

## AS-BUILT DRAWING CHECKLIST

All entities who construct water/sewer mains or facilities, for acceptance and perpetual maintenance by the City of Hendersonville, or to connect to existing COH systems, shall submit to the City's Engineering Department certified "As-Built Drawings" Including:

- 1) 1-set of paper drawings: 24" x 36";
- 2) 1-CD containing: electronic .dxf and/or .dwg file of the as-built construction drawings,
- 3) a PDF of the drawings;
- 4) a comma-delimited text file of the infrastructure and easement points with point descriptions;
- 5) an Excel spreadsheet containing tabular coordinate data for each appurtenance.

In addition, **For CITY GIS purposes, beginning September, 2018** we will request geo-referenced WBlocks drawings for each: water and sewer, generated from the As-built DWG which isolates the linework for the as-built infrastructure, appurtenances, easements and labels.

For a tutorial on isolating line work with WBLOCKS:

<https://knowledge.autodesk.com/support/autocad/learn-explore/caas/sfdcarticles/sfdcarticles/Export-Objects-to-Drawing-File-with-WBLOCK-Command.html>

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 prior to issuance of final acceptance.** The following checklist shall be attached to each set of as-built drawings submitted for approval. Each blank shall be initialed by the applicant as being included on the as-built drawings or marked "N/A" if not applicable to the project. All plan sheets shall be 24" x 36" paper. Lettering shall be bold, clear and a minimum of 1/8" in height.

**All applicable information listed on the following pages shall be included on all as-built drawings.**

**AS-BUILT DRAWING CHECKLIST**

**AS-BUILT DRAWING INFORMATION**

Project Name: \_\_\_\_\_  
Submitted By: \_\_\_\_\_  
Phone Number: \_\_\_\_\_  
Transmittal Date: \_\_\_\_\_

**GENERAL INFORMATION**

- A. Copy of recorded plat or deed of easements, indicating easements and rights-of-way.
- B. Boundary of tract by courses and distance with references.
- C. Tie to North Carolina grid coordinate system (NAD 83).
- D. Vicinity map clearly depicting the project area.
- E. Scale drawings and bar scale.
- F. North arrow with appropriate North reference (i.e., NAD 83).
- G. Location of benchmark with M.S.L. elevation.
- H. Seal and signature of North Carolina registered P.E. that performed as-built drawing, on each sheet.
- I. All existing easements identified and dimensioned; include legal reference (deed book and page number).
- J. Statement designating drawings are "As-Built" on each sheet.
- K. Street names, including state road numbers (SR), properly labeled on each sheet of drawing.
- L. Cover sheet including entire project area with water and sewer infrastructure as constructed including main sizes and connection to nearest existing water and sewer mains.
- M. Phase and section designations shall be listed on each sheet.

**AS-BUILT DRAWING CHECKLIST**

**DATA** - To be shown in tabular format.

	A. Acreage in total tract.
	B. Average lot size.
	C. Total number of lots.
	D. Total linear footage of infrastructure chart.
	Water mains (Identify size and length of each).
	Number of water valves (For each size).
	Number of fire hydrants.
	Sewer mains (Identify size and length of each).
	Number of manholes.
	Number of valves (For each size).
	Number of pump stations.

**WATER SYSTEM**

	A. Pipe material labeled.
	B. Pipe size labeled.
	C. Separation from sanitary, storm sewer and gas line shown on plans
	D. Alignment stations shown on plans.
	E. NAD 83 coordinate location for each appurtenance.
	Point number corresponding to water system data table.
	F. Certification by North Carolina P.E. of construction in accordance with the water extension permit.
	Certification on the plans.
	A separate certification form shall also be provided.
	G. A separate, recorded easement dedication plat for utility extensions outside rights-of-way.
	H. Plan and profile.
	I. Depth of line at 50' intervals shown on the plan view
	J. Distance from EOP/White line at 50' intervals
	M. Detailed plan of tank/pump site including pipe and valve layout
	N. 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).
	O. Generator specifications, including: service phase (1 or 3); voltage; amperage; kilowatt hours; fuel type; and fuel storage capacity.
	P. O&M manual for pumps, motors, generator, valves, etc.

**AS-BUILT DRAWING CHECKLIST**

**WATER SYSTEM DATA TABLE**

	A. Northing, Easting, and Elevation for all appurtenances (NAD 83)
	Valves
	Fire hydrants
	Blowoffs
	Pump stations/tanks
	Meters (w/ associated lot number or address)
	Air release valves
	Fittings

**SEWER SYSTEM**

	A. Pipe material labeled.
	B. Pipe size labeled.
	C. Manhole top elevations.
	D. Invert in and out elevations.
	E. Pipe slope.
	F. Separation from water, storm sewer and gas line shown on plans.
	G. Alignment stations shown on the plans
	H. Point number corresponding to sewer system data table (NAD 83)
	I. Horizontal control (bearings and distances of gravity lines).
	J. 100-year flood elevation. (Shown in profile)
	K. Certification by North Carolina P.E. of construction in accordance with the sewer extension permit.
	Certification on the plans.
	A separate certification form shall also be provided.
	L. A separate, recorded easement dedication plat for utility extensions outside rights-of-way.
	M. Plan and profile.
	N. O & M manual for pump station, generator, etc.
	O. Pump station specifications, including pump type (submersible or above-ground), pump make (Hydromatic, <i>Fairbanks-Morse</i> , <i>Flygt</i> ), horsepower, flowrate, total dynamic head (TDH, ft.).
	P. 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.
	Q. Force mains only: distance from EOP and depth at 50' intervals

**AS-BUILT DRAWING CHECKLIST**

**SEWER SYSTEM DATA TABLE**

	A. Point, Northing, Easting, elevation and description for all appurtenances
	Manholes
	Drop manholes
	High velocity manholes
	Clean outs (with associated lot number or address)
	Air and vacuum valve
	Fittings

**CITY OF HENDERSONVILLE USE ONLY**

Reviewed by: \_\_\_\_\_

Date: \_\_\_\_\_

Approved: \_\_\_\_\_

Returned: \_\_\_\_\_