

CITY AND COUNTY OF SAN FRANCISCO  
PUBLIC UTILITIES COMMISSION



# SEWER LATERAL STANDARD DETAILS

FINAL  
May 2017



LOCATION MAP  
SCALE: 1"=4000'

## DRAWING LIST

SHT. NO.	DWG. NO.	DESCRIPTION
		COVER AND LIST OF DRAWINGS
1	1	TYPICAL SEWER LATERAL CONFIGURATIONS
2	2	SPECIAL SEWER LATERAL CONFIGURATIONS
3	3	PRIVATE SEWER LATERAL CONNECTION
4	4	TYPICAL SEWER LATERAL CONSTRUCTION-DETAILS
5	5	TYPICAL SEWER LATERAL INSTALLATION IN COMBINED SEWER SYSTEM AND SANITARY SEWER SYSTEM
6	6	CLEANOUT IN COMBINED SEWER SYSTEM AND SANITARY SEWER SYSTEM
7	7	TYPICAL SEWER LATERAL INSTALLATION IN STORM SEWER SYSTEM
8	8	CLEANOUT IN STORM SEWER SYSTEM
9	9	CATCHBASIN/SAND TRAP WITH CLEANOUT IN STORM SEWER SYSTEM
10	10	SEWER LATERAL CONNECTION SCHEDULE
11	11	SEWER LATERAL CONNECTION TYPES 1-6
12	12	SEWER LATERAL CONNECTION TYPES 7-10
13	13	SEWER LATERAL CONNECTION TYPES 11-16
14	14	SEWER LATERAL CONNECTION TO MANHOLE
15	15	SEWER LATERAL TRENCH
16	16	SEWER LATERAL BREAK REPAIR
17	17	SEWER LATERAL RELOCATION DETAIL 1
18	18	SEWER LATERAL RELOCATION DETAIL 2
19	19	SEWER LATERAL ABANDONMENT
20	20	UNACCEPTABLE SEWER LATERAL CONFIGURATIONS

## ABBREVIATIONS

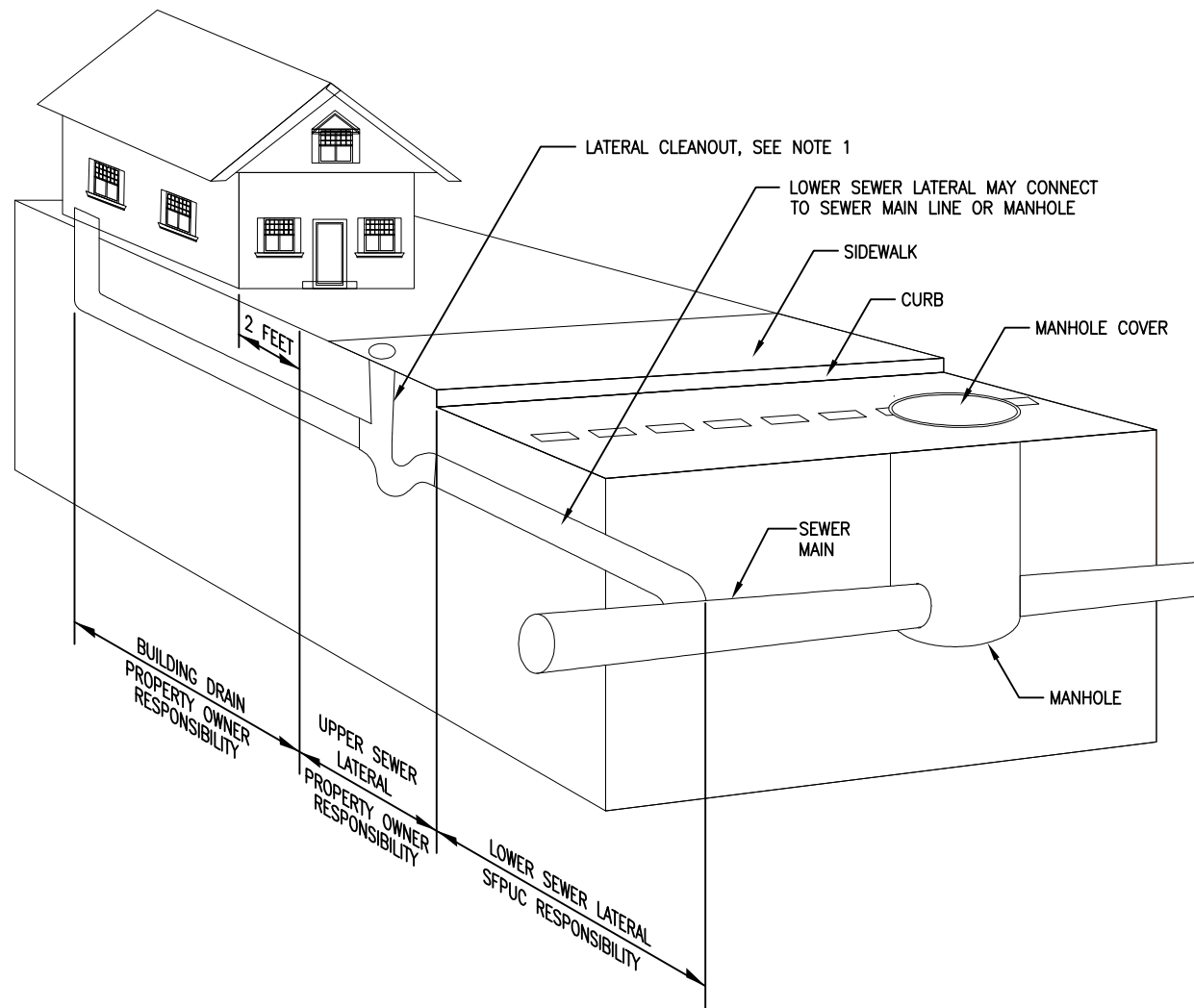
CHAP	CHAPTER
CI	CAST IRON
HDPE	HIGH DENSITY POLYETHYLENE
ISP	IRON STONE PIPE
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
SFDBI	SAN FRANCISCO DEPARTMENT OF BUILDING INSPECTION
SFDPW	SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS
SFPC	SAN FRANCISCO PLUMBING CODE
SFPUC	SAN FRANCISCO PUBLIC UTILITIES COMMISSION
TYP	TYPICAL
VCP	VITRIFIED CLAY PIPE

### GENERAL NOTE:

1. THE PROPERTY OWNER IS RESPONSIBLE FOR CONSTRUCTION, INSPECTION AND MAINTENANCE OF THE ENTIRE SEWER LATERAL. SFPUC IS RESPONSIBLE FOR REPAIR AND REHABILITATION ONLY FOR THE LOWER LATERAL.



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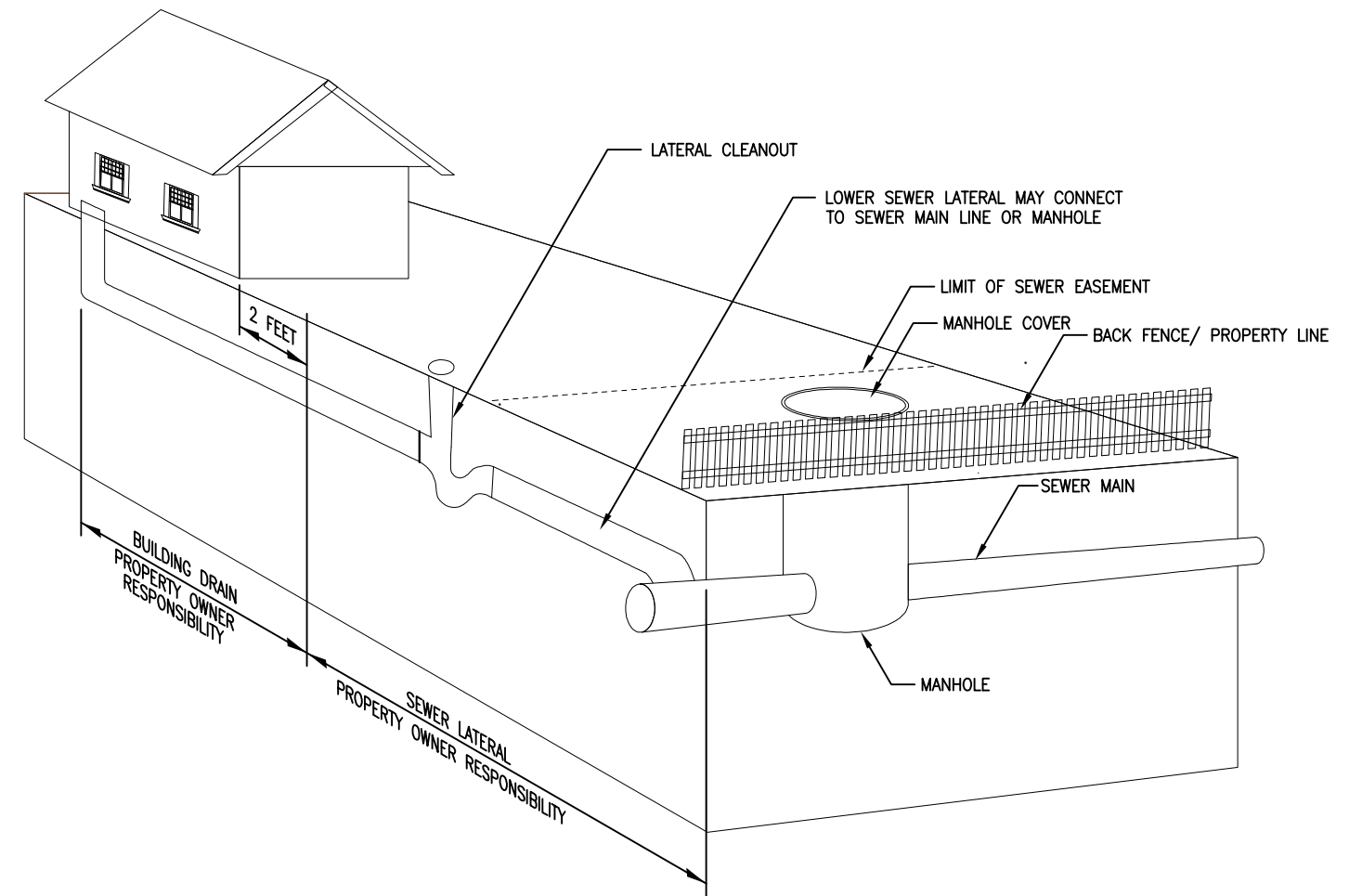
**TYPICAL SEWER LATERAL CONFIGURATION  
IN STANDARD CITY STREET**

1

NOT TO SCALE

**NOTES:**

1. THE CLEANOUT IS THE PROPERTY OWNER'S RESPONSIBILITY.
2. THE CLEANOUT IN THE COMBINED SEWER SYSTEM AND SANITARY SEWER SYSTEM CONSISTS OF A P-TRAP, RISER, AND VENT.
3. THE CLEANOUT IN THE STORM SEWER SYSTEM CONSISTS OF A RISER AND VENT.
4. PROPERTY OWNER SHALL SUBMIT SEWER CONNECTION PERMIT APPLICATION TO SFPUC FOR WORK THAT INCLUDES A CONNECTION TO THE EXISTING SEWER MAIN.
5. A MANHOLE IS REQUIRED AT POINT OF CONNECTION BETWEEN LATERAL AND SEWER MAIN FOR LATERALS 10" DIAMETER AND GREATER. UNLESS THE SEWER IS 42" DIAMETER OR GREATER.



**TYPICAL SEWER LATERAL CONFIGURATION  
IN SFPUC EASEMENT ON PRIVATE PROPERTY**

2

NOT TO SCALE

**NOTES:**

1. PROPERTY OWNER SHALL SUBMIT SEWER CONNECTION PERMIT APPLICATION TO SFPUC FOR WORK THAT INCLUDES A CONNECTION TO THE EXISTING SEWER MAIN.

**APPLICABLE TO BOTH  
COMBINED AND SANITARY  
SEWER SYSTEMS**



**SEWER LATERAL  
STANDARD DETAILS**  
SAN FRANCISCO PUBLIC UTILITIES COMMISSION

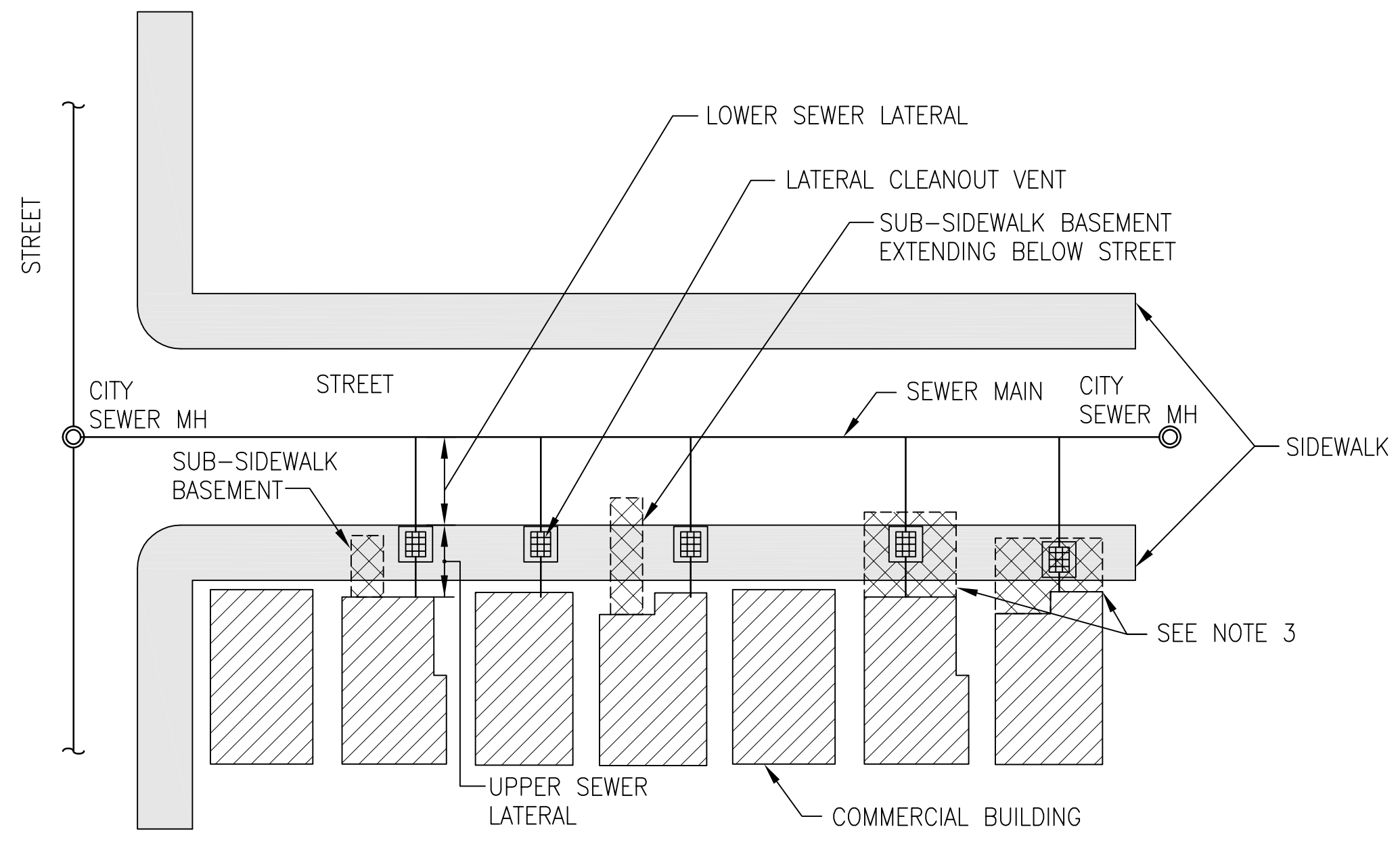
DATE MAY 2017	REVISION 1.0	REVISED
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**TYPICAL SEWER LATERAL CONFIGURATIONS**

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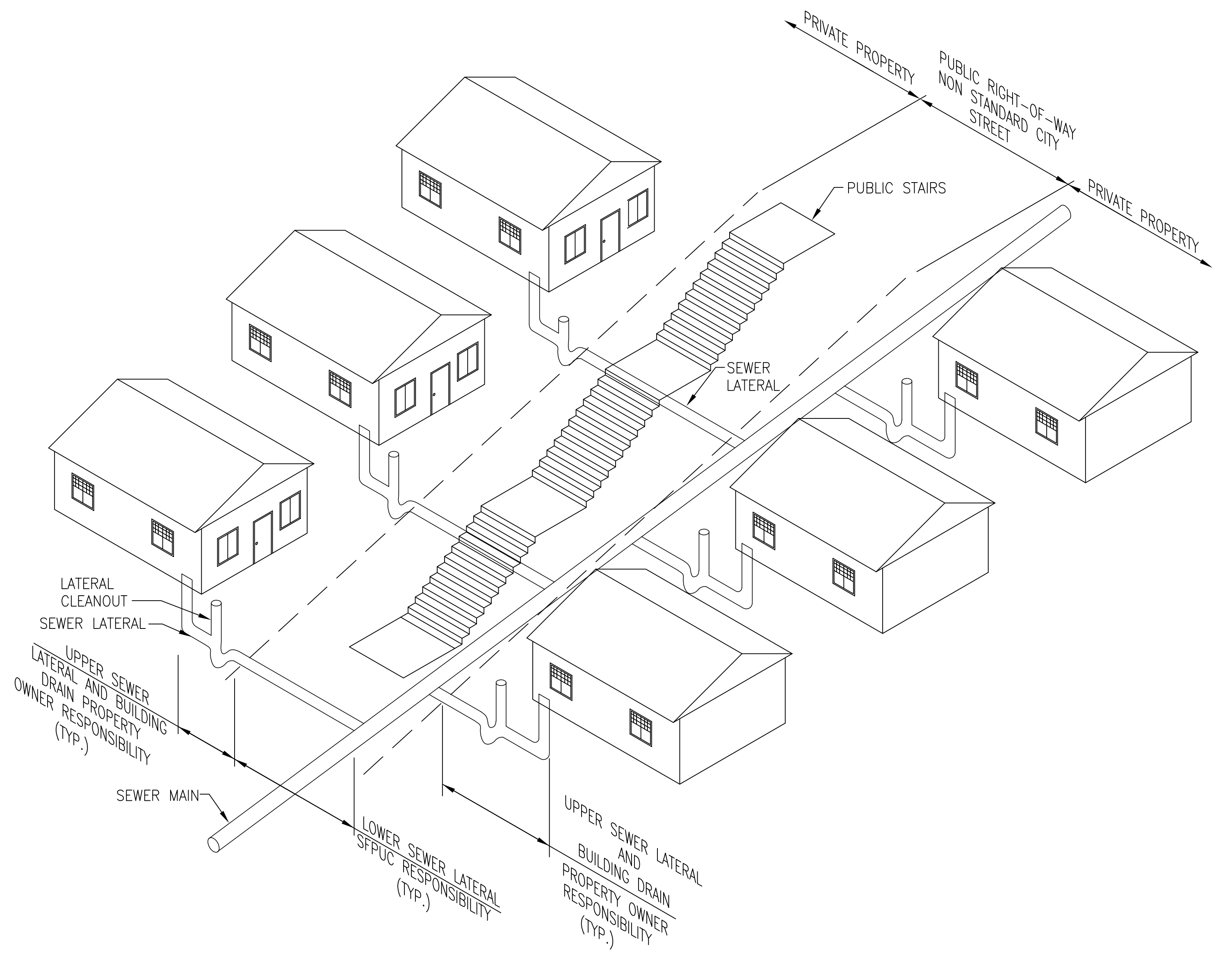
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- NOTES:**
1. SEE DETAIL 1 OF DRAWING NO. 4 FOR ALLOWABLE DEVIATION FROM PERPENDICULAR.
  2. SEWER LATERAL CLEANOUT MUST BE LOCATED OUTSIDE OF THE SUB-SIDEWALK BASEMENT AND MUST BE PERPENDICULAR TO CURB WHENEVER POSSIBLE.
  3. IN SITUATIONS WHERE THE CLEANOUT CAN'T BE LOCATED OUTSIDE THE SUB-SIDEWALK BASEMENT, THE ENTIRE SEWER LATERAL FROM THE SEWER MAIN TO THE BUILDING WILL BE THE PROPERTY OWNER'S RESPONSIBILITY.

**SPECIAL SEWER LATERAL CONFIGURATION – COMMERCIAL BUILDINGS WITH SUB-SIDEWALK BASEMENTS IN STANDARD CITY STREET** 1  
 NOT TO SCALE



**SPECIAL SEWER LATERAL CONFIGURATION IN PUBLIC STAIRS (I.E. NON-STANDARD CITY STREET)** 2  
 NOT TO SCALE

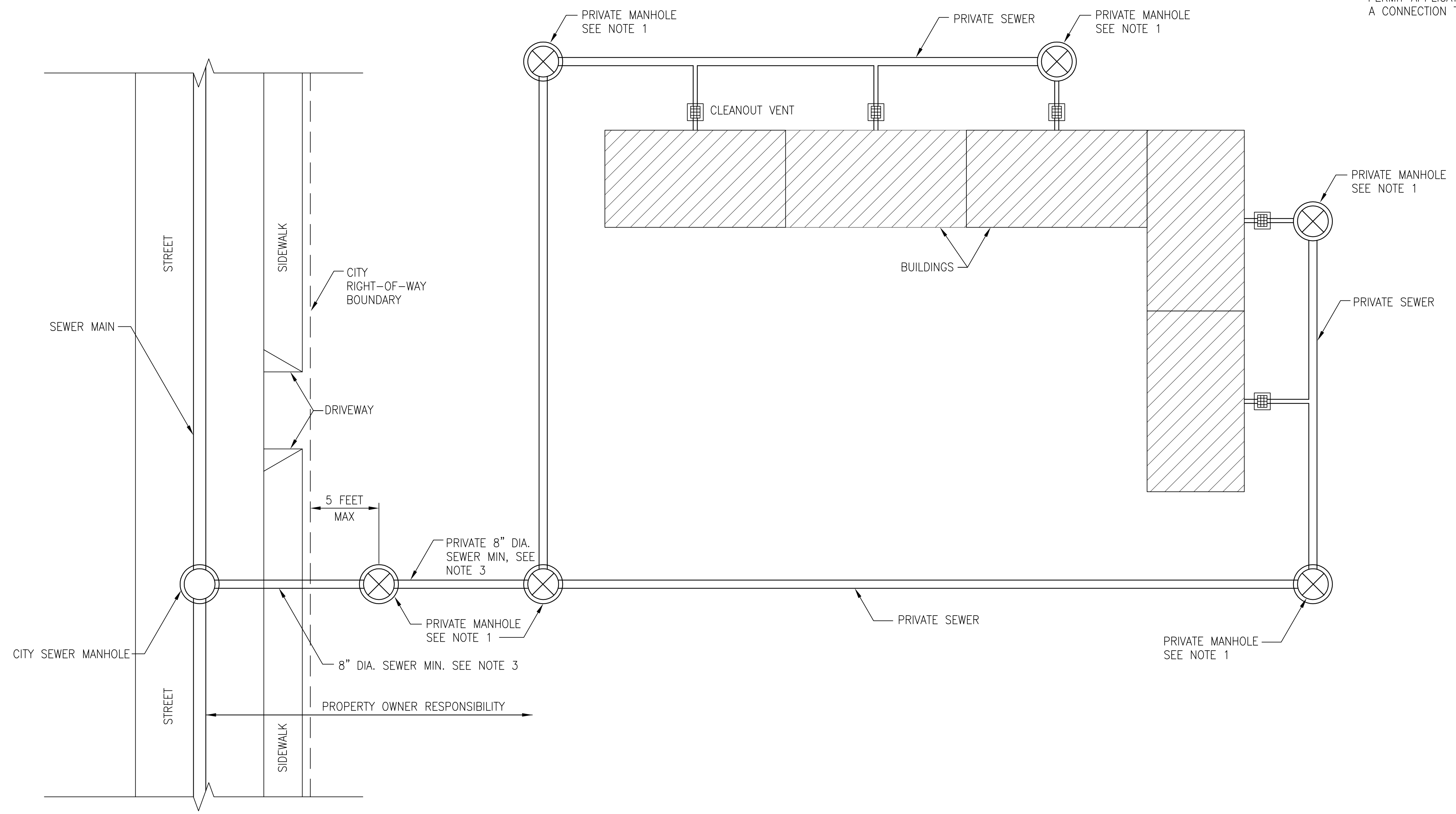
APPLICABLE TO BOTH COMBINED AND SANITARY SEWER SYSTEMS



SEWER LATERAL STANDARD DETAILS		
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**SPECIAL SEWER LATERAL CONFIGURATIONS**

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- NOTES:**
1. PRIVATE MANHOLE COVERS SHALL INCLUDE THE LETTERING "PRIVATE SEWER" TO DISTINGUISH FROM SFDPW OR SFPUC STANDARD MANHOLE COVERS.
  2. SAND TRAP DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE MOST RECENT SAN FRANCISCO PLUMBING CODE.
  3. PROPERTY OWNER SHALL SUBMIT SEWER CONNECTION PERMIT APPLICATION TO SFPUC FOR WORK THAT INCLUDES A CONNECTION TO THE EXISTING SEWER MAIN.

