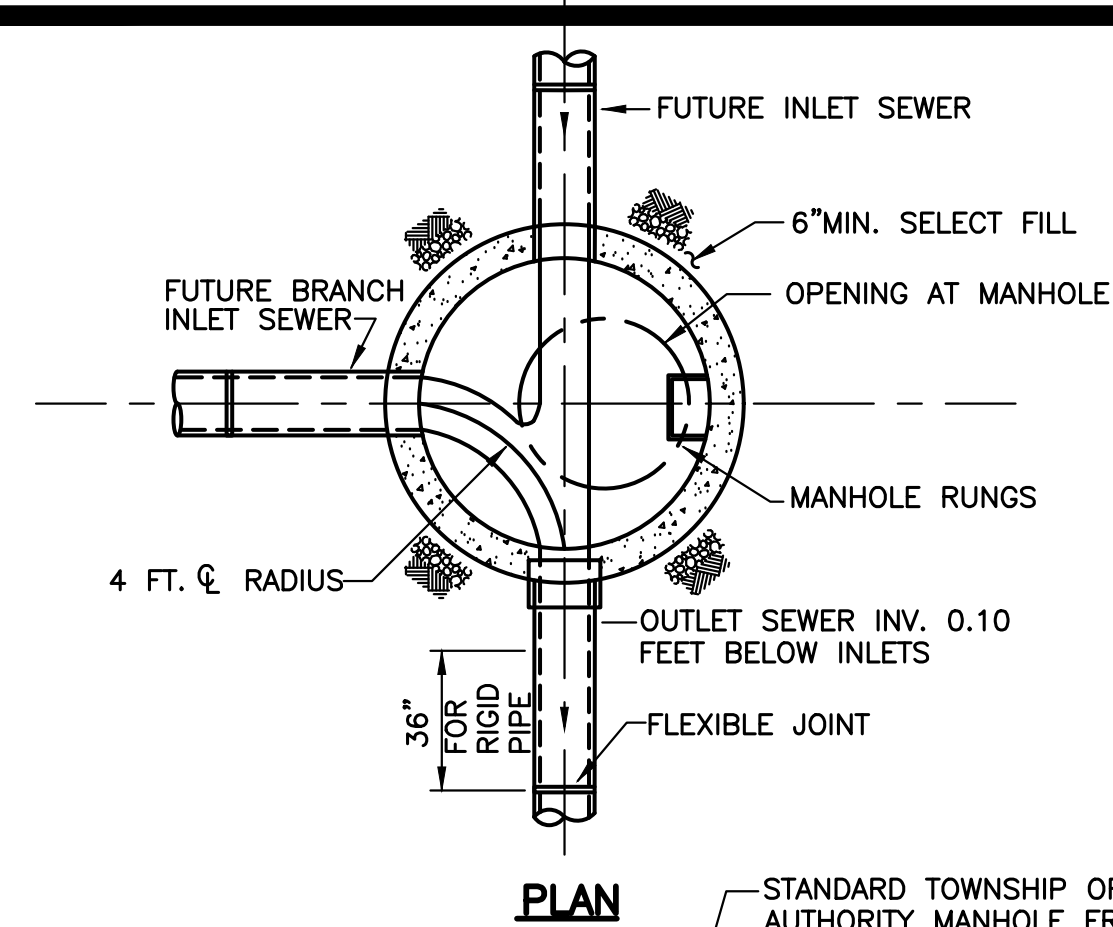
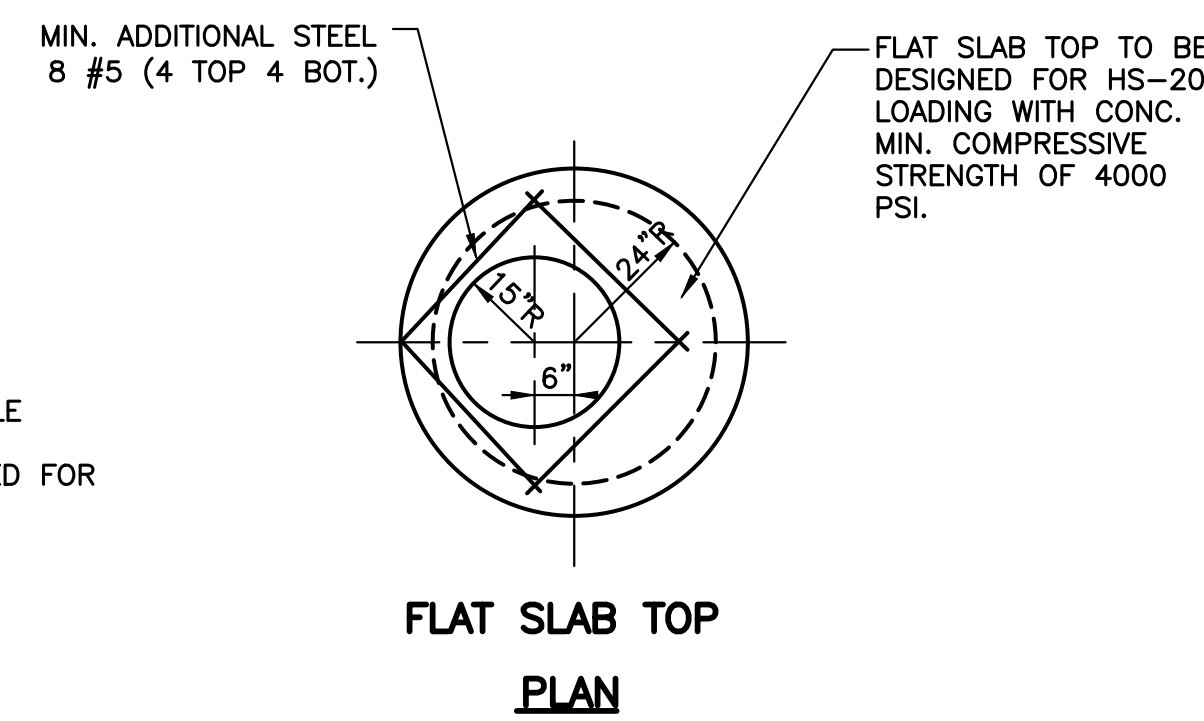


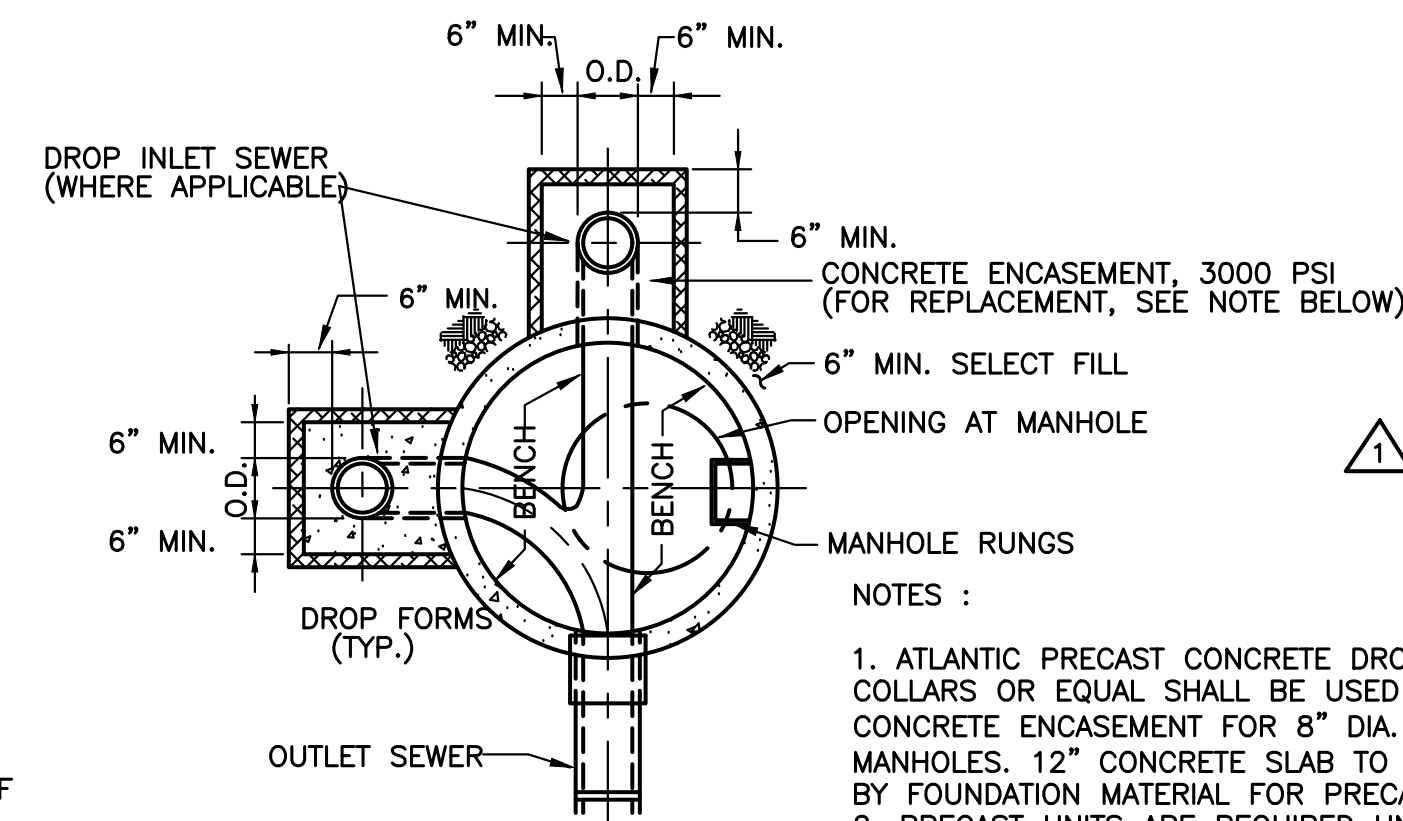


NOTES :

1. USE STANDARD AUTHORITY MANHOLE FRAME AND COVER.
2. SPECIAL DETAILS WILL BE PROVIDED FOR SEWERS 27" AND LARGER.



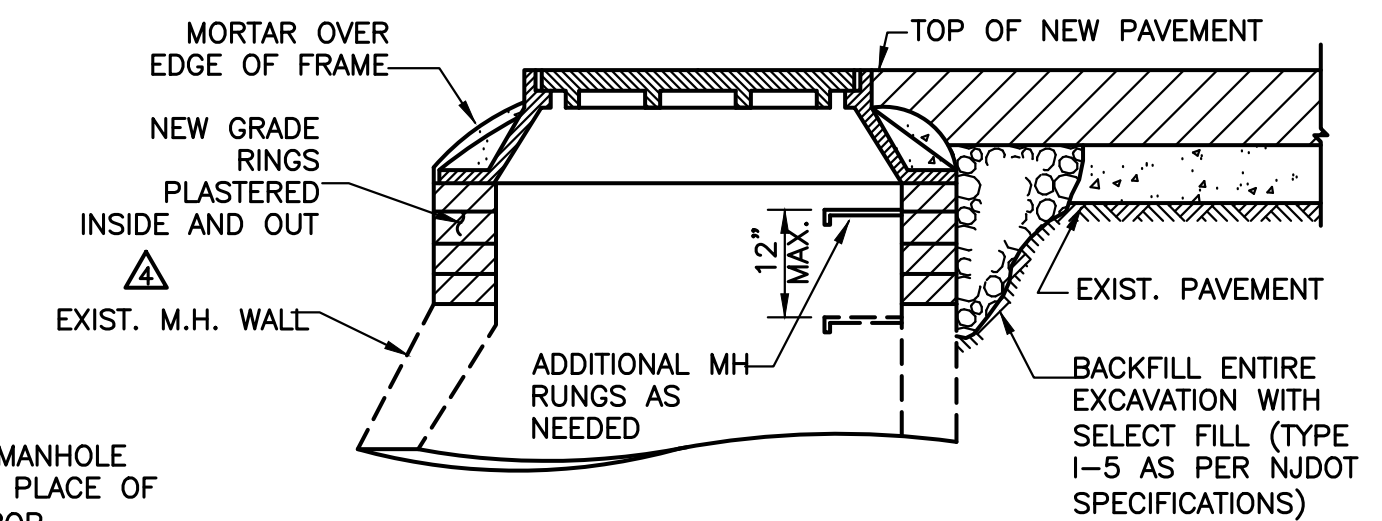
FLAT SLAB TOP
PLAN



PLAN

NOTES :

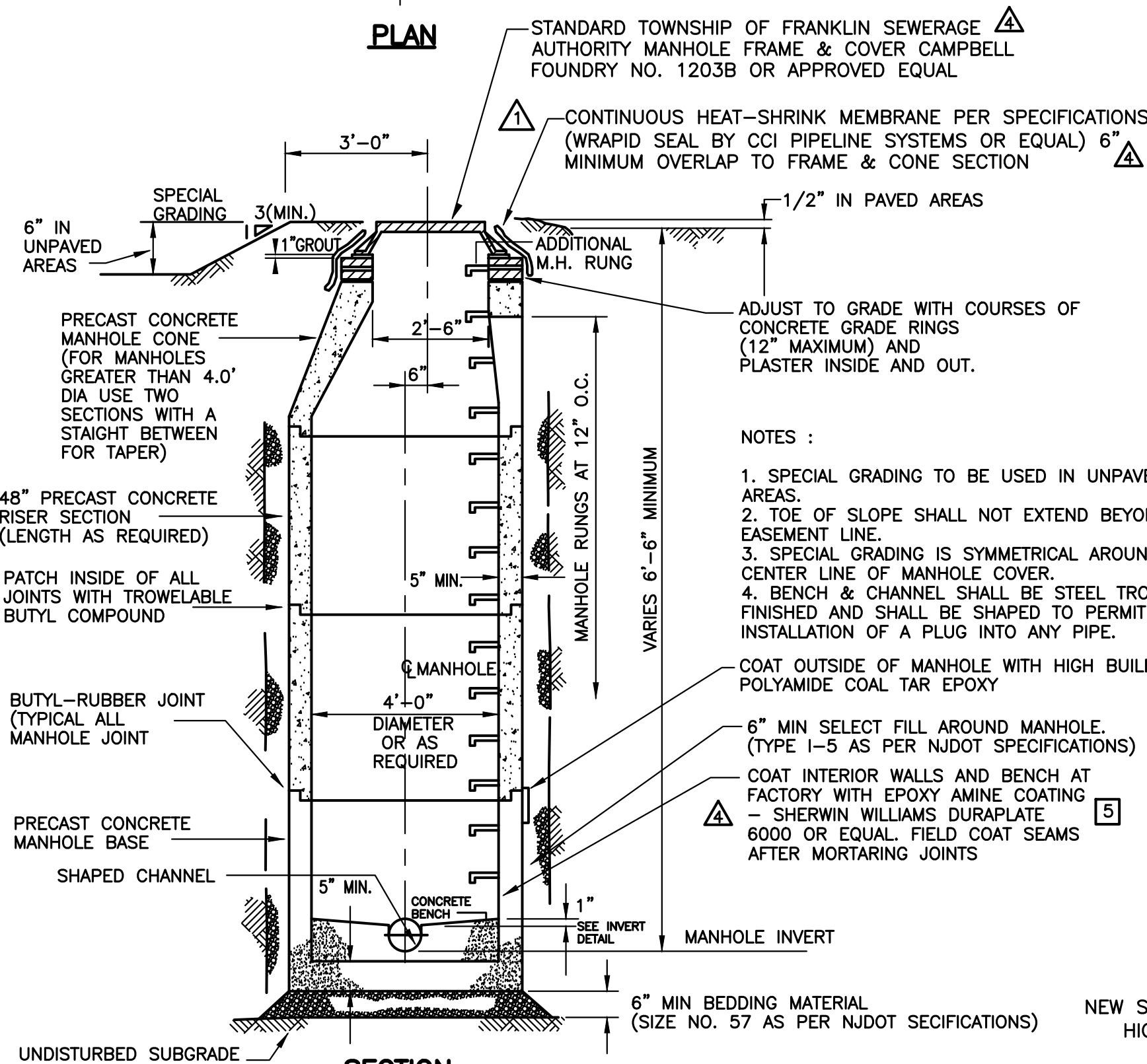
1. ATLANTIC PRECAST CONCRETE DROP MANHOLE COLLARS OR EQUAL SHALL BE USED IN PLACE OF CONCRETE ENCASUREMENT FOR 8" DIA. DROP MANHOLES. 12" CONCRETE SLAB TO BE REPLACED BY FOUNDATION MATERIAL FOR PRECAST UNITS.
2. PRECAST UNITS ARE REQUIRED UNLESS JOB CONDITIONS PRECLUDE THEIR USE.



