



## Quick Reference Document

# NCDOT Aggregate WorkSpace Set Up Instructions and ORD Initial Training Links

## NCDOT OpenRoads Designer (ORD) Implementation Initiative

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For questions regarding this document,  
contact Jeffrey M. Garland, PE, PMP at  
[jmgarland@ncdot.gov](mailto:jmgarland@ncdot.gov)



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## Document Purpose

The intent of this document is to provide a quick reference guide to assist NCDOT Technical Staff with (1) setting up and testing the NCDOT Aggregate WorkSpace option and (2) taking initial online ORD training modules. The training links provided in this document are not a complete list of options but rather meant to be a quick start guide.

As updated information and/or corrections are made available, I will plan on sending out revised versions of this document.

I welcome any questions regarding this document and input on how to continue to best assist the Department in moving forward with this initiative.

Thank you to Oak Thammavong and others for their assistance and guidance in preparing the included content.

Wishing everyone and their families the very best during these unprecedented times.

Thanks for all that each of you do for the Citizens of North Carolina.

Jeff

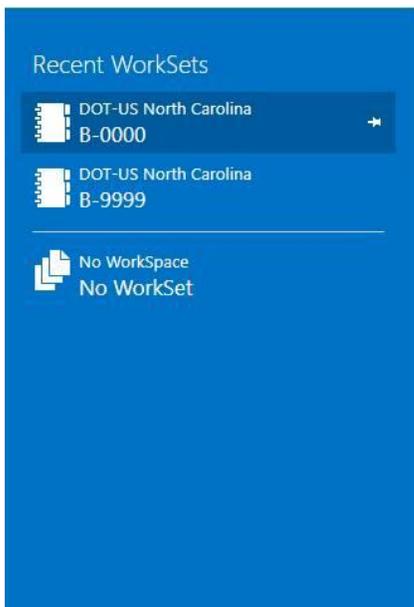
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Jeffrey M. Garland, PE, PMP  
ORD Implementation Manager  
North Carolina Department of Transportation  
919 707 6209 office  
[jmgarland@ncdot.gov](mailto:jmgarland@ncdot.gov)



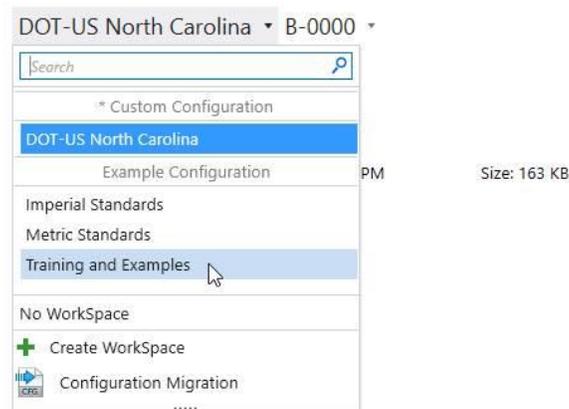
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## Background

- (1) Per coordination with Dan Ahern of Bentley as part of the on-site working session on 03/04/20, the NCDOT is testing out a recently developed **NCDOT Aggregate WorkSpace**.
  - a. For Background, see the following Bentley link from Dan Ahern's recent webinar: <https://event.on24.com/wcc/r/2293997/51440A233E47D97575267C90835C46C5>
  - b. The link provides information and reasons why NCDOT is potentially pursuing this WorkSpace configuration option including OpenBridge/OpenRoads/OpenRail integration and details about future unmanaged and managed ProjectWise WorkSpaces.
- (2) The NCDOT Aggregate WorkSpace enables users to switch between the NCDOT and Bentley's Training and Examples WorkSpaces as part of our training and testing work.
  - a. The ability to readily switch between the NCDOT and Bentley WorkSpaces will further enable and prepare the NCDOT for upcoming intermediate and advanced local specialized trainings.



