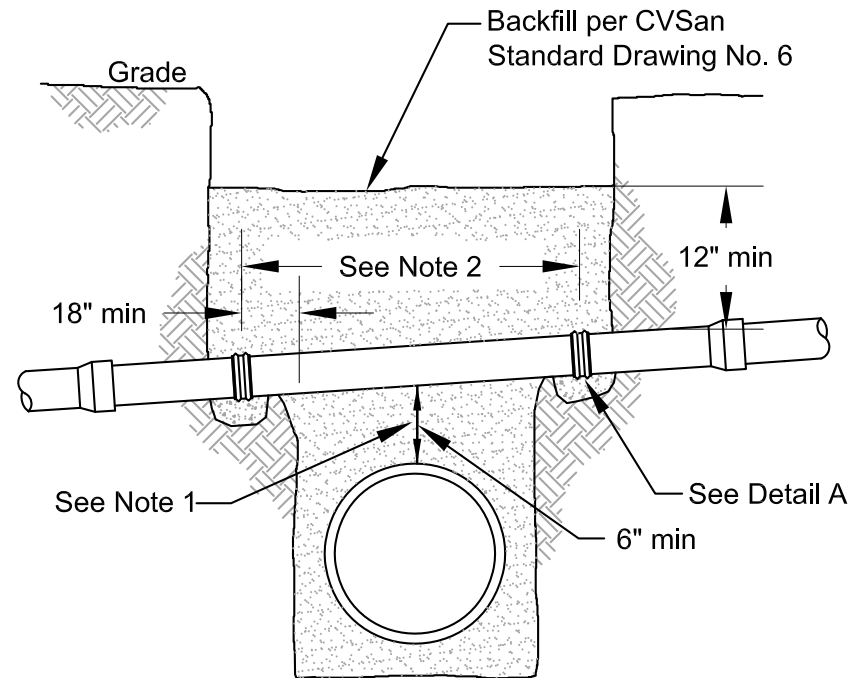
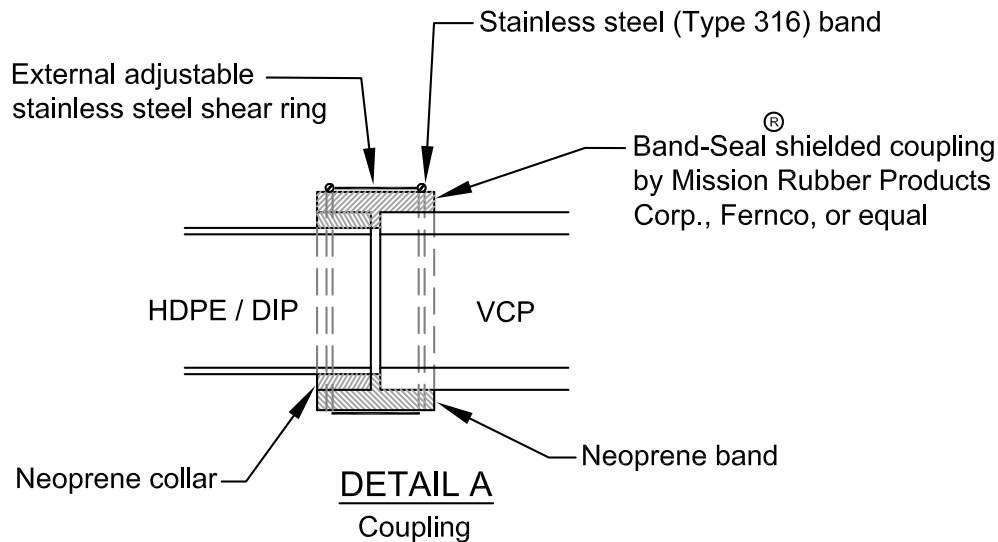


NEW UTILITY CROSSING OVER SANITARY SEWER



NEW UTILITY CROSSING UNDER SANITARY SEWER



NOTES:

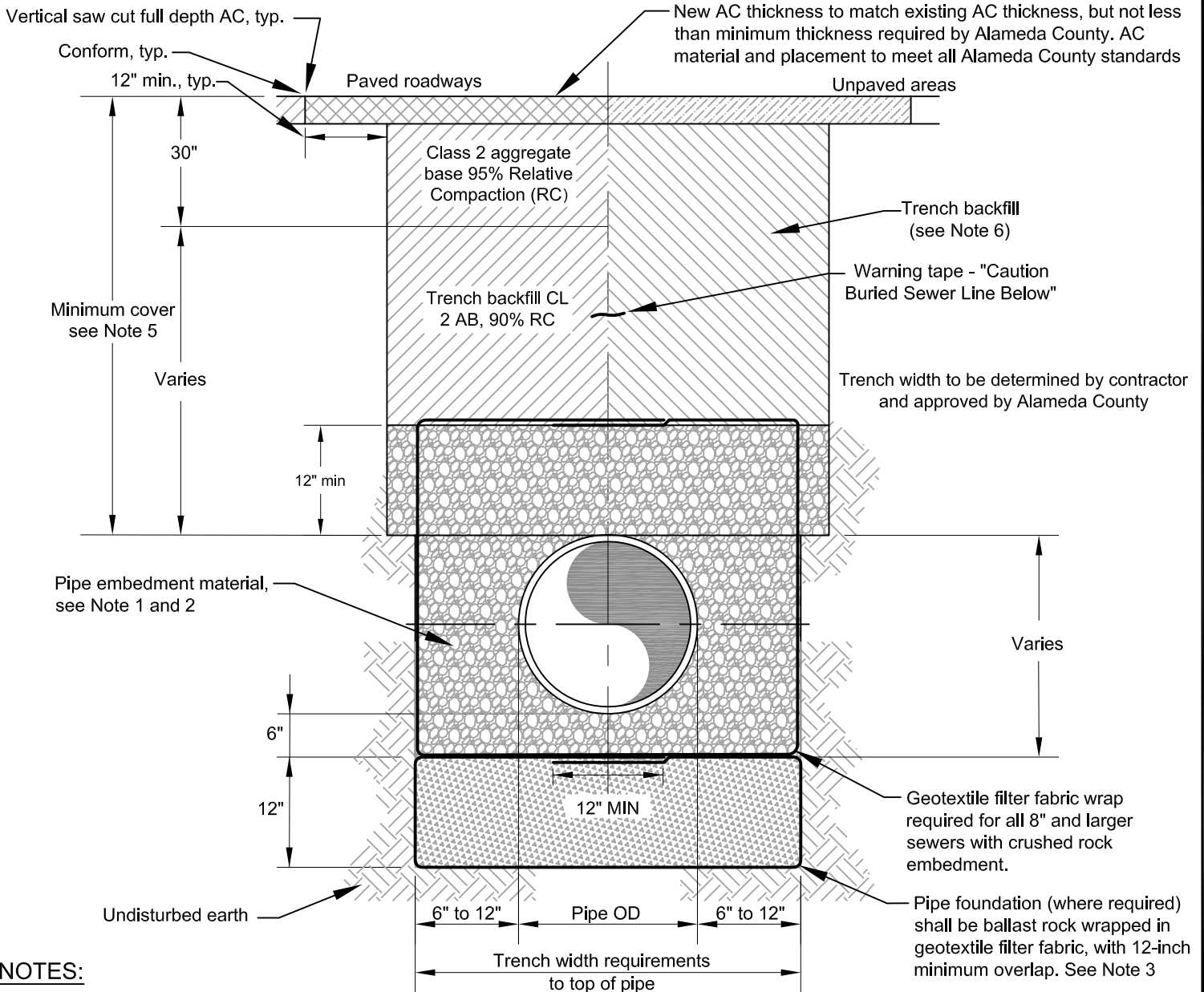
1. When clearance is 12" or less, replace existing VCP sewer with one length of Protecto 401 ceramic epoxy coated ductile iron pipe or HDPE SDR-17 to span trench as shown.
2. For potable water crossings, the sewer main shall not have joints 10' (ten feet) from the outside of the water pipe on each side.

