



**City of Middletown**  
**WATER & SEWER DEPARTMENT**  
**82 Berlin Street**  
**Middletown, CT 06457**  
**Phone: (860) 638-3500**

**GENERAL REQUIREMENTS**  
**SANITARY SEWER MAIN AND LATERAL INSTALLATION**  
**MARCH 2024**

**GRAVITY SEWER MAINS**

Gravity sewer mains shall meet the following material requirements:

- Polyvinyl Chloride (PVC), ASTM D-3034 or ASTM F-1760, SDR 35, with retained ring gasket for pipes 18-inches in diameter and smaller.
- PVC, ASTM F-679, SDR 26 with retained ring gasket for pipes 24 inches in diameter and larger.
- Ductile iron pipe (DIP) Class 52 for applications where the depth of bury is either greater than 15 feet or less than four feet. DIP shall be lined with Protecto 401 epoxy or equal.
- Class 54 DIP is required under railroad crossings.
- Maximum allowable slope is 10% (0.10 ft/ft)
- Minimum allowable slope for 8 to 10 inch diameter pipe is 0.5% (0.005 ft/ft)
- Minimum allowable slope for 12 inch diameter pipe and larger is 0.3% (0.003 ft/ft)
- Minimum pipe diameter is 8 inch

**NON-GRAVITY – FORCE MAIN**

No new pump stations or force mains are allowed. Any request for a waiver of this requirement must be submitted to the Middletown WPCA for consideration.

**GRAVITY SEWER LATERALS**

Gravity sewer laterals shall meet the following material requirements:

- Polyvinyl Chloride (PVC), ASTM D-3034 or ASTM F-1760, SDR 35, with retained ring gasket. Maximum length of 6.5 feet.
- Ductile iron pipe (DIP) Class 52 for applications where the depth of bury is either greater than 15 feet or less than 4 feet. DIP shall be lined with Protecto 401 epoxy or equal.
- Maximum allowable slope is 10% (0.10 ft/ft)
- Minimum allowable slope is 2% (0.02 ft/ft) for 6 inch diameter pipe
- Minimum pipe diameter is 6 inches.
- Minimum bury depth is 3 feet to top of pipe.

**GENERAL REQUIREMENTS  
SANITARY SEWER MAIN AND LATERAL INSTALLATION  
CONTINUED**

- Laterals must connect to the sewer main. No connections to manhole structures will be allowed.
- The property owner owns the lateral from the building to the wye in the sewer main.

**SANITARY SEWER LATERAL LINING**

The lining of existing sanitary sewer lateral pipe is generally an acceptable method of repair where applicable. The contractor must submit the type of lining and lining method to the department prior to receiving a permit for this work. Care shall be taken to eliminate any coupons, scrap or other foreign material from entering the City's sanitary sewer main. The liner shall not protrude into the sanitary sewer main and shall not have rough or broken edges. A video inspection of the final installation shall be conducted and submitted to the inspector to ensure the liner has properly cured and is free of defects. The contractor shall coordinate with the city when access to city owned manholes is required to complete any work.

**NON –GRAVITY SEWER LATERALS**

See “Low Pressure Sewer Service Installation of Force Mains and Services.”

**JOINTS**

Bell and spigot type with retained ring gasket in accordance with ASTM D-3034. Bell and spigot to be installed in the direction of flow.

**UTILITY SEPARATION**

Sewer mains and laterals shall be separated from water utilities by a minimum horizontal distance 10 feet and a minimum vertical distance of 18 inches. Sanitary sewer piping shall be installed below any water main or service when possible. The minimum separation distance from all other utilities shall be 5 feet horizontal and 18 inches vertical.

**FITTINGS**

Molded wyes, tees, and bends shall be bell and spigot type with retained ring gasket. In accordance with ASTM D-3034. All bell fittings are allowed for repairs only.

**FIELD PERFORMANCE TESTING**

Pressure testing shall be measured between manholes on new sanitary sewer installations. A low-pressure air test shall be performed with a minimum pressure of 3.5 p.s.i. held for five minutes with no drop in pressure allowed. New manholes shall be vacuum tested in accordance with ASTM C1244-05.

**VIDEO INSPECTION**

**GENERAL REQUIREMENTS  
SANITARY SEWER MAIN AND LATERAL INSTALLATION  
CONTINUED**

All new sanitary sewer main line installations shall be video inspected with the latest digital video equipment. The line shall be flushed and then a dye solution allowed to flow immediately prior to the video inspection. Any deficiencies shall be noted in a written report. The report and a digital copy of the video shall be submitted to the Sewer Department for review.

**TRENCH BACKFILL**

Sewer pipe shall be backfilled with  $\frac{3}{4}$ " (max) crushed stone to a depth of one foot above the pipe. An additional 12-inches of coarse sand shall be used to backfill over the crushed stone with filter fabric. The remainder of the trench backfill shall be in accordance with the latest Department of Public Works standards when work is within a City street.

**MARKING TAPE & TRACER WIRE**

Install detectable green marking tape, six inches wide 24 inches above the sewer main or lateral.

Tracer wire shall be installed on all non-metallic pipe. The Sewer Department may require tracer wire on certain critical metallic pipe in areas where standard methods are ineffective. Tracer wire for open cut pipe installations shall be #12 AWG copper clad steel with a minimum break load of 450 pounds and have a minimum 30 mil thickness of green HDPE insulation. All trace wire connectors shall be designed for direct bury, water proof and filled with a dielectric silicone gel. No non-locking friction fit, twist on or taped connectors are allowed. Above ground trace wire access box or grade level access boxes are required at either end of the run. Magnesium grounding rods are required at both ends of the trace wire. The tracer wire shall be buried 2- 6 inches directly below the pipe. The trace wire shall not be wrapped around the pipe or connected to any other utility. Tracer wire and appurtenances shall be by Copperhead Industries or equal. The contractor shall follow the manufacturer's installation instructions. The tracer wire shall be tested with line locating equipment to verify that it was installed correctly.

**PAVEMENT**

Pavement removal and/or replacement shall be in accordance with the latest City of Middletown Department of Public Works standards.

**MANHOLES, FRAMES AND COVERS**

Standard precast manholes, frames and covers shall be in accordance with the latest Sewer Department standards and requirements. Manholes shall be installed every 300 to 400 feet. See attached detail. Water tight manhole covers are required in areas prone to flooding or in the gutter/flow line of streets, driveways, parking lots.

**MANHOLE INVERTS**

All inverts are to be of red clay brick and built in a workman like manner to a height of 0.80 of the pipe diameter. Poured concrete inverts are not allowed on manholes with pipes less than 24 inches in diameter. Precast manhole inverts are not allowed.

**GENERAL REQUIREMENTS  
SANITARY SEWER MAIN AND LATERAL INSTALLATION  
CONTINUED**

**DROP MANHOLES AND CHIMNEYS**

Standard precast outside drop manholes shall be in accordance with the latest Sewer Department standards and requirements. Drop manholes with a drop less than two feet shall be formed within the manhole. Interior drop manholes are not allowed. Chimneys shall be pre-cast with a cast iron cover installed flush with the final grade (EJIW 1578-11CO2 or equal).

**SEWER LATERAL CLEANOUTS**

Cleanouts are required at intervals not greater than 100 feet or when more than two 45° bends or 90° total bends are installed. Threaded male plugs shall be used to cap cleanout. Cleanout covers shall be cast iron installed flush with the grade similar to EJIW 1578-11CO2.

**CONNECTIONS TO CITY SANITARY SEWER**

New Residences with property lines located within 200 feet of a public sanitary sewer are required to connect to the City's sewer collection system. A parcel with a failing septic system may be also be required by the Health Department to connect to public sanitary sewer if the property is within 200 feet of an existing sewer main.

Each improved property shall have its own sanitary sewer lateral. No common laterals are allowed.

- Each side of a duplex, or each townhouse unit shall have its own sewer lateral.
- Buildings incorporating multiple condominium units may be served by one sanitary sewer lateral, similar to an apartment building sewer service.

