



City of Middletown
WATER & SEWER DEPARTMENT
82 Berlin Street
Middletown, CT 06457
TEL: (860) 343-8085
FAX: (860) 343-8091

GENERAL REQUIREMENTS
SANITARY SEWER MAIN AND LATERAL INSTALLATION
JULY 2010

SEWER MAINS:

GRAVITY

- Polyvinyl Chloride (PVC), ASTM D-3034 or ASTM F-1760, SDR 35, with retained ring gasket. Maximum length of 13 feet.
- Vitrified Clay Pipe (VCP), ASTM C-700, or NCPI ER 3300-67 (Class 3300) with retained ring gasket. Maximum length of 6.5 feet.
- DIP Class 52 for applications where the depth of bury is either greater than 15 feet or less than four feet.
- Maximum Slope = 10% = 0.10 ft/ft
- Minimum Slope = 0.5% = 0.005 ft/ft for 8 inch pipe
- Minimum Slope = 0.3% = 0.003 ft/ft for 12 inch pipe
- Minimum Pipe Diameter = 8 inch

NON-GRAVITY

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

SEWER LATERALS: GRAVITY

- Polyvinyl Chloride (PVC), ASTM D-3034 or ASTM F-1760, SDR 35, with retained ring gasket. Maximum length of 6.5 feet.
- DIP Class 52 for applications where the depth of bury is either greater than 15 feet or less than four feet. Maximum length of 6.5 feet.
- Maximum Slope = 10% = 0.10 ft/ft
- Minimum Slope = 2% = 0.02 ft/ft for 6 inch pipe
- Minimum Pipe Diameter = 6 inch
- Minimum bury is 36 inches top of pipe

GENERAL REQUIREMENTS
SANITARY SEWER MAIN AND LATERAL INSTALLATION
JULY 2010
--CONTINUED--

- SEWER LATERALS: NON-GRAVITY**
See Low Pressure Sewer Service Installation of Force Mains and Services dated July 2000.
- JOINTS:** Bell and spigot type with retained ring gasket. In accordance with ASTM D-3034.
- 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 As Ordered by Engineer (A.O.B.E.)
- TESTING:** **MATERIAL**
In accordance with ASTM D-2412.
- FIELD PERFORMANCE**
Pressure testing shall be measured between manholes.
PVC joints –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.
- VIDEO INSPECTION:** All new sanitary sewer installations shall be video inspected with the latest 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 report and provided to the City along with a copy of the recording.
- TRENCH BACKFILL:** Backfill to one foot above the sanitary sewer main shall be in accord with the latest Sewer Department standards and requirements. The remainder of the trench backfill shall be in accord with the latest D.P.W. standards and requirements.
- PAVEMENT:** Pavement removal and/or replacement shall be in accord with the latest D.P.W. standards and requirements.
- MANHOLES:** Standard precast manholes in accord with the latest Sewer Department standards and requirements. See attached detail.
- DROP MANHOLES:** Standard precast outside drop manholes in accord with the latest Sewer Department standards and requirements. Drop manholes with a drop less than two feet shall be formed within the manhole.

GENERAL REQUIREMENTS
SANITARY SEWER MAIN AND LATERAL INSTALLATION
JULY 2010
--CONTINUED--

- INVERTS:** All inverts are to be of red clay brick; built in a workman like manner to a height of 0.80 of the pipe diameter, A.O.B.E. Poured concrete inverts are **Not Allowed**.
- FRAMES & COVERS:** Standard pre-cast manhole frames and covers in accord with the latest Sewer Department standards and requirements.
- SEWER CHIMNEYS:** Standard pre-cast sewer chimneys in accord with the latest Sewer Department standards and requirements.
- CONNECTION:** **New** Residences with property lines located within 200 feet of a public sanitary sewer are required to connect. In the case of a failing septic system, the same applies.
- ABANDONMENT:** The sewer lateral(s) shall be cut at the main line, a plumber's stop shall be installed and covered with concrete or A.O.B.E..
- PERMITS:** Prior to making a connection or repair to the sanitary sewer a permit must be obtained. The permit will only be issued to a licensed drain layer. If the permit applicant is not the licensed drain layer, a letter permitting the applicant to use the license must be submitted in conjunction with the application. Connection fees shall be paid prior to issuance of a permit.
- GENERAL:** All sanitary sewer work must meet the City of Middletown Sewer Ordinance. In addition, a licensed professional engineer, licensed by the State of Connecticut, must seal all sewer designs with the exception of existing houses where the licensed plumber conducting the work can submit the plan for connection.
- PRECONSTRUCTION:** Prior to the start of construction the contractor, engineer, and owner shall meet with representatives from the Sewer Department to ensure compliance with City requirements.
- INFORMATION:** All installations, building connections, abandonments, and test procedures

