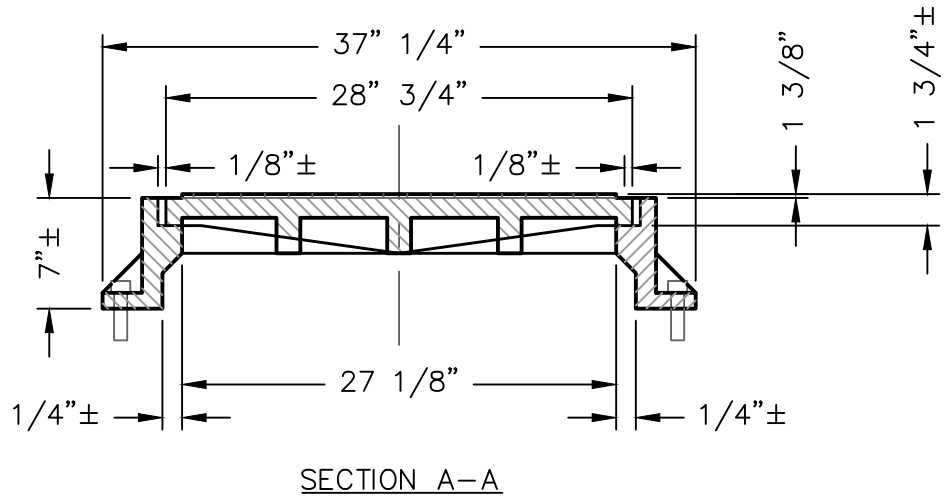
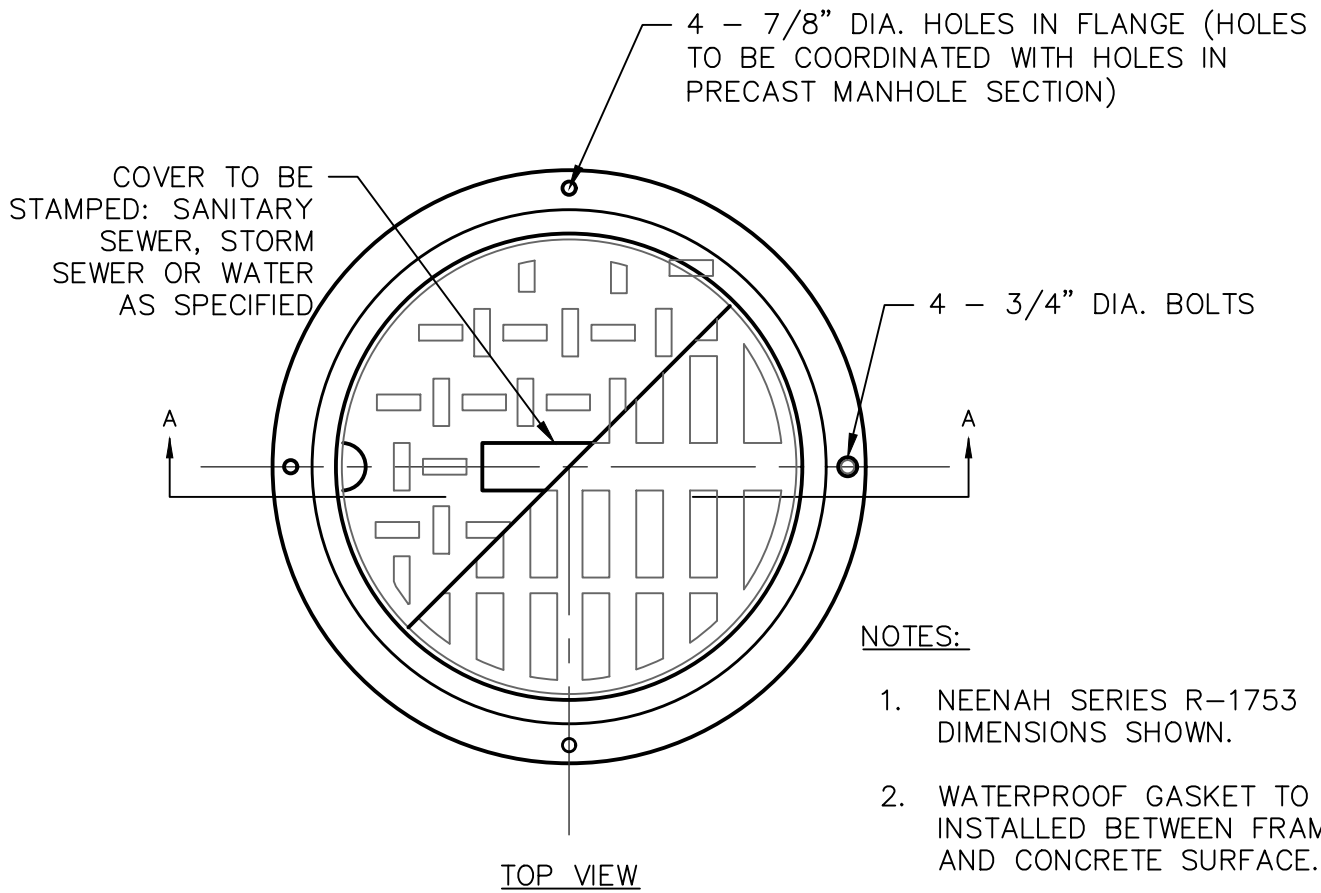


APPENDIX F  
CONSTRUCTION SPECIFICATIONS &  
DETAILS

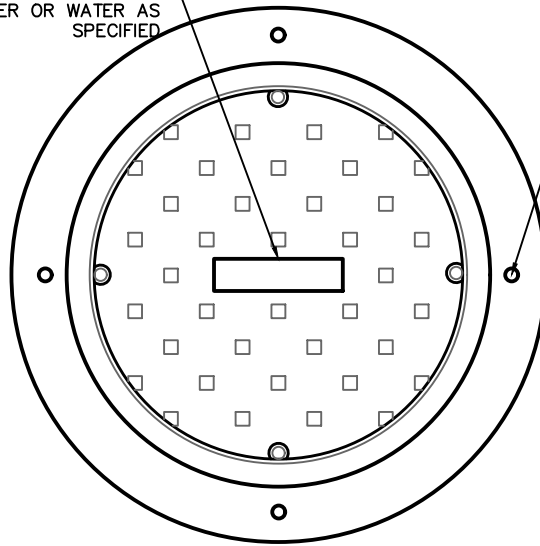
**Municipal Authority of the Borough of Somerset**  
**Construction Specifications and Details**

<b>CATEGORY</b>	<b>NAME</b>	<b>DWG</b>
MANHOLE	FRAME & COVER - STANDARD	SEWER- 1
MANHOLE	FRAME & COVER - WATER TIGHT	SEWER- 2
MANHOLE	FRAME & COVER - GRADE RING	SEWER- 3
MANHOLE	STEP	SEWER- 4
MANHOLE	PRECAST 4'-0" I.D.	SEWER- 5
MANHOLE	PRECAST 5'-0" I.D.	SEWER- 6
MANHOLE	PRECAST 6'-0" I.D.	SEWER- 7
MANHOLE	FLAT TOP PRECAST	SEWER- 8
MANHOLE	FLOW CHANNEL ORIENTATION	SEWER- 9
MANHOLE	OUTSIDE DROP CONNECTION	SEWER- 10
MANHOLE	INSIDE DROP CONNECTION	SEWER- 11
MANHOLE	INSIDE SPLASH CONNECTION	SEWER- 12
MANHOLE	PRESSURE CONNECTION - SPLASH	SEWER- 13
MANHOLE	PRESSURE CONNECTION - DROP PIPE	SEWER- 14
MANHOLE	EXISTING SEWER CONNECTION	SEWER- 15
MANHOLE	EXISTING MANHOLE CONNECTION	SEWER- 16
MANHOLE	ABANDON CONNECTION	SEWER- 17
SEWER	VIEWPORT	SEWER- 18
SEWER	GRAVITY SERVICE	SEWER- 19
SEWER	GRINDER PUMP SERVICE	SEWER- 20
SEWER	CLEAN OUT	SEWER- 21
SEWER	COUPLING - GRAVITY SEWER	SEWER- 22
SEWER	RESIDENTIAL SEWER LATERAL	SEWER- 23
WATER	WATER SERVICE - SERVICE LINE CONNECTION	WATER- 1
WATER	WATER SERVICE - METER PIT	WATER- 2
WATER	WATER - SERVICE LINE ROAD BORE	WATER- 3
WATER	WATER - VALVE	WATER- 4
WATER	WATER - HYDRANT	WATER- 5
WATER	WATER - THRUST BLOCK	WATER- 6
WATER	WATER - THRUST BLOCK BEARING	WATER- 7
WATER	WATER - THRUST BLOCK ANCHOR	WATER- 8
WATER	WATER - BLOW OFF	WATER- 9
WATER	WATER - END CAP	WATER- 10
WATER	WATER- INTERIOR RESIDENTIAL METER	WATER- 11
GENERAL	UTILITY - TRENCH	GENERAL - 1
GENERAL	UTILITY - PIPE ZONE	GENERAL - 2
GENERAL	UTILITY - DIRECTIONAL DRILL	GENERAL - 3
GENERAL	UNPAVED RESTORATION	GENERAL - 4
GENERAL	MUNICIPAL HIGHWAY - FLEXIBLE BASE	GENERAL - 5



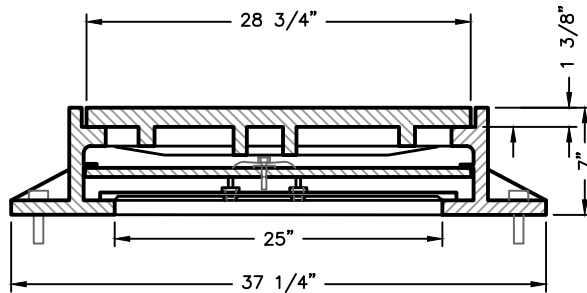
<b>CONSTRUCTION DETAIL</b>	
MANHOLE FRAME AND COVER (STANDARD)	
THE MUNICIPAL AUTHORITY OF THE BOROUGH OF SOMERSET	SEWER-1

COVER TO BE STAMPED:  
SANITARY SEWER, STORM  
SEWER OR WATER AS  
SPECIFIED



4 - 7/8"  
DIA. HOLES  
IN FLANGE  
W/4 - 3/4"  
DIA BOLTS

TOP VIEW



SECTION

NOTES:

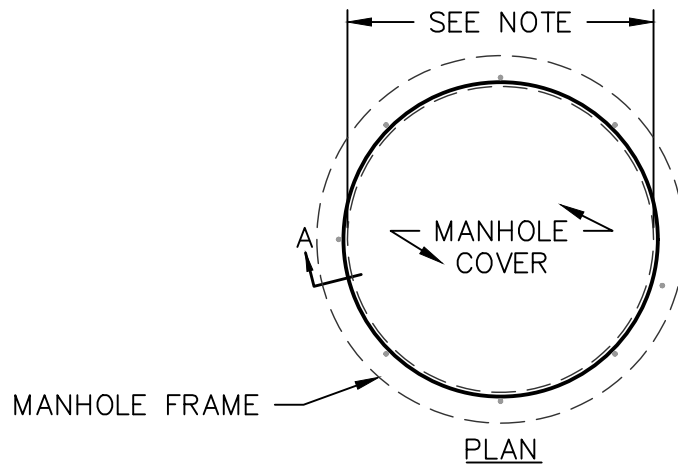
1. NEENAH SERIES R-1755F2  
DIMENSIONS ARE SHOWN.
2. WATERPROOF GASKET TO BE  
INSTALLED BETWEEN FRAME AND  
CONCRETE SURFACE.
3. TWO (2) QUARTER TURN PADDLE HOOKS  
TO BE SUPPLIED ON COVER TO LOCK  
THE COVER INTO POSITION.

CONSTRUCTION DETAIL

MANHOLE  
FRAME AND COVER (WATER TIGHT)

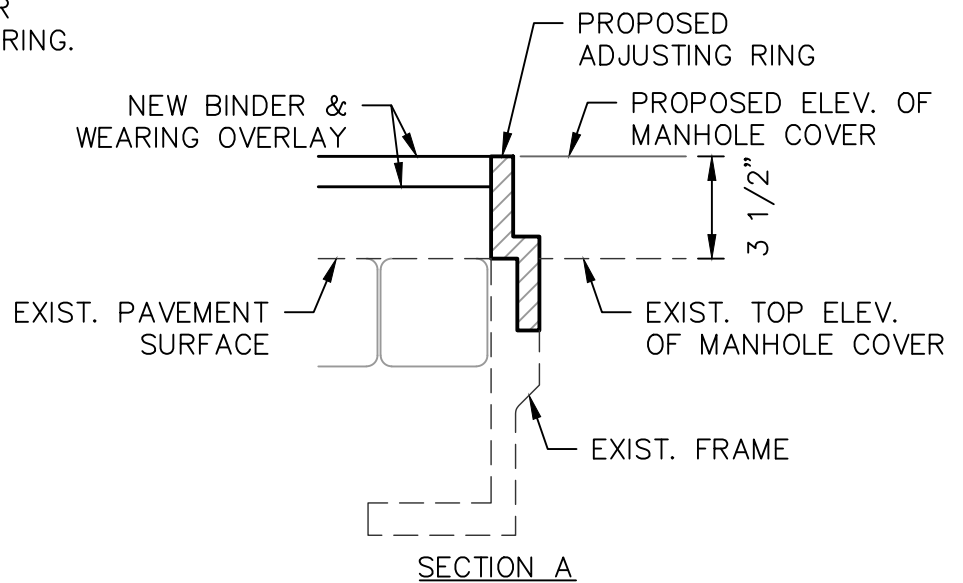
THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET

SEWER-2



**NOTE:**

1. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS REQUIRED FOR FABRICATION OF ADJUSTMENT RING.

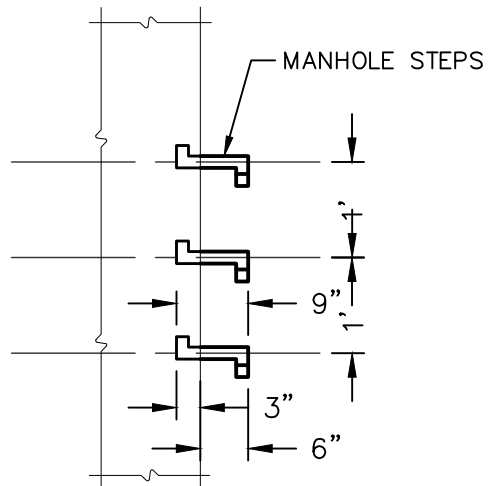
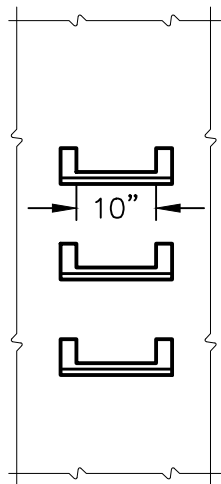
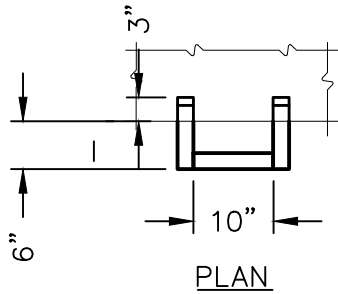


**CONSTRUCTION DETAIL**

MANHOLE  
FRAME AND COVER (GRADE RING)

**THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET**

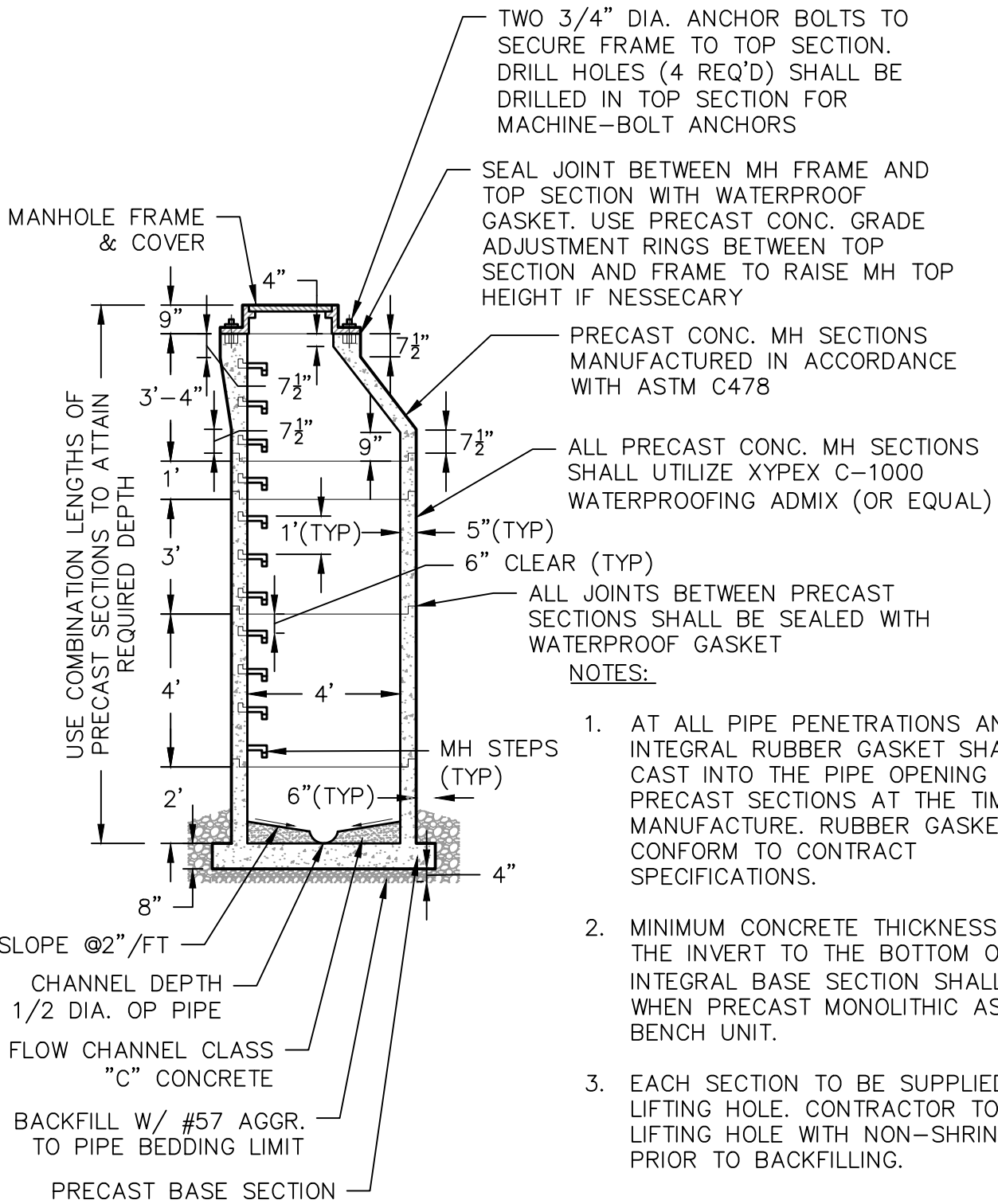
SEWER-3



**NOTE:**

1. MANHOLE STEPS TO BE POLYPROPYLENE PLASTIC WITH 1/2" GRADE 60 STEEL REINFORCEMENT UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.