APPLICABLE TO BOTH  
COMBINED AND SANITARY  
SEWER SYSTEMS



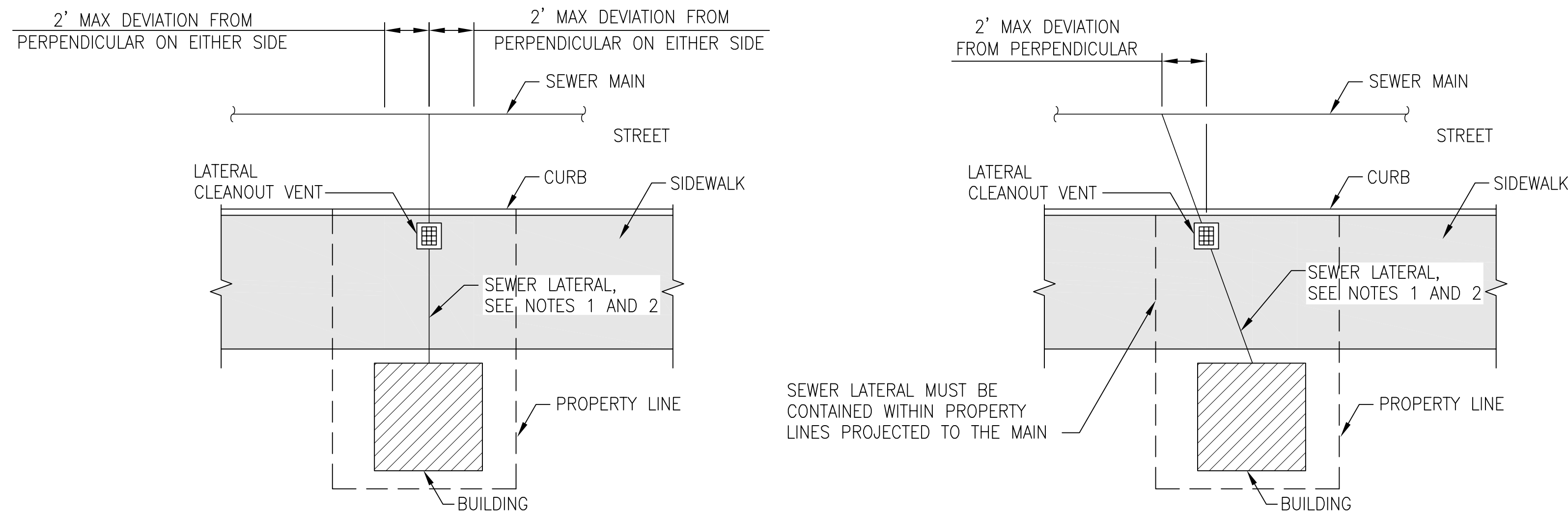
**SEWER LATERAL  
STANDARD DETAILS**  
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**PRIVATE SEWER LATERAL CONNECTION**



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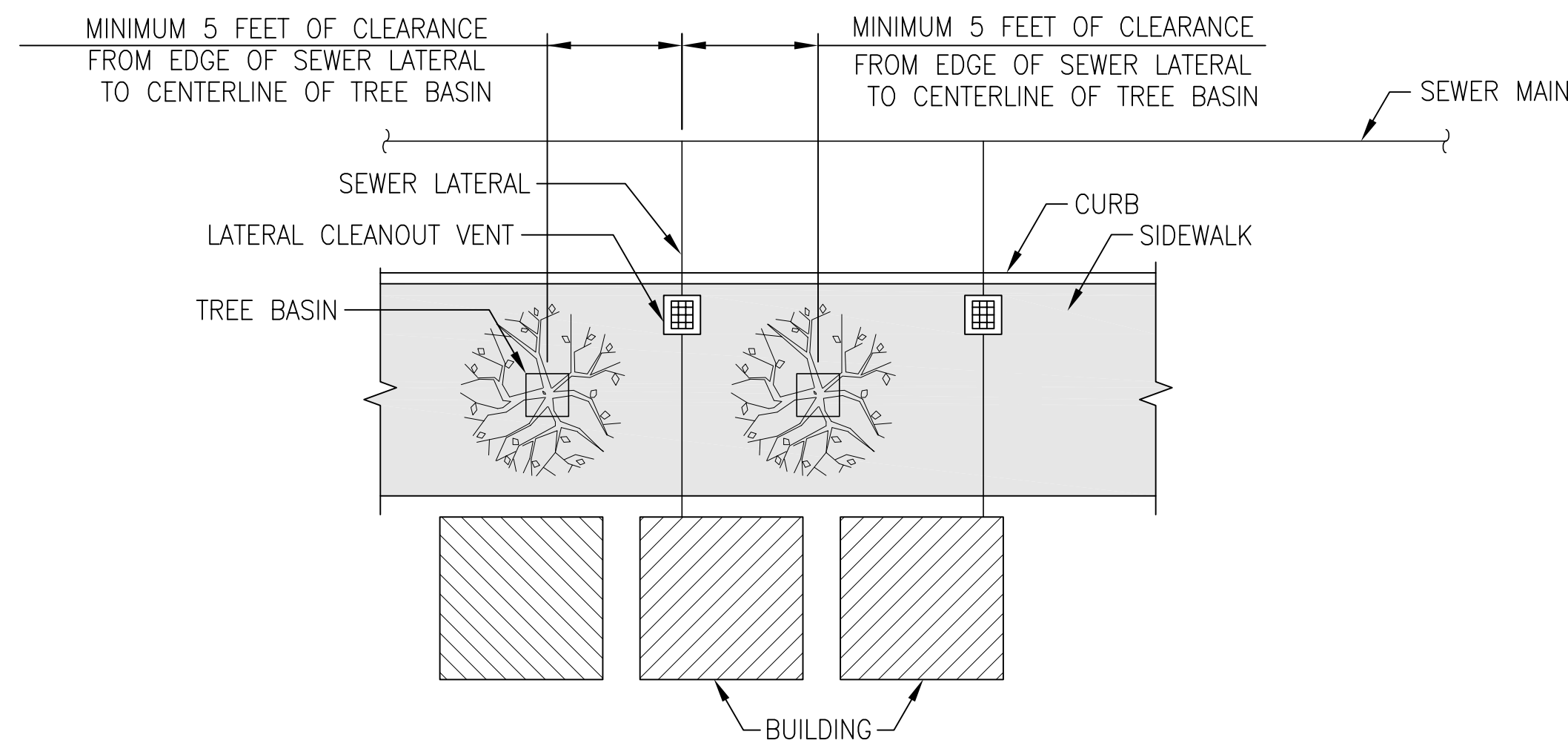
**NOTES:**

1. SEWER LATERAL ALIGNMENT MUST BE PERPENDICULAR TO THE SEWER MAIN AND CONTAINED WITHIN PROPERTY LINES PROJECTED TO THE SEWER MAIN, UNLESS OTHERWISE APPROVED BY SFPUC.
2. A MAXIMUM 2 FOOT DEVIATION IS ALLOWED ON EITHER SIDE OF THEORETICAL PERPENDICULAR ALIGNMENT.

**ALLOWABLE SEWER LATERAL ALIGNMENT DEVIATION FROM PERPENDICULAR**

NOT TO SCALE

1



**NOTE:**

1. MINIMUM CLEARANCE REQUIREMENTS PER SFPUC ORDER NO. 169,946 – SIDEWALK LANDSCAPING GUIDELINES.

**MINIMUM CLEARANCE BETWEEN TREE AND SEWER LATERAL ALIGNMENT IN PUBLIC RIGHT-OF-WAY**

NOT TO SCALE

2

APPLICABLE TO BOTH COMBINED AND SANITARY SEWER SYSTEMS



**SEWER LATERAL STANDARD DETAILS**  
SAN FRANCISCO PUBLIC UTILITIES COMMISSION

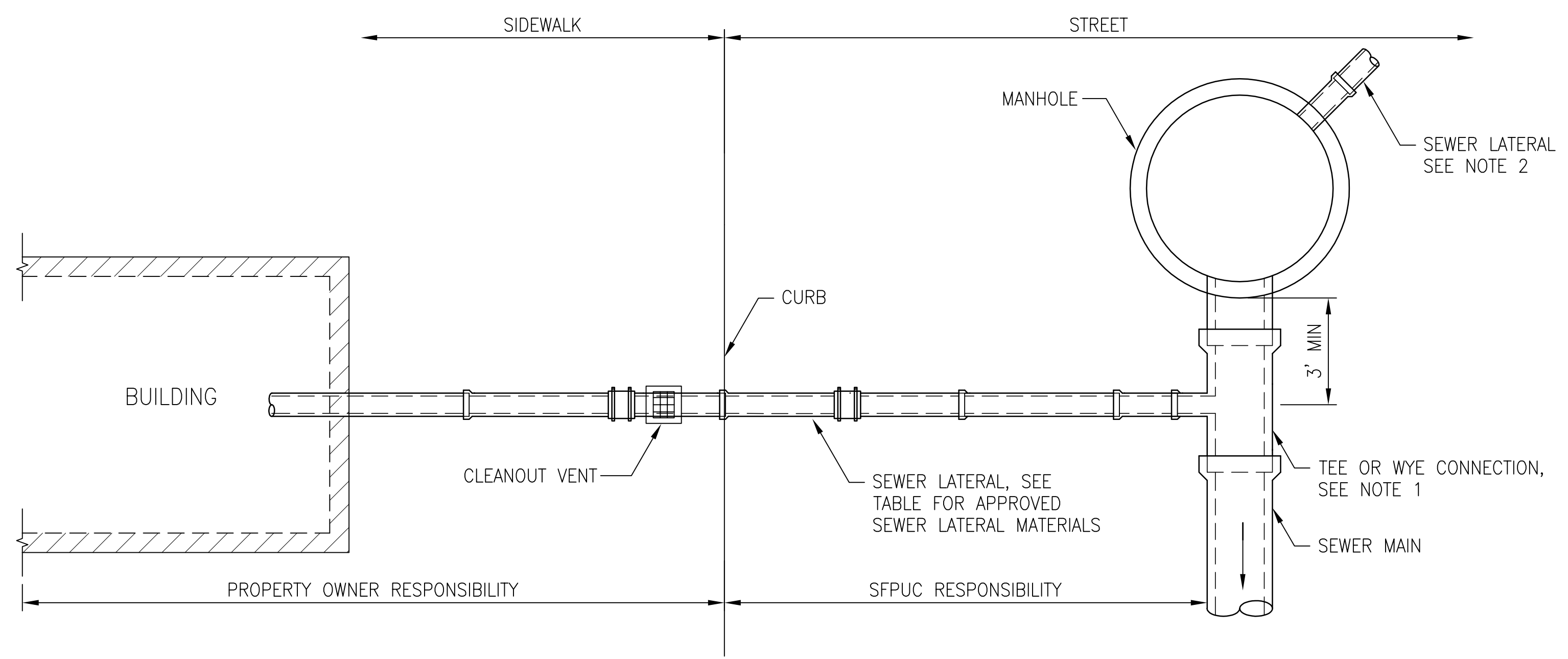
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**TYPICAL SEWER LATERAL CONSTRUCTION - DETAILS**

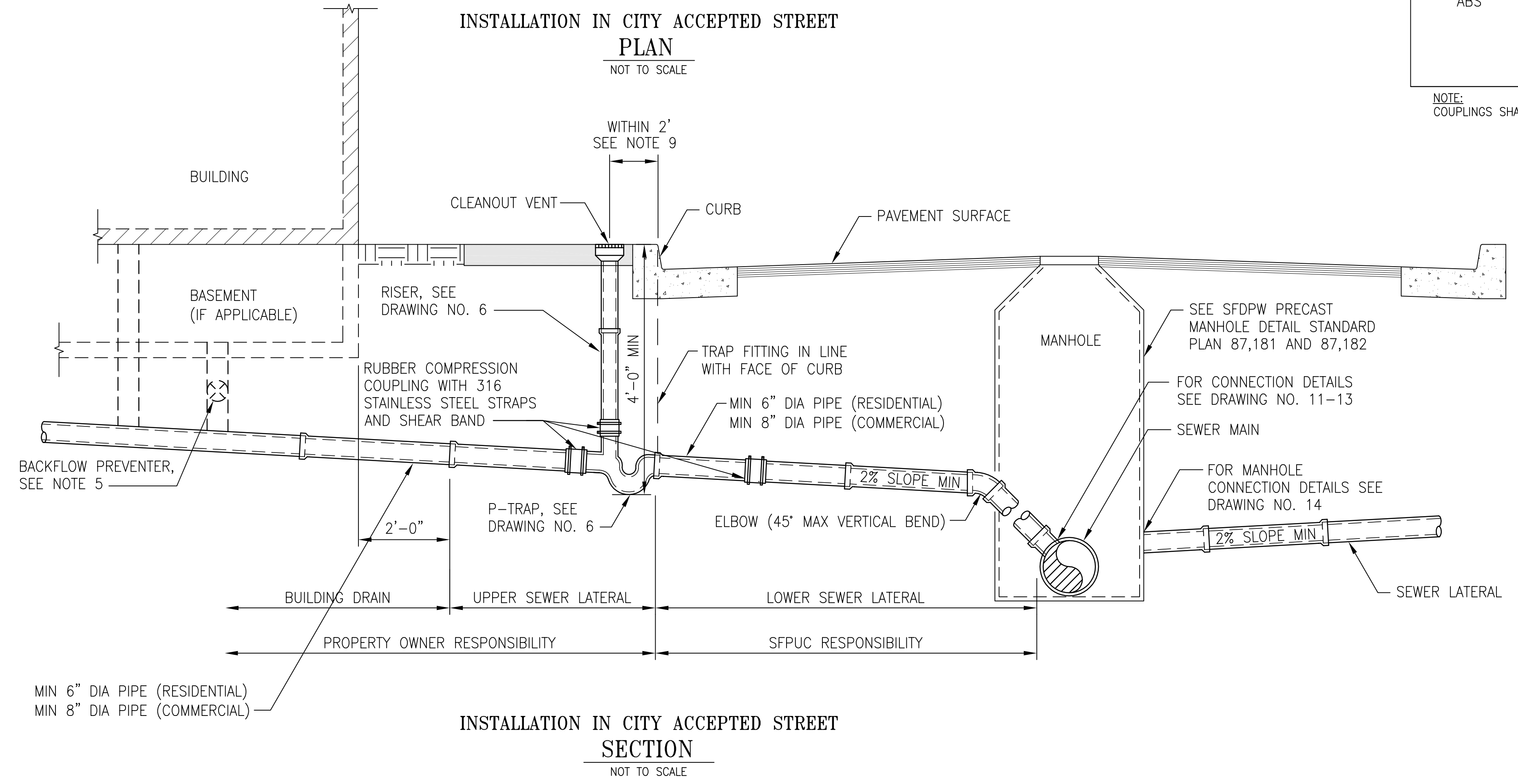
DWG NO.

**4**

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**INSTALLATION IN CITY ACCEPTED STREET  
PLAN**  
NOT TO SCALE



**INSTALLATION IN CITY ACCEPTED STREET  
SECTION**  
NOT TO SCALE

**APPROVED SEWER LATERAL JOINTS**

SEWER LATERAL MATERIAL	VCP	HDPE	ABS	CAST IRON (TRAP)
VCP	<ul style="list-style-type: none"> <li>BELL AND SPIGOT COMPRESSION JOINT MEETING THE REQUIREMENTS OF ASTM C425.</li> <li>FOR PLAIN END PIPE, RUBBER COUPLINGS CAN BE USED</li> </ul>			<ul style="list-style-type: none"> <li>VCP SPIGOT CAN BE USED WITH BELL ON P-TRAP IF CONNECTION IS WATERTIGHT AND MEETS PRESSURE TESTING OF ASTM C425.</li> <li>VCP PLAIN END PIPE CAN CONNECT TO PLAIN END ON P-TRAP USING RUBBER COUPLINGS.</li> </ul>
HDPE		<ul style="list-style-type: none"> <li>BUTT FUSION JOINTS WITH INTERNAL JOINT BEAD REMOVED, MEETING REQUIREMENTS OF ASTM D2657 AND D3261.</li> <li>ELECTRO-FUSION JOINTS USING ELECTRO-FUSION COUPLINGS.</li> <li>BELL &amp; SPIGOT JOINTS ARE NOT ACCEPTABLE</li> </ul>		<ul style="list-style-type: none"> <li>HDPE PIPE CAN CONNECT TO BELL ON A P-TRAP USING RUBBER COUPLING. USE BUSHING TO COUPLE PIPE OF DIFFERENT OUTSIDE DIAMETERS.</li> <li>HDPE PIPE CAN CONNECT TO THE PLAIN END ON A P-TRAP USING RUBBER COUPLING. USE BUSHING TO COUPLE PIPE OF DIFFERENT OUTSIDE DIAMETERS.</li> </ul>
ABS			<ul style="list-style-type: none"> <li>PLAIN END PIPE AND SOCKETS SHALL BE JOINED USING SOLVENT CEMENT MEETING THE REQUIREMENTS OF ASTM D2661.</li> <li>PLAIN END PIPE CAN CONNECT TO PLAIN END PIPE USING A RUBBER COUPLING.</li> </ul>	<ul style="list-style-type: none"> <li>ABS PLAIN END PIPE CAN BE USED WITH BELL ON P-TRAP IF CONNECTION IS WATERTIGHT AND MEETS PRESSURE TESTING OF ASTM C425.</li> <li>ABS PLAIN END PIPE CAN CONNECT TO PLAIN END ON P-TRAP USING RUBBER COUPLING. USE BUSHING TO COUPLE PIPE OF DIFFERENT OUTSIDE DIAMETERS.</li> </ul>

NOTE: COUPLINGS SHALL BE RUBBER COMPRESSION COUPLINGS, MINIMUM 5-INCH LONG, WITH STAINLESS STEEL BANDS IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM C425

**APPROVED SEWER LATERAL MATERIALS**

SEWER LATERAL MATERIAL	UPPER LATERAL	LOWER LATERAL
VCP	YES	YES
HDPE	YES	YES
ABS	YES	NO

**NOTES:**

- MANUFACTURED TEES ARE REQUIRED FOR CONNECTION TO SEWER MAINS LESS THAN 12" DIAMETER.
- SEWER LATERALS 10" DIAMETER AND GREATER CONNECTING TO SEWER MAINS LESS THAN 42" DIAMETER SHALL CONNECT DIRECTLY TO A MANHOLE. IF THERE IS NO MANHOLE TO CONNECT TO, A NEW MANHOLE SHALL BE CONSTRUCTED BASED ON SFPDW STANDARD DETAIL 87,181 THROUGH 87,186.
- CLEANOUT SHALL BE THE PROPERTY OWNERS RESPONSIBILITY.
- OWNER MUST ACQUIRE ALL NECESSARY PERMITS FROM APPLICABLE AGENCIES PRIOR TO CONSTRUCTION.
- A BACKFLOW PREVENTER IS REQUIRED IF THE ELEVATION OF THE FIXTURE IS LOWER THAN THE ELEVATION OF THE CLEANOUT VENT COVER. THIS REQUIREMENT IS FROM THE MOST RECENT SAN FRANCISCO PLUMBING CODE, CHAPTER 7.
- A CLEANOUT IN THE COMBINED SEWER SYSTEM AND SANITARY SEWER SYSTEM CONSISTS OF THE P-TRAP, RISER AND VENT.
- A FITTING SHALL BE TRIMMED NEAT WITH INTERIOR OF SEWER MAIN.
- SEWER LATERALS SHALL BE INSTALLED WITH NO ABRUPT VERTICAL OR HORIZONTAL SLOPE CHANGES.
- POSITIVE SURFACE SLOPE SHALL BE MAINTAINED FROM VENT TO GUTTER.
- THE LOWER SEWER LATERAL SHALL NOT "ZIG-AND-ZAG" TO AVOID OBSTRUCTIONS. THE ELBOW FITTING TO TURN THE LATERAL VERTICALLY DOWN TO THE SEWER MAIN IS THE ONLY ALLOWABLE FITTING. IF THE LOWER LATERAL MUST BE LOWERED TO AVOID AN EXISTING OBSTRUCTION, TWO ELBOW FITTINGS WILL BE ALLOWED WITH ONE IMMEDIATELY AFTER THE P-TRAP.

**APPLICABLE TO COMBINED SEWER SYSTEM AND SANITARY SEWER SYSTEM**



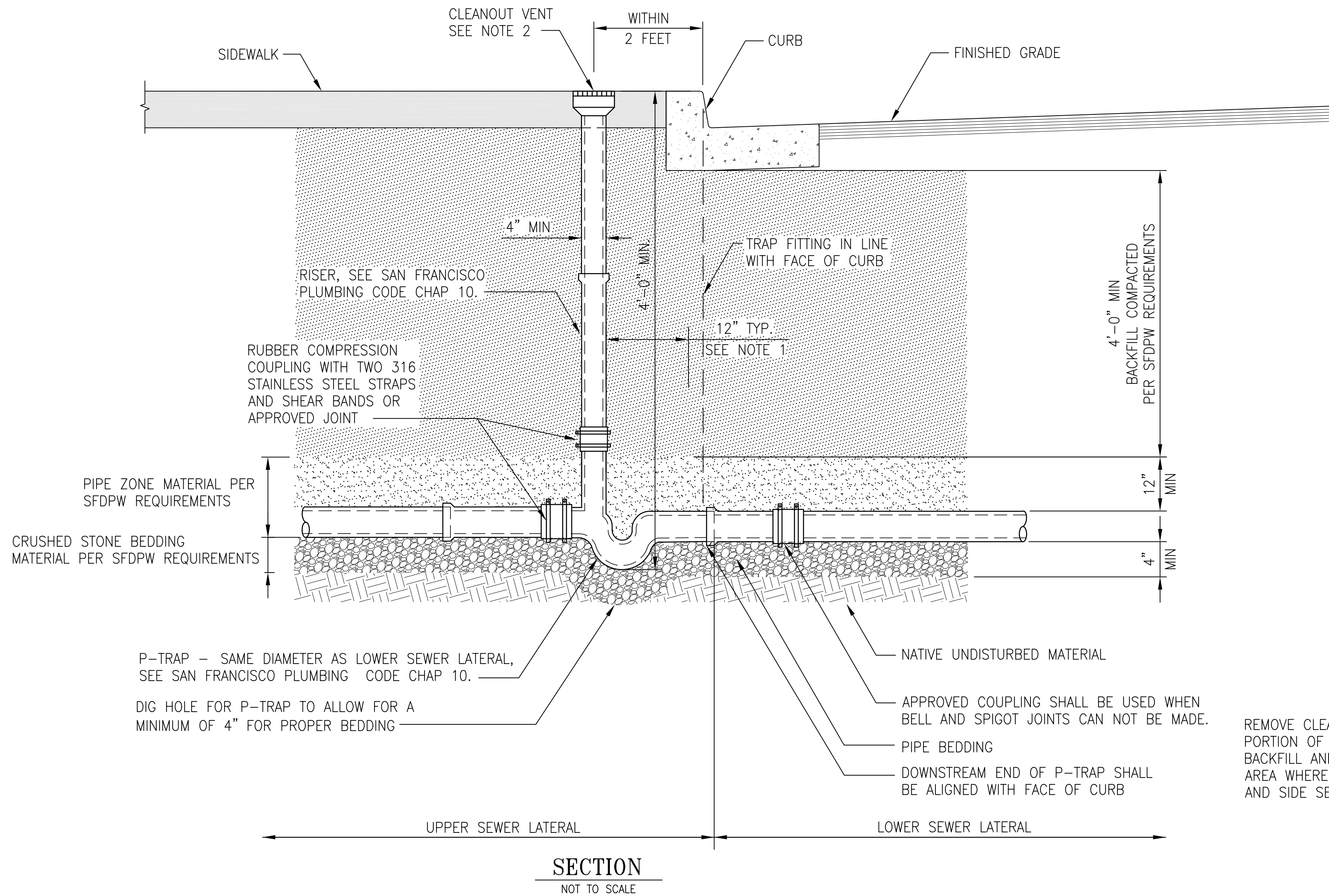
**SEWER LATERAL STANDARD DETAILS**  
SAN FRANCISCO PUBLIC UTILITIES COMMISSION

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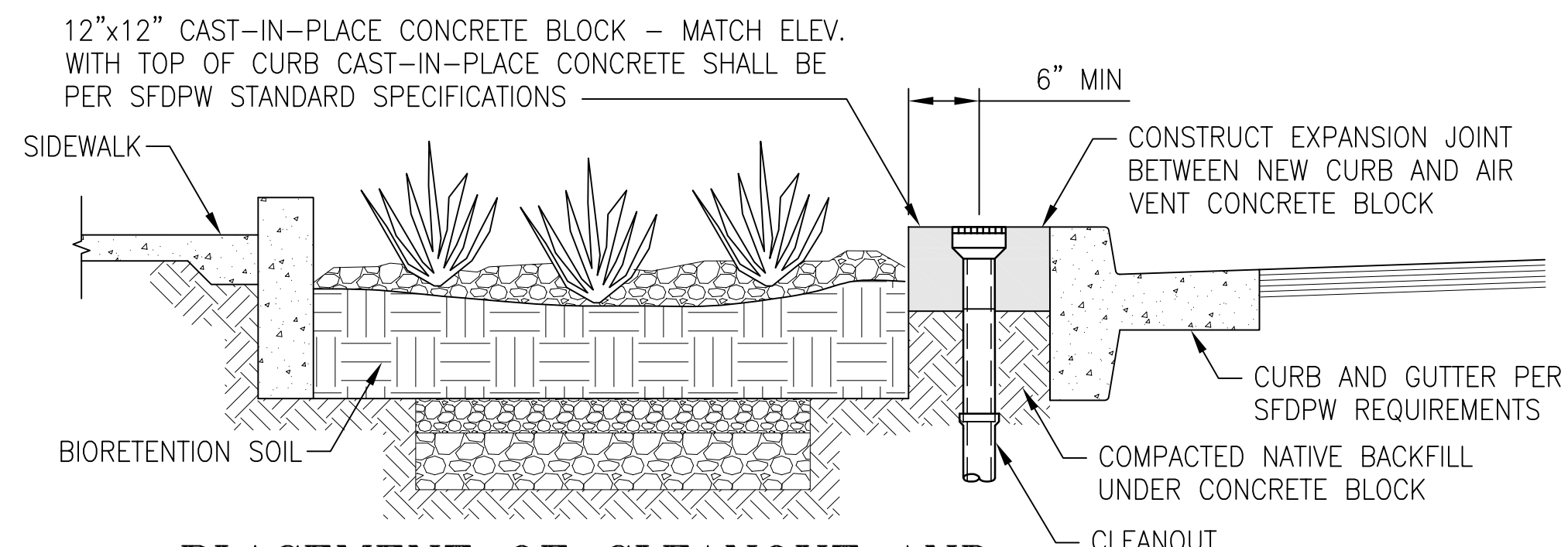
**TYPICAL SEWER LATERAL INSTALLATION IN COMBINED SEWER SYSTEM AND SANITARY SEWER SYSTEM**



