

# BRIGHTON TOWNSHIP SEWAGE AUTHORITY

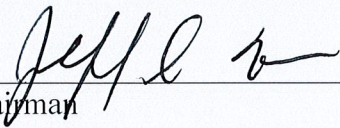
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Mark Piccirilli  
Gordon R. Sheffer, PhD.

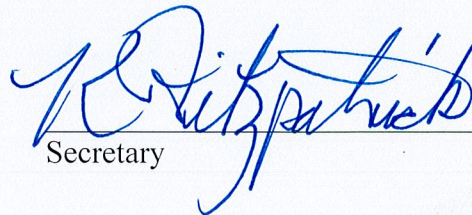
1300 Brighton Road  
Beaver, PA 15009  
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## ADOPTION

The “Standard Details for Sewer Line Construction” dated January 2024 are hereby approved and adopted this 19<sup>th</sup> day of February, 2024 by the Board of Directors of the Brighton Township Sewage Authority. This version of the standard detail drawings for Sanitary Sewage Construction date January 2024 shall supersede all previous versions of same.

  
Chairman

  
Secretary

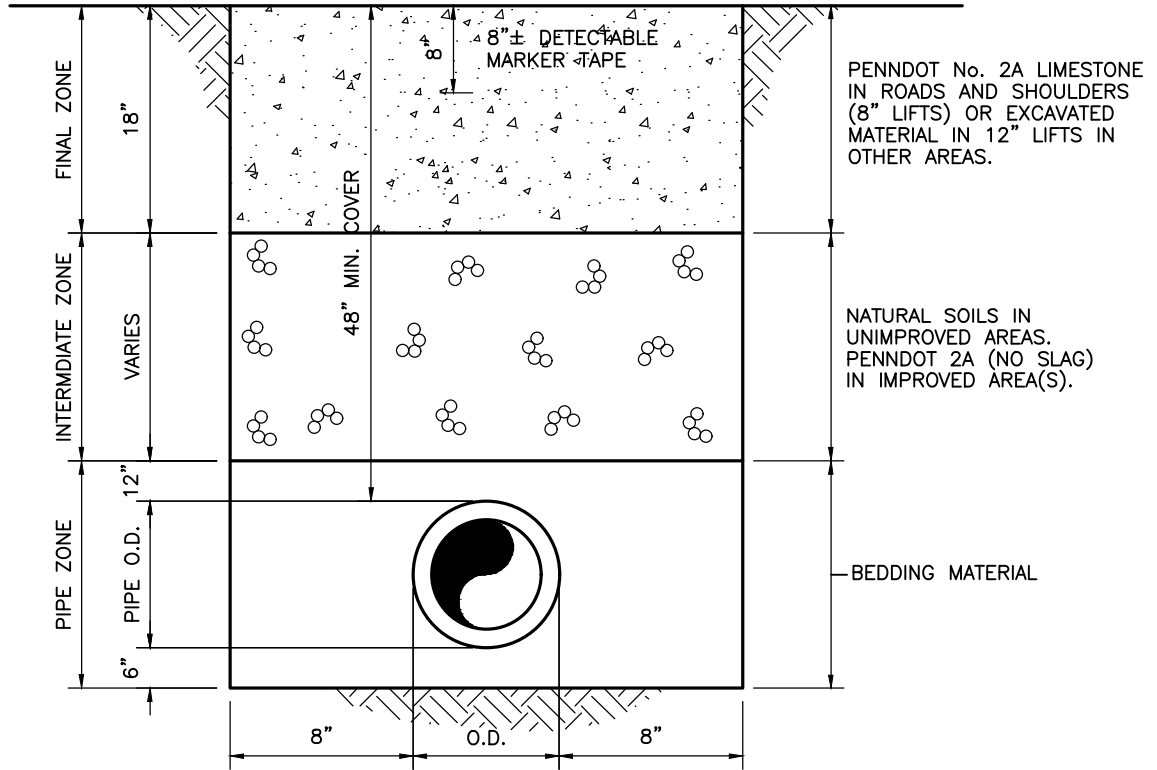


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**NOTE:**

REFER TO SEWER MAIN AND SERVICE LATERAL INSTALLATION OF THE SPECIFICATIONS FOR FURTHER DETAIL AND SPECIFICATIONS.



**TRENCH EXCAVATION AND BACKFILL DETAIL**

N. T. S.

**NOTES:**

- BEDDING MATERIAL SHALL BE AASHTO No. 57 COURSE AGGREGATE (NO SLAG).
- RESTRAINED JOINT P401 LINED DUCTILE IRON PIPING REQUIRED FOR ALL LINES PROPOSED IN FILL SLOPES.
- REFER TO TOWNSHIP AND/OR PENNDOT REQUIREMENTS FOR FINAL SURFACE RESTORATION REQUIREMENTS OR OTHER SPECIAL REQUIREMENTS (BACKFILL, COMPACTION, ETC.)

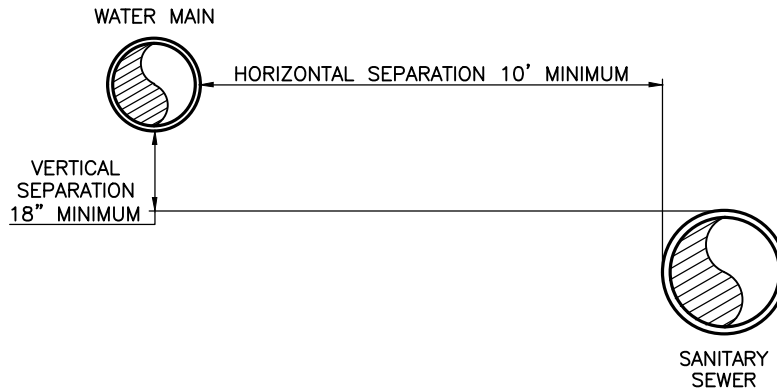
**BRIGHTON TOWNSHIP  
SEWAGE AUTHORITY**

1300 Brighton Road  
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Scale:	N.T.S.
Filename:	BTSA-SAN-01.dwg
Date:	January 2024

Trench Excavation and Backfill Detail

DETAIL: BTSA-SAN-01



**NOTES:**

1. WHEN THE HORIZONTAL SEPARATION OF THE WATER MAIN AND SEWER LINE IS LESS THAN 10', THE VERTICAL SEPARATION BETWEEN THE TOP (CROWN) OF THE SEWER LINE AND THE BOTTOM (INVERT) OF THE WATER MAIN SHALL BE AT LEAST 18". ENCASE WATERLINE IN CONCRETE WHERE SEWER / WATERLINE CROSSINGS OCCUR AND, WHERE THE CONDITIONS PREVENT AN 18" VERTICAL SEPARATION.
2. NO OTHER UNDERGROUND UTILITIES, SUCH AS GAS, ELECTRIC, TELEPHONE, OR CABLE, SHALL BE PLACED ABOVE THE SANITARY SEWER OR WITHIN THREE FEET OF EACH SIDE OF THE SANITARY SEWER.

**UTILITY SEPARATION**

N. T. S.

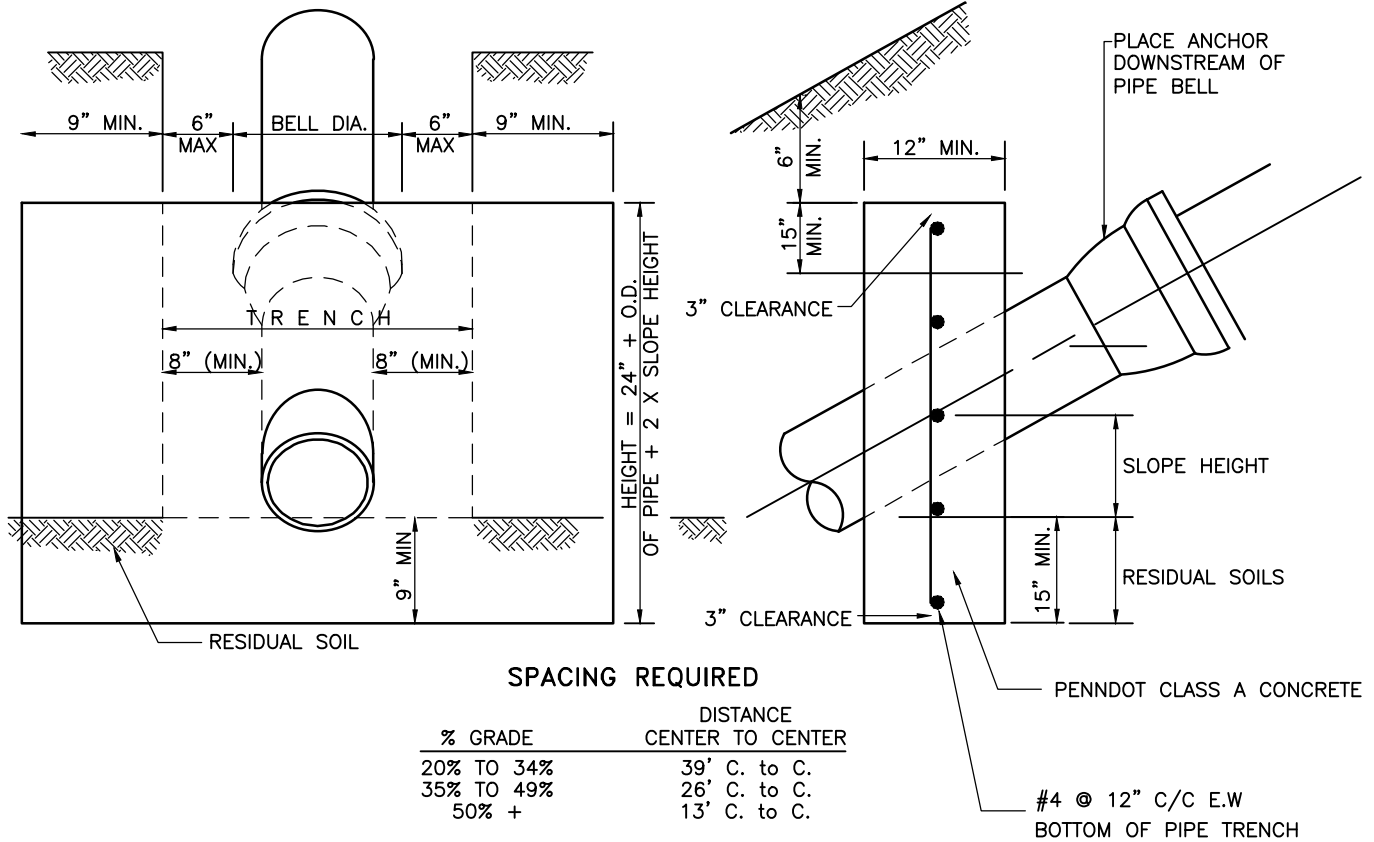
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Scale:	N.T.S.
Filename:	BTSA-SAN-02.dwg
Date:	January 2024

**Utility Separation**

DETAIL: BTSA-SAN-02



**SPACING REQUIRED**

% GRADE	DISTANCE CENTER TO CENTER
20% TO 34%	39' C. to C.
35% TO 49%	26' C. to C.
50% +	13' C. to C.

**NOTES:**

1. SELF-RESTRAINED JOINT (SRJ) CLASS 52 DUCTILE IRON PIPING SHALL BE USED FOR ALL PIPING OVER 20% GRADE.
2. SRJ DUCTILE IRON PIPING TO BE COMPLETE WITH PROTECTO 401 CERAMIC EPOXY LINING OR APPROVED EQUAL.

**CONCRETE ANCHOR FOR PIPE LINES**

N. T. S.

**BRIGHTON TOWNSHIP  
SEWAGE AUTHORITY**

1300 Brighton Road  
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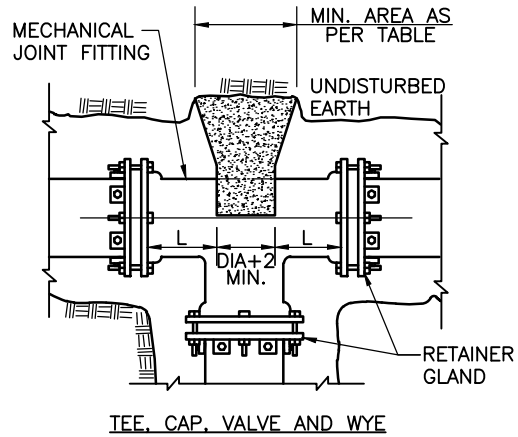
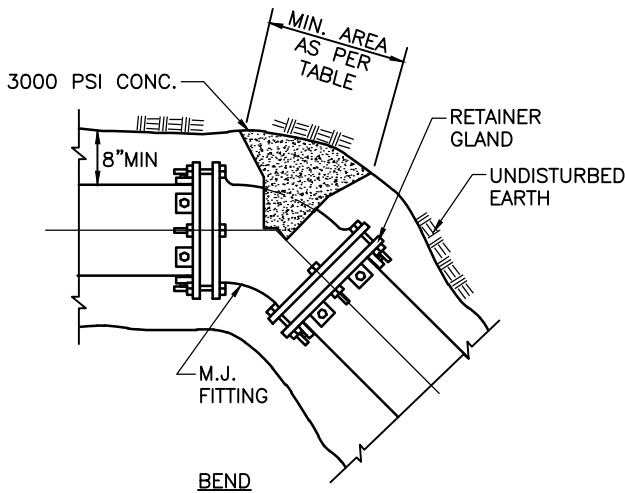
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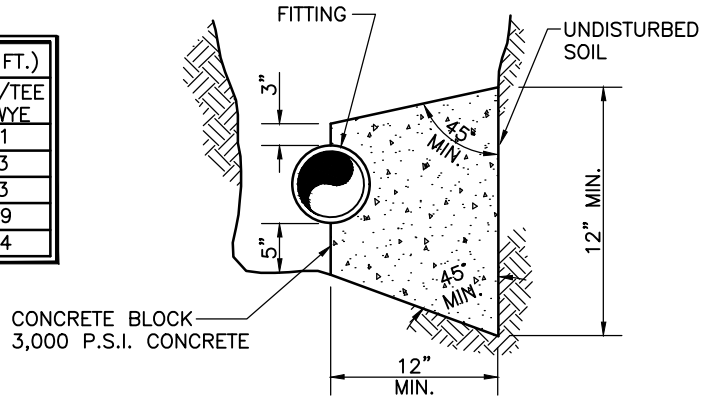
Date: January 2024

**Concrete Anchor for Pipe Lines**

DETAIL: BTSA-SAN-03



PIPE SIZE (in)	L (in.)	MINIMUM BEARING AREA OF BLOCK(SQ. FT.)				
		90° BENDS	45° BENDS	22.5° BENDS	11.25° BENDS	VALVE/TEE OR WYE
4	5	2.9	1.6	1.0	1.0	2.1
6	6	6.0	3.3	1.7	1.0	4.3
8	6.5	10.3	5.6	2.9	1.5	7.3
10	6.5	15.4	8.4	4.3	2.2	10.9
12	7	21.8	11.8	6.0	3.1	15.4



**NOTES:**

1. EARTH PRESSURE = 2,000 LBS./SQ.FT.
2. APPLIED PRESSURE = 150 P.S.I.+50% FOR WATER HAMMER OR SURGE
3. IF EARTH IN FIELD WILL NOT SUPPORT THE ABOVE EARTH PRESSURE, AREA OF BLOCK MUST BE INCREASED PROPORTIONATELY.
4. CONCRETE TO BE 3,000 P.S.I., PADOT CLASS A, 3" SLUMP
5. ALL MECHANICAL JOINT FASTENERS (I.E. BOLTS, NUTS, ETC.) SHALL BE FREE OF CONCRETE. ALL FITTINGS SHALL BE MECHANICAL JOINT AND HAVE MEG-A-LUG RETAINER GLANDS (OR EQUAL) INSTALLED TO MANUFACTURERS SPECIFICATIONS.
6. WRAP FITTING AND JOINT WITH TAR PAPER (OVER POLYETHYLENE ENCASEMENT) PRIOR TO POURING CONCRETE.
7. CONCRETE WITH BEARING AREAS GREATER THAN 3 S.F. TO HAVE W4 x W4 WELDED WIRE FABRIC.
8. ALL FITTINGS TO BE DUCTILE IRON WITH EPOXY LINING.

**FORCEMAIN HORIZONTAL THRUST BLOCKING**

N.T.S.

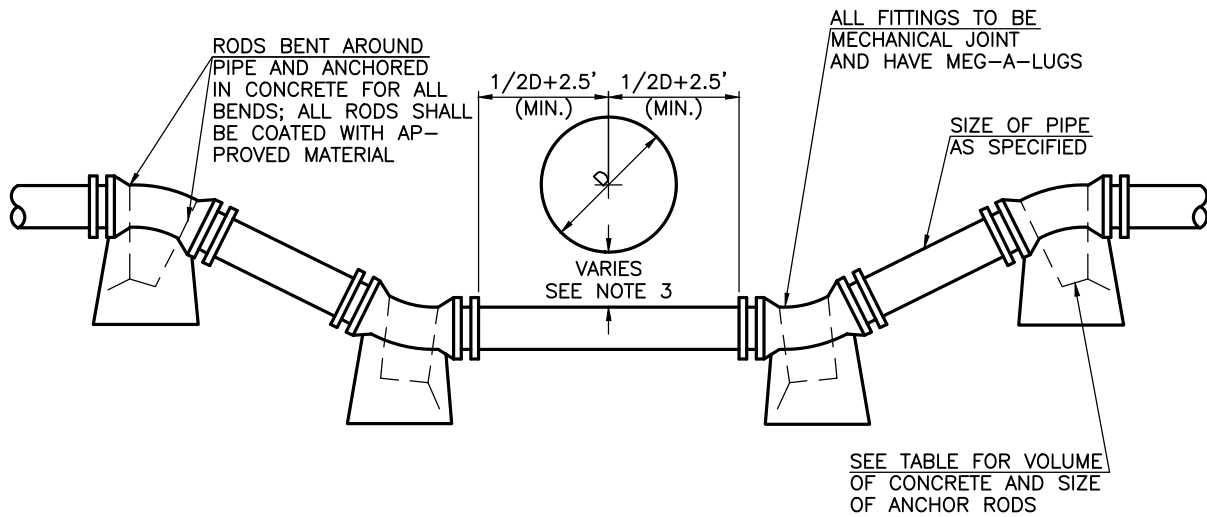
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SEWAGE AUTHORITY**

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Scale: N.T.S.  
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Date: January 2024

**Forcemain Horizontal Thrust  
Blocking (150 PSI)**

DETAIL: BTSA-SAN-04



PIPE SIZE	TOTAL PRESSURE IN POUNDS	VOLUME IN CUBIC FEET			SIZE AND No. OF ANCHORS		
		45° BENDS	22.5° BENDS	11.25° BENDS	45° BENDS	22.5° BENDS	11.25° BENDS
4	3900	20	10	5	1-#4	1-#4	1-#4
6	7200	37	19	9	2-#4	1-#4	1-#4
8	11800	60	31	15	2-#4	2-#4	1-#4
10	17100	87	45	22	2-#4	2-#4	2-#4
12	23700	122	62	31	2-#5	2-#4	2-#4
14	31400	160	82	41	2-#6	2-#4	2-#4
16	42000	214	110	55	2-#7	2-#5	2-#4
18	51800	264	135	67	2-#7	2-#5	2-#4
20	63000	322	164	82	2-#8	2-#6	2-#4
24	86000	440	224	112	2-#9	2-#7	2-#5

**NOTES:**

1. THE TABLE IS BASED ON 150# TEST PRESSURE.
2. REINFORCE ALL BLOCKS WITH #4 AT 6" E.F. MINIMUM 3" FROM ALL SIDES.
3. SEE "FORCEMAIN UNDER OBSTRUCTION" DETAIL.

