

LOCATION OF UTILITIES

Section 1. PURPOSE

It is the intent of the Bedford Regional Water Authority (“Authority”) to have water and sewer utilities installed in a manner that avoids conflict with the roadways and other utilities as well as providing the least disturbance for the installation, operation, and maintenance of the public utilities. The following standards have been set forth in cooperation with the Virginia Department of Transportation – Bedford Residency (“VDOT”), the Bedford County Planning and Zoning Department, and the Town of Bedford in effort to reach a mutual objective. It is the intent of these standards to only address those streets within a residential or commercial subdivision. Placement of utilities along arterial streets will be addressed on a case by case basis.

Section 2. PLACEMENT

- A. Placement in Right-of-Way: Where it is preferred by the Authority and the Developer to have the utilities placed within the right-of-way, the following standards shall apply:
1. General Location: Water or sewer lines to be placed in the right-of-way shall be designed and installed in the road shoulder at a location three (3) feet minimum from the edge of pavement or three (3) feet behind curb or sidewalk.
 2. Requirements:
 - a. Shoulder Width: Any shoulder containing a water or sewer line may require a larger width to allow for minimal to no impact to ditchline from the utilities.
 - b. Valve boxes shall be placed in the shoulder flush with grade. Valve boxes shall not be placed within a cut slope or in the area of the ditch.
 - c. Fire hydrants and other above grade features shall be placed behind the ditchline and outside of VDOT clear zone.
 - d. Minimum distance from line to guard rail shall be four (4) feet.
 - e. Minimum distance from line to edge of pavement shall be the greater of three (3) feet or the equivalent to the depth of the water or sewer line. Where curbing exists or is proposed, this measurement shall be taken from the back of the curb.
 - f. Manholes, cleanouts, meter boxes, bends, gate valves, and water and sewer connections shall be placed outside of pavement, sidewalks, or road shoulders. Exceptions may be made for manholes or gate valves on a case by case basis only after other options have been examined, and cost to move these items outside of pavement is determined to be three (3) times the cost of the designed placement.
 - g. There will be additional requirements for construction for any lines or appurtenances allowed under pavement. This includes, but is not limited to, epoxy lining of manholes, use of ductile iron pipe, and strategic placement of structures and appurtenances to limit direct impact of vehicular traffic and provide the most accessibility for maintenance.
 3. Design Submission:
 - a. Design Plans should include road profiles and cross sections showing the water or sewer lines in relation to the roadway. This may be accomplished by combining the utility and roadway plans. If done separately, plans that are submitted to VDOT, the Town of Bedford and the Authority for review must show both the roadway and utility lines as they may affect each other.

LOCATION OF UTILITIES

- b. Design Plans should reference appropriate sections and/or details from the Master Specifications policy.
 4. Construction:
 - a. Construction and installation of water and sewer lines shall be in accordance with the Master Specifications policy.
 - b. Compaction requirements for water and sewer line backfill shall be 95% Standard Proctor when in any road right-of-way. Please See Section 31 23 33 of the Master Specifications for specific requirements of compaction.
 - c. Surveyed As-Built/Record drawings shall be required for the final alignment of streets and water and sewer lines. Where surveys indicate improper placement of water or sewer lines in relation to road proximity, water or sewer infrastructure will require relocation prior to VDOT, or Authority acceptance.
- B. Placement in Easement: Where placement of utilities in the right-of-way is not feasible or desirable, the following standards shall apply:
 1. General Location: Water or sewer lines shall be placed in Authority dedicated easements adjacent to a public utility easement or right-of-way.
 2. Subdivision Plats: Subdivision plats shall contain the following wording or a separate easement agreement shall be prepared for the development:
 - a. "Utility owner(s) shall have reasonable access to easements and the right from time to time to cut or remove trees, underbrush, or other obstructions within the easements which may interfere with the right of easement granted. The easements shall not be obstructed by a permanent structure and/or trees and shrubbery which would interfere with the facilities constructed for the operation of the utility owner's system(s) on this easement, nor shall the grade of the easement be changed except as may be mutually agreed upon between the property owner and utility owner(s)."
 3. Requirements:
 - a. Depth: Lines shall be installed at a depth below road elevation to allow for future driveway entrances into the properties. Minimum cover requirement of thirty-six (36) inches under future entrances shall be considered in determining required depth.
 - b. Road Crossings: Water and pressure sewer lines shall be consistent to one side of the road, with crossings occurring only at road intersections. Where practical, double services shall be utilized to minimize road crossings.
 4. Design Submission:
 - a. Design Plans shall be submitted as stated in Section A.3 above.
 - b. Design profiles shall include road elevation and crossing utilities or structures in addition to the proposed utility and existing and proposed grades directly over the utility.
 5. Easements:
 - a. Adjacent to the right-of-way:
 - i. Easements shall extend a minimum distance beyond the utility line equivalent to greatest depth in that portion of line, not less than five (5) feet.
 - ii. Easements shall not encroach the area over a building's angle of stability.
 - iii. Water meter settings, sewer cleanouts and cut-off valves shall be contained within the easement or placed at the easement boundary line.