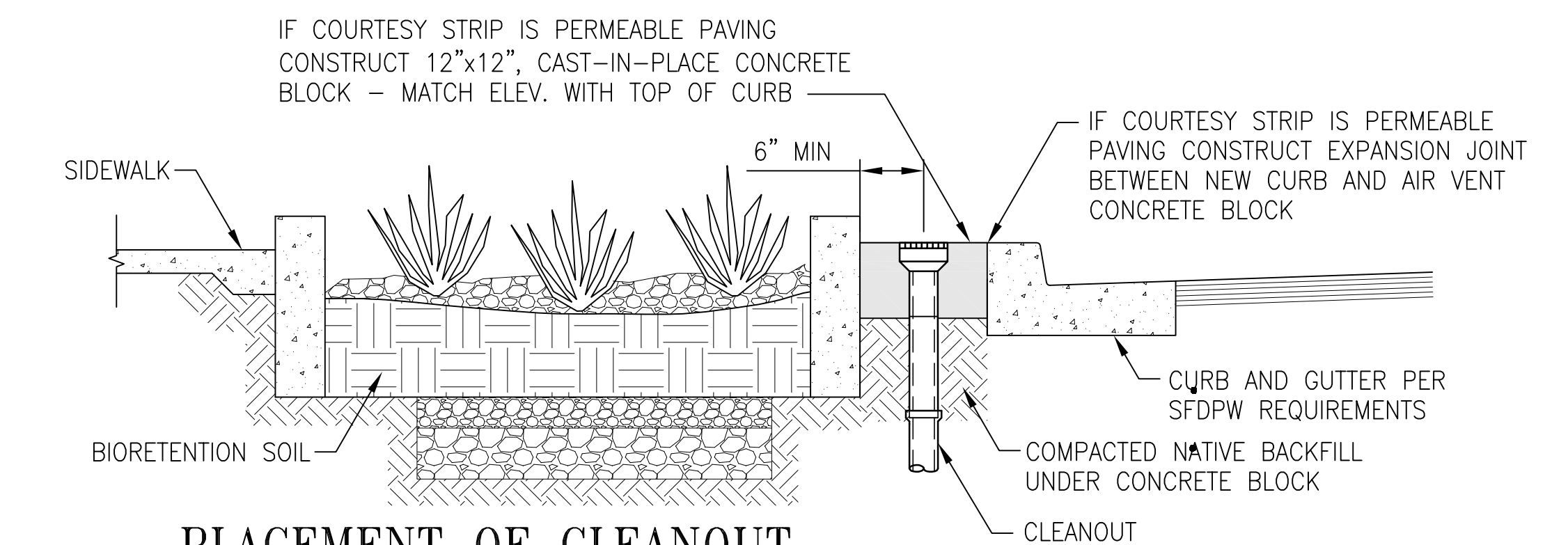
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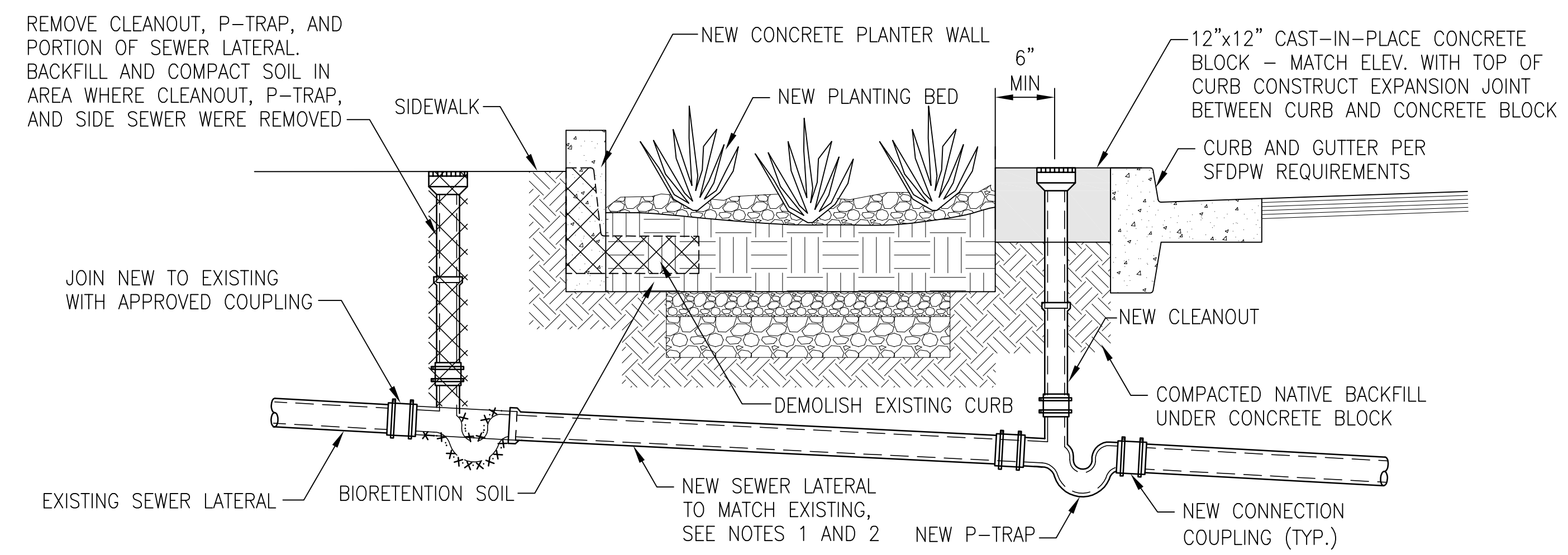
- NOTES:**
1. PLACE A MINIMUM OF 12" BACKFILL ALL AROUND THE OUTSIDE DIAMETER OF THE RISER. BACKFILL SHALL BE IN ACCORDANCE WITH SFPDW STANDARD SPECIFICATIONS.
  2. CLEANOUT VENT SHALL NOT BE LESS THAN 5.5 SQUARE INCHES WITH 3/8-INCH DIAMETER PERFORATIONS PER CHAPTER 10 OF THE MOST RECENT CALIFORNIA PLUMBING CODE AND SAN FRANCISCO PLUMBING CODE AMENDMENTS.
  3. CONTRACTOR SHALL REPAIR/RESTORE EXISTING PAVEMENT PER SFPDW EXCAVATION REGULATIONS.
  4. REFER TO SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS SPECIFICATION PART 7, FOR BEDDING, BACKFILL AND COMPACTION REQUIREMENTS ASSOCIATED WITH RIGID AND FLEXIBLE PIPING.
  5. REFER TO DRAWING NO. 14 FOR TRENCH DETAIL.
  6. PROPERTY OWNER MUST ACQUIRE ALL NECESSARY PERMITS FROM SFPUC, SFDBI AND SFPDW PRIOR TO CONSTRUCTION.
  7. THE CLEANOUT IN THE COMBINED SEWER SYSTEM AND SANITARY SEWER SYSTEM CONSISTS OF THE P-TRAP, RISER AND VENT.



**PLACEMENT OF CLEANOUT AND BIORETENTION PLANTER WITHOUT COURTESY STRIP** 1  
NOT TO SCALE



**PLACEMENT OF CLEANOUT AND BIORETENTION PLANTER WITH COURTESY STRIP** 2  
NOT TO SCALE



**RELOCATION OF CLEANOUT ASSOCIATED WITH BIORETENTION PLANTER CONSTRUCTION** 3  
NOT TO SCALE

- NOTES:**
1. SEWER LATERALS LOCATED UNDER BIORETENTION PLANTERS SHALL BE PROTECTED IN ACCORDANCE WITH SFPUC GREEN STORMWATER INFRASTRUCTURE TYPICAL DETAILS.
  2. THE WALL PENETRATION DETAIL FOR SEWER LATERALS IN THE SFPUC GREEN STORMWATER INFRASTRUCTURE TYPICAL DETAILS SHALL BE USED IF THE LATERAL CROSSES THE BIORETENTION PLANTER WALL.

APPLICABLE TO COMBINED  
SEWER SYSTEM AND  
SANITARY SEWER SYSTEM



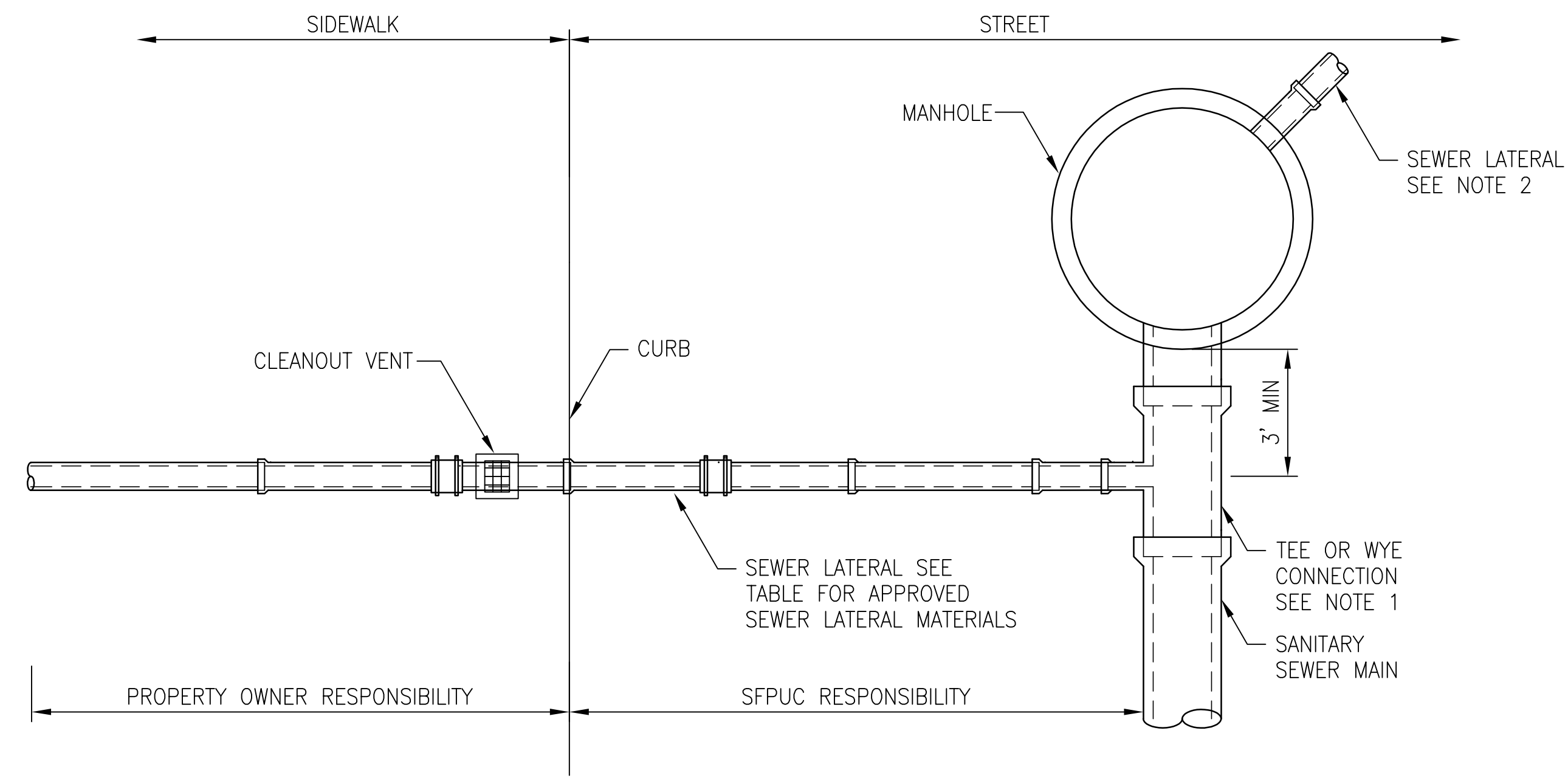
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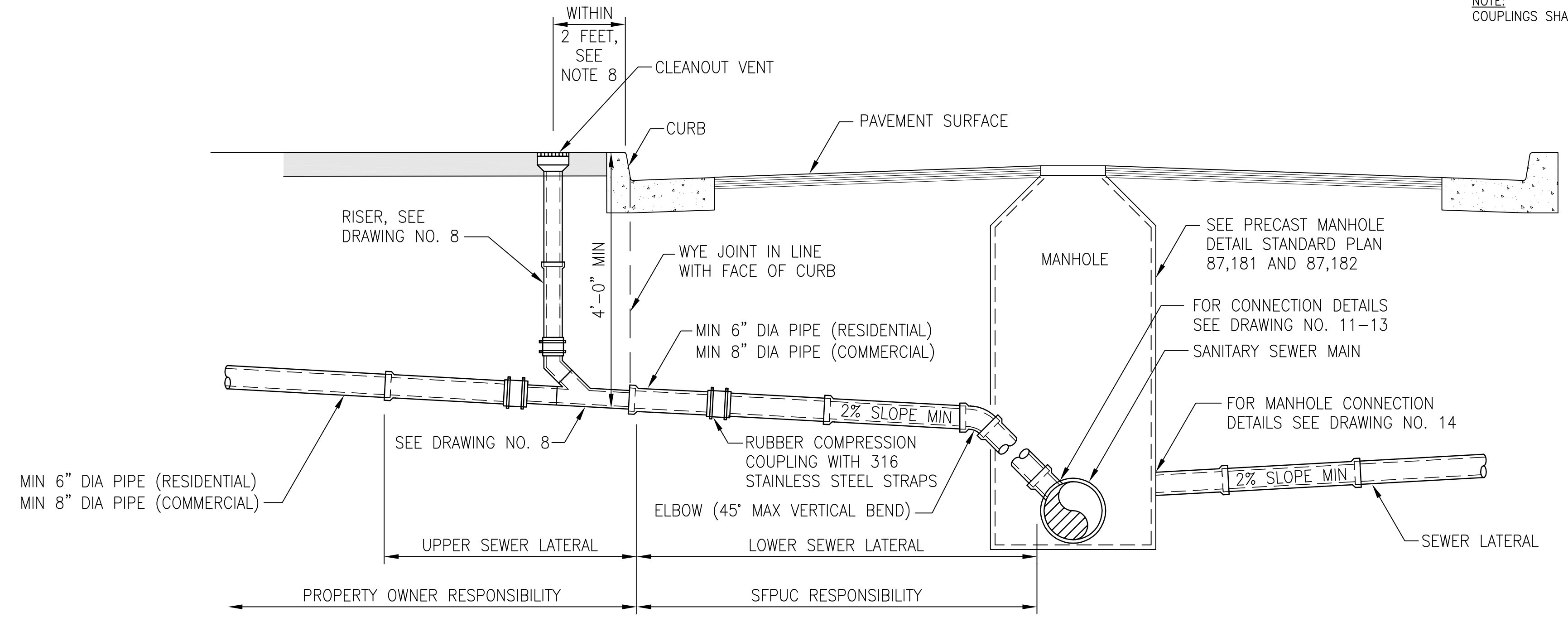
**CLEANOUT IN COMBINED SEWER SYSTEM  
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**APPROVED SEWER LATERAL JOINTS**

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**APPROVED SEWER LATERAL MATERIALS**

SEWER LATERAL MATERIAL	UPPER LATERAL	LOWER LATERAL
VCP	YES	YES
HDPE	YES	YES
ABS	YES	NO

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APPLICABLE TO STORM  
SEWER SYSTEM ONLY



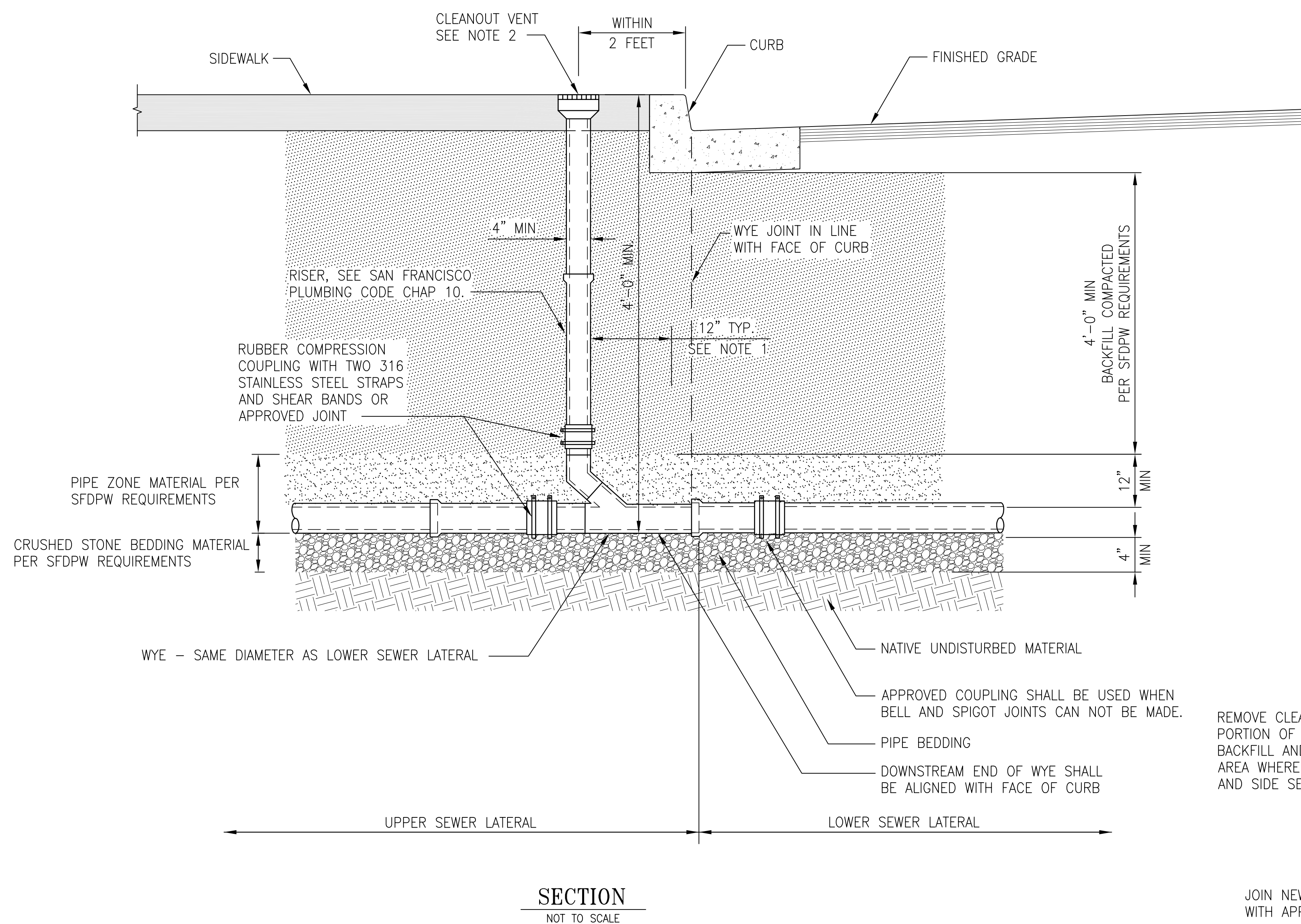
**SEWER LATERAL  
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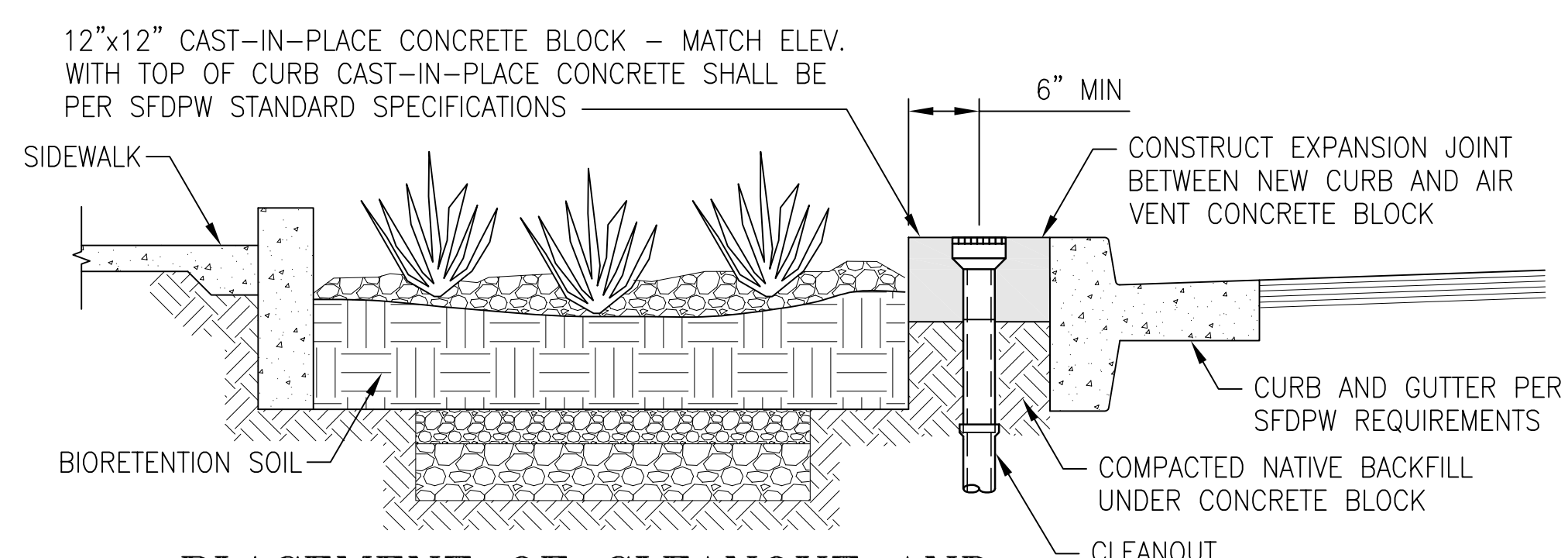
**TYPICAL SEWER LATERAL INSTALLATION  
IN STORM SEWER SYSTEM**



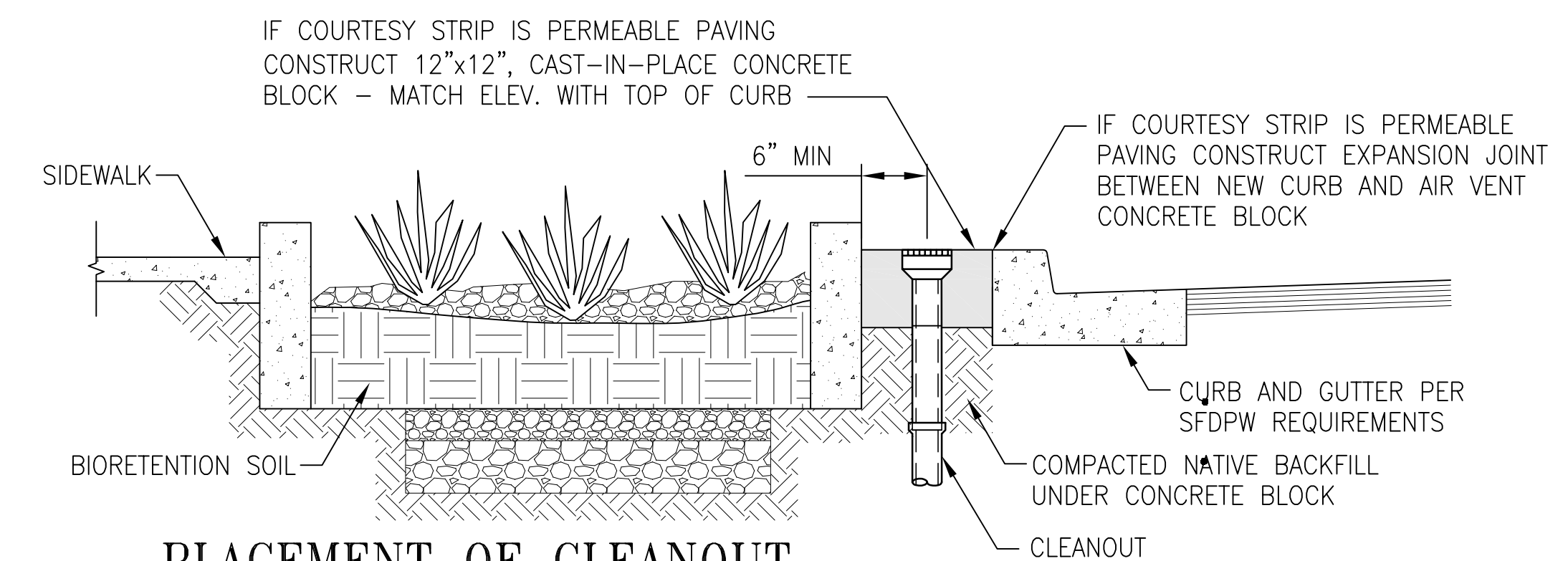
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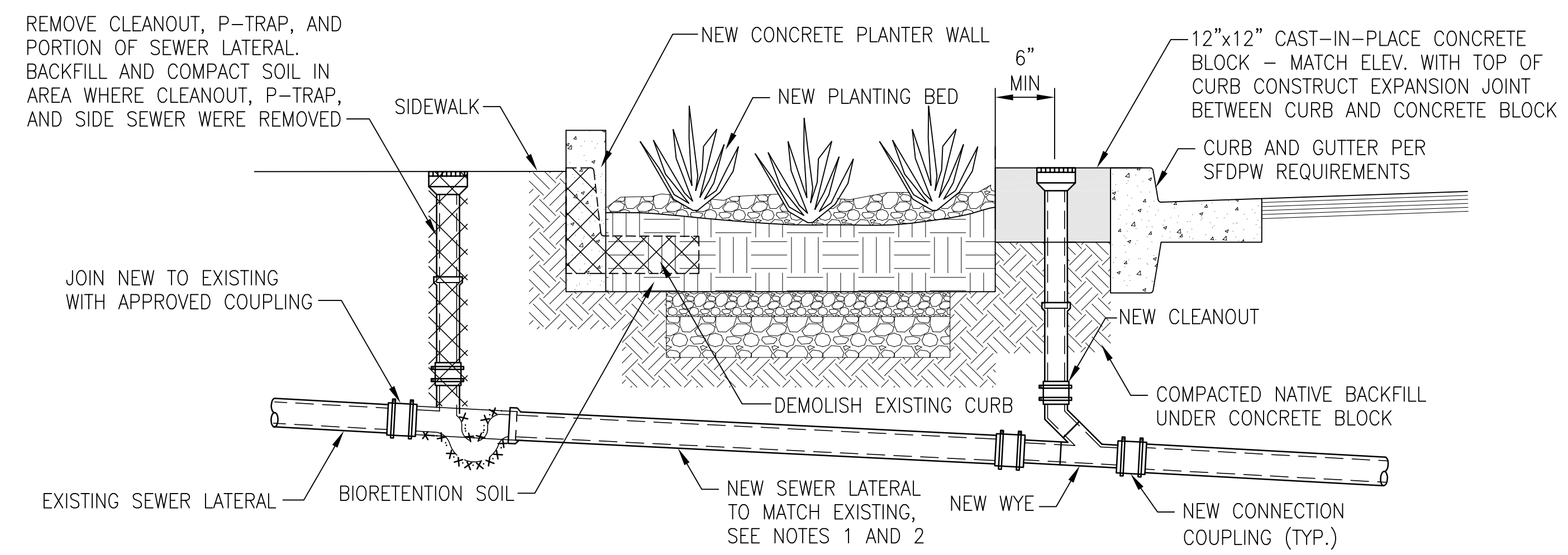
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  3. CONTRACTOR SHALL REPAIR/RESTORE EXISTING PAVEMENT PER SFPUC EXCAVATION REGULATIONS.
  4. REFER TO SAN FRANCISCO DEPARTMENT OF PUBLIC WORKS SPECIFICATION PART 7, FOR BEDDING, BACKFILL AND COMPACTION REQUIREMENTS ASSOCIATED WITH RIGID AND FLEXIBLE PIPING.
  5. REFER TO DRAWING NO. 14 FOR TRENCH DETAIL.
  6. PROPERTY OWNER MUST ACQUIRE ALL NECESSARY PERMITS FROM SFPUC, SFDBI AND SFPDW PRIOR TO CONSTRUCTION.
  7. THE CLEANOUT IN THE STORM SEWER SYSTEM CONSISTS OF THE WYE, RISER AND VENT.



