County of San Mateo

Sanitary Sewer Standard Details and Specifications

C-1 Sanitary Sewer Manhole Detail

C-2 Sanitary Sewer Manhole Covers and Frames

C-3 Standard Sewer Cleanout Detail

C-4 Sanitary Sewer Flushing Inlet Detail

C-5 Sewer Lateral Detail

C-6 Standard Trench Backfill and Bedding Detail for Vitrified Clay and Ductile Iron Sewer Pipe

C-7 Standard Trench Backfill and Bedding Detail for Polyvinyl Chloride Sewer Pipe

C-8 Lateral Connection Installation Detail on Existing Pipe

C-9 Overflow and Backflow Device Detail

C-10 Vitrified Clay and Ductile Iron Sewer Pipe Crossing Repair

C-11 Polyvinyl Chloride Sewer Pipe Crossing Repair

C-12 Concrete Encasement Detail

~~C-13 Standard Specifications - General Notes~~

~~C-14 Standard Specifications - Pipe and Fittings~~

~~C-15 Standard Specifications - Testing Requirements (1 of 2)~~

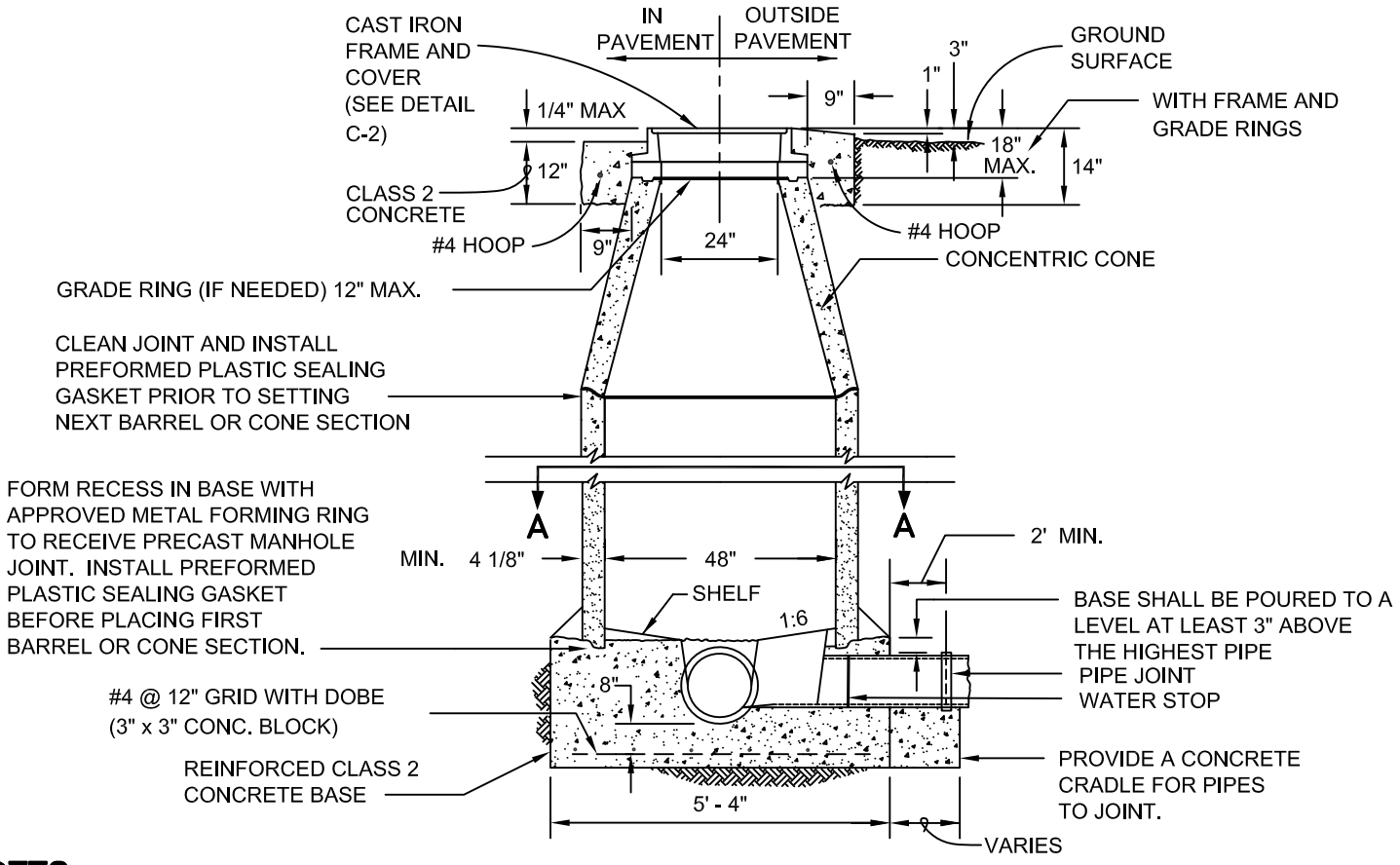
~~C-16 Standard Specifications - Testing Requirements (2 of 2)~~

COUNTY OF SAN MATEO
DEPARTMENT OF
PUBLIC WORKS

REDWOOD CITY
CALIFORNIA

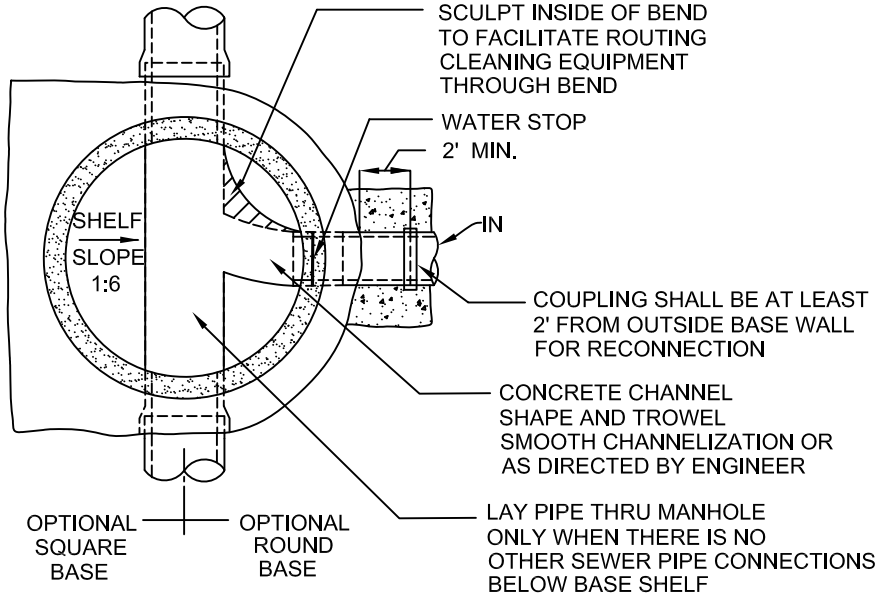
DRAWN BY:	T.D.
CHECK BY:	M.C.
APPROVED BY:	A.M.S

SCALE:	NONE
DATE:	6/2015
REVISED:	04/2024



NOTES:

1. ALL STEEL TO BE 3" CLEAR.
2. MANHOLE SHELF SHALL BE MORTARED TO A SLOPE OF 1:6.
3. THERE SHALL BE NO STEPS IN THE MANHOLE.
4. PREFORMED PLASTIC SEALING GASKET SHALL BE "RAM-NEK" OR APPROVED EQUAL.
5. STANDARD WATER STOPS SHALL BE INCORPORATED INTO THE MANHOLE BASE WHEN PVC PIPES ARE USED.
6. MANHOLE THROAT LOCATION TO BE OPPOSITE THE LARGEST SHELF AREA OR AS DIRECTED BY THE ENGINEER.
7. NO LATERAL CONNECTIONS TO HDPE MANHOLE.
8. ANY VARIATION FROM DETAIL SHALL BE APPROVED BY THE ENGINEER.



SECTION A-A

SANITARY SEWER MANHOLE DETAIL

SEE HTTP://PUBLICWORKS.SMCGOV.ORG/SEWER-SERVICES FOR STANDARD DETAILS.

