

"GCS" OR  
"SANITARY  
SEWER"

ONE MAN BLIND  
PICK HOLE

SANITARY  
SEWER

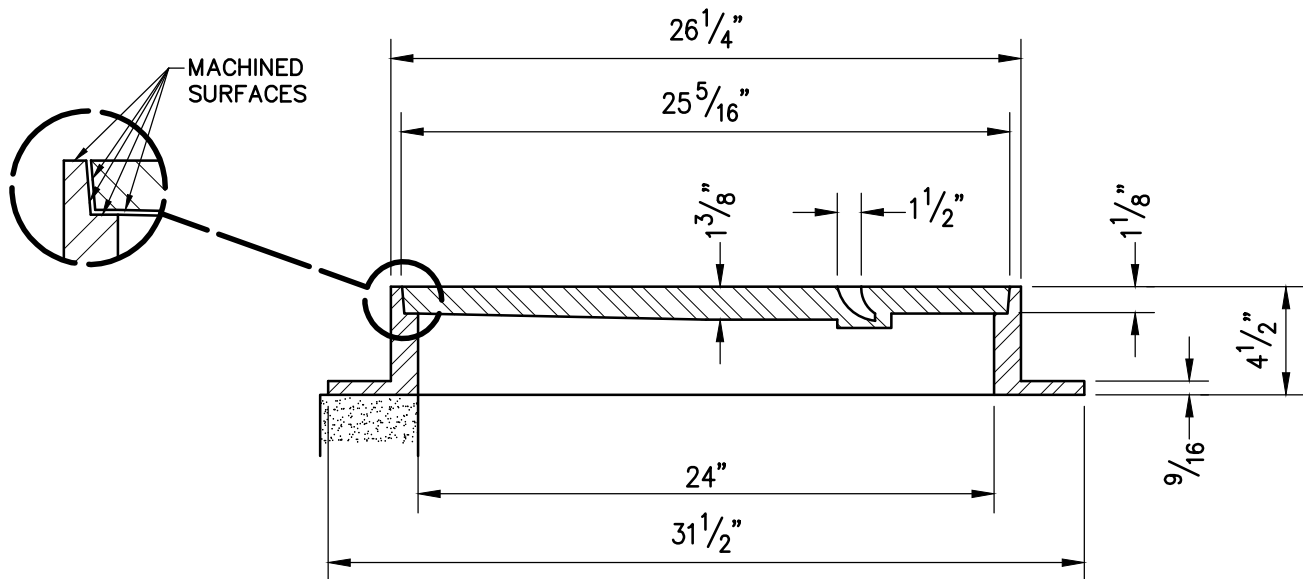
ASTM GRID  
PATTERN

$7/8"$   
 $1/2"$

GROUT HOLE  
4 - EQUALLY  
SPACED

$3 1/2"$

PLAN



SECTION

SCALE:  $1 1/2" = 1'-0"$

NOTES:

1. FRAME AND COVER SHALL BE D&L SUPPLY A-1024M, PHOENIX IRON WORKS P-1090 R/G, OR EQUAL.
2. FRAME AND COVER SHALL MEET OR EXCEED THE REQUIREMENTS OF AASHTO H-20 LOADING.

APPROVED BY:

JOHN H. RAYNER, PE

DATE: JULY 2023

GRANADA COMMUNITY SERVICES DISTRICT  
STANDARD DETAIL

**MANHOLE FRAME AND COVER**

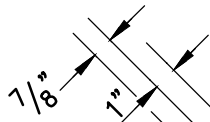
STANDARD No.

**1**

"GCSD" OR  
"SANITARY SEWER"

4-1/2" HEX-HEAD  
STAINLESS STEEL  
BOLTS

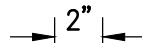
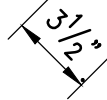
ONE MAN BLIND  
PICK HOLE



GCSD

ASTM GRID  
PATTERN

GROUT HOLE  
4-EQUALLY  
SPACED



**PLAN**

MACHINED  
SURFACES  
SAME AS D-1

26 1/4"

25 5/16"

1 3/8"

1 1/2"

1 1/8"

1/4" DIA. NEOPRENE  
"O" RING SEAL

4-5/8" CINCH  
ANCHORS

4 1/2"

9/16"

MANHOLE

24"

31 1/2"

**SECTION**

SCALE: 1 1/2" = 1'-0"

**NOTES:**

1. MAXIMUM ALLOWABLE PRESSURE SHALL BE 10 P.S.I.
2. FRAME AND COVER SHALL MEET OR EXCEED THE REQUIREMENTS OF AASHTO H-20 LOADING.
3. FRAME AND COVER SHALL BE D&L SUPPLY E-1928, PHOENIX IRON WORKS P-1002, OR EQUAL.

APPROVED BY:

JOHN H. RAYNER, PE

DATE: JULY 2023

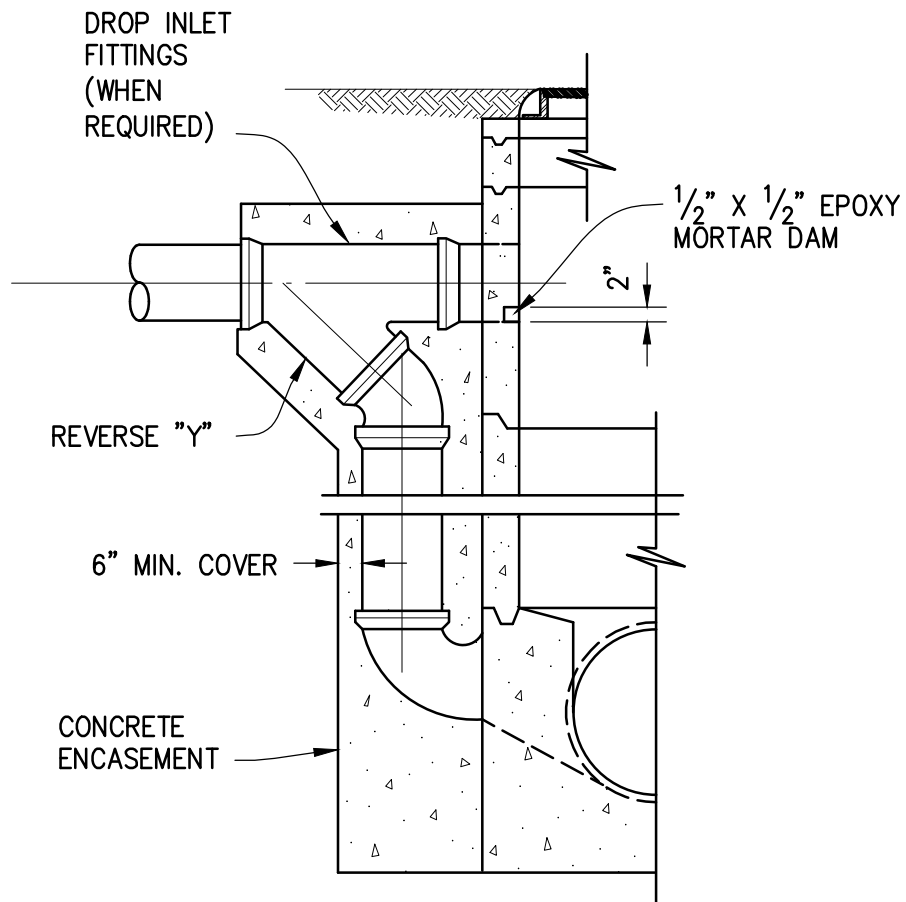
GRANADA COMMUNITY SERVICES DISTRICT  
STANDARD DETAIL

**PRESSURE TYPE  
MANHOLE FRAME AND COVER**

STANDARD No.

**2**





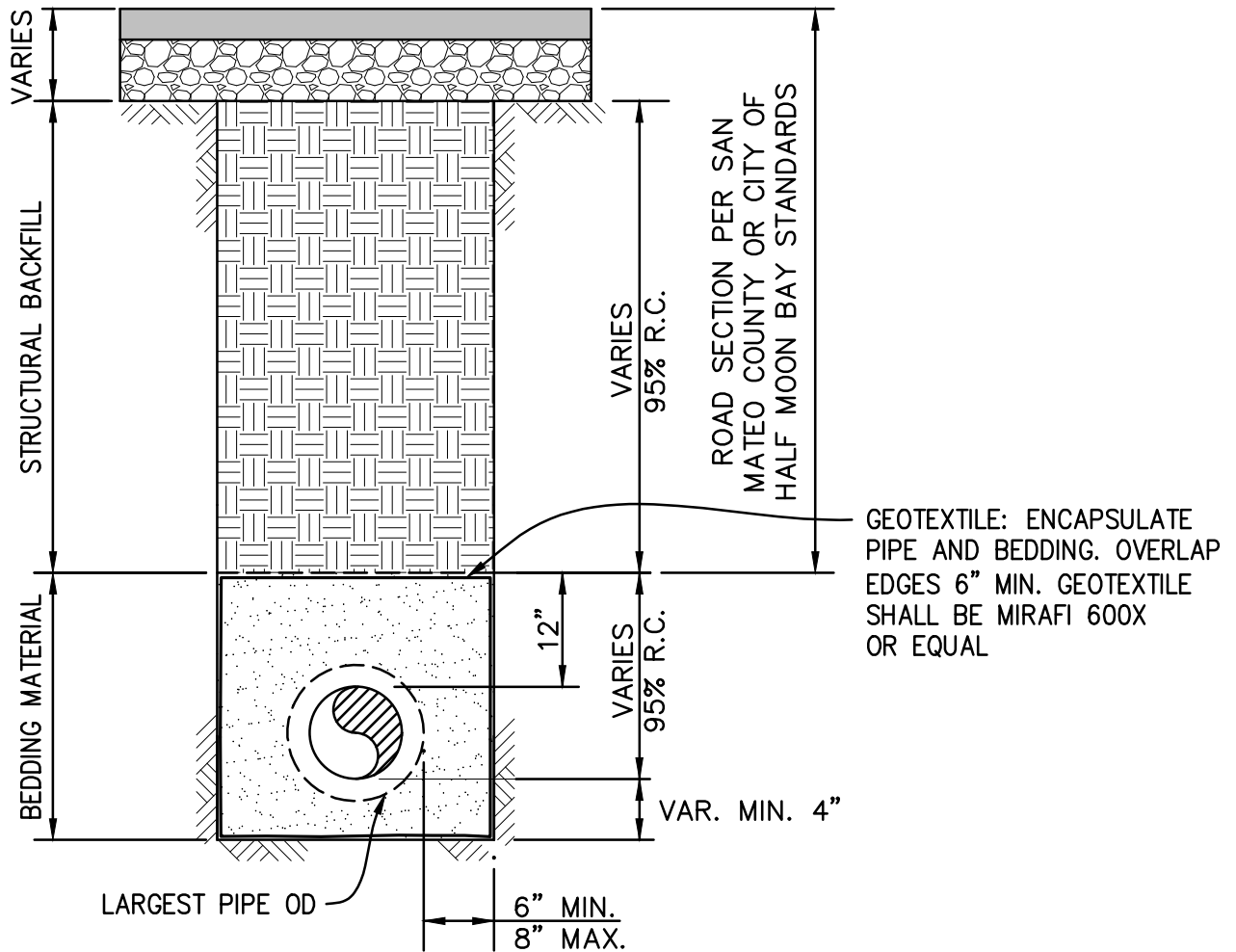
WITH DROP INLET

NOTE:

USE DROP INLET WHEN THE ELEVATION DIFFERENCE BETWEEN THE OUTLET PIPE CROWN AND THE INLET PIPE INVERT IS GREATER THAN 18 INCHES.