LOCATION OF UTILITIES

- b. Non-adjacent to right-of-way:
 - i. Where utilities must be routed away from roadways, easements not adjacent to right-of-ways shall be a minimum twenty (20) feet in width. Where line depth exceeds ten (10) feet, the easement width shall be equal to twice the maximum depth, with the line being centered within the easement.
 - ii. Easements shall be provided such that vehicular access is available to all portions of the line.
 - iii. Where easements cross through fenced areas, gates shall be required to provide unrestricted access through the easement boundaries.
- c. Public Utility Easements:
 - i. Where existing water and/or sewer lines and appurtenances have been previously installed inside public utility easements, a minimum separation of four (4) feet shall be maintained between any water or sewer facility and other utilities lines or utility transformers, pedestals, boxes, or other utility structures.
- 6. Construction:
 - a. Easements are to be graded to final lot grade. At minimum, final lot grade must be established in the areas surrounding water or sewer appurtenances.
 - b. Water meters and sewer cleanouts/low pressure sewer force main connections are to be installed on the property side of the water or sewer line such that connections to these services do not require crossing of the main line.

Section 3. OTHER REQUIREMENTS

- A. Roadway and Entrance Crossings:
 - 1. All water or sewer main lines or services shall be encased when crossing roadways or commercial entrances for purposes of protection and ease of maintenance. Exceptions may be considered on a case-by-case basis.
 - a. Existing water and sewer utilities located under proposed roadways or entrances shall be permanently bridged with heavy duty asphalt or heavy-duty concrete where casing is not feasible, as approved by the Authority.
 - b. Any vehicular entrance intended to serve a medical facility or other facilities requiring consistent access shall require encasement of water and/or sewer crossings without exception, unless access to the site is provided in more than one location.
 - 2. For purposes of design requirements and review, any vehicular access intended to serve more than three (3) residences shall be considered a roadway.
 - 3. Waterlines and sewers shall cross roadways, entrances, and driveways at a perpendicular angle. Under special circumstances where this is not feasible, angled crossings may be allowed on roadways, not to exceed a 45-degree angle of crossing.
 - 4. Water and sewer utilities will not be permitted to travel parallel to the roadway under pavement.
 - 5. Water and sewer taps must be tapped on same side of main as the crossing direction.
- B. Water and Sewer Connections:
 - 1. Water and sewer service connection taps will not be allowed under pavement or sidewalk.

