

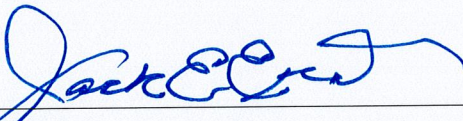


WATER
At Your Service

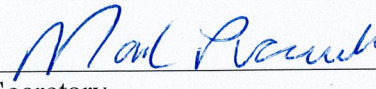
Brighton Township Municipal Authority

ADOPTION

The “Standard Details for Waterline Construction” dated February 2024 are hereby approved and adopted this 19th day of February, 2024 by the Board of Directors of the Brighton Township Municipal Authority. This version of the standard detail drawings for Waterline Construction date February 2024 shall supersede all previous versions of same.



Chairman

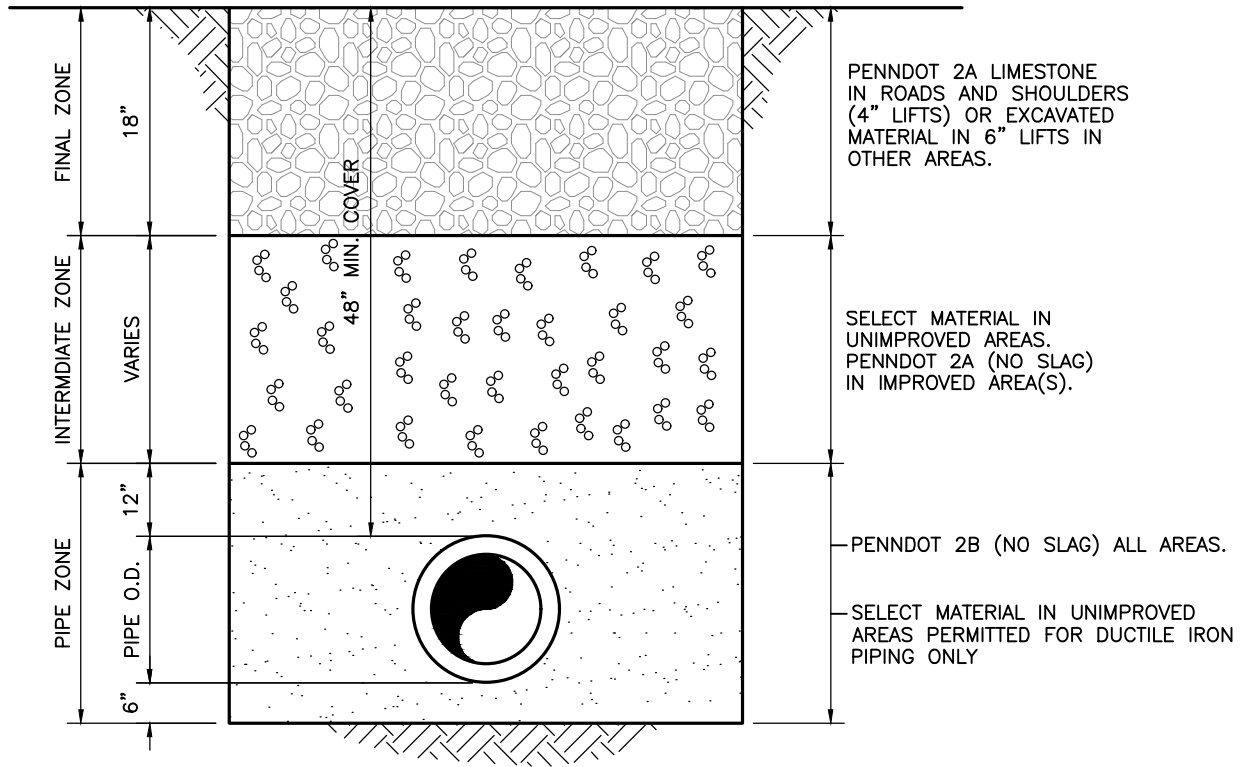


Secretary



INDEX OF STANDARD DETAILS

Drawing No.	Description
BTMA-1	Trench Excavation and Backfill
BTMA-2	Waterline/Sanitary Utility Separation
BTMA-3	Pavement Replacement
BTMA-4	Casing Pipe Assembly
BTMA-5	Pressure Line Vertical Blocking
BTMA-6	Horizontal Thrust Blocking
BTMA-7	Laying Water Mains Under Obstructions
BTMA-8	Standard Hydrant Detail
BTMA-9	Water Main Connection to Existing Service Line
BTMA-10	Water Main Long Service Connection
BTMA-11	1" Air Relief for Water Main
BTMA-12	2" Blow-Off Assembly
BTMA-13	Air Vacuum Release Manhole
BTMA-14	Manhole Frame and Cover
BTMA-15	Meter Setting Detail – Inside Residence
BTMA-16	Meter Setting Detail – Residential Concrete Meter Pit
BTMA-17	Meter Setting Detail – Residential Multi-Meter Pit
BTMA-18	Meter Setting Detail – Residential Plastic Meter Pit
BTMA-19	Meter Setting Detail – Commercial Meter Pit
BTMA-20	Meter Setting Detail – Commercial Meter Pit 2” Through 4”
BTMA-21	Private Fire Service for Residential Structure
BTMA-22	Water Main Short Service Connection
BTMA-23	Gate Valve Assembly



NOTES:

1. REFER TO WATERMAIN INSTALLATION OF THE SPECIFICATIONS FOR FURTHER DETAIL AND SPECIFICATIONS.
2. RESTRAINED JOINT DUCTILE IRON PIPING REQUIRED FOR ALL WATER LINES PROPOSED IN FILL SLOPES.
3. REFER TO TOWNSHIP AND/OR PENNDOT REQUIREMENTS FOR FINAL SURFACE RESTORATION REQUIREMENTS OR OTHER SPECIAL REQUIREMENTS (BACKFILL, COMPACTION, ETC.)

**TRENCH EXCAVATION AND
BACKFILL DETAIL**

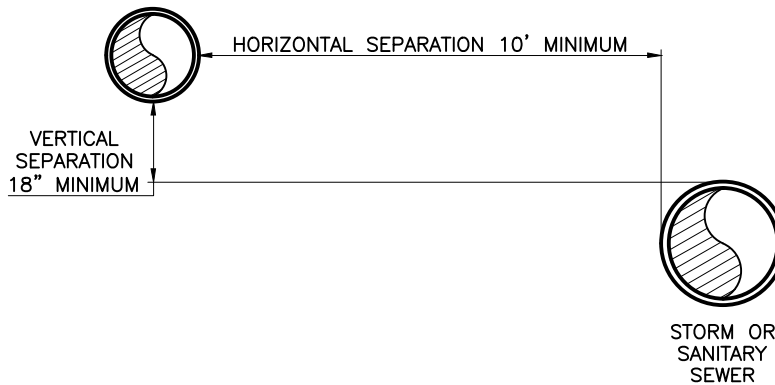
N. T. S.

**BRIGHTON TOWNSHIP
MUNICIPAL AUTHORITY**
1300 Brighton Road
Beaver, Pennsylvania 15009

DATE: January 30, 2024
FILE NAME: BTMA-1.dwg
SCALE: N.T.S.

**TRENCH EXCAVATION
BACKFILL DETAIL**

WATER MAIN



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". WATERLINE SHALL BE ENCASED 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 WATERLINE OR WITHIN FIVE FEET OF EACH SIDE OF THE WATERLINE.

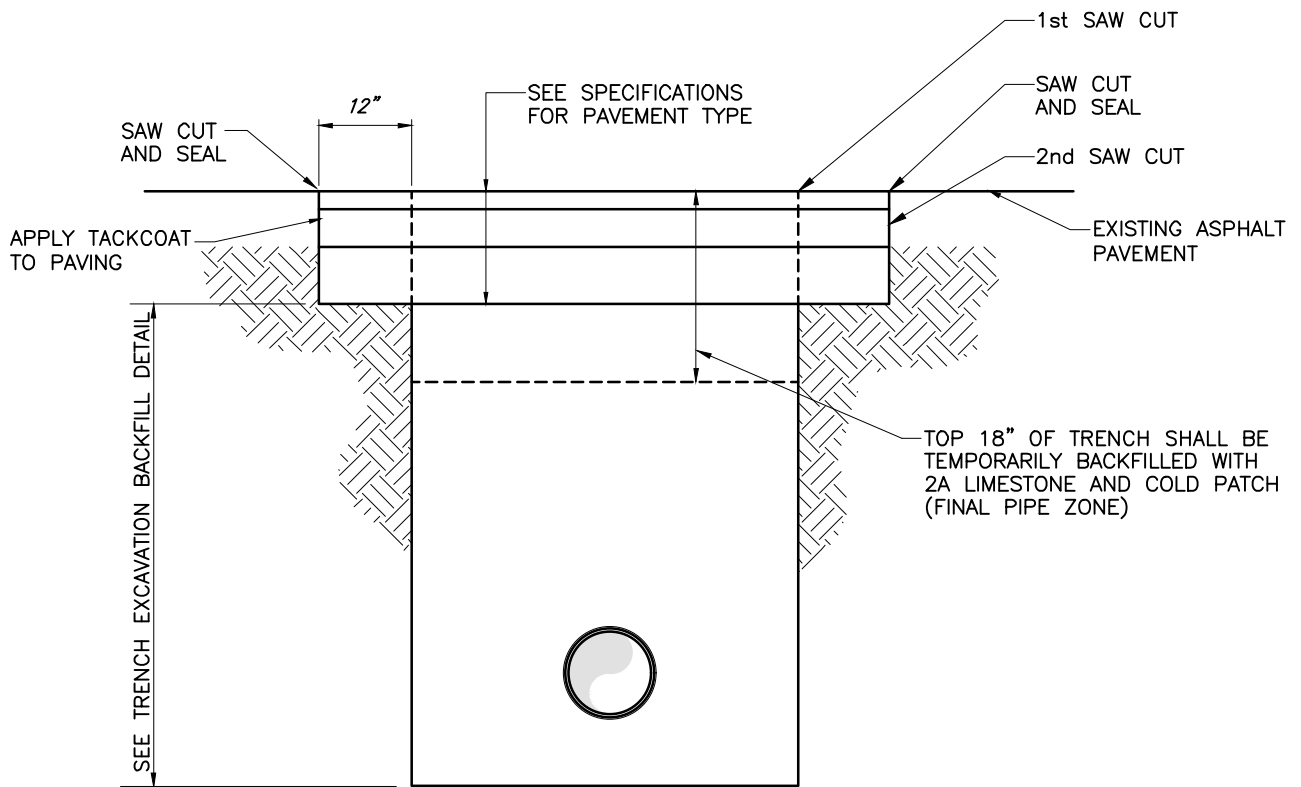
UTILITY SEPARATION

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DATE:	January 30, 2024
FILE NAME:	BTMA-2.dwg
SCALE:	N.T.S.

UTILITY SEPARATION



NOTES:

- 1) ALL ROADWAY TRAFFIC LINES AND MARKINGS SHALL BE REPLACED.
- 2) MAKE TWO SAW CUTS. ONE BEFORE EXCAVATION AND ONE PRIOR TO PAVING.

PAVEMENT REPLACEMENT DETAIL

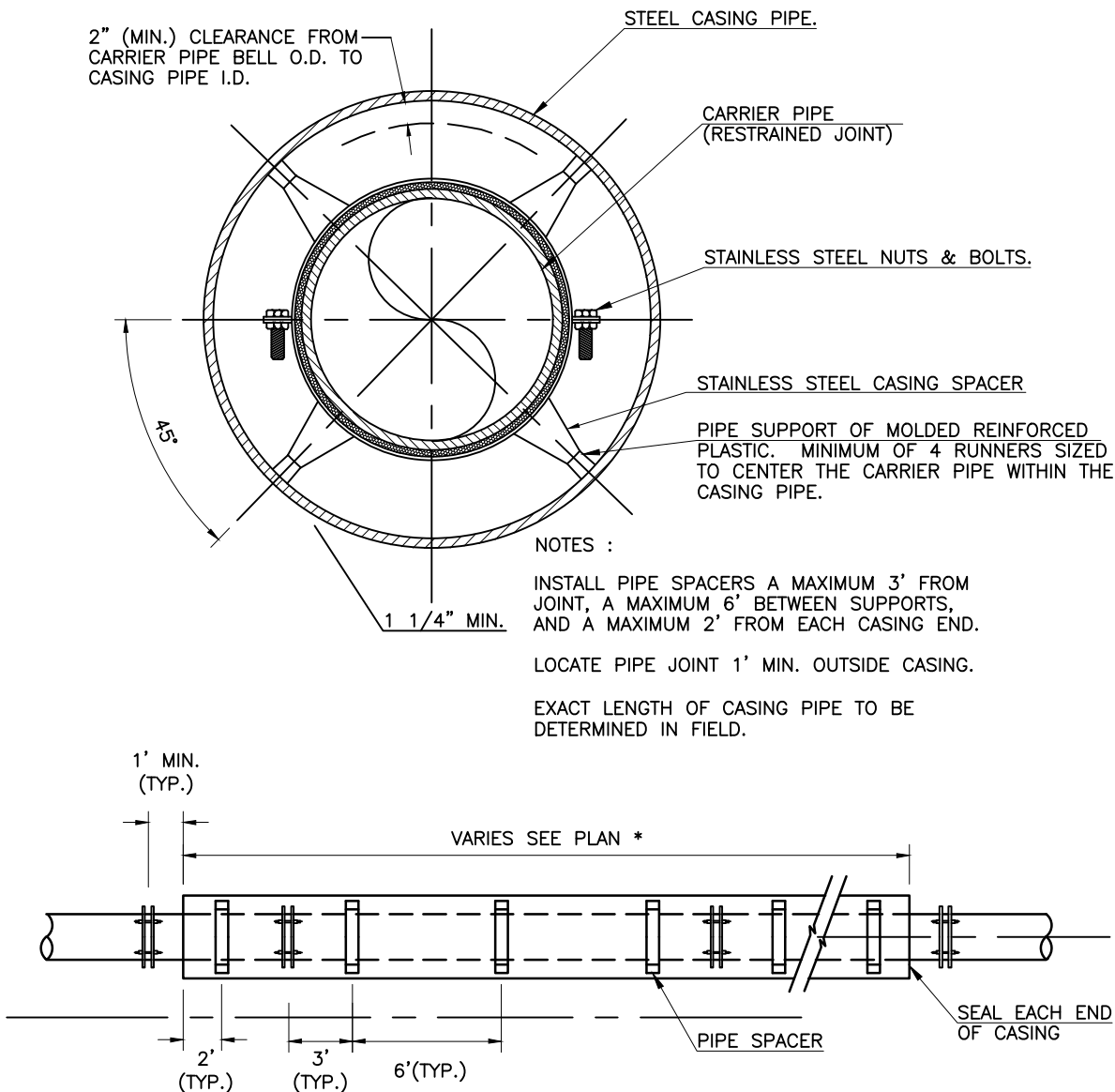
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DATE: January 30, 2024
FILE NAME: BTMA-3.dwg
SCALE: N.T.S.