**PLACEMENT OF CLEANOUT AND BIORETENTION PLANTER WITHOUT COURTESY STRIP** 1  
NOT TO SCALE



**PLACEMENT OF CLEANOUT AND BIORETENTION PLANTER WITH COURTESY STRIP** 2  
NOT TO SCALE



**RELOCATION OF CLEANOUT ASSOCIATED WITH BIORETENTION PLANTER CONSTRUCTION** 3  
NOT TO SCALE

- NOTES:**
1. SEWER LATERALS LOCATED UNDER BIORETENTION PLANTERS SHALL BE PROTECTED IN ACCORDANCE WITH SFPUC GREEN STORMWATER INFRASTRUCTURE TYPICAL DETAILS.
  2. THE WALL PENETRATION DETAIL FOR SEWER LATERALS IN THE SFPUC GREEN STORMWATER INFRASTRUCTURE TYPICAL DETAILS SHALL BE USED IF THE LATERAL CROSSES THE BIORETENTION PLANTER WALL.

APPLICABLE TO STORM SEWER SYSTEM ONLY



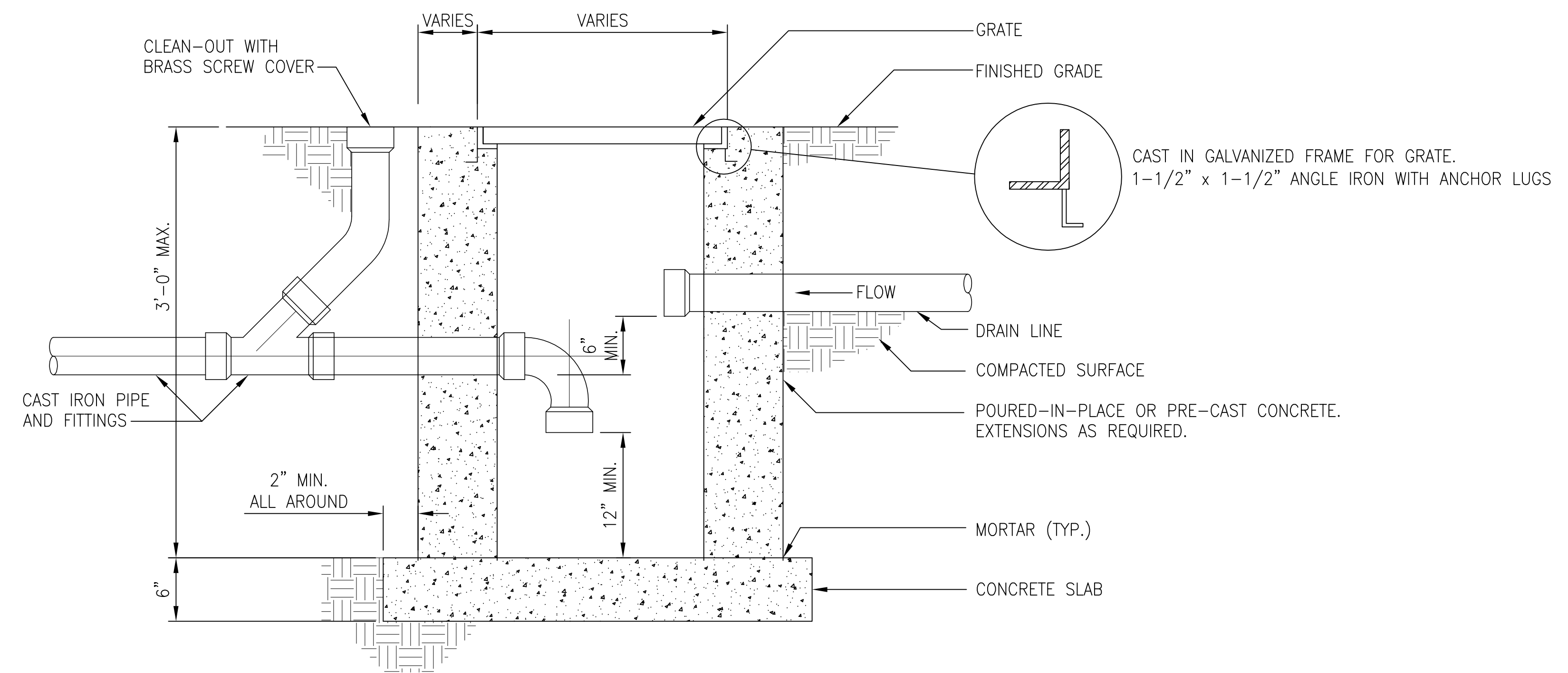
**SEWER LATERAL  
STANDARD DETAILS**  
SAN FRANCISCO PUBLIC UTILITIES COMMISSION

DATE MAY 2017	REVISION 1.0	REVISED
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**CLEANOUT IN STORM SEWER SYSTEM**



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CATCH BASIN/SAND TRAP  
WITH CLEANOUT DETAIL  
NOT TO SCALE

1



**SEWER LATERAL  
STANDARD DETAILS**  
SAN FRANCISCO PUBLIC UTILITIES COMMISSION

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**CATCH BASIN/SAND TRAP WITH  
CLEANOUT IN STORM SEWER SYSTEM**



**SEWER LATERAL CONNECTION SCHEDULE**

	SEWER MAIN MATERIAL	SEWER MAIN DIAMETER	LOWER SEWER LATERAL MATERIAL	ALLOWABLE CONNECTION TYPE	REFERENCE DRAWING AND DETAIL NO.
CONNECTION TO NEW OR EXISTING SEWER MAIN	VCP	8"-10" DIAMETER	VCP	TYPE 1 - VCP TEE BELL END (NEW SEWER MAIN CONSTRUCTION) TYPE 2 - VCP TEE PLAIN END CONNECTION (NEW SEWER MAIN CONSTRUCTION) TYPE 3 - VCP/ISP TEE WITH APPROVED COUPLINGS (CONNECTION TO EXISTING SEWER MAIN)	DRAWING NO. 11 DETAIL 1 DRAWING NO. 11 DETAIL 2 DRAWING NO. 11 DETAIL 3
			HDPE	TYPE 2 - VCP TEE PLAIN END CONNECTION (NEW SEWER MAIN CONSTRUCTION) TYPE 3 - VCP/ISP TEE WITH APPROVED COUPLINGS (CONNECTION TO EXISTING SEWER MAIN)	DRAWING NO. 11 DETAIL 2 DRAWING NO. 11 DETAIL 3
		12"-18" DIAMETER	VCP	TYPE 1 - VCP TEE BELL END (NEW SEWER MAIN CONSTRUCTION) TYPE 2 - VCP TEE PLAIN END CONNECTION (NEW SEWER MAIN CONSTRUCTION) TYPE 3 - VCP/ISP TEE WITH APPROVED COUPLINGS (CONNECTION TO EXISTING SEWER MAIN) TYPE 5 - TAP-TITE FITTING (CONNECTION TO EXISTING SEWER MAIN) (SEE NOTE 2)	DRAWING NO. 11 DETAIL 1 DRAWING NO. 11 DETAIL 2 DRAWING NO. 11 DETAIL 3 DRAWING NO. 11 DETAIL 5
			HDPE	TYPE 5 - TAP-TITE FITTING CONNECTION TO EXISTING SEWER MAIN (SEE NOTE 2)	DRAWING NO. 11 DETAIL 5
		24"-36" DIAMETER	VCP	TYPE 1 - VCP TEE BELL END (NEW SEWER MAIN CONSTRUCTION) TYPE 2 - VCP TEE PLAIN END CONNECTION (NEW SEWER MAIN CONSTRUCTION) TYPE 3 - VCP/ISP TEE WITH APPROVED COUPLINGS (CONNECTION TO EXISTING SEWER MAIN) TYPE 5 - TAP-TITE FITTING (CONNECTION TO EXISTING SEWER MAIN) (SEE NOTE 2)	DRAWING NO. 11 DETAIL 1 DRAWING NO. 11 DETAIL 2 DRAWING NO. 11 DETAIL 3 DRAWING NO. 11 DETAIL 5
			HDPE	TYPE 5 - TAP-TITE FITTING (CONNECTION TO EXISTING SEWER MAIN) (SEE NOTE 2)	DRAWING NO. 11 DETAIL 5
	ISP	8"-10" DIAMETER	VCP	TYPE 3 - VCP/ISP TEE WITH APPROVED COUPLINGS (CONNECTION TO EXISTING SEWER MAIN)	DRAWING NO. 11 DETAIL 3
			HDPE	TYPE 3 - VCP/ISP TEE WITH APPROVED COUPLINGS (CONNECTION TO EXISTING SEWER MAIN)	DRAWING NO. 11 DETAIL 3
		12"-24" DIAMETER	VCP	TYPE 3 - VCP/ISP TEE WITH APPROVED COUPLINGS (CONNECTION TO EXISTING SEWER MAIN) TYPE 5 - TAP-TITE FITTING (CONNECTION TO EXISTING SEWER MAIN) (SEE NOTE 2)	DRAWING NO. 11 DETAIL 3 DRAWING NO. 11 DETAIL 5
			HDPE	TYPE 3 - VCP/ISP TEE WITH APPROVED COUPLINGS (CONNECTION TO EXISTING SEWER MAIN) TYPE 5 - TAP-TITE FITTING (CONNECTION TO EXISTING SEWER MAIN) (SEE NOTE 2)	DRAWING NO. 11 DETAIL 3 DRAWING NO. 11 DETAIL 5
	HDPE	VARIES	HDPE	TYPE 4- HDPE SADDLE (CONNECTION TO NEW OR EXISTING SEWER MAIN)	DRAWING NO. 11 DETAIL 4
	BRICK	VARIES	VCP	TYPE 6 - VCP BELL STUB CONNECTION (CONNECTION TO NEW OR EXISTING SEWER MAIN)	DRAWING NO. 11 DETAIL 6
			HDPE	TYPE 7 - VCP PLAIN END STUB AND APPROVED COUPLING CONNECTION (CONNECTION TO NEW OR EXISTING SEWER MAIN)	DRAWING NO. 12 DETAIL 7
	RCP	VARIES	VCP	TYPE 5 - TAP-TITE FITTING CONNECTION TO EXISTING SEWER MAIN, SEE NOTE 2 TYPE 8 - VCP BELL STUB CONNECTION (CONNECTION TO NEW OR EXISTING RCP/RC SEWER MAIN) TYPE 9 - VCP CONCRETE COLLAR CONNECTION (CONNECTION TO NEW OR EXISTING RCP SEWER MAIN)	DRAWING NO. 11 DETAIL 5 DRAWING NO. 12 DETAIL 8 DRAWING NO. 12 DETAIL 9
			HDPE	TYPE 5 - TAP-TITE FITTING CONNECTION TO EXISTING SEWER MAIN, SEE NOTE 2 TYPE 10- VCP PLAIN END STUB AND APPROVED COUPLING CONNECTION (CONNECTION TO NEW OR EXISTING RCP/RCSEWER MAIN)	DRAWING NO. 11 DETAIL 5 DRAWING NO. 12 DETAIL 10
VARIES	VARIES	CIPP	TYPE 16 - CONNECTION BETWEEN NEW SEWER LATERAL AND LINED SEWER MAIN	DRAWING NO. 13 DETAIL 16	
CONNECTION TO REHABILITATED SEWER MAIN	FIBERGLASS SLIPLINED PIPE	VARIES	VARIES	TYPE 11 - TAP-TITE FITTING (OR EQUAL) FOR FIBERGLASS SLIPLINED CONNECTION (SEWER MAIN REHABILITATION)	DRAWING NO. 13 DETAIL 11
	HDPE SLIPLINED PIPE	VARIES	VARIES	TYPE 12 - HDPE SADDLE FOR HDPE SLIPLINED PIPE CONNECTION (SEWER MAIN REHABILITATION)	DRAWING NO. 13 DETAIL 12
	CURED-IN-PLACE PIPE LINER	VARIES	VARIES	TYPE 13 - TAP-TITE FITTING (OR EQUAL) FOR CURED-IN-PLACE PIPE LINER CONNECTION (SEWER MAIN REHABILITATION)	DRAWING NO. 13 DETAIL 13
	VCP AND ISP	24" AND SMALLER	VARIES	TYPE 14 - CONNECTION BETWEEN EXISTING SEWER LATERAL AND SMALL SEWER MAIN BEING LINED	DRAWING NO. 13 DETAIL 14
	VCP, BRICK AND RCP	LARGER THAN 24"	VARIES	TYPE 15- CONNECTION BETWEEN EXISTING SEWER LATERAL AND LARGE SEWER MAIN BEING LINED	DRAWING NO. 13 DETAIL 15

**NOTES:**

- APPROVED COUPLINGS SHALL BE PER SFDPW STANDARD SPECIFICATIONS, PART 3.
- CONNECTING SEWER MAIN MUST BE AT LEAST DOUBLE THE DIAMETER OF THE SEWER LATERAL FOR CORE DRILL TYPE CONNECTIONS (TAP-TITE OR EQUAL).

**APPLICABLE TO BOTH COMBINED AND SANITARY SEWER SYSTEMS**



**SEWER LATERAL STANDARD DETAILS**  
SAN FRANCISCO PUBLIC UTILITIES COMMISSION

DATE: MAY 2017      REVISION: 1.0      REVISED:

**SEWER LATERAL CONNECTION SCHEDULE**

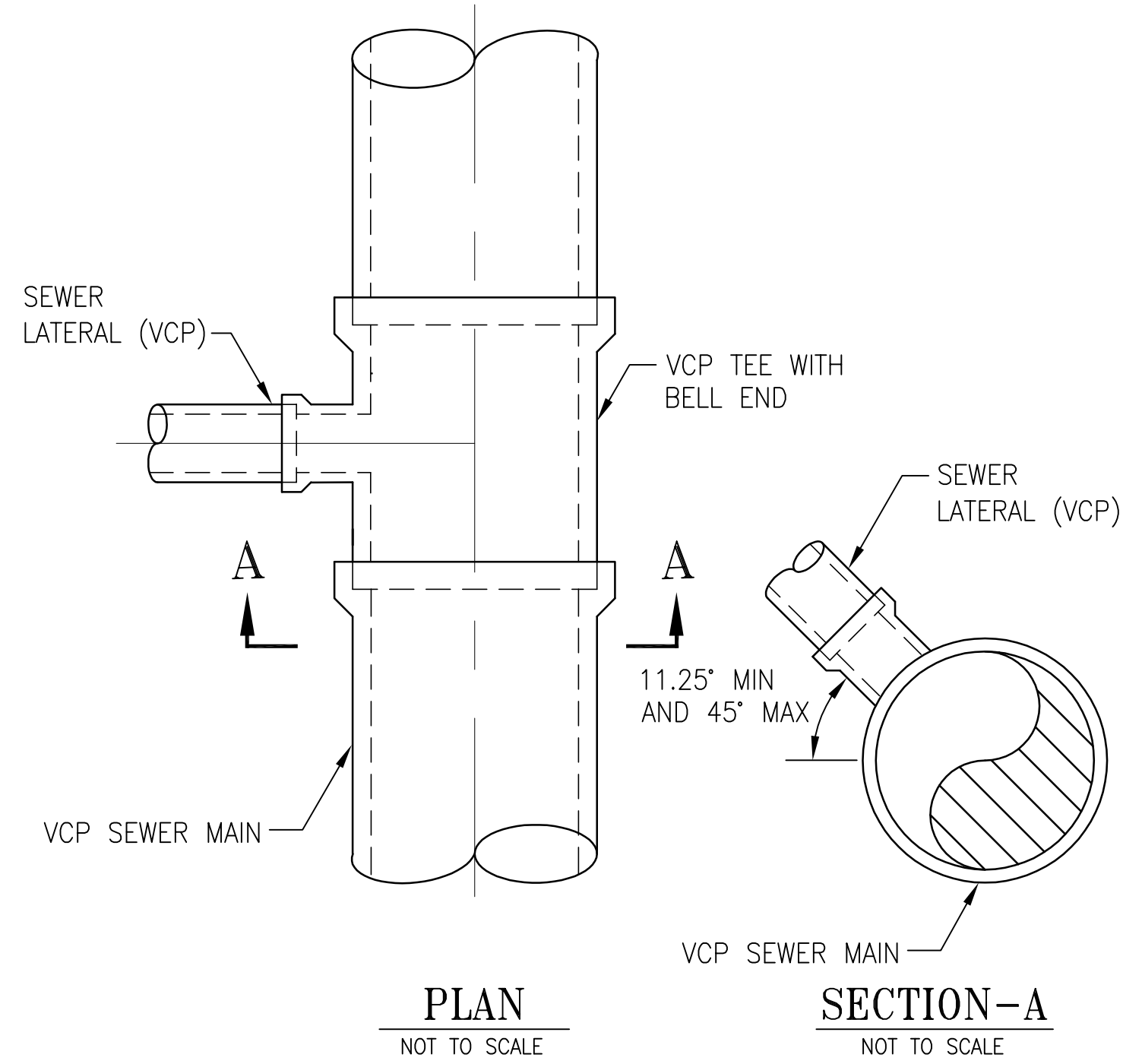
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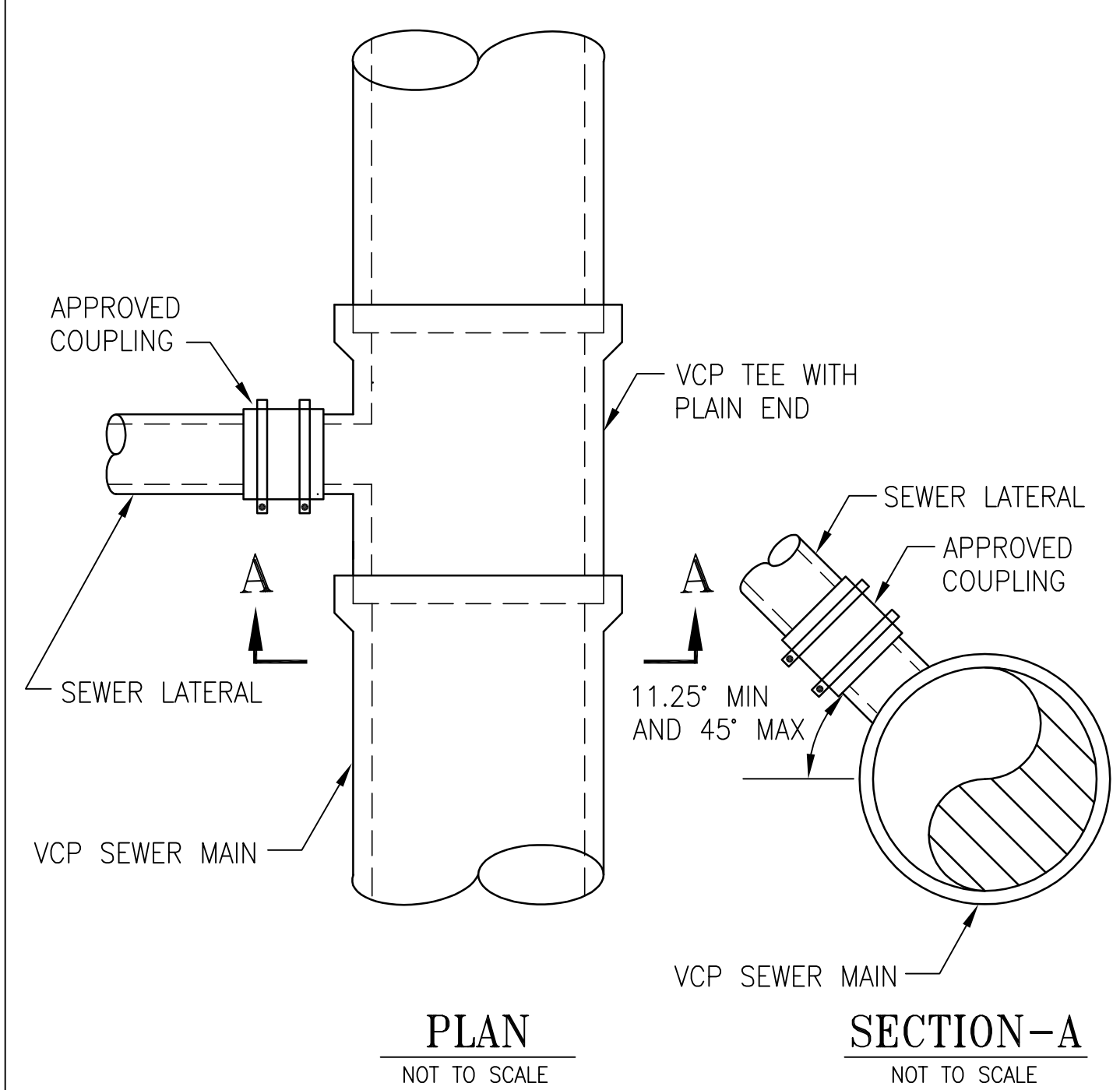
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**TYPE 1 - VCP TEE BELL END CONNECTION  
(NEW SEWER MAIN CONSTRUCTION)**

NOT TO SCALE

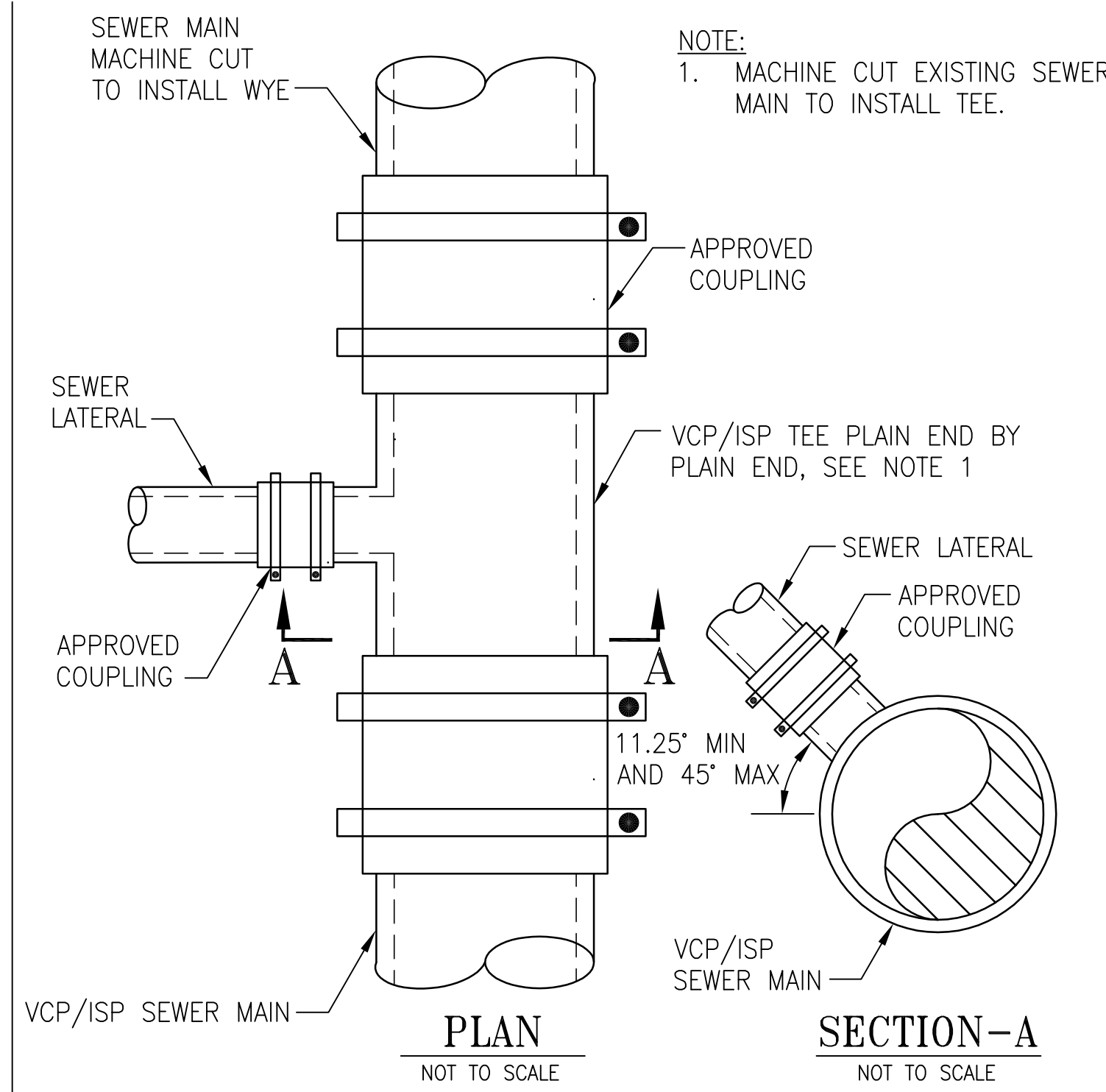
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**TYPE 2 - VCP TEE PLAIN END CONNECTION  
(NEW SEWER MAIN CONSTRUCTION)**

NOT TO SCALE

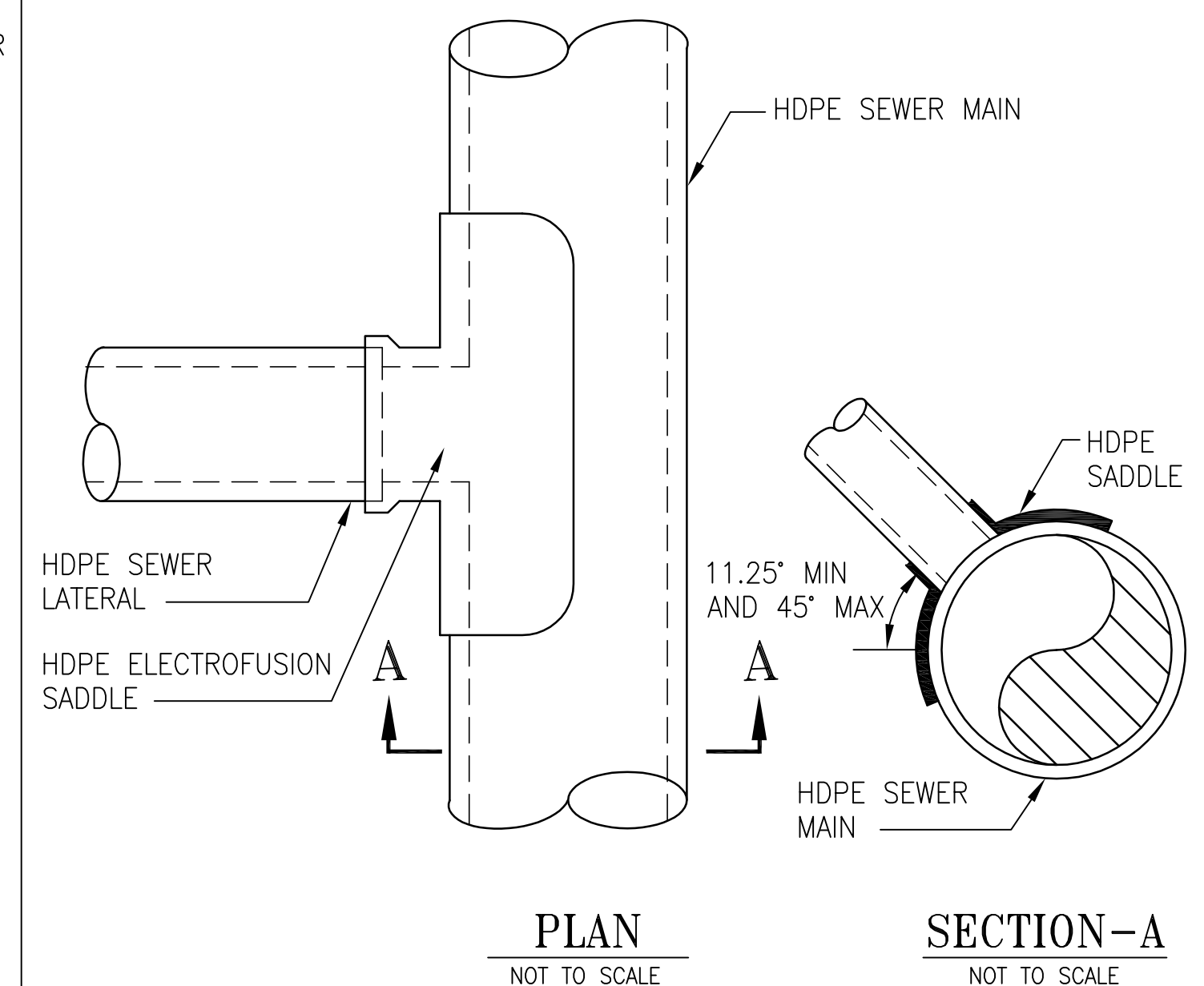
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**TYPE 3 - VCP/ISP TEE W/APPROVED COUPLINGS  
(CONNECTION TO EXISTING SEWER MAIN)**