## OpenRoads Designer CONNECT Edition





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## Setup

### Step 1: Tutorial Videos

In preparation for downloading the NCDOT Aggregate WorkSpace ZIP file, watch each of these short tutorial videos in the order noted below:

1. [Download WorkSpace ZIP.mp4](#)
2. [Extract WorkSpace ZIP.mp4](#)
3. [Copy Desktop Shortcut Icons.mp4](#)
4. [Create WorkSet in ProjectStore R Drive.mp4](#)
5. [Create WorkSet under WorkSpace C Drive.mp4](#)
6. [Loading Individual NCDOT Discipline.mp4](#)
7. [Loading All NCDOT Disciplines.mp4](#)
8. [Working with MyChoice.mp4](#)

### Step 2: Download NCDOT Aggregate WorkSpace

Download and install the NCDOT Aggregate WorkSpace by clicking on the link below.

[MICROSTATION\\_CONNECT\\_WORKSPACE-Beta.zip](#) (327 MB)

### Step 3: Download Roadway Design Training Worksets

Download then "Extract all" Roadway Design Training WorkSets to the root C:\ drive just like the WorkSpace ZIP.

**(NOTE: Once downloaded, don't take the training yet. This concludes setting up your environment and you will return to the Training as noted in Step 6)**

- ✚ [Training-RD\\_Civil Geometry.zip](#) (431 MB)
- ✚ [Training-RD\\_OpenRoads Designer Templates.zip](#) (5 MB)
- ✚ [Training-RD\\_Quick Start.zip](#) (129 MB)



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## Training

### Step 4: Bentley LEARNserver Training: MicroStation CONNECT Edition

Now that you have the NCDOT Aggregate WorkSpace set up, as a pre-cursor to ORD training, take the following General MicroStation CONNECT Edition Training located at the link below:

[MicroStation CONNECT Edition Basics for Civil Designers](#)

### Step 5: Bentley LEARNserver Training: OpenRoads Designer

Utilizing the Bentley Learn WorkSpace and newly deployed NCDOT Aggregate WorkSpace, take the Bentley Learn training modules noted below in the order listed.

- All of the Bentley LEARN training modules listed below are located at the following link:

[Access Training Links](#)

- You will need to scroll down through the multiple training options to select the pertinent titles.
    - Once you locate the training module, you can launch the lectures and download and the training materials.
1. QuickStart for OpenRoads Designer Geometry
  2. Creating and Editing Centerline Geometry
  3. Beyond Centerline Geometry
  4. QuickStart for OpenRoads Designer Corridor Modeling
  5. Creating and Manipulating the Corridor
  6. Template Triggers and Switches
  7. Using and Defining Superelevation
  8. Intersection Design-Horizontal and Vertical Geometry
  9. Intersection Design-3D Model Detailing
  10. Drawing Production - Creating Plan and Profile Sheets
  11. Drawing Production - Creating Cross Section Sheets
  12. Quantities and Earthwork

### Step 6: NCDOT Training: Roadway Design Modules

Utilizing the WorkSets downloaded in Step 3 above, take the training included in these downloads.



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## Updates

### Step 7: NCDOT Aggregate WorkSpace Update\_V5.01\_ 07-20-20

See the procedure below to update the current NCDOT Aggregate Workspace.

Perform the NCDOT Aggregate WorkSpace update in the following sequence.

1. Delete the entire "C:\MICROSTATION\_CONNECT\_WORKSPACE" folder.
2. Download the "MICROSTATION\_CONNECT\_WORKSPACE-Beta.zip" (video #1).
3. Unzip "MICROSTATION\_CONNECT\_WORKSPACE-Beta.zip" To the root C:\ drive (video #2).
4. Delete the old desktop icons.
5. Copy or preferably Move the new desktop icons from the WorkSpace (video #3)

#### NOTES:

- In order to quickly check your current version of the NCDOT Aggregate Workspace, right click on the zip file link and, under properties, check the Version History option.
- The new desktop icons now include active workspaces for EAU, Photogrammetry, and the Rail Division (OpenRail Designer) for testing/piloting.



