

Memorandum

To: Engineering and Development Community
From: Utilities Plan Review Section
Date: 08-03-2007
Subject: Plan Submittal Requirements

All construction plans submitted for Utilities review shall include a cover sheet, an overall utility plan, and a plan and profile sheet for each street and outfall, within the project limits, being on-site or off-site. The following criterion has been established as the **minimum** requirement for first plan review:

- All Sheets:
- 24" x 36" Sheet, Graphic Scale, North Arrow, Phase Lines, Match Lines, and Title Block
 - Labeled "Preliminary – For Review Only" (to be removed when all revisions are finalized)
- Title Block:
- Project and Street Names, Project Limits, Sheet Number, and the Drawing Scale
 - Submittal and Revision Dates, Initials of Designer, Drafter, and Checker
 - Appropriate Signature, Water/Sewer Permit, and Erosion Control Blocks
 - Revision list: number, date, and "Utility Comments" with annotation  at each revision
- Cover Sheet:
- Project Name, Jurisdiction, and Owner/Developer/Consulting Engineer Information
 - Vicinity Map with North Arrow, Legend, and Sheet Listing or Drawing Index
 - Map of Entire Project Area, which shall identify all existing and proposed features
- Utility Overall:
- Overall site plan of water and/or sewer layout, 40 or 60 scale (not to exceed 100 scale)
 - Overall storm layout to include pipe, culverts, structures, ditches, etc.
 - Street tree layout, symbolized with lighter/thinner line weight, typically with an  symbol
 - Streams, creeks, ponds, and other water features or crossings
 - Applicable City of WS standard notes, street section typical(s), and detail drawings
 - Erosion and/or Storm Water Ponds that impact or are in close proximity to SS mains
- Plan & Profile:
- Scale: 1"= 40' Horizontal / 1"= 4' Vertical
 - 100-Year Flood Elevation, Streams, Creeks, Ponds, and other water features or crossings
 - All elevations SHALL be based on an actual field survey using mean sea level datum
 - Profile elevations labeled at 10-ft grid interval with 1-ft interval (lighter, thinner) gridlines
 - Stationing along the survey baseline, on-site/off-site outfalls, and base of profile grid area
 - Profiles read left to right, low to high, and project directly below the plan view
 - North shall be orientated within the top 180° of the plan view
 - Street profiles show existing and proposed LT, RT, and CL elevation with differing line type
 - Outfall profiles show existing and proposed CL elevation only with differing line type
 - Profiles show length, size, material, and grade for every segment of sewer
 - Manholes are labeled with a number, station, rim elevation, and centerline invert
 - Other manhole labeling or note may be required for inverts, type, ring & cover, drop, etc.
 - Erosion and/or Storm Water Ponds that impact or are in close proximity to SS mains
- Utility Detail:
- Utility detail drawings, typical sections, and/or utility notes not found within the plan set
 - Signature/Approval block requirements are based on detail sheet content and may vary
 - This sheet may not apply to every plan set.

Minimum requirement for first plan review (continued):

- All Drawings:
- Proposed pipes, structures, fittings, services, etc, shown in heavier or thicker, solid lines
 - Proposed water and/or sewer mains labeled with size, material, and type (Water or SS)
 - Existing pipes, structures, fittings, services, etc, shown in lighter or thinner, dashed lines
 - Existing water and/or sewer mains labeled with (city or county) project or drawing number
 - One flow arrow per segment of SS shown on all existing or proposed sewer mains
 - Flow arrows shown on the sewer main, preferably at the point of entry to each manhole
 - Streets and Roads labeled with existing or approved name, to include SR number as it applies
 - Right-of-way, roadway, and easement limits, widths, and type clearly shown
 - Existing and proposed property lines and corners or boundary lines and markers
 - Existing and proposed lot lines, lot numbers, and lot frontages
 - Current owner information (name, block, and lot) on ALL adjacent property
 - Consistency in text, symbolism, and line: type, weight, size, font, hatching, etc.
- Unacceptable:
- Spelling errors, overlap, upside-down, unreadable, duplicate, or stray: text, symbols, or lines
 - Plotter/printer tracks, smudging, smearing, blurry, blotchy, cut-offs, or poor print quality
 - Folded plans are acceptable for review only (final plan sets shall be neatly rolled)
- Design:
- City of Winston-Salem, North Carolina, Department of Public Works, Engineering Division
 - Online at www.cityofws.org/Home/Departments/Engineering/Articles/Publications
 - Technical Specifications and Detail Drawings
 - Water Line and Sanitary Sewer Line Construction
 - Infrastructure Development Standards
 - Deviation due to design consideration shall be subject to approval during the review process
 - The consulting engineer is responsible for the design and shall conform to CCUC policy, which shall include, but is not limited, to the following:
 - Water and sewer mains shall generally be located 6-ft off the centerline of the roadway
 - Water and sewer mains shall in no case cross the centerline or curb line of any roadway
 - SS manholes shall not be located on the centerline of the roadway or under any curb
 - For state roads, water and sewer mains shall generally be located 5-ft back of pavement
 - Max hydrant spacing for single family is 700-ft, preferably at intersections and dead-ends
 - 500-ft spacing may be required in high density single family developments
 - Max hydrant spacing for multifamily is 500-ft, preferably at intersections and dead-ends
 - Storm pipe or structures shall not be in conflict with water and sewer mains or services
 - Infrastructure design shall mean water over storm and storm over sewer
 - Existing water and sewer mains, structures, services, and fittings shall be field located
- General:
- Forms, fees, applications, agreements, and permits are the responsibility of the consulting engineer or their duly appointed representative. Upon completion of all revisions, each sheet in the final plan set shall be original, sealed, signed, and dated by a Professional Engineer. Plans approved and signed by Utilities will only be returned when all matters of the plan review process have been satisfactorily resolved. Five copies (no blue prints) of approved and signed plans shall be returned to Utilities.

This guide is being provided as a general list of common areas in design and drafting that draw attention to City/County Utilities plan review process. This guide is not all-inclusive to every technical aspect of plan review, nor is it intended to serve as a technical specification to water line and sanitary sewer line construction. It is designed to provide a consistent outline of general acceptability of drafting and design in City/County Utilities jurisdiction for water and/or sewer permits.