Surveyed As-Built Checklist

This checklist is intended as a guideline to ensure an efficient review and verification of the As-Builts. Please note this checklist is not exhaustive and additional feedback or comments may be provided based on specific needs or circumstances.

All entities who construct water and/or sewer mains or facilities, for acceptance and perpetual maintenance by the City of Hendersonville (COH), or to connect to existing COH systems, shall submit to the City's Engineering Department certified "Surveyed As-Built Drawings." Submittal must include a **.dxf or .dwg** file and a PDF of the as-built construction drawings and a comma-delimited text file of the infrastructure and easement points with point descriptions (including point number, northing, easting, elevation, description).

As-built drawings shall be signed, sealed, and dated on each sheet by a North Carolina registered engineer (P.E.) as part of the City's acceptance process. As-Built Drawings shall be submitted and approved prior to issuance of final acceptance. Lettering shall be clear and a minimum of 1/8" in height. All applicable information listed below shall be included on all as-built drawings.

☐ **GENERAL INFORMATION**

- Copy of recorded plat or deed of easements, indicating easements and rights-of-way.
- Cover sheet with vicinity map clearly depicting the project area.
- Index sheet including the entire project area with water and sewer infrastructure as constructed including main sizes and connection to nearest existing water and sewer mains. Include sheet layout if there are more than two plan/profile sheets.
- Boundary of tract by metes and bounds with references.
- Drawings shall be in North Carolina State Plane Coordinate System (NAD 83) and shall include plan and profiles.
- Scale drawings and bar scale (minimum horizontal scale 1 in = 50 ft).
- North arrow with appropriate North reference (i.e., NAD 83). Plans shall be oriented so that the north arrow is toward the top, or left margin.
- The vertical datum shall be NAVD88 (vertical scale shall be 1"=10').
- Seal and signature of NC registered P.E. that prepared as-built drawing and reference to NC PLS who collected (and date of) the survey on each sheet.
- All existing and proposed easements identified and dimensioned. Include legal reference (deed book and page number).
- Each sheet shall be titled or stamped "As-Built" or "Record Drawing".
- Street names, including State Road (SR) numbers, must be clearly labeled on each sheet of drawings. Each street should be identified as either public—specifying the responsible public entity—or private.
- Each sheet shall clearly label phase and section designations.
- CAD files shall have separate layers for water and sewer infrastructure.

☐ **WATER SYSTEM**

- Pipes shall be labeled with material and diameter (along water line).
- Separation from sanitary, storm sewer and gas line shown and called out on profiles.
- Center line stationing shown on plans.
- Label all appurtenances (all valves, fire hydrants, meters, air release, blowoff, end of line plug, etc.) with point #, size and type.

- Profiles shall include valves, hydrants, pipe, final grade, utility crossings with clearance.
- Detailed plan of tank/pump site including pipe and valve layout
- Pump station specifications, including pump type (split-case or multistage vertical pumps); pump make (Grundfos, Goulds, etc.); horsepower; flowrate (in gpm); and total dynamic head (in feet).
- Generator specifications, including service phase (1 or 3); voltage; amperage; kilowatt hours; fuel type; and fuel storage capacity.
- O&M manual for pumps, motors, generator, valves, etc.

WATER SYSTEM DATA TABLE (Information shall be in NAD 83)

Northing, Easting, Description and Elevation for all appurtenances

- Valves
- Fire Hydrants
- Blowoffs
- Pump Stations/ Tanks
- Meters (w/associated lot number or address)
- Air Release Valves
- Total linear footage of all proposed lines, categorized by line size and material

☐ **SEWER SYSTEM**

- Pipe shall be labeled with slope, material, diameter, distance between manholes and gravity main/ force main.
- Manhole shall be labeled with top elevations and all invert elevations with cardinal direction. Manholes with drops, watertight locking lids and vents are to be identified.
- Separation from water, storm sewer and gas line shown and called out on profiles.
- Center line stationing shown on plans.
- Label all appurtenances (all manholes, cleanouts, air releases, etc.) with point #, size and type.
- 100-year flood elevation. (Shown in profile)
- Profiles shall include manholes, cleanouts, valves, pipe, final grade, utility crossings with clearance.
- O & M manual for pump station, generator, etc.
- Pump station specifications, including pump type (submersible or above-ground), pump make (Hydromatic, Fairbanks-Morse, Flygt), horsepower, flowrate, total dynamic head (TDH, ft.).
- Generator specifications, including service phase (1 or 3), voltage (120/208, 480, etc.), amperage, kilowatt hours (kW), fuel type (diesel, propane, etc.) and fuel storage capacity.

SEWER SYSTEM DATA TABLE (Information shall be in NAD 83)

Northing, Easting, Description and Elevation for all appurtenances

- Manholes (identify watertight and locking lids)
- Drop Manholes
- High Velocity Manholes
- Manhole Vents
- Clean outs (w/ associated lot number or address)
- Air and vacuum valves
- Total linear footage of all proposed lines, categorized by line size and material