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## FAQs – WorkSpaces and WorkSets

### NOTES:

- NCDOT plans to submit an official Service Request with Bentley to make the MY\_WORKSET\_LOCATION(S) variable a list not a single location which would no longer require switching between different WorkSets.
- This document provides detailed information on how the NCDOT is using WorkSets in a nonmanaged WorkSpace environment. WorkSets in a ProjectWise (Project) managed WorkSpace environment may be different.

### 1. What is a WorkSpace WorkSet?

In general, a WorkSet is the “Project” or plan set using the resources and standards of a WorkSpace.

### 2. Why is choosing a WorkSet mandatory?

When opening a Microstation CONNECT Edition/ORD DGN file and if a WorkSpace is selected or used, then a WorkSet MUST also be selected to accompany the WorkSpace. This is referred to as DGN file “branding”.

If no WorkSpace is selected during launch, then no WorkSet is automatically assigned to the DGN file. This is referred to as an “unbranded” No WorkSpace/No WorkSet or “Disassociated WorkSet” DGN file.

### 3. What is DGN file “branding”, “re-branding” and “un-branding” and how do they affect the WorkSets?

Virtually almost all Microstation CONNECT Edition/ORD DGN files created from a WorkSpace seed is assigned or associated (branded) with a WorkSpace and WorkSet (Project or plan set group). After the DGN file has been branded, there is no need to select the WorkSpace and WorkSet to launch the DGN file. Simply double-click on it.

A DGN file can be “re-branded” by selecting a different WorkSet (Project) -moving from one Project to another using the same WorkSpace- and/or a different WorkSpace and WorkSet before launch.

WorkSpace Admins may sometime need to initially load the WorkSpace resources (brand), then “unbrand” the file by keying-in the command “File DisassociateWorkSet” before exiting.



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Most WorkSpace seeds, DGN libraries (.dgnlib) and cell libraries can be unbranded or disassociated from a WorkSpace and WorkSet.

#### 4. What are the key components of a WorkSet (Project)?

In addition to the Project CADD files each WorkSet (Project) will have both a .dgnws and .cfg. For example, B-0000.dgnws and B-0000.cfg.

{WorkSet Name}.dgnws – Microstation DGN WorkSet (.dgnws) file which contain the Project properties such as Project Number, Status, and Location. The “Project” .dgnws file along with Sheet Indexing and Text Favorites are used to automatically populate the sheet title block information, i.e. Project Number and Sheet Number.

{WorkSet Name}.cfg – A configuration text file pointing to the WorkSet (Project) CADD DGN files/folders location and Project specific Standards (not available as part of the overall WorkSpace, e.g. levels, cell libraries and Project specific template library (.itl).

#### 5. What are some of the types of WorkSets found in the NCDOT ORD WorkSpace?

**NOTE NOT ALL WORKSETS ARE “PROJECT” RELATED.** This is a common misconception.

##### Type 1 - Project (Number) WorkSets stored on a Network Server

- Type 1A (existing folder structures) - STIP Project WorkSets stored in ProjectStore (R:\ drive)
- Type 1B (new folder structure) STIP Project WorkSets store on any network server, e.g. S:\ drive, P:/Projects/NCDOT/, //MyNetwork/Projects/MyDOT/{MyProjects}, etc.

##### Type 2 - Project (Number) WorkSets stored on the local “C:\Projects\NCDOT” folder

Delivered with the NCDOT example WorkSpace is the WorkSet “C:\Projects\NCDOT\B-0000”.

##### Type 3 - Unit Specific Training WorkSets (Non-project related)

Roadway Design has three training WorkSets:

- Training-RD Civil Geometry
- Training-RD OpenRoads Designer Templates
- Training-RD Quick Start

The WorkSet Training\*.dgnws and Training\*.cfg files reside under:

“C:\MICROSTATION\_CONNECT\_WORKSPACE\Configuration\DepartmentS tandards\Disciplines\NCDOT\_Roadway\WorkSets”.