<b>CONSTRUCTION DETAIL</b>	
MANHOLE STEP	
THE MUNICIPAL AUTHORITY OF THE BOROUGH OF SOMERSET	SEWER-4



TWO 3/4" DIA. ANCHOR BOLTS TO SECURE FRAME TO TOP SECTION. DRILL HOLES (4 REQ'D) SHALL BE DRILLED IN TOP SECTION FOR MACHINE-BOLT ANCHORS

SEAL JOINT BETWEEN MH FRAME AND TOP SECTION WITH WATERPROOF GASKET. USE PRECAST CONC. GRADE ADJUSTMENT RINGS BETWEEN TOP SECTION AND FRAME TO RAISE MH TOP HEIGHT IF NESSECARY

PRECAST CONC. MH SECTIONS MANUFACTURED IN ACCORDANCE WITH ASTM C478

ALL PRECAST CONC. MH SECTIONS SHALL UTILIZE XYPEX C-1000 WATERPROOFING ADMIX (OR EQUAL)

5"(TYP)  
6" CLEAR (TYP)

ALL JOINTS BETWEEN PRECAST SECTIONS SHALL BE SEALED WITH WATERPROOF GASKET

NOTES:

1. AT ALL PIPE PENETRATIONS AN INTEGRAL RUBBER GASKET SHALL BE CAST INTO THE PIPE OPENING OF PRECAST SECTIONS AT THE TIME OF MANUFACTURE. RUBBER GASKET TO CONFORM TO CONTRACT SPECIFICATIONS.
2. MINIMUM CONCRETE THICKNESS FROM THE INVERT TO THE BOTTOM OF THE INTEGRAL BASE SECTION SHALL BE 4" WHEN PRECAST MONOLITHIC AS A BENCH UNIT.
3. EACH SECTION TO BE SUPPLIED WITH LIFTING HOLE. CONTRACTOR TO FILL LIFTING HOLE WITH NON-SHRINK GROUT PRIOR TO BACKFILLING.

USE COMBINATION LENGTHS OF PRECAST SECTIONS TO ATTAIN REQUIRED DEPTH

SLOPE @2"/FT

CHANNEL DEPTH  
1/2 DIA. OP PIPE

FLOW CHANNEL CLASS  
"C" CONCRETE

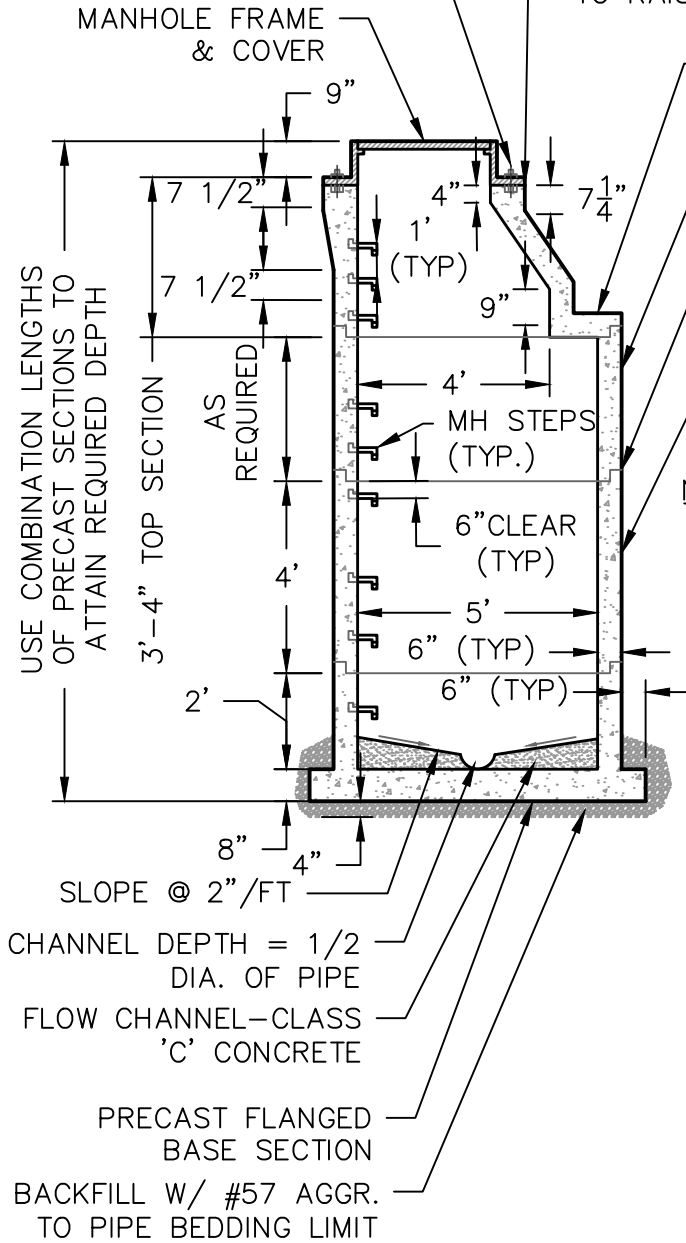
BACKFILL W/ #57 AGGR.  
TO PIPE BEDDING LIMIT

PRECAST BASE SECTION

<b>CONSTRUCTION DETAIL</b>	
MANHOLE (4FT) ID	
THE MUNICIPAL AUTHORITY OF THE BOROUGH OF SOMERSET	SEWER-5

TWO 3/4" DIA. ANCHOR BOLTS TO SECURE FRAME TO TOP SECTION. DRILL HOLES (2 REQ'D) SHALL BE DRILLED IN TOP SECTION FOR MACHINE-BOLT ANCHORS

SEAL JOINT BETWEEN MH FRAME AND TOP SECTION WITH WATERPROOF GASKET. USE PRECAST CONC. GRADE ADJUSTMENT RINGS BETWEEN TOP SECTION AND FRAME TO RAISE MH TOP HEIGHT IF NECESSARY



INTERIOR DIAMETER ADJUSTMENT RING

PRECAST CONC. MH SECTIONS MANUFACTURED IN ACCORDANCE WITH ASTM C478

ALL JOINTS BETWEEN PRECAST SECTIONS SHALL BE SEALED WITH WATERPROOF GASKET

PRE-CAST CONC. MH SECTIONS SHALL UTILIZE XYPEX C-1000 WATERPROOFING ADMIX (OR EQUIVALENT)

**NOTES:**

1. AT ALL PIPE PENETRATIONS AN INTEGRAL RUBBER GASKET SHALL BE CAST INTO THE PIPE OPENING OF PRECAST SECTIONS AT THE TIME OF MANUFACTURE. RUBBER GASKET TO CONFORM TO CONTRACT SPECIFICATIONS.
2. EACH SECTION TO BE SUPPLIED WITH LIFTING HOLE. CONTRACTOR TO FILL LIFTING HOLE WITH NON-SHRINK GROUT PRIOR TO BACKFILLING
3. INTERIOR DIAMETER ADJUSTMENT RINGS MAY BE USED TO CONNECT A STD. 4'-0" TOP SECTION TO THE 5'-0" DIAMETER BARREL SECTION.
4. MINIMUM CONCRETE THICKNESS FROM THE INVERT TO THE BOTTOM OF THE INTEGRAL BASE SECTION SHALL BE 4" WHEN PRECAST MONOLITHIC AS A BENCHED UNIT

**CONSTRUCTION DETAIL**

MANHOLE  
(5FT) ID

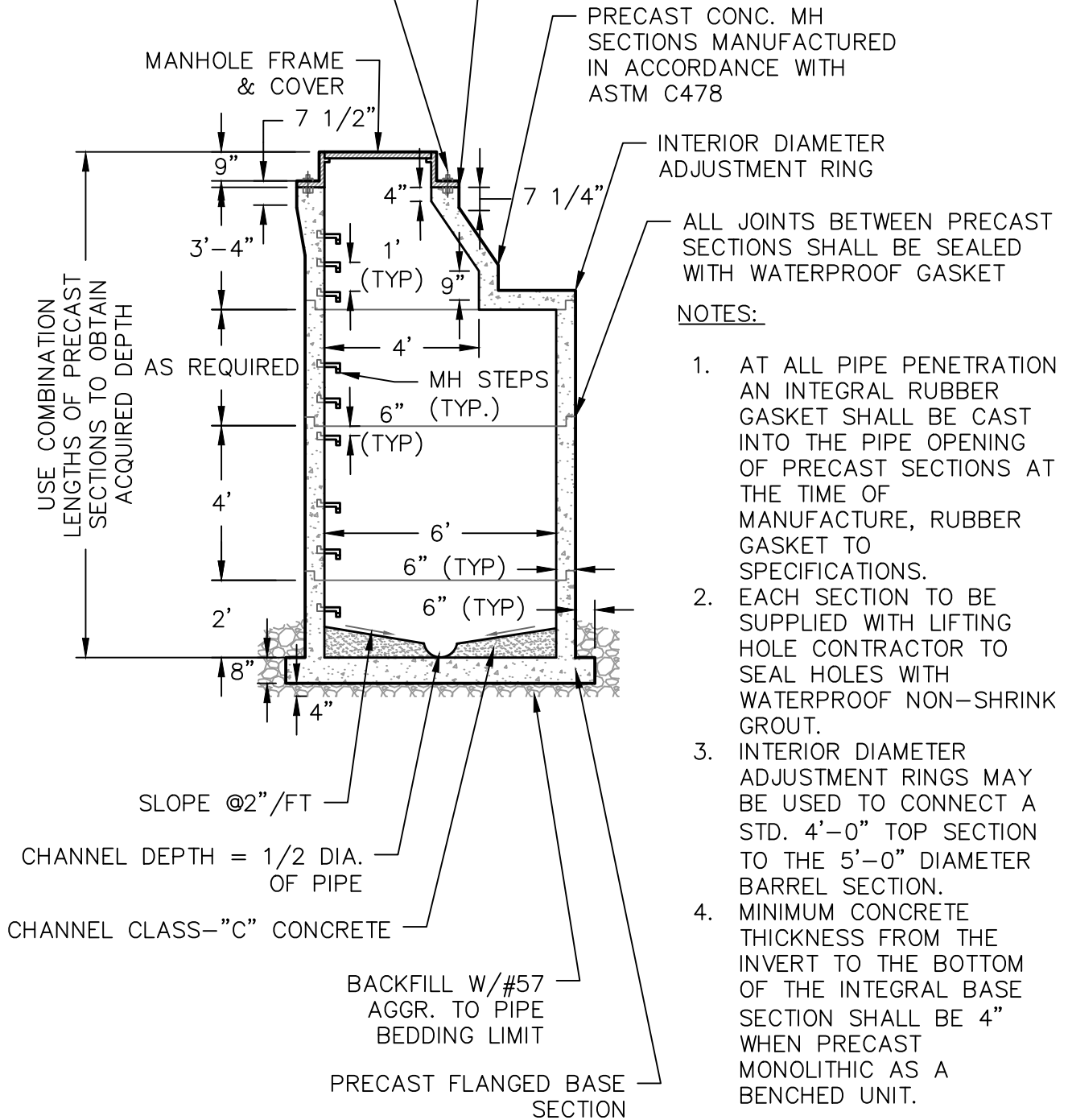
THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET

SEWER-6



TWO 3/4" ANCHOR BOLTS TO SECURE FRAME TO TOP SECTION. DRILL HOLES (2 REQ'D) SHALL BE DRILLED IN TOP SECTION FOR MACHINE-BOLT ANCHORS

SEAL JOINT BETWEEN MH FRAME AND TOP SECTION WITH WATERPROOF GASKET. USE PRECAST CONC. GRADE ADJUSTMENT RINGS BETWEEN TOP SECTION AND FRAME TO RISE MH TOP HEIGHT IF NECESSARY



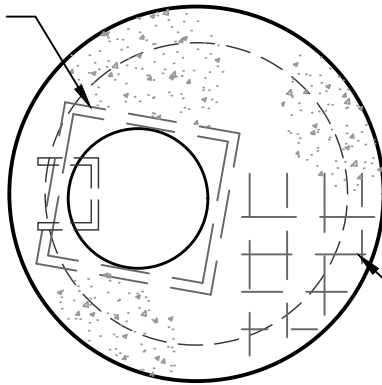
**CONSTRUCTION DETAIL**

MANHOLE  
(6FT) ID

THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET

SEWER-7

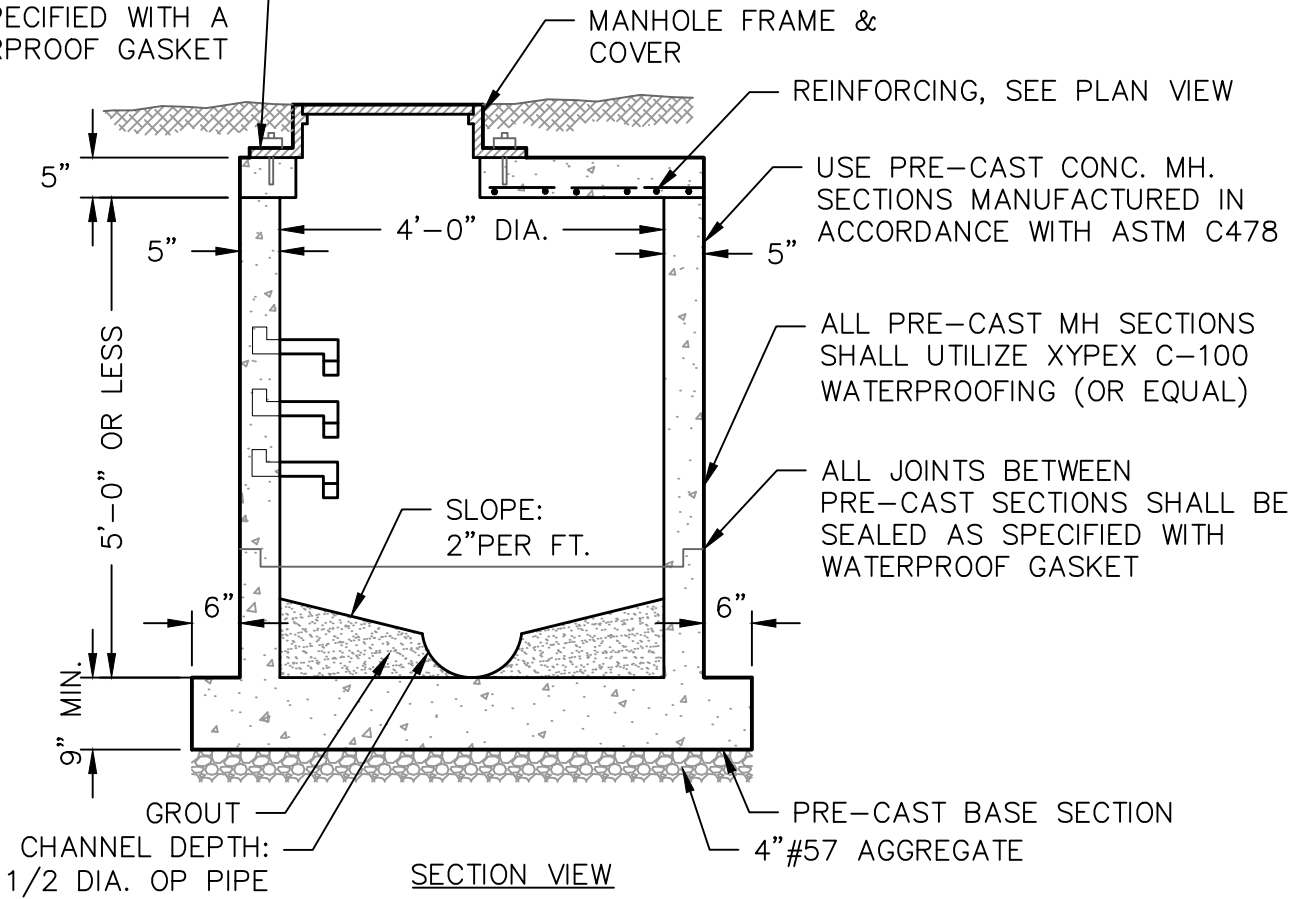
#4 BARS DIAGONALLY  
AROUND OPENING



#4 BARS @ 6" C/C  
(TYP. BOTH WAYS)

PLAN

JOINT BETWEEN MANHOLE  
FRAME AND TOP SECTION  
SHALL BE SEALED AS  
SPECIFIED WITH A  
WATERPROOF GASKET



SECTION VIEW

REINFORCING, SEE PLAN VIEW

USE PRE-CAST CONC. MH.  
SECTIONS MANUFACTURED IN  
ACCORDANCE WITH ASTM C478

ALL PRE-CAST MH SECTIONS  
SHALL UTILIZE XYPEX C-100  
WATERPROOFING (OR EQUAL)

ALL JOINTS BETWEEN  
PRE-CAST SECTIONS SHALL BE  
SEALED AS SPECIFIED WITH  
WATERPROOF GASKET

PRE-CAST BASE SECTION  
4" #57 AGGREGATE

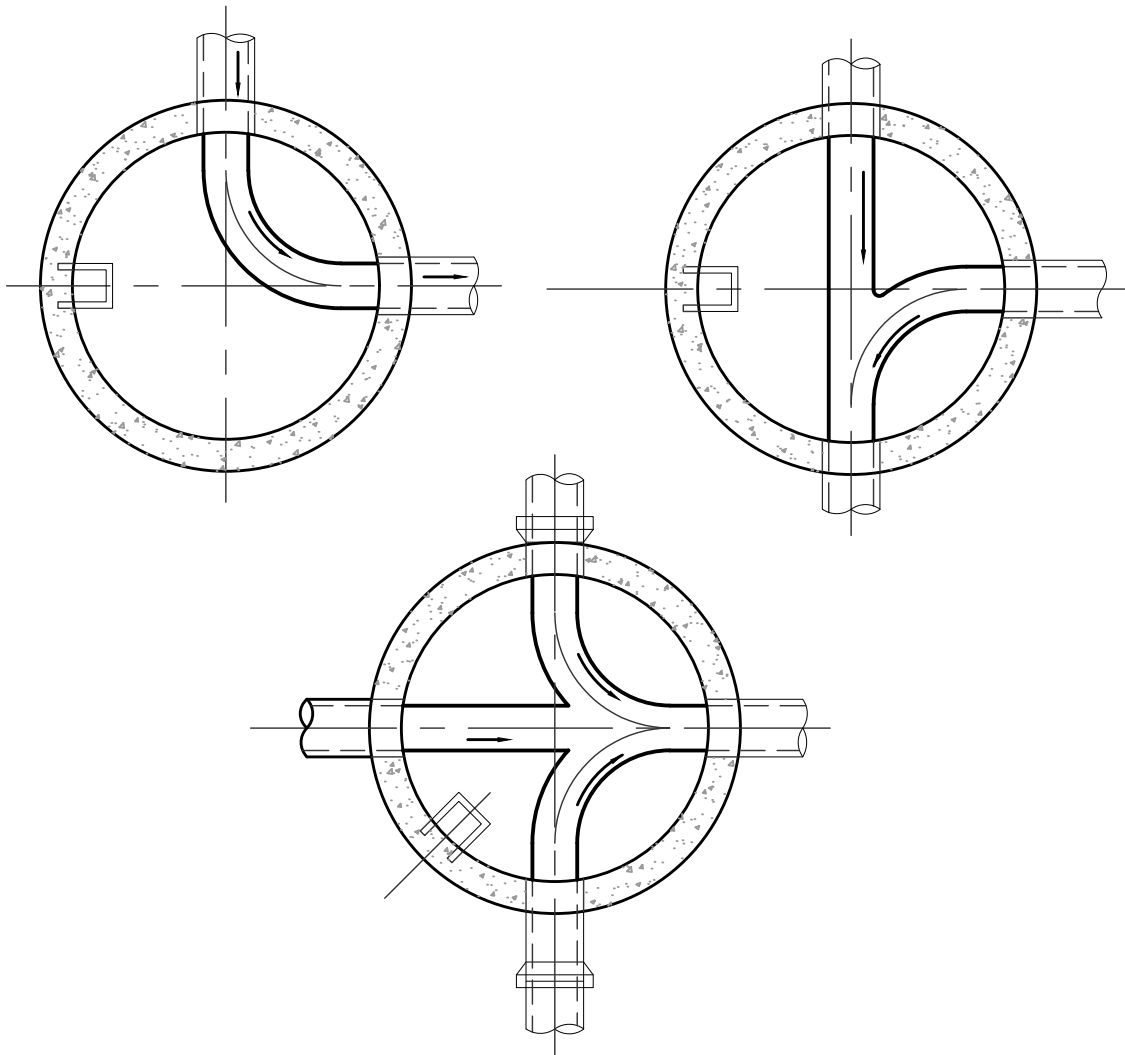
GROUT  
CHANNEL DEPTH:  
1/2 DIA. OP PIPE

