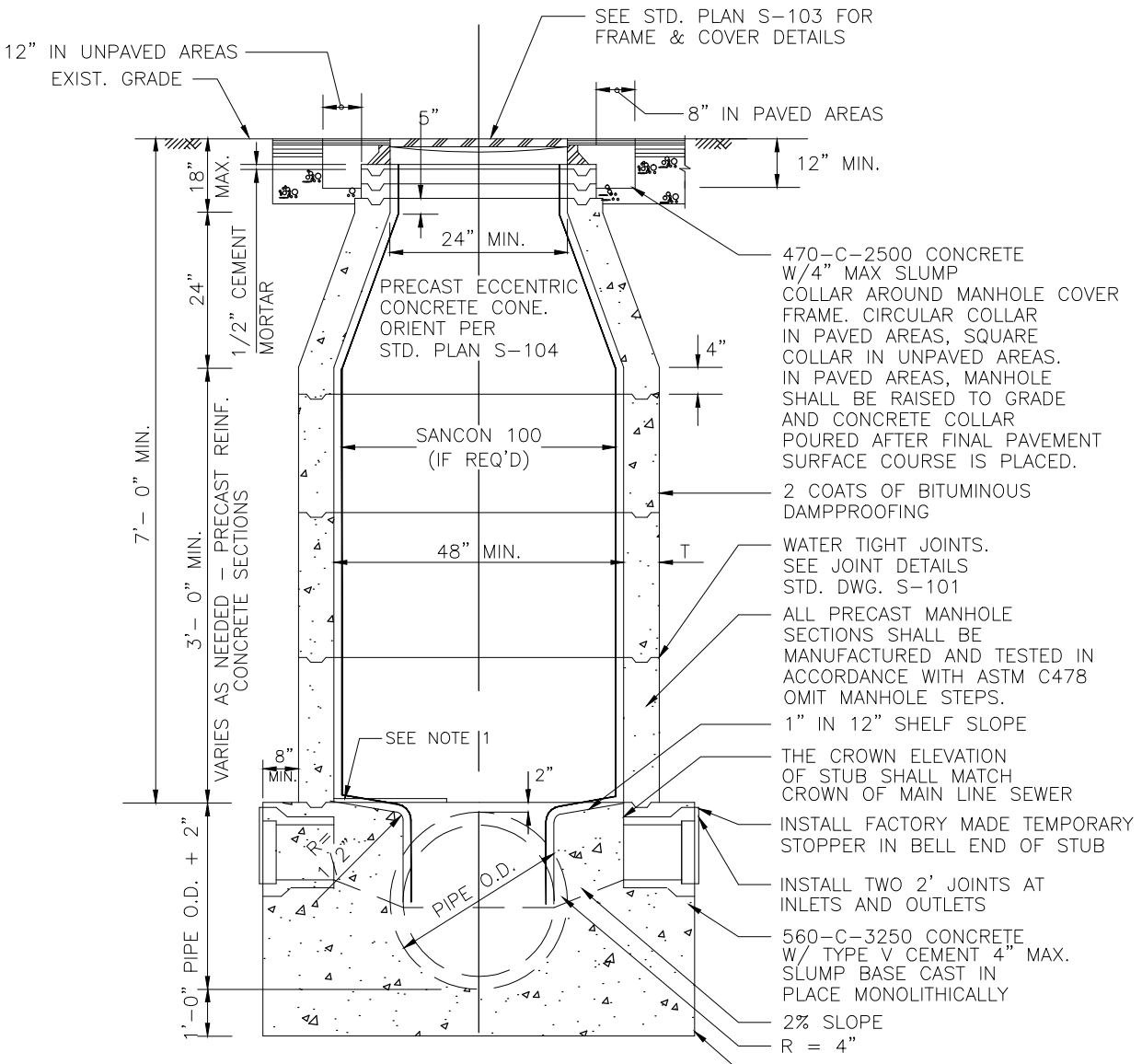




CITY OF GARDEN GROVE PUBLIC WORKS STANDARD PLANS

SERIES S-100 SEWER

- S-100 MANHOLE DETAILS
- S-101 CONCRETE BASE AND JOINT DETAILS
- S-102 SEWER DROP MANHOLE WITH CLEANOUT
- S-103 MANHOLE FRAME AND COVER
- S-104 MANHOLE SHAFT OPENING ORIENTATION PLAN
- S-105 LATERAL CLEANOUT DETAIL
- S-106 PVC PIPE BEDDING AND MANHOLE CONNECTION DETAILS
- S-107 VCP PIPE BEDDING DETAILS
- S-108 CONCRETE ENCASEMENT TYPE A, B, & C
- S-109 CONCRETE SLOPE ANCHORS
- S-110 STEEL CASING PIPE
- S-111 VCP OR PVC TYPICAL LATERAL
- S-112 CUT IN WYE CONNECTION
- S-113 PVC MANHOLE LINER
- S-114 PVC T-LOCK LINER DETAILS
- S-115 PVC LINER WITH GAS FLAP INSTALLATION
- S-116 FLAT TOP MANHOLE
- S-117 TYPICAL GREASE INTERCEPTOR
- S-118 DESIGN CRITERIA FOR SEPARATION OF WATER AND SEWER MAINS



NOTES:

SEE SHEET 2 OF 2



Garden Grove
Sanitary District

MANHOLE DETAILS

Approved  Date 12-8-15
City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER
S-100
SHEET 1 OF 2

MANHOLE DETAILS NOTES:

1. PLACE TWO HALF MOON SHAPED TEMPORARY PLYWOOD COVERS (5/8" THICK MINIMUM) IN BOTTOM OF MANHOLE AFTER SHAFTS HAVE BEEN SET TO KEEP DEBRIS FROM ENTERING SEWER.
2. FOR DROP MANHOLE SEE STD. PLAN. S-103.
3. FOR MANHOLES LOCATED OUTSIDE PAVED AREAS, THE FRAME AND COVER SHALL BE SET A MINIMUM OF 0.1 FT. ABOVE FINISH GRADE IN SHOULDER AREAS, UNPAVED ROADS OR LANDSCAPING AREAS, AND 18" IN UNFINISHED AREAS.
4. ALL INLETS AND OUTLETS SHALL BE SUPPORTED WITH CONCRETE SUPPORTS PRIOR TO POURING MANHOLE BASE.
5. MANHOLE LOCATIONS SHALL BE MARKED ON CURB FACE.
6. WALL THICKNESS (T) SHALL BE MINIMUM 5" FOR 48" MANHOLES, 6" FOR 60" MANHOLES, 7" FOR 72" MANHOLES.
7. SIDES OF BASE SHALL BE EITHER FORMED OR POURED AGAINST VERTICAL SMOOTH EARTH.
8. WHEN DEPTH OF MANHOLE EXCEEDS 15 FEET FROM TOP OF PIPE TO FINISH GRADE, MANHOLE SHAFT SHALL BE INCREASED TO 60 INCH DIAMETER.
9. A PLASTIC SIGN SHALL BE ATTACHED 12 INCHES BELOW THE TOP OF MANHOLE FRAME WITH INSCRIPTION:

**CAUTION
PERMIT REQUIRED CONFINED SPACE
VENTILATE BEFORE ENTERING**

IN LETTERS NO SMALLER THAN 1/2 INCH IN HEIGHT. ATTACH SIGN TO MANHOLE WALL WITH A MINIMUM OF 4 TYPE 316 STAINLESS STEEL SCREWS AND ANCHORS.

10. DIAMETER OF MANHOLE PER SIZE OF SEWER LINE.

SEWER MAIN (INCHES)	MAXIMUM BRANCH SIZE (INCHES)	MANHOLE SIZE (INCHES)	FRAME AND COVER (INCHES)
8-15	10	48	24
18-21	12	60	30
24-36	15	72	36



Garden Grove
Sanitary District

MANHOLE DETAILS

Approved  Date 12-8-15
City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER
S-100
SHEET 2 OF 2

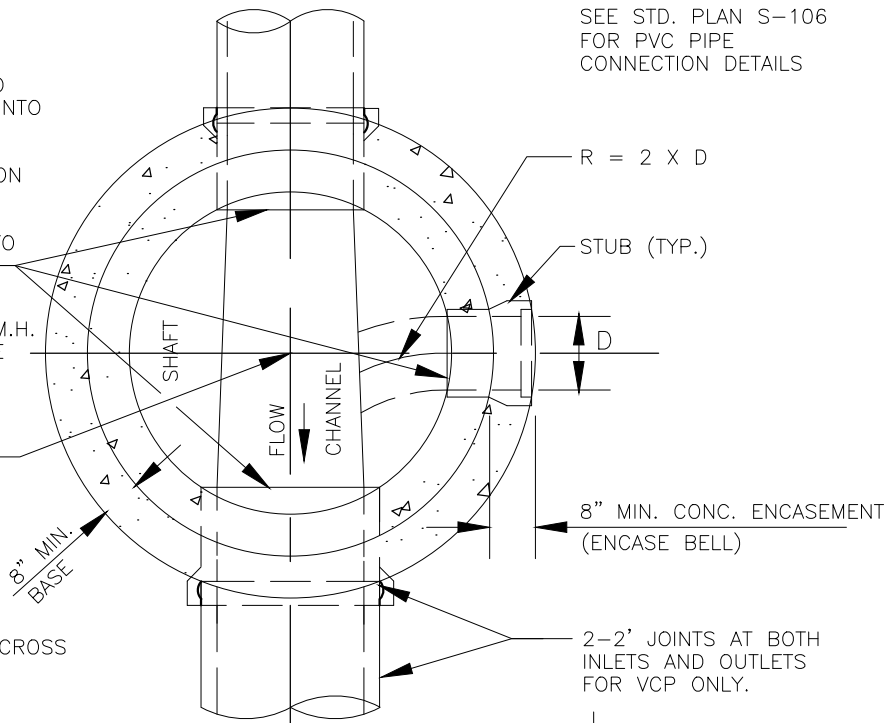
PIPE SHALL BE LAID WITH END SQUARE INTO M.H. BASE, UNLESS OTHERWISE NOTED. REMOVE TOP PORTION OF PIPE, THEN CONSTRUCT FILLET SHELF OVER PIPE TO DRAIN

FOR LOCATION OF M.H. SHAFT OPENING SEE STD. PLAN S-104

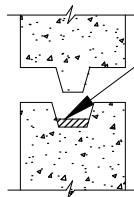
M.H. STATIONING

PROVIDE 0.10' FALL ACROSS M.H. WHERE POSSIBLE

SEE STD. PLAN S-106 FOR PVC PIPE CONNECTION DETAILS



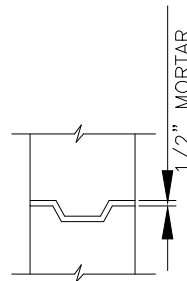
PLAN



JOINT SEALING COMPOUND

PLASTIC JOINT

REQ. IN GROUNDWATER



1/2" MORTAR

MORTAR JOINT

NOTES:

1. MORTAR JOINTS - SUFFICIENT MORTAR SHALL BE APPLIED ACROSS ENTIRE FACE OF JOINT SO THAT WHEN PRECAST UNITS ARE PLACED ON TOP OF ONE ANOTHER, THE MORTAR WILL SQUEEZE OUT BOTH THE INSIDE AND OUTSIDE WALL FACES. JOINTS SHALL BE "POINTED UP" AFTER SETTING PRECAST UNITS EXCLUDING GRADE RINGS.
2. PLASTIC JOINTS - PERFORMED COLD-APPLIED READY-TO-USE PLASTIC JOINT SEALING COMPOUND SHALL BE QUICK-SEAL AS SUPPLIED BY QUIKSET UTILITY VAULTS OR APPROVED EQUAL MUST BE USED WHEN GROUND WATER IS ENCOUNTERED.