A separate and independent sewer lateral shall be provided for every structure on a parcel to be served.

- This requirement may be waived by the Chief Engineer. Two or more structures on a single parcel, under one ownership, may be served by the same common lateral if it is unlikely that the parcel can be subdivided in the future under zoning regulations and given the physical layout of the parcel and buildings.
- If for any reason, the property is subsequently divided, each building is required to then be separately and independently connected to the public sewer.

Installing laterals on adjacent and neighboring properties should be avoided when possible. An easement is required when a lateral is installed across property other than the one being served. The easement shall be in place prior to applying for a certificate of occupancy.

**GENERAL REQUIREMENTS  
SANITARY SEWER MAIN AND LATERAL INSTALLATION  
CONTINUED**

**ILLEGAL SEWER CONNECTIONS**

In accordance with City Ordinances, “no person shall discharge or cause to be discharged any storm water, surface water, groundwater, roof runoff, subsurface drainage...to any sanitary sewer.” Therefore, the following connections to the sanitary sewer are prohibited: roof downspouts, exterior foundations drains, areaway drains, yard drains, sump pump discharges and any other sources of the surface runoff or groundwater.

**ABANDONMENT**

When a sewer lateral is to be abandoned, it shall be cut at the main line and a plumber’s stop installed and encased in concrete. If abandonment at the main is not feasible, a proposed alternate shall be submitted in writing for review and approval.

**SUBMITTALS**

Cut sheets for all materials being proposed for construction must be submitted to the City of Middletown Sewer Department for review and approval. The review process may take up to two weeks. This should be incorporated into the developer’s/contractor’s schedule.

A sketch detailing the proposed sewer lateral connection is required for all residential properties. Non-residential properties require a site plan stamped by a Professional Engineer registered in the State of Connecticut for the connection or abandonment of sewers. The sketch or site plan shall be submitted when applying for the sanitary sewer permits.

**PERMITS**

A valid state license (P-1 or P-7) is required for all sewer permits. The license holder is required to sign the permit. The license holder can provide a written and signed letter granting his designee permission to sign a permit in their absence. However, the permit holder is responsible for completing the work under the permit. A copy of the plumber’s license and the signer’s driver’s license is required. All fees and required documents shall be submitted prior to the approval of any permits.

**INSPECTIONS**

The contractor is responsible for contacting the Sewer Department’s inspector to schedule the inspection of work. Inspectors are typically available between 7:30 am and 3:30 pm Monday through Friday, not including holidays. There may be an overtime charge for any inspections outside of the normal working hours listed above.

The contractor shall not backfill the sewer lateral installation or repair until the work is approved by the inspector. The contractor will be responsible for exposing any sewer lateral that was backfilled prior to inspection. The license holder for the permit shall be present for any field inspections.

**GENERAL REQUIREMENTS  
SANITARY SEWER MAIN AND LATERAL INSTALLATION  
CONTINUED**

**SUB-DIVISION AND LARGE PROJECTS**

The following items are required for all large projects and sub-divisions:

**Preconstruction Meeting:** Prior to the start of non-residential construction, the contractor, engineer, and owner shall meet with representatives from the City of Middletown Water and Sewer Department to ensure compliance with these requirements.

**Submittals:** Working drawings, shop drawings, material certifications and product data shall be submitted for all materials to be used in the construction of sanitary sewer facilities. The review process may take up to two weeks. This should be incorporated into the developer's/contractor's schedule.

A sketch detailing the proposed sewer lateral connection is required for all residential properties. Non-residential properties require a site plan stamped by a Professional Engineer registered in the State of Connecticut for the connection or abandonment of sewers. The sketch or site plan shall be submitted when applying for the sanitary sewer permits.

**Punch Lists:** After substantial completion of the project, the Department will generate a punch list of items that are not complete or don't meet the Sewer Department standards. This list shall be addressed by the contractor prior to acceptance. An additional fee may be charged if more than two inspections are required.

**As Built Drawings:** Upon completion, an as-built drawing shall be furnished to the Department for review and approval. The sanitary sewer as-built shall include the plan and profile of the new sanitary sewer system and its connection to the existing system. The plans shall be on submitted on 24" x 36" (Arch D) size sheets on both mylar prints and in electronic format (PDF and CAD).

**CONTACT INFORMATION**

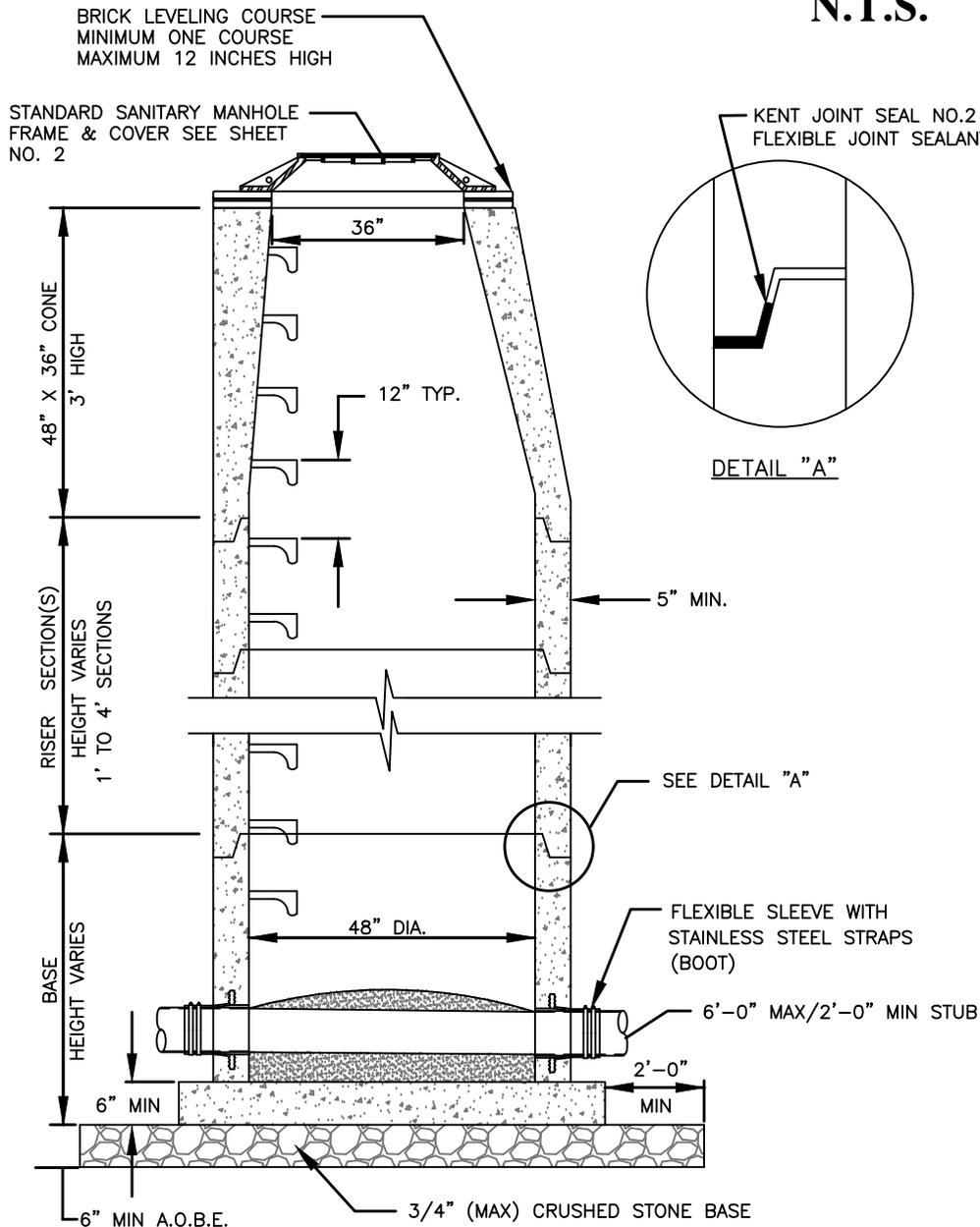
All installations, building connections, valve operations, and test procedures must be cleared with the City of Middletown Water and Sewer Department. Use the following extensions.

