

Standard ROW Utility Plan Requirements

1) General

Utility Plans shall be submitted as a part of the City Right-of-Way permit application process. Properly formatted complete drawings with sufficient information as listed below is required. If proper plans are not submitted, applicants will be notified and required to resubmit before a permit review can continue.

2) Plan Format

- a) Plans should include the following aspects listed on this sheet and be legible and not crowded.
- b) Plan sheet size of 11"x17" is preferred. Full size plan sheets should only be submitted if requested.
- c) Plans should show the entire project limits.
- d) Electronic files shall be in PDF format.

3) Professional Engineer Seals

Installation of new public infrastructure and applicable utility permit requests require plans to be sealed by a licensed North Carolina Professional Engineer.

4) Plan Title Sheet

- a) Location / Vicinity Map with proposed work area(s)
 - a. North arrow
 - b. City Streets and State roads labeled
- b) Utility owner information and project contact information
- c) Engineering firm information
- d) Mapping and Surveying data source(s) shall be identified. See SUE definition below.
- e) Project scope: This information should include a brief description of the work being proposed with a general to and from provided (e.g. "8 inch sanitary sewer along Greenville Loop Road from Pine Grove Road to Old Military Road").

5) General Notes

General notes should include the requirements of the Utility, City of Wilmington General Notes and any NCDOT requirements.

6) Legend / Symbology

All features shown on plan set should have a corresponding symbol. The legend is to include all applicable symbols and line styles.

7) Detail Sheets

The following details should be included if applicable:

- a) Standard Details
 - Aerial detail with minimum vertical clearance
 - Utility trench with minimum bury depth
 - Bore detail
 - Road repair detail
 - Road and Utility crossing details with minimum clearances. See General Profile View.
 - Storm drainage crossing detail
 - Utility Structures –
 - i. Applicable details should be provided for handholes, vaults, manholes and other utility structures proposed.
 - ii. When using an NCDOT approved structure, include product number.
 - iii. Utility lids, boxes, structures, etc. are not preferred in the sidewalk. If unavoidable, an associated repair detail should be included.
 - Excavation/Bore pit detail: This detail should note the standard size and depth of proposed pits.
 - City of Wilmington Standard details. (road repair, utility trench, sidewalk, curbing, driveway, tree protection, etc.)
- b) Other utility details as applicable, such as a site-specific detail to provide specific guidance for the situation.

8) Plan & Profile Drawings

Requirements for plan and profile views are outlined below. The location and scope of a project shall determine the level of design required for submission. Generally the more congested a corridor is, the more mapping and survey is required to create design drawings.

For minimal activities like spot repairs or utility service installations that are $\leq 2"$ diameter and less than 50' in length and/or located in low impact areas, the capture of detailed information for existing at-grade and underground utilities on a plan sheet drawing may not be required.

9) General Plan View

The following aspects should be included on all plan view sheets:

- a) North Arrow; City street and State routes labeled

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- b) Scale / Dimension: All plans should either be to scale or properly and accurately dimensioned.
 - Scaled plans should be no greater than 1" = 60'
- c) Limits of Work, Limits of Disturbance, Excavation areas, etc.
- d) New Facility features:
 - Length, size and material of the installation or segment – overhead, aboveground, and underground
 - Installation methods (aerial, directional boring, trenching, jack & bore, pneumatic hammer, plowing, etc.)
 - Utility structures with dimensions
 - Utility markers
 - Excavation/Bore pit locations with dimensions and type of expected shoring
 - Offsets from roadway features should be included (i.e. offsets of new facilities, bore pits, etc. from the edge of pavement or back of curb, the right of way line, other relevant roadway features).
- e) Roadway features (existing or proposed):
 - Edge of pavement and/or back of curb, with roadway width
 - Sidewalk and/or multi-use path, with width
 - Right of way line and/or control of access line, with right of way width
 - Storm drainage (e.g. cross drains, longitudinal drains, catch basins, junction boxes and drop inlets, culverts, etc.), with diameters.
 - Ditch line and/or toe of fill
 - Bridges and components, including the substructure, if the encroaching utility is proposed in proximity.
- f) Existing at-grade and above-ground features and utilities shall be shown on plans accordingly:

This includes, but is not limited to, trees, significant landscaping, retaining walls, sidewalks, driveways, curbing, multi-use paths, streetlights, utility poles, drainage features, hydrants, valves, manholes, handholes, cabinets, etc.

 - Utility records /GIS data is a minimum requirement for low impact installations such as directional drilling or minor excavations in low traffic and utility corridors, such as local roads where existing utilities are minimal.
 - Field verified survey information is required for projects with significant construction activity or large excavation/trenching footprints or where a high-volume of traffic or a full range of utilities exists, typically on arterial and collector roadways, and in high commercial activity zones; or where the presence of existing utilities and aboveground utilities will prohibit the proposed facility from being installed in accordance with alignment preferences indicated in City of Wilmington Technical Standards and Standard Provisions.

10) For underground utility mapping efforts, designers shall provide Subsurface Utility Engineering (SUE) techniques appropriate to the need. SUE quality levels are described below:

- SUE Level D – basic information from utility records, GIS may be used.
- SUE Level C – includes adding field verified survey information with utility maps/GIS records.
- SUE Level B - includes surface geophysical techniques (electronic locators, etc.) to determine horizontal positions of ex. utilities.
- SUE Level A – provides the highest level of accuracy and condition assessments through non-destructive (e.g. excavation, potholing) physical exposure of underground utilities.

11) Existing underground utilities shall be located and shown on plans accordingly

- a) At a minimum, utility records /GIS data (SUE Level D) shall be used for low impact installations, including directional drilling, in low traffic areas and minor utility corridors, such as local roads where existing utilities are minimal and do not present a conflict.
- b) Utility records/GIS data aided by field survey verification (SUE Level C) shall be used for projects with more significant construction activity or large excavation/trenching footprints or where a high-volume of traffic or a full range of utilities exists, typically on arterial and collector roadways, and in high commercial activity zones.
- c) Additional technology and location efforts (SUE Level B and SUE Level A methods) may be needed in areas of concern or highly congested areas or where existing utility structure conflicts are known, or at the discretion of the City of Wilmington where identifying existing utility locations will aide in the safeguard and proper review of the proposed utility installation.
- d) **Plan sheets shall indicate the SUE level of information used to create utility drawings.**

12) General Profile View

A profile view is required when crossing a roadway or other areas of concern. At a minimum, standard details should be included to show how roadways and features will be crossed. The following aspects should be included for all profile views:

- Roadway and Right of Way limits
- Minimum vertical dimensions
- Excavation/Bore pit locations
- Existing/proposed utility elevations, sizes and materials; to help identify potential utility conflicts
- Grade and/or cover on proposed utilities
- Scale of profile view
- Rim and invert elevations for proposed utility structures
- 1:1 slope from the edge of pavement
- Maximum bore diameter