Garden Grove
Sanitary District

CONCRETE BASE AND JOINT DETAILS

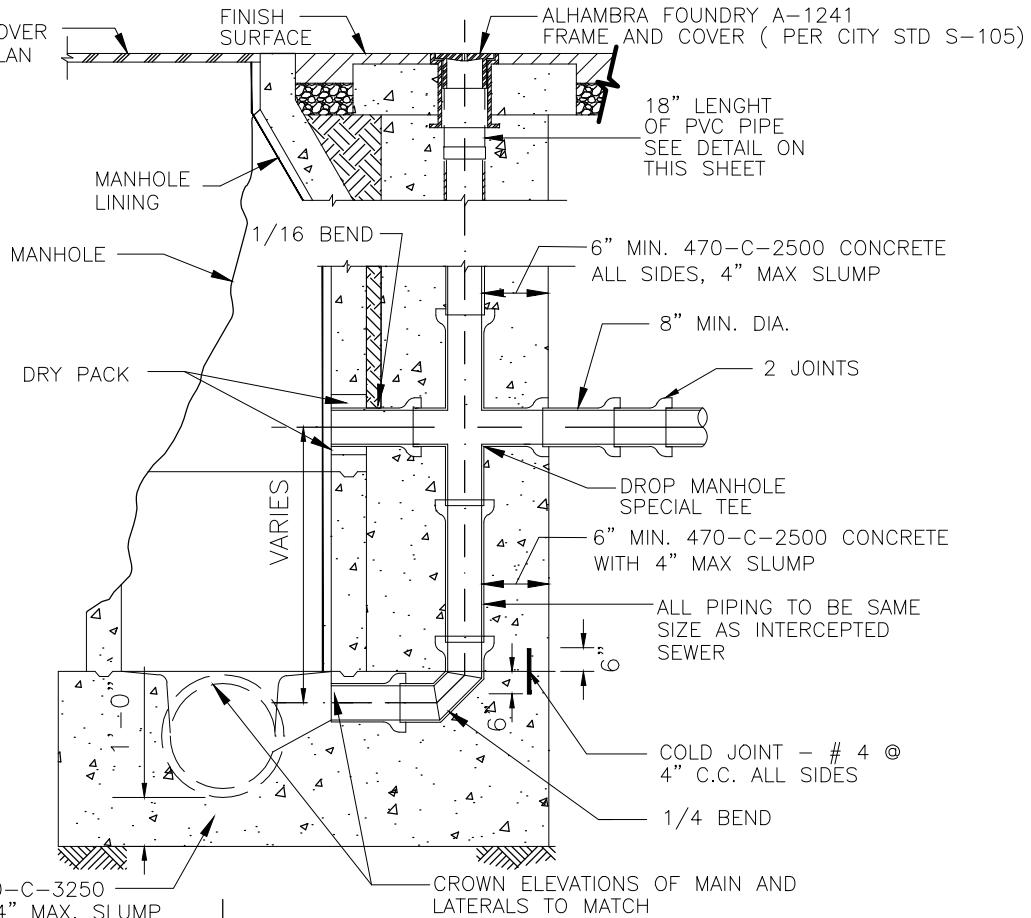
Approved  Date 12-8-15
City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER

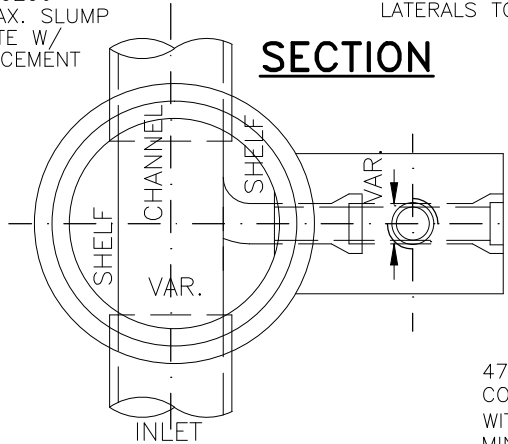
S-101

STA. MH
FRAME & COVER
SEE STD. PLAN
S-103

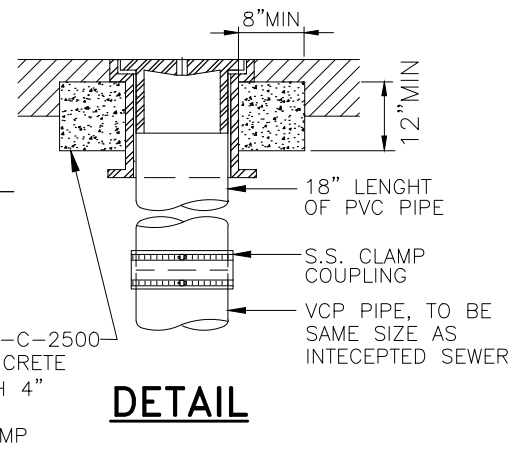


560-C-3250
W/4" MAX. SLUMP
CONCRETE W/
TYPE V CEMENT

SECTION



PLAN



DETAIL

NOTES:

1. DROP MANHOLE TO BE USED FOR SPECIAL SITUATIONS ONLY, AND SHALL NOT BE CONSTRUCTED WITHOUT APPROVAL BY GGSD.
2. ALL NEW OPENINGS CONSTRUCTED INTO MANHOLE SHALL BE DONE BY CORE DRILLING.



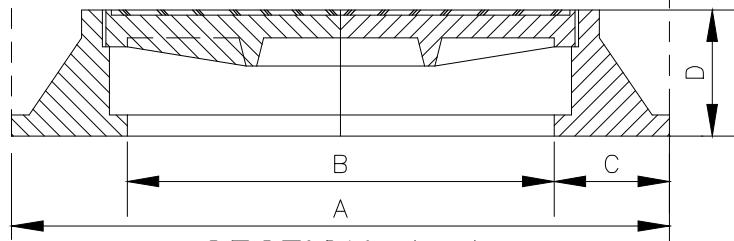
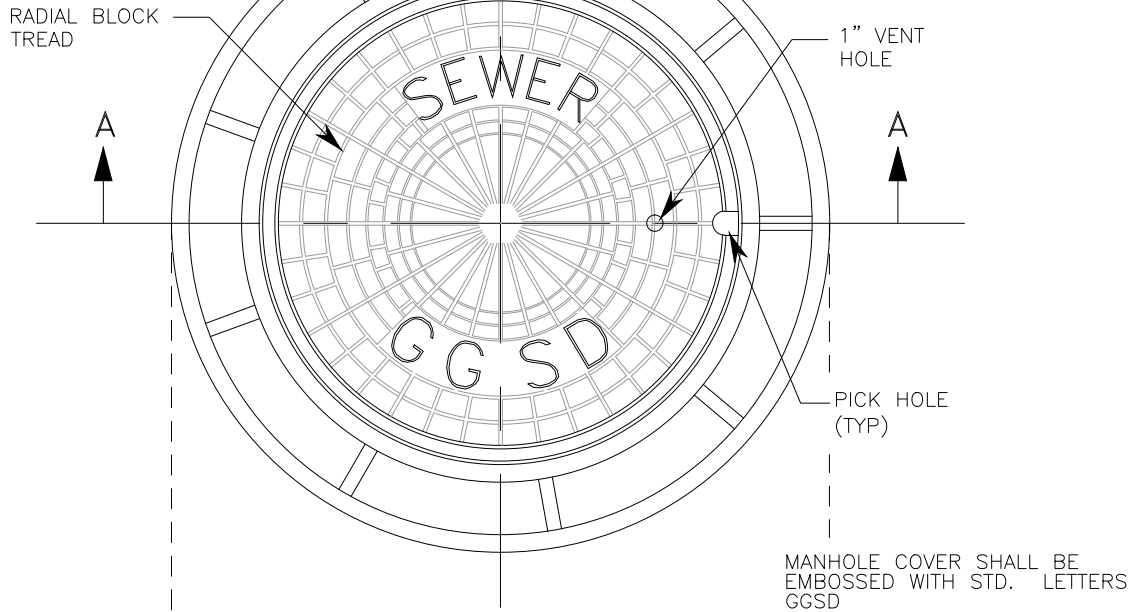
Garden Grove
Sanitary District

**SEWER DROP MANHOLE
WITH CLEANOUT**

Approved  Date 12-8-15
City Engineer R.C.E. 52125 Exp. 12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER
S-102



SECTION A-A

MANHOLE SIZE	A	B	C	D	PLATE NUMBER
48"	32 1/2"	24	4 1/4	6	A-1495
60"	38 1/2"	30	4 1/4	6	A-1497
72"	44 1/2"	36	4 1/4	6	A-1498


NOTES:

- WHERE FRAME AND COVER ARE SET 18" ABOVE GRADE, FOUR (4) 1/2" DIA. INSERTS FOR ADJUSTABLE STUDS SHALL BE CAST IN TOP GRADE RING, FRAME SHALL BE BOLTED TO GRADE RING.
- MANHOLE COVER AND FRAME SHALL BE AS MANUFACTURED BY ALHAMBRA FOUNDRY. FRAME AND COVER SHALL BE COATED WITH ASPHALT OR COAL TAR.



