The following requirements for a submittal of CAD data have been prepared for the purpose of incorporating the digital submittal information into the Town's Geographic Information System (GIS) base mapping, so that accurate data may become available to Town staff, engineers, and the larger development community.

☐ The CAD file must contain public infrastructure (roadways, sidewalks, storm water, water, and sewer) and plat information within a single drawing in DWG format, that was constructed during the project.
   - Files in DXF, DWF, or DGN format are not acceptable.
   - The drawing must be a "stand-alone" without the necessity of attaching Reference or XREF files or modifying layers.
   - The CAD file must be saved in the current CAD version.

☐ The infrastructure shall be drawn in the file for as-built locations as surveyed and certified by a Professional Land Surveyor (except for buried features like bends, tees, crosses and reducers who locations can be derived from CAD data).
   - All as-built survey data collection must be within an accuracy tolerance of 0.10' horizontal and 0.05' vertical, based on the project's horizontal and vertical datum.
     - The data must be projected in North Carolina State Plane Coordinates: North American Datum 1983 (NAD 83), Vertical Datum tied into NAVD88, and units are US Survey Feet.

☐ Public/private utility infrastructure and plat information must be organized into separate layers according to feature type and drawn as polylines and blocks (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.
   - Features must be clearly segregated 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.
   - Features that should appear in the drawing on separate layers are listed below in the *Public and Private Storm Drainage System Requirements*. Any additional features not listed are optional and must also be on separate layers with clear, understandable layers names. Existing elevation contours are not needed and should not be included within the provided file.
   - Include an updated, as-built storm pipe network

- If a pipe network is not available, include an SDF file with the as-built storm network information.

☐ Please include a project extents polygon to define the project boundary.
- All polygons must close without overlaps.
    - 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.

☐ 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.

Public and Private Storm Drainage System Requirements:

Structures/Points:

- All structures should be points or blocks under the same layer.
- The attributes of the points are to include those listed below.
    - Structure Name
    - Rim Elevation
    - Invert Elevation
    - Structure Description

    NOTE: Apron invert elevations are required on all flared end structures and storm sewer stubs.

- A sample table of the attributes can be found below:

Point No.	Northing	Easting	Rim Elevation	Invert Elevation(s)	Description*

*FES, HW or EW, JB, YI, DI, CB

Pipes/Lines:

- All pipes should be lines under the same layer.
- The attributes of the pipes should include the following:
    - Pipe ID
    - Upstream structure ID
    - Upstream invert
    - Downstream structure ID
    - Downstream invert
    - Pipe diameter
    - Pipe material
- A sample table of the attributes can be found below:

	From		To			
Link ID	Structure ID	Invert	Structure ID	Invert	Diameter	Material*

*RCP, CSP, HDPE, PVC, DIP

SCM:

- Provide survey shots of storm pond bottom, side slopes and grade breaks to verify the volume of each pond. The as built must also verify emergency overflow elevations and locations. This as built plan shall be Certified (signature with current date and NC state licensure number) as to general conformance with the City Approved grading plan by a Registered Engineer or Registered Land Surveyor and submitted in an electronic format
- The plans shall show the final design specifications for all stormwater management facilities and practices and the field location, size, depth, and planted vegetation of all measures, controls, and devices, as installed.
- A final inspection and approval by the stormwater Administrator shall occur before the release of any performance securities. No certificate of compliance or occupancy shall be issued without final as-built plans and a final inspection, or performance guarantees, and approval by the Stormwater Administrator.