**PAVEMENT REPLACEMENT
DETAIL**

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

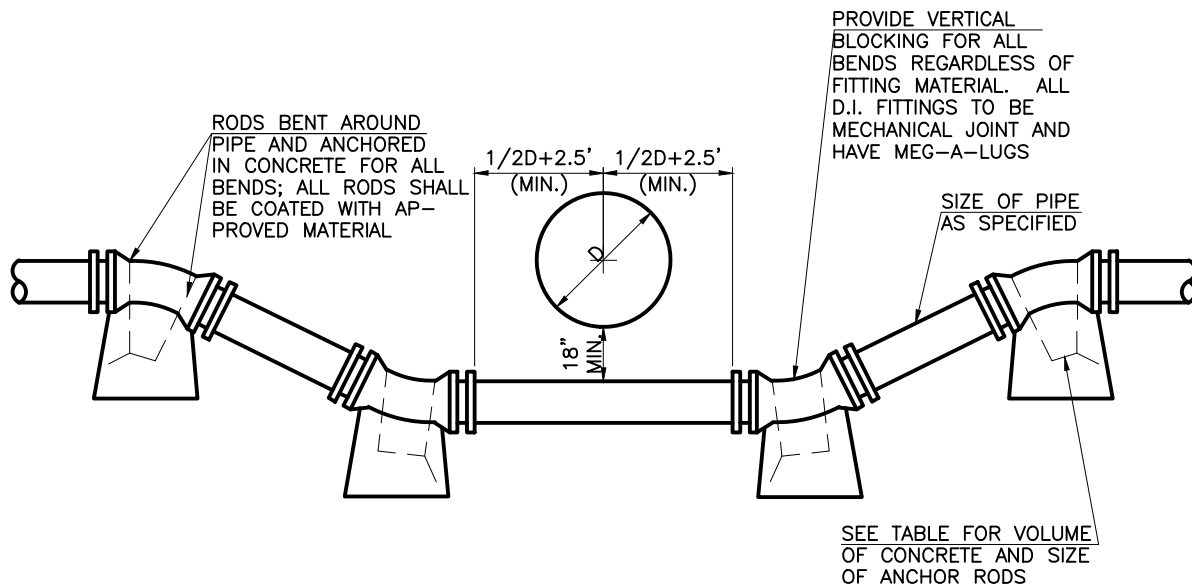
CASING PIPE ASSEMBLY DETAIL

N. T. S.

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MUNICIPAL AUTHORITY**
1300 Brighton Road
Beaver, Pennsylvania 15009

DATE: January 30, 2024
FILE NAME: BTMA-4.dwg
SCALE: N.T.S.

CASING PIPE ASSEMBLY DETAIL



LOW PRESSURE ZONE

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

HIGH PRESSURE ZONE

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	40	20	10	1-#4	1-#4	1-#4
6	7200	74	36	18	2-#4	1-#4	1-#4
8	11800	120	62	36	2-#4	2-#4	1-#4
10	17100	174	90	44	2-#4	2-#4	2-#4
12	23700	244	122	62	2-#5	2-#4	2-#4

NOTES:

- CONFIRM PRESSURE ZONE REQUIREMENTS WITH AUTHORITY PRIOR TO CONSTRUCTION.
- APPLIED PRESSURE (LOW PRESSURE ZONE) = 150 P.S.I.
- APPLIED PRESSURE (HIGH PRESSURE ZONE) = 300 P.S.I.
- ALL BLOCKS SHALL BE REINFORCED WITH #4 AT 6" E.F. MINIMUM 3" FROM ALL SIDES.

PRESSURE LINE VERTICAL BLOCKING

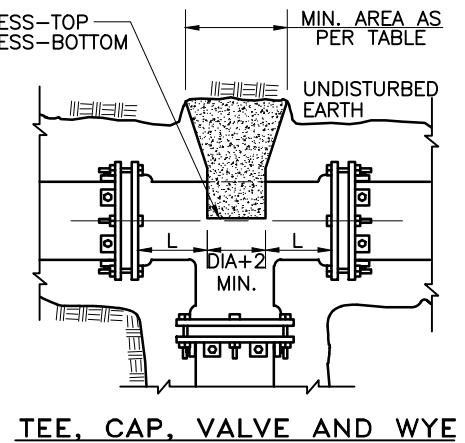
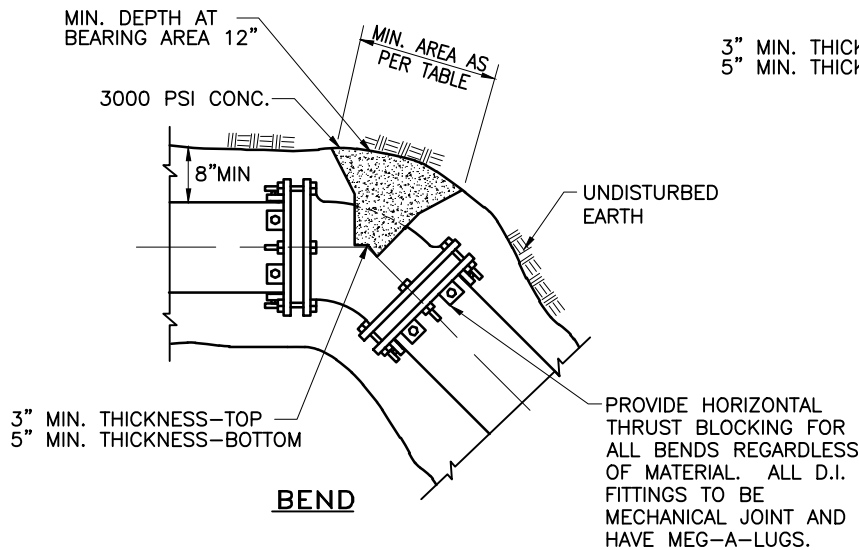
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DATE: January 30, 2024
FILE NAME: BTMA-5.dwg
SCALE: N.T.S.

**PRESSURE LINE
VERTICAL BLOCKING**

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LOW PRESSURE ZONE

PIPE SIZE (in)	L (in.)	MINIMUM BEARING AREA OF BLOCK(SQUARE FEET)				
		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

HIGH PRESSURE ZONE

PIPE SIZE (in)	L (in.)	MINIMUM BEARING AREA OF BLOCK(SQUARE FEET)				
		90° BENDS	45° BENDS	22.5° BENDS	11.25° BENDS	VALVE/TEE OR WYE
4	5	4.0	2.2	1.1	1.0	2.8
6	6	9.0	4.9	2.5	1.2	6.4
8	6.5	16.0	8.7	4.4	2.2	11.3
10	6.5	25.0	13.5	6.9	3.5	17.7
12	7	36.0	19.5	9.9	5.0	25.4

NOTES:

1. CONFIRM PRESSURE ZONE (HIGH/LOW) REQUIREMENTS WITH AUTHORITY PRIOR TO CONSTRUCTION.
2. EARTH PRESSURE = 2,000 LBS./SQ.FT.
3. APPLIED PRESSURE (LOW PRESSURE ZONE) = 150 P.S.I.+50% FOR WATER HAMMER OR SURGE
4. APPLIED PRESSURE (HIGH PRESSURE ZONE) = 300 P.S.I.
5. IF EARTH IN FIELD WILL NOT SUPPORT THE ABOVE EARTH PRESSURE, AREA OF BLOCK MUST BE INCREASED PROPORTIONATELY.
6. CONCRETE TO BE 3,000 P.S.I., PADOT CLASS A, 3" SLUMP
7. ALL MECHANICAL JOINT FASTENERS (I.E. BOLTS, NUTS, ETC.) SHALL BE FREE OF CONCRETE.
8. CONCRETE WITH BEARING AREAS GREATER THAN 3 S.F. TO HAVE W4 x W4 WELDED WIRE FABRIC.

HORIZONTAL THRUST BLOCKING DETAIL

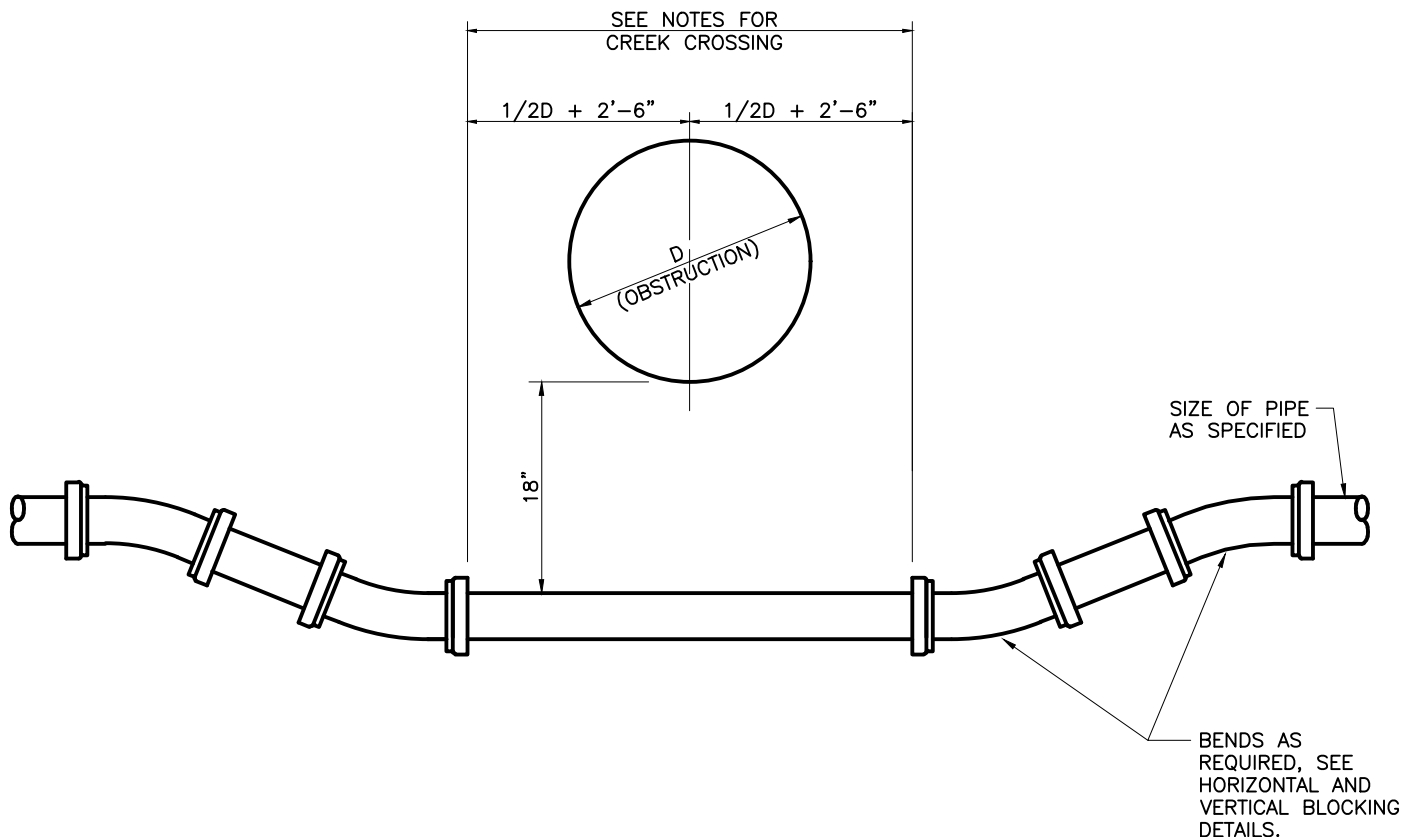
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1300 Brighton Road
Beaver, Pennsylvania 15009

DATE: January 30, 2024
FILE NAME: BTMA-6.dwg
SCALE: N.T.S.

**HORIZONTAL THRUST
BLOCKING DETAIL**

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NOTES :

1. FOR CROSSING UNDER AN EXISTING GREEK, EXTEND A MINIMUM OF 20'-0" BEYOND THE TOP OF BANK ON EACH SIDE.
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 WATER MAIN.
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.

LAYING WATER MAINS UNDER OBSTRUCTIONS

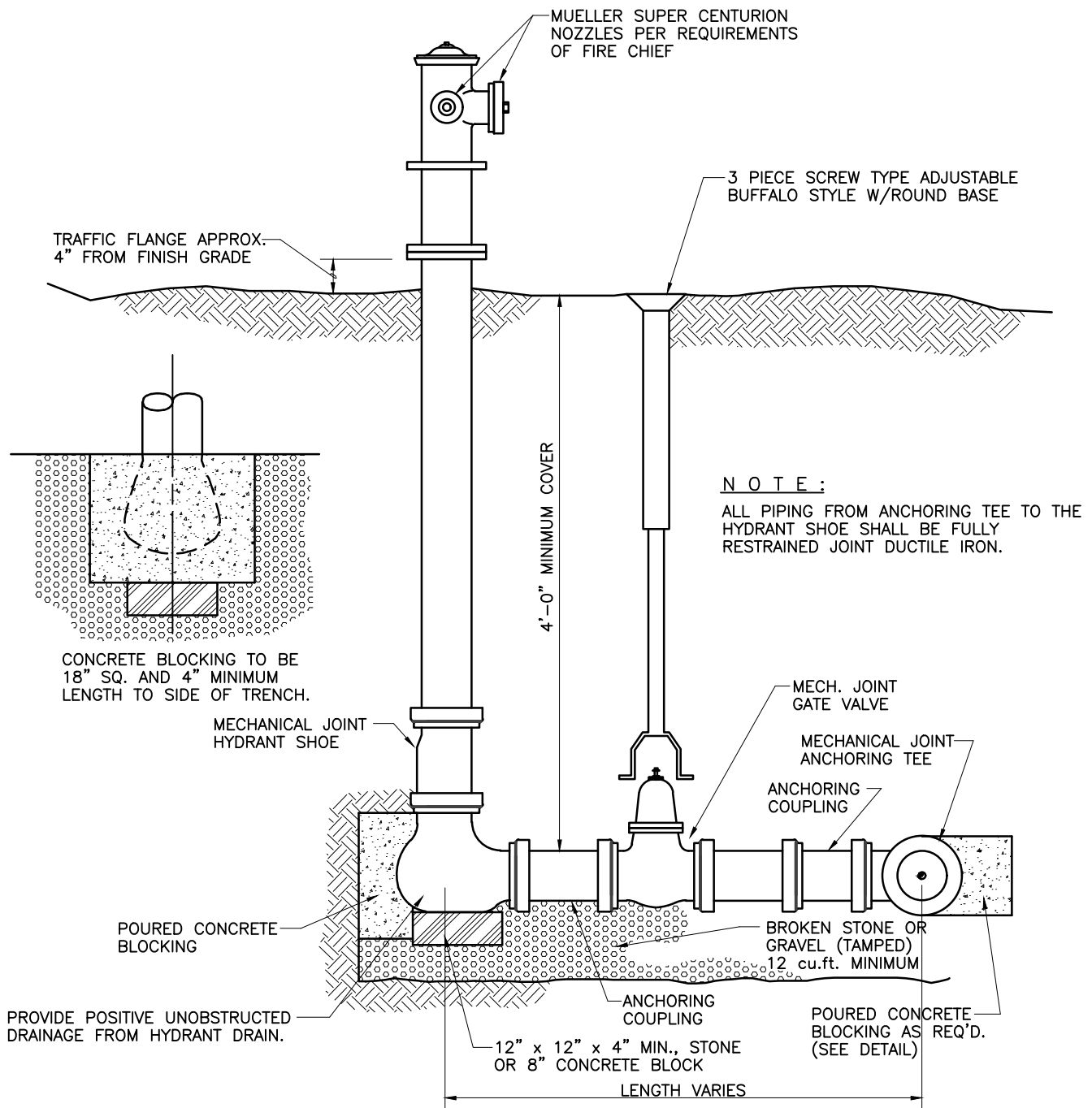
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Beaver, Pennsylvania 15009

DATE: January 30, 2024
FILE NAME: BTMA-7.dwg
SCALE: N.T.S.

**LAYING WATER MAINS
UNDER OBSTRUCTIONS**

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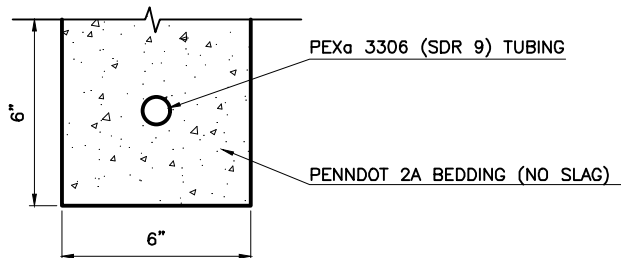
STANDARD HYDRANT DETAIL

N.T.S.

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Beaver, Pennsylvania 15009

DATE: January 30, 2024
FILE NAME: BTMA-8.dwg
SCALE: N.T.S.

STANDARD HYDRANT DETAIL



BEDDING DETAIL

N. T. S.

FOR PVC WATERLINE ONLY. PROVIDE MUELLER H-13000 SERIES (OR EQUAL) FIXED RANGE, BRONZE DOUBLE STRAP SERVICE SADDLE. USE OF RANGED SERVICE SADDLE IS NOT PERMITTED.