GENERAL REQUIREMENTS
SANITARY SEWER MAIN AND LATERAL INSTALLATION
JULY 2010
--CONTINUED--

must be cleared with the City of Middletown Sewer Department, 48 hours in advance. Use the following extensions:

Chief Engineer – 152
Assistant Chief Engineer – 155
Inspections – 154

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

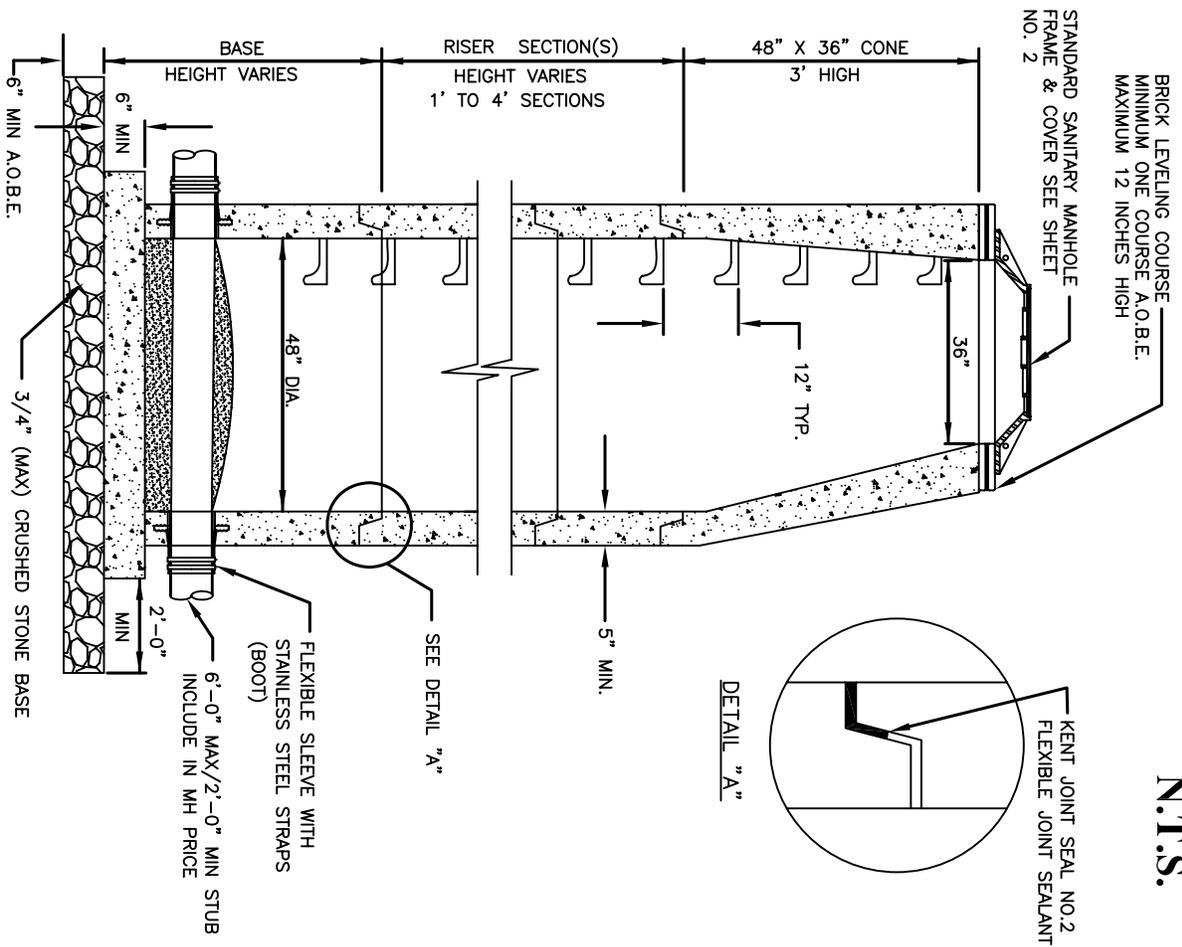
AS-BUILT:

Upon completion of work, an as-built drawing/map shall be furnished to the Sewer Department, ASAP. See Attached for Examples. Provide both mylars and electronic copy in AutoCAD.

In addition to as-built drawings, all new sanitary sewer installations shall be video inspected with the recording and written report submitted to the Water and Sewer Department.