NOT TO SCALE

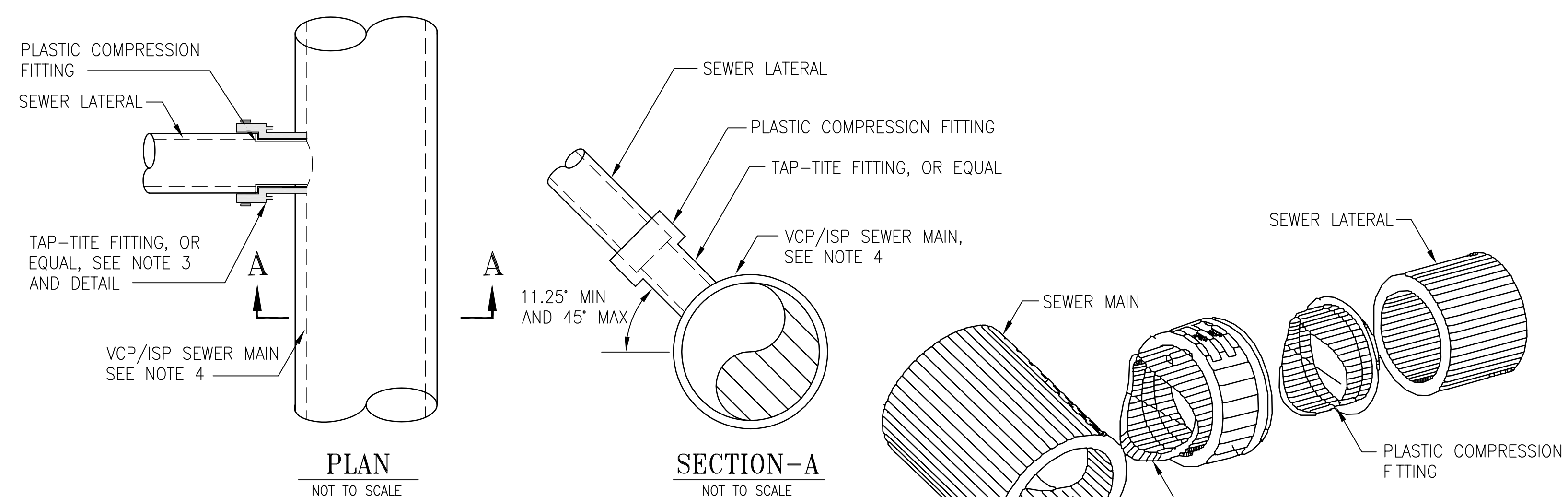
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**TYPE 4 - HDPE SADDLE  
(CONNECTION TO NEW OR EXISTING SEWER MAIN)**

NOT TO SCALE

4

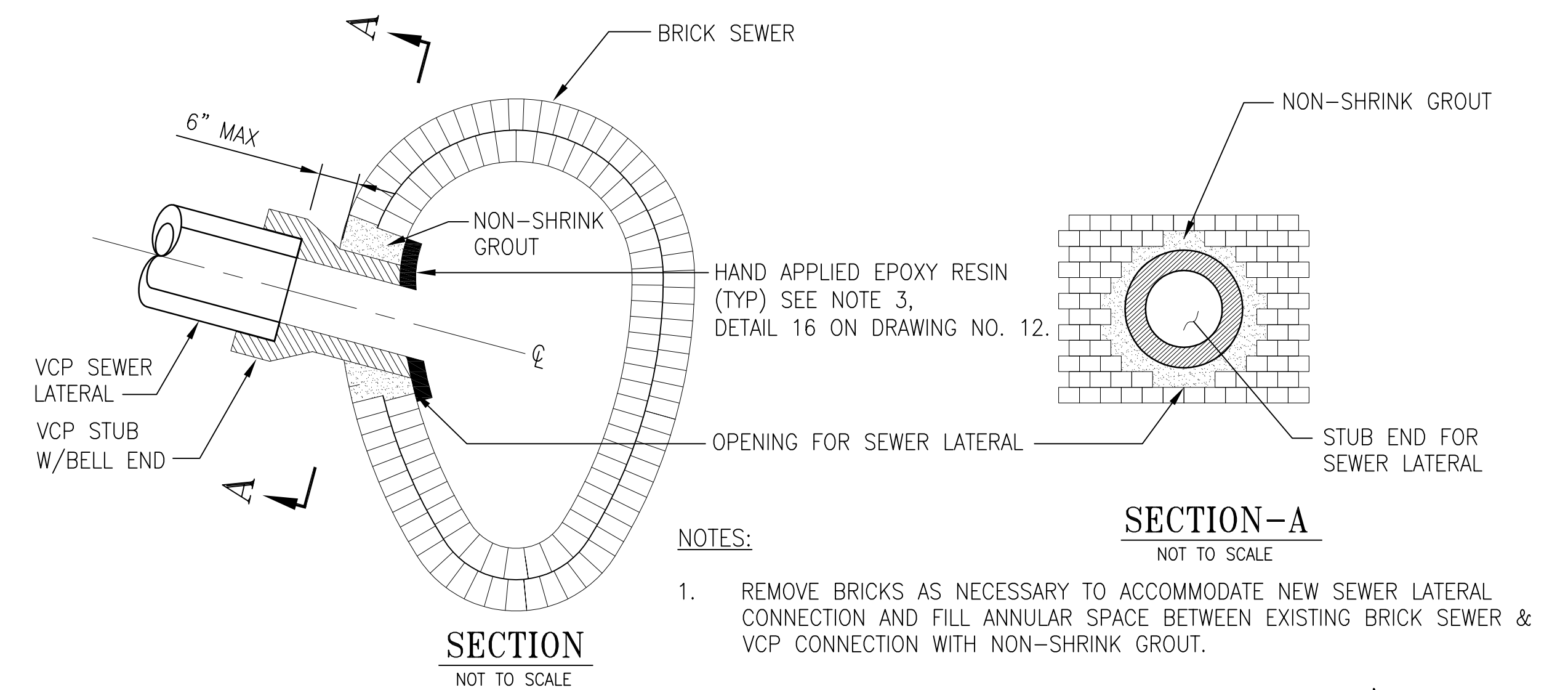


- NOTES:**
- CORE DRILL HOLE ON SEWER MAIN AND INSTALL FITTING, PER MANUFACTURER'S MIN RECOMMENDATIONS.
  - TAP-TITE STYLE FITTING OR EQUAL CAN BE USED IF SEWER MAIN IS AT LEAST DOUBLE THE DIAMETER OF SEWER LATERAL.
  - PROVIDE BUSHINGS AND/OR APPROVED COUPLING AS REQUIRED FOR SEWER LATERAL CONNECTION.
  - FITTING SHALL BE TRIMMED NEAT WITH INTERIOR SURFACE OF SEWER MAIN PIPE.

**TYPE 5 - TAP-TITE FITTING  
(CONNECTION TO EXISTING SEWER MAIN)**

NOT TO SCALE

5



- NOTES:**
- REMOVE BRICKS AS NECESSARY TO ACCOMMODATE NEW SEWER LATERAL CONNECTION AND FILL ANNULAR SPACE BETWEEN EXISTING BRICK SEWER & VCP CONNECTION WITH NON-SHRINK GROUT.
  - ALL CONNECTIONS ARE REQUIRED TO BE BETWEEN THE 2 O'CLOCK AND 4 O'CLOCK OR 8 O'CLOCK AND 10 O'CLOCK POSITION ON THE SEWER MAIN. IN NO CASE SHALL CONNECTION BE WITHIN 18 INCHES OF THE INVERT.

**TYPE 6 - VCP BELL STUB CONNECTION  
(CONNECTION TO NEW OR EXISTING SEWER MAIN)**

NOT TO SCALE

6

APPLICABLE TO BOTH  
COMBINED AND SANITARY  
SEWER SYSTEMS



**SEWER LATERAL  
STANDARD DETAILS**  
SAN FRANCISCO PUBLIC UTILITIES COMMISSION

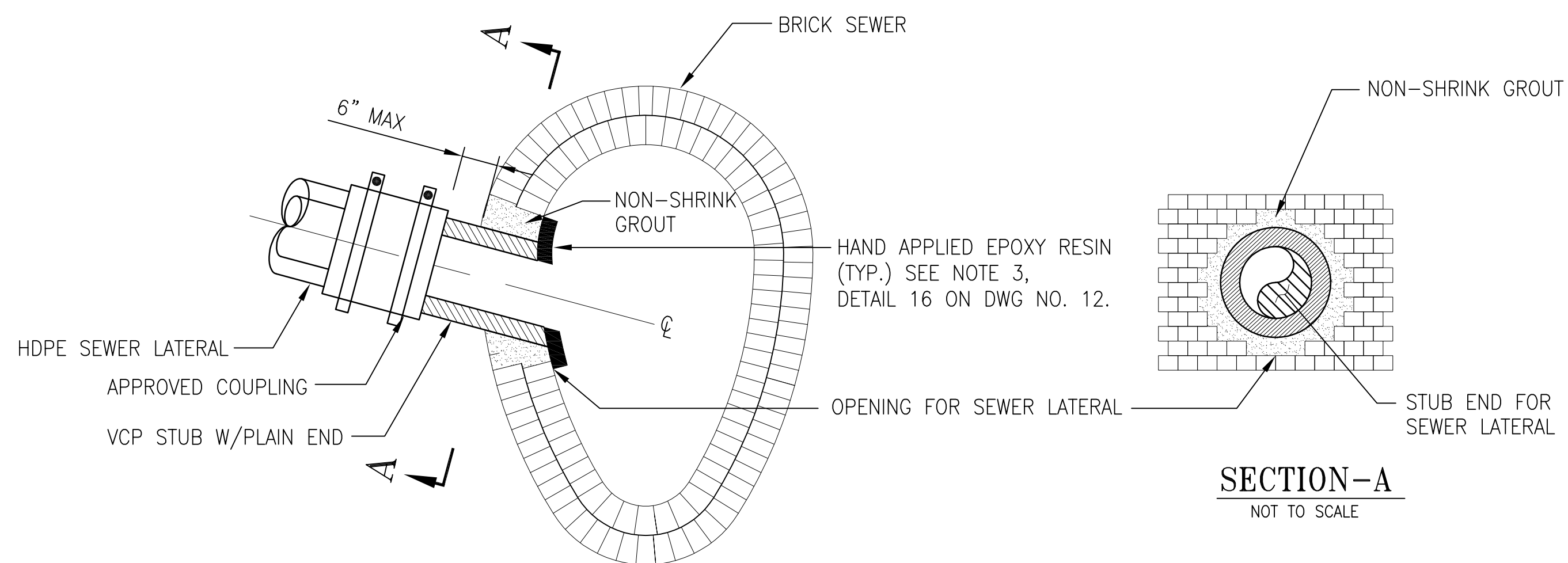
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**SEWER LATERAL CONNECTION TYPES 1-6**

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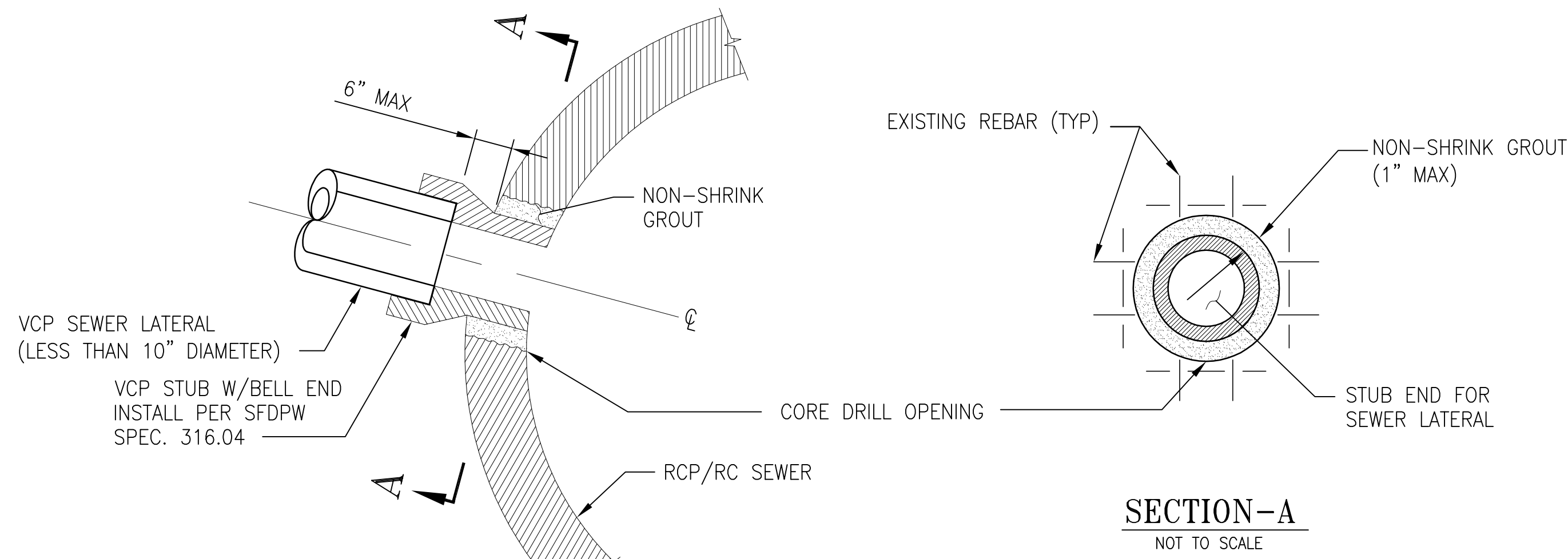


**NOTES:**

1. REMOVE BRICKS AS NECESSARY TO ACCOMMODATE NEW SEWER LATERAL CONNECTION AND FILL ANNULAR SPACE BETWEEN EXISTING BRICK SEWER & VCP CONNECTION WITH NON-SHRINK GROUT.
2. ALL CONNECTIONS ARE REQUIRED TO BE BETWEEN THE 2 O'CLOCK AND 4 O'CLOCK OR 8 O'CLOCK AND 10 O'CLOCK POSITION ON THE SEWER MAIN. IN NO CASE SHALL CONNECTION BE WITHIN 18 INCHES OF THE INVERT.

**TYPE 7 - VCP PLAIN END STUB AND APPROVED COUPLING CONNECTION  
(CONNECTION TO NEW OR EXISTING SEWER MAIN)**  
NOT TO SCALE

7

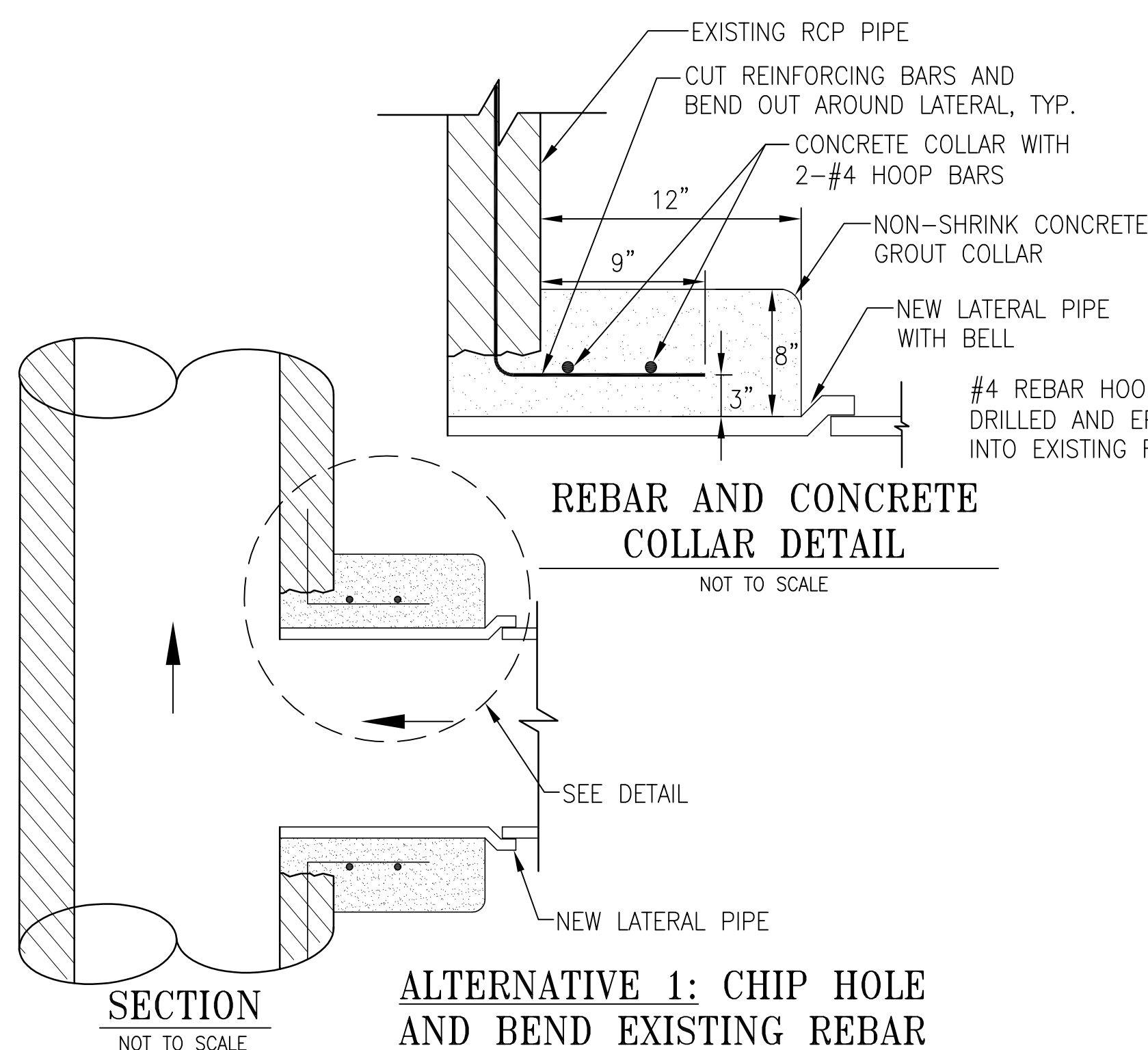


**NOTES:**

1. SEWER LATERALS GREATER THAN OR EQUAL TO 10" DIAMETER CONNECTING DIRECTLY TO SEWER MAIN SHALL USE TYPE 9 - VCP CONCRETE COLLAR CONNECTION.
2. ALL CONNECTIONS ARE REQUIRED TO BE BETWEEN THE 9 O'CLOCK AND 11 O'CLOCK POSITION ON THE SEWER MAIN.

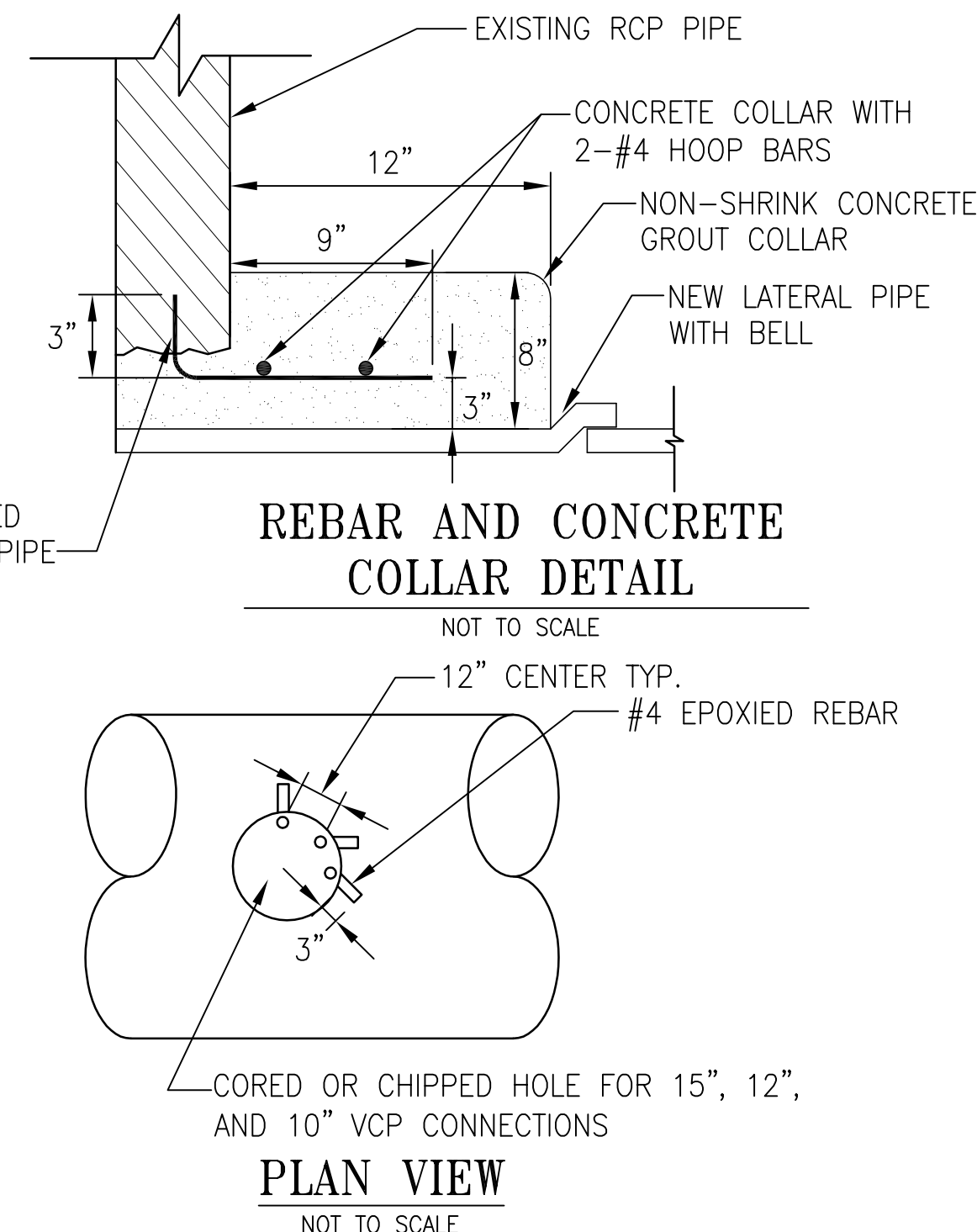
**TYPE 8 - VCP BELL STUB CONNECTION  
(CONNECTION TO NEW OR EXISTING RCP/RC SEWER MAIN)**  
NOT TO SCALE

8



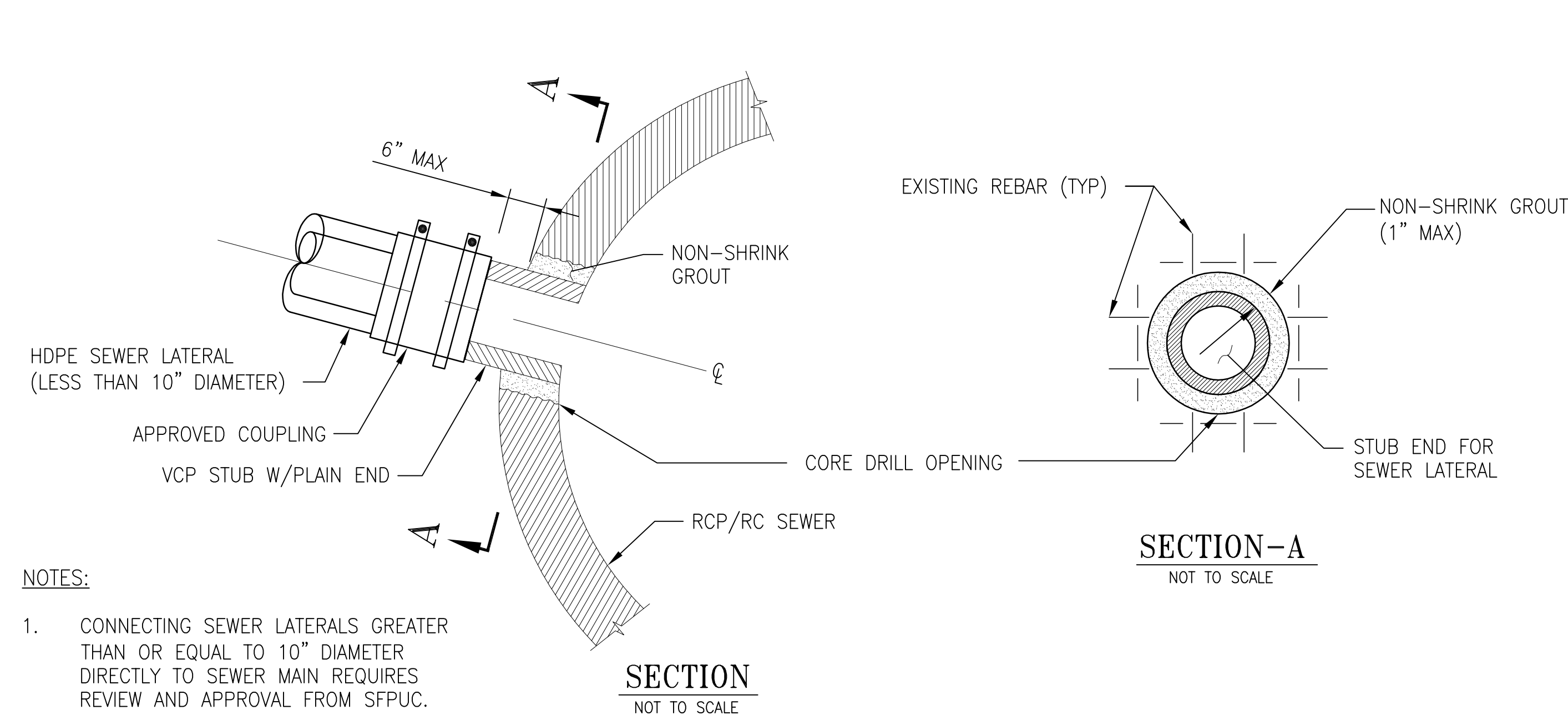
**ALTERNATIVE 1: CHIP HOLE AND BEND EXISTING REBAR**

**TYPE 9 - VCP CONCRETE COLLAR CONNECTION  
(CONNECTION TO NEW OR EXISTING SEWER MAIN)**  
NOT TO SCALE



**ALTERNATIVE 2: CORE OR CHIP HOLE AND ADD REBAR HOOKS**

9



**NOTES:**

1. CONNECTING SEWER LATERALS GREATER THAN OR EQUAL TO 10" DIAMETER DIRECTLY TO SEWER MAIN REQUIRES REVIEW AND APPROVAL FROM SFPUC.
2. ALL CONNECTIONS ARE REQUIRED TO BE BETWEEN THE 9 O'CLOCK AND 11 O'CLOCK POSITION ON THE SEWER MAIN.

