

# UbO PLAN SHEET DEVELOPMENT INSTRUCTIONS

With many different entities producing Utilities by Others (UbO) plans, the following instructions were developed in order to assist these entities in creating a set of UbO plans that are uniform in appearance and style. The following paragraphs describe general guidelines to be used in developing UbO plan sheets.

When creating the UbO plan sheets, the latest NCDOT Utilities Workspace should be downloaded. This workspace contains menus, line styles, cells, text styles, design scripts, plotting styles and help menus. Do not change any line styles. The NCDOT Utilities Workspace can be found at: <https://connect.ncdot.gov/resources/CADD/Pages/default.aspx>. This opens the For CADD Consultants page.

Micro-Station levels that should be included on all UbO sheets where applicable are:

1. Slope Stakes
2. Buildings
3. Wetlands
4. Wetland Boundaries
5. Detours
6. ROW
7. Parcel Numbers With Owner's Name
8. Drainage
9. Alignment Stations
10. Vegetation
11. L and Y Stationing Marks
12. Permanent Utility Easements (PUEs)
13. North Direction Arrows
14. Begin and End Of TIP
15. Match Lines
16. Stream Flow Arrows
17. Names of Streams
18. Buffer Zones If Applicable
19. Contaminated Areas If Applicable

Reference in the required files in the uoput file in order to show the levels that are needed. These required reference files are:

1. RDY\_DSN
2. FS
3. RDY\_ROW
4. RDY\_SS

5. DRN
6. NEU\_WET

Design the proposed utility lines in the uopot file. Then create the plan sheet files and reference the uopot and any other required files into the uopsh file(s).

Two items that are not shown in the UbO plans are the Symbology sheet and the Note sheet. Notes should be placed inside individual sheets where needed.

Some rules that should be followed when creating UbO sheets are listed in the following sentences.

1. Past tense should be used in all labels related to utility notes that describe a utility that has already been constructed prior to the NCDOT Roadway Contractor or the Contactor's subcontractors arriving at the construction site to do their work.
2. Use the word "Abandoned" to designate all utility lines that are abandoned. For utility lines that are already abandoned, place a label on the utility line saying "Abandoned" or place a note on the plans saying "Abandoned" with an arrow pointing to the specific utility line.
3. If a utility line is to be abandoned during the project, make a label with an arrow pointing to the abandoned utility line and place the words in the label saying "To Be Abandoned" . For these utility lines to be abandoned, put in the UbO Special Provisions when a specific utility owner will abandon their line during the roadway construction contract.
5. For review of UbO plans, use the correct layer and style for the text that corresponds to a specific utility. For example, use yellow text to describe a gas line, blue text to describe a water main, green text to describe a sewer main, orange text to describe a telephone line, red text to describe a power line, and red text to describe a power pole to be removed. All of these are taken care of when the NCDOT Utilities Workspace is used and the correct level is turned on in the level toolbar. The final UbO plans will be plotted in black.
6. Boxes around the text are shown in black.
7. Leader lines should be in black.
8. All leader lines should touch the utility line they are designating.
9. Use lines styles from the NCDOT workspace to complete the UbO plans.
10. Use a communication line style for all proposed phone, fiber optic, and cable TV lines.

11. Multiuse poles should have tic marks rotated so as not to be obscured by the overhead lines.
12. Connect all proposed overhead power or communications lines to the outside of the proposed or existing poles.
13. Benchmarks and baselines should be taken off of the plans.
14. Only plan sheets with utility relocation work to be done on them are to be included in the UbO package. These sheets are depicted and numbered on the UBO title sheet.
15. Do not leave NCDOT Hydraulic or Roadway Detail blocks showing on the UbO plan sheet. These details include Ditch Details and Curve Data. When hiding these details, make sure all required levels are still visible in the main UO plans.
16. Do not label or identify any existing poles that are to remain.
17. No scale bar should be shown on the plan sheets.
18. If only one owner of a specific type of utility is shown on the plans, then the utility owner's name does not have to be displayed with an arrow pointing to their utility line.
19. If there are multiple owners of a particular type of utility, have the specific owners' names clearly labeled representing the owner of each line.
20. Text to describe a utility line should be placed near the sheet border in order to avoid cluttering near the highway and utility design as applicable.
21. The north arrow placed on the UbO plan sheets should be referenced or copied from the Roadway plan sheet.
22. When creating 50 to 1 scale plans, text should be 7.5 in height and 7.5 in width with a weight of 5 using a 71 font for text that is boxed on the plans.
23. The weight of the box around the label text should be 3.
24. Enter the Roadway sheet number that corresponds to the correct UbO plan sheet, in the note of the plan sheet title block that says "This Sheet Corresponds to RDY \_".
25. For temporary overhead power line relocations, use the temporary overhead power line style to designate the temporary overhead power lines. Connect these to the appropriate poles. Label the temporary power lines, temporary poles and temporary guy wires.

26. On each sheet, copy the matchlines and corresponding text from the respective Roadway plans and change the sheet numbers.

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