Main Office	860-638-3500
Markouts & Inspections	860-638-3522
Mapping and Information	860-638-3516
Assistant Chief Engineer	860-638-3515
Chief Engineer	860-638-3517

**Provide notification at least 48 hours prior to commencement of work.**

# TYPICAL SANITARY MANHOLE DETAIL

N.T.S.



**NOTES:**

1. MANHOLE TO BE MANUFACTURED IN ACCORDANCE WITH ASTM C-478.
2. TOP STEP TO BE 18" MAX. BELOW TOP OF FRAME.
3. MANHOLE STEPS TO BE STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC MODEL #PS2-PF-SL OR CAST ALUMINUM ALLOY 6061 DROP FRONT DESIGN.
4. INSERT RUBBER PLUG INTO LIFTING HOLES FROM OUTSIDE & FILL WITH NON-SHRINK MORTAR INSIDE & OUTSIDE.
5. BRICK RISER COLLAR TO BE PARGED & RECEIVE TWO COATS BITUMINOUS WATERPROOFING MATERIAL.
6. MANHOLE JOINTS SHALL RECEIVE NON-SHRINK GROUT INTERIOR.
7. MANHOLE STEPS SHALL BE 12" ON CENTER.
8. OUTSIDE OF MANHOLE SHALL RECEIVE TWO COATS BITUMINOUS WATERPROOFING MATERIAL.
9. INVERTS SHALL BE CONSTRUCTED OF RED BRICK



CITY OF MIDDLETOWN  
WATER & SEWER DEPARTMENT  
ENGINEERING DIVISION

SEWER SYSTEM SPECIFICATIONS  
TYPICAL SANITARY MANHOLE  
DETAIL

DATE: MARCH 2024

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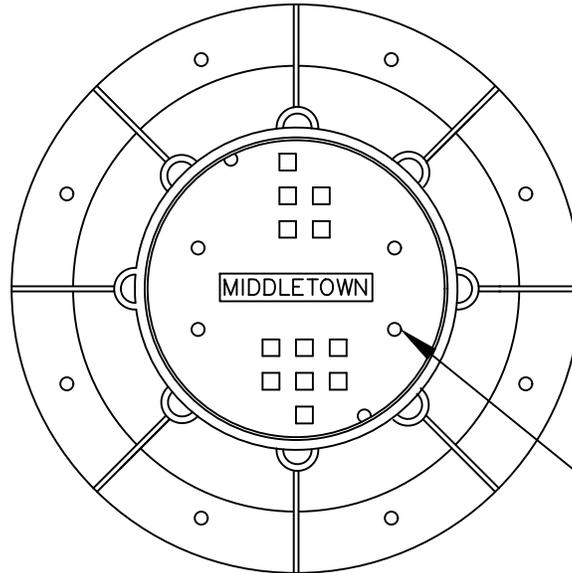
# TYPICAL SANITARY MANHOLE FRAME AND COVER DETAIL

N.T.S.

**NOTES:**

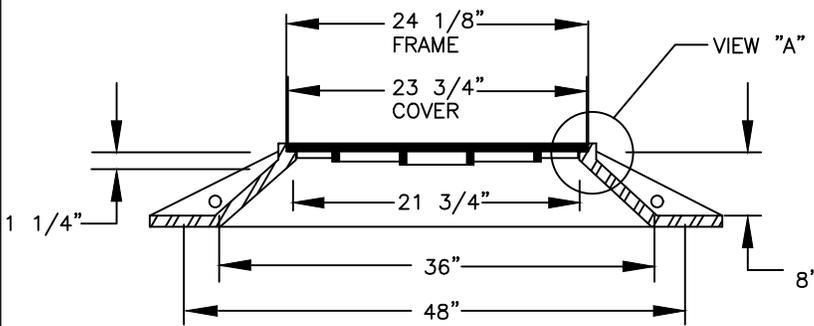
CAMPBELL FOUNDRY CO  
HARRISON, NJ  
PATTERN NO. 1221

EJCO  
EAST JORDAN, MI  
PATTERN NO. LJ105/  
2205Z1-1248A

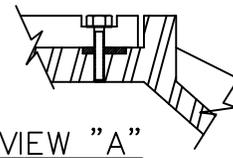


4 - 1" DIA VENT HOLES  
AS REQUIRED BY THE  
CHIEF ENGINEER

PLAN

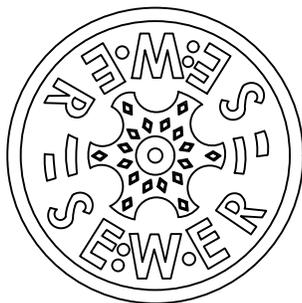


FRAME



VIEW "A" SHOWING WATERTIGHT COVER  
VERSION OF MH FRAME & COVER  
ASSEMBLY. ASSEMBLY CONSISTS OF  
4 STAINLESS BOLTS & INSERTS, 1 SOLID  
COVER (NO VENT HOLES) & 1  
NEOPRENE GASKET.

WATERTIGHT COVER



PRIVATE MH COVER

**NOTES:**

1. MATERIAL CONSISTS OF GRAY CAST IRON CONFORMING TO ASTM SPEC A48-76 CLASS 30B.
2. PRIVATE MANHOLE FRAMES AND COVERS SHALL BE STANDARD MDC STYLE PATTERN NO. 1221/2205Z WITH SINGLE HOLE IN CENTER AND "SEWER" SPELLED OUT.



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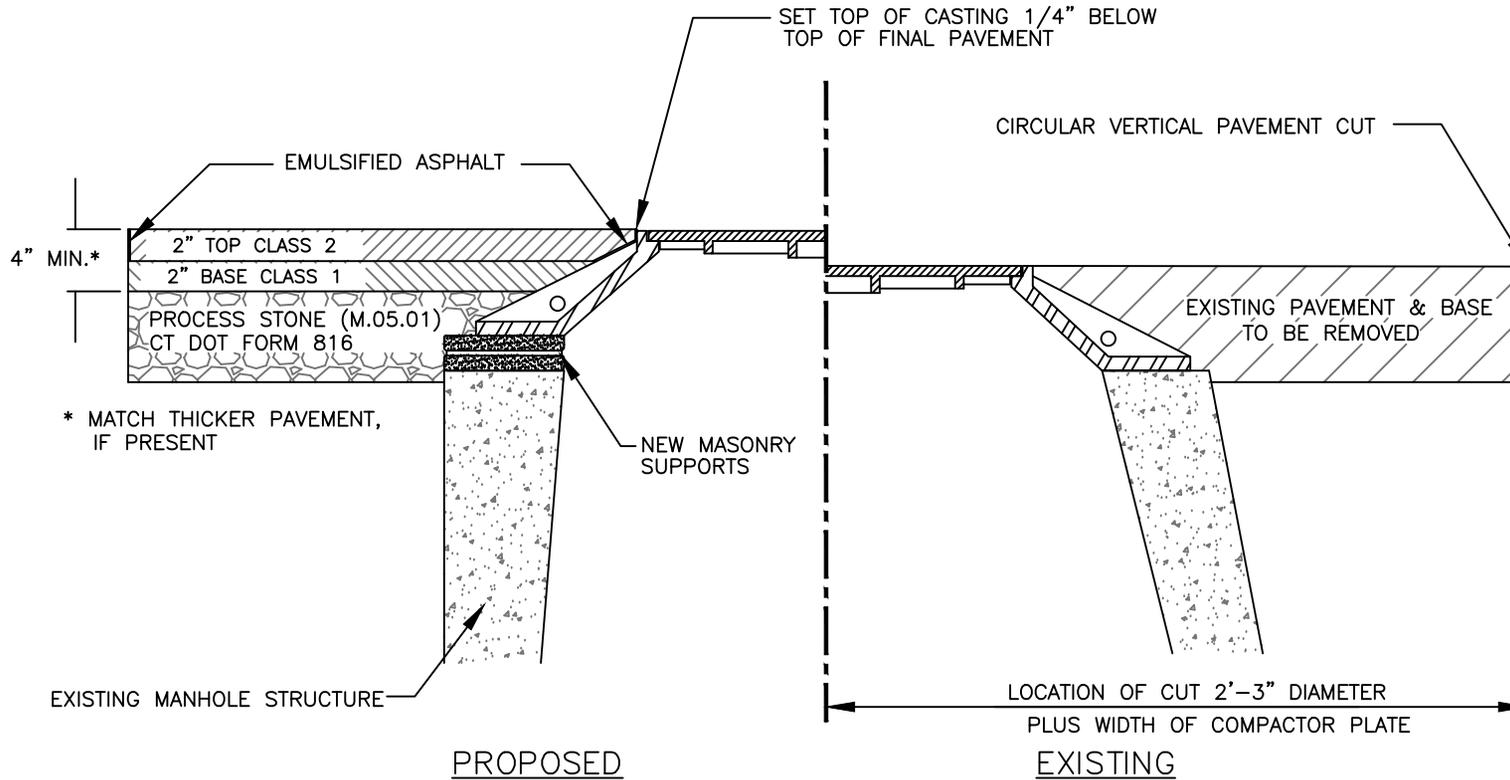
**SEWER SYSTEM SPECIFICATIONS  
TYPICAL SANITARY MANHOLE  
FRAME AND COVER DETAIL**