**TYPE 10 - VCP PLAIN END STUB AND APPROVED COUPLING CONNECTION (CONNECTION TO NEW OR EXISTING RCP/RC SEWER MAIN)**  
NOT TO SCALE

10

**APPLICABLE TO BOTH COMBINED AND SANITARY SEWER SYSTEMS**



**SEWER LATERAL STANDARD DETAILS**  
SAN FRANCISCO PUBLIC UTILITIES COMMISSION

DATE	MAY 2017	REVISION	1.0	REVISED
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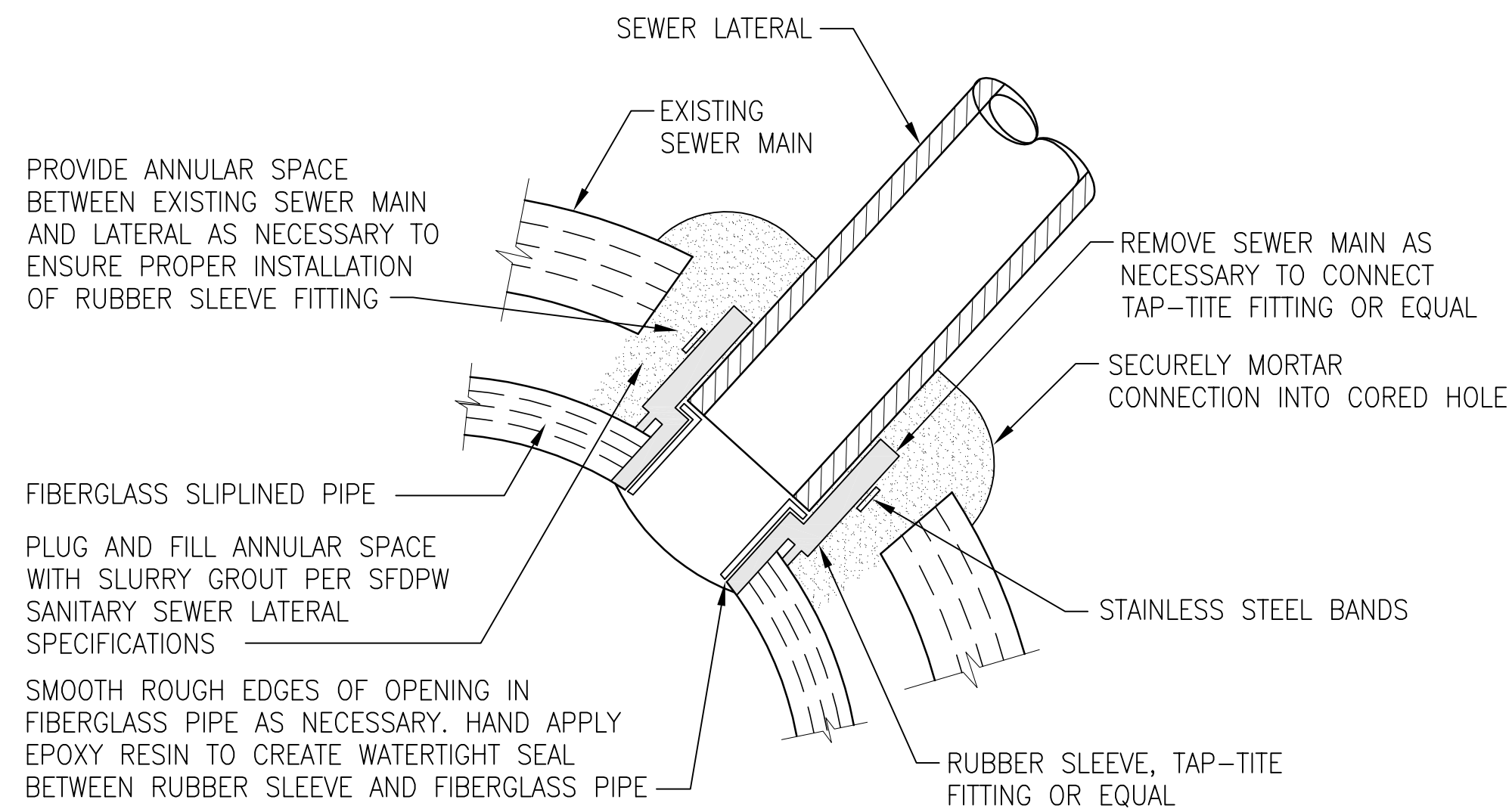
**SEWER LATERAL CONNECTION TYPES 7-10**

DWG NO.

**12**

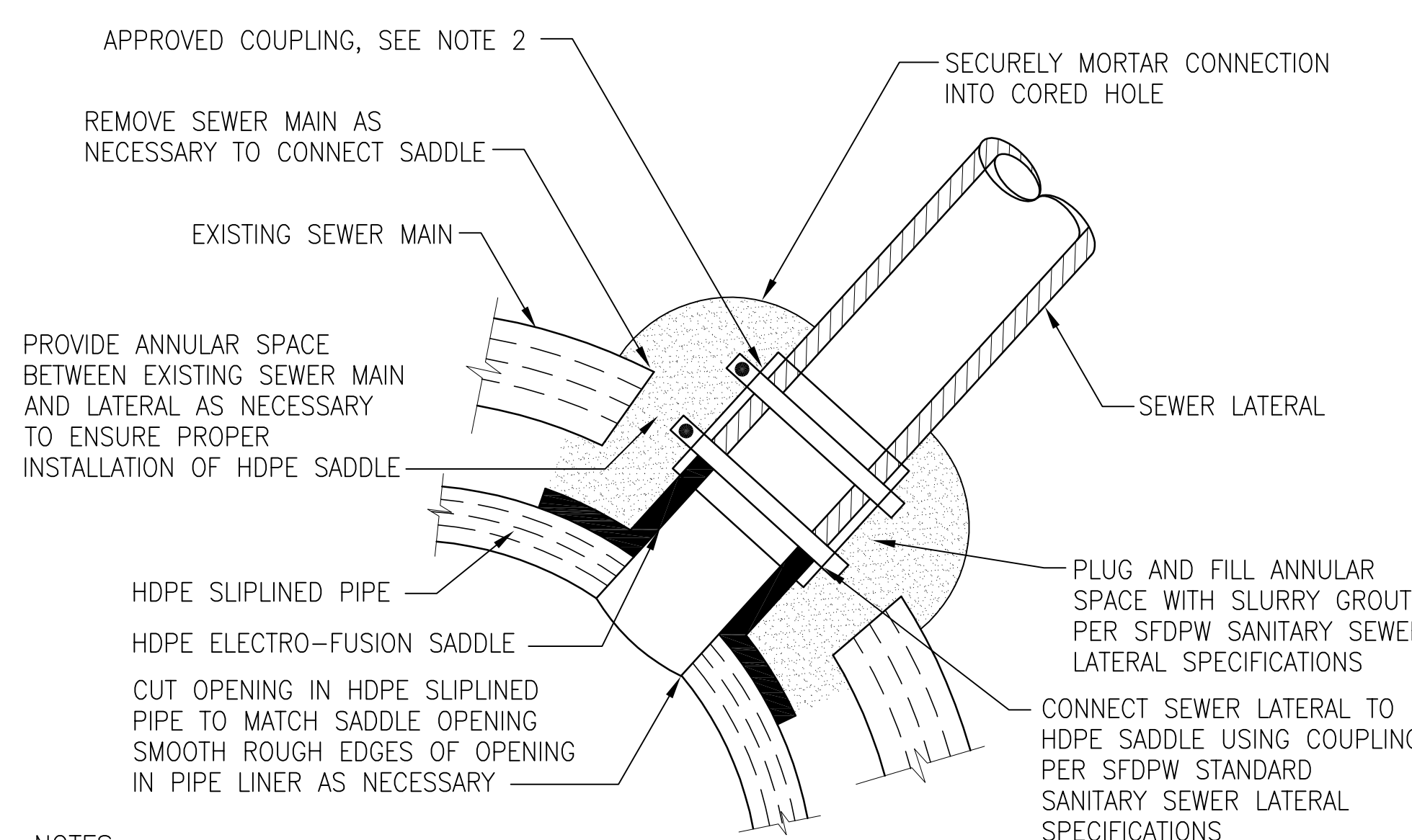


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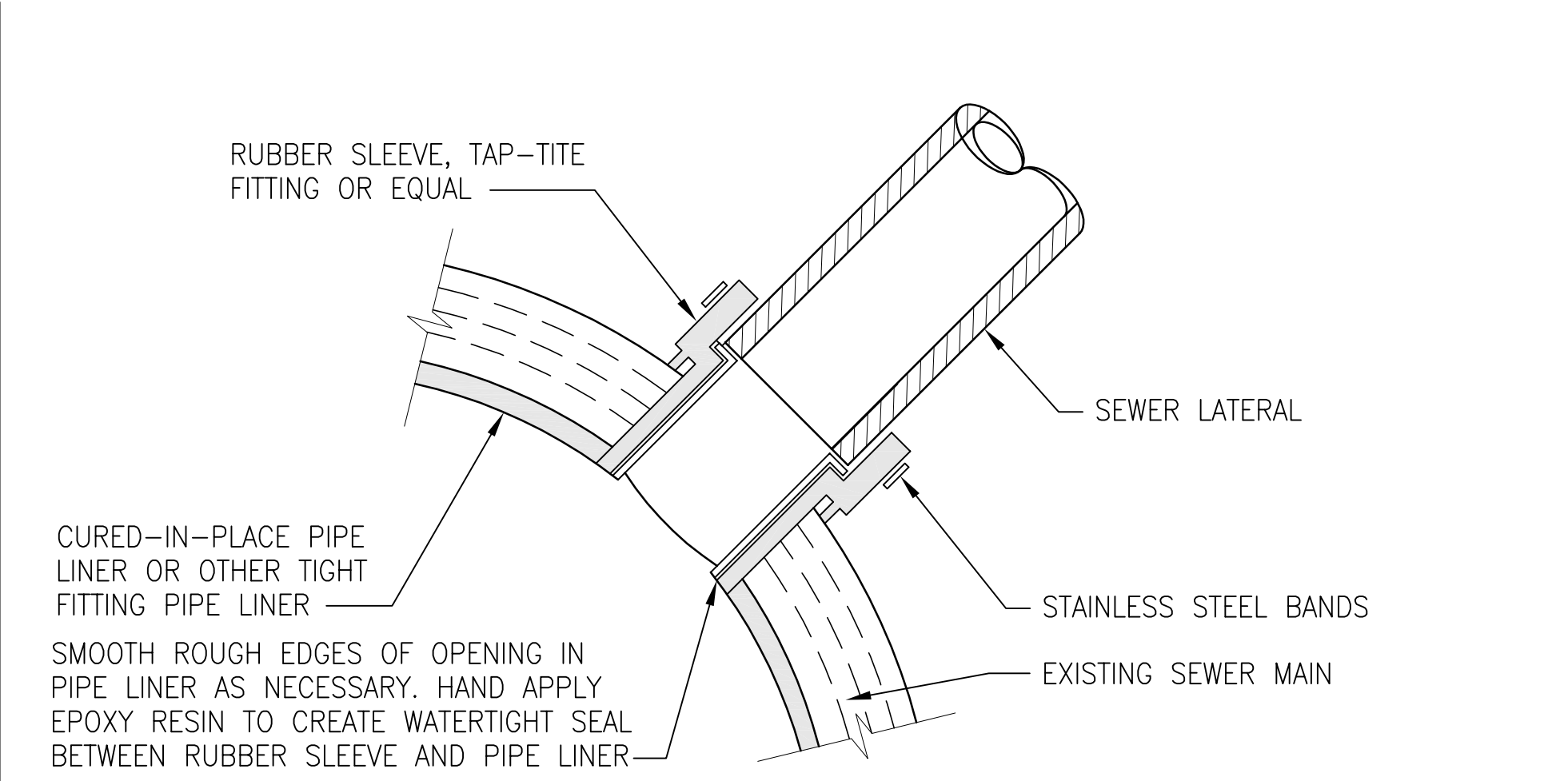
- NOTES:**
1. FITTING SHALL BE TRIMMED NEAT WITH INTERIOR OF FIBERGLASS SLIPLINED PIPE.
  2. THIS DETAIL CAN BE USED FOR NEW SEWER LATERALS CONNECTING TO EXISTING SEWER MAINS THAT WERE PREVIOUSLY SLIPLINED WITH FIBERGLASS PIPE.
  3. THIS DETAIL CAN BE USED TO CONNECT EXISTING SEWER LATERALS TO SEWER MAINS BEING SLIPLINED WITH FIBERGLASS PIPE. THIS CONFIGURATION WOULD REQUIRE A NEW SHORT PIPE STUB BETWEEN THE TAP-TITE AND THE EXISTING SEWER LATERAL. THE PIPE STUB AND THE EXISTING LATERAL WOULD BE CONNECTED USING AN APPROVED COUPLING.

**TYPE 11 - TAP-TITE FITTING (OR EQUAL) FOR FIBERGLASS SLIPLINED CONNECTION (SEWER MAIN REHABILITATION)** 11  
NOT TO SCALE



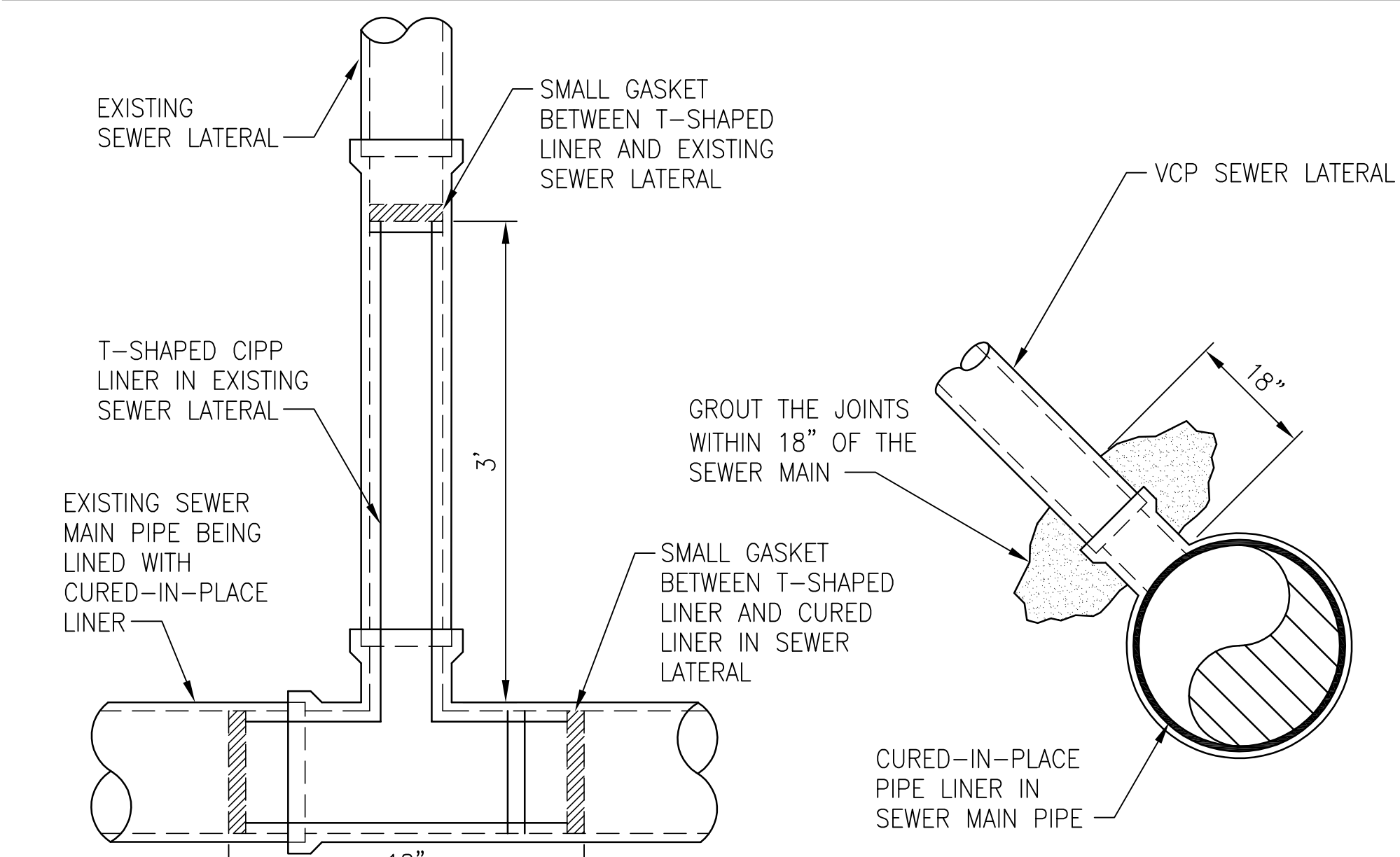
- NOTES:**
1. THIS DETAIL CAN BE USED FOR NEW SEWER LATERALS CONNECTING TO EXISTING SEWER MAINS THAT WERE PREVIOUSLY SLIPLINED WITH HDPE PIPE.
  2. THIS DETAIL CAN BE USED TO CONNECT EXISTING LATERALS TO SEWER MAINS BEING SLIPLINED WITH HDPE PIPE. THIS CONFIGURATION WOULD REQUIRE A NEW SHORT PIPE STUB BETWEEN THE SADDLE AND THE EXISTING SEWER LATERAL. THE PIPE STUB AND THE EXISTING SEWER LATERAL SHALL BE CONNECTED USING AN APPROVED COUPLING OR IN THE CASE OF HDPE LATERALS SHALL BE FUSED.

**TYPE 12 - HDPE SADDLE FOR HDPE SLIPLINED PIPE CONNECTION (SEWER MAIN REHABILITATION)** 12  
NOT TO SCALE



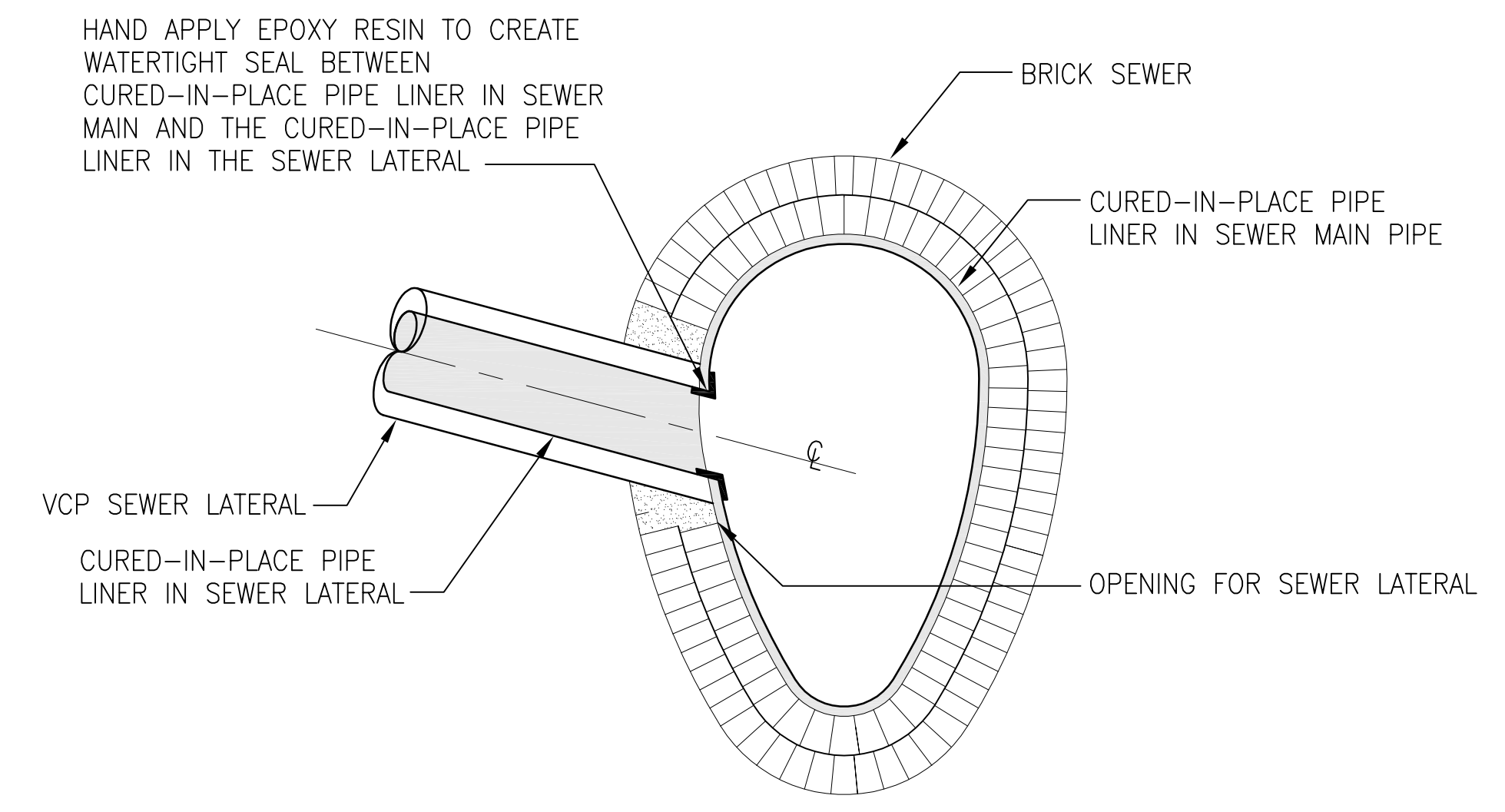
- NOTES:**
1. FITTING SHALL BE TRIMMED NEAT WITH INTERIOR OF CURED-IN-PLACE PIPE.
  2. THIS DETAIL CAN BE USED FOR NEW SEWER LATERALS CONNECTING TO EXISTING SEWER MAINS THAT WERE PREVIOUSLY LINED WITH CURED-IN-PLACE PIPE (OR OTHER TIGHT FITTING LINER).
  3. IF PERMITTED BY THE PROJECT DOCUMENTS, THIS DETAIL CAN BE USED TO CONNECT EXISTING SEWER LATERALS TO SEWER MAINS BEING LINED WITH CURED-IN-PLACE PIPE LINER. THIS CONFIGURATION WOULD REQUIRE EXCAVATION AT EACH SEWER LATERAL. THIS CONFIGURATION WOULD ALSO REQUIRE A NEW SHORT PIPE STUB BETWEEN THE RUBBER SLEEVE AND THE EXISTING SEWER LATERAL. THE PIPE STUB AND THE EXISTING SEWER LATERAL WOULD BE CONNECTED USING AN APPROVED COUPLING.

**TYPE 13 - TAP-TITE FITTING (OR EQUAL) FOR CURED-IN-PLACE LINER CONNECTION (SEWER MAIN REHABILITATION)** 13  
NOT TO SCALE



- NOTE:**  
ALTERNATIVE 1 SHOWN IN PLAN VIEW
- ALTERNATIVE 1: T-SHAPED CIPP LINER** 14  
NOT TO SCALE
- ALTERNATIVE 2: SEAL JOINTS USING GROUT**  
NOT TO SCALE

**TYPE 14 - CONNECTION BETWEEN EXISTING SEWER LATERAL AND SMALL SEWER MAIN BEING LINED** 14  
NOT TO SCALE



- NOTE:**
1. THIS DETAIL CAN BE USED TO CONNECT EXISTING SEWER LATERALS BEING LINED WITH CURED-IN-PLACE PIPE LINER TO SEWER MAINS BEING LINED WITH CURED-IN-PLACE PIPE LINER.

**TYPE 15 - CONNECTION BETWEEN EXISTING SEWER LATERAL AND LARGE SEWER MAIN BEING LINED** 15  
NOT TO SCALE

- NOTES:**
1. IF CONNECTING A NEW SEWER LATERAL TO AN EXISTING SMALL DIAMETER VCP SEWER THAT WAS PREVIOUSLY LINED WITH CURED-IN-PLACE PIPE, USE A TYPE 5 CONNECTION. HAND APPLY EPOXY RESIN TO SEAL CUT EDGE ON CURED-IN-PLACE PIPE LINER WHERE IT ABUTS AGAINST FITTING.
  2. IF CONNECTING A NEW SEWER LATERAL TO AN EXISTING ISP SEWER THAT WAS PREVIOUSLY LINED WITH CURED-IN-PLACE PIPE, USE A TYPE 6 CONNECTION. HAND APPLY EPOXY RESIN TO SEAL CUT EDGE ON CURED-IN-PLACE PIPE LINER WHERE IT ABUTS AGAINST PVC TRANSITION PIECE.
  3. IF CONNECTING A NEW SEWER LATERAL TO AN EXISTING BRICK SEWER THAT WAS PREVIOUSLY LINED WITH CURED-IN-PLACE PIPE, USE A TYPE 7 OR TYPE 8 CONNECTION. HAND APPLY EPOXY RESIN TO SEAL CUT EDGE ON CURED-IN-PLACE PIPE LINER. HAND APPLY EPOXY RESIN TO COVER ANY EXPOSED PIPE WALL ON THE INSIDE OF THE MAIN SEWER PIPE BETWEEN THE LATERAL PIPE AND THE CUT LINER.
  4. IF CONNECTING A NEW SEWER LATERAL TO AN EXISTING LARGE DIAMETER SEWER THAT WAS PREVIOUSLY LINED WITH CURED-IN-PLACE PIPE, USE A TYPE 9 OR TYPE 10 CONNECTION. HAND APPLY EPOXY RESIN TO SEAL CUT EDGE ON CURED-IN-PLACE PIPE LINER. HAND APPLY EPOXY RESIN TO COVER ANY EXPOSED PIPE WALL ON THE INSIDE OF THE MAIN SEWER PIPE BETWEEN THE SEWER LATERAL PIPE AND THE CUT LINER.

