

CONSTRUCTION AND MATERIALS

SPECIFICATIONS

NORTHEASTERN YORK COUNTY SEWER
AUTHORITY
YORK COUNTY, PA

June, 2015

Prepared By:

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SECTION 00160

UTILITY CONFLICT STATEMENT

Any discrepancies between the requirements of these specifications and the requirements of any other authorized agency, such as public utilities, must be resolved prior to commencement of construction activities in order to avoid delays.

END OF SECTION

SECTION 01010

GENERAL REQUIREMENTS

1.01 WORK CONDITIONS

- A. Construct the work in stages to provide for public convenience.
 - 1. Do not close off public use of facilities until completion of one stage of construction will provide alternative usage.
- B. Conduct construction operations to ensure the least inconvenience to the general public.
- C. Take measures to control traffic when working on or near public roads and streets.
 - 1. Employ traffic control measures in accordance with Pennsylvania Department of Transportation Publication No. 213, "Work Zone Traffic Control Guidelines," or latest revision.
- D. Restore existing paving outside the limits of work that is damaged by the Developer's operations to its original condition at the expense of the Developer.
- E. Continuously keep rights-of-way, storage areas, streets, roads, highways, and adjacent properties free from accumulation of waste materials, excess excavation, rubbish, and windblown debris resulting from construction operations.
- F. Protection of Existing Utilities and Structures:
 - 1. Take all precautions and utilize all facilities required to protect existing utilities and structures. Advise each Utility Company at least 3 working days in advance of intent to excavate, do demolition work or use explosives, and give the location of the job site. Request cooperative steps of the Utility Company and suggestions for procedures to avoid damages to its lines.
 - 2. Advise each person in physical control of powered equipment or explosives used in excavation or demolition work of the type and location of utility lines at the job site, the Utility Company assistance to expect and procedures to follow to prevent damage.
 - 3. Immediately report to the Utility Company, the Authority and its Engineer any break, leak or other damage to the lines or protective coatings made to discovered during the work and immediately alert the occupants of the affected premises of any emergency created or discovered.
 - 4. Allow free access of Utility Company personnel at all times for purposes of maintenance, repair, and inspection.

1.02 PENNDOT HIGHWAY OCCUPANCY PERMIT

- A. The Developer's attention is directed to Chapter 459, Occupancy of Highways by Utilities under Title 67 Transportation of the Pennsylvania Code. The Developer will pay the cost of the highway occupancy permit and the costs of the permit inspection fees, if any. The Authority will be designated as the permittee. The Developer shall pay all costs in connection with the highway occupancy permit or permits, including but not limited to all costs for special insurance and bonds. The Developer/Contractor is responsible for scheduling final inspection and obtaining final PennDOT approval.

1.03 PERMITS

- A. The Developer shall secure and pay the cost for the Department of Environmental Protection Water Quality Management Permit.
- B. The Developer shall secure and pay for other permits required to comply with Federal, State, and local ordinances and regulations.

1.04 SEWAGE PUMPING STATIONS

- A. Design of pumping stations will be in accordance with these specifications and the Authority Engineer's recommendations. The type of station to be designed (precast, cast-in-place, Submersible, Suction Lift, Wetwell/Drywell) will be decided upon in a meeting with the Authority Engineer prior to commencing design on the station. With this specification revision, the Authority is declaring Gorman-Rupp suction lift stations as their standard.
- B. Should PVC or HDPE pipe be used for the force main, tracer wire shall also be installed.
- C. The Developer is responsible for electrical service to the station along with provisions for emergency power supply. If cellular service is not available, developer is responsible for providing telephone service.
- D. All padlocks shall be ordered through the Authority.

1.05 GRINDER PUMPING STATIONS

- A. Design of grinder pumping stations will be in accordance with the Authority Engineer's recommendations. The details of the station to be designed will be decided upon in a meeting with the Authority Engineer prior to commencing design on the station. The Authority's standard grinder pump is a F.E. Myers WG20.

1.06 SUBMITTALS AND CERTIFICATIONS

- A. All materials and products requiring submission of manufacturer's information must be approved by the Authority Engineer prior to purchasing and installing.
- B. The Developer/Contractor shall provide any additional information required by the Authority Engineer to assure compliance with these specifications.
- C. Provide three (3) copies (or electronic copy), plus the number of copies the Contractor wants returned) of all submittals and certificates to the Authority Engineer.

PART 2 – EXECUTION

2.01 PROCEDURE

- A. Confer and verify with other contractors as to locations and extent of their work, to the end that interferences and deletions between trades are prevented and embedded or required items are installed in conjunction with the work under this contract. Interconnections between work of other contracts shall be made by the Developer whose work is erected last unless otherwise specifically stated in the Contract Documents, required by the Authority Engineer or necessitated by the nature or extent of the work.

2.02 DEVELOPER'S USE OF PREMISES

- A. Confine construction equipment, the storage of materials and equipment, and operations of workmen to within the permanent and temporary rights-of-way.

- B. Pipeline materials may be stored appropriately along the route of the work provided such stored materials do not unduly restrict public use or infringe on private property.
- C. Assume full responsibility for materials stored on site.
- D. Provide dumpsters for disposal of waste materials. Do not stock pile waste materials on site.
- E. The Developer/Contractor shall provide self-contained toilet units (Jiffy-John type facilities) at the site.

2.03 SEWER AND WATER MAIN SEPARATION

A. Horizontal Separation:

Sewers, including manholes, should be separated at least 10 feet horizontally from any existing or proposed water mains. Should local conditions prevent a lateral separation of 10 feet, a sewer may be closer than 10 feet to a water main if:

- (a) It is laid in a separate trench; and,
- (b) The elevation of the top (crown) of the sewer is at least 18 inches below the bottom of the bottom (invert) of the water main; or
- (c) Based upon recommendations from the Authority Engineer.

B. Vertical Separation:

Whenever sewers cross under the water mains, the top of the sewer shall be at least 18 inches below the bottom of the water main.

When the elevation of the sewer cannot be varied to provide the required 18" vertical separation, relocate the water main, for a distance of 10 feet extending on each side of the sewer with one full-length of water main centered over the sewer so that both joints will be as far from the sewer as possible.

Water main should be constructed of slip-on mechanical joint ductile iron pipe or protected steel pipe. Both sewer and water main services shall be pressure tested to assure water tightness prior to backfilling.

Where a water main crosses under a sewer, provide adequate structural support for the sewer to prevent damage to the water main. Provide at least 18 inches of vertical separation.

C. Special Conditions:

Where it is impossible to obtain proper horizontal and vertical separation as specified, construct the pipelines as specified above and, in addition, encase the sewer line with a minimum 6" of cement concrete for 10 feet on either side of the water main. All encased pipelines shall be ductile iron pipe and extend from downstream MH to upstream MH.

2.04 SOIL EROSION AND SEDIMENTATION CONTROL PLAN

- A. The Developer/Contractor is required to provide soil erosion and sedimentation control measures as indicated in the Soil Erosion and Sedimentation Control Plan, which will be completed as necessitated by the nature or extent of work. An approved copy of the Soil Erosion and Sedimentation Control Plan shall be submitted to the Authority.

2.05 FIELD OBSERVATION

- A. Field observation shall be at the discretion of the Authority. The Authority's Inspector shall have the authority to halt construction if, in his opinion, construction is not being done according to the specifications and/or construction drawings. Any construction not being performed in accordance with

Authority Specifications shall be reported to the Authority and Engineer for direction. Periodic field visits will occur on all construction activities, unless special circumstances warrant additional time. The Developer/Contractor is responsible for payment of the Engineer's inspection and administrative fees to Northeastern York County Sewer Authority.

2.06 PRECONSTRUCTION MEETING

- A. Before starting the work, a conference will be held at the Authority office to review the project and to establish a working understanding between the parties as to the Project. Present at the conference will be the Developer or his representative, the Authority Engineer, the Authority's Inspector, the Contractor, and the Superintendent. At the preconstruction meeting, the Developer or Contractor shall supply a schedule for construction activities and a list of materials/products to be used on the project. The list should identify manufacturers, model numbers, and sufficient data to assure compliance with the specifications. The Developer shall furnish two (3) copies of the approved plan to the Authority Engineer one (1) week prior to the preconstruction meeting.

2.07 RECORD DRAWINGS

- A. The Contractor is required to keep an up-to-date set of Record Drawings (As-Constructed Drawings) for the project.
- B. The Contractor shall identify the location of all newly installed, existing to remain, and to be abandoned pipe and conduit as it is installed or uncovered during the construction period.
- C. No trenching for pipe or conduit shall be backfilled until the piping has been located and recorded by the Contractor.
- D. Up-to-date is defined as containing modifications for work performed within the past 30 days.
- E. The Contractor shall verify As-Constructed elevations of sanitary sewer and storm sewer inverts and road profiles.
- F. The Contractor shall provide detailed locations of all sanitary sewer lateral locations, depth, and length. Sewer laterals shall be located using manholes as a reference point and stationary from that point.
- G. At the end of the project, the Contractor's record drawings shall be turned over to the Engineer in Auto CADD and PDF format or as directed by the Authority Engineer.
- H. The Engineer will review the Contractor's record drawings. If the record drawings do not meet the requirements stated above, final adoption of the improvements will not be approved.

Sewer connection permit applications will not be approved until record drawings are submitted and approved.

2.08 FINAL ACCEPTANCE

- A. There will be no final acceptance of sewer lines until all other utilities are installed and testing is completed.

END OF SECTION

SECTION 02601

MANHOLES

PART 1 GENERAL

1.01 DESCRIPTION

B. Related Work Specified Elsewhere (Replace with the following):

- | | |
|---|---------------|
| 1. Trenching, backfilling, and compacting:* | Section 02221 |
| 2. Soil erosion and sedimentation control: | Section 02270 |
| 3. Finish grading, seeding, and sodding: | Section 02485 |
| 4. Bituminous paving and surfacing: | Section 02500 |
| 5. Concrete Structure with protective liner: | Section 02603 |
| 6. Sanitary sewer pipe: | Section 02610 |
| 7. Storm drain pipe: | Section 02618 |
| 8. Sewer testing: | Section 02651 |
| 9. Plain and reinforced cement concrete: | Section 03000 |
| 10. Cement concrete for utility construction: | Section 03050 |

*Note: Refer to local Municipality's specifications on trenching, backfilling and compacting; if no specifications exist, refer to the appropriate sections within this specification.

D. Applicable Standard Details (Add the following):

- 02601-8 Inside Drop Manhole
- 02601-9 Standard Manhole Cover and Frame
- 02601-10 Alternate Manhole Cover and Frame

1.03 SUBMITTALS

B. Shop Drawings:

2. (Replace with the following): Submit details of manhole frames and covers, including required lettering as shown on Detail 02601-9 and 02601-10.