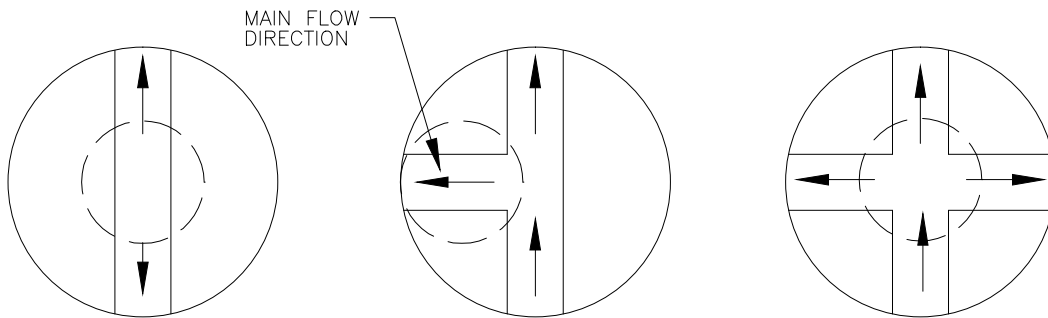
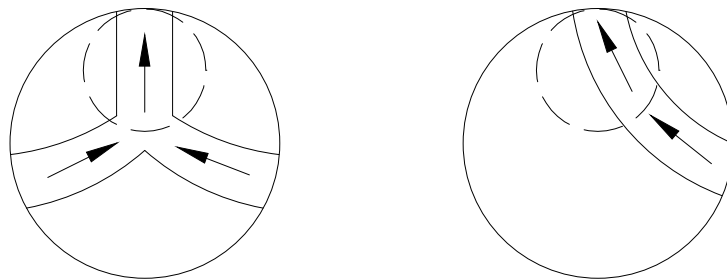
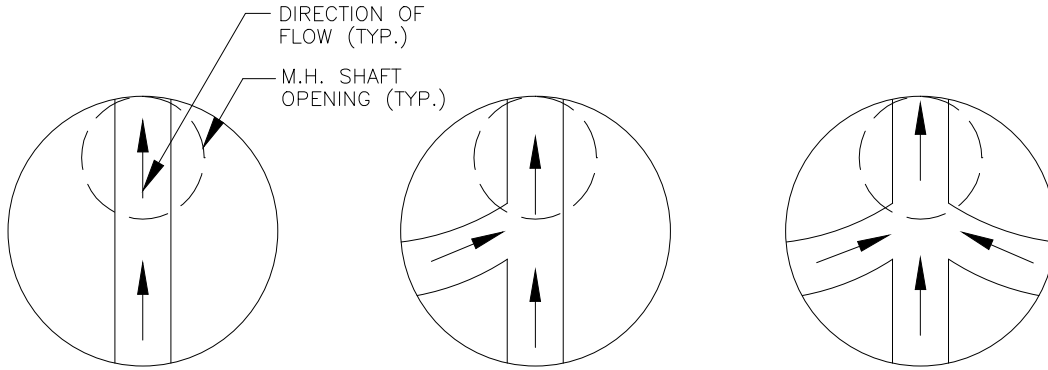
Garden Grove
Sanitary District

**MANHOLE FRAME AND COVER
(TRAFFIC LOADING)**

Approved  Date 12-8-15
City Engineer R.C.E. 52125 Exp. 12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER
S-103



SUMMIT M.H.
EITHER SIDE

SUMMIT M.H.

SUMMIT M.H.
ANY POSITION



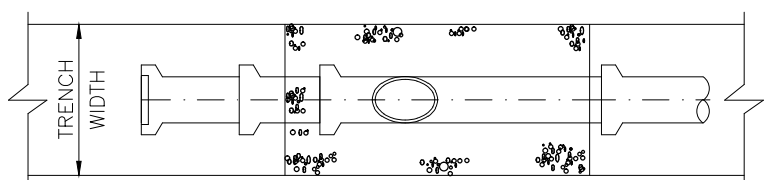
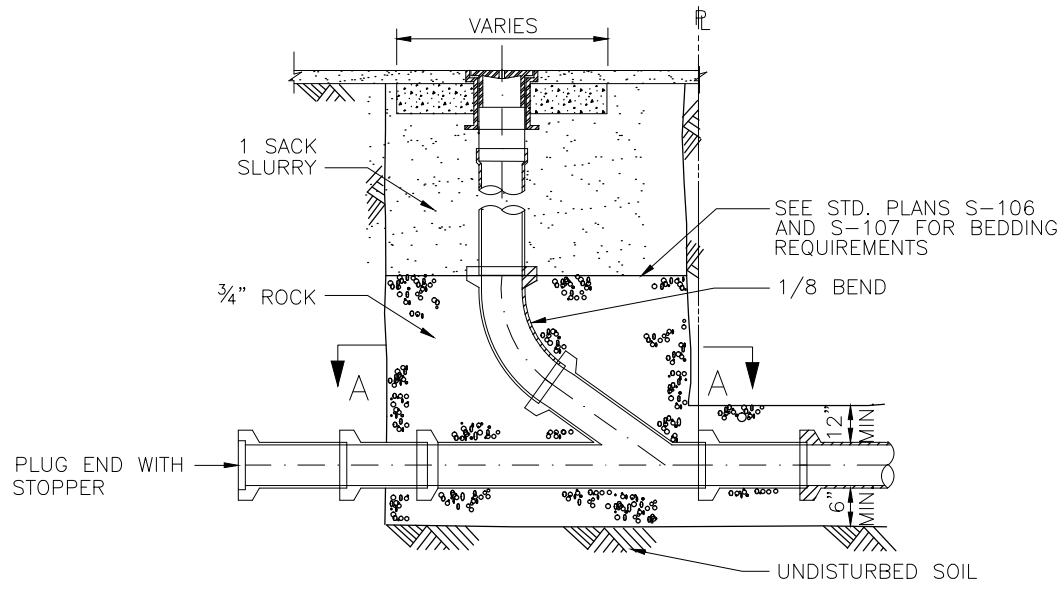
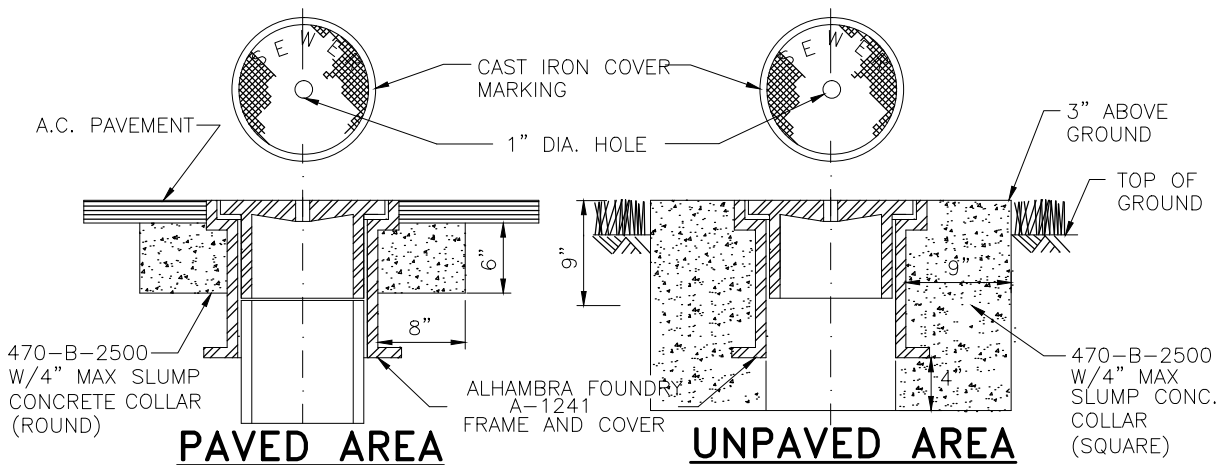
Garden Grove
Sanitary District

MANHOLE SHAFT OPENING ORIENTATION PLAN

Approved  Date 12-8-15
City Engineer R.C.E. 52125 Exp. 12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER
S-104



- NOTES:**
1. CLEANOUT PIPE TO BE SAME SIZE AND KIND OF MATERIAL AS LATERAL.
 2. CLEANOUTS TO BE INSTALLED WITHIN 5' OF BUILDING, DIRECTION CHANGES, MAXIMUM 75' INTERVALS AND AT PROPERTY LINE.



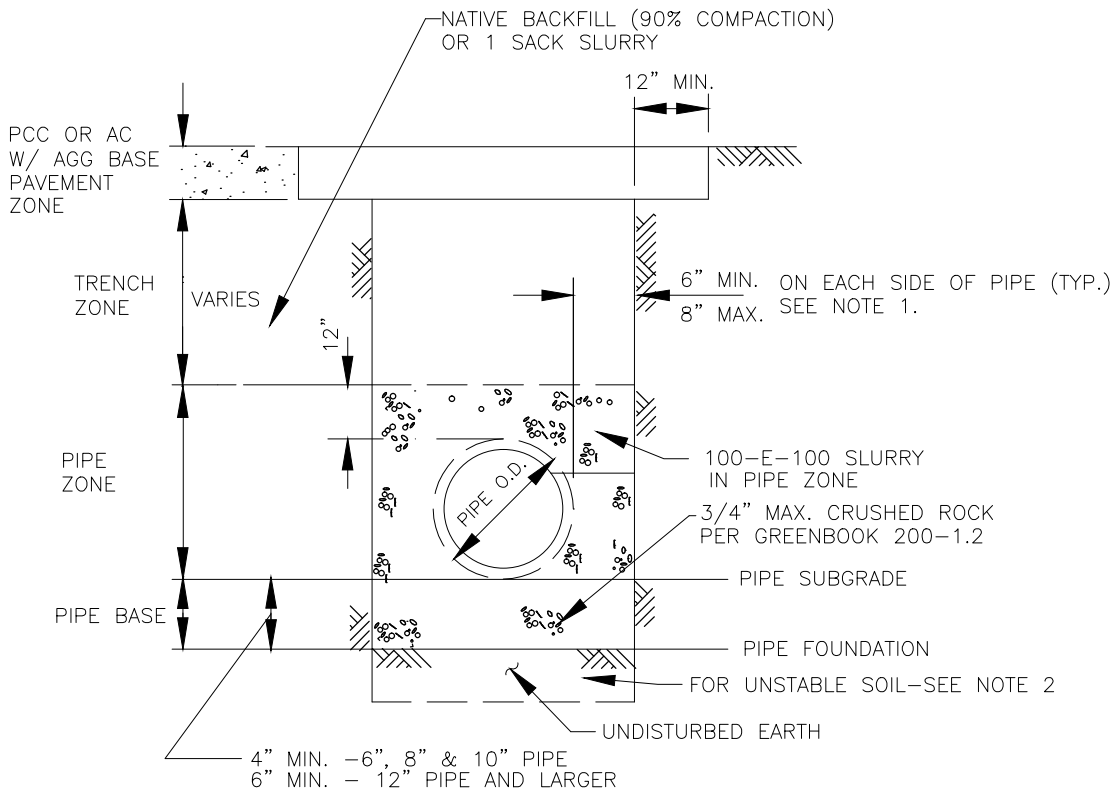
Garden Grove
Sanitary District

LATERAL CLEANOUT DETAIL

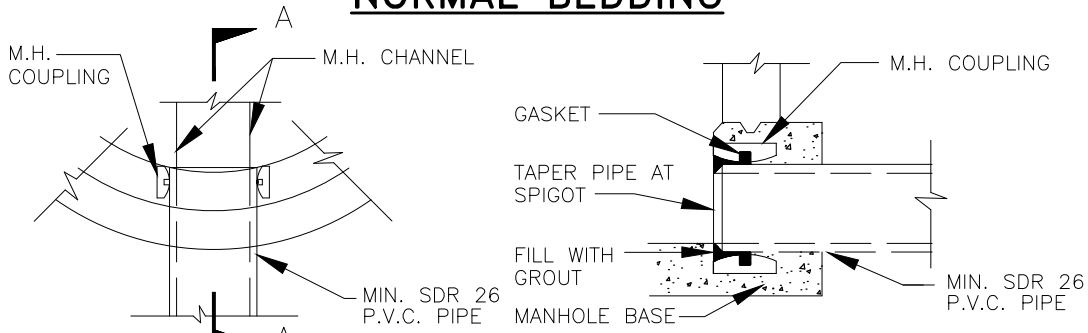
Approved  Date 12-8-15
City Engineer R.C.E. 52125 Exp. 12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER
S-105



NORMAL BEDDING



PLAN

SECTION A - A

PVC PIPE MANHOLE CONNECTION DETAILS

NOTES:

1. CONCRETE ENCASEMENT PER STD. DWG. S-108 SHALL BE USED WHERE THE TRENCH WIDTH AT THE UPPER LIMIT OF THE PIPE ZONE EXCEEDS THE MAXIMUM WIDTH SPECIFIED ABOVE.
2. IF UNSTABLE SOIL IS ENCOUNTERED, DISTRICT REPRESENTATIVE SHALL DETERMINE DEPTH OF REMOVAL AND THICKNESS OF FOUNDATION ROCK REFILL MATERIAL.
3. SEE STD. PLANS S-101 AND S-102 FOR MANHOLE DETAILS.