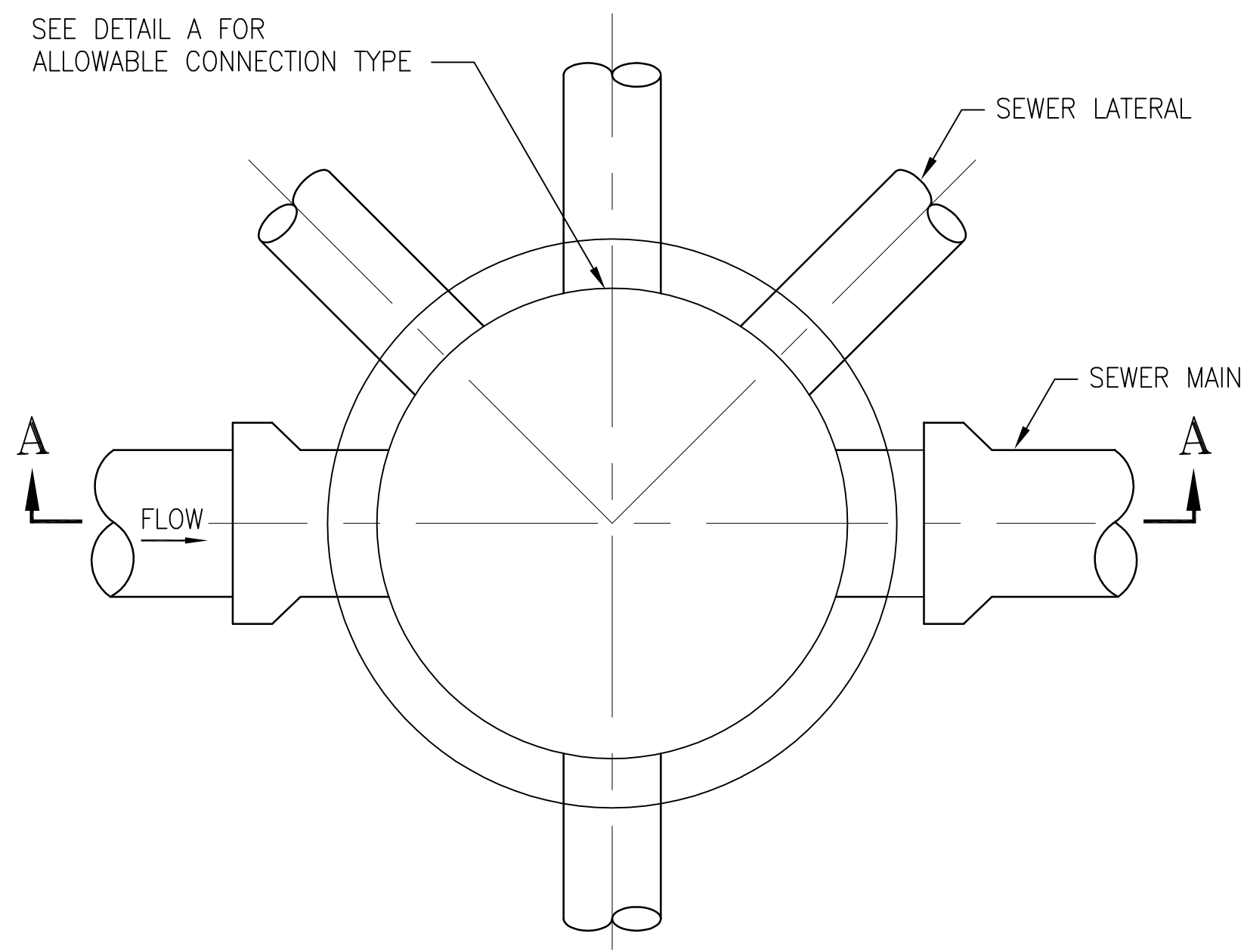
**TYPE 16 - CONNECTION BETWEEN NEW SEWER LATERAL AND LINED SEWER MAIN** 16  
NOT TO SCALE

APPLICABLE TO BOTH COMBINED AND SANITARY SEWER SYSTEMS

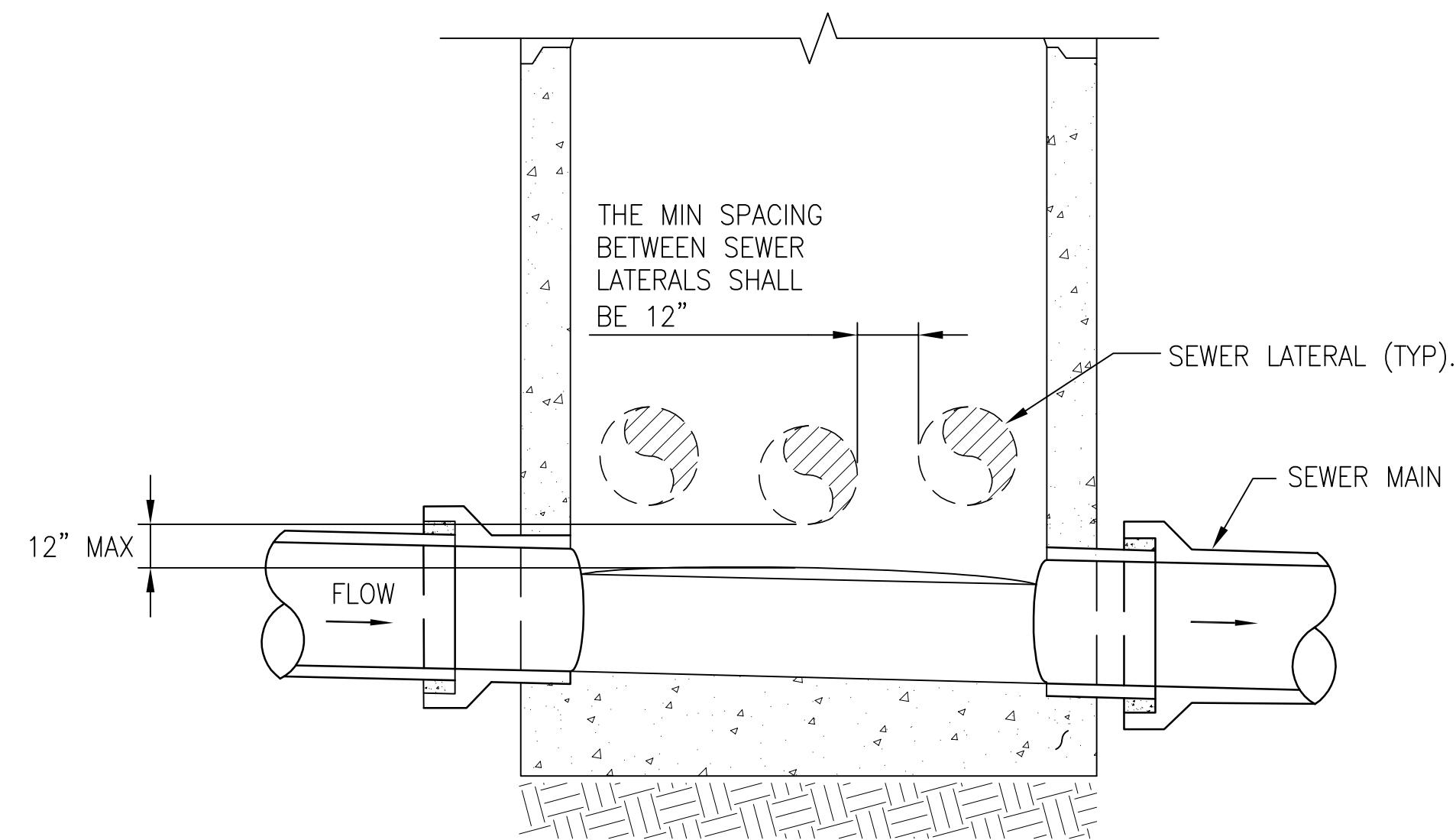




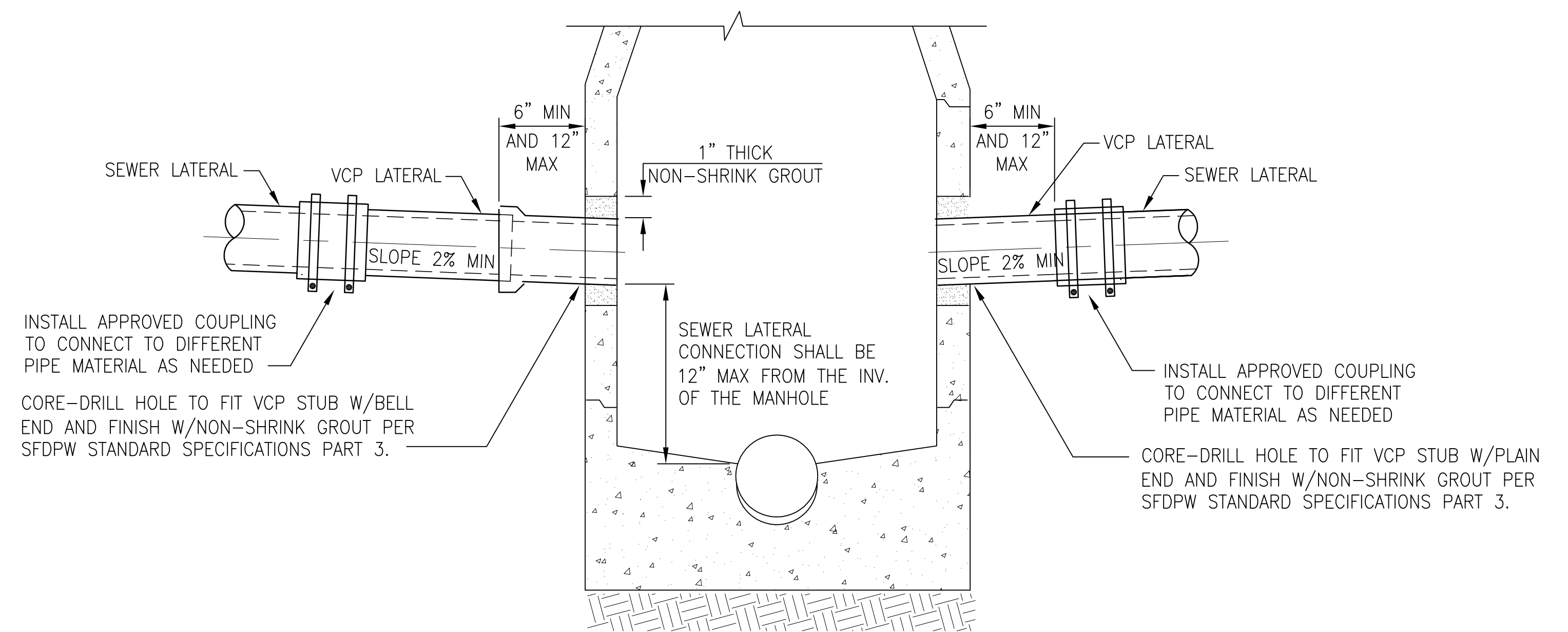
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**PLAN**  
NOT TO SCALE



**SECTION-A**  
NOT TO SCALE



NOTE: THIS DETAIL REPRESENTS TWO ALLOWABLE MANHOLE CONNECTIONS.

**DETAIL-A**  
NOT TO SCALE

APPLICABLE TO BOTH  
COMBINED AND SANITARY  
SEWER SYSTEMS

**NOTES:**

1. SEWER LATERAL CONNECTIONS SHALL BE FLUSH WITH INSIDE FACE OF MANHOLE WALL.
2. SEWER LATERAL CONNECTIONS SHALL BE MINIMUM 8" FROM PRECAST MANHOLE BARREL SECTION JOINTS.
3. MORE THAN THREE LATERAL CONNECTIONS INTO A MANHOLE WILL REQUIRE REVIEW AND APPROVAL BY SFPUC.



**SEWER LATERAL  
STANDARD DETAILS**  
SAN FRANCISCO PUBLIC UTILITIES COMMISSION

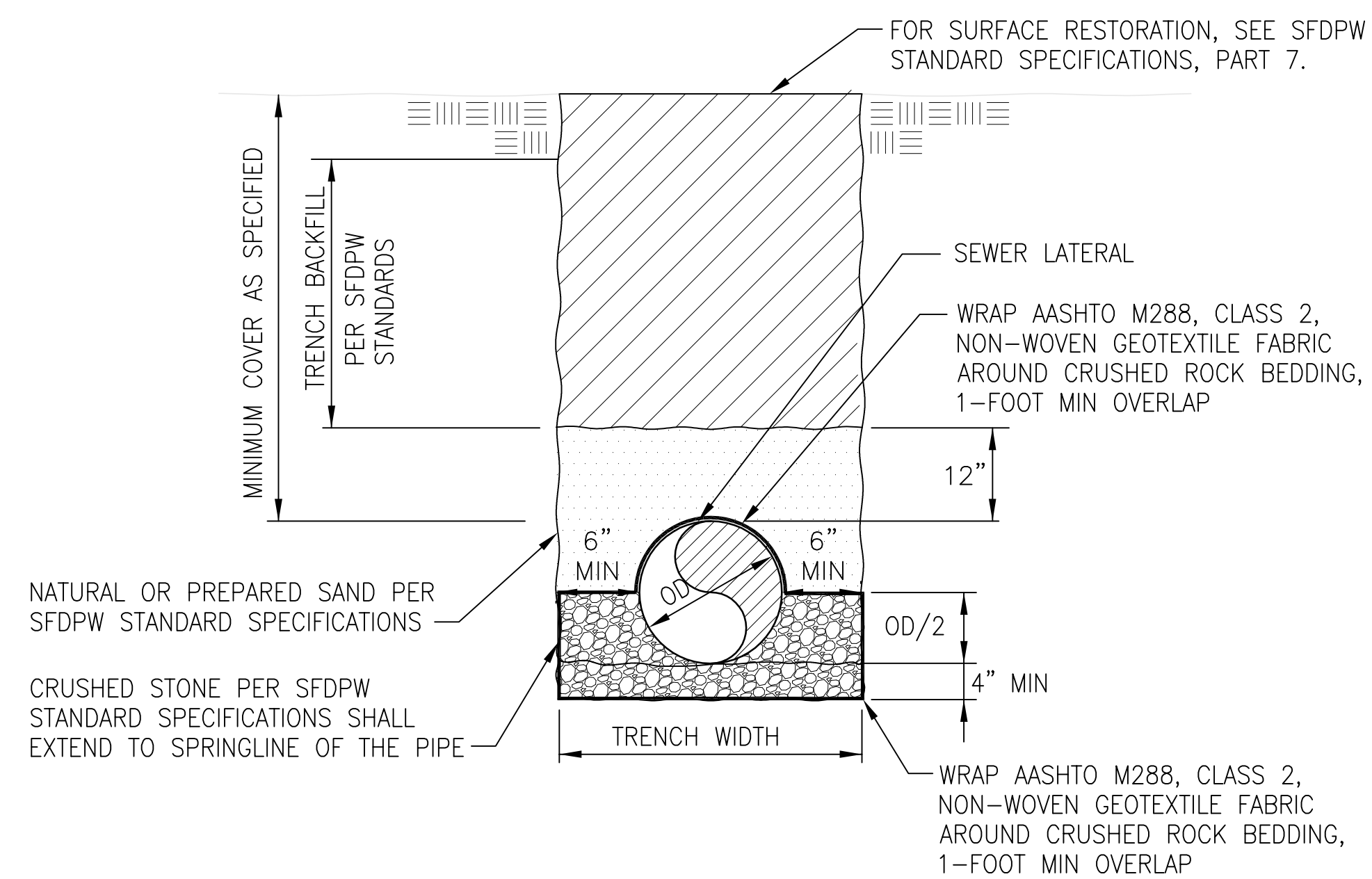
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**SEWER LATERAL CONNECTION TO MANHOLE**

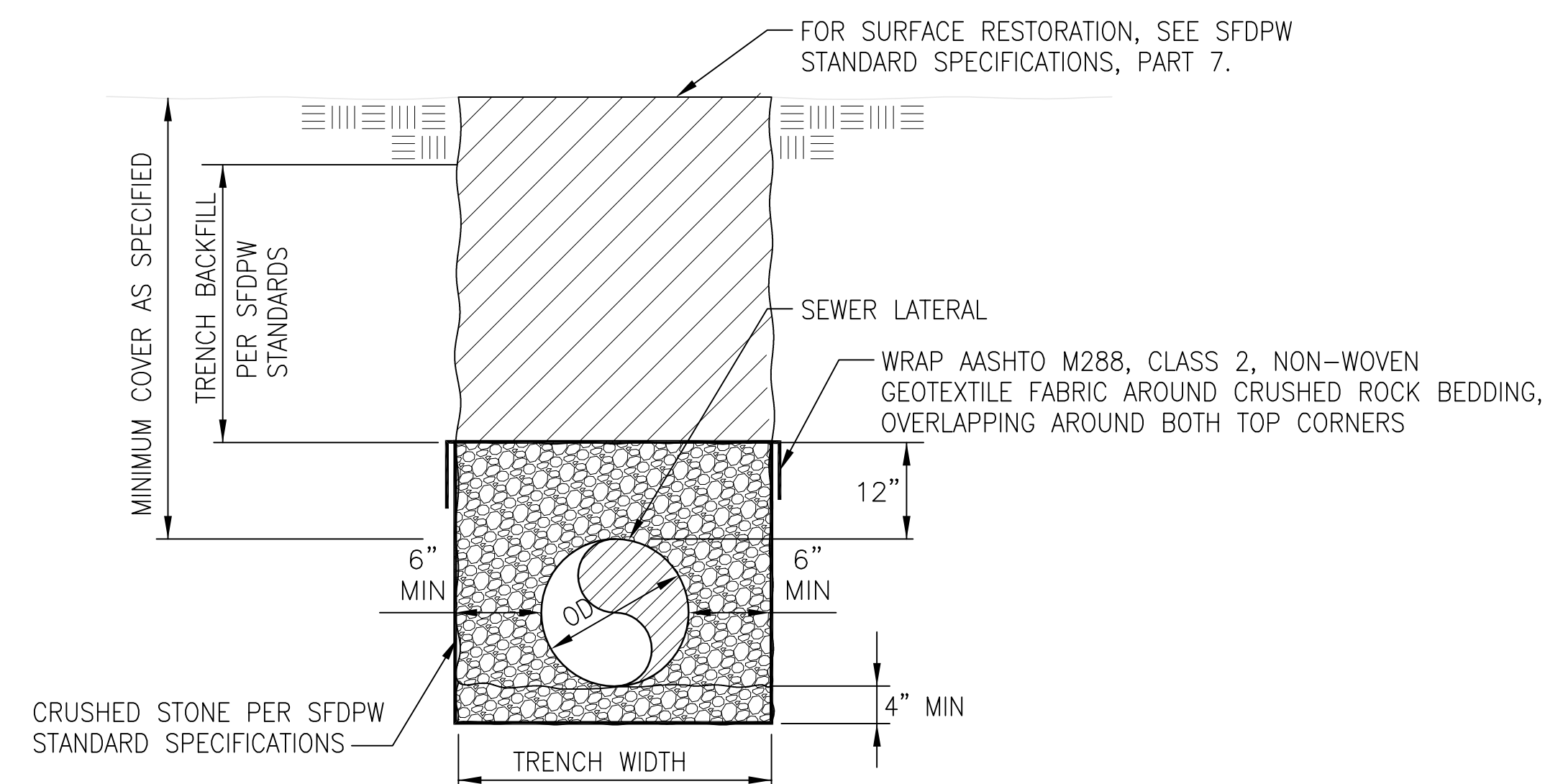
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**TRENCH DETAIL FOR RIGID PIPE** 1  
NOT TO SCALE



**TRENCH DETAIL FOR FLEXIBLE PIPE** 2  
NOT TO SCALE

**NOTES:**

1. TRENCH SHALL HAVE VERTICAL WALLS IN PIPE ZONE UNLESS NOTED OTHERWISE.
2. BACKFILL SHALL BE SUITABLE NATIVE MATERIAL OR IMPORTED BACKFILL MATERIAL PER SFPW SPECIFICATIONS CAREFULLY PLACED AND MECHANICALLY COMPACTED, PER SFPW STANDARD SPECIFICATIONS.
3. FOR ADDITIONAL INFORMATION ON VCP SEWER LATERALS, SEE ASTM C12 "STANDARD PRACTICE FOR INSTALLING VITRIFIED CLAY PIPE LINES". FOR ADDITIONAL INFORMATION ON HDPE AND ABS SEWER LATERALS, SEE ASTM D2321 "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS".

APPLICABLE TO BOTH  
COMBINED AND SANITARY  
SEWER SYSTEMS



**SEWER LATERAL  
STANDARD DETAILS**  
SAN FRANCISCO PUBLIC UTILITIES COMMISSION

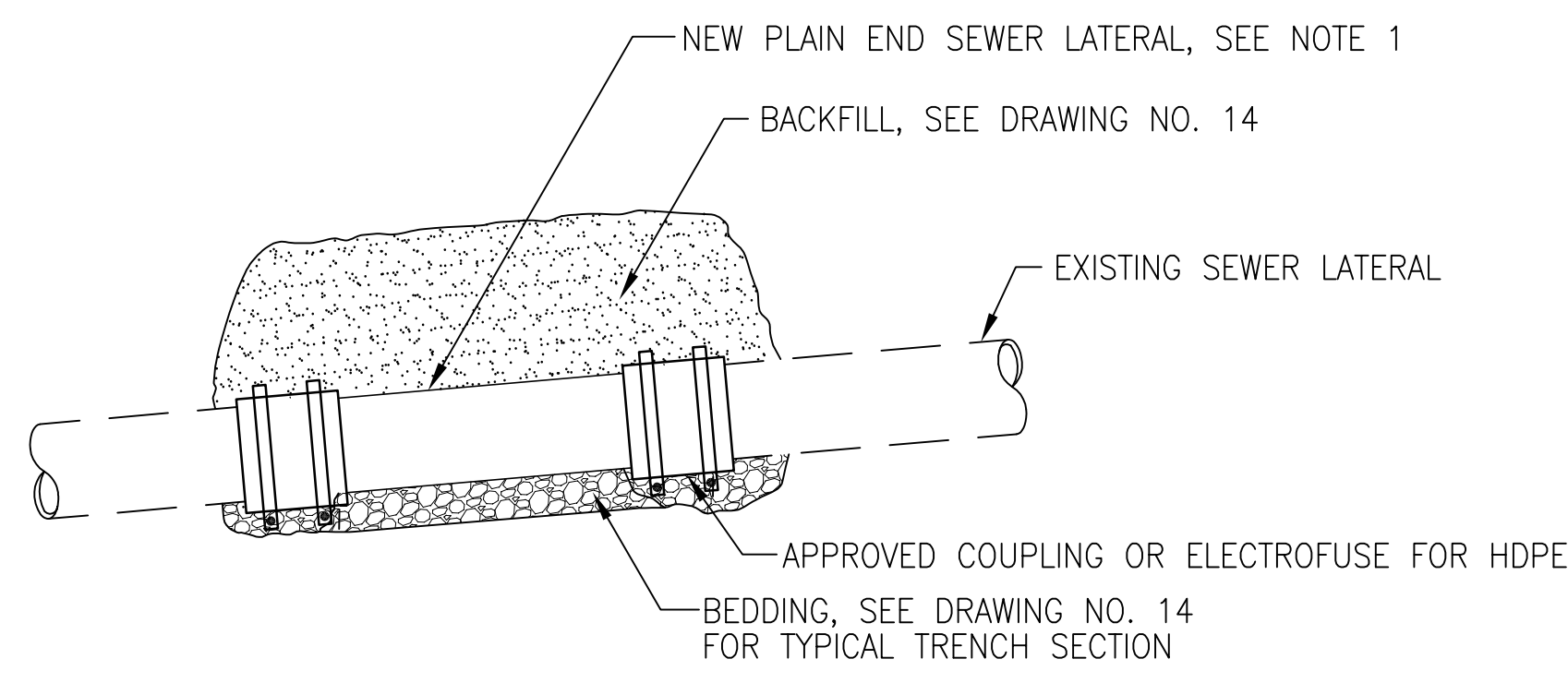
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**SEWER LATERAL TRENCH**

DWG NO.



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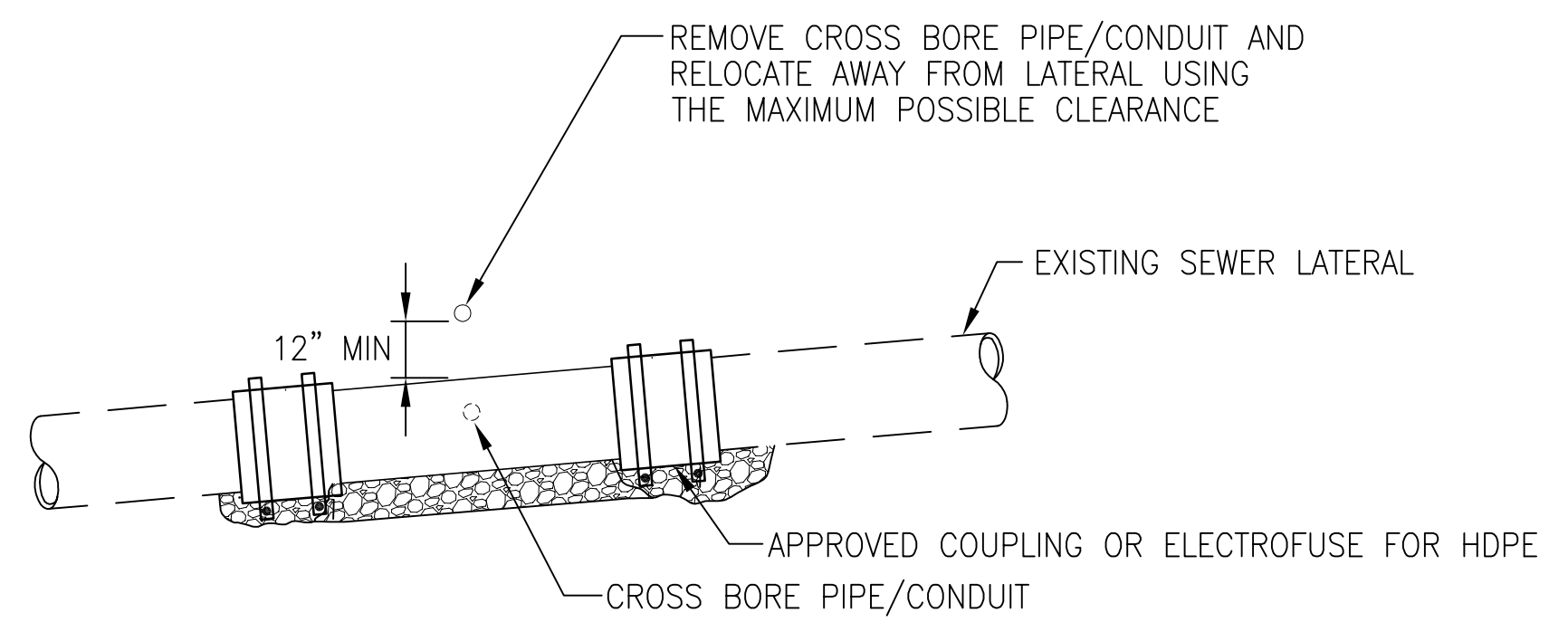


NOTE:

1. REPLACEMENT SEWER LATERAL SIZE AND MATERIAL SHALL MATCH THAT OF EXISTING SEWER LATERAL. IF SIZE OR MATERIAL DO NOT MATCH, PROVIDE A COUPLING THAT WILL ACCOMMODATE VARIATIONS IN PIPE O.D.
2. THE FULL LENGTH OF THE DEFECTIVE PIPE MUST BE REPLACED TO AVOID CREATION OF NEW JOINTS.