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 CONSIST OF RED BRICK



CITY OF MIDDLETOWN
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ENGINEERING DIVISION

SEWER SYSTEM SPECIFICATIONS
TYPICAL SANITARY MANHOLE
DETAIL

DATE: JULY 2010

SHEET 1 OF 8

TYPICAL SANITARY MANHOLE FRAME AND COVER DETAIL

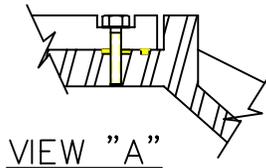
N.T.S.

NOTES:

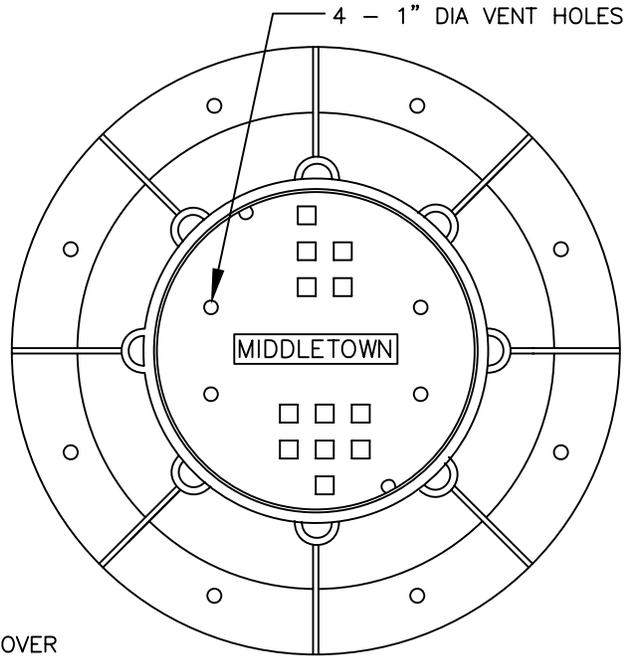
CAMPBELL FOUNDRY CO
HARRISON, NJ
PATTERN NO. 1221
DWG NO. B8535

LEBARON FOUNDRY CO
BROCKTON, MA
PATTERN NO. LJ1055
DWG NO. LJ 105S

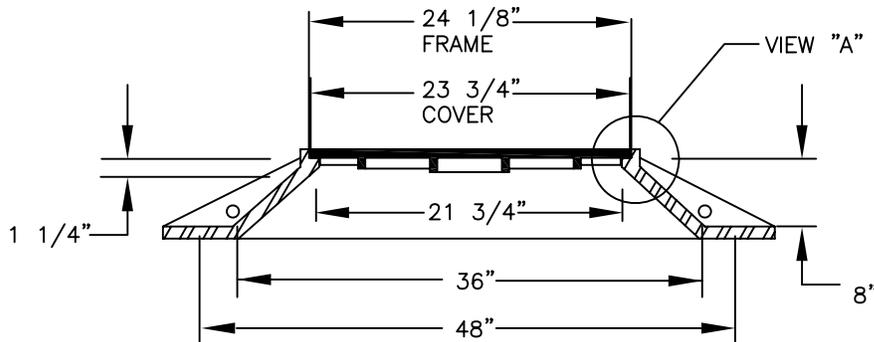
LAPERLE FOUNDRY CO
ST OURS, QUEBEC
PATTERN NO. 3521
DWG NO. A 3521



VIEW "A" SHOWING WATERTIGHT COVER VERSION OF MH FRAME & COVER ASSEMBLY. ASSEMBLY CONSISTS OF 3 STAINLESS BOLTS & INSERTS, 1 SOLID COVER (NO VENT HOLES) & 1 SQUARE NEOPRENE GASKET.



PLAN



FRAME

NOTES:

MATERIAL CONSISTS OF GRAY CAST IRON CONFORMING TO ASTM SPEC A48-76 CLASS 30B.