PART 2 PRODUCTS

2.13 MANHOLE FRAMES AND COVERS

B. (Replace with the following): Within street right-of-way, private drives and/or parking areas, frames and covers shall be capable of withstanding an AASHTO HS-25 loading and shall have a minimum 24" clear opening. Watertight frames and covers shall meet AASHTO HS-20 loading requirements.

D. (Replace with the following): Cover shall be lettered "NEYSCA Sanitary Sewer" with 2" high letters.

2.18 (Add the following): MANHOLE INSERTS

A. Manhole inserts shall be Parson Manhole Inserts as manufactured by Parson Environmental Products, Inc., Reading, PA or approved equal.

PART 3 EXECUTION

3.05 STANDARD MANHOLE CONSTRUCTION

D. (Replace with the following): Drop Connections

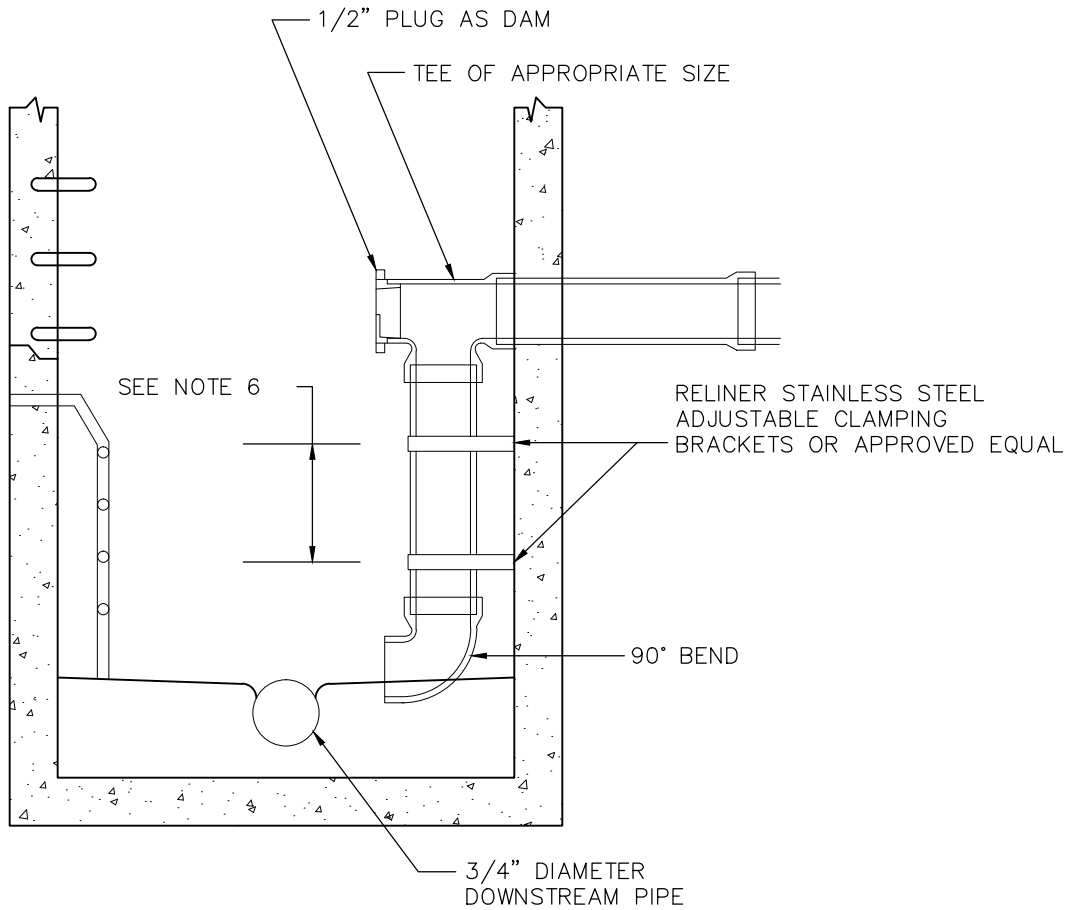
1. External drop connections should be constructed as shown on Standard Detail 02601-5. Encase drop connection in concrete.
2. Internal drop connections shall be similar to Intra-flow Low-profile drop system manufactured by Royal Enterprises of America, or equal as approved by the Authority's Engineer as shown on Standard Detail 02601-8.

J. (Add the following):

7. All manholes (except water tight) to be provided with manhole inserts.

END OF SECTION

K:\094510000\documents\Standard Technical Provisions Revisions\Section_02601_Manholes



NOTES:

1. INSIDE DROPS ARE ONLY TO BE USED UPON APPROVAL BY THE SEWER AUTHORITY.
2. ALL PIPES AND FITTINGS SHALL BE SIMILAR SIZE AND MATERIAL AS INCOMING MAIN LINE.
3. MINIMUM SIZE MANHOLE FOR INSIDE DROP CONNECTION SHALL BE 60" DIAMETER.
4. CONNECTIONS TO MANHOLE SHALL BE MADE USING GPK ADAPTOR, KOR-N-SEAL BOOTS, OR APPROVED EQUAL.
5. WITHIN A 60" DIAMETER MANHOLE, THE MAXIMUM ALLOWABLE DIAMETER OF THE INSIDE DROP PIPING IS 12". INSIDE DROPS EXCEEDING 12" IN DIAMETER OR MULTIPLE DROPS SHALL BE REVIEWED BY THE SEWER AUTHORITY AND MAY REQUIRE A LARGER DIAMETER MANHOLE.
6. RELINER STAINLESS STEEL ADJUSTABLE CLAMPING BRACKETS, OR APPROVED EQUAL, SHALL BE INSTALLED WITHIN 6" OF BOTH BELL AND SPIGOT ENDS OF EACH DROP PIPE. IF DROP PIPE LENGTH EXCEEDS 5 FEET, THEN CENTER STRAPS SHALL BE INSTALLED WITH A MINIMUM SPACING OF 4 FEET ON CENTER. BRACKETS SHALL BE ATTACHED UTILIZING STAINLESS STEEL EXPANSION BOLTS, MINIMUM OF 2 EACH AT CONNECTION POINTS.

NOTE: NOT TO SCALE

**NORTHEASTERN YORK COUNTY SEWER AUTHORITY
CONSTRUCTION & MATERIAL SPECIFICATIONS**



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**INSIDE DROP
CONNECTION TO
MANHOLE**

DATE: 1/17/2008

DRAWN BY: BAM/JLD

CHK. BY:

NO. 02601-8

SECTION 02603

CONCRETE STRUCTURES WITH PROTECTIVE LINER

PART 1 GENERAL

1.01 DESCRIPTION

A. The work of this Section includes, but is not limited to:

1. Materials, equipment, and labor required for complete lining or coating of concrete structures based on a proven and acceptable technology meeting the minimum requirements set forth in this and all other sections.
2. Structural reinforcement and corrosive rehabilitation utilizing a cured-in-place or spray coating.
3. Void filling and protective application by applying spray monolithic resin coatings or cured in place liners to all interior surfaces of an existing structure.

B. Related work specified elsewhere:

- | | |
|---------------------------|---------------|
| 1. Manholes | Section 02601 |
| 2. Sanitary Sewer Testing | Section 02651 |

1.02 QUALITY ASSURANCE

A. The structural designed lining or coating thickness must be sealed by a Professional Engineer (PE) registered in the Commonwealth of Pennsylvania.

B. Furnish materials of quality required by the American Society for Testing and Materials (ASTM) standards or other approved standards and specifications.

C. The Applicator must have been trained and certified by the manufacturer to handle and apply their products, as well as appropriate re-certification documentation, as necessary, by the manufacturer.

D. Applicator shall initiate and enforce quality control procedures consistent with applicable ASTM, NACE, and SSPC standards and the manufacturer's recommendations.

E. A 10-year performance warranty, which covers both the labor and materials, shall be provided. The warranty shall be non-prorated and specific to actual performance. The warranty shall cover repair of a liner or coating which is found to be deformed, separated from the substrate, showing significant reactions to chemicals, or is leaking either through the surface or behind the liner or coating within the 10-yr warranty period. The OWNER will be responsible for conducting tests, in accordance with Section 1.02.G of these specifications, to determine imperfections which constitute a warranty claim.

F. REFERENCE STANDARDS

1. ASTM D638: Test Method for Tensile Properties of Plastics.
2. ASTM D790: Test Methods for Flexural Properties of Un-reinforced and Reinforced Plastics.
3. ASTM D695: Test Methods for Compressive Properties for Plastics.

4. ASTM D4060: Test Methods for Abrasion.
5. ASTM D2240: Test Method for Hardness, Shore D.
6. ASTM D4541: Adhesion to Concrete.
7. ASTM D543: Resistance of Plastics to Chemical Reagents.
8. ASTM C 109: Compressive Strength of Hydraulic Cement Mortars.
9. ASTM C307: Tensile Strength of Hydraulic Cement Mortars.
10. ASTM F1216: Standard Practice for Rehabilitation and Conduits by the Inversion and Curing of a Resin – Impregnated Tube.
11. ASTM C 1244-05ae1: Test method for Concrete Sewer Manholes by Negative Air Pressure (Vacuum) Test.
12. ASTM D 4787: Standard Practice for Continuity Verification of Liquid or Sheet Linings Applied to Concrete Substrates.

G. INSPECTION/TESTING

1. OWNER or ENGINEER shall visually inspect structure for leaks from infiltration or inflow.
2. Vacuum Test, as practical.
3. Structural Pull Test. Test at 150-psi. Perform 1(one) test per structure (ASTM D4541)
4. All lined manholes will be inspected for cracks, voids, holes, uncured spots, dry spots, delamination's and any defect which might affect the coating performance.
5. Holiday Test
 - a. CONTRACTOR is required to utilize a high voltage Holiday detection system to determine if any Holidays (voids) exist in the lining or coating.
 - b. Test the entire coated surface for holidays at 100 volts/mil, in accordance with ASTM D4787.
 - c. Approved Holiday Test devices:
 - Model APW by Tinker & Razor
 - Model 14/20 by DE Stearns
 - Equal, as approved by ENGINEER.
6. Where defects or voids are located, mark locations for repair, according to the system manufacturer's recommendations (using original or identical materials).
7. Retest repaired voids to prove Holiday free.
8. All repairs shall be made at no additional cost to the OWNER. Prior to initiating repairs, CONTRACTOR shall submit data on proposed, manufacturer approved repair products and

techniques to OWNER and ENGINEER for approval. OWNER and ENGINEER may approve the proposed repair techniques, or may require, at their discretion, and at no additional cost, the implementation of any remedies including the removal and replacement of liners that fail to pass inspection and testing requirements.