NOT TO SCALE

APPROVED BY: JOHN H. RAYNER, PE	GRANADA COMMUNITY SERVICES DISTRICT STANDARD DETAIL	STANDARD No.
DATE: JULY 2023	<b>MANHOLE DROP INLET</b>	<b>4</b>



**TYPICAL TRENCH SECTION**

STRUCTURAL BACKFILL\*

BEDDING MATERIAL

STRUCTURAL BACKFILL REQUIREMENTS  
(CALTRANS CALIF. TEST 202) MIN. SAND  
EQUIVALENT OF 20.

GRANULAR BEDDING MATERIAL REQUIREMENTS  
(ASTM D448 SIZE #67)

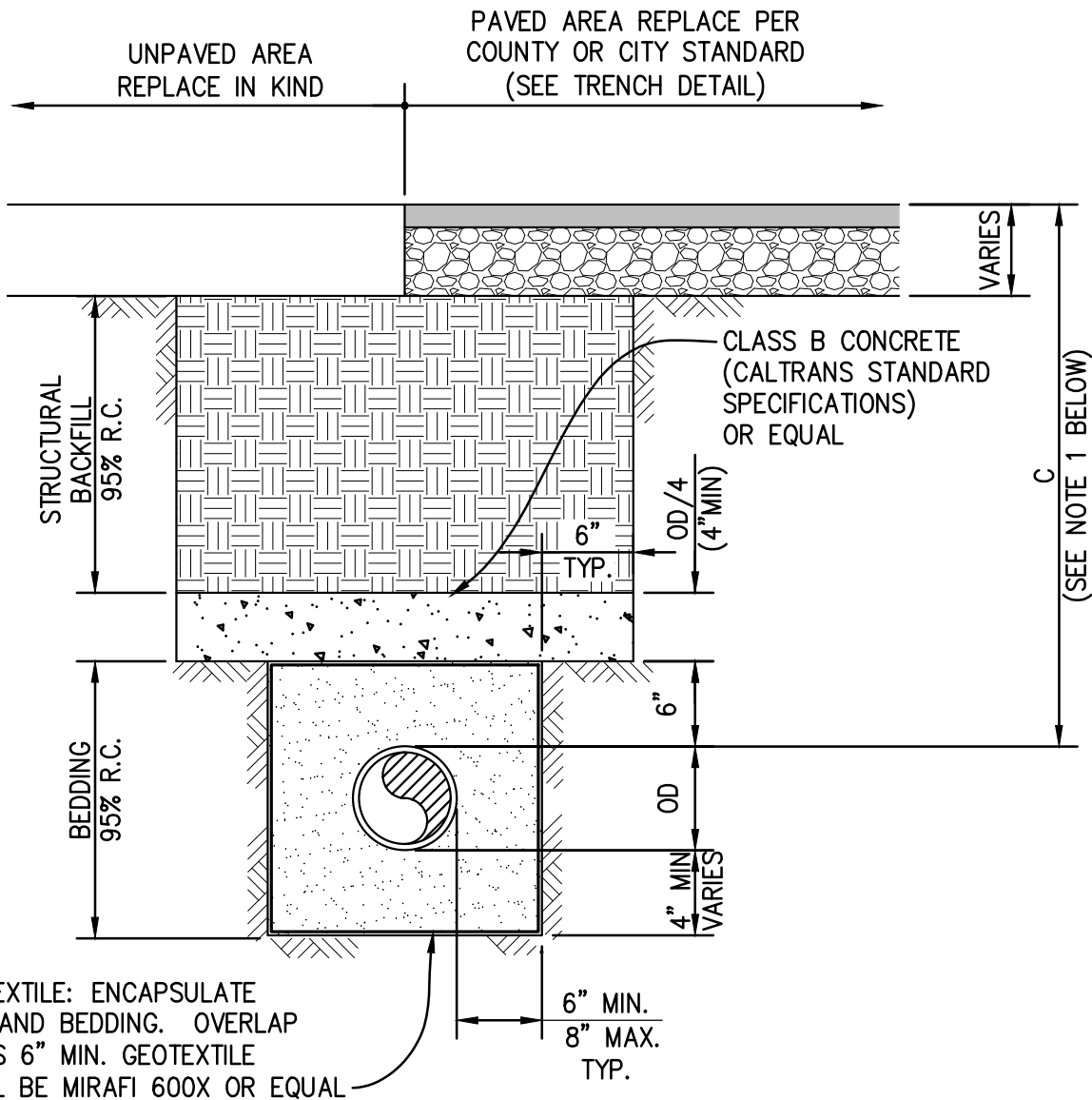
SIEVE SIZES	PERCENTAGE PASSING
1-1/2"	100
3/4"	80-100
#4	30-60
#30	5-35
#200	0-12

SIEVE SIZES	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	20-55
#4	0-10
#8	0-5

\* USE ROADWAY AGENCY STANDARD.  
IF NO ROADWAY AGENCY STANDARD,  
USE REQUIREMENTS ABOVE.

NOT TO SCALE

APPROVED BY:  JOHN H. RAYNER, PE	GRANADA COMMUNITY SERVICES DISTRICT STANDARD DETAIL	STANDARD No.
DATE: JULY 2023	<b>STANDARD BACKFILL DETAIL</b>	<b>5</b>

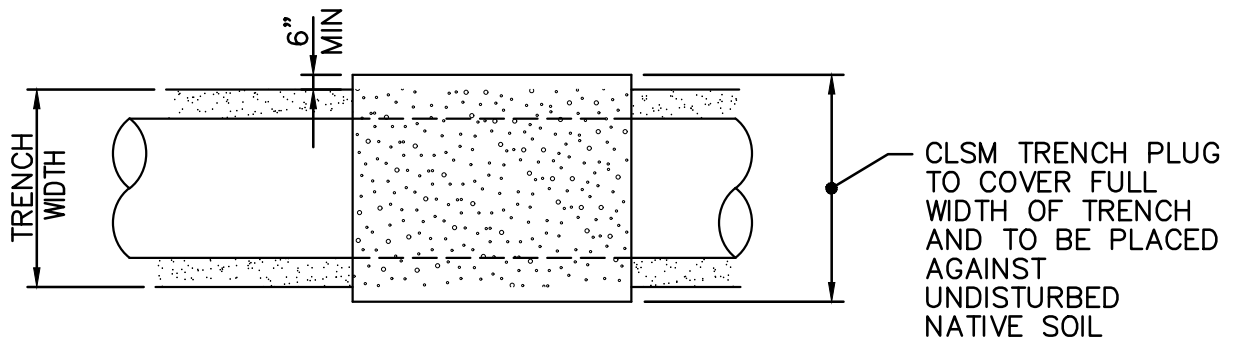


**NOTES:**

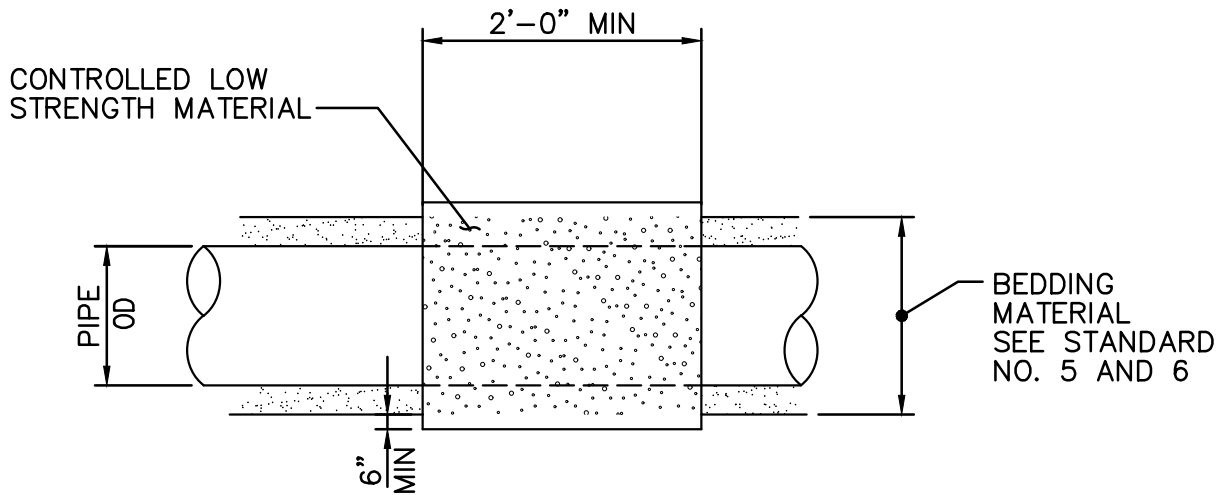
1. THIS DETAIL APPLIES WHERE COVER "C" IS LESS THAN 3 FEET AND SHALL ONLY BE USED WHERE APPROVED BY DISTRICT ENGINEER.
2. PIPE MATERIAL SHALL BE POLYETHYLENE WRAPPED DUCTILE IRON. CONCRETE CAPS SHALL NOT BE USED OVER PLASTIC PIPE.
3. BEDDING MATERIAL SHALL BE COMPACTED PRIOR TO CONCRETE PLACING.
4. SEE STANDARD TRENCH DETAIL, STANDARD NO. 5 FOR BEDDING AND BACKFILL MATERIAL REQUIREMENTS.
5. SEE STANDARD NO. 7 FOR TRENCH PLUG DETAIL.