**TYPICAL  
FORCEMAIN VERTICAL BLOCKING**

N. T. S.

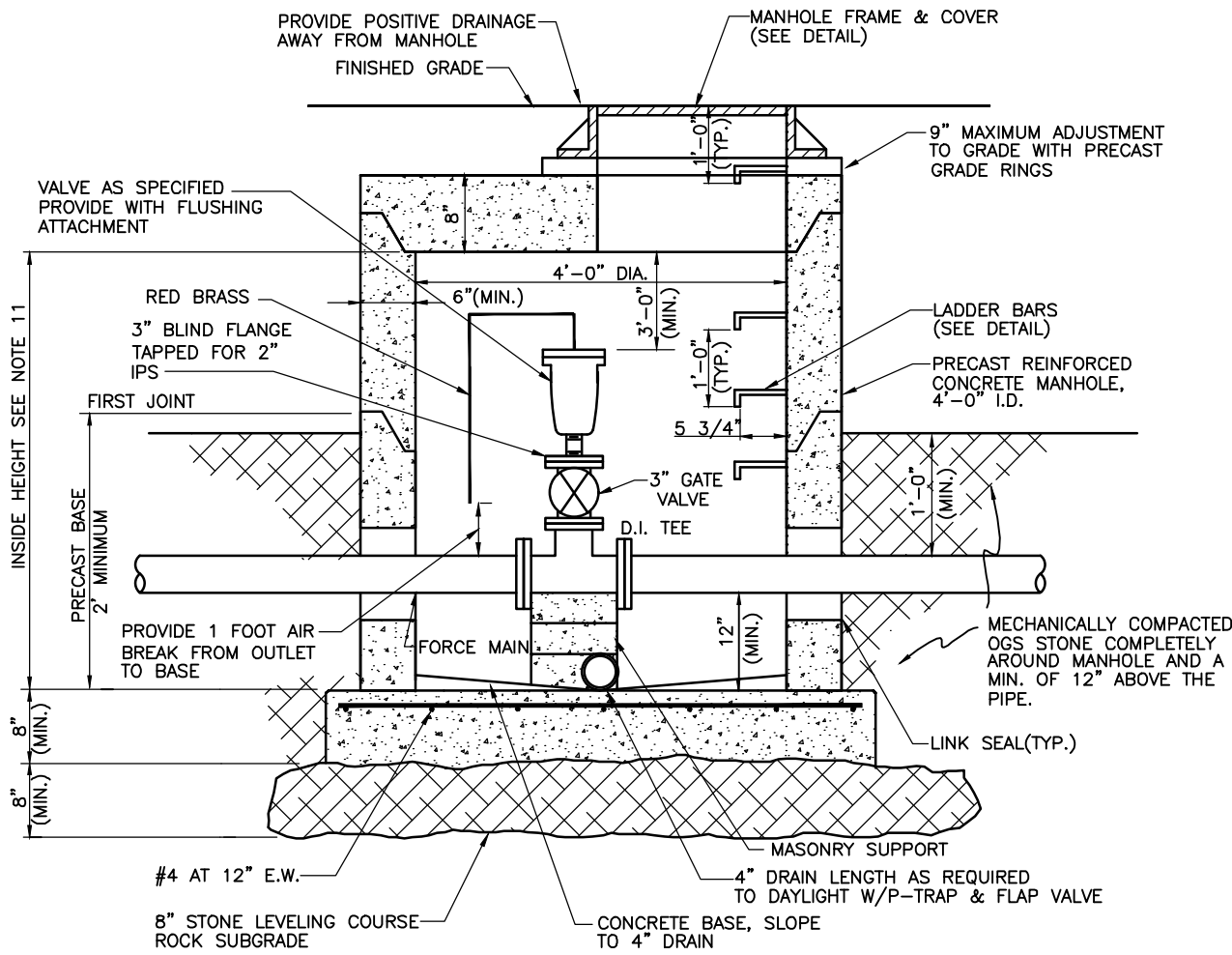
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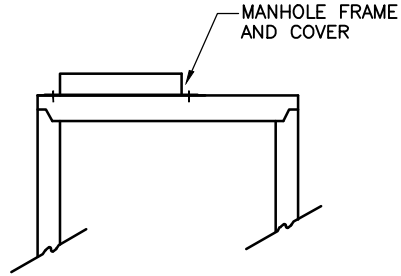
**Forcemain Vertical Blocking (150 PSI)**

DETAIL: BTSA-SAN-05



**NOTES :**

1. ALL CONCRETE TO BE CLASS A CONCRETE, 4000 PSI, 5%± 1% AIR ENTRAINED.
2. MANHOLE BARREL JOINTS TO BE SEALED WITH 1"Ø 2 FLEXIBLE BUTYL RUBBER JOINT SEALANT, USE 1/2"Ø FOR FRAME AND COVER.
3. FRAME AND COVER TO BE ANCHORED WITH 2-3/4" DIA. S.S. ANCHOR BOLTS SET PERMANENTLY ANCHORED INTO CONCRETE.
4. LIFTING HOLES TO BE POINTED WITH NON-SHRINK GROUT, AND LEFT WATERTIGHT, NEAT AND SMOOTH.
5. MAXIMUM ADJUSTMENT TO FINISHED GRADE USING PRECAST GRADE RINGS SHALL NOT EXCEED NINE INCHES (9").
6. PRECAST SECTIONS SHALL CONFORM TO ASTM C-478 AS REVISED.
7. COAT EXTERIOR OF ALL MANHOLE BARREL SECTIONS WITH APPROVED BITUMINOUS COATING.
8. CAST LADDER BARS INTO BARREL SECTIONS AND CONFORM TO ASTM C-478, AS REVISED.
9. PROVIDE ALL RED BRASS AND DUCTILE IRON PIPING, UNLESS NOTED.
10. PROVIDE ALL NECESSARY PIPE, FITTINGS AND/OR ADAPTORS TO MAKE A COMPLETE WATER TIGHT CONNECTION.
11. INSIDE HEIGHT TO BE SET BASED ON VALVE INSTALLED. ADJUST PIPE DEPTH AS REQUIRED. MINIMUM HEIGHT IS 6"-6".
11. MANHOLE FRAME AND COVER TO BE SET AT GRADE. BURIAL OF MANHOLE FRAME AND COVER IS PROHIBITED.



NOTE:  
MANHOLE SLAB TOP SHALL MEET MINIMUM H-20 LOADING AND SHALL BE USED TO MEET GRADES AND/OR OTHER CONDITIONS AS MAY BE REQUIRED.

**MANHOLE SLAB TOP**

**AIR/VACUUM RELEASE ASSEMBLY**

N. T. S.

**BRIGHTON TOWNSHIP  
SEWAGE AUTHORITY**

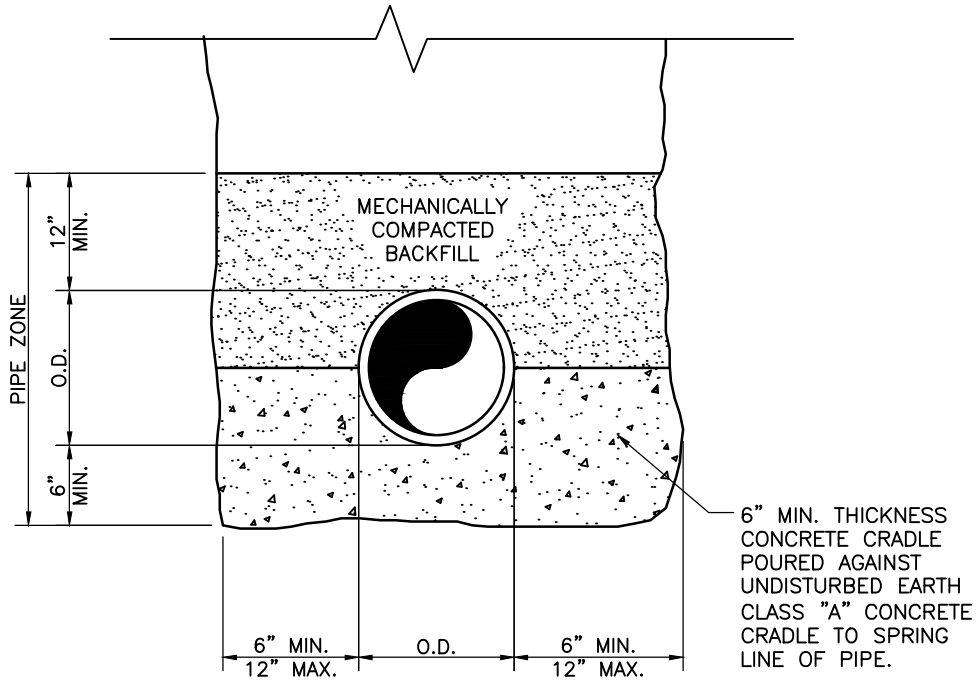
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Filename: BTSA-SAN-06.dwg  
Date: January 2024

**Air / Vacuum Release Assembly**

DETAIL: BTSA-SAN-06





**TYPICAL  
CONCRETE CRADLE**

N. T. S.

**NOTE:**  
RESTRAIN PIPE AS REQUIRED TO PREVENT FROM FLOATING OR DISPLACEMENT.

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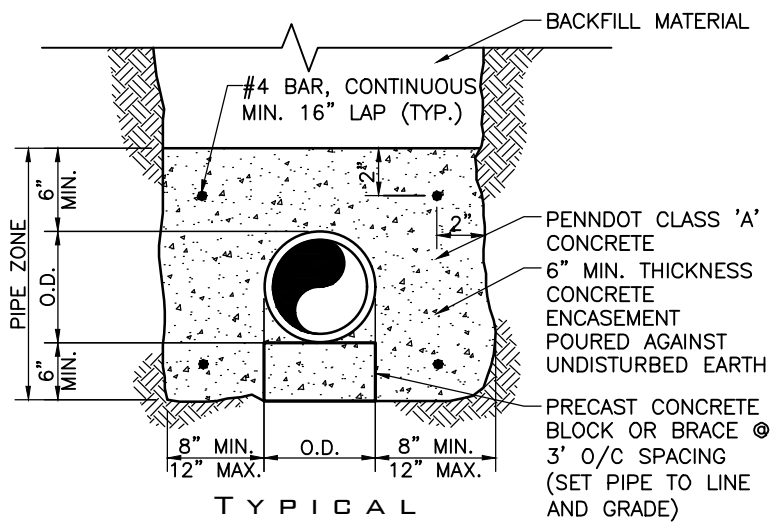
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Date: January 2024

**Concrete Cradle**

DETAIL: BTSA-SAN-07



**TYPICAL  
CONCRETE ENCASEMENT**

N. T. S.

**NOTE:**  
RESTRAIN PIPE AS REQUIRED TO  
PREVENT FROM FLOATING OR DISPLACEMENT.

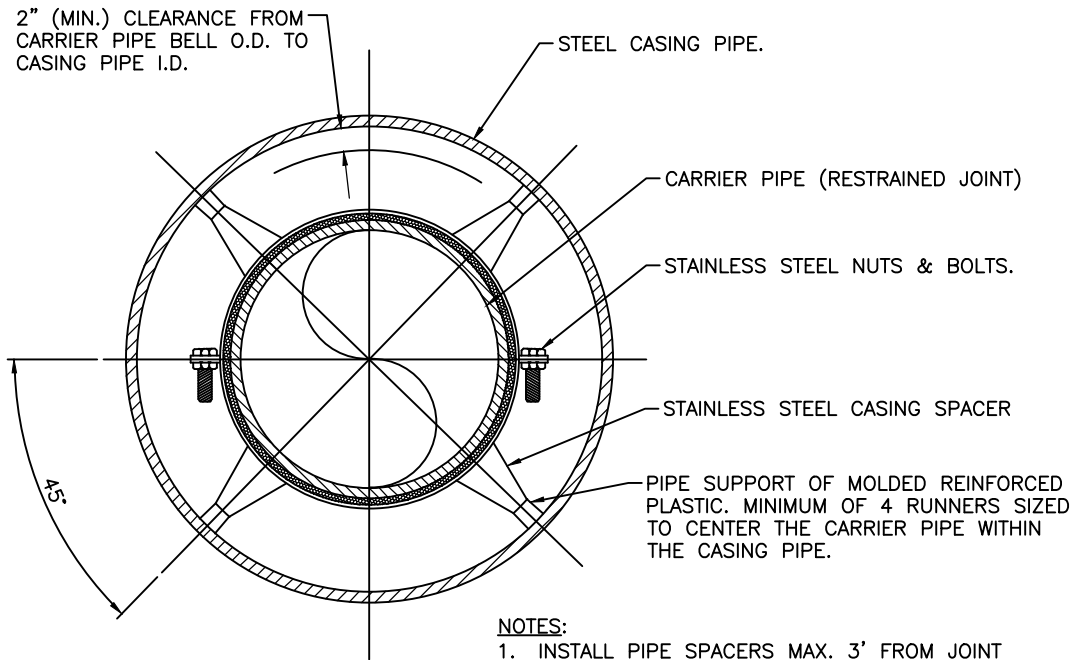
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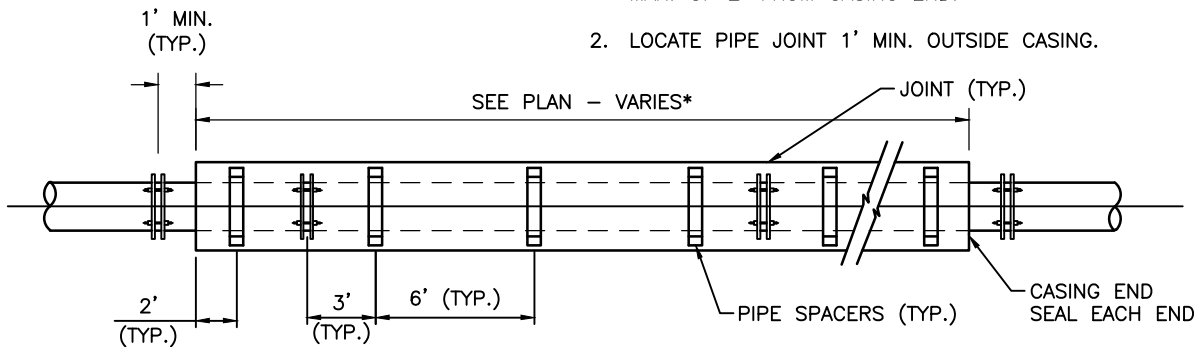
**Concrete Encasement**

DETAIL: BTSA-SAN-08



**NOTES:**

1. INSTALL PIPE SPACERS MAX. 3' FROM JOINT MAX. OF 6' BETWEEN SUPPORTS, AND A MAX. OF 2' FROM CASING END.
2. LOCATE PIPE JOINT 1' MIN. OUTSIDE CASING.



\* EXACT LENGTH OF CASING PIPE TO BE DETERMINED IN THE FIELD.