1.03 SUBMITTALS

- A. Certification from the manufacturer that lining or coating system meets or exceeds requirements of this specification.
- B. Certification from the manufacturer that the Applicator has been trained and certified by the manufacturer to handle and apply their products, as well as appropriate re-certification documentation, as necessary, by the manufacturer. The CONTRACTOR shall submit a list of similar work performed within three years of the bid date, along with the previous site owner's contact information. In the absence of this experience, a Manufacturer's representative must be present onsite during application and certify installation has been completed to their standard.
- C. Shop Drawings for lining or coating system including physical properties, thickness and fabrication data and installation and repair instructions.
- D. Shop Drawings for Patching and Profiling, Infiltration Control, and Grouting Mixes including physical properties, and installation instructions.
- E. Design calculations for liner or coating thickness, sealed by a Professional Engineer (PE) registered in the Commonwealth of Pennsylvania, for hydraulic load generated by the groundwater table. The design depth of groundwater table will be given by the OWNER/ENGINEER and will be specific to each structure to be rehabilitated.
- F. Breakdown of time required to perform the structure rehabilitation including: cleaning, infiltration mitigation (patching and profiling), installation, curing time, and total bypass pumping time.
- G. The OWNER/ENGINEER has determined that the existing steps are to remain in place. If the lining process requires removal of the existing steps, replacements steps shall be provided that are structurally and dimensionally equivalent to the existing steps. Any variation must first be approved by the OWNER/ENGINEER. Shop Drawings shall be submitted for the new ladder or steps.

1.04 JOB CONDITIONS

- A. CONTRACTOR is responsible for traffic control during rehabilitation work. Traffic control shall be in accordance with Pennsylvania Department of Transportation Publication 213, "Temporary Traffic Control Guidelines."

1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Product delivery, storage and handling shall be in accordance with all specifications and recommendations of the product manufacturer.

PART 2 PRODUCTS

2.01 LINING/COATING MATERIALS

- A. The liner material shall be used to form a structurally enhanced monolithic lining or coating, covering all interior surfaces of the structure, including benches, channel and inverts of manholes, and walls and floor of wet well.
- B. The OWNER reserves the sole right to determine approval/disapproval of a system or product.
- C. Approved Products/ Installers:

1. SprayWall by Sprayroq
Sprayroq, Inc.
248 Cahaba Valley Parkway
Pelham, AL 35124

Abel Recon
3925 Columbia Avenue
Mountville, PA 17554

2. Raven 405
RLS Solutions Inc.
13105 East 61st Street, Suite A
Broken Arrow, OK 74012

PIM Corporation
201 Circle Dr. North, Suite 106
Piscataway, NJ 08854

SWERP, Inc.
1237 Hayes Blvd.
Bristol, PA 19007

3. Approved Equal by ENGINEER and OWNER

D. Design Requirements

- 1. The following specific design conditions shall be assumed for all structures being rehabilitated with the respective approved system:

<u>Parameter</u>	<u>Design Requirement</u>
• Structure Condition	Partially/Fully Deteriorated, based on condition of the existing structure, per ASTM F1216
• Soil Type	Saturated/Unsaturated
• Soil Load	120 lbs/cu. ft.
• Soil Modulus	500 psi.
• Safety Factor	2.0 minimum (must be verified by design engineer)
• Soil Cover	Distance from grade to invert
• Water Table	Same as Soil Cover, unless specifically specified by OWNER or ENGINEER
• Bond Strength	Shall exceed tensile strength of substrate
• Shore D Hardness	80
• Density	87±pcf

2. The liner or coating material shall conform to the minimum physical requirements listed below:

Type of Product	Polyurethane	Epoxy
Tensile Strength	7,400 psi	7,600 psi
Tensile Modulus	425,000 psi	
Flexural Strength	14,000 psi	13,000 psi
Flexural Modulus (initial)	735,000 psi	727,000 psi
Compressive Strength	7,900 psi	18,000 psi

3. The finished structure shall be corrosion resistant to: 20% Sulfuric Acid, 5% Sodium Hydroxide, 5% Ammonium Hydroxide, 1% Nitric Acid; as well as other common ingredients of the sanitary sewage environment.
4. Unless otherwise specified by OWNER/ENGINEER, the wall of the liner or coating shall be structurally designed to withstand the hydraulic load generated by the groundwater table. In the absence of geotechnical reports or test borings, CONTRACTOR shall assume that hydrostatic head is equal to the structure depth. Calculations must be submitted along with supporting formulas that document the version of formula used to determine the design thickness. The wall thickness shall be designed to account for the minimum strengths and/or modulus over the long-term life of the product. The design shall be verified and sealed by a Professional Engineer (PE) registered in the Commonwealth of Pennsylvania.
5. When it is pre-determined by the OWNER/ ENGINEER that groundwater loading is not an issue, the rehabilitation lining or coating shall be installed to the thickness necessary to qualify as a monolithic (void free) liner. The minimum value coating thickness for structural rehabilitation shall be 125 mils, or as required by the manufacturer to provide the required corrosion resistance and mechanical properties, whichever is greater.

2.02 PATCHING and PROFILING, INFILTRATION CONTROL, AND GROUTING MIXES

- A. Patching and profiling mix: A quick setting, cementitious material shall be used as a patching and profiling mix. It shall be mixed and applied according to the manufacturer's recommendations and shall meet the following minimum requirements.

1. Design Requirements:

Compressive strength	ASTM C 109	1000 psi @ 1 hr 3500 psi @ 48 hrs 5000 psi @ 28 days
Tensile strength	ASTM C 307	200 psi @ 24 hrs 300 psi @ 7 days

- B. Infiltration control mix: A rapid-setting, cementitious product, specifically formulated for leak control, shall be used to stop minor water infiltration, shall be mixed and applied according to the manufacturer's recommendations and shall meet the following minimum requirements.

1. Design Requirements:

Compressive strength	ASTM C 109	1,800 psi @ 1/2 hr 4,000 psi @ 24 hrs 5,000 psi @ 7 days
Tensile strength	ASTM C 307	300 psi @ 7 days 350 psi @ 28 days

C. Grouting mix: A polyurethane grout shall be used for stopping very active infiltration, filling voids and shall be mixed/applied according to manufacturer's recommendations.

1. Approved Manufacturers/Products

- a. Deneef Hydroactive Cut
- b. Sealguard
- c. Approved Equal

PART 3 EXECUTION

3.01 INSTALLATION

A. All existing manhole steps are to remain, unless procedure set forth in Section 1.03.G is taken by CONTRACTOR.

3.02 MAINTAINING WASTEWATER FLOWS

A. The CONTRACTOR shall be fully responsible for restricting the normal sewage flow through the manhole where the specified rehabilitation work demands such flow restriction. The CONTRACTOR will plan his work in order to maintain flows and not interrupt sewer service. This may include night work. The cost of any night work required will be included in the contract price of the applicable item. The CONTRACTOR shall not perform work to manholes until plans for bypass pumping or flow restriction have been submitted by the CONTRACTOR and accepted by the ENGINEER. Additionally, no plugging of existing Sanitary Sewer Gravity Mains will be made without the approval of the OWNER.

3.03 PREPARATION

- A. Prior to entering structures, an atmosphere evaluation shall be conducted by the CONTRACTOR to determine whether air quality permits entrance based on local, state, or federal safety regulations. Appropriate confined space procedures and equipment are required while accessing structures.
- B. Verify ambient temperature inside the structure is greater than or equal to 50° F.
- C. Place screens, when necessary, over all pipe openings to prevent extraneous material from entering sewer system.
- D. All foreign material shall be removed from the structures' wall and bench/floor using a minimum 3500 psi pressure washing system.
- E. Loose or protruding brick mortar/concrete shall be removed with a mason's hammer and chisel. Fill large voids with quick setting patch mix, as described in Section 2.02 of these specifications. The structure shall be re-profiled according to manufacturer's requirements.
- F. The surface to be repaired must be clean and free of any loose materials.
- G. The use of acid no matter how diluted for cleaning purposes is not allowed.
- H. Minor leaks shall be stopped using the quick-setting specially formulated infiltration control mix described in Section 2.02 of these specifications and applied per manufacturer's instructions.
- I. Where severe infiltration is present, drilling may be required in order to pressure grout outside the structure using a cementitious or chemical grout following the manufacturer's recommendations.

- J. The manhole must be infiltration free for at least 24 hours prior to placing the liner.
- K. Remove all loose grout and rubble of existing channel. Rebuild channel, if required, by shaping and repairing slope of shelves or benches. Work shall include alignment of inflow and outflow ports in such a manner as to prevent the deposition of solids at the transition point. All inverts shall follow the grades of the pipe entering the manhole. Changes in direction of the sewer and entering branch or branches shall have a true curve of as large a radius as the size of the manhole will permit. Channels shall be shaped to allow entrance of maintenance equipment into pipes including buckets, TV camera, etc. Inverts shall only be lined where indicated on the Contract Drawings.
- L. Mask manhole steps and all pipes and equipment in the wet well to prevent the sprayed-on resin-based liner from accumulating on these items.
- M. If necessary to install liner or coating, inside drop connections may be removed, but shall be reinstalled to the condition, dimensions and structural stability of the existing inside drop.

3.04 APPLICATION

- A. After proper cleaning, the substrate must be dried, as specified by the resin manufacturer, to ensure maximum adhesion.
- B. The lining or coating shall be applied evenly over the entire structure, including the invert, floor of wet well, bench, walls, and riser rings up to the frame and cover casting, insuring a monolithic system is maintained. Finished channel surface and invert surfaces shall be smooth, free of ridges, wrinkles, or sags and shall not impair flow.
- C. If an additional application is required to meet required structural rehabilitation, the initial application must be allowed to fully cure before a second coat is applied, in order to protect the repair profile from sagging due to over-application. Bypass pumping shall remain in service to allow a stable environment for the first application to cure properly.
- D. For field-lining or coating at the structure, application shall not be made unless the ambient temperature inside the structure is 50°F or higher. The structure shall be protected while curing to ensure temperatures consistent with the 50°F or higher requirements.
- E. When predetermined by the OWNER/ENGINEER, that the existing steps are to be removed and new steps are to be installed:
 - If previously existed, a clear opening of 21" minimum shall be maintained.
 - The top step shall not be located more than 30" from the finished grade.
- F. Flow through the structure should be re-established per manufacturer's recommendation and as soon as possible allowing appropriate curing.
- G. Prior to structural performance testing, a minimum curing time is required per manufacturer's recommendation.

3.06 RESTORATION

- A. CONTRACTOR shall be responsible for any restoration necessary to return site conditions equal to that existing immediately prior to any work done.

END OF SECTION

SECTION 02610

SANITARY SEWER PIPE

PART 1 GENERAL

1.01 DESCRIPTION

B. Related work specified elsewhere:

- | | |
|--|---------------|
| 1. Boring and jacking: | Section 02150 |
| 2. Trenching, backfilling and compaction:* | Section 02221 |
| 3. Soil erosion and sedimentation control: | Section 02270 |
| 4. Finish grading, seeding and sodding: | Section 02485 |
| 5. Trench paving and restoration: | Section 02575 |
| 6. Manholes: | Section 02601 |
| 7. Concrete structure with protective liner: | Section 02603 |
| 8. Sewer pipeline testing: | Section 02651 |
| 9. Cement concrete for utility construction: | Section 03050 |

*Note: Refer to local Municipality's specifications on trenching, backfilling, and compacting; if no specifications exist refer to the appropriate sections within this specification.

