

CITY OF OCEANSIDE

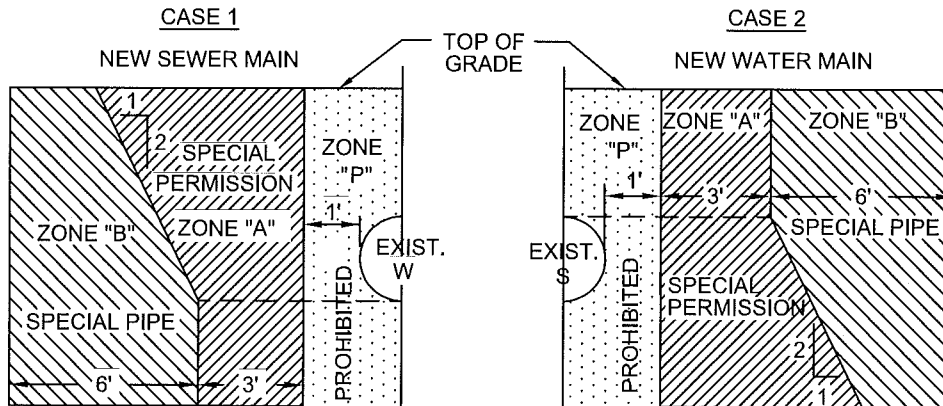
WATER UTILITIES DEPARTMENT

SEWER STANDARD DRAWINGS

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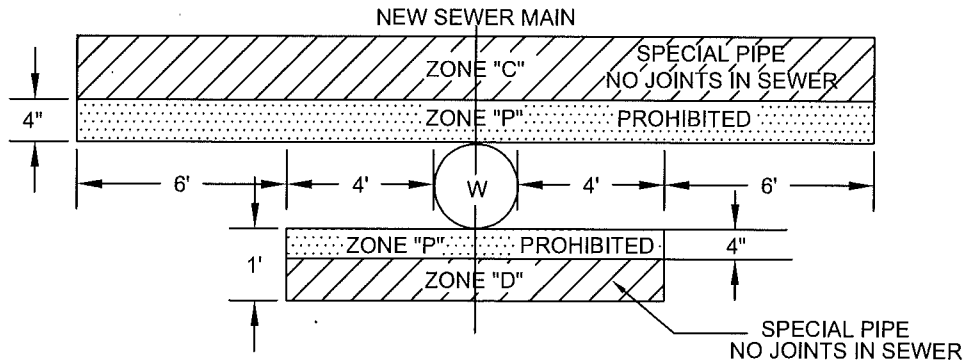
PARALLEL CONSTRUCTION



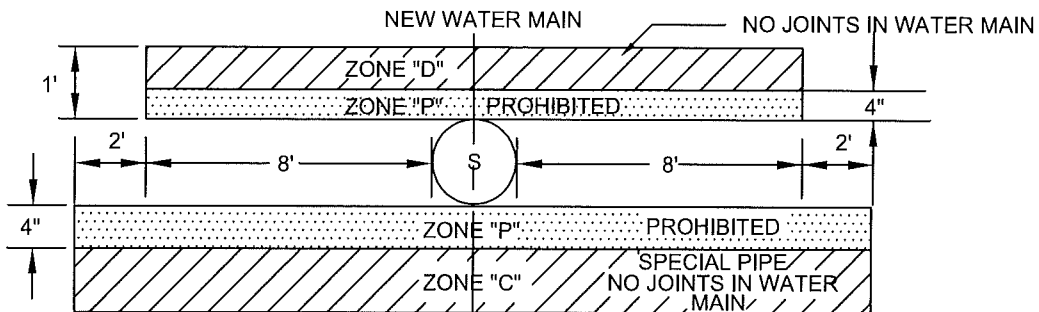
NOTE: ZONES IDENTICAL ON EITHER SIDE OF CENTER LINES.
 ZONE "P" IS A PROHIBITED ZONE.

CROSSINGS

CASE 1



CASE 2



NOT TO SCALE

Revision	By	Approved	Date
04/12/01	kal		
09/26/02	DW		
01/04/16	MU		

CITY OF OCEANSIDE

**DESIGN CRITERIA FOR SEPARATION
 OF WATER AND SEWER MAINS**

CITY ENGINEER	Date
STANDARD DRAWING NO.	S-1a

NOTES:

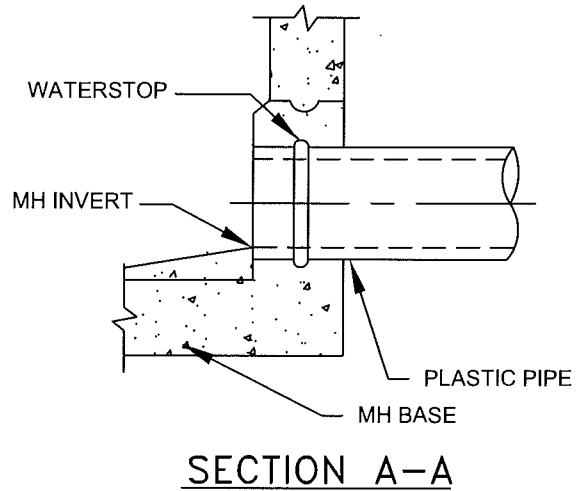
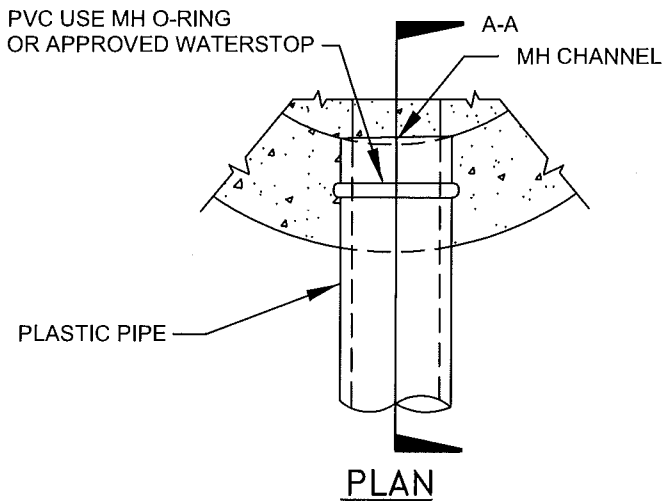
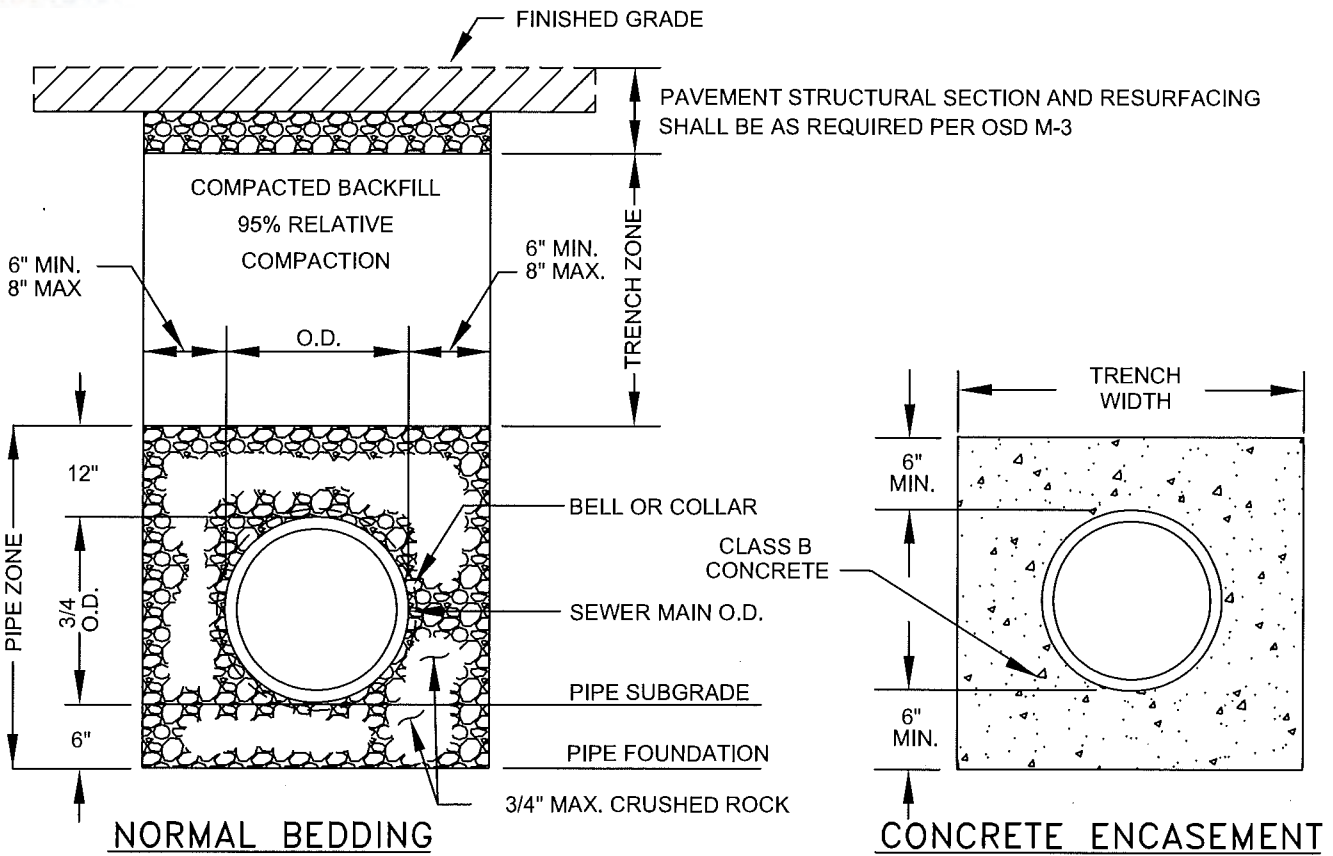
Case 1: New Sewer Being Installed

<u>Zone</u>	<u>Requirements</u>
A	Sewer Lines parallel to water mains shall not be permitted in this zone without approval from the Health Agency.
B	A sewer line parallel to water main shall be constructed of PVC with rubber ring joints.
C	A sewer line crossing a water main shall be constructed of: <ol style="list-style-type: none"> 1. Continuous section of SDR26, as an alternative Class 200 PVC per AWWA C900 or C905 can be used. 2. Any sewer main within a continuous sleeve
D	A sewer line crossing a water main shall be constructed the same as Zone C

Case 2: New Water Main Being Installed

<u>Zone</u>	<u>Requirements</u>
A	No water mains parallel to sewer shall be constructed without approval from the Health Agency.
B	If sewer paralleling the water main does not meet the Case 1, Zone B Requirements, then water main shall be constructed of: <ol style="list-style-type: none"> 1. DIP 2. PVC per AWWA C900 or C905
C	If the sewer crossing the water main does not meet Case 1, Zone C Requirements, the water main shall have no joints in Zone C and will be constructed of: <ol style="list-style-type: none"> 1. Same as Case 2, Zone B above
D	If the sewer crossing the water main does not meet the requirements for Zone C, Case 1, the water main shall have no joints within four (4) feet from either side of the sewer and shall be constructed of: <ol style="list-style-type: none"> 1. Same as Case 2, Zone B above

Revision	By	Approved	Date	CITY OF OCEANSIDE DESIGN CRITERIA FOR SEPARATION OF WATER AND SEWER MAINS		
04/12/01	kal				CITY ENGINEER	Date
09/26/02	DW				STANDARD	S-1b
08/31/04	AC				DRAWING NO.	
09/22/10	DW					
01/04/16	MU					

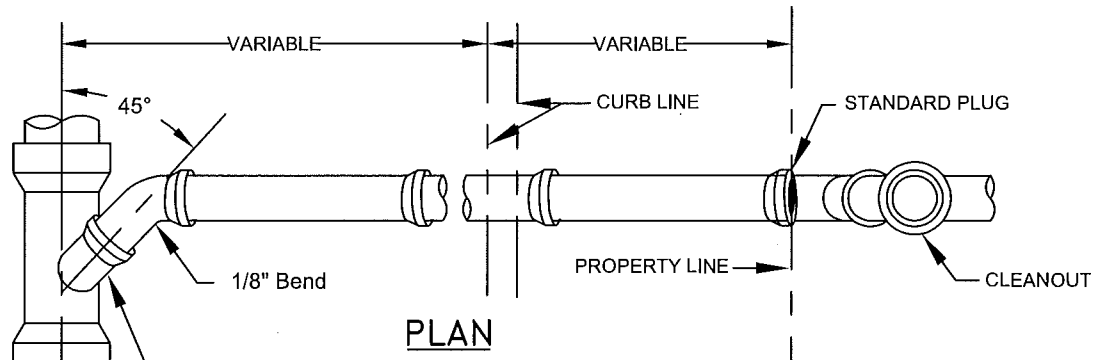


MANHOLE CONNECTION DETAILS

NOTES:

1. SEE STD. DWGS. S-5, S-6 & S-7 FOR MANHOLE DETAILS.
2. NORMAL CRUSHED ROCK BEDDING SHALL BE USED FOR DEPTH OF COVER > 4' OR < 17' FOR PVC BEDDING FOR DEPTH OF COVER < 4' OR > 17' TO BE DETERMINED BY THE CITY.
3. CONCRETE ENCASEMENT SHALL BE USED WHERE THE TRENCH WIDTH AT THE UPPER LIMITS OF THE PIPE ZONE EXCEEDS THE MAXIMUM WIDTH SPECIFIED ABOVE.