**CASING PIPE ASSEMBLY DETAIL**

N. T. S.

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SEWAGE AUTHORITY**

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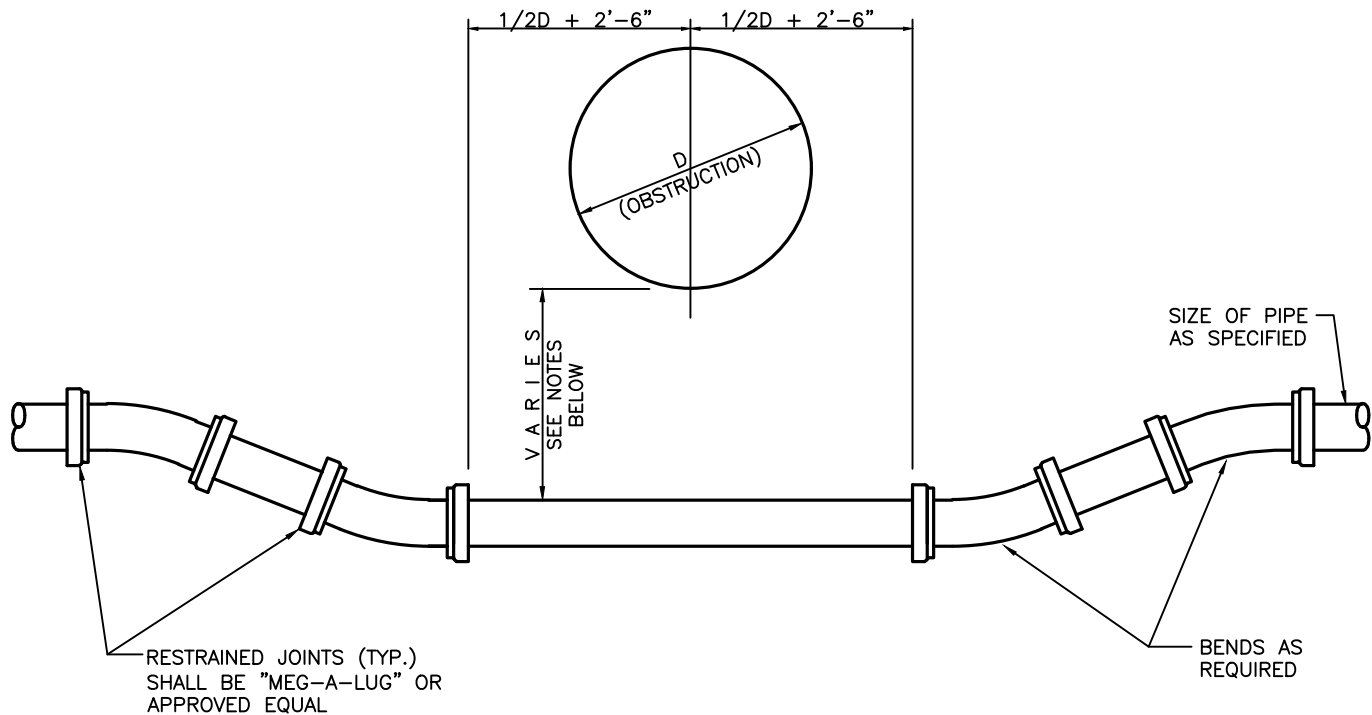
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Filename: BTSA-SAN-09.dwg

Date: January 2024

**Casing Pipe Assembly Detail**

DETAIL: BTSA-SAN-09



**NOTES:**

1. ALL PIPE SHALL BE DUCTILE IRON CLASS 52 SELF RESTRAINED JOINT FOR CREEK CROSSINGS WITH A MINIMUM OF 3'-0" COVER FROM THE STREAM BOTTOM TO THE TOP OF THE PIPE AND SHALL EXTEND A MINIMUM OF 10'-0" BEYOND THE TOP OF BANK ON EACH SIDE OF STREAM.
2. FOR CROSSING UNDER EXISTING PIPE OR OBSTRUCTIONS A MINIMUM OF 18" CLEARANCE SHALL BE MAINTAINED FROM THE BOTTOM OF THE EXISTING PIPE TO THE TOP OF THE PROPOSED FORCEMAIN.
3. FOR CROSSING UNDER EXISTING PIPE THE CONTRACTOR MAY ELIMINATE FITTINGS, IF DEPTH CAN BE OBTAINED BY DEFLECTING PIPE JOINTS WITHIN ALLOWABLE LIMITS AND IN ACCORDANCE WITH MANUFACTURES RECOMMENDATIONS.
4. SEE "FORCEMAIN VERTICAL BLOCKING" DETAIL.

**FORCEMAINS UNDER OBSTRUCTIONS**

N. T. S.

**BRIGHTON TOWNSHIP  
SEWAGE AUTHORITY**

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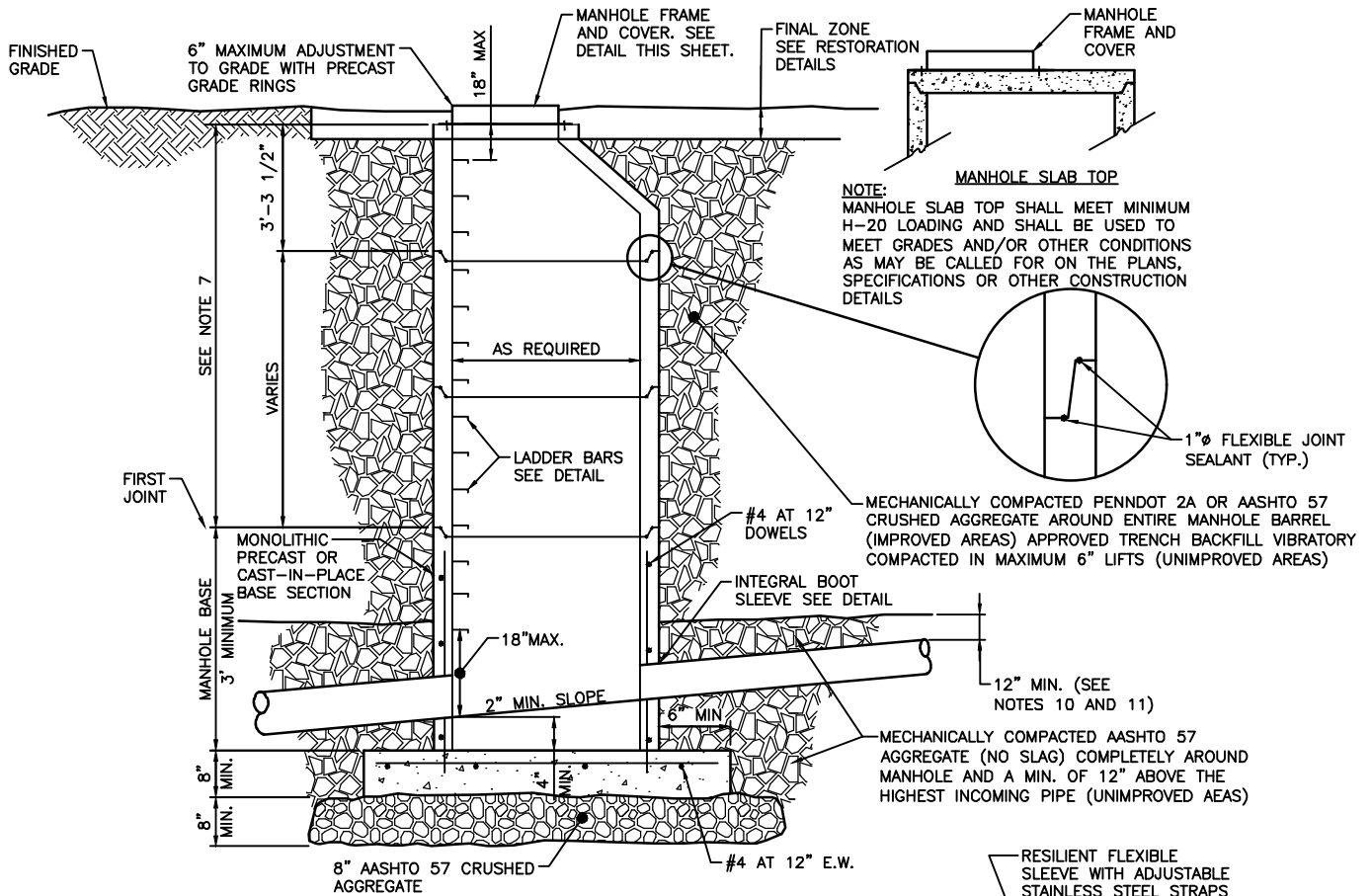
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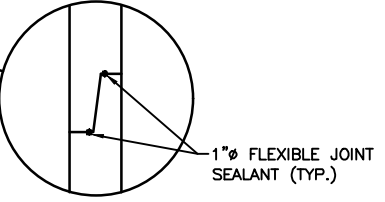
Date: January 2024

**Force mains Under Obstructions**

DETAIL: BTSA-SAN-10

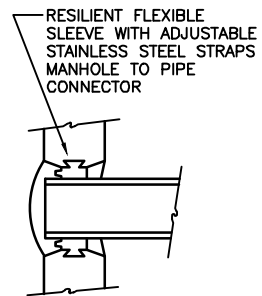


NOTE:  
 MANHOLE SLAB TOP SHALL MEET MINIMUM H-20 LOADING AND SHALL BE USED TO MEET GRADES AND/OR OTHER CONDITIONS AS MAY BE CALLED FOR ON THE PLANS, SPECIFICATIONS OR OTHER CONSTRUCTION DETAILS



MECHANICALLY COMPACTED PENNDOT 2A OR AASHTO 57 CRUSHED AGGREGATE AROUND ENTIRE MANHOLE BARREL (IMPROVED AREAS) APPROVED TRENCH BACKFILL VIBRATORY COMPACTED IN MAXIMUM 6" LIFTS (UNIMPROVED AREAS)

MECHANICALLY COMPACTED AASHTO 57 AGGREGATE (NO SLAG) COMPLETELY AROUND MANHOLE AND A MIN. OF 12" ABOVE THE HIGHEST INCOMING PIPE (UNIMPROVED AREAS)



INTEGRAL BOOT SLEEVE

**NOTES:**

1. ALL CONCRETE TO BE CLASS AAA CONCRETE, 4500 PSI, 5% ± 1% AIR ENTRAINED, AND XYPEX C-1000.
2. SEAL MANHOLE BARREL JOINTS WITH 2- 1"Ø FLEXIBLE BUTYL RUBBER JOINT SEALANT, USE 1/2"Ø FOR FRAME AND COVER.
3. ANCHOR FRAME AND COVER WITH 2-3/4" DIA. S.S. ANCHOR BOLTS SET PERMANENTLY INTO CONCRETE.
4. POINT LIFTING HOLES WITH NON-SHRINK GROUT, WATERTIGHT, NEAT AND SMOOTH.
5. MAXIMUM ADJUSTMENT TO FINISHED GRADE USING PRECAST GRADE RINGS IS SIX INCHES (6").
6. CONFORM PRECAST SECTIONS TO ASTM C-478 AS REVISED.
7. IF THIS DIMENSION IS LESS THAN 3'-3" USE PRECAST SLAB TOP DESIGNED TO MEET LOAD CONDITIONS (H-20 MIN.)
8. COAT EXTERIOR OF ALL MANHOLE BARREL SECTIONS WITH APPROVED BITUMINOUS COATING.
9. CAST LADDER BARS INTO BARREL SECTIONS AND CONFORMING TO ASTM C-478, AS REVISED.
10. WHERE MANHOLES ARE INSTALLED IN IMPROVED AREAS, BACKFILL THE ENTIRE EXCAVATED AREA WITH MECHANICALLY COMPACTED PENNDOT 2A OR AASHTO 57 CRUSHED AGGREGATE (NO SLAG).
11. WHERE MANHOLES ARE CONSTRUCTED IN UNIMPROVED AREAS, BACKFILL THE ENTIRE EXCAVATED AREA WITH MECHANICALLY COMPACTED PENNDOT 2A OR AASHTO 57 CRUSHED AGGREGATE (NO SLAG). FROM THE BOTTOM OF THE EXCAVATED AREA TO 12 INCHES ABOVE THE HIGHEST PIPE ENTERING THE MANHOLE.
12. MANHOLE FRAME AND COVER TO BE SET AT GRADE. BURIAL OF MANHOLE FRAME AND COVER IS PROHIBITED.

**TYPICAL  
 PRECAST CONCRETE SANITARY MANHOLE AND SLAB TOP**

N. T. S.

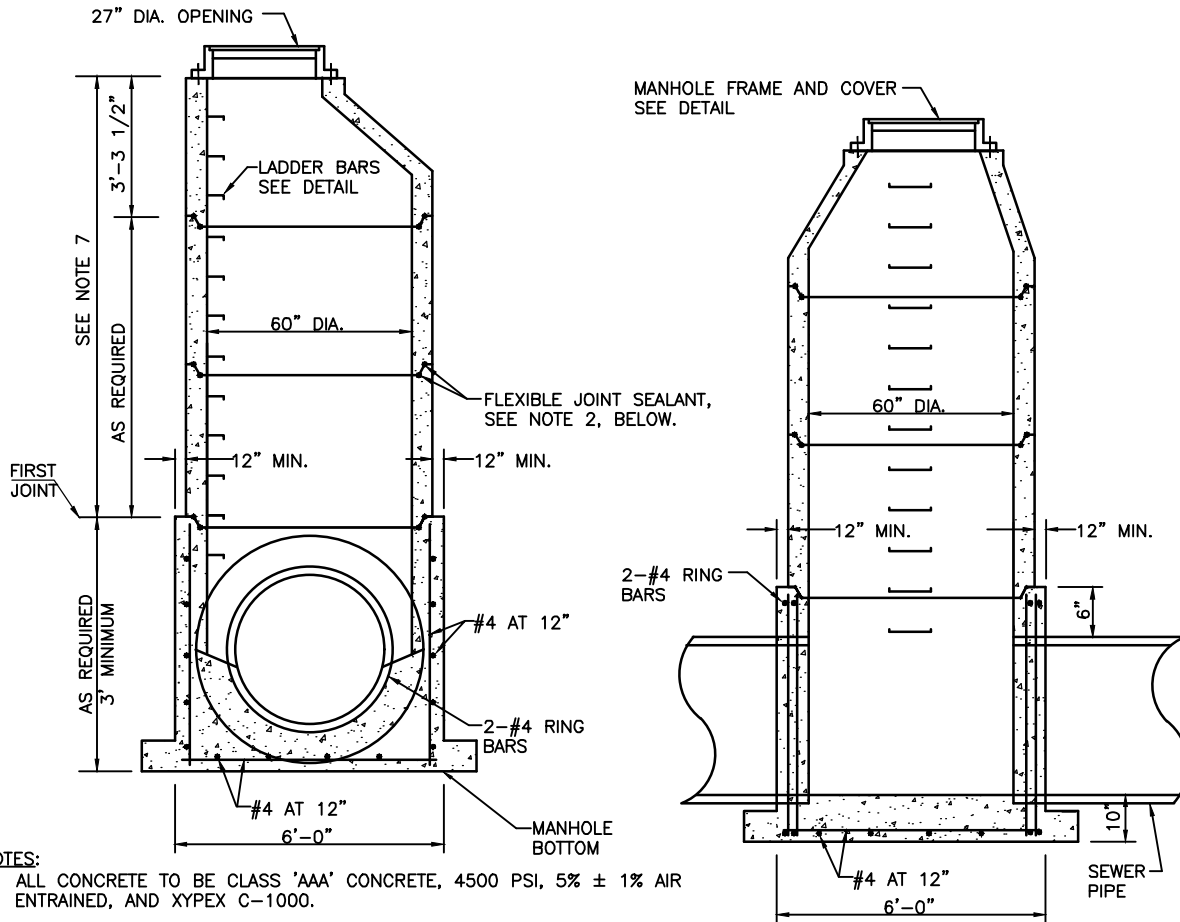
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Scale:	N.T.S.
Filename:	BTSA-SAN-11.dwg
Date:	January 2024

**Precast Concrete Manhole and Slab  
 Top**

DETAIL: BTSA-SAN-11



**NOTES:**

1. ALL CONCRETE TO BE CLASS 'AAA' CONCRETE, 4500 PSI, 5% ± 1% AIR ENTRAINED, AND XYPEX C-1000.
2. SEAL MANHOLE BARREL JOINTS WITH 2- 1"Ø FLEXIBLE BUTYL RUBBER JOINT SEALANT, USE 1/2"Ø FOR FRAME AND COVER.
3. ANCHOR FRAME AND COVER WITH 2-3/4" DIA. S.S. ANCHOR BOLTS SET PERMANENTLY ANCHORED INTO CONCRETE.
4. POINT LIFTING HOLES WITH NON-SHRINK GROUT, AND LEFT WATERTIGHT, NEAT AND SMOOTH.
5. MAXIMUM ADJUSTMENT TO FINISHED GRADE USING PRECAST GRADE RINGS SHALL NOT EXCEED SIX INCHES (6").
6. CONFORM PRECAST SECTIONS TO ASTM C-478 AS REVISED.
7. IF THIS DIMENSION IS LESS THAN 3'-3" USE PRECAST SLAB TOP DESIGNED TO MEET LOAD CONDITIONS.(H-20 MIN).
8. COAT EXTERIOR OF ALL MANHOLE BARREL SECTIONS WITH APPROVED BITUMINOUS COATING.
9. CAST LADDER BARS INTO BARREL SECTIONS AND SHALL CONFORM TO ASTM C-478, AS REVISED.
10. WHERE MANHOLES ARE INSTALLED IN IMPROVED AREAS, THE ENTIRE EXCAVATED AREA SHALL BE BACKFILLED WITH PENNDOT 2A OR AASHTO 57 CRUSHED AGGREGATE.
11. WHERE MANHOLES ARE CONSTRUCTED IN UNIMPROVED AREAS, BACKFILL THE ENTIRE EXCAVATED AREA WITH PENNDOT 2A OR AASHTO 57 CRUSHED AGGREGATE FROM THE BOTTOM OF THE EXCAVATED AREA TO 12 INCHES ABOVE THE HIGHEST PIPE ENTERING THE MANHOLE.
12. PROVIDE FLANGED BASE.
13. MANHOLE FRAME AND COVER TO BE SET AT GRADE. BURIAL OF MANHOLE FRAME AND COVER IS PROHIBITED.

**CAST-IN PLACE OR PRECAST CONCRETE  
5' DIAMETER SANITARY MANHOLE**

N. T. S.

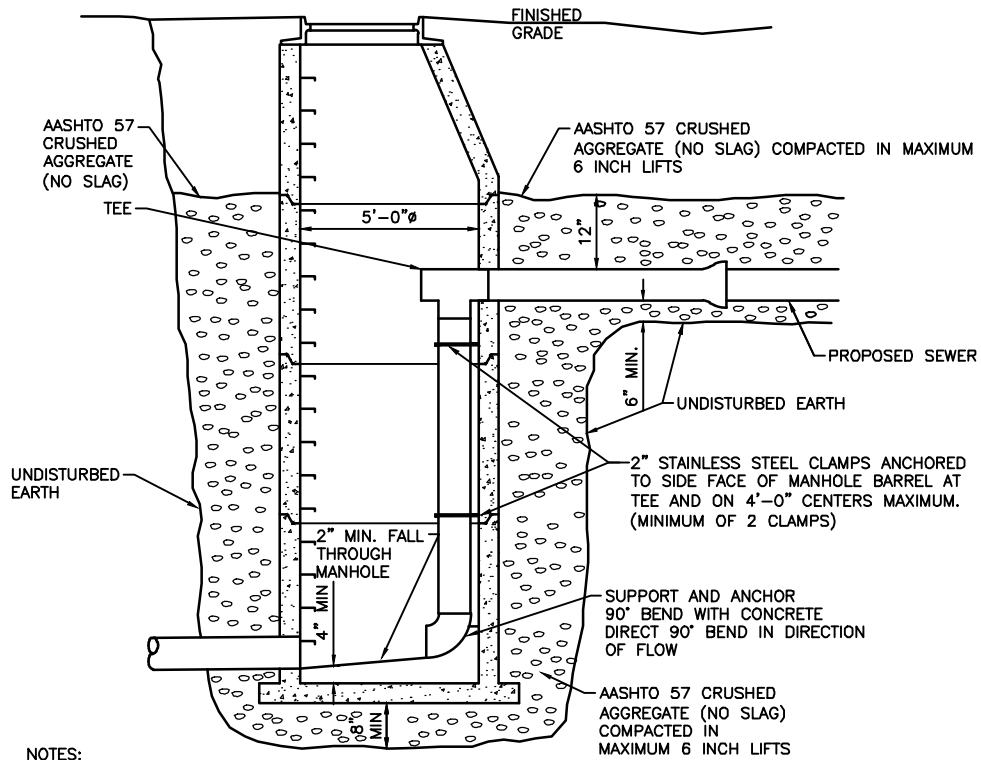
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Scale:	N.T.S.
Filename:	BTSA-SAN-12.dwg
Date:	January 2024

# Cast-In-Place or Precast 5' Diameter Sanitary Manhole

DETAIL: BTSA-SAN-12



**NOTES:**

1. USE SAME PIPE MATERIAL USED TO CONSTRUCT THE MAIN FROM WHICH THE DROP CONNECTION IS MADE.
2. PVC DROP CONNECTION PIPE SHALL BE ASTM SDR 26.
3. DIAMETER OF THE DROP CONNECTION INLET PIPING SHALL EQUAL THE DIAMETER OF THE INLET PIPE.
4. MECHANICALLY COMPACTED AASHTO No. 57 CRUSHED AGGREGATE (NO SLAG) 8" MINIMUM LEVELING COURSE UNDER BOTTOM OF MANHOLE.
5. PROVIDE 5'-0" DIAMETER MANHOLES FOR MANHOLE DROP CONNECTIONS. SEE 5' DIAMETER SANITARY MANHOLE DETAIL.
6. ALL MOUNTING HARDWARE TO BE STAINLESS STEEL.

