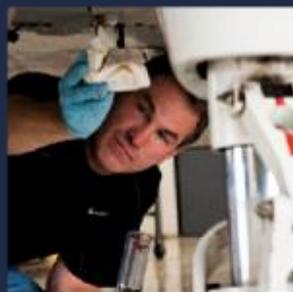


ODOT CADD USERS GROUP • MARCH 6, 2019



OHIO DEPARTMENT OF
TRANSPORTATION

WELCOME

Mark McCloud, CADD Services Manager

AGENDA

- Electronic Design Deliverables
- OpenRoads Designer Transition Plan
- Configuring OHDOT Workspace for CONNECT
- What to Expect in OpenRoads Designer
- Reducing Estimated Construction Costs by 30% Using OpenRoads Tools
- Autodesk Ohio State Kit Update
- Item Master Spec Year Changes to GENSUM
- Diving into ProjectWise at ODOT
- Q & A Panel

CPD CERTIFICATES

- Must be present to receive CPD certificate
- Register at the touch screen kiosk
- Certificates will be sent via email

CADD SERVICES

- Located in ODOT Central Office
- Division of Engineering
- Office of CADD and Mapping Services
- We research, develop, implement and maintain the engineering CADD standards for the Ohio Department of Transportation.

CADD SERVICES

- Our Web Site
 - http://www.dot.state.oh.us/Divisions/Engineering/CaddMapping/CADD_Services/Pages/default.aspx
- Bentley Communities
 - https://communities.bentley.com/communities/user_communities/ohio_dot_consultants/
- Support Request
 - https://odot.formstack.com/forms/cadd_servicerequest
- YouTube
 - <https://www.youtube.com/channel/UCo-lOt5L4GHSDbSkKWPeWAw>

ELECTRONIC DESIGN DELIVERABLES

Mark McCloud, CADD Services Manager

PREVIOUS STANDARDS AND PRACTICES

- Appendix E of the CADD standards manual
 - Electronic Submission Checklist
- L & D Volume 3 - Section 1503
 - CADD File Requirements for Design and Construction
- Plan Package Submittal Process
 - Does not include requirements for CADD files
 - No check of what CADD files are submitted
 - CADD files not seen as contract documents
 - For reference only

PREVIOUS STANDARDS AND PRACTICES

- Project Letting and Awarding
 - Contractors look for CADD files to assist in the bidding process
 - Sometimes can prevent Prebid questions
 - Contractors usually ask for the CADD files on awarded projects
 - CADD files are needed for Storm Water Population Prevention Plans(SWPPP) which is an EPA requirement

PREVIOUS STANDARDS AND PRACTICES

- Offices involved in tracking down CADD files
 - Districts
 - Consultants
 - Central Office Construction
 - Central Office Contracts
 - Central Office CADD Services

NEW STANDARDS AND PRACTICES

- Getting ready for 3D models
 - FHWA Every Day Count Initiative
 - Need to start getting digital files on current projects
- Electronic Design Deliverables Document
 - Document better defining what electronic files are required for ODOT project submission
 - Draft was available for review and comment in late 2017
 - Comments/questions collected and addressed (See [FAQ](#))
 - Formally released April 30th, 2018
 - [Guidelines for Electronic Design Deliverables](#)

NEW STANDARDS AND PRACTICES

- Electronic Design Deliverables Document
 - Chapter 1 - General Information
 - Chapter 2 - CADD Files
 - Chapter 3 - Alignment Files
 - Chapter 4 - Surface Files
 - Chapter 5 - Engineering Data
 - Chapter 6 - Survey Files
 - Chapter 7 - Plan Set
 - Chapter 8 - 3D Models (to be updated)
 - Chapter 9 - Submission of Electronic Files
 - Chapter 10 - Filing Projects to Central Office (ODOT use only)

NEW STANDARDS AND PRACTICES

1503 CADD File Requirements for Design and Construction

1503.1 CADD Software Requirements

All projects requiring submittal of CADD files shall be developed using MicroStation and GEOPAK, or Autodesk, in accordance with the [CADD Engineering Standards Manual](#) and the project's scope of services. Although ODOT will accept CADD files developed using Autodesk software, no support, standards, documentation, or guidance of any kind with respect to design and delivery using Autodesk tools will be provided. For more information, see the [ODOT CADD Engineering Standards Manual](#), Section 101.

1503.2 CADD File Requirements

Unlike electronic image files (i.e. PDF images) that are part of the contract documents, CADD files (i.e., basemap files) provided to contractors are for reference purposes only. In the event that there is a conflict between the CADD files and the bidding documents, the bidding documents shall take precedence.

CADD files, and a Project Index File, shall be provided in accordance with the requirements for Electronic Submittals described in the [ODOT Guidelines for Electronic Design Deliverables](#), located on the [Office of CADD and Mapping Services](#) website, and included in the [Final Plan Package submittal](#).