**CONSTRUCTION DETAIL**

MANHOLE  
FLAT TOP PRECAST

**THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET**

SEWER-8



NOTES:

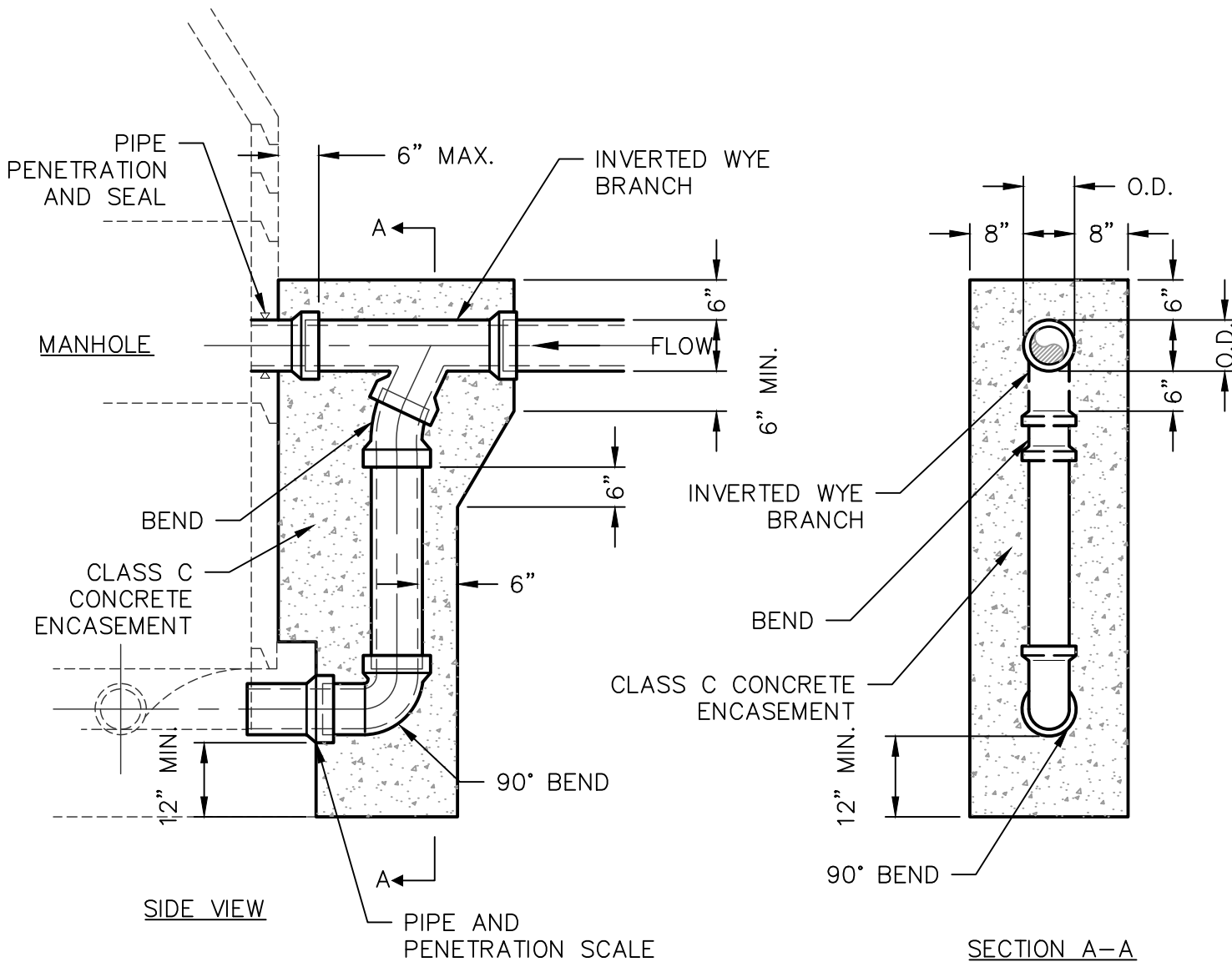
1. SLOPE CONCRETE INVERT 2" PER FOOT OF CHANNEL.
2. CHANNEL DEPTH TO EQUAL ONE HALF PIPE DIA.
3. RECONSTRUCT CHANNELS IN EXISTING MANHOLES TO ACCOMMODATE NEW PIPE CONFIGURATIONS.

**CONSTRUCTION DETAIL**

MANHOLE  
FLOW CHANNEL—PLAN VIEW

**THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET**

SEWER-9



**NOTES:**

1. PIPE PENETRATION AND SEAL SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALL PROCEDURE FOR NEW OR EXISTING MANHOLES. FILL ANNULAR SPACE AND AFFECT AREAS WITH WATERPROOF BIT. COATING.

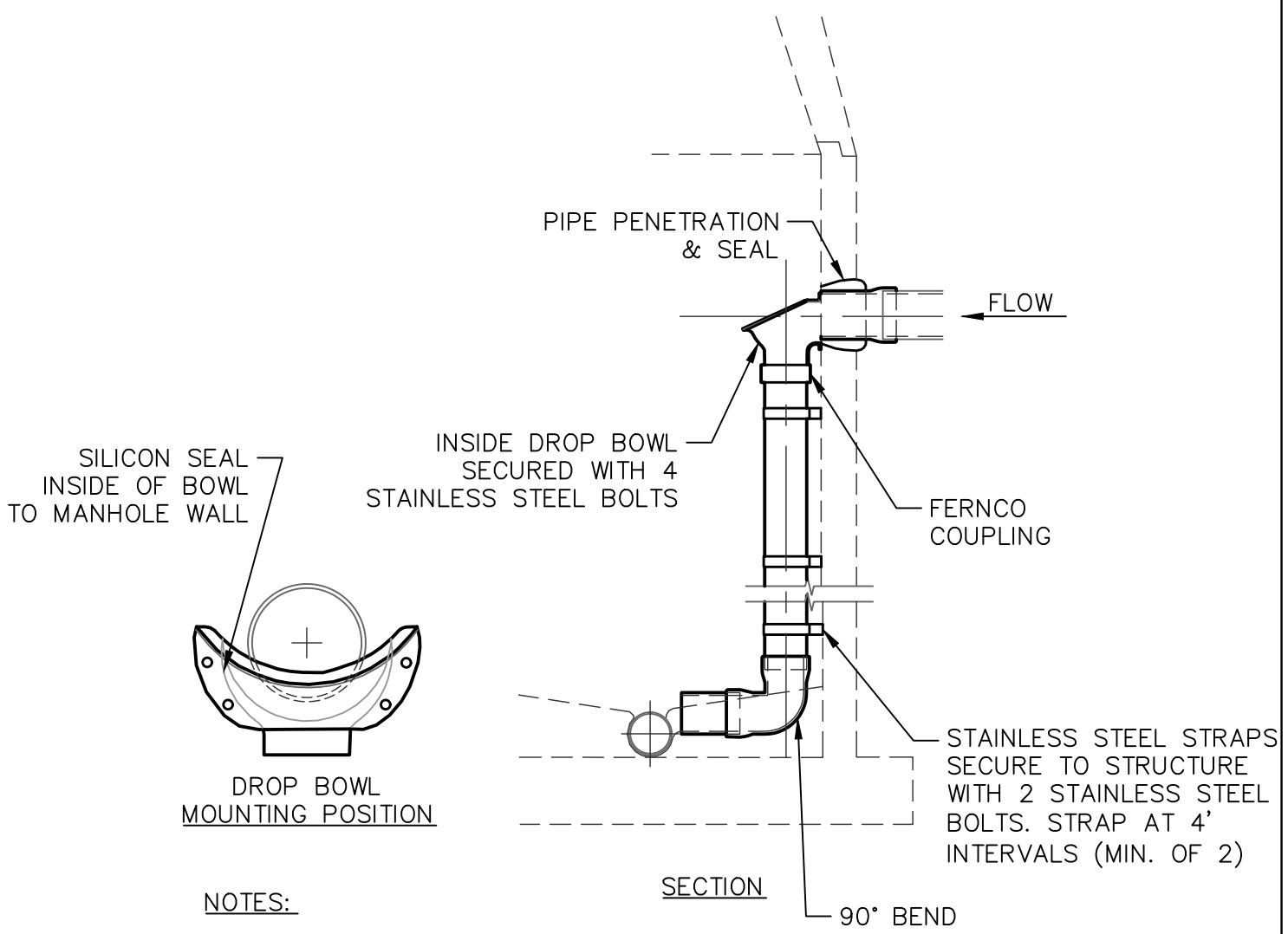
**CONSTRUCTION DETAIL**

MANHOLE  
OUTSIDE DROP

THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET

SEWER-10

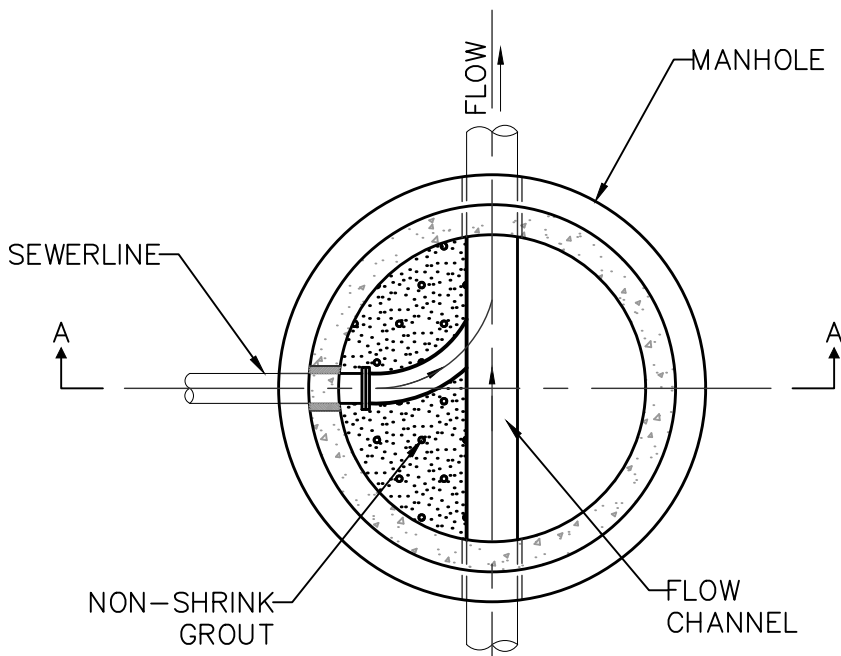
MH-INSIDE DROP - DETAIL (JAKE).DWG, 7/31/2020 11:23:17 AM



**NOTES:**

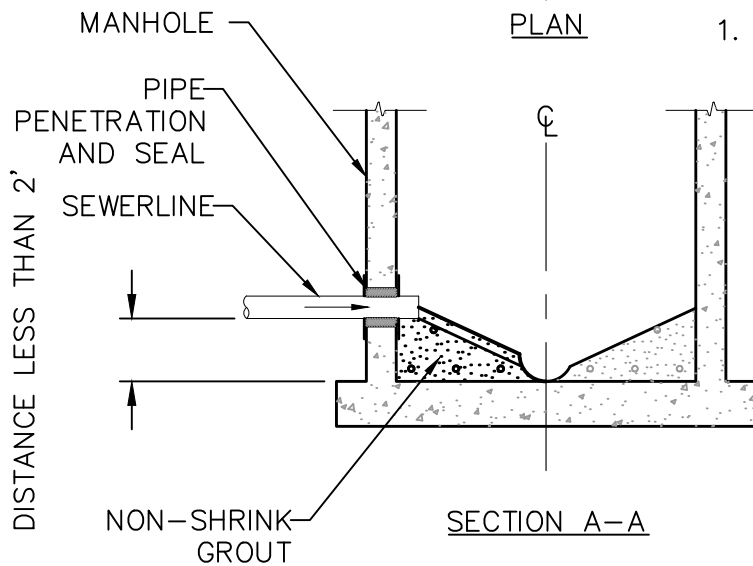
1. DROP PIPE SHALL BE PROVIDED FOR THE SEWERS ENTERING A MANHOLE AT AN ELEVATION OF 24 INCHES OR MORE ABOVE THE MANHOLE INVERT.
2. PIPE PENETRATION AND SEAL SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALL PROCEDURE FOR NEW OR EXISTING MANHOLES. FILL ANNULAR SPACE AND AFFECTED AREAS OF THE MANHOLE EXTERIOR WITH WATERPROOF BIT. COATING.

<b>CONSTRUCTION DETAIL</b>	
MANHOLE INSIDE DROP	
THE MUNICIPAL AUTHORITY OF THE BOROUGH OF SOMERSET	SEWER-11



**NOTES:**

1. PIPE PENETRATION AND SEAL SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALL PROCEDURE FOR NEW OR EXISTING MANHOLES. FILL ANNULAR SPACE AND AFFECTED AREAS OF THE MANHOLE EXTERIOR WITH WATERPROOF BIT. COATING.

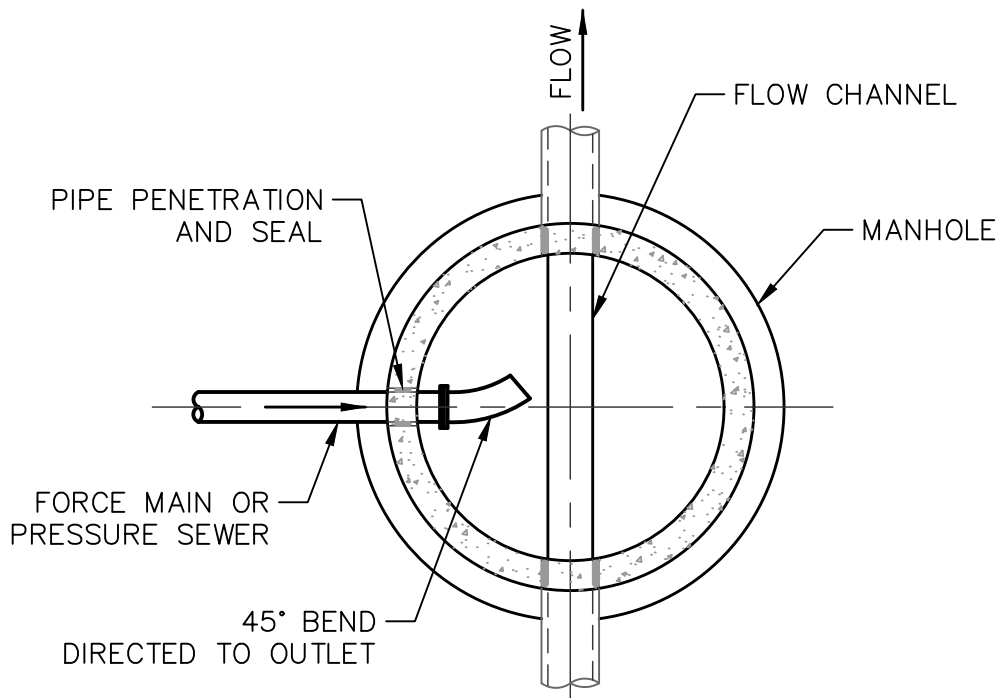


**CONSTRUCTION DETAIL**

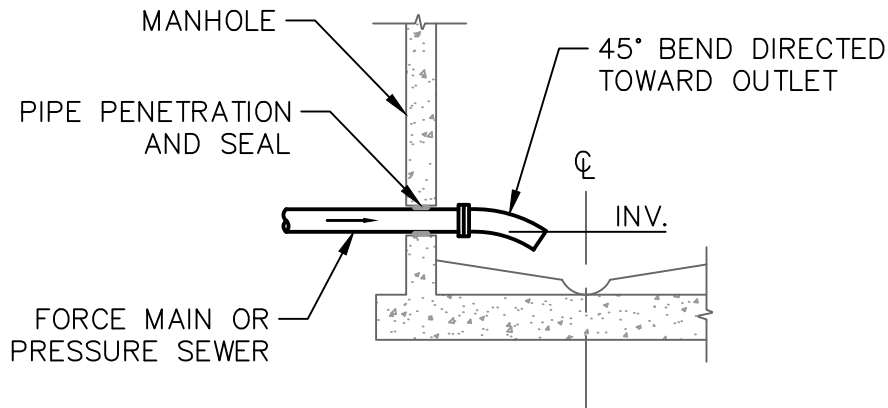
MANHOLE  
INSIDE SPLASH

**THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET**

SEWER-12



NEW MANHOLE CONNECTION – PLAN VIEW

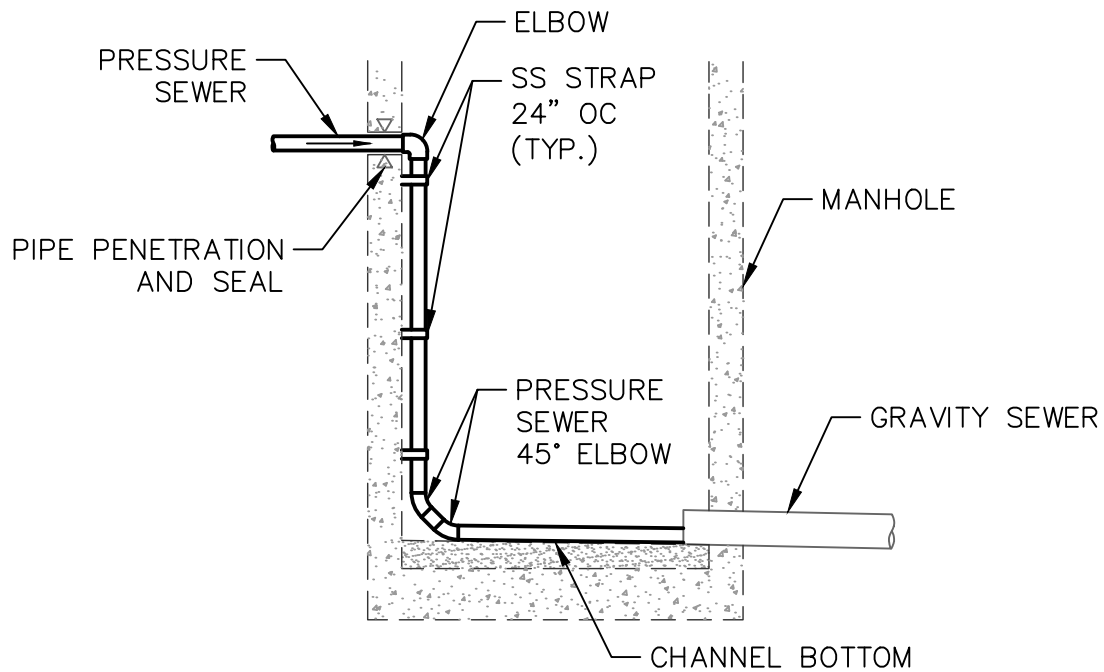


EXISTING MANHOLE CONNECTION – SECTION VIEW

NOTES:

1. PIPE PENETRATION AND SEAL SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALL PROCEDURE FOR NEW OR EXISTING MANHOLES. FILL ANNULAR SPACE AND AFFECTED AREAS OF THE MANHOLE EXTERIOR WITH WATERPROOF BIT. COATING

<b>CONSTRUCTION DETAIL</b>	
MANHOLE PRESSURE CONNECTION—SPLASH	
THE MUNICIPAL AUTHORITY OF THE BOROUGH OF SOMERSET	SEWER—13



NOTES:

SECTION VIEW

1. PIPE PENETRATION AND SEAL SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALL PROCEDURE FOR NEW OR EXISTING MANHOLES. FILL ANNULAR SPACE AND AFFECTED AREAS OF THE MANHOLE EXTERIOR WITH WATERPROOF BIT. COATING.