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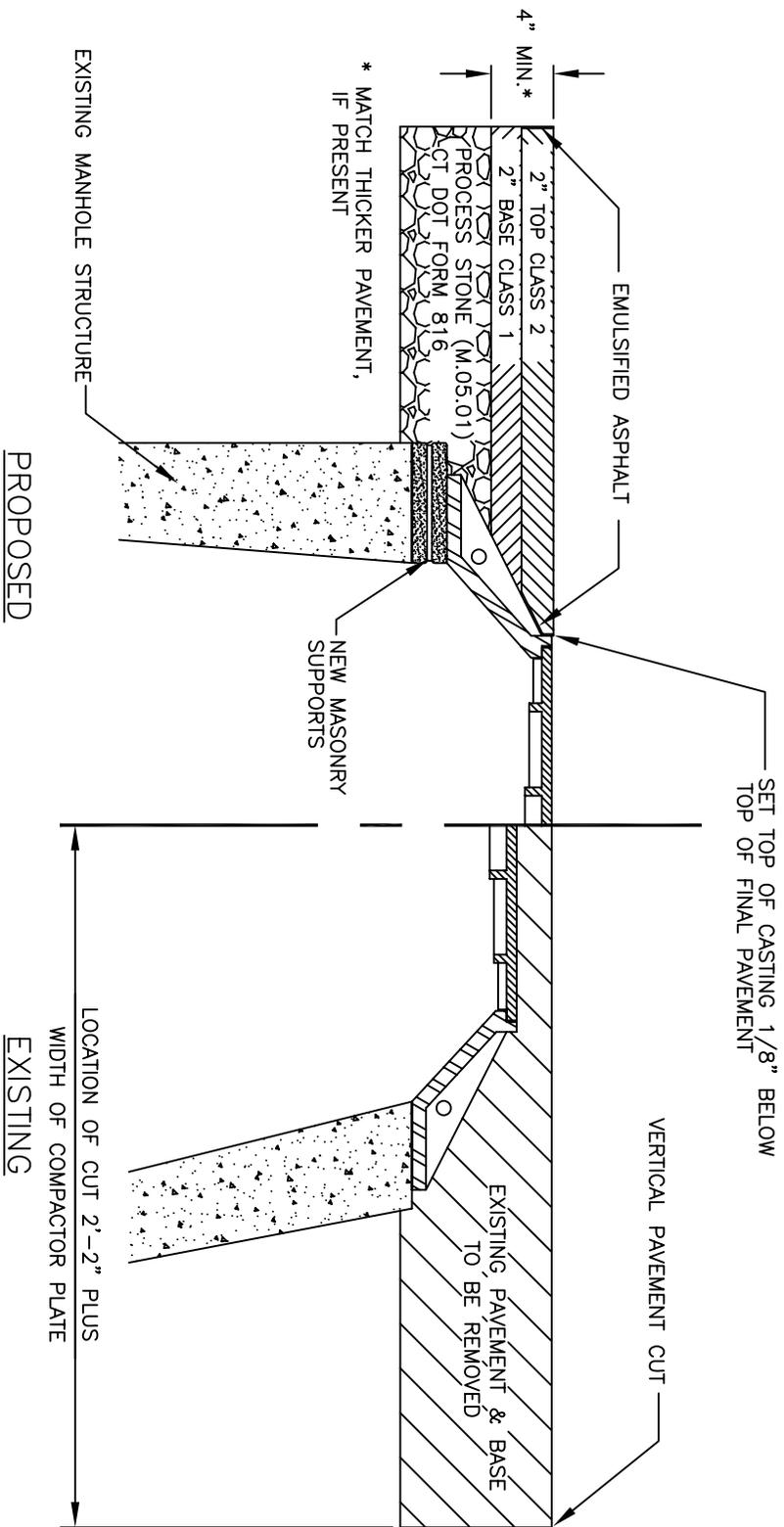
**SEWER SYSTEM SPECIFICATIONS
TYPICAL SANITARY MANHOLE
FRAME AND COVER DETAIL**

DATE: JULY 2010

SHEET 2 OF 8

TYPICAL SANITARY MANHOLE RAISING TO GRADE DETAIL

N.T.S.