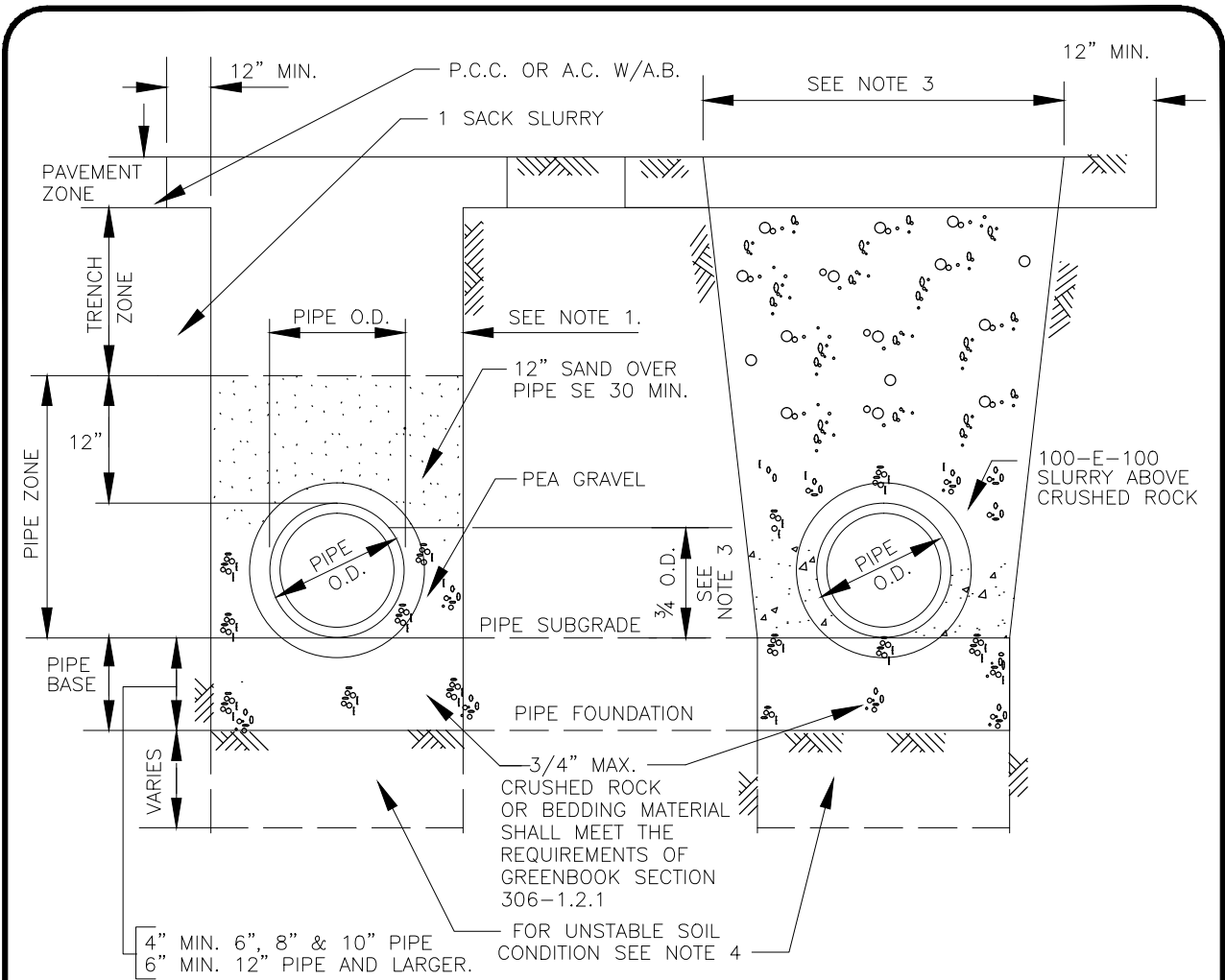
Garden Grove
Sanitary District

**P.V.C. PIPE BEDDING &
MANHOLE CONNECTION DETAILS**

Approved  Date 12-8-15
City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER
S-106



TYPICAL NORMAL BEDDING

OVERWIDTH BEDDING

SEE NOTE 2

NOTES:

1. TRENCH WIDTH AT THE UPPER LIMIT OF THE PIPE ZONE SHALL BE WITHIN THE FOLLOWING LIMIT FOR TYPICAL NORMAL BEDDING.
 - (A) MAXIMUM TRENCH WIDTH—O.D. PIPE OR BELL PLUS 8" MAX. EACH SIDE OF PIPE.
 - (B) MINIMUM TRENCH WIDTH—O.D. PIPE OR BELL PLUS 6" MIN. EACH SIDE OF PIPE.
2. OVERWIDTH BEDDING SHALL BE USED WHERE THE TRENCH WIDTH AT THE UPPER LIMIT OF THE PIPE ZONE EXCEEDS THE MAXIMUM WIDTH SPECIFIED ABOVE.
3. MAXIMUM OVERWIDTH BEDDING TO BE DETERMINED IN FIELD BY THE DISTRICT REPRESENTATIVE ON THE BASIS OF OVERWIDTH EXCAVATED.
4. IF UNSTABLE SOIL IS ENCOUNTERED, DISTRICT REPRESENTATIVE SHALL DETERMINE DEPTH OF REMOVAL AND SIZE OF FOUNDATION ROCK REFILL MATERIAL.



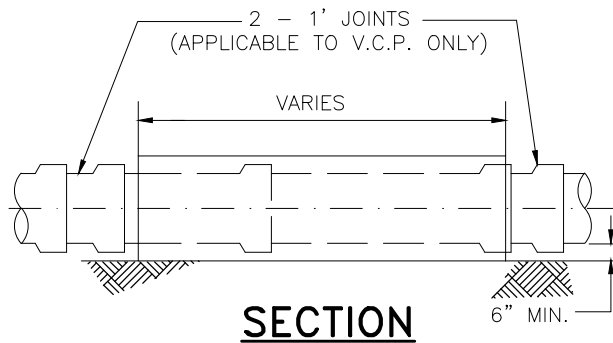
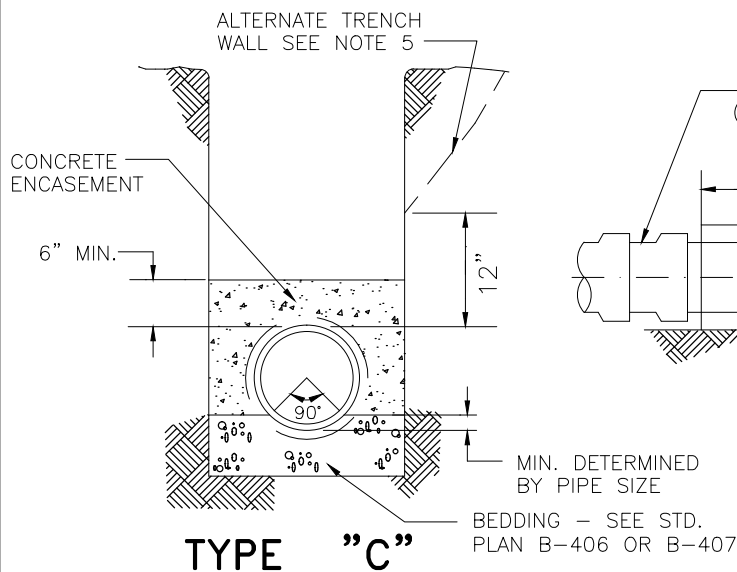
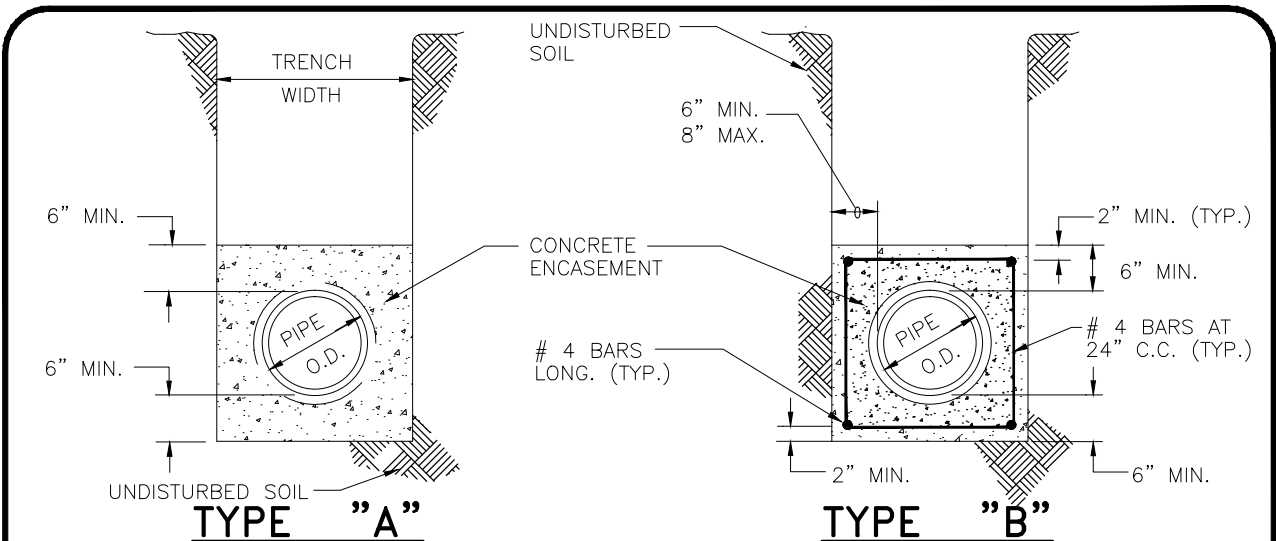
Garden Grove
Sanitary District

V.C.P. PIPE BEDDING DETAILS

Approved  Date 12-8-15
City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER
S-107



NOTES:

1. CONCRETE ENCASEMENT SHALL BE USED WHEN COVER IS UNDER 4' OR OVER 20'.
2. ENCASEMENT TO BE PLACED AGAINST UNDISTURBED NATURAL GROUND OR FILL COMPACTED TO 90% RELATIVE DENSITY.
3. NO. 4 GRADE 60 STEEL REINFORCING BARS SHALL BE PLACED AS SHOWN.
4. TYPE OF CONCRETE ENCASEMENT TO BE USED SHALL BE SHOWN ON PLANS OR AS SPECIFIED BY DISTRICT REPRESENTATIVE TO MEET UNFORESEEN FIELD CONDITIONS. UNLESS NOTED OTHERWISE, ENCASEMENT SHALL BE 470-C-2500 WITH 4" MAX. SLUMP.
5. WHERE SLOPED TRENCHES ARE USED, WALLS WILL NOT BEGIN TO SLOPE CLOSER THAN 12" FROM THE TOP OF THE PIPE.



