



City of Sanford, North Carolina

Department of Engineering

Main Line (919) 777-1122

Civil Engineering Construction Plans Review Checklist

Project Name: _____

Date: _____

Engineer: _____

Construction Drawing Review Checklist

- **Cover Sheet:**

- Project/Development Name
- Date
- Revision Number & Date
- Vicinity Map
- Index
- Engineer name, address, phone number & email
- Developer name, address, phone number & email
- Site Data
 - Current Zoning
 - Use (if different than Zoning)
 - Total Parcel Area
 - Total Disturbed Area
 - Existing Impervious area, (sf & ac)
 - Existing Impervious percentage
 - Proposed Impervious area, (sf & ac)
 - Proposed Impervious percentage
 - Property Owner Information, (Name, PIN, Deed Book & Page Number, Area)

- **General Notes:**

- General Construction Notes
- Erosion Control Notes
- Utility Notes
- Construction Sequence, if applicable

- Existing Conditions/Demolition Sheet:
 - Legend, or call out, of all symbols & line styles
 - Label contour elevations (maximum 2' & 10' intervals)
 - Show all existing structures and features on site.
 - Label all existing utilities including pipe size and material
 - Label rims & inverts of existing storm & sewer structures
 - Label all items to be demolished/abandoned or include in legend
 - Show limits of existing vegetation in the project site
 - Show project limits
 - Show all existing street features, (i.e. curb, gutter, edge of pavement, centerline, existing ROW, etc.)
 - Adjacent parcel data, (Owner name, PIN, address, area, Deed Book & Page Number, Plat Book & Page

- Construction Plan Sheets:
 - Provide overall site plan with sheet index/schedule.
 - North Arrow
 - Scale –
 - no less than 20
 - no greater than 100 for overall site
 - no greater than 50 for detailed site plans
 - Label streets on ALL sheets with street names, Right-of-Way width and Public/Private designation
 - Lot numbers & areas
 - Set back lines
 - Show driveway locations
 - Stormdrainage Easements with Public/Private designation
 - Public Utility Easements outside Right-of-way with width & purpose labelled
 - Private utility easements, proposed & existing
 - Contour Elevations on, and legible (maximum 2' & 5' intervals)
 - Provide enough contour elevations to easily determine flow directions
 - Centerline alignments turned on showing stations
 - Label cul-de-sac radii to face of curb
 - Legend, or call out, of all symbols, line styles & hatching styles
 - Chamfer Right-of-Way lines at intersections.
 - Show sight distance triangle easements at all intersections.
 - Show curb ramp locations.
 - Current street typical section shall be used for proposed streets.
 - Provide schedule of materials for public infrastructure

- Grading & Drainage Plan Sheets:

- North Arrow
- Scale –
 - no less than 20
 - no greater than 100 for overall site
 - no greater than 50 for detailed site plans
- Street names with Right-of-Way Width and Public/Private designation
- Lot numbers
- Set back lines
- Show driveway locations
- Stormdrainage Easements with Public/Private designation
- Provide a storm structure at the ROW to distinguish between public & private systems.
- Clearly label all public & private utility Easements outside Right-of-way with width & purpose
- Contour Elevations on, and legible
- Provide enough contour elevations to easily determine flow direction
- Legend or call out for all symbols & line styles
- Structure numbers
- Pipe length, size & material
- Rim & invert elevations of proposed & existing storm structures
- Grading shall be designed in a manner that accommodates future sewer extensions to adjacent properties which naturally flow to the site.
- Provide diversion so runoff does not adversely impact an adjacent property.
- Note specifying no waffle boxes permitted in public rights-of-way or easements.

- Utility Plan Sheets:

- North Arrow
- Scale –
 - no less than 20
 - no greater than 100 for overall site
 - no greater than 50 for detailed site plans
- Street names with ROW Width and Public/Private designation
- Lot numbers
- Set back lines
- Water, sewer & stormdrainage easements with Public/Private designation
- Public Utility Easements outside Right-of-way with width & purpose labelled
- Legend or call out for all symbols & line styles

- Water & Sewer alignments with stations
- Provide note stating meters & cleanouts to be placed a minimum of 10' from property lines.
- Utility Legend
- Size & material of existing water & sewer being tied to
- Pipe length, size & material of all public utilities
- FH's space no greater than 400 feet
- End treatments of water line termination points
- Place fire hydrants at the end of cul-de-sacs
- Public utilities, within streets, shall be extended to the site's property lines.
- Sanitary Sewer system designed to provide future access for adjacent properties which naturally flow to the site.
- Sewer system shall be designed deep enough to allow adjacent properties to tie in.
- Sewer easements shall be provided to each, individual adjacent lot which naturally flows to the site.
- Ensure Cut-In-TEE connection is used if water main being tapped is same size as proposed water line
- Diameter of existing main shall be 2 inches larger than new line to utilize a tapping sleeve & valve connection
- Note that tapping Sleeve & Valve shall be ductile iron, full body mechanical
- Sewer outfall, &/or lift station design, must be included to show that project can stand alone, and be served, independently of other developments.
 - In order for the city to consider the utilization of a Lift Station for residential applications it must serve at least 400 acres or 400 units. For commercial/industrial applications, consideration is given on a case-by-case basis.
- Min. 18" pipe for Stormdrainage conveyance
- Show driveway locations
- Provide stormwater quantity mitigation for pre & post construction flow rates.
- Where water main changes vertical alignment to avoid storm structures, etc., call out fittings at each change in elevation.
- Where water main changes horizontal alignment, call out fittings at each change in alignment.
- Water looping shall be required where feasible.
- Note specifying no waffle boxes permitted in public rights-of-way or easements.

- Plan & Profile Sheets:

- Scale: Horizontal & Vertical
- North Arrow

- Provide legend or call out all symbols & line types
 - Show all water main appurtenances in plan & profile view (blow off, hydrants, valves, etc.)
 - Vertical curve data (PVC, PVI, PVT, K-Value, Length, etc.)
 - Provide station & elevation of CL of all intersecting streets
 - Show all utility crossings, invert elevations & separation distance
 - Show pipe lengths, grades & materials
 - Show all storm and sewer structure numbers, rim, invert in & invert out elevations
 - Label proposed & existing ground lines
 - Grade utility easements, outside ROW, so it is traversable by heavy maintenance equipment.
- Details Sheets:
 - Ensure details are current
 - Ensure all necessary details are included in plans
- Supporting Documentation:
 - All calculations shall be submitted prior to final plan approval. (stormwater, downstream sewer analysis, water pressure, TIA's, etc.)
 - All permit approvals, pertaining to site construction, must be submitted prior to final plan approval. (water, sewer, encroachment, driveway, land disturbance, 401/404, etc.)