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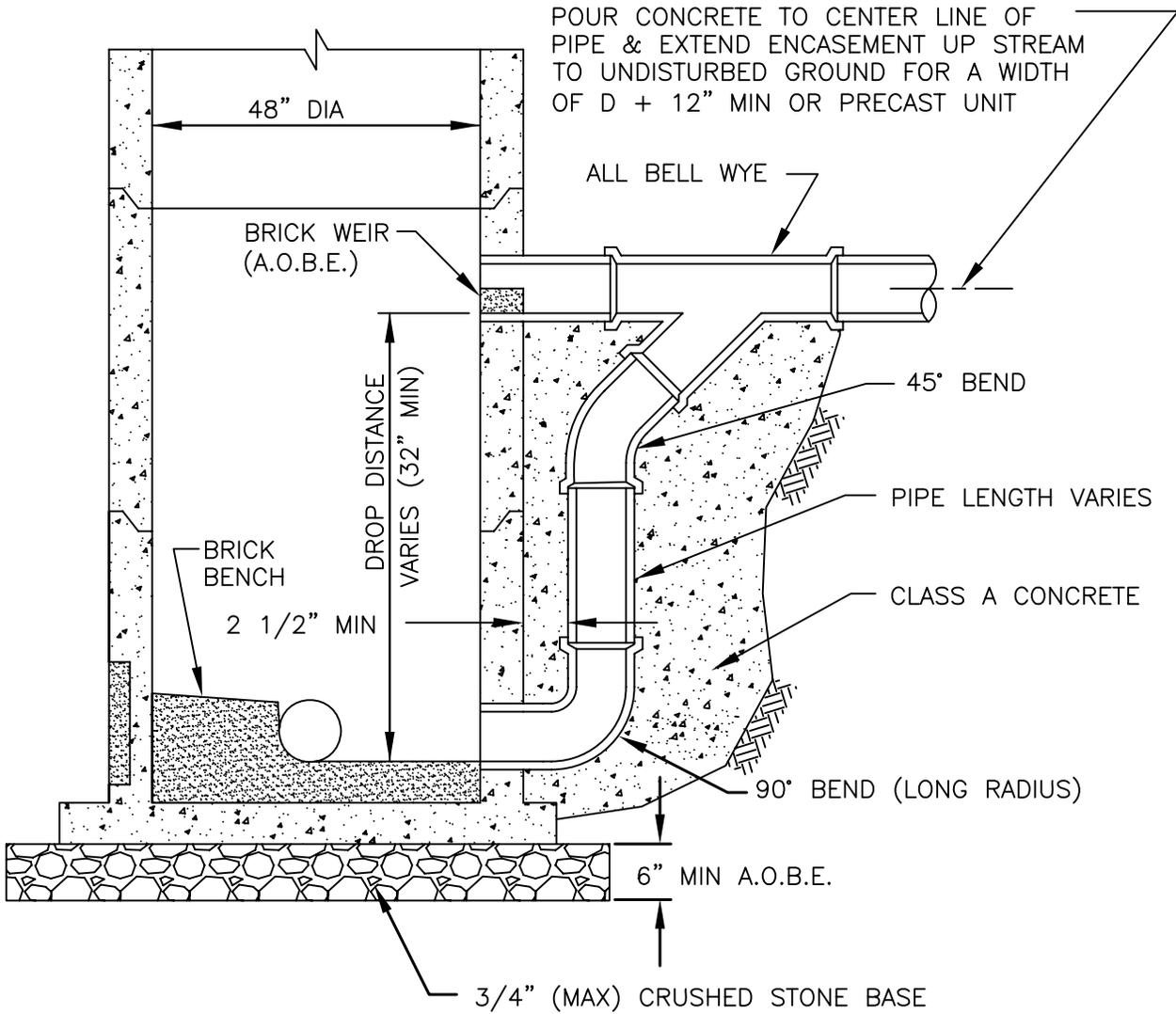
SEWER SYSTEM SPECIFICATIONS
TYPICAL SANITARY MANHOLE
RAISING TO GRADE DETAIL

DATE: JULY 2010

SHEET 3 OF 8

TYPICAL SANITARY MANHOLE OUTSIDE DROP DETAIL

N.T.S.



