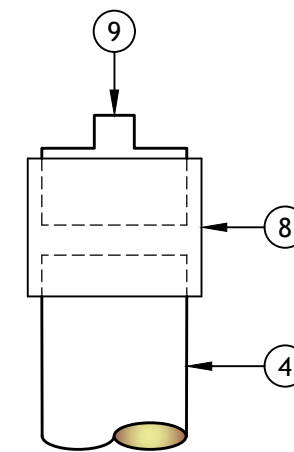


**CONSTRUCTION NOTES:**

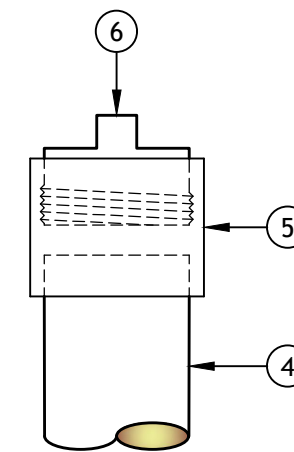
- ① PRECAST BOX, FRAME AND COVER PER EVWD STANDARD DRAWING, S-8
- ② 1/8 BEND (OR OTHER FITTING NECESSARY TO ADJUST TO PROPER GRADE)
- ③ V.C.P. OR P.V.C. PIPE WYE BRANCH FITTING
- ④ V.C.P. OR P.V.C. PIPE
- ⑤ SOLVENT WELD x F.I.P.T. SCH. 40 P.V.C. COUPLING
- ⑥ P.V.C. SCH. 40 STOPPER M.I.P.T. PLUG WITH MALE SQUARE NUT
- ⑦ PIPE LOCATOR FOR NON-METALLIC PIPE INSTALLATIONS. WARNING TAPE PER EVWD STANDARD SPEC. 15151
- ⑧ BANDED RUBBER COUPLING
- ⑨ PLASTIC PLUG
- ⑩ 2" x 2" REDWOOD MARKER STAKE

**NOTES:**

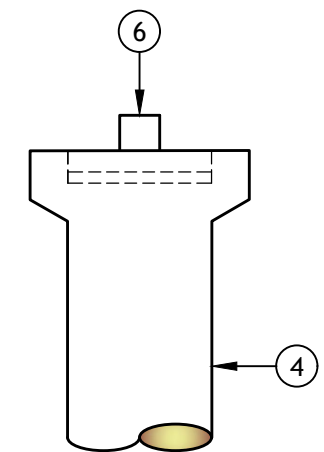
- 1. Where curb and gutter is designed, but not installed, sewer lateral shall be positioned so that a minimum five (5) feet of cover will be maintained under proposed curb installation.
- 2. Where curb and gutter do not exist and are not designed, the lateral shall be positioned so that the minimum clearance at the property line will be five feet and six inches (5'-6") as measured from the crown of the existing street.
- 3. The District shall approve design of connection for multiple family dwellings, commercial lots, schools and places of greater than normal household water use.
- 4. House connection to be at right angles to sewer main unless location of main does not permit.
- 5. Lateral size to be determined on the basis of total number of fixture units, but in no case shall the lateral diameter be less than four inches (4") for single family residential homes; nor less than six inches (6") for multiple family residences and commercial or industrial buildings.
- 6. Place 3/4" crushed rock bedding in trench bottom per East Valley Water District standard.
- 7. Temporary plug wye branch with ABS stopper or approved "cookie" if lateral is not constructed to property line.