D. Applicable Standard Details (Add the following):

- | | |
|---------|---|
| 02610-5 | Observation Tee/Cleanout |
| 02610-6 | Pipe Reconnection Detail |
| 02610-7 | Observation Tee/Cleanout Cap Protection Casing Detail |

PART 2 PRODUCTS

2.01 CEMENT CONCRETE SEWER PIPE (replace) – NOT PERMITTED

2.07 CLEANOUTS (Add the following paragraph):

B. Cleanout caps:

2. Install observation tee/cleanout flush with ground at connection of building sewer and sewer lateral, as shown on Detail 02610-5. When observation tee/cleanout is installed in asphalt or concrete (driveway, parking area, sidewalk, etc.) cap protection will be required, see Detail 02610-7.

PART 3 EXECUTION

3.04 LATERALS

- C. (Replace with the following): Laterals shall be installed at a slope of 1/8"/ft. (6" diameter) from the main to the cleanout or plug. The minimum depth under streets shall be 5'. Any deviations shall be approved by the ENGINEER prior to installation.

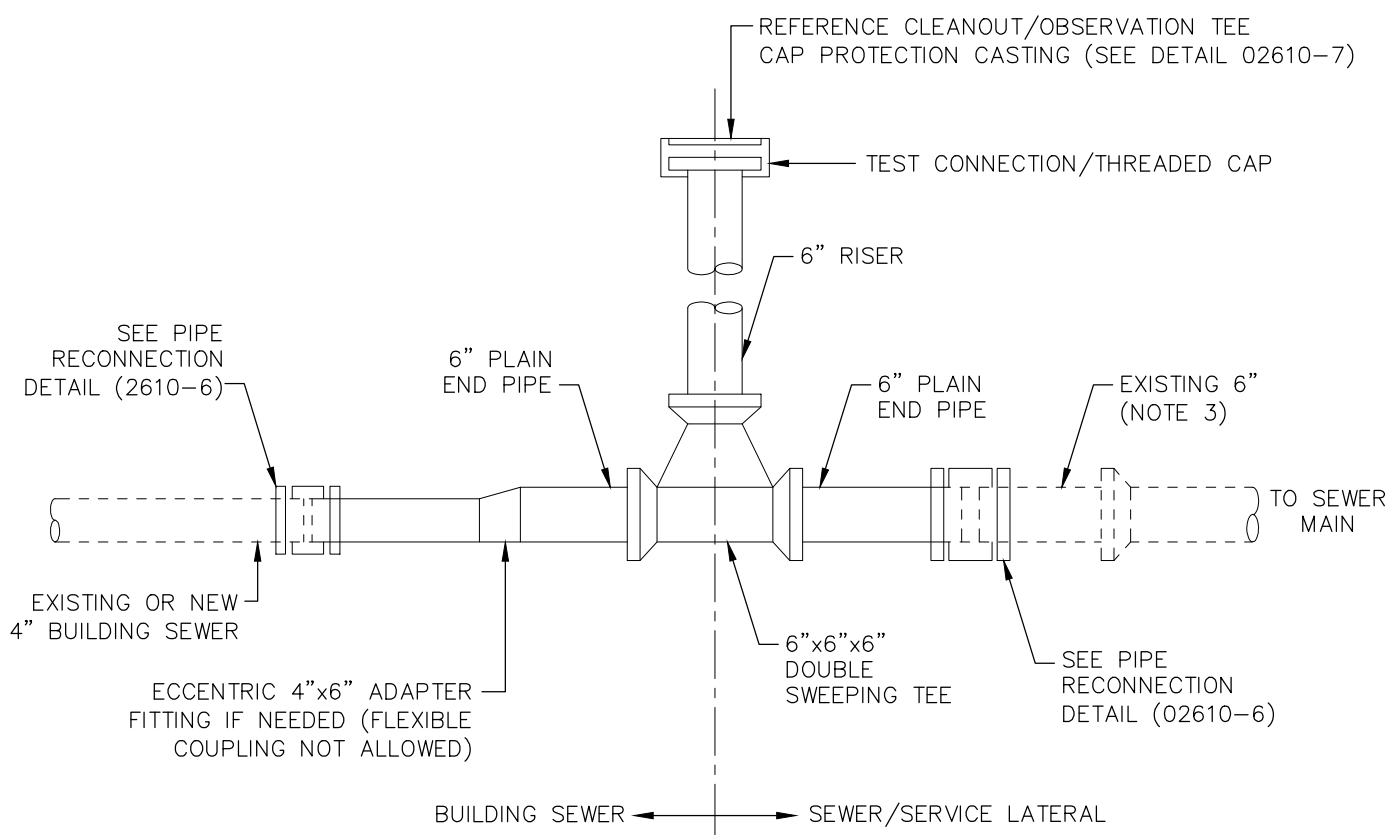
- F. (Delete paragraph).

- G. (Add the following): In building sewers and sewer laterals, not greater than 45° bends should be used, except where indicated on the Standard Details included in these specifications. Provide at least a one (1) foot piece between bends.

END OF SECTION

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NOTES:

1. REFER TO APPROPRIATE DRAWINGS FOR CLEANOUT CAP DETAILS.
2. LOCATE OBSERVATION TEE 5'-0" (MAX. FROM CURB, OR AT THE CONNECTION POINT BETWEEN SEWER LATERAL AND BUILDING SEWER IF KNOWN).
3. IF 4" LATERAL EXISTS, USE ECCENTRIC 4" X 6" ADAPTER FITTING FOR TRANSITION TO OBSERVATION TEE (4" X 6" FLEXIBLE COUPLING NOT ALLOWED).
4. REFER TO BUILDING SEWER AND/OR SERVICE LATERAL INSTALLATION/REPLACEMENT DETAIL FOR ACCEPTABLE PIPE MATERIALS FOR TRANSITION BETWEEN SCHEDULE 40 PVC AND SDR-35 PIPING.

NOTE: NOT TO SCALE

**NORTHEASTERN YORK COUNTY SEWER AUTHORITY
CONSTRUCTION & MATERIAL SPECIFICATIONS**

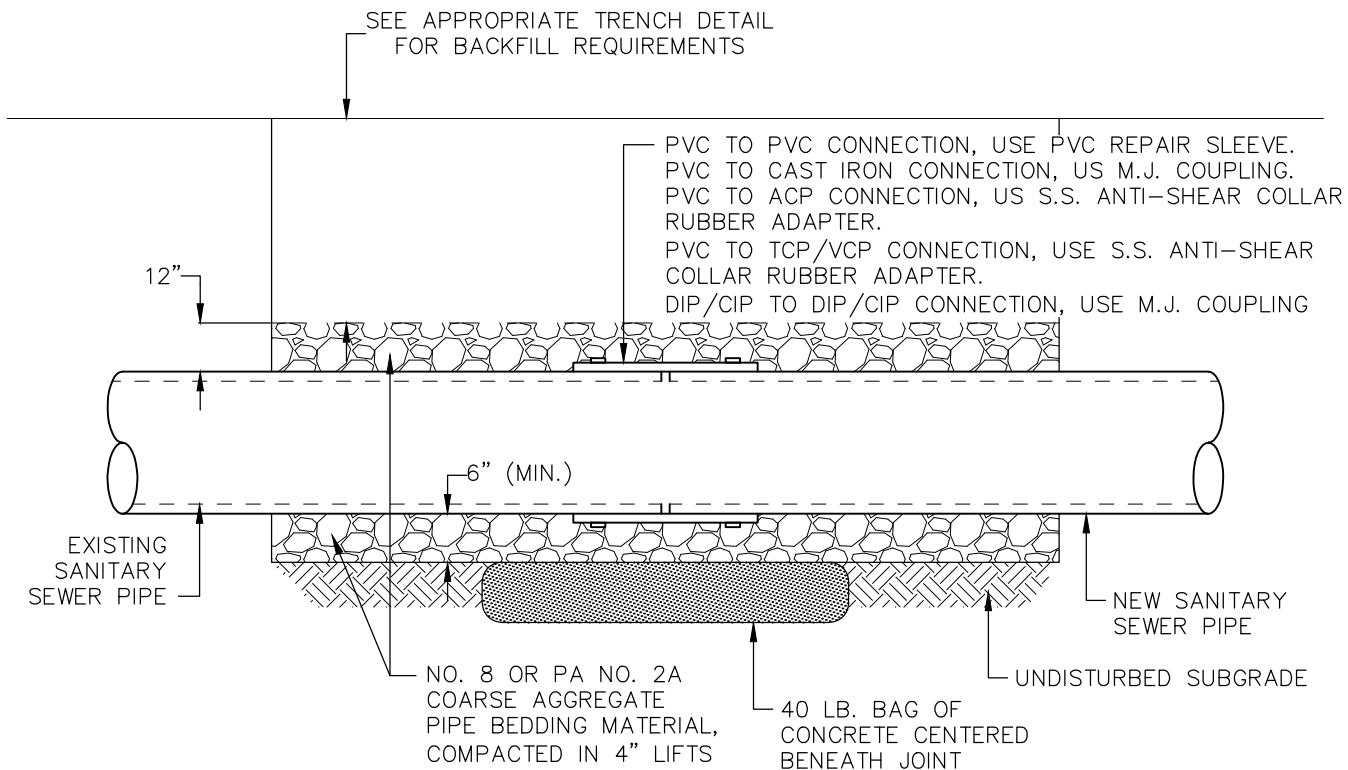


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**CLEANOUT/
OBSERVATION TEE**

DATE:	4/11/2007
DRAWN BY:	BAM
CHK. BY:	
NO.	02610-5

K:\094510000\documents\Standard Technical Provisions\Revisions\02610-6.dwg, 11/5/2015 3:48:25 PM



NOTES:

1. RECONNECTIONS TO BE AIR TESTED IN ACCORDANCE WITH SPECIFICATIONS.
2. M.J. (MECHANICAL JOINT) COUPLINGS TO BE SMITH-BLAIR OR APPROVED EQUAL.