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



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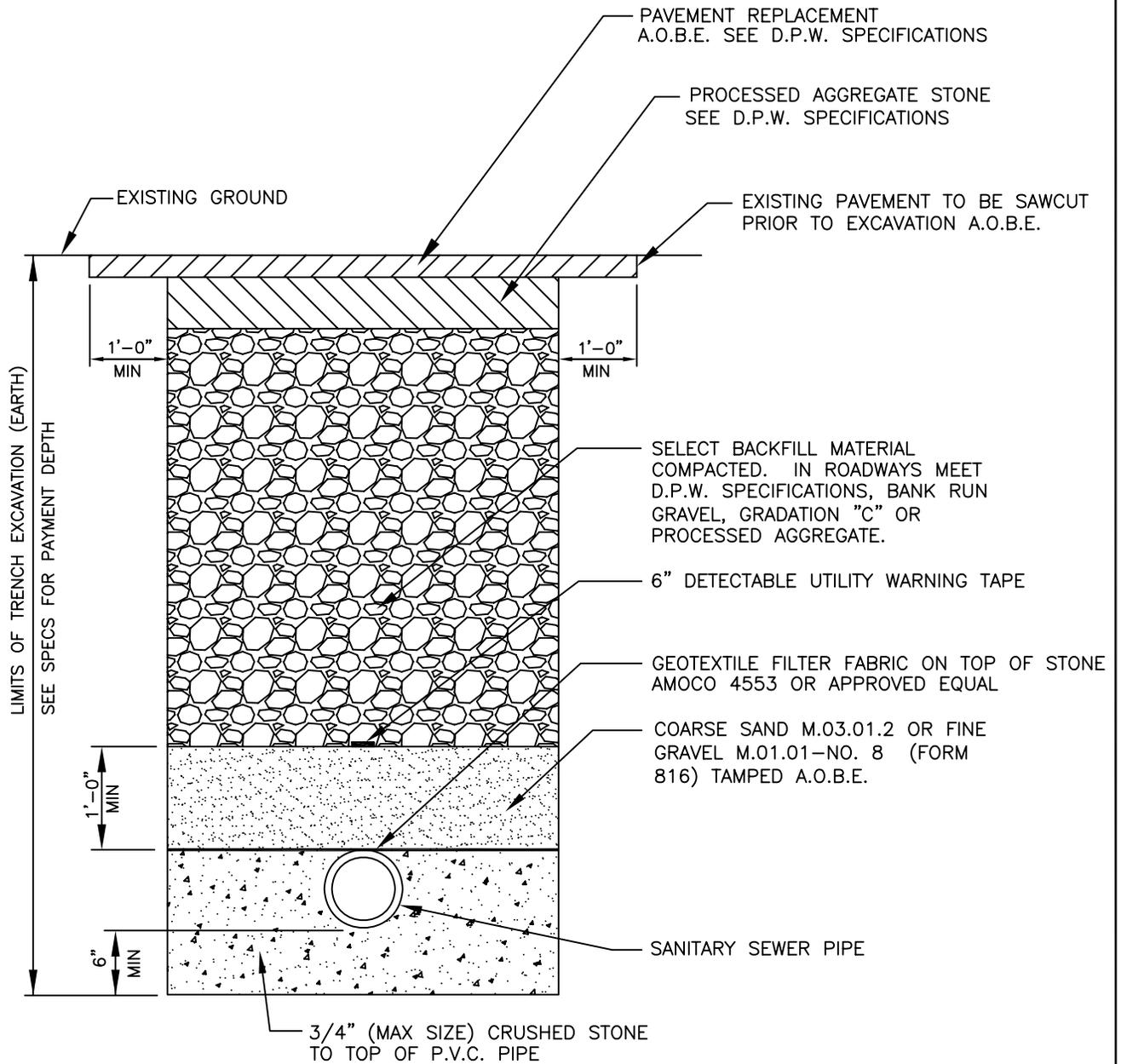
SEWER SYSTEM SPECIFICATIONS
**TYPICAL OUTSIDE DROP
SANITARY MANHOLE DETAIL**

DATE: JULY 2010

SHEET 4 OF 8

TYPICAL SANITARY SEWER TRENCH CROSS-SECTION DETAIL

N.T.S.



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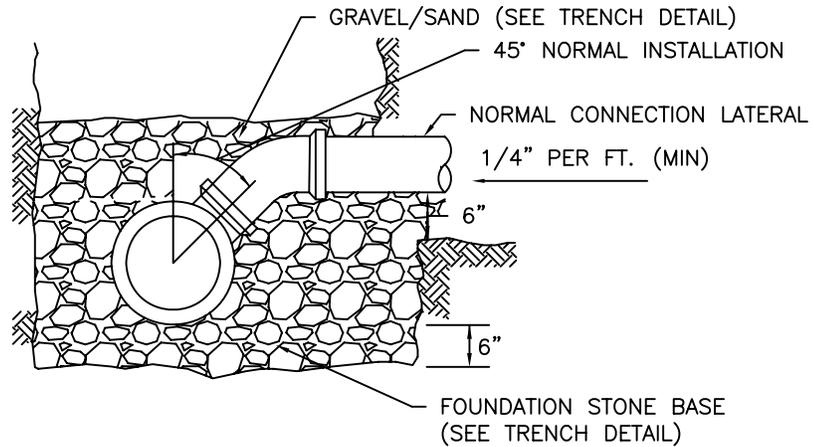
**SEWER SYSTEM SPECIFICATIONS
TYPICAL SANITARY SEWER
TRENCH CROSS-SECTION DETAIL**