TYPICAL  
INSIDE MANHOLE DROP CONNECTION  
**8", 10", 12" AND 15" DIAMETER SEWER PIPES**  
N. T. S.

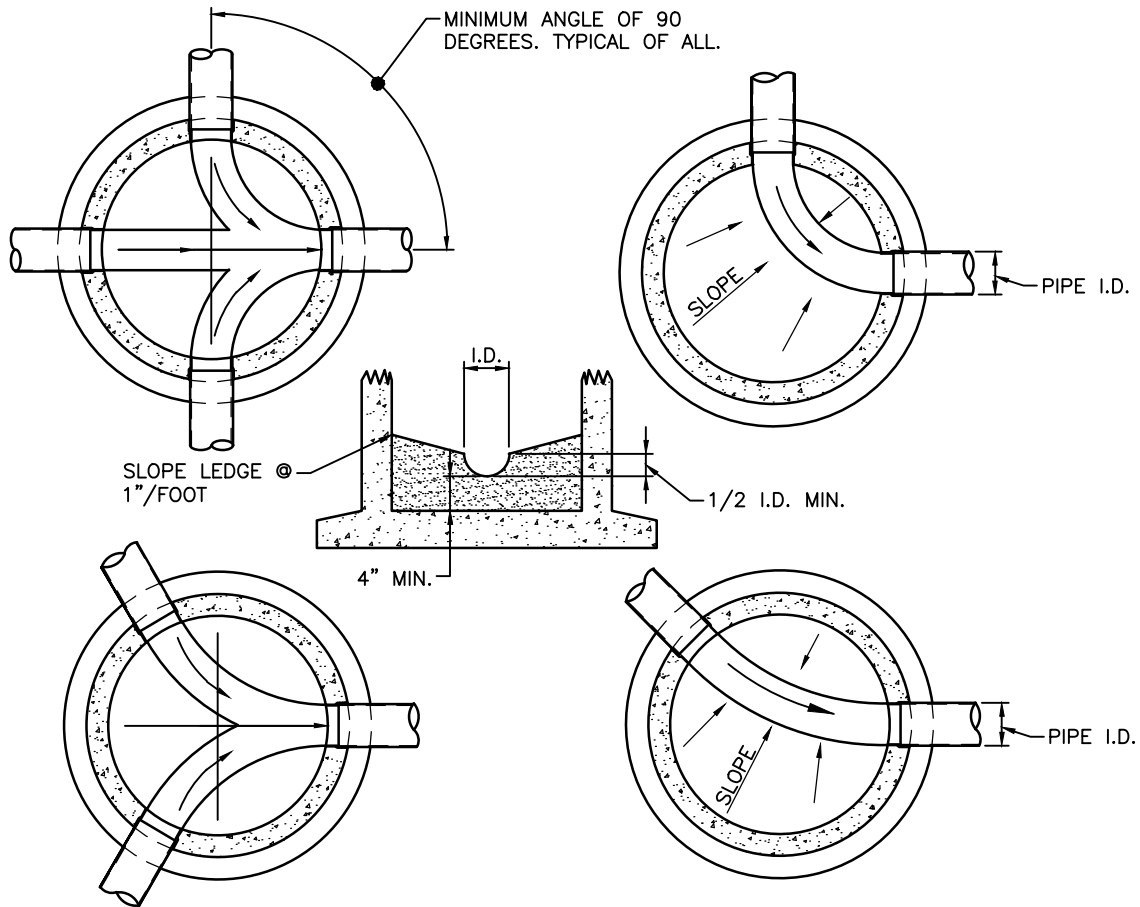
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Scale: N.T.S.  
Filename: BTSA-SAN-13.dwg  
Date: January 2024

**Inside Manhole Drop Connection 8",  
10", 12", and 15" Diameter Sewer  
Pipes**

DETAIL: BTSA-SAN-13



**NOTES:**

1. CHANNELS TYPICAL, NUMBER AND LOCATION TO MEET FIELD CONDITIONS.
2. CHANNELS TO BE SEMI-CIRCULAR IN SECTION.
3. SLOPE MANHOLE FLOOR TO CHANNEL FOR DRAINAGE.
4. USE CLASS 'AAA' CONCRETE TO FORM CHANNELS AND HAVE A MINIMUM DEPTH OF 4 INCHES.
5. PROVIDE SMOOTH FLOAT FINISH. PROVIDE UNIFORM RADIUS.
6. PRE-POURED INVERTS PROHIBITED. ALL INVERTS TO BE FIELD POURED.
7. EDGE OF FILLET TO EXTEND 2" ABOVE INVERT AT PIPE.

TYPICAL  
**MANHOLE CHANNELS**  
 N. T. S.

**BRIGHTON TOWNSHIP  
 SEWAGE AUTHORITY**

1300 Brighton Road  
 Beaver, Pennsylvania 15009

Scale: N.T.S.

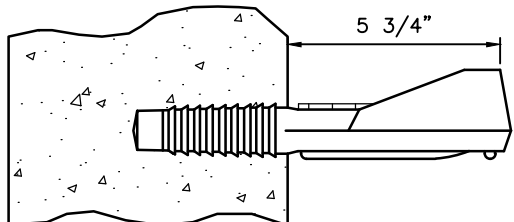
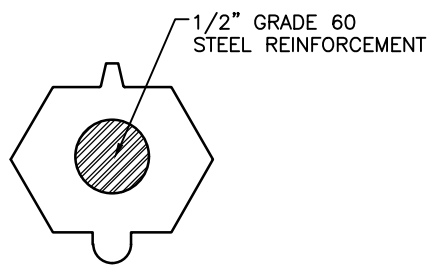
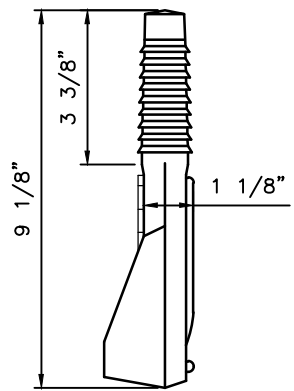
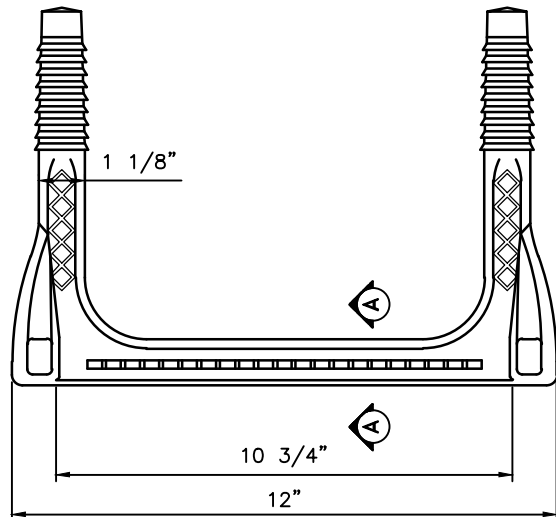
Filename: BTSA-SAN-14.dwg

Date: January 2024

**Manhole Channels**

DETAIL: BTSA-SAN-14





TYPICAL  
**LADDER BARS FOR MANHOLE**  
 N. T. S.

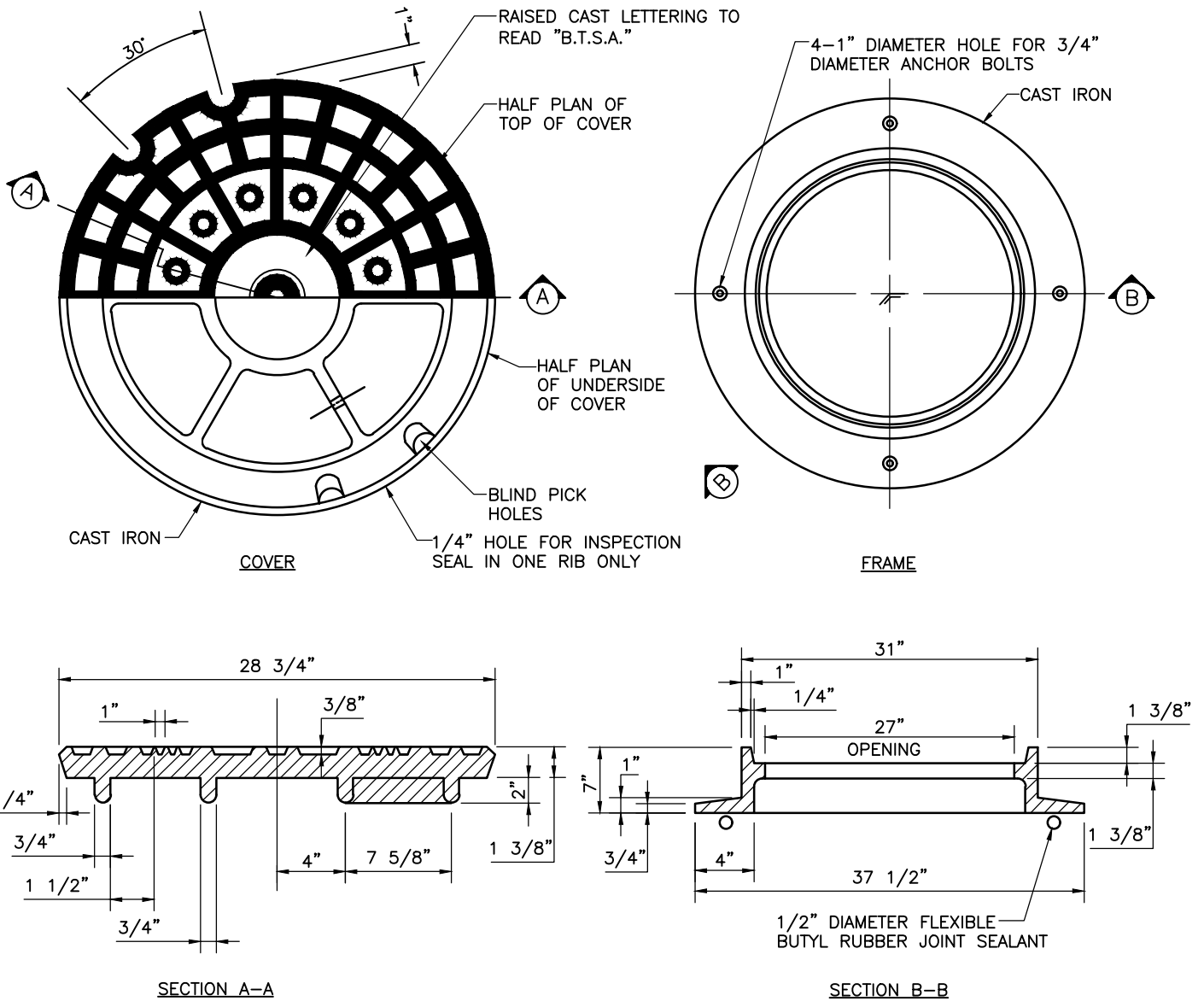
**BRIGHTON TOWNSHIP  
 SEWAGE AUTHORITY**

1300 Brighton Road  
 Beaver, Pennsylvania 15009

Scale:	N.T.S.
Filename:	BTSA-SAN-15.dwg
Date:	January 2024

## Ladder Bars for Manhole

DETAIL: BTSA-SAN-15



TYPICAL  
**STANDARD SANITARY MANHOLE FRAME AND COVER**

N. T. S.

**NOTES:**

1. MANHOLE FRAME AND COVER TO BE SET AT GRADE. BURIAL OF MANHOLE FRAME AND COVER IS PROHIBITED.

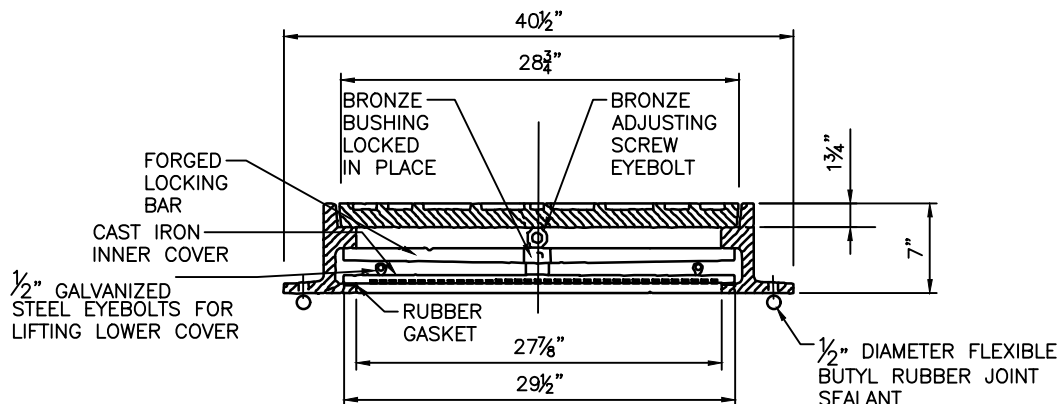
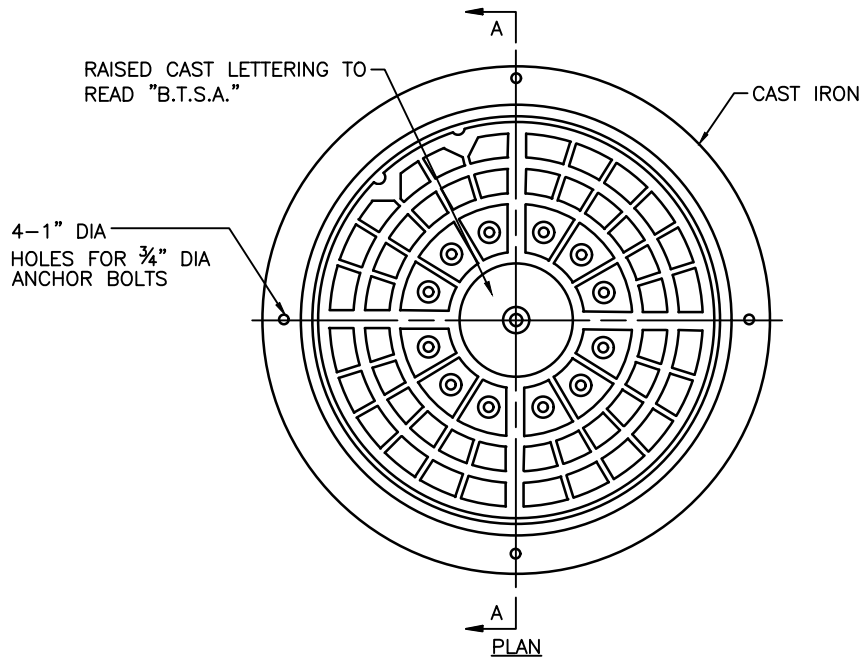
**BRIGHTON TOWNSHIP  
 SEWAGE AUTHORITY**

1300 Brighton Road  
 Beaver, Pennsylvania 15009

Scale: N.T.S.  
 Filename: BTSA-SAN-16.dwg  
 Date: January 2024

**Standard Sanitary Manhole Frame  
 and Cover**

DETAIL: BTSA-SAN-16



**NOTES:**

**SECTION A-A**

1. ALL CONTACT SURFACES MACHINED.
2. PROVIDE SECURITY SADDLE OVER EYEBOLT IF SPECIFIED.
3. REFER TO STANDARD SANITARY MANHOLE FRAME AND COVER DETAIL FOR DETAIL ON COVER.
4. RAISED CAST LETTERING TO READ "B.T.S.A."
5. MANHOLE FRAME AND COVER TO BE SET AT GRADE. BURIAL OF MANHOLE FRAME AND COVER IS PROHIBITED.