Castro Valley Sanitary District
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TYPICAL METHOD OF CROSSING

Drawn By: MRK
Date: 09/28/2017
Checked By: LML
Approved By: RPW
Scale: NTS

Drawing No. 5



NOTES:

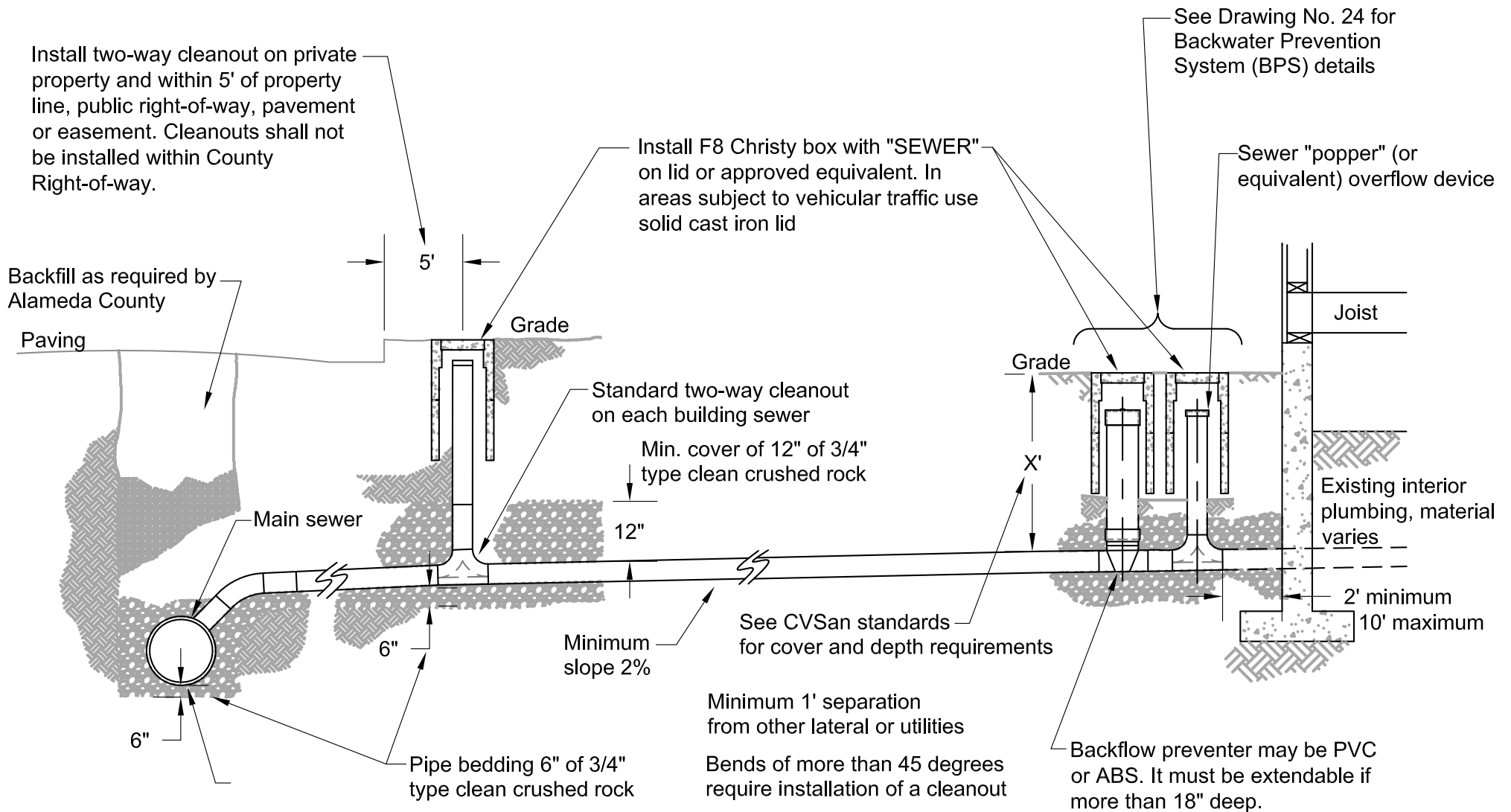
- ① Pipe embedment material shall be specified by design engineer and based on required load factor for sewer installation. For Class B and crushed stone encasement bedding requirements, the pipe embedment material is crushed rock. For Class C bedding requirements, the pipe embedment material is Class 2 aggregate base. Crushed stone pipe embedment shall be used in all cases where embedment material is not specified by design engineer.
- ② Crushed rock shall be compacted with a minimum of four passes with a Vibraplate 220Y Wacker (or equivalent) with a 12 inch square shoe, or equal, on the material below the pipe and after material has been placed to a point 12 inches above the pipe. Class 2 AB shall have 90% relative compaction and shall be compacted in 6 inch lifts.
- ③ Foundation material shall be required where trench bottom is determined by CVSan to be unstable.
- ④ Where sewer is constructed under existing utilities, backfill around existing utilities shall meet controlling agency's requirements or requirements on CVSan Standard Drawing No. 5.
- ⑤ Minimum cover requirements are based on pipe material and surface loading.
 - a) VCP and HDPE SDR-17 pipe material - four (4) feet minimum in traveled ways subject to vehicular traffic
 - b) DIP (Protecto 401 Ceramic Epoxy Coated) and CIP pipe material - two (2) foot minimum in all areas
- ⑥ Trench backfill with selected material from excavated materials may be used in non-roadway areas with approval of CVSan.
- ⑦ Install detectable underground warning tape two feet above top of pipe, "Caution Buried Sewer Line Below".

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**SANITARY SEWER MAIN
BACKFILL DETAIL**

Drawn By: MRK
Date: 09/27/2017
Checked By: LML
Approved By: RPW
Scale: NTS

Drawing No. 6



APPROVED PIPE TYPES FOR LATERALS

- Vitrified Clay Pipe
- Ductile Iron Pipe
- Cast Iron Pipe
- High Density Polyethylene (HDPE SDR-17)

TESTING REQUIREMENTS

1. Prior to backfilling
2. Air or water test performed to CVSan Standards

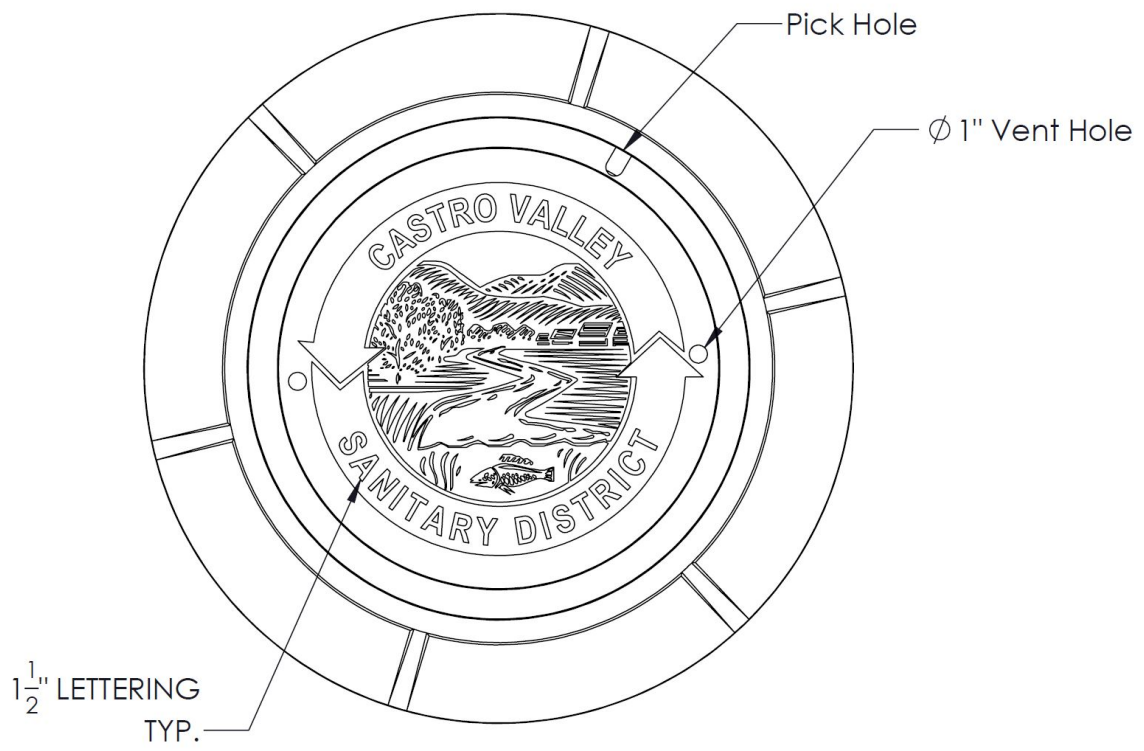
All sanitary sewer construction must comply with the Castro Valley Sanitary District Code, General Provisions and Specifications for Construction of Sanitary Sewers, and CA Uniform Plumbing Code.