**VCP STOPPER DETAIL**



**PVC STOPPER DETAIL**



**STOPPER DETAIL**

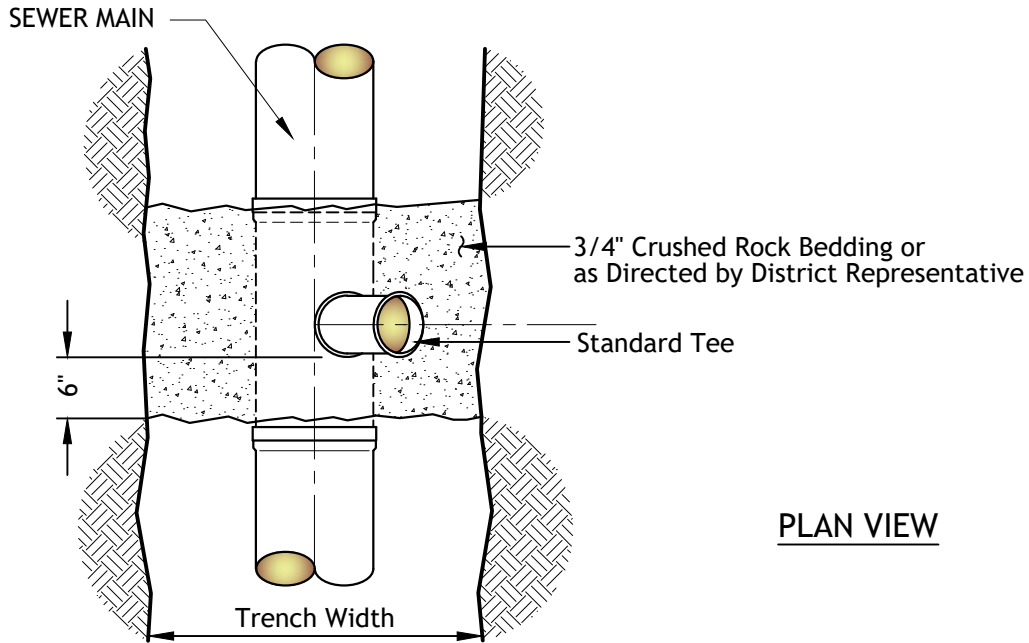
**TYPICAL HOUSE CONNECTION**



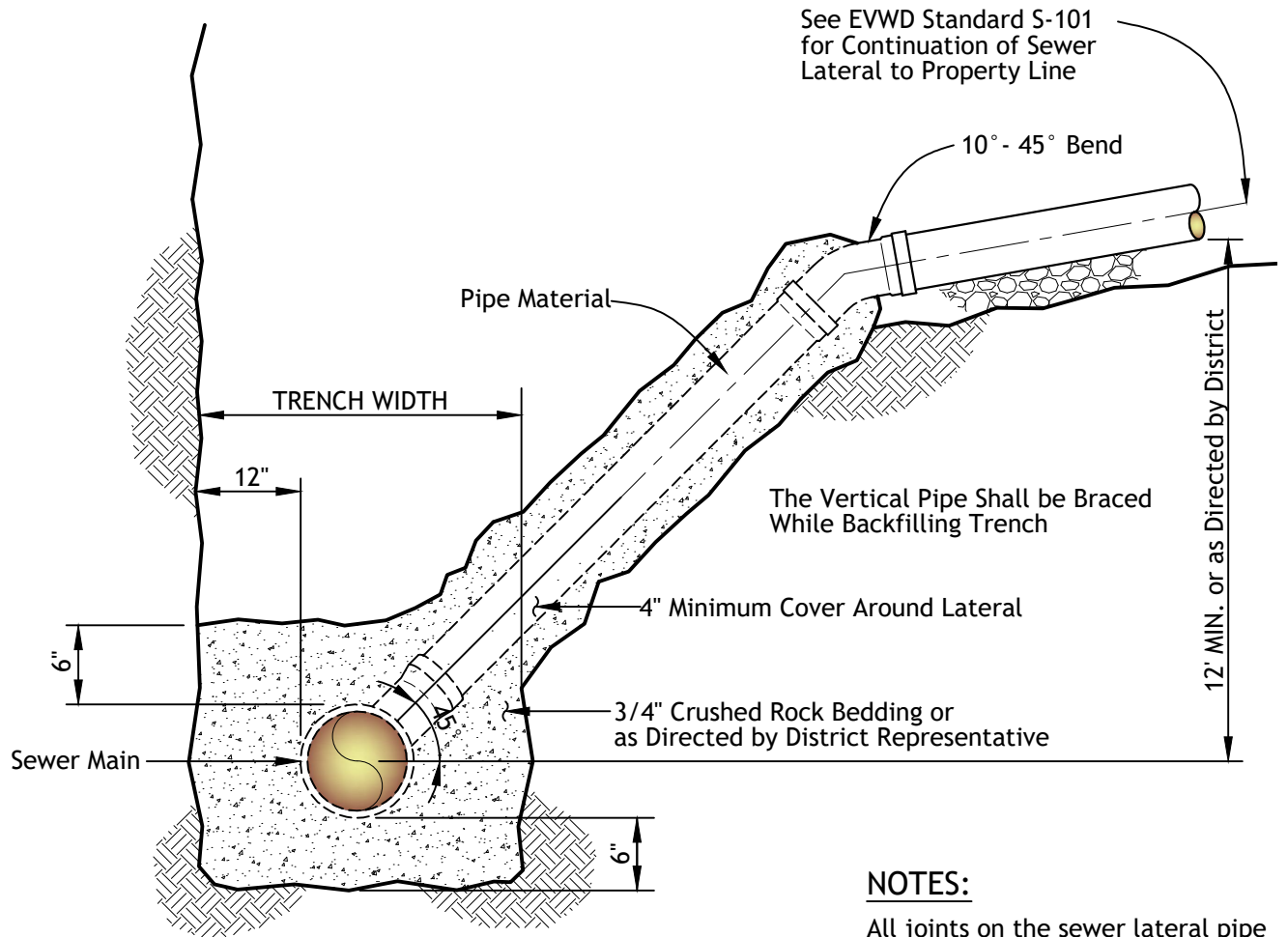
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*Jeff Noelte*  
 JEFF NOELTE, P.E. 67924  
 DIRECTOR OF ENGINEERING and OPERATIONS

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PLAN VIEW



ELEVATION

NOTES:

All joints on the sewer lateral pipe shall be compression type or approved solvent weld

**DEEP CUT SEWER LATERAL**

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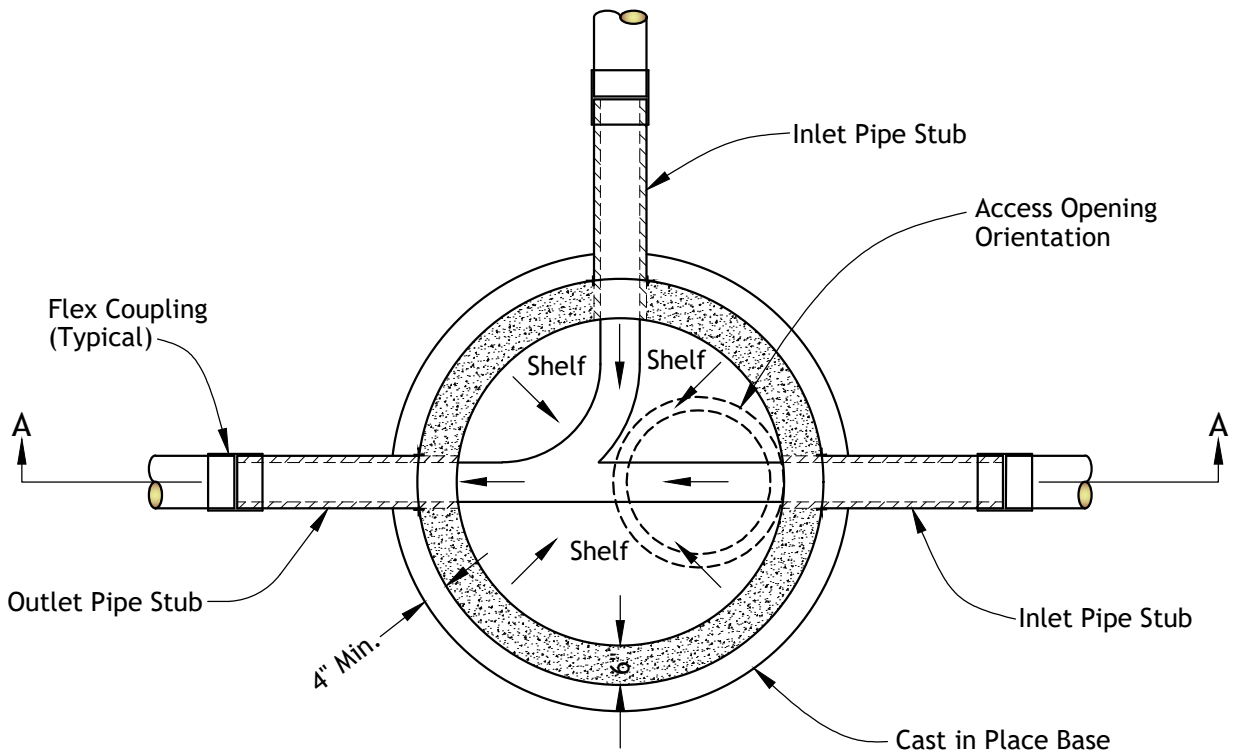
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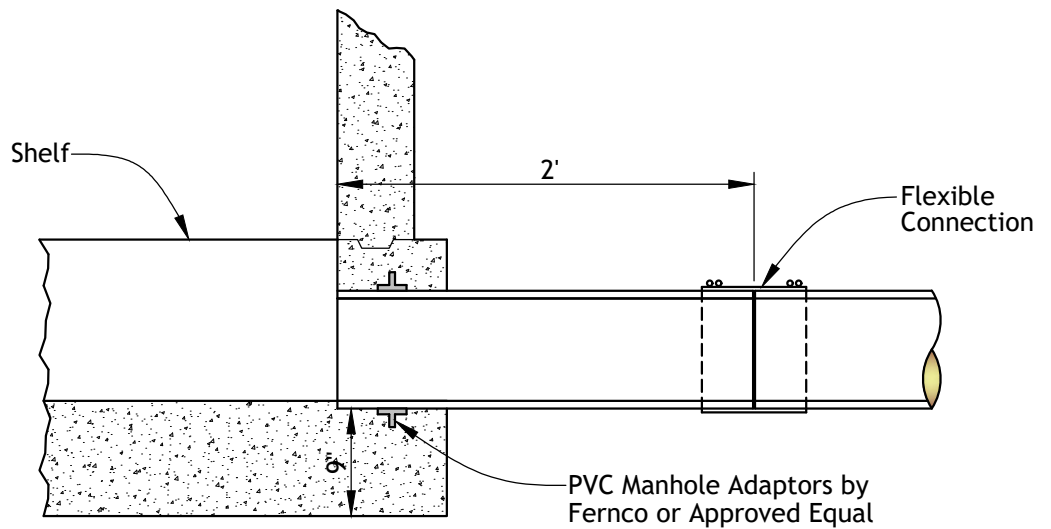
EVWD  
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**PLAN OF BASE**

