



CAD and GIS Submittal Standards

As part of the As-Built Checklist, all entities who develop or construct within the Town of Holly Springs must submit as-built data in **PDF, CAD, and GIS Shapefile** format. The following requirements for the submittal of CAD and GIS data have been prepared for the purpose of incorporating digital submittal information into the Town's asset management system, so that accurate data may become available to emergency responders, Town staff, engineers, and the larger development community.

CAD Data

- CAD file must contain public utility infrastructure and plat information within a single drawing in **DWG format**.
- The CAD data is not meant to be printed. As such, it should not be all inclusive of the information displayed on the plan sheets. Objects normally set up in the layout tab ("paper space") for the purposes of plotting plan sheets, such as title blocks, page borders, legends, vicinity maps, and north arrows, should NOT be included in the CAD file. Callout detail boxes also should not be included.
- CAD data must be drawn at full scale (1:1), and oriented to NC Grid North.
- The data must be tied to Town monumentation data, in real world coordinates, and spatially referenced to the Town's GIS projected coordinate system: North American Datum 1983 (NAD 83), NC State Plan, FIPS 3200, Units: US feet.
- All lines must be snapped at their endpoints and free of gaps or dangles. Annotation text that breaks the continuity of lines should be shifted out of the way of the line.
- Public/private utility infrastructure and plat information must be organized into separate layers according to feature type and drawn as polylines (except for annotation). All layers must be turned on and visible/unfrozen. **Layer names should be intuitive and descriptive of the objects on that layer** (i.e. "SAN_SEWER", "SS-MANHOLE", "STORM_CONVEYANCE", etc.).
- Features must be clearly separated into their appropriate layer and not appear on other unrelated layers. Remnants of lines or points used in the development of the drawing but not representative of actual real-world features (trim lines, transit points, etc.) should be removed from the drawing.
- Existing infrastructure should be on separate layers from proposed infrastructure and should be differentiated as such in layer names (i.e. "EXIST_WATER_MAIN" versus "PROP_WATER_MAIN").
- Features that should appear in the drawing on separate layers are listed below.

CAD Layers

The features below should appear in the drawing on separate layers.

- Potable Water
 - Fire Hydrants
 - Water Mains with line breaks at new material and/or diameter connections
 - Water Valves
 - Water Meters
 - Water annotation: pipe sizes, material types
- Sanitary Sewer
 - Gravity sewer mains with line breaks at new material and/or diameter connections
 - Force mains with line breaks at new material and/or diameter connections
 - Manholes
 - Cleanouts
 - Sewer annotation: pipe sizes, material types
- Reclaimed/Reuse Water
 - Reclaimed water mains with line breaks at new material and/or diameter connections
 - Reclaimed water valves
 - Reclaimed water tanks
 - Reclaimed water annotation: pipe sizes, material types
- Stormwater
 - Stormwater pipes
 - Stormwater structures (drop inlets, catch basins, junction boxes, yard inlets, etc)
 - Stormwater outfalls



CAD and GIS Submittal Standards

- Stormwater control measures (retention ponds, etc)
- Stormwater annotation: pipe sizes, material types

GIS Data

Unlike a CAD .dwg file, which is a single file, a shapefile is a collection of files that store geometric location and attribute information of geographic features. This is the preferred format for use in Geographic Information Systems (GIS). For more information on exporting the GIS shapefile data format, please see the following link: <https://desktop.arcgis.com/en/arcmap/latest/manage-data/shapefiles/what-is-a-shapefile.htm>

- The same standards for CAD layers apply to the GIS layers.
- Public/private utility infrastructure and plat information must be organized into separate layers according to feature type and drawn as polylines or points. **Layer names should be intuitive and descriptive of the objects on that layer** (i.e. "SS-MANHOLE", "SW_POINTS", "W_MAINS")
- The data must be spatially referenced to the Town's GIS projected coordinate system: North American Datum 1983 (NAD 83), NC State Plan, FIPS 3200, Units: US feet.

Required files

GIS Shapefiles submitted to the portal must include the following files at a minimum:

- .shp – stores the feature geometry
- .shx – assists with rendering data
- .dbf – stores attribute data associated with the features
- .prj – stores information about the coordinate system

See an example of a shapefile. Note the highlighted file extensions required in every submittal.

Name	Date modified	Type	Size
▼ A long time ago			
□ Avent_Ferry_Pump_Station_Properties.dbf	4/12/2011 1:31 PM	DBF File	1,331 KB
□ Avent_Ferry_Pump_Station_Properties.prj	4/12/2011 1:29 PM	PRJ File	1 KB
□ Avent_Ferry_Pump_Station_Properties.sbn	4/12/2011 1:31 PM	SBN File	16 KB
☒ Avent_Ferry_Pump_Station_Properties.sbx	4/12/2011 1:31 PM	Adobe Illustrator ...	1 KB
□ Avent_Ferry_Pump_Station_Properties.shp	4/12/2011 1:31 PM	SHP File	808 KB
☛ Avent_Ferry_Pump_Station_Properties.sh...	4/12/2011 1:29 PM	Microsoft Edge H...	27 KB
□ Avent_Ferry_Pump_Station_Properties.shx	4/12/2011 1:31 PM	SHX File	13 KB

GIS Submittal instructions

Please follow the instructions below to ensure your GIS data is submitted successfully.

1. Place all GIS shapefiles (including all extensions) in a single zipped folder.

▼ Today			
📁 Avent_Ferry_Pump_Station_Properties.zip	8/7/2025 10:43 AM	Compressed (zipp...	1,352 KB

2. Rename the extension to ".piz". Submit this file to the portal.

▼ Today			
📁 Avent_Ferry_Pump_Station_Properties.piz	8/7/2025 10:43 AM	PIZ File	1,352 KB