RECORD DRAWING CHECKLIST

Town of Apex
Development Services
PO Box 250
105-B Upchurch Street
Apex, NC 27502

Phone: (919) 372-7467

ALL Record Drawing submittals must include the following:

☐ $200 Record Drawing Review Fee (cash or check only)

AND

All items below uploaded to IDT for review and approval:

☐ PDF file(s) of each signed/sealed record drawing sheet
☐ Engineer's Water Certification of Completion, if applicable
☐ Engineer's Sewer Certification of Completion, if applicable
☐ Signed Record Drawing Checklist
☐ Signed/sealed bond estimates
☐ 1 AutoCAD as-built file (after approval & upon request from staff)

See Electronic Record Drawing Submittal Process for more information and help uploading a New Project to IDT.

This Record Drawing checklist does not apply to SCMs. Deliver the $200 Record Drawing Review Fee to Development Services located at 105-B Upchurch Street, Apex, NC between the hours of 7:30 a.m. and 4:30 p.m. (or mail to the PO Box address above). Record drawings which reflect "As-Built" conditions must be submitted prior to start of one-year warranty or acceptance by the Town of Apex for roadway and/or public utilities. *Plat and/or Certificate of Occupancy sign off will not occur until all submittals have been received and approved by Town of Apex staff.*

Project Name:_____

Engineering Firm:_____

Engineer (First, Last Name):_____ **PE License #**_____

Phone:_____ **Email:**_____

All applicable information listed below shall be included on all Record Drawings:

☐ 1. Each sheet shall include the following Record Drawing Certification with adequate space for Electronic Signature by the approving Inspector and Manager.

RECORD DRAWING CERTIFICATION

This record drawing has been reviewed by the Town of Apex Water Resources Infrastructure Inspections Division. To the best of my knowledge and belief, the record drawing conforms to the requirements established in the Standard Specifications and Details of the Town of Apex, the approved Construction Drawings, and the Record Plat.

By:_____ By:_____
Infrastructure Inspections Manager Infrastructure Inspector

☐ 2. Field verified locations (tied to NC Plane Coordinate System) for all visible infrastructure. Constructed utilities located below grade shall have reference to known point if the constructed utilities are different than the approved construction drawings.
☐ 3. Utility easements are shown and centered on the as-built utility locations.
☐ 4. AutoCAD submittal includes Base file and survey layer.
☐ 5. Drawings include the following:

A. *General Information*

☐ Boundary of tract with all courses and distances indicated. 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, and north arrow.
☐ All easements identified and dimensioned. Include legal reference (Deed, BOM, Page #).
☐ Benchmark location and elevation.

B. *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.

Public Roadway System - continued

☐ Pavement sections and typical cross sections.

☐ Geotextile fabric locations, type, and manufacturer.

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

☐ 100-year flood limits and elevations.

☐ 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.

D. Water Distribution System

☐ Pipe size, location, and type material.

☐ Separation from sanitary and storm sewer systems.

☐ Location of valves, fire hydrants, meters, 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.), manufacturer, model number, and number of turns to close (use form below).

☐ Copy of PROJECT ENGINEER'S certification indicating construction of the water system in accordance with the approved plans and specifications.

Valve Size	Manufacturer	Model	Type (butterfly/gate/etc.)	Number of Turns to Close Valve

E. Sanitary Sewer System

☐ Pipe size, location, and type material.

☐ Location of manhole (center) and invert (in & out) elevations noting directions.

☐ Location of each end of casing pipe with distance to reference points including depth to top of casing.

☐ Pipe grades and manhole to manhole distances.

☐ Clean-out locations.

☐ Separation from water distribution and storm water systems.

☐ Copy of the PROJECT ENGINEER'S certification indicating construction in accordance with the approved plans and specifications.

F. Pump Stations & Force Mains

☐ Pump station test results.
☐ Force main location, size, material type, location of air release valves and check valves, etc.
☐ Location of each end of casing pipe with distance to reference points including depth to top of casing.
☐ Pump station and associated appurtenances operation and maintenance manuals per Section 800 of Town specifications.
☐ Pump Station Certification.
☐ Pump Station / Force Main Design Calculations.
☐ Pump Station Record Drawings.
☐ Certified Pump Curves.
☐ Startup Report.

Engineer's Certification Statement:

☐ **I certify that all information requested on the Record Drawing Checklist has been included as part of this Record Drawing submittal and to the best of my knowledge the information provided is correct and utility locations have been field verified and are within the limits of the easements.**

Engineer's Signature_____ Date_____ SEAL

AUTOCAD RECORD DRAWING SUPPLEMENT

The following requirements for 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 emergency responders, Town 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 2016 version 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 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 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 sizes, material types

  - Sewer mains
  - Manholes
  - Cleanouts
  - Sewer annotation: pipe sizes, material types

  - Storm mains
  - Inlets
  - Headwalls
  - Outfalls
  - Other drainage structures (valley gutters, etc.)
  - Storm annotation: pipe sizes, material types

  - 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 & sizes