WorkSpaces & WorkSets

Note this document provides detailed information on how the NCDOT is using WorkSpaces and WorkSets in a non-managed WorkSpace environment. WorkSets in a ProjectWise (Project) managed WorkSpace environment may be different.

What is a WorkSpace?

In general, a WorkSpace is a place where the DOTs store their "Department Standards", resources, libraries, and custom applications such levels, cells, line styles, feature definitions, macros (BAS/VBA/MDL), pen tables/design scripts, color table/book, unit definitions (miles/feet English vs. kilometers/meters Metric), Design Standards, seed files, etc. A WorkSpace is the "parent" of a *WorkSet*.

What is a WorkSpace WorkSet?

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

Can a Workset (Project) use a different or another DOT WorkSpace?

Although it is possible by "re-branding" an individual file (see "DGN file branding" explanation below), it is unlikely and undesirable for the entire Project since a WorkSet (Project) is the "child" of the WorkSpace. The list of applicable WorkSets (Projects) is available only after the selection of a WorkSpace.

What is the main difference between the first generation NCDOT ORD "Alpha" and the second generation "Beta" or "Aggregate" Workspaces?

The 1st generation NCDOT ORD WorkSpace (2017) has multiple "WorkSpaces" for each NCDOT Unit (NCDOT_Roadway, NCDOT_Hydraulics, NCDOT_Geotechnical, etc.). It has a similar structure as the NCDOT V8 workspaces.

The 2nd generation NCDOT ORD WorkSpace (2020) has only one WorkSpace, "DOT-US North Carolina". All NCDOT Units former "workspaces" were moved to the Disciplines (Roles) WorkSpace folder and they can still be maintained by the individual NCDOT Units. It was created from the help of Bentley and feedbacks from our Divisions and PEFs. It was also designed to be compatible and streamline with other DOT WorkSpaces.

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. The NCDOT "Null" V8 WorkSpace served the same purpose.

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- 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.

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

<u>What are the key components of a WorkSet (Project)?</u>

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).

<u>What are some of the types of WorkSets found in the NCDOT ORD WorkSpace?</u>

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 files and folder structure) - STIP Project WorkSets stored in ProjectStore (R:\ drive) which already have an existing files and folder structure, e.g. Projects started in V8.
- Type 1B (new files and 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\Department-Standards\Disciplines\NCDOT_Roadway\WorkSets".

   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\Department-Standards\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 WORKSPACE AND 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 since the WorkSpace is the parent of the WorkSet. Note these WorkSets can be stored on the local C:\ drive or on the sever depending on where the WorkSpace is stored.

> C:\MICROSTATION_CONNECT_WORKSPACE\Configuration\WorkSpaces\DOT-US North Carolina\WorkSets

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 other Project team and squad members, such as Project data and status, Project Print/iPlot Organizer Sets 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 on the local C:\ drive is permitted, it should be used as a temporary location before moving them to ProjectStore (R:\ drive) or ProjectWise.

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).

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.

How are new WorkSets (Projects) created for the different types mentioned above?

New WorkSets can be created from the WorkSet selection dropdown list via the desktop icons. Each WorkSet (Project) should have the STIP Project number as the WorkSet Name, e.g. BR-2020. In addition, three other fields must be redefined from their default locations:

- Root Folder – location where the WorkSet (Project) .dgnws and .cfg files are stored.
- Design Files – default location where the WorkSet (Project) CADD files are stored.
- Standard Files – location where the WorkSet\Standards files and folders are stored.

Note the WorkSet\Standards subfolders (Cell, Data, Seed, Symb, Macros, Dgnlib, etc.) are automatically generated by the WorkSpace configuration file (.cfg).

Type 1A - existing files and folders established previously with V8 in ProjectStore (R:\ drive).

- Root Folder: R:\Common
- Design Files: R:\Common
- Standard Files: R:\Common\Standards

Type 1B - new files and folders on a network server (S:\ drive example).

- Root Folder: S:\Projects\NCDOT\(WorkSet Name}
- Design Files: S:\Projects\NCDOT\(WorkSet Name}
- Standard Files: S:\Projects\NCDOT\(WorkSet Name}

Type 2 - new files and folders on local "C:\Projects\NCDOT" folder.

- Root Folder: C:\Projects\NCDOT\(WorkSet Name}
- Design Files: C:\Projects\NCDOT\(WorkSet Name}
- Standard Files: C:\Projects\NCDOT\(WorkSet Name}

Type 3 - new files and folders for NCDOT Unit Training Worksets.