NEW STANDARDS AND PRACTICES

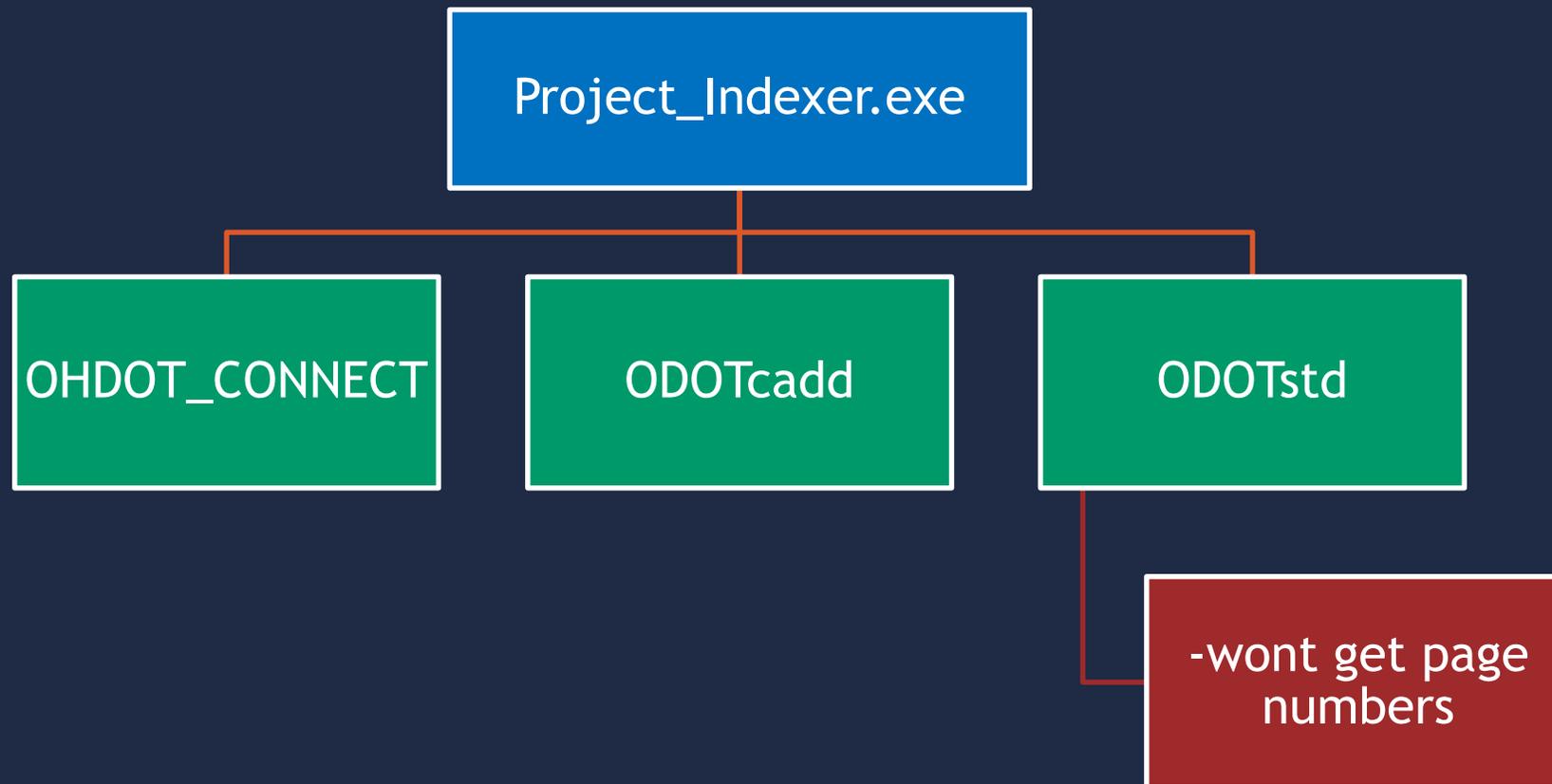
- Electronic Design Deliverables Document
 - Future updates will address any changes with ProjectWise Implementation
- Appendix E of the CADD standards manual has been removed
- Plan Package Submission Process
 - Includes requirements for CADD files
 - Automated check process for CADD files with email if not in compliance
- CADD files required for projects filing on or after July 30th, 2018

PROJECT INDEXER

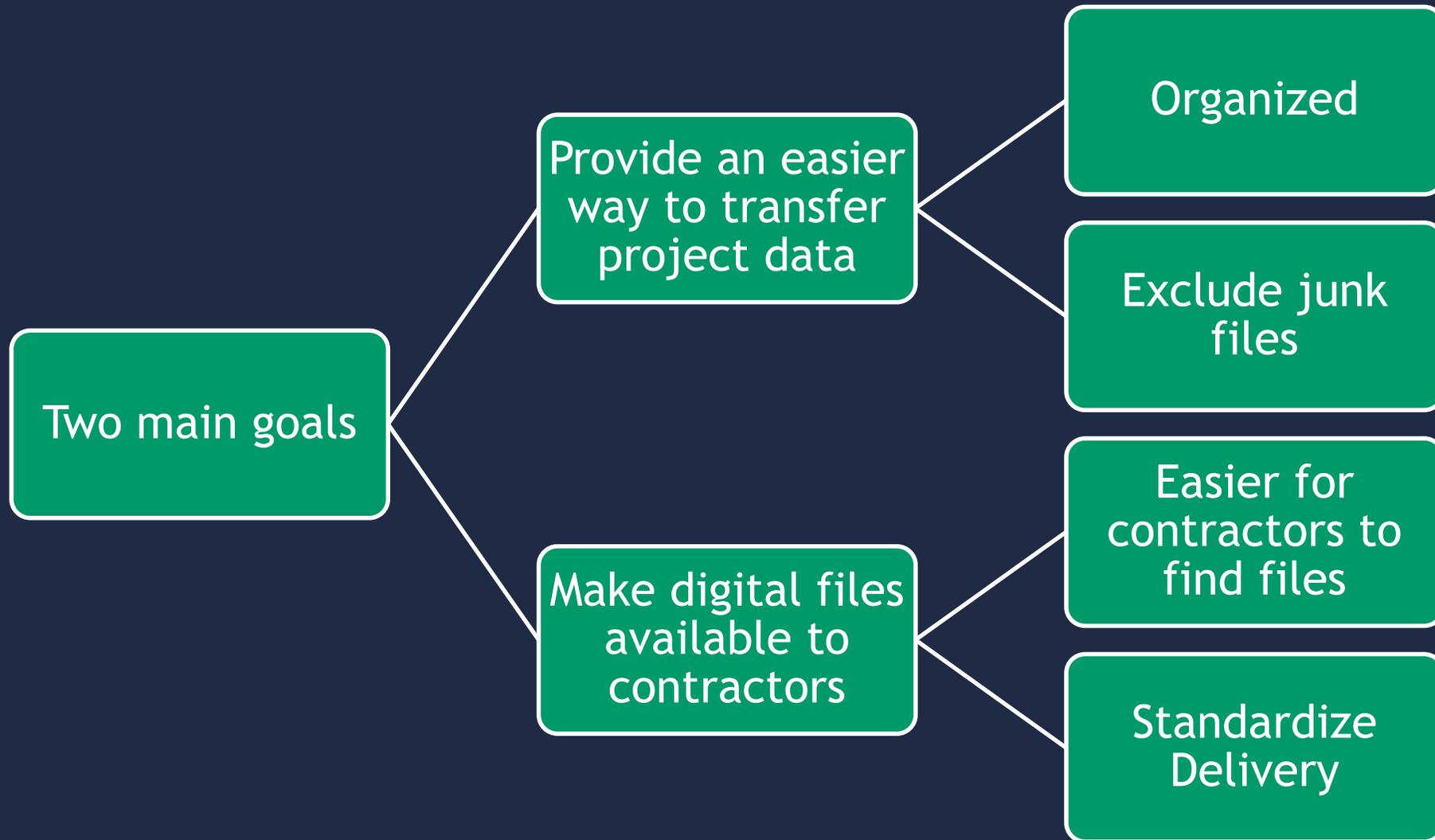
- Project Indexer Application
 - Used to organize and build the .ZIP file for project delivery
- YouTube Videos
 - Tutorials for using the Project Indexer application
 - <https://www.youtube.com/channel/UCo-lOt5L4GHSDbSkKWPeWAw/feed>

