



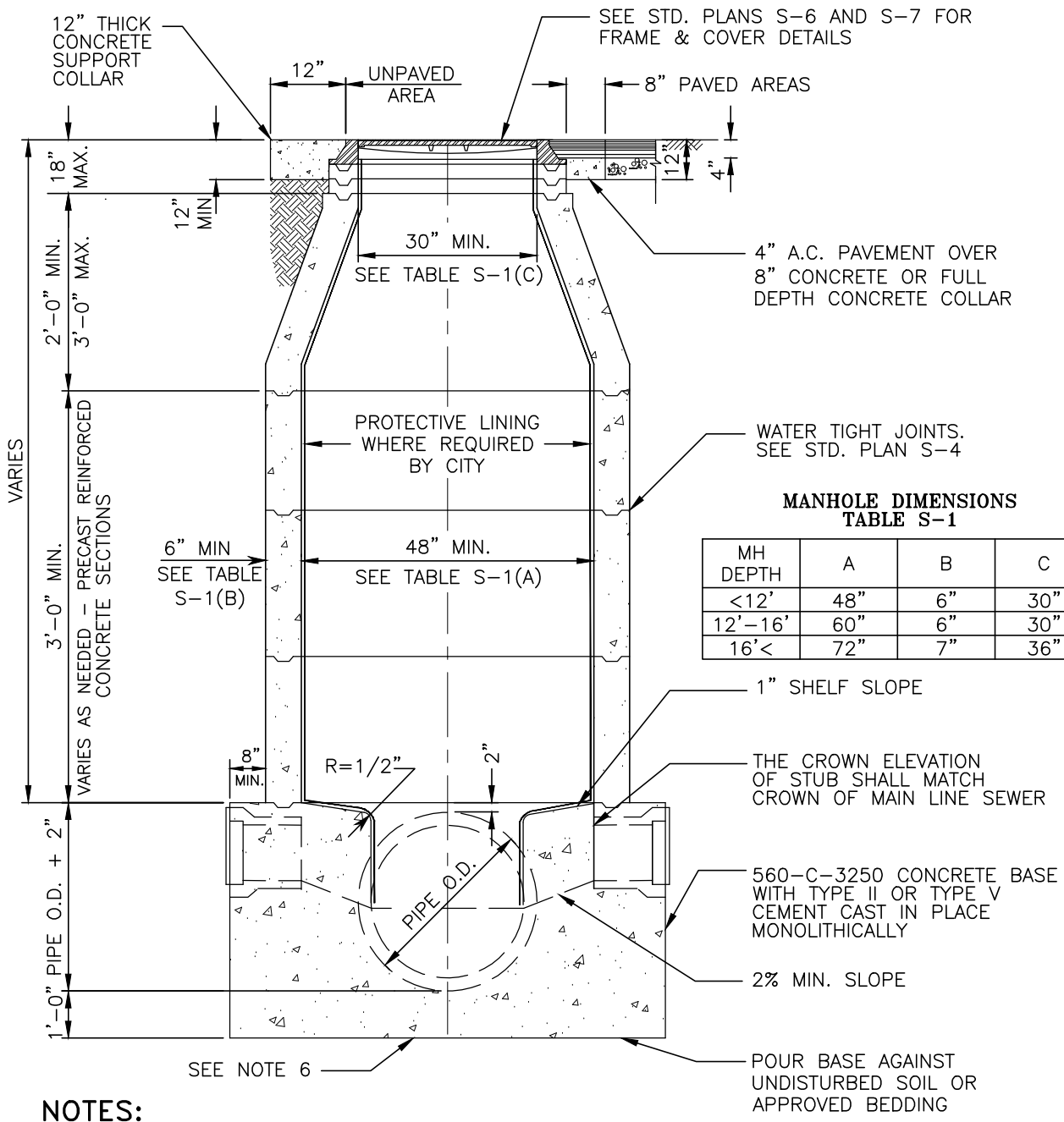
CITY OF SEAL BEACH STANDARD DRAWINGS

2021 Edition

STANDARD DRAWINGS FOR SEWER FACILITIES

2021

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NOTES:

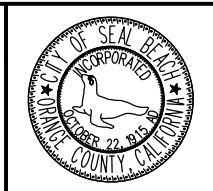
1. FRAME AND COVER SHALL HAVE A CLASS 560-C-3250 CONCRETE COLLAR, CIRCULAR IN PAVED AREAS, SQUARE IN UNPAVED, 12-INCH MINIMUM DEPTH.
2. PROVIDE FLEXIBLE JOINT WITHIN 2- FEET OF OUTSIDE FACE, ALL DIRECTIONS, ALL PIPE TYPES.
3. REFER TO STD. PLANS S-2 THROUGH S-7 FOR ADDITIONAL DETAILS.
4. ALL PRECAST MANHOLE SECTIONS SHALL BE MANUFACTURED AND TESTED IN ACCORDANCE WITH ASTM C478. OMIT MANHOLE STEPS.
5. WATERPROOFING SHALL BE APPLIED TO THE EXTERIOR OF PVC LINED OR EPOXY LINED MANHOLES.
6. IN AREAS SUBJECT TO TIDAL FLUCTUATIONS OR GROUNDWATER, PROVIDE MINIMUM 12-INCHES OF 1/2" GRAVEL WRAPPED IN MIRAFI 140N FILTER FABRIC BELOW APPROVED BEDDING.

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

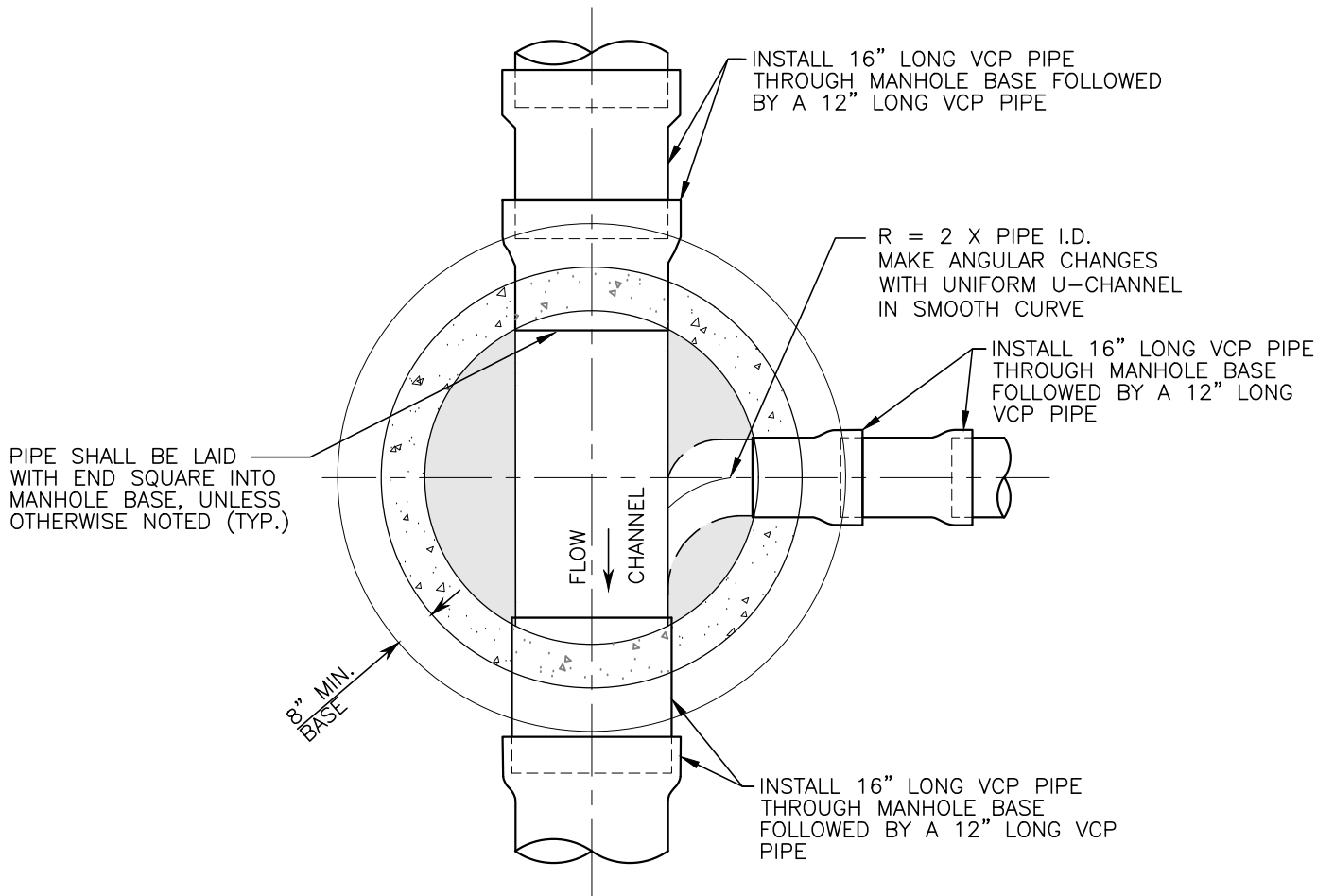
MANHOLE DETAILS

DRAWN BY:	M. URIBE
CHECKED BY:	J. LEE
DATE:	OCT 2021
SCALE:	NO SCALE

APPROVED BY:	
DIRECTOR OF PUBLIC WORKS	10/7/2021
	DATE



S-1
SHEET 1 OF 1



PLAN

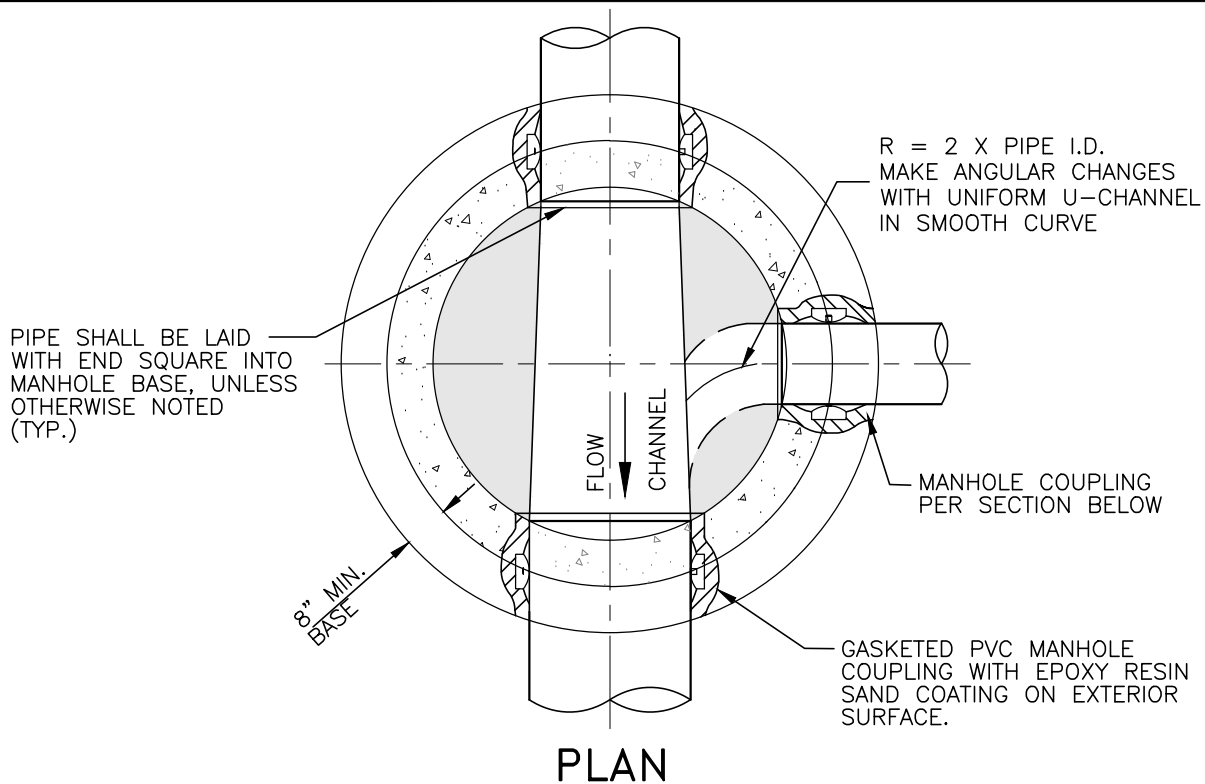
NOTES:

1. MANHOLE BASE SHALL BE CONSTRUCTED ON A FIRM, UNYIELDING, UNDISTURBED SUBGRADE OR APPROVED BEDDING. IF SUBGRADE IS YIELDING OR HAS BEEN DISTURBED, BASE SHALL BE CONSTRUCTED AS APPROVED BY THE CITY ENGINEER.
2. UNLESS OTHERWISE DIRECTED, BASE SHALL BE CONSTRUCTED OF CLASS 560-C-3250 CONCRETE AND TYPE II OR TYPE V CEMENT.
3. PROVIDE A MINIMUM 0.10-FOOT FALL ACROSS MANHOLE WHERE POSSIBLE.
4. SEE STD. PLAN S-5 FOR MANHOLE OPENING ORIENTATION.
5. IN AREAS SUBJECT TO TIDAL FLUCTUATIONS OR GROUNDWATER, PROVIDE MINIMUM 12-INCHES OF 1/2" GRAVEL WRAPPED IN MIRAFI 140N FILTER FABRIC BELOW APPROVED BEDDING.