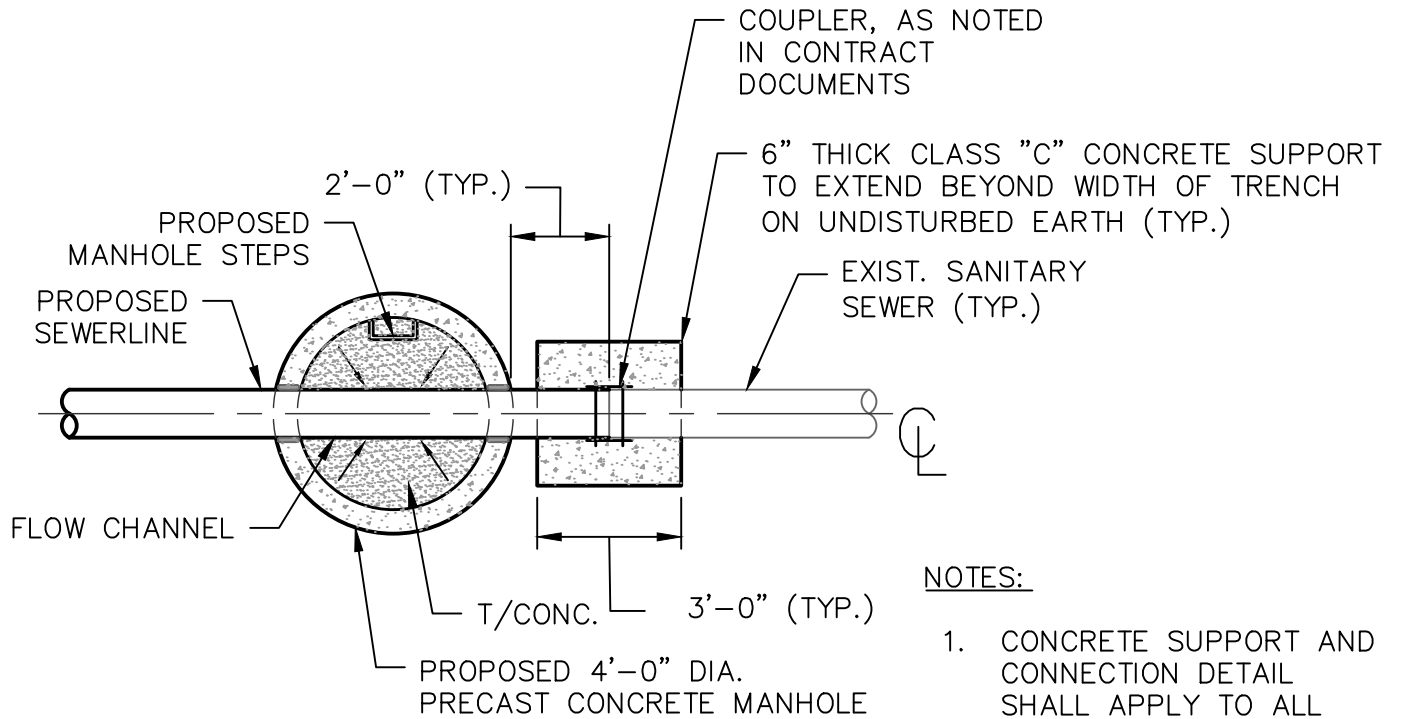
**CONSTRUCTION DETAIL**

MANHOLE  
PRESSURE CONNECTION-DROP

**THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET**

SEWER-14





**NOTES:**

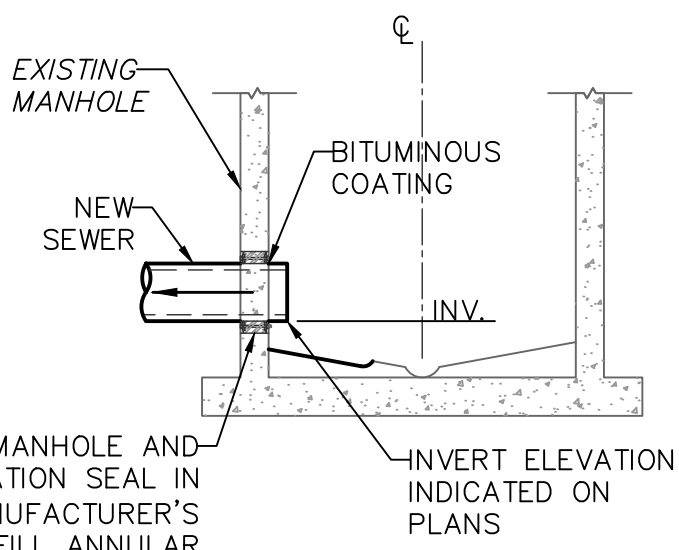
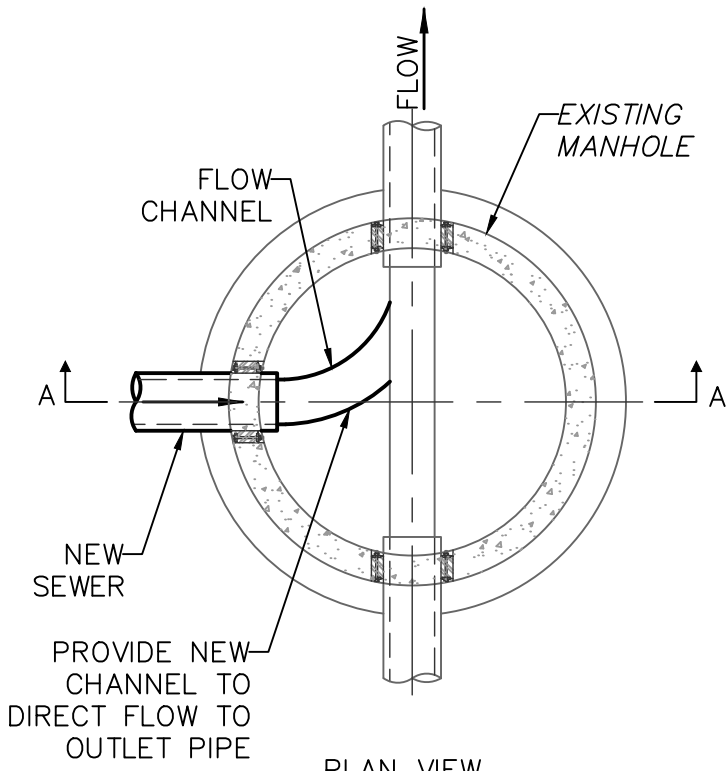
1. CONCRETE SUPPORT AND CONNECTION DETAIL SHALL APPLY TO ALL MAIN LINE CONNECTIONS TO EXISTING SEWERS

**CONSTRUCTION DETAIL**

MANHOLE  
CONNECTION TO EX. MAIN

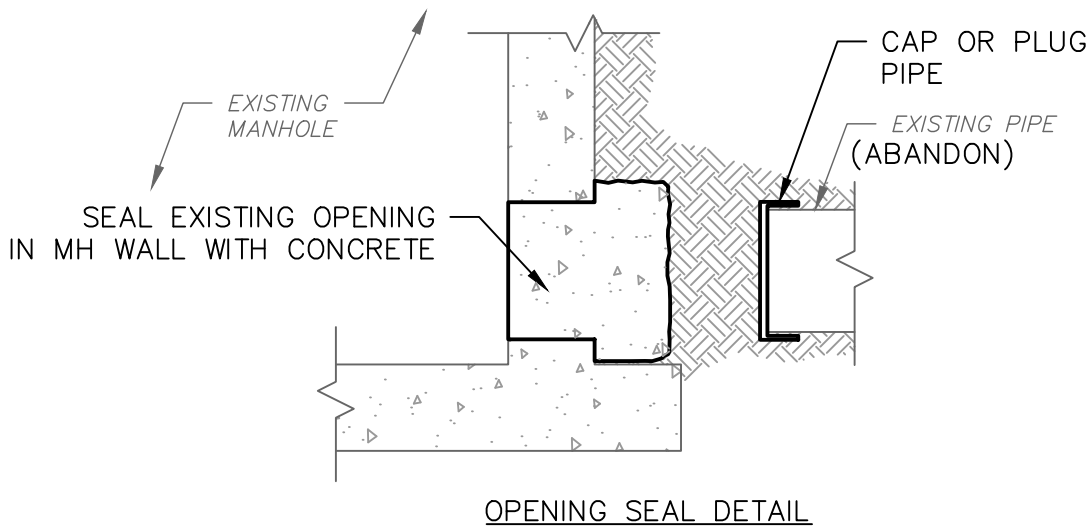
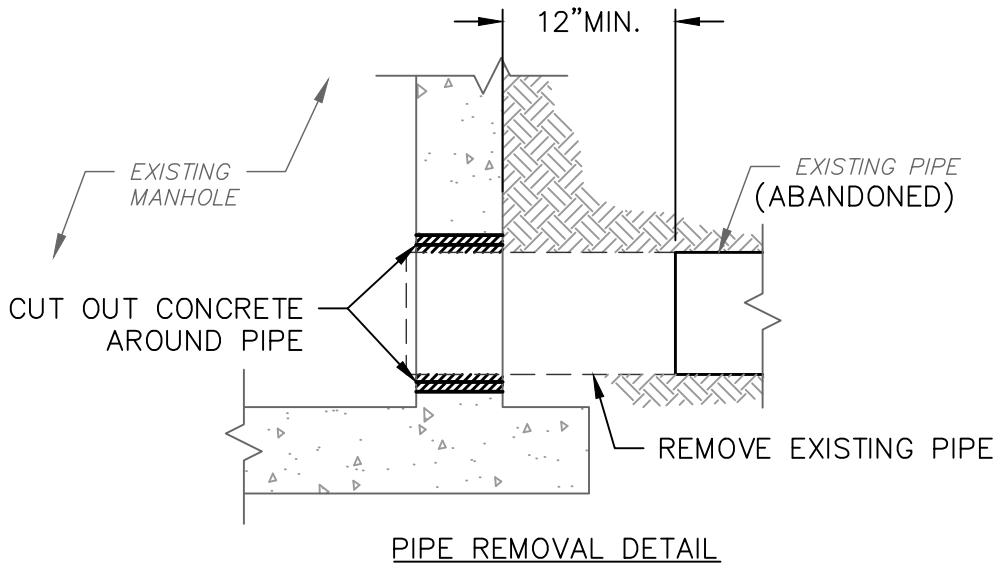
**THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET**

SEWER-15



CORE EXISTING MANHOLE AND INSTALL PIPE PENETRATION SEAL IN ACCORDANCE WITH MANUFACTURER'S INSTALL PROCEDURE. FILL ANNULAR SPACE AND AFFECTED AREAS OF MANHOLE EXTERIOR WITH WATERPROOF BIT. COATING

<b>CONSTRUCTION DETAIL</b>	
MANHOLE CONNECTION TO EX. MH	
THE MUNICIPAL AUTHORITY OF THE BOROUGH OF SOMERSET	SEWER-16



**CONSTRUCTION DETAIL**

MANHOLE  
ABANDON CONNECTION

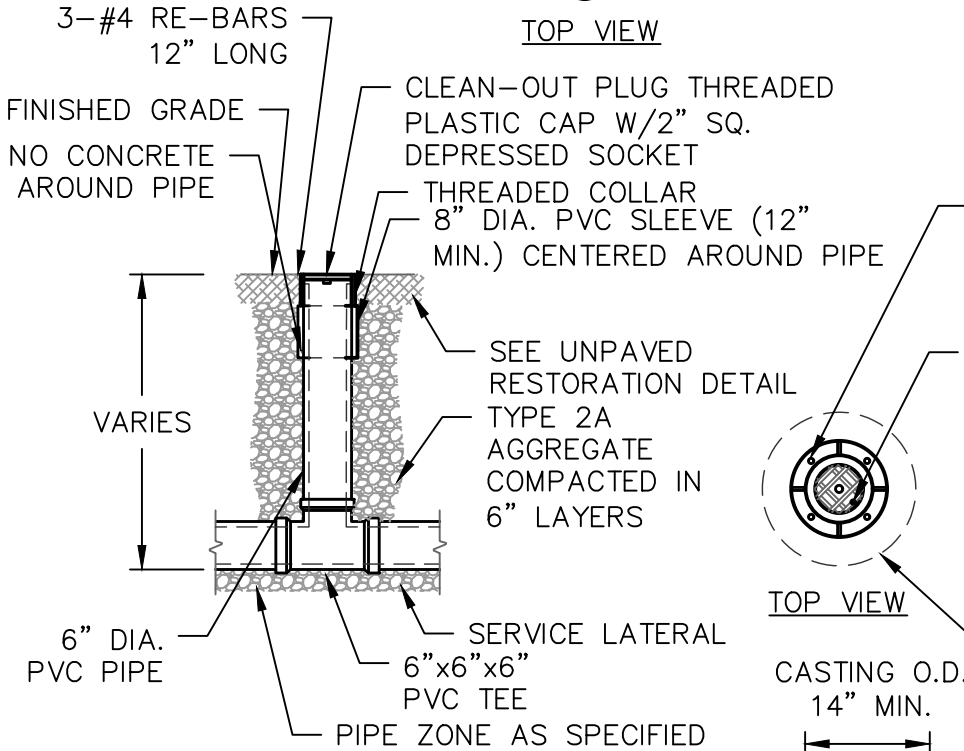
**THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET**

SEWER-17

3-#4 RE-BARS  
12" LONG

CLEAN-OUT PLUG THREADED  
PLASTIC CAP W/2" SQ.  
DEPRESSED SOCKET

TOP VIEW

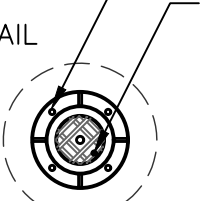


(4) 7/8" DIA. HOLES IN  
CASTING. USE (4) 3/4"x4"  
LG. BOLTS FOR SECURING  
TO CONCRETE RING

SECURITY BOLT

NOTE:

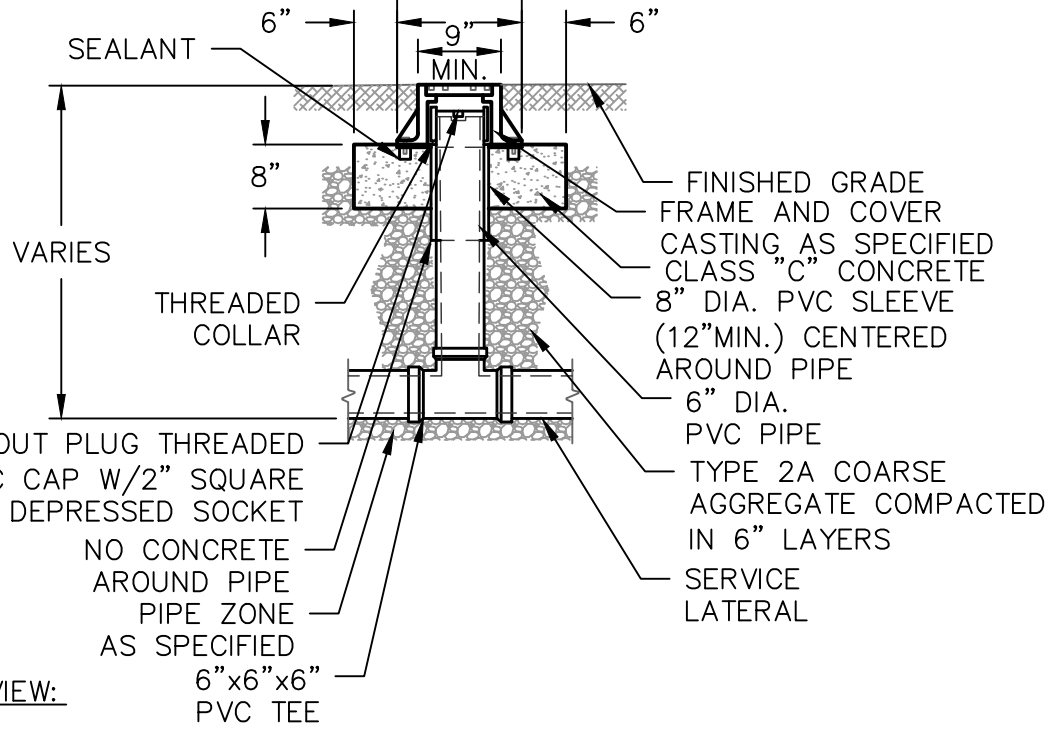
NO CONCRETE  
AROUND PIPE



TOP VIEW

CASTING O.D.  
14" MIN.