PROJECT INDEXER

Works with all versions of our CADD standards!!



PROJECT INDEXER



PROJECT DELIVERY

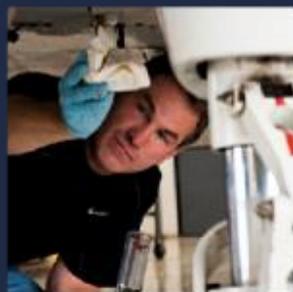
- Automated emailing system in place to ensure compliance
- Project manager will receive an email if files are missing
- Filtering setup for specific project types
 - No need for digital files (Bikeway, Mowing, Painting)
- July 30th, 2018 to present date
 - 189 projects with a 96% compliance

QUESTIONS



Last updated 3/25/2019

CADD MEETING • MARCH 6, 2019



OHIO DEPARTMENT OF
TRANSPORTATION

OPENROADS DESIGNER TRANSITION PLAN

Rachel Lewis, P.E.
Administrator, CADD & Mapping Services

COMPONENTS OF THE PLAN

- Transition Summary/Plan
- Training Plan
- Communication Plan
- Waiver Process
- FAQ documentation

TRANSITION TIMELINE

- **January - June 2019**
 - Begin Pilot Projects
 - Train ODOT Surveyors & Begin using ORD for Survey for projects beginning after Jan. 1, 2020
 - Implement waiver process
- **July 1, 2019**
 - ORD training for ODOT engineers begins
 - Bentley discontinues SS1/SS2/Geopak
 - Bentley begins phase out of SS4 & Geopak

TRANSITION TIMELINE (CONTINUED)

○ January 2020

- All new projects in ORD
- All projects filing after Dec. 31, 2021 either brought forward to CONNECT/ORD or waiver needs filed & approved
- SS1/SS2 (V8istd/odotstd) discontinued & unavailable (V8istd/odotstd) - except where waivers were granted
- Note: SS4/Geopak (odotcadd) still available for projects filing before Dec. 31, 2021 and projects waived.

○ July 2020

- All waivers should be submitted by this date for proper resource planning. Call CADD office for waivers after this date.

TRANSITION TIMELINE (CONTINUED)

- January 2021
 - Bentley discontinues support for all non-CONNECT products (includes SS4/Geopak).
- January 2022
 - SS4/Geopak will be unavailable, except for users working on projects granted a waiver.
- January 2023
 - Department fully implemented.
 - Begin transition to 3D models.

TRAINING PLAN

- Surveyors are being trained April - May 2019
- Engineers will be trained July - December 2019
- Districts will have designated trainers and we will have a training support program for them
- Videos
- On-line/Skype training
- Bentley training tools.

COMMUNICATION PLAN

- **Goals:**
 - Keep stakeholders informed of project timeline and changes.
 - Provide opportunities for structured involvement and feedback from stakeholders.
 - Provide clear insight into any decisions needed or roadblocks.
 - Allow path for stakeholder acceptance.

COMMUNICATION PLAN

- Types & Frequency

- Consultant CADD Meetings - 4/year

- Emails

- Notifications in ORD

- Website - dedicated page for ORD Transition & Updates

- http://www.dot.state.oh.us/Divisions/Engineering/CaddMapping/CADD_Services/ORD-Transition/Pages/default.aspx

- Presentations - as conferences become available

WAIVER PROCESS

- Open April 2019 - July 2020
- Please plan ahead!
- This process is to help us help you.
- Waivers should be submitted by the Districts.

WORKSPACE AND STANDARDS

- Workspace & Standards will be taken out of beta/draft and be available April 1, 2019
- New CADD standards manual will be released July 1, 2019.

PILOT PROJECTS

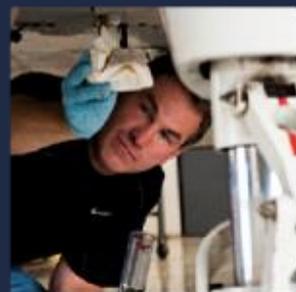
- We are looking for more pilot projects.

QUESTIONS



Last updated 3/25/2019

INTRODUCTION TO OHIO DOT CADD STANDARDS



OHIO DEPARTMENT OF
TRANSPORTATION

GETTING STARTED

John Drsek P.E.