NOT TO SCALE

APPROVED BY:  JOHN H. RAYNER, PE  DATE: JULY 2023	GRANADA COMMUNITY SERVICES DISTRICT STANDARD DETAIL  <b>CONCRETE CAP</b>	STANDARD No.  <b>6</b>
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PLAN



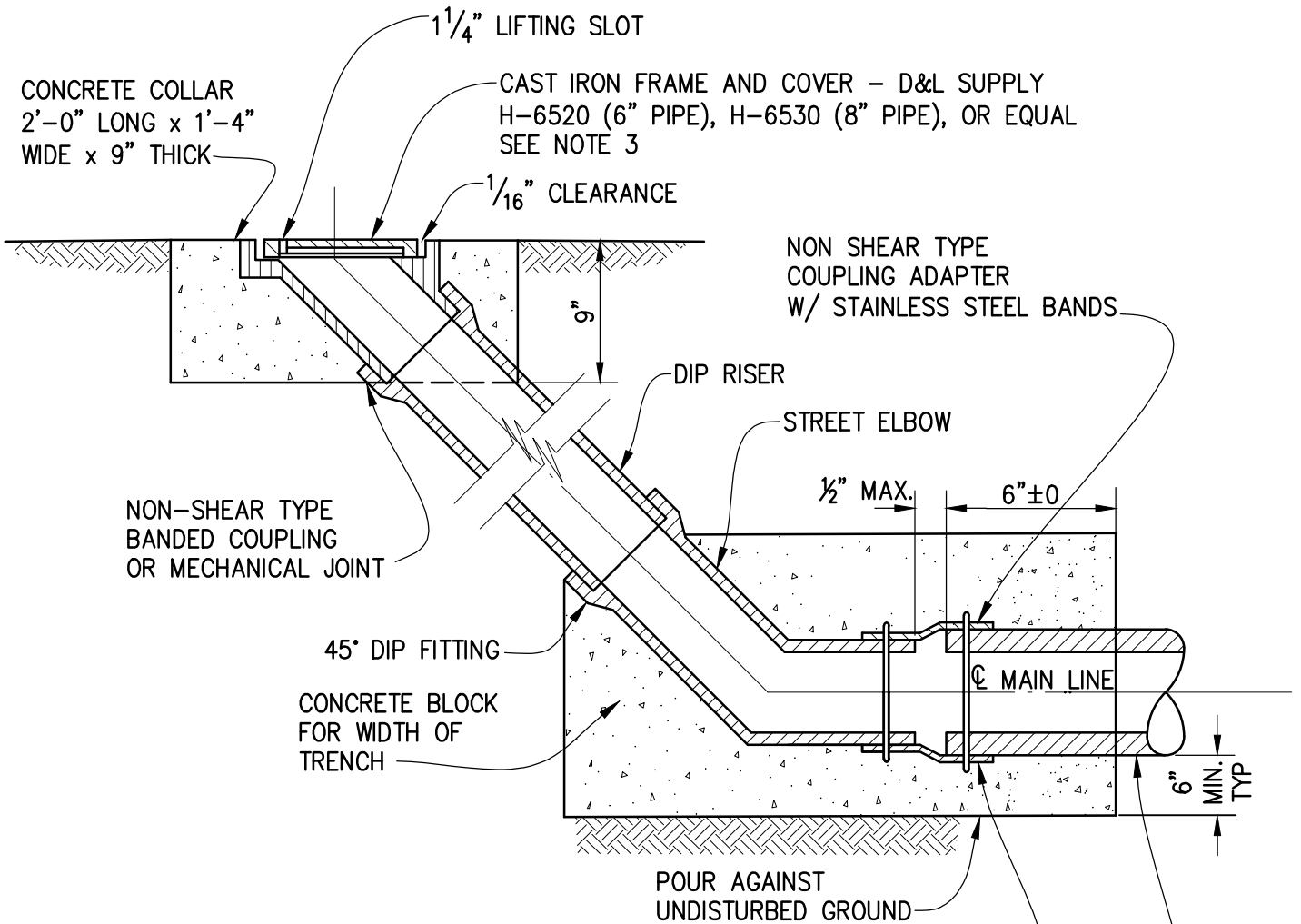
SECTION

NOTES:

1. TRENCH PLUGS SHALL BE SPACED AT EVERY 500' OR LESS, UNLESS INDICATED OTHERWISE.
2. PLACE TRENCH PLUG AGAINST UNDISTURBED NATIVE MATERIAL.

NOT TO SCALE

APPROVED BY: JOHN H. RAYNER, PE DATE: JULY 2023	GRANADA COMMUNITY SERVICES DISTRICT STANDARD DETAIL <b>TRENCH PLUG</b>	STANDARD No. <b>7</b>
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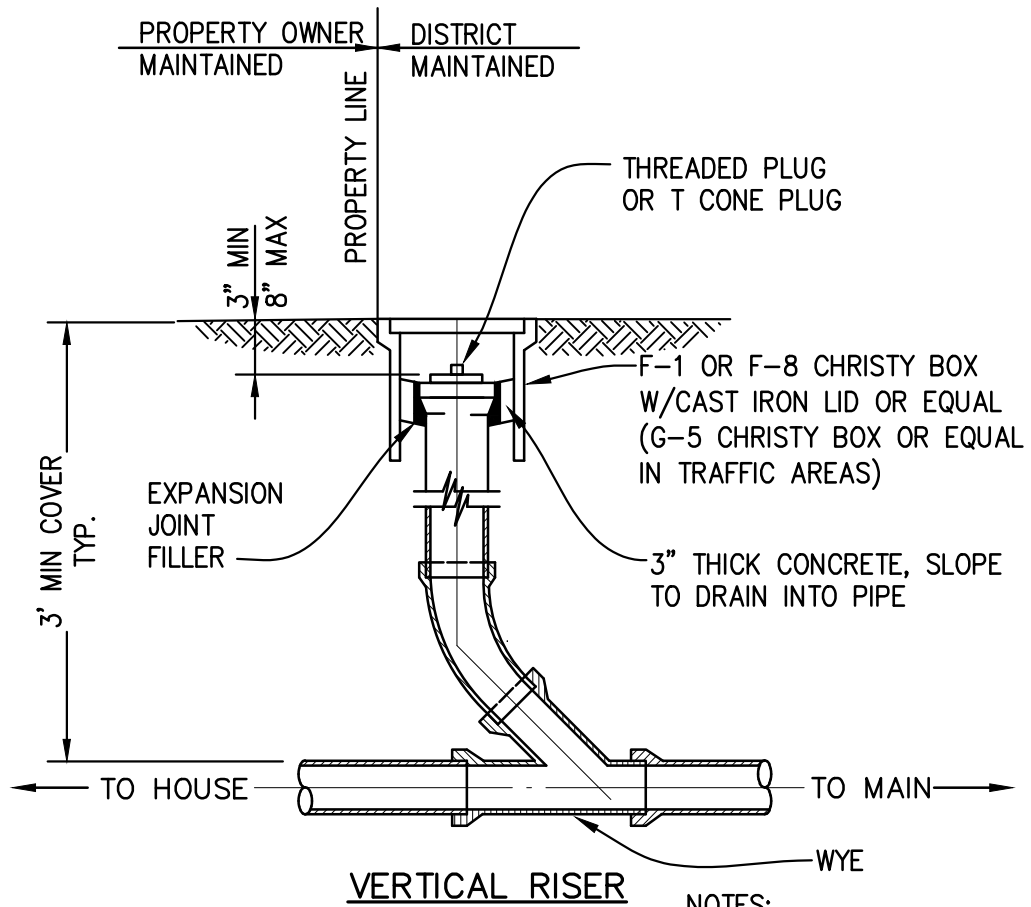
**NOTES:**

1. MAINLINE FLUSHING INLET SHALL ONLY BE USED WHERE APPROVED BY DISTRICT ENGINEER.
2. CONCRETE ENCASE BANDED COUPLINGS 6" MIN.
3. COVER SHALL BE MARKED WITH "SEWER".
4. COAT CUT DUCTILE IRON PIPE ENDS WITH AN EPOXY SEALER.