DATE: MARCH 2024

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# TYPICAL SANITARY MANHOLE RAISING TO GRADE DETAIL

N.T.S.



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WATER & SEWER DEPARTMENT  
ENGINEERING DIVISION

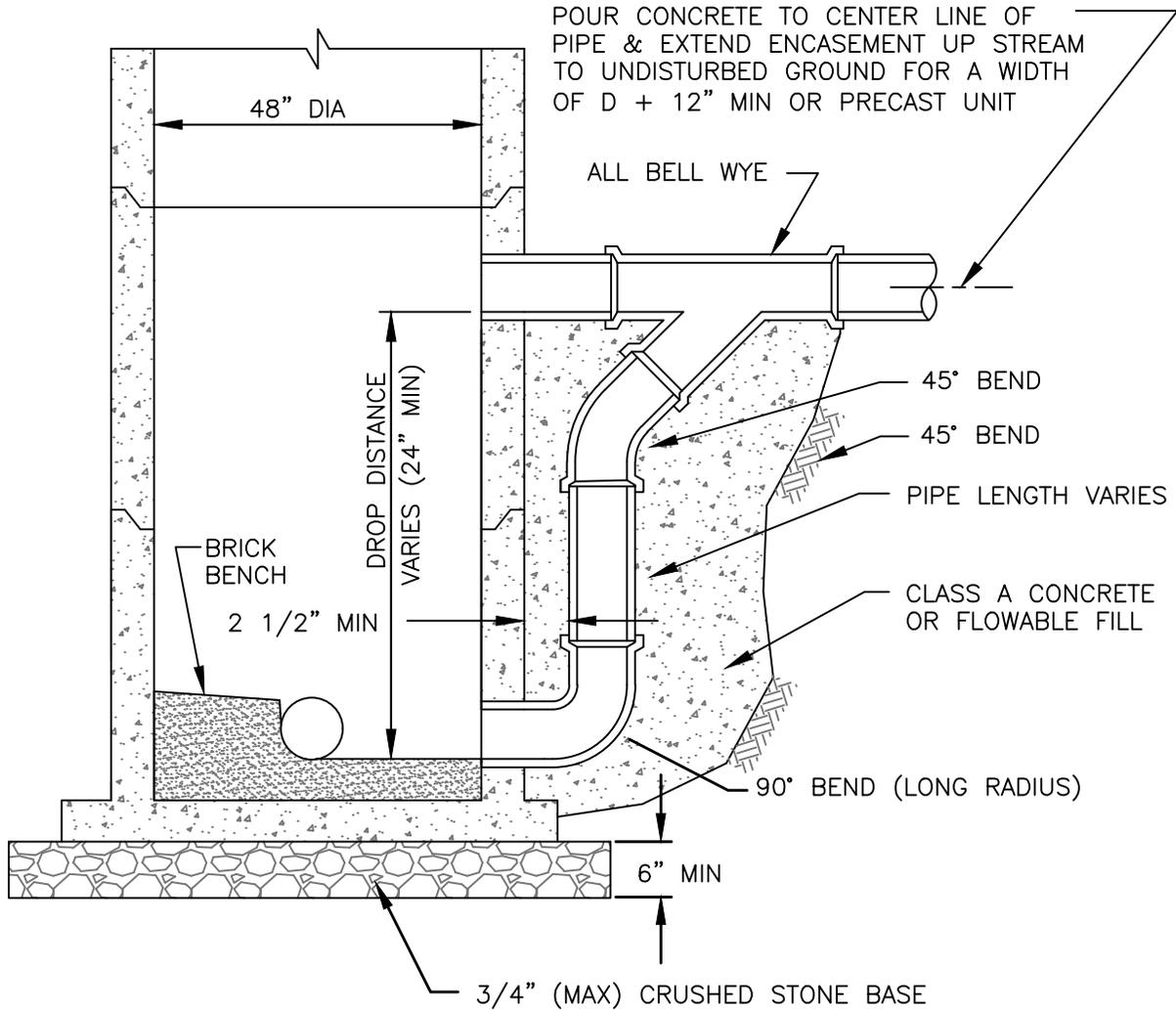
SEWER SYSTEM SPECIFICATIONS  
TYPICAL SANITARY MANHOLE  
RAISING TO GRADE DETAIL