Office of CADD and Mapping Services

STANDARDS

- Ohio DOT has 3 different CAD standards.
- Each standard is set up with different configurations

OHDOT

- In Beta
- MicroStation Connect
- OpenRoads Designer Connect

ODOTcadd

- MicroStation v8i SS4
- PowerGEOPAK v8i SS4

ODOTstd

- MicroStation v8i
- PowerGEOPAK v8i SS2
- Retired-No Longer updated

ODOTCADD & ODOTSTD CONFIGURATION

John Drsek P.E.

WHERE TO DOWNLOAD

ODOTstd

- Zip file
- ftp://ftp.dot.state.oh.us/pub/CADD/update/ODOTV8istd_Full.zip

ODOTcadd

- Executable
- <ftp://ftp.dot.state.oh.us/pub/CADD/CADDSync/Links/ODOTcaddStandardsDownload.html>

SETTING UP ODOTSTD & ODOTCADD STANDARDS

The ODOTcadd Standards includes a configuration tool that will configure the user for both ODOTcadd and ODOTstd standards!!



CONNECT CONFIGURATION

John Drsek P.E.

CONFIGURATION LEVELS

CONNECT:

System
Application
Organization
WorkSpace
WorkSet
Role
User

Not Touching: Intent is to leave this only for consultants to use.

-things that would be used across workspaces (gets loaded regardless of what workspace is selected)

-CAN NOT BE SET FROM WITHIN A WORKSPACE

DOT's each have their own workspace.

-Where the project files go (dgn, spreadsheets...)

WHAT DO THE CONFIGURATION FILES DO

Organization ← *Default*

WorkSpaces ← *Default*

ConfigurationSetup.cfg

WorkspaceSetup.cfg

WorkspaceSetup.cfg

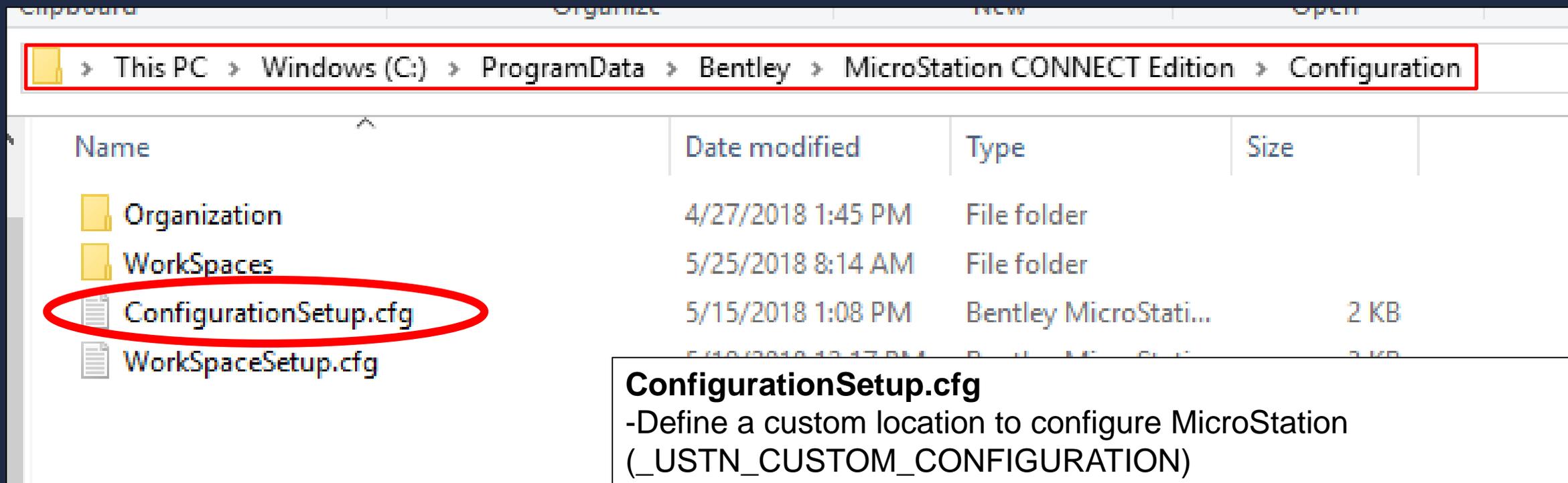
- Define Workspace Label (`_USTN_WORKSPACELABEL`)
- Define Organization (`_USTN_ORGANIZATION`)
- Define Workspace Root (`_USTN_WORKSPACESROOT`)

-all .cfg files found here will populate the Workspaces dropdown list in the MicroStation Start up screen
this is where the delivered example workspaces are!

<< MicroStation CONNECT Edition > Configuration > WorkSpaces >

Name	Date modified
Example	9/1
NoWorkSpace	9/1
Template	9/1
Example.cfg	6/2

WHAT DO THE CONFIGURATION FILES DO



The screenshot shows a Windows File Explorer window with the address bar path: This PC > Windows (C:) > ProgramData > Bentley > MicroStation CONNECT Edition > Configuration. The address bar is highlighted with a red box. The main pane shows a table of files and folders:

Name	Date modified	Type	Size
Organization	4/27/2018 1:45 PM	File folder	
WorkSpaces	5/25/2018 8:14 AM	File folder	
ConfigurationSetup.cfg	5/15/2018 1:08 PM	Bentley MicroStati...	2 KB
WorkspaceSetup.cfg	5/15/2018 12:17 PM	Bentley MicroStati...	2 KB

The file **ConfigurationSetup.cfg** is circled in red. A text box to the right provides details about this file.