1" CORPORATION MUELLER MODEL H-15008 OR EQUAL TAPPED DIRECTLY TO D.I. WATER MAIN. USE MUELLER MODEL H-15028 OR EQUAL FOR HDPE AND PVC C900 WATER MAIN. USE STAINLESS STEEL STIFFENER.

EXISTING CURB BOX AND CURB STOP

1" PEXa 3306 (SDR 9) TUBING (SEE BEDDING DETAIL)

LENGTH AS REQUIRED

INSTALL WOOD BLOCKING AS DIRECTED BY THE AUTHORITY

4" SCHEDULE 80 PVC CONDUIT UNDER ROADWAYS. (NEW CONSTRUCTION).

EXISTING WATERLINE

WATER MAIN

FOR HDPE WATER MAIN ONLY, PROVIDE ELECTROFUSION SERVICE SADDLE (DIPS) WITH 2" FEMALE BRASS IRON PIPE THREAD AND BRASS BUSHING (2" MALE IRON PIPE THREAD BY 1" FEMALE IRON PIPE THREAD).

NOTES:

1. SIZE OF FITTINGS AND LINE SHALL BE 1" OR AS SHOWN ON THE DRAWINGS.
2. FOR 2" SERVICES ON DUCTILE IRON WATER MAIN USE MUELLER BRONZE DOUBLE STRAP THREADED SERVICE CLAMP OR EQUAL.
3. LAY PEXa 3306 (SDR 9) TUBING IN PENNDOT 2A BEDDING (NO SLAG).
4. IN AREAS OF DISTRIBUTION SYSTEM WHEN WORKING PRESSURE EXCEEDS 110 PSIG THE USE OF TYPE K COPPER IN LIEU OF PEXa 3306 (SDR 9) IS REQUIRED.

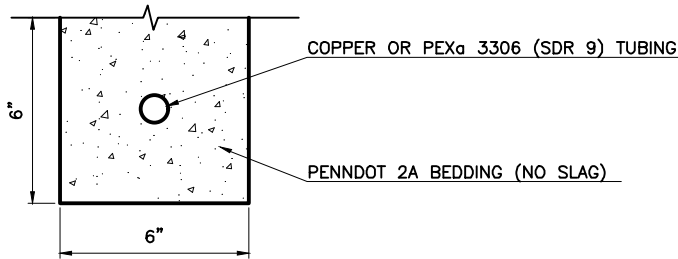
WATER MAIN LONG SERVICE CONNECTION

N. T. S.

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MUNICIPAL AUTHORITY**
1300 Brighton Road
Beaver, Pennsylvania 15009

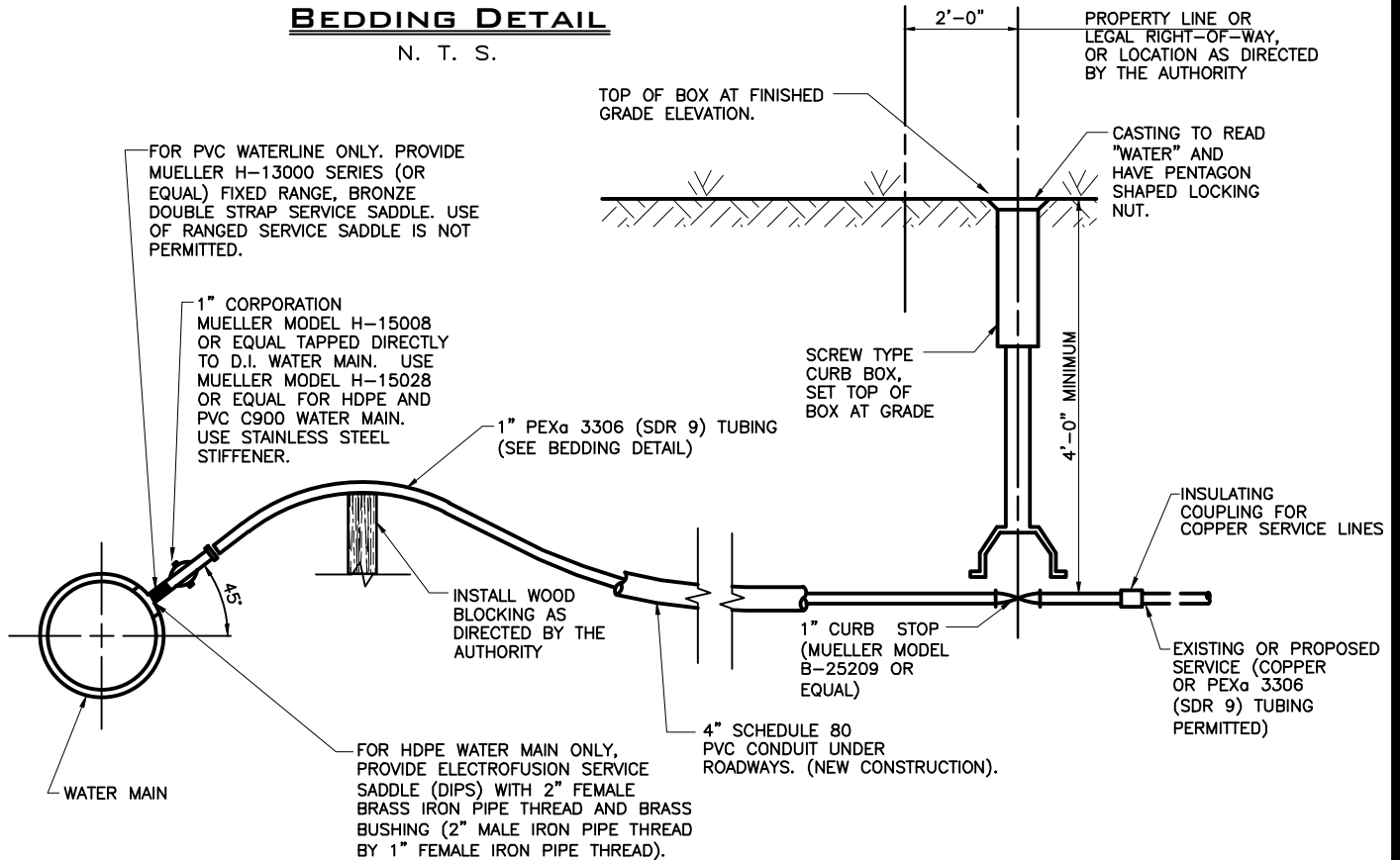
DATE: January 30, 2024
FILE NAME: BTMA-9.dwg
SCALE: N.T.S.

**WATER MAIN LONG CONNECTION
TO EXISTING SERVICE LINE**



BEDDING DETAIL

N. T. S.



NOTES:

1. SIZE OF FITTINGS AND LINE SHALL BE 1" OR AS SHOWN ON THE DRAWINGS.
2. FOR 2" SERVICES ON DUCTILE IRON WATER MAIN USE MUELLER BRONZE DOUBLE STRAP THREADED SERVICE CLAMP OR EQUAL.
3. LAY PEXa TUBING IN PENNDOT 2A BEDDING (NO SLAG).
4. IN AREAS OF DISTRIBUTION SYSTEM WHEN WORKING PRESSURE EXCEEDS 110 PSIG THE USE OF TYPE K COPPER IN LIEU OF PEXa 3306 (SDR 9) IS REQUIRED.

WATER MAIN LONG SERVICE CONNECTION

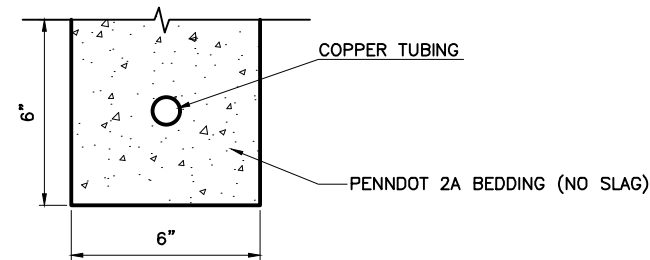
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1300 Brighton Road
Beaver, Pennsylvania 15009

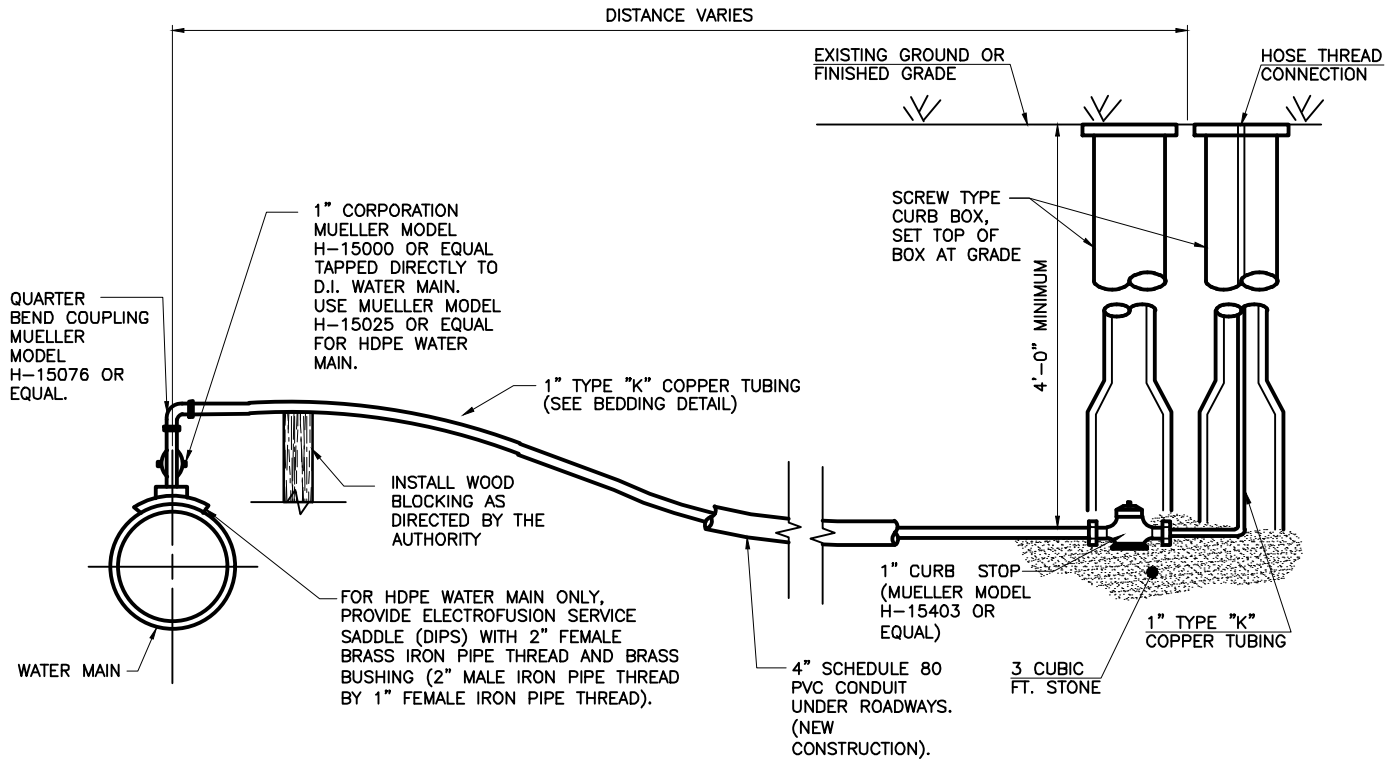
DATE: January 30, 2024
FILE NAME: BTMA-10.dwg
SCALE: N.T.S.

**WATER MAIN LONG
SERVICE CONNECTION**



BEDDING DETAIL

N. T. S.



NOTES:

1. SIZE OF FITTINGS AND LINE SHALL BE 1" OR AS SHOWN ON THE DRAWINGS.
2. FOR 2" SERVICES ON DUCTILE IRON WATER MAIN USE MUELLER BRONZE DOUBLE STRAP THREADED SERVICE CLAMP OR EQUAL.
3. LAY COPPER TUBING IN PENNDOT 2A BEDDING (NO SLAG).

1" AIR RELIEF FOR WATER MAIN

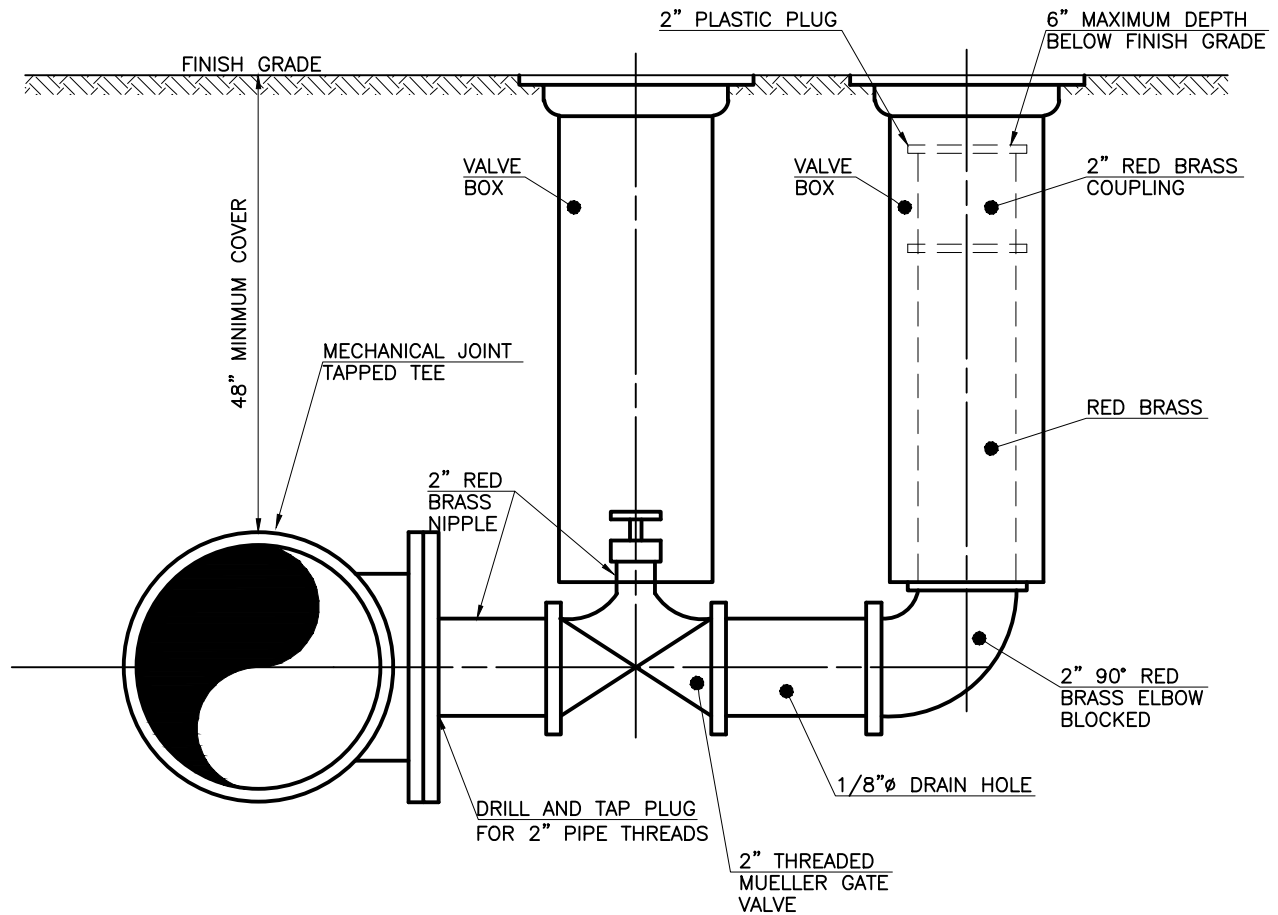
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1300 Brighton Road
Beaver, Pennsylvania 15009

DATE: January 30, 2024
FILE NAME: BTMA-11.dwg
SCALE: N.T.S.