**WATERTIGHT SANITARY MANHOLE FRAME AND COVER**

N. T. S.

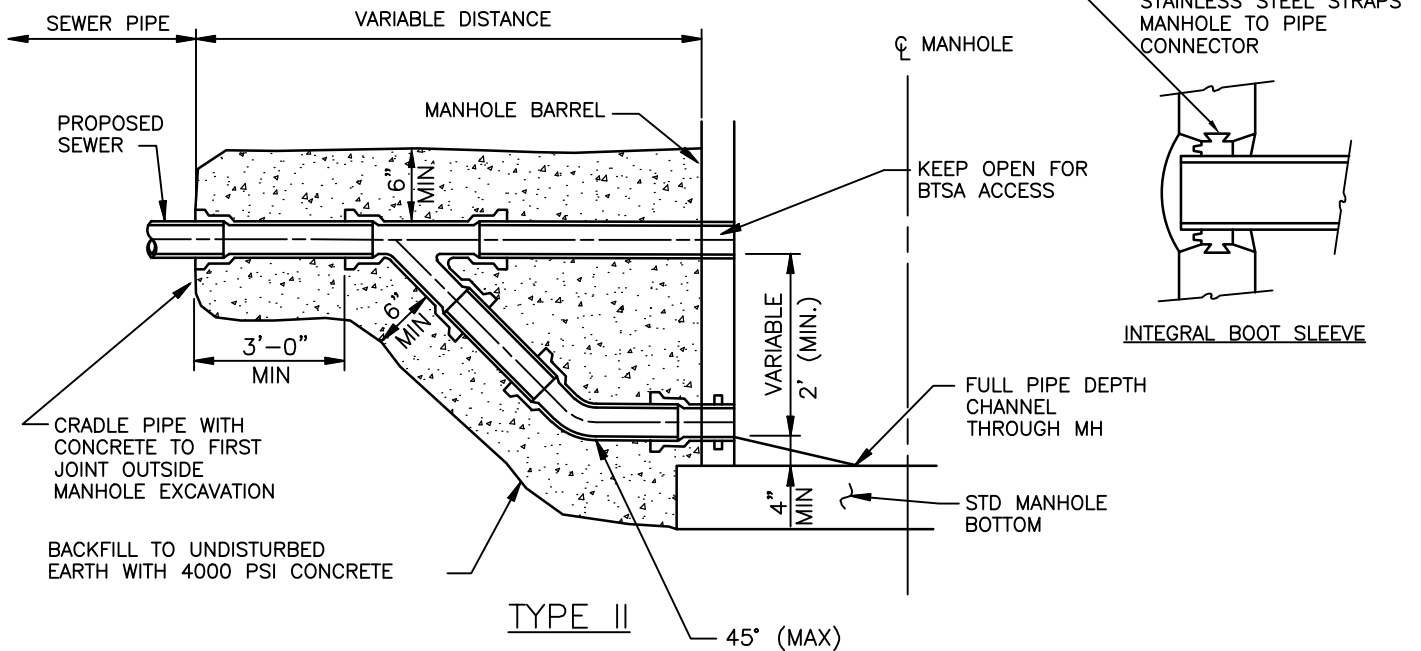
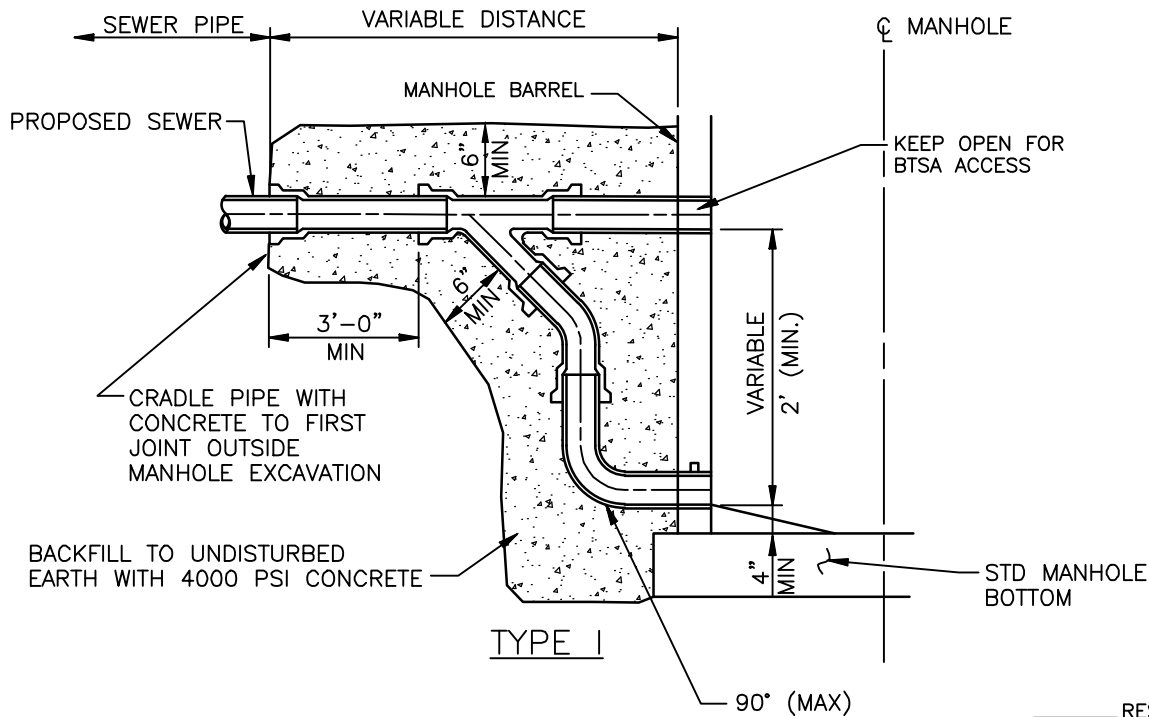
**BRIGHTON TOWNSHIP  
SEWAGE AUTHORITY**

1300 Brighton Road  
Beaver, Pennsylvania 15009

Scale: N.T.S.  
Filename: BTSA-SAN-17.dwg  
Date: January 2024

**Watertight Sanitary Manhole Frame  
and Cover (with Inner Cover Option)**

DETAIL: BTSA-SAN-17



**NOTES:**

1. OUTSIDE DROP CONNECTIONS ARE PERMITTED ONLY WHEN CONNECTING TO EXISTING MANHOLES AND WITH APPROVAL FROM THE OWNER.
2. SEE STANDARD DRAWINGS AND SPECIFICATIONS FOR MANHOLE CONSTRUCTION REQUIREMENTS.
3. USE TYPE II UNLESS SHOWN OTHERWISE ON CONTRACT DRAWINGS.
4. ALL PIPING SHOWN TO BE DUCTILE IRON WITH EPOXY LINING. CONNECT TO UPSTREAM SEWER USING EPOXY COATED DRESSER COUPLING WITH STAINLESS STEEL NUTS AND BOLTS.

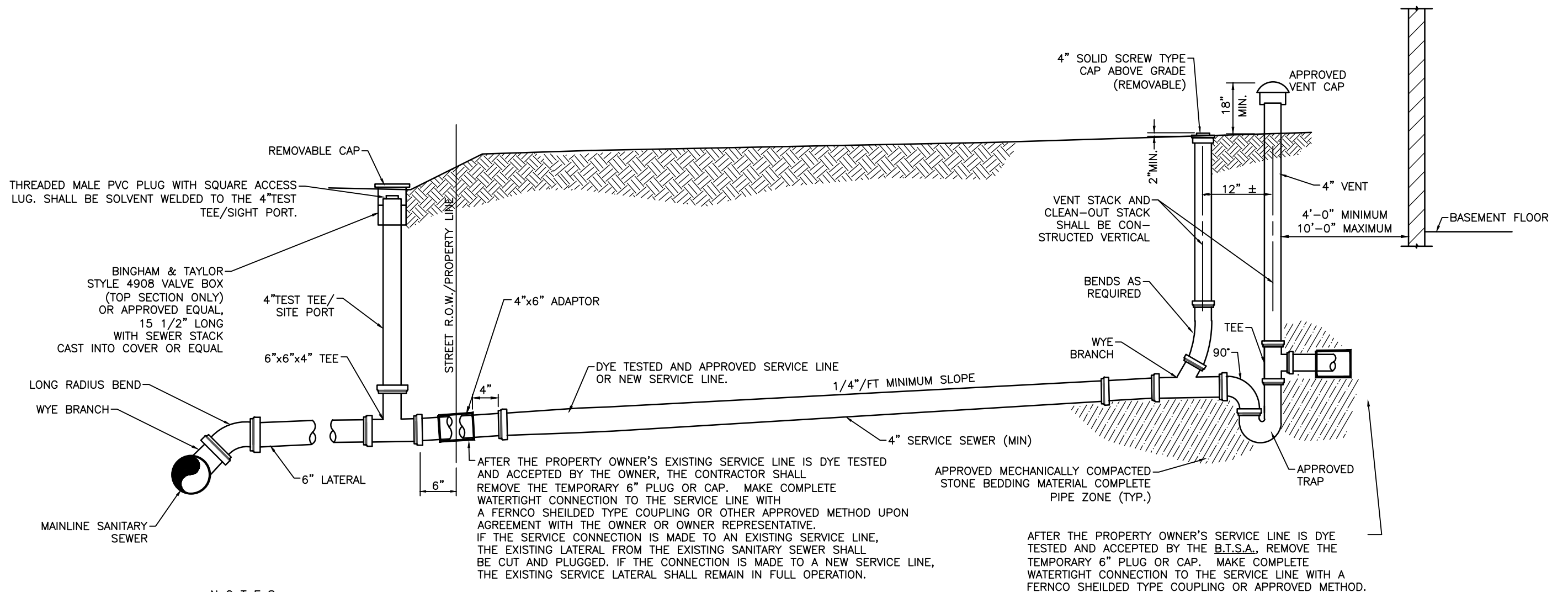
**BRIGHTON TOWNSHIP  
SEWAGE AUTHORITY**

1300 Brighton Road  
Beaver, Pennsylvania 15009

Scale: N.T.S.  
Filename: BTSA-SAN-18.dwg  
Date: January 2024

**Outside Drop Connection**

DETAIL: BTSA-SAN-18



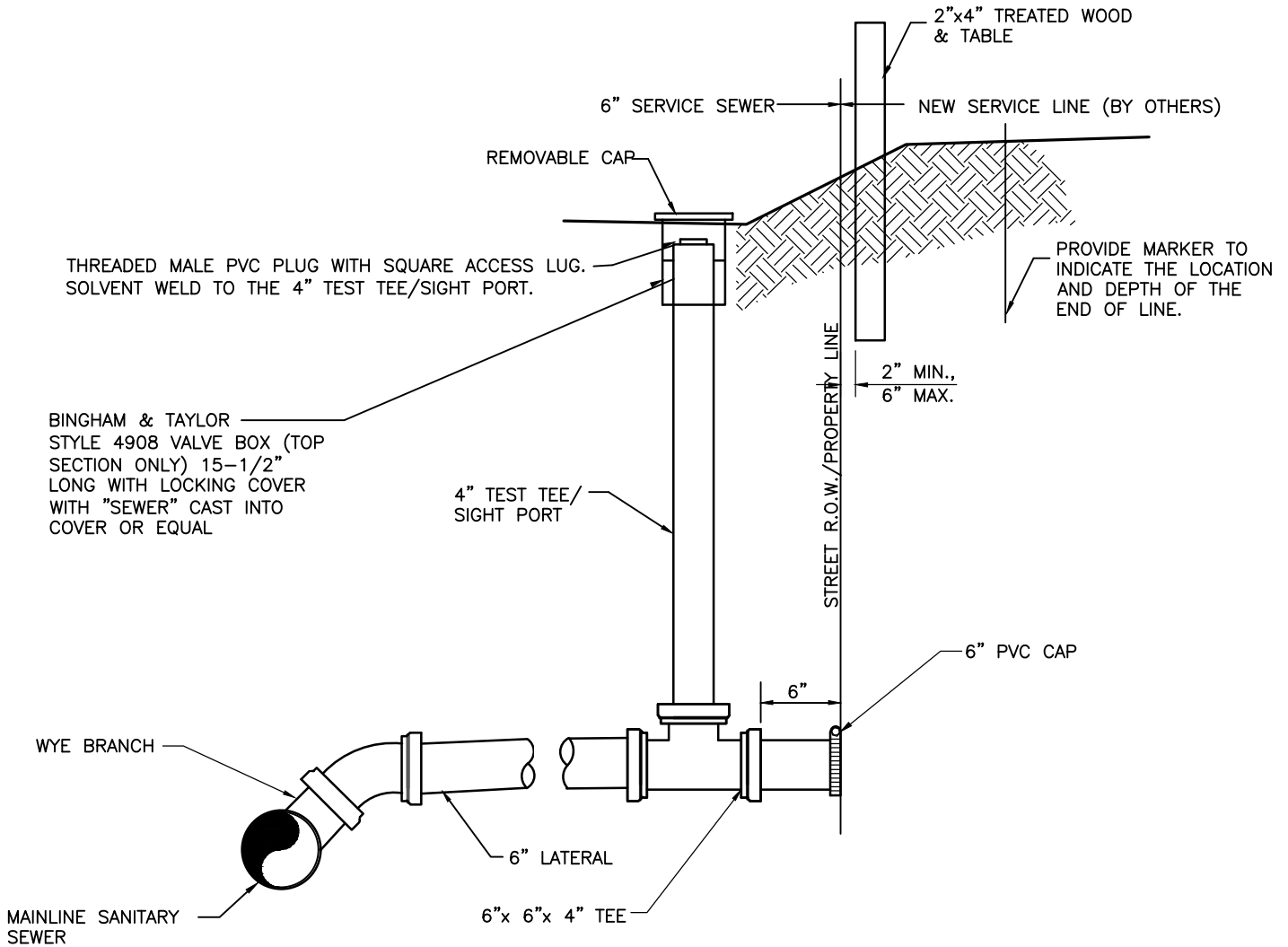
**NOTES:**

1. CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF SERVICE LATERAL WITH PROPERTY OWNER TO BE SERVED.
2. PVC PIPE SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3034-SDR 26 AND ASTM D-3212 JOINTS.
3. PRIOR TO RECONNECTION TO THE EXISTING SERVICE LATERAL THE CONTRACTOR SHALL DYE TEST ROOF DOWN SPOUTS AND STORM WATER DRAIN LINES AS DETERMINED BY THE B.T.S.A. OR B.T.S.A. REPRESENTATIVE AND AT NO ADDITIONAL COST TO THE INSTALLATION.
4. THE CONTRACTOR SHALL SCHEDULE ALL HOUSE LATERAL CONNECTIONS WITH THE B.T.S.A. REPRESENTATIVE AND PROPERTY OWNER PRIOR TO START OF CONSTRUCTION ON PRIVATE PROPERTY.
5. PROVIDE A MINIMUM OF 42-INCHES OF COVER ALONG THE LENGTH OF SERVICE LATERAL LINE.
6. BTSA RESERVES THE RIGHT TO HAVE THE CONTRACTOR APPLY AN AIR TEST. AIR TEST TO BE PERFORMED BY PLUGGING FREE ENDS OF SEWER PIPING, INTRODUCING LOW PRESSURE AIR INTO SEALED SEWER SECTION UNTIL INTERNAL AIR PRESSURE IS 5 PSIG. MAINTAIN INTERNAL AIR PRESSURE OF 5 PSIG FOR 5 MINUTES WITH 0.0 PSIG ALLOWABLE PRESSURE DROP FOR ACCEPTANCE.

**TYPICAL SIGHT TEE, SERVICE LINE CLEANOUT AND VENT**

N. T. S.

<b>BRIGHTON TOWNSHIP SEWAGE AUTHORITY</b>  1300 Brighton Road Beaver, Pennsylvania 15009	Scale:	N.T.S.	<b>Typical Sight Tee, Service Line Cleanout and Vent</b>  DETAIL: BTSA-SAN-19
	Filename:	BTSA-SAN-19.dwg	
	Date:	January 2024	



**NOTES:**

1. CONFORM PVC PIPE AND FITTINGS TO THE REQUIREMENTS OF ASTM D-3034-SDR 26 AND ASTM D-3212 JOINTS.
2. CONSTRUCT ALL LATERALS AT A MINIMUM SLOPE OF TWO PERCENT(2%).
3. INSTALL ALL LATERALS ACCORDING TO THE TRENCH AND PIPE ZONE DETAIL.
4. THE CONTRACTOR TO COORDINATE PLACEMENT OF WYE CONNECTION, SERVICE LATERAL AND SIGHT TEE WITH THE PROPERTY OWNER AND THE OWNER'S REPRESENTATIVE PRIOR TO THE START OF CONSTRUCTION.
5. DEPTH TO FLOW LINE TO BE MARKED INDELIBLY ON STAKE.
6. FOR ALL CONNECTIONS TO MAINLINE SANITARY SEWER OVER DEPTH OF 12', TEE TO BE CONCRETE ENCASED (SEE CONCRETE ENCASEMENT DETAIL).

TYPICAL  
WYE CONNECTION, SERVICE LATERAL  
**SIGHT TEE DETAIL**

N. T. S.

**BRIGHTON TOWNSHIP  
SEWAGE AUTHORITY**

1300 Brighton Road  
Beaver, Pennsylvania 15009

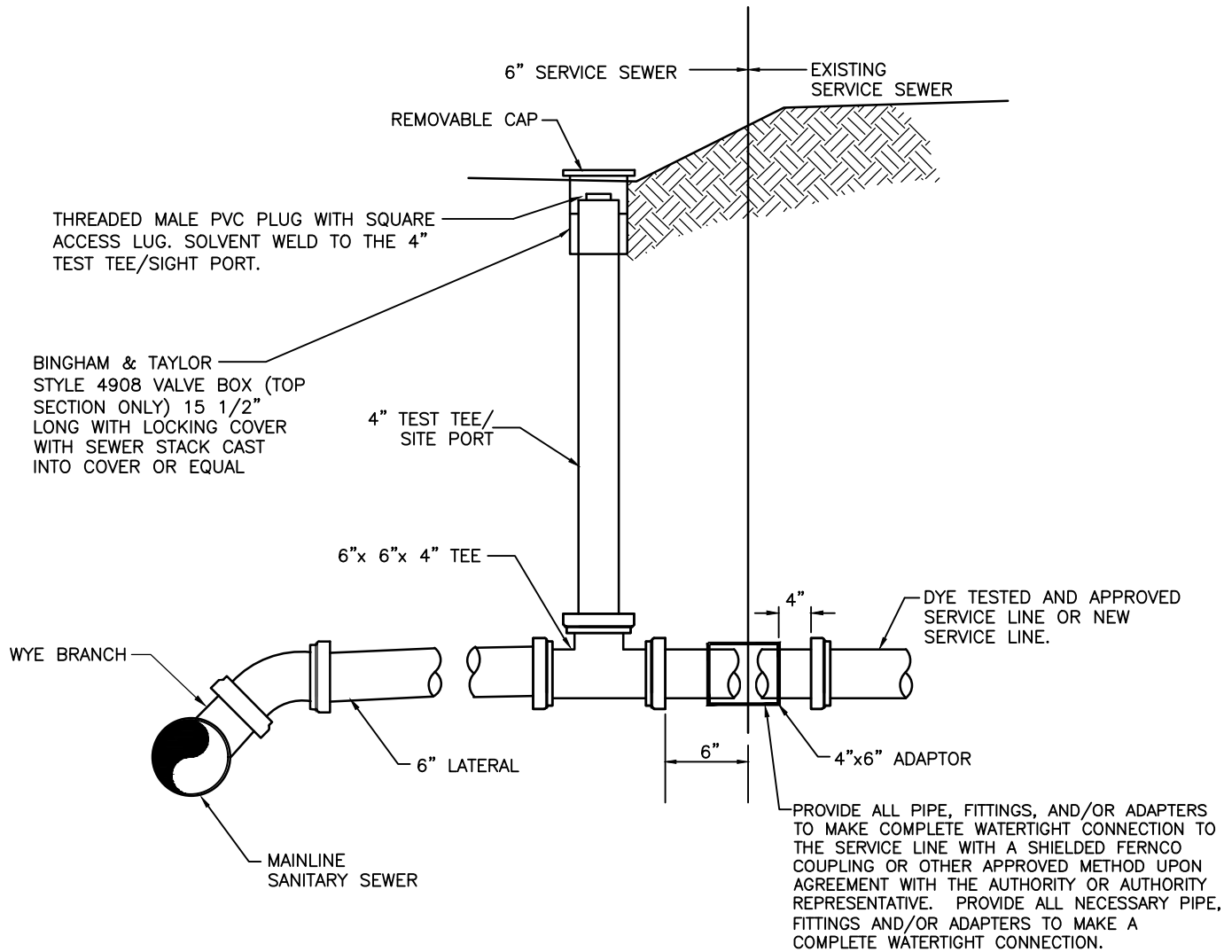
Scale: N.T.S.