DATE: MARCH 2024

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# TYPICAL SANITARY MANHOLE OUTSIDE DROP DETAIL

## N.T.S.



**NOTE:** CONTRACTOR MAY SUBMIT PRECAST CONCRETE OUTSIDE DROP STYLE MANHOLES FOR APPROVAL.



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ENGINEERING DIVISION

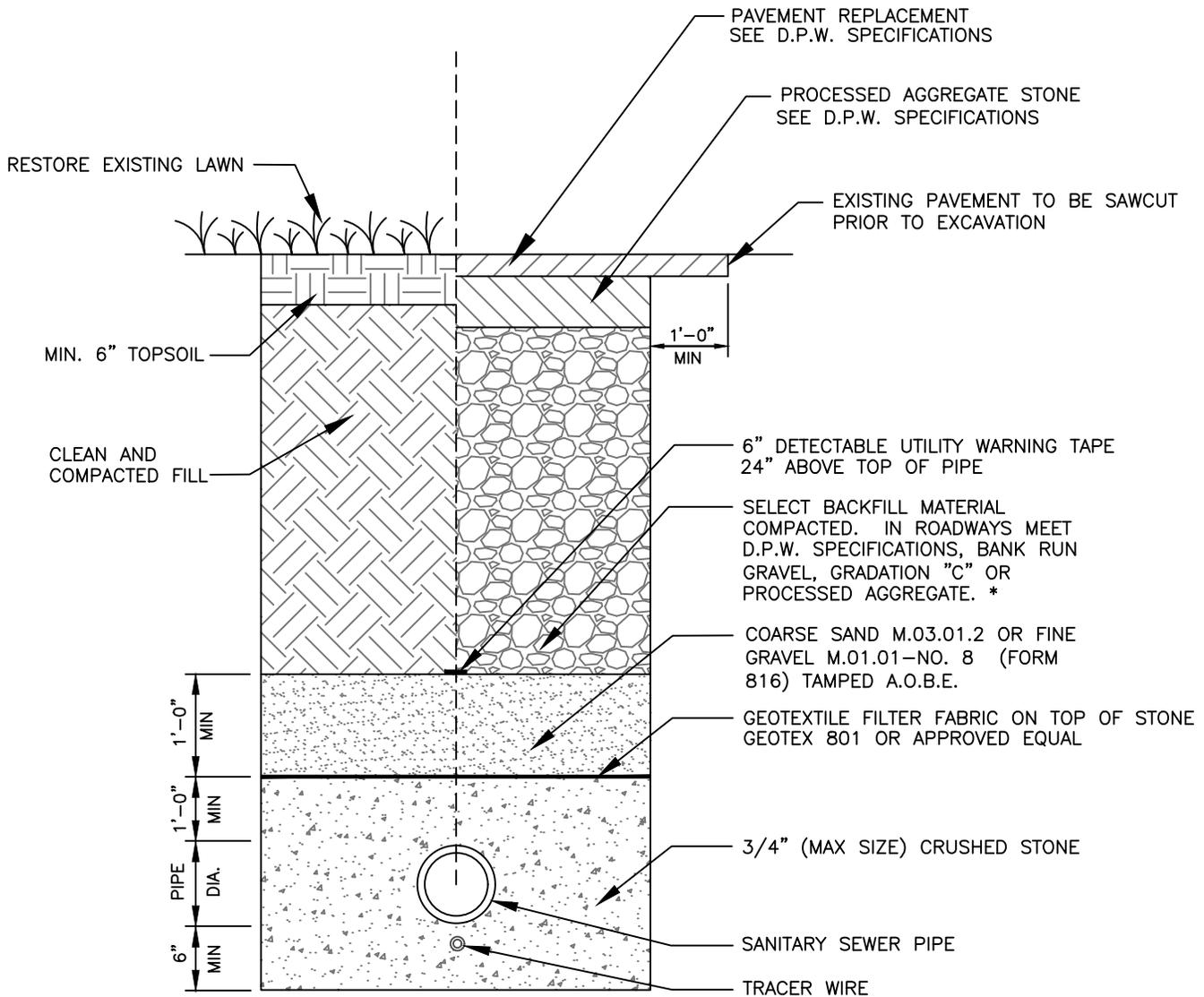
SEWER SYSTEM SPECIFICATIONS  
**TYPICAL OUTSIDE DROP SANITARY  
MANHOLE DETAIL**

DATE: MARCH 2024

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# TYPICAL SANITARY SEWER TRENCH CROSS-SECTION DETAIL

## N.T.S.



\* - IN ALL OTHER AREAS, SUITABLE EXISTING MATERIAL  
MAY BE USED IF APPROVED BY THE ENGINEER.



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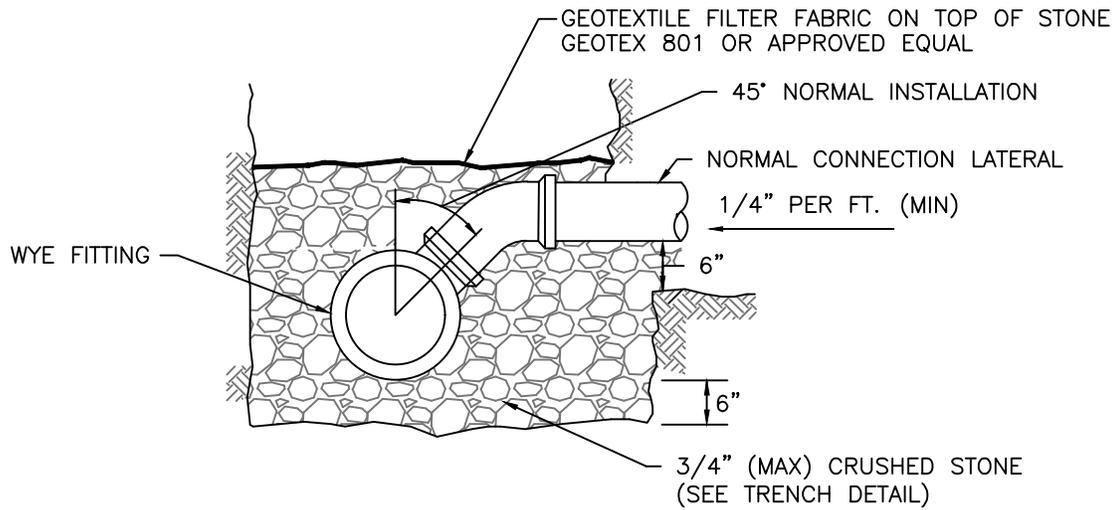
SEWER SYSTEM SPECIFICATIONS  
TYPICAL SANITARY SEWER  
TRENCH CROSS-SECTION DETAIL

DATE: MARCH 2024

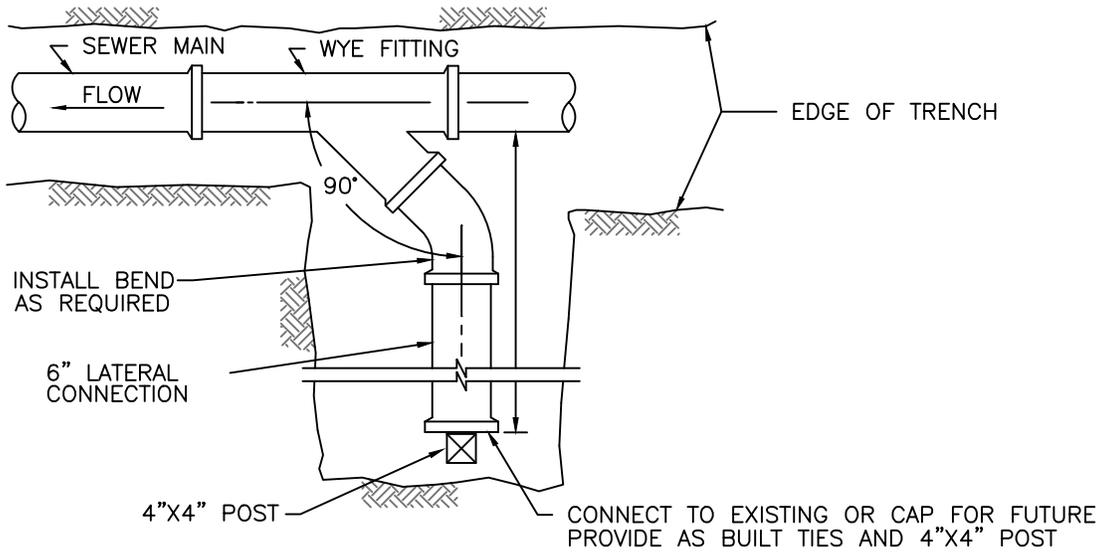
SHEET 5 OF 11

# TYPICAL SANITARY SEWER LATERAL DETAIL

N.T.S.



SECTION



PLAN

**NOTES:**

EXCAVATE BY HAND INTO EDGE OF TRENCH AND INSTALL WYE OR TEE AS REQUIRED, PLACE FOUNDATION STONE UNDER AND AROUND WYE OR TEE AND BEND.

**APPROVED SADDLES**

GENECO "SEALTITE" SADDLE, ROMAC INDUSTRIES "CB" SADDLE OR APPROVED EQUAL

MACHINE TAPS SHALL BE MADE AT NO MORE THAN 45° UNLESS OTHERWISE APPROVED.