\*Section A-A and Notes located on Sheet 2



**PVC MANHOLE CONNECTION**

**PRECAST REINFORCED CONCRETE MANHOLE**

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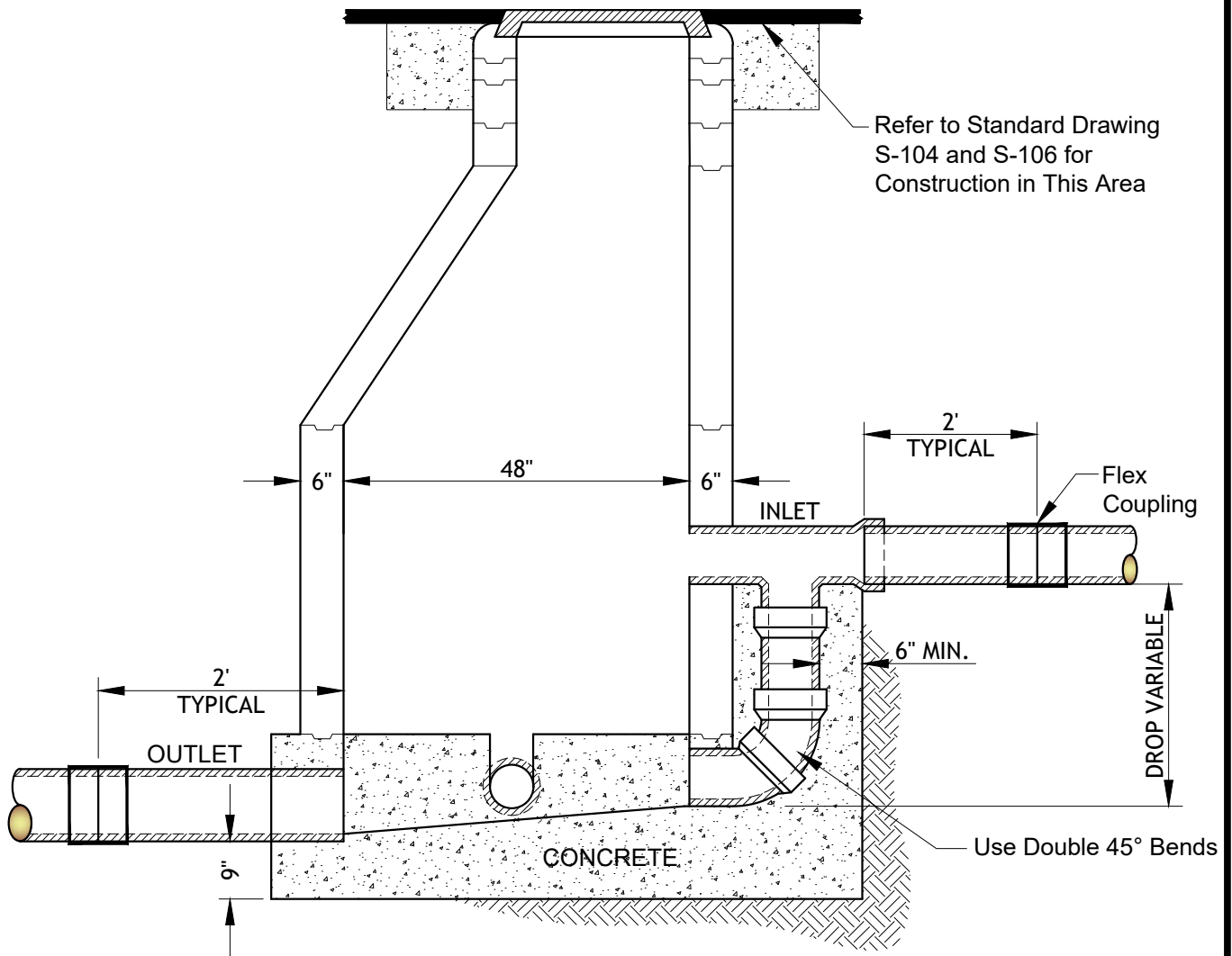
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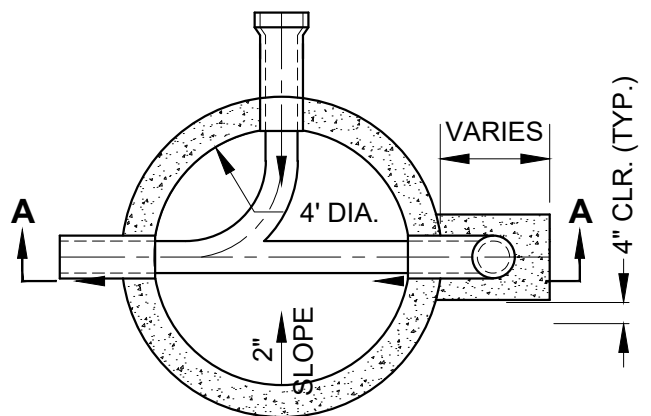




**SECTION A-A**

**NOTES:**

1. See EVWD Std. Dwg's. S-104 and S-106 for Construction of Manhole
2. All drop manhole fittings shall be of the same material as the sewer main and shall be of solid wall construction.



