

Data Transfer Recommendations for Utilities by Others Designers

By NCDOT UTILITIES / CADD SERVICES

May 2025

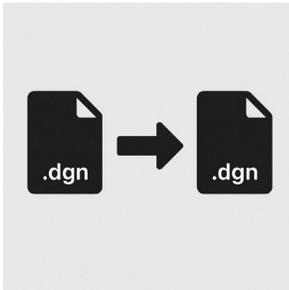
NCDOT design plans, including Utility Construction (UC) plans for work to be included in highway contracts, are designed using Bentley OpenRoads Designer (ORD) or Bentley MicroStation. Utility relocation work that is not included in highway contracts is considered Utilities by Others (UO). The Department understands that utility companies who prepare relocation designs for UO work may not have access to Bentley products. The NCDOT Utilities Unit and CADD Integration Team have developed recommendations for how to incorporate Bentley design data into non-Bentley CADD platforms, herein referred to as data transfer.

Means and methods for data transfer expressed in this recommendation are not “gospel” and may or may not be re-creatable depending on many variables. NCDOT requirements prevent NCDOT user file conversion. CADD Integration has instructed NCDOT Utilities personnel to refrain from file conversion at this time so data transfer methods must operate within these guidelines. The NCDOT Utilities Unit intends to continue cross-platform exploration.

The recommendations described are based on testing the following platforms:

- OpenRoads Designer versions 10.12 & 2023
- MicroStation SS4
- AutoCAD 2025

OpenRoads Designer(.dgn) to MicroStation(.dgn)

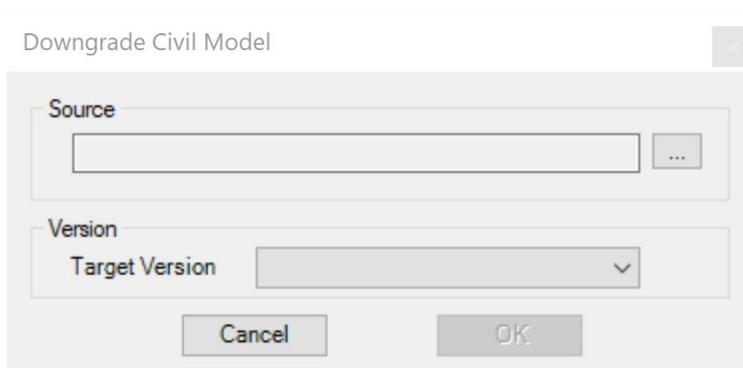


Civil Data Removal

OpenRoads Designer (ORD) operates on a Civil Data schema. Civil Data is contained within all files native to ORD and is needed to produce 3D models. Civil Data should be removed by the ORD user if one is experiencing problems opening ORD files in MicroStation.

Steps to remove Civil Data

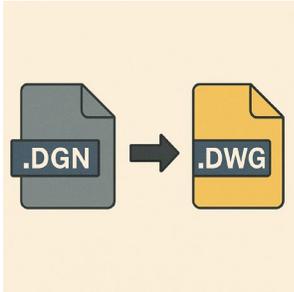
1. Manually Open ORD and select the file of your choice.
2. Select file > Civil Tools > Civil File Manager
3. Select Action > Downgrade Civil Model > Select a singular source file or folder > Remove Civil Model under Target Version



4. Now select a save destination (this cannot be placed within the same folder as existing un-modified file. This process will not remove the current file, rather it produces a duplicate file in a separate location).

5. End user(s) must verify file integrity.

OpenRoads Designer(.dgn) to AutoCAD(.dwg)