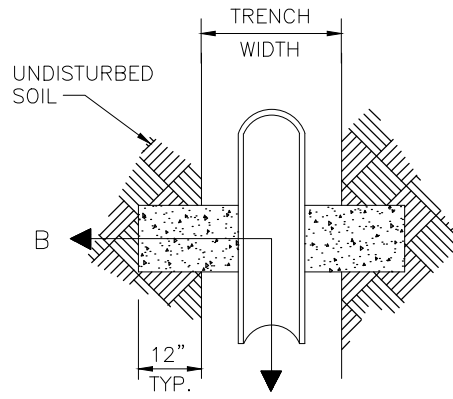
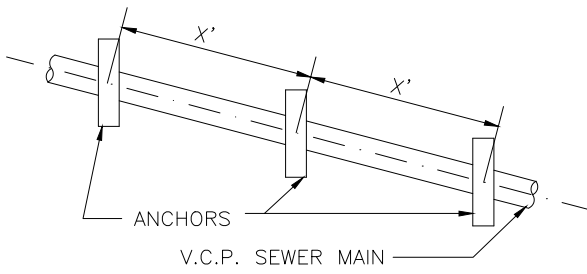
Garden Grove
Sanitary District

**CONCRETE ENCASEMENT
TYPE A, B, & C**

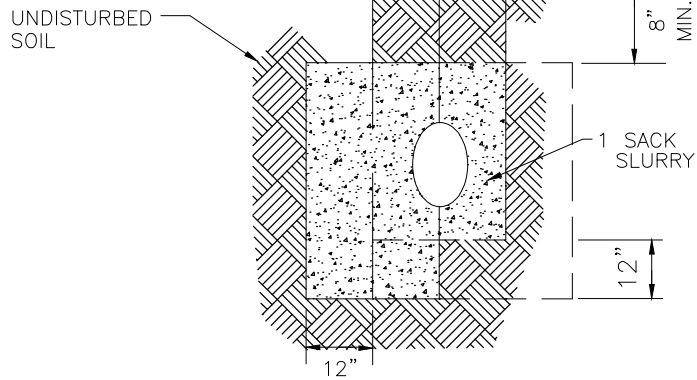
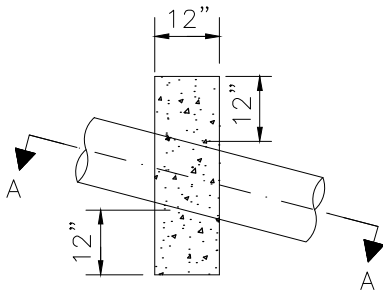
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City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER
S-108



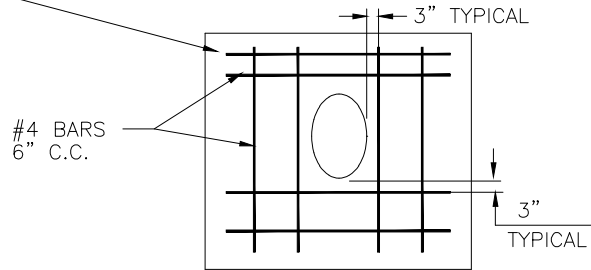
SECTION A-A



SECTION B-B

3" MIN. CLEARANCE BETWEEN REINFORCING STEEL AND EDGE OF CONCRETE

PIPE SLOPE	PIPE SLOPE	X DISTANCE
100%	1:1	12'
66.6%	1-1/2:1	14'
50%	2:1	16'
40%	2-1/2:1	18'
33.3%	3:1	20'



REINFORCING STEEL PATTERN

NOTES:

1. SLOPES GREATER THAN 10% SHALL BE USED BY SPECIAL WRITTEN APPROVAL OF CITY.
2. PIPE ANCHORS REQUIRED ON ALL SLOPES OF 3:1 OR STEEPER.
3. ANCHOR SHALL EXTEND 12" INTO NATURAL UNDISTURBED SOIL.
4. CONCRETE SHALL BE 560-C-3250 W/4" MAX. SLUMP.
5. ANCHORS FOR TRAPAZOIDAL TRENCH SECTIONS WILL CONFORM TO TRENCH CROSS SECTION AND EXTEND 12" INTO UNDISTURBED SOIL.



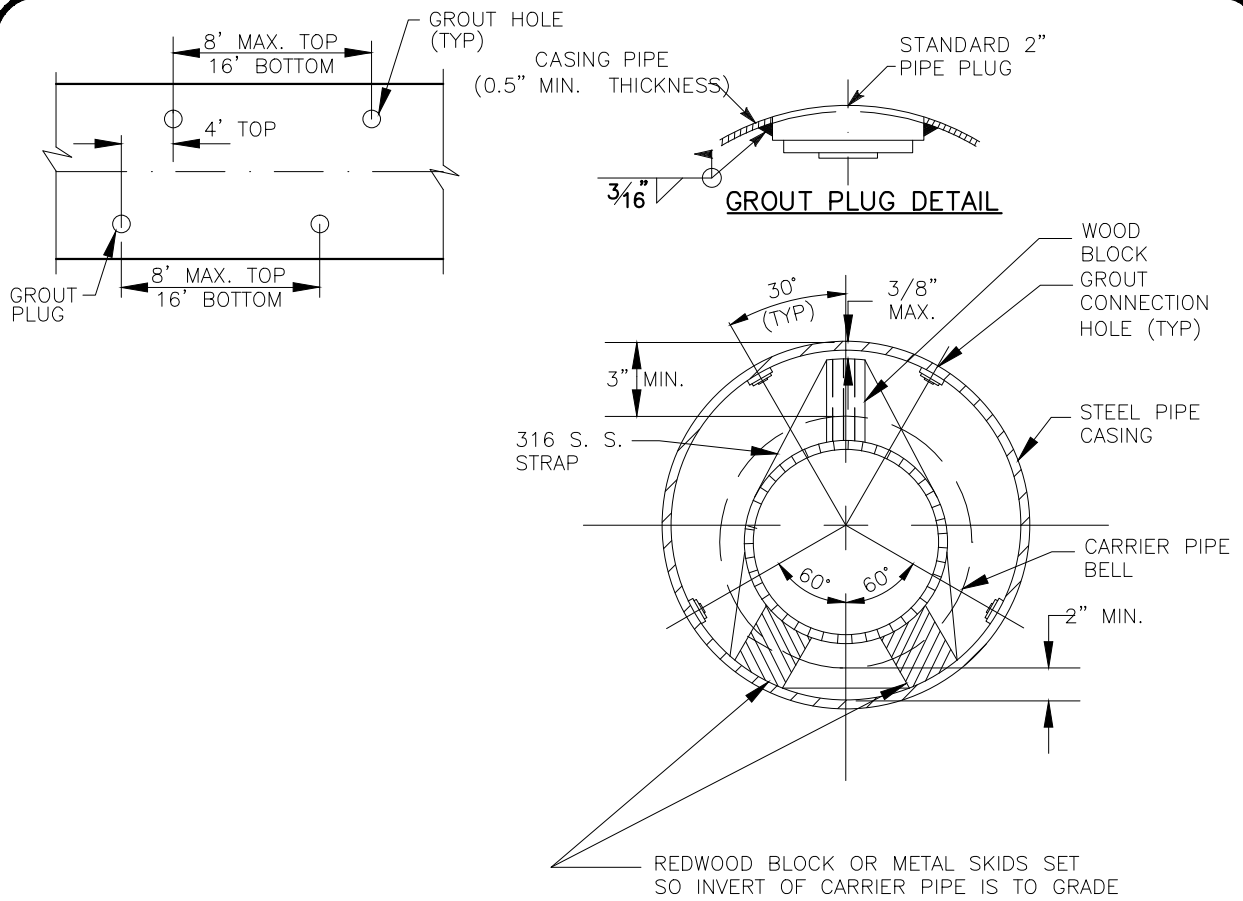
Garden Grove
Sanitary District

CONCRETE SLOPE ANCHORS

Approved  Date 12-8-15
City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER
S-109



NOTES:

CASING DETAIL

1. UNLESS NOTED OTHERWISE, CASING SHALL BE INSTALLED BY THE JACK AND BORE, AND/OR TUNNEL METHOD. IF OPEN-CUT INSTALLATION OF CASING IS ALLOWED, BACKFILL SHALL BE IN ACCORDANCE WITH STD. PLAN S-106 OR S-107
2. MINIMUM CASING SIZE SHALL BE 24" AND MINIMUM CASING THICKNESS SHALL BE 5/16".
3. ALL STEEL CASING PIPE FIELD JOINTS SHALL BE WELDED FULL-CIRCUMFERENCE.
4. UNFINISHED REDWOOD SKIDS SHALL BE PROVIDED PER DETAIL ABOVE.
5. CARRIER PIPE SHALL BE AIR PRESSURE TESTED PRIOR TO FILLING OF ANNULAR SPACE.
6. UPSTREAM AND DOWNSTREAM ELEVATIONS OF CARRIER PIPE SHALL BE VERIFIED PRIOR TO FILLING OF ANNULAR SPACE.
7. EACH END OF CASING SHALL BE SEALED WITH CONCRETE MORTAR, OR MANUFACTURED CASING END COVER.
8. PERIPHERY OF CASING SHALL BE PRESSURE GROUTED.
9. ANNULAR SPACE SHALL BE FILLED WITH LEAN GROUT.
10. FOR REDWOOD BLOCKS, 3' LONG SKIDS BEVELED AT BOTH ENDS SHALL BE STRAPPED IN PLACE 3" FROM EACH JOINT OF PIPE, NOTCH SKID SET TO SEAT STRAP.