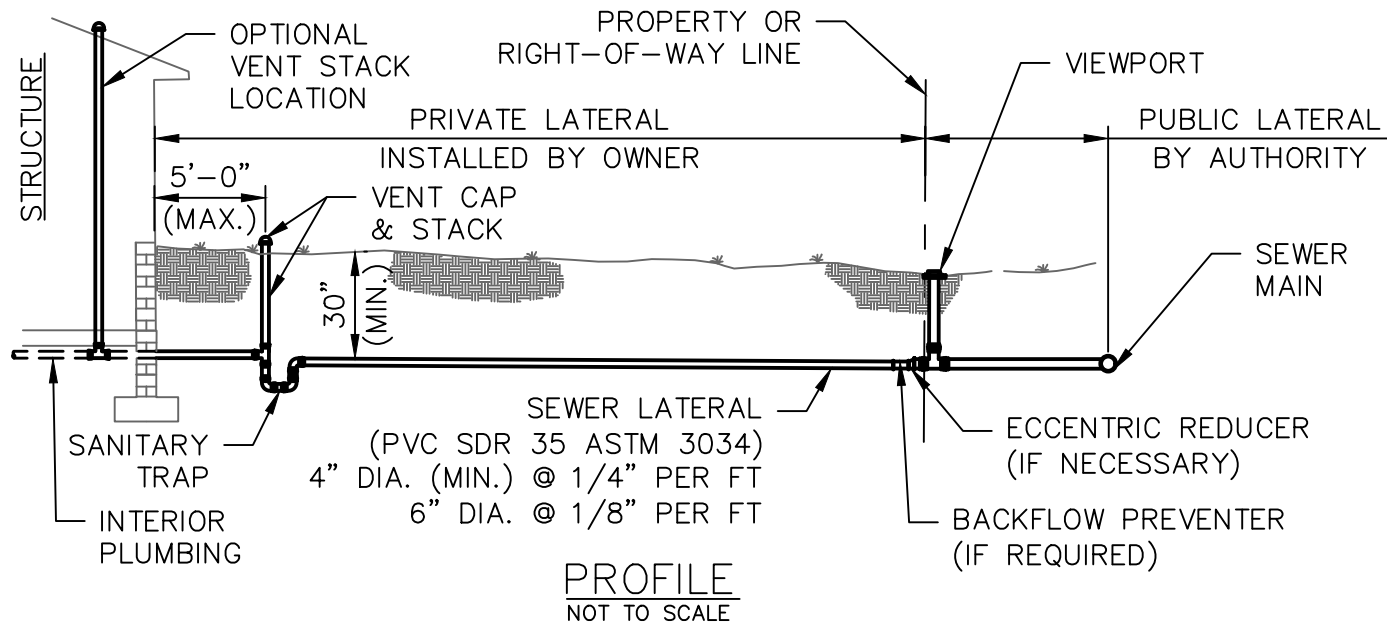
CONCRETE BASE



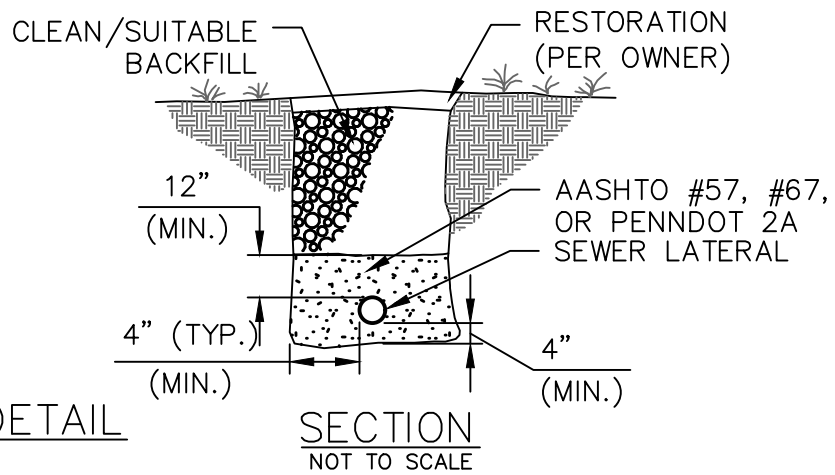
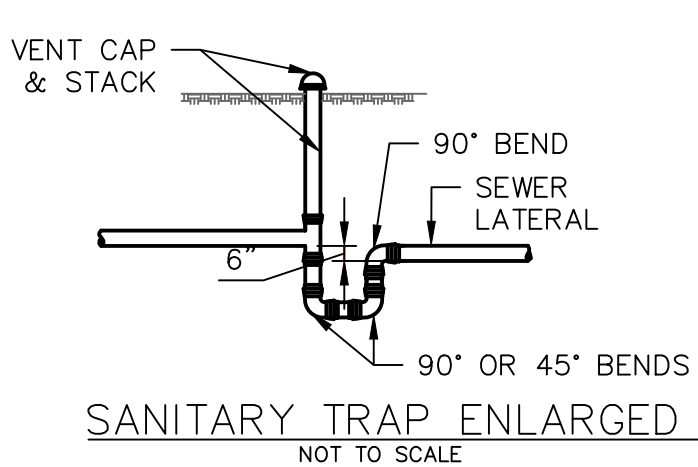
SIDE VIEW:

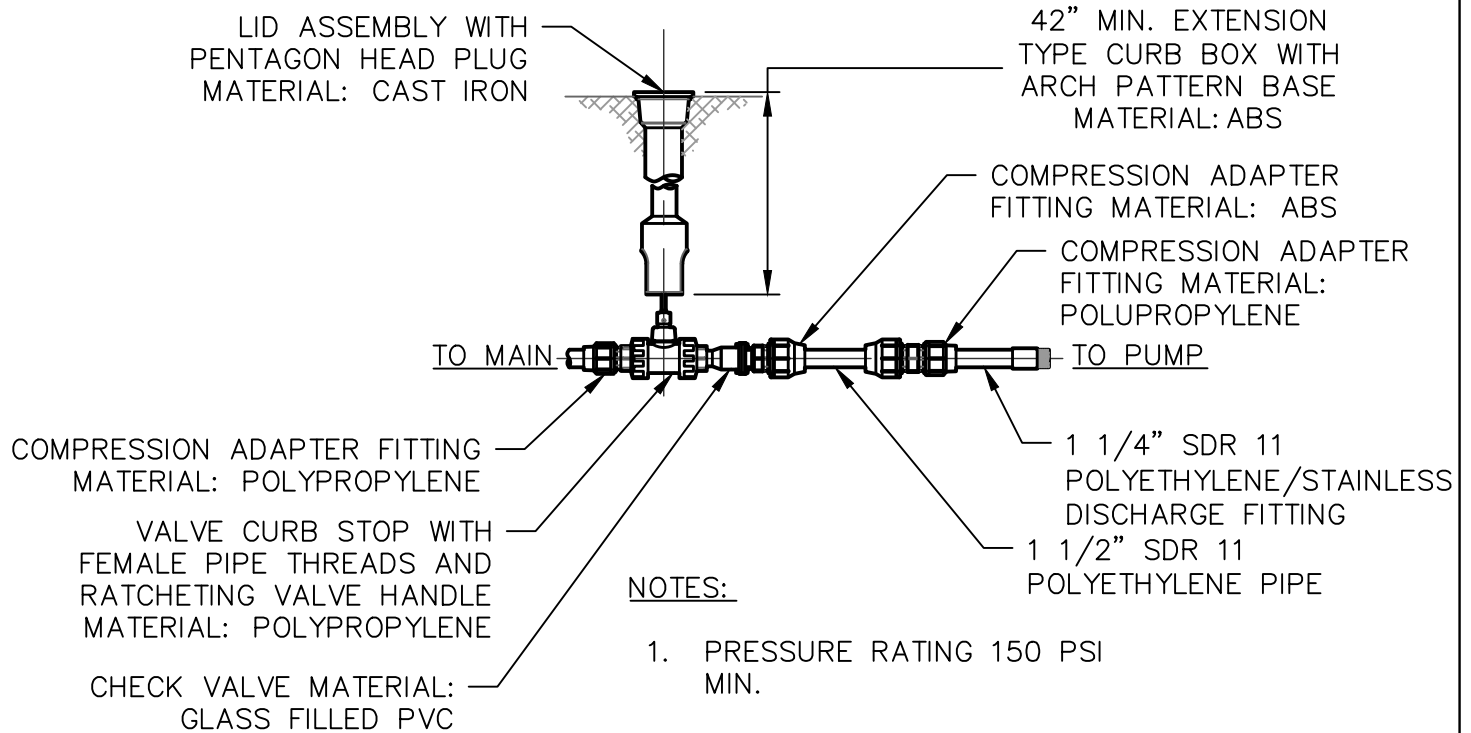
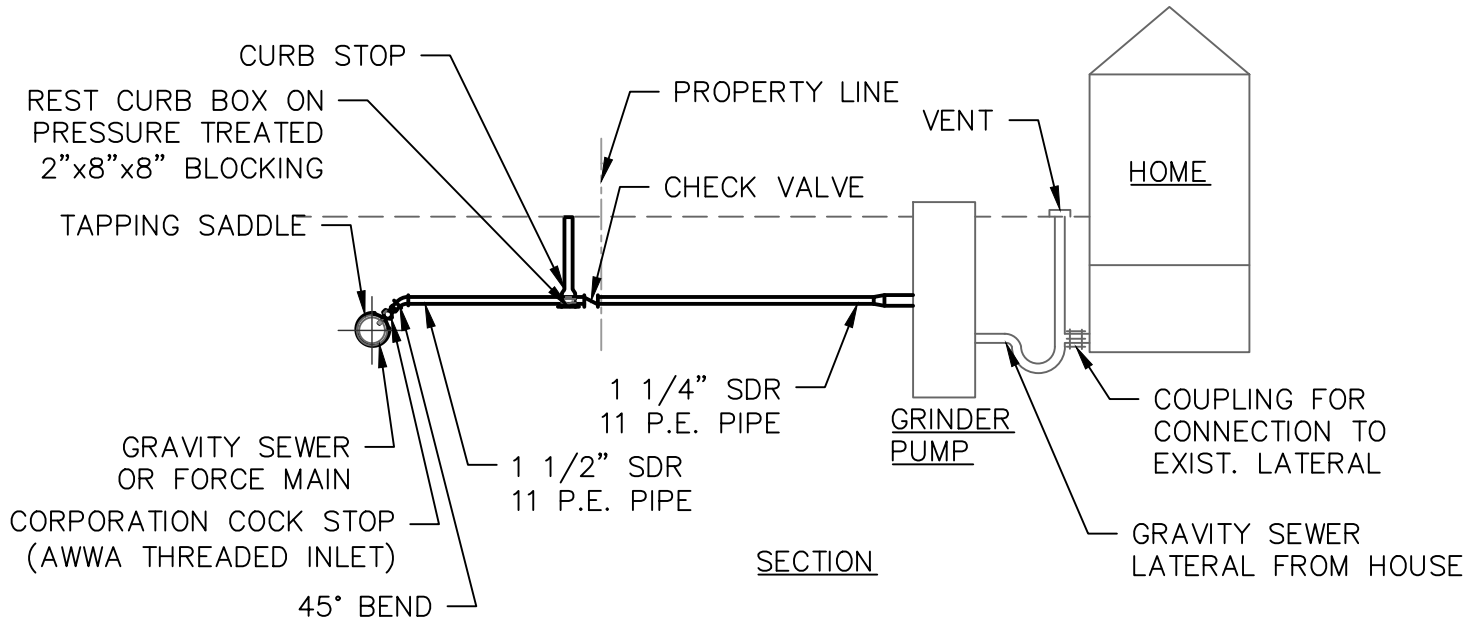
TYPE B - VIEW PORTS LOCATED IN PAVED AREAS

<b>CONSTRUCTION DETAIL</b>	
SEWER VIEWPORT	
THE MUNICIPAL AUTHORITY OF THE BOROUGH OF SOMERSET	SEWER-18



CONSTRUCTION DETAIL	SEWER GRAVITY SERVICE	SEWER-19
	THE MUNICIPAL AUTHORITY OF THE BOROUGH OF SOMERSET	





**NOTES:**

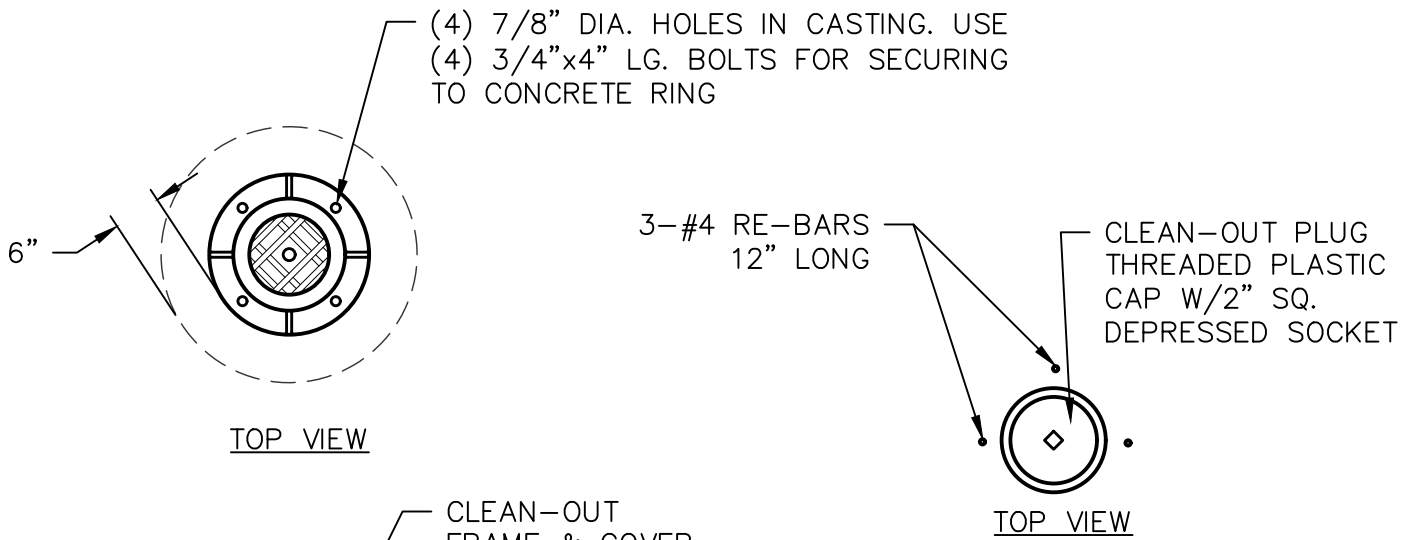
1. PRESSURE RATING 150 PSI MIN.
2. ALL PACK POINT COUPLING SUPPLIED WITH INSERT STIFFENERS

**CONSTRUCTION DETAIL**

SEWER  
GRINDER PUMP SERVICE

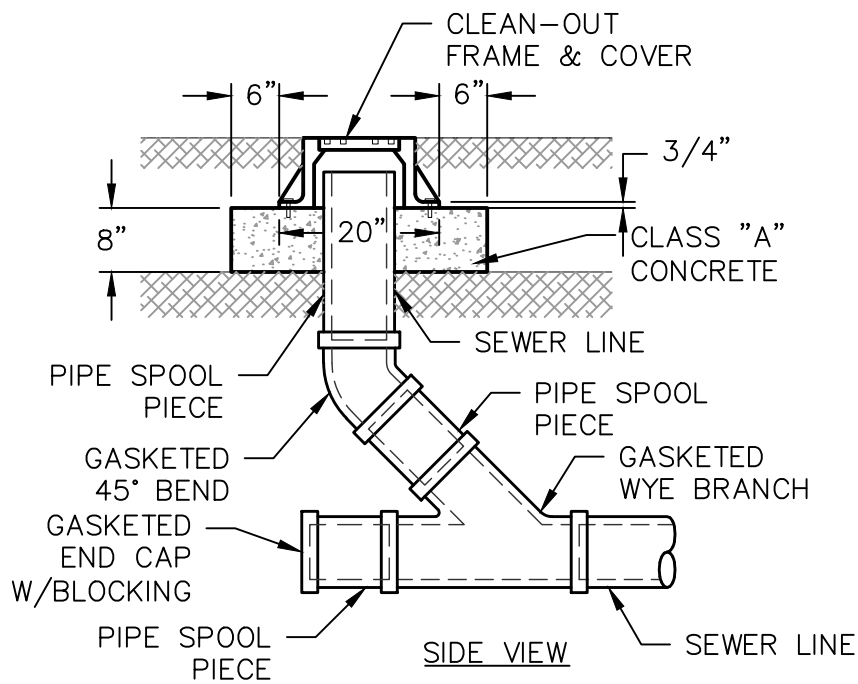
THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET

SEWER-20



**NOTE:**

1. THREADED PLASTIC CAP IS USED FOR UNPAVED AREAS



**NOTE:**

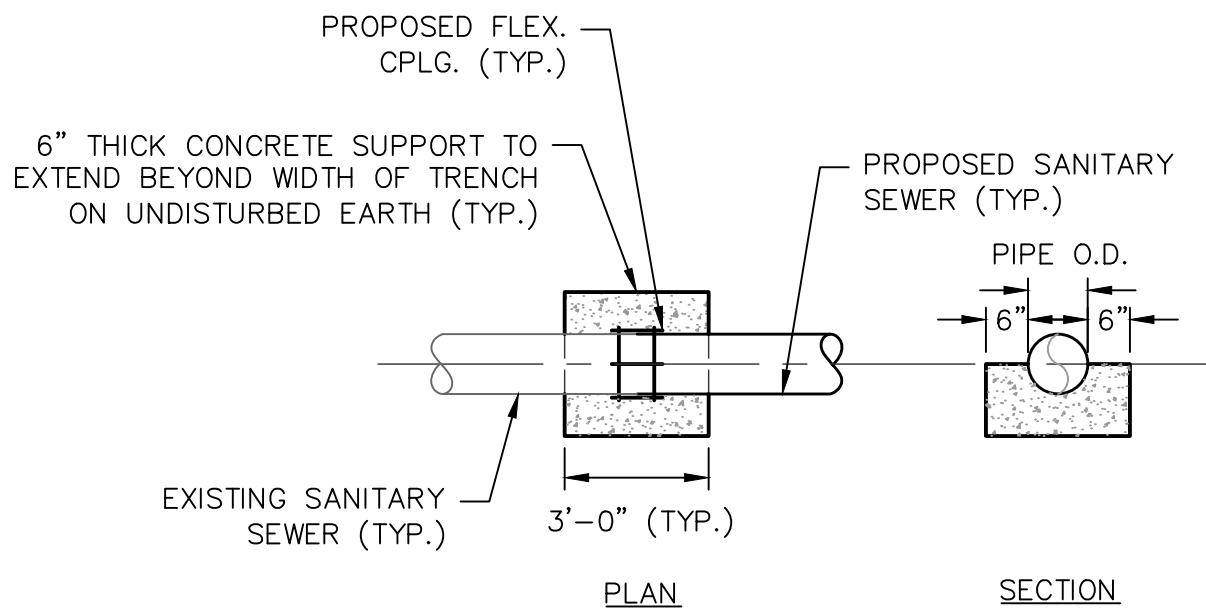
1. CLEAN-OUT FRAME AND COVER TO BE NEENAH R-1976
2. FOR IN-LINE CLEAN-OUTS THAT DO NOT COVER END, STANDARD TEE & VERTICAL RISER CAN BE USED

**CONSTRUCTION DETAIL**

SEWER  
CLEAN OUT

THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET

SEWER-21



**CONSTRUCTION DETAIL**

SEWER  
COUPLING—GRAVITY SEWER

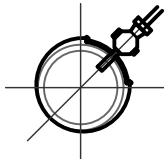
**THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET**

SEWER-22



PROPERTY LINE

E.G./OR  
F.G.