ConfigurationSetup.cfg

- Define a custom location to configure MicroStation (`_USTN_CUSTOM_CONFIGURATION`)
- still loads `WorkspaceSetup.cfg`!!
- Can be set during installation

```
# for Your Organization
```

```
#
```

```
# The main function of this configuration file is to allow user to specify  
# the root Configuration directory to activate. The active Configuration  
# directory is represented by _USTN_CONFIGURATION. By default, it points to  
# the installed Configuration defined by _USTN_INSTALLED_CONFIGURATION,  
# which can consist of example WorkSpaces and WorkSets.
```

```
# If your organization has its own Configuration directory, you can define  
# _USTN_CUSTOM_CONFIGURATION to that directory path and use it as follows.
```

```
#
```

```
#_USTN_CUSTOM_CONFIGURATION = D:/.../MyConfiguration/
```

```
#_USTN_CONFIGURATION : ${_USTN_CUSTOM_CONFIGURATION}
```

```
#-----
```

```
#-----
```

```
# START: The section defines user selection at the time of installation.
```

```
# These lines are generated by installer.
```

```
[General]
```

```
_USTN_CUSTOM_CONFIGURATION= X:\CADDServices\CONNECTCONFIG\
```

```
[SetConfiguration]
```

```
%if !defined (_USTN_USER_CONFIGURATION)
```

```
%if defined ( _USTN_CUSTOM_CONFIGURATION) && (${_USTN_CUSTOM_CONFIGURATION} != "") && exists (${_USTN_CUSTOM_CONFIGURATION})
```

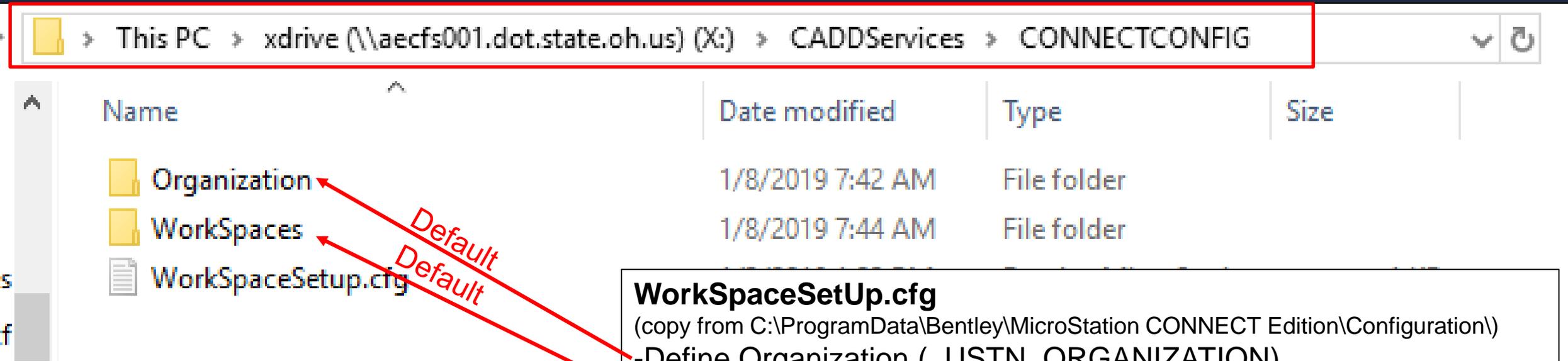
```
_USTN_CONFIGURATION = ${_USTN_CUSTOM_CONFIGURATION}
```

```
%endif
```

```
%endif
```

****setting this to a network drive****
-This means that setting this **one variable** is all that is needed to be done on the user/client side!!!
-Everything else is managed on the network!!

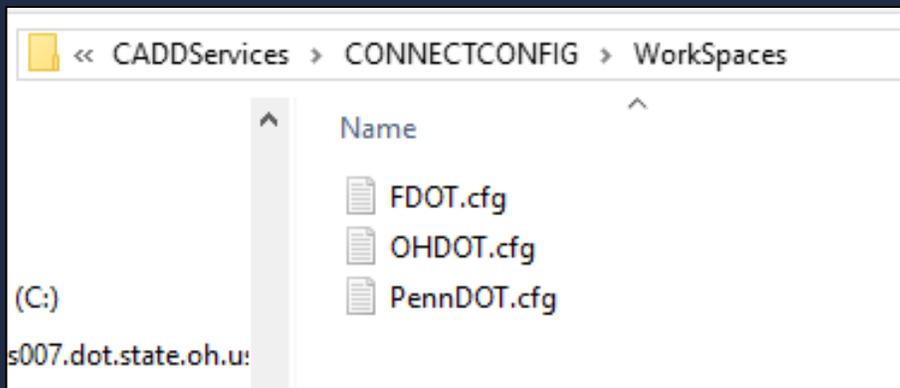
CUSTOM CONFIGURATION SETUP



WorkspaceSetup.cfg
(copy from C:\ProgramData\Bentley\MicroStation CONNECT Edition\Configuration\)

- Define Organization (_USTN_ORGANIZATION)
- Define WorkSpaceS Root (_USTN_WORKSPACE\$ROOT)