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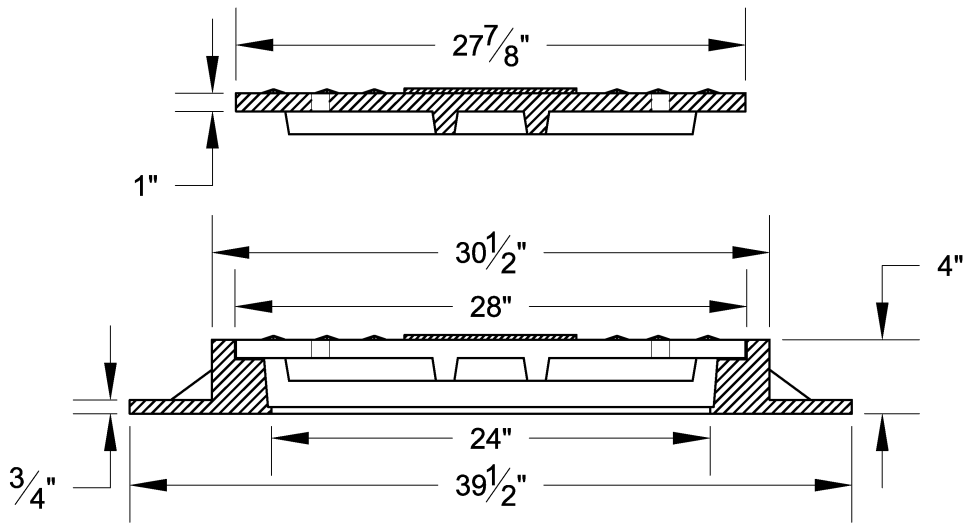
**TYPICAL BUILDING SEWER (LATERAL)
PROFILE VIEW**

Drawn By: MRK
Date: 03-29-2019
Checked By: LML
Approved By: RPW
Scale: NTS

Drawing No. 9



TOP VIEW



SECTION

NOTES:

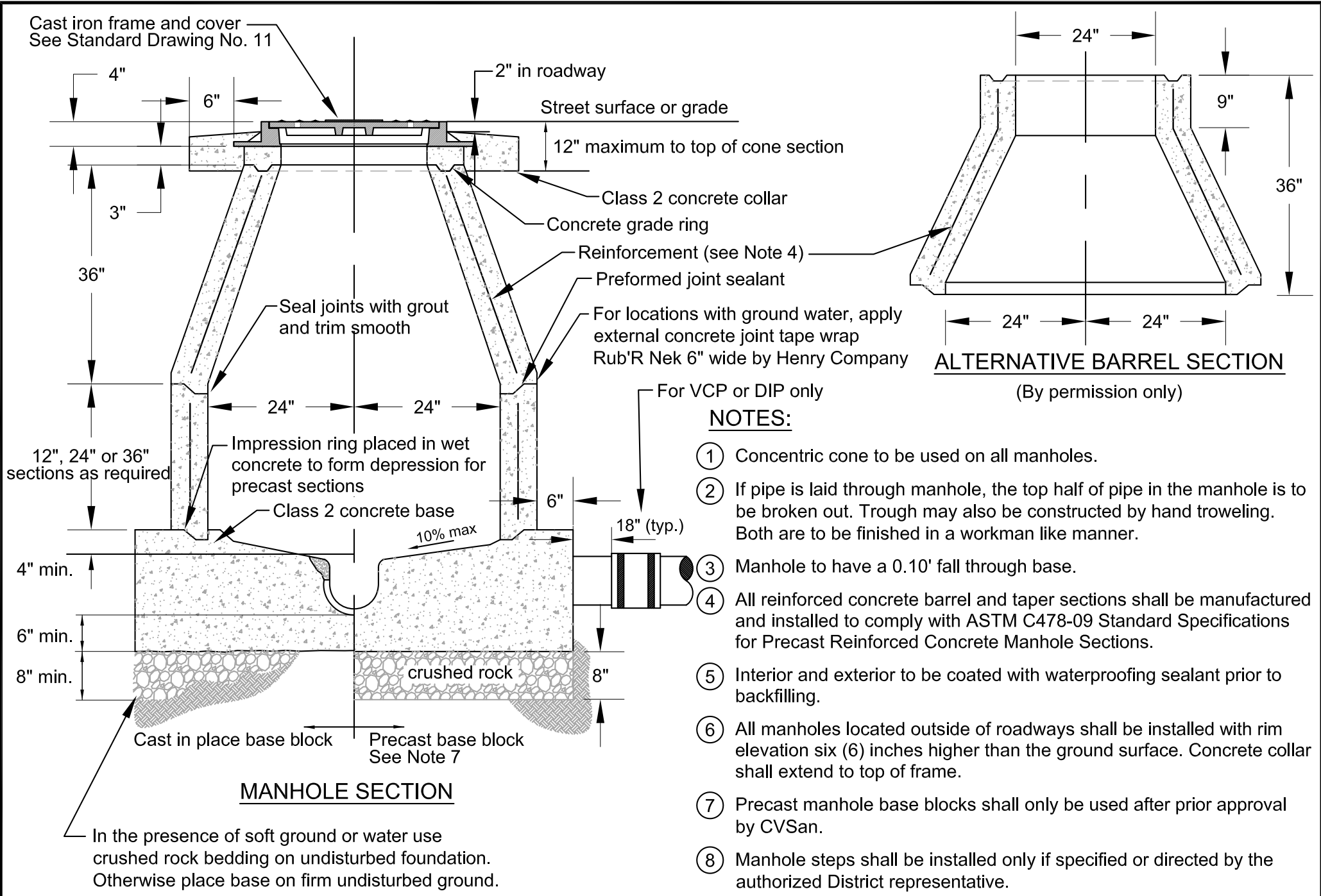
- ① Frame and cover to exceed H-20 wheel loading
- ② Casting shall be dipped in bituminous paint prior to being installed
- ③ Frames and covers shall be by South Bay Foundry, A1985 R-1, or equal

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**STANDARD MANHOLE
 FRAME AND COVER**