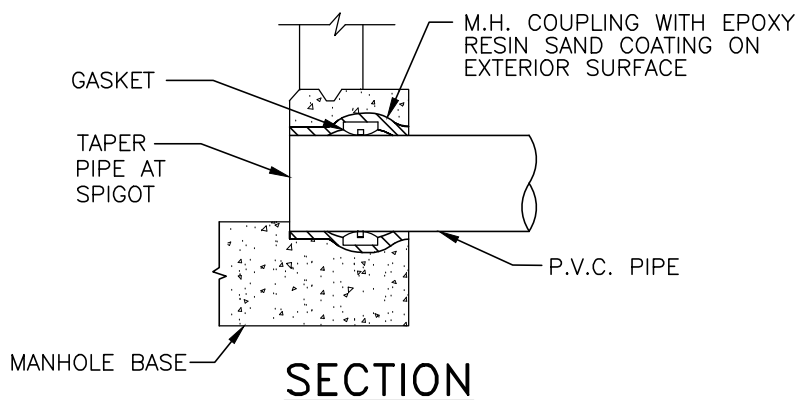
SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

VCP PIPE AND CONCRETE BASE CONNECTION

DRAWN BY: M. URIBE	APPROVED BY:		S-2
CHECKED BY: J. LEE	<i>[Signature]</i>		
DATE: OCT 2021	10/7/2021		
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PLAN



SECTION

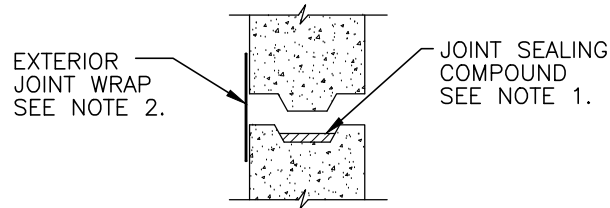
NOTES:

1. MANHOLE BASE SHALL BE CONSTRUCTED ON A FIRM, UNYIELDING, UNDISTURBED SUBGRADE OR APPROVED BEDDING. IF SUBGRADE IS YIELDING OR HAS BEEN DISTURBED, BASE SHALL BE CONSTRUCTED AS APPROVED BY THE CITY ENGINEER.
2. UNLESS OTHERWISE DIRECTED, BASE SHALL BE CONSTRUCTED OF 560-C-3250 CONCRETE AND TYPE II OR TYPE V CEMENT.
3. PROVIDE 0.10-FOOT FALL ACROSS MANHOLE WHERE POSSIBLE.
4. SEE STD. PLAN S-5 FOR MANHOLE OPENING ORIENTATION.
5. IN AREAS SUBJECT TO TIDAL FLUCTUATIONS OR GROUNDWATER, PROVIDE MINIMUM 12-INCHES OF 1½" GRAVEL WRAPPED IN MIRAFI 140N FILTER FABRIC BELOW APPROVED BEDDING.

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

PVC PIPE AND CONCRETE BASE CONNECTION

DRAWN BY: M. URIBE	APPROVED BY:		S-3
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SHAFT JOINT

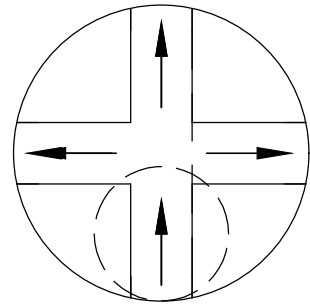
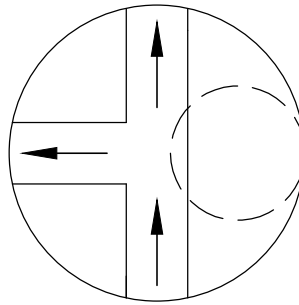
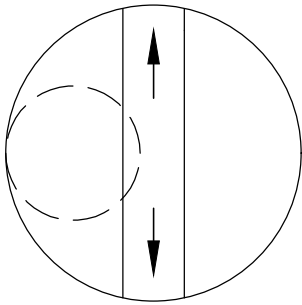
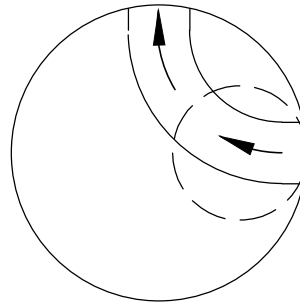
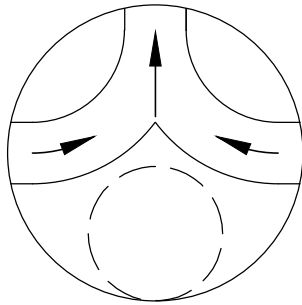
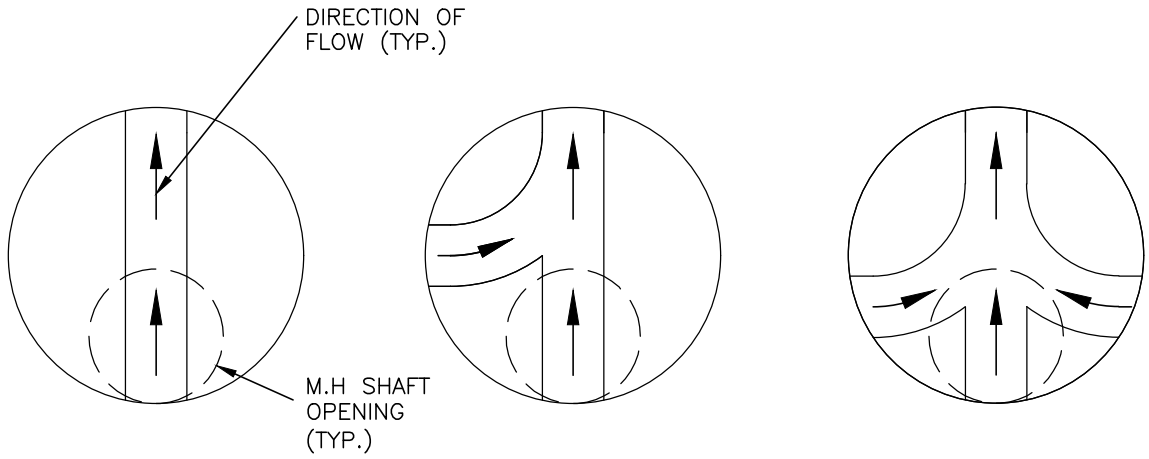
NOTES:

1. JOINT SEALANT – PREFORMED COLD-APPLIED, READY-TO-USE PLASTIC JOINT SEALING COMPOUND SHALL BE USED WHEN GROUNDWATER IS ENCOUNTERED.
2. JOINT WRAP – APPLY A 6-INCH MINIMUM WIDTH OUTSIDE JOINT WRAP CENTERED OVER ALL SHAFT JOINTS IN GROUNDWATER AREAS AFTER APPLICATION OF BITUMINOUS DAMP PROOF COATING. JOINT WRAP SHALL BE RU116 RUB'R-NEK BY HENRY COMPANY OR SEAL WRAP BY SEALING SYSTEMS, OR APPROVED EQUAL.
3. ALL JOINTS, INCLUDING BASE, SHALL BE CONSTRUCTED WATERTIGHT, FLUSH AND SMOOTH WITH A MATERIAL APPROVED BY THE INTERIOR LINING MANUFACTURER.
4. ALL JOINTS SHALL BE TONGUE AND GROOVE TYPE, INCLUDING BASE.
5. SEE STD. PLANS S-1, S-2, AND S-3 FOR MANHOLE DETAILS.

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

MANHOLE SHAFT JOINT AND CONNECTION DETAILS

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				SHEET 1 OF 1



SUMMIT M.H. (ONLY)
EITHER SIDE

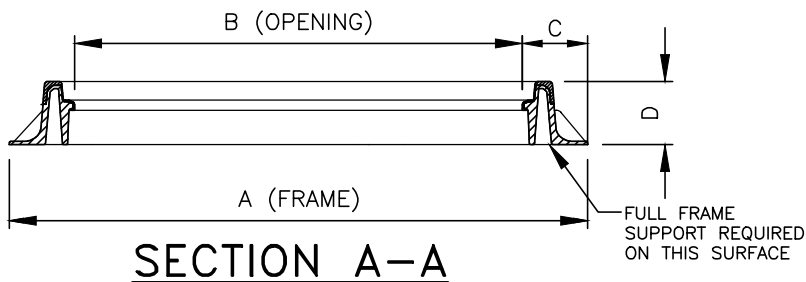
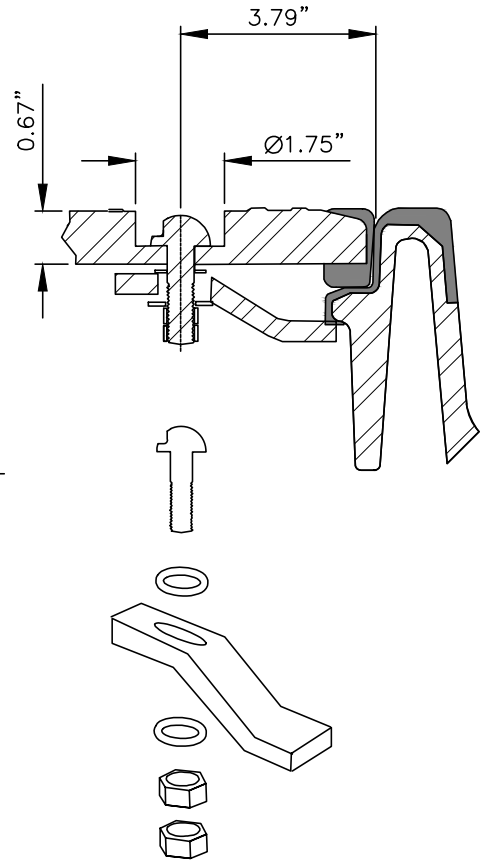
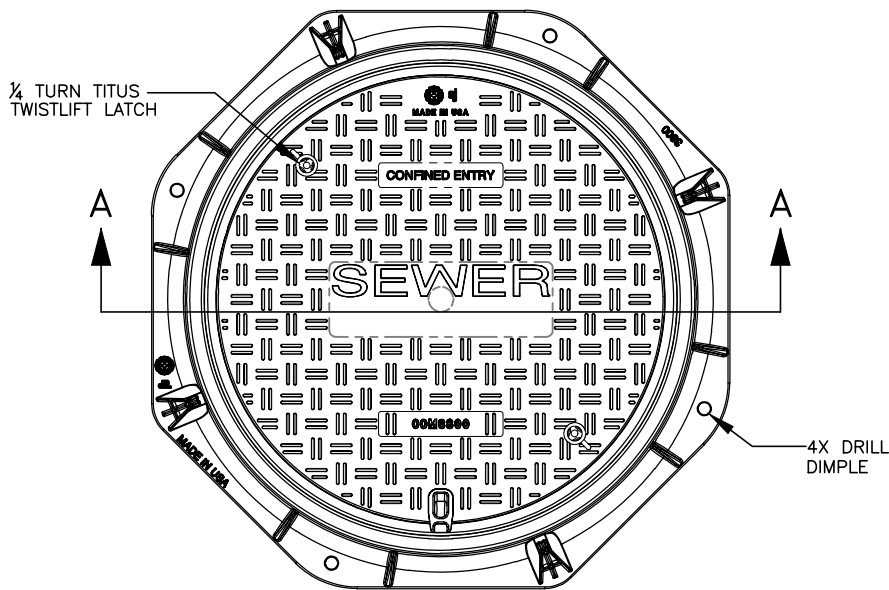
SUMMIT
M.H. (ONLY)

SUMMIT M.H. (ONLY)
ANY POSITION

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

MANHOLE SHAFT LOCATION DETAILS

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CHECKED BY: J. LEE			
DATE: OCT 2021	10/7/2021		
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		DATE	SHEET 1 OF 1