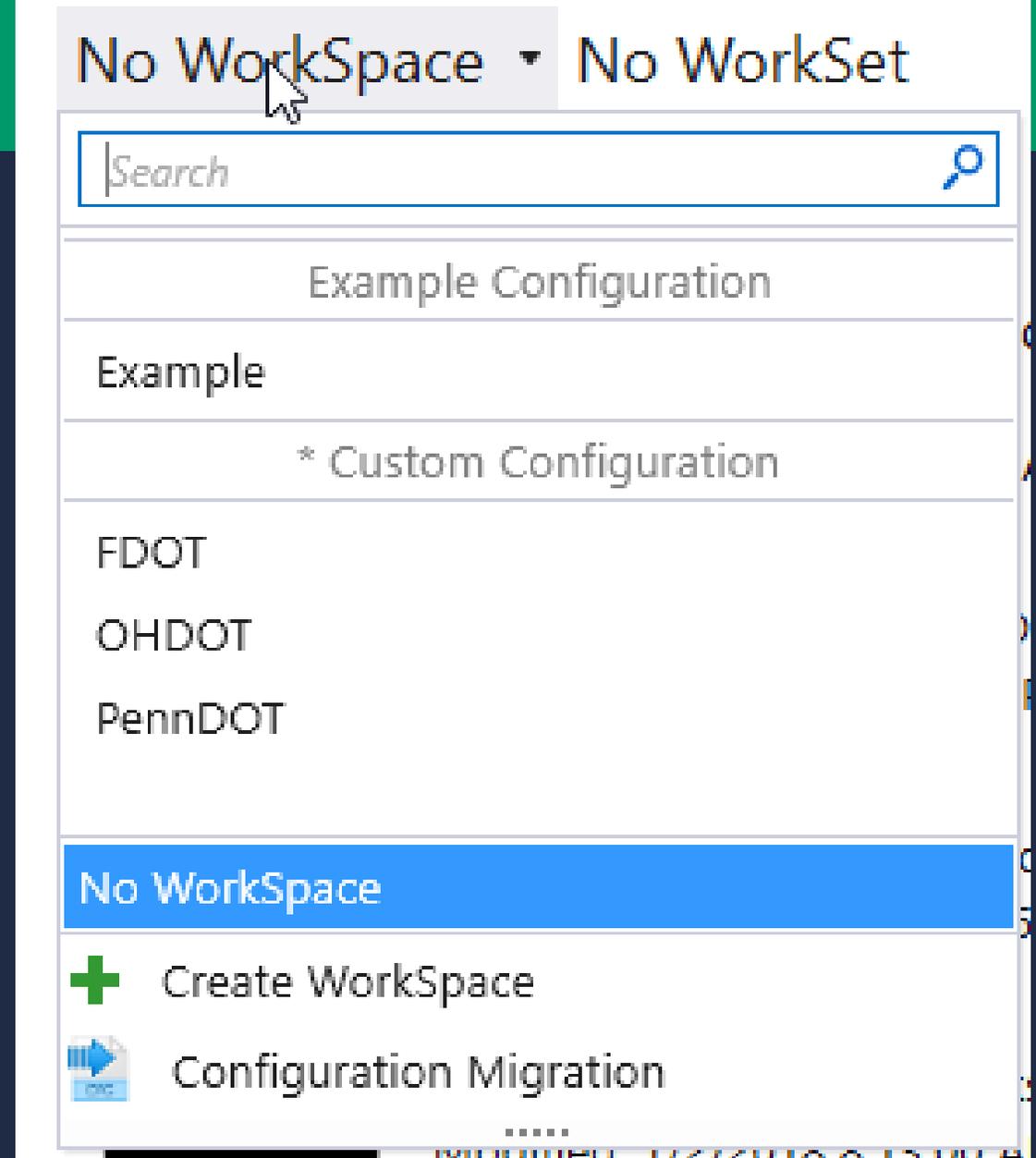
-all .cfg files found here will populate the Workspaces dropdown list in the MicroStation Start up screen



RESULT

Making use of the Custom Configuration variable will add the Custom Configuration section shown to the right.

If DOTs set up their workspaces like this DOTs can ensure they don't stomp on each others workspaces and allow consultants to easily set up multiple Workspaces.



OHDOT.CFG WORKSPACE CONFIG FILE

- Does four things

1. Sets the directory of the Workspace (`_USTN_WORKSPACEROOT`). This is how to achieve getting a workspace folder to a different location than the workspace config file!
2. Sets the Workspace Standards directory (`_USTN_WORKSPACESTANDARDS`)
3. Sets the Worksets directory (`_USTN_WORKSETSROOT`)
4. Calls the `OHDOT_Workspace.cfg` file in the Standards to set all the configuration variables for MicroStation. (makes it easier to update)

OHDOT'S WORKSPACE

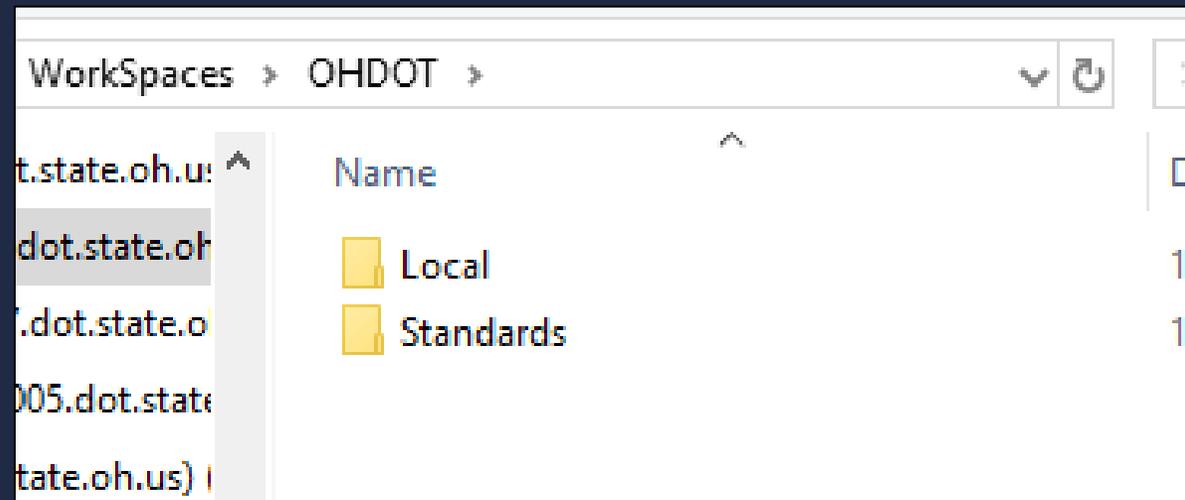
Inside our Workspace folder we have a Standards folder where all DOT standards are kept and a local folder.