Filename:  
BTSA-SAN-20.dwg

Date: January 2024

**Wye Connection, Service Lateral  
Sight Tee Detail (New Service)**

DETAIL: BTSA-SAN-20



**WYE CONNECTION, SERVICE LATERAL, AND SIGHT TEE**

N. T. S.

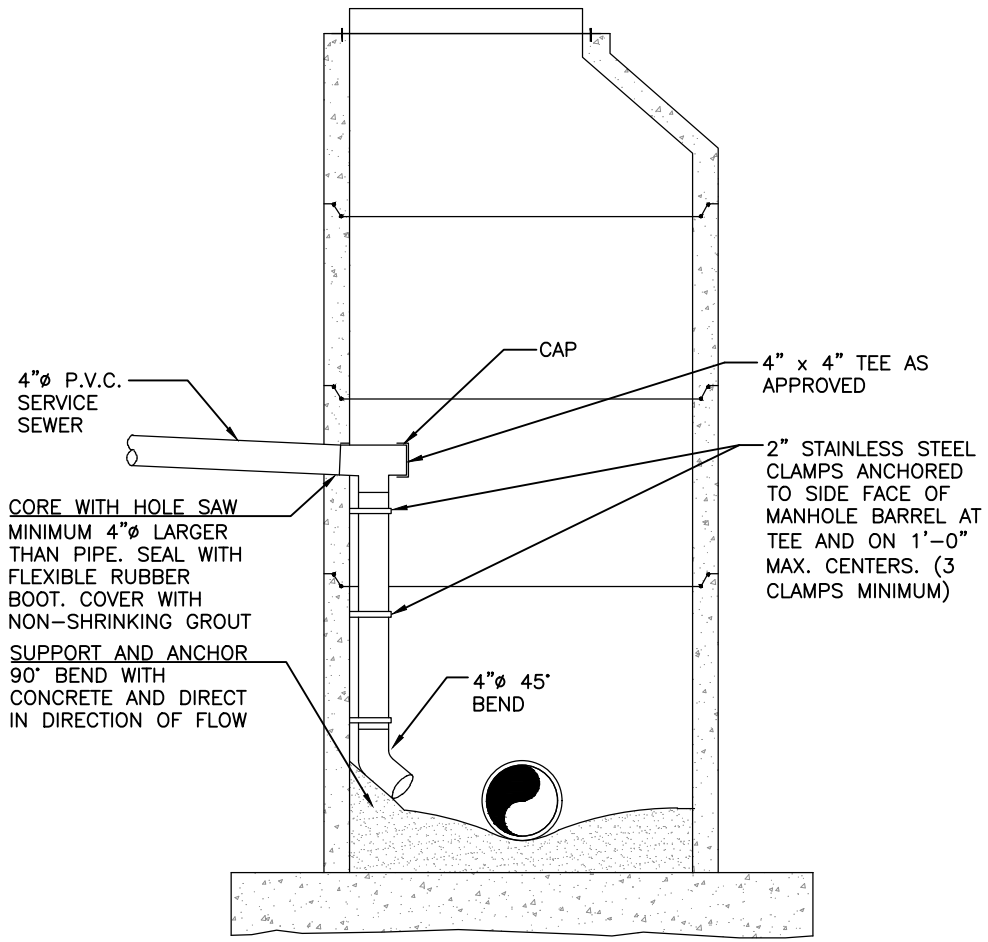
**BRIGHTON TOWNSHIP  
SEWAGE AUTHORITY**

1300 Brighton Road  
Beaver, Pennsylvania 15009

Scale: N.T.S.  
Filename: BTSA-SAN-21.dwg  
Date: January 2024

**Wye Connection, Service Lateral  
Sight Tee Detail (Existing Service)**

DETAIL: BTSA-SAN-21



**NOTE:**  
 DROP CONNECTION INLET PIPE SHALL BE 4"  $\phi$  P.V.C. PIPE CONFORMING TO ASTM SDR26.

TYPICAL  
**SERVICE CONNECTION AT MANHOLE**  
 N. T. S.

**BRIGHTON TOWNSHIP  
 SEWAGE AUTHORITY**

1300 Brighton Road  
 Beaver, Pennsylvania 15009

Scale: N.T.S.

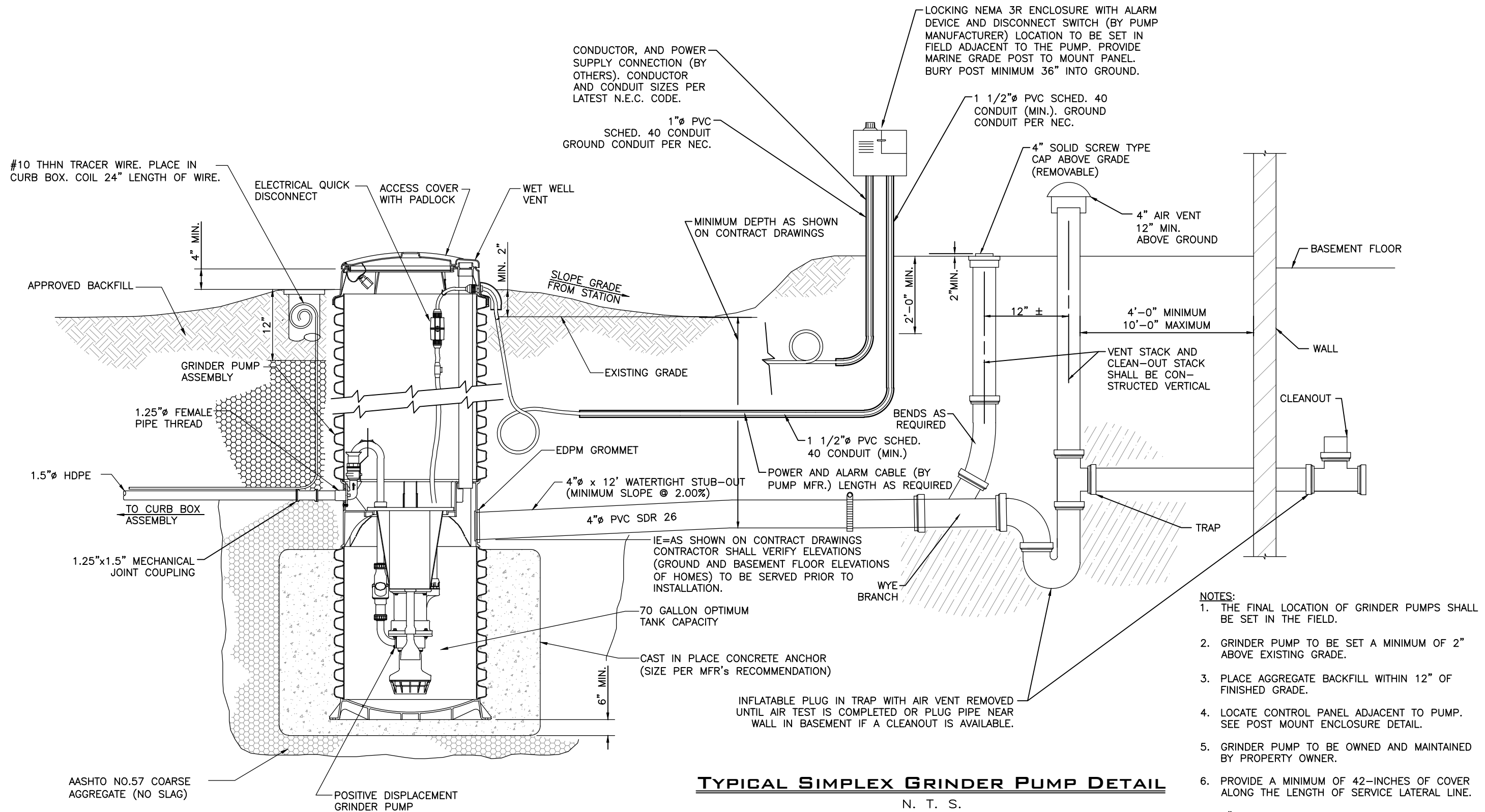
Filename: BTSA-SAN-22.dwg

Date: January 2024

**Service Connection at Manhole**

DETAIL: BTSA-SAN-22





- NOTES:**
1. THE FINAL LOCATION OF GRINDER PUMPS SHALL BE SET IN THE FIELD.
  2. GRINDER PUMP TO BE SET A MINIMUM OF 2" ABOVE EXISTING GRADE.
  3. PLACE AGGREGATE BACKFILL WITHIN 12" OF FINISHED GRADE.
  4. LOCATE CONTROL PANEL ADJACENT TO PUMP. SEE POST MOUNT ENCLOSURE DETAIL.
  5. GRINDER PUMP TO BE OWNED AND MAINTAINED BY PROPERTY OWNER.
  6. PROVIDE A MINIMUM OF 42-INCHES OF COVER ALONG THE LENGTH OF SERVICE LATERAL LINE.
  7. 4" PVC SDR-26 PIPING TO BE BACKFILLED WITH PEA GRAVEL OR AASHTO No. 57 COARSE AGGREGATE (NO SLAG).
  8. GRINDER LINE TO BE BACKFILLED WITH SAND OR PEA GRAVEL.

**TYPICAL SIMPLEX GRINDER PUMP DETAIL**  
N. T. S.

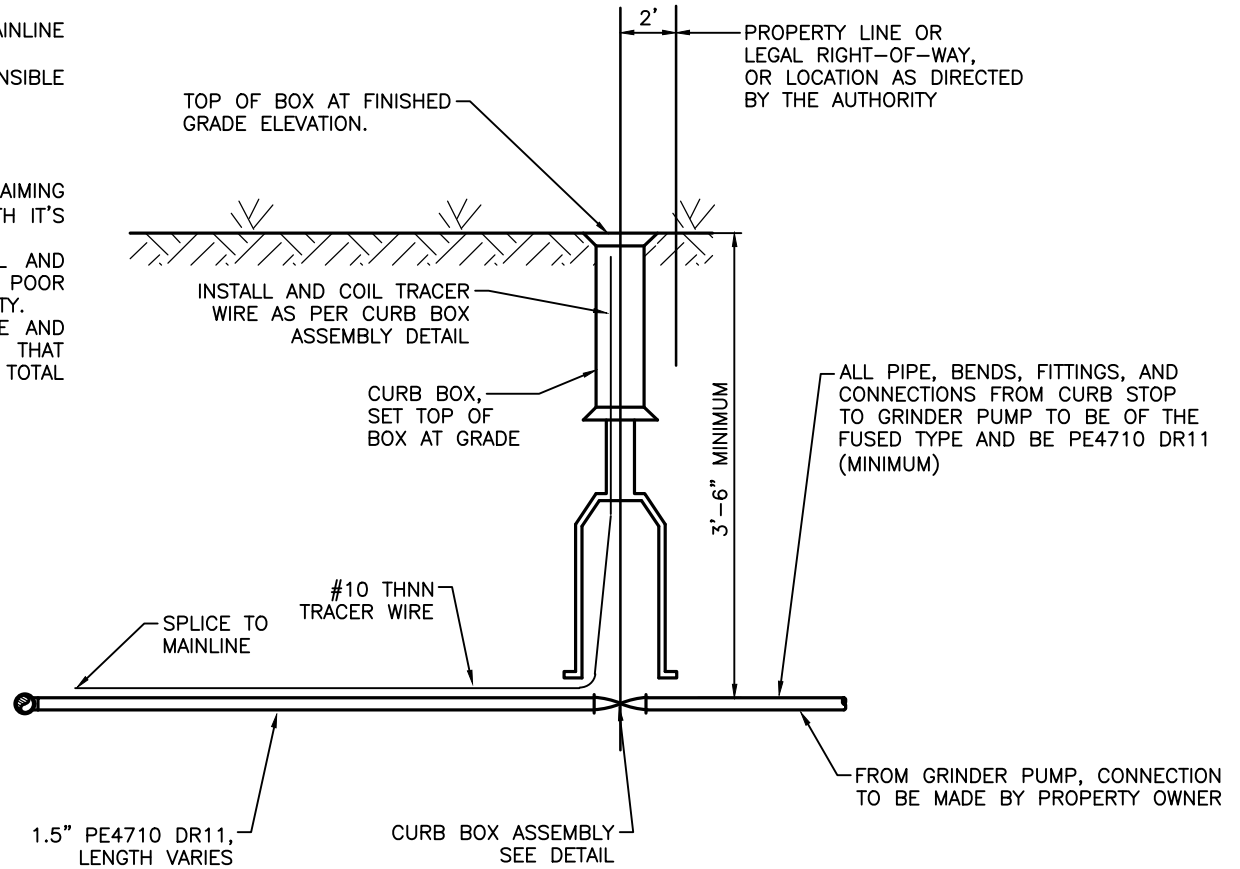
<b>BRIGHTON TOWNSHIP SEWAGE AUTHORITY</b>  1300 Brighton Road Beaver, Pennsylvania 15009	Scale:	N.T.S.	<b>Typical Simplex Grinder Pump Detail</b>
	Filename:	BTSA-SAN-23.dwg	
	Date:	January 2024	
		DETAIL: BTSA-SAN-23	

**NOTES:**

1. THE CONTRACTOR AND/OR PROPERTY OWNER IS TO COORDINATE SERVICE LATERAL LOCATION WITH AN AUTHORITY REPRESENTATIVE PRIOR TO THE START OF CONSTRUCTION.
2. EXCAVATOR IS RESPONSIBLE FOR ALL PA ONE CALLS.
3. AN AUTHORITY REPRESENTATIVE SHALL BE PRESENT DURING THE CONSTRUCTION OF THE SERVICE LATERAL, ANY CONNECTION TO AUTHORITY LINES, AND/OR TESTING. THIS INSPECTION SHOULD BE COORDINATED BY THE CONTRACTOR AND THE AUTHORITY.
4. SERVICE LATERAL FROM CURB BOX ASSEMBLY TO MAINLINE SHALL BE HYDROSTATICALLY TESTED PRIOR TO DISCHARGE.
5. THE CONTRACTOR AND/OR PROPERTY OWNER IS RESPONSIBLE FOR RESTORING SITE TO ORIGINAL CONDITIONS.

**DISCLAIMER:**

1. THE AUTHORITY IS NOT RESPONSIBLE FOR, NOR CLAIMING OWNERSHIP OF ANY GRINDER PUMPS INSTALLED ALONG WITH IT'S INDIVIDUAL GRINDER LINE.
2. IT IS THE ONUS OF THE PROPERTY OWNER TO INSTALL AND MAINTAIN THE GRINDER PUMP. ANY MALFUNCTIONS OR POOR PERFORMANCE WILL NOT BE INVESTIGATED BY THE AUTHORITY.
3. IT IS THE ONUS OF THE PROPERTY OWNER TO PURCHASE AND INSTALL A POSITIVE DISPLACEMENT GRINDER PUMP THAT AVERAGES 15 GALLONS PER MINUTE AT 60 FEET OF TOTAL DYNAMIC HEAD.