45° CONNECTION OPTION

CURB BOX

CURB STOP

3" SAND BED  
ALL AROUND

SERVICE LINE  
TO BUILDING

SWIVEL FITTING

BRONZE TAPPING SADDLE

WATER MAIN

REQUIRED BEDDING (AS  
SPECIFIED)

3-PIECE COMPRESSION  
COUPLING

3/4" OR 1" WATER SERVICE  
PE DR 9 CTS,  
TYPE "K" COPPER

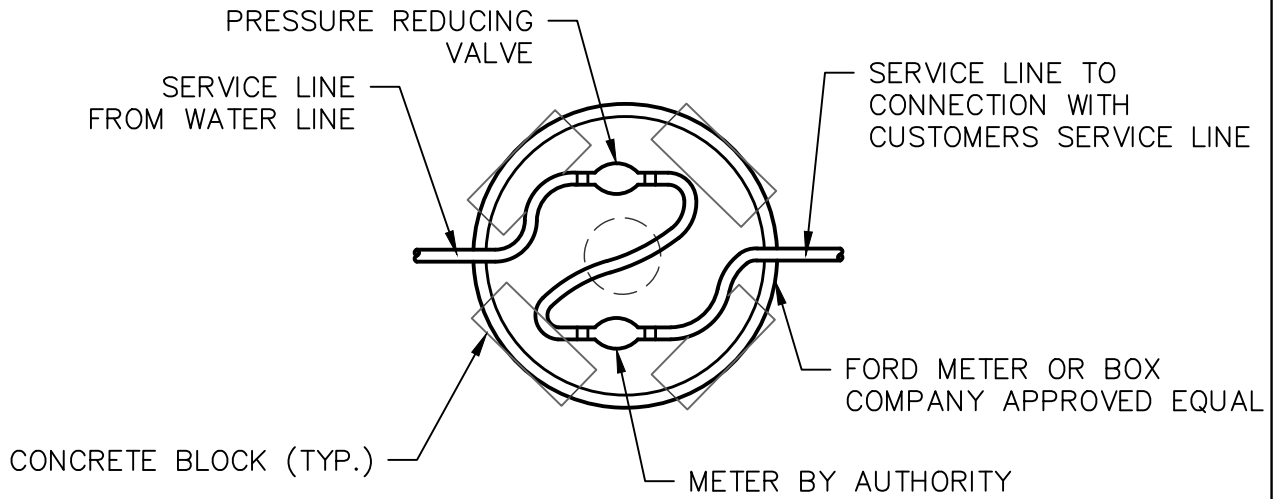
CORPORATION COCK STOP  
(AWWA THREADED INLET)

**CONSTRUCTION DETAIL**

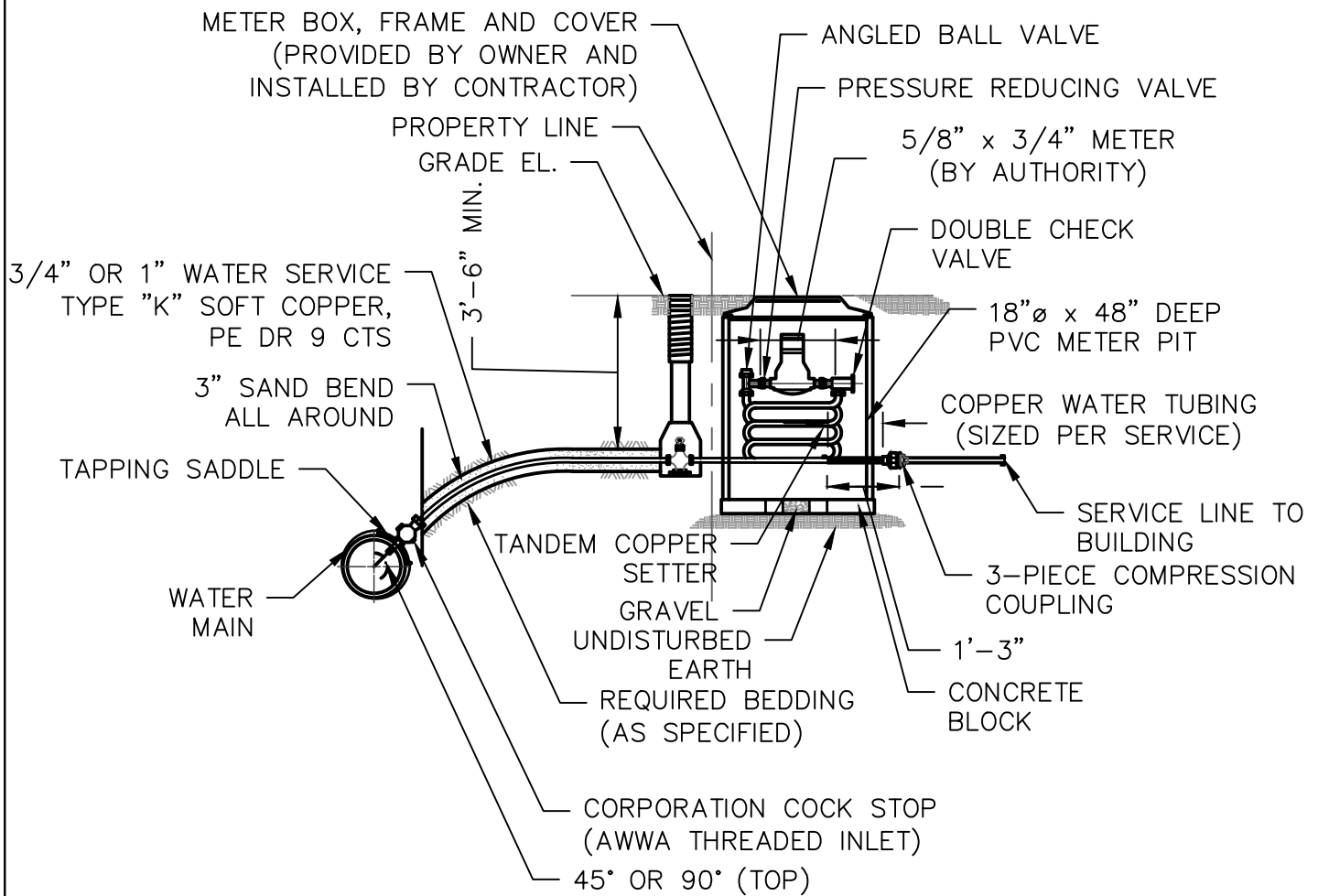
WATER  
SERVICE LINE CONNECTION

**THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET**

WATER-1

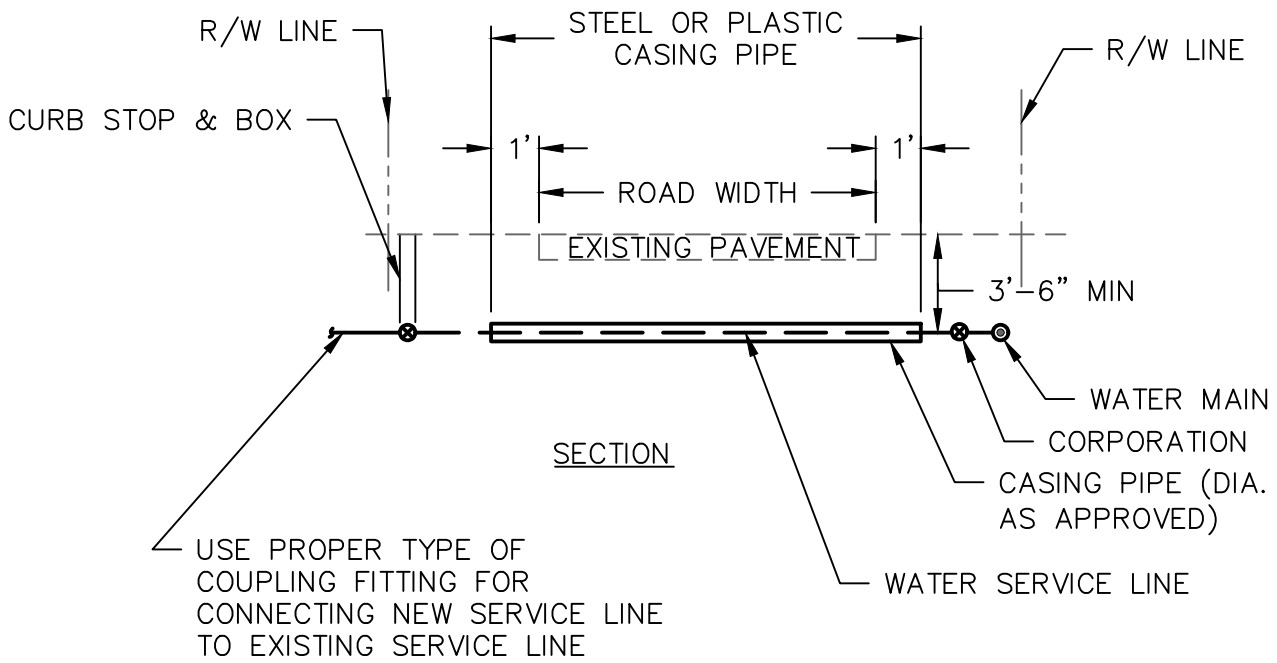


PLAN



SECTION

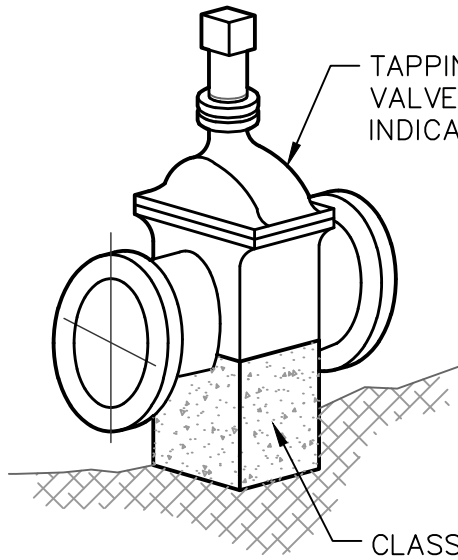
<b>CONSTRUCTION DETAIL</b>	
WATER METER PIT SERVICE CONNECTION	
THE MUNICIPAL AUTHORITY OF THE BOROUGH OF SOMERSET	WATER-2



**NOTES:**

1. ROAD BORING CASING PIPE TO EXTEND AS SHOWN.
2. FILL VOID AT ENDS OF CASING WITH FLEXIBLE CAULKING OR SPRAY INSULATION.

<b>CONSTRUCTION DETAIL</b>	
WATER SERVICE LINE ROAD BORE	
<b>THE MUNICIPAL AUTHORITY OF THE BOROUGH OF SOMERSET</b>	WATER-3

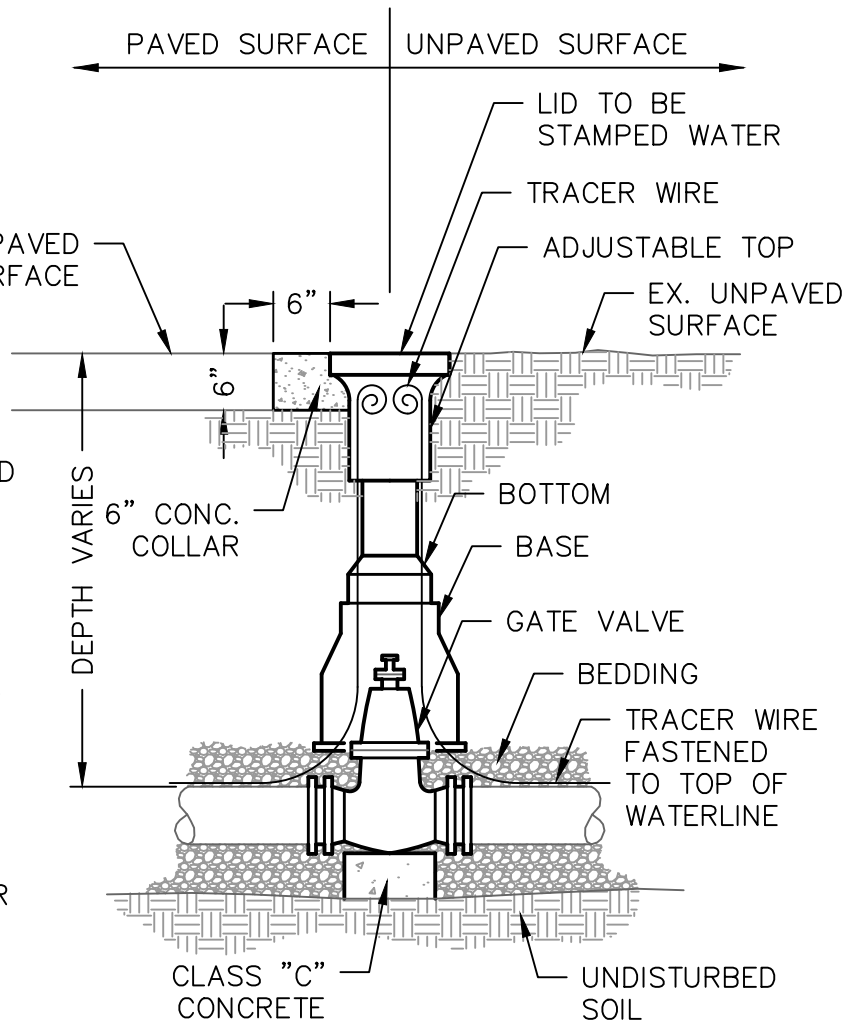


TAPPING VALVE OR GATE VALVE – SIZED AS INDICATED ON PLANS

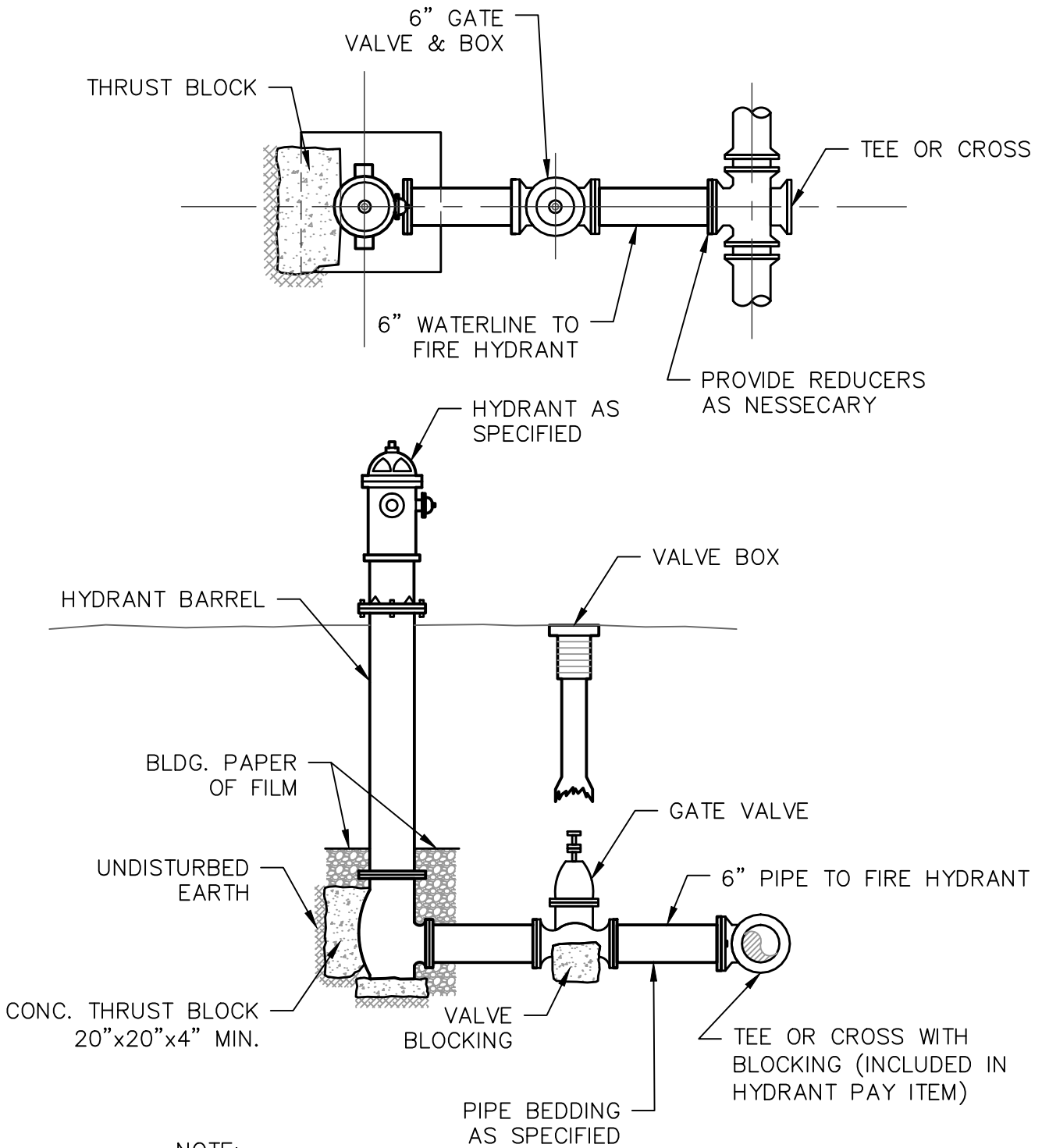
CLASS "C" CONCRETE

**NOTE:**

1. PROVIDE CLASS A CONCRETE COLLAR AROUND ENTIRE PERIMETER FOR CURB BOX INSTALLATIONS WITHIN PAVED AREAS. CONCRETE COLLAR TO BE 6" THICK PLAIN CEMENT CONCRETE. CONCRETE COLLAR MAY BE CIRCULAR OR SQUARE WITH MINIMUM 6" WIDTH FROM FACE OF BOX TO FACE OF CONCRETE.
2. PROVIDE TRACER WIRE FOR ALL PVC, PE, AND HDPE PIPE.



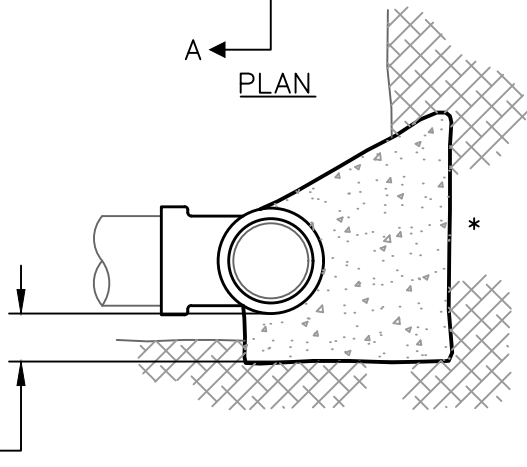
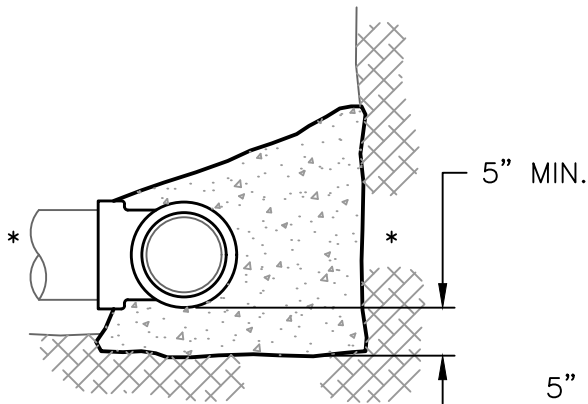
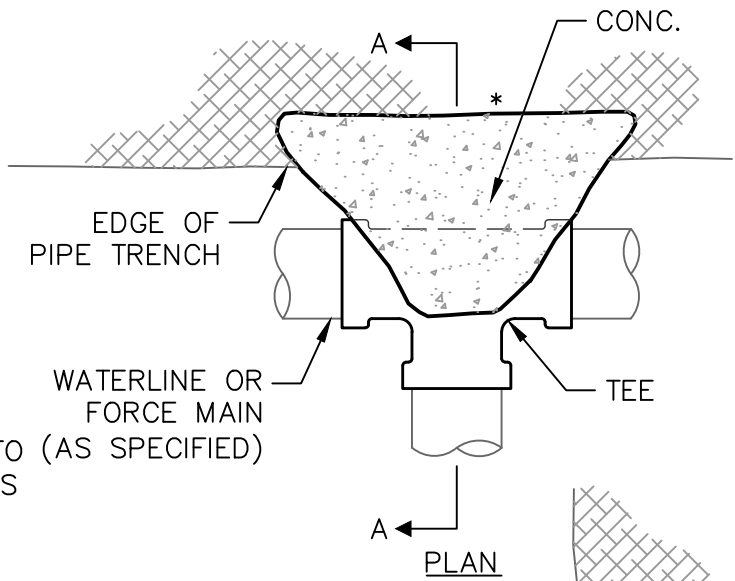
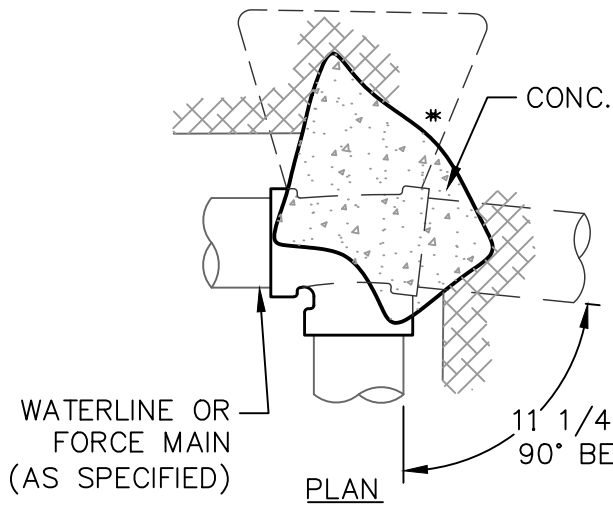
<b>CONSTRUCTION DETAIL</b>	
WATER VALVE	
<b>THE MUNICIPAL AUTHORITY OF THE BOROUGH OF SOMERSET</b>	WATER-4



**NOTE:**

ALL JOINTS FROM TEE TO HYDRANT SHALL BE RESTRAINED

<b>CONSTRUCTION DETAIL</b>	
WATER HYDRANT	
THE MUNICIPAL AUTHORITY OF THE BOROUGH OF SOMERSET	WATER-5



ELEVATION

11 1/4°, 22 1/2°, 45°, & 90° BENDS

REFER TO STD. 12 FOR  
STANDARD BEARING AREA TABLE

SECTION A-A  
TEE OR TAPPING SLEEVE

\* BEARING SURFACE REFER TO  
STANDARD TABLE FOR MINIMUM  
BEARING AREA REQUIREMENTS  
FOR VARIOUS PIPE SIZES.

