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## SURVEYED AS-BUILT REQUIREMENTS

### Section 1. PURPOSE

In order to maintain proper records of the infrastructure owned by the Bedford Regional Water Authority (“Authority”), as-built drawings/record drawings are required at the completion of each water and/or sewer project.

### Section 2. GENERAL

Drawings should reflect all changes in the field as noted by the Authority Inspector and the Utility Contractor. The symbology used should reflect the same used in the Design Plan legend. In addition, facilities are to be surveyed to provide accurate location on the drawings, with notations by the Contractor and/or Inspector present to assist in locating the facilities in the field. Water lines and force main lines should be marked by utility locating equipment and surveyed so that the accurate location is shown on the as-builts.

### Section 3. POLICY

- A. All drawings submitted to the Authority must be signed by a Professional Engineer and dated. Each of the following formats must be submitted:
  - 1. Hard Copy of original design plans with Contractor Mark-ups shown.
  - 2. Hard Copies of as-builts with Licensed Engineer or Surveyor stamp and signatures (Full and half sizes).
  - 3. Adobe PDF.
  - 4. Native digital CAD files with any associated plotting and pen setting files.
    - a. Digital as-built files must be prepared in USGS NAD83 Virginia South State Plane Coordinates.
  - 5. Ascii/text survey file.
  - 6. Water or sewer modeling files or .shp files when available.
- B. Drawings must include a statement on each plan sheet stating that lines and appurtenance locations have been determined through field survey and Contractor markups.
- C. Waterline: The following items must be clearly shown on the surveyed as-built record drawings:
  - 1. Surveyed:
    - a. Waterline (based on locator marks).
    - b. Edge of pavement or curbing, where applicable.
    - c. Valves.
    - d. Fire Hydrants.
    - e. Blowoffs.
    - f. Air Releases.
    - g. Meter Settings (identified as single or double).
  - 2. From Contractor/Inspector Mark-ups:
    - a. Profile changes.
    - b. Horizontal and vertical bends.
    - c. Service line locations (if not able to survey).

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- d. Casing lengths and size.
  - e. Type of pipe.
  - f. Restraint type.
- D. Gravity Sewer Line: The following items must be clearly shown on the surveyed as-built record drawings (vertical measurements may be based upon the Authority's information of the existing infrastructure):
- 1. Surveyed:
    - a. Manholes:
      - i. Ground elevation.
      - ii. Rim elevation.
      - iii. Invert in and out elevations.
      - iv. Cleanouts.
  - 2. From Contractor/Inspector Mark-ups:
    - a. Profile changes.
    - b. Connections lines to cleanouts.
    - c. Casing lengths and size.
    - d. Type of pipe.
- E. Force Main Sewer Line: The following items must be clearly shown on the surveyed as-built record drawings:
- 1. Surveyed:
    - a. Force main (based on locator marks).
    - b. Edge of pavement or curbing, where applicable.
    - c. Air release/flushing valves.
    - d. Low pressure system lateral valves.
    - e. Flushing stations.
    - f. Sewer pump stations (where installed).
  - 2. From Contractor/Inspector Mark-ups:
    - a. Profile changes.
    - b. Horizontal and vertical bends.
    - c. Service line locations (if not surveyed).
    - d. Casing lengths and size.
    - e. Type of pipe.

### Section 4. REVISIONS

- A. This policy was approved and adopted by the Authority's Executive Director on April 23, 2013, effective July 1, 2013.