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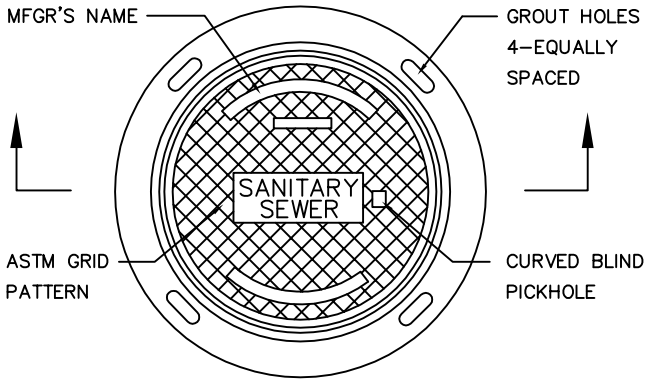
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CALIFORNIA

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CHECK BY: R.O.
APPROVED BY: N.R.C.

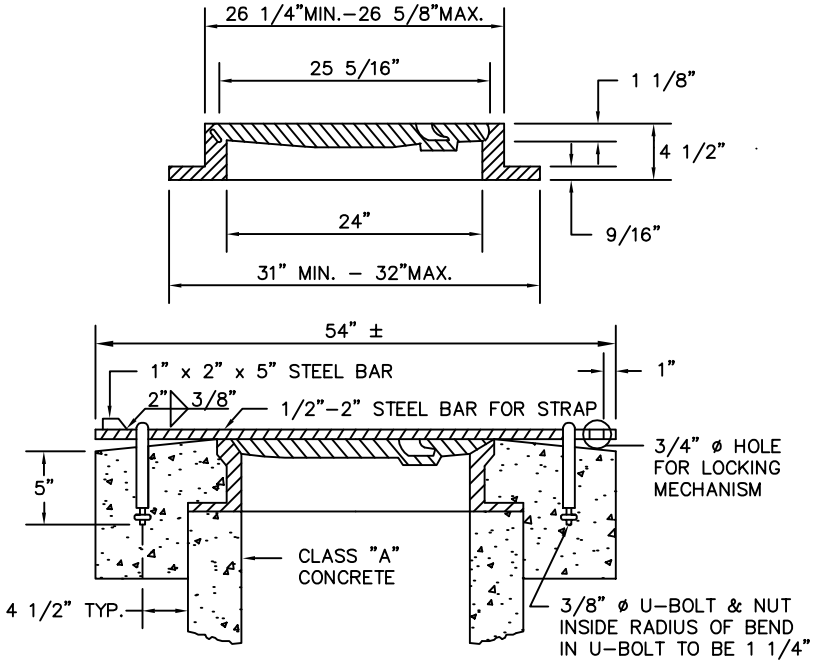
SCALE: NONE
DATE: 6/95
REVISED:

GENERAL NOTE:

FRAME AND COVER SHALL MEET OR EXCEED THE REQUIREMENTS OF AASHTO H-20 LOADING.