RAISING FRAME ON EXISTING MANHOLE

DETAIL

N.T.S.



SECTION

(BRANCH INLET SEWER NOT SHOWN)

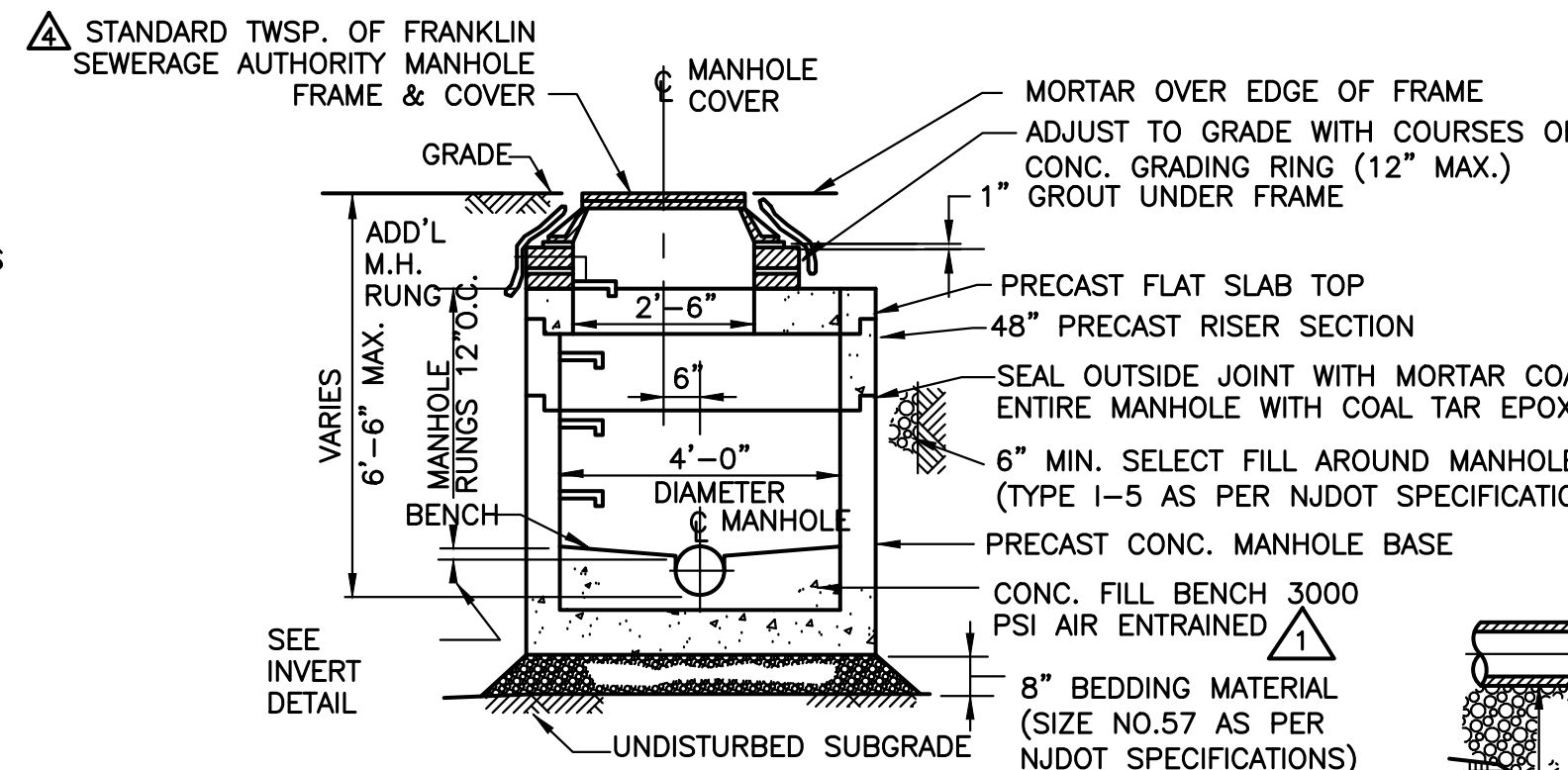
STANDARD MANHOLE

DETAIL

N.T.S.

A

ALL PRECAST MANHOLE SECTIONS SHALL BE MANUFACTURED BY THE WET CAST METHOD AND SHALL MEET THE REQUIREMENTS OF SPECIFICATION A.S.T.M. C-478.



SECTION

NOTE:

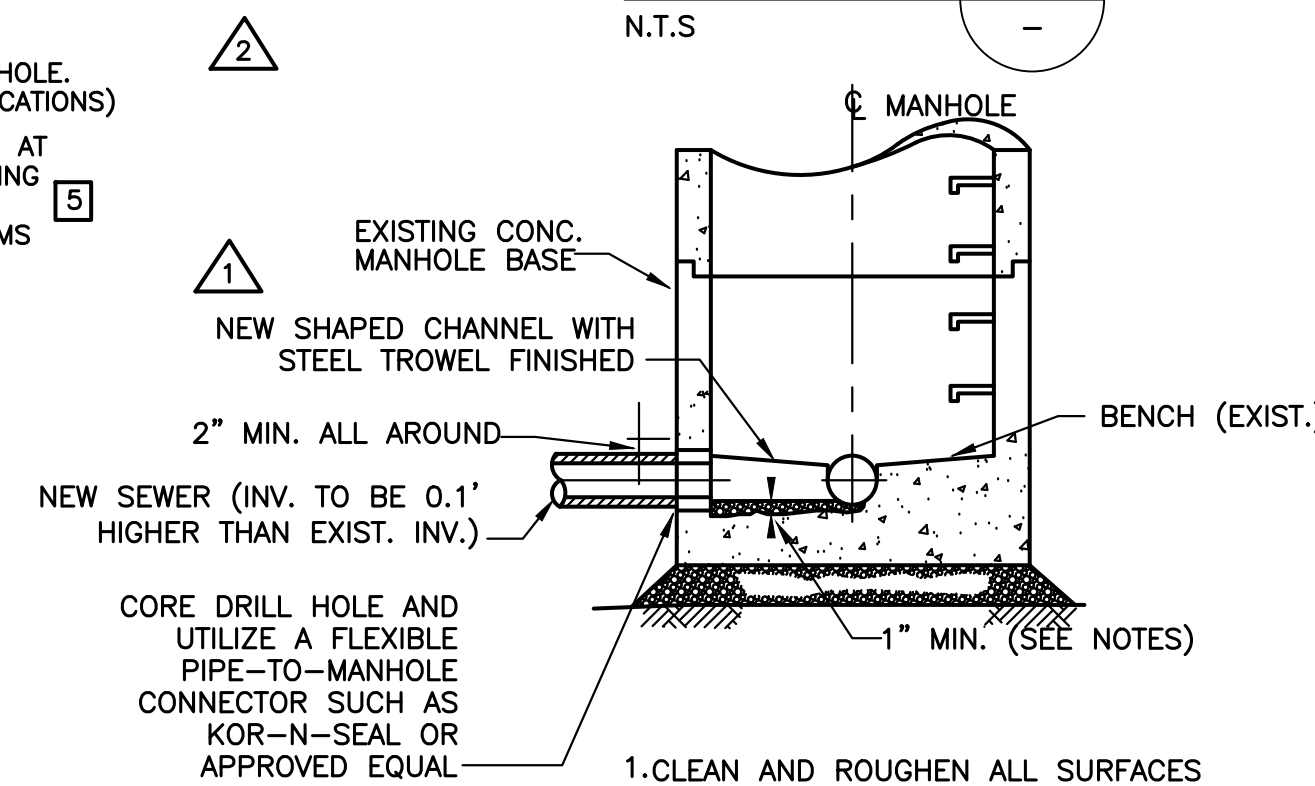
1. FOR INLET, OUTLET, BASE AND BRANCH DETAILS SEE INVERT DETAILS
2. INTERIOR COATING AND CONTINUOUS HEAT-SHRINK MEMBRANE SHALL BE AS INDICATED ON STANDARD MANHOLE DETAIL A THIS SHEET.

SHALLOW MANHOLE

DETAIL

N.T.S.

B

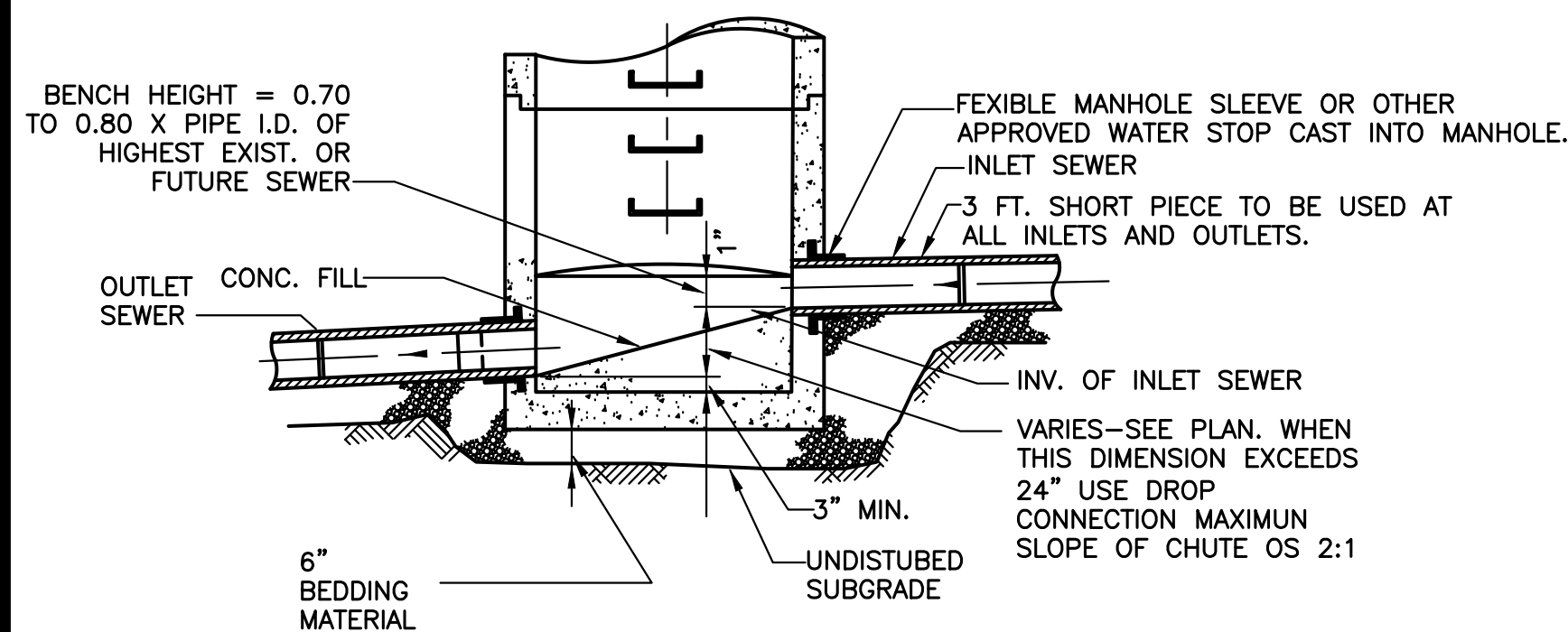


NEW CONNECTION TO EXISTING MANHOLE

DETAIL

N.T.S.

H



INVERT

DETAIL

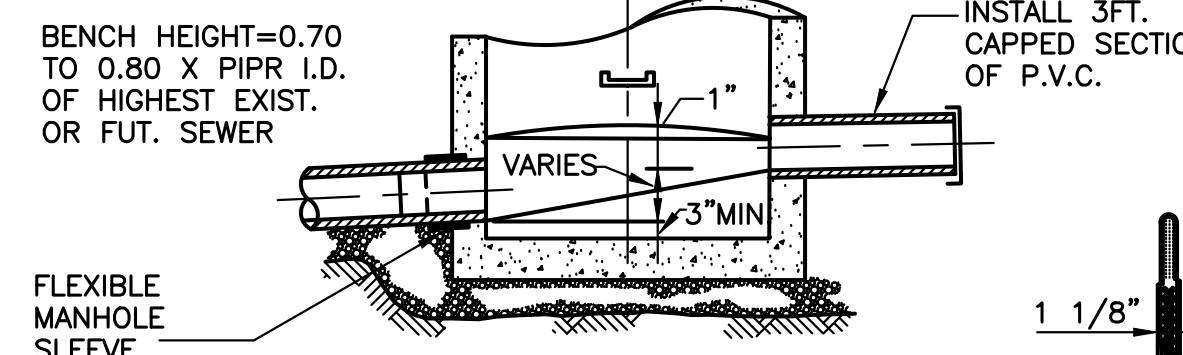
N.T.S.

