

Technical Specification 010

AS-BUILT (RECORD) DRAWINGS

1.0 General

- a) It is the intent of this specification to provide information to the design engineer and utility contractor concerning requirements for acceptable record drawings for all projects with infrastructure permitted in the county's name.
- b) Accurate as built drawings are an important closeout component of a project and are required for:
 - Signing water, sewer, and pump station state permit certifications
 - Issuance of Substantial Completion and Final Acceptance
 - Updating the county water and sewer GIS utility map

Water and / or sewer certifications submitted by the design engineer of record will not be processed without approved as built record drawings that conform to this specification regardless of who prepares the record drawings.

2.0 Record Drawings

- a) The utility contractor is responsible for employing the design engineer and/or a surveyor licensed in the State of North Carolina to provide accurate record drawings upon completion of construction. The record drawings must be sealed, signed, and dated by the engineer or land surveyor.
- b) The record drawings shall be provided to the county as: One set of paper drawings and a CD or USB drive containing both **georeferenced** AutoCAD (Version 2007 or later) and Adobe PDF format files. The PDF files must be of **each individual plan sheet of the record drawings.**
- c) Record drawings shall conform to this as built technical specification and will also accurately identify the location of all properties, rights-of-way, and easements utilized for the installation of all installed facilities. Record drawings will utilize offsets and benchmarks as necessary to identify the location of all facilities correctly and accurately within the properties, rights-of-way, or easements, and will also indicate any and all encroachments which exist. All aboveground structures such as manholes, fire hydrants, valve boxes, meter boxes, electrical services, pump stations, air release valves, etc., will also be clearly identified.
- d) Horizontal control shall be per the State Plane Coordinate System (NAD 83).
- e) Vertical control shall be per NAVD 88.

AS-BUILT (RECORD) DRAWING CHECKLIST

Plan sheet size: 24" x 36" (Arch D) with engineer's seal and / or surveyor's seal as applicable

Each sheet of the record drawings, including the required Brunswick County Cover Sheet, shall have the NCDEQ PWSS water permit number and / or the NCDEQ DWQ sewer permit number for the project on the sheet.

Drawings shall be prepared at a scale of 1" = 50' (horizontal) and 1" = 5' (vertical)

Indexed Brunswick County Cover Sheet with: Location of plan-profile sheets by sheet number, name of project and/or subdivision, owner's name, address, phone number, engineer's name, address, phone number, surveyor's name, address, phone number, date, north arrow, scale, site map of project site shown as an inset (minimum size 3" x 3")

Total linear feet of mains shown on cover sheet as:

Water Mains _____ Force mains _____ Gravity sewer mains _____

Gravity sewer shall be shown in both plan and profile view with all manhole inverts accurately field located and labeled in profile view and a manhole name and/or number assigned to each manhole. Manhole rim and invert elevations shall be accurately located and shown. If applicable clearly indicate and label all five (5) foot diameter manholes. All sewer mains and manholes shall have stationing numbers for ease of reference.

Plans shall show individual services for gravity sewer cleanouts, water meter boxes, and low-pressure sewer services and shall be accurately located and shown on the plans as follows:

Gravity sewer cleanout – open circle

Water meter service – open box

Low pressure sewer – open oval

Clearly indicate all gravity sewer service laterals and indicate their size (4 inch or 6 inch)

Gravity sewer cleanouts shall be located by measuring from the nearest downstream manhole along the sewer main upstream to a point which lies on a line that is perpendicular to the sewer main and connects said point and the cleanout – for example, 150 / 15R (150' from downstream manhole and 15' over to the right side of main)

Water taps and meters larger than the standard one (1) inch lateral with (¾) inch meter shall be clearly identified with the size of the service lateral and water meter

Drawings shall indicate water and sewer phases and their relationship to other subdivision phases (if applicable)

Use complete and accurate material descriptions, for example, pipe material (PVC, DIP, HDPE, Fusible PVC, etc.), pipe diameter, DR # of pipe, pressure class of any DIP, length, slope (for gravity sewer), AWWA and / or NSF

Show station or distance to beginning and end of all changes in pipe material and pipe deflections

Show all existing and required vertical and horizontal separations between sewer mains and water mains and between water mains / sewer mains and stormwater pipes

Show existing grade elevations and proposed finish grade elevations

Show all water supply wells within a one hundred (100) foot radius of any gravity sewer main or pressure force main

If any vented manholes were used [eg, rims less than (2) feet above 100-year flood elevation] then show the vented manhole and vent and indicate a watertight ring and cover

Show location and size of all air release valves, gate valves, plug valves, butterfly valves, fire hydrants, post flushing hydrants, temporary blow offs, tees, crosses, cleanouts, etc., along all water mains and sewer force mains

Show lot numbers, lot lines, easement lines, rights-of-way lines, and street names

For horizontal directional drills and jack-and-bores the drilling logs are to be incorporated with the record drawings