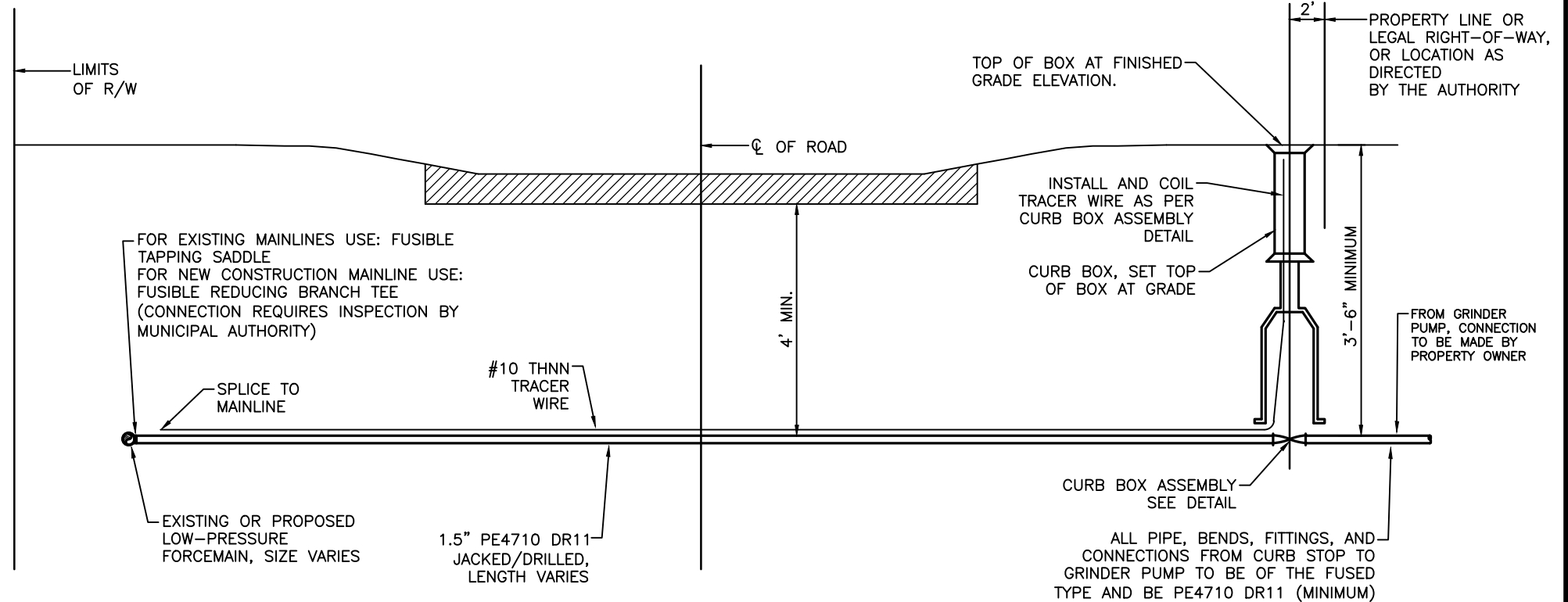
<b>BRIGHTON TOWNSHIP SEWAGE AUTHORITY</b>  1300 Brighton Road Beaver, Pennsylvania 15009	Scale:	N.T.S.	<h1>Force Main Short Service Connection</h1>
	Filename:	BTSA-SAN-24.dwg	
	Date:	January 2024	
	DETAIL: BTSA-SAN-24		

**NOTES:**

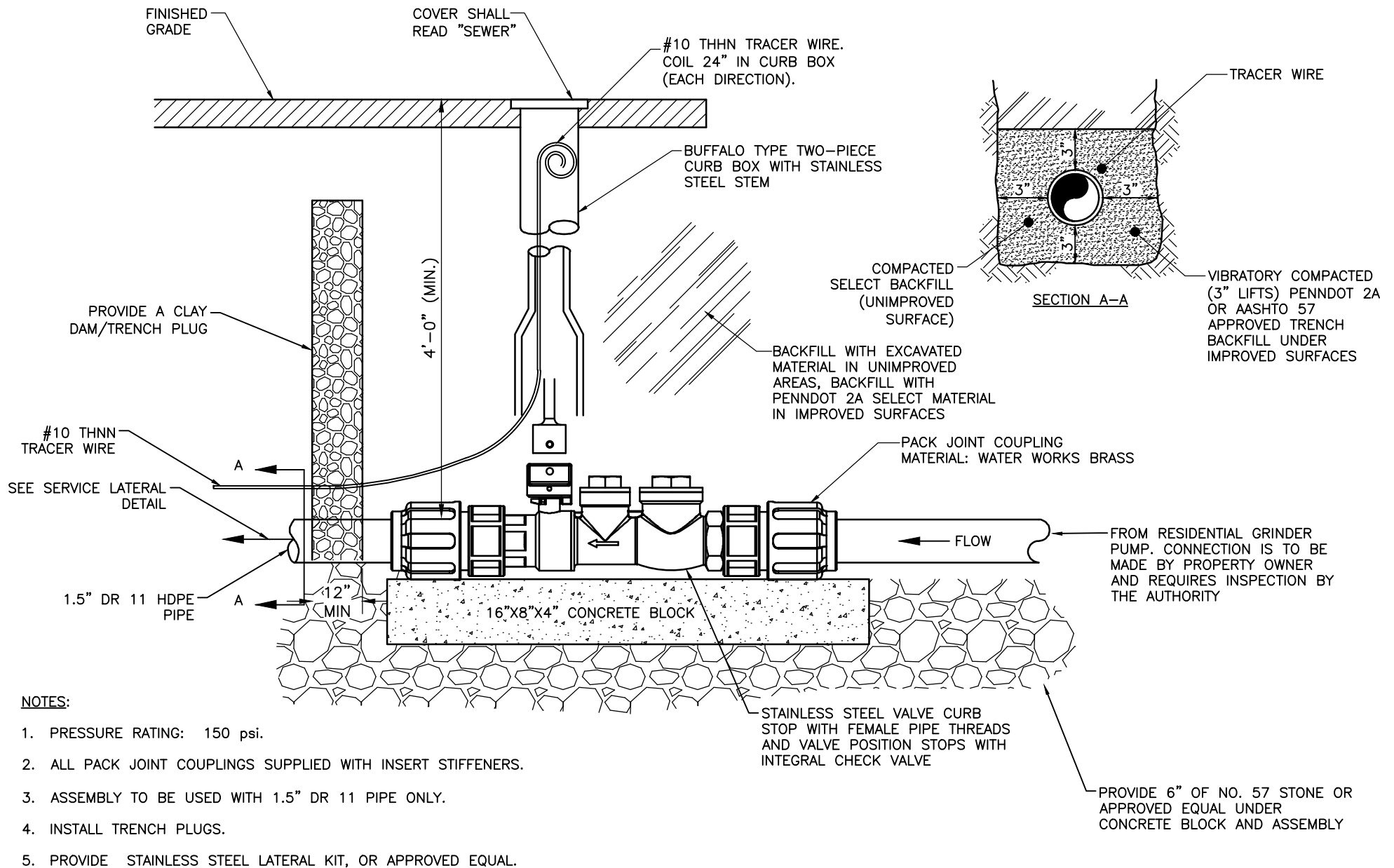
1. THE CONTRACTOR AND/OR PROPERTY OWNER IS TO COORDINATE SERVICE LATERAL LOCATION WITH AN AUTHORITY REPRESENTATIVE PRIOR TO THE START OF CONSTRUCTION.
2. EXCAVATOR IS RESPONSIBLE FOR ALL PA ONE CALLS.
3. AN AUTHORITY REPRESENTATIVE SHALL BE PRESENT DURING THE CONSTRUCTION OF THE SERVICE LATERAL, ANY CONNECTION TO AUTHORITY LINES, AND/OR TESTING. THIS INSPECTION SHOULD BE COORDINATED BY THE CONTRACTOR AND THE AUTHORITY.
4. SERVICE LATERAL FROM CURB BOX ASSEMBLY TO MAINLINE SHALL BE HYDROSTATICALLY TESTED PRIOR TO DISCHARGE.
5. THE CONTRACTOR AND/OR PROPERTY OWNER IS RESPONSIBLE FOR RESTORING SITE TO ORIGINAL CONDITIONS.

**DISCLAIMER:**

1. THE AUTHORITY IS NOT RESPONSIBLE FOR, NOR CLAIMING OWNERSHIP OF ANY GRINDER PUMPS INSTALLED ALONG WITH IT'S INDIVIDUAL GRINDER LINE.
2. IT IS THE ONUS OF THE PROPERTY OWNER TO INSTALL AND MAINTAIN THE GRINDER PUMP. ANY MALFUNCTIONS OR POOR PERFORMANCE WILL NOT BE INVESTIGATED BY THE AUTHORITY.
3. IT IS THE ONUS OF THE PROPERTY OWNER TO PURCHASE AND INSTALL A POSITIVE DISPLACEMENT GRINDER PUMP THAT AVERAGES 15 GALLONS PER MINUTE AT 60 FEET OF TOTAL DYNAMIC HEAD.



<b>BRIGHTON TOWNSHIP SEWAGE AUTHORITY</b>  1300 Brighton Road Beaver, Pennsylvania 15009	Scale:	N.T.S.	<h1 style="margin: 0;">Force Main Long Service Connection</h1>
	Filename:	BTSA-SAN-25.dwg	
	Date:	January 2024	
	DETAIL: BTSA-SAN-25		



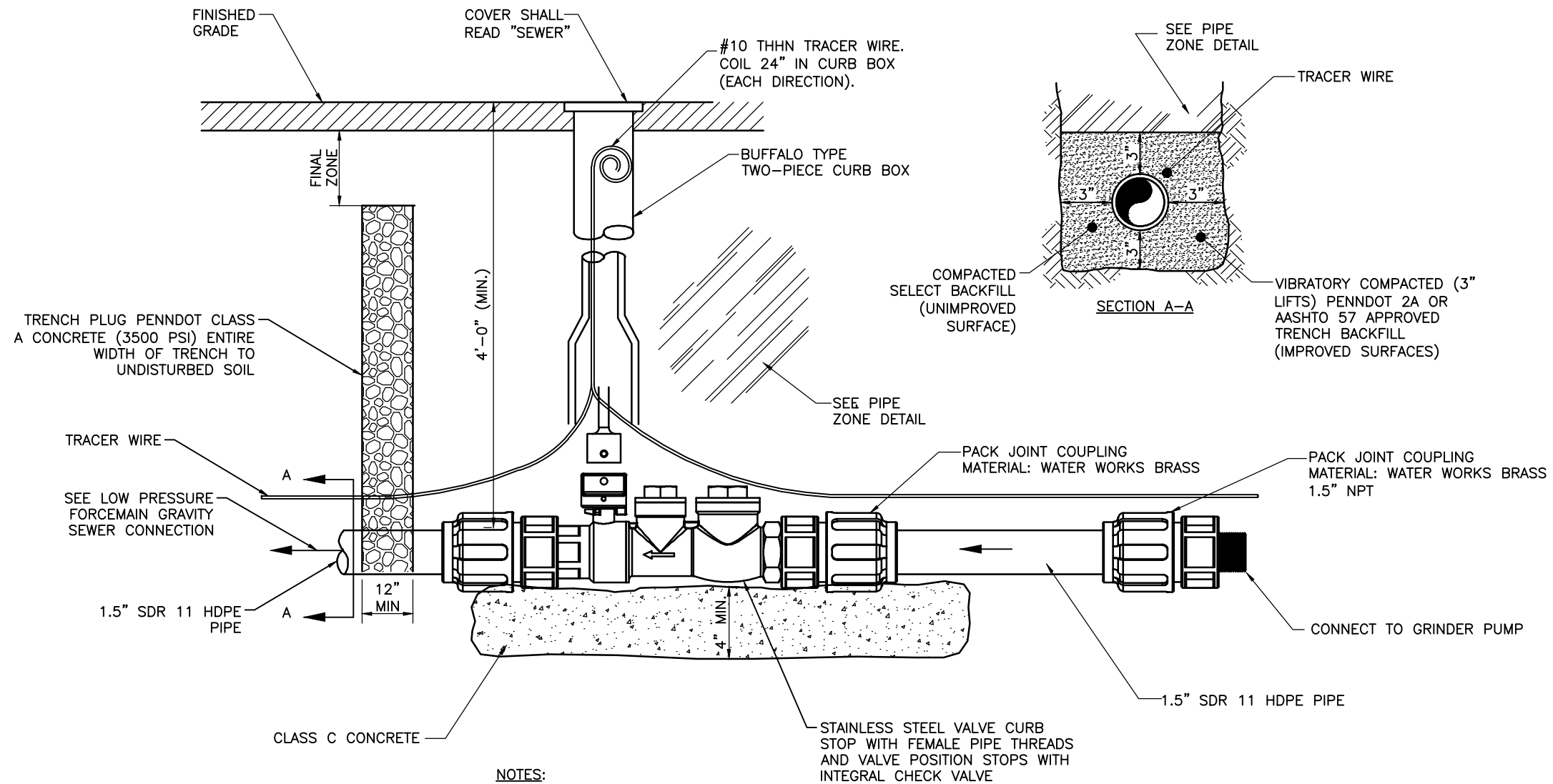
**NOTES:**

1. PRESSURE RATING: 150 psi.
2. ALL PACK JOINT COUPLINGS SUPPLIED WITH INSERT STIFFENERS.
3. ASSEMBLY TO BE USED WITH 1.5" DR 11 PIPE ONLY.
4. INSTALL TRENCH PLUGS.
5. PROVIDE STAINLESS STEEL LATERAL KIT, OR APPROVED EQUAL.

<b>BRIGHTON TOWNSHIP SEWAGE AUTHORITY</b>  1300 Brighton Road Beaver, Pennsylvania 15009	Scale:	N.T.S.
	Filename:	BTSA-SAN-26.dwg
	Date:	January 2024

# Force Main Curb Box Assembly

DETAIL: BTSA-SAN-26



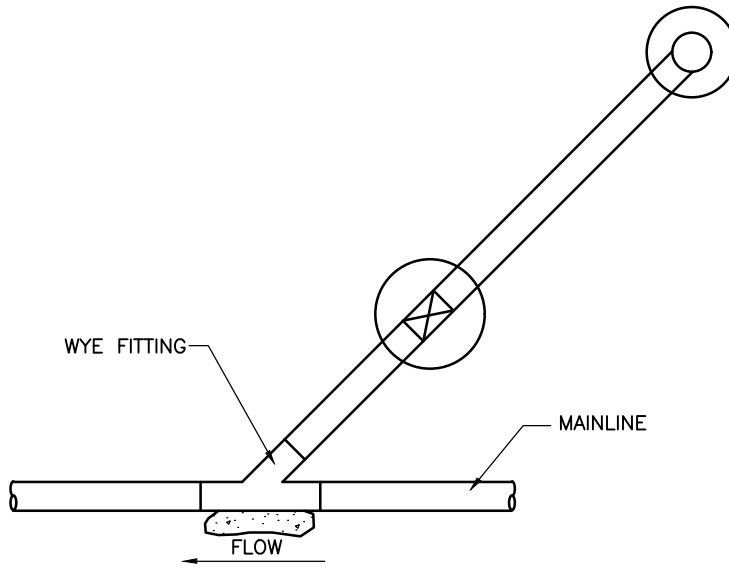
**NOTES:**

1. PRESSURE RATING: 150 psi.
2. ALL PACK JOINT COUPLINGS SUPPLIED WITH INSERT STIFFENERS.
3. ASSEMBLY TO BE USED WITH 1.5" SDR 11 PIPE ONLY.
4. INSTALL TRENCH PLUGS.
5. PROVIDE EONE SEWER SYSTEMS STAINLESS STEEL LATERAL KIT, PART NUMBER NC0193G01, OR APPROVED EQUAL.

**CURB BOX ASSEMBLY & LOW PRESSURE SEWER PIPE ZONE**

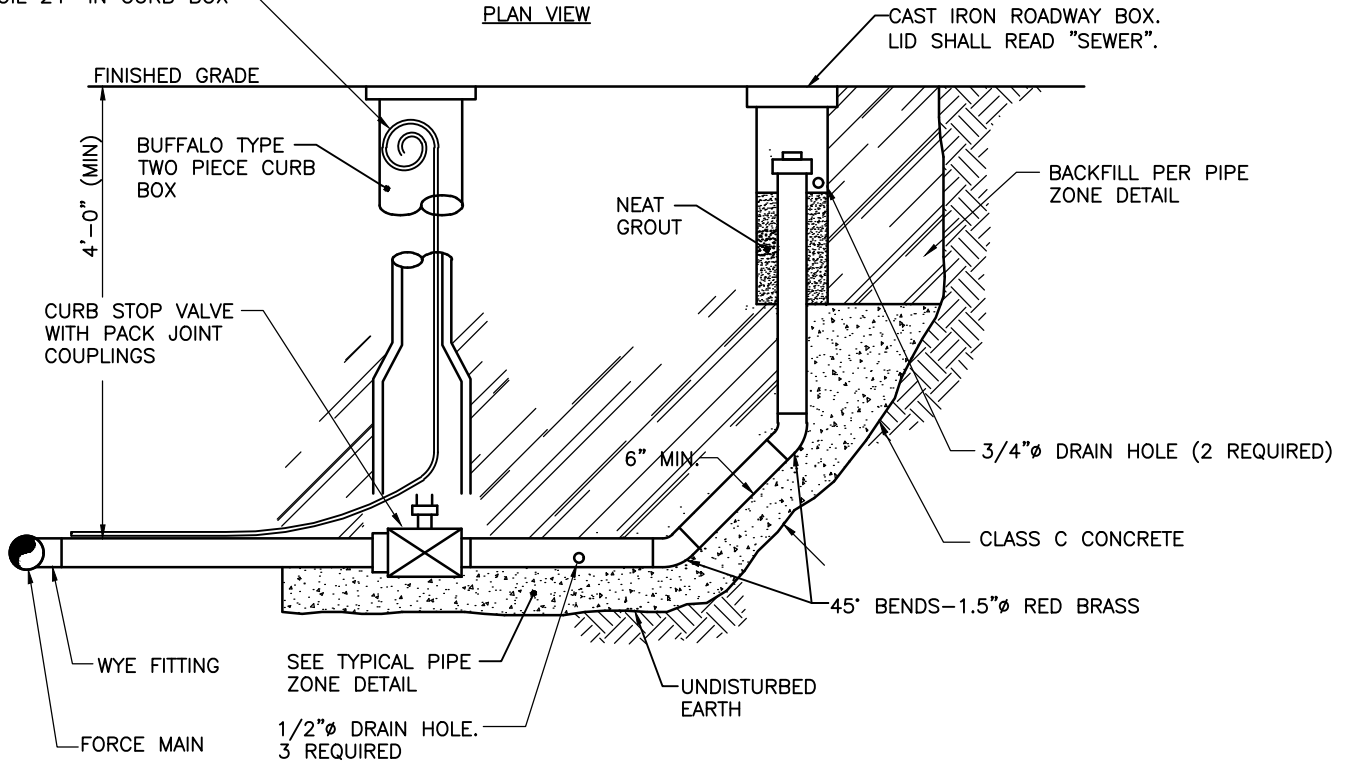
N. T. S.