G

(BRANCH INLET SEWER NOT SHOWN)

NOTES :

1. CHANNEL WIDTH TO BE BETWEEN 1.0 AND 1.10 X PIPE DIAMETER
2. BENCH AND CHANNEL SHALL HAVE A STEEL TROWEL FINISH.

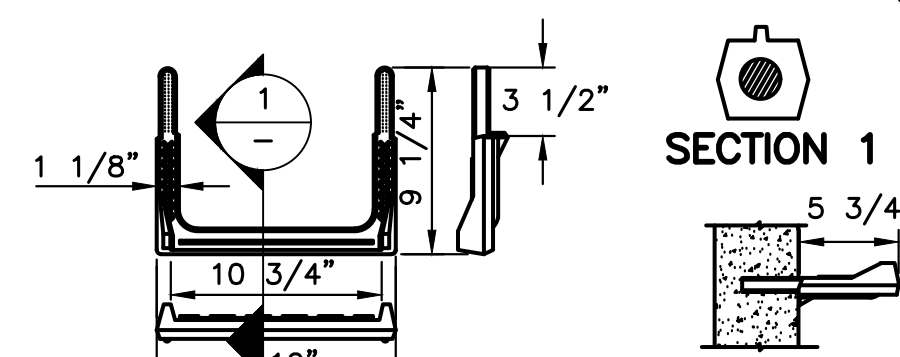


FUTURE EXTENSION

DETAIL

N.T.S.

K



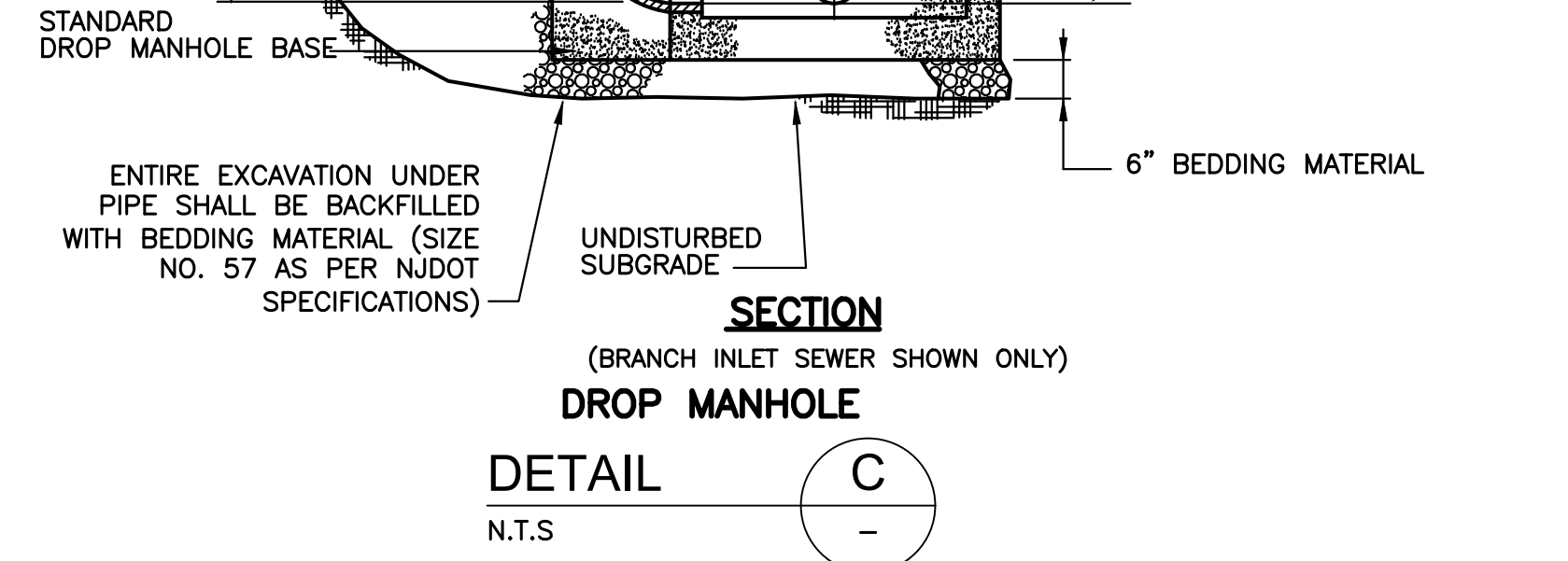
SECTION 1

COPOLYMER MANHOLE RUNG

DETAIL

N.T.S.

L



SECTION

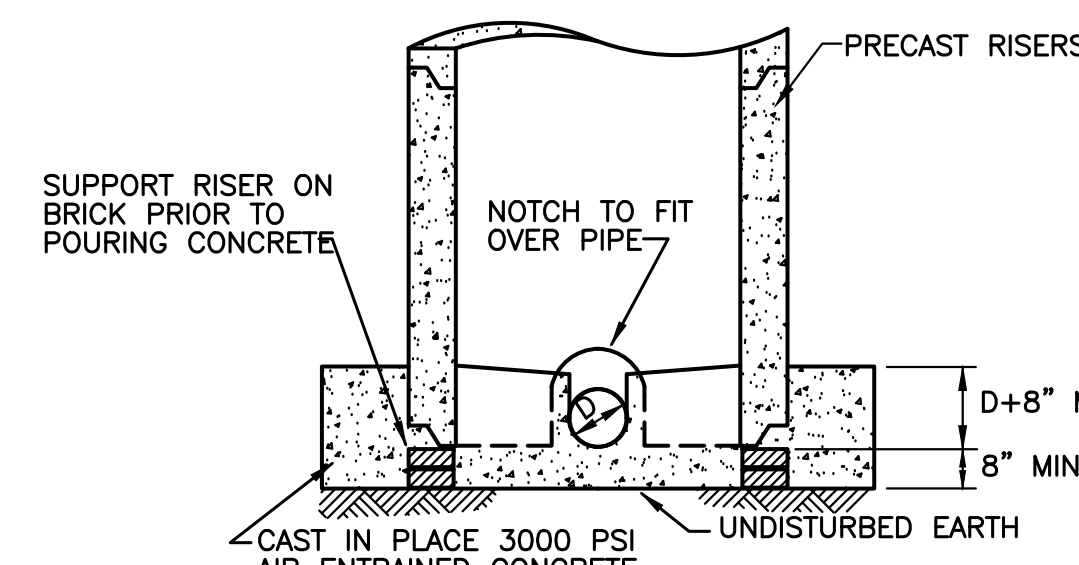
(BRANCH INLET SEWER SHOWN ONLY)

DROP MANHOLE

DETAIL

N.T.S.

C

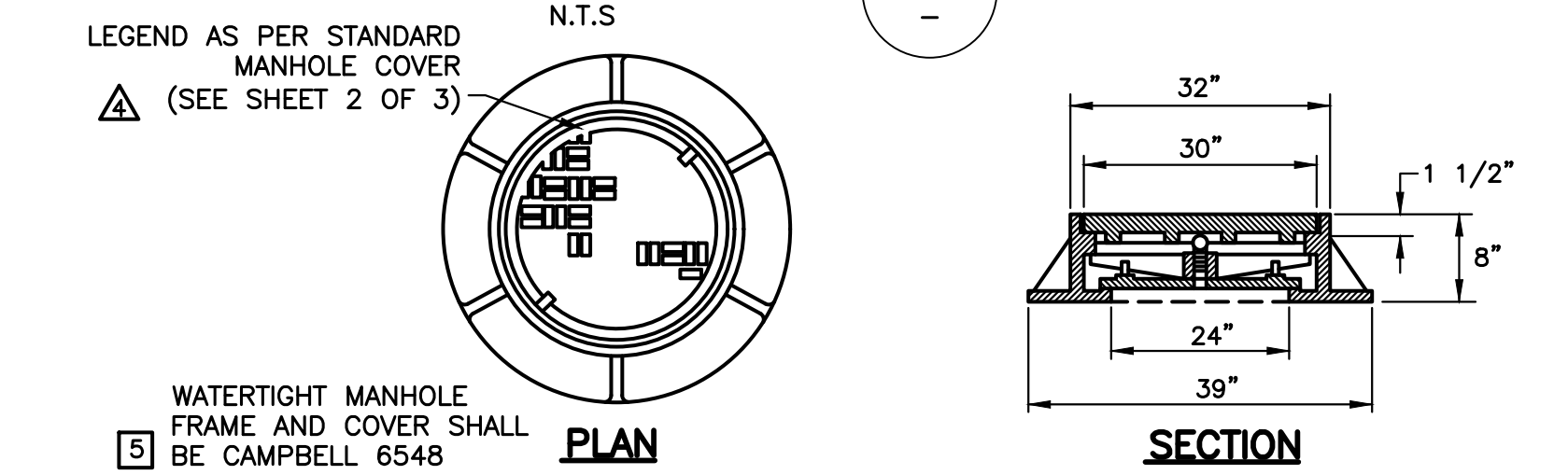


DOG HOUSE MANHOLE

DETAIL

N.T.S.

(FOR INSTALLING NEW MANHOLE ON ACTIVE SEWER)

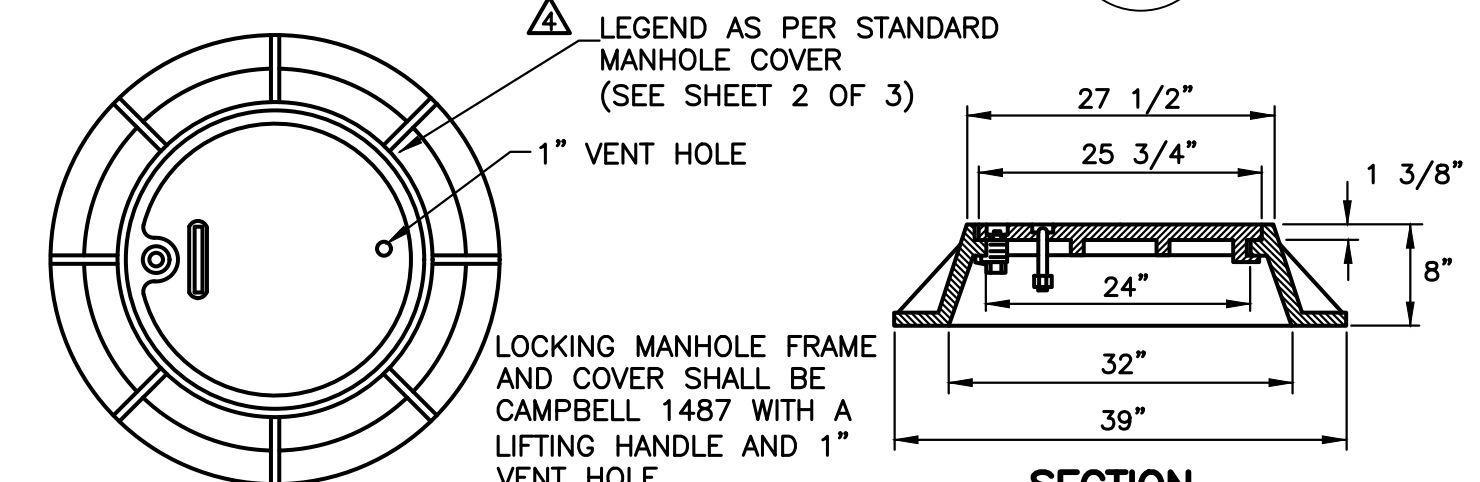


WATERTIGHT MANHOLE FRAME AND COVER

DETAIL

N.T.S.

F



LOCKING MANHOLE FRAME AND COVER

DETAIL

N.T.S.

J

NOTE: SHALL BE USED WHERE SPECIFIED ON PLANS IN REMOTE EASEMENTS NOT SUBJECT TO FLOODING

NOTE:

ALL WORK SHALL COMPLY WITH THE REVISION OF THE "RATES, RULES & REGULATIONS APPLICABLE TO SEWER SERVICE IN THE TOWNSHIP OF FRANKLIN, SOMERSET COUNTY, NEW JERSEY" IN EFFECT AT THE TIME CONSTRUCTION BEGINS.

NOTE:

FTSA STANDARD CONSTRUCTION DETAILS WERE PREPARED BY CDM SMITH IN MAY 1997 LAST REVISED BY CME ASSOCIATES IN OCTOBER 2024 AS DIRECTED BY FTSA.

NOTES :

1. TOP OF PIPE SHALL BE NEATLY CUT AFTER CAST-IN-PLACE CONC. BASE AND BENCH HAS SET
2. FOR DETAIL OF UPPER PART OF MANHOLE, SEE "STANDARD MANHOLE" DETAIL
3. ACRYLAMIDE GEL GROUT INJECTION SHALL BE USED TO STOP LEAKS, IF ANY, AROUND MANHOLE SEAMS AND PIPES.
4. FTSA APPROVAL SHALL BE REQUIRED PRIOR TO INSTALLATION OF ANY DOG HOUSE MANHOLE.
5. INTERIOR COATING AND CONTINUOUS HEAT-SHRINK MEMBRANE SHALL BE AS INDICATED ON STANDARD MANHOLE DETAIL A THIS SHEET.