Drawn By: MKL
 Date: 04/12/2022
 Checked By: LML
 Approved By: RPW
 Scale: NTS

Drawing No. 11

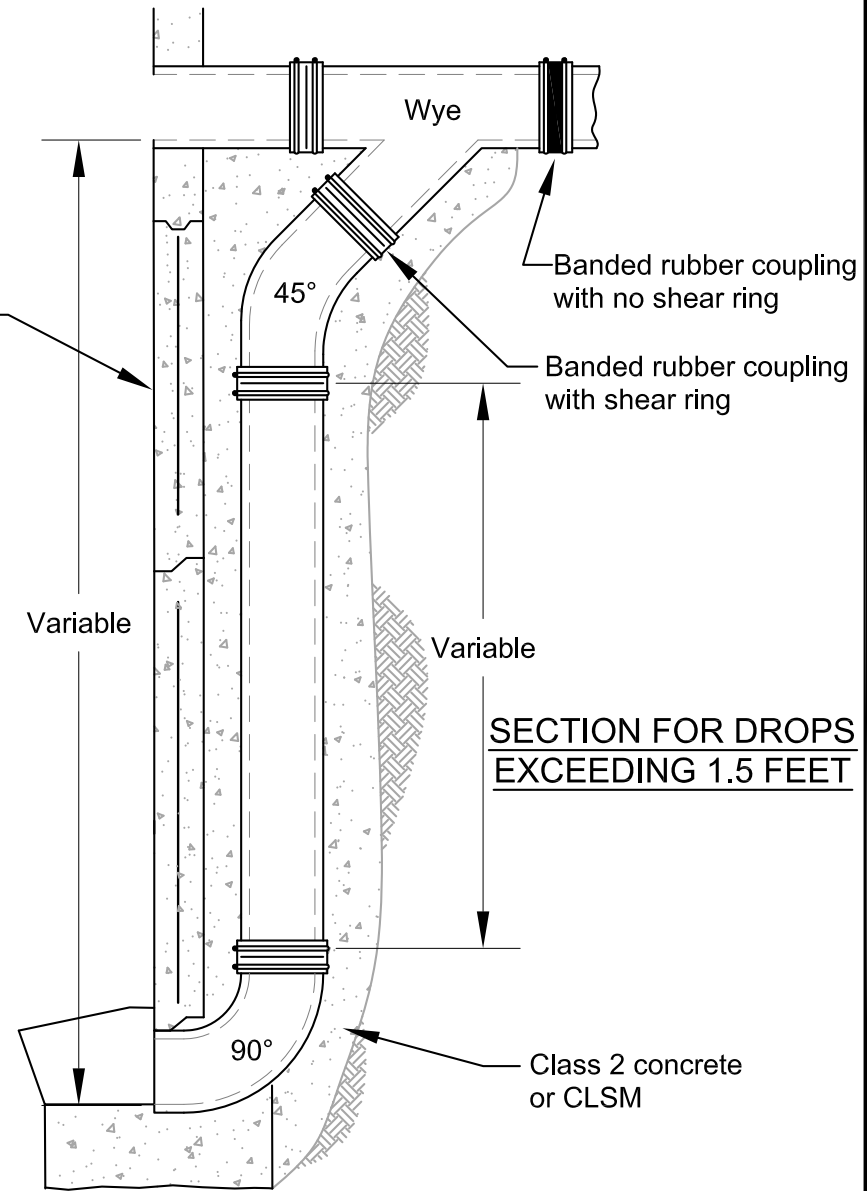
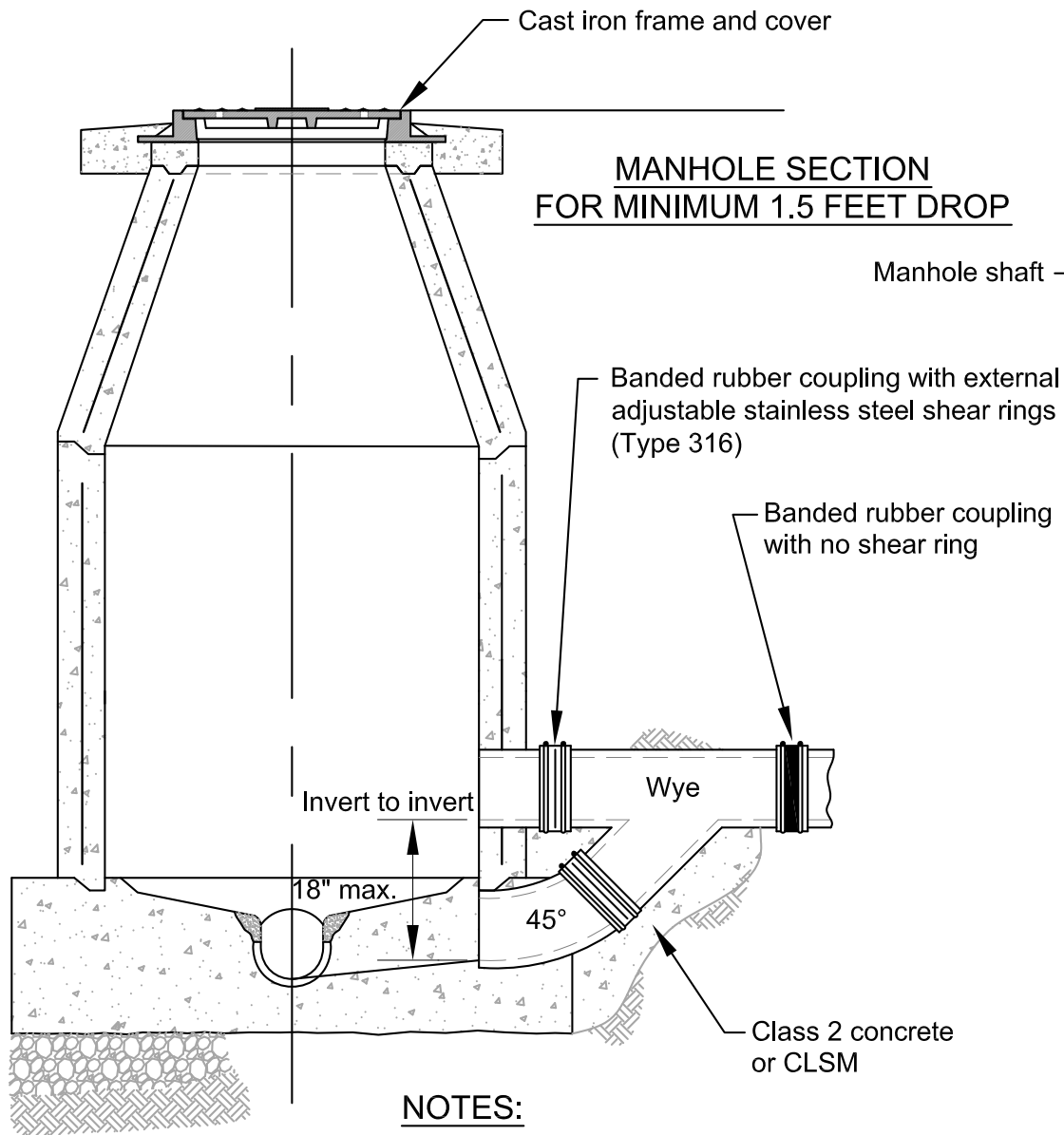


Castro Valley Sanitary District
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**STANDARD PRECAST MANHOLE WITH
CONCENTRIC CONE**

Drawn By: MRK
Date: 09/27/2017
Checked By: LML
Approved By: RPW
Scale: NTS

Drawing No. 13



NOTES:

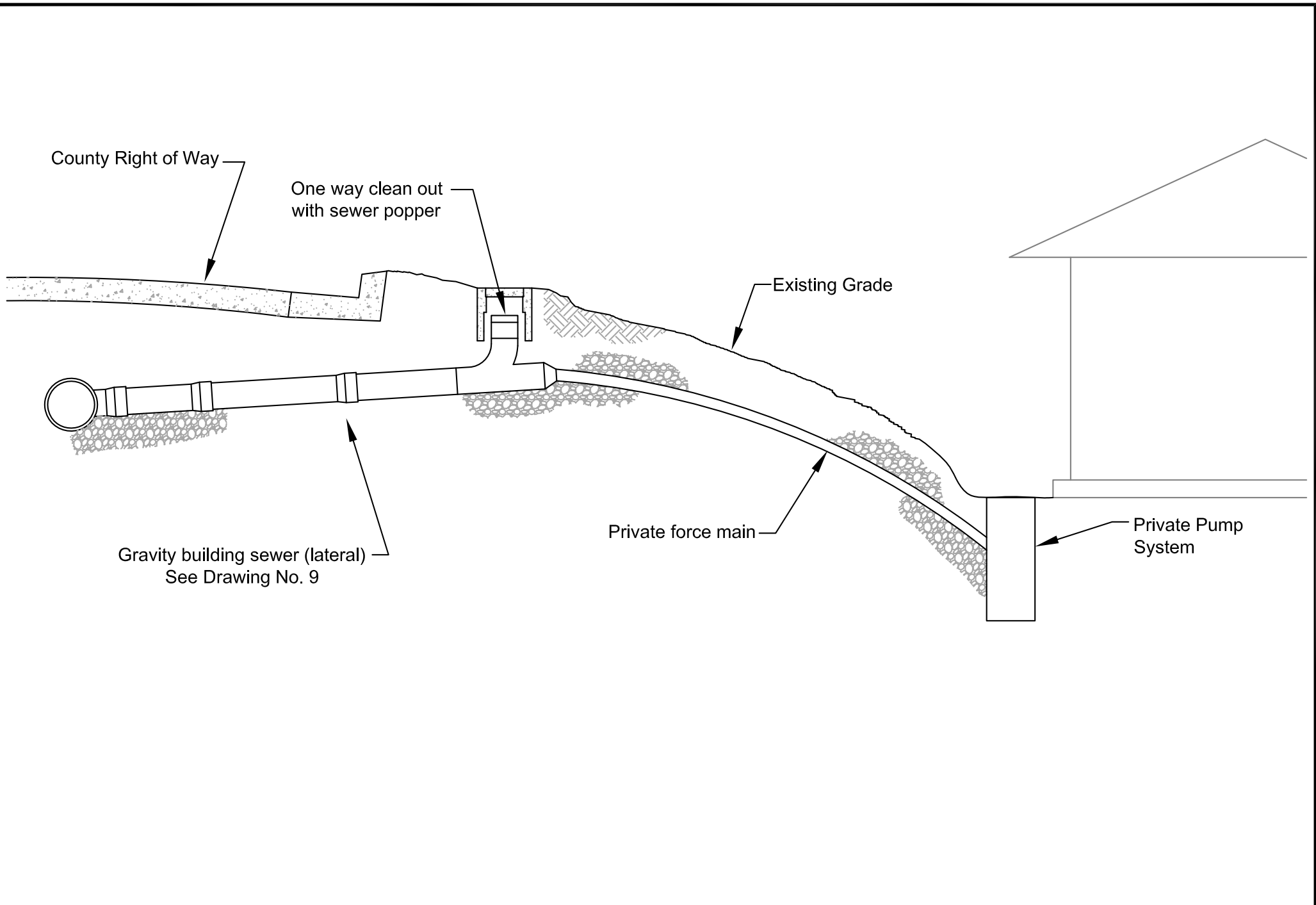
- ① Drop manholes shall not be used in design unless authorized by CVSan. Drop manhole replacement or repair is allowed only with prior CVSan approval.
- ② All dimensions and standards for manholes are specified on Drawing No. 13.

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DROP MANHOLE

Drawn By: MRK
Date: 09/28/2017
Checked By: LML
Approved By: RPW
Scale: NTS

Drawing No. 15



Castro Valley Sanitary District
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 Castro Valley, CA 94546

**TYPICAL PRIVATE FORCE MAIN
 CONNECTION**

Drawn By: MRK
 Date: 09/28/2017
 Checked By: LML
 Approved By: RPW
 Scale: NTS

Drawing No. 17

Sanitary sewers and appurtenances thereto shall be constructed in accordance with the provisions of the Castro Valley Sanitary District (CVSan) Code at the time of acceptance and the general provisions and specifications therein set forth which are incorporated herein by reference.

Sanitary facilities as shown on these plans were approved by the Sanitary Board of the Castro Valley Sanitary District on the ____ day of _____, 20 ____, by Resolution No. _____.

Castro Valley Sanitary District

By _____
Authorized Officer of CVSan

Cover Sheet Block

Approved by Castro Valley
Sanitary District (CVSan)
Resolution

No : _____

See Sheet _____
for approval signature and
construction requirements.

Interior Sheet Block

Notes :

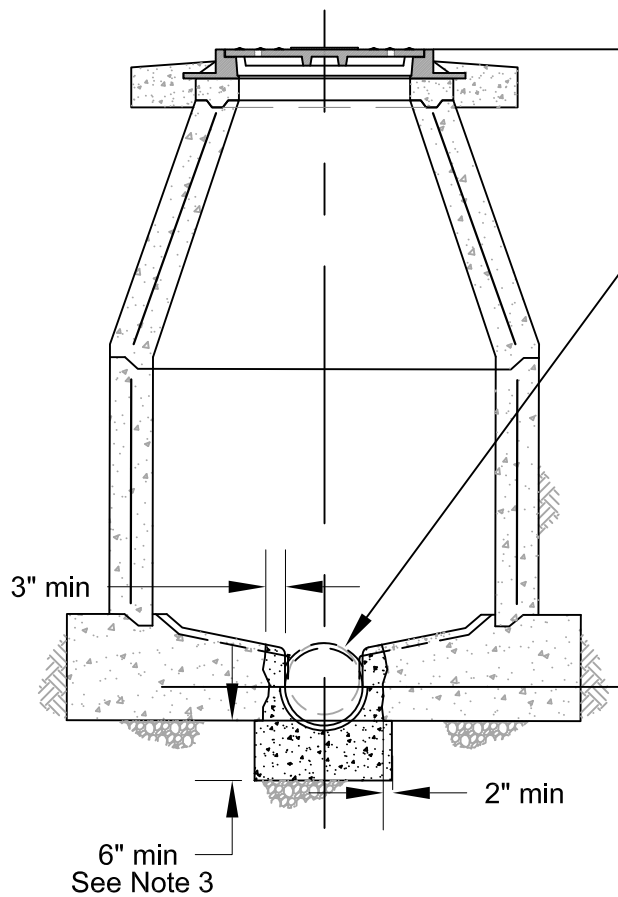
1. Cover sheet block shall be approximately 3.5" x 8" in size on 24" x 36" sheet.
2. Interior sheet block shall be approximately 1" x 3" in size on 24" x 36" sheet.
3. Blocks shall be located in lower right corner of sheet when possible.

Castro Valley Sanitary District
21040 Marshall Street
Castro Valley, CA 94546

**CVSan STANDARD
SIGNATURE BLOCK**

Drawn By: MRK
Date: 09/28/2017
Checked By: LML
Approved By: RPW
Scale: NTS

Drawing No. 19

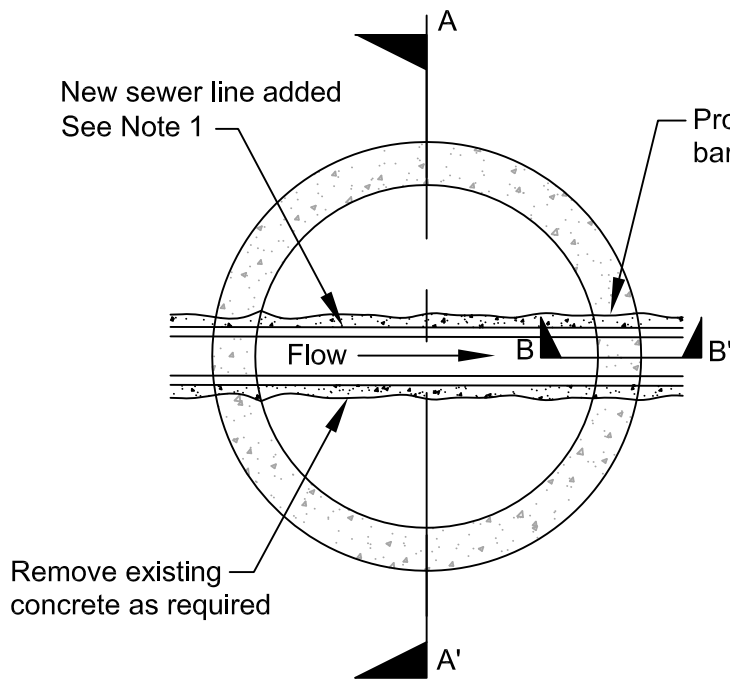


SECTION A-A'