**PLAN**

**SEWER DROP MANHOLE**

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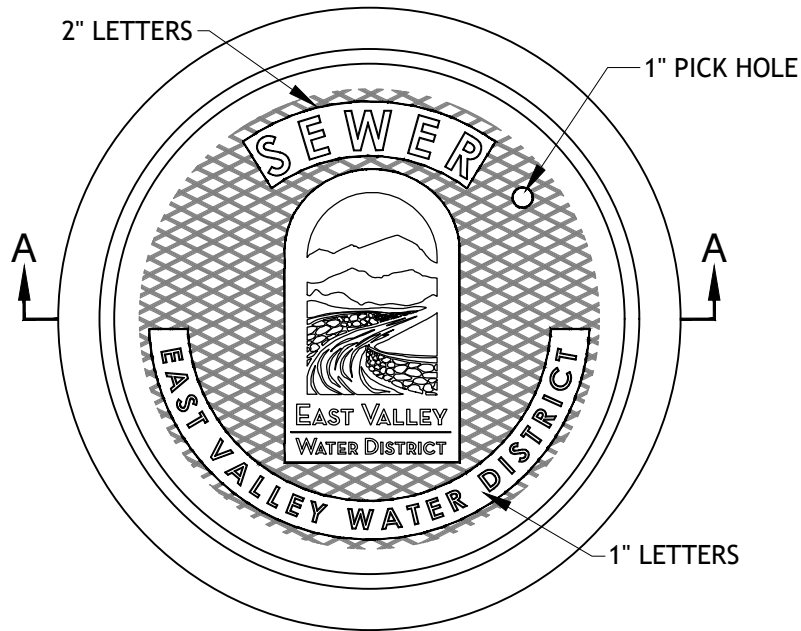


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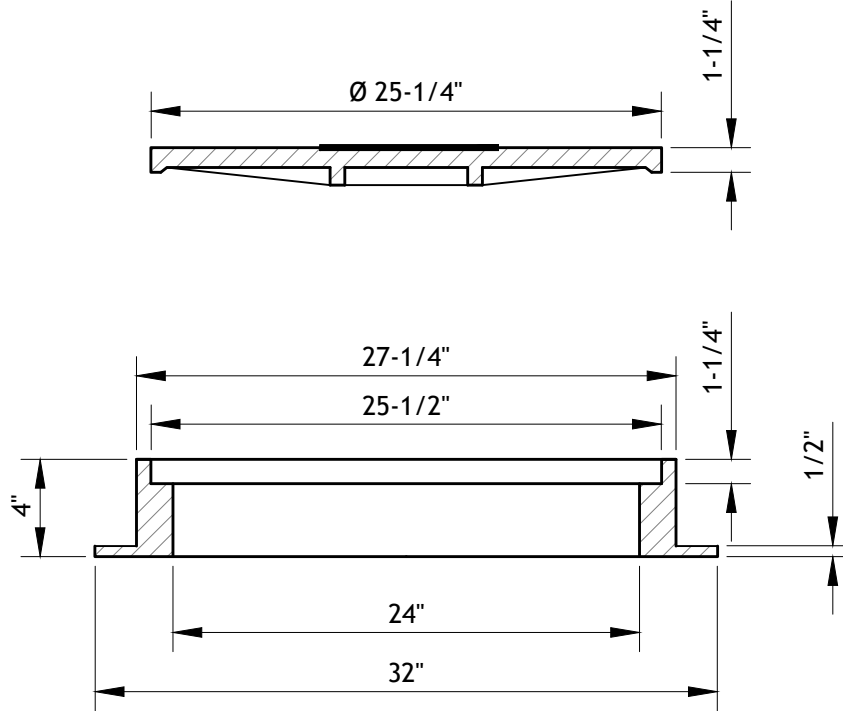
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TOP VIEW OF COVER



SECTION A-A

NOTES:

1. Ring and cover to be machined as shown for a snug fit.
2. C.I. to have 30,000 p.s.i. tensile strength.
3. SBF 1254 manhole frame and cover per south bay foundry.

**MANHOLE FRAME AND COVER**

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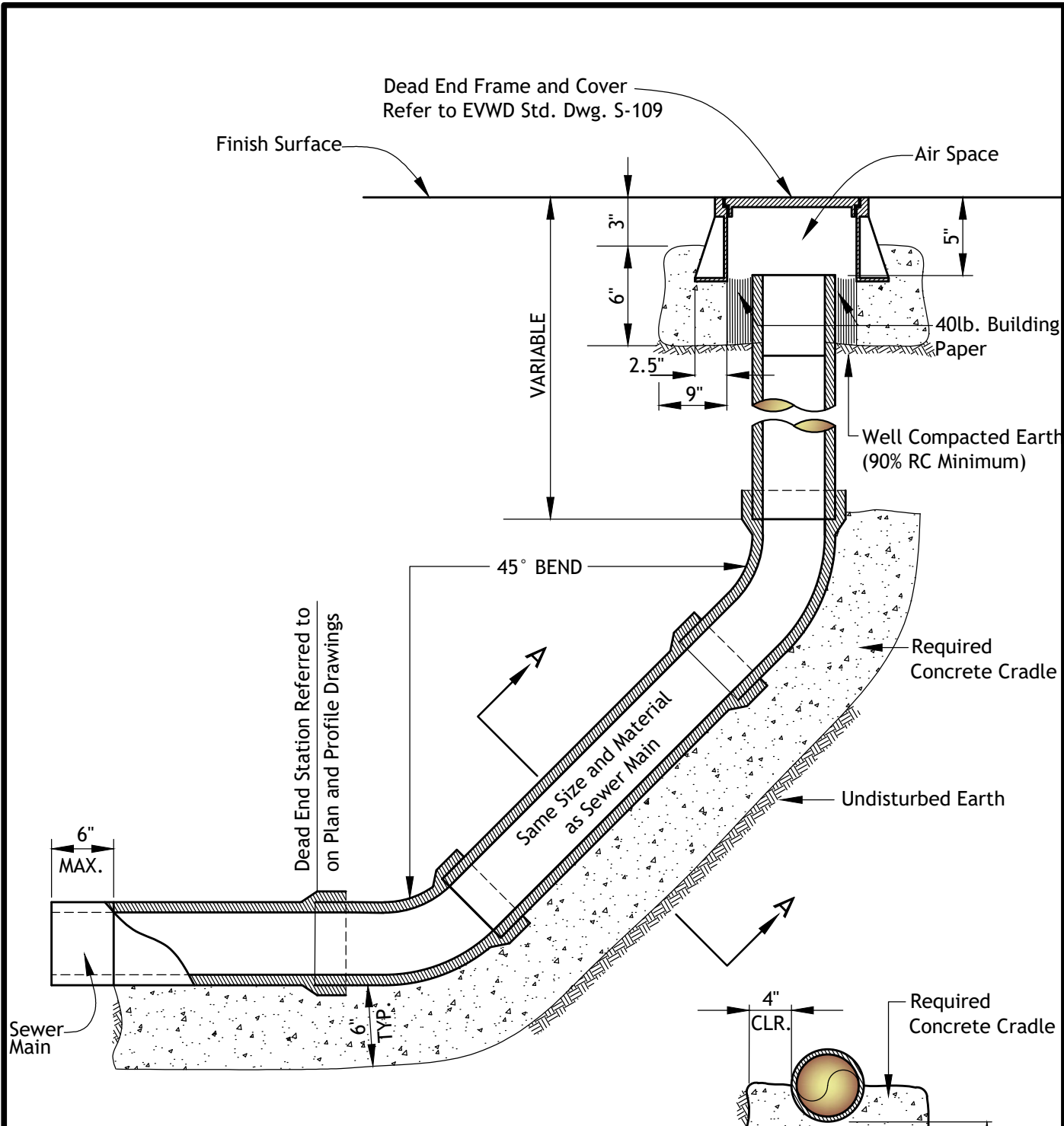
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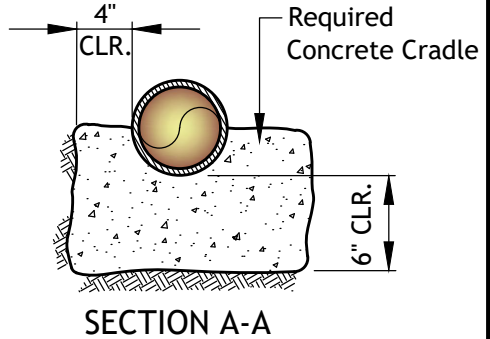
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**NOTES:**

