

SECTION 3510 - SEWER SERVICE CONNECTIONS, WYES, AND RISERS

PART 1 - GENERAL

1.1 SCOPE OF WORK:

Provide all labor, materials, equipment and services required for furnishing and installing all sewer service laterals, all wye (or tee) branches, riser pipe, and appurtenances specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

- A. Trench Excavation: Section 3720
- B. Bedding and Backfill: Section 3730

PART 2 - PRODUCTS

2.1 SERVICE LATERAL CONNECTIONS:

- A. New service connection fittings and lines shall be six (6) inch diameter as supplied by the manufacturer of the gravity sewer pipe unless required otherwise by ENGINEER. All fittings located on the lateral shall be incidental and not be a separate pay item. Laterals shall be PVC or ABS according to ASTM D3034 or ASTM D2751, respectively, unless otherwise shown. Minimum wall thickness shall be SDR 35 for installations less than 16 feet in depth, and SDR 26 for installations from 16 to 25 feet in depth.

Connections of new service laterals to existing sanitary sewers shall be accomplished by means of a compression fit service connection. The service connection shall be specifically designed for connection to the existing sanitary sewer pipe material and shall be the Inserta Tee brand as manufactured by Inserta Fittings Company of Hillsboro, Oregon or approved equal. Connections to the existing sanitary sewers shall be installed per the manufacturer's installation instructions.

- B. Minimum slope for lateral service lines shall be two percent (2.0%). All specifications for gravity sewer lines and appurtenances shall apply to lateral service lines. Unless otherwise shown on the plans or directed by the ENGINEER, all service laterals shall be installed in a trench with a maximum width as per Section 3720.
- C. Service laterals to be extended from main sewers over twelve feet (12') in depth where the property being served does not require the full depth, may be brought up to grade in the manner described for riser pipe. Service laterals from main sewers less than 12 feet in depth will be extended on a straight uniform grade from the main to the point of terminus. Depths of service laterals at the point of termination will be shown on the Plans or supplied by the ENGINEER. All sanitary sewer laterals shall be installed at least four feet (4') below the existing or proposed basement floor elevation at the point of connection to the sewer main. Service laterals shall be extended to the right-of-way line or easement line, as applicable, unless otherwise shown on the plans or directed by the ENGINEER. Laterals shall not exceed a depth of twelve feet (12') below finish grade at the end of the lateral at the right-of-way or easement line unless specifically authorized by the County.
- D. Laterals Crossing Pavement - Laterals may be installed beneath the pavement by open trench or free bore method, if permitted by the Butler County Engineer's Office. The open trench method is generally described in Section 1165 of these specifications, and the free bore method is generally described in Section 1240. If the open trench or free bore method is not permitted by the Engineer's Office, the procedures described in paragraph 2.1 F shall be followed.
- E. Laterals Crossing a State Highway - Laterals shall be free bored under state highways, if permitted by O.D.O.T. Where free boring is not permitted, laterals under a state highway shall be installed as described in paragraph 2.1 F. Open trench for service lines crossing state highway pavement will not be permitted.

- F. At the locations shown on the plans, or as required by the ENGINEER, service laterals shall be installed in an encasement pipe by boring and jacking as shown on the plans. Requirements of Section 1210 of these specifications shall be followed in such instances. A sufficiently large boring pit shall be excavated to allow for proper alignment of the drilling equipment and to allow the service lateral to be pushed through the encasement pipe. The horizontal alignment of the encasement pipe shall not vary more than two (2) feet at the upstream end of the service lateral from a line drawn at right angles to the sanitary sewer at the wye branch or riser.

2.2 WYE BRANCHES:

- A. Location: In general, wye branches shall be placed in the main sewer opposite each lot or property to which a house service may be extended.
- B. Existing Sewers: Where a wye branch is to be installed in an existing sewer, the CONTRACTOR will be permitted to tap the sewer pipe and install the wye as directed by the ENGINEER. Wyes shall only be installed on the type of pipe for which they were designed. Wyes shall be approved by the ENGINEER.
- C. Wyes shall be of the same material, strength, and joint as the sewer main pipe.
- D. Where the wye branch is not designed for use with ABS or PVC service pipe, appropriate adapters shall be used to connect the lateral to the wye branch.

2.3 RISER PIPE:

Where the cover on the wye branch is in excess of twelve feet below average ground surface, a 45 degree bend and sufficient riser pipe (also installed at a 45 degree slope) shall be added to terminate at a depth of twelve feet below the ground surface, provided the property being served will not require additional depth.

2.4 CLOSURES:

- A. Where no riser pipe or lateral is installed with the wye branches, the outlet of each wye branch shall be securely sealed with a restrained water tight closure that can be later removed without damage to the outlet.
- B. ABS or PVC: All closures at the ends of ABS or PVC wye branches, risers or service laterals shall be made by installing a length of ABS or PVC pipe to the wye branch, riser or service lateral and solvent cementing an ABS or PVC cap to the spigot end. A sufficient length of pipe should be installed to permit removal of the closure and extending the line in the future. Mechanical plugs shall not be permitted.
- C. All closures shall be capable of passing the sewer leakage test(s).

2.5 WYE POLES:

- A. A wye pole shall be placed at the end of each wye branch, riser, or house service, as the case may be, extending to a point 6 inches below the end of the pipe to hold it firmly in position during backfilling. If the wye pole is pulled out, bent, or broken, the CONTRACTOR shall, at no cost to the OWNER, replace or straighten the pole. The wye pole shall be adjacent to the end of the pipe but not above it or against it.
- B. Material: Wye poles shall be not less than a standard 2 x 4 and shall extend a minimum of 3 feet above the finished grade. The material used for wye poles shall be in good condition and shall be straight, sound and free from large or loose knots.

PART 3 - BASIS OF PAYMENT

Payment for service laterals will be made at the Contract unit price per linear foot, complete in place, regardless of depth, which price shall include compensation for all trenching, bedding, laying, backfilling, surface

restoration (except pavement replacement and sodding), lateral service pipe, and service pipe fittings. The quantity of service connection to be paid for shall be the length of the pipe measured along the centerline of the completed service connection, from the end of the wye branch (or riser) to the completed connection with the existing lateral sewer or the capped end of a new sewer lateral, without deducting for fittings.

Payment for wye branches shall be made at the Contract unit price per each for each size and material installed, complete in place, regardless of depth. Cost of riser pipe (if required), fittings, closure plug, and wye pole shall be included in prices for wye branches. Compensation for locating existing service laterals, trenching, bedding, laying, connecting existing lateral pipe to new lateral pipe, backfilling, and restoring the surface (except pavement replacement and sodding) shall also be included in this item.

When a separate bid item is included on the proposal forms for Service Laterals Under Pavement, additional compensation shall be made at the bid price per service for each service lateral installed under the roadway. This item shall include either free boring the lateral under the pavement or open cutting the pavement to install the lateral according to the above specifications, as required for each service. This item shall include all backfill and pavement restoration. Temporary pavement of service lateral trenches, where required, will be paid for separately under the bid item for Temporary Pavement. Payment will be made separately under the appropriate bid item for boring and jacking for any service laterals that must be installed in a casing pipe.

END OF SECTION