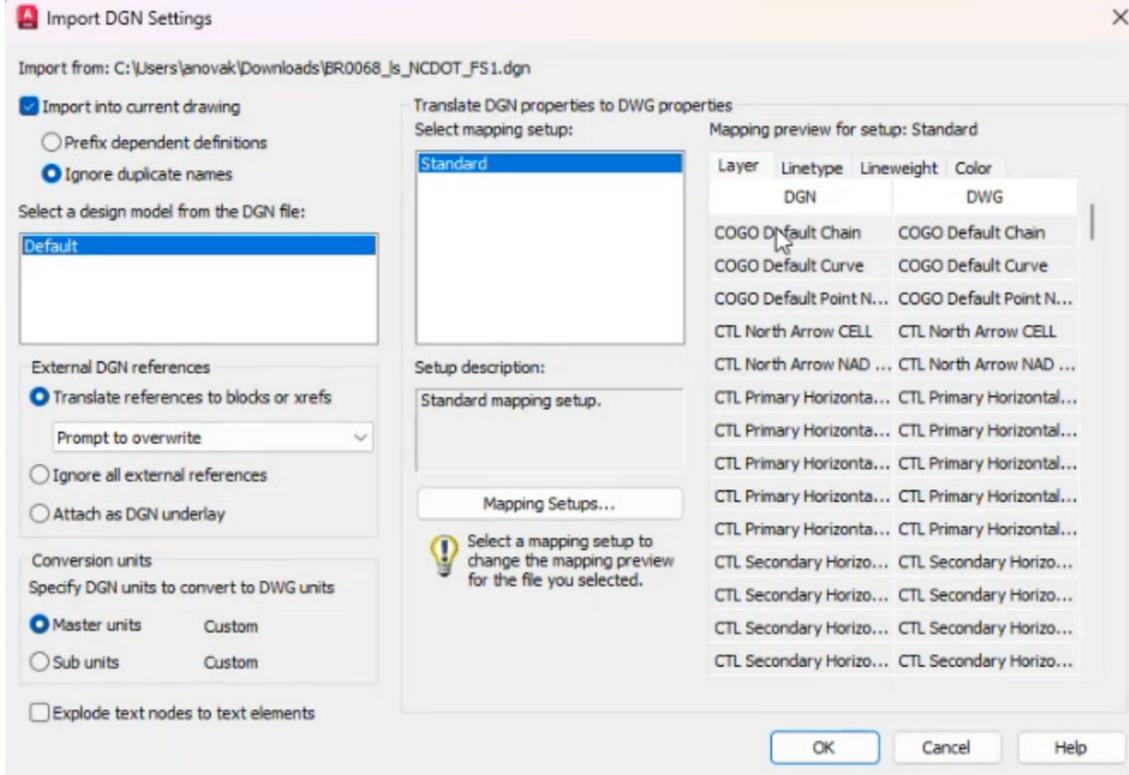


Conversion via AutoCAD

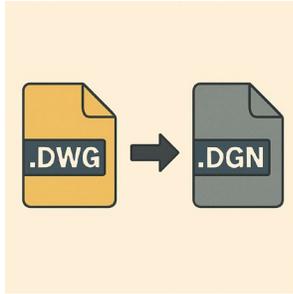
MicroStation / OpenRoads Designer files must be modified to be digested by AutoCAD. To remain within our guidelines, NCDOT requires the AutoCAD user to convert the delivered files.

Steps to convert DGN to DWG

1. Manually open AutoCAD software and open a blank file.
2. Search "DGNIMPORT" within the search bar and select the **DGNIMPORT** tool
3. Select a DGN file within the Import DGN File window
4. Select "OK" and leave settings default within the Import DGN settings window
5. End user(s) must verify file integrity.



AutoCAD(.dwg) to OpenRoads Designer(.dgn)

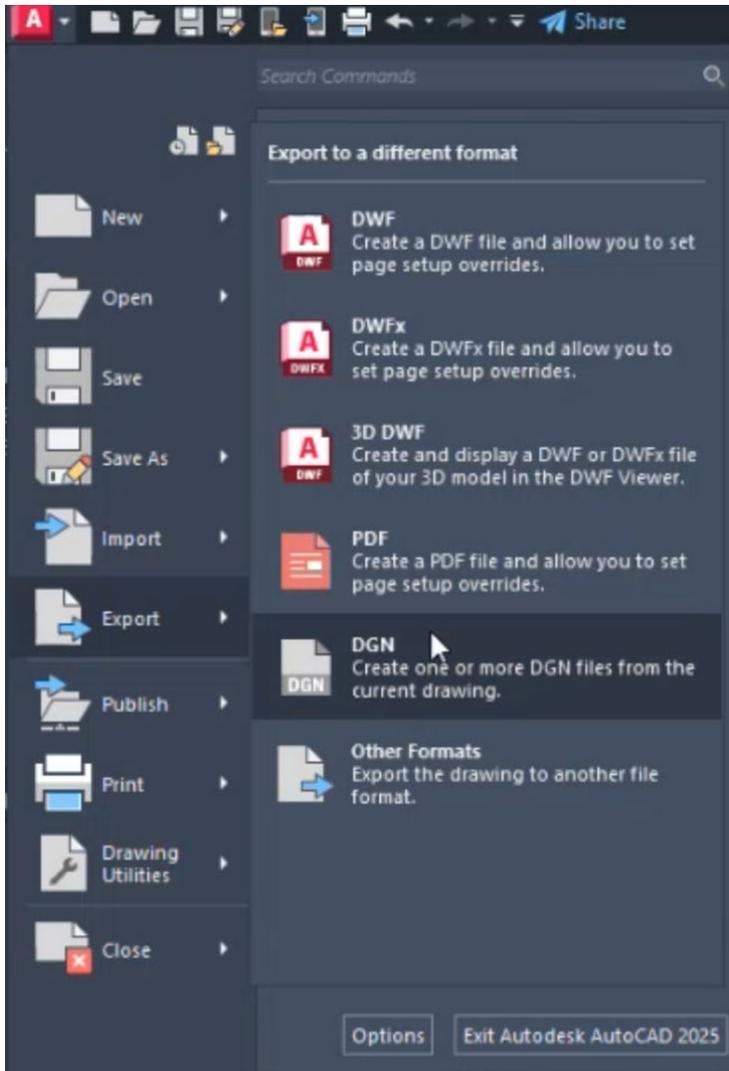


Conversion via AutoCAD

The steps below are geared toward the AutoCAD user.

Steps to convert DWG to DGN

1. Select file (AutoCAD symbol) in upper left-hand corner
2. Export > DGN
3. Save
4. End user(s) must verify file integrity.



AutoCAD 2025 was used for testing; other versions may have different workflow.