NOTE: NOT TO SCALE

ABBOTTSTOWN PARADISE JOINT SEWER AUTHORITY
 CONSTRUCTION & MATERIAL SPECIFICATIONS



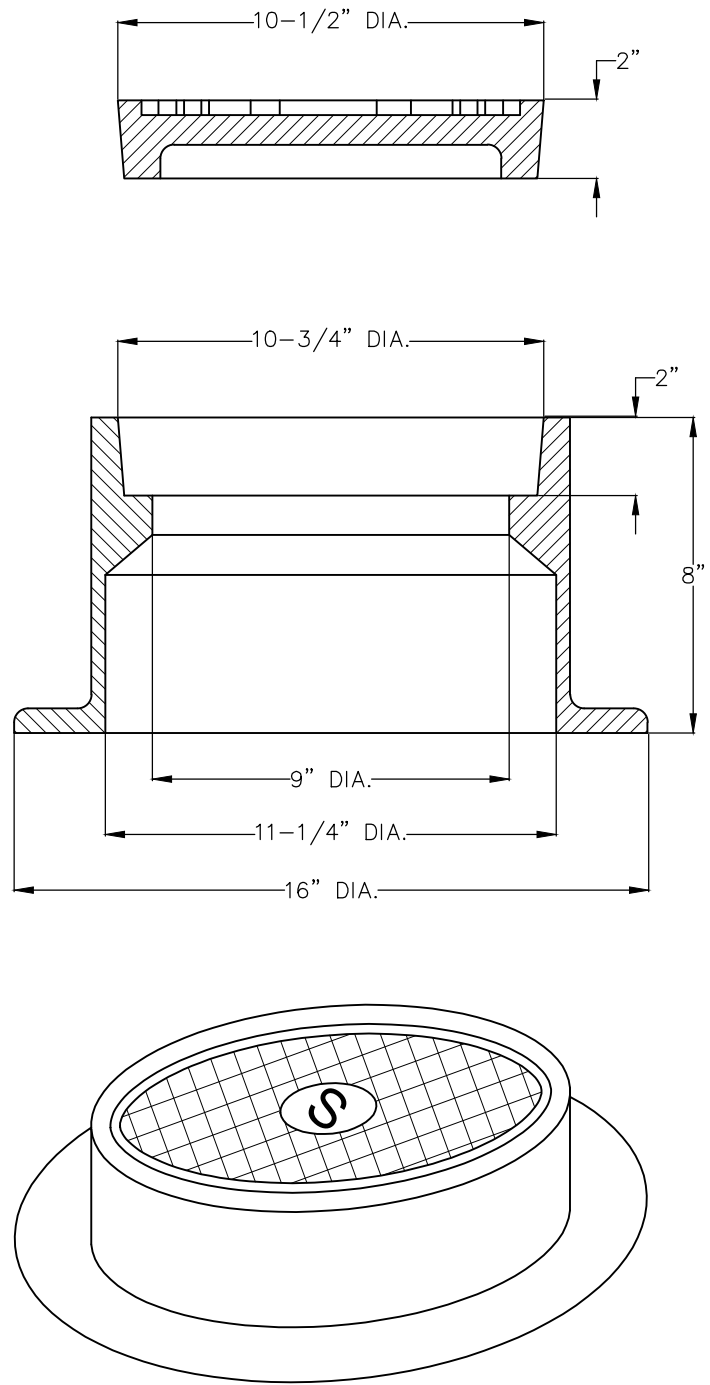
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PIPE RECONNECTION
 DETAIL

DATE:	4/11/2007
DRAWN BY:	BAM
CHK. BY:	
NO.	02610-6

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NOTES:

1. MINIMUM WEIGHT OF 90 LBS.
2. FRAME AND COVER SHALL BE MODEL NO. 1565, MANUFACTURED BY EAST JORDAN IRON WORKS, INC. OR APPROVED EQUAL.

NOTE: NOT TO SCALE

**NORTHEASTERN YORK COUNTY SEWER AUTHORITY
CONSTRUCTION & MATERIAL SPECIFICATIONS**



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**CLEANOUT/OBSERVATION
TEE CAP PROTECTION
CASING DETAIL**

DATE:	4/11/2007
DRAWN BY:	BAM
CHK. BY:	
NO.	02610-7

SECTION 02722

LOW-PRESSURE SEWER SYSTEM

PART 1 – GENERAL REQUIREMENTS

1.01 DESCRIPTION

A. The Work of this section includes, but is not limited to:

1. Sanitary sewer low-pressure pipelines
2. Service connections
3. In-line cleanouts
4. Terminal cleanouts

B. Related Work Specified Elsewhere:

1. Section 02221 – Trenching, Backfilling & Compacting
2. Section 02610 – Sanitary Sewer Pipe
3. Section 02651 – Sewer and Manhole Testing

C. Applicable standard details:

02722-1	Typical Pressure Sewer Service Connection Plan
02722-2	Pressure Sewer Trench and Bedding Detail
02722-3	Service Valve Detail
02722-4	Valve Box Detail
02722-5	In-line Cleanout Detail
02722-6	Terminal Cleanout Detail

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM D1784 – Rigid poly (vinyl chloride) (PVC) Compounds and Chlorinated Poly (vinyl chloride) (CPVC) Compounds
2. ASTM D2241 – Poly (vinyl chloride) (PVC) Plastic Pipe (SDR-PR)
3. ASTM D2466 – Poly (vinyl chloride) (PVC) Plastic Pipe Fittings, Schedule 40
4. ASTM D2564 – Solvent Cements for Poly (vinyl chloride) (PVC) Plastic Pipe and Fittings
5. ASTM D3139 – Joints for Plastic Pressure Pipes Using Flexible Elastometric Seals
6. ASTM D1785 – Poly (vinyl chloride) (PVC) Plastic Pipe, schedules 40, 80, and 120
7. ASTM F477 – Elastometric Seals (Gaskets) for Joints Plastic Pipe
8. ASTM D3261 – Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fitting for Polyethylene (PE) Pipe and Tubing
9. ASTM D3350 – Standard Specification for Polyethylene Plastics Pipe and Fitting Materials
10. ASTM F714 – Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based
11. ASTM 1055 – Standard Specification for Electro Fusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene Pipe and Tubing

1.03 SUBMITTALS

A. Shop drawings and product data:

1. Submit manufacturer's catalog data, literature, illustrations, and specifications.
2. Submit shop drawings of valves and valve operators including dimensions, net assembled weight of each size valve furnished, construction details, and materials of components.
3. Submit manufacturer's installation instructions.
4. Submit manufacturer's maintenance instructions and complete parts lists.

B. Certificates:

1. Submit a Certificate of Compliance, together with supporting data, from the materials supplier(s) attesting that valves, accessories, and specialties meet or exceed specification requirements.

1.04 PRODUCT DELIVER, STORAGE, AND HANDLING

A. During loading, transporting and unloading, and storage on site, exercise care to prevent damage to materials.

B. Do not drop pipe or fittings.

1.05 TOWNSHIP/BOROUGH ROAD OCCUPANCY PERMIT

A. Developer/Contractor must obtain a road occupancy permit prior to commencing work.

PART 2 – PRODUCTS

2.01 POLYCHLORIDE (PVC) SEWER PIPE

A. Pressure Sewer Pipe and Fittings:

1. Pipe: ASTM D2241, SDR21
2. Flexible Elastometric Seals: ASTM D3139
3. Seal Material: ASTM F477
4. Fittings: ASTM D2466, Socket Type, Schedule 40
5. Solvent Cement: ASTM D2564

2.02 HIGH DENSITY POLYETHYLENE PIPE

A. Pressure Sewer Force Main:

1. High Density Polyethylene (HDPE), 160 psi rated, SDR II, Iron Pipe Size (IPS), size as indicated on the plans.
2. The outside pipe diameter (OD) and minimum wall thickness (MWT) shall be as follows:

<u>IPS (Inches)</u>	<u>OD (Inches)</u>	<u>MWT (Inches)</u>
2	2.375	0.216
3	3.500	0.318
4	4.500	0.409
6	6.625	0.602

3. Materials used shall have a PPI/ASTM standard thermoplastic material designation code of PE3408 and a material classification conforming to Grade P34 for ASTM D-3350.

4. Pressure sewer force mains when installed in the public rights-of-way shall have all pipe data heat indented in a “Green” stripe on the wall of the pipe.
5. Pipe shall be supplied in the maximum length available to avoid joints.
6. Field splices shall be in accordance with ASTM D3261 (Butt Heat Fusion) or by approved electrofusion fittings manufactured in accordance with ASTM F1055 and rated at a minimum operating pressure of that of the pipe.
7. Fittings and adapters to valves and other equipment shall be in the strict accordance with the recommendations of the pipe manufacturer.

B. Pressure Sewer Service Laterals:

1. Shall be 1-1/4” High Density Polyethylene (HDPE), 160 psi rated, SDR 11, Iron Pipe Size (IPS) pipe with an outside diameter of 1.660 inches with a minimum wall thickness of 0.151 inches.
2. Materials used shall have a PPI/ASTM standard thermoplastic material designation code of PE3408 and a material classification conforming to Grade P34 for ASTM D-3350.
3. Pressure sewer service lateral shall be solid “Green” in color.
4. Pipe shall be supplied in minimum lengths of 500 feet to avoid joints.
5. Field splices shall be in accordance with ASTM D3261 (Butt Heat Fusion) or by approved electro fusion fittings manufactured in accordance with ASTM F1055 and rated at a minimum operating pressure of that of the pipe.

2.03 UTILITY MARKING TAPE

A. Tape shall consist of a minimum of 5-mil (0.005”) overall thickness, with no less than a 35 gauge (0.00035”) solid aluminum foil core. The foil must be visible from BOTH sides. The layers shall be laminated together with the extrusion lamination process, not adhesives. Further, there shall be NO inks or printing extending to the edges of the tape. The adhesive will NOT contain any dilutants, pigments, or contaminants and is specially formulated to resist degradation by elements normally encountered in the soil. All printing shall be encased to avoid ink rub-off. Depth of bury shall be in accordance with the manufacturer’s specifications.

B. Test Data:

<u>Property</u>	<u>Method</u>	<u>Value</u>
Thickness	ASTM D2103	5.0 mils
Tensile Strength	ASTM D882	25 lbs/inch (5,500 psi)
Elongation	ASTM D882-88	<50% at break
Printability	ASTM D2578	>50% dynes/cm ²
Flexibility	ASTM D671-81	Pliable hand
Inks	Mfg. Specs.	Heat set Myles
Message Repeat	Mfg. Specs.	Every 20”
Foils	Mfg. Specs.	Dead soft/annealed
Top Layer	Mfg. Specs.	Virgin PET
Bottom Layer	Mfg. Specs.	Virgin LDPE
Adhesives	Mfg. Specs.	>30%, Solid, 1.5#/R
Bond Strength	Boiling H2O @100° C	5 hours w/o peel
Colors	APWA Code	See Below

C. Color code shall be as follows:

1. Safety Red: Electric power, distribution and transmission, and municipal electric systems.
2. Highly Visible Safety Yellow: Gas and oil distribution and transmission, dangerous materials, petroleum and steam.

3. Safety Alert Orange: Telephone and telegraph systems, police and fire communications, and cable television.
4. Safety Precaution Blue: Water systems and slurry pipelines.
5. Safety Green: Sanitary and storm sewer systems.
6. Safety Brown: Force mains, reclaimed water lines and effluent reuse lines.
7. Alert Purple: Reclaimed non-potable water lines.