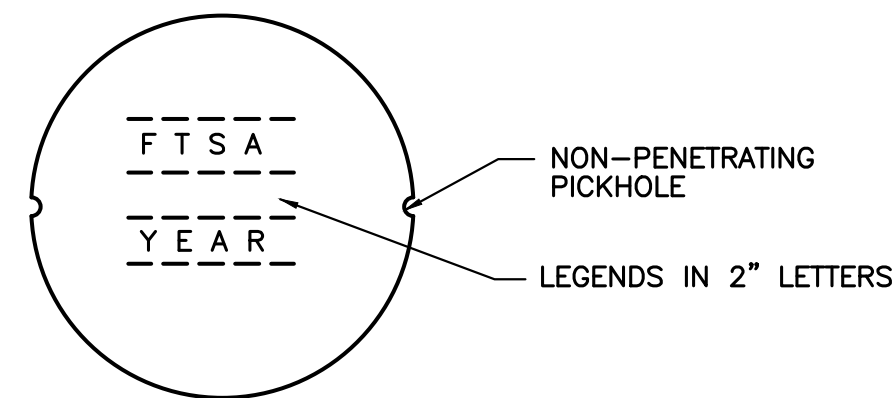
REV. NO.	DATE	DRWN	CHKD	DESCRIPTION OF REVISION
5	10/24	CME	FTSA	REVISIONS TO UPDATE RATES, RULES AND REGULATIONS
4	10/13	CDM	FTSA	REVISIONS TO UPDATE RATES, RULES AND REGULATIONS
3	5/00	CDM	FTSA	GENERAL NOTE
2	2/98	CDM	FTSA	
1	5/97	CDM	FTSA	MANHOLE COATINGS, ENCAPSULATION SYSTEM, BEDDING



FRANKLIN TOWNSHIP SEWERAGE AUTHORITY

70 Commerce Drive, Somerset, NJ 08873-3470

Tel: (732) 873-2121 • Fax: (732) 873-2038 • www.ftsa-nj.org



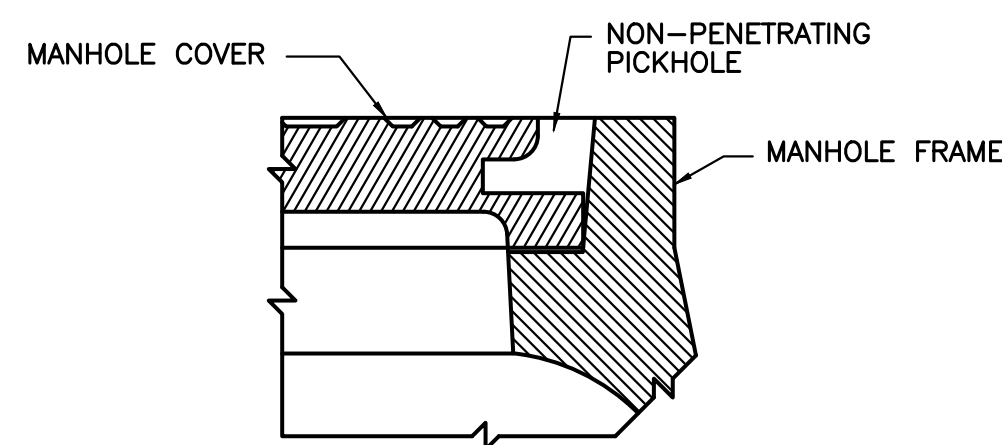
STANDARD MANHOLE COVER

DETAIL A

N.T.S.

NOTES :

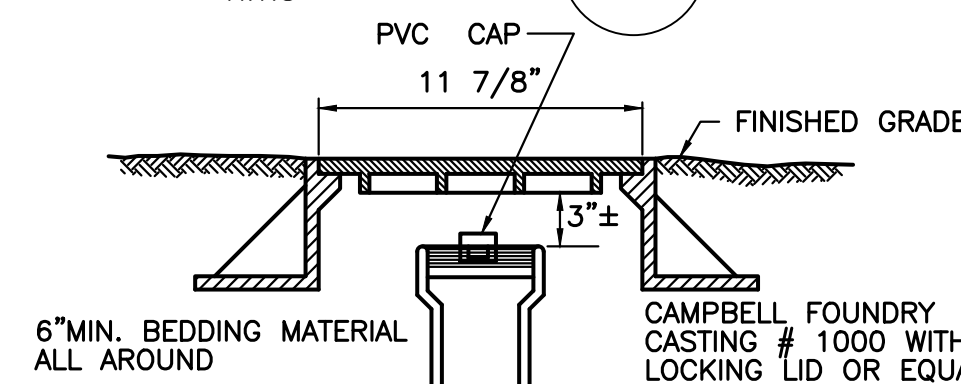
1. MANHOLE COVERS SHALL INDICATE "FTSA" AND YEAR
2. SEATING SURFACES OF MANHOLE FRAME AND COVERS SHALL BE MACHINED TO INSURE A NON-CHATTERING FIT. MANHOLE FRAMES AND COVERS SHALL BE PROPERLY CLEANED AND DIP COATED IN A WATERPROOF ASPHALTUM PAINT.
3. MANHOLE COVERS TO BE CAMPBELL NO. 1203 B OR AN APPROVED EQUAL.
4. LETTERING TO BE APPROVED BY AUTHORITY PRIOR TO CASTING.
5. NO STANDARD COVERS ARE TO HAVE VENTS.



SPECIAL PICKHOLE

DETAIL E

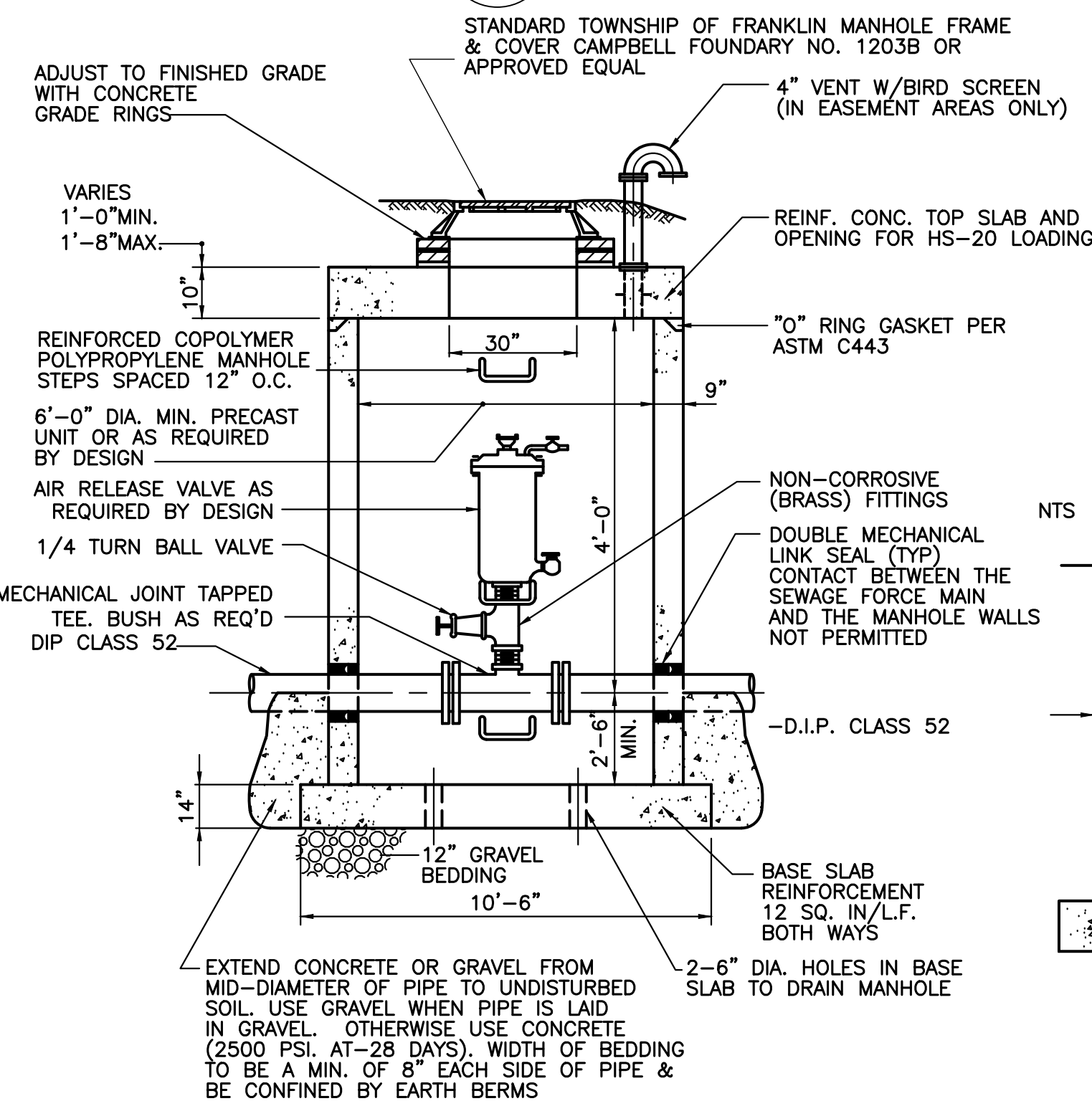
N.T.S.



RISER COVER

DETAIL F

N.T.S.



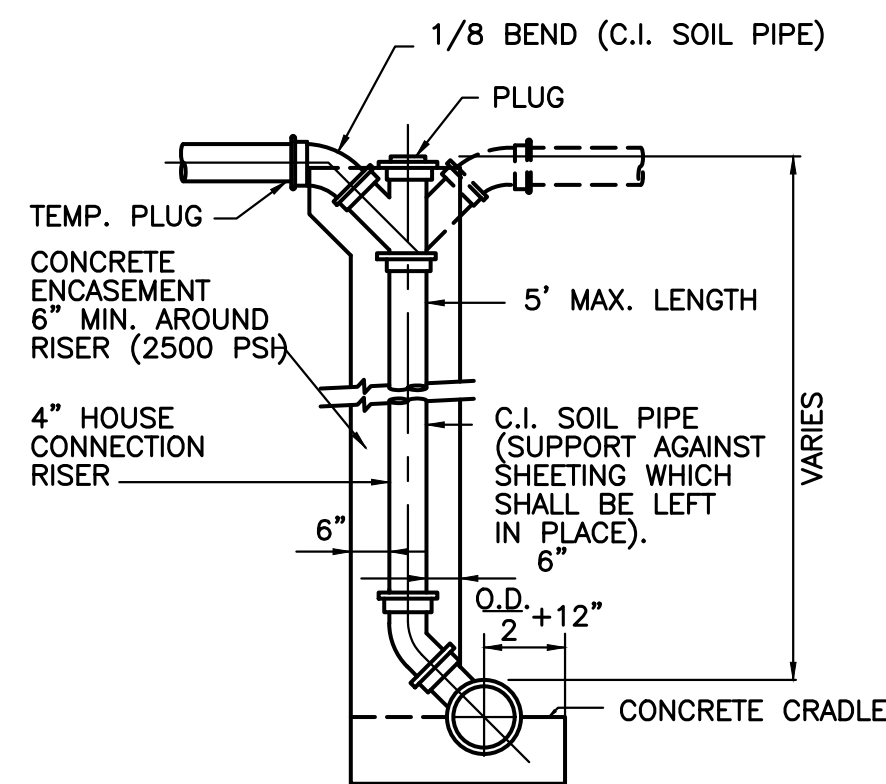
SEWAGE FORCE MAIN AIR RELEASE VALVE

DETAIL I

N.T.S.

NOTES :

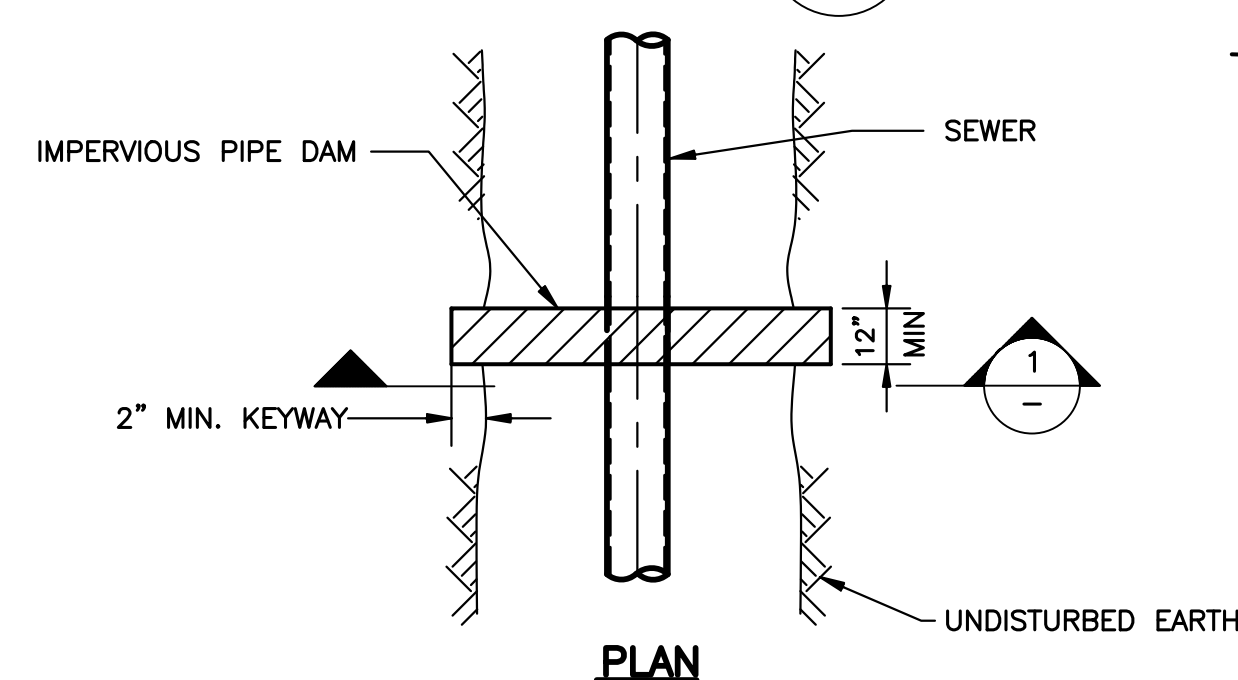
1. IF CONTRACTOR INCREASES TRENCH WIDTH, HE IS TO RECOMPUTE & SUBMIT FOR APPROVAL BY THE ENGINEER ALL PIPE CLASSES. ANY ADDITIONAL COST NECESSITATED BY THE INCREASE IN TRENCH WIDTH IS TO BE BORNE BY THE CONTRACTOR.
2. IN PAVED AREAS, WIDTH OF PAVEMENT TO BE REMOVED SHALL BE EXTENDED 12" BEYOND EDGE OF TRENCH.
3. ALL EXCAVATION, TRENCHING, SHEETING AND BRACING SHALL CONFORM TO THE REQUIREMENTS OF THE "CONSTRUCTION SAFETY CODE OF THE BUREAU OF ENGINEERING AND SAFETY OF THE NEW JERSEY DEPARTMENT OF LABOR AND INDUSTRY.
4. SLOPE OF THE TRENCH SHALL NOT EXCEED 0.5:H.A. REQUIREMENTS WHERE SUCH SLOPE WILL CAUSE TOP WIDTH OF TRENCH TO PROTRUDE BEYOND THE ACQUIRED EASEMENT (PERMANENT PLUS TEMPORARY) THE CONTRACTOR SHALL USE SHEETING.
5. NO SEWER SHALL BE DESIGNED WITH LESS THAN 4FT. OF COVER WITHOUT SPECIAL PERMISSION OF FTSA.
6. PROVIDE AT LEAST ONE IMPERVIOUS PIPE TRENCH DAM IN BEDDING BETWEEN EACH MANHOLE OR EVERY 300 FT, WHICHEVER IS LESS (SEE DETAIL THIS SHEET)



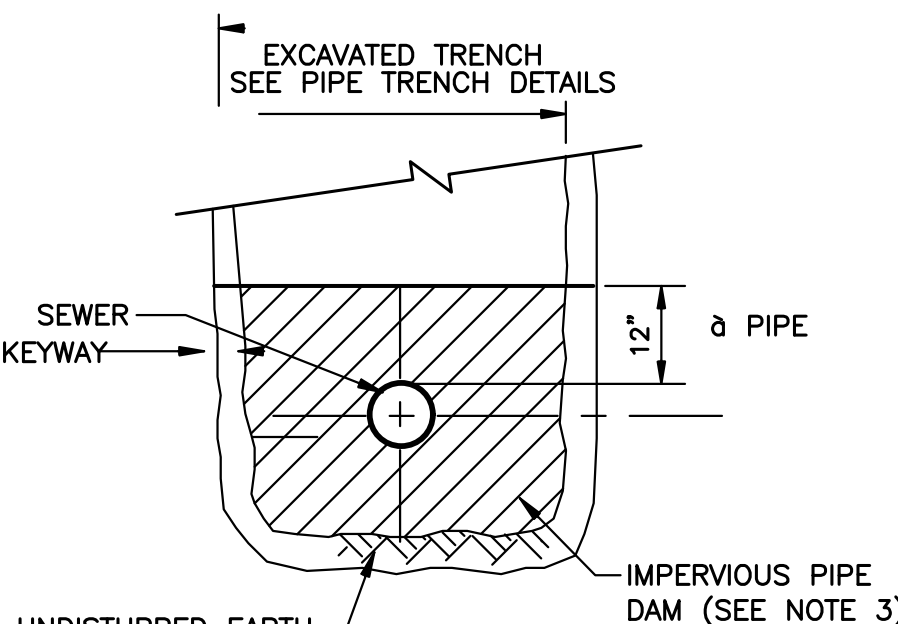
RISER

DETAIL B

N.T.S.