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ENGINEERING DIVISION

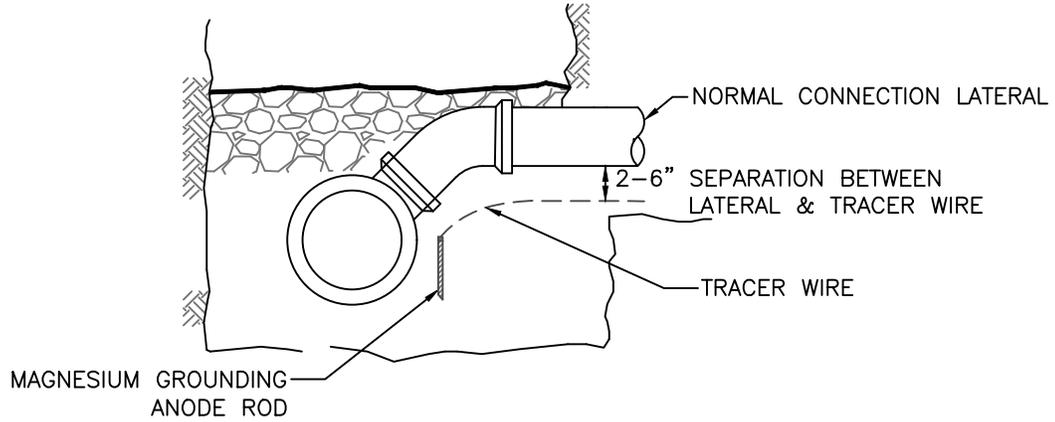
SEWER SYSTEM SPECIFICATIONS  
TYPICAL SANITARY SEWER  
LATERAL DETAIL

DATE: MARCH 2024

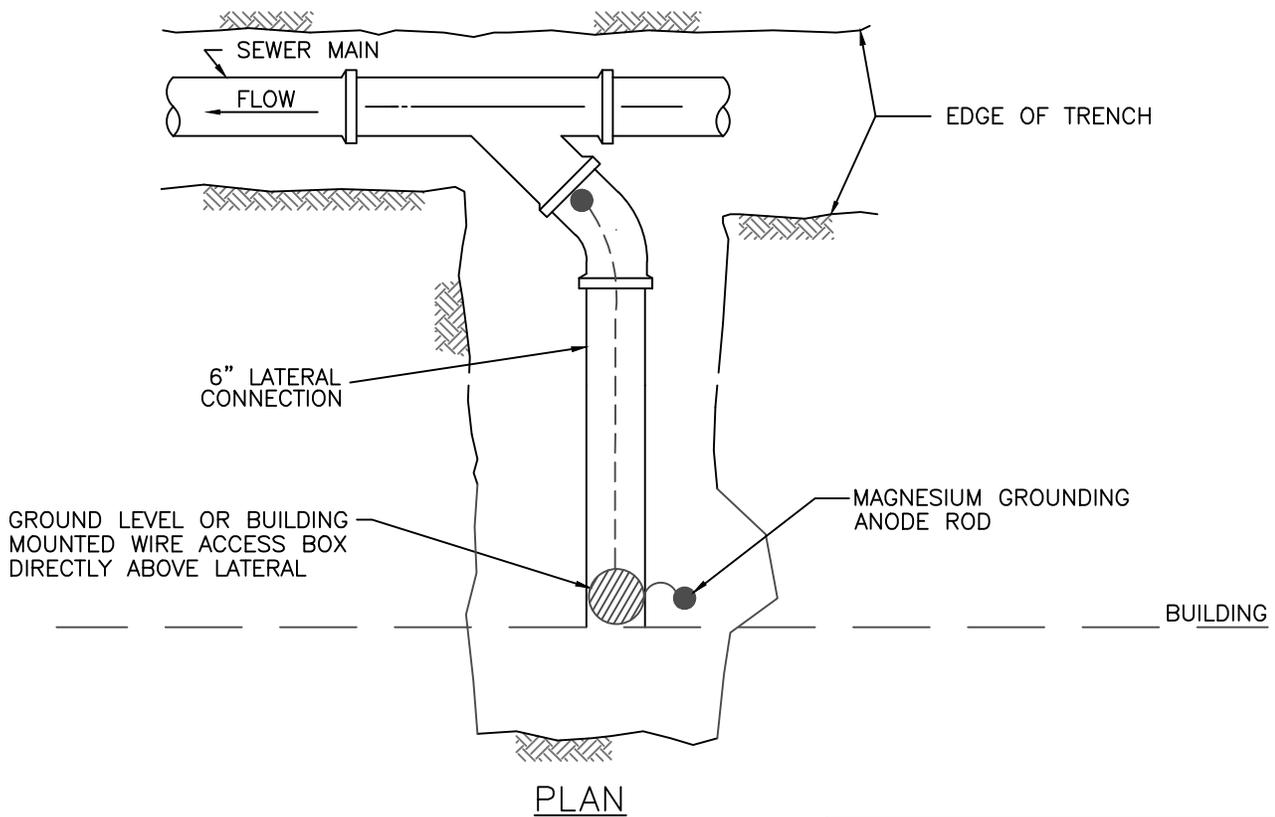
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# TYPICAL SANITARY SEWER LATERAL DETAIL

N.T.S.



SECTION



PLAN



CITY OF MIDDLETOWN  
WATER & SEWER DEPARTMENT  
ENGINEERING DIVISION

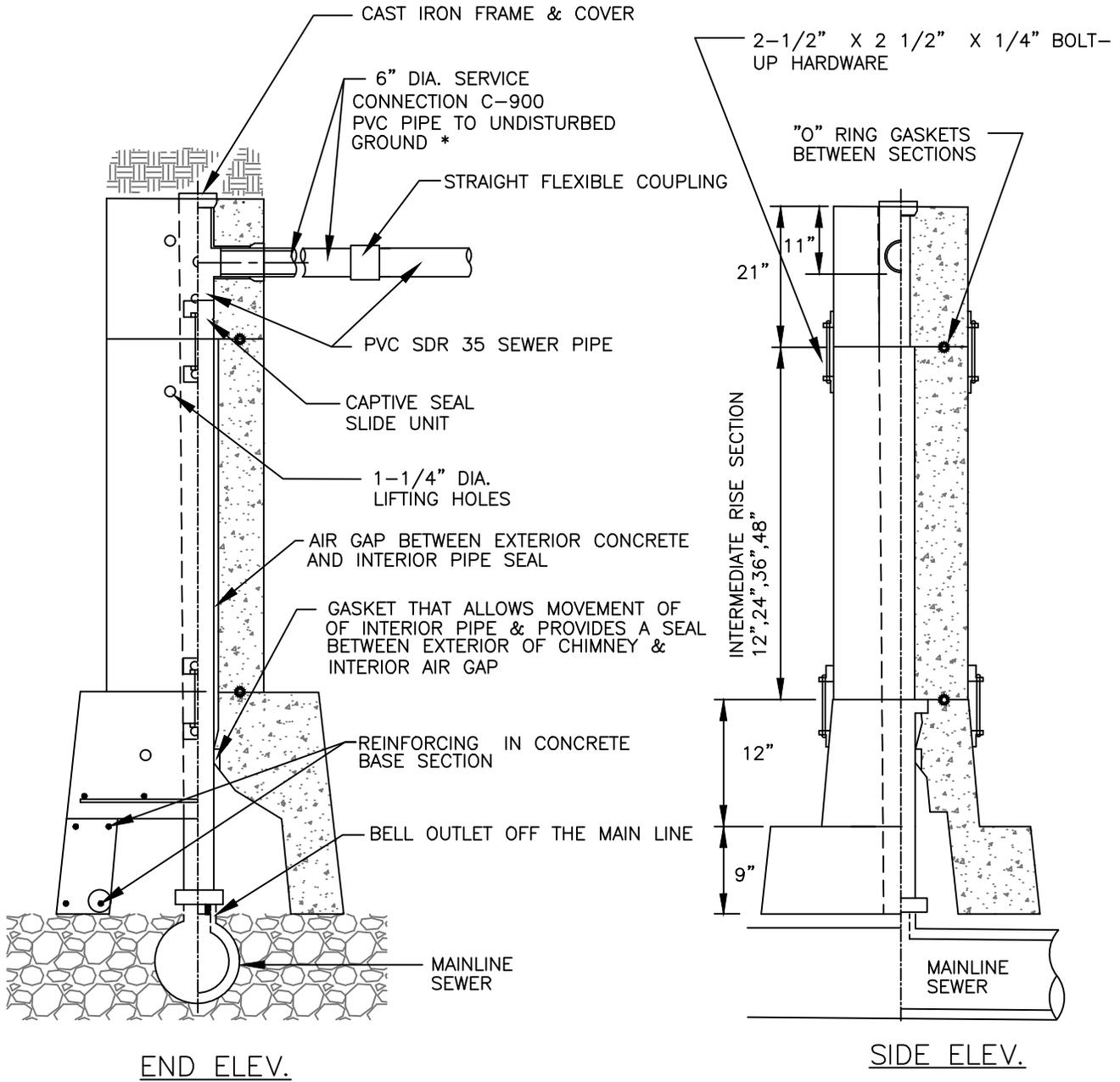
SEWER SYSTEM SPECIFICATIONS  
TYPICAL SANITARY SEWER  
LATERAL TRACER WIRE DETAIL