**1" AIR RELIEF FOR
WATER MAIN**

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NOTES:

1. ALL PIPE AND FITTINGS TO BE RED BRASS.
2. PLACE 2 CU. FT. OF STONE UNDER DRAIN HOLE.

2" BLOW-OFF ASSEMBLY

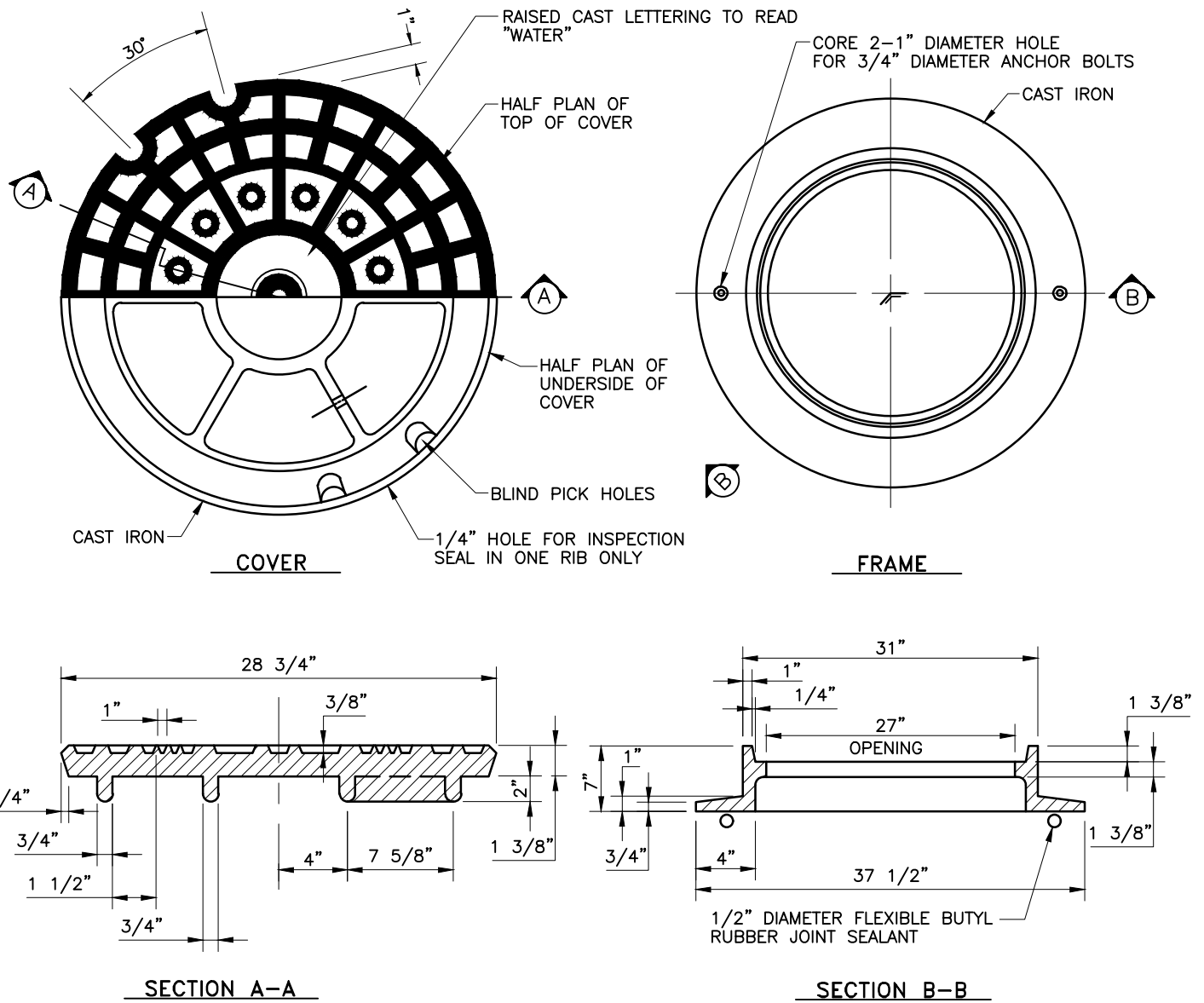
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DATE: January 30, 2024
FILE NAME: BTMA-12.dwg
SCALE: N.T.S.

2" BLOW-OFF ASSEMBLY

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TYPICAL
MANHOLE FRAME AND COVER
N. T. S.

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MUNICIPAL AUTHORITY**
1300 Brighton Road
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DATE: January 30, 2024
FILE NAME: BTMA-14.dwg
SCALE: N.T.S.

MANHOLE FRAME AND COVER

- ① 1"x 3/4" ANGLE METER VALVE
- ② 3/4" BRASS NIPPLE
- ③ 3/4" PRESSURE REDUCING VALVE
- ④ 3/4" x 5/8" REMOTE WATER METER (SUPPLIED BY B.T.M.A.)
- ⑤ 3/4" BACKFLOW PREVENTER (DUAL CHECK BACKFLOW PREVENTER)
- ⑥ 3/4" x 5/8" SEWER METER (TO METER OUTSIDE WATER NOT ENTERING BRIGHTON TOWNSHIP SANITARY SEWER AUTHORITY SYSTEM.) THIS ITEM IS OPTIONAL AND SUBJECT TO APPLICATION APPROVAL AND PAYMENT OF APPLICABLE FEES.
- ⑦ 3/4" GATE VALVE

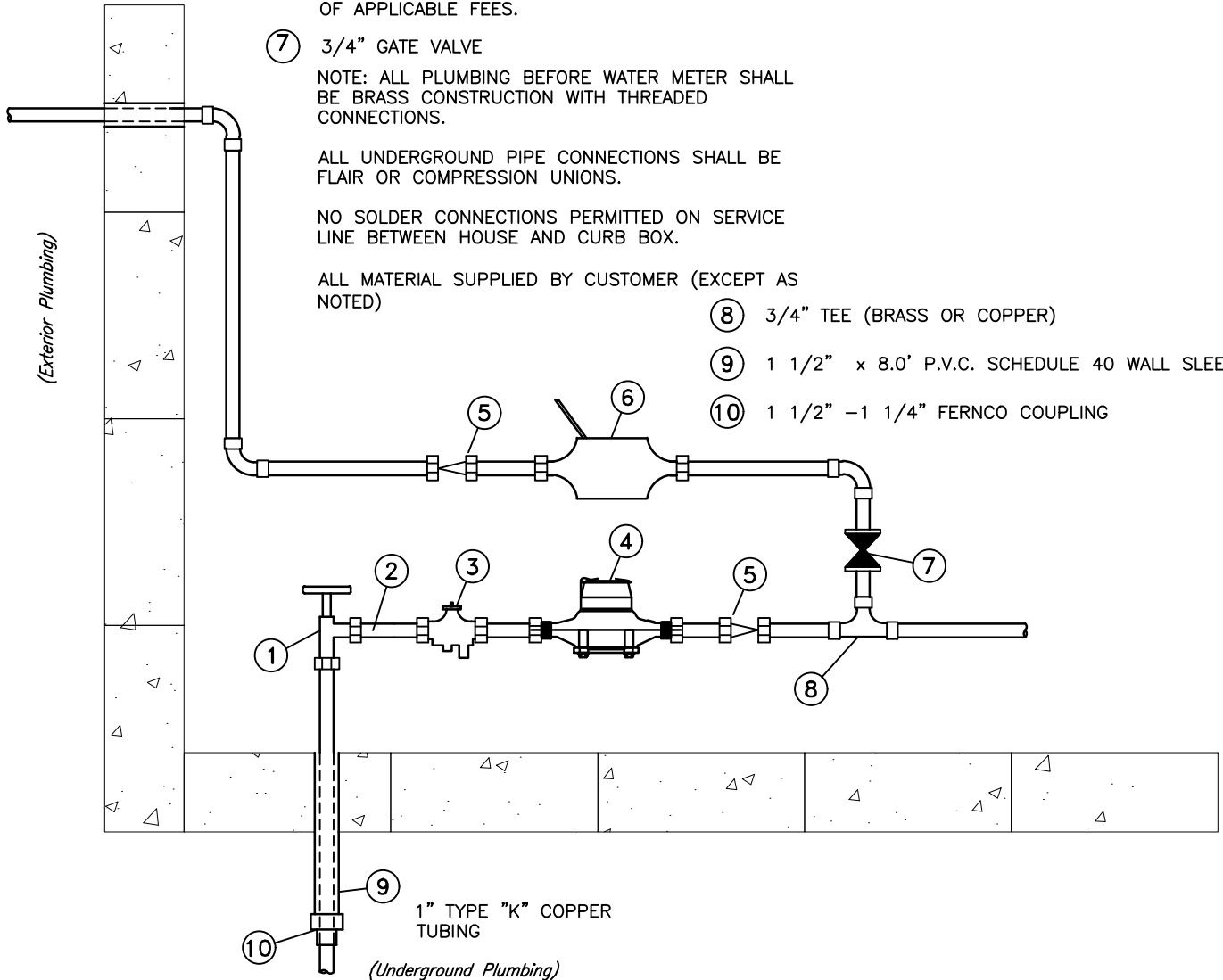
NOTE: ALL PLUMBING BEFORE WATER METER SHALL BE BRASS CONSTRUCTION WITH THREADED CONNECTIONS.

ALL UNDERGROUND PIPE CONNECTIONS SHALL BE FLAIR OR COMPRESSION UNIONS.

NO SOLDER CONNECTIONS PERMITTED ON SERVICE LINE BETWEEN HOUSE AND CURB BOX.

ALL MATERIAL SUPPLIED BY CUSTOMER (EXCEPT AS NOTED)

- ⑧ 3/4" TEE (BRASS OR COPPER)
- ⑨ 1 1/2" x 8.0' P.V.C. SCHEDULE 40 WALL SLEEVE
- ⑩ 1 1/2" - 1 1/4" FERNCO COUPLING



NOTES:

1. AN EXPANSION TANK SHALL BE INSTALLED ON THE INLET SIDE OF THE WATER LINE TO THE WATER HEATER.
2. ALL METERS SHALL BE SET IN AN AREA WHICH IS ACCESSIBLE FOR REPAIR AND/OR REPLACEMENT AND SUITABLE FOR OPERATION AND READING.
3. PROVIDE FLOOR DRAIN WITHIN 10 FEET OF THE METER SETTING.
4. METER INSTALLATION WITHIN CRAWL SPACES OR GARAGES IS PROHIBITED.
5. PROVIDE 3/8" PVC WALL SLEEVE FOR REMOTE METERING EQUIPMENT. LOCATION AS DIRECTED BY THE AUTHORITY.
6. INSTALLATION OF UNMETERED SERVICE LINES UNDER CONCRETE FLOORS (BASEMENT, GARAGES OR SLAB ON GRADE BUILDINGS) IS PROHIBITED.

METER SETTING DETAIL

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MUNICIPAL AUTHORITY**
1300 Brighton Road
Beaver, Pennsylvania 15009

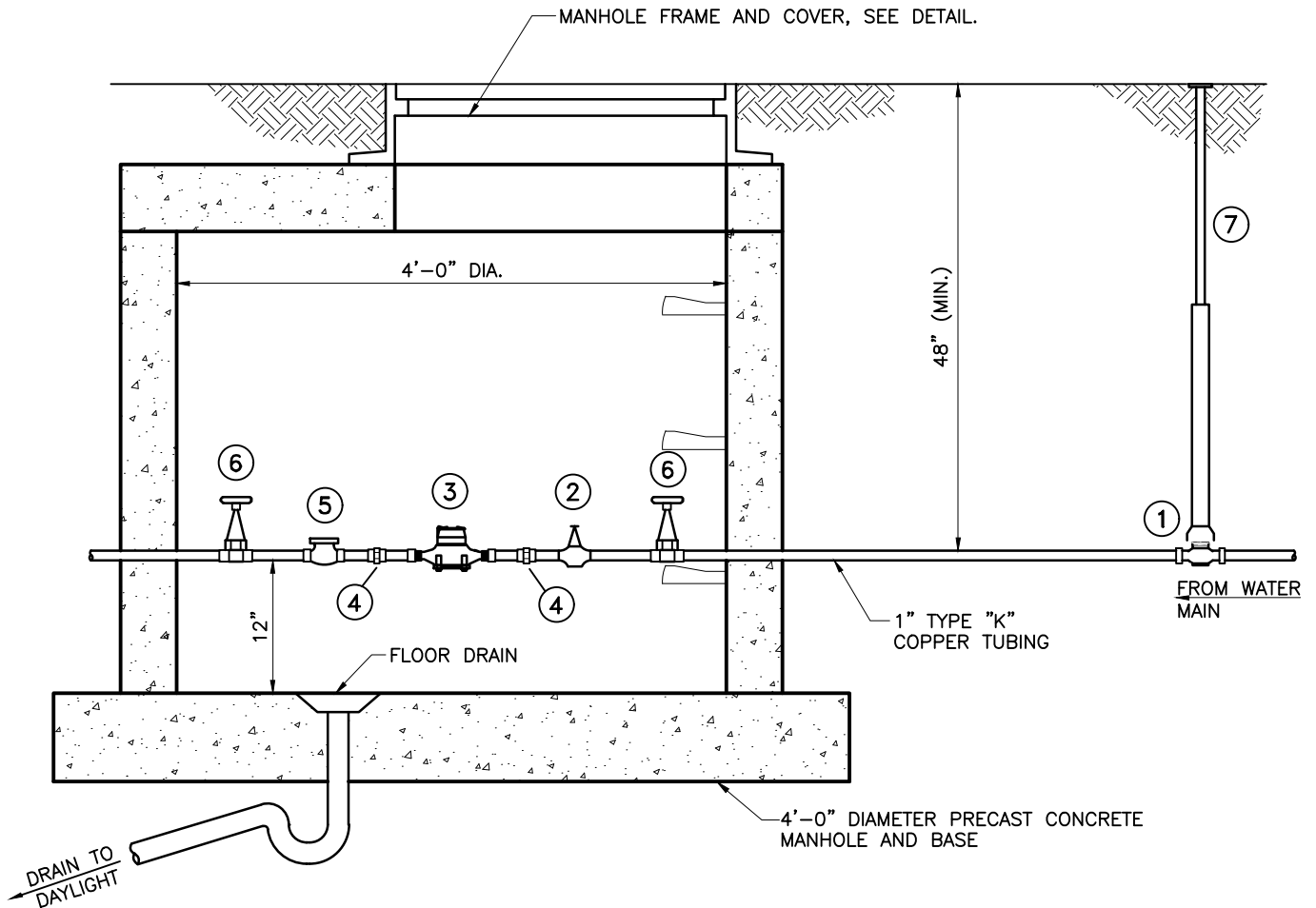
DATE: January 30, 2024
FILE NAME: BTMA-15.dwg
SCALE: N.T.S.

**METER SETTING DETAIL
INSIDE RESIDENCE**

NOTES:

- ① MUELLER CURB BOX (FURNISHED AND INSTALLED BY BTMA).
- ② PRESSURE REDUCING VALVE, AS REQUIRED.
- ③ NEPTUNE® T-10 WATER METER (FURNISHED AND SET BY BTMA).
- ④ BRASS METER UNIONS.
- ⑤ WILKINS DUAL CHECK VALVE, MODEL 700, SERIAL #5491, FEMALE IPS OR APPROVED EQUAL.
- ⑥ FULL PORT BALL VALVE.
- ⑦ CURB BOX (FURNISHED AND INSTALLED BY BTMA).

1. METER PIT IS TO BE LOCATED AT OR NEAR RIGHT OF WAY LINE IN NON-TRAFFIC AND NON-PARKING AREA.
2. METER PIT IS REQUIRED WHERE A WATER SERVICE LINE EXCEEDS 100 FT OR WHERE HOME IS BUILT ON SLAB.
3. AN EXPANSION TANK SHALL BE INSTALLED ON THE INLET SIDE OF THE WATER LINE TO THE WATER HEATER.
4. PRIOR TO STARTING WORK OR ORDERING MATERIALS, CONTACT BTMA TO REVIEW REQUIREMENTS. VERIFY ALL CONNECTION TYPES PRIOR TO ORDERING.
5. NO SOLDER CONNECTIONS PERMITTED ON SERVICE LINE BETWEEN HOUSE AND CURB BOX.
6. IN SOME INSTALLATIONS THE METER SIZE MAY DIFFER FROM THE WATER SERVICE TUBING DIAMETER. PROVIDE ALL REQUIRED FITTINGS BEFORE AND AFTER EACH METER PIT. ALL FITTINGS TO BE COMPRESSION TYPE AND RATED AT 300 PSI WORKING PRESSURE.