* ALL MATERIALS USED SHALL CONFORM TO ASTM SPEC. A-159-70T-G3000 OR U.S. GOV'T SPEC. QQ1-653

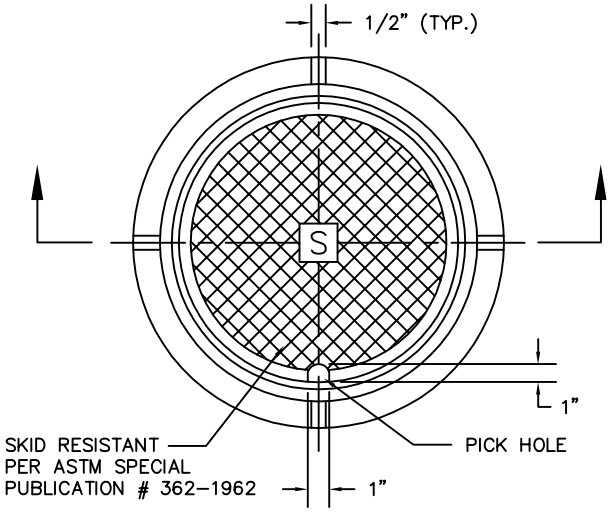


* MANHOLE STRAP TO BE USED IN OFF ROAD AREA WHERE SPECIFIED BY THE ENGINEER

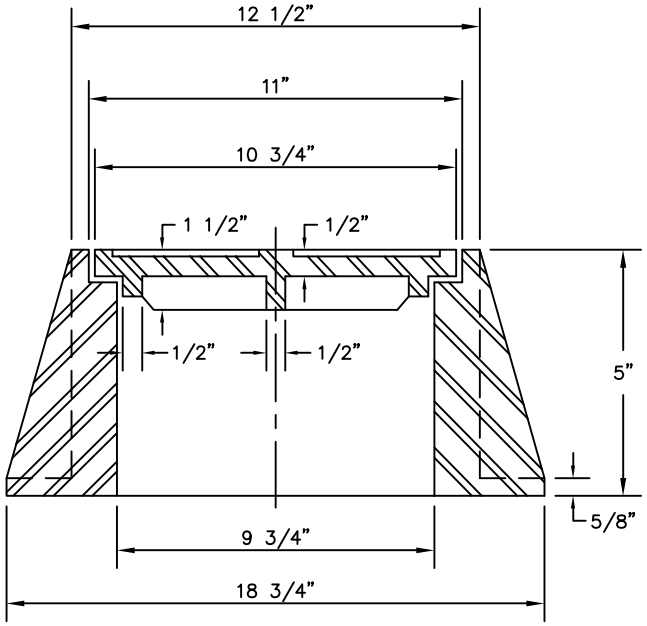
* U-BOLTS, NUT & STRAP SHALL BE HOT DIP GALVANIZED AFTER FABRICATION

SECTION

SANITARY SEWER MANHOLE COVER, FRAME AND STRAP DETAIL



* ALL MATERIALS USED SHALL CONFORM TO ASTM SPEC. A-159-64T-G3000 OR U.S. GOV'T SPEC. QQ1-653



SECTION

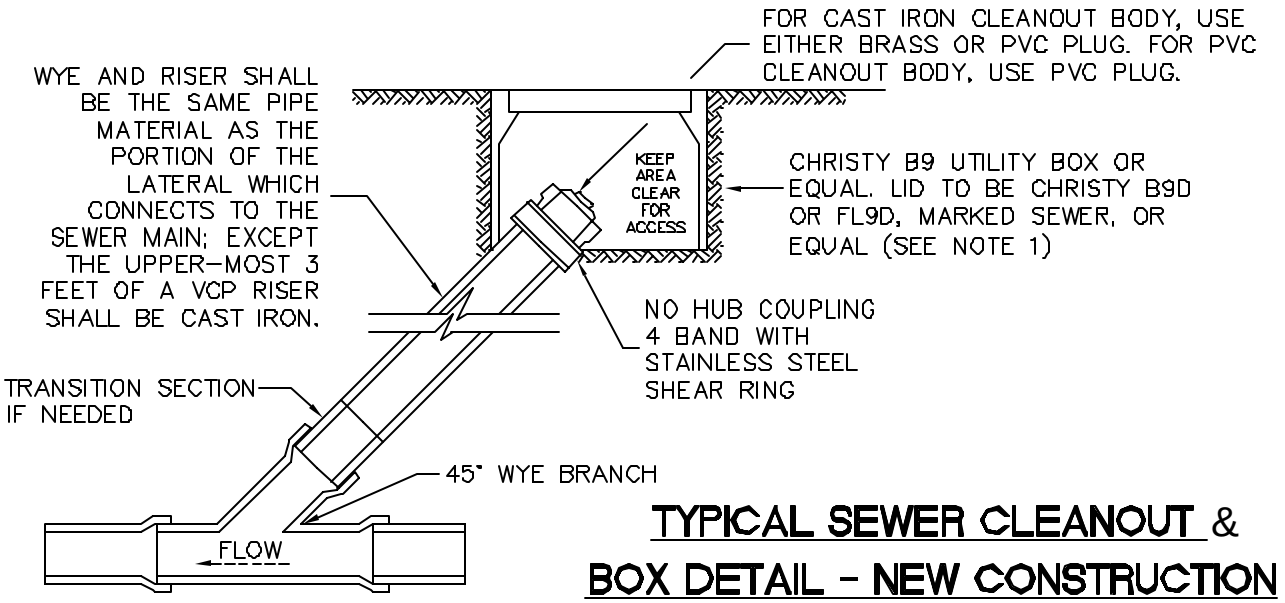
SANITARY SEWER FLUSHING INLET COVER

SAN MATEO COUNTY DEPARTMENT
OF
PUBLIC WORKS

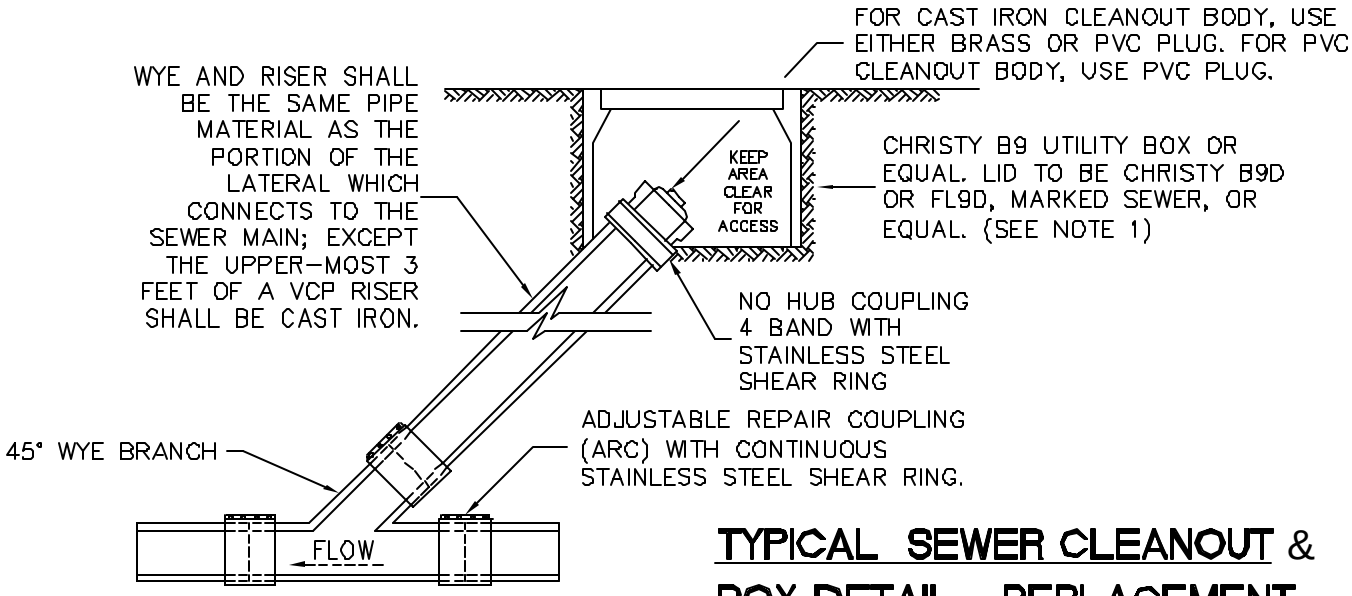
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CHECK BY: A.M.S.
APPROVED BY: N.R.C.

SCALE: NONE
DATE: 8/06
REVISED:



TYPICAL SEWER CLEANOUT & BOX DETAIL - NEW CONSTRUCTION



TYPICAL SEWER CLEANOUT & BOX DETAIL - REPLACEMENT

NOTES:

1. WHEN BOX IS SUBJECT TO TRAFFIC LOADING, PROVIDE CAST IRON LID.
2. BOX TO BE PLACED SUCH THAT CLEANOUT CAP CAN BE EASILY REMOVED, SEE ILLUSTRATION.
3. PROPERTY OWNER IS RESPONSIBLE FOR MAINTAINING LATERAL FROM THE PROPERTY STRUCTURE TO DISTRICT MAIN. DISTRICT PROVIDES COURTESY SERVICE FROM DISTRICT STANDARD PROPERTY LINE CLEANOUT TO THE MAIN.
4. SDR-26 WYE, RISER, CLEANOUT BODY AND CAP CAN BE USED ONLY WHEN LATERAL FROM PROPERTY LINE TO MAIN LINE IS REPLACED WITH SDR-26.
5. WHEN ENTIRE LATERAL IS REPLACED, LATERAL FROM PROPERTY LINE CLEANOUT TO MAIN LINE SHALL HAVE A 14-1-UF GUAGE MINIMUM SINGLE CONDUCTOR TRACER WIRE TAPED TO THE ENTIRE LENGTH OF THE PIPE.

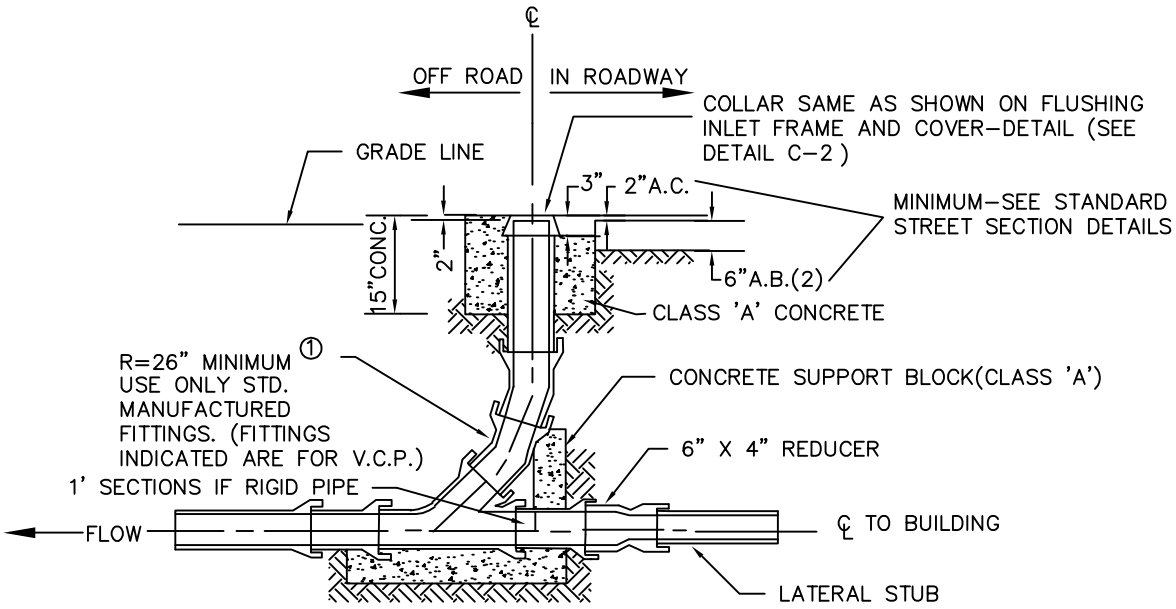
CONSTRUCTION OF A STANDARD CLEANOUT REQUIRES MULTIPLE INSPECTIONS BY DISTRICT PERSONEL:
1. FIRST INSPECTION - TO INSPECT WYE AND RISER, WYE AND RISER MUST BE EXPOSED.
2. SECOND INSPECTION - TO INSPECT PLACEMENT OF BOX, LID AND LOCATION OF CLEANOUT WITHIN BOX .

SAN MATEO COUNTY DEPARTMENT
OF
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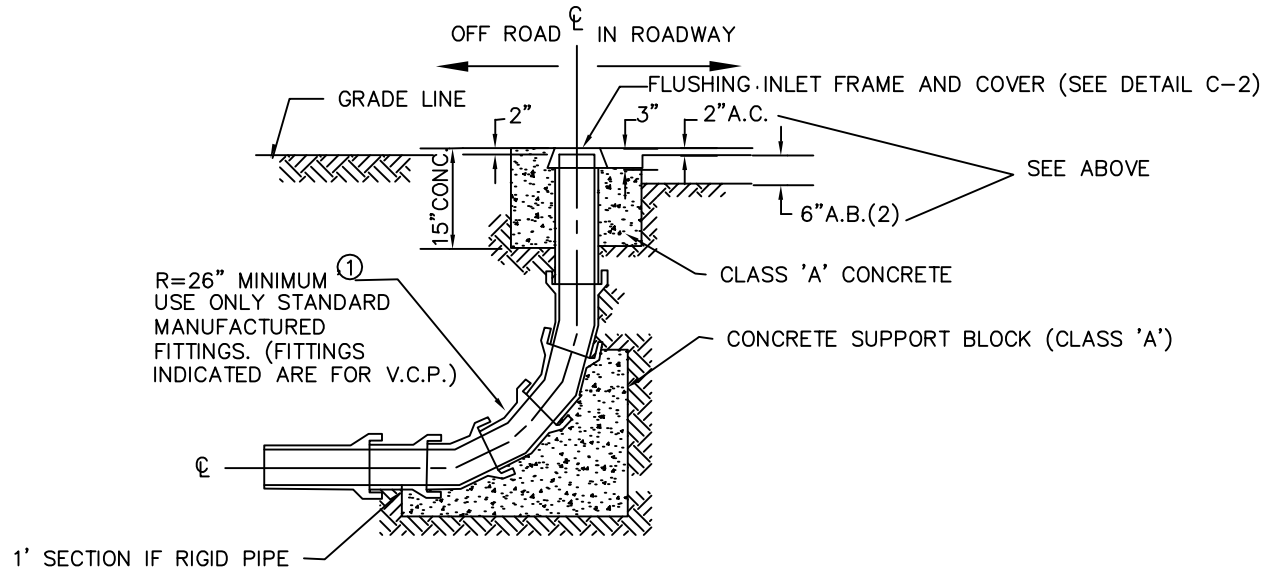
REDWOOD CITY
CALIFORNIA