<b>BRIGHTON TOWNSHIP SEWAGE AUTHORITY</b>  1300 Brighton Road Beaver, Pennsylvania 15009	Scale:	<b>Curb Box Assembly</b>	
			N.T.S.
	Filename:		BTSA-SAN-27.dwg
	Date:	January 2024	
		DETAIL: BTSA-SAN-27	



#10 THHN TRACER WIRE.  
COIL 24" IN CURB BOX

PLAN VIEW



SECTION VIEW

TYPICAL  
INLINE  
**CLEAN-OUT ASSEMBLY**

N. T. S.

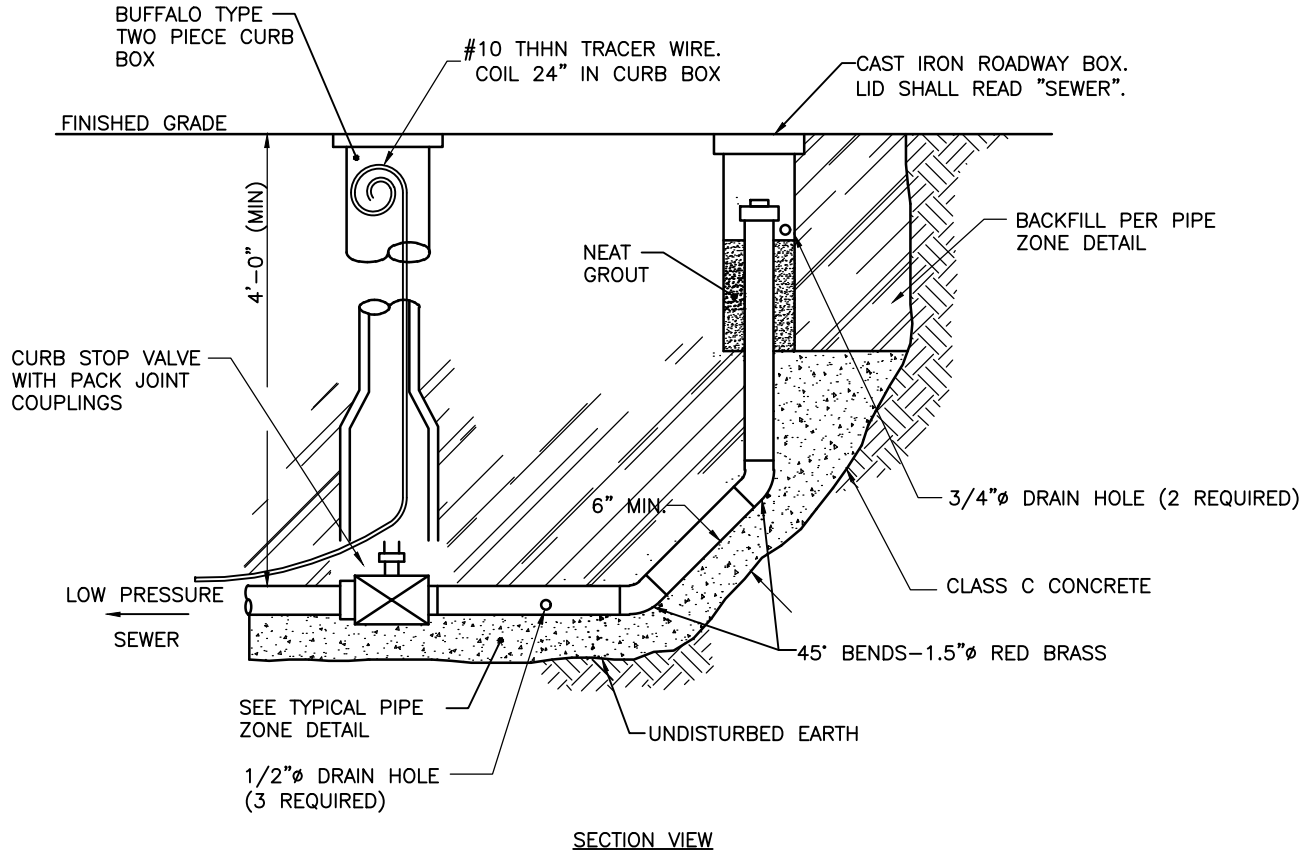
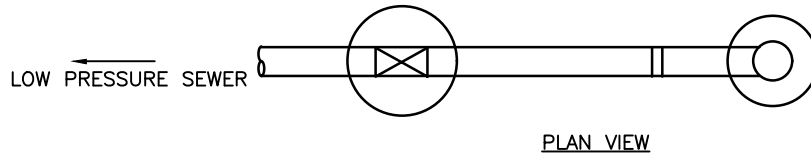
**BRIGHTON TOWNSHIP  
SEWAGE AUTHORITY**

1300 Brighton Road  
Beaver, Pennsylvania 15009

Scale: N.T.S.  
Filename: BTSA-SAN-28.dwg  
Date: January 2024

**Low Pressure Sewer Inline Clean-Out  
Assembly**

DETAIL: BTSA-SAN-28



TYPICAL  
**TERMINAL  
 CLEAN-OUT ASSEMBLY**  
 N. T. S.

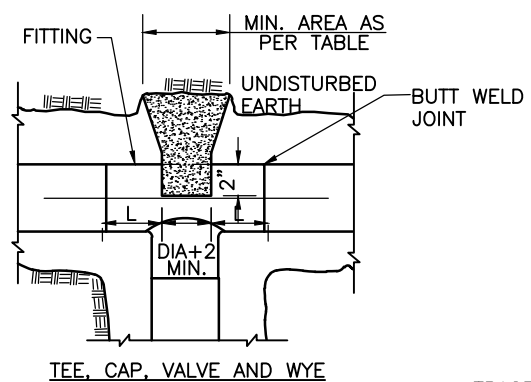
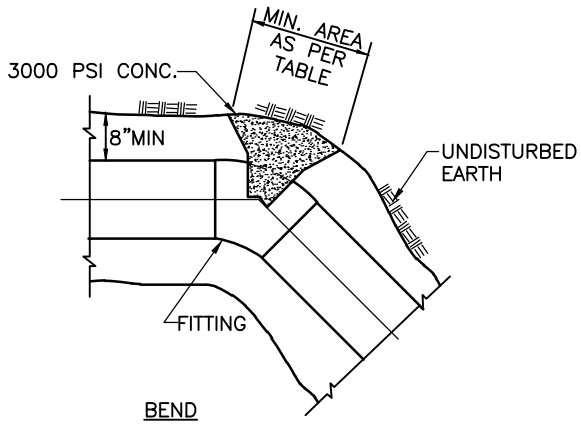
**BRIGHTON TOWNSHIP  
 SEWAGE AUTHORITY**

1300 Brighton Road  
 Beaver, Pennsylvania 15009

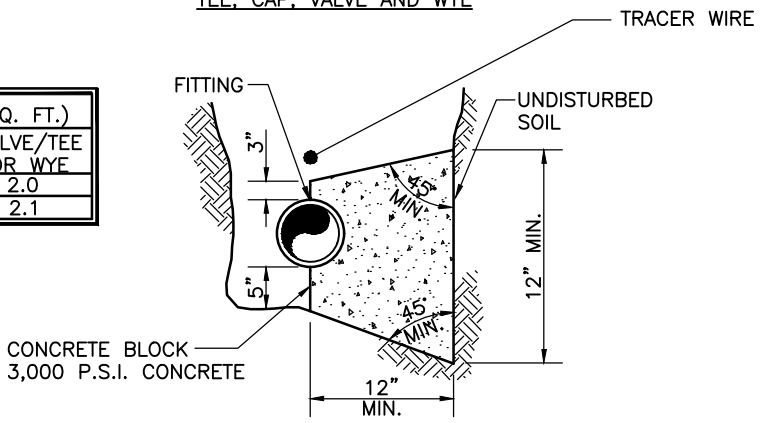
Scale:	N.T.S.
Filename:	BTSA-SAN-29.dwg
Date:	January 2024

**Low Pressure Sewer Terminal  
 Clean-Out Assembly**

DETAIL: BTSA-SAN-29



PIPE SIZE (in)	L (in.)	MIN. BEARING AREA OF BLOCK(SQ. FT.)				
		90° BENDS	45° BENDS	22.5° BENDS	11.25° BENDS	VALVE/TEE OR WYE
1 to 2	5	2	1.5	1.0	1.0	2.0
2 to 4	1.5	2.9	1.6	1.0	1.0	2.1



- NOTES:**
1. EARTH PRESSURE = 2,000 LBS./SQ.FT.
  2. APPLIED PRESSURE = 150 P.S.I.+50% FOR WATER HAMMER OR SURGE.
  3. IF EARTH IN FIELD WILL NOT SUPPORT THE ABOVE EARTH PRESSURE, AREA OF BLOCK MUST BE INCREASED PROPORTIONATELY.
  4. CONCRETE TO BE 3,300 P.S.I., CLASS 'A', 3" SLUMP.

**TYPICAL  
 LOW PRESSURE (SEWER)  
 HORIZONTAL THRUST BLOCKING DETAIL**  
 N. T. S.

**BRIGHTON TOWNSHIP  
 SEWAGE AUTHORITY**

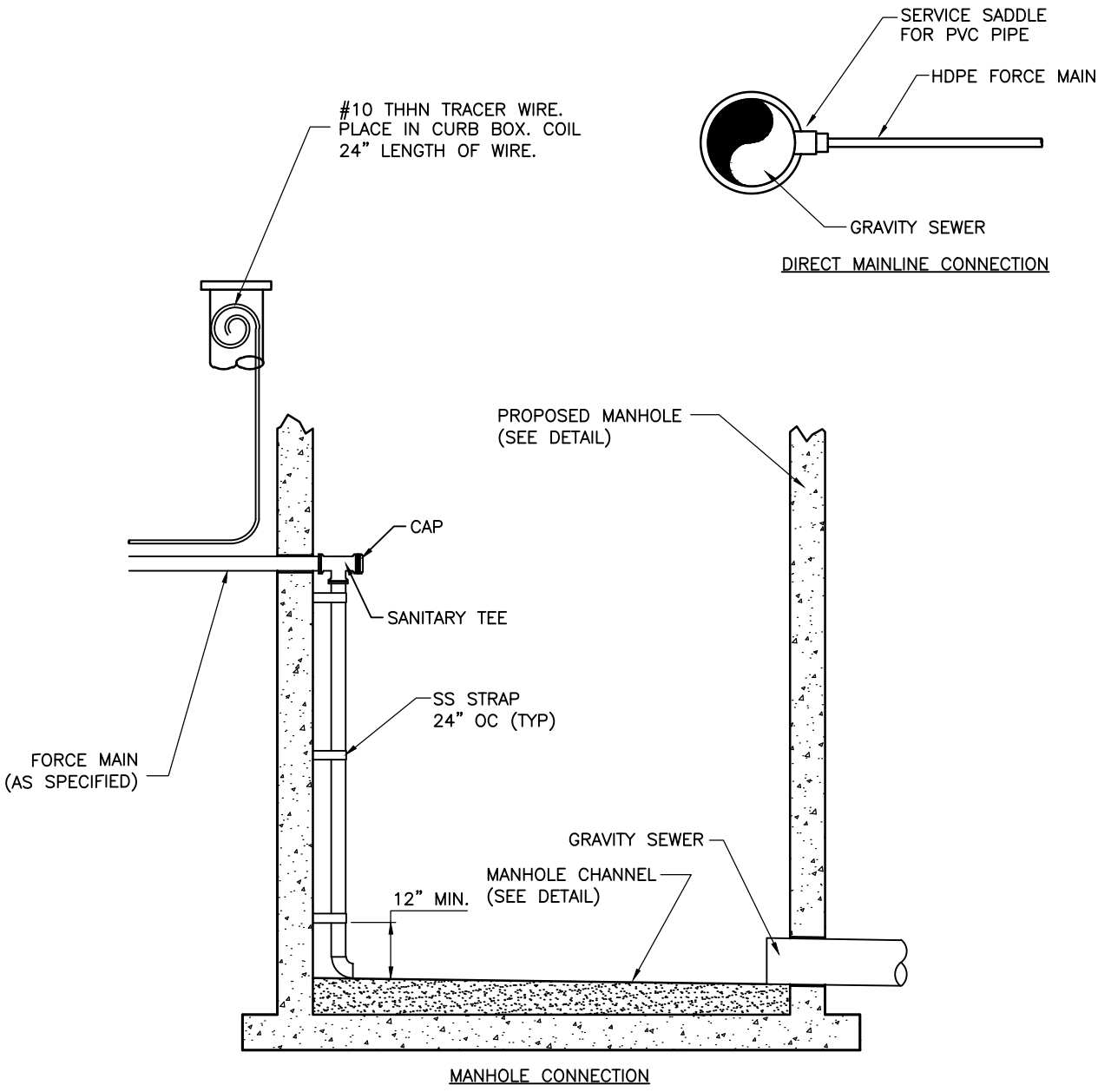
1300 Brighton Road  
 Beaver, Pennsylvania 15009

Scale: N.T.S.  
 Filename: BTSA-SAN-30.dwg  
 Date: January 2024

**Low Pressure (Sewer) Horizontal  
 Thrust Blocking Detail**

DETAIL: BTSA-SAN-30





**LOW PRESSURE FORCE MAIN  
CONNECTION TO GRAVITY SEWER**

N. T. S.

**BRIGHTON TOWNSHIP  
SEWAGE AUTHORITY**

1300 Brighton Road  
Beaver, Pennsylvania 15009

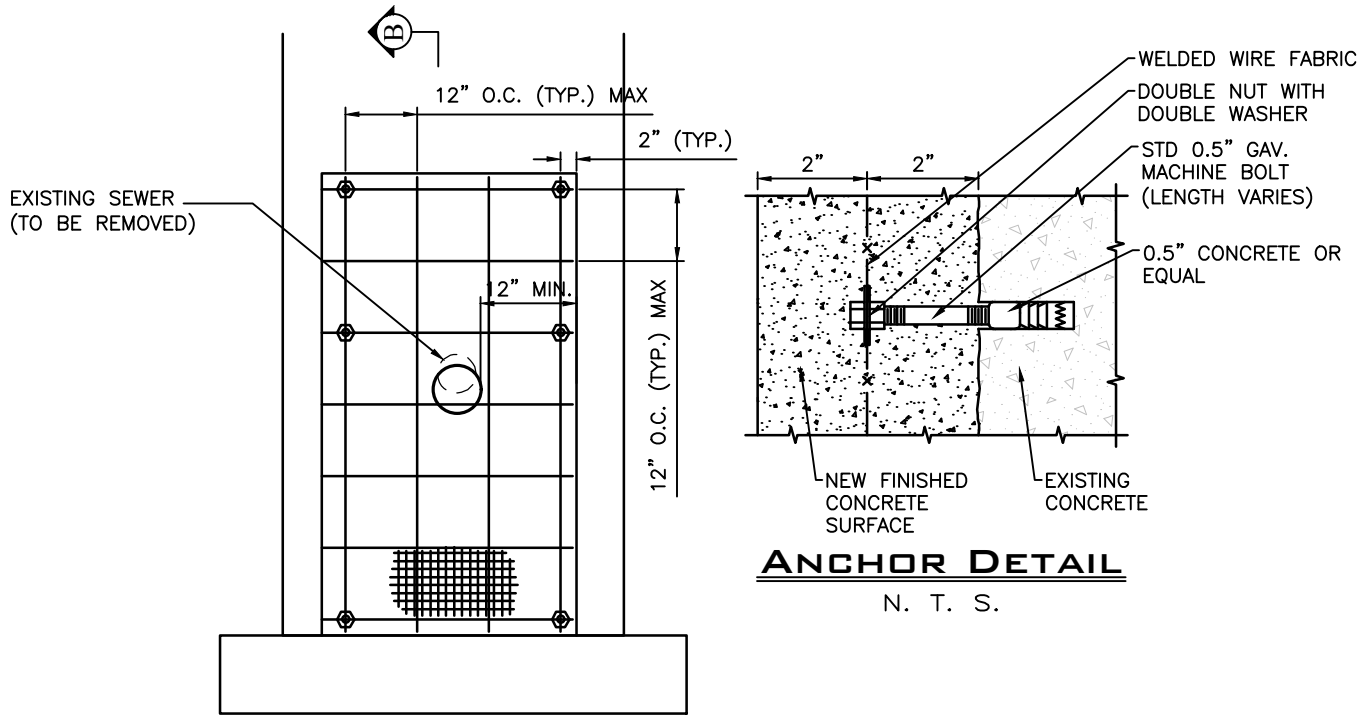
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Date: January 2024

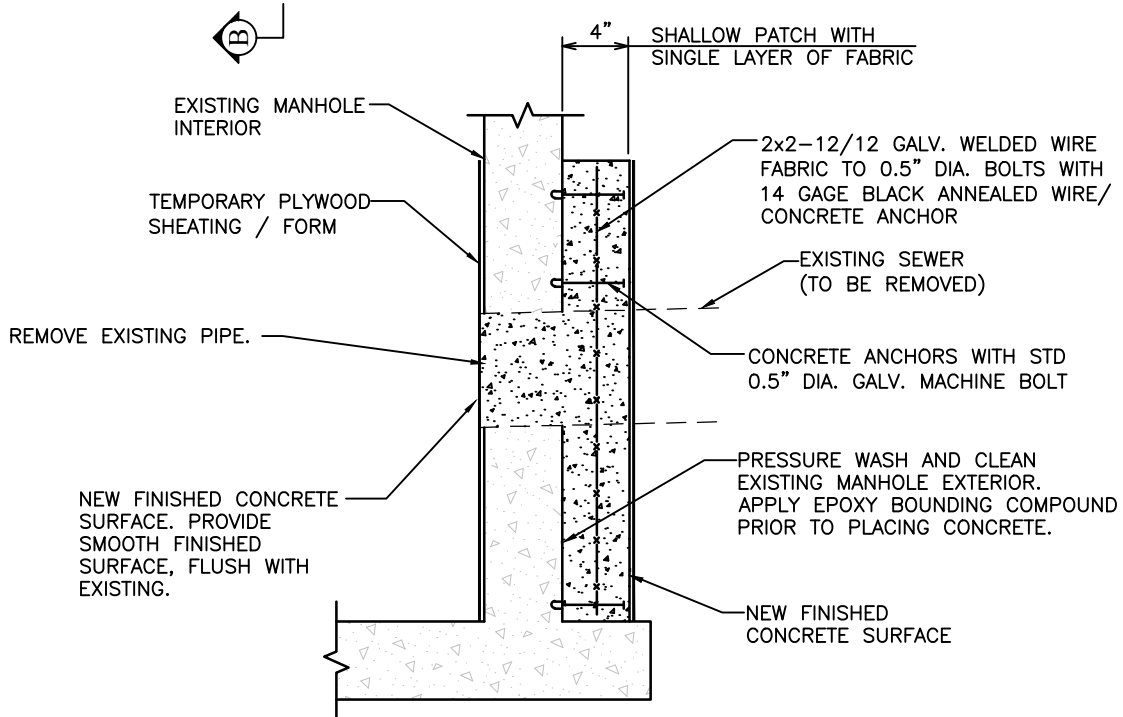
**Low Presure Force Main Connection  
to Gravity Sewer**

DETAIL: BTSA-SAN-31



**ANCHOR DETAIL**

N. T. S.



**SECTION B-B (TYP.)  
SEWER TERMINATION  
MANHOLE REPAIR DETAIL**

N. T. S.

**BRIGHTON TOWNSHIP  
SEWAGE AUTHORITY**

1300 Brighton Road  
Beaver, Pennsylvania 15009

Scale: N.T.S.  
Filename: BTSA-SAN-32.dwg  
Date: January 2024

**Sewer Termination Manhole Repair**

DETAIL: BTSA-SAN-32