PLAN



SECTION 1

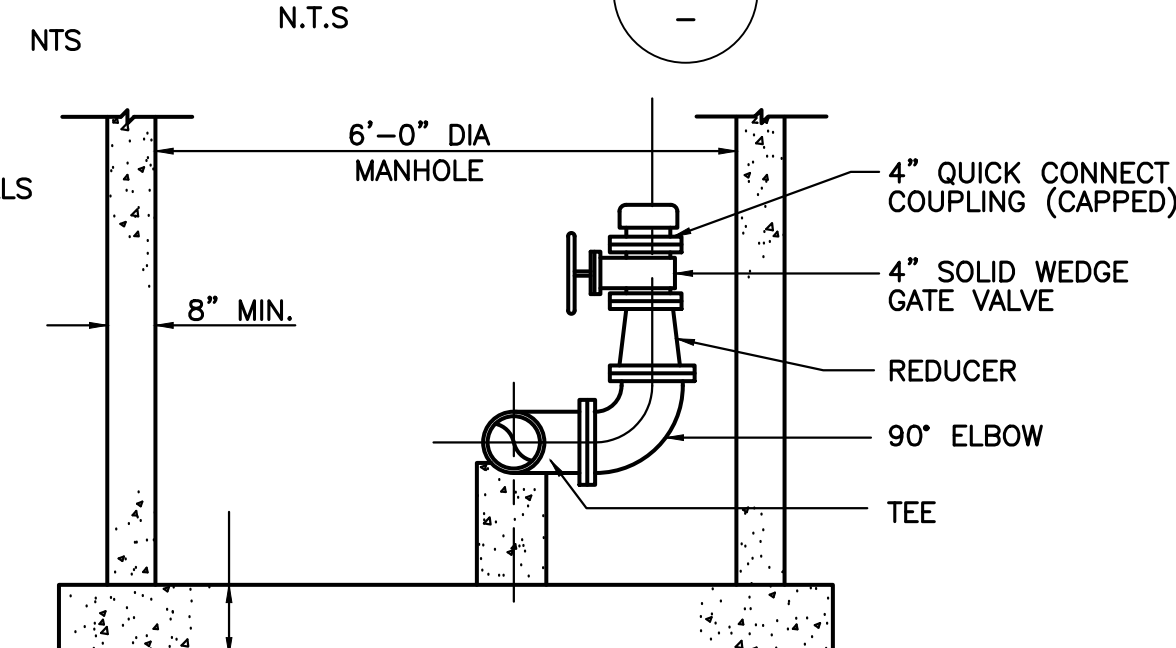
NOTES:

1. IMPERVIOUS PIPE DAMS SHALL BE INSTALLED A MAXIMUM OF 300 FEET APART, WITH AT LEAST ONE DAM BETWEEN MANHOLES.
2. IMPERVIOUS PIPE DAMS SHALL BE INSTALLED EQUIDISTANT FROM PIPE JOINTS.
3. IMPERVIOUS PIPE DAM SHALL BE NATURAL CLAY, MANUFACTURED CLAY PANELS, CONCRETE, OR OTHER SUITABLE APPROVED MATERIAL AND SHALL HAVE A MAXIMUM PERMEABILITY OF 1×10^{-5} CM/SEC.

TYPICAL PIPE TRENCH DAM

DETAIL G

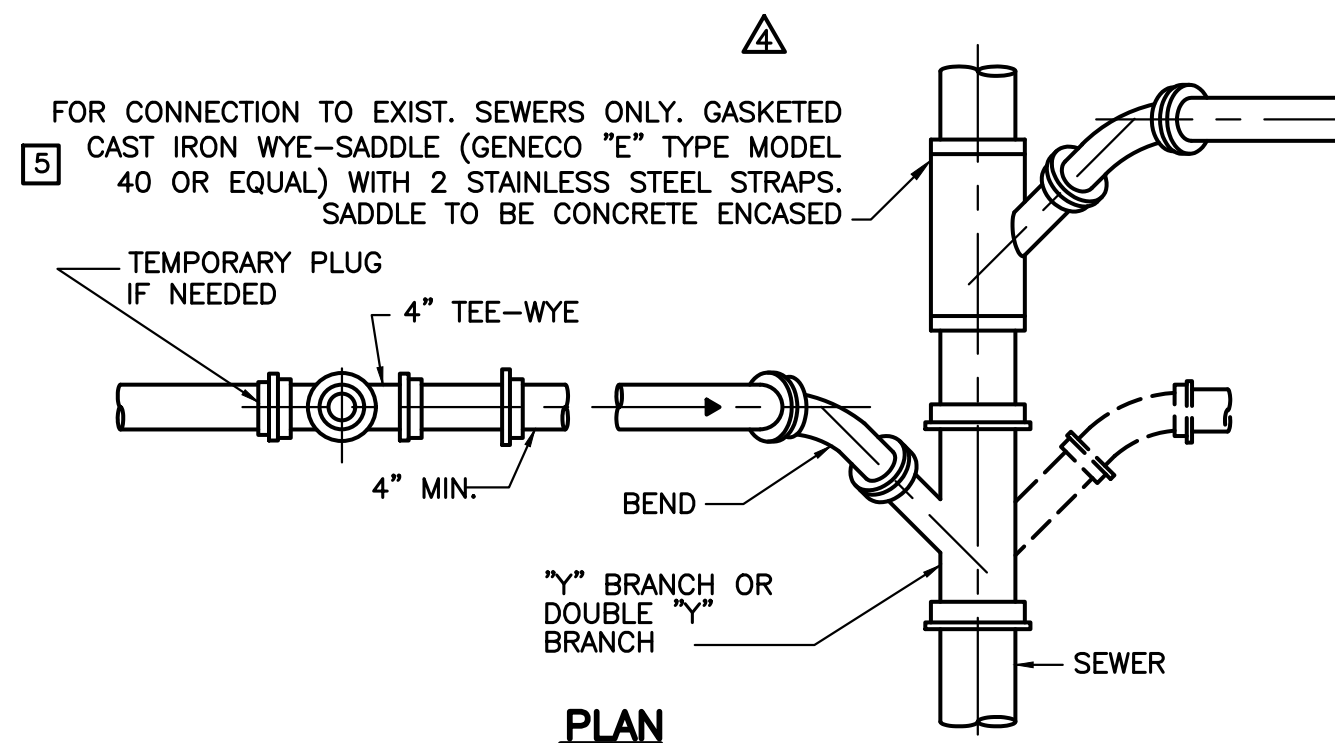
N.T.S.



FORCE MAIN BLOW OFF

DETAIL J

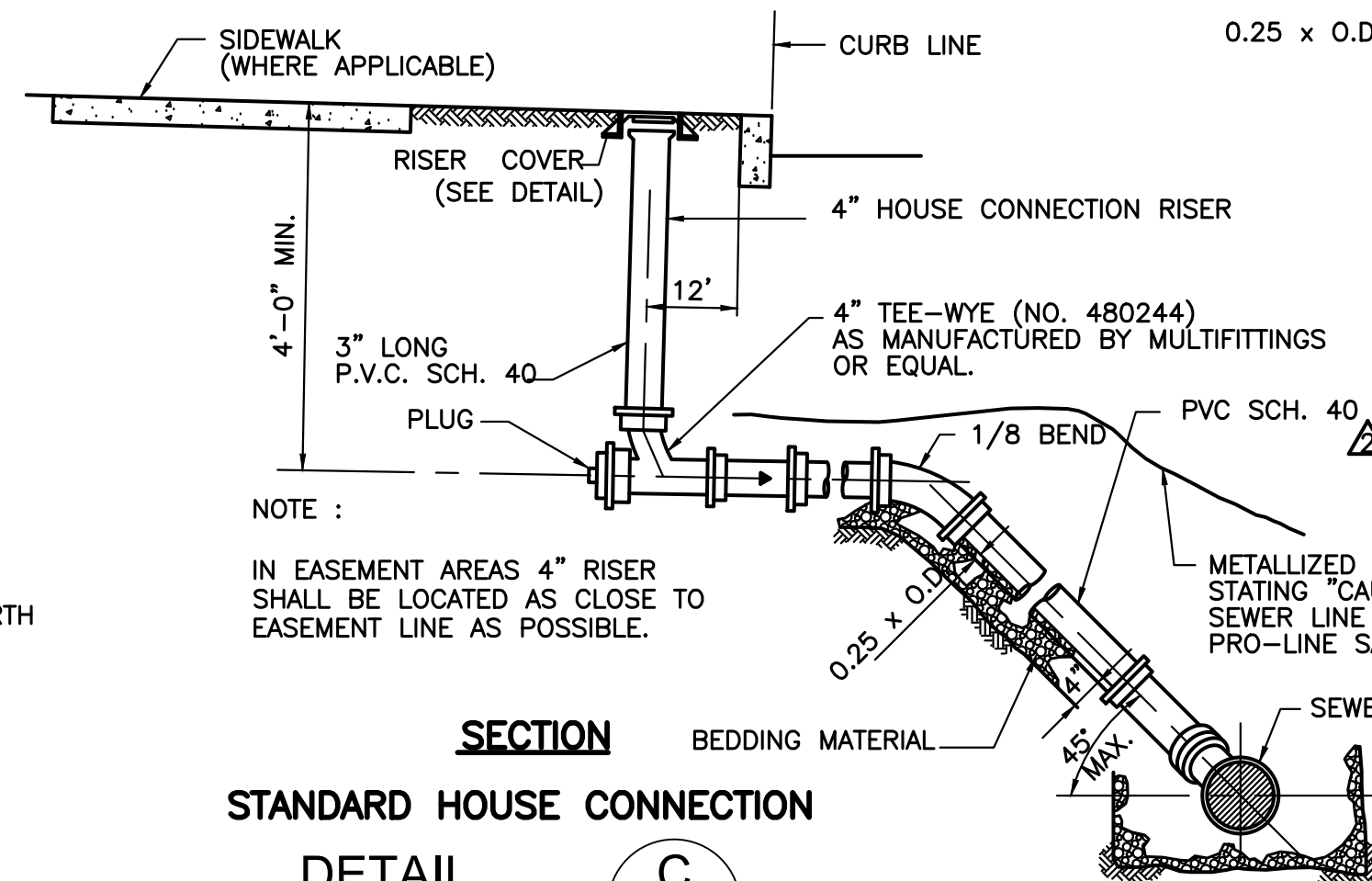
N.T.S.