BOLT-DOWN DETAIL

MANHOLE SIZE	A	B	C	D	SERIES NUMBER
48"	41"	30"	5 1/2"	5 1/16"	COM3200
60"	41"	30"	5 1/2"	5 1/16"	COM3200
72"	46 1/2"	36"	5 1/4"	5 1/16"	COM3800

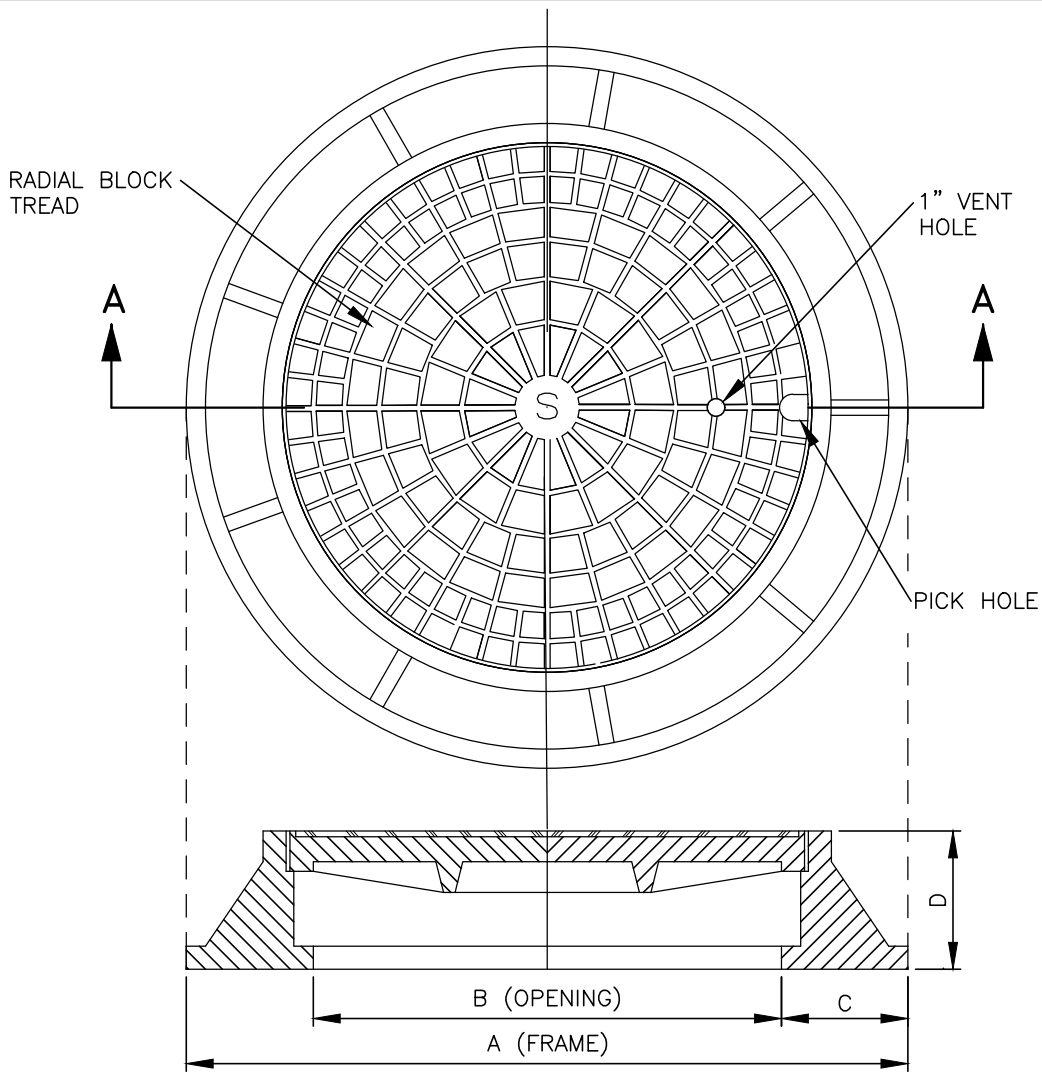
NOTES:

1. COMPOSITE MANHOLE FRAME AND COVER SHALL BE AS MANUFACTURED BY EJ WITH TITUS TWISTLIFT SECURITY LOCK, OR APPROVED EQUAL. FRAME AND COVER SHALL BE TRAFFIC RATED. INSERT TO READ "SEWER."
2. BOLT-DOWN MATERIAL SHALL BE 316 STAINLESS STEEL.
3. COMPOSITE FRAME AND COVER SHALL BE INSTALLED ON NON-ARTERIAL STREETS.

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

TRAFFIC MANHOLE FRAME AND COVER - COMPOSITE

DRAWN BY: M. URIBE	APPROVED BY:		S-6
CHECKED BY: J. LEE			
DATE: OCT 2021	10/7/2021		
SCALE: NO SCALE	DIRECTOR OF PUBLIC WORKS DATE		
			SHEET 1 OF 1



SECTION A-A

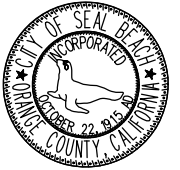

MANHOLE SIZE	A	B	C	D
48"	38.5"	30"	4.25"	6"
60"	38.5"	30"	4.25"	6"
72"	44.5"	36"	4.25"	6"

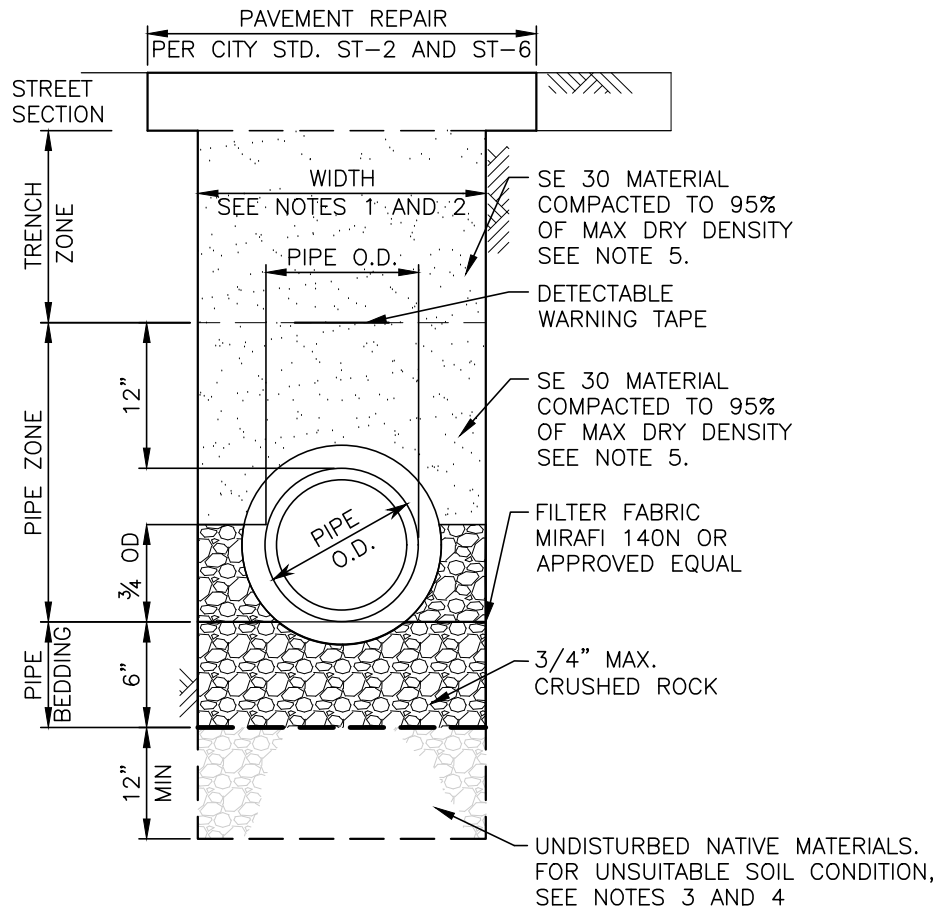
NOTES:

1. CAST IRON MANHOLE FRAME AND COVER SHALL BE AS MANUFACTURED BY LONG BEACH IRON WORKS. FRAME AND COVER SHALL BE TRAFFIC RATED.
2. WHERE THE CITY ENGINEER DEEMS NECESSARY FOR HEIGHTENED PROTECTION OF THE PUBLIC OR FACILITIES, PAMREX HINGED MANHOLE FRAME AND LOCKING COVER, OR APPROVED EQUAL, MAY BE REQUIRED.
3. CAST IRON FRAME AND COVERS SHALL BE INSTALLED ON ARTERIAL STREETS.

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

TRAFFIC MANHOLE FRAME AND COVER - CAST IRON

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CHECKED BY: J. LEE			
DATE: OCT 2021	10/7/2021		
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			SHEET 1 OF 1




PIPE BEDDING FOR GRAVITY PIPE

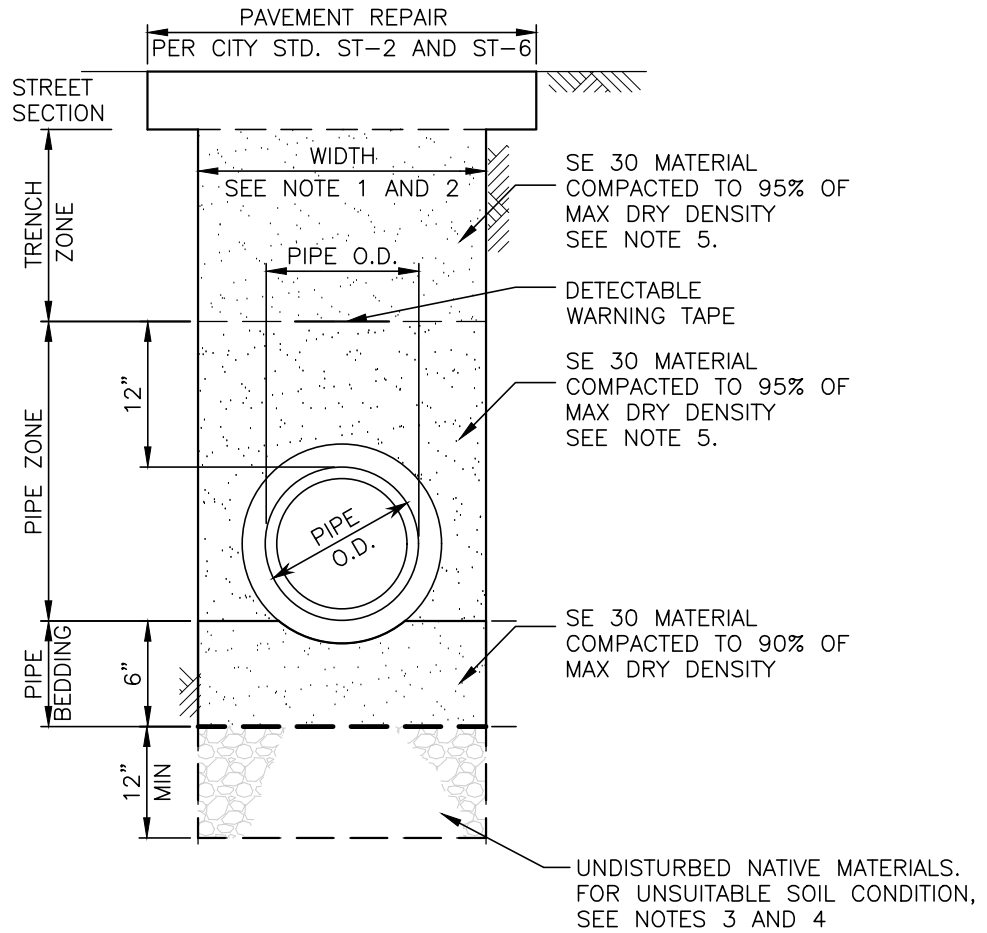
NOTES:

1. TRENCH WIDTH AT THE UPPER LIMIT OF THE PIPE ZONE SHALL BE WITHIN THE FOLLOWING LIMITS FOR TYPICAL NORMAL BEDDING.
 - (A) MAXIMUM TRENCH WIDTH—O.D. PIPE OR BELL PLUS 8—INCHES MAX. EACH SIDE OF PIPE.
 - (B) MINIMUM TRENCH WIDTH—O.D. PIPE OR BELL PLUS 6—INCHES MIN. EACH SIDE OF PIPE.
2. PROVIDE CLASS 100—E—100 CEMENT SLURRY IN PIPE ZONE FOR OVERWIDTH TRENCH CONDITIONS.
3. IF UNSUITABLE SUBGRADE SOIL CONDITIONS ARE ENCOUNTERED, A REGISTERED GEOTECHNICAL ENGINEER SHALL DETERMINE DEPTH OF REMOVAL. MINIMUM DEPTH OF REMOVAL SHALL BE 12—INCHES.
4. FOUNDATION ROCK SHALL BE 1½” GRAVEL WRAPPED IN MIRAFI 140N FILTER FABRIC.
5. USE SLURRY BACKFILL FOR THE PIPE AND TRENCH ZONE IF DETERMINED BY THE CITY REPRESENTATIVE.