1. For pipe sizes of ten (10) inches in diameter and larger a manhole is to be installed. Refer to East Valley Water District Standard Drawing S-104 for manhole construction.
2. For pipe sizes of six (6) inches to eight (8) inches in diameter a cleanout is to be installed at dead ends.



**DEAD END - PIPE CLEANOUT**

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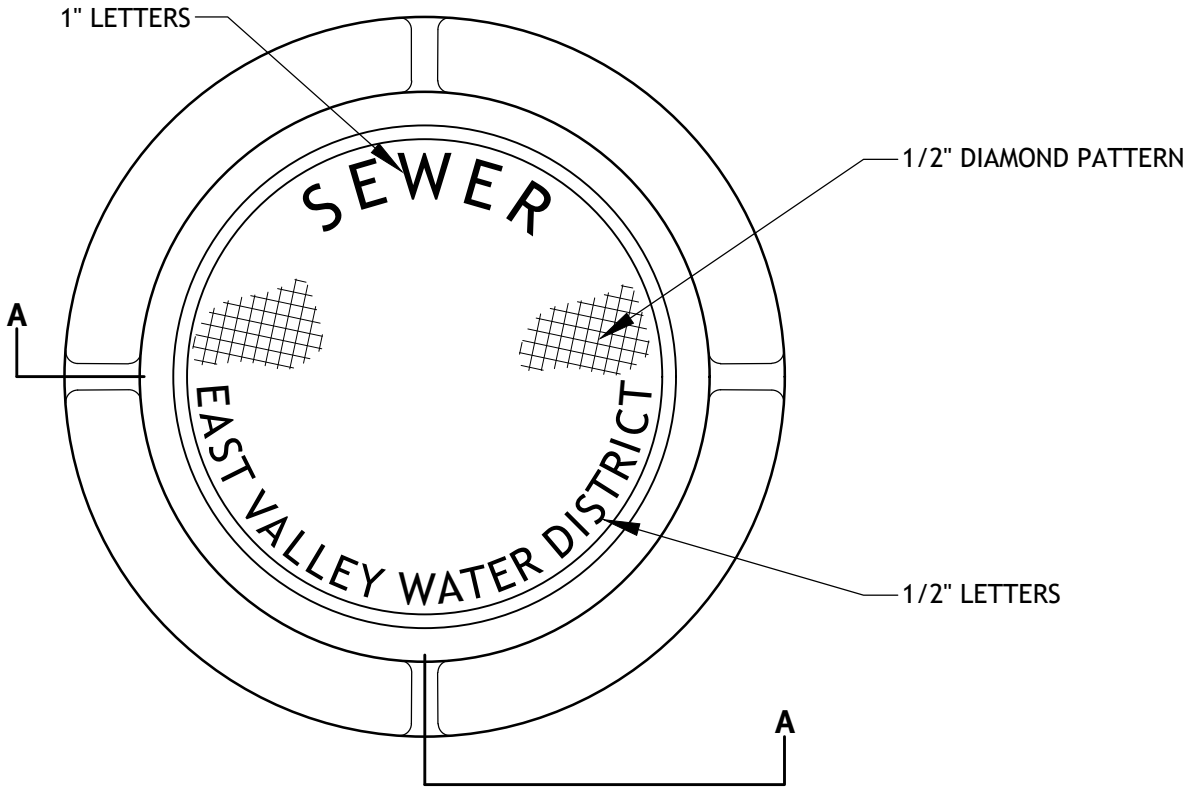
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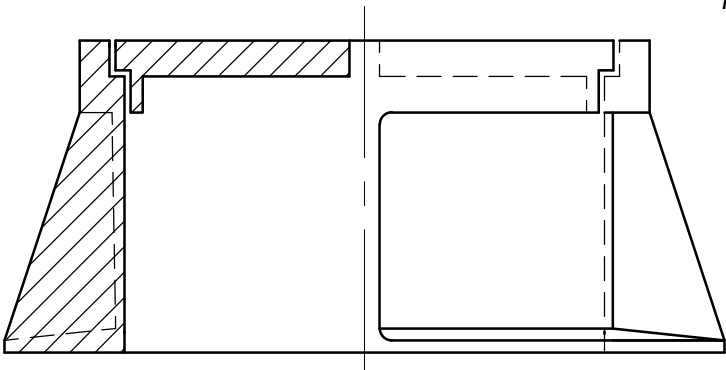
**EVWD  
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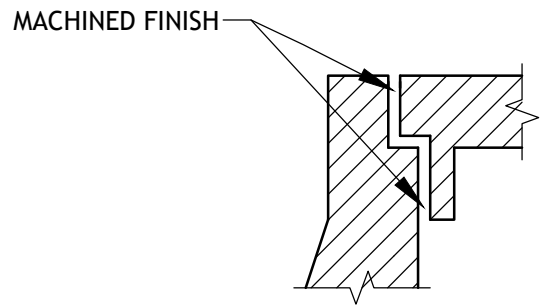
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**PLAN**



**SECTIONAL ELEVATION A-A**



**COVER SEATING DETAIL**

**NOTES:**

- 1. Covers and frames machined to fit.
- 2. C.I. to have 30,000 psi tensile strength.
- 3. Clean out frame and cover per Alhambra Foundry A-1242.
- 4. Refer to EVWD Standards S-1077 for mounting.