NOT TO SCALE

APPROVED BY: JOHN H. RAYNER, PE DATE: JULY 2023	GRANADA COMMUNITY SERVICES DISTRICT STANDARD DETAIL <b>FLUSHING INLET</b>	STANDARD No. <b>8</b>
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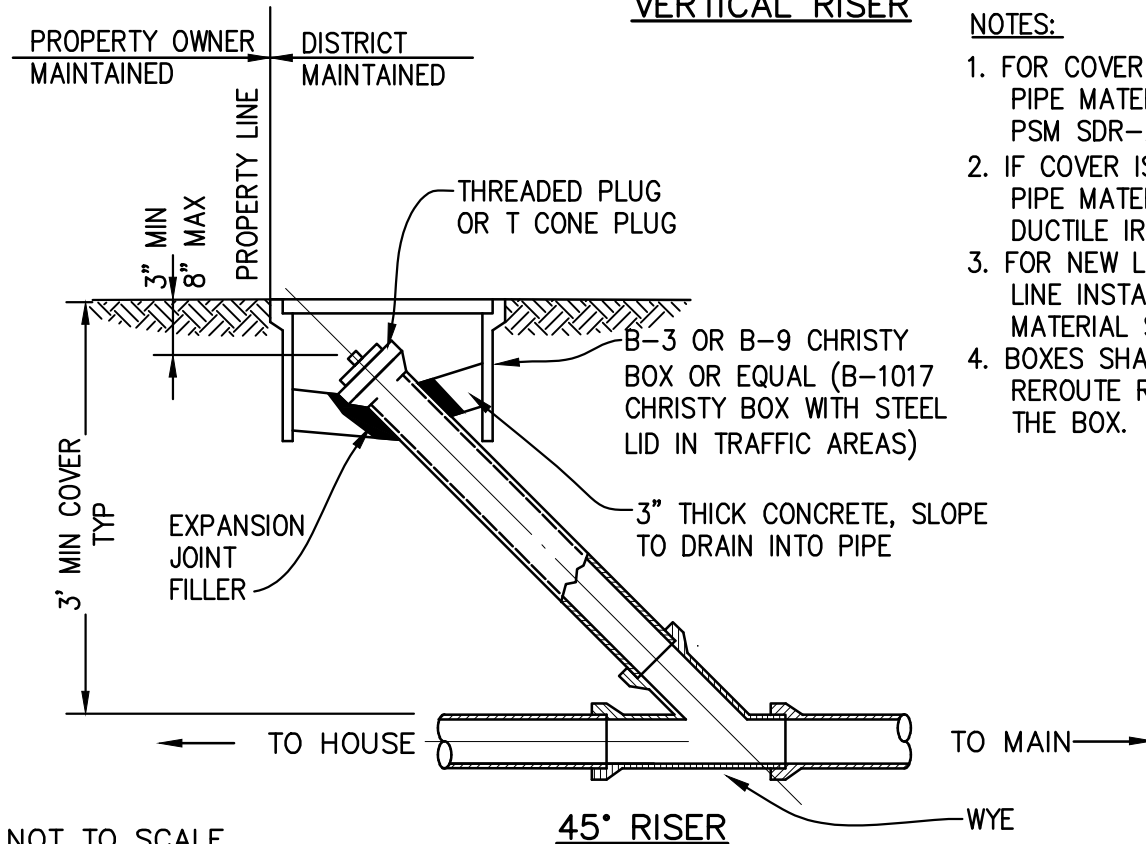




**VERTICAL RISER**

**NOTES:**

1. FOR COVER 3' AND GREATER, PIPE MATERIAL SHALL BE PVC PSM SDR-26 OR HDPE SDR-17.
2. IF COVER IS LESS THAN 3', PIPE MATERIAL SHALL BE DUCTILE IRON.
3. FOR NEW LATERAL AND MAIN LINE INSTALLATIONS, PIPE MATERIAL SHALL BE THE SAME.
4. BOXES SHALL BE RAISED TO REROUTE RUNOFF AROUND THE BOX.



NOT TO SCALE

**45° RISER**

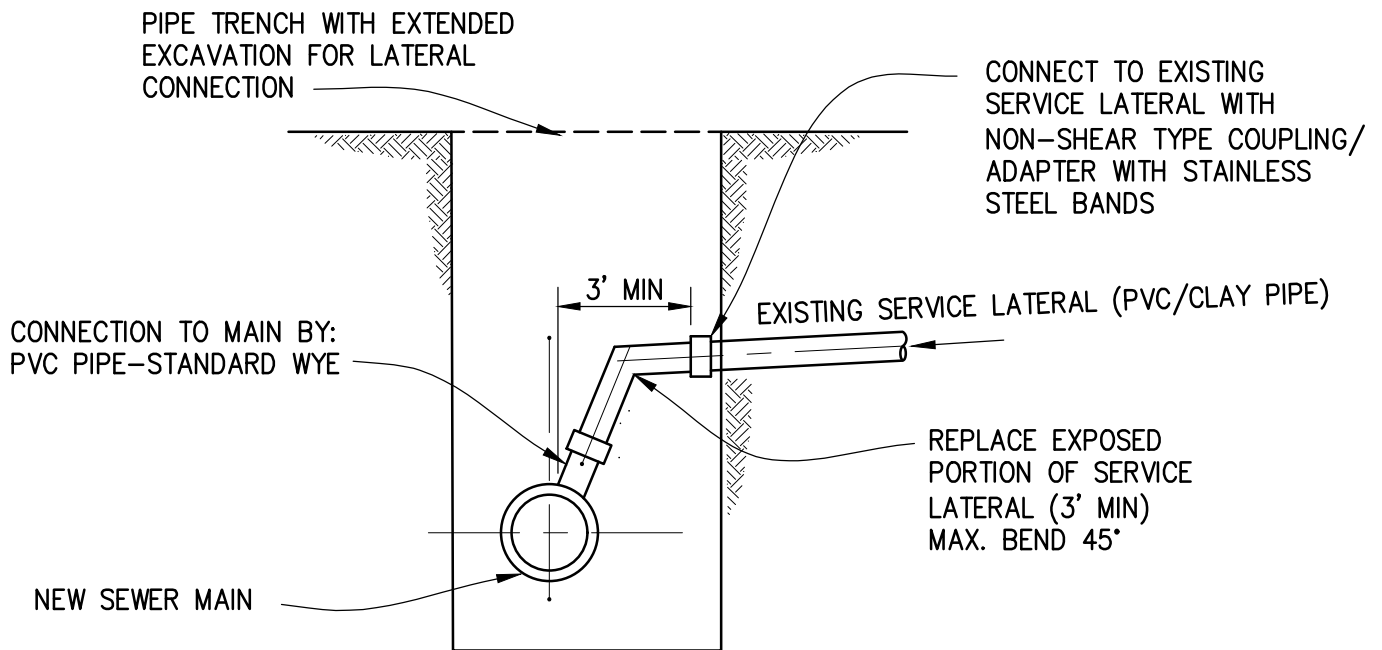
APPROVED BY:  
 JOHN H. RAYNER, PE  
 DATE: JULY 2023

GRANADA COMMUNITY SERVICES DISTRICT  
 STANDARD DETAIL

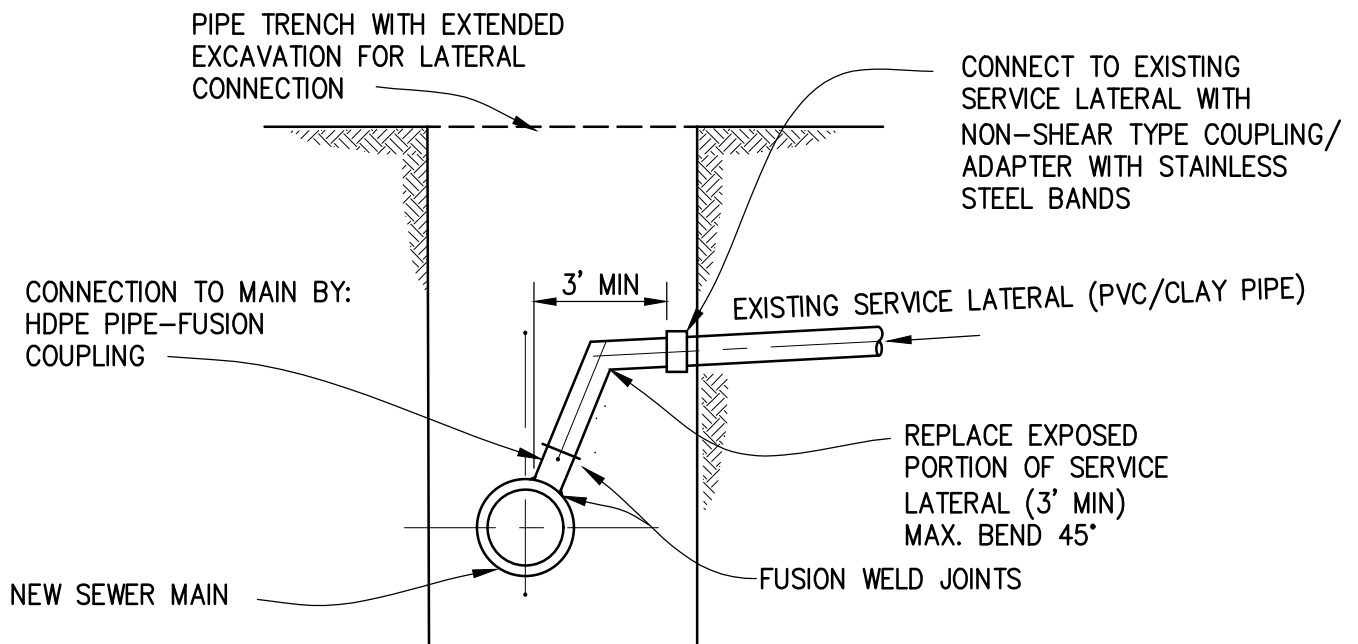
STANDARD No.