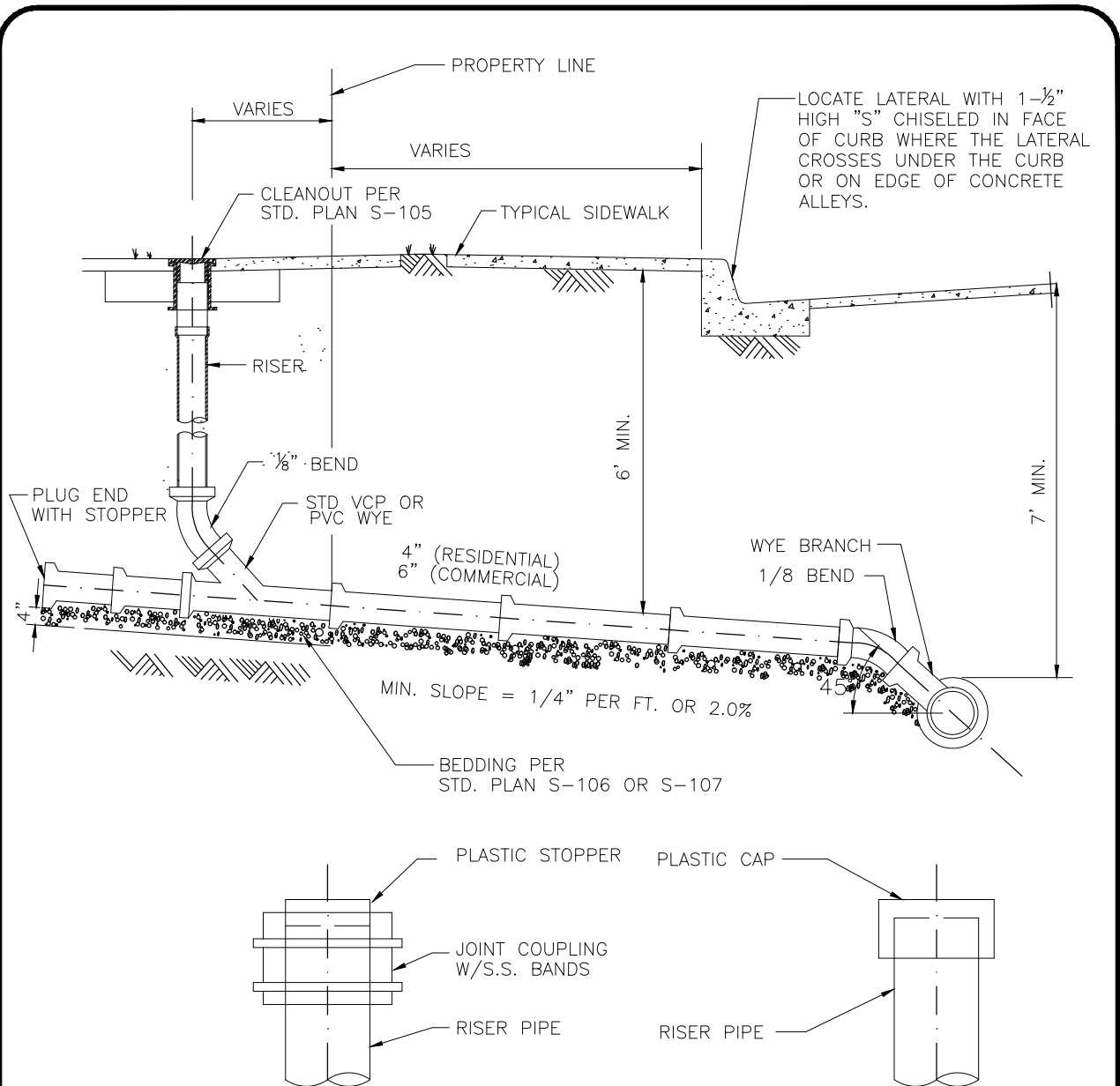
Garden Grove
Sanitary District

STEEL CASING PIPE

Approved  Date 12-8-15
City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER
S-110



OPTIONAL STOPPER DETAILS

NOTES:

1. LATERAL SIZE TO BE DETERMINED ON THE BASIS OF TOTAL NUMBER OF FIXTURE UNITS DRAINED, BUT IN NO CASE SHALL THE LATERAL DIAMETER BE LESS THAN FOUR INCHES FOR SINGLE OR MULTIPLE FAMILY RESIDENTIAL AND SIX INCHES FOR COMMERCIAL OR INDUSTRIAL LAND USES.
2. LATERAL TO BE INSTALLED TO PROPERTY LINE.
3. IF LATERAL NOT BUILT, PLUG WYE BRANCH WITH STOPPER.
4. IF RISER NOT BUILT, PLUG LATERAL AT R .



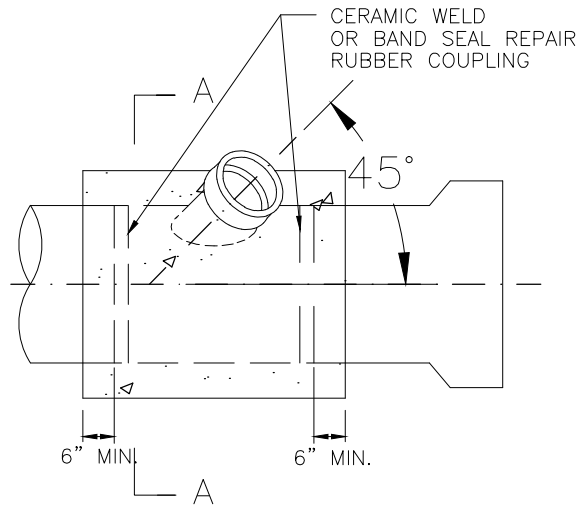
Garden Grove
Sanitary District

**V.C.P. OR P.V.C.
TYPICAL LATERAL**

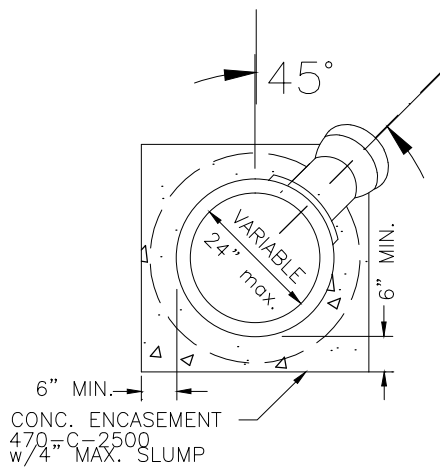
Approved  Date 12-8-15
City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER
S-111



CUT IN WYE



SECTION A-A

NOTES:

1. THE SADDLE CONNECTION SHALL BE SECURED WITH 470-C-2500 W/4" MAX SLUMP CONCRETE ENCASEMENT AFTER THE CONNECTION IS APPROVED BY THE DISTRICT REPRESENTATIVE.
2. ALL CHIPS, DIRT, EPOXY, MORTAR, AND CONCRETE SHALL BE KEPT OUT OF THE SEWER.
3. DAMAGED PIPE SHALL BE REPLACED.
4. 8" AND LARGER CONNECTIONS SHALL BE BY STANDARD OR DROP MANHOLES.



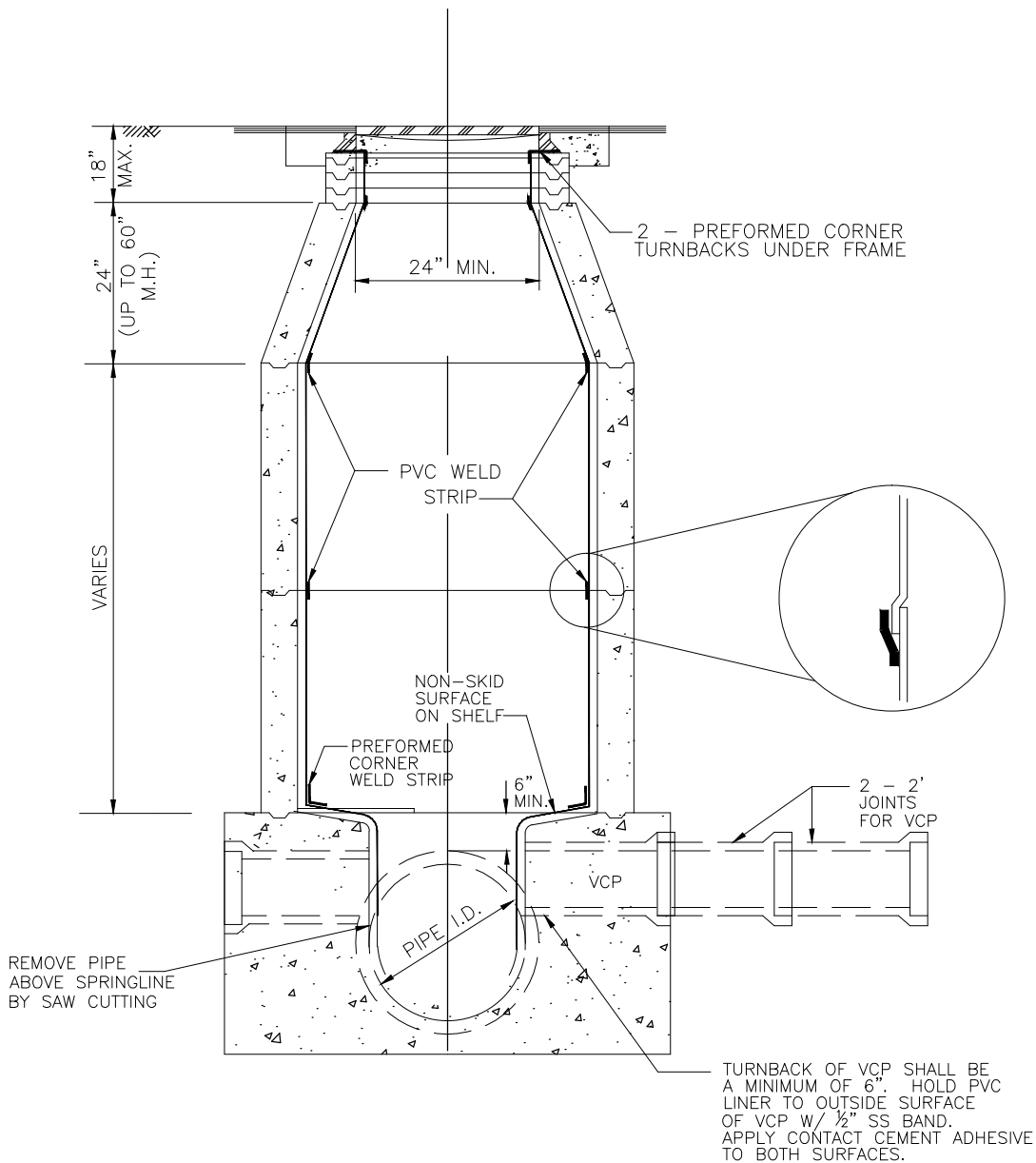
Garden Grove
Sanitary District

CUT IN WYE CONNECTION

Approved  Date 12-8-15
City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER
S-112