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

PIPE BEDDING FOR GRAVITY PIPE

DRAWN BY: M. URIBE	APPROVED BY: <i>Alle Urrutia</i> _____ DIRECTOR OF PUBLIC WORKS	10/7/2021 DATE	
CHECKED BY: J. LEE			S-8
DATE: OCT 2021			
SCALE: NO SCALE			SHEET 1 OF 1



PIPE BEDDING FOR PRESSURE PIPE

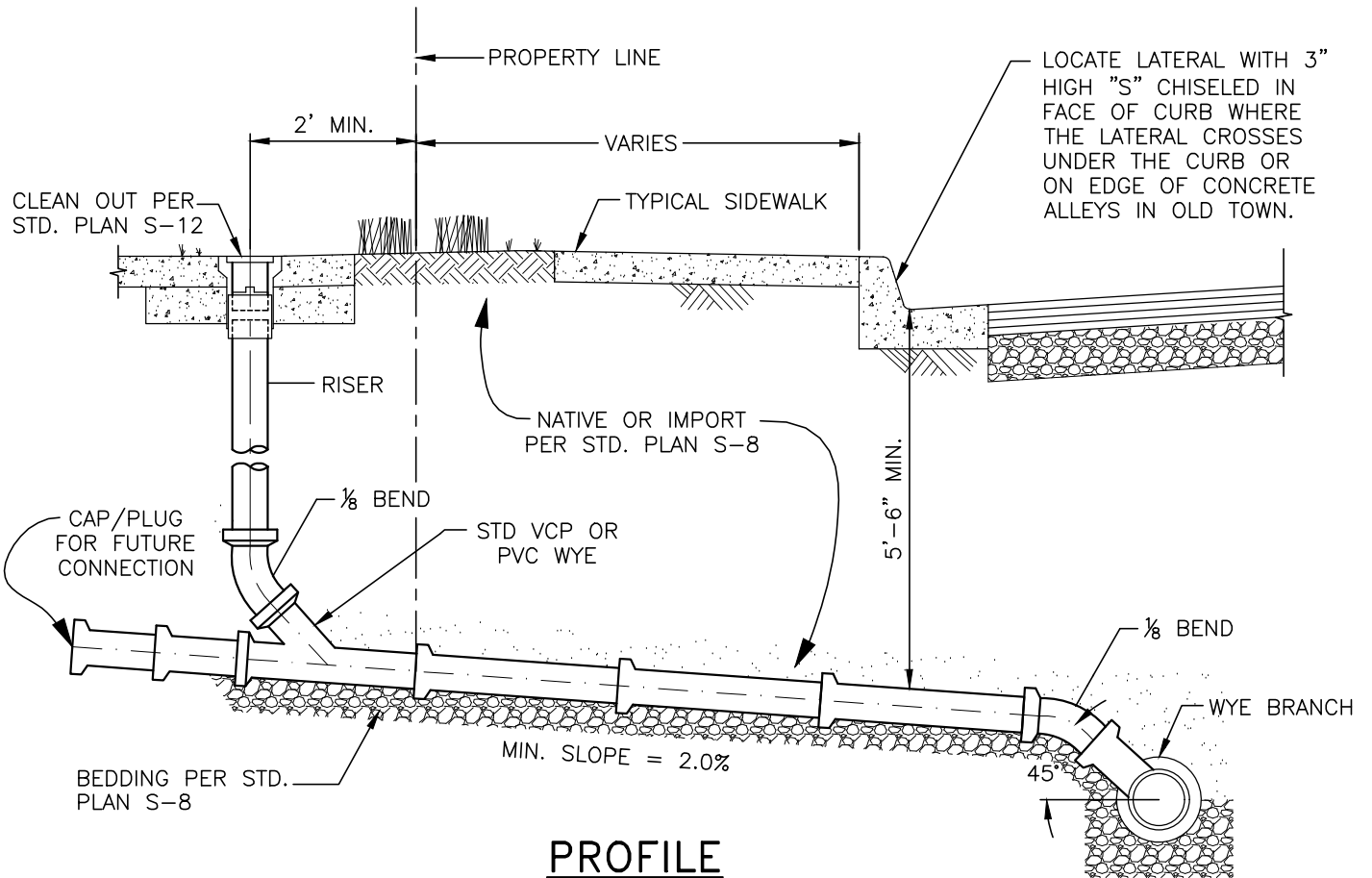
NOTES:

1. TRENCH WIDTH AT THE UPPER LIMIT OF THE PIPE ZONE SHALL BE WITHIN THE FOLLOWING LIMITS FOR TYPICAL NORMAL BEDDING.
 - (A) MAXIMUM TRENCH WIDTH—O.D. PIPE OR BELL PLUS 8—INCHES MAX. EACH SIDE OF PIPE.
 - (B) MINIMUM TRENCH WIDTH—O.D. PIPE OR BELL PLUS 6—INCHES MIN. EACH SIDE OF PIPE.
2. PROVIDE CLASS 100—E—100 CEMENT SLURRY IN PIPE ZONE FOR OVERWIDTH TRENCH CONDITIONS.
3. IF UNSUITABLE SUBGRADE SOIL CONDITIONS ARE ENCOUNTERED, A REGISTERED GEOTECHNICAL ENGINEER SHALL DETERMINE DEPTH OF REMOVAL. MINIMUM DEPTH OF REMOVAL SHALL BE 12—INCHES.
4. FOUNDATION ROCK SHALL BE 1½" GRAVEL WRAPPED IN MIRAFI 140N FILTER FABRIC.
5. USE SLURRY BACKFILL FOR THE PIPE AND TRENCH ZONE IF DETERMINED BY THE CITY REPRESENTATIVE.

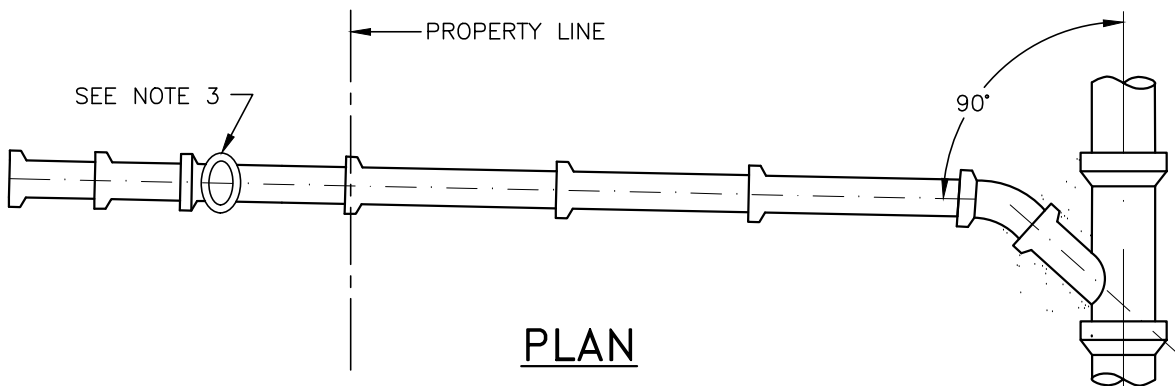
SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

PIPE BEDDING FOR PRESSURE PIPE

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CHECKED BY: J. LEE			SHEET 1 OF 1
DATE: OCT 2021			
SCALE: NO SCALE			



PROFILE





PLAN

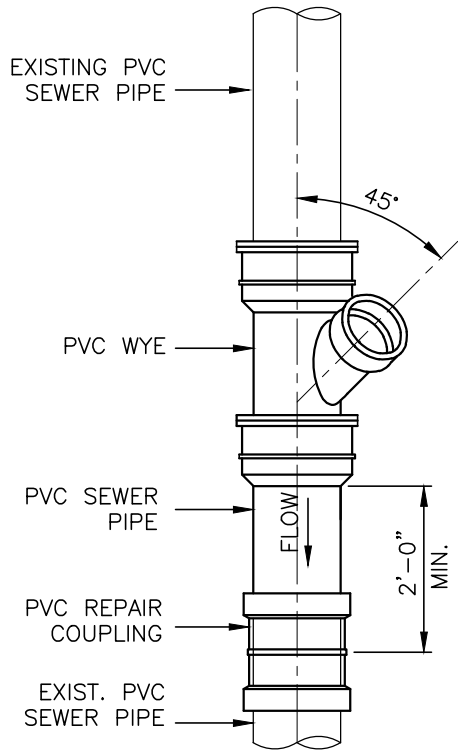
NOTES:

1. LATERAL SIZE SHALL BE DETERMINED ON THE BASIS OF TOTAL NUMBER OF FIXTURE UNITS DRAINED BUT IN NO CASE SHALL THE LATERAL DIAMETER BE LESS THAN 4-INCHES FOR A SINGLE OR MULTIPLE FAMILY RESIDENTIAL AND 6-INCHES FOR COMMERCIAL OR INDUSTRIAL LAND USES.
2. LATERAL TO BE INSTALLED TO PROPERTY LINE.
3. IF RISER NOT BUILT, PLUG WYE BRANCH WITH STOPPER.

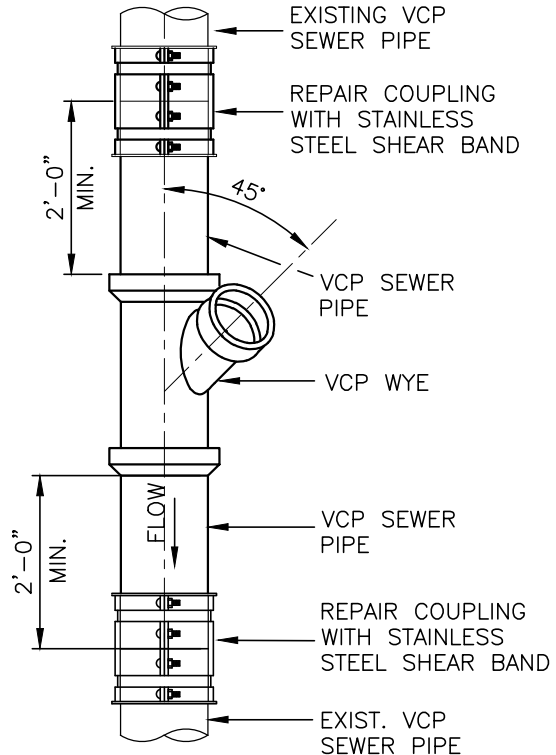
SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

TYPICAL LATERAL

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CHECKED BY: J. LEE	10/7/2021 DATE		
DATE: OCT 2021	DIRECTOR OF PUBLIC WORKS		
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PVC LATERAL CONNECTION




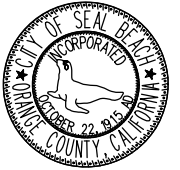
VCP LATERAL CONNECTION

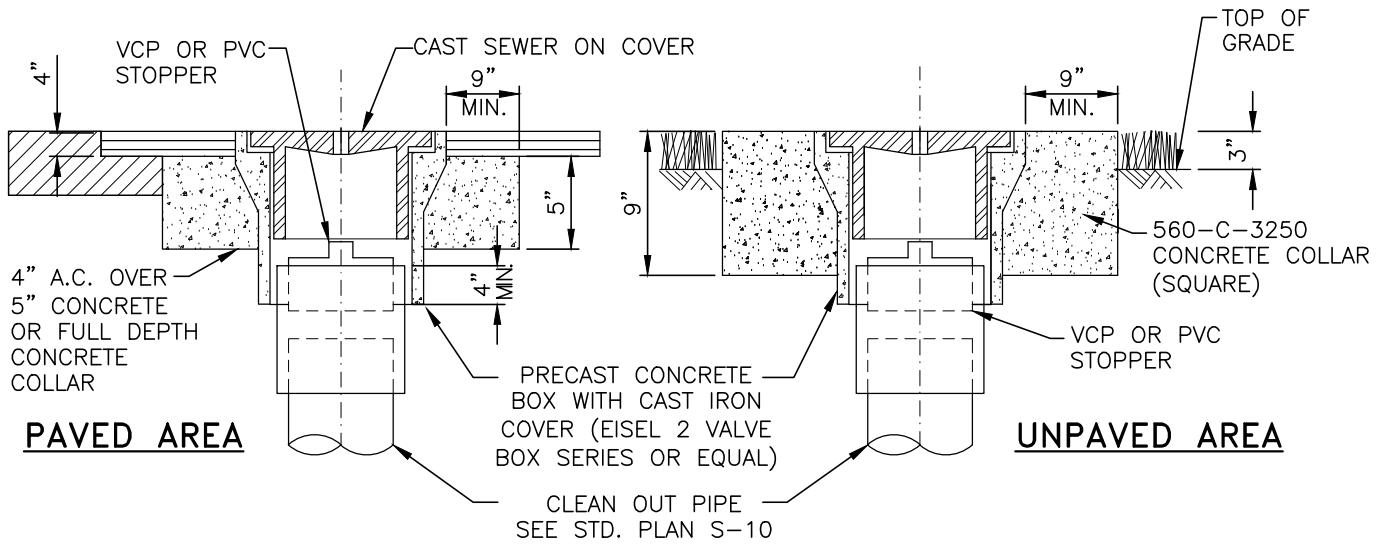
NOTES:

1. FOR PIPE BEDDING DETAIL, REFER TO STD. PLAN S-8.
2. ALL CHIPS, DIRT, AND DEBRIS SHALL BE KEPT OUT OF THE SEWER.
3. THERE SHALL BE NO MATERIAL THAT PROTRUDES PAST THE INSIDE WALL OF THE SEWER.
4. FOR CLOSURE DETAILS, REFER TO STD. PLAN S-13.