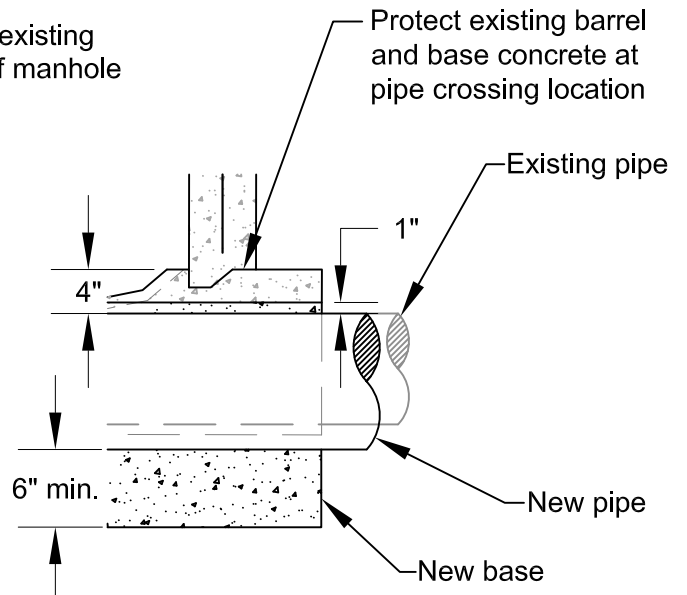
New pipe (see Note 2) or smooth channel surface with 1/2" cement mortar

NOTES:

- ① Contractor shall install the new sewer by cutting a trench through the existing concrete base of the manhole. The width of the trench shall be wide enough to permit placement of three (3) inches of Class 2 concrete on both sides of the pipe.
- ② Where possible, the pipe will be laid through the manhole and the top broken out to springline after the concrete in the base has set. Work is to be finished in a workman like manner.
- ③ Where removal of concrete extends to bottom of manhole base, the material below the pipe cutout shall be over excavated to provide a minimum concrete thickness of six (6) inches below the bottom of the new sewer installation.



PLAN



PARTIAL SECTION B-B'

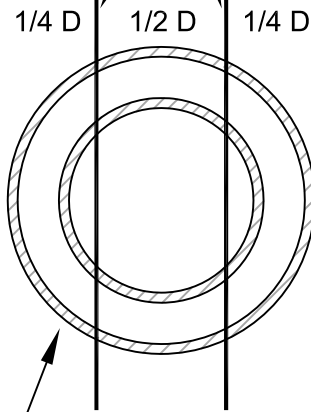
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21040 Marshall Street
Castro Valley, CA 94546

**MANHOLE BASE
RESHAPING**

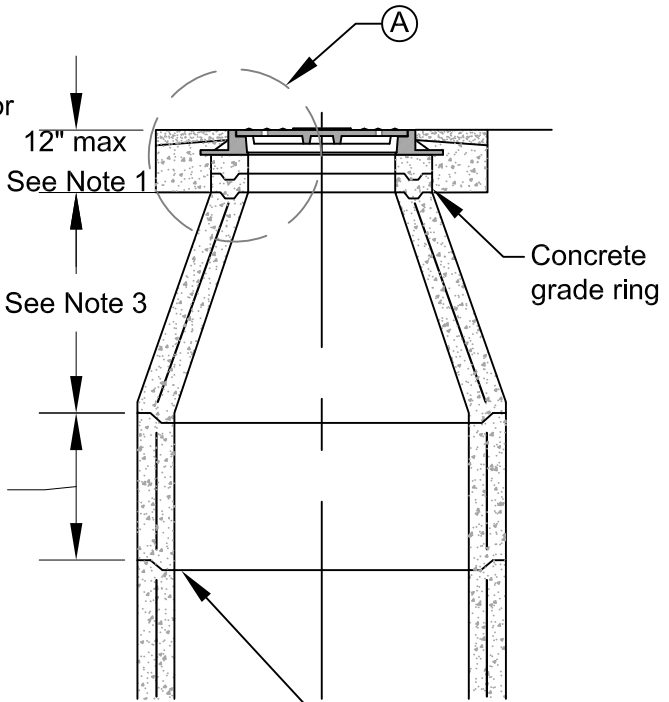
Drawn By: MRK
Date: 09/28/2017
Checked By: LML
Approved By: RPW
Scale: NTS

Drawing No. 20

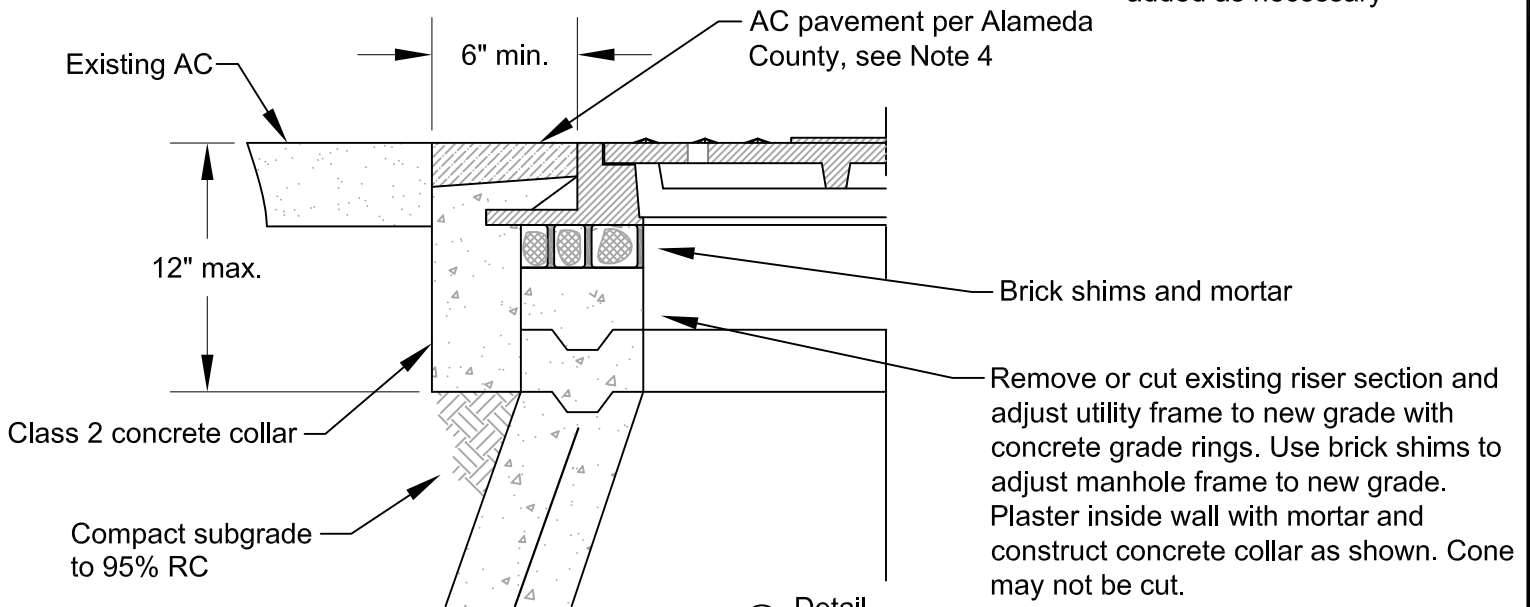
Straight edges to be placed parallel to direction of travel or as directed by the CVSan inspector