**TYPICAL  
 SERVICE LATERAL CLEANOUT**

**9**



**PVC PIPE LATERAL CONNECTION**



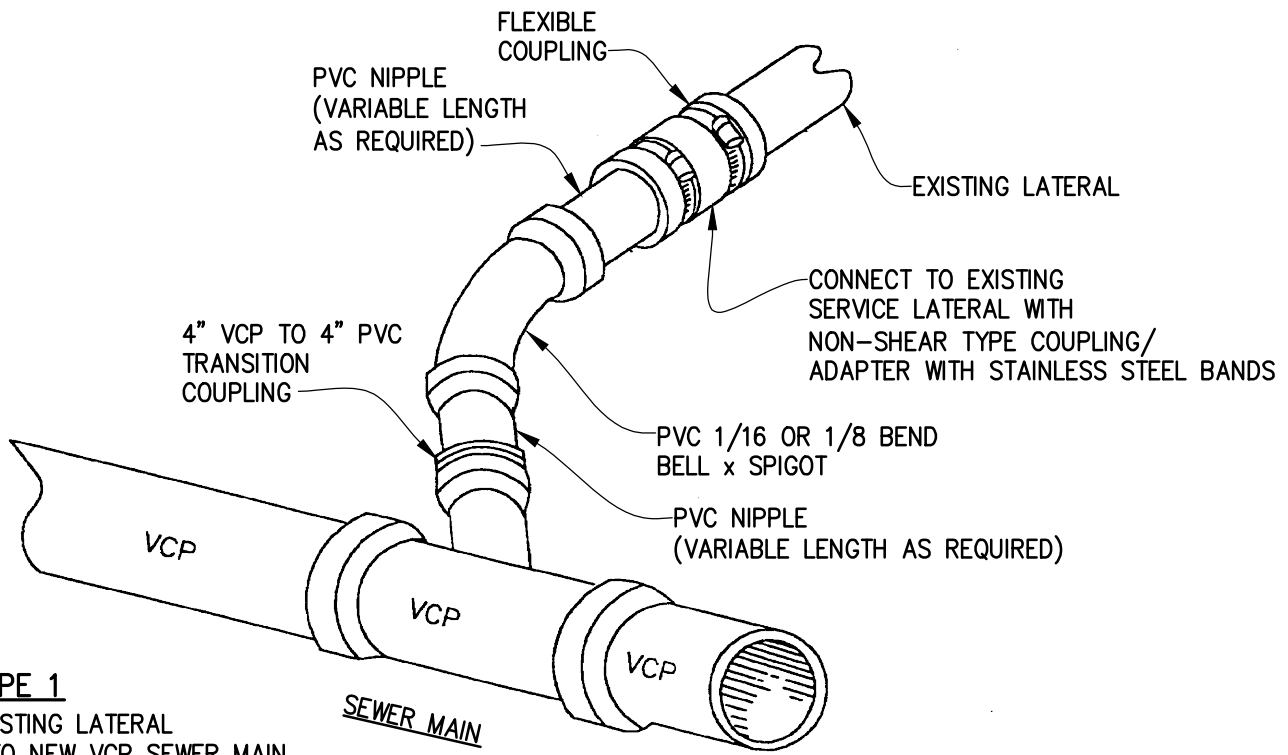
**NEW MAIN LINE HDPE LATERAL CONNECTION**

**NOTES:**

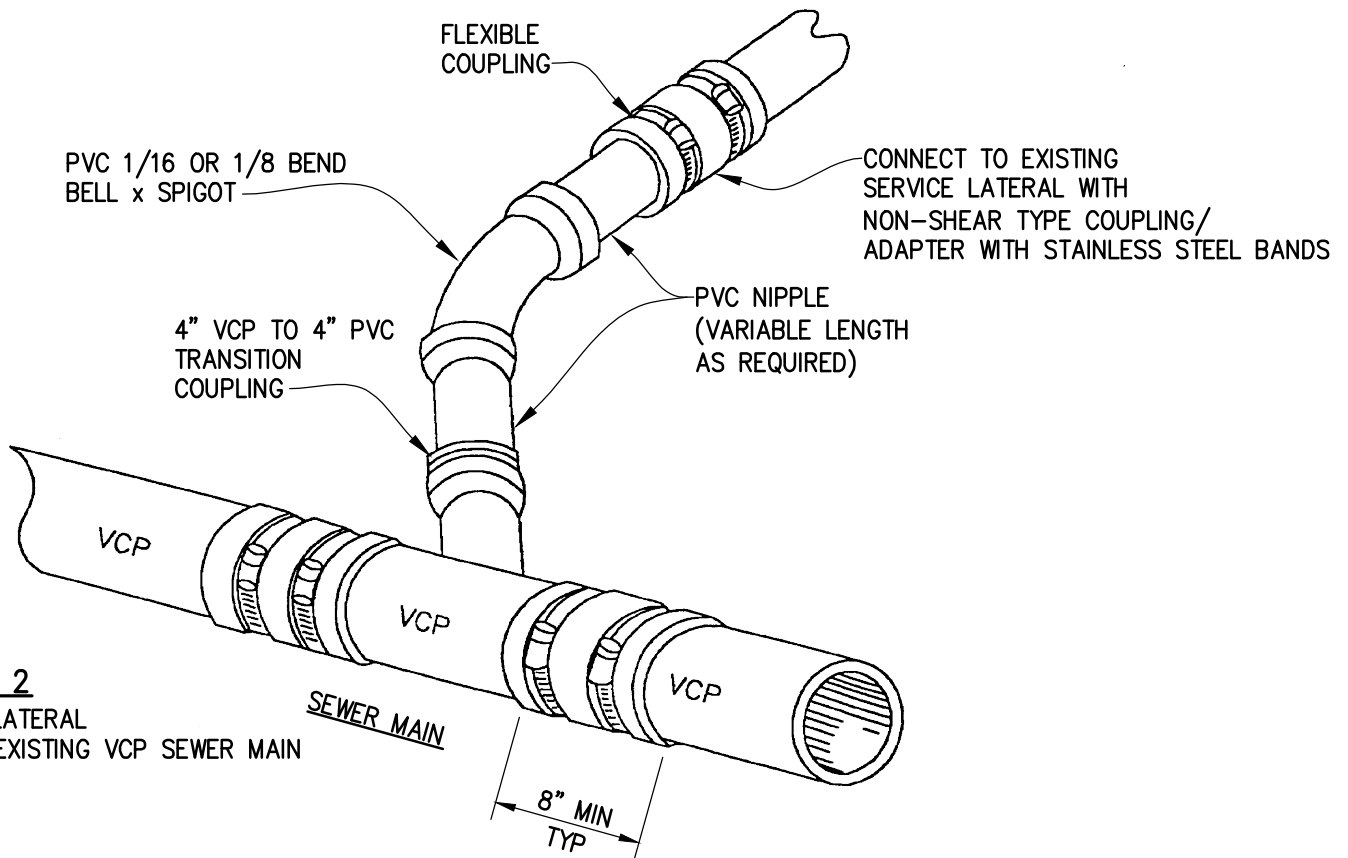
1. REPLACEMENT SERVICE LATERALS SHALL BE SAME MATERIAL AS MAIN.
2. ROOT CONTROL SHALL BE APPLIED TO JOINTS AT NEW/EXISTING SERVICE LATERAL CONNECTION PER SPEC SECTION C5.
3. PVC - MAXIMUM GAP BETWEEN PIPES AT COUPLINGS 1/2".

NOT TO SCALE

APPROVED BY:  JOHN H. RAYNER, PE	GRANADA COMMUNITY SERVICES DISTRICT STANDARD DETAIL	STANDARD No.
DATE: JULY 2023	<b>LATERAL RECONNECTION DETAIL NEW SEWER MAIN CONSTRUCTION</b>	<b>10</b>



**TYPE 1**  
EXISTING LATERAL INTO NEW VCP SEWER MAIN



**TYPE 2**  
NEW LATERAL INTO EXISTING VCP SEWER MAIN

NOT TO SCALE

APPROVED BY:  
JOHN H. RAYNER, PE

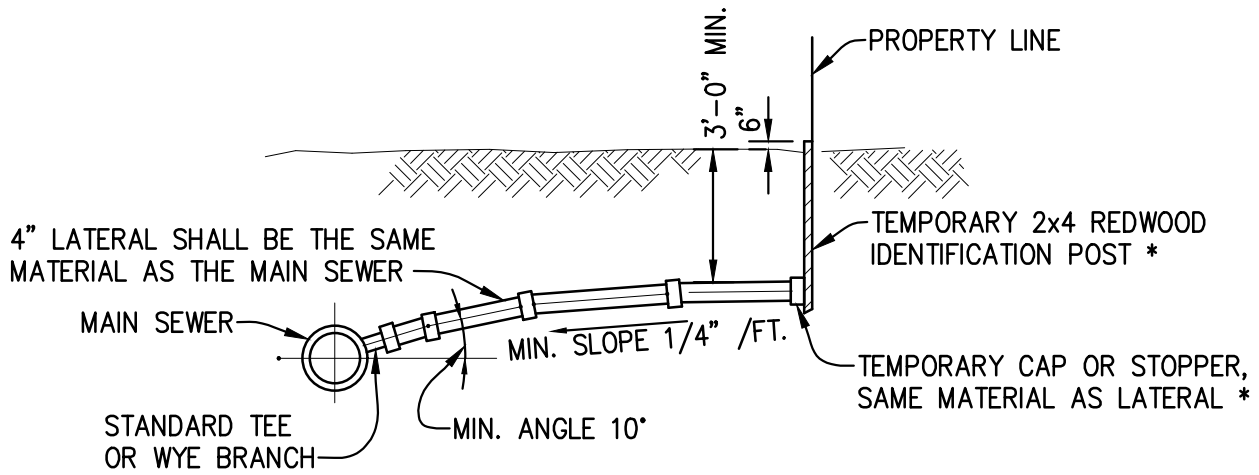
DATE: JULY 2023

GRANADA COMMUNITY SERVICES DISTRICT  
STANDARD DETAIL

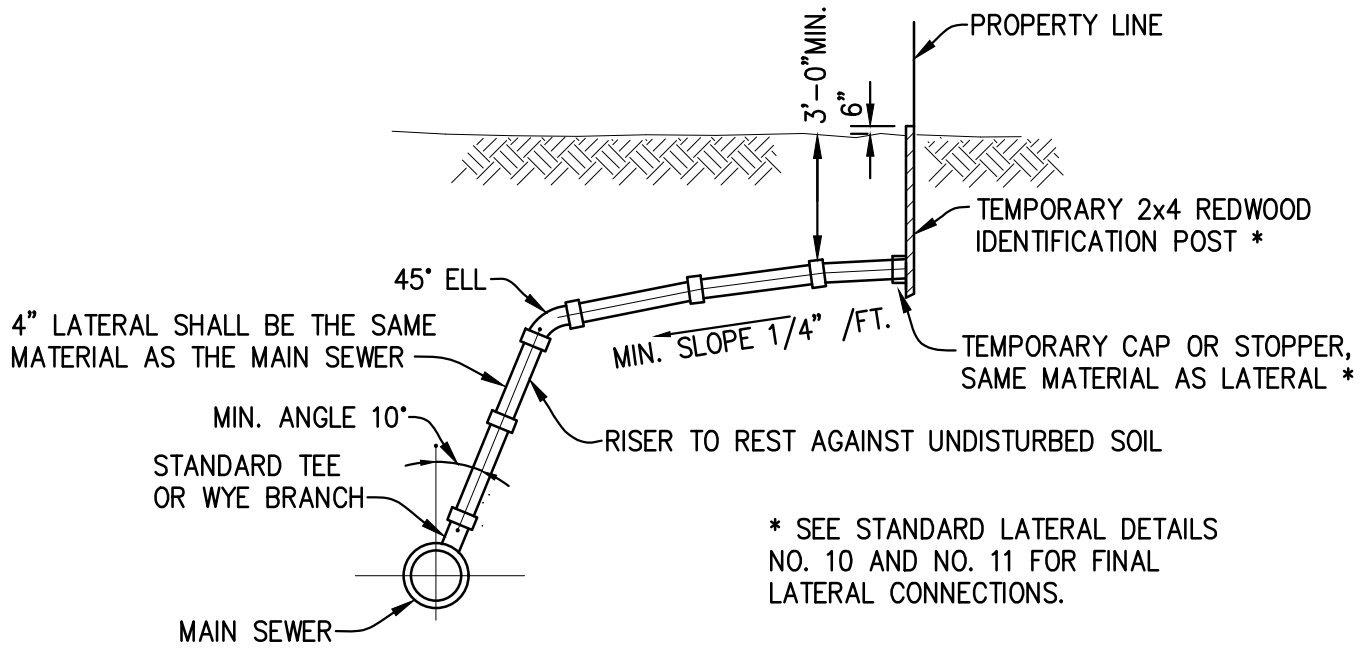
**LATERAL CONNECTION TO  
VCP MAIN – TYPE 1 & TYPE 2**

STANDARD No.