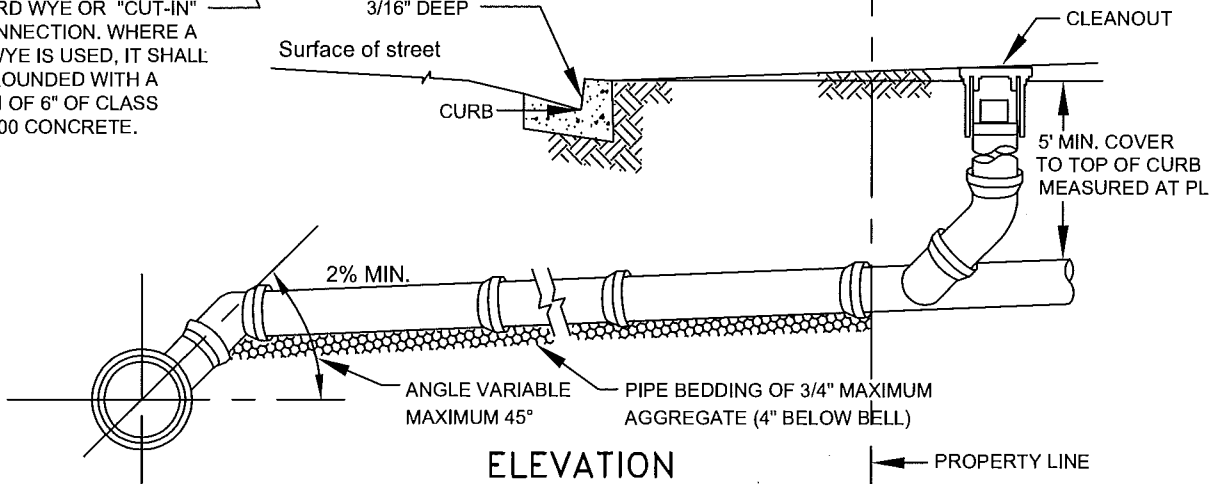
Revision	By	Approved	Date	CITY OF OCEANSIDE	
04/12/01	kal				
10/18/02	DW				
08/30/04	AC				
01/04/16	MU				
				CITY ENGINEER Date	
PLASTIC SEWER PIPE TRENCH DETAILS					



PLAN

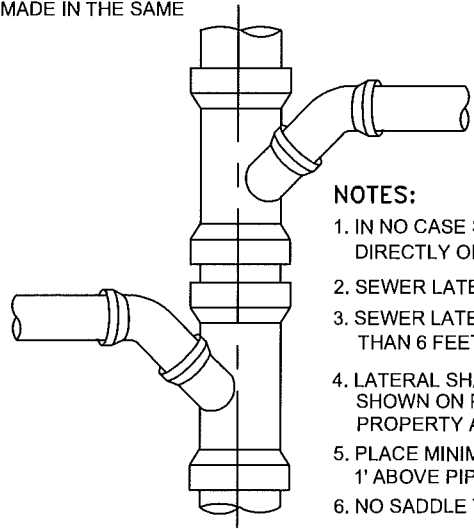
STANDARD WYE OR "CUT-IN" WYE CONNECTION. WHERE A CUT-IN WYE IS USED, IT SHALL BE SURROUNDED WITH A MINIMUM OF 6" OF CLASS 470-C-2000 CONCRETE.

LETTER "S" STAMPED OR CHISELED IN FACE OF CURB NOT LESS THAN 1 1/2" HIGH AND 3/16" DEEP



ELEVATION

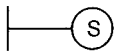
DETAIL SHOWING THE MANNER OF CONNECTING OPPOSITE LATERALS TO A SEWER MAIN. TWO CONNECTIONS SHALL NOT BE MADE IN THE SAME LENGTH OF PIPE



DETAIL

NOTES:

1. IN NO CASE SHALL A LATERAL CONNECT TO THE SEWER MAIN DIRECTLY ON TOP OF THE PIPE.
2. SEWER LATERALS SHALL HAVE A MINIMUM SLOPE OF 2%.
3. SEWER LATERAL PIPE SHALL BE PVC SDR 35. FOR DEPTHS LESS THAN 6 FEET OR GREATER THAN 12 FEET USE PVC SDR 26.
4. LATERAL SHALL EXTEND TO PROPERTY LINE UNLESS OTHERWISE SHOWN ON PLANS. PROVIDE ABOVE-GROUND MARKER ON PRIVATE PROPERTY AT TIME OF BACKFILL.
5. PLACE MINIMUM 3" WIDE DETECTOR TAPE MARKED "SEWER" 1' ABOVE PIPE ALONG ENTIRE LATERAL.
6. NO SADDLE TAPS ARE ALLOWED.
7. SEWER LATERAL INCLUDING WYE CONNECTION IS PROPERTY OWNER'S RESPONSIBILITY.