**CONSTRUCTION DETAIL**

WATER  
THRUST BLOCK

**THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET**

WATER-6

THRUST BLOCKING AT 100 PSI WORKING PRESSURE					
PIPE SIZE INCHES	MIN. BEARING SURFACE REQUIRED – S.F.				
	11 1/4° BEND	22 1/2° BEND	45° BEND	90° BEND	TEES & PLUGS
2-4	1.0	1.0	1.0	1.0	1.0
6	1.0	1.0	1.5	2.5	2.0
8	1.0	1.5	2.5	4.0	3.0
10	1.0	2.0	3.5	6.5	5.0
12	1.5	2.5	5.0	9.0	7.0
16	2.4	4.75	9.5	13.0	12.0
18	3.0	6.0	11.5	17.0	15.0

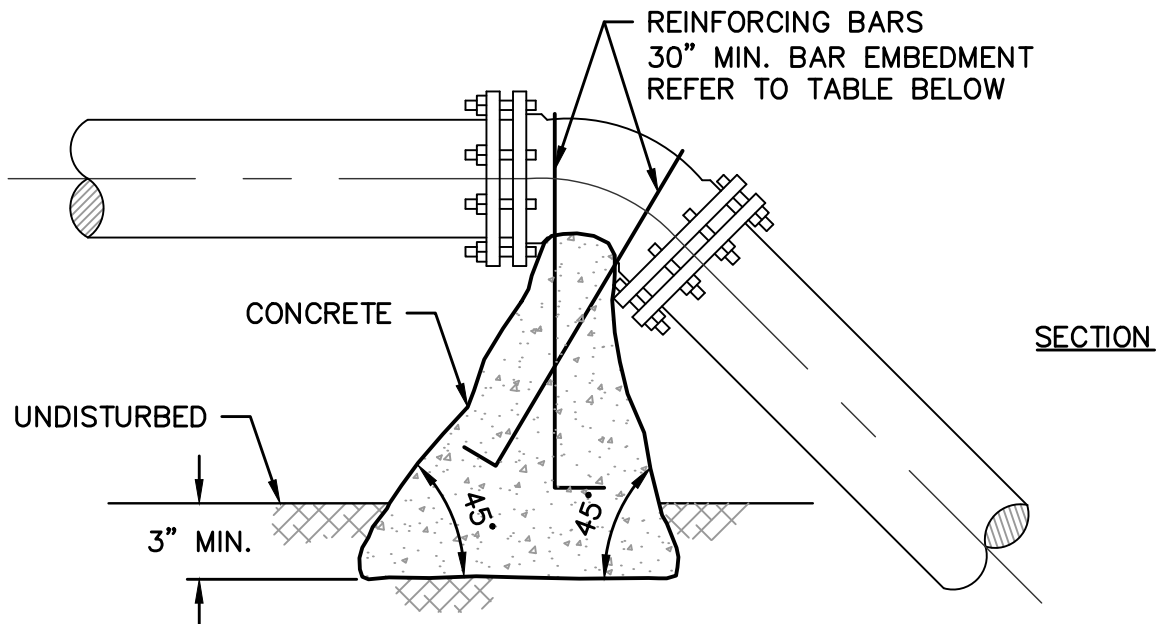
THRUST BLOCKING AT 150 PSI WORKING PRESSURE					
PIPE SIZE INCHES	MIN. BEARING SURFACE REQUIRED – S.F.				
	11 1/4° BEND	22 1/2° BEND	45° BEND	90° BEND	TEES & PLUGS
2-4	1.5	1.5	1.5	1.5	1.5
6	1.5	1.5	2.0	4.0	3.0
8	1.5	2.0	4.0	7.0	5.0
10	1.5	3.0	5.5	10.5	7.5
12	2.0	4.0	8.0	14.5	10.5
16	3.5	7.0	14.0	25.5	18.0
18	4.5	9.0	17.0	32.0	22.5

THRUST BLOCKING AT 200 PSI WORKING PRESSURE					
PIPE SIZE INCHES	MIN. BEARING SURFACE REQUIRED – S.F.				
	11 1/4° BEND	22 1/2° BEND	45° BEND	90° BEND	TEES & PLUGS
2-4	2.0	2.0	2.0	2.0	2.0
6	2.0	2.0	3.0	5.5	4.0
8	2.0	2.5	5.0	9.0	6.5
10	2.0	4.0	7.5	14.0	10.0
12	3.0	5.5	10.5	19.5	14.0
16	5.0	9.5	18.0	33.5	24.0
18	6.0	12.0	23.0	42.5	30.0

NOTE:

THE ABOVE VALUES ARE BASED ON A  
SOIL BEARING CAPACITY OF 2000 PSF.  
FIELD CONDITIONS SHOULD BE REPORTED TO THE ENGINEER.

<b>CONSTRUCTION DETAIL</b>	
WATER THRUST SIZING	
<b>THE MUNICIPAL AUTHORITY OF THE BOROUGH OF SOMERSET</b>	WATER-7



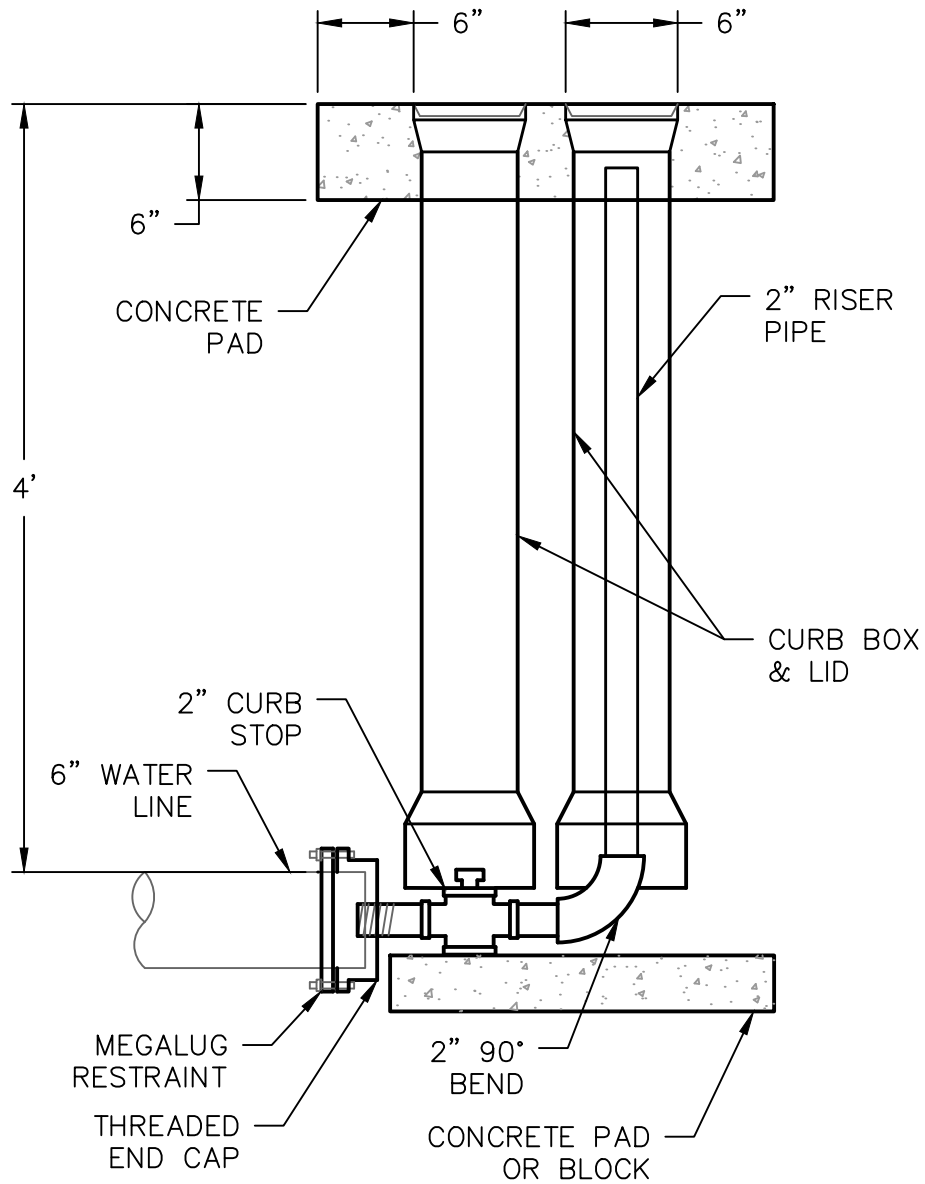
100 P.S.I. WORKING PRESSURE		
PIPE SIZE INCHES	CUBIC YARDS OF CONCRETE REQUIRED (Min.)	BAR SIZE
4	0.5	1"φ
6	1.0	1"φ
8	1.7	1"φ
10	2.2	1"φ
12	3.0	1"φ
16	5.4	1"φ
18	6.5	1"φ
20	8.0	1"φ
24	10.9	1-1/8"φ

200 P.S.I. WORKING PRESSURE		
PIPE SIZE INCHES	CUBIC YARDS OF CONCRETE REQUIRED (Min.)	BAR SIZE
4	1.0	1"φ
6	2.0	1"φ
8	3.4	1"φ
10	4.3	1"φ
12	6.0	1"φ
16	10.7	1"φ
18	12.9	1"φ
20	15.9	1-1/8"φ
24	21.7	1-1/4"φ

150 P.S.I. WORKING PRESSURE		
PIPE SIZE INCHES	CUBIC YARDS OF CONCRETE REQUIRED (Min.)	BAR SIZE
4	0.75	1"φ
6	1.5	1"φ
8	2.5	1"φ
10	3.2	1"φ
12	4.5	1"φ
16	8.0	1"φ
18	9.7	1"φ
20	11.9	1"φ
24	16.3	1-1/8"φ

<b>CONSTRUCTION DETAIL</b>	
WATER THRUST BLOCK ANCHOR	
THE MUNICIPAL AUTHORITY OF THE BOROUGH OF SOMERSET	WATER-8



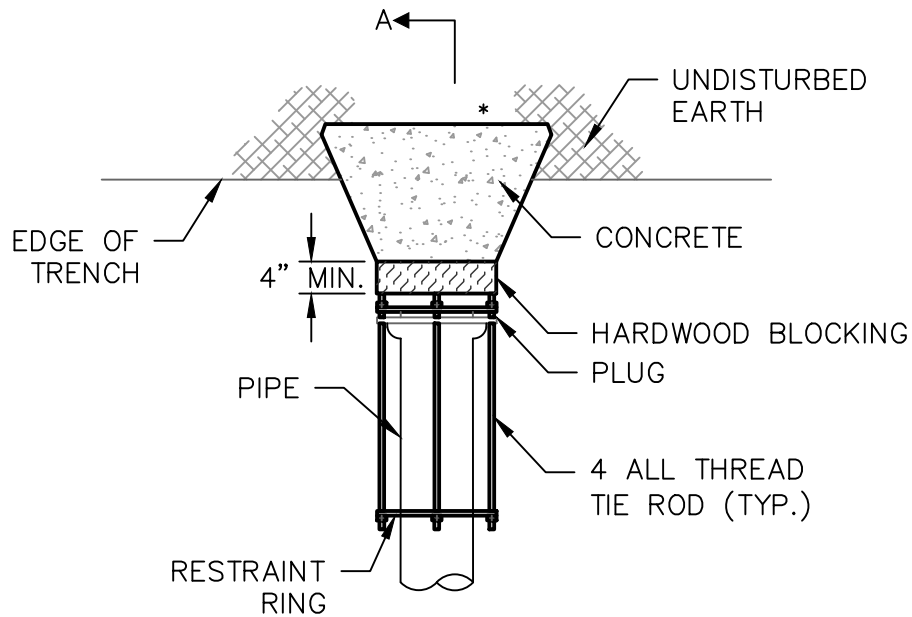


**CONSTRUCTION DETAIL**

WATER  
BLOW OFF

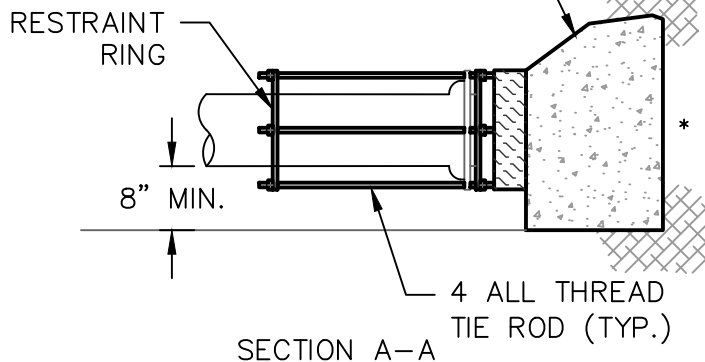
**THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET**

WATER-9



PLAN

HARDWOOD BLOCKING TO FACILITATE REMOVAL OF THRUST BLOCK FOR FUTURE CONNECTION TO PIPE



NOTE:

1. PLUG OR CAP SHALL BE SUITABLE FOR USE WITH SPECIFIED PIPE AND DESIGN PRESSURE.
2. BEARING SURFACE TO STANDARD BEARING AREA TABLE: USE BEARING AREA REQUIRED FOR 90° BEND AND SIZE OR PIPE INDICATED.