DATE: JULY 2010

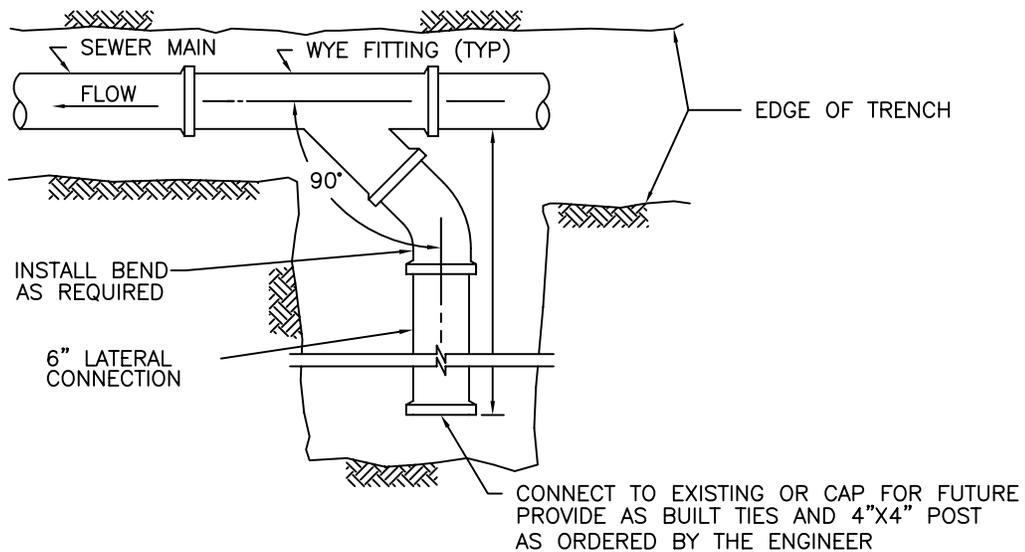
SHEET 5 OF 8

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, FORD "CB" SADDLE OR APPROVED EQUAL

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



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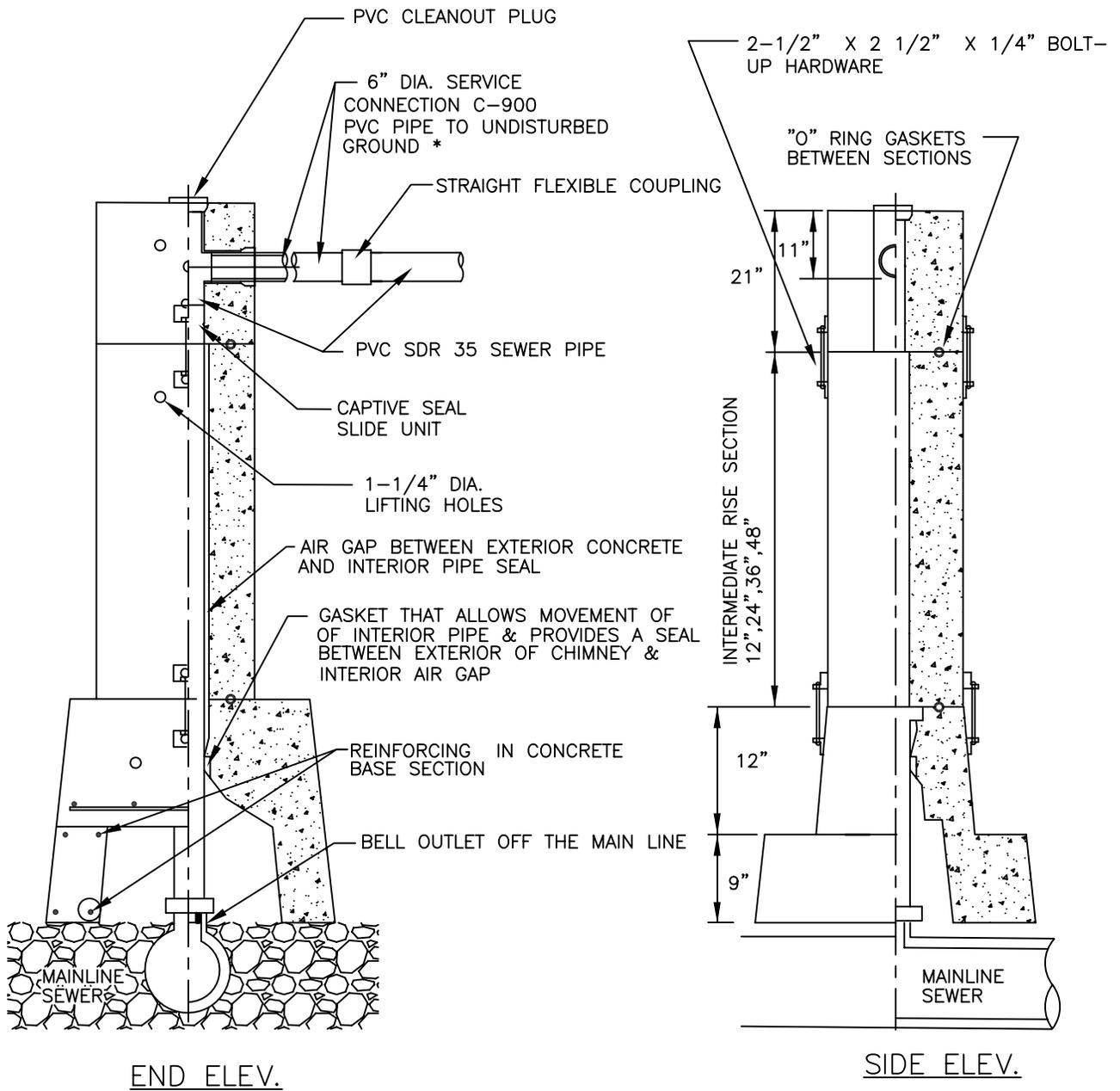
SEWER SYSTEM SPECIFICATIONS
TYPICAL SANITARY SEWER
LATERAL DETAIL

DATE: JULY 2010

SHEET 6 OF 8

TYPICAL PRECAST CHIMNEY DETAIL

N.T.S.