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

CUT-IN WYE CONNECTION

DRAWN BY: M. URIBE	APPROVED BY: 		S-11
CHECKED BY: J. LEE			
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NOTES:

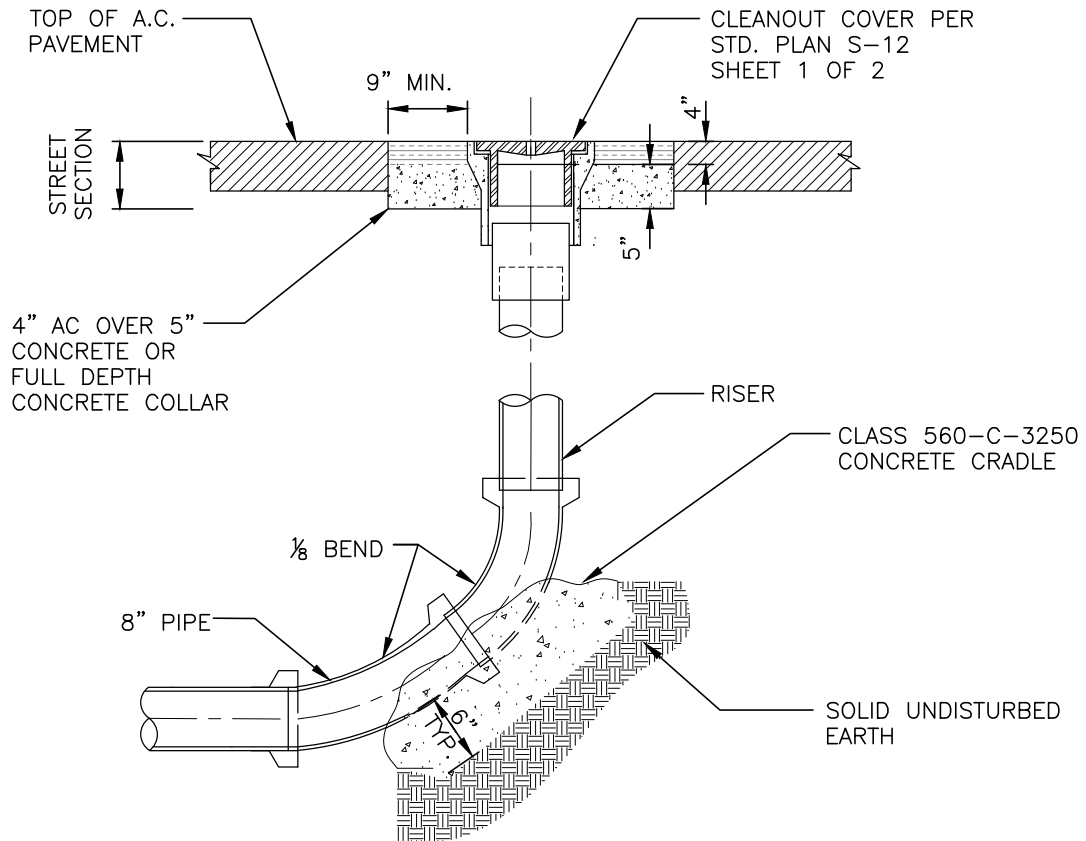
1. CLEANOUT PIPE SHALL BE THE SAME SIZE AND KIND OF MATERIAL AS LATERAL.
2. CLEANOUT COLLAR SHALL BE CLASS 560-C-3250 CONCRETE.

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

CLEANOUT DETAIL

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END OF PRIVATE MAIN



PROFILE

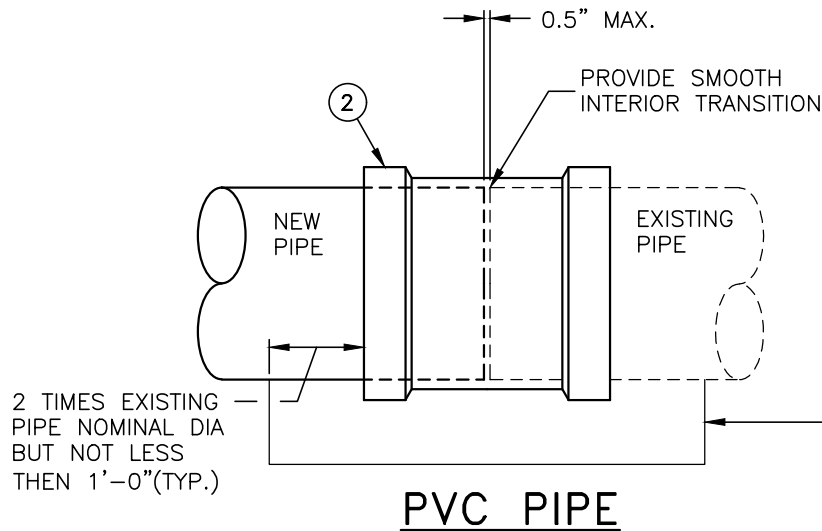
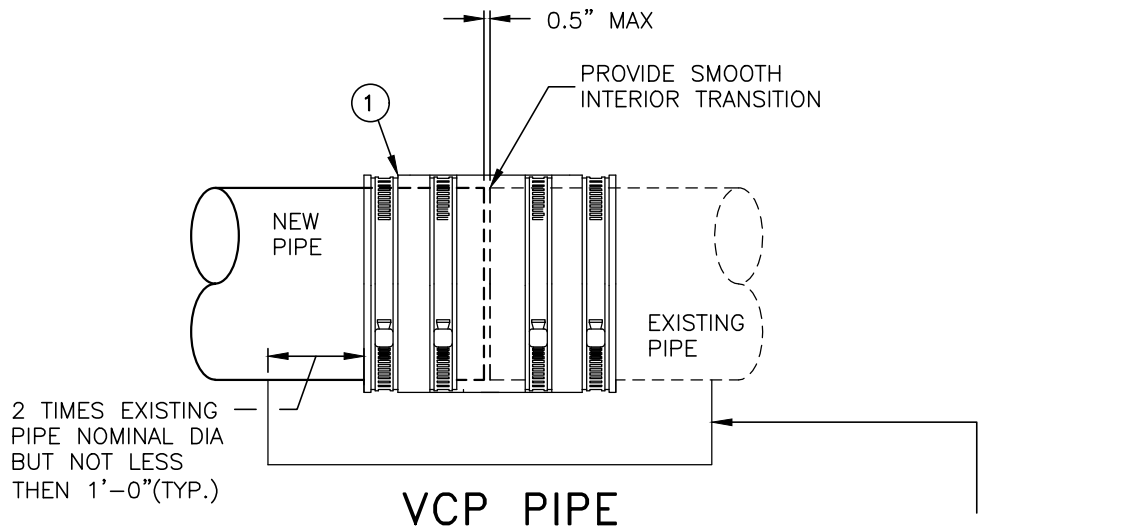
NOTE:

1. SEWER MAINS LARGER THAN 8" SHALL HAVE A TERMINAL MANHOLE.
2. CLEANOUT RISER SHALL BE SAME MATERIAL AS THE SEWER MAIN.

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

CLEANOUT DETAIL

DRAWN BY: M. URIBE	APPROVED BY: _____ DIRECTOR OF PUBLIC WORKS	10/7/2021 _____ DATE	
CHECKED BY: J. LEE	S-12		
DATE: OCT 2021	SHEET 2 OF 2		
SCALE: NO SCALE			



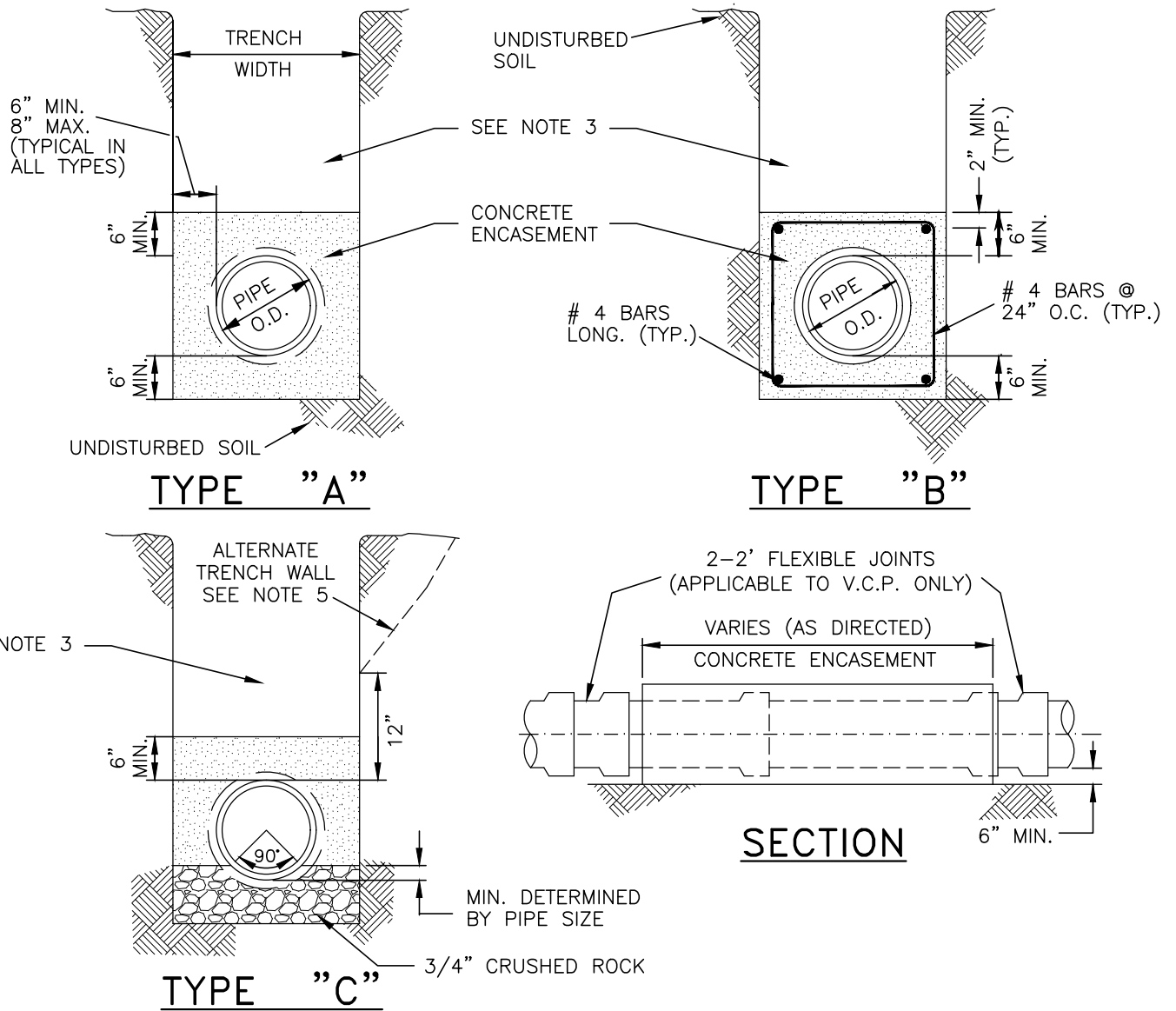
ELEVATION

- ① FOR VCP CLOSURES, 316 STAINLESS STEEL SHEAR RING REPAIR COUPLINGS SHALL BE USED (AS MANUFACTURED BY MISSION RUBBER AND, GLADDING McBEAN OR EQUAL).
- ② PVC PIPE CLOSURE SHALL BE SDR 26 GASKET x GASKET COUPLING (HARCO 509, OR EQUAL).