METER SETTING DETAIL

N. T. S.

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MUNICIPAL AUTHORITY**
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DATE: January 30, 2024
FILE NAME: BTMA-16.dwg
SCALE: N.T.S.

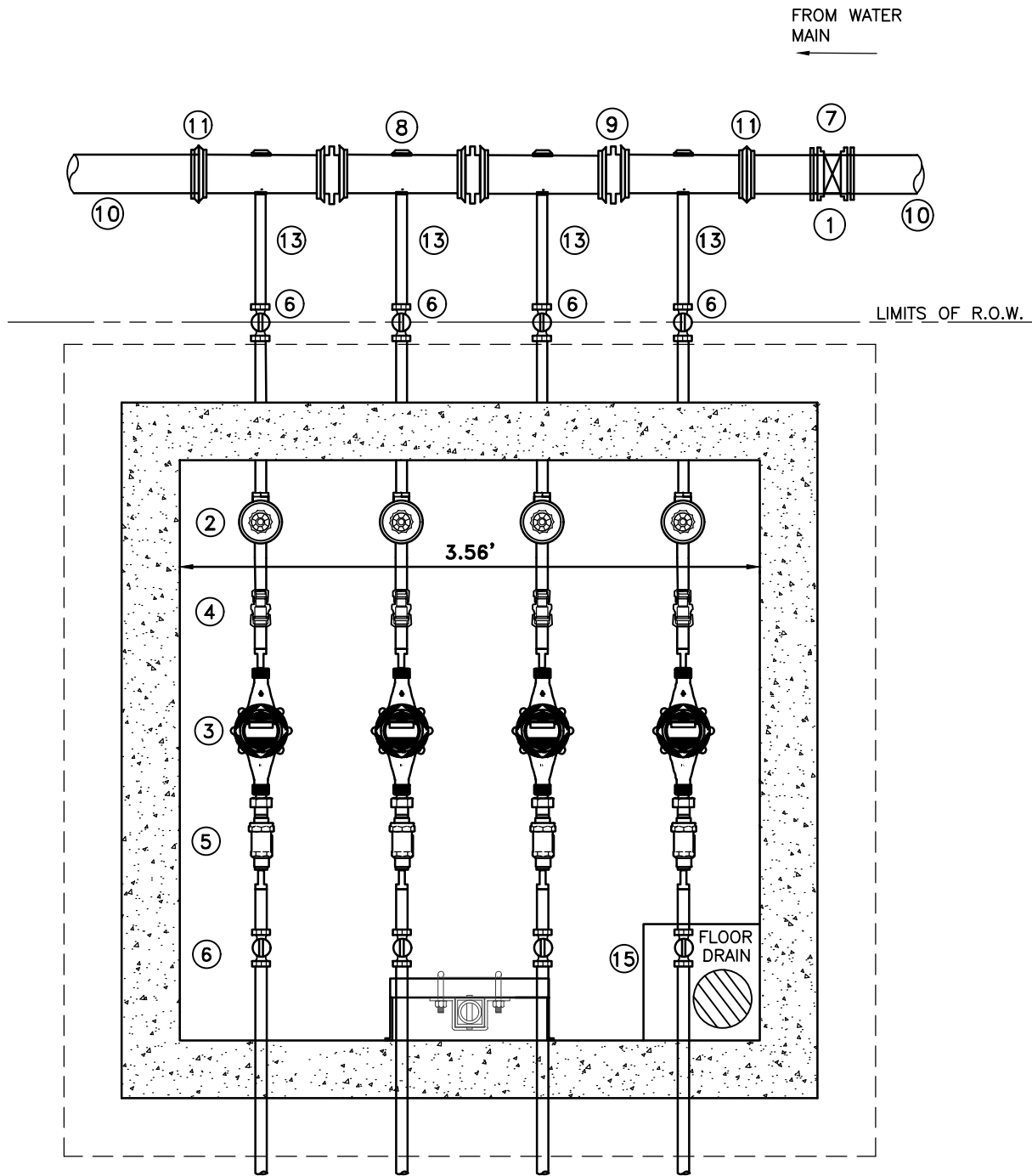
**METER SETTING DETAIL
RESIDENTIAL CONCRETE
METER PIT**

FITTING AND EQUIPMENT SCHEDULE

- 1 MUELLER 2360 SERIES RESILIENT-WEDGE GATE VALVE WITH NON-RISING STEM AND MECHANICAL JOINTS, WHERE REQUIRED.
- 2 PRESSURE REGULATOR, WHERE REQUIRED.
- 3 NEPTUNE®T-10 WATER METER (FURNISHED AND SET BY BTMA).
- 4 MUELLER BRASS INSULATED STRAIGHT COUPLINGS.
- 5 WATTS DUAL CHECK VALVE, MODEL LF7, FEMALE IPS WITH UNION OR APPROVED EQUAL.
- 6 MUELLER THREADED FULL PORT BALL VALVE, CURB STYLE
- 7 TYLER UNION 2-PIECE SLID TYPE VALVE BOX (5 1/4").
- 8 MECHANICAL JOINT TAPPED TEE (DIAMETER VARIES)
- 9 DUCTILE IRON FOSTER ADAPTER
- 10 PROPOSED/EXISTING WATERMAIN (DIAMETER VARIES)
- 11 EBAA MEG-A-LUG (MODEL DEPENDENT ON WATERMAIN TYPE)
- 12 TYLER UNION CURB BOX
- 13 TYPE K COPPER
- 14 S.S. PIPE SUPPORT
- 15 SUMP FOR PUMP (IF REQUIRED)

NOTES:

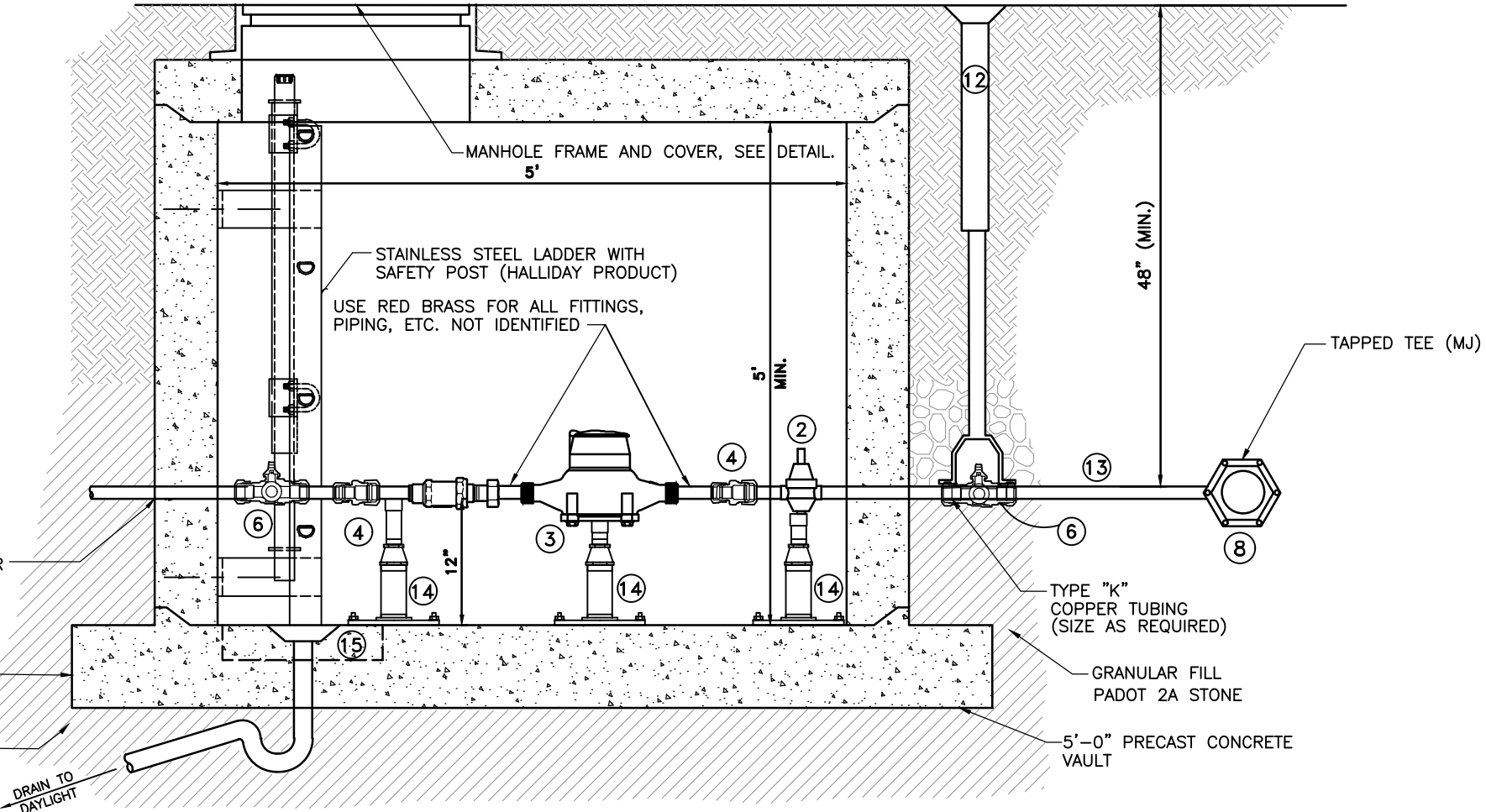
- 1. METER PIT IS TO BE LOCATED AT OR NEAR RIGHT OF WAY LINE IN NON-TRAFFIC AND NON-PARKING AREA.
- 2. METER PIT IS REQUIRED WHERE A WATER SERVICE LINE EXCEEDS 100 FT OR WHERE HOME IS BUILT ON SLAB.
- 3. AN EXPANSION TANK SHALL BE INSTALLED ON THE INLET SIDE OF THE WATER LINE TO THE WATER HEATER.
- 4. PRIOR TO STARTING WORK OR ORDERING MATERIALS, CONTACT BTMA TO REVIEW REQUIREMENTS. VERIFY ALL CONNECTION TYPES PRIOR TO ORDERING.
- 5. NO SOLDER CONNECTIONS PERMITTED ON SERVICE LINE BETWEEN HOUSE AND CURB BOX.
- 6. IN SOME INSTALLATIONS THE METER SIZE MAY DIFFER FROM THE WATER SERVICE TUBING DIAMETER. PROVIDE ALL REQUIRED FITTINGS BEFORE AND AFTER EACH METER PIT. ALL FITTINGS TO BE COMPRESSION TYPE AND RATED AT 300 PSI WORKING PRESSURE.
- 7. THE PRECAST CONCRETE METER PIT SHOP DRAWINGS SHALL BE ACCOMPANIED BY COMPLETE STRUCTURAL AND UPLIFT DESIGN CALCULATIONS. UPLIFT CALCULATIONS SHALL ASSUME COMPLETE SUBMERGENCE OF THE METER PIT. SOIL RESISTANCE TO UPLIFT SHALL BE EVALUATED IN A VERTICAL PLANE ONLY ABOVE THE FLANGED BASE. ALL DESIGN CALCULATIONS SHALL BEAR THE SEAL AND SIGNATURE OF A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF PA. CONCRETE DIMENSIONS SHOWN ARE MINIMUMS. PROVIDE MINIMUM DESIGN LOADING OF AASHTO HS-25 WITH 30% IMPACT AND EQUIVALENT SOIL PRESSURE OF 130 PSF.
- 8. ALL PIPING IN PIT TO BE COPPER AND/OR RED BRASS.



WATER STOP W/ ANCHOR COLLAR WITH NON SHRINK GROUT (TYP OF ALL PENETRATIONS).

6' SQUARE PRECAST BASE (MINIMUM)

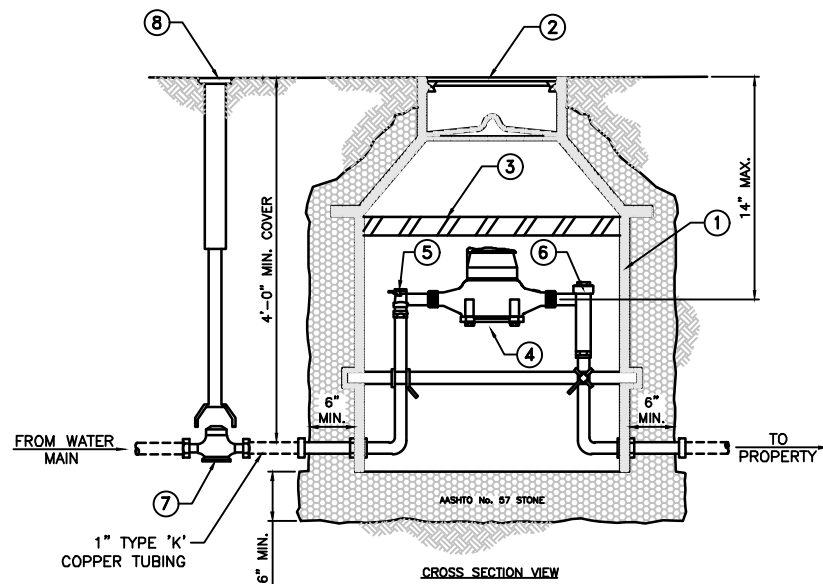
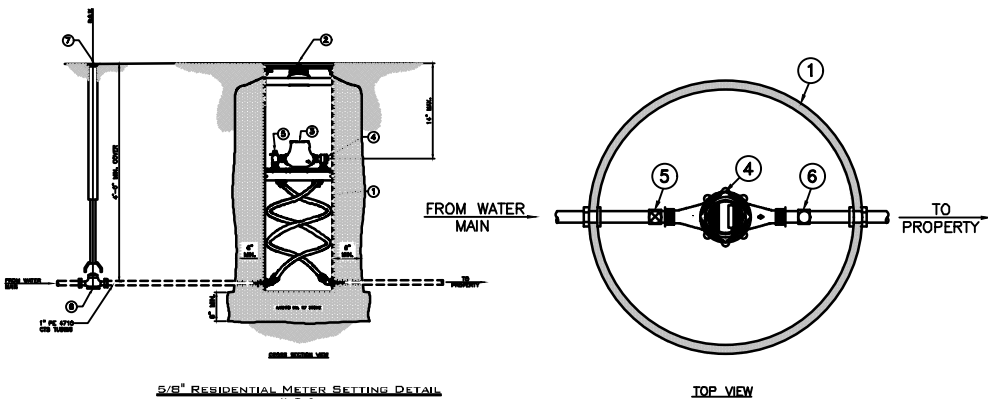
PROOF ROLLED AND APPROVED SUBGRADE



BRIGHTON TOWNSHIP
MUNICIPAL AUTHORITY
1300 Brighton Road
Beaver, Pennsylvania 15009

Drawn By	Scale: N.T.S.
Checked By	Filename: BTMA-17.dwg
Approved By	Date: January 30, 2024

RESIDENTIAL MULTI-METER PIT
STANDARD DETAIL



5/8" METER SETTING

- ① FORD PLASTIC COIL TYPE PIT SETTER OR APPROVED EQUAL 15" DIAMETER OR 18" DIAMETER PVC CYLINDER (FURNISHED AND INSTALLED BY APPLICANT/PROPERTY OWNER).
- ② FLAT LOCKING COVER AS MANUFACTURED BY FORD WITH INSULATING DISC OR APPROVED EQUAL (FURNISHED AND INSTALLED BY APPLICANT/PROPERTY OWNER).
- ③ NEPTUNE® T-10 WATER METER (FURNISHED AND SET BY BTMA).
- ④ 3/4" (MIN.) ANGLE BALL VALVE (FURNISHED AND INSTALLED BY APPLICANT/PROPERTY OWNER).
- ⑤ 3/4" (MIN.) ANGLE CARTRIDGE DUAL CHECK VALVE (FURNISHED AND INSTALLED BY APPLICANT/PROPERTY OWNER).
- ⑥ MUELLER CURB STOP (FURNISHED AND INSTALLED BY BTMA).
- ⑦ CURB BOX (FURNISHED AND INSTALLED BY BTMA).