SEE STD. PLANS S-101, S-102, S-103



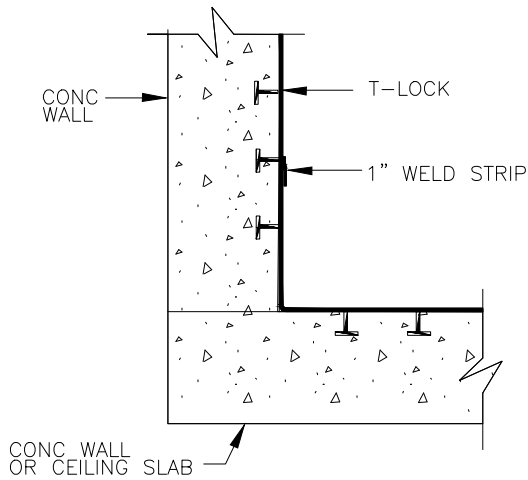
Garden Grove
Sanitary District

PVC MANHOLE LINER

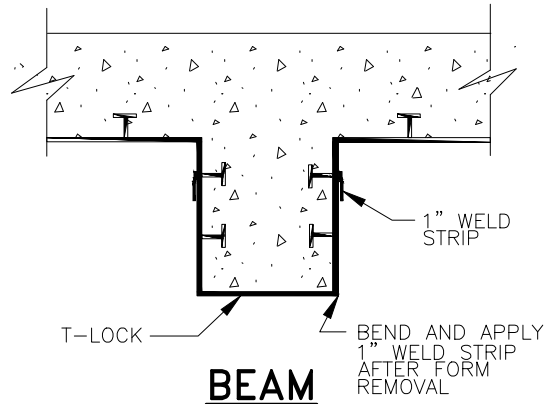
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City Engineer R.C.E. 52125 Exp. 12-31-16

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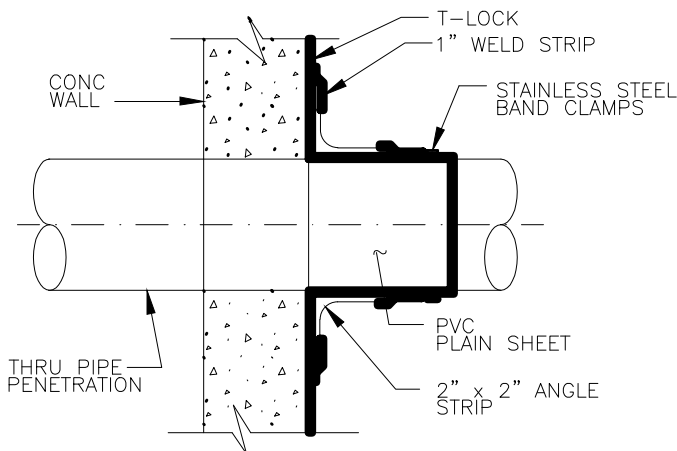
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S-113



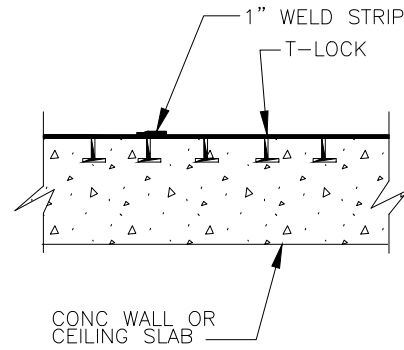
CORNER



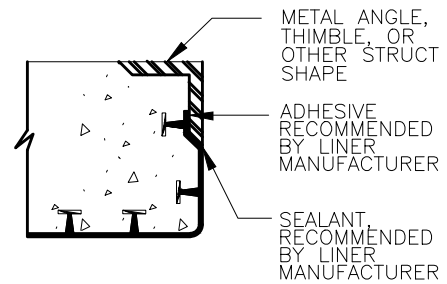
BEAM



PIPE PENETRATION



SPLICE



METAL EMBED

NOTE

1. AT BUTT JOINTS, INSTALL 1" WELD STRIP ON FRONT AND BACK.
2. LINER RIBS SHALL BE ORIENTED VERTICALLY ON VERTICAL SURFACES.



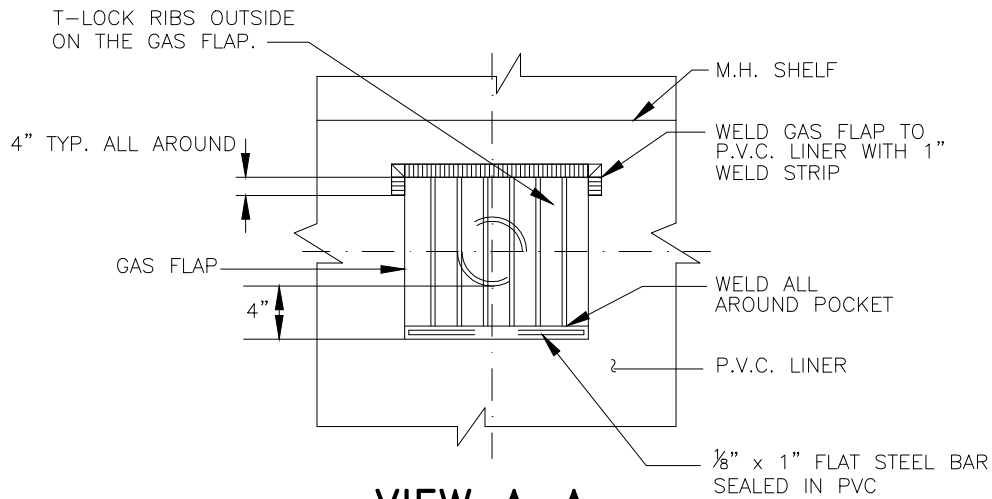
Garden Grove
Sanitary District

**P.V.C. T-LOCK
LINER DETAILS**

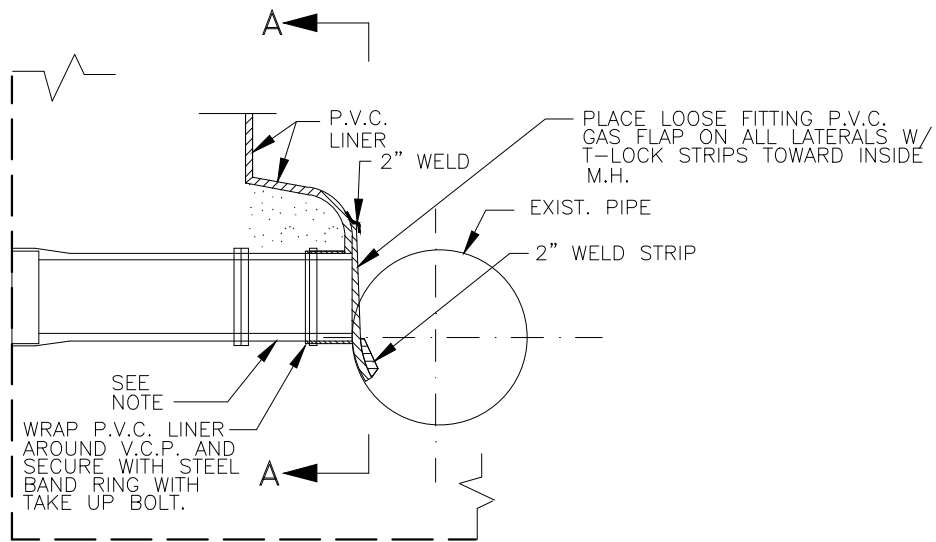
Approved  Date 12-8-15
City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER
S-114



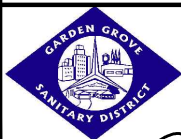
VIEW A-A
NOT TO SCALE



PLAN

NOTE

FOR INSTALLATION AT EXISTING M.H., REMOVE INTERFERING CONCRETE AT END OF EACH LATERAL AND EXTEND VCP AS SHOWN. GROUT IN PLACE. EXTEND PVC M.H. LINER OVER GROUT AND INSTALL GAS FLAP AS SHOWN.



Garden Grove
Sanitary District

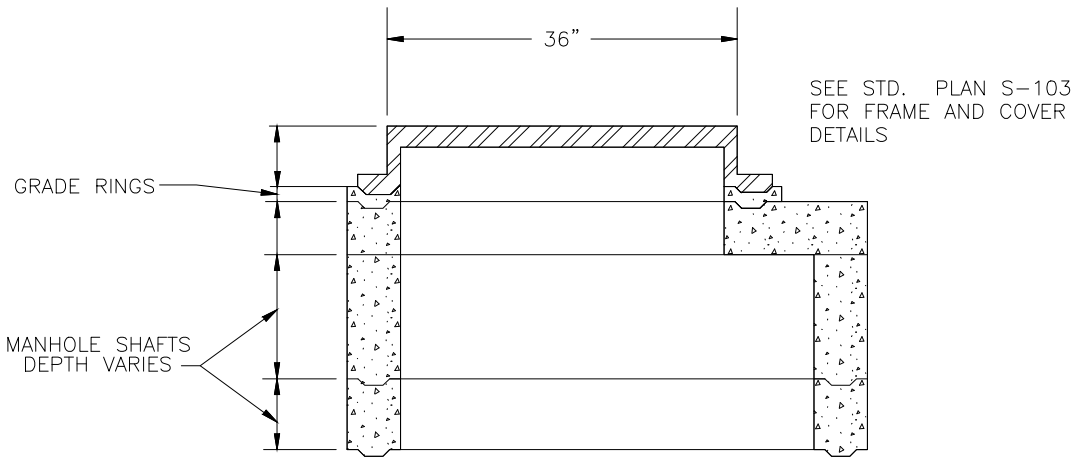
P.V.C. LINER WITH GAS FLAP INSTALLATION

Approved  Date 12-8-15
City Engineer R.C.E. 52125 Exp.12-31-16

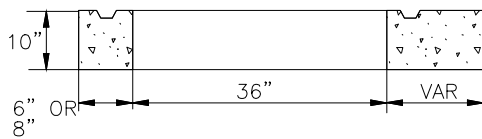
REVISIONS	BY	DATE

STD. PLAN NUMBER

S-115



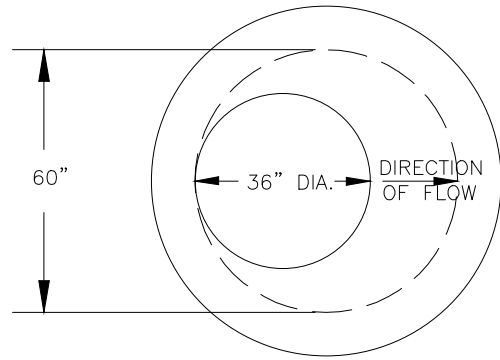
TYPICAL SECTION
FLAT TOP MANHOLE



FLAT TOP COVER

NOTES

1. CONSTRUCTION SHALL BE IN ACCORDANCE WITH STD. PLAN S-101 AND S-103
2. REINFORCED CONCRETE MANHOLE, QUIKSET OR APPROVED EQUAL.
3. USE OF FLAT TOP MANHOLE REQUIRES WRITTEN DISTRICT APPROVAL.