PLAN

NOTES :

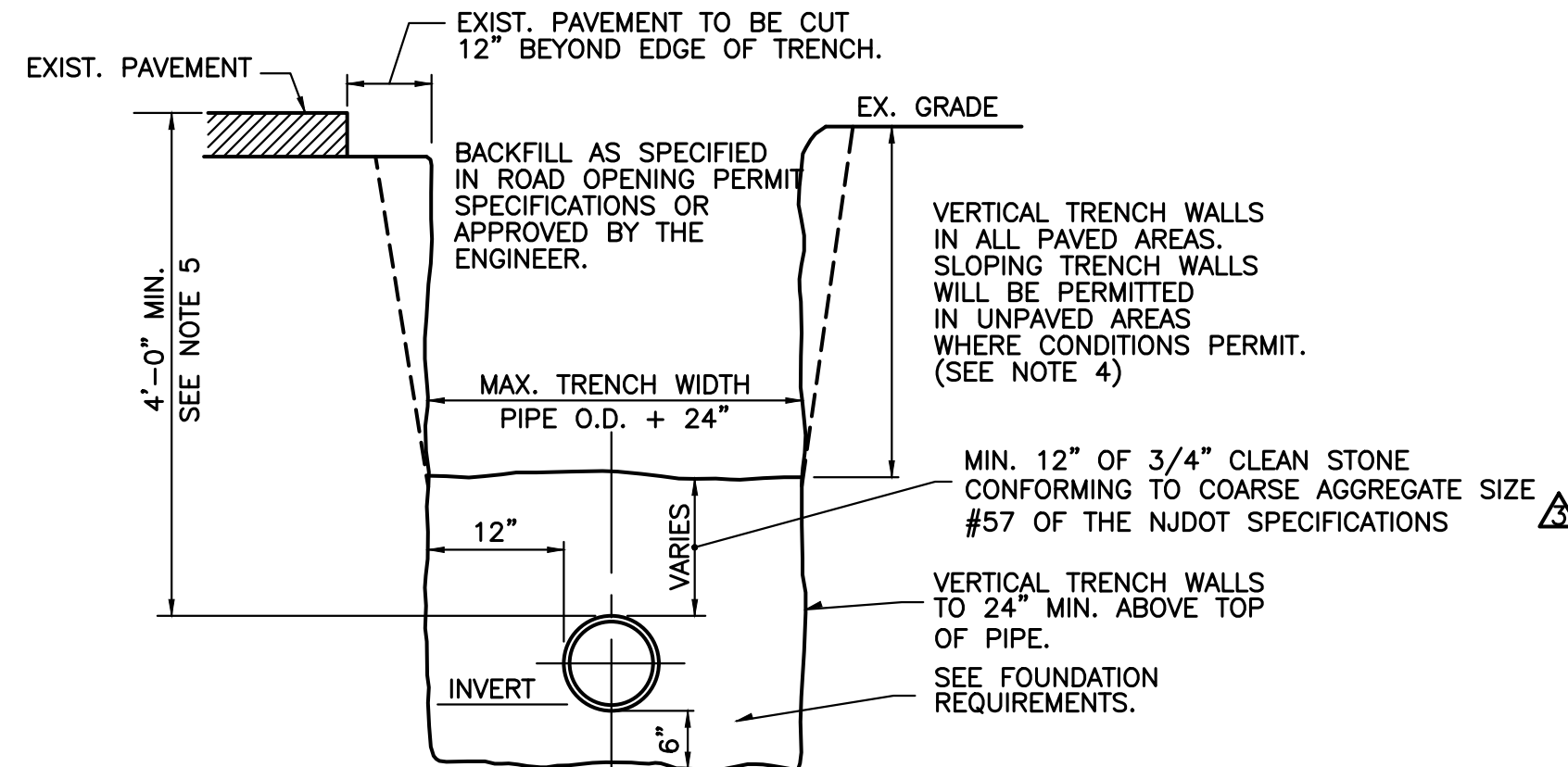
1. CLEANOUT TO BE LOCATED IN GRASSED AREA BETWEEN SIDEWALK AND CURB. CLEANOUTS WILL NOT BE PERMITTED IN DRIVEWAYS OR SIDEWALKS.
2. LATERAL TO BE SAME SIZE FOR ENTIRE LENGTH FROM BUILDING TO SEWER, 4" OR 6" PVC SCH. 40



SECTION STANDARD HOUSE CONNECTION

DETAIL L

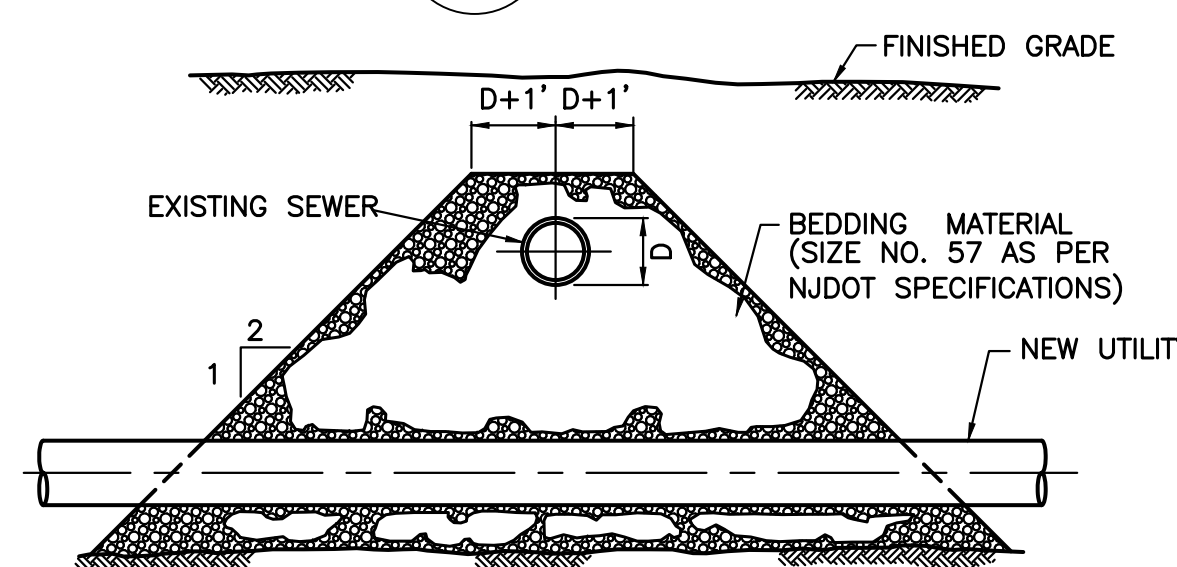
N.T.S.



TRENCH

DETAIL M

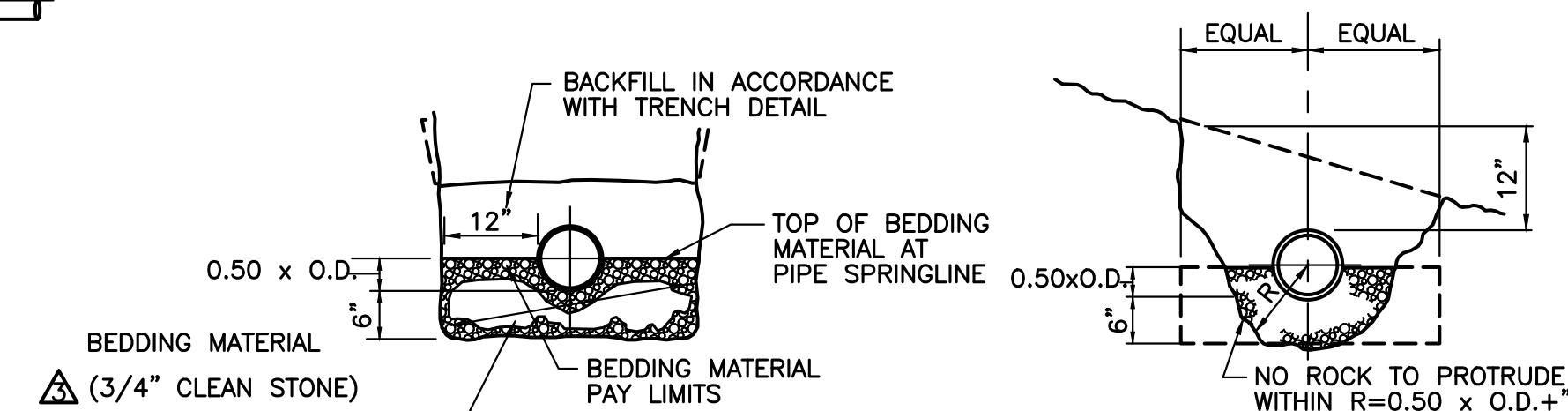
N.T.S.



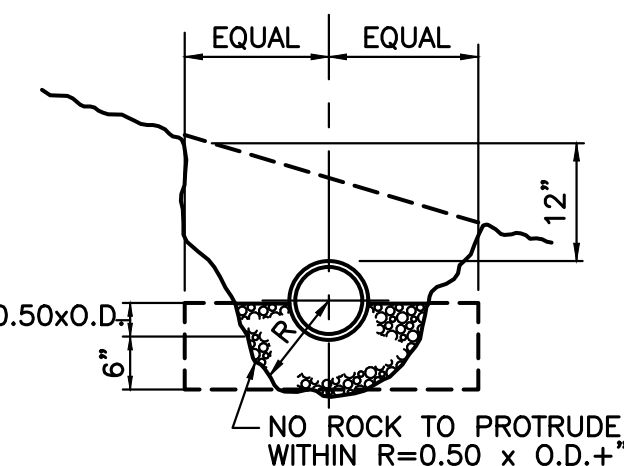
UTILITY CROSSING BELOW EXISTING SEWER

DETAIL N

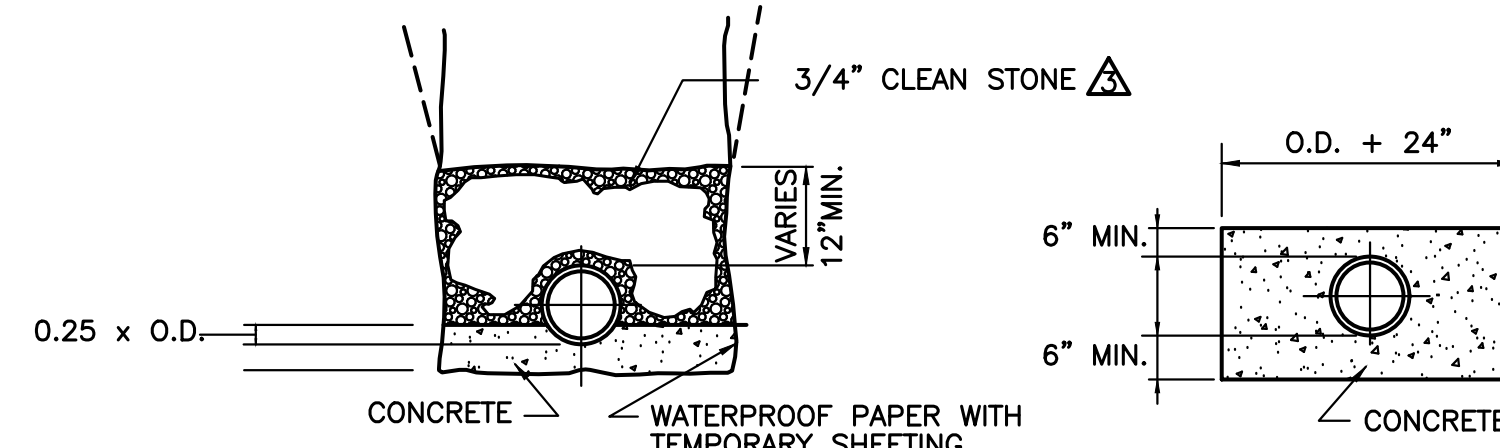
N.T.S.



FOUNDATION MATERIAL ON EARTH



FOUNDATION MATERIAL ON ROCK



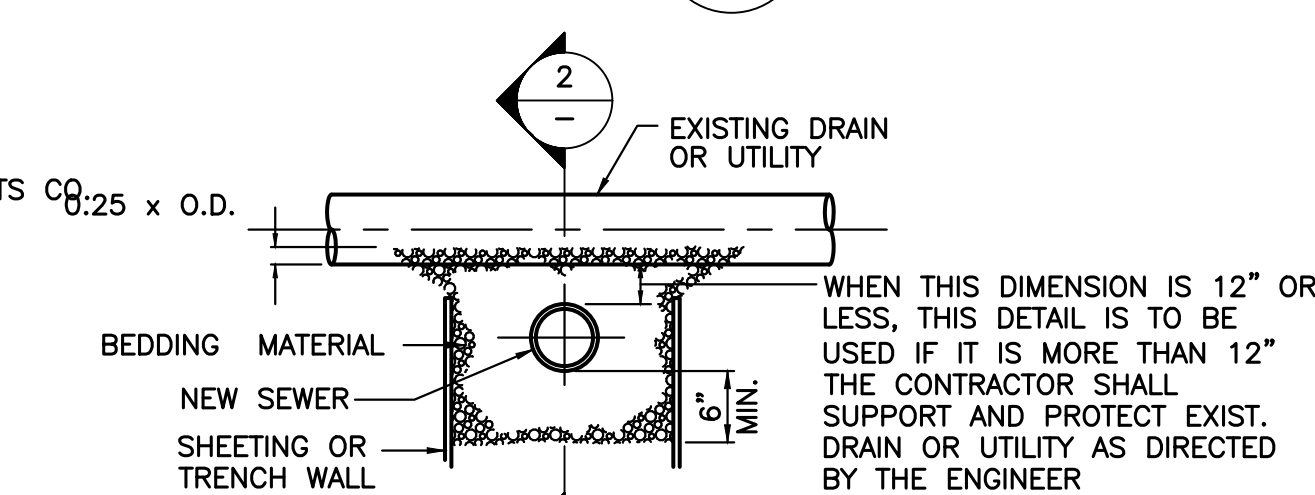
CONCRETE CRADLE ON EARTH

CONCRETE ENCASEMENT

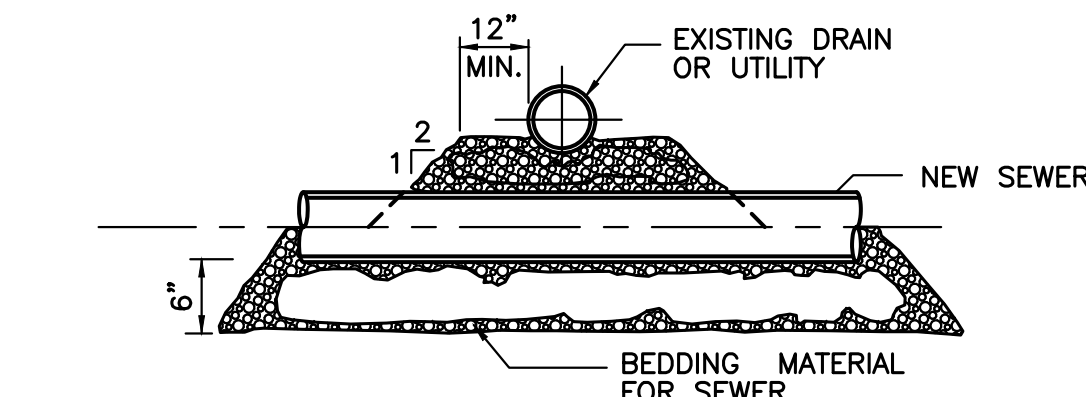
FOUNDATION REQUIREMENTS

DETAIL Q

N.T.S.



PLAN



SECTION 2

SEWER CROSSING BELOW EXISTING DRAIN OR UTILITY

DETAIL H

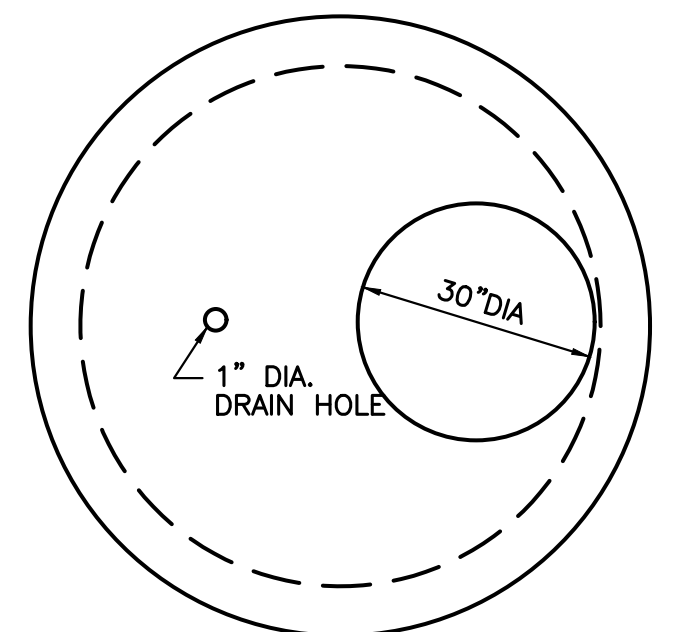
N.T.S.