2.04 VALVES

A. Ball Valves

1. Bronze body, solid bronze tee head, ASTM B62. Compression type union inlet and outlet. Double Buna-N-O-rings in stem, spherical ball, molded Buna-N rubber seats. Size as indicated on the Contract Drawings.

B. PVC Check Valves

1. Gravity operated, ball type providing full-primed passageway when open.
2. 150 psi working pressure.
3. Flowmatic 208C or equal.

2.05 ADJUSTABLE VALVE BOXES

- A. Plastic, PVC, ABS, or reinforced olefin polymers.
- B. Plastic top tube, belled bottom; bell arched and flanged; slide friction adjustment.
- C. Cast iron top collar and lid; lid cast with "Sewer."

PART 3 – EXECUTION

3.01 PREPARATION

- A. Perform trench excavation to the line and grade indicated on the Drawings and as specified in Section 02221 – Trenching, Backfilling, and Compacting.
- B. Unless otherwise indicated on the Drawings, provide for a minimum cover of 4'-0" above the top of the piping laid in the trenches.
- C. Provide Type IV bedding as indicated on Standard Detail 02722-2; place aggregate in a manner to avoid segregation and compact to the maximum practical density so that the pipe can be laid to the required tolerances.

3.02 LAYING PIPE IN TRENCHES

- A. Give ample notice to the Engineer in advance of pipe laying operations.
- B. Lower pipe into trench using handling equipment designated for the purpose to assure safety of personnel and to avoid damage to the pipe. Do not drop pipe.
- C. Lay pipe proceeding upgrade with the bell or groove pointing upstream.
- D. Excavate recesses in bedding material to accommodate joints, fittings, and appurtenances. Do not subject pipe to a blow or shock to achieve solid bedding or grade.
- E. Lay each section of pipe in such a manner as to form a close concentric joint with the adjoining section and to avoid offsets in the flow line.
- F. Clean and inspect pipe and fitting before joining. Assemble to provide tight, flexible joints that permit movement caused by expansion, contraction, and ground movement. Use lubricant recommended by the pipe or fitting manufacturer for mating joints. If unusual resistance is encountered or if the pipe cannot be

fully inserted into the joint, disassemble joint, inspect for damage, re-clean joint components, and re-assemble joint.

- G. Do not deflect joints in pressure piping more than the maximum recommended by the pipe manufacturer.
- H. Place sufficient backfill on each section of pipe, as it is laid, to hold pipe firmly in place.
- I. Clean the interior of the pipe as the work progresses.
- J. Keep trenches and excavation free of water during construction.
- K. When the work is not in progress, and at the end of each workday, securely plug ends of pipe and fittings to prevent trench water, earth, or other substances from entering the pipe or fittings.

3.03 THRUST RESTRAINT

- A. Provide Pressure pipeline with restrained joints or concrete thrust blocking at all bends, tees, and changes in direction; construct concrete thrust blocking in accordance with Standard Details 02615-2 and 02615-3. If restrained joints are utilized, submit design calculations showing determination of restrained lengths and submit joint restraint details. Methods of joints restraint shall utilize devices specifically designed for the application for which manufacture's data is available for the application. Submit manufacture's literature for approval.

3.04 SERVICE VALVES AND CLEANOUTS

- A. Provide service valves, in-line cleanouts, and terminal cleanouts where indicated on the Drawings.
- B. Construct as indicated on Standard Details 02722-3 through 02722-6.

3.05 BACKFILLING TRENCHES

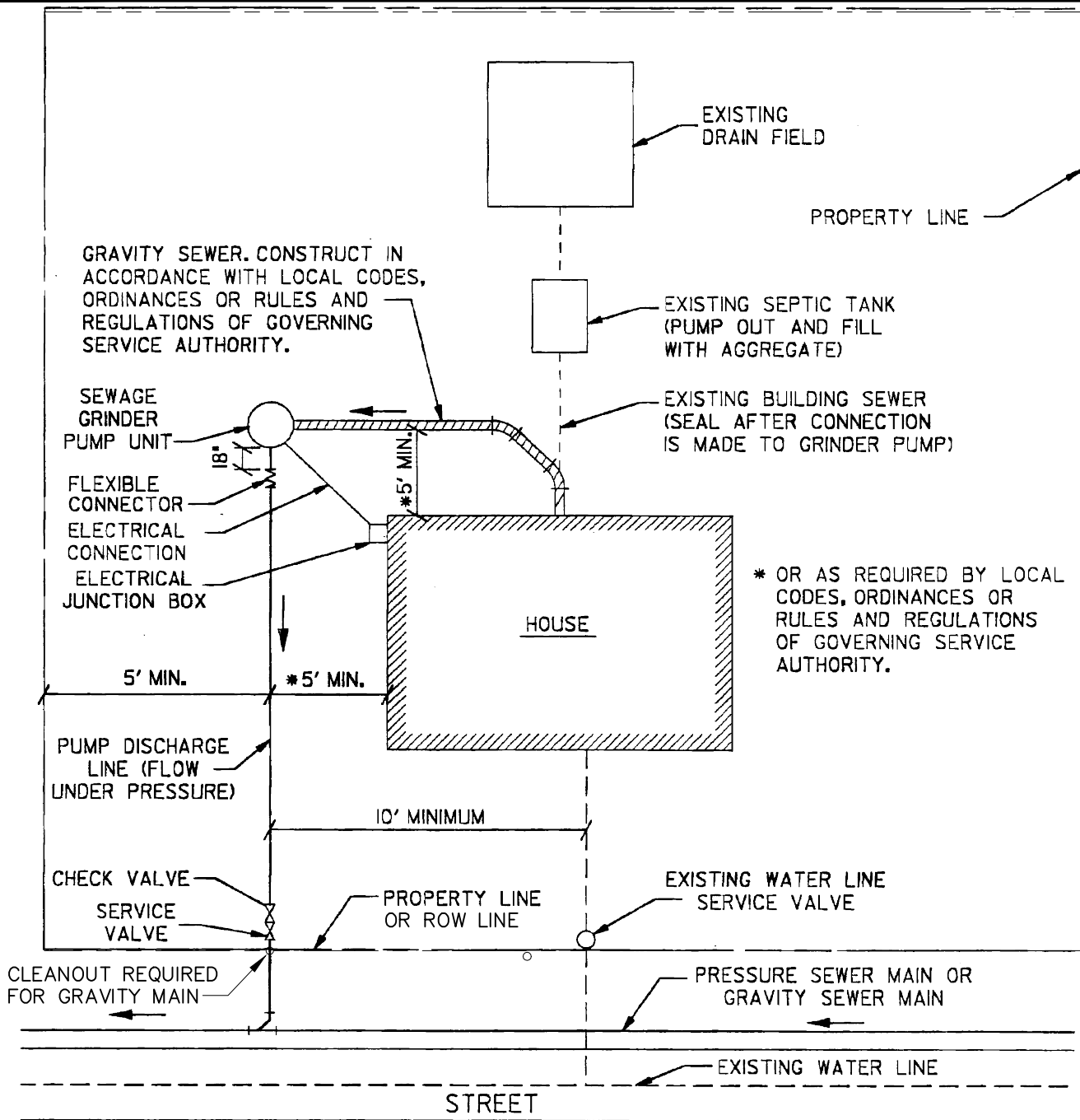
- A. Backfill pipeline trenches only after elimination of pipe laying by the Township Engineer.
- B. Install detectable utility marking tape above all sanitary sewer pressure pipeline, 12" to 18" below final grade.
- C. Backfill pipeline trenches in accordance with Section 02221.

3.06 HYDROSTATIC LEAKAGE TEST

- A. Hydrostatically test each newly laid pressure pipeline, including any valved section thereof, in accordance with Section 02651.

END OF SECTION

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GRAVITY SEWER. CONSTRUCT IN ACCORDANCE WITH LOCAL CODES, ORDINANCES OR RULES AND REGULATIONS OF GOVERNING SERVICE AUTHORITY.

SEWAGE GRINDER PUMP UNIT

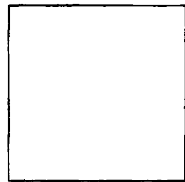
FLEXIBLE CONNECTOR
ELECTRICAL CONNECTION
ELECTRICAL JUNCTION BOX

5' MIN.

PUMP DISCHARGE LINE (FLOW UNDER PRESSURE)

CHECK VALVE
SERVICE VALVE

CLEANOUT REQUIRED FOR GRAVITY MAIN



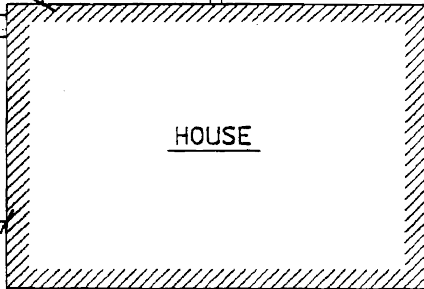
EXISTING DRAIN FIELD

PROPERTY LINE



EXISTING SEPTIC TANK (PUMP OUT AND FILL WITH AGGREGATE)

EXISTING BUILDING SEWER (SEAL AFTER CONNECTION IS MADE TO GRINDER PUMP)



HOUSE

5' MIN.

10' MINIMUM

* OR AS REQUIRED BY LOCAL CODES, ORDINANCES OR RULES AND REGULATIONS OF GOVERNING SERVICE AUTHORITY.

EXISTING WATER LINE SERVICE VALVE

PROPERTY LINE OR ROW LINE

PRESSURE SEWER MAIN OR GRAVITY SEWER MAIN

EXISTING WATER LINE

STREET

LEGEND:

- EXISTING WATER LINE
- - - EXISTING DRAIN LINE
- ////// BUILDING SEWER
- SGP DISCHARGE LINE
- SGP SEWAGE GRINDER PUMP

NOTE:

DISCHARGE LINE CHECK VALVE NOT REQUIRED FOR CONNECTION TO GRAVITY SEWER MAIN. NEED CLEANOUT AT PROPERTY LINE. SEE 5226 FOR CLEANOUT DETAIL.