11

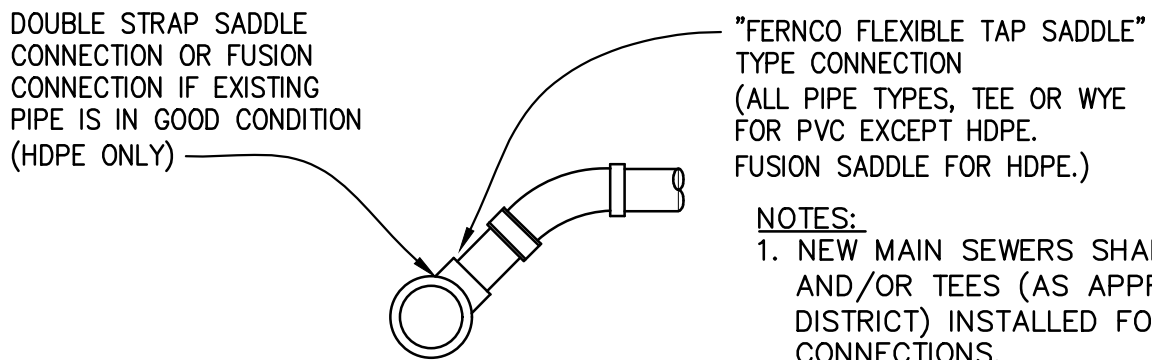


**SHALLOW SEWER – 10' AND LESS**



\* SEE STANDARD LATERAL DETAILS NO. 10 AND NO. 11 FOR FINAL LATERAL CONNECTIONS.

**DEEP SEWER – GREATER THAN 10'**



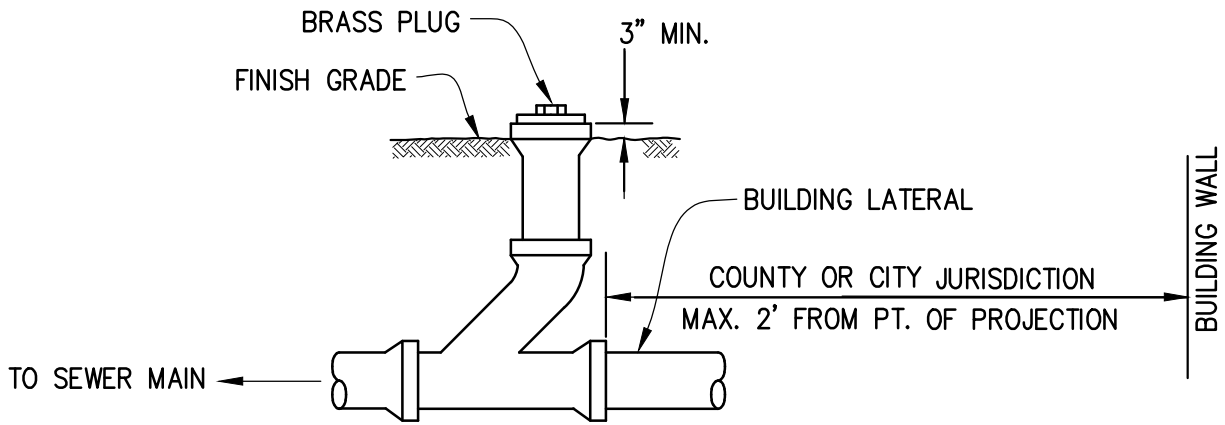
**CONNECTION TO EXISTING MAIN TO BE USED UNLESS OTHERWISE**

- NOTES:**
1. NEW MAIN SEWERS SHALL HAVE WYES AND/OR TEES (AS APPROVED BY DISTRICT) INSTALLED FOR LATERAL CONNECTIONS.
  2. ENCASE ALL COUPLINGS OR SADDLE CONNECTIONS IN CLASS A CONCRETE 6" ALL AROUND AND BEYOND ENDS.

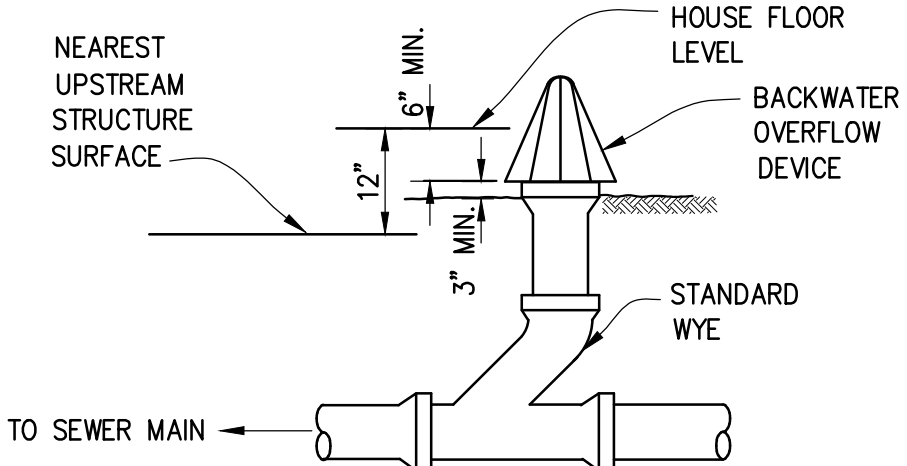
NOT TO SCALE

APPROVED BY: JOHN H. RAYNER, PE	GRANADA COMMUNITY SERVICES DISTRICT STANDARD DETAIL	STANDARD No.
DATE: JULY 2023	<b>LATERAL CONNECTION</b>	

**12**



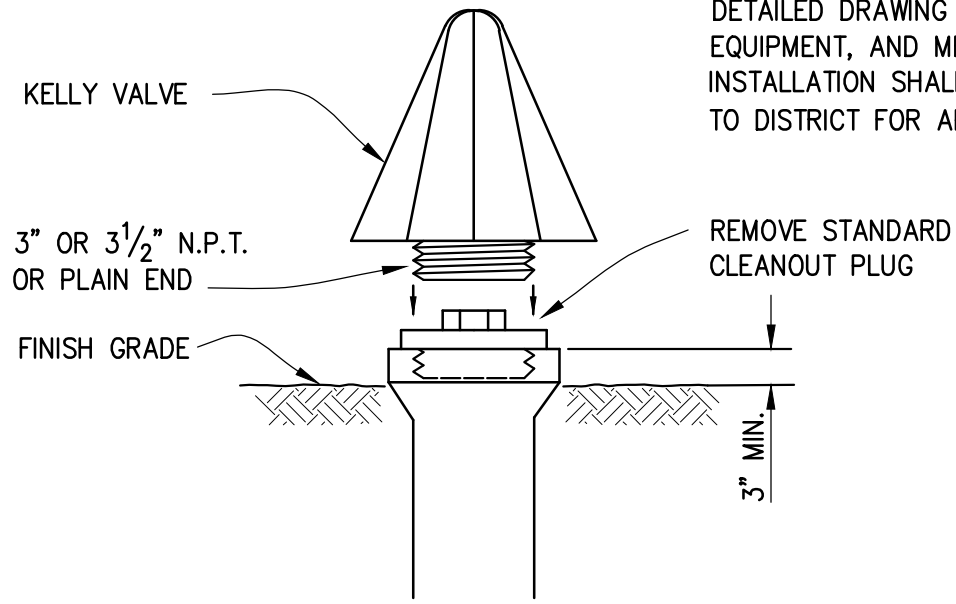
**STANDARD CLEANOUT  
AT BUILDING UNIT**



**OVERFLOW SYSTEM**

**NOTE:**

DETAILED DRAWING OF LOCATION, EQUIPMENT, AND METHOD OF INSTALLATION SHALL BE SUBMITTED TO DISTRICT FOR APPROVAL.



