

SECTION 33 31 14
SANITARY SEWER SERVICES

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes
 - 1. Sanitary sewer service pipe replacement and all appurtenances.
- B. Related Sections
 - 1. Section 33 05 05 - Trenching and Backfilling.
 - 2. Section 33 31 00 - Sanitary Utility Sewer Piping.
 - 3. Section 33 08 30 - Commissioning of Sanitary Sewer Utilities.
 - 4. Section 33 01 12.13 – Tracer Wire

1.02 PRICE AND PAYMENT PROCEDURES

- A. Measurement and Payment
 - 1. Sanitary Sewer Pipe
 - a. Sewer pipe shall be paid for at the contract price per lineal foot, which shall include the cost of furnishing all pipe, pipe bend sections, jointing material, bedding material and other material and of delivering, handling, laying, dewatering, trenching, sheeting and backfilling, restoring of the surface, necessary permits, and all material or work necessary to install the pipe complete in place at the depth specified.
 - b. The length of pipe for which payment is made shall be the actual overall length measured along the axis of the pipe without regard to intervening manholes, tee sections or bend sections.
 - c. All lengths will be measured in a horizontal plane unless the grade of the pipe is more than fifteen (15) percent.
 - 2. Reconnect to Existing Sewer Service: Measurement will be based on each connection made, regardless of size. Payment shall include all items required to complete the Work.
 - 3. Sanitary Sewer Service Locate Box: Measurement will be by each installed. Payment shall include all items required to complete the Work.
 - 4. Tracer Wire: Shall be considered incidental to the Project.
 - 5. Remove Concrete Floor / Concrete Pavement Special
 - a. The Contractor shall remove and replace portions of the existing concrete floor for the purpose of sanitary sewer and water service work in buildings as directed by the Engineer. Payment shall be at the contract unit price per square foot measured in place upon completion.
 - 1) All edges shall be neatly saw-cut.
 - 2) The concrete removal area shall be as small as possible to complete the work. Replacement of the floor shall be performed by a qualified craftsman and shall meet or exceed the thickness, quality, finish, and appearance of the existing floor, which is typically 4" crushed aggregate base with a minimum Portland cement concrete (PCC).
 - 3) The Contractor shall be responsible for the removal of rubble, excess dirt, protection of existing property from dust accumulation or other damage and cleanup for a complete patch, satisfactory to the Engineer and homeowner.
 - 4) All materials, labor, rubble and excavated material disposal, cleanup, or other required items are incidental.

- 5) Any hours spent by the plumber on removing or replacing concrete floor will not be included in the common laborers pay item.
- b. The Contractor shall be responsible for coordinating the schedule and other items relevant to this work with the homeowner such that adequate notice is available to allow removal of carpet, furniture, etc. by the homeowner.
- 6. Common Laborers Hours (Connect Services in Building)
 - a. Payment for sanitary sewer and/or water service work from the location of the pipe in the floor opening to the meter, sewer stack, or other required location on the inside of the building shall be on a time and material basis.
 - 1) Actual hours worked in the building will be counted and rounded to the nearest ¼ hour.
 - 2) No hours shall be charged for preparation work such as remove and replace concrete floor, excavation, removal, etc. Materials shall be paid at the invoice cost plus 15% markup. A currently licensed plumber shall perform the work. Hours shall be based on one licensed plumber. Payment shall be at the contract unit price per man-hour.
 - 3) The Contractor shall provide itemized receipts for each service indicating property address, crew, dates, times work performed, materials used and total hours.
 - b. Coordination, testing, flushing, property protection or other items required to satisfactorily complete the work outside the building are incidental to bid items for that work. The Contractor shall give the Engineer sufficient notice prior to any work such that inspection can be provided.
- 7. All other Work and costs of this Section shall be incidental to the Project and included in the Total Base Bid.

1.03 REFERENCES

- A. MnDOT
 - 1. 2451 – Structural Excavation and Backfills shall apply to granular materials for foundation, bedding and encasement of utility line construction, except as modified herein.
 - 2. All references to Mn/DOT specifications shall mean the specific edition, including Supplemental Specifications and Technical Memoranda as identified in Section 01420 of these Specifications.
- B. City of Northfield Standard Contract Document and Technical Specifications February 2020 (inclusive with this specification).

1.04 SUBMITTALS

- A. Submit the following items consistent with Section 01 33 00:
 - 1. Product data for the following items:
 - a. Pipe and fittings.
 - b. Transition couplings.
 - c. Tracer wire.
 - 2. Record and Location of Service Connections
 - a. It shall be the duty of the Contractor to keep an accurate record of service connections as to location, depth to top of riser, type of connection provided, etc.
 - b. Location shall be made in respect to the nearest manhole center downgrade from the service.
 - c. This record shall be turned over to the Engineer for the Engineer's records at time intervals specified by the Engineer.