The OHDOT.cfg calls a config file inside the standards folder that does all the work.

The Local folder is open to the office to put any customizations specific to OHDOTs workspace (different from organization level which would be across all workspaces)

That Config file also will run any config file found inside the Local/config/ folder.

Repeat same steps for ORD
NOT using CivilOrganization variable



WHERE TO DOWNLOAD

OHDOT_CONNECT

Install Options

- Local:
ftp://ftp.dot.state.oh.us/pub/CADD/CADDSync/OHDOT/OhioDOTCONNECTCADDStandardsInstaller_Local_v1003.exe
- Server/Client:
ftp://ftp.dot.state.oh.us/pub/CADD/CADDSync/OHDOT/OhioDOTCONNECTCADDStandardsInstaller_Server_v1003.exe
ftp://ftp.dot.state.oh.us/pub/CADD/CADDSync/OHDOT/OhioDOTCONNECTCADDStandardsInstaller_Client_v1003.exe
- ZIP file
<ftp://ftp.dot.state.oh.us/pub/CADD/CADDSync/OHDOT/Standards.zip>
- ProjectWise Managed WorkSpace
Coming Soon

OHDOT-INSTALLERS

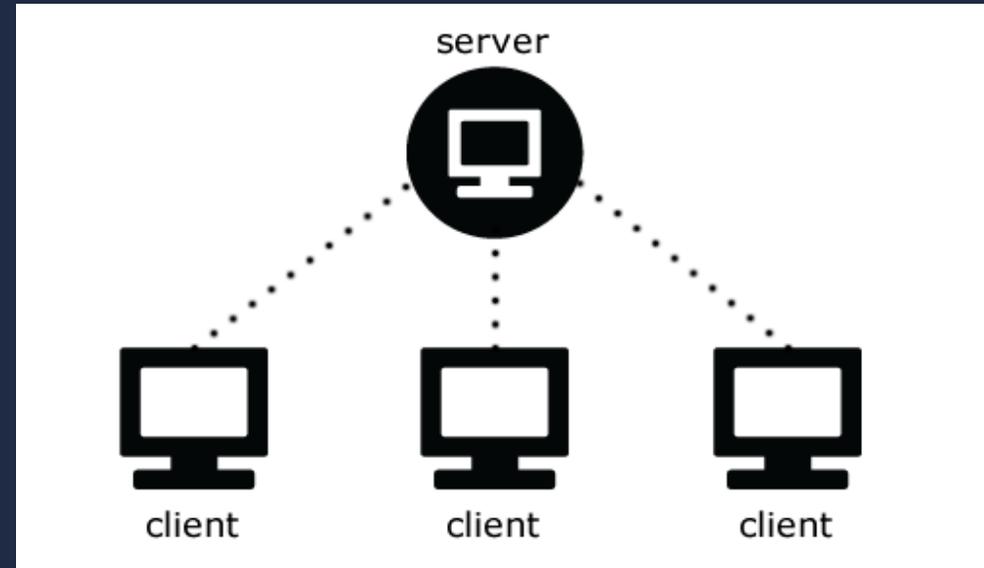
Local Install



Custom Installers (.exe) to handle install/update/uninstall.

- can be run silently
- does all the configuration for the user
- Sync tool to synchronize standards at any time