Frame, cover and AC lip to be within 1/8 inch of the elevation of surrounding pavement to be determined with straight edge as shown



Precast reinforced concrete sections to be removed or added as necessary



(A) Detail NTS

NOTES:

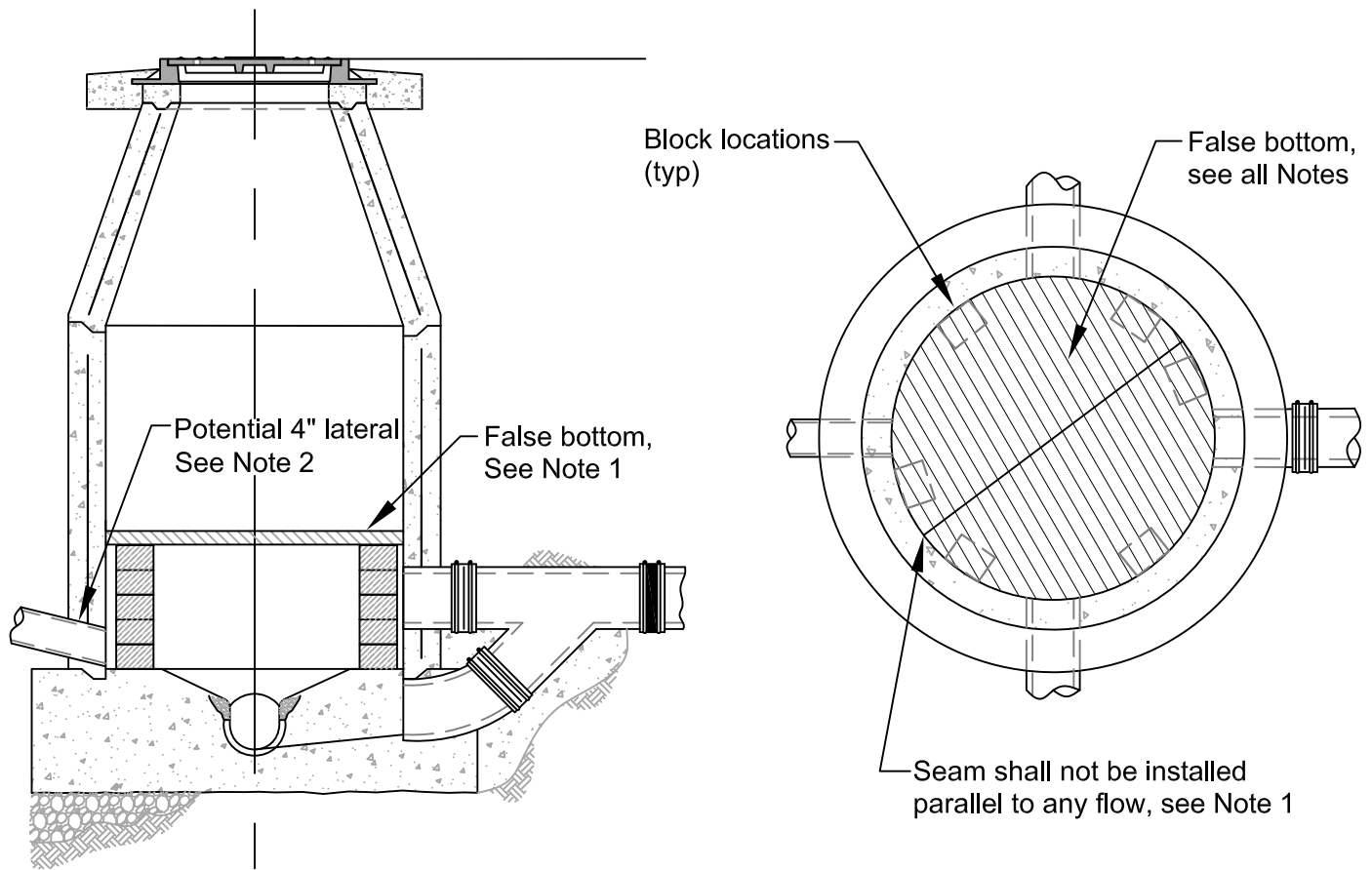
- ① If new grade is to be higher than existing grade, manhole throat depth shall not exceed twelve (12) inches. Add same diameter barrel sections as necessary.
- ② If new grade is to be lower than existing grade, remove grade rings or sections of the barrel and install combination of barrel section and grade rings as necessary.
- ③ If an existing eccentric cone is to be removed, it must be replaced with the concentric type.
- ④ AC paving is to conform to the standards of Alameda County. Place temporary AC (cutback) around utility frame until permanent paving is placed.

Castro Valley Sanitary District
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**MANHOLE FRAME
MODIFICATIONS**

Drawn By: MRK
Date: 09/28/2017
Checked By: LML
Approved By: RPW
Scale: NTS

Drawing No. 21



NOTES:

- ① False bottom is to be constructed of 1" marine grade plywood. The plywood is to be cut to a 4' diameter circle and then cut in half. The false bottom must be placed in the manhole with the seam perpendicular to direction of flow, or in such a manner as to protect the pipe inlet from any debris.
- ② False bottom is to be placed on blocks with a minimum clearance of 4" above all wastewater inlets of the manhole. False bottom shall be connected to the blocks by nail or screw to prevent the blocks from falling into the flow. Blocks shall not obstruct the flow of wastewater.
- ③ Debris shall be removed from the manhole each time work in manhole is performed.
- ④ Installation of false bottom must be approved by CVSan and a notification given 24 hours prior to commencement of work.
- ⑤ Any overflows, blockages and/or damages to sewer pipe associated with the failure of false bottoms shall be the full responsibility of the agency/contractor that installed the false bottom.
- ⑥ Agency/contractor installing false bottoms is to confirm with CVSan all drop manholes prior to commencing the work.