**DEAD END CLEAN OUT FRAME and COVER**



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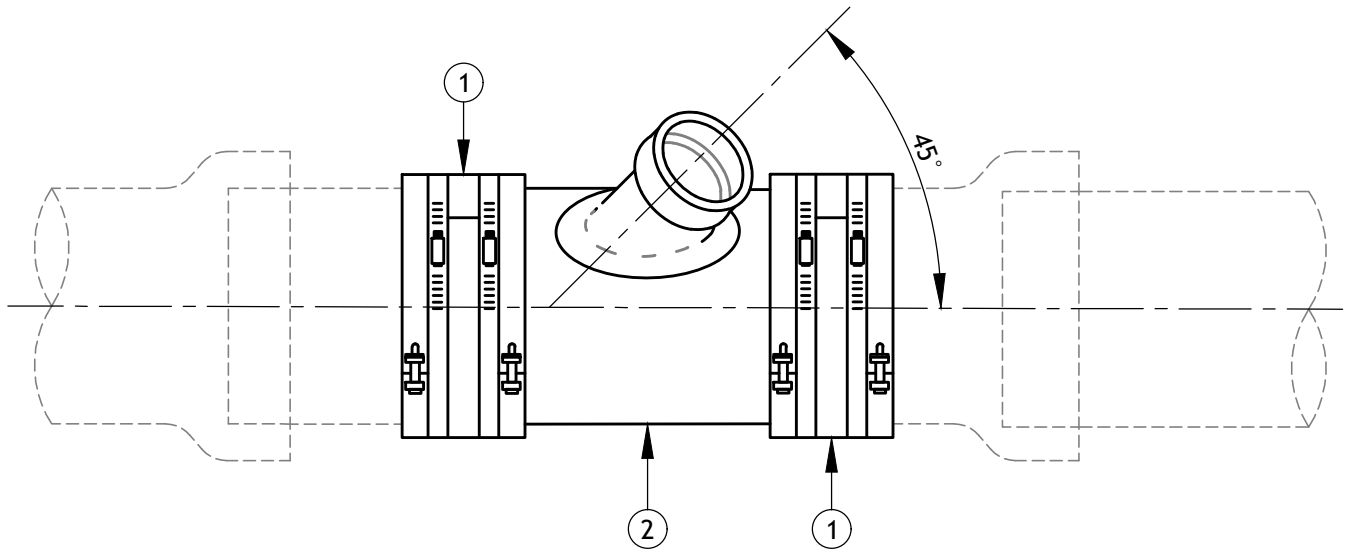
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**CONSTRUCTION NOTES:**

- ① BANDED RUBBER COUPLING WITH OUTSIDE TYPE 316 STAINLESS STEEL SHEAR RING
- ② WYE FITTING

**NOTES:**

1. When 12" minimum space between edge of coupling and bell cannot be provided, cut-out nearest bell joint and insert plain-end pipe.
2. All debris shall be kept out of the sewer. The pipe reach cut-into shall be cleaned as directed by the District Representative.
3. Damaged pipe shall be replaced as directed by the District Representative.
4. Saddle-type connections shall only be used for special situations, and shall not be constructed without prior District approval.
5. 8" and larger diameter laterals shall be connected to mainline via manhole only, per EVWD Std. Dwg. S-104.

**CUT-IN WYE CONNECTION**

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PROPOSED MANHOLE



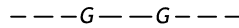
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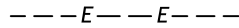
PROPOSED SEWER MAIN



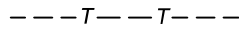
PROPOSED WATER MAIN



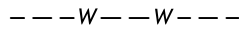
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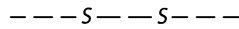
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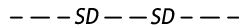
EXISTING TELEPHONE



EXISTING WATER MAIN



EXISTING SEWER MAIN



EXISTING STORM DRAIN

STA. XX+XX.XX

PROPOSED STATIONING

(STA. XX+XX.XX)

EXISTING STATIONING

XXXX.XX INV.

PROPOSED INVERT

(XXXX.XX INV.)

EXISTING INVERT

## STANDARD SYMBOLS and LINETYPES



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## HORIZONTAL CURVE:

1. Curvature in Vitrified Clay Pipe (VCP) - Horizontal curves shall be obtained by pulling the pipe joint. Joint deflections shall conform to the table entitled "RADIUS OF CURVATURE AND ANGLE OF DEFLECTION FOR CURVILINEAR SEWERS USING VARIOUS PIPE LENGTHS", of Clay Pipe Engineering Manual, latest edition, published by National Clay Pipe Institute. Curvature in vitrified clay pipe shall be accommodated through joint deflection and shortened lengths of pipe and shall conform to the following table:

Nominal Pipe Diameter (inches)	Minimum Radius of Curvature
6" to 12"	200'
15" to 24"	200'
27" to 36"	200'

2. PVC - Horizontal curves for PVC shall be obtained by bending the pipe along its length within the trench. Beveling pipe ends will not be allowed. Bending shall be done manually by the workers in the trench, and shall not be done by mechanical equipment. The following table shall be used as basis for horizontal curve:

Minimum Radius of Pipe	Minimum Radius (Feet)
6"	200'
8"	200'
10"	250'
12"	300'
15"	350'

## REVERSE CURVE:

Reverse curves are not permitted between manholes.

### Note:

- Horizontal curves may be used where economies in construction may be obtained without increasing problems of maintenance and operations. Horizontal curve shall have a minimum radius of 200 feet and shall be between manholes, with the manhole spacing being reduced to a maximum of 350 feet.
- In curved streets, the sewer shall follow the curvature parallel to the centerline where the street curve is the same or greater than the minimum allowable radius of the sewer. Allowable joint deflections shall be the more stringent of those set forth below the manufacture's recommendations, with manhole spacing being reduced to a maximum of 350 feet.