DATE: MARCH 2024

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# TYPICAL PRECAST CHIMNEY DETAIL

## N.T.S.



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WATER & SEWER DEPARTMENT  
ENGINEERING DIVISION

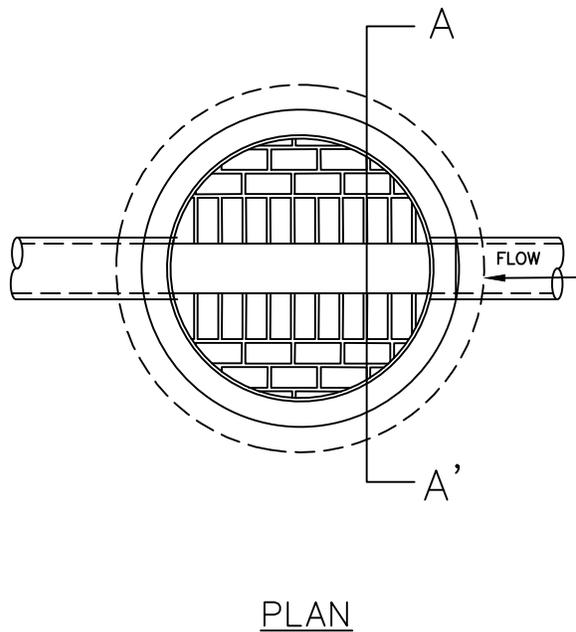
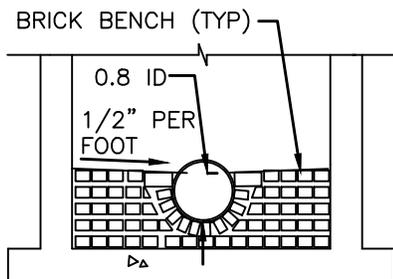
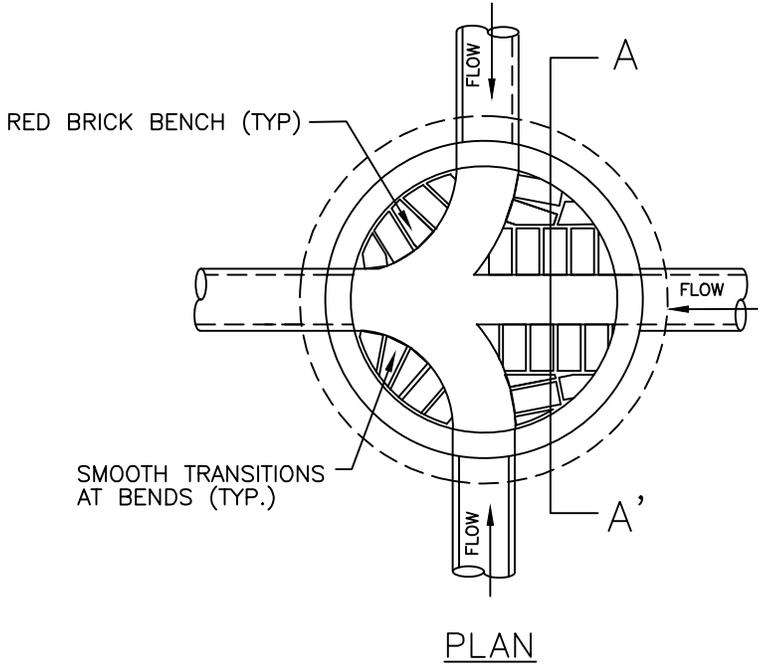
**SEWER SYSTEM SPECIFICATIONS  
PRECAST CHIMNEY DETAIL**

DATE: MARCH 2024

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# TYPICAL BRICK INVERT DETAIL

## N.T.S.



**NOTES:**

1. INVERTS TO CONSIST OF RED CLAY BRICK.
2. MASONRY TO BE UNIFORM, WITH MAXIMUM SPACING OF 3/8 INCH.
3. INVERTS SHALL CLOSELY MATCH THE PIPE DIAMETER.
4. INVERTS SHALL NOT BE PREFABRICATED ABOVE GRADE.
5. CAST-IN-PLACE CONCRETE INVERTS ALLOWED FOR MH'S WITH PIPE DIAMETER 24" AND LONGER.
6. PRE-CAST INVERTS ARE NOT ALLOWED.