LEGEND ON PLANS

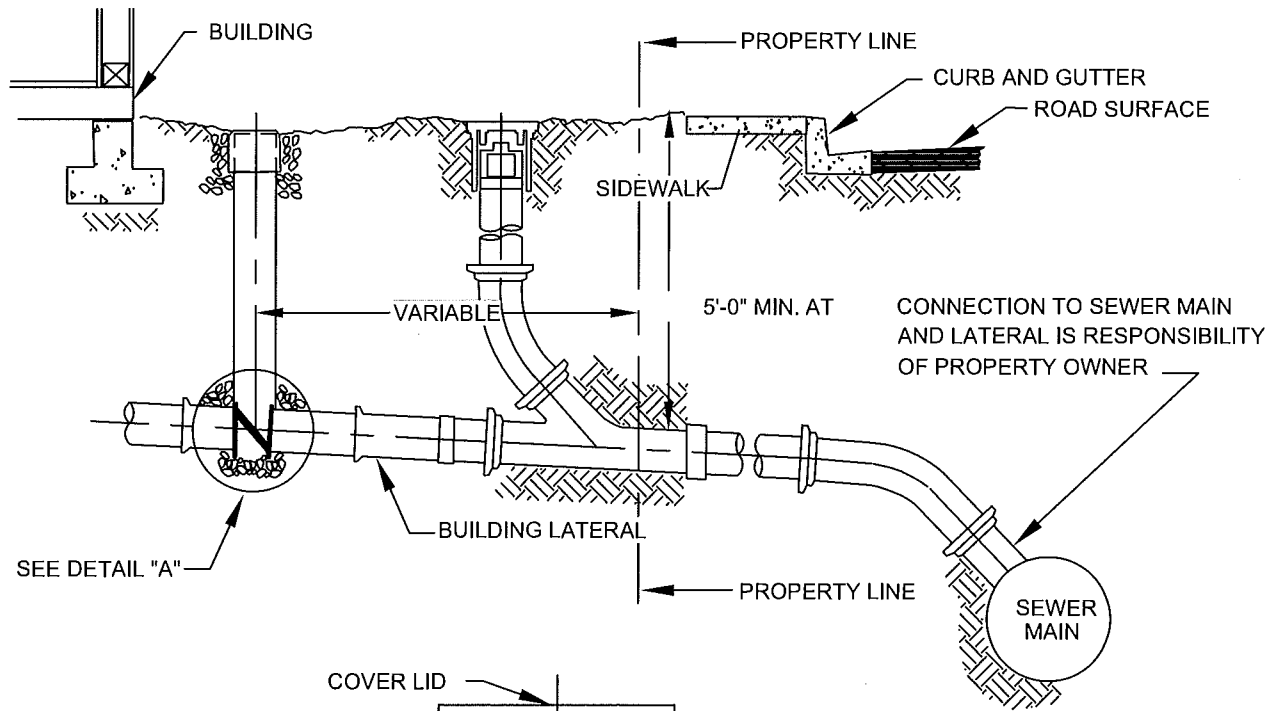
Revision	By	Approved	Date
04/16/01	kal		
09/27/02	DW		
08/06/04	AC		
01/04/16	MU		

CITY OF OCEANSIDE

**HOUSE CONNECTION
(SEWER LATERAL)**

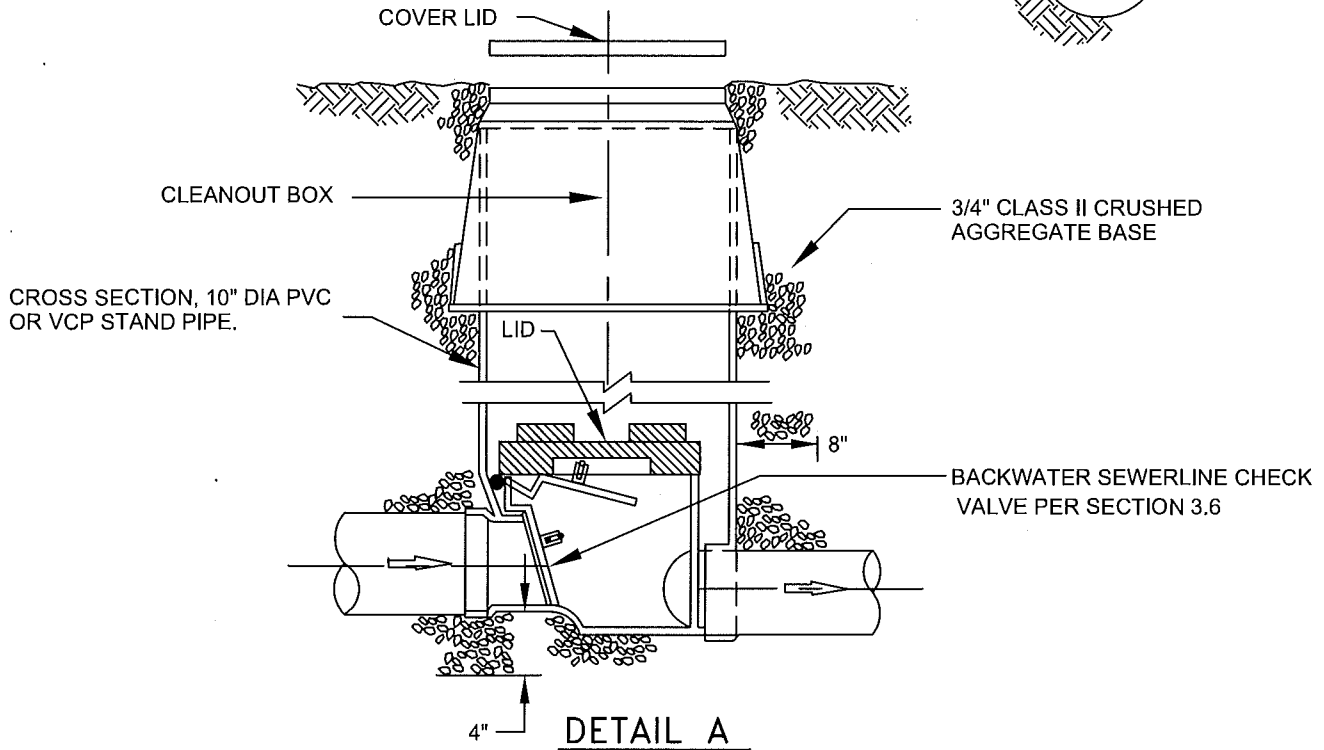
CITY ENGINEER Date

STANDARD DRAWING NO. **S-3**



SEE DETAIL "A"

CONNECTION TO SEWER MAIN AND LATERAL IS RESPONSIBILITY OF PROPERTY OWNER



CROSS SECTION, 10" DIA PVC OR VCP STAND PIPE.