1" THROUGH 2" METER SETTING

- ① 36" TILE SIZE ID FORD PIT SETTER FOR 1-1/2" AND 2" METERS (FURNISHED AND INSTALLED BY APPLICANT/PROPERTY OWNER).
- ② FORD CAST IRON MONITOR COVER WITH 20" LOCKING LID, INNER LID, AND INSULATION BLANKET (ELECTRONIC METER READING LIDS NOT PERMITTED) (FURNISHED AND INSTALLED BY APPLICANT/PROPERTY OWNER).
- ③ 2" INSULATING DISC
- ④ NEPTUNE® MACH 10 WATER METER (FURNISHED AND SET BY BTMA).
- ⑤ 3/4" (MIN.) ANGLE BALL VALVE (FURNISHED AND INSTALLED BY APPLICANT/PROPERTY OWNER).
- ⑥ 3/4" (MIN.) ANGLE CARTRIDGE DUAL CHECK VALVE (FURNISHED AND INSTALLED BY APPLICANT/PROPERTY OWNER).
- ⑦ MUELLER CURB STOP (FURNISHED AND INSTALLED BY BTMA).
- ⑧ CURB BOX (FURNISHED AND INSTALLED BY BTMA).

NOTES:

1. METER SETTER IS TO BE LOCATED AT OR NEAR RIGHT OF WAY LINE.
2. METER SETTER IS REQUIRED WHERE A WATER SERVICE LINE EXCEEDS 100-FT OR WHERE HOMES ARE BUILT ON SLABS.
3. AN EXPANSION TANK SHALL BE INSTALLED ON THE INLET SIDE OF THE WATER LINE TO THE WATER HEATER.
4. WHERE REQUIRED, A PRESSURE REDUCING VALVE SHALL BE INSTALLED ON THE INLET SIDE OF THE EXPANSION TANK.
5. METERS PITS SHALL BE LOCATED IN NON-TRAFFIC AND NON-PARKING AREAS.
7. PRIOR TO STARTING WORK OR ORDERING MATERIALS, CONTACT BRIGHTON TOWNSHIP MUNICIPAL AUTHORITY TO REVIEW REQUIREMENTS. VERIFY ALL CONNECTION TYPES PRIOR TO ORDERING.
8. NO SOLDER CONNECTIONS PERMITTED ON SERVICE LINE BETWEEN HOUSE AND CURB BOX.
9. IN SOME INSTALLATIONS THE METER SIZE MAY DIFFER FROM THE WATER SERVICE TUBING DIAMETER. PROVIDE ALL REQUIRED FITTINGS BEFORE AND AFTER EACH METER SETTER. ALL FITTINGS TO BE COMPRESSION TYPE AND RATED AT 300 PSI WORKING PRESSURE.
10. 1" NEPTUNE® MACH 10 TO BE THREADED. 1-1/2" AND LARGER TO BE FLANGED

**BRIGHTON TOWNSHIP
MUNICIPAL AUTHORITY**
1300 Brighton Road
Beaver, Pennsylvania 15009

Drawn By	Scale:	N.T.S.
Checked By	Filename:	BTMA-18.dwg
Approved By	Date:	January 30, 2024

RESIDENTIAL PLASTIC METER PIT

GENERAL NOTES

- ALL DUCTILE IRON PIPING SHALL BE CLASS 52 HAVING A MINIMUM WORKING PRESSURE OF 350 PSI.
- THE PRECAST CONCRETE METER PIT SECTIONS SHALL BE FURNISHED TO THE DIMENSIONS SHOWN AND SHALL BE DESIGNED IN ACCORDANCE WITH THE FOLLOWING:
CONCRETE - 4000 PSI @ 28 DAYS
ENTRAINED AIR - 5% (±1%)
STEEL - ASTM A496-A615
- GRADE 60

DESIGN LOADING - AASHTO HS-25 WITH 30% IMPACT AND EQUIVALENT SOIL PRESSURE OF 130 PSF.

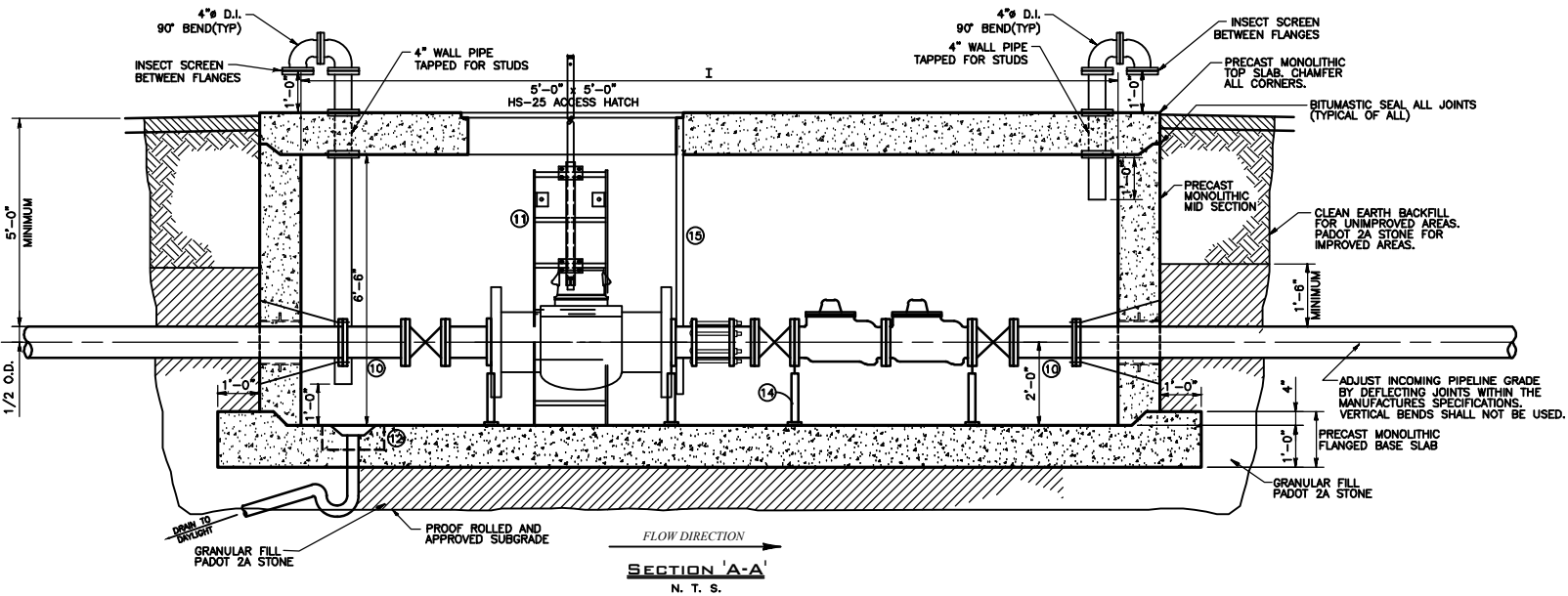
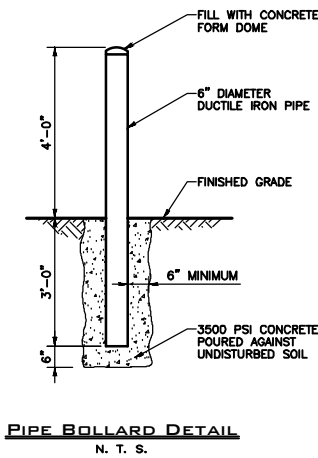
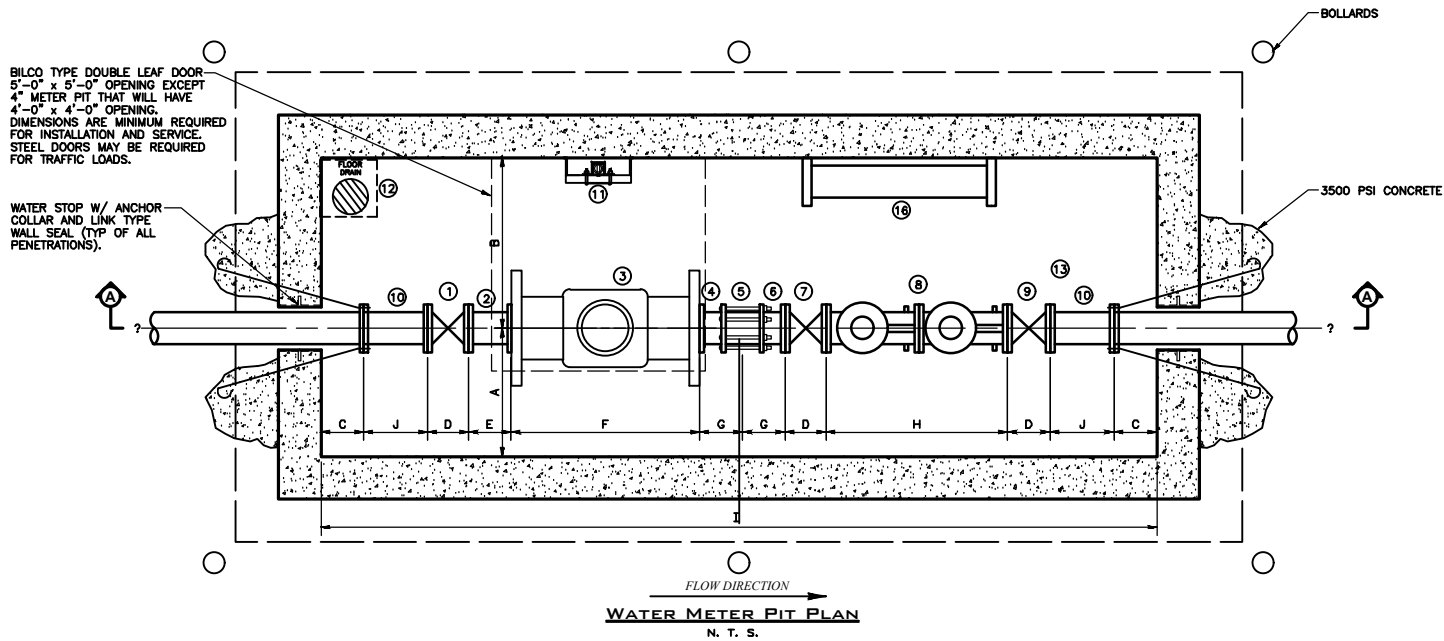
THE PRECAST CONCRETE METER PIT SHOP DRAWINGS SHALL BE ACCOMPANIED BY COMPLETE STRUCTURAL AND UPLIFT DESIGN CALCULATIONS. UPLIFT CALCULATIONS SHALL ASSUME COMPLETE SUBMERGENCE OF THE METER PIT. SOIL RESISTANCE TO UPLIFT SHALL BE EVALUATED IN A VERTICAL PLANE ONLY ABOVE THE FLANGED BASE. ALL DESIGN CALCULATIONS SHALL BEAR THE SEAL AND SIGNATURE OF A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF PA.
- ALL PRECAST METER PIT JOINTS SHALL BE BOLTED TOGETHER AND SEALED WATERTIGHT PER THE MANUFACTURER'S SPECIFICATIONS.
- ALL PRECAST METER PIT SECTIONS SHALL HAVE A WATERPROOF BITUMASTIC COATING APPLIED TO ALL EXTERIOR SURFACES BELOW FINISHED GRADE.
- ALL INTERIOR PIPING, FITTINGS, VALVES, ETC. SHALL BE PAINTED BLUE ACCORDING TO THE FOLLOWING OR APPROVED EQUIVALENT:
TAR COATED APPURTENANCES:
- ONE(1) COAT TNEC SERIES 1 OMNITHANE MID-ZINC MCU @ 3.0-4.0 MILS DFT
- TWO(2) COATS TNEC SERIES 446 PERMA-SHIELD MCU @ 6.0-8.0 MILS DFT PER COAT.

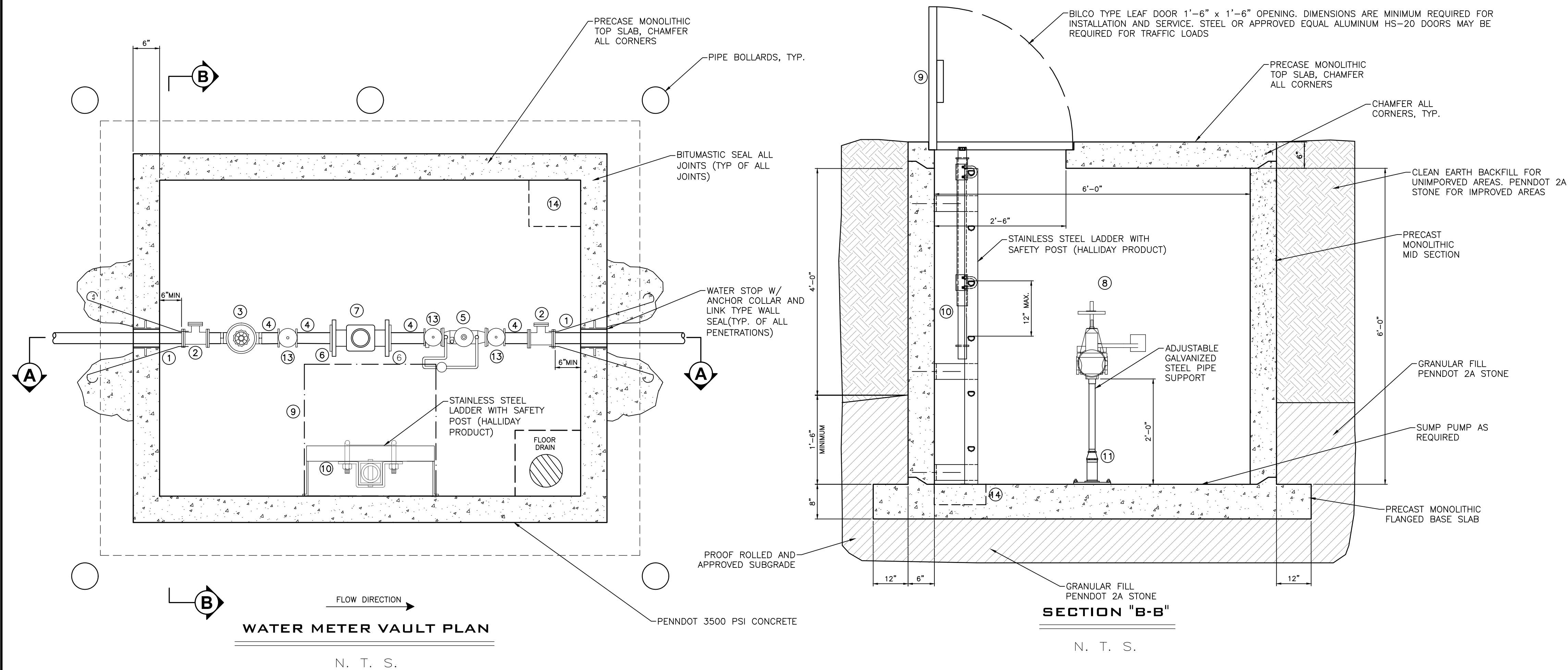
PRIMED OR UNPAINTED APPURTENANCES:
- ONE(1) COAT TNEC SERIES 1 OMNITHANE MID-ZINC MCU @ 3.0-4.0 MILS DFT.
- ONE(1) COAT TNEC SERIES 27 TYPOXY POLYAMIDE EPOXY @ 2.0-3.0 MILS DFT.
- ONE(1) COAT TNEC SERIES 73 ENDURA-SHIELD ALIPHATIC ACRYLIC URETHANE @ 2.0-3.0 MILS DFT.
- PIPE SUPPORTS, TIE RODS, ANCHORS AND THRUST RESTRAINT AT FITTINGS AND VALVES SHALL BE PROVIDED SUFFICIENT TO ALLOW PIPING TO STAND WITH REMOVAL OF METERS. FRICTION CLAMPS ARE NOT PERMITTED FOR RESTRAINT OF PIPING SYSTEMS.
- 2" VALVES AND UNDER ARE I.P.S. 4" VALVES AND OVER ARE FLANGED - 125 P.S.I. CLASS FLANGE W/125 P.S.I. DRILLING.
- IT WILL BE NECESSARY FOR THE CUSTOMER TO INSTALL PROPER GRAVITY DRAINAGE OR OTHER MECHANICAL MEANS TO KEEP VAULT DEWATERED.
- GATE VALVES AND PIPING SHOULD BE SAME SIZE AS METER.
- ALL VALVES AND BACK FLOW PREVENTORS TO BE MAINTAINED BY CUSTOMER.
- BILCO TYPE DOOR (HS-25) TO BE CENTERED OVER METER ASSEMBLY AND ACCESS LADDER.
- TIE RODS TO BE EMBEDDED IN CONCRETE OR BOLTED TO STEEL PLATES ON EXTERNAL WALLS. WATER COMPANY TO INSPECT BEFORE BACKFILLING.
- INSTALL PIPE BOLLARDS AROUND PERIMETER OF METER PIT TO PREVENT VEHICULAR TRAFFIC FROM TRAVELING OVER PIT.
- TOUCH READ PAD TO BE INSTALLED ON DOUBLE LEAF DOOR
- METER SIZE TO BE DETERMINED BY THE WATER AUTHORITY BASED ON ACTUAL WATER REQUIREMENTS.
- ALL FLANGE BOLTS TO BE STAINLESS STEEL.