**BACKWATER OVERFLOW DEVICE**

NOT TO SCALE

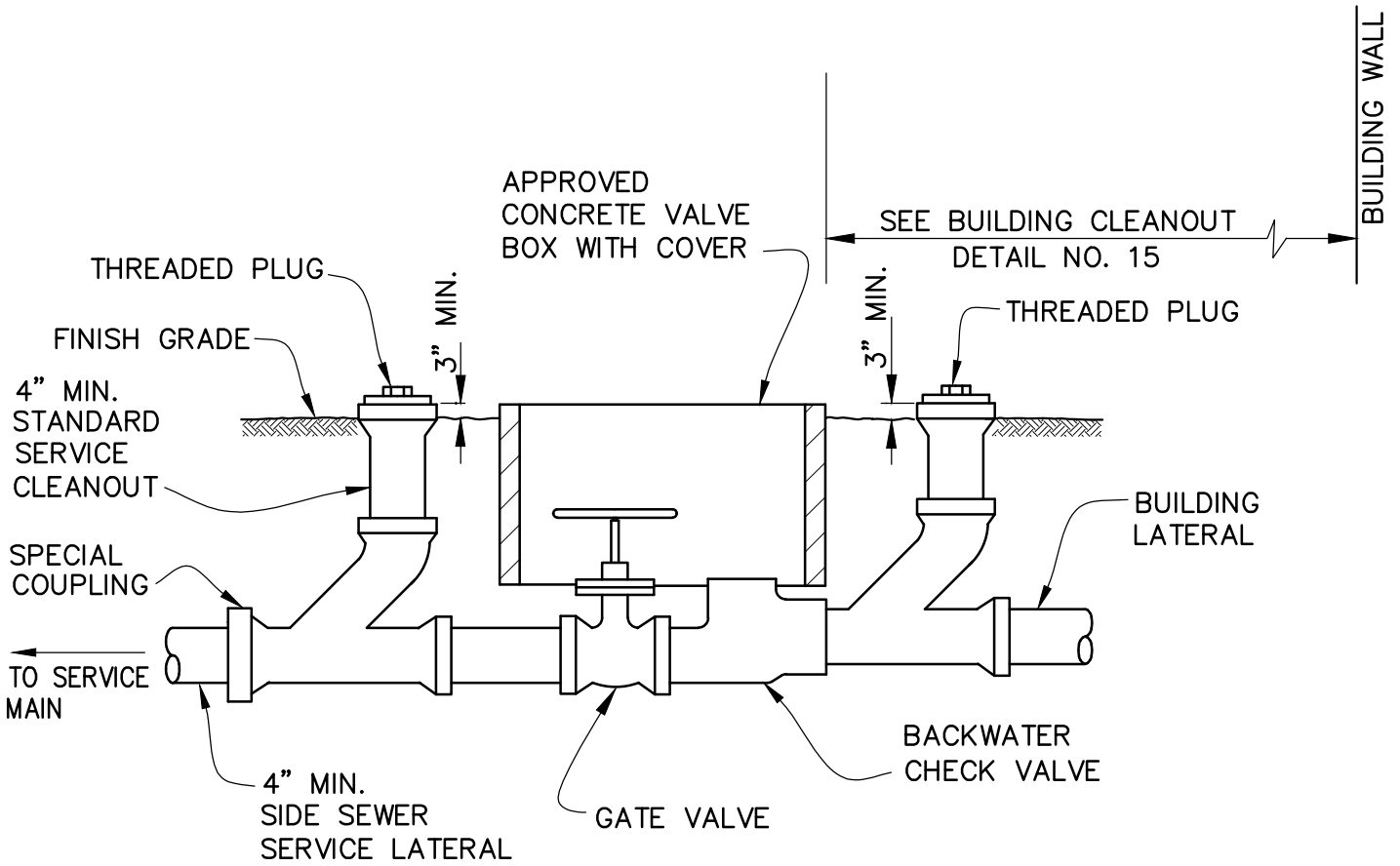
APPROVED BY:  
JOHN H. RAYNER, PE  
DATE: JULY 2023

GRANADA COMMUNITY SERVICES DISTRICT  
STANDARD DETAIL

**BUILDING CLEANOUT AND  
BACKWATER OVERFLOW DEVICE**

STANDARD No.

**13**

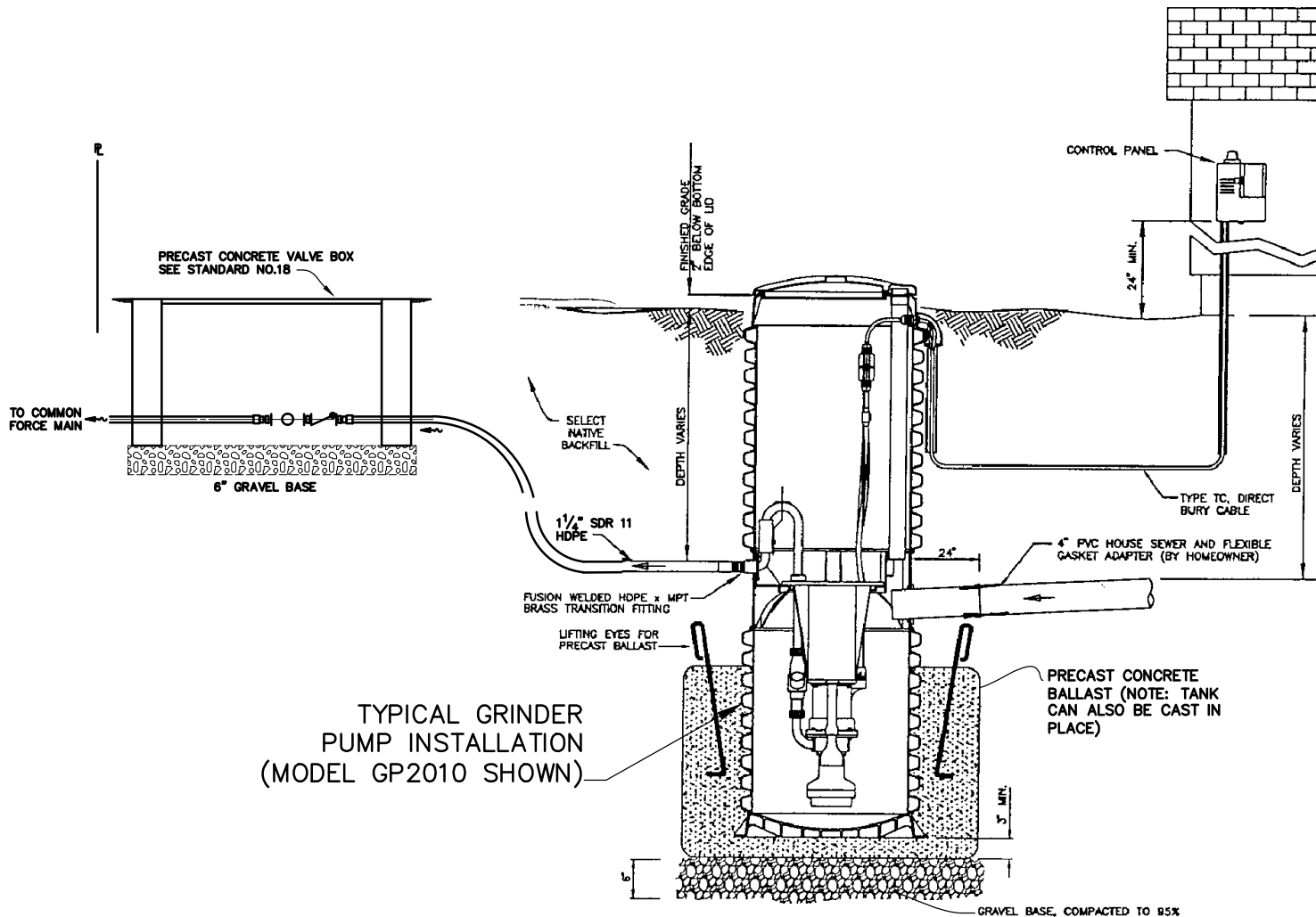


NOT TO SCALE

APPROVED BY:  
 JOHN H. RAYNER, PE  
 DATE: JULY 2023

GRANADA COMMUNITY SERVICES DISTRICT  
 STANDARD DETAIL  
**BACKWATER CHECK VALVE AND  
 SHUTOFF SYSTEM**

STANDARD No.  
**14**



TYPICAL GRINDER PUMP INSTALLATION (MODEL GP2010 SHOWN)

NOT TO SCALE

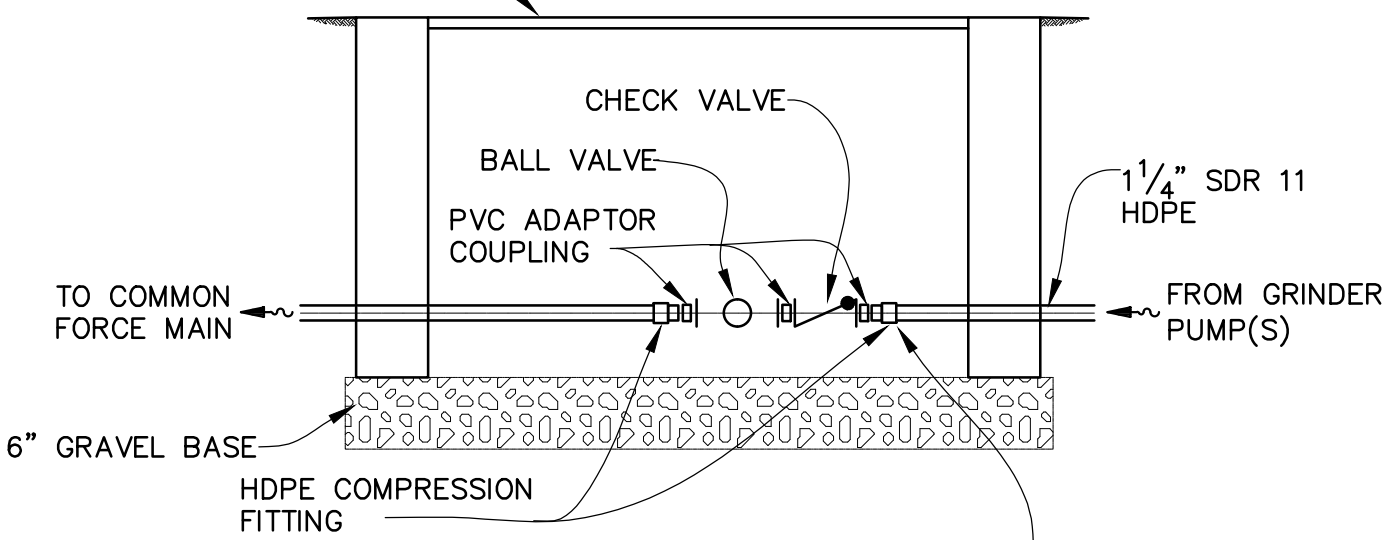
APPROVED BY:  
 JOHN H. RAYNER, PE  
 DATE: JULY 2023

GRANADA COMMUNITY SERVICES DISTRICT  
 STANDARD DETAIL

**TYPICAL  
 GRINDER PUMP INSTALLATION**

STANDARD No.  
**15**

PRECAST CONCRETE VALVE BOX WITH  
REMOVABLE TRAFFIC LID, DESIGNED  
FOR H2O LOADING.