NOT TO SCALE

**NORTHEASTERN YORK COUNTY SEWER AUTHORITY
CONSTRUCTION & MATERIAL SPECIFICATIONS**



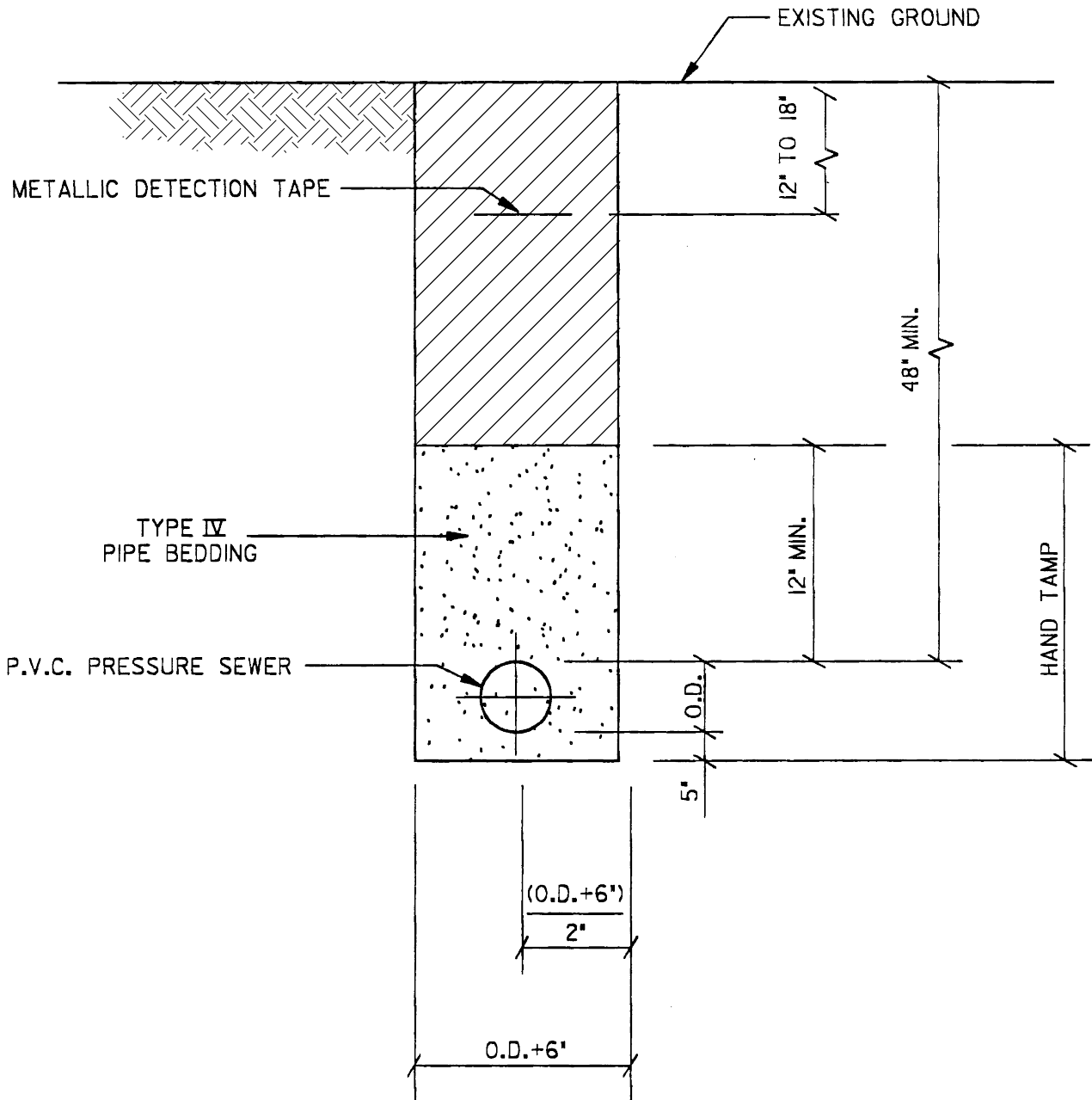
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**TYPICAL PRESSURE
SEWER SERVICE
CONNECTION**

DATE:	1/17/2008
DRAWN BY:	JLD
CHK. BY:	
NO.	02722-1

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NOTE: NOT TO SCALE

NORTHEASTERN YORK COUNTY SEWER AUTHORITY
CONSTRUCTION & MATERIAL SPECIFICATIONS

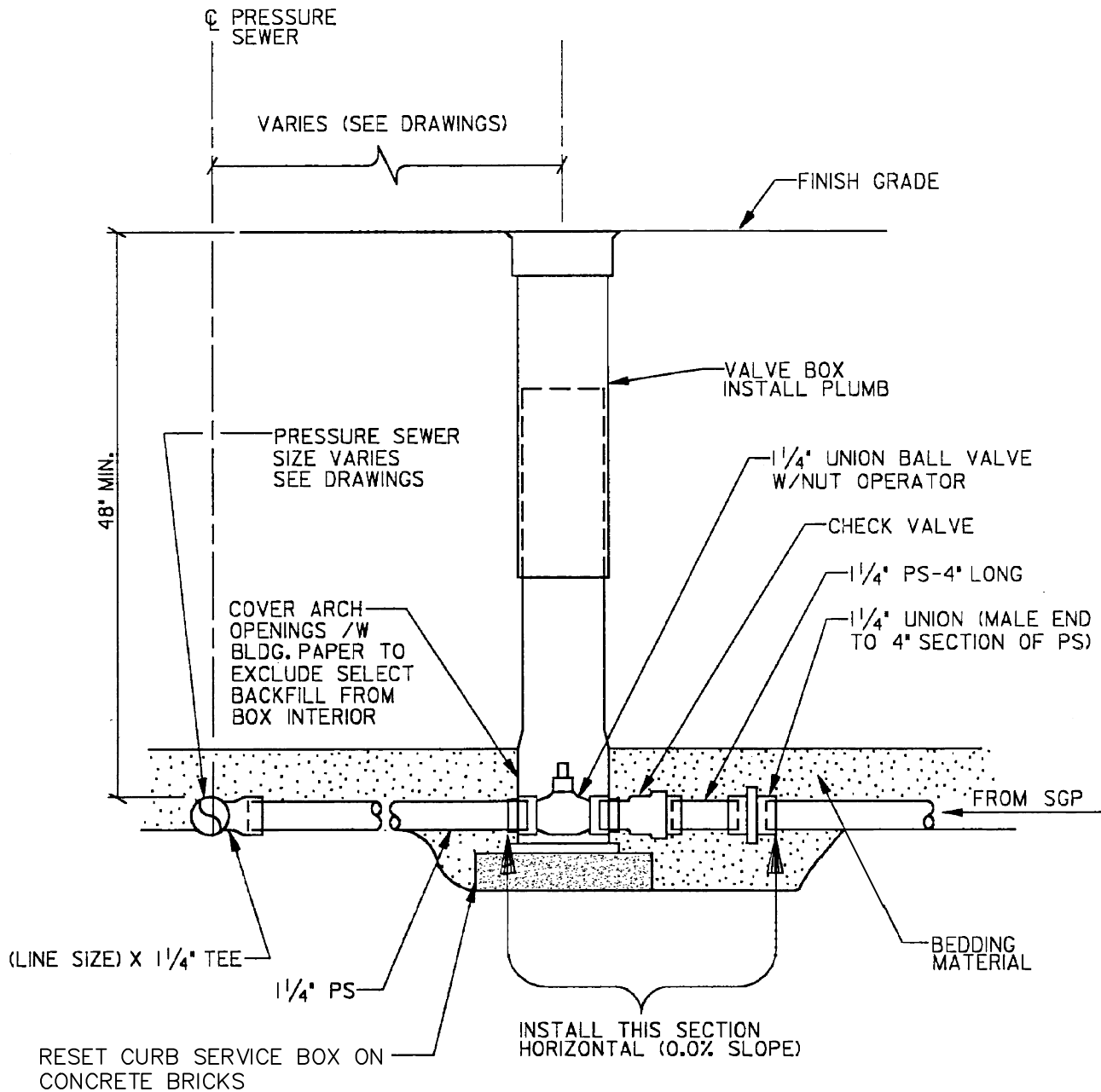


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PRESSURE TRENCH

DATE:	1/17/2008
DRAWN BY:	BAM
CHK. BY:	
NO.	02722-2



1. MAINTAIN 4 FT. MINIMUM COVER OVER PRESSURE SEWER.
2. CONCRETE BRICKS TO REST ON UNDISTURBED EARTH OR FIRM SUBGRADE.
3. ALL PVC CONNECTIONS SHALL BE SOLVENT WELD EXCEPT WHERE OTHERWISE NOTED.
4. SGP - SEWAGE GRINDER PUMP. NOT TO SCALE

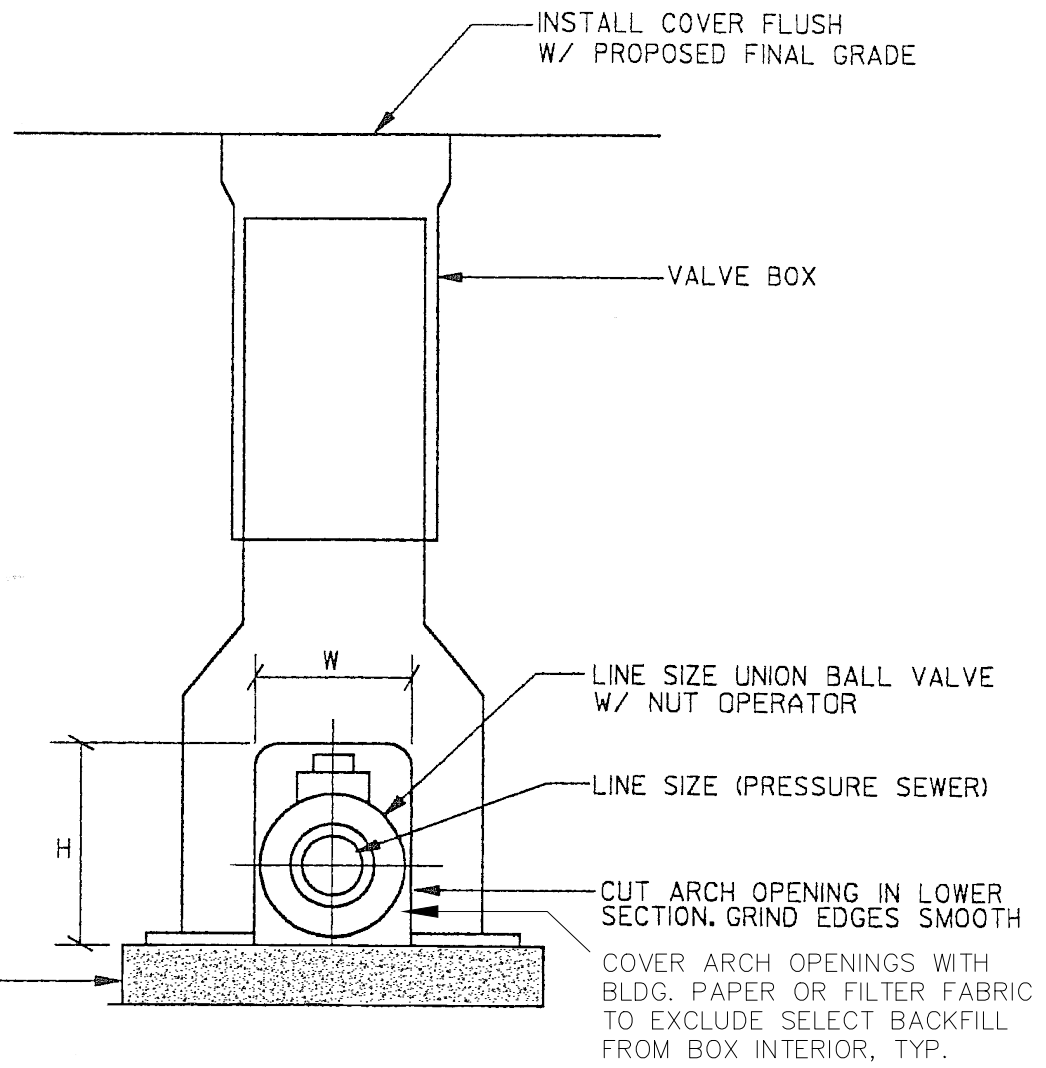
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**SERVICE VALVE
ASSEMBLY FOR
PRESSURE SEWER
SYSTEM**