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The Training\*.cfg's point to the course datasets and CADD DGN files under:  
"C:\NCDOT Training\Roadway".

### Type 4 - Unit Specific WorkSpace Admin WorkSets (Non-project related)

For example, "C:\MICROSTATION\_CONNECT\_WORKSPACE\Configuration\DepartmentStandards\Disciplines\NCDOT\_Roadway\WorkSets\" contains:

- Admin-RD.dgnws
- Admin-RD.cfg

Used by each NCDOT Unit CADD Admin to update, fix and maintain their WorkSpaces. This is equivalent to in the past selecting a WorkSpace (to load resources) and selecting "NoWorkSet". THIS IS STILL A BRANDED DGN FILE WITH A WORKSET CALLED "NoWorkSet". See "No WorkSpace/No WorkSet" explanation above if no WorkSpace is selected.

### Type 5 - Bentley default "catch-all" Location of any of the WorkSet types above C:\MICROSTATION\_CONNECT\_WORKSPACE\Configuration\WorkSpaces\DOT-US North Carolina\WorkSets

6. What are some of the main disadvantages of storing the WorkSets on the local C:\ drive versus on a network server?
- WorkSets stored on the local C:\ drive are not shared with others, such as Project data, Print/iPlot Organizer and sheet Indexing.
  - No Windows domain active directory file/folder read/write permission settings. • Inconsistent WorkSet name for the same Project, i.e. BR-2000, BR\_2000, BR-2000-Oak, BR2000, etc.
  - Not backed-up.

While storing WorkSets and Project CADD files is permitted, it should be used as a temporary location before moving them to ProjectStore (R:\ drive) or ProjectWise when completed.



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7. If I have various WorkSets in various locations and they are all connected, how do I switch between them?

Use the "NCDOT\_WorkSets.cfg" on your desktop. Edit the variable "NCDOT\_USE\_LOCAL\_WORKSETS" and set the value to:

- "L0" to go to the NCDOT STIP Project Type 1 WorkSets on a network server, e.g. R:\ and S:\ drive.
- "L1" to go to the local NCDOT STIP Project Type 2 Worksets stored on "C:\Projects\NCDOT" folder.
- "L2" to go to local NCDOT Unit training Type 3 and workspace admin Type 4 WorkSets. This the NCDOT delivered default configuration.
- "L3" to go to the local or server Type 5 WorkSets stored under the WorkSpaces\WorkSets folder (Bentley Default).



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## Documentation Notes

### For future planned upgrades and features to the NCDOT Aggregate Workspace

V1. Initial Release. (4/22/20)

V2. Added OpenBridge configurations and the three Roadway Design Training WorkSets and training material on the local C:\ drive (C:\NCDOT Training\Roadway). (4/26 Sunday)

V3. Expanded a comprehensive WorkSet Configuration for template specific ITL (R & C drives), e.g. NCDOT\_RDY\_[TIP #].itl. (4/26/20)

V4. WorkSets (TIP projects) store on shared server other than R:\ drive, C:\ drive, and local training. (4/29/20).

V5.01 Update and Upgrade NCDOT design, drawing, and sheet seeds, standardize sheet borders for ORD 2020R2. (7/20/20)

V6. Guardrail and MASH GREUs 2D and 3D custom line styles. Upgrade Roadway Templates (planned)

V7. Include NCDOT\_Rail WorkSpace (possibly) and XS Sheet Annotation 2.0. (planned)

V8. Production pen tables and plotting procedure.

V9. Right of Way plans and monuments, estimates. Create VBA for Parcel Index Sheet and quick display of NCDOT Units/Disciplines loaded with the WorkSpace and WorkSet )brand) in the active file.

--- Upgrade WorkSpace status from Beta to Pre-production. ---

V10. Hearing Map procedure and pen tables.