VAULT AND PIPING LENGTHS										
METER SIZE	A	B	C	D	E	F	G	H	J	TOTAL LENGTH OF VAULT
6"	3'-0"	4'-0"	1'-0"	10'-1/2"	1'-0"	3'-8"	1'-0"	3'-4"	1'-4"	17'-6"
8"	3'-0"	4'-0"	1'-0"	11'-1/2"	1'-0"	4'-5"	1'-0"	4'-3"	1'-6"	19'-7"

FITTING AND EQUIPMENT SCHEDULE

- RESILIENT SEATED FLG x FLG GATE VALVE WITH RISING STEM
- FLG x FLG SPOOL PIECE
- NEPTUNE® MACH 10 ULTRASONIC METER ASSEMBLY WITH WATERPROOF REGISTER AND TOUCH READ PAD
- FLG x PE SPOOL PIECE (ACTUAL LENGTH 11")
- DRESSER STYLE FULL BODY COUPLING
- PE x FLG SPOOL PIECE
- RESILIENT SEATED FLG x FLG GATE VALVE WITH RISING STEM
- DOUBLE CHECK BACK FLOW PREVENTOR
- RESILIENT SEATED FLG x FLG GATE VALVE WITH RISING STEM
- D.I. SPOOL PIECE (FLxFL)
- STAINLESS STEEL LADDER WITH SAFETY POST (HALLIDAY PRODUCTS)
- SUMP FOR PUMP (IF REQUIRED)
- RESTRAINING RODS 1/2" DIA. - 8 REQUIRED (4 PER FITTING)
- ADJUSTABLE GALVANIZED STEEL PIPE SUPPORT (TYPICAL OF 4) WITH 8" x 8" WELDED STL. BASE PLATE
- 1" PVC DRAIN FOR GUTTER OF HATCH
- FLG x FLG SPOOL PIECE TO MATCH LENGTH OF METER ASSEMBLY



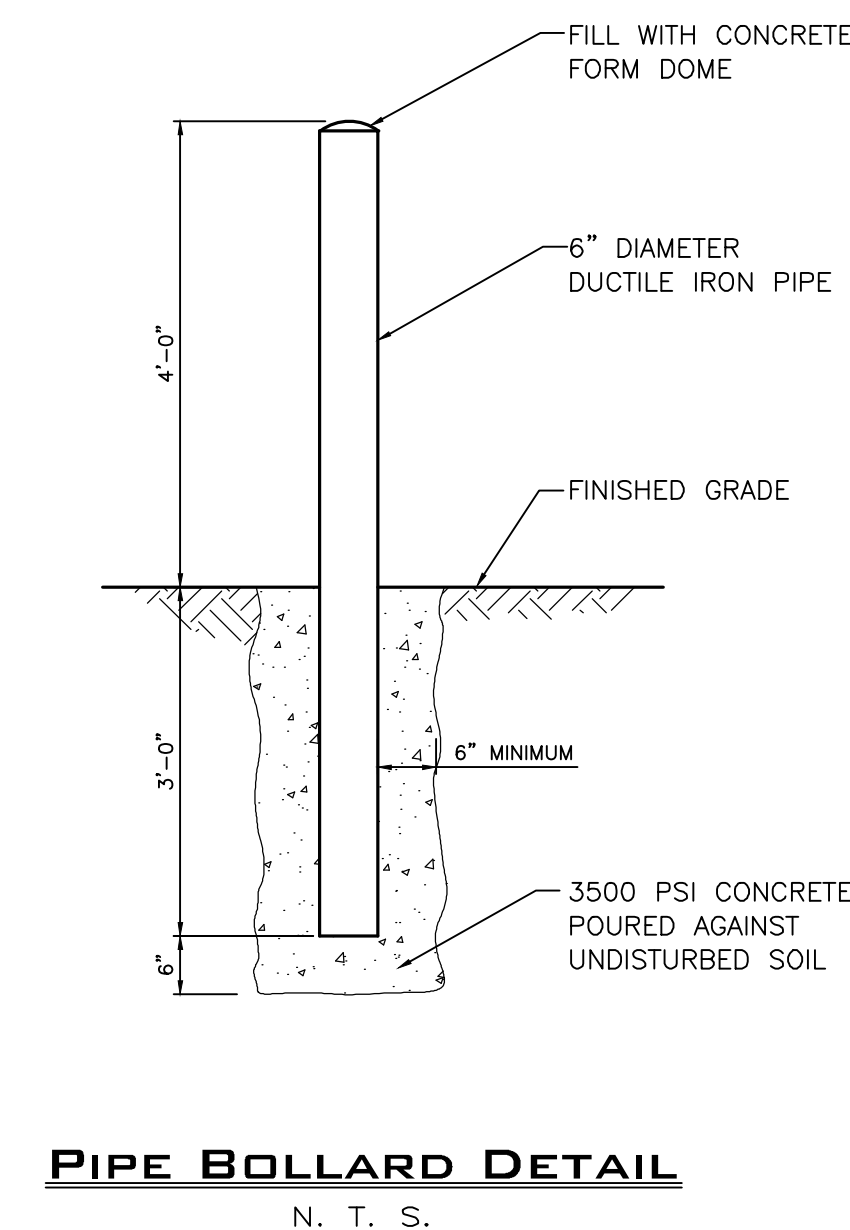
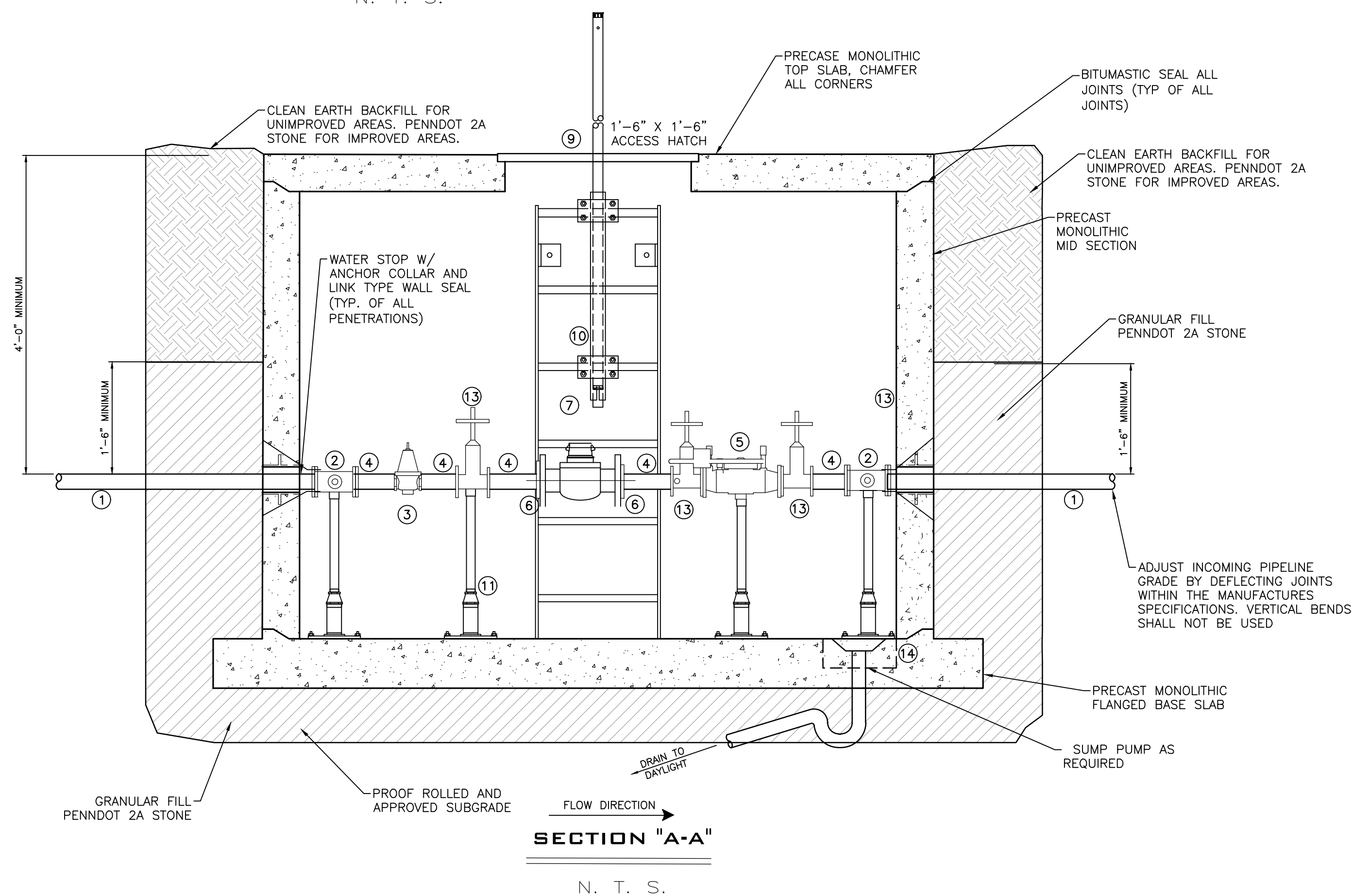


GENERAL NOTES

- ALL DUCTILE IRON PIPING SHALL BE CLASS 52 HAVING A MINIMUM WORKING PRESSURE OF 350 PSI.
- THE PRECAST CONCRETE METER PIT SECTIONS SHALL BE FURNISHED TO THE DIMENSIONS SHOWN AND SHALL BE BE DESIGNED IN ACCORDANCE WITH THE FOLLOWING:
CONCRETE - 4000 PSI @ 28 DAYS
ENTRAINED AIR - 5% ($\pm 1\%$)
STEEL - ASTM A496-A615
- GRADE 60
DESIGN LOADING - AASHTO HS-25 WITH 30% IMPACT AND EQUIVALENT SOIL PRESSURE OF 130 PSF.
THE PRECAST CONCRETE METER PIT SHOP DRAWINGS SHALL BE ACCOMPANIED BY COMPLETE STRUCTURAL AND UPLIFT DESIGN CALCULATIONS. UPLIFT CALCULATIONS SHALL ASSUME COMPLETE SUBMERGENCE OF THE METER PIT. SOIL RESISTANCE TO UPLIFT SHALL BE EVALUATED IN A VERTICAL PLANE ONLY ABOVE THE FLANGED BASE. ALL DESIGN CALCULATIONS SHALL BEAR THE SEAL AND SIGNATURE OF A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF PA. CONCRETE DIMENSIONS SHOWN ARE MINIMUMS.
- ALL PRECAST METER PIT JOINTS SHALL BE BOLTED TOGETHER AND SEALED WATERTIGHT PER THE MANUFACTURER'S SPECIFICATIONS.
- ALL PRECAST METER PIT SECTIONS SHALL HAVE A WATERPROOF BITUMASTIC COATING APPLIED TO ALL EXTERIOR SURFACES BELOW FINISHED GRADE.
- ALL INTERIOR PIPING, FITTINGS, VALVES, ETC. SHALL BE PAINTED BLUE ACCORDING TO THE FOLLOWING OR APPROVED EQUIVALENT:
TAR COATED APPURTENANCES
- ONE(1) COAT TNEC SERIES 1 OMNITHANE MIO-ZINC MCU @ 3.0-4.0 MILS DFT
- TWO(2) COATS TNEC SERIES 446 PERMA-SHIELD MCU @ 6.0-8.0 MILS DFT PER COAT.
PRIMED OR UNPAINTED APPURTENANCES
- ONE(1) COAT TNEC SERIES 1 OMNITHANE MIO-ZINC MCU @ 3.0-4.0 MILS DFT.
- ONE(1) COAT TNEC SERIES 27 TYPOXY POLYAMIDE EPOXY @ 2.0-3.0 MILS DFT.
- ONE(1) COAT TNEC SERIES 73 ENDURA-SHIELD ALIPHATIC ACRYLIC URETHANE @ 2.0-3.0 MILS DFT.
- PIPE SUPPORTS, TIE RODS, ANCHORS AND THRUST RESTRAINT AT FITTINGS AND VALVES SHALL BE PROVIDED SUFFICIENT, TO ALLOW PIPING TO STAND WITH REMOVAL OF METERS. FRICTION CLAMPS ARE NOT PERMITTED FOR RESTRAINT OF PIPING SYSTEMS.
- 2" VALVES AND UNDER ARE I.P.S. 4" VALVES AND OVER ARE FLANGED - 125 P.S.I. CLASS FLANGE W/125 P.S.I. DRILLING.
- IT WILL BE NECESSARY FOR THE CUSTOMER TO INSTALL PROPER GRAVITY DRAINAGE OR OTHER MECHANICAL MEANS TO KEEP VAULT DEWATERED.
- GATE VALVES AND PIPING SHOULD BE SAME SIZE AS METER.
- ALL VALVES AND BACK FLOW PREVENTORS TO BE MAINTAINED BY CUSTOMER.
- HS-20 BILCO TYPE DOOR TO BE CENTERED OVER METER ASSEMBLY AND ACCESS LADDER.
- TIE RODS TO BE EMBEDDED IN CONCRETE OR BOLTED TO STEEL PLATES ON EXTERNAL WALLS. WATER COMPANY TO INSPECT BEFORE BACKFILLING.
- INSTALL PIPE BOLLARDS AROUND PERIMETER OF METER PIT TO PREVENT VEHICULAR TRAFFIC FROM TRAVELING OVER PIT.
- TOUCH READ PAD TO BE INSTALLED ON HATCH.
- METER SIZE TO BE DETERMINED BY THE WATER AUTHORITY BASED ON ACTUAL WATER REQUIREMENTS.
- ALL FLANGE BOLTS TO BE STAINLESS STEEL.
- THIS DETAIL APPLIES TO APPLICATIONS WHERE A FIRE SERVICE IS NOT PROPOSED. SEE DETAIL BTMA-18 FOR FIRE METERING.
- WATERLINE GREATER THAN 2 INCH DIAMETER REQUIRES THE USE OF DUCTILE IRON IN LIEU OF BRASS AND/OR COPPER TUBING.