- Root Folder: C:\MICROSTATION_CONNECT_WORKSPACE\Configuration\Department-Standards\Disciplines\NCDOT_{Unit}\WorkSets
- Design Files: C:\NCDOT Training\{NCDOT Unit}\{WorkSet Name}
- Standard Files: C:\NCDOT Training\{NCDOT Unit}\{WorkSet Name}\Standards

Type 4 - existing files and folders for NCDOT Unit WorkSpace Admin WorkSets.

- Root Folder: C:\MICROSTATION_CONNECT_WORKSPACE\Configuration\Department-Standards\Disciplines\NCDOT_{Unit}\WorkSets

- Design Files: C:\MICROSTATION_CONNECT_WORKSPACE\Configuration\Department-Standards\Disciplines\NCDOT_{Unit}
- Standard Files: C:\MICROSTATION_CONNECT_WORKSPACE\Configuration\Department-Standards\Disciplines\NCDOT_(Unit}\Standards

Type 5 - new or existing files and folders in the WorkSpace\WorkSets folder (Bentley default).

- Root Folder: C:\MICROSTATION_CONNECT_WORKSPACE\Configuration\WorkSpaces\DOT-US North Carolina\WorkSets
- Design Files: C:\MICROSTATION_CONNECT_WORKSPACE\Configuration\WorkSpaces\DOT-US North Carolina
- Standard Files: C:\MICROSTATION_CONNECT_WORKSPACE\Configuration\WorkSpaces\DOT-US North Carolina\Standards

In some cases, WorkSet locations for existing files and folders can easily be edited at the bottom of the WorkSet.cfg file.

Can the "UpdateConnectWs" App be used to update the NCDOT Aggregate WorkSpace?

Not currently. Use the ZIP file as a temporary method until the UpdateConnectWs app can be fixed.

Can the Design File Generator (DFG) be used to create new ORD files?

No. The DFG is for V8 SS2/SS4 file creation because of the WorkSpace seeds.

How are new TIP Project (WorkSet) files created in ORD and the naming convention?

After selecting the WorkSpace and Workset (brand), click on "New" and verify the correct 2D or 3D design seed.

Naming Convention (same as V8): TIP Number_NCDOT Unit_Type_Optional Description.dgn
Example: BR-2020_RDY_ALG_Y11.dgn

ProjectWise (managed WorkSpace – File Creation Wizard) may put dashes instead of underscores in the file name, e.g. BR-2020-RDY-ALG-Y11.dgn

Is there a NCDOT 3D Design Seed and what are the recommendations for using 2D versus 3D in ORD?

Yes. A complete list of WorkSpace design seeds includes:

- **OBM-seed3d-English.dgn** – Used by OpenBridge Modeler/Designer spawn from Bentley delivered WorkSpace
- **Seed2D - English Design.dgn** – Used by OpenRoads Designer
- **Seed2D - English Rail Design.dgn** – Used by OpenRail Designer spawn from Bentley delivered WorkSpace.

- **Seed2D - SMU OBM DESIGN.dgn** – Used by OpenBridge Modeler/Designer created by the Structures Management Unit (SMU).
- **Seed3D - English Design.dgn** – Used by OpenRoads Designer.

Most ORD files can use the 2D design seed because it will automatically create and reference a "3D-Default" model when a vertical component is introduced, such as adding a profile to a chain or making a terrain active.

Files created for the ORD Survey Workflow or containing terrain models may need to be created using a 3D design seed. In addition, WorkSpace files such 3D cell libraries, 3D custom line style libraries, and feature definition libraries may also use the 3D design seed.

<u>What are the MicroStation Model types used to create the corresponding WorkSpace seed files?</u>

- 2D/3D Design
- 2D Drawing
- 2D Sheet

<u>Are there any other specialized seed files in the WorkSpace?</u>

- Named Boundary Drawing (.dgnlib)
- Drawing and Sheet Definition (.dgn)
- SUDA (.dgnlib)
- User Preferences (.xml)

<u>Why doesn't the Structures-OBM and OpenRail desktop icons work?</u>

OpenBridge Modeler/Designer and/or OpenRail Designer may not have been installed. This is common since most users only have OpenRoads Designer (ORD) installed. If you have the need or want to test OpenBridge or OpenRall please contact CADD Services.