BACKWATER SEWERLINE CHECK VALVE PER SECTION 3.6

DETAIL A

NOTES

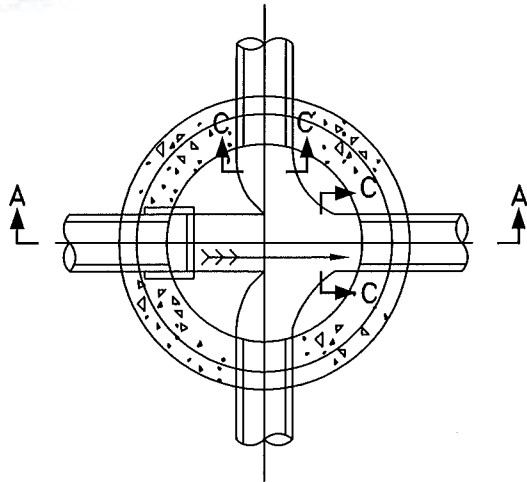
1. SEWAGE BACKWATER VALVE ASSEMBLY TO BE INSTALLED ON ALL LATERALS WHERE THE FINISH FLOOR OR PAD ELEVATION IS LOWER THAN THAT OF THE FIRST UPSTREAM MANHOLE.
2. PROPERTY OWNER IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF THE SEWAGE BACKFLOW VALVE ASSEMBLY.

Revision	By	Approved	Date
04/16/01	kal		
06/05/01	DW		
10/18/02	DW		
08/06/04	AC		
01/04/16	MU		

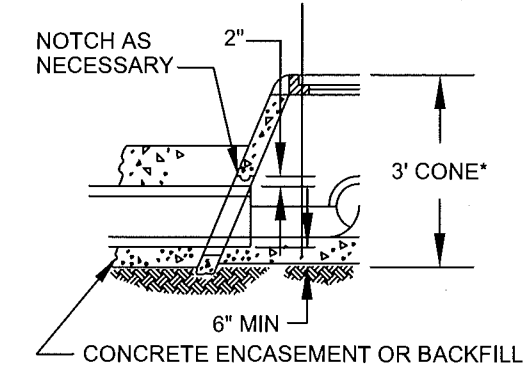
CITY OF OCEANSIDE

SEWAGE BACKWATER VALVE ASSEMBLY

CITY ENGINEER _____ Date _____
 STANDARD DRAWING NO. **S-4**

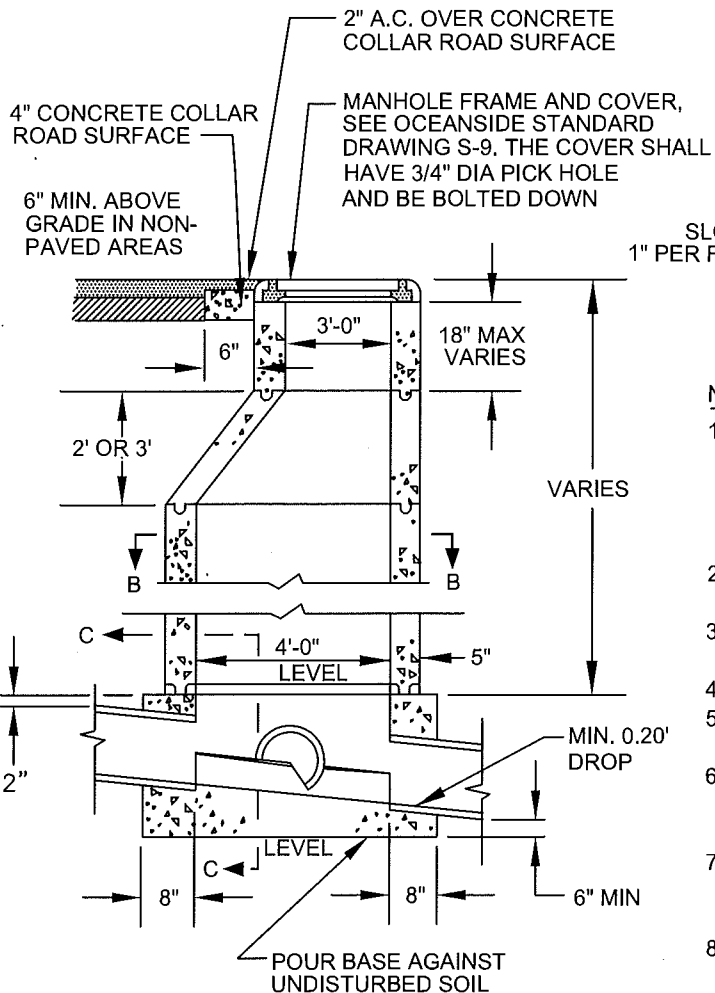


SECTION B-B

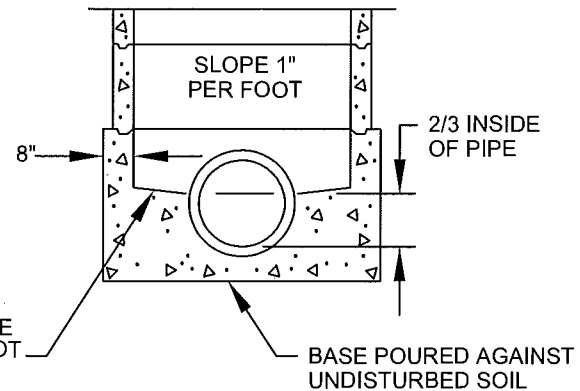


HALF SECTION SHALLOW MANHOLE

* ECCENTRIC CONE SHALL BE USED.



SECTION A-A



SECTION C-C

NOTES

1. MANHOLE FRAME AND ALL JOINTS SHALL BE SET IN CLASS "C" MORTAR, 3/8" THICK, NEATLY STRUCK AND POINTED OR PREFORMED COLD-APPLIED READY-TO-USE PLASTIC JOINT SEALING COMPOUND AND PRIMER. (ALSO SEE NOTE 6 BELOW)
2. ALL PRECAST COMPONENTS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C-478
3. VERTICAL WALL OF CONE SHALL BE ON THE DOWNSTREAM SIDE OF THE MANHOLE.
4. CONCRETE BASE SHALL BE 564-C-3250.
5. APPROVED WATERSTOP REQUIRED FOR PLASTIC PIPE CONNECTIONS.
6. WHEN MANHOLE IS IN GROUND WATER OR IN THE DRAINAGE PATH USE APPROVED EPOXY MORTAR AT JOINTS.
7. INTERIOR OF THE MANHOLE SHALL BE COATED WITH SANCON 100, ZEBRON, OR SAUERISEN SEWARGUARD 210S.
8. RUBBER RINGS, WATERPROOF LIDS IN AREAS SUBJECT TO FLOODING.
9. ALL MANHOLES SHALL HAVE BOLTED LIDS.