FITTING AND EQUIPMENT SCHEDULE

- TYPE "K" COPPER TUBING OR BRASS - SIZE AS REQUIRED
- LEE BRASS DOMESTIC CAST THREADED TEE WITH PLUG
- PRESSURE REGULATOR, WHERE REQUIRED
- BRASS NIPPLE - SIZE AS REQUIRED
- DOUBLE CHECK BACKFLOW DETECTOR
- METER COUPLINGS
- NEPTUNE® MACH 10 ULTRASONIC METER (2") OR C&I MACH 10 ULTRASONIC METER (3" THROUGH 4")
- WATERLINE - 2" WATERWORKS BRASS OR DUCTILE, AS REQUIRED
- 30" x 30" HS-25 ACCESS HATCH
- STAINLESS STEEL LADDER WITH SAFETY POST (HALLIDAY PRODUCT)
- ADJUSTABLE GALVANIZED STEEL PIPE SUPORT (TYP.)
- 90 DEGREE LEE BRASS FITTING
- THREADED GATE VALVE
- SUMP FOR PUMP (IF REQUIRED)



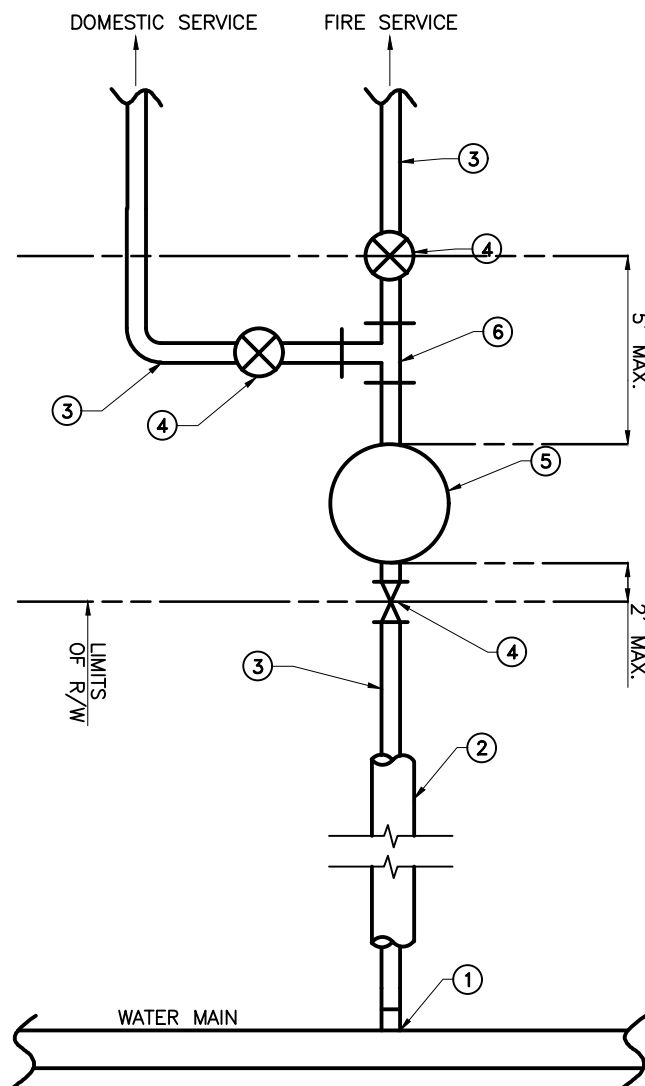
**BRIGHTON TOWNSHIP
MUNICIPAL AUTHORITY**
1300 Brighton Road
Beaver, Pennsylvania 15009-9211

DRAWN BY:
CHECKED BY:
APPROVED BY:

SCALE:
N.T.S.
DATE:
January 30, 2024

COMMERCIAL METER PIT
2-INCH THROUGH 4-INCH METER SIZES

FILE NAME: BTMA-20.DWG
DWG. NO. 0124-02-19
SHEET NO. 1 of 1



**PRIVATE FIRE SERVICE
FOR RESIDENTIAL STRUCTURE**

N. T. S.

- ① MUELLER MODEL H-15008 CORPORATION STOP (FURNISHED AND INSTALLED BY BTMA).
- ② SCHEDULE 80 PVC CASING PIPE UNDER ROADWAYS. (SEE NOTE 2).
- ③ TYPE "K" COPPER TUBING (1" MINIMUM)
- ④ MUELLER MODEL H-15209 CURB STOP AND VALVE BOX (FURNISHED AND INSTALLED BY BTMA).
- ⑤ MUELLER HUNT METER BOX (SEE METER SETTING DETAIL)
- ⑥ MUELLER MODEL H-15391 TEE (FURNISHED AND INSTALLED BY BTMA).
- ⑦ MUELLER HUNT METER BOX (SEE METER SETTING DETAIL)
- ⑧ MUELLER MODEL H-15391 TEE (FURNISHED AND INSTALLED BY BTMA).

NOTES:

1. SIZE OF ALL FACILITIES TO BE DETERMINED BY APPLICANT'S/PROPERTY OWNER'S SPRINKLER DESIGNER.
2. THE APPLICANT/PROPERTY OWNER IS RESPONSIBLE FOR THE CONSTRUCTION (INCLUDING PIT EXCAVATION) AND COST FOR ALL BORES HAVING COPPER TUBING/CASING PIPE DIAMETER GREATER THAN 1". ALL NEW DEVELOPMENT CONSTRUCTION REQUIRES SCHEDULE 80 PVC CASING PIPE BENEATH ROADWAYS. BTMA TO FURNISH AND INSTALL COPPER TUBING WITHIN PVC CASING PIPE.
3. WHERE A TWO INCH DIAMETER SERVICE CONNECTION IS REQUIRED ON A 4 INCH DIAMETER EXISTING WATER MAIN - A CONNECTION WILL BE MADE USING A DUCTILE IRON TEE IN LIEU OF A CORPORATION. ALL CONNECTIONS TO WATER MAIN WILL BE DONE BY BTMA.
4. THE LENGTH OF COPPER TUBING BENEATH ROADWAY SHALL BE PROVIDED SUCH THAT ONE (1) CONTINUOUS PIECE IS INSTALLED WITHIN SCHEDULE 80 PVC CASING WITHOUT THE NEED OF FITTINGS, FASTENERS, COUPLINGS, ETC.
5. THE CURB BOX LID FOR DOMESTIC SERVICE SHALL READ "WATER". THE CURB BOX LID FOR FIRE SERVICE SHALL READ "FIRE".
6. AN EXPANSION TANK SHALL BE INSTALLED ON THE INLET SIDE OF THE WATER LINE TO THE WATER HEATER.
7. THE NEED FOR A PRESSURE REDUCING VALVES IS THE RESPONSIBILITY OF THE APPLICANT/PROPERTY OWNER. INSTALLATION OF PRESSURE REDUCING VALVES SHALL BE INSTALLED BY THE APPLICANT/PROPERTY OWNER.
8. BTMA TO FURNISH AND INSTALL TYPE "K" COPPER TUBING FROM THE WATER MAIN TO THE LIMIT OF R/W (SEE NOTE 2 FOR EXCEPTIONS). THE APPLICANT/PROPERTY OWNER TO FURNISH AND INSTALL REMAINING FIRE AND DOMESTIC SERVICE TYPE "K" COPPER TUBING FROM LIMIT OF R/W TO RESIDENTIAL STRUCTURE.

**BRIGHTON TOWNSHIP
MUNICIPAL AUTHORITY**
1300 Brighton Road
Beaver, Pennsylvania 15009

Drawn By

Checked By

Approved By

Scale:

N.T.S.

Filename:

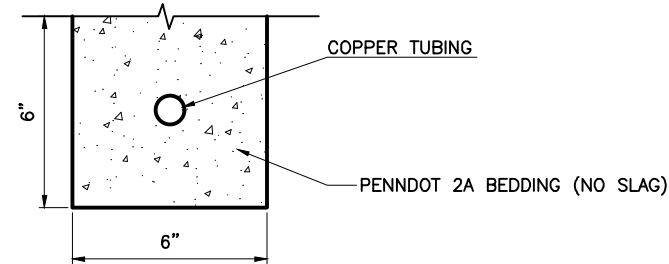
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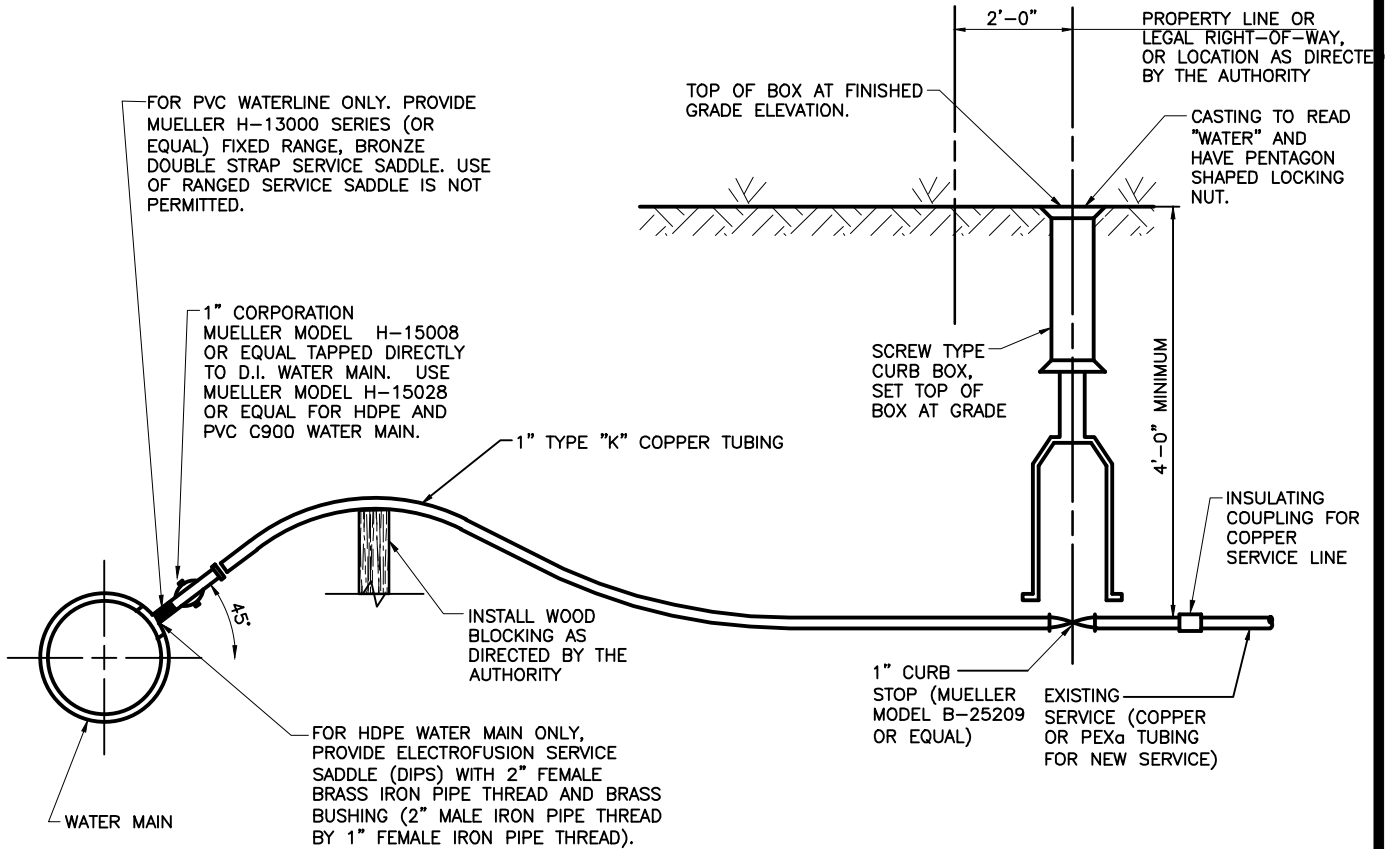
January 30, 2024

**PRIVATE FIRE SERVICE
FOR
RESIDENTIAL STRUCTURE**

N:\PROJ\124\124-04\DETAILS\BTMA-20.dwg layout = 22 BTMA-20 - Short Service Connection Detail Username = cad04 Date = Feb 01, 2024 - 10:49am



BEDDING DETAIL
N. T. S.



NOTES:

1. SIZE OF FITTINGS AND LINE SHALL BE 1" OR AS SHOWN ON THE DRAWINGS.
2. FOR 2" SERVICES ON DUCTILE IRON WATER MAIN USE MUELLER BRONZE DOUBLE STRAP THREADED SERVICE CLAMP OR EQUAL.
3. LAY COPPER TUBING IN PENNDOT 2A BEDDING (NO SLAG).

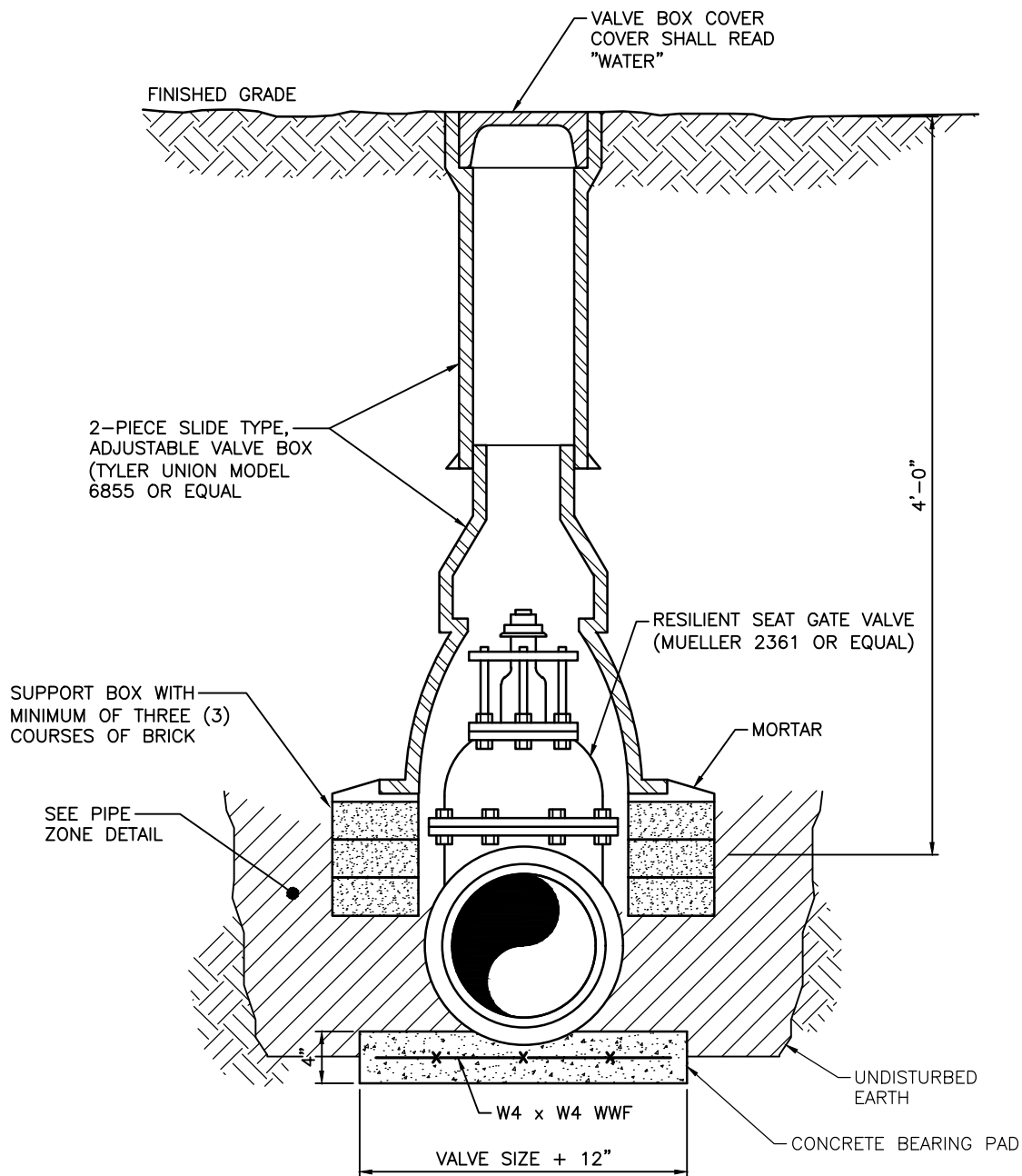
WATER MAIN SHORT SERVICE CONNECTION
N. T. S.

**BRIGHTON TOWNSHIP
MUNICIPAL AUTHORITY**
1300 Brighton Road
Beaver, Pennsylvania 15009

DATE: January 30, 2024
FILE NAME: BTMA-22.dwg
SCALE: N.T.S.

**WATER MAIN
SHORT SERVICE CONNECTION**

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TYPICAL
GATE VALVE ASSEMBLY
N. T. S.

**BRIGHTON TOWNSHIP
MUNICIPAL AUTHORITY**
1300 Brighton Road
Beaver, Pennsylvania 15009

DATE:	January 30, 2024
FILE NAME:	BTMA-23
SCALE:	N.T.S.

GATE VALVE ASSEMBLY