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

GRAVITY PIPE FIELD CLOSURE

DRAWN BY: M. URIBE	APPROVED BY: _____ DIRECTOR OF PUBLIC WORKS	10/7/2021 _____ DATE		S-13
CHECKED BY: J. LEE				SHEET 1 OF 1
DATE: OCT 2021				
SCALE: NO SCALE				



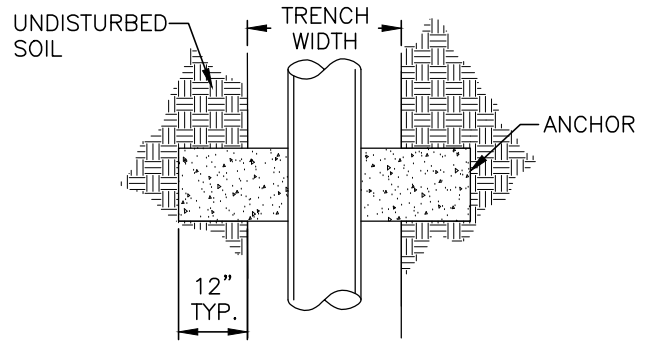
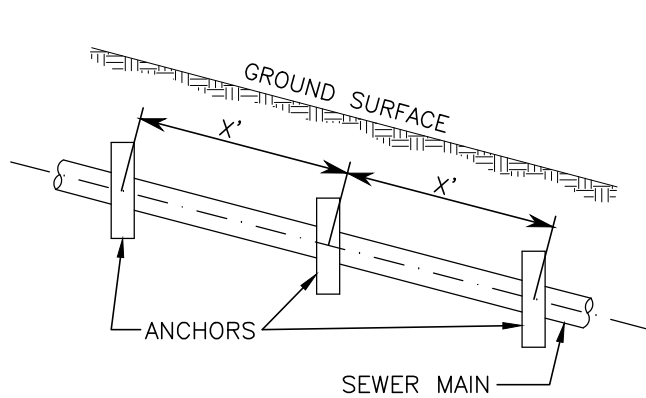
NOTES:

1. TYPE OF CONCRETE ENCASEMENT TO BE USED SHALL BE SHOWN ON PLANS OR AS SPECIFIED BY THE SEAL BEACH REPRESENTATIVE TO MEET UNFORESEEN FIELD CONDITIONS. UNLESS NOTED OTHERWISE, ENCASEMENT SHALL BE CLASS 560-C-3250 CONCRETE WITH A 4-INCH MAXIMUM SLUMP.
2. CONCRETE ENCASEMENT SHALL BE USED WHEN COVER IS UNDER 4-FEET OR OVER 20-FEET.
3. BACKFILL WITH SLURRY BACKFILL WHEN COVER IS OVER 20-FEET; SLURRY BACKFILL OR SE 30 COMPACTED TO 95% OF MAX DRY DENSITY WHEN COVER IS UNDER 4-FEET.
4. ENCASEMENT TO BE PLACED AGAINST UNDISTURBED NATURAL GROUND OR FILL COMPACTED TO 95 PERCENT RELATIVE DENSITY.
5. #4 GRADE 60 STEEL REINFORCING BARS SHALL BE PLACED AS SHOWN (TYPE "B").
6. WHERE SLOPED TRENCHES ARE USED, WALLS SHALL NOT BEGIN TO SLOPE CLOSER THAN 12-INCHES FROM THE TOP OF THE PIPE.

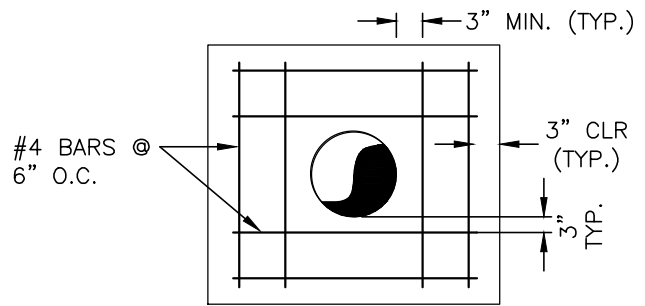
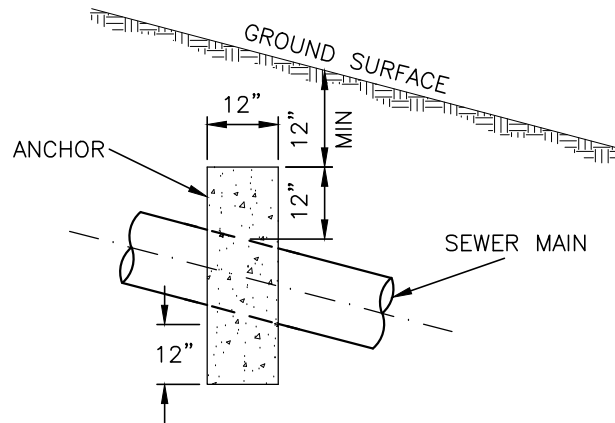
SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

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

DRAWN BY: M. URIBE CHECKED BY: J. LEE DATE: OCT 2021 SCALE: NO SCALE	APPROVED BY: DIRECTOR OF PUBLIC WORKS	10/7/2021 DATE		S-14 SHEET 1 OF 1
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CROSS SECTION



REINFORCING STEEL PATTERN

PIPE SLOPE	GROUND SLOPE	X DISTANCE
1.00	1:1	12'
0.67	1-1/2:1	14'
0.50	2:1	16'
0.40	2-1/2:1	18'
0.33	3:1	20'

NOTES:

1. SLOPE GREATER THAN 10 PERCENT REQUIRES SPECIAL WRITTEN APPROVAL FROM THE CITY OF SEAL BEACH.
2. PIPE ANCHORS REQUIRED ON ALL GROUND SLOPES OF 3:1 OR STEEPER.
3. ANCHOR SHALL EXTEND 12-INCHES INTO NATURAL UNDISTURBED SOIL.
4. CONCRETE SHALL BE CLASS 560-C-3250.
5. ANCHORS FOR TRAPEZOIDAL TRENCH SECTIONS WILL CONFORM TO TRENCH CROSS SECTION AND EXTEND 12-INCHES INTO UNDISTURBED SOIL.

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

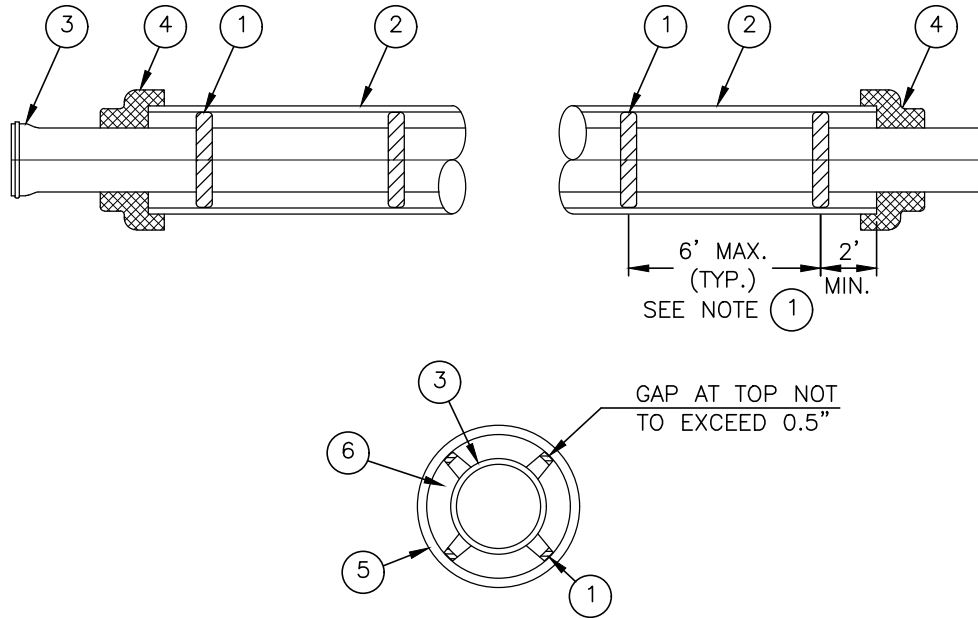
CONCRETE SLOPE ANCHORS

DRAWN BY:	M. URIBE
CHECKED BY:	J. LEE
DATE:	OCT 2021
SCALE:	NO SCALE

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	10/7/2021
	DATE



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SHEET 1 OF 1



STEEL CASING DETAILS

- ① STAINLESS STEEL CASING SPACER CENTER RESTRAINT POSITION (CASCADE MFG. OR EQUAL) SHALL BE ATTACHED TO CARRIER PIPE AT APPROPRIATE POSITIONS TO PROPERLY SUPPORT THE CARRIER PIPE WITHIN THE CENTER OF THE CASING INSTALLATION. SPACERS SHALL BE SET AT 6-FOOT INTERVALS FOR PVC AND DUCTILE IRON PIPE. A MINIMUM OF TWO (2) SPACERS PER JOINT SHALL BE PROVIDED FOR VCP.
- ② ALL JOINTS OF STEEL CASING SHALL BE WELDED FULL CIRCUMFERENCE, MINIMUM CASING I.D. AND WALL THICKNESS SHALL BE 24-INCHES AND ½-INCH RESPECTIVELY, UNLESS APPROVED OTHERWISE BY THE CITY ENGINEER.
- ③ CARRIER PIPE SHALL BE PVC SDR 26, EXTRA STRENGTH VITRIFIED CLAY, HDPE, OR CERAMIC EPOXY LINED DUCTILE IRON PIPE, AS APPROVED BY THE CITY ENGINEER. CARRIER PIPE SHALL BE PRESSURE TESTED PRIOR TO FILLING OF ANNULAR SPACE. INVERT ELEVATIONS SHALL BE VERIFIED PRIOR TO FILLING OF ANNULAR SPACE.
- ④ EACH END OF CASING SHALL BE SEALED WITH CONCRETE MORTAR OR MANUFACTURED CASING END COVER.
- ⑤ PERIPHERY OF CASING SHALL BE PRESSURE GROUTED.
- ⑥ ANNULAR SPACE SHALL BE FILLED WITH LEAN GROUT OR AIR-BLOWN SAND.
- ⑦ STEEL CASING SHALL BE CATHODICALLY PROTECTED. PROVIDE 30LB PRE-PACKAGED ZINC ANODE EACH END OF CASING.

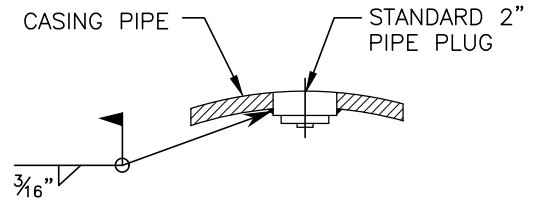
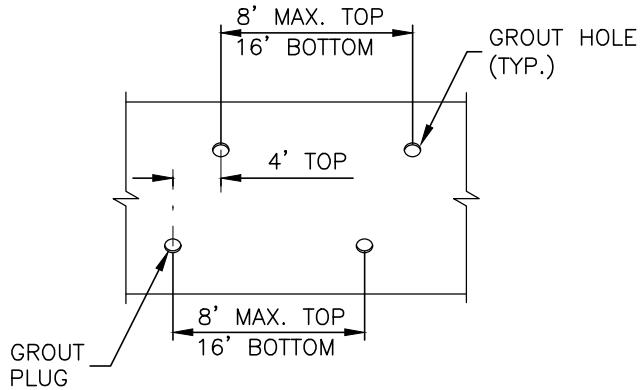
NOTE:

UNLESS NOTED OTHERWISE, CASING SHALL BE INSTALLED BY JACK AND BORE, AND/OR TUNNEL METHOD. IF OPEN-CUT INSTALLATION OF CASING IS ALLOWED, BACKFILL SHALL BE IN ACCORDANCE WITH STD. PLAN S-8.