LOCATION OF UTILITIES

2. **Meter Settings:** Double meter settings are to be utilized wherever possible. In cases where both water and sewer lines are served from the street, the use of double settings will be required.
 3. **Sewer Connections:** Wherever possible, one sewer connection per water meter shall be used for each parcel of land that is connected to the Authority's sewer system. If one sewer connection per water meter is not possible, efforts shall be made to minimize the number of sewer connections to the system. The Authority will make the final determination on the location and number of sewer connections to be used.
- C. **Grading:** Finished grade is to be established to two (2) feet beyond the water or sewer appurtenances (i.e. meter settings, cleanouts, manholes, valve boxes, etc.) to avoid detriment to the integrity of the line or appurtenances upon the lot development. Failure to do so may result in delay of service to the properties and/or delay in surety release.
- D. **Landscaping:**
1. **Trees:** Trees shall be placed so that the canopy at full growth does not extend beyond the utility. No tree shall be placed within ten (10) feet of a water or sewer line.
 2. **Shrubs:** Shrubs should generally be placed a minimum of ten (10) feet from a water or sewer line. However, some shrubs with non-hydrophilic root systems may be allowed as close as five (5) feet to a water or sewer line upon review.
 3. The Authority has a list of acceptable landscaping that shall be used as a guideline in determining appropriate trees and shrubs to be used near public water and sewer utilities.
- E. **Existing Utilities:** Where new development affects existing water or sewer lines, these same standards shall apply. Specific improvements necessary to the existing utilities to accommodate the proposed utilities will be addressed on a case by case basis.
- F. **Structures:** Utilities are not to be placed within ten (10) feet of an existing or proposed building structure.

Section 4. EXCEPTIONS

It is recognized that in certain dense developments within Planned zoning districts, some of the utility location requirements above may have need for special considerations. In such districts where building setbacks of fifteen (15) feet or less are approved by the Zoning authority, exceptions to the above requirements may be considered by Authority personnel using the guidelines and criteria listed below. Each development within these districts will be addressed on a case by case basis to identify the best location for utilities. In any concessions made, the ability to safely maintain and operate the facilities shall be of the utmost importance.

- A. **Green space,** where available, it is the preferred location for the water and sanitary sewer facilities and their appurtenances.

LOCATION OF UTILITIES

- B. Where buildings are adjacent to the sidewalks without green space between the building and the road, the following guidelines shall apply:
 - 1. Water and sanitary sewer mains may be permitted to be installed in the roadway. Placement in the roadway shall be installed in the center of the traveling lane to avoid direct impact of vehicular traffic.
 - 2. Meter boxes and sewer connections should be installed in the sidewalk.
- C. Where buildings are located ten (10) feet or more from the sidewalk, water and sanitary sewer lines may be permitted to be installed under the sidewalk.
- D. Lines shall be installed at minimum depth, not to exceed six (6) feet.
- E. Gravity sewer lines requiring depths greater than six (6) feet must be routed outside of the right-of-way in Authority dedicated easement. This may require the placement of the sewer main behind the building structures.
- F. Water and sanitary sewer mains should be installed above storm sewer lines.
- G. Every effort must be made to position manholes, gate valves, air release valves, and blow-off valves in the most safely accessible areas such as islands, parking areas, bike lanes or sidewalks.
- H. Tracer wire box placement shall be adjusted to provide the safest point of access.
- I. Appurtenances installed in sidewalks shall be installed in accordance to the Master Specifications requirements listed for installations in pavement. All lids for appurtenance boxes located in sidewalk or pavement shall be hinged or bolted.

Section 5. REVISIONS

- A. This policy was approved and adopted by the Authority's Executive Director on April 23, 2013, effective July 1, 2013.
- B. This policy was modified as follows:
 - 1. Approved October 4, 2022; effective October 4, 2022.
 - a. References were updated and/or added where appropriate for the Town of Bedford.
 - b. Easements were clarified to be Authority dedicated easements.
 - c. Section 2.A.2.d: Distance to guardrail changed from three (3) feet to four (4) feet.
 - d. Section 2.B.2.a: Wording modified for clarification.
 - e. Section 2.B.6.b and Section 3.B.3: Connection types were clarified.
 - f. Section 3.A: Clarifications added for encasement requirements and exceptions.
 - g. Section 3.A.5: Sewer taps added.
 - h. Section 3.C: 'Cleanouts' was added to a list of example water and sewer appurtenances.