**TYPICAL SEWER LATERAL REPAIR SECTION**  
 NOT TO SCALE

1



NOTE:

1. FOR ALL OTHER REPAIR INFORMATION SEE DETAIL 1 ON THIS SHEET.

**SEWER LATERAL REPAIR SECTION FOR CROSS BORES**  
 NOT TO SCALE

2

APPLICABLE TO BOTH  
 COMBINED AND SANITARY  
 SEWER SYSTEMS



**SEWER LATERAL  
 STANDARD DETAILS**  
 SAN FRANCISCO PUBLIC UTILITIES COMMISSION

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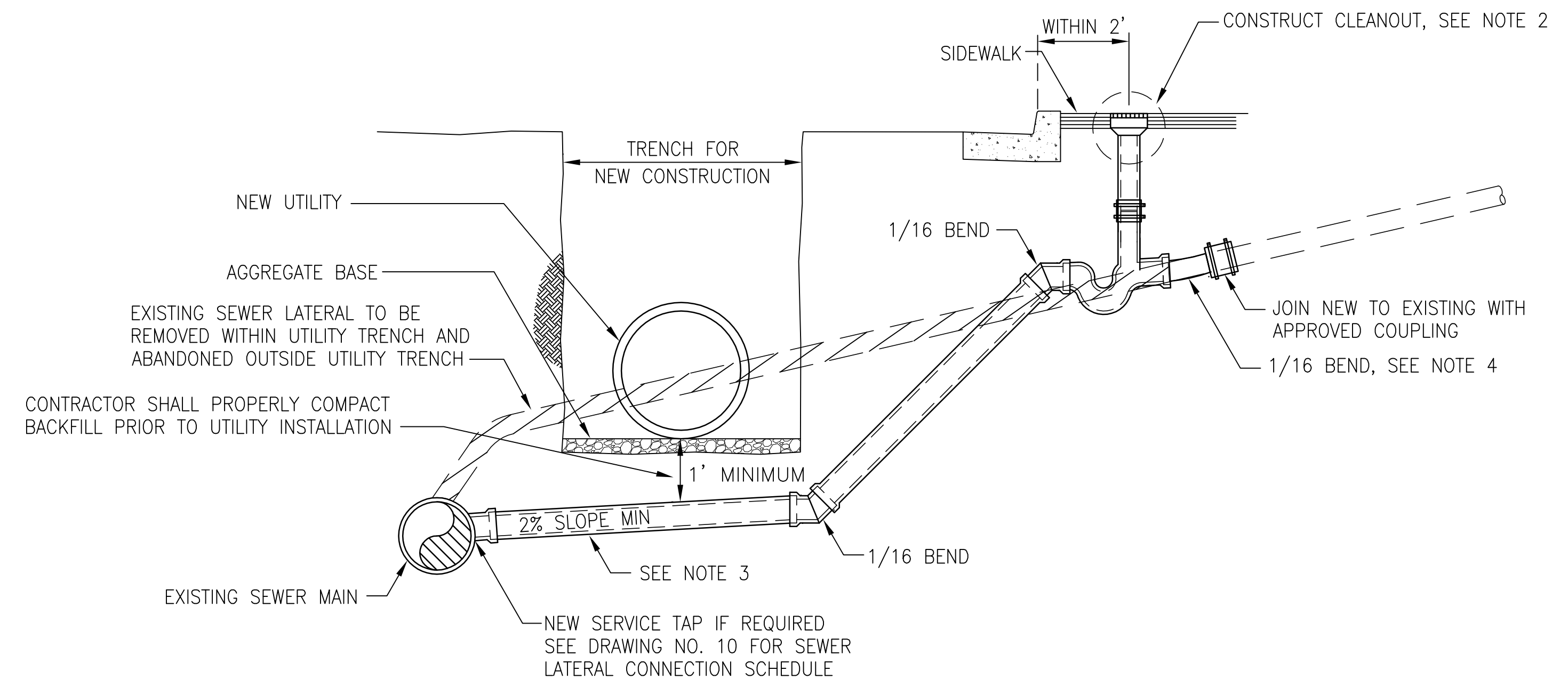
**SEWER LATERAL BREAK REPAIR**

DWG NO.

**16**



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- NOTES:**
1. UTILITY LOCATION SHALL BE DESIGNED KEEPING SEWER LATERALS IN MIND. THE RELOCATION OF SEWER FACILITIES SHALL BE MINIMIZED.
  2. FOR CLEANOUT IN COMBINED SEWER SYSTEM AND SANITARY SEWER SYSTEM, SEE DRAWINGS NO. 5 THROUGH 8.
  3. JOINTS ON RELOCATED SEWER LATERAL SHALL NOT BE ALLOWED WITHIN THE LIMITS OF THE TRENCH REQUIRED FOR CONSTRUCTION OF THE NEW CROSSING UTILITY. IF JOINTS MUST BE USED ON THE LATERAL WITHIN THE LIMITS OF THE NEW UTILITY TRENCH SECTION, THE RELOCATED LATERAL SHALL BE ENCASED IN CONCRETE.
  4. ALTERNATIVELY, CONTRACTOR MAY DEFLECT JOINT WITHIN THE MANUFACTURER'S ACCEPTED TOLERANCES.

**EXISTING SEWER LATERAL RELOCATION  
BELOW NEW UTILITY CONSTRUCTION** 1  
NOT TO SCALE

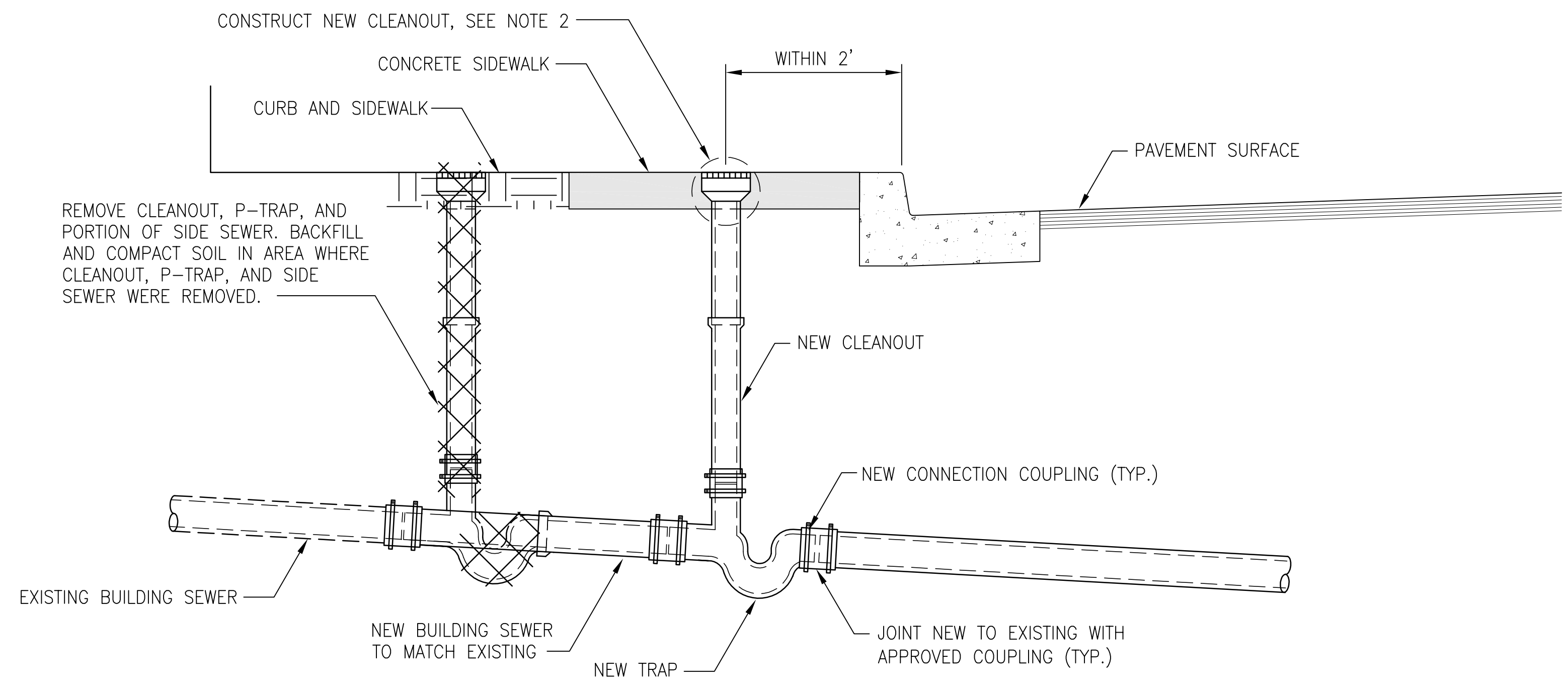
APPLICABLE TO BOTH  
COMBINED AND SANITARY  
SEWER SYSTEMS



SEWER LATERAL STANDARD DETAILS		
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**SEWER LATERAL RELOCATION DETAIL 1**

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NOTES:

- 1. FOR TYPICAL INSTALLATION OF SEWER LATERAL IN COMBINED SEWER SYSTEM AND SANITARY SEWER SYSTEM, SEE DRAWINGS NO. 5 AND NO. 7, RESPECTIVELY.
- 2. FOR CLEANOUT ASSEMBLIES THAT ARE LOCATED IN THE VICINITY OF THE PLANTING BED, SEE DRAWINGS NO. 6 AND NO. 8.

**RELOCATION OF SEWER LATERAL CLEANOUT DUE TO SIDEWALK WIDENING** 2  
 NOT TO SCALE

APPLICABLE TO BOTH  
 COMBINED AND SANITARY  
 SEWER SYSTEMS



**SEWER LATERAL  
 STANDARD DETAILS**  
 SAN FRANCISCO PUBLIC UTILITIES COMMISSION

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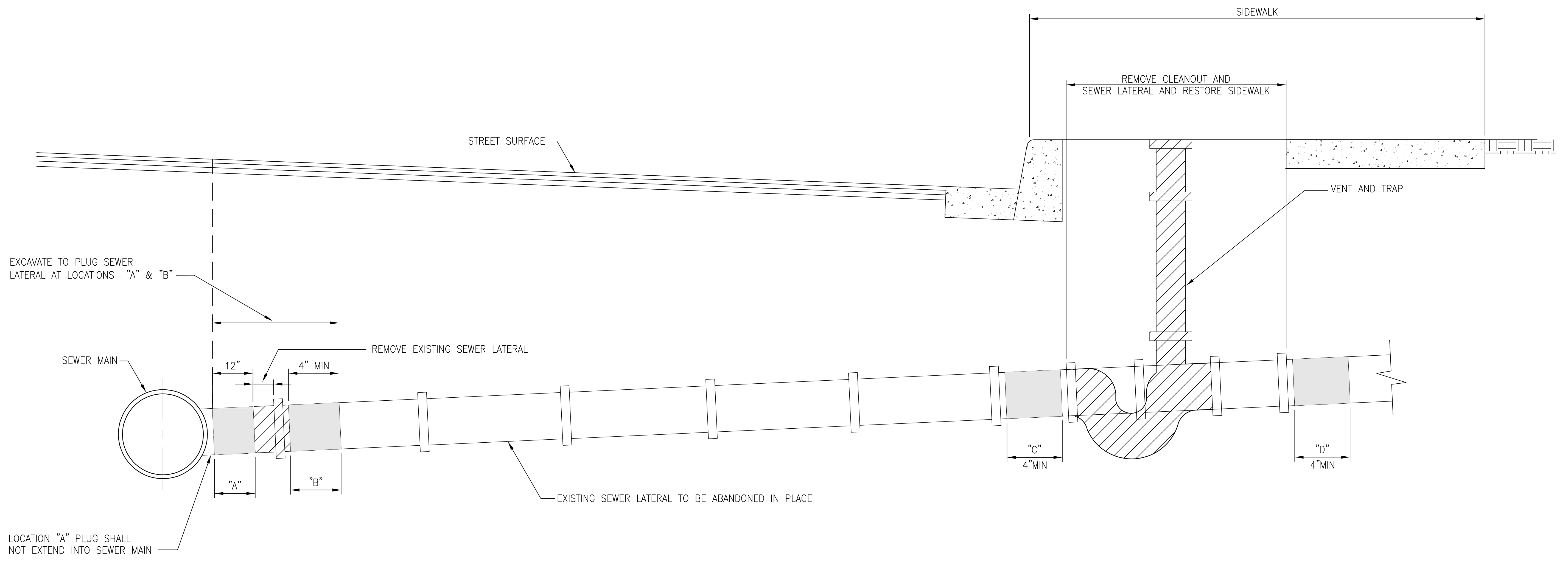
**SEWER LATERAL RELOCATION DETAIL 2**



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NOTES:

- 1. ALL PLUGS SHALL BE CONCRETE OR BRICK AND MORTAR.
- 2. SEWER LATERALS LARGER THAN 12" IN DIAMETER SHALL BE PLUGGED AND FILLED WITH SLURRY AS SPECIFIED IN SFPW STANDARD SPECIFICATIONS CHAPTER 3.
- 3. SEWER LATERALS SMALLER THAN 12" IN DIAMETER SHALL BE PLUGGED AS SPECIFIED IN SFPW STANDARD SPECIFICATIONS CHAPTER 3.
- 4. PLUG SEWER LATERAL AT LOCATIONS "A", "B", "C", AND "D".



APPLICABLE TO BOTH COMBINED AND SANITARY SEWER SYSTEMS

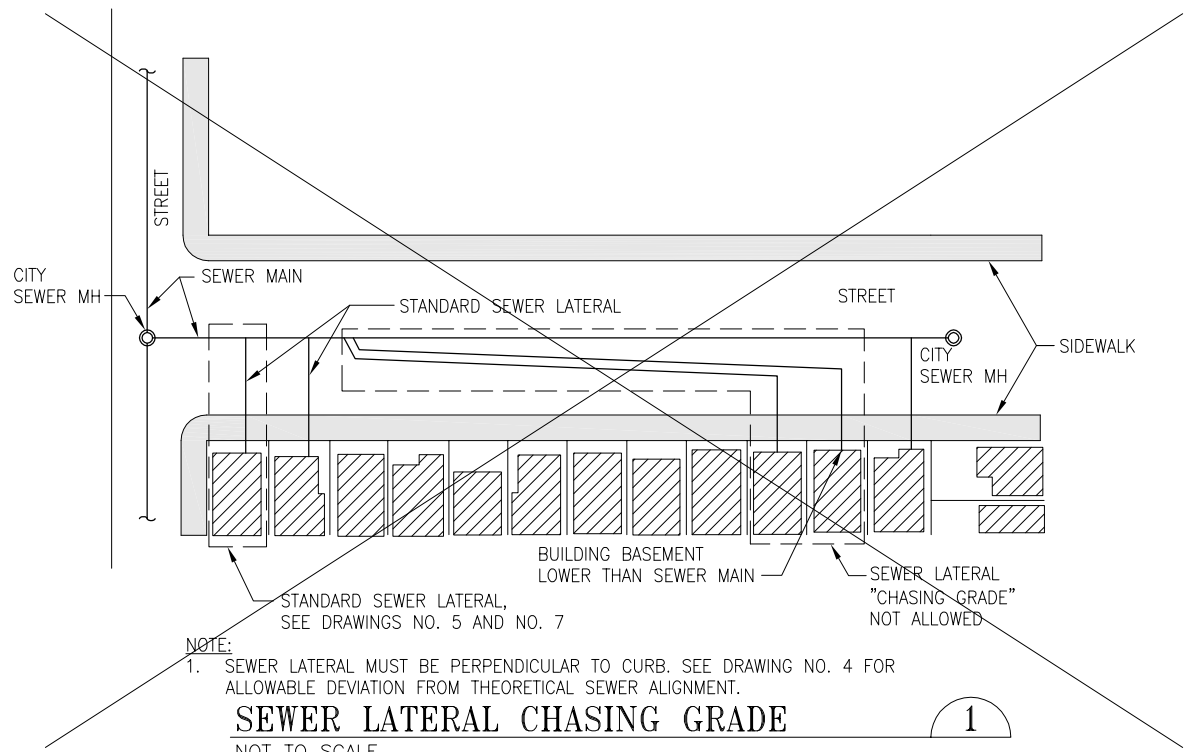


SEWER LATERAL STANDARD DETAILS  
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SEWER LATERAL ABANDONMENT

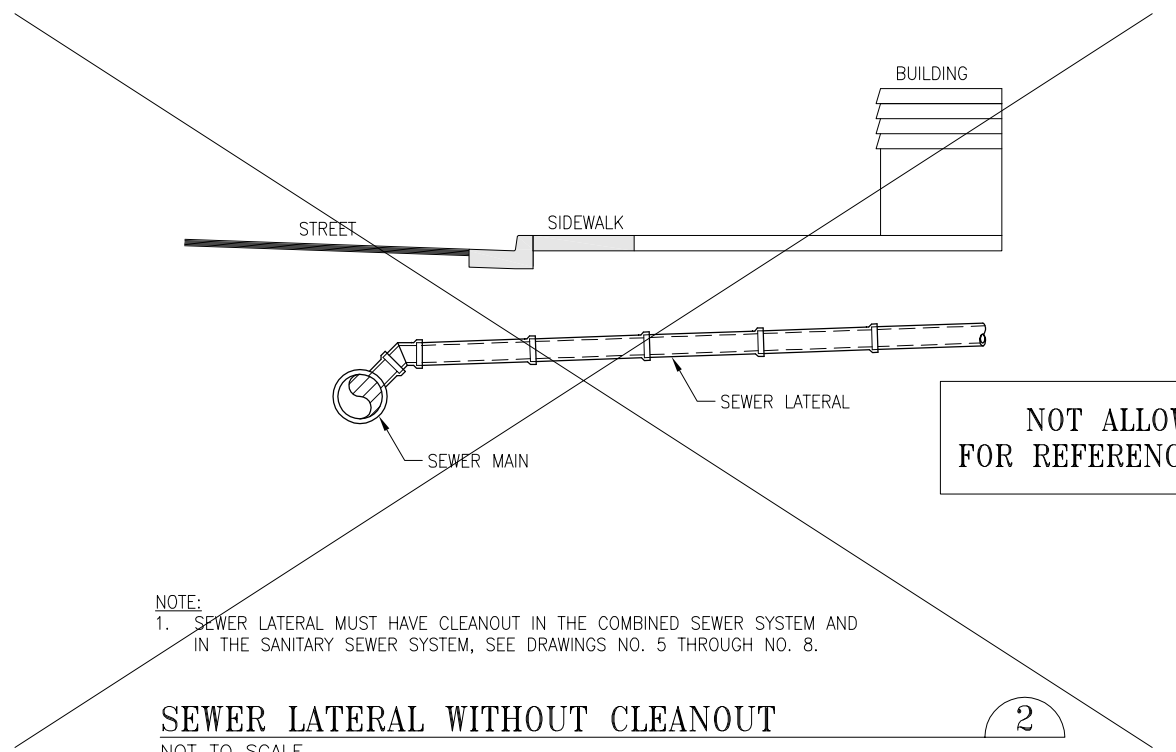
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NOTE:  
1. SEWER LATERAL MUST BE PERPENDICULAR TO CURB. SEE DRAWING NO. 4 FOR ALLOWABLE DEVIATION FROM THEORETICAL SEWER ALIGNMENT.

**SEWER LATERAL CHASING GRADE**  
NOT TO SCALE

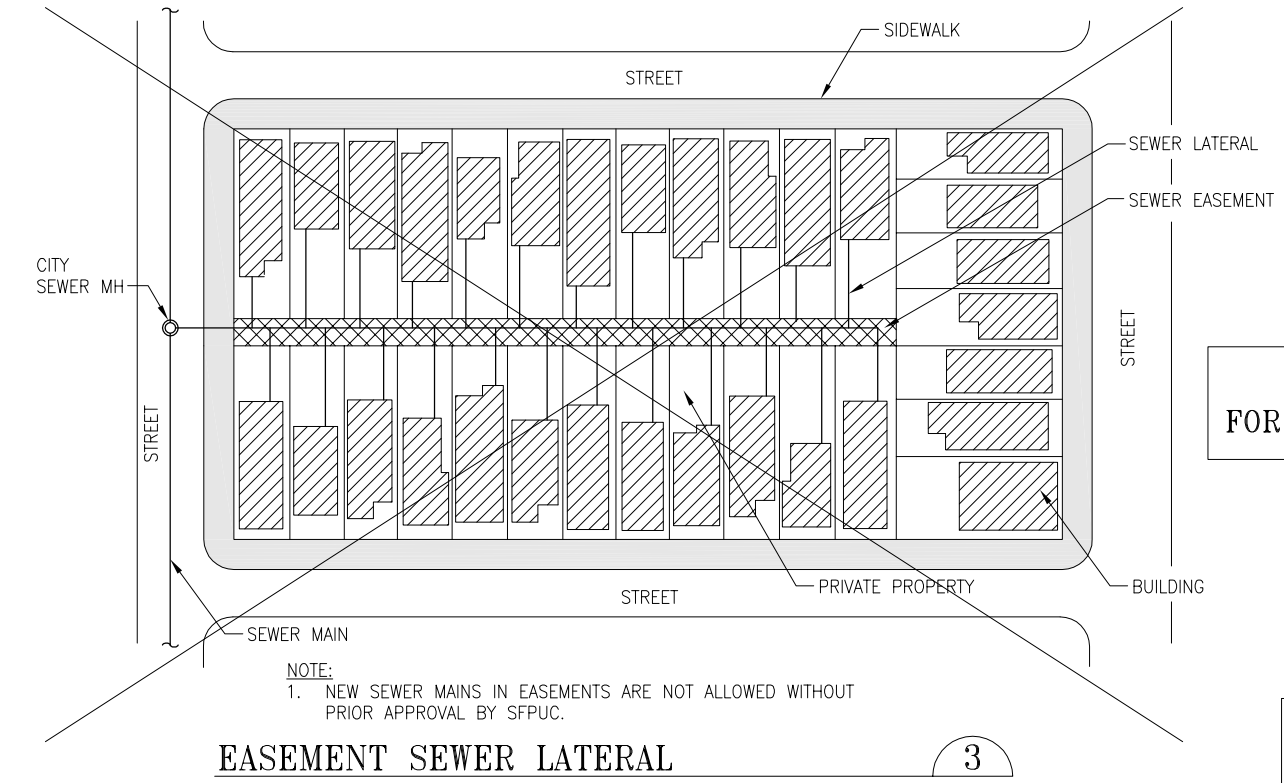
NOT ALLOWED FOR REFERENCE ONLY



NOTE:  
1. SEWER LATERAL MUST HAVE CLEANOUT IN THE COMBINED SEWER SYSTEM AND IN THE SANITARY SEWER SYSTEM, SEE DRAWINGS NO. 5 THROUGH NO. 8.

**SEWER LATERAL WITHOUT CLEANOUT**  
NOT TO SCALE

NOT ALLOWED FOR REFERENCE ONLY

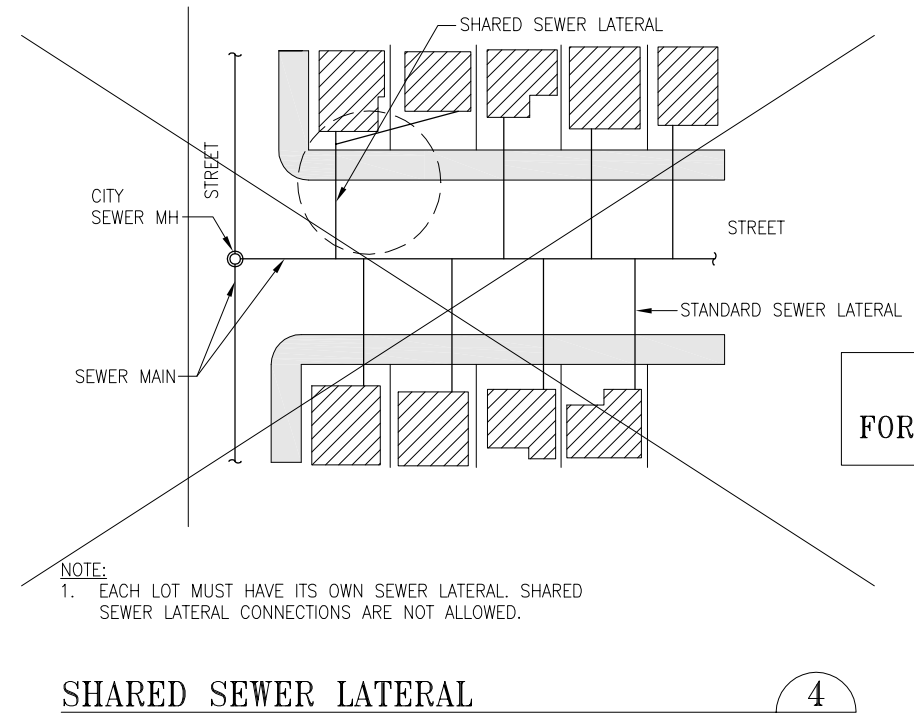


NOTE:  
1. NEW SEWER MAINS IN EASEMENTS ARE NOT ALLOWED WITHOUT PRIOR APPROVAL BY SFPUC.

**EASEMENT SEWER LATERAL**  
NOT TO SCALE

NOT ALLOWED FOR REFERENCE ONLY

APPLICABLE TO BOTH SEPARATE AND SANITARY SEWER SYSTEM



NOTE:  
1. EACH LOT MUST HAVE ITS OWN SEWER LATERAL. SHARED SEWER LATERAL CONNECTIONS ARE NOT ALLOWED.

**SHARED SEWER LATERAL**  
NOT TO SCALE

NOT ALLOWED FOR REFERENCE ONLY



**SEWER LATERAL STANDARD DETAILS**  
SAN FRANCISCO PUBLIC UTILITIES COMMISSION

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**UNACCEPTABLE SEWER LATERAL CONFIGURATIONS**