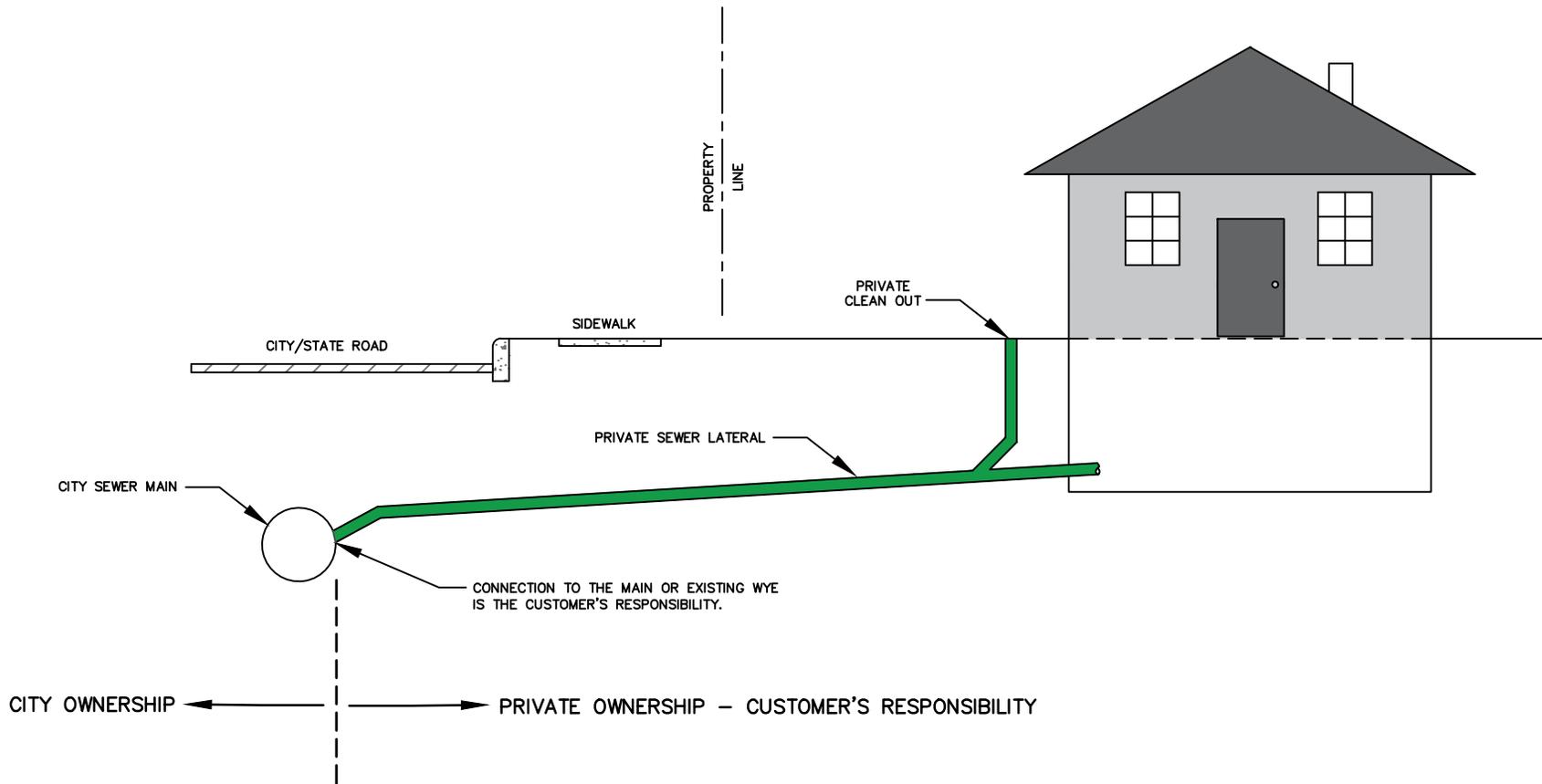


CITY OF MIDDLETOWN  
WATER & SEWER DEPARTMENT  
ENGINEERING DIVISION

**SEWER SYSTEM SPECIFICATIONS  
TYPICAL BRICK INVERT DETAIL**

DATE: MARCH 2024

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1. The customer owns and is responsible for the installation and maintenance of the sanitary sewer lateral from the City owned sewer main in the street/easement to the building being served. Any wye fitting installed as part of the City owned main will be maintained by the City. The connection point to a City main or wye is the responsibility of the customer including any tap or saddle used to make the connection. Only sewer mains located in City or State streets, right-of-ways or within an easement in favor of the City are owned and maintained by the City. Sewer mains on private property are the responsibility of the owner to the point of connection to the City main or manhole.

2. An easement is required when a private lateral or sewer main is located on property owned by others.



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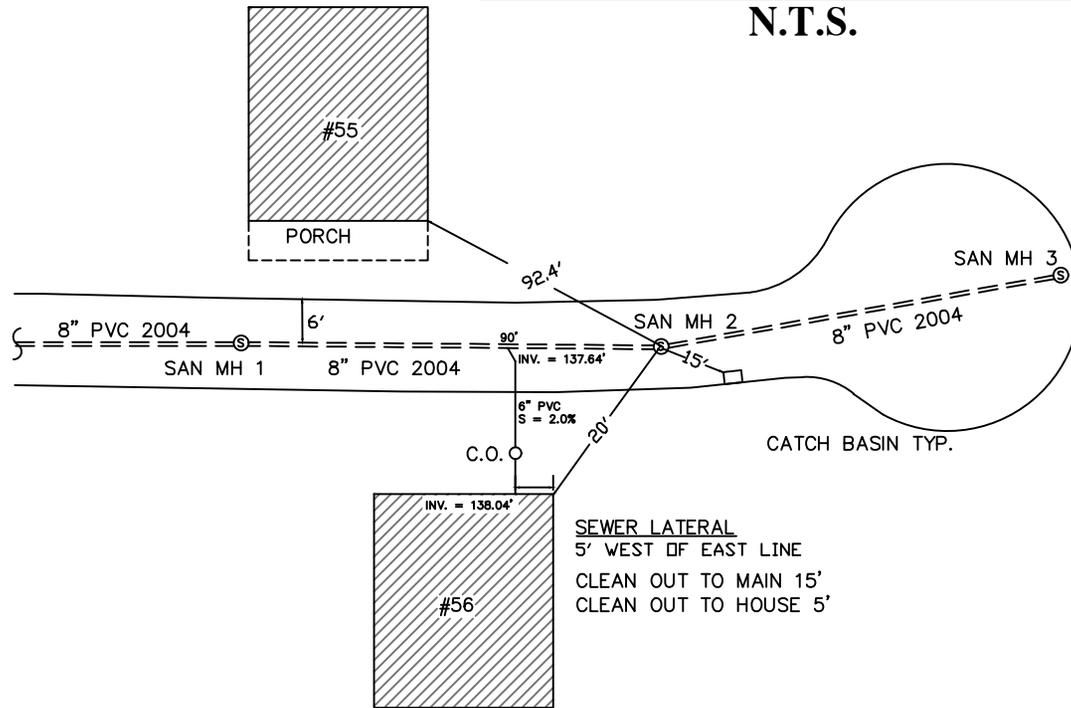
LIMITS OF OWNERSHIP  
SEWER LATERALS

DATE: MARCH 2024

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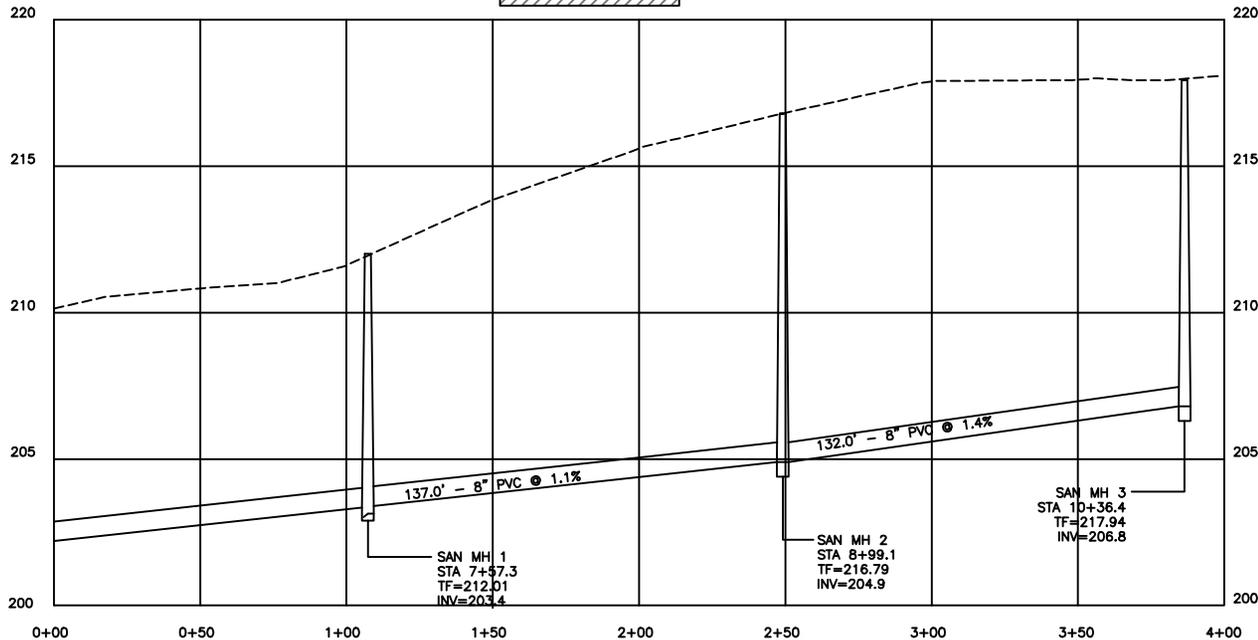
# TYPICAL SEWER MAP AS-BUILT

## N.T.S.



**NOTES:**

1. SEWER MAP AS-BUILTS SHALL BE SUBMITTED ON 24"X36" MYLARS.
2. PROVIDE PDF COPY.
3. SEWER LATERAL DISTANCE SHOULD BE SHOWN AS DISTANCE FROM DOWNSTREAM MH TO WYE CONNECTION.
4. SHOW LOCATION OF GRINDER PUMP ON DRAWINGS IF REQUIRED.



CITY OF MIDDLETOWN  
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SEWER SYSTEM SPECIFICATIONS  
TYPICAL AS-BUILT SEWER MAP

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