**CONSTRUCTION DETAIL**

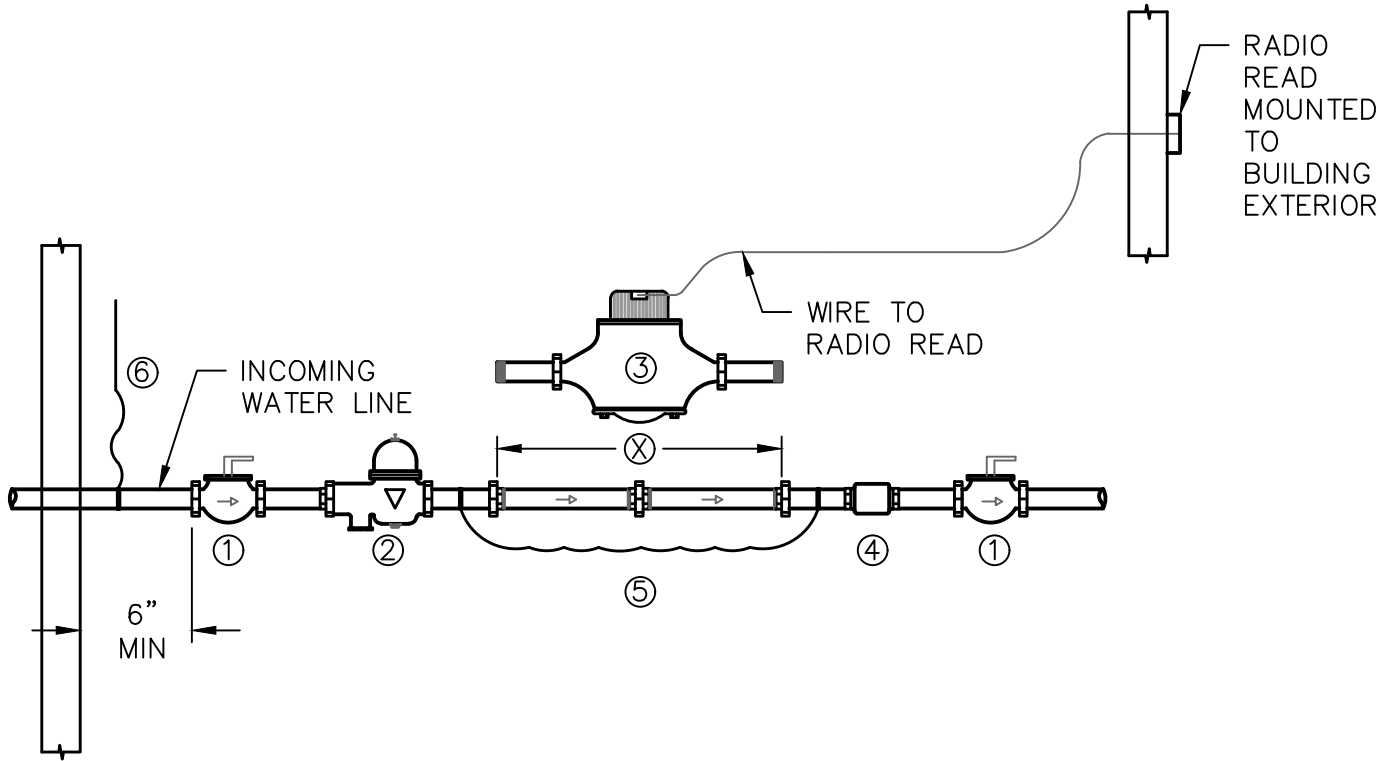
WATER  
END CAP

**THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET**

WATER-10

LEGEND

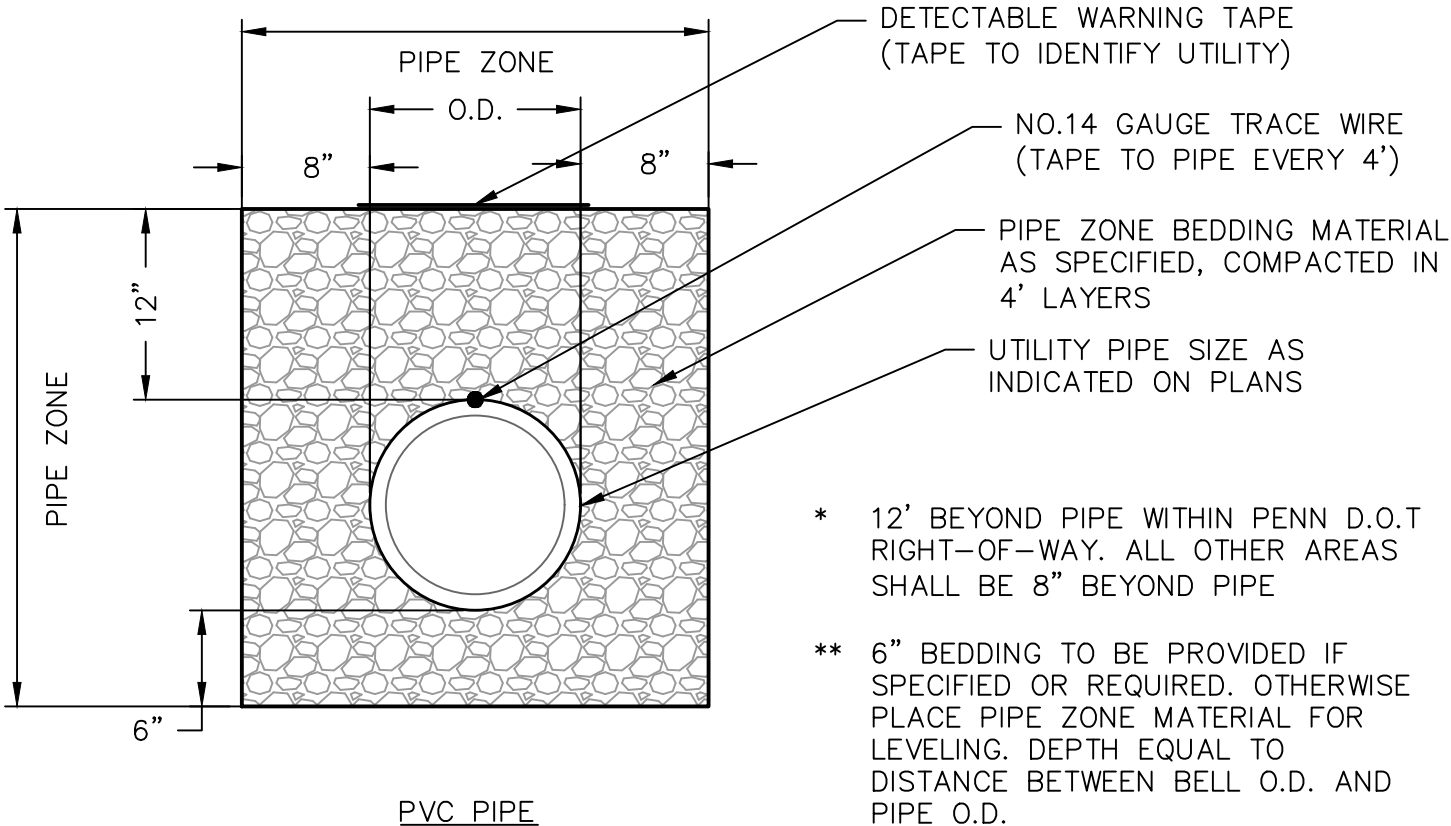
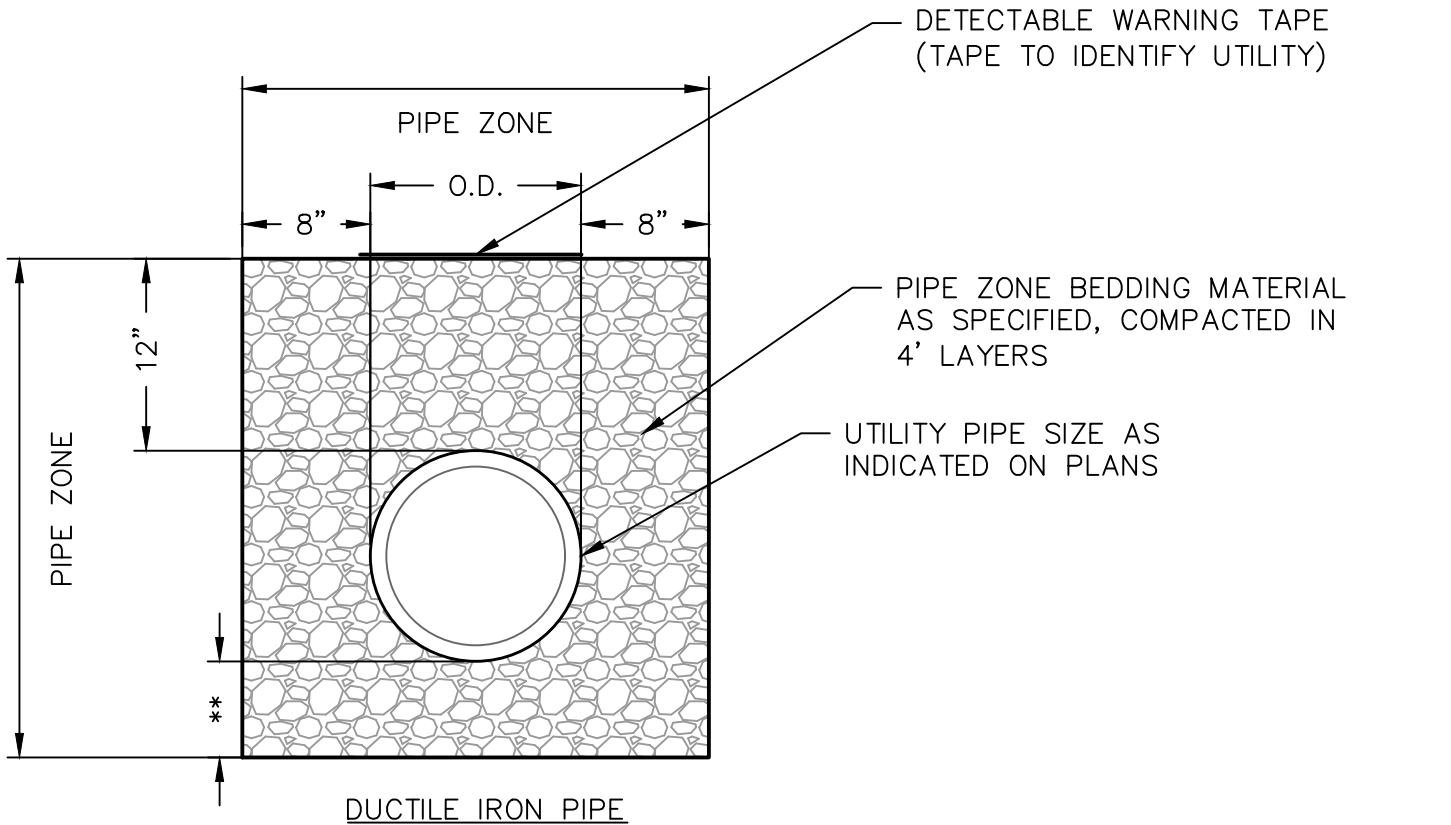
- ① ISOLATION VALVE
- ② PRESSURE REGULATOR
- ③ METER (FURNISHED BY AUTHORITY)
- ④ DUAL CHECK VALVE
- ⑤ GROUND WIRE (PROVIDE FOR METALLIC PIPE)
- ⑥ GROUND WIRE (LAND TO GROUND BUS BAR OR GROUND ROD)
- ⊗ CONTACT AUTHORITY FOR METER & DIMENSIONS



NOTES:

1. ALL COMPONENTS SHALL BE "LEAD FREE"
2. PIPE SHALL BE TYPE K COPPER, HIGH DENSITY POLYETHYLENE PLASTIC PIPE (CTS DR9), OR CROSS-LINK POLYETHYLENE (PEX-CTS). ALL PIPE SHALL HAVE A PRESSURE RATING OF NOT LESS THAN 160 PSI.
3. FITTINGS
  - i. COPPER: COMPRESSION, FLARE (ABOVE GROUND ONLY), SOLDER (ABOVE GROUND ONLY).
  - ii. PEX: COMPRESSION OR MECHANICAL. PROVIDE INSERT STIFFENERS.
  - iii. HDPE: COMPRESSION OR MECHANICAL. PROVIDE INSERT STIFFENERS.

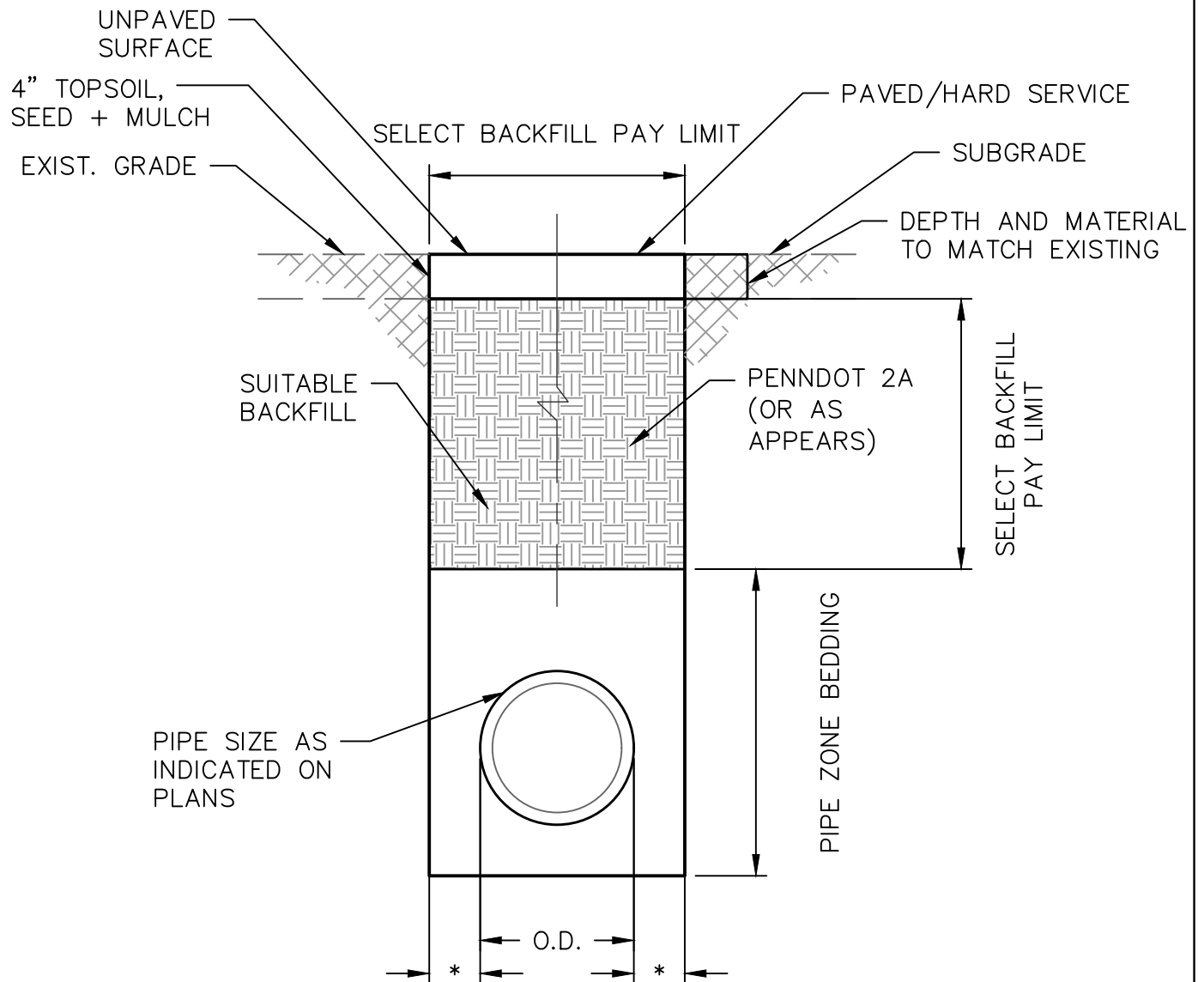
CONSTRUCTION DETAIL	
INTERIOR RESIDENTIAL METER	
THE MUNICIPAL AUTHORITY OF THE BOROUGH OF SOMERSET	WATER-11



\* 12' BEYOND PIPE WITHIN PENN D.O.T RIGHT-OF-WAY. ALL OTHER AREAS SHALL BE 8" BEYOND PIPE

\*\* 6" BEDDING TO BE PROVIDED IF SPECIFIED OR REQUIRED. OTHERWISE PLACE PIPE ZONE MATERIAL FOR LEVELING. DEPTH EQUAL TO DISTANCE BETWEEN BELL O.D. AND PIPE O.D.

<b>CONSTRUCTION DETAIL</b>	
GENERAL UTILITY-PIPE ZONE	
THE MUNICIPAL AUTHORITY OF THE BOROUGH OF SOMERSET	GENERAL-2



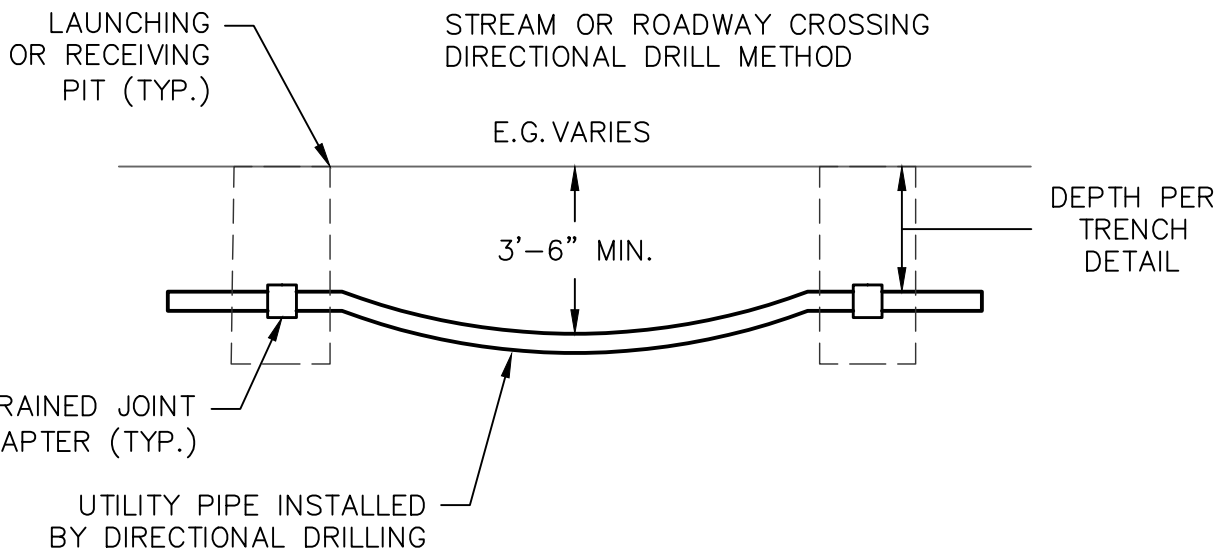
\* 12" BEYOND PIPE WITHIN PENN D.O.T. RIGHT-OF-WAY, ALL OTHER AREAS SHALL BE 8" BEYOND PIPE

**CONSTRUCTION DETAIL**

GENERAL  
TRENCH

**THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET**

GENERAL-1



NOTE:

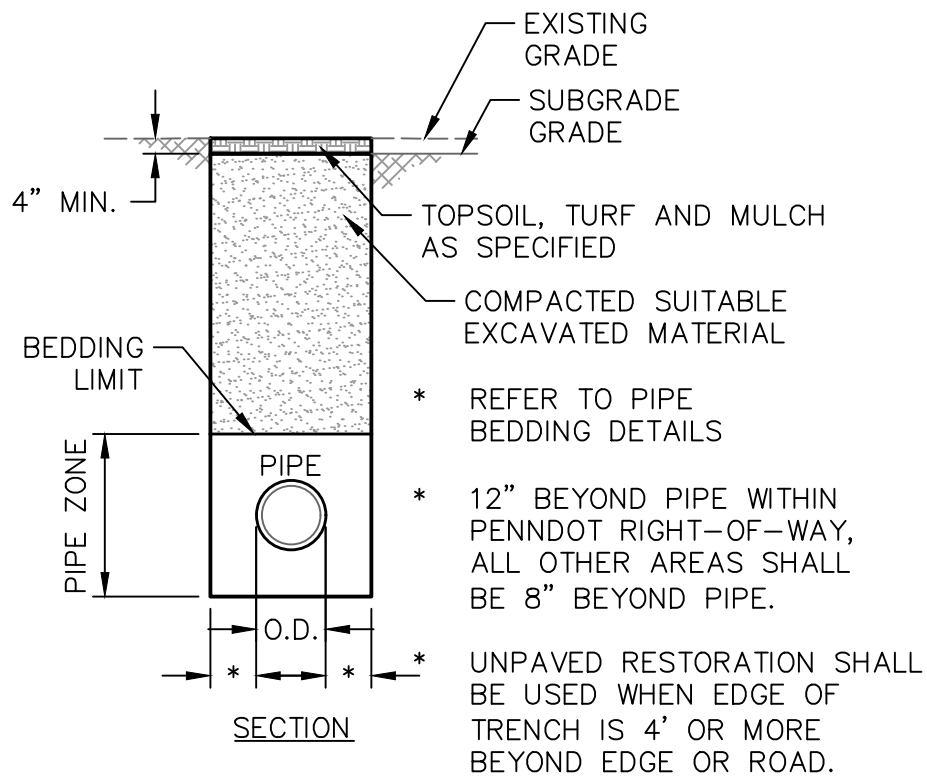
1. CONTRACTOR TO DEVELOP DIRECTIONAL DRILL PLAN FOR EACH STREAM OR ROADWAY CROSSING EXCEEDING 100 LF OR 15 VF.
2. CONTRACTOR TO FOLLOW INADVERTENT RETURN PLAN FOR ALL STREAM CROSSINGS
3. ALL DRILL FLUIDS TO BE MANAGED IN ACCORDANCE WITH PA DEP EROSION AND SEDIMENTATION

**CONSTRUCTION DETAIL**

GENERAL  
UTILITY-DIRECTIONAL DRILL

**THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET**

GENERAL-3

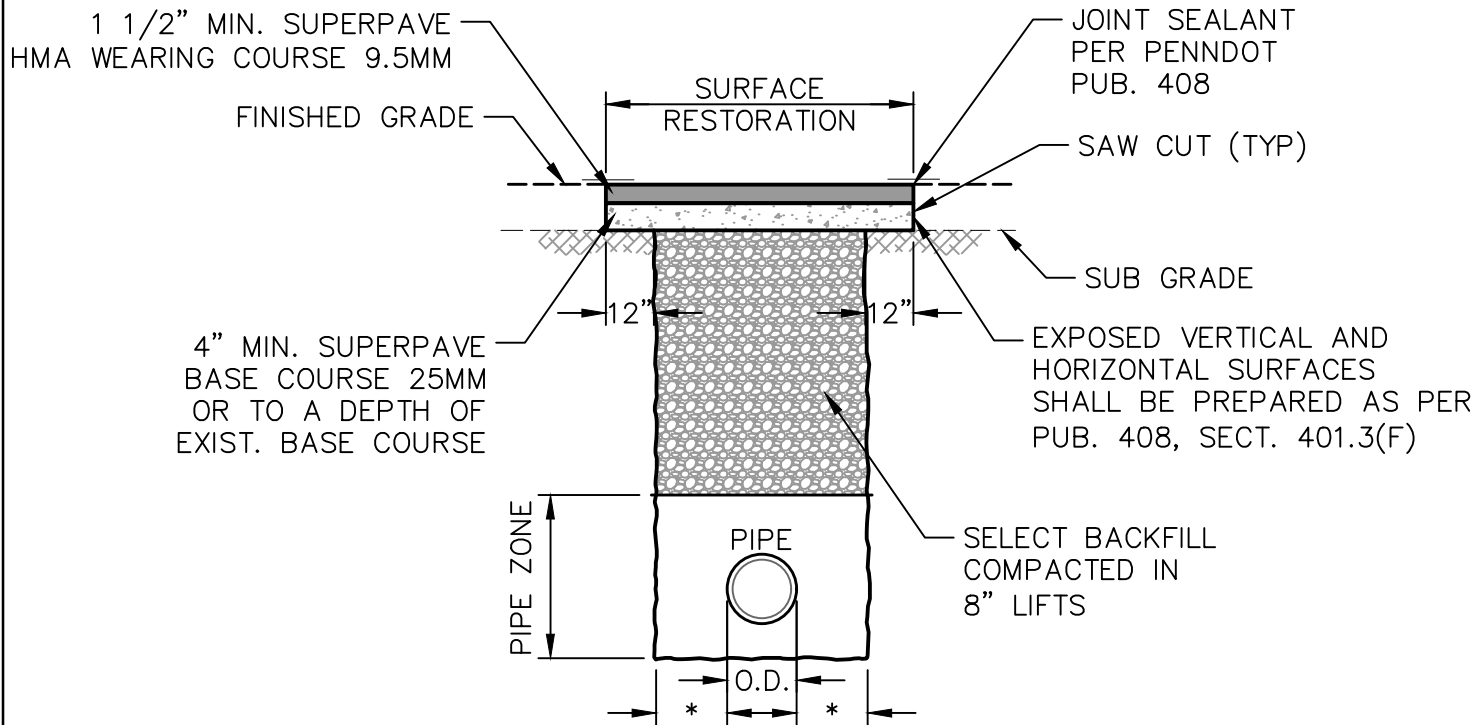


**CONSTRUCTION DETAIL**

UNPAVED RESTORATION  
TRENCH

**THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET**

GENERAL-4



SECTION

\* REFER TO PIPE BEDDING DETAILS

**CONSTRUCTION DETAIL**

MUNICIPAL HIGHWAY – FLEXIBLE BASE  
TRENCH

**THE MUNICIPAL AUTHORITY OF  
THE BOROUGH OF SOMERSET**

GENERAL-5