DRAWN BY: N.M.A.
CHECK BY: R.O.
APPROVED BY: N.R.C.

SCALE: NONE
DATE: 6/95
REVISED: _____



FLUSHING INLET WITH LATERAL STUB



NOTE: ① FOR P.V.C. PIPE, LARGE 90° MANUFACTURED SWEEPS MAY BE USED IF R=36" OR GREATER

FLUSHING INLET

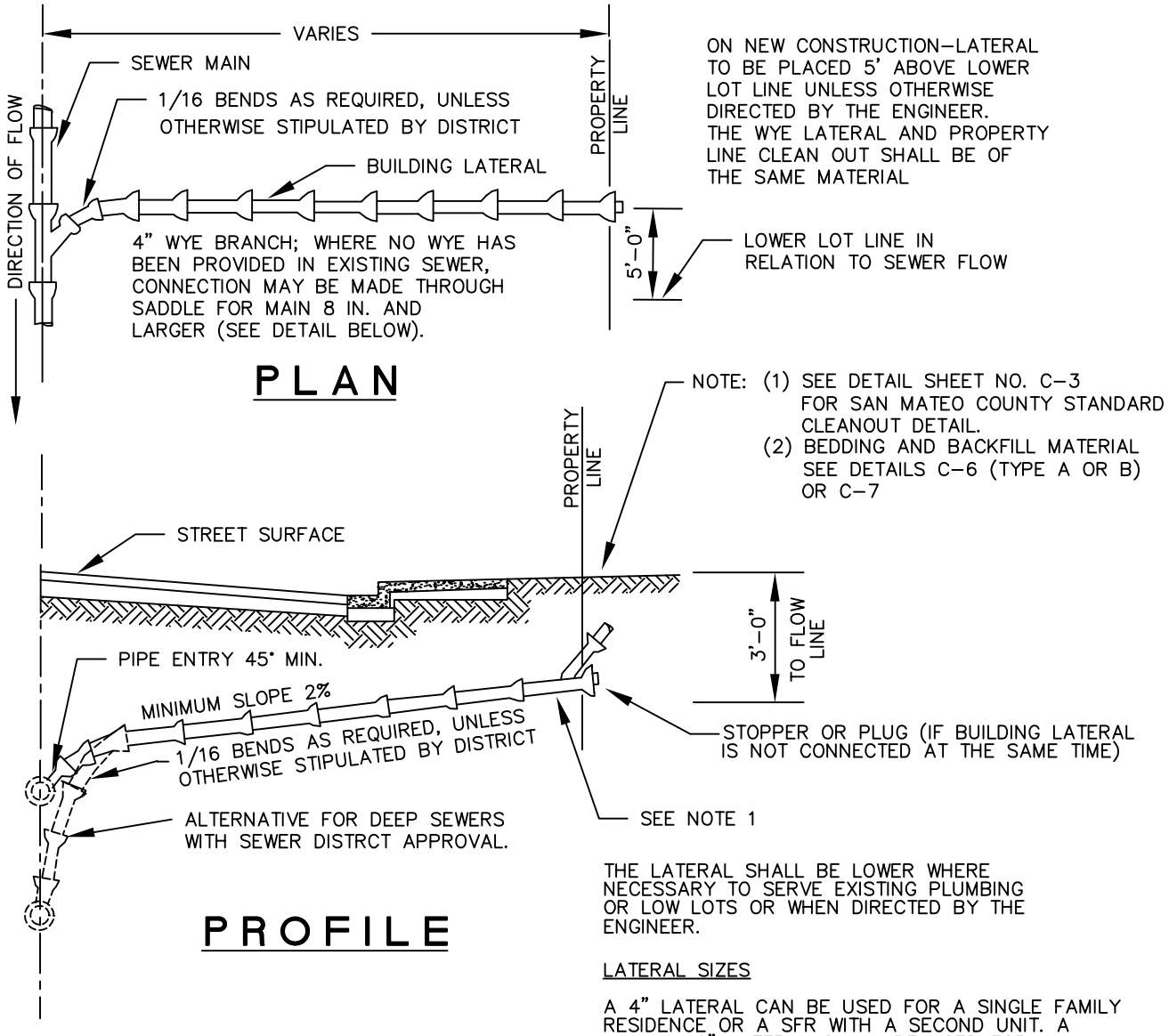
SANITARY SEWER FLUSHING INLET DETAIL

SAN MATEO COUNTY DEPARTMENT
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SCALE: NONE
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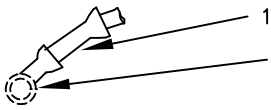


THE LATERAL SHALL BE LOWER WHERE NECESSARY TO SERVE EXISTING PLUMBING OR LOW LOTS OR WHEN DIRECTED BY THE ENGINEER.

LATERAL SIZES

A 4" LATERAL CAN BE USED FOR A SINGLE FAMILY RESIDENCE OR A SFR WITH A SECOND UNIT. A MINIMUM 6" LATERAL SHALL BE USED FOR ALL OTHER DEVELOPMENTS.

METHOD OF ATTACHING LATERAL TO EXISTING SEWER WHERE NO WYE HAS BEEN PROVIDED



1. EXISTING MAIN ≤ 8": FOR MEANS BY WHICH CONNECTION IS TO BE MADE TO MAIN LINE SEE DETAIL C-8.
2. EXISTING MAIN 10"-18": CONNECTION BY MEANS OF AN APPROVED SADDLE "TEE"
3. EXISTING MAIN >18": CONNECTION SHALL BE AT A MANHOLE UNLESS OTHERWISE APPROVED BY THE SEWER DISTRICT.

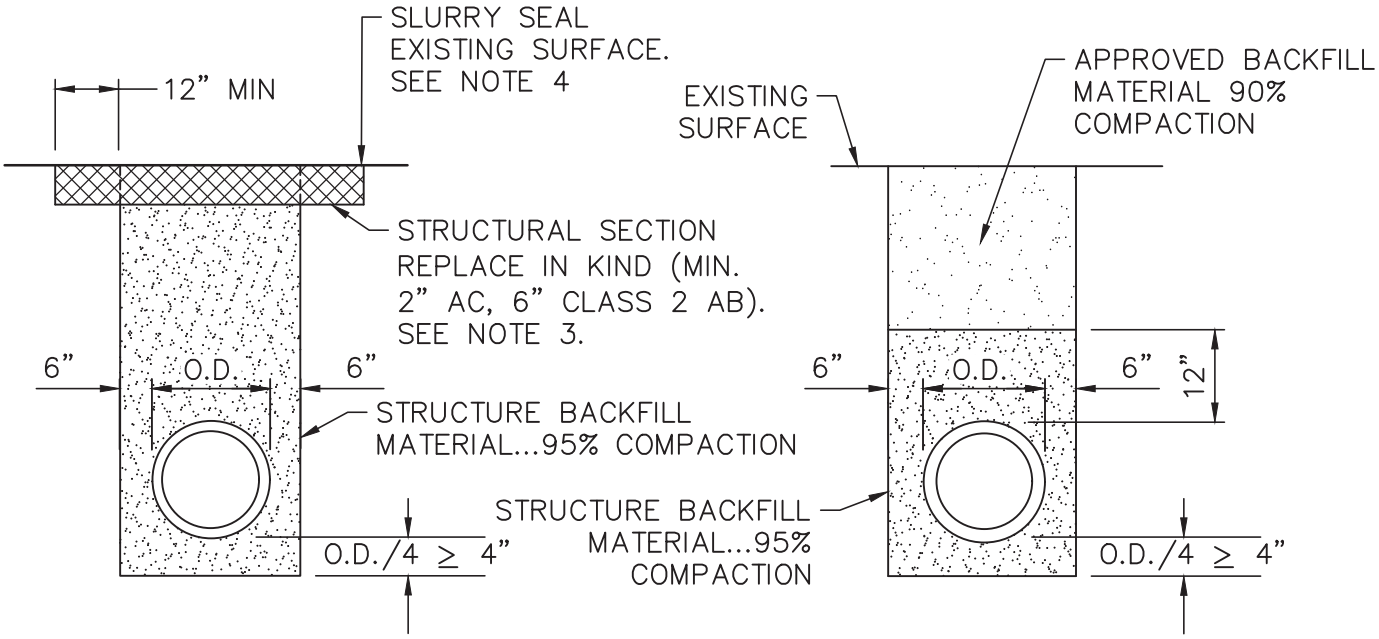
SEWER LATERAL DETAIL

COUNTY OF SAN MATEO DEPARTMENT
OF
PUBLIC WORKS

REDWOOD CITY
CALIFORNIA

DRAWN BY: A.Z.
CHECKED BY: K.L.
APPROVED BY: A.M.S.

SCALE: NONE
DATE: 2–2022
REVISED: 2–2022



TYPE A (IN ROADWAY) **TYPE B (OUTSIDE ROADWAY)**

NOTES:

1. STRUCTURE BACKFILL MATERIAL....MATERIAL WITH SAND EQUIVALENT NOT LESS THAN 20 AND SIEVE GRADATION BY WEIGHT AS FOLLOWS:

SIEVE SIZE	% PASSING SIEVE
3"	100
No. 4	35–100
No. 200	20–100

2. BACKFILL MATERIAL.... MATERIAL FROM EXCAVATION, FREE FROM STONES OR LUMPS EXCEEDING 3 INCHES GREATEST DIMENSION, ORGANIC MATTER, OR OTHER UNSATISFACTORY MATERIAL.

3. ON TRENCHES THAT PARALLEL THE ROAD AND ARE WITHIN EXISTING BICYCLE LANES, THE WIDTH OF THE STRUCTURAL SECTION SHALL BE GREATER THAN OR EQUAL TO THE WIDTH OF THE EXISTING BICYCLE LANE, WHICHEVER IS WIDER. PAVING JOINTS WITHIN BICYCLE LANE ARE NOT ALLOWED.

4. FULL WIDTH SLURRY SHALL BE APPLIED TO THE FINISH SURFACE FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT WHEN THERE IS A MAIN OR LATERAL LINE INSTALLATION THAT IS GREATER THAN 100 FEET IN TOTAL LENGTH. SLURRY SEAL SHALL COMPLY WITH CALTRANS STANDARD SPECIFICATIONS. SPREAD RATE TO BE 17 LBS/SY (±1).

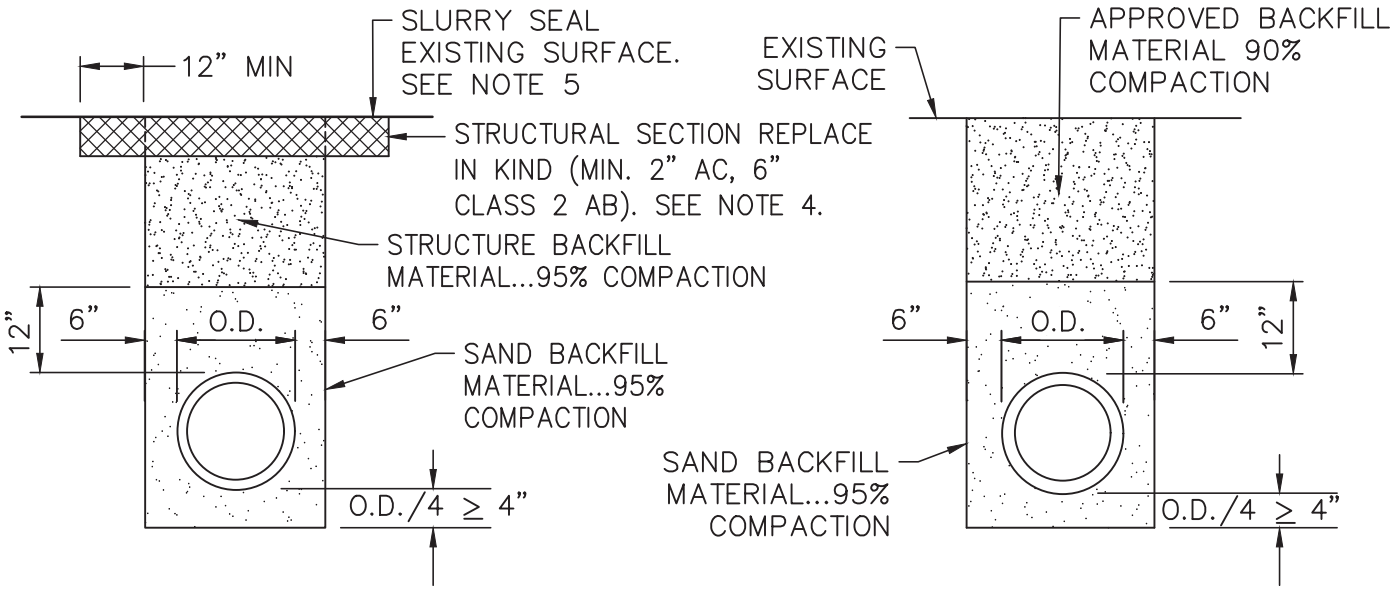
STANDARD TRENCH BACKFILL AND BEDDING DETAIL FOR VITRIFIED CLAY AND DUCTILE IRON SEWER PIPE

COUNTY OF SAN MATEO DEPARTMENT
OF
PUBLIC WORKS

REDWOOD CITY
CALIFORNIA

DRAWN BY: A.Z.
CHECKED BY: K.L.
APPROVED BY: A.M.S.

SCALE: NONE
DATE: 2–2022
REVISED: 2–2022



TYPE A (IN ROADWAY) **TYPE B (OUTSIDE ROADWAY)**

NOTES:

1. SAND....MATERIAL FREE FROM ORGANIC MATTER AND CLAY WITH A SIEVE GRADATION BY WEIGHT AS FOLLOWS:

SIEVE SIZE	% PASSING SIEVE
No. 4	100
No. 200	0–5

2. STRUCTURE BACKFILL MATERIAL....MATERIAL WITH SAND EQUIVALENT NOT LESS THAN 20 AND SIEVE GRADATION BY WEIGHT AS FOLLOWS:

SIEVE SIZE	% PASSING SIEVE
3"	100
No. 4	35–100
No. 200	20–100

3. BACKFILL MATERIAL.... MATERIAL FROM EXCAVATION, FREE FROM STONES OR LUMPS EXCEEDING 3 INCHES GREATEST DIMENSION, ORGANIC MATTER, OR OTHER UNSATISFACTORY MATERIAL.

4. ON TRENCHES THAT PARALLEL THE ROAD AND ARE WITHIN EXISTING BICYCLE LANES, THE WIDTH OF THE STRUCTURAL SECTION SHALL BE GREATER THAN OR EQUAL TO THE WIDTH OF THE EXISTING BICYCLE LANE. PAVING JOINTS WITHIN BICYCLE LANE ARE NOT ALLOWED.

5. FULL WIDTH SLURRY SHALL BE APPLIED TO THE FINISH SURFACE FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT WHEN THERE IS A MAIN OR LATERAL LINE INSTALLATION THAT IS GREATER THAN 100 FEET IN TOTAL LENGTH. SLURRY SEAL SHALL COMPLY WITH CALTRANS STANDARD SPECIFICATIONS. SPREAD RATE TO BE 17 LBS/SY (±1).

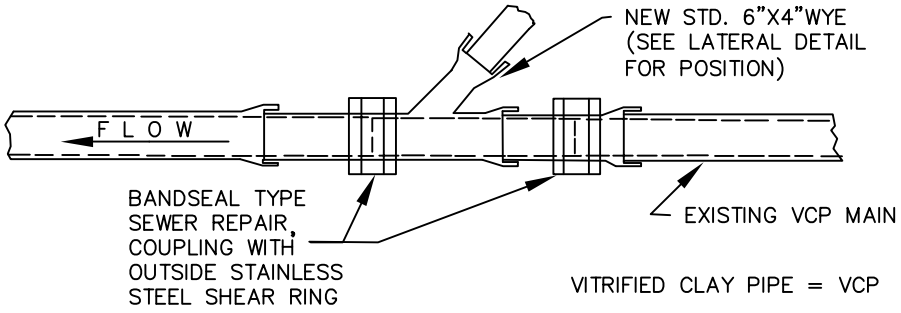
STANDARD TRENCH BACKFILL AND BEDDING DETAIL FOR PVC SEWER PIPE

SAN MATEO COUNTY DEPARTMENT
OF
PUBLIC WORKS

REDWOOD CITY
CALIFORNIA

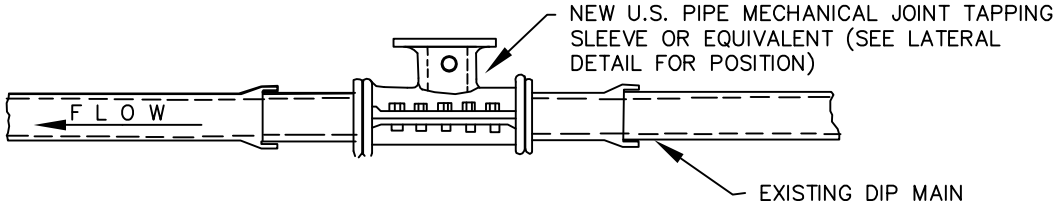
DRAWN BY: N.M.A.
CHECK BY: R.O.
APPROVED BY: N.R.C.

SCALE: NONE
DATE: 6/95
REVISED: _____



NOTE: (1) THE NEWLY INSTALLED WYE SHALL BE OF THE SAME MATERIAL AS THE EXISTING MAIN.

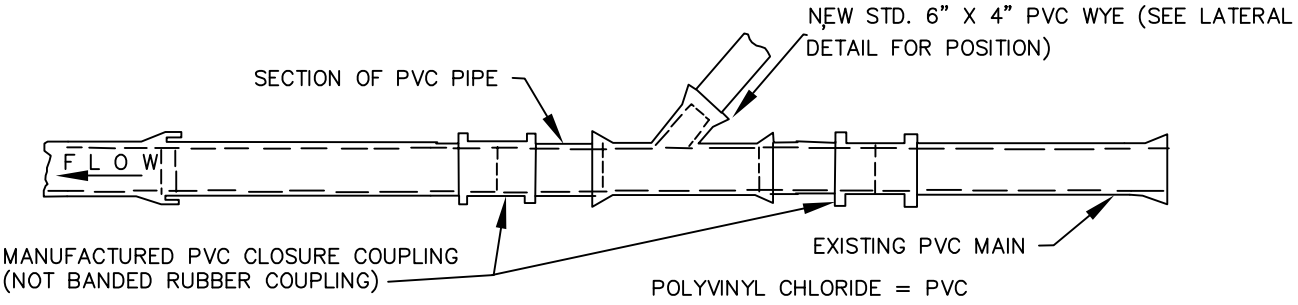
PLAN
VITRIFIED CLAY



NOTES: HORIZONTAL PIPE ENTRY ANGLE WILL BE 90 ^{0}, INSTEAD OF 45 ^{0}
(SEE LATERAL DETAIL, PLAN VIEW)

VERTICAL PIPE ENTRY ANGLE SHALL BE 45 ^{0} MINIMUM (SEE LATERAL DETAIL PROFILE VIEW)

PLAN
DUCTILE IRON PIPE



NOTE: ALL PVC, PIPE AND FITTINGS SHALL BE SDR 35 35 AND SHALL HAVE RUBBER GASKETED JOINTS. SOLVENT WELDED JOINTS SHALL NOT BE ALLOWED.

PLAN
POLYVINYL CHLORIDE PIPE

LATERAL CONNECTION INSTALLATION DETAIL ON EXISTING PIPE

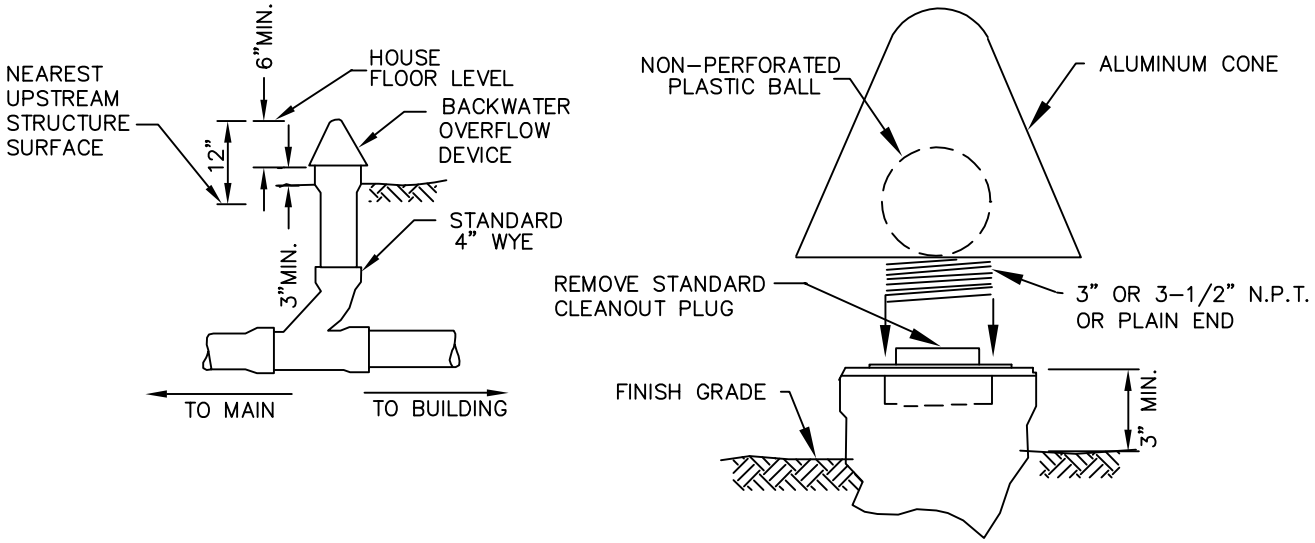
NOTE: LATERAL CONNECTION INSTALLATION ON NEWLY INSTALLED PIPE WILL BE AS DIRECTED BY THE DEPARTMENT OF PUBLIC WORKS.

SAN MATEO COUNTY DEPARTMENT
OF
PUBLIC WORKS

REDWOOD CITY
CALIFORNIA

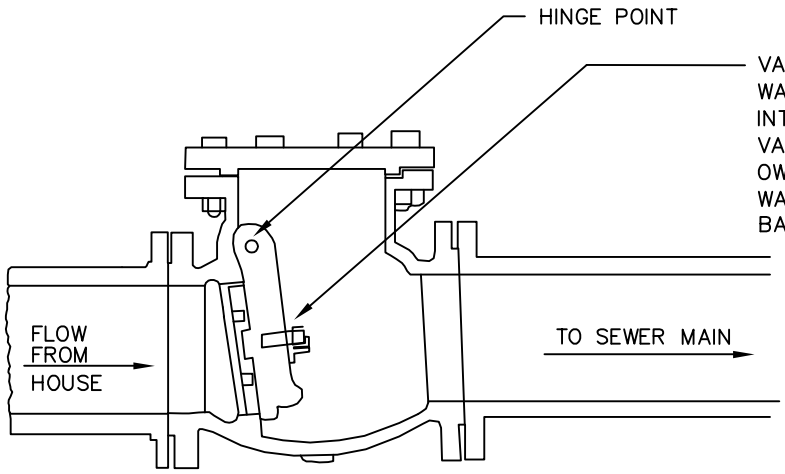
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SCALE: NONE
DATE: 6/95
REVISED: _____



OVERFLOW DEVICE

NOTE: LOCATION OF DEVICE TO APPROVAL OF DISTRICT AND BUILDING DEPARTMENT PRIOR TO INSTALLATION



NOTE: LOCATION OF DEVICE TO APPROVAL OF DISTRICT AND BUILDING DEPARTMENT PRIOR TO INSTALLATION

BACKFLOW DEVICE

OVERFLOW AND BACKFLOW DEVICE DETAIL

SAN MATEO COUNTY DEPARTMENT
OF
PUBLIC WORKS

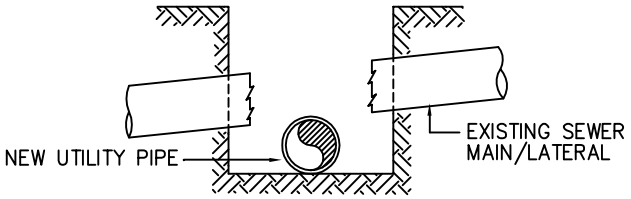
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APPROVED BY: N.R.C.

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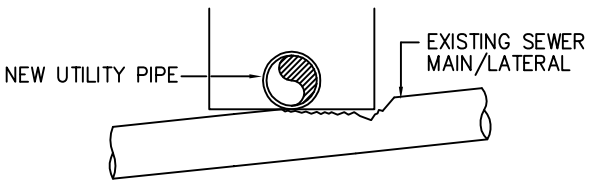
NOTICE:

CALL SANITARY DISTRICT (363–4765 OR 363–4100) BEFORE MAKING ANY SEWER REPAIRS. ALL REPAIRS MUST BE DONE IN THE PRESENCE OF A DISTRICT INSPECTOR.



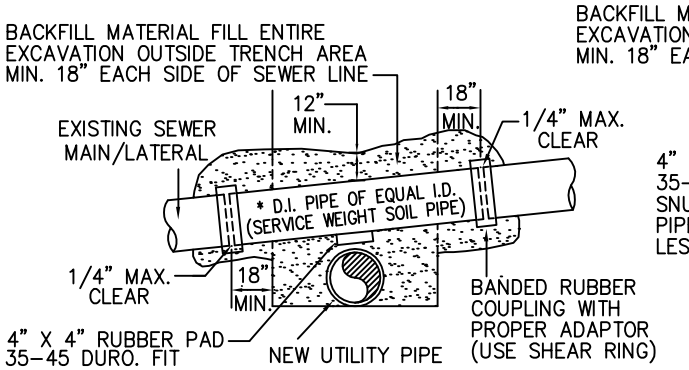
SIMPLE SEWER MAIN/LATERAL BREAK
(NO CONFLICT IN GRADE)

BREAK



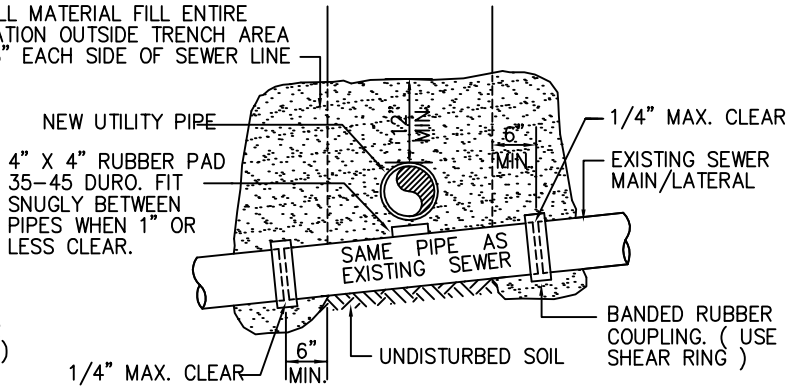
SIMPLE SEWER MAIN/LATERAL BREAK
(NO CONFLICT IN GRADE)

BREAK



REPAIR

* D.I. = DUCTILE IRON



REPAIR

PROCEDURE:

1. NOTIFY SANITARY DISTRICT (363–4765 OR 363–4100)
2. TRIM SEWER PIPE TO A CLEAN CUT UNDAMAGED END, A MINIMUM OF 18" INTO TRENCH WALL. CUT PIECE OF NEW DUCTILE IRON PIPE (D.I.P.) OF EQUAL DIAMETER TO FIT SPACE BETWEEN TRIMMED ENDS WITH A MAXIMUM CLEARANCE OF 1/4 INCH AT EACH END. ALIGN PIPES AT UPSTREAM END AND SLIDE COUPLING DOWNSTREAM, CENTERING IT OVER THE JOINT, TIGHTEN COUPLING BANDS. WHEN O.D. OF PIPES ARE WITHIN 1" OF EACH OTHER, THERE SHALL BE A 4"X4" PAD OF 35–45 DUROMETER RUBBER PLACED SNUGLY BETWEEN THE PIPES.
3. CONCRETE ENCASEMENT SHALL BE REQUIRED IN THE EVENT THE ADJACENT SOIL IS DISTURBED. LIMITS SHALL BE DETERMINED BY THE DISTRICT.

PROCEDURE:

1. NOTIFY SANITARY DISTRICT (363–4765 OR 363–4100)
2. REPAIR SHALL BE MADE AS SHOWN ABOVE WHEN CLEARANCE BETWEEN SEWER PIPE AND UTILITY PIPE IS 6" OR MORE, REPAIR MAY BE MADE WITH THE SAME TYPE OF PIPE AS THE EXISTING SEWER. WHEN O.D. OF PIPES ARE WITHIN 1" OF EACH OTHER, THERE SHALL BE A 4" X 4" PAD OF 35–45 DUROMETER RUBBER PLACED SNUGLY BETWEEN THE PIPES.
3. IF EXISTING SEWER PIPE IS PVC OR ABS, USE MANUFACTURED COUPLINGS AND NOT BANDED RUBBER COUPLINGS.
4. CONCRETE ENCASEMENT SHALL BE REQUIRED IN THE EVENT THE ADJACENT SOIL IS DISTURBED. LIMITS SHALL BE DETERMINED BY THE DISTRICT.

STANDARD DRAWING
VITRIFIED CLAY AND DUCTILE IRON SEWER PIPE
PIPE CROSSING REPAIR

SAN MATEO COUNTY DEPARTMENT
OF
PUBLIC WORKS

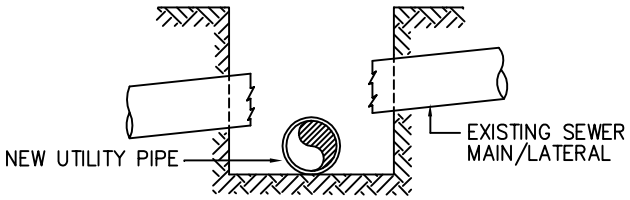
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APPROVED BY: N.R.C.

SCALE: NONE
DATE: 6/95
REVISED: _____

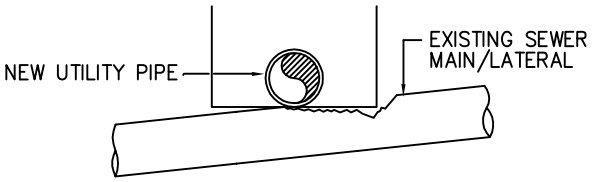
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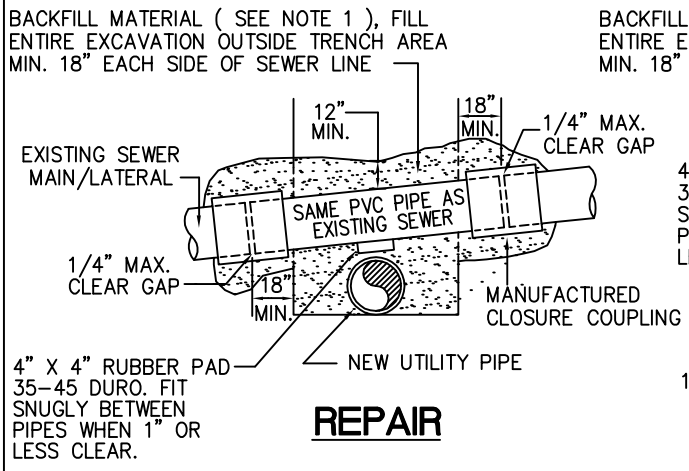
SIMPLE SEWER MAIN/LATERAL BREAK
(NO CONFLICT IN GRADE)

BREAK

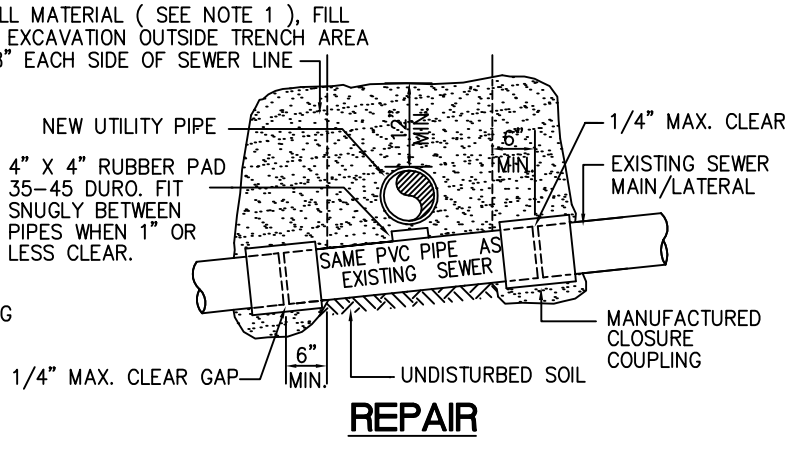


SIMPLE SEWER MAIN/LATERAL BREAK
(NO CONFLICT IN GRADE)

BREAK



REPAIR



REPAIR

NOTES:
1. BACKFILL MATERIAL SHALL BE SAND AS SPECIFIED IN STANDARD TRENCH BACKFILL AND BEDDING DETAIL FOR P.V.C. SEWER PIPE (C–7) OR OTHER MATERIAL APPROVED EQUAL BY THE SEWER DIVISION.
2. THE USE OF BANDED RUBBER COUPLINGS IS PROHIBITED.

PROCEDURE:

1. NOTIFY SANITARY DISTRICT (363–4765 OR 363–4100)
2. TRIM SEWER MAIN/LATERAL TO A CLEAN–CUT, UNDAMAGED END, A MINIMUM OF 18" INTO TRENCH WALL. INSTALL NEW PVC PIPE WITH MANUFACTURED CLOSURE COUPLINGS (IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS).
3. WHEN OUTSIDE DIAMETER OF THE CROSSING PIPES ARE WITHIN 1" OF EACH OTHER, THERE SHALL BE A 4" X 4" PAD OF 35–45 DUROMETER RUBBER PLACED SNUGLY BETWEEN THE PIPES.

PROCEDURE:

1. NOTIFY SANITARY DISTRICT (363–4765 OR 363–4100)
2. WHEN O.D. OF PIPES ARE WITHIN 1" OF EACH OTHER, THERE SHALL BE A 4" X 4" PAD OF 35–45 DUROMETER RUBBER PLACED SNUGLY BETWEEN THE PIPES.

STANDARD DRAWING

POLYVINYL CHLORIDE (PVC) SEWER PIPE

PIPE CROSSING REPAIR

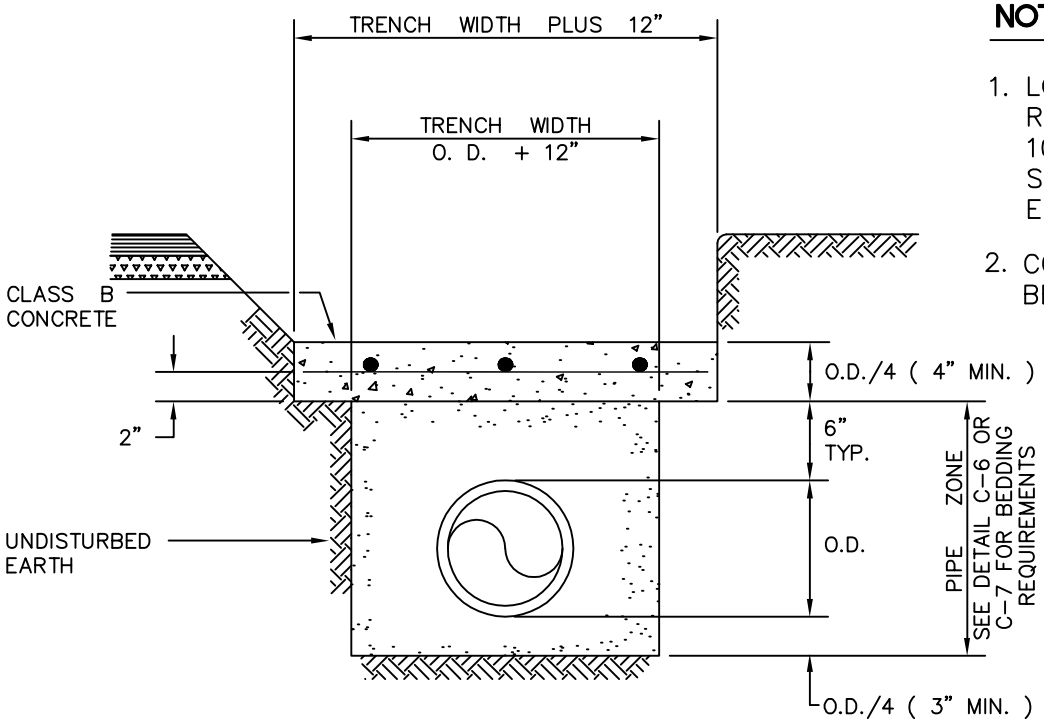
C–11

SAN MATEO COUNTY DEPARTMENT
OF
PUBLIC WORKS

REDWOOD CITY
CALIFORNIA

DRAWN BY: M.L.
CHECK BY: R.O.
APPROVED BY: N.R.C.

SCALE: NONE
DATE: 6/95
REVISED: _____

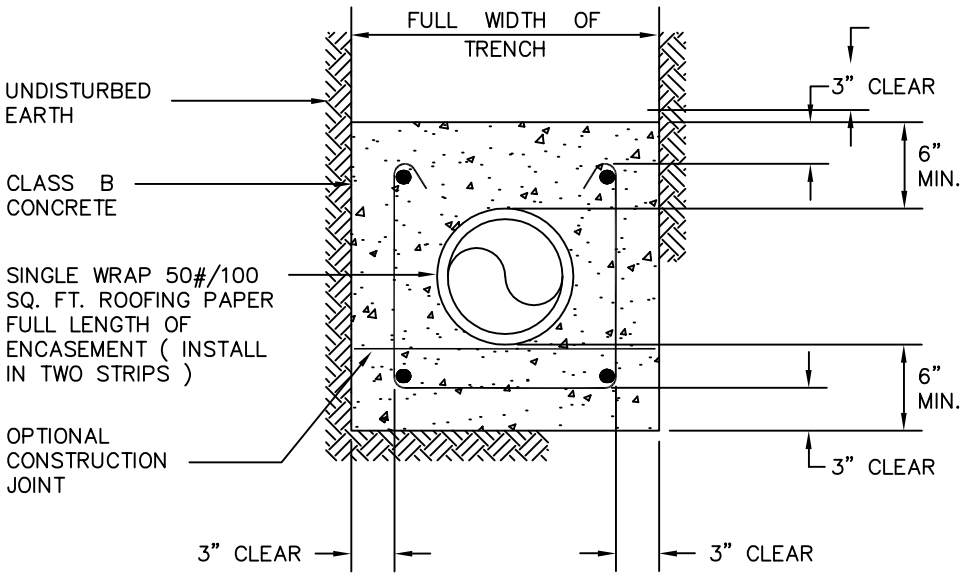


NOTE:

1. LONGITUDINAL TRENCH SLAB REINFORCING: #4 BARS AT 10" O.C. TRANSVERSE TRENCH SLAB REINFORCING: 1–#4 EVERY 20" OF SLAB LENGTH.
2. CONCRETE CAPS SHALL NOT BE USED OVER PLASTIC PIPE.

REINFORCED CONCRETE CAP

NON - PLASTIC PIPE ONLY



NOTE:

1. LONGITUDINAL REINFORCING: 4–#4 BARS AS SHOWN. STIRRUP REINFORCING: 1–#4 BAR EVERY 24" OF CONCRETE ENCASEMENT LENGTH.
2. PLASTIC PIPE SHALL NOT BE ENCASED.

CONCRETE ENCASEMENT

NON - PLASTIC PIPE ONLY