DATE:	1/17/2008
DRAWN BY:	JLD
CHK. BY:	
NO.	02722-3

VALVE SIZE	H	W
1/4"	6"	4 1/2"
1/2"	6"	4 1/2"
2"	6"	4 1/2"
2 1/2"	6 1/2"	5 1/2"
3"	6 1/2"	6 1/2"



NOT TO SCALE

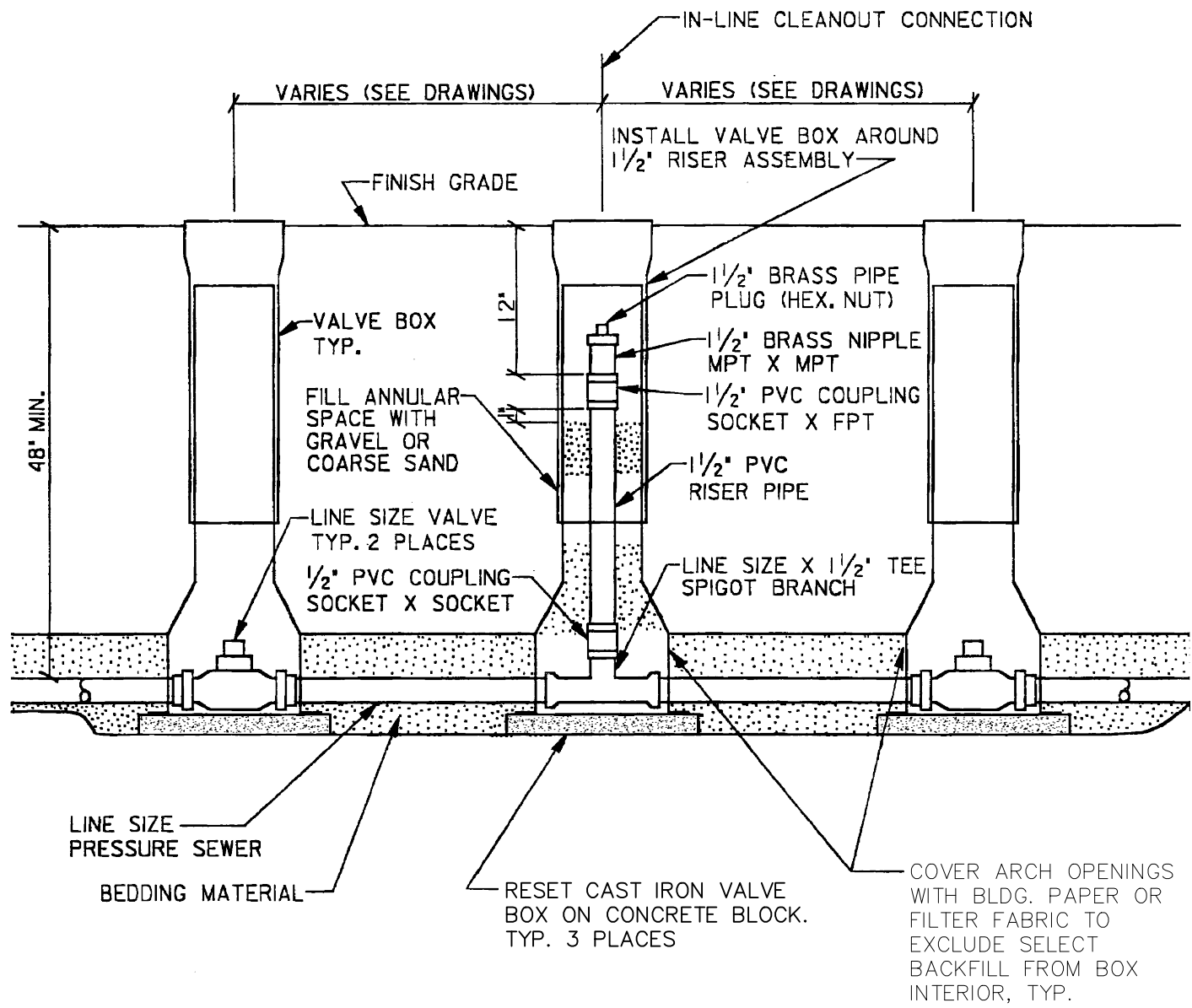
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VALVE BOX DETAIL FOR
PRESSURE SEWER
SYSTEM

DATE:	1/17/2008
DRAWN BY:	JLD
CHK. BY:	
NO.	02722-4



1. CONCRETE BLOCK TO REST ON UNDISTURBED EARTH OR FIRM SUBGRADE.
2. ALL PVC CONNECTIONS SHALL BE SOLVENT WELD EXCEPT WHERE NOTED OTHERWISE, OR APPROVED BY AUTHORITY ENGINEER.
3. ALL HDPE CONNECTIONS SHALL BE FUSION WELD EXCEPT WHERE NOTED OTHERWISE, OR APPROVED BY AUTHORITY ENGINEER.

NOT TO SCALE

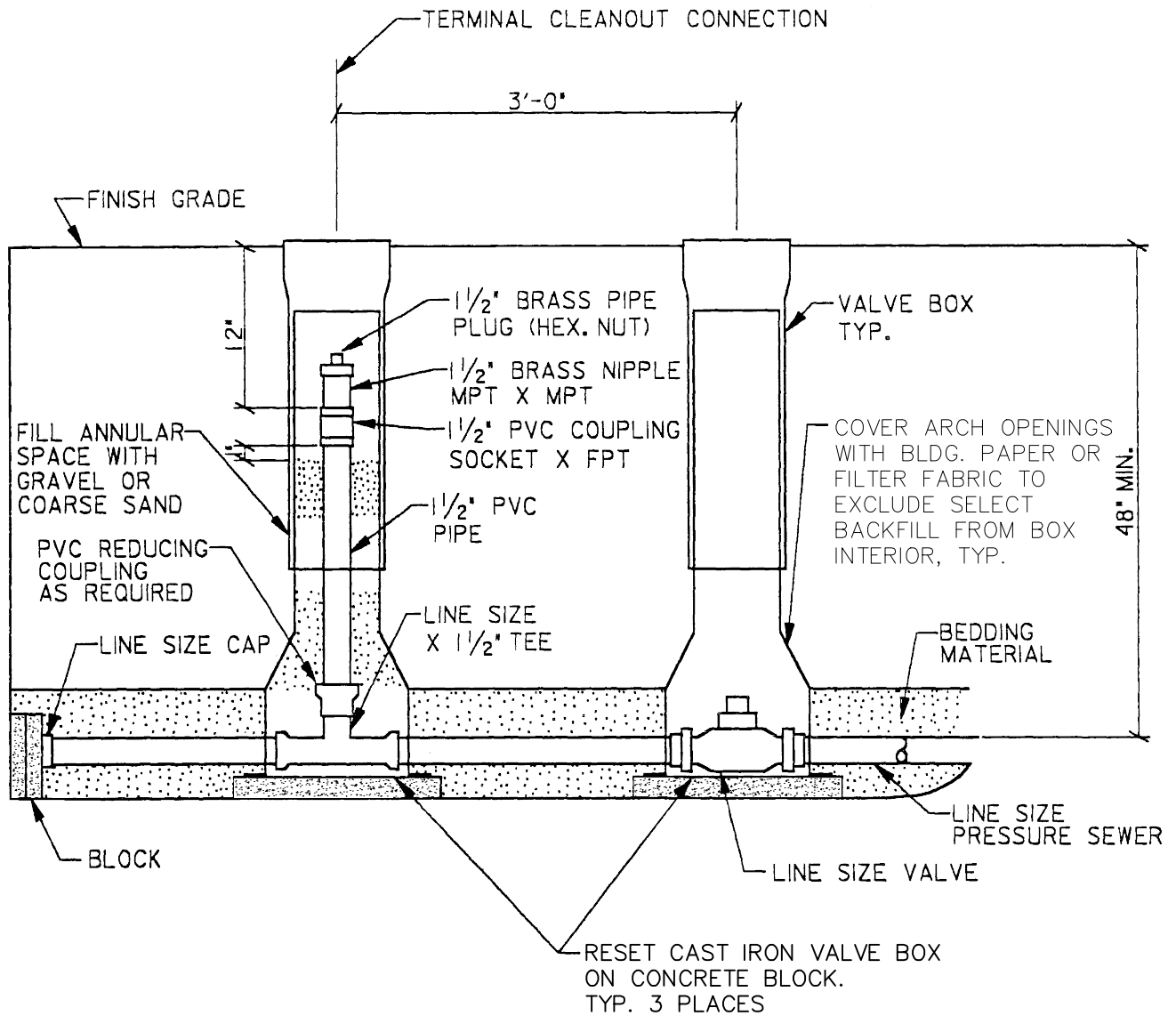
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CONSTRUCTION & MATERIAL SPECIFICATIONS**



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**IN-LINE CLEANOUT
CONNECTION FOR
PRESSURE SEWER
SYSTEM**

DATE:	1/17/2008
DRAWN BY:	JLD
CHK. BY:	
NO.	02722-5



NOTES:

1. CONCRETE BLOCK TO REST ON UNDISTURBED EARTH OR FIRM SUBGRADE
2. BLOCK FOR LINE SIZE CAP TO REST AGAINST UNDISTURBED EARTH.
3. ALL PVC CONNECTIONS SHALL BE SOLVENT WELD EXCEPT WHERE NOTED OTHERWISE, OR APPROVED BY AUTHORITY ENGINEER.
4. ALL HDPE CONNECTIONS SHALL BE FUSION WELD EXCEPT WHERE NOTED OTHERWISE, OR APPROVED BY AUTHORITY ENGINEER.

NOT TO SCALE

NORTHEASTERN YORK COUNTY SEWER AUTHORITY
CONSTRUCTION & MATERIAL SPECIFICATIONS



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TERMINAL CLEANOUT
CONNECTION FOR
PRESSURE SEWER
SYSTEM

DATE:	1/17/2008
DRAWN BY:	JLD
CHK. BY:	
NO.	02722-6