Revision	By	Approved	Date
04/15/01	kal		
10/22/02	DW		
09/22/10	DW		
01/04/16	MU		

CITY OF OCEANSIDE

**MANHOLE- 4' DIAMETER
 (FOR 21" MAX. DIA. PIPE)**

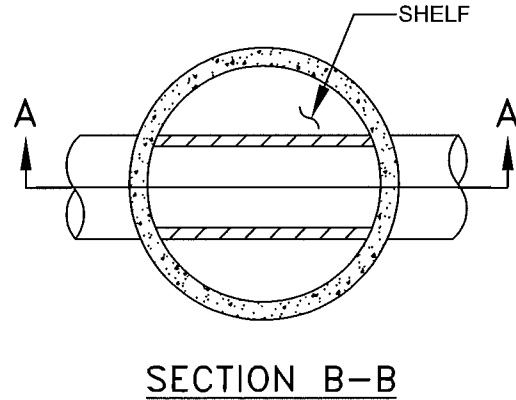
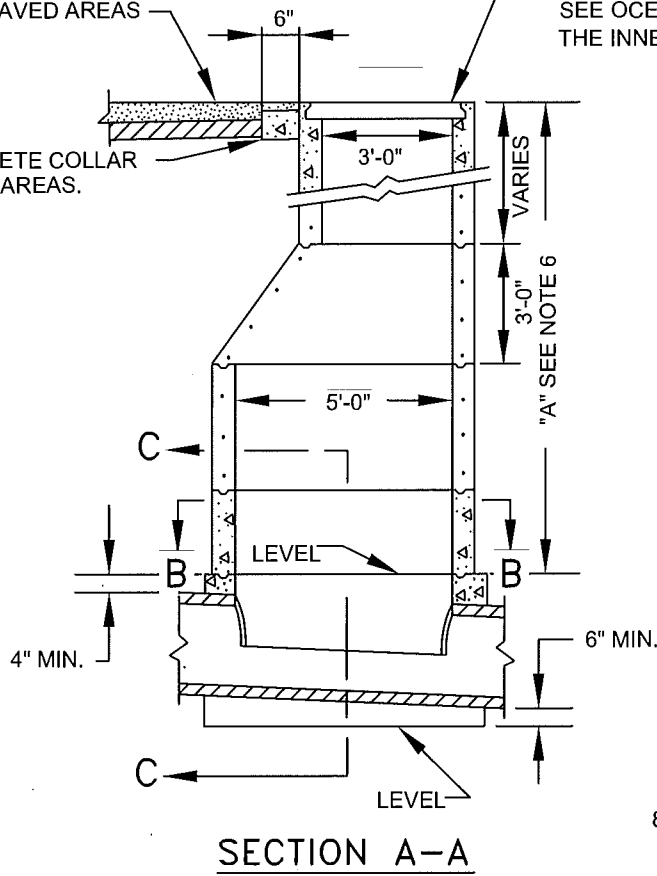
CITY ENGINEER Date

STANDARD DRAWING NO. **S-5**

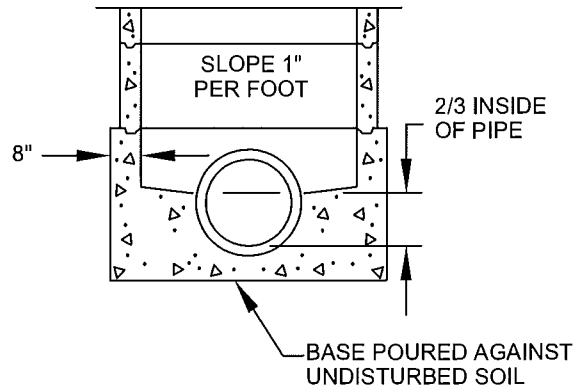
2" A.C. OVER CONCRETE ROAD SURFACE
 6" MIN. ABOVE GRADE IN NON-PAVED AREAS

4" CONCRETE COLLAR IN PAVED AREAS.

MANHOLE FRAME AND COVER BOLTED DOWN
 SEE OCEANSIDE STANDARD DRAWING S-9.
 THE INNER COVER SHALL HAVE 3/4" DIA. PICK HOLE



SECTION B-B



SECTION C-C

NOTES:

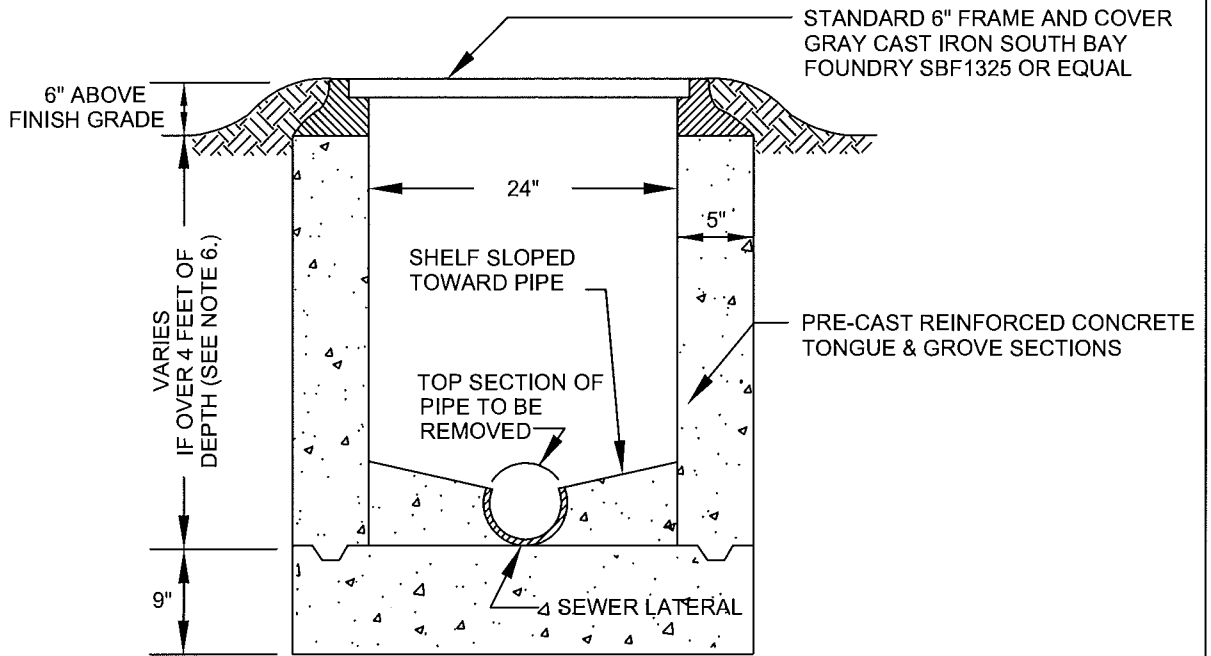
1. MANHOLE FRAME AND ALL JOINTS SHALL BE SET IN CLASS "C" MORTAR, 3/8" THICK, NEATLY STRUCK READY-TO-USE PLASTIC JOINT SEALING COMPOUND AND PRIMER. (ALSO SEE NOTE 6 BELOW).
2. ALL PRECAST COMPONENTS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C-478.
3. VERTICAL WALL OF CONE SHALL BE ON THE DOWNSTREAM SIDE OF THE MANHOLE.
4. CONCRETE BASE SHALL BE 564-C-3250.
5. APPROVED WATER STOP REQUIRED FOR PLASTIC PIPE CONNECTIONS.
6. WHEN MANHOLE IS IN GROUNDWATER OR IN THE DRAINAGE PATH USE APPROVED EPOXY MORTAR AT JOINTS.
7. PRECAST SECTIONS SHALL BE USED WITHIN DIMENSION "A" AS REQUIRED, IN ORDER OF PREFERENCE LISTED.
 - A. CONE (NOTCHED FOR PIPE IF DIMENSION "A" IS LESS THAN 3')
 - B. 6" TO 24" OF 3' DIAMETER GRADE RINGS
 - C. 5' DIAMETER SHAFT TO MAXIMUM HEIGHT OF 60"
 - D. ADDITIONAL 3' DIAMETER RISERS
8. INTERIOR OF MANHOLE TO BE COATED WITH SANCON 100, ZEBRON OR SAUEREISEN SEWER GUARD 210S.

Revision	By	Approved	Date
04/15/01	kal		
10/22/02	DW		
08/30/04	AC		
09/22/10	DW		
01/04/16	MU		

CITY OF OCEANSIDE

MANHOLE - 5' DIAMETER
(FOR 24" THROUGH 42" DIA. PIPE)

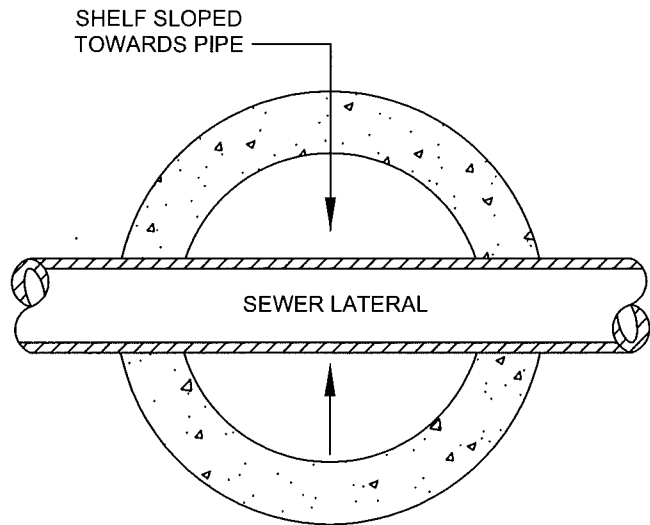
CITY ENGINEER	Date
STANDARD DRAWING NO.	S-6



PROFILE

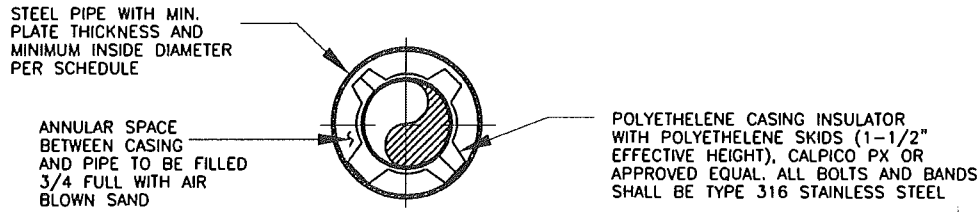
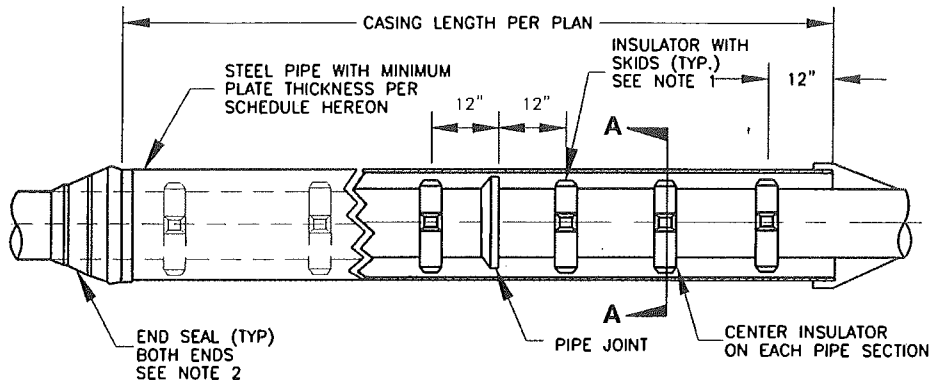
NOTES:

1. THE INTERIOR OF THE MANHOLE SHALL BE COATED WITH SANCON 100, ZEBRON, OR SAUERISEN SEWERGUARD 210S.
2. THE DEPTH OF CHANNEL FORMED BY CONCRETE INVERT SHALL BE 2/3 OF THE DIAMETER OF THE SEWER LATERAL PIPE.
3. THE OWNER WILL HAVE SOLE RESPONSIBILITY FOR MAINTAINING THE MANHOLE IN AN ADEQUATE MANNER SO AS NOT TO BECOME LOST IN THE LANDSCAPE OR INTERFERE WITH EASY INSPECTION AND SAMPLING.
4. THE MANHOLE SHALL BE CONSTRUCTED ON PRIVATE PROPERTY.
5. MANHOLE INSTALLATION IS IN ACCORDANCE WITH CHAPTER 29, SEC. 29.49 CITY OF OCEANSIDE CODE.
6. IF THE MANHOLE DEPTH FROM RIM ELEVATION TO INVERT ELEVATION IS GREATER THAN 4.0 FEET, THE MANHOLE WILL BE INSTALLED CONFORMING IN EVERY DETAIL TO STANDARD DRAWING S-5.
7. MANHOLES ON PRIVATE PROPERTY SHALL BE STAMPED "PRIVATE SEWER"