Server/Client Install

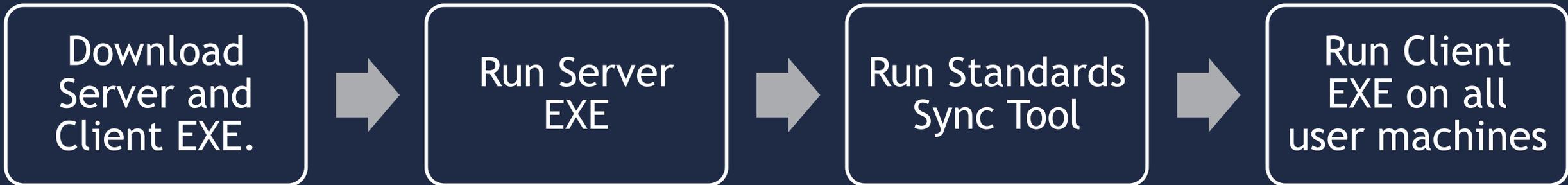


SET UP PROCESS

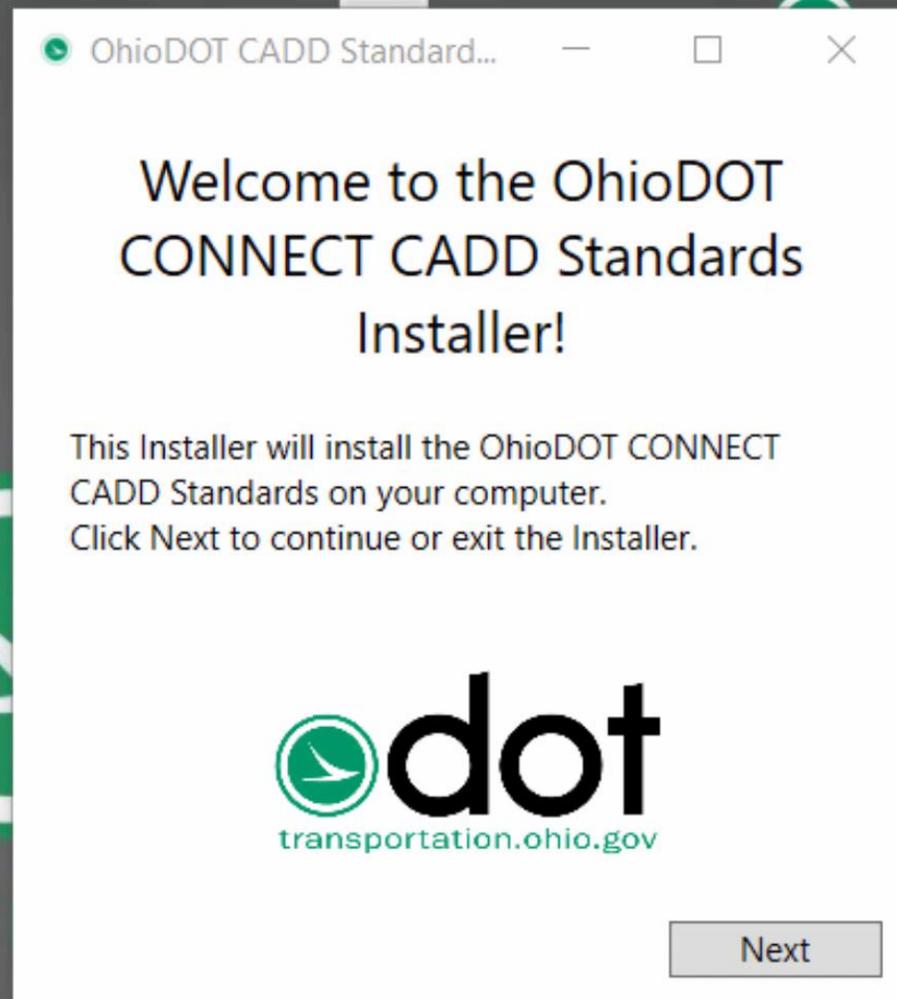
Local Setup



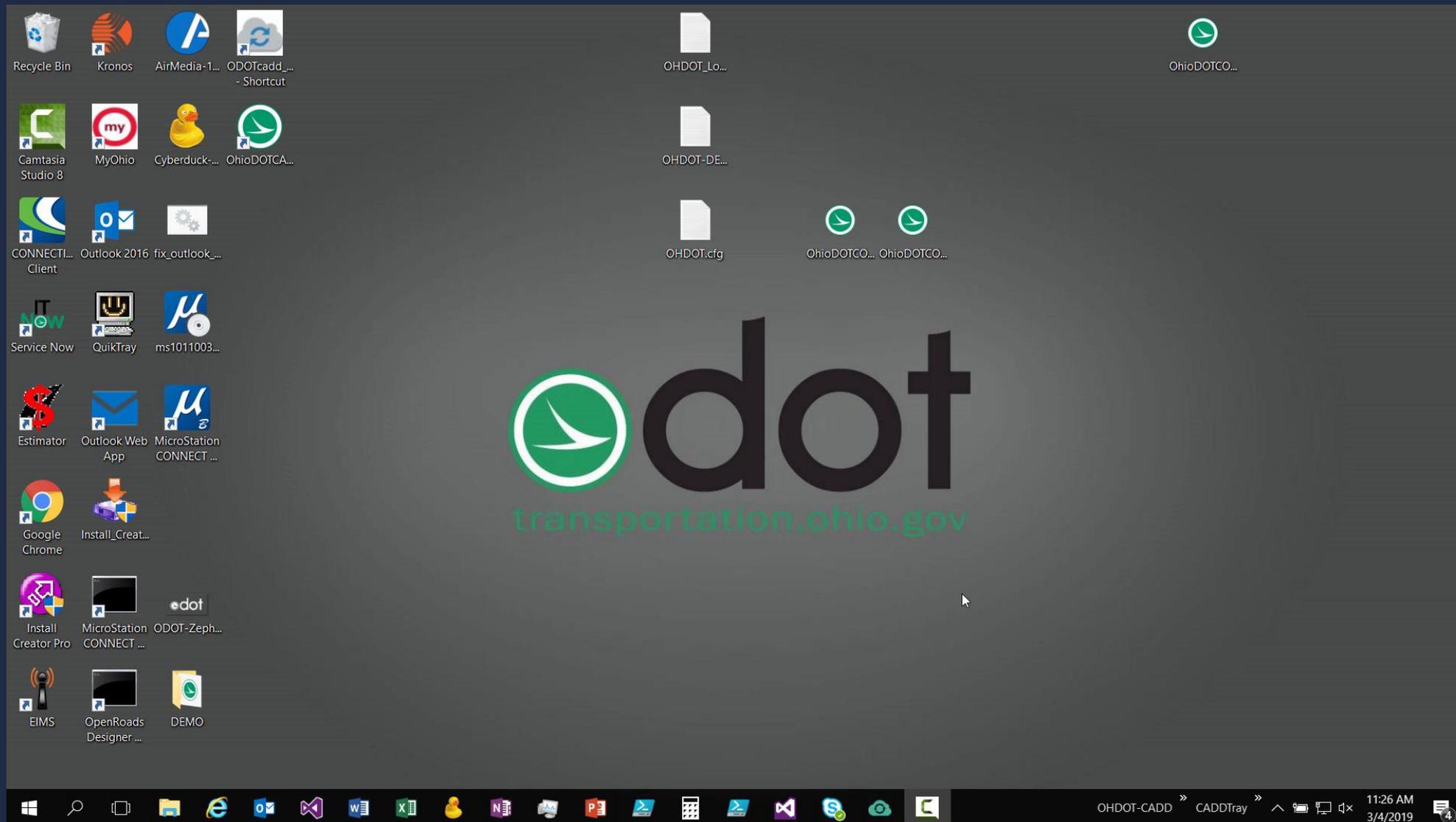
Server/Client Setup



DEMO - SERVER/CLIENT INSTALL - SYNC TOOL



DEMO - NOTIFICATION SYSTEM



WHAT DO THE INSTALLERS GIVE YOU

Local

- Sync Tool
- Notification System
- Start Menu Folder
- Installs ODOT Fonts
- Registry Keys for Google Analytics
- Sets Custom Configuration Directory
- Sets up OHDOT WorkSpace cfg file