## SEWER PIPE CURVATURE



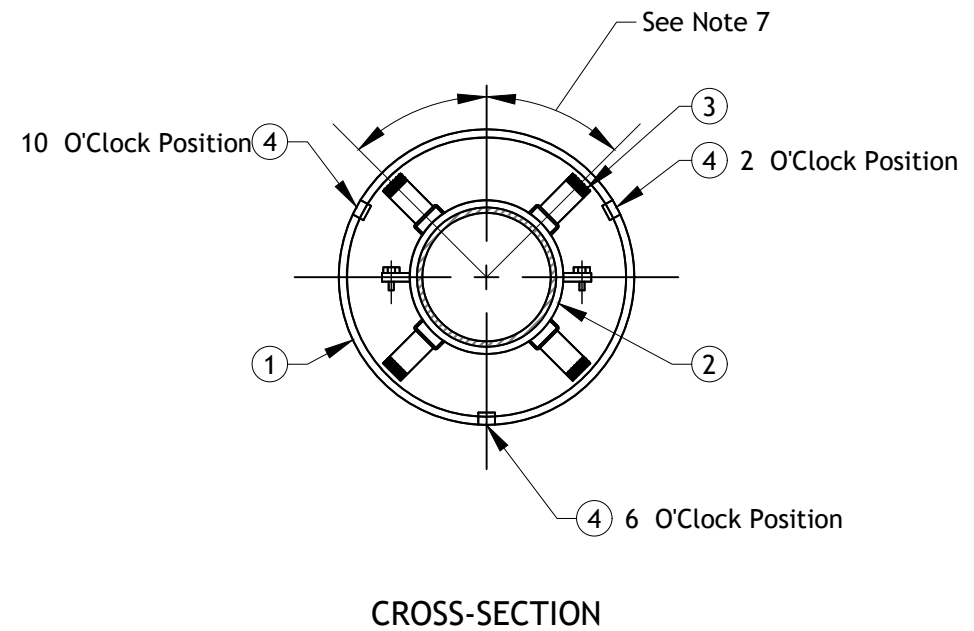
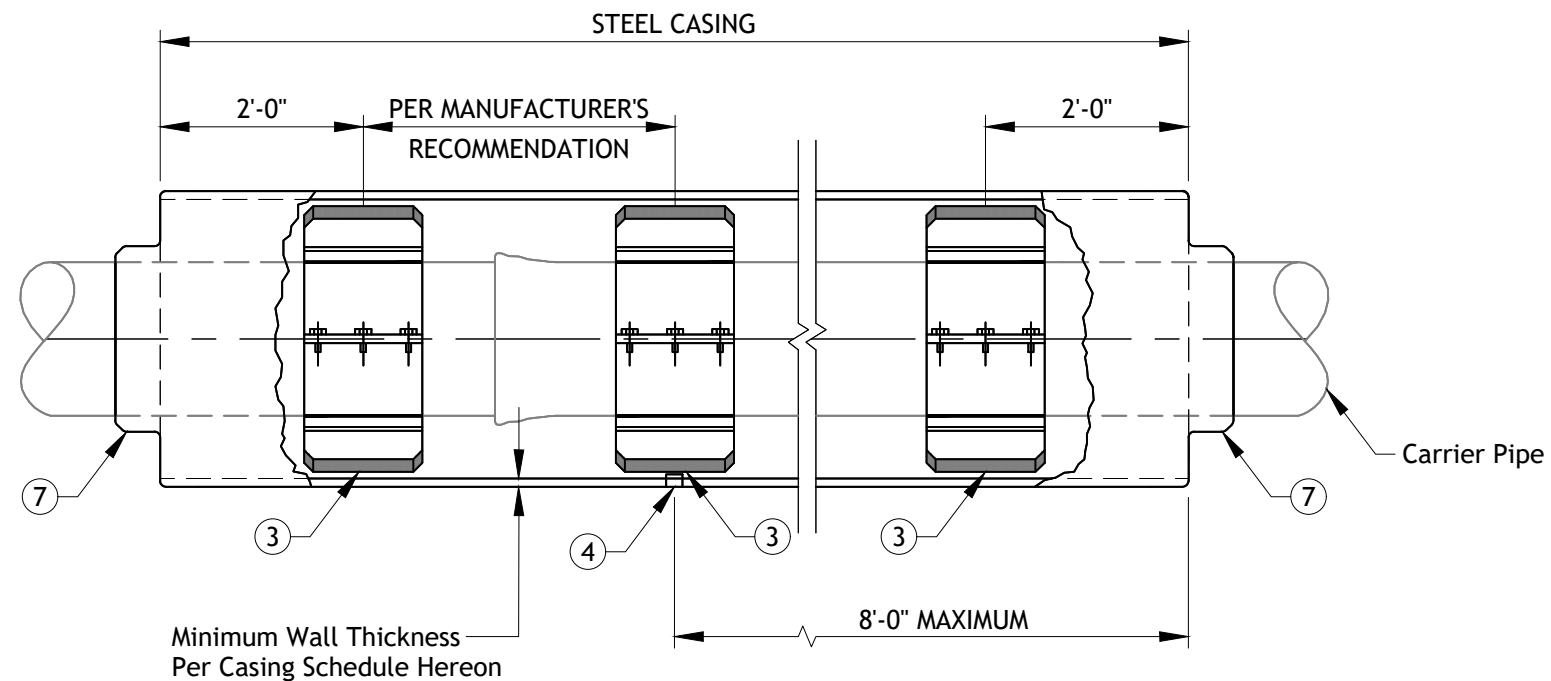
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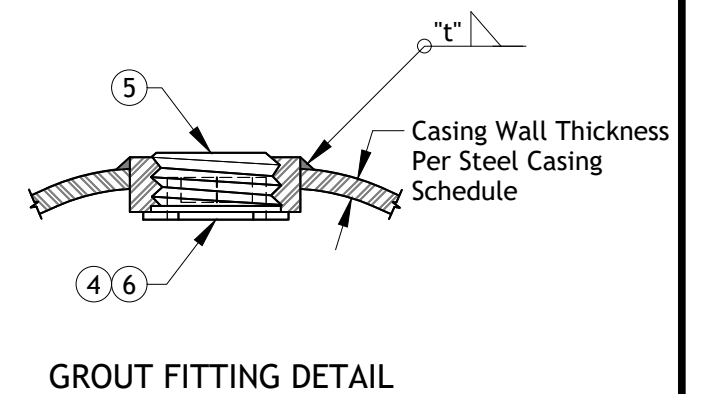
**ITEM MATERIALS:**

- ① STEEL CASING
- ② CARRIER PIPE JOINT BELL, BEYOND
- ③ STAINLESS STEEL CASING SPACERS WITH UHMW POLYETHYLENE RUNNERS
- ④ GROUT FITTING @ 8' O.C. PER DETAIL HEREON. FOR ALL CASINGS 24" IN DIA. AND LARGER, INSTALL ONE COUPLING IN A 6 O'CLOCK POSITION @ 8' O.C.; STAGGER COUPLINGS BETWEEN 10 O'CLOCK AND 2 O'CLOCK POSITIONS EVERY 4 LINEAR FEET ALONG CASING AXIS
- ⑤ 3" NPT THREADED STEEL PLUG WITH FLUSH HEAD AND INTERNAL TURN HANDLE
- ⑥ 2" NPT STANDARD WEIGHT STEEL PIPE HALF COUPLING
- ⑦ CASING END SEAL WITH STAINLESS STEEL WORM-SCREW BAND CLAMP