PLAN

Revision	By	Approved	Date	CITY OF OCEANSIDE		
04/12/01	kal					
10/22/02	DW			INSPECTION MANHOLE	CITY ENGINEER	Date
08/30/04	AC				STANDARD	
01/04/16	MU				DRAWING NO.	S-7



SECTION A-A

NOTES:

1. SPACING BETWEEN THE CASING INSULATORS SHALL BE PER THE MANUFACTURERS RECOMMENDATIONS EXCEPT THAT THERE SHALL BE AT LEAST 3 CASING INSULATORS PER PIPE SECTION, ONE 12" FROM EACH JOINT AND ONE CENTERED. ADDITIONALLY, ONE INSULATOR SHALL BE INSTALLED 12" FROM EACH END OF THE CASING.
2. BOTH ENDS OF THE CASING BETWEEN THE CASING AND CARRIER PIPE MUST BE SEALED WATERTIGHT USING CONCRETE OR A HEAT SHRINK WRAP AROUND SEAL SUCH AS MANUFACTURED BY PIPELINE SEAL AND INSULATOR LTD. OR APPROVED EQUAL. BANDS SHALL BE TYPE 316 STAINLESS STEEL.
3. ALL STEEL CASING PIPE JOINTS SHALL BE WELDED FULL CIRCUMFERENCE.
4. SIZE AND THICKNESS OF CASING SHALL BE AS SHOWN IN SCHEDULE.
5. CASING SHALL BE INSTALLED BY THE BORE AND JACK AND/OR TUNNEL METHOD. METHOD MUST BE APPROVED BY THE WATER UTILITIES DEPARTMENT.
6. THE STEEL CASING SHALL BE LINED AND COATED WITH HOT APPLIED COAL TAR ENAMEL PER AWWA C203. ENAMEL SHALL BE AWWA TYPE II.

SCHEDULE STEEL CASING FOR PIPELINES		
CARRIER PIPE NOMINAL SIZE (INCHES)	CASING WALL THICKNESS (INCH)	MINIMUM CASING O.D. (INCHES)
8	3/8	20
10	3/8	22
12	3/8	24
14	7/16	26
15	7/16	26
16	1/2	30
18	1/2	32
20	1/2	34
21	1/2	34
24	1/2	42
27	5/8	42
30	5/8	48

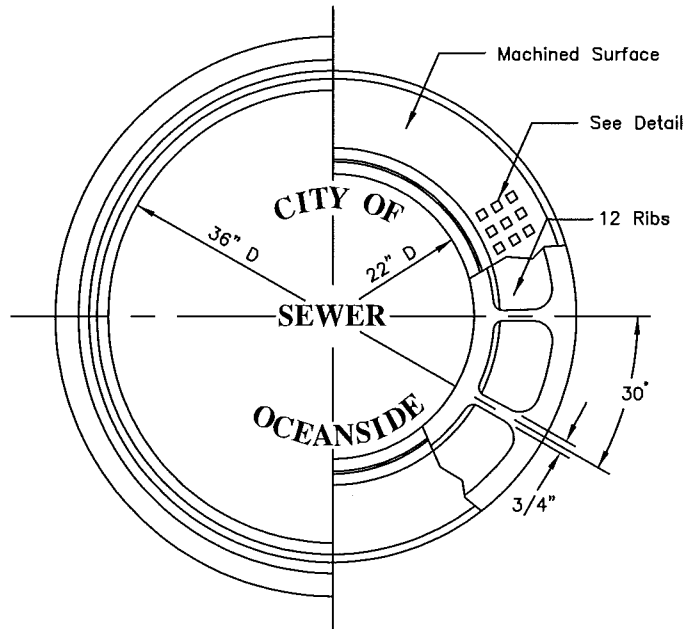
Revision	By	Approved	Date
03/02/01	kal		
10/18/02	DW		
08/30/04	AC		
09/22/10	DW		

CITY OF OCEANSIDE

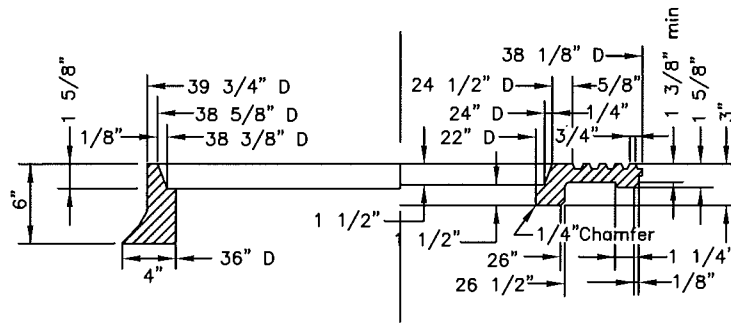
**SEWER ENCASEMENT
DETAIL**

Scott D. Arnold 12-1-10
 CITY ENGINEER Date

STANDARD
DRAWING NO. **S-8**



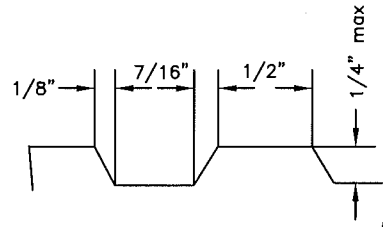
HALF PLAN FRAME & COVER



HALF SECTION FRAME & COVER

NOTES

1. Frame and cover shall be SBF 1325/1310 and cast iron.
Cast iron shall conform to ASTM 48, Class 35B
2. Weight: Frame 314 lbs–363 lbs.
Outer Cover 285 lbs–330 lbs.
Inner Cover 147 lbs–171 lbs.
3. Machine all matching surfaces and seats of frame and cover to prevent rocking.
4. Imported frames and covers shall have the country of origin marked in compliance with federal regulations.



DETAIL

Revision	By	Approved	Date	CITY OF OCEANSIDE 36" MANHOLE FRAME AND TWO CONCENTRIC COVERS HEAVY DUTY		CITY ENGINEER Date	
01/04/16	MU					STANDARD DRAWING NO. S-9	