PART 2 PRODUCTS

2.01 MANUFACTURED UNITS

- A. Poly Vinyl Chloride (PVC) Schedule 40 Plastic Pipe and Fittings
 - 1. General: Pipe and fittings shall be made of compounds conforming to ASTM D1784 in accordance with the material requirements of D1785 and ASTM D2665. PVC fittings shall conform to ASTM D2665. Belled end pipe shall have tapered sockets conforming to ASTM D2672.
 - 2. Design: Integral belled pipe with a minimum wall thickness conforming to Schedule 40.
 - 3. Solvent Cement Joints: The solvent cement used to join pipe and fittings shall meet the requirements of ASTM D2564.

2.02 BEDDING MATERIAL

- A. See Section 33 05 05.

2.03 TRANSITION COUPLING

- A. Coupling consisting of an elastomeric sleeve with incorporating stainless steel tension bands, tightening mechanism, and less than 0.01 inch thick shear ring conforming to ASTM C1173, Type A.
- B. Separate bushings are not allowed without approval from the Engineer.
- C. Where dissimilar pipe materials result in offset flow lines, an eccentric coupler will be required and shall be approved by the Engineer.

PART 3 EXECUTION

3.01 GENERAL

- A. As indicated on the plans and at such other points as may be deemed necessary, six inch or four inch wyes only, SDR 26, shall be installed for house connections at such intervals as the size of the lots may demand.
- B. Where the depth of the trench exceeds twelve feet, the Contractor shall use a riser on which shall be used a tee or tee saddle on the main line and shall be extended to a minimum of nine feet below the surface at a point five feet behind the curb line or five feet on the street side of the street property line (see Standard Plate).
- C. The minimum required cover for any service shall be 4 feet.
 - 1. If 4 feet of cover is not attainable, the service shall be insulated as directed by the Engineer.
- D. Service connections shall be made at existing wyes where available or by means of a saddle where a wye is not available.
- E. No connections shall be made into a manhole without written consent by the City Engineer. The minimum grade for a sanitary service shall be 1%.
- F. The joints and bedding shall be made as previously specified.
- G. The tops of all risers and openings to wye and/or tee branches shall be capped by a slip joint plug to prevent any water from entering the service until the connection is placed in service.

- H. In areas with non-granular fill, all wyes and 45° bends shall be backfilled with granular fill a minimum of 1' around the connection.
 - 1. Granular fill shall be incidental to the installation.

3.02 PRIVATE SERVICES

- A. Sanitary sewer and water services shall be constructed to the right-of-way line at a minimum and to houses as directed by the Engineer.
- B. Sewer and water services shall be installed in the same trench to the greatest extent possible.
- C. The connection of the new service to the existing service shall be considered incidental and should be figured into the price for the wye or curb stop and box.
- D. Services installed to the building shall be brought beyond the foundation to an opening in the basement floor.
- E. A separate sewer service (4") and water service (1") shall be installed from the mainline pipes for each unit of multiple family housing structures such as double bungalows, triplexes, quads, etc.
- F. A variance from these requirements is acknowledged only in the event that a revised service layout detail is drawn on the plans and receives written approval by the City Engineer.
- G. Boring, pneuma-gophering, tunneling, insertion inside existing services or other means of service installation will be required in some cases for water and sewer line installations.
 - 1. All surfaces will be restored to their original condition.
- H. Sewer and on the interior of the buildings from the point of floor openings to the water meter, sewer stack, or other required locations shall be performed by a licensed plumber.
 - 1. The Contractor is responsible for the protection of all property not scheduled for replacement in the building.
 - 2. Work shall be performed in conformance to all applicable codes.
 - 3. The Contractor shall be responsible for coordination with the homeowner for the protection of private property on the exterior and interior of the home, including trees.

3.03 SERVICE ABANDONMENT

- A. Any Sanitary Service that is abandon shall be removed completely and or sandfilled to the main or riser. Abandonment procedure shall be approved by the Engineer.

3.04 FIELD QUALITY CONTROL

- A. Do not backfill trench until the service has been inspected and approved by the Engineer.
- B. Low pressure air and infiltration testing shall conform to Section 33 08 30 and be performed prior to existing service reconnection (where applicable).
- C. Tracer Wire Testing: Demonstrate the electrical continuity of the tracer wire.

3.05 RECORD AND LOCATION OF SERVICE CONNECTIONS

- A. It shall be the duty of the Contractor to keep an accurate record of service connections as to location, depth to top of riser, type of connection provided, etc.

1. Location shall be made in respect to the nearest manhole center downgrade from the service.
 2. This record shall be turned over to the Engineer for the Engineer's records at time intervals specified by the Engineer.
- B. At the end of all house connections, the Contractor shall furnish and set a 2" x 2" wooden marker stake set vertically to two feet above the ground surface.
- C. In areas of newly platted land where the houses have yet been built on the lots served, the Contractor shall furnish and set steel fence posts securely wired to the 2" x 2" and allowed to extend 2' to 3' above the ground surface.
- D. The 2" x 2" wooden marker stake shall extend from the invert of the service stub to two feet above the ground surface.
- E. A tracer wire shall be installed as detailed within the City's Standard Details.

END OF SECTION