PLAN



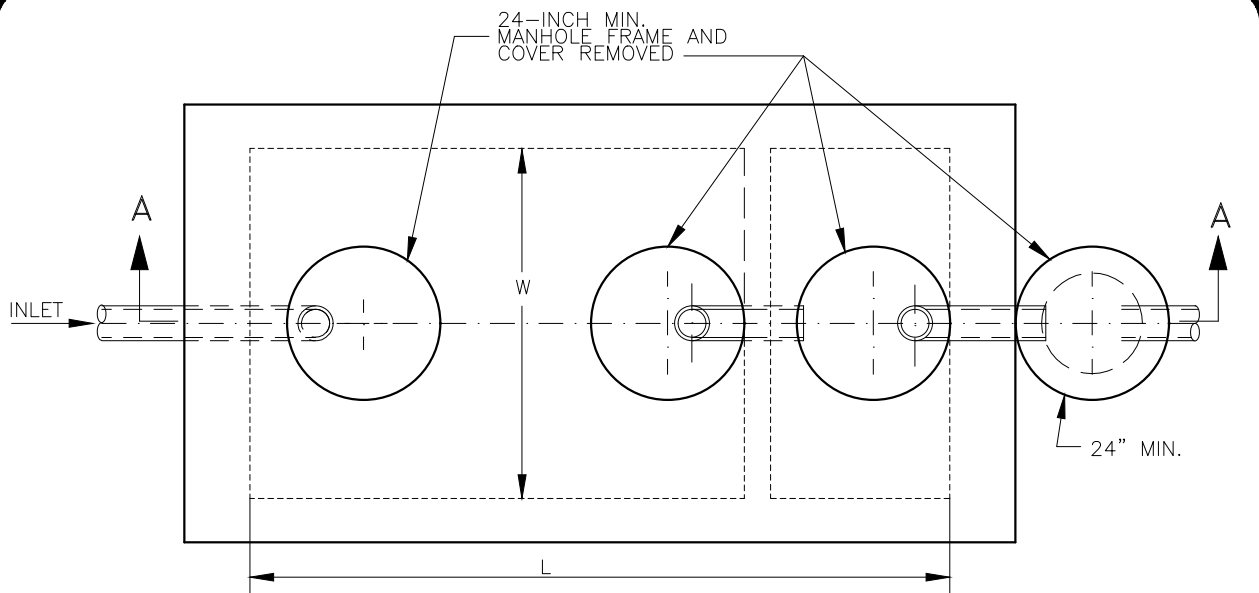
Garden Grove
Sanitary District

FLAT TOP MANHOLE

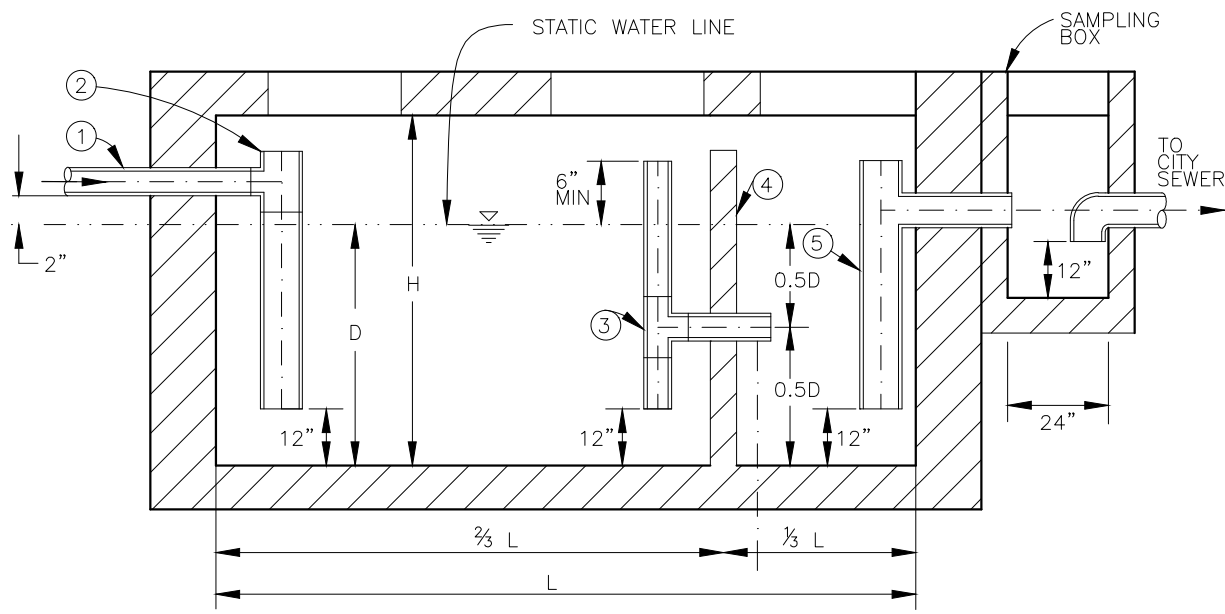
Approved  Date 12-8-15
City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER
S-116



PLAN



SECTION A-A

- ① INLET PIPE 4-INCH MINIMUM
- ② INFLOW TEE AND STANDPIPE
- ③ CROSSOVER TEE AND STANDPIPE
- ④ BAFFLE WALL
- ⑤ OUTFLOW TEE AND STANDPIPE

NOTE:
 GREASE INTERCEPTOR SHALL BE DESIGNED AND SIZED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CALIFORNIA PLUMBING CODE, APPENDIX H.



Garden Grove
Sanitary District

TYPICAL GREASE INTERCEPTOR

Approved  Date 12-8-15
 City Engineer R.C.E. 52125 Exp.12-31-16

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S-117
 SHEET 1 OF 2

1. GREASE INTERCEPTOR SHALL BE INSTALLED IN CONFORMANCE WITH THE PROVISIONS OF THE CALIFORNIA PLUMBING CODE AS ADOPTED BY THE CITY OF GARDEN GROVE.
2. ALL GREASE INTERCEPTOR SHALL BE OF AN APPROVED TYPE AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURES INSTALLATION INSTRUCTIONS OR AS SUBMITTED BY A DESIGN PROFESSIONAL.
3. INTERCEPTOR SHALL BE ON DRY LEVEL UNDISTURBED SOIL ON A FIRM COMPACTED BASE.
4. MANHOLE GRADE RINGS SHALL BE SEALED WITH MOTAR OR AN APPROVED ALTERNATIVE WATER BARRIER.
5. SAMPLE BOXES SHALL BE REQUIRED UNLESS EXEMPTED BY THE ENVIRONMENTAL SERVICES MANAGER.
6. ON PLUMBING PLAN SUBMITTAL INCORPORATE MANUFACTURE'S INSTALLATION INSTRUCTIONS, TYPE, AND LOCATION OF INTERCEPTOR.



Garden Grove
Sanitary District

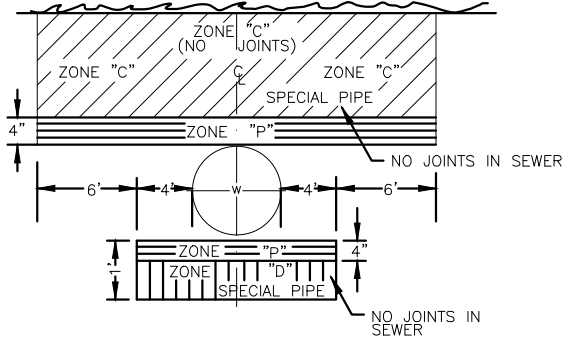
TYPICAL GREASE INTERCEPTOR

Approved  Date 12-8-15
City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER
S-117
SHEET 2 OF 2

NEW SEWER

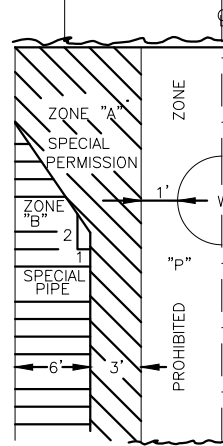


PERPENDICULAR CROSSING

NOTE: "P" IS A PROHIBITED CONSTRUCTION ZONE

NOTES:

ZONES IDENTICAL, ON EITHER SIDE OF CENTER LINES. ZONE "P" IS A PROHIBITED ZONE, SECTION 64630 (2) CALIFORNIA ADMINISTRATIVE CODE, TITLE 22



NEW SEWER BEING INSTALLED

- | | |
|---------|---|
| ZONE | SPECIAL CONSTRUCTION REQUIRED FOR SEWER |
| A,B,C,D | SEWER LINES PARALLEL TO WATER MAINS SHALL NOT BE PERMITTED IN THIS ZONE WITHOUT APPROVAL FROM THE STATE WATER RESOURCES CONTROL BOARD (SWRCB) AND THE CITY. |
| B | A SEWER LINE PLACED PARALLEL TO A WATER LINE SHALL BE CONSTRUCTED OF: <ol style="list-style-type: none"> 1. EXTRA STRENGTH VITRIFIED CLAY PIPE WITH COMPRESSION JOINTS. 2. PLASTIC SEWER PIPE WITH RUBBER RING JOINTS, DR 26. 3. DUCTILE IRON PIPE WITH COMPRESSION JOINTS. 4. REINFORCED CONCRETE PRESSURE PIPE WITH COMPRESSION JOINTS (PER AWWA C302-74). |
| C | A SEWER LINE CROSSING A WATER MAIN SHALL BE CONSTRUCTED OF: <ol style="list-style-type: none"> 1. DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING AND MECHANICAL JOINTS. NO JOINTS WITHIN 10' EITHER SIDE OF WATER. 2. A CONTINUOUS SECTION OF CLASS 305 (DR 14 PER AWWA C900) PVC PIPE OR EQUIVALENT, CENTERED OVER THE WATER PIPE BEING CROSSED. 3. A CONTINUOUS SECTION OF REINFORCED CONCRETE PRESSURE PIPE (PER AWWA C302-74) CENTERED OVER THE PIPE BEING CROSSED. 4. ANY SEWER PIPE WITHIN A CONTINUOUS STEEL PIPE SLEEVE. |

PARALLEL INSTALLATION

(CONT.)

- D A SEWER LINE CROSSING A WATER MAIN SHALL BE CONSTRUCTED OF
1. A CONTINUOUS SECTION OF DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING AND MECHANICAL JOINTS CENTERED ON THE WATER PIPE BEING CROSSED.
 2. A CONTINUOUS SECTION OF CLASS 305 (DR 14 PER AWWA C900) PVC PIPE OR EQUIVALENT, CENTERED ON THE WATER PIPE BEING CROSSED.
 3. A CONTINUOUS SECTION OF REINFORCED CONCRETE PRESSURE PIPE (PER AWWA C302-74) CENTERED ON THE WATER PIPE BEING CROSSED.
 4. ANY SEWER PIPE WITHIN A CONTINUOUS STEEL PIPE SLEEVE.
 5. ANY SEWER PIPE MATERIAL ENCASED IN REINFORCED CONCRETE PER STD. DWG. S-108 TYPE "B".

Garden Grove
Sanitary District

DESIGN CRITERIA FOR SEPARATION OF WATER AND SEWER MAINS

Approved Date 12-8-15
City Engineer R.C.E. 52125 Exp.12-31-16

REVISIONS	BY	DATE

STD. PLAN NUMBER
S-118