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

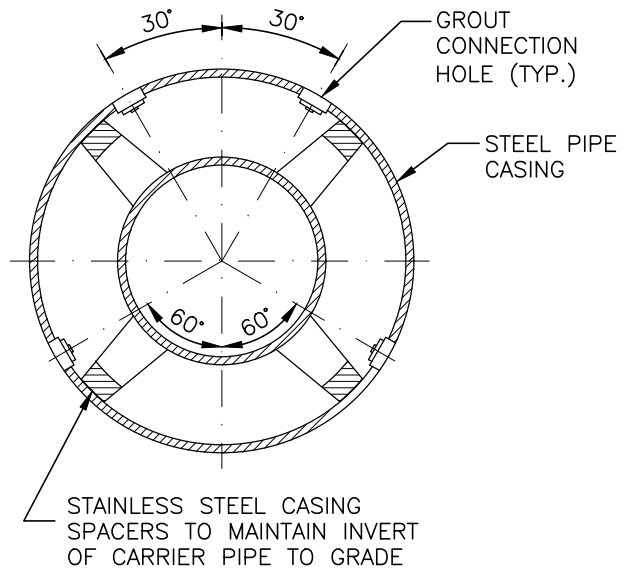
STEEL CASING PIPE

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CHECKED BY: J. LEE				SHEET 1 OF 2
DATE: OCT 2021				
SCALE: NO SCALE				



GROUT PLUG DETAIL

CARRIER PIPE SIZE (INCHES)	MIN. CASING SIZE (INCHES)
8-15	24
18	30
21	33
24	36



STEEL CASING DETAIL

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

STEEL CASING PIPE

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DIRECTOR OF PUBLIC WORKS	
	10/7/2021
	DATE



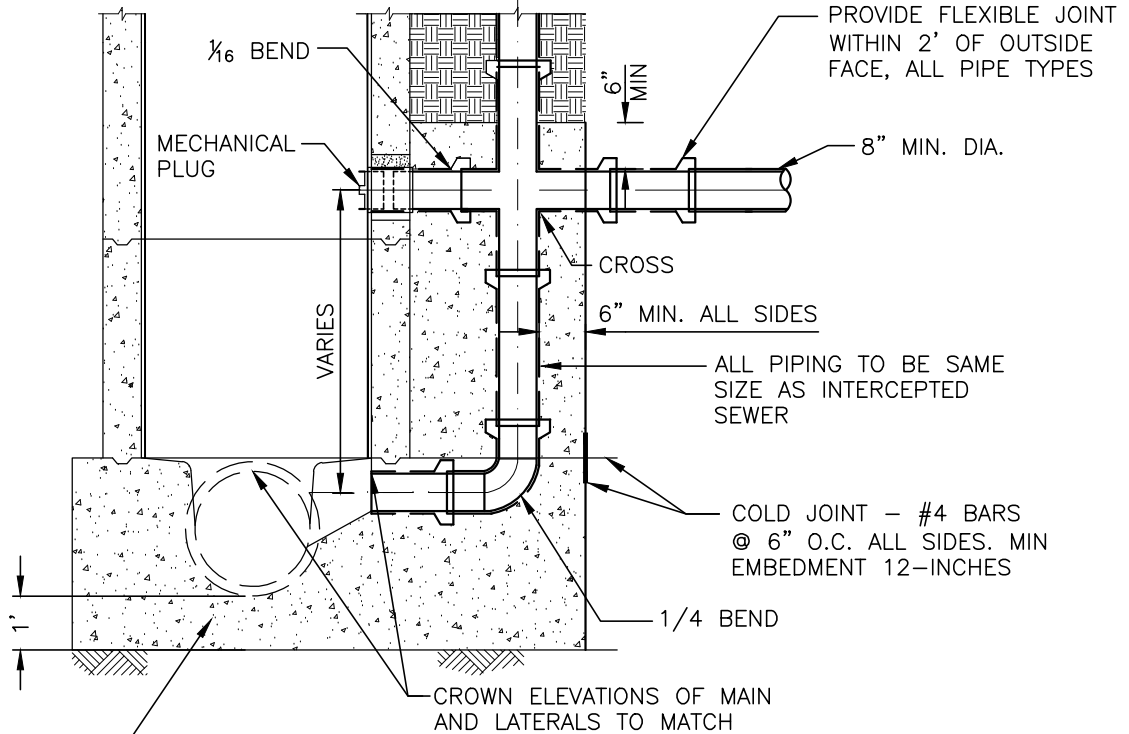
S-16
SHEET 2 OF 2

MANHOLE FRAME & COVER
SEE STD. PLANS S-6 AND
S-7

CLEAN OUT BOX
SEE STD. PLAN S-12

MANHOLE.
REFER TO
STD. PLAN S-1

MANHOLE
LINING



CLASS 560-C-3250
CONCRETE WITH TYPE II
OR TYPE V CEMENT.
REFER TO STD. PLAN S-1



SECTION

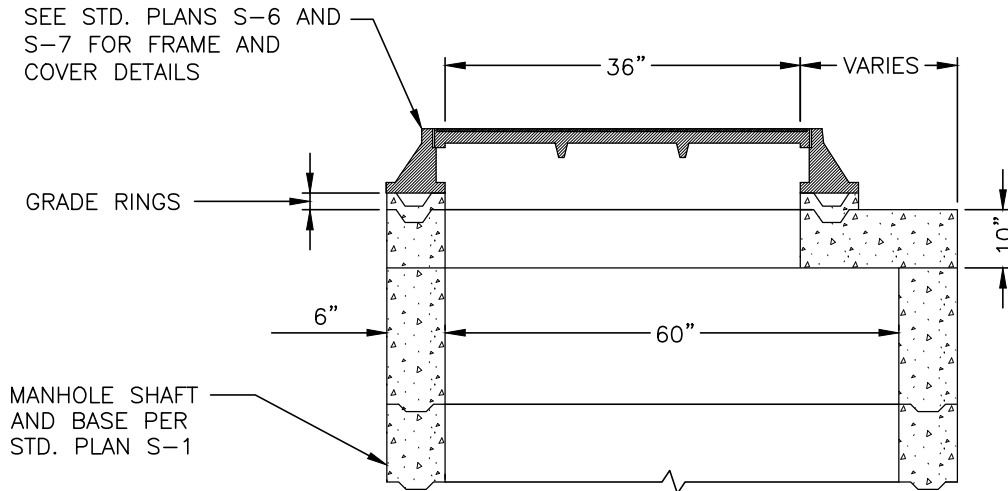
NOTES:

1. DROP MANHOLE TO BE USED FOR SPECIAL SITUATION ONLY, AND SHALL NOT BE CONSTRUCTED WITHOUT APPROVAL BY THE CITY OF SEAL BEACH.
2. ALL NEW OPENINGS CONSTRUCTED INTO EXISTING MANHOLE SHALL BE DONE BY CORE DRILLING.
3. ALL DROP MANHOLES SHALL HAVE AN APPROVED INTERIOR PROTECTIVE LINING.

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

DROP MANHOLE WITH CLEANOUT

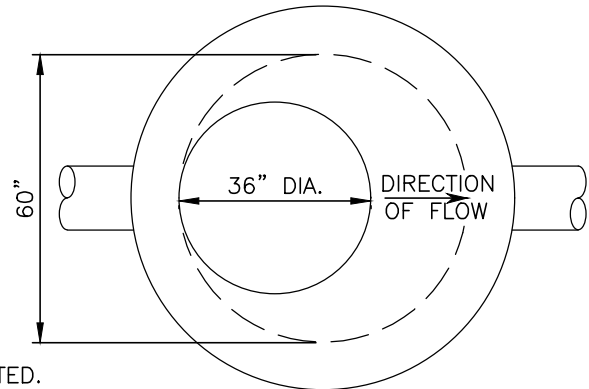
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FLAT TOP MANHOLE SECTION

NOTES:



1. FLAT TOP MANHOLES SHALL BE CONSTRUCTED WHEN THE TOP OF PIPE TO MANHOLE RIM IS LESS THAN 5-FEET.
2. USE OF FLAT TOP MANHOLE REQUIRES CITY OF SEAL BEACH APPROVAL.
3. CONSTRUCTION SHALL BE IN ACCORDANCE WITH STD. PLAN S-1.
4. FLAT TOP MANHOLES SHALL BE H-20 TRAFFIC RATED. HEAVY DUTY LOADING SHALL BE DETERMINED ON A CASE BY CASE BASIS BY THE CITY REPRESENTATIVE.

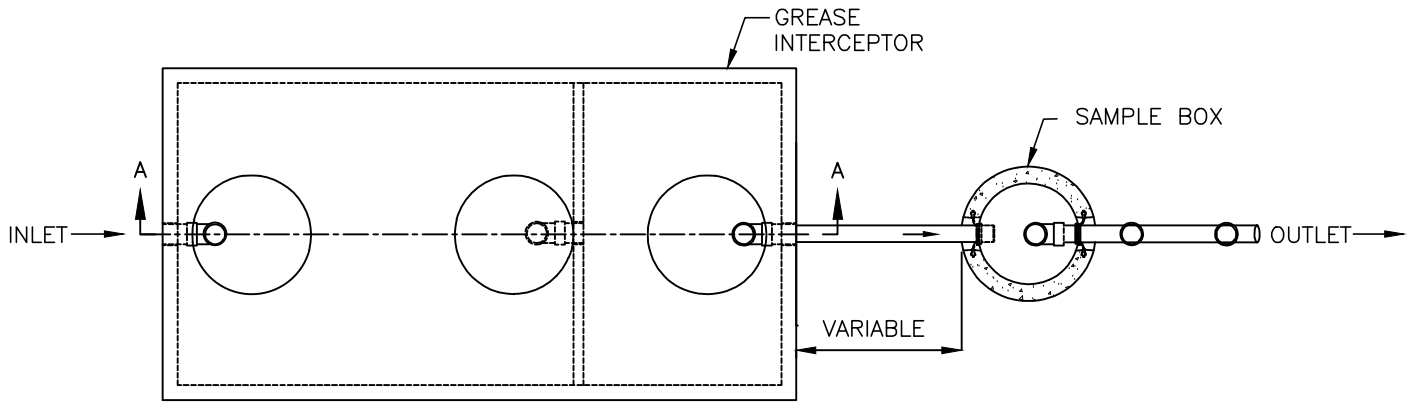


PLAN

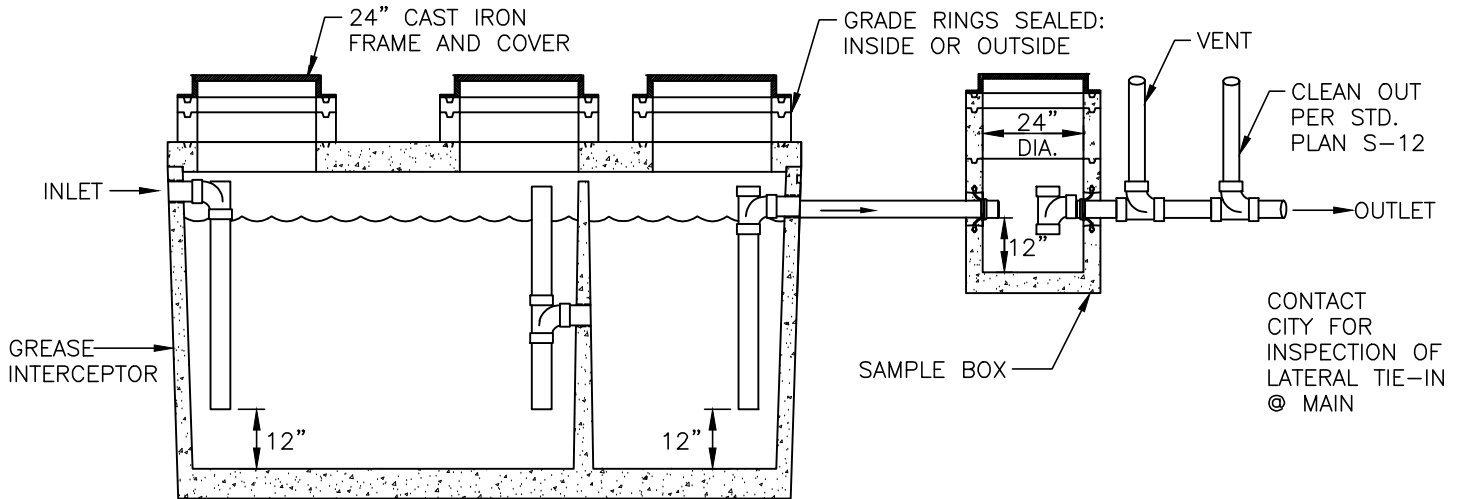
SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

FLAT TOP MANHOLE

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SHEET 1 OF 1			



PLAN VIEW



SIDE VIEW

NOTES:

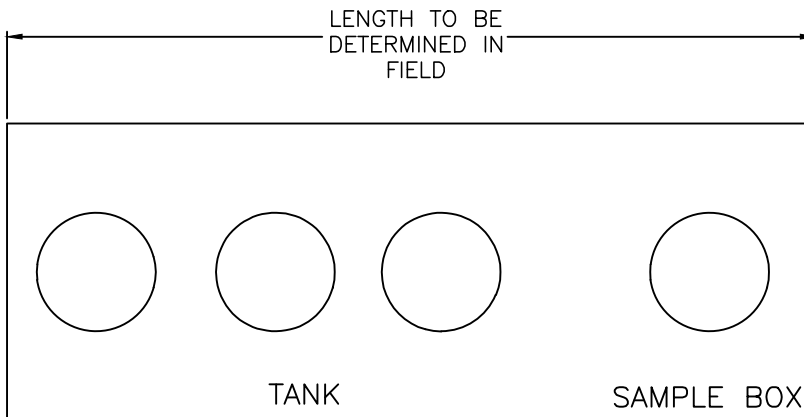
1. SIZE AND LOCATION OF INTERCEPTOR TO BE APPROVED PRIOR TO INSTALLATION. SIZING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE UNIFORM PLUMBING CODE.
2. INTERCEPTOR TO HAVE:
 - A. SAMPLE BOX
 - B. SANITARY TEE; INSIDE SAMPLE BOX, DISCHARGE SIDE
 - C. VENT
 - D. CLEANOUT PRIOR TO LATERAL CONNECTION
 - E. MANHOLE AT EACH INTERNAL BAFFLE TUBE – NO MORE THAN 1'-0" BETWEEN MANHOLES
3. INSPECTION OF INTERCEPTOR
 - A. ALL CONNECTIONS TO INTERCEPTOR TO BE INSPECTED PRIOR TO BACKFILL.
 - B. INTERCEPTOR TO BE FILLED WITH WATER PRIOR TO INSPECTION, PER MANUFACTURERS INSTRUCTION, OR REQUEST.