**NOTES:**

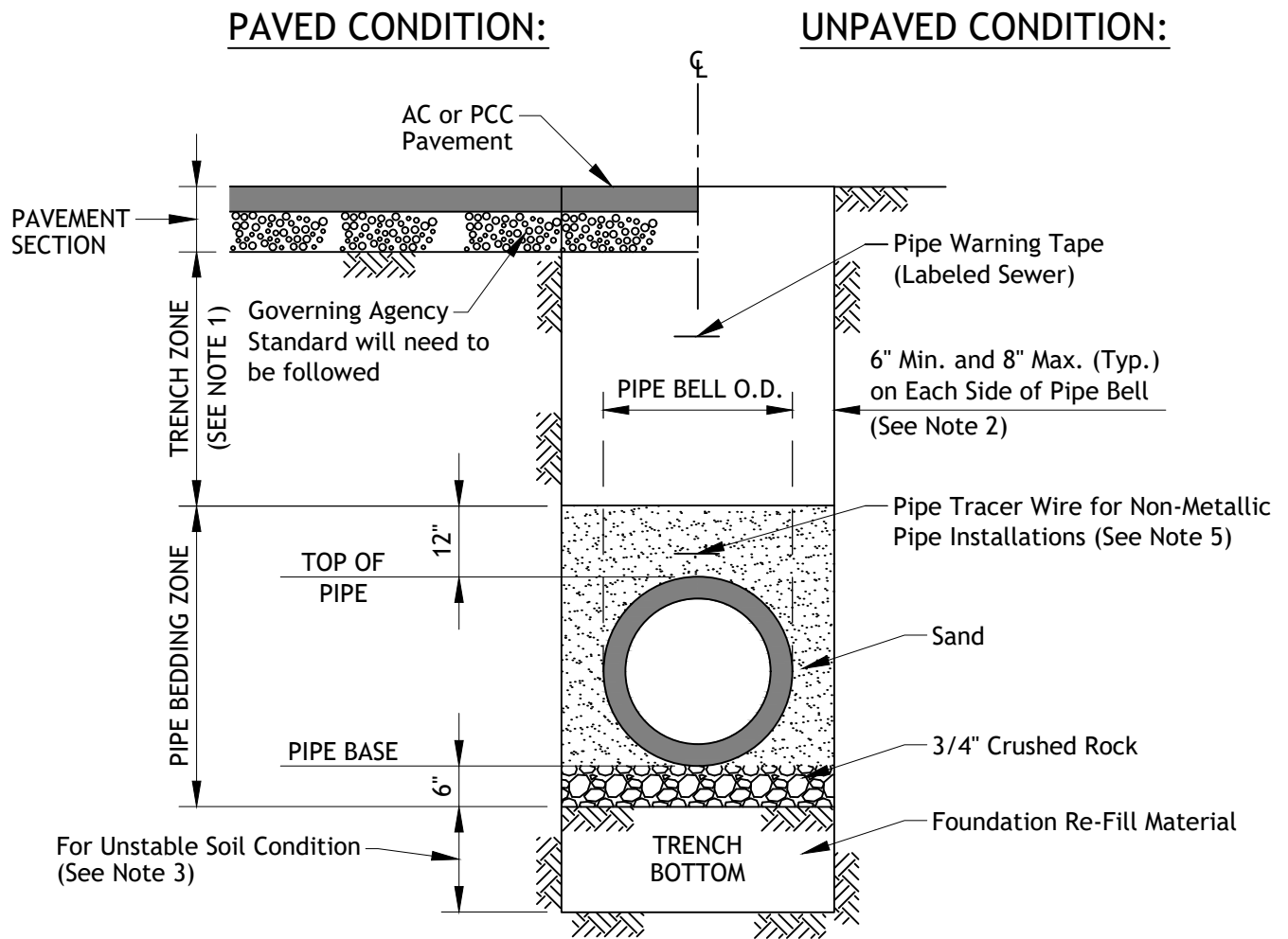
1. Casing shall be installed by the Bore, Jack and/or Tunnel Method.
2. Size and thickness of casing shall be as shown in schedule. For long bores or special situations greater wall thickness than shown in schedule may be required.
3. All steel casing pipe field joints shall be welded full-circumference.
4. Carrier pipe shall be pressure tested prior to sealing ends of casing.
5. Each end of casing shall be sealed with approved rubber casing end seals.
6. Backfill for casing in open cut shall be per EVWD Std. Dwg. S-114.
7. Number and placement of spacers on carrier pipe per Manufacturer's Specification.

Steel Casing Schedule			
VCP SIZE	BELL O.D.	MIN. CASING SIZE, I.D.	MIN. WALL THICKNESS
6"	11"	18"	5/16"
8"	14"	20"	3/8"
10"	16"	24"	3/8"
12"	19"	27"	3/8"
15"	24"	30"	1/2"
18"	27"	36"	1/2"
PVC SIZE	BELL O.D.	MIN. CASING SIZE, I.D.	MIN. WALL THICKNESS
6"	7.1"	16"	5/16"
8"	9.5"	18"	5/16"
10"	11.9"	20"	3/8"
12"	13.9"	24"	3/8"
15"	18.0"	27"	3/8"
18"	21.8"	30"	1/2"



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<b>STEEL CASING FOR SEWER PIPE</b>		
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**NOTES:**

1. Compaction for the Trench Zone shall meet the local agency having jurisdiction or whichever compaction requirement is stricter.
2. Where Contractor fails to maintain proper trench width limits, special backfill (such as one-sack slurry) and bedding shall be required as determined in the field by the District Representative.
3. If unstable soil is encountered, the District Representative shall determine overexcavation depth and foundation re-fill material.
4. Contractor shall provide hand excavated "Bell Hole" for each pipe joint so that the weight of pipe does not bear on the bell. Contractor shall re-fill and hand-tamp each "Bell Hole" prior to completing the placement of pipe bedding.
5. 14 gauge pipe tracer wire shall be installed and fastened to the pipe and wrapped at 5' intervals around the entire circumference of the pipe.
6. The minimum depth of cover from finish grade to the top of the sewer main shall be seven (7') feet unless otherwise approved by the Engineering Manager.

**SEWER TRENCH**

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**EVWD  
STD. DWG.  
S-114**

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