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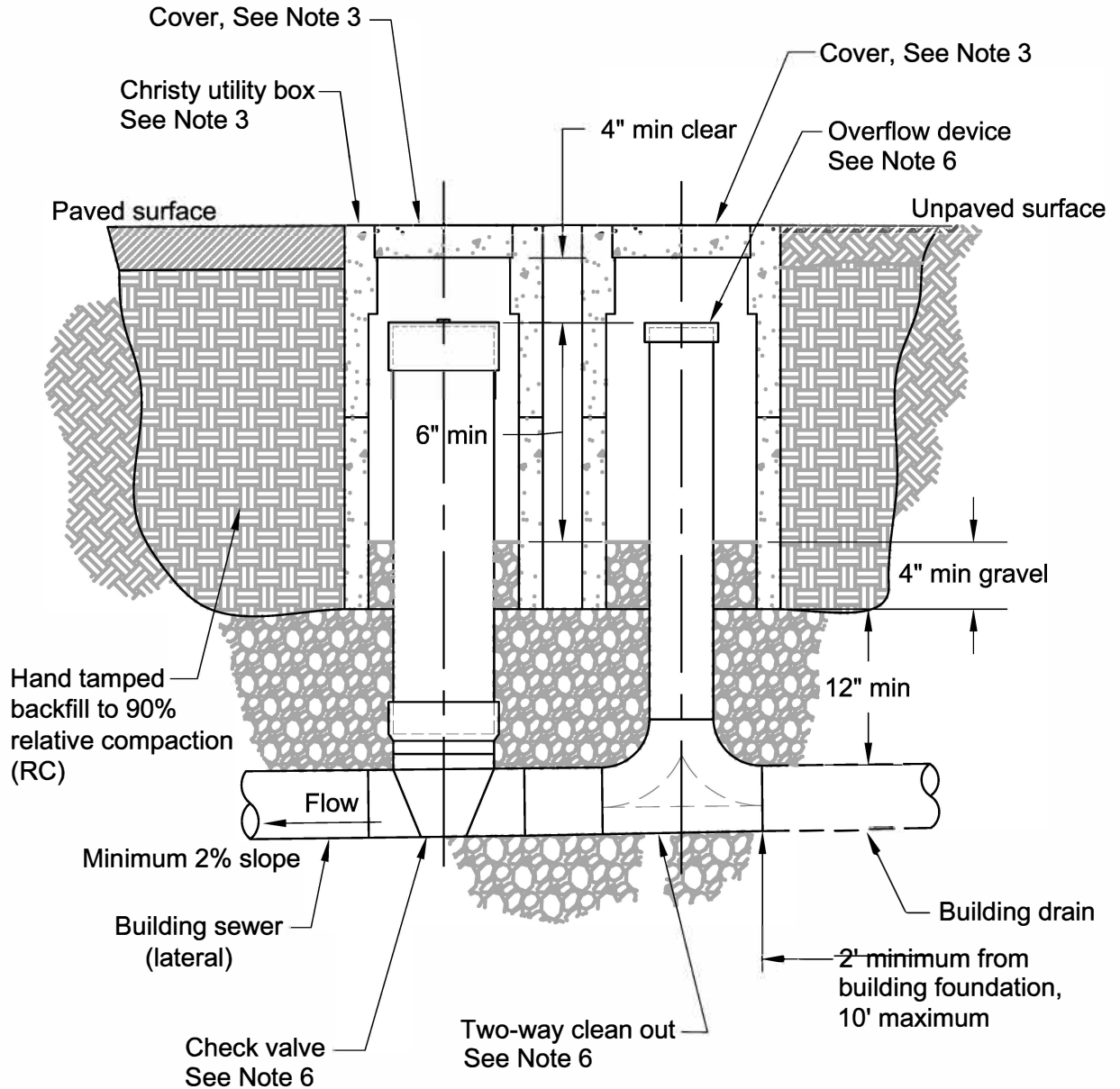
**MANHOLE FALSE
 BOTTOM**

Drawn By: MRK
 Date: 09/28/2017
 Checked By: LML
 Approved By: RPW
 Scale: NTS

Drawing No. 22

NOTES:

- ① Backwater prevention system (BPS) shall include a check valve, a two-way cleanout (CO), and an overflow device installed on the CO. Other types of backwater prevention devices may be approved by CVSan.
- ② A backwater prevention system is required as follows:
 - A. On all new building sewers
 - B. On all existing building sewers requiring repair or replacement of more than 50 percent of the building sewer.
 - C. Other conditions identified in CVSan Code Section 3807.
- ③ Approved boxes are: Christy concrete products F08 concrete box with F08 R lid or N36 concrete box with B36 lid. N36 box is allowed upon approval of CVSan inspector.
- ④ All box lids shall be marked with the word "SEWER".
- ⑤ In areas subject to vehicular traffic, use solid cast iron lid.
- ⑥ Refer to CVSan Code Section 3807 for approved backwater valves, and Section 3810 for approved cleanout devices.
- ⑦ Backflow preventer may be ABS or PVC. It must be extendable if more than 18" deep.

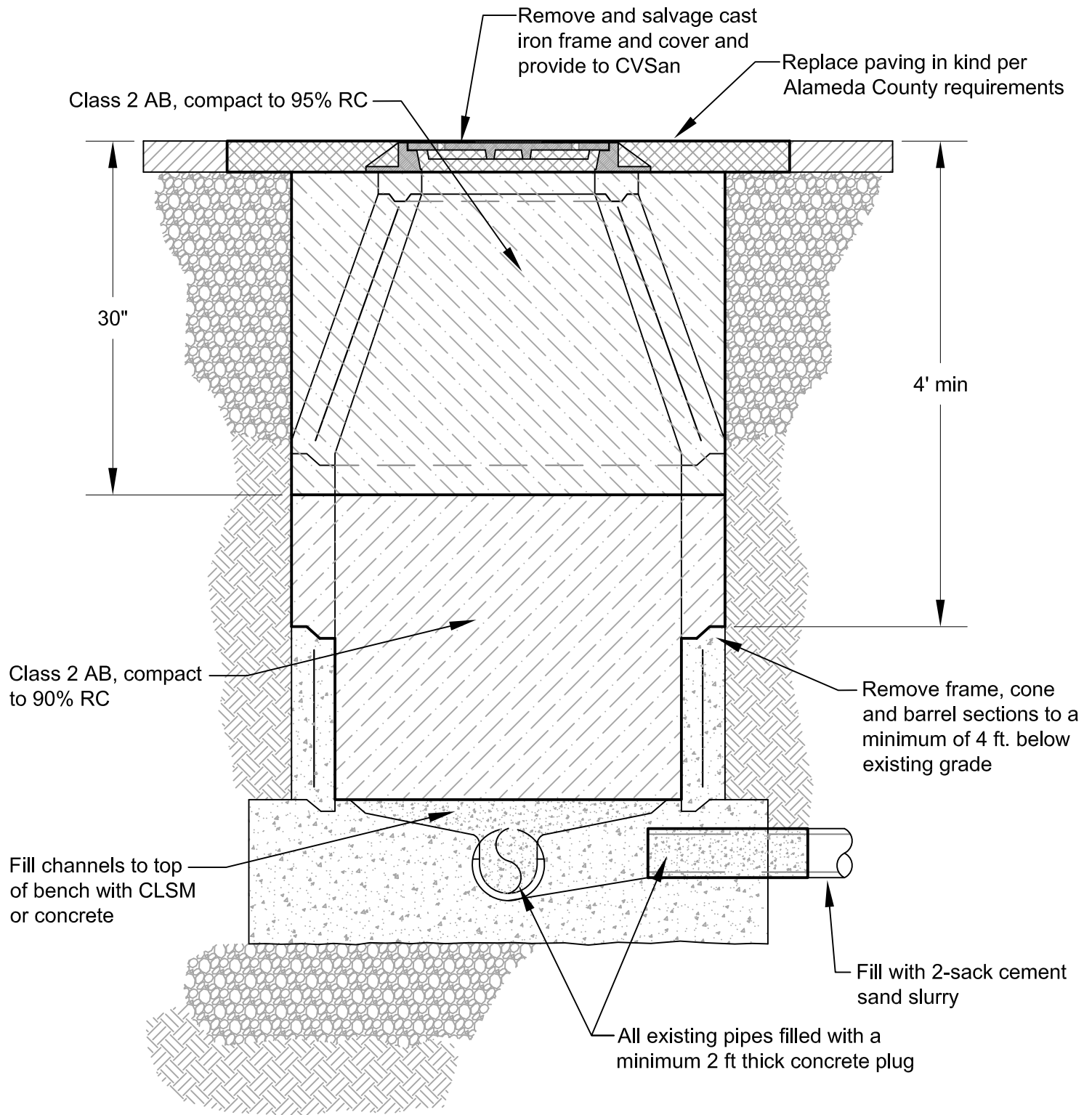


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**BUILDING SEWER BACKWATER
PREVENTION SYSTEM**

Drawn By: MRK
Date: 03-29-2019
Checked By: LML
Approved By: RPW
Scale: NTS

Drawing No. 24



NOTE:

Existing manholes to be abandoned shall have the castings, grade rings, and manhole body removed to the bottom of the cone section with the removal of the manhole rings to a minimum of four (4) feet below street grade or existing ground elevation. After plugging of existing pipelines at the manhole, the remainder of the manhole barrel shall then be filled and compacted with Class 2 AB material. The manhole frame and cover shall be salvaged and provided to CVSan. The removed concrete shall be disposed of by the contractor in accordance with state regulations.

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**STANDARD SEWER
MANHOLE ABANDONMENT**

Drawn By: MRK
Date: 09/28/2017
Checked By: LML
Approved By: RPW
Scale: NTS

Drawing No. 26