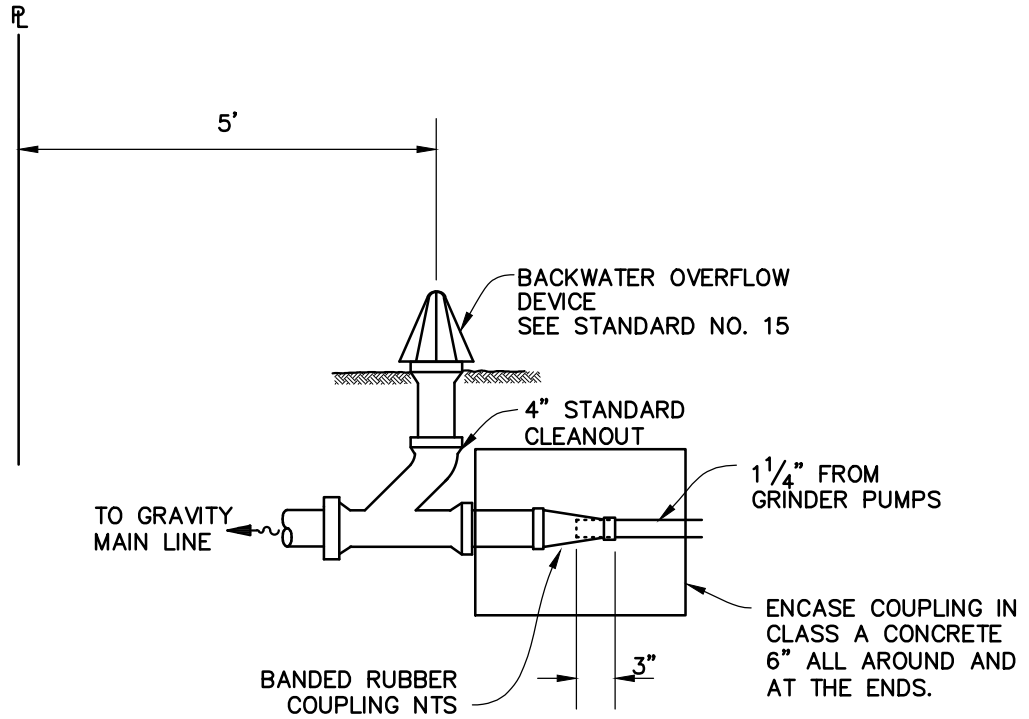


AT LOCATIONS WHERE CONNECTION  
FROM GRINDER PUMP TO THE CHECK  
VALVE IS NOT COMPLETED, CAP AND  
SECURE THE PIPE END.

NOT TO SCALE

APPROVED BY: JOHN H. RAYNER, PE DATE: JULY 2023	GRANADA COMMUNITY SERVICES DISTRICT STANDARD DETAIL <b>GRINDER PUMP SYSTEM          CONNECTION TO          COMMON FORCE MAIN</b>	STANDARD No. <b>16</b>
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NOT TO SCALE

APPROVED BY:  
 JOHN H. RAYNER, PE

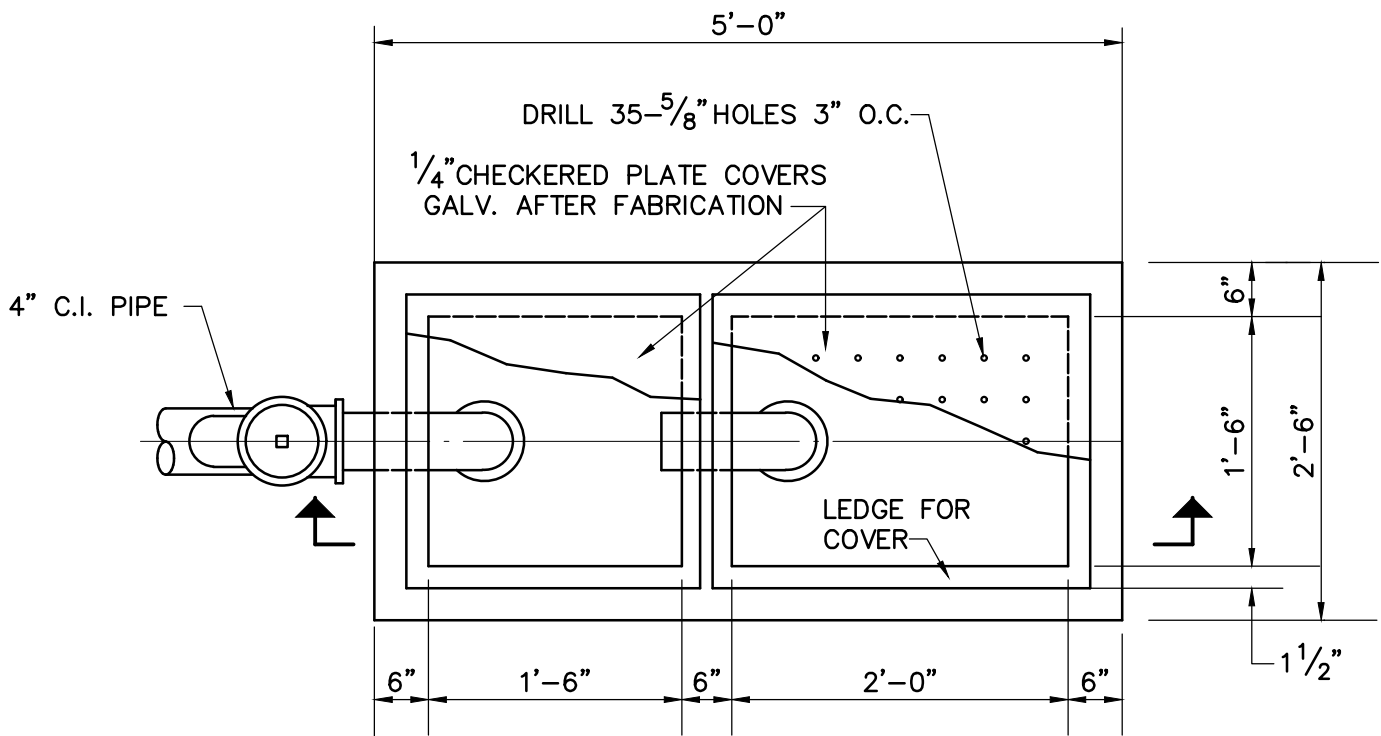
DATE: JULY 2023

GRANADA COMMUNITY SERVICES DISTRICT  
 STANDARD DETAIL

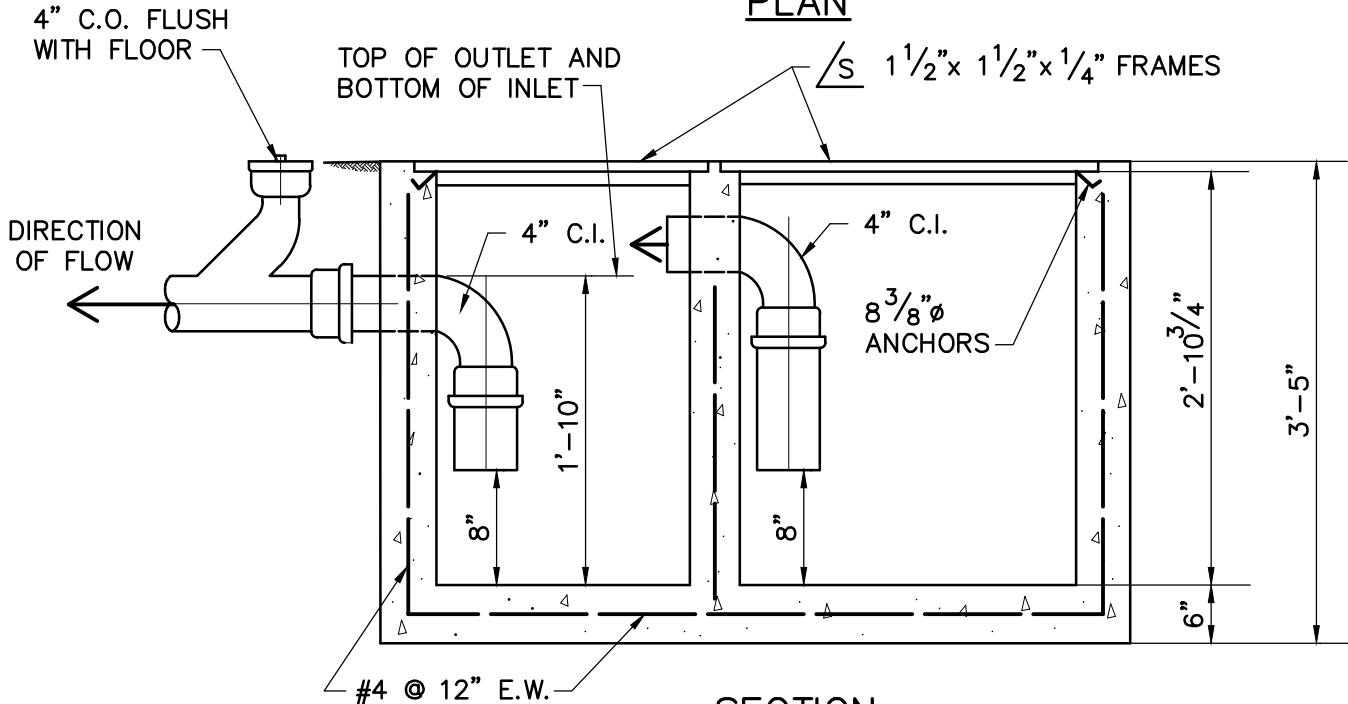
**GRINDER PUMP SYSTEM  
 CONNECTION TO  
 GRAVITY MAIN SYSTEM**

STANDARD No.

**17**



**PLAN**



**SECTION**

**NOTE:**

THE SIZE OF THE INTERCEPTOR SHALL BE DETERMINED BY THE UNIFORM PLUMBING CODE. THE UNIT SHOWN IS THE MINIMUM RESIDENTIAL UNIT.

NOT TO SCALE

APPROVED BY:  
 JOHN H. RAYNER, PE  
 DATE: JULY 2023

GRANADA COMMUNITY SERVICES DISTRICT  
 STANDARD DETAIL

**GREASE & SAND INTERCEPTOR**

STANDARD No.

**18**