* NOTE: C-900 PIPE TO BE INCLUDED IN THE PRICE BID FOR "SERVICE CONNECTION CHIMNEY."



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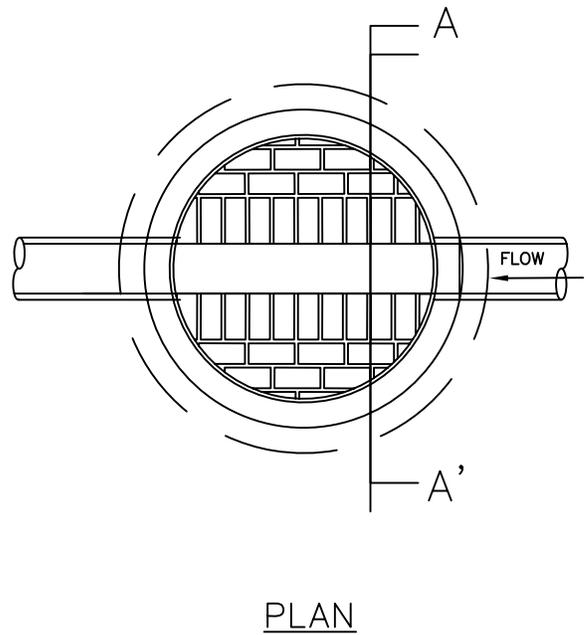
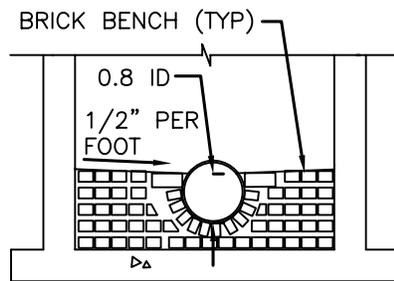
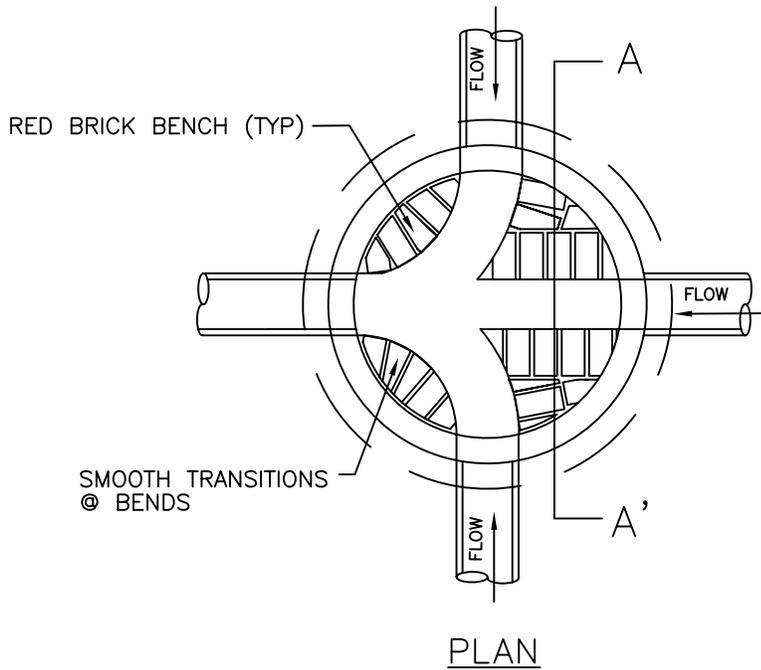
SEWER SYSTEM SPECIFICATIONS
PRECAST CHIMNEY DETAIL

DATE: JULY 2010

SHEET 7 OF 8

TYPICAL BRICK INVERT DETAIL

N.T.S.



NOTES:

1. INVERTS TO CONSIST OF RED CLAY BRICK ONLY, UNLESS ORDERED BY THE ENGINEER.
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.



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**SEWER SYSTEM SPECIFICATIONS
TYPICAL BRICK INVERT DETAIL**

DATE: JULY 2010

SHEET 8 OF 8