CONTACT CITY FOR INSPECTION OF LATERAL TIE-IN @ MAIN

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

TYPICAL GREASE INTERCEPTOR

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CONCRETE COLLAR DETAIL
PLAN VIEW



PLAN VIEW



END VIEW

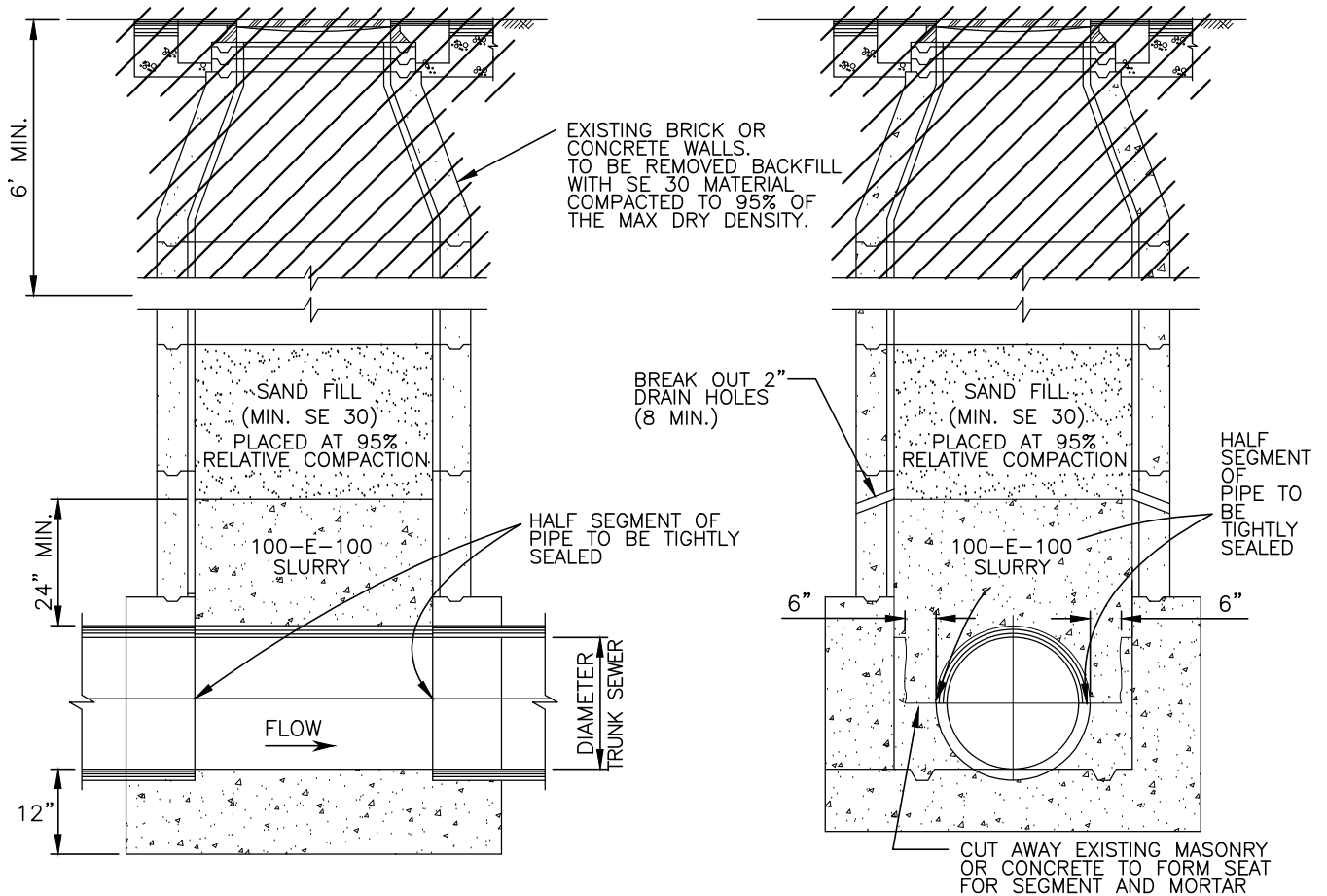
NOTES:

1. ALL MANHOLES AND SAMPLE BOXES TO BE INSTALLED A MINIMUM OF 1/2" ABOVE FINISH GRADE/PAVEMENT WITH A CONCRETE COLLAR A MINIMUM OF 18" AROUND ALL MANHOLE LIDS AND 12" DEEP.
2. CONCRETE COLLAR, SAMPLE BOX FITTING AND ALL EXTERIOR PIPING SUPPLIED BY INSTALLER.

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

TYPICAL GREASE INTERCEPTOR

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LONGITUDINAL SECTION


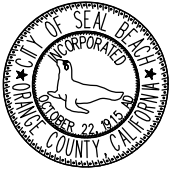
CROSS SECTION

NOTES:

1. 48 HOURS PRIOR TO COMMENCING THE ABANDONMENT OF THE MANHOLE, THE CONTRACTOR SHALL CONTACT THE CITY OF SEAL BEACH.
2. NO WORK SHALL BE DONE ON MANHOLE EXCEPT IN THE PRESENCE OF A CITY OF SEAL BEACH REPRESENTATIVE.
3. MANHOLE FRAME AND COVER OF THE MANHOLE TO BE ABANDONED SHALL BE SALVAGED, CLEANED AND DELIVERED TO THE CITY OF SEAL BEACH.
4. THE CONTRACTOR SHALL REMOVE A MINIMUM OF 6--FEET OF THE MANHOLE SHAFT BELOW STREET SUBGRADE. IF MANHOLE DEPTH IS LESS THEN 6--FEET, WITH THE APPROVAL OF THE CITY ENGINEER, THE CONTRACTOR SHALL REMOVE A MINIMUM OF 3--FEET OF THE MANHOLE SHAFT BELOW SUBGRADE.
5. IF THE LOWER PORTION OF THE EXISTING CHANNEL THROUGH THE MANHOLE IS NOT AS SHOWN, THE CHANNEL SHALL BE REFORMED AS DIRECTED BY THE CITY OF SEAL BEACH REPRESENTATIVE.
6. HALF SEGMENT OF PIPE SHALL BE OF THE TYPE USED IN THE TRUNK SEWER PIPE.
7. IF SEWER IS TO BE ABANDONED, PLUG/DRY PACK PIPE ENDS WITH 18--INCHES OF CONCRETE AND EXTEND 100--E--100 SLURRY TO CHANNEL.

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

ABANDONMENT OF EXISTING MANHOLE

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GRAVITY SEWER PIPELINES



- A. PVC PIPE
 - 1. VINYLTECH
 - 2. DIAMOND PLASTICS
 - 3. CARLON
- B. PVC FITTINGS
 - 1. GPK PRODUCTS
- C. VITRIFIED-CLAY PIPE AND FITTINGS
 - 1. GLADDING McBEAN
 - 2. MISSION CLAY PRODUCTS

DUCTILE-IRON PIPE AND FITTINGS

- A. PIPE
 - 1. PACIFIC STATES CAST IRON PIPE COMPANY
 - 2. U.S. PIPE
 - 3. AMERICAN PIPE
- B. FITTINGS
 - 1. TYLER
 - 2. TRINITY VALLEY
 - 3. DAYTON
 - 4. SIGMA
 - 5. LONG BEACH IRON
- C. PUSH-ON JOINT RESTRAINT HARNESS FOR DUCTILE IRON PIPE:
 - 1. EBAA IRON MEGALUG SERIES
 - 2. SMITH BLAIR BELL-LOCK
 - 3. ROMAC
- D. MECHANICAL JOINT RESTRAINING SYSTEM FOR DUCTILE IRON PIPE
 - 1. SMITH BLAIR MJ-LOCK
 - 2. ROMAC ROMOGRIP
- E. MECHANICAL JOINT RESTRAINING SYSTEM FOR PVC PIPE
 - 1. SMITH BLAIR MJ-LOCK
 - 2. ROMAC PVC ROMOGRIP
- F. PLASTIC FILM WRAP
 - 1. POLYKEN 900
 - 2. SCOTCH WRAP 50
- G. CERAMIC EPOXY LINING
 - 1. INDURON PROTECTO 401
 - 2. TNEMEC PERMA-SHIELD PL SERIES 431
- H. CORROSION GUARD
 - 1. CHRISTY'S CG-15 CORROSION GUARD
 - 2. TRENTON

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

STANDARD MATERIALS LIST

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PVC PRESSURE DISTRIBUTION PIPE

- A. PVC DISTRIBUTION PIPE
 - 1. NORTH AMERICAN PIPE CORPORATION
 - 2. VINYLTECH
 - 3. CERTAINTEED

- B. PUSH-ON JOINT RESTRAINT HARNESS FOR PVC PIPE:
 - 1. EBAA IRON MEGALUG SERIES 1900
 - 2. SMITH BLAIR BELL-LOCK
 - 3. ROMAC

POTABLE WATER, RECYCLED WATER, AND WASTEWATER FACILITIES IDENTIFICATION

- A. WARNING TAPE AND PIPE SLEEVES
 - 1. GRIFFOLYN COMPANY, INC.
 - 2. TERRA TAPE, DIVISION OF REEF INDUSTRIES
 - 3. T. CHRISTY ENTERPRISES, INC.

- B. WITNESS MARKERS
 - 1. CARSONITE WATER LINE MARKERS

SEWER LATERALS

- A. BANDED FLEXIBLE SADDLE WYES
 - 1. FERNCO

- B. BANDED FLEXIBLE COUPLING
 - 1. FERNCO

PRECAST REINFORCED CONCRETE MANHOLES

- A. PRECAST REINFORCED CONCRETE PRODUCTS
 - 1. JENSEN PRECAST
 - 2. OLD CASTLE PRECAST
 - 3. PRECON PRODUCTS

- B. CAST IRON FRAME AND COVERS
 - 1. STANDARD
 - a. ALHAMBRA FOUNDRY
 - b. NEENAH FOUNDRY
 - c. LONG BEACH IRON WORKS
 - d. SOUTH BAT FOUNDRY

- C. COMPOSITE MANHOLE FRAMES AND COVERS
 - 1. EJ

- D. CONCRETE ADHESIVE
 - 1. SIKA CORPORATION

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

STANDARD MATERIALS LIST

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EPOXY COATING FOR SEWER MANHOLE REHABILITATION

- A. COATING
 - 1. SAUEREISEN SEWERGARD No. 210
 - 2. WARREN ENVIRONMENTAL S-301
 - 3. QUADEX STRUCTURE GUARD



- B. REPAIR MATERIALS
 - 1. SAUEREISEN RESURFACING COMPOUND No. F-121
 - 2. WARREN M-301 EPOXY MASTIC
 - 3. CTS CEMENT RAPID SET MORTAR MIX

GREASE INTERCEPTORS

- A. GREASE INTERCEPTORS
 - 1. PRO-CAST
 - 2. JENSEN PRECAST

SEAL BEACH STANDARD PLANS FOR SEWER FACILITIES

STANDARD MATERIALS LIST

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