NOTE :

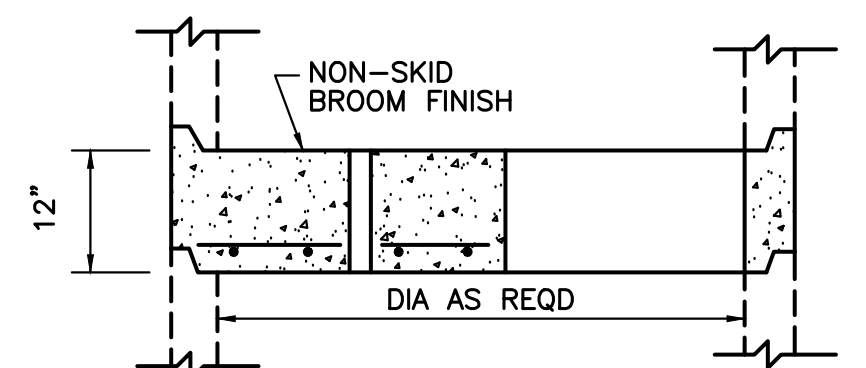
ALL MATERIAL REMOVED FROM BENEATH ANY EXISTING SEWER SHALL BE REPLACED WITH CONCRETE OR CLEAN CRUSHED STONE. IF THE VOID UNDER THE SEWER IS LESS THAN 12" THEN ONLY CONCRETE SHALL BE USED.

NOTE:

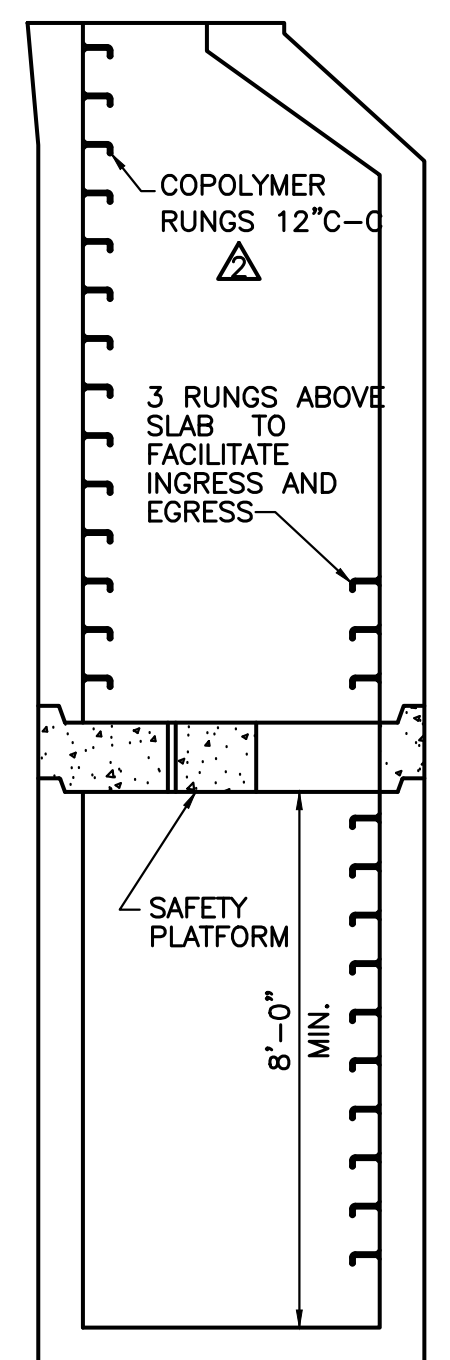
ALL WORK SHALL COMPLY WITH THE REVISION OF THE "RATES, RULES & REGULATIONS APPLICABLE TO SEWER SERVICE IN THE TOWNSHIP OF FRANKLIN, SOMERSET COUNTY, NEW JERSEY" IN EFFECT AT THE TIME CONSTRUCTION BEGINS.



PLAN VIEW-SLAB



CROSS SECTION - SLAB



MH CROSS SECTION

SAFETY PLATFORM FOR DEEP MANHOLES

DETAIL U

N.T.S.

NOTE :

WHEN DEPTH OF MH FROM TOP OF FRAME AND COVER TO INVERT EXCEEDS 15'-0" THIS DETAIL IS TO BE USED.

NOTE:

FTSA STANDARD CONSTRUCTION DETAILS WERE PREPARED BY CDM SMITH IN MAY 1997 LAST REVISED BY CME ASSOCIATES IN OCTOBER 2024 AS DIRECTED BY FTSA.

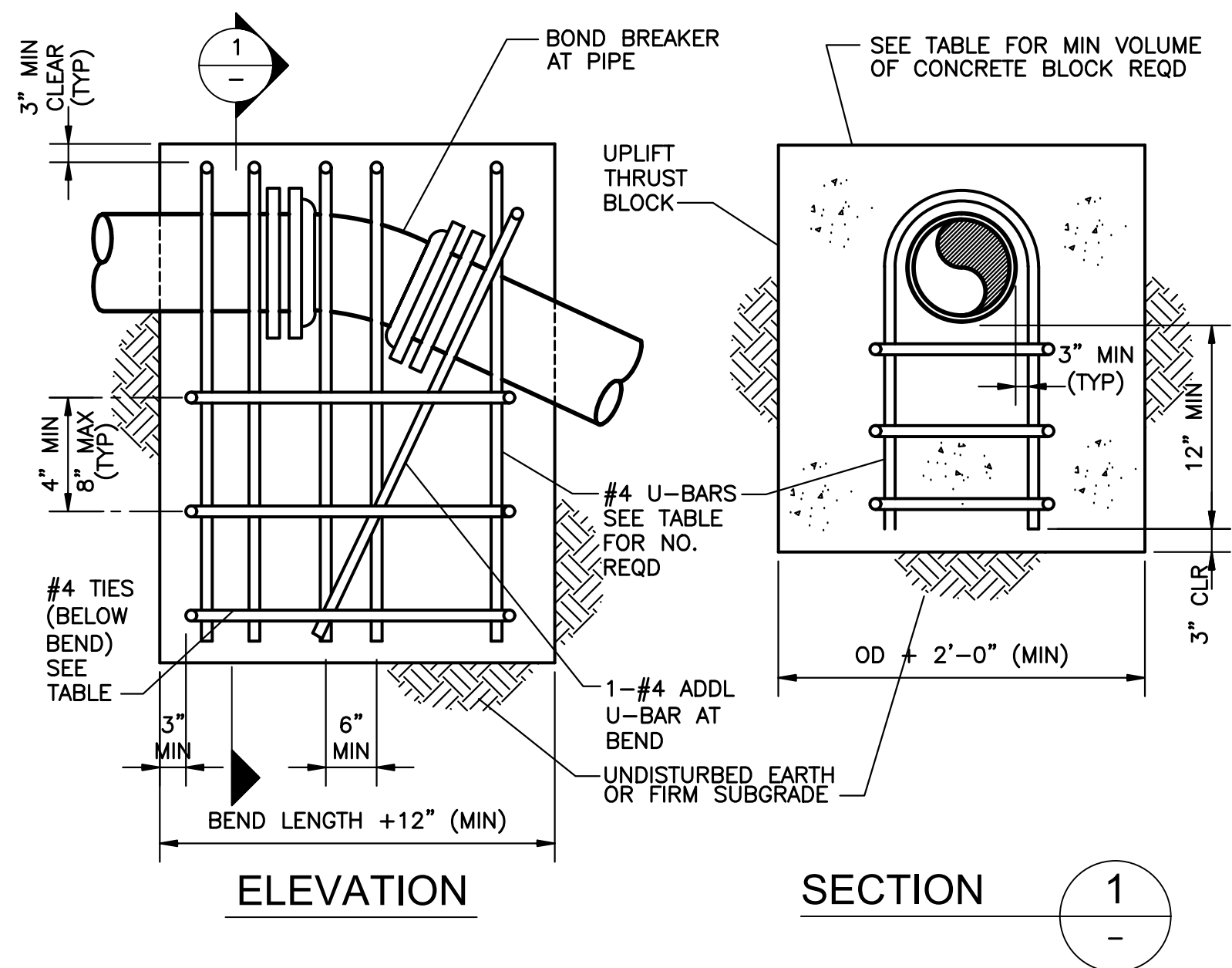
REV. NO.	DATE	DRWN	CHKD	DESCRIPTION OF REVISION
5	10/24	CME	FTSA	REVISIONS TO UPDATE RATES, RULES AND REGULATIONS
4	10/13	CDM	FTSA	REVISIONS TO UPDATE RATES, RULES AND REGULATIONS
3	5/00	CDM	FTSA	PIPE BEDDING & GENERAL NOTE
2	2/98	CDM	FTSA	LATERAL RUNGS
1	5/97	CDM	FTSA	MANHOLE COATINGS, ENCAPSULATION SYSTEM, BEDDING



FRANKLIN TOWNSHIP SEWERAGE AUTHORITY

70 Commerce Drive, Somerset, NJ 08873-3470

Tel: (732) 873-2121 • Fax: (732) 873-2038 • www.ftsa-nj.org



PIPE SIZE (IN.)	PIPE O.D. (IN.)	60 DEG		45 DEG		30 DEG		22.5 DEG		#4 TIES REQD
		REINF	CONC	REINF	CONC	REINF	CONC	REINF	CONC	
3	3.96	2	1	2	0.5	2	0.5	2	0.5	2
4	4.80	2	1	2	1.0	2	0.5	2	0.5	2
6	6.90	2	2	2	1.5	2	1.0	2	1.0	2
8	9.05	2	3.5	2	3	2	2	2	1.5	2
10	11.10	2	5	2	4	2	3	2	2.0	2
12	13.20	3	7	3	6	2	4	2	3	2
14	15.30	4	9	4	7	3	5	2	4	4
16	17.40	6	12	5	10	3	7	3	5	4
18	19.50	7	15	6	12	4	9	3	7	4

NOTES:

1. "REINF" = NO. OF #4-U-BARS REQUIRED.
2. "CONCRETE" = VOLUME OF CONCRETE BLOCK REQUIRED, CU YD.
3. MAXIMUM TEST PRESSURE = 1.5x1.50 PSI.
4. MINIMUM GRADE 40 REBAR.

THRUST BLOCK FOR UPPER VERTICAL BENDS WITH REINFORCING BARS

DETAIL A

N.T.S.

DETAIL FOR LOWER VERTICAL BENDS

NOMINAL PIPE SIZE (INCHES)	MAXIMUM PIPE OD (INCHES)	REQUIRED BEARING AREA (SQ FT)					
		90 DEG	60 DEG	45 DEG	30 DEG	22.50 DEG	11.25 DEG
3	3.96	2.0	1.4	1.1	0.7	0.5	0.3
4	4.80	2.9	2.0	1.6	1.1	0.8	0.4
6	6.90	6	4	3	2.2	1.6	0.8
8	9.05	10	7	6	4	3	1.4
10	11.10	15	11	8	6	4	2.1
12	13.20	22	15	12	8	6	3
14	15.30	29	21	16	11	8	4
16	17.40	38	27	20	14	10	5
18	19.50	48	34	26	17	13	7
20	21.60	58	41	32	21	16	8
24	25.80	83	59	45	30	23	12
30	32.00	128	90	69	47	35	18
36	38.30	183	130	99	67	51	25

THRUST BLOCKS FOR HORIZONTAL BENDS AND LOWER VERTICAL BENDS

NOTES:

1. MAXIMUM TEST PRESURE = 1.5 x 150 PSI
2. MINIMUM ALLOWABLE SOIL BEARING PRESSURE = 2000 PSF
3. BEARING AREA = A x B
4. C SHALL BE GREATER THAN A/2 AND B/2.

THRUST BLOCKS FOR HORIZONTAL BENDS AND LOWER VERTICAL BENDS

DETAIL C

N.T.S.

NOMINAL PIPE SIZE (IN)	MAXIMUM PIPE OD (IN)	REQUIRED BEARING AREA (SQ FT)
3	3.96	1.4
4	4.80	2.0
6	6.90	4
8	9.05	7
10	11.10	11
12	13.20	15
14	15.30	21
16	17.40	27
18	19.50	34
20	21.60	41
24	25.80	59
30	32.00	90
36	38.30	130

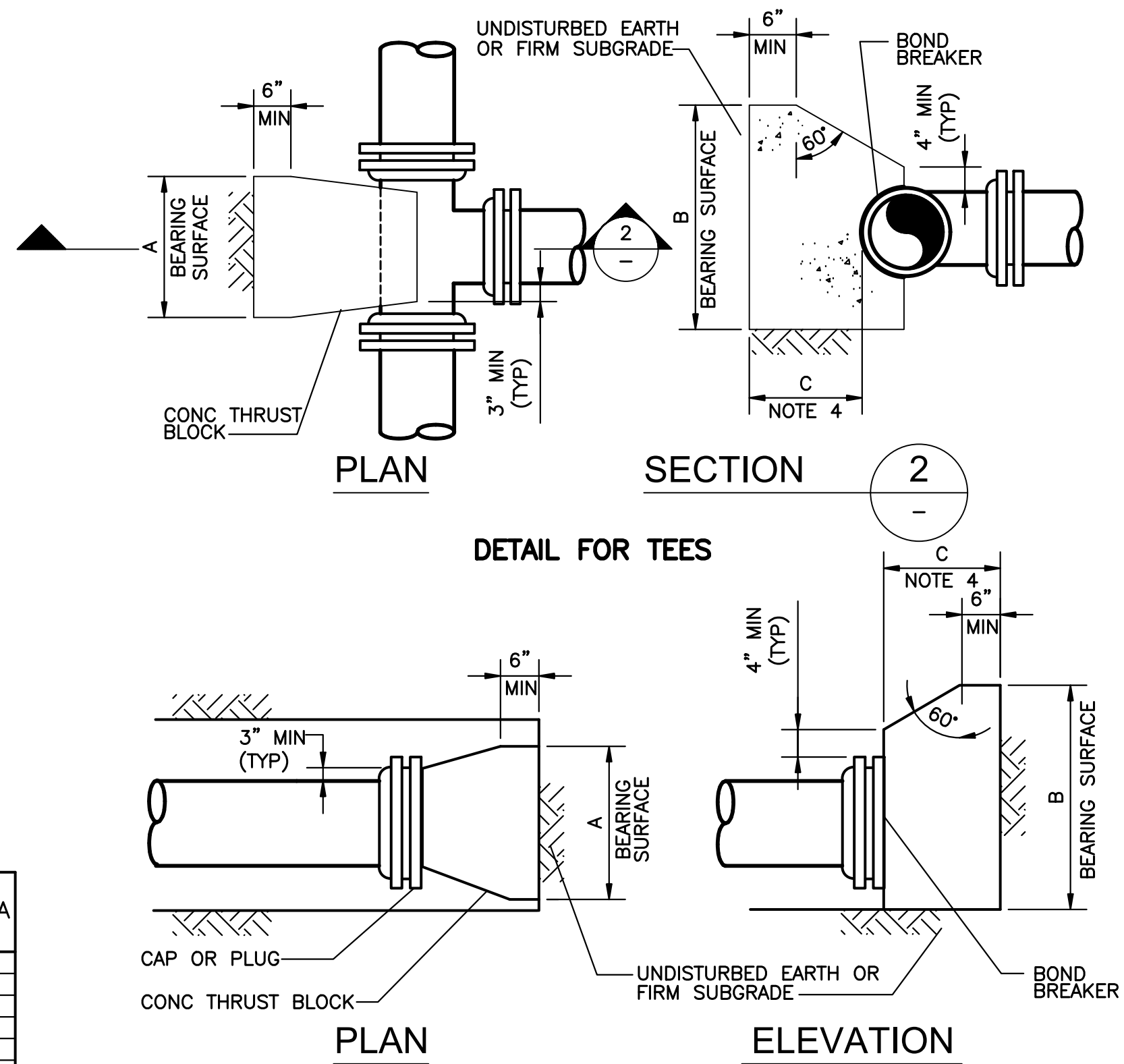
NOTES:

1. MAXIMUM TEST PRESSURE = 1.5x150 PSI
2. MINIMUM ALLOWABLE SOIL BEARING PRESSURE = 2000 PSF
3. BEARING AREA = A x B
4. C SHALL BE GREATER THAN A/2 AND B/2.

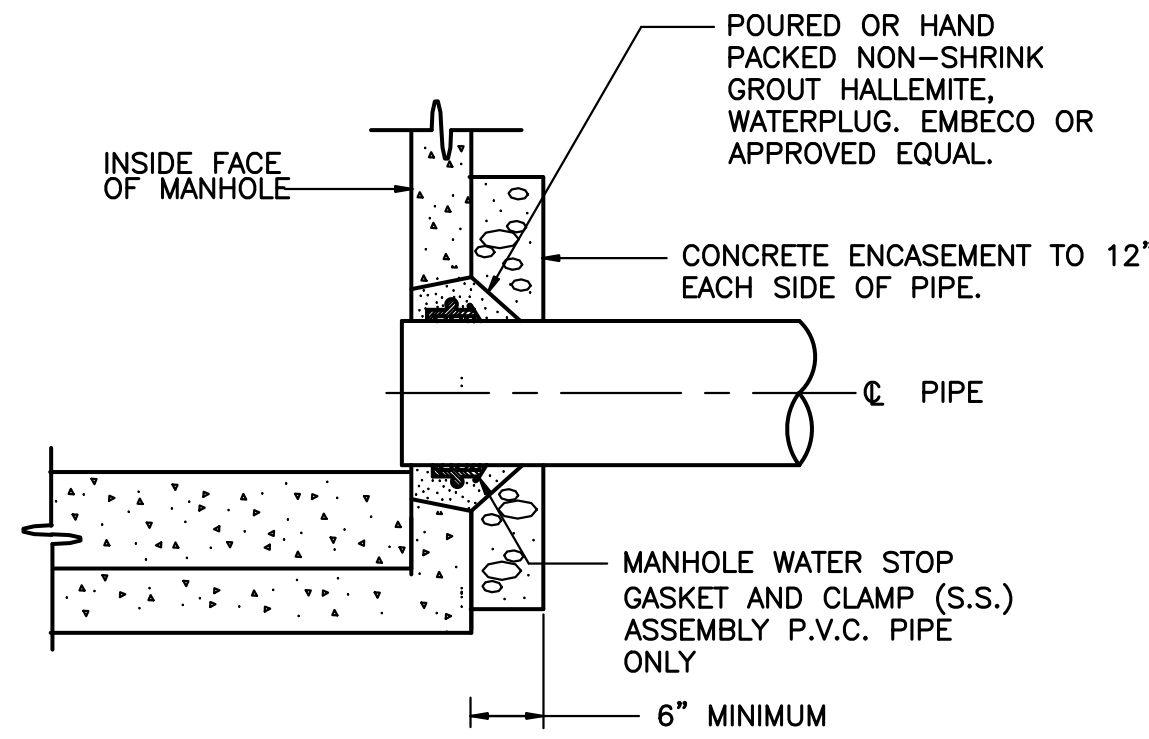
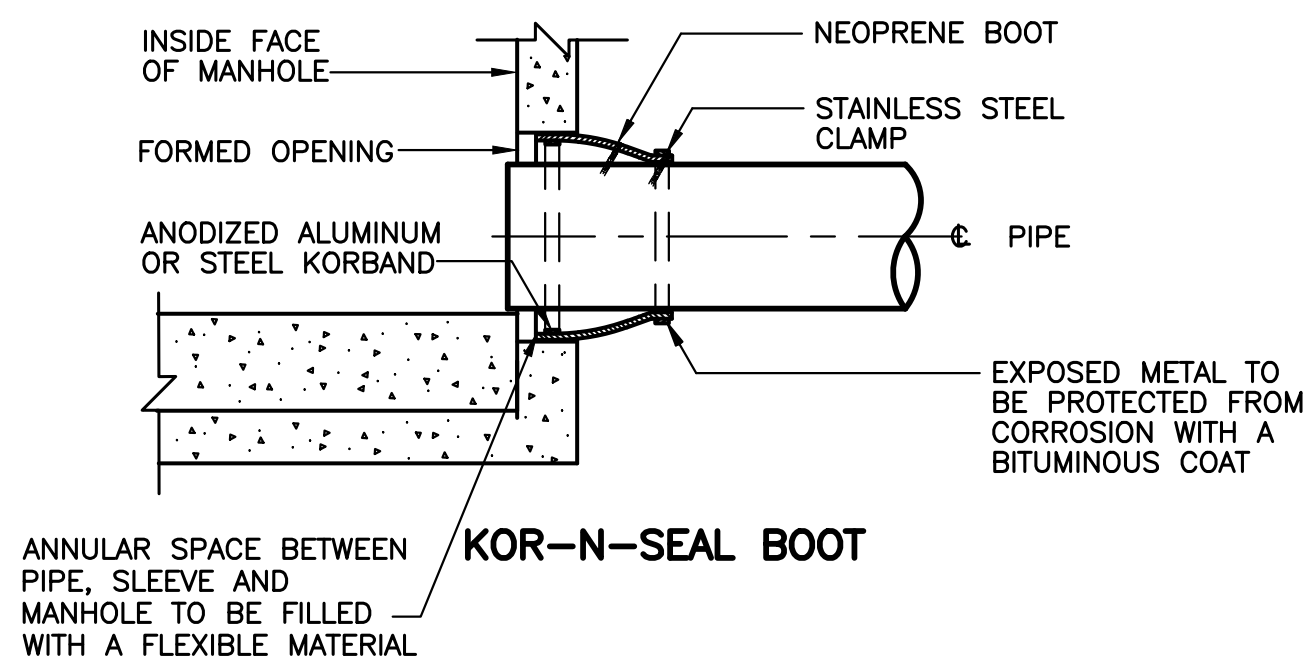
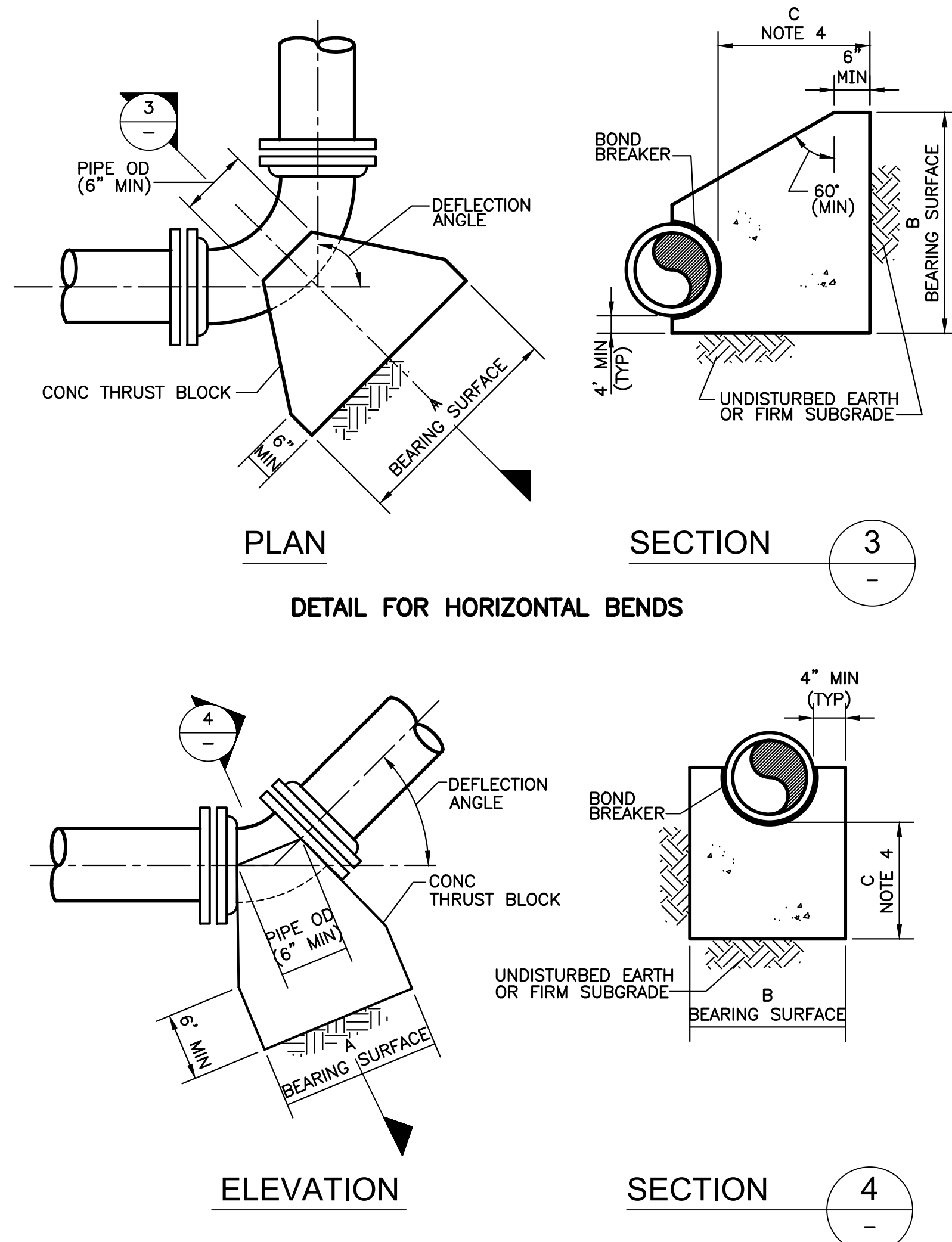
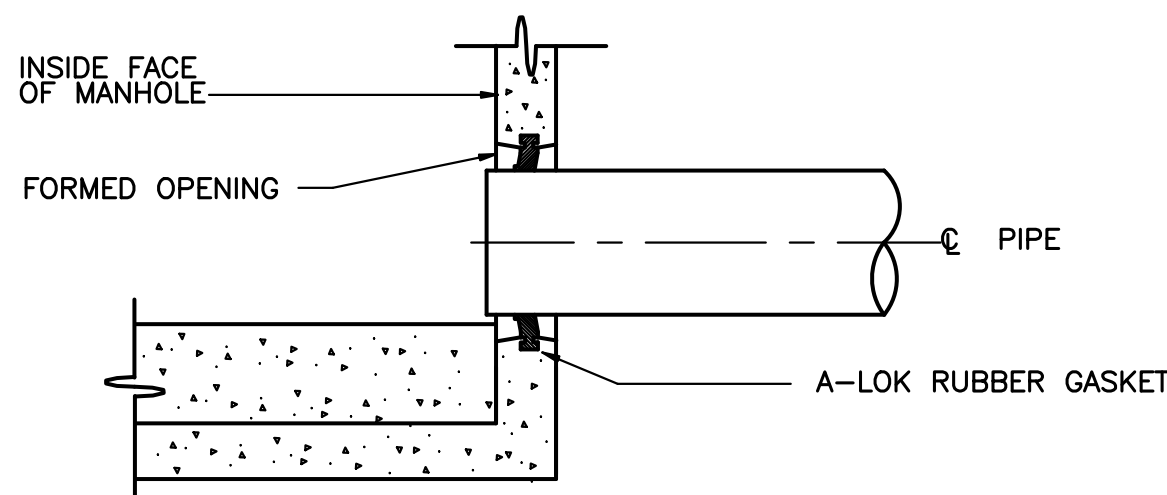
THRUST BLOCK FOR TEES, CAPS AND PLUGS

DETAIL B

N.T.S.



DETAIL FOR CAPS OR PLUGS



CONCRETE ENCASEMENT

PIPE CONNECTIONS II

DETAIL E

N.T.S.

NOTE:

FTSA STANDARD CONSTRUCTION DETAILS WERE PREPARED BY CDM SMITH IN MAY 1997 LAST REVISED BY CME ASSOCIATES IN OCTOBER 2024 AS DIRECTED BY FTSA.

NOTE: ALL WORK SHALL COMPLY WITH THE REVISION OF THE "RATES, RULES & REGULATIONS APPLICABLE TO SEWER SERVICE IN THE TOWNSHIP OF FRANKLIN, SOMERSET COUNTY, NEW JERSEY" IN EFFECT AT THE TIME CONSTRUCTION BEGINS.

1	10/24	CME	FTSA	UPDATE BORDER AND TITLE BLOCK	
REV. NO.	DATE	DRWN	CHKD	DESCRIPTION OF REVISION	
 <i>FRANKLIN TOWNSHIP SEWERAGE AUTHORITY</i> 70 Commerce Drive, Somerset, NJ 08873-3470 Tel: (732) 873-2121 • Fax: (732) 873-2038 • www.ftsa-nj.org					

STANDARD DETAILS III OF III