



**PUBLIC WORKS**  
Engineering Division  
225 E Weatherspoon St  
Sanford, NC 27330  
Phone: (919) 777-1122

## **RECORD DRAWING SUBMITTTAL REQUIREMENTS**

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**ALL Record Drawing submittals must include the following:**

- signed/sealed 24" x 36" record drawing set - pdf
- signed/sealed Public Water Supply Engineer's Certification – pdf
- signed/sealed Sewer Engineering Certification – pdf
- as-built file - DWG (AutoCAD 014 Software Version 19.1 or earlier)

### **RECORD DRAWING CHECKLIST**

For items that require survey grade information, design information should be marked through but readable.

**A. General Information**

- One corner (minimum) of the tract shall be tied to the NC Plane Coordinate System. Horizontal tie to North American Datum (NAD83). Vertical tie to North American Vertical Datum of 1988 (NAVD88)
- Vicinity map, scale of drawings (1" = 100' or greater 500 scale), and north arrow.
- All easements identified. Include legal reference (Deed, BOM, Page #).
- Benchmark location and elevation.
- Outline of FEMA mapped 100-year flood limits and elevations.
- All current Lee County parcel information in the project-area is to be defined and properly labeled.
- Statement designating drawings are "Record Drawings" on each sheet
- P.E. Certification on each sheet of the as-builts
- Copies of all recorded maintenance agreements

**B. Potable Water Distribution System**

- Pipe size, location, and type material and pressure class.
- Plan and profile
- Separation from sanitary and storm sewer systems.
- Survey grade location of valves, fire hydrants, blow-off assemblies, and each end of casing pipe with distance to reference points including depth to top of casing.
- For all valves; type (butterfly/gate/etc.)

**C. Pump Stations & Force Mains**

- Pump station design capacity
- Pump station test results.

- Pump station and associated appurtenances operation and maintenance manuals
- Pump Station / Force Main Design Calculations.
- Pump Station Record Drawings.
- Survey grade manholes, wet wells with invert elevations
- Force main location, size, material type, location of air release valves and check valves, etc.

***D. Reclaim Water Distribution System***

- Pipe size, location, and type material and pressure class.
- Plan and profile
- Separation from sanitary and storm sewer systems.
- Survey grade location of valves, air release valves, meters, blow-off assemblies
- For all valves; type (butterfly/gate/etc.)

***E. Public Roadway System (including NCDOT and off-site improvements)***

- Street widths (back-to-back of curb) and right-of-way dimensions.
- Horizontal alignment with radii, PC's, and PT's of all curves and curve data.
- Vertical alignment with centerline grades, vertical curve lengths, station numbers, and elevation of all PVC's and PVT's, and centerline profile and curve data.
- Street-pavement sections (indicating street widths (BOC TO BOC) and typical cross sections. Sidewalks, base course and pavement thickness and ROW widths.
- Areas where heavy pavement structures have been placed
- Horizontal sight lines
- Official street name on each applicable sheet

***F. Sanitary Sewer System***

- Plan and profile
- Pipe size, location, and type material.
- Survey grade location of manhole (center) and invert (in & out) elevations, include diameter
- Survey grade pipe grades and manhole to manhole distances.
- Clean-out locations.
- Protective coating types, if used.
- 100 -year flood plain elevation
- Outfall lines showing stream locations and depth with ability to serve adjoining properties.
- Special construction details: piers, boring, encasements, drop manholes etc.
- High priority sewer lines.
- Separation from water distribution and storm water systems.

***G. Public and Private Storm Water Drainage System (including NCDOT and off-site improvements)***

- Plan and Profile
- 100-year flood limits and elevations.
- Survey grade structure top and invert elevations.
- Pipe size and type material.
- Pipe grades and distances.
- Include all outlet structure details and invert elevations.
- Include any applicable maintenance clauses from homeowner covenants.

## RECORD DRAWING SUPPLEMENT – CAD file requirement

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

· **CAD file must contain public utility infrastructure and plat information within a single drawing in DWG format.**

Files in DXF, DWF, or DGN format are not acceptable. Drawing must be “stand-alone” without the necessity of attaching Reference or XREF files, or modifying and levels and layers. **CAD file must be saved as AutoCAD 014 Software Version 19.1 or earlier.** Current GIS does not support newer versions at this time.

· 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 true north.

· The data must be tied to County monumentation data, in real world coordinates, and spatially referenced to the City's GIS projected coordinate system: North American Datum 1983 (NAD 83), NC State Plane, FIPS 3200; Units: US Feet.

· 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.

· 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.

**IMPORTANT: 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. *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. Any additional features not listed are optional and must also be on separate layers with clear, understandable layers names. ELEVATION CONTOURS ARE NOT NEEDED.

**Public/Private Infrastructure:**

- Fire Hydrants
- Water Mains
- Water Valves
- Water Meters
- Water annotation: pipe material, length, diameter; hydrant manufacturer, manufacture date, barrel size, nozzles, bury depth.
- Sewer mains
- Manholes
- Cleanouts
- Sewer annotation: pipe material, length, diameter; Manhole depth, material, invert elevations
- Storm mains
- Storm manholes
- Inlets
- Headwalls
- Outfalls
- Other drainage structures (valley gutters, etc.)
- Storm annotation: pipe material, length, diameter; Manhole depth, material, invert elevations
- Buildings
- Paving: edge of pavement, parking area, striping

**Plat Information:**

- Subdivision/Phase boundary
- Parcel lot lines
- Street centerlines
- ROW lines
- Easement, fire lanes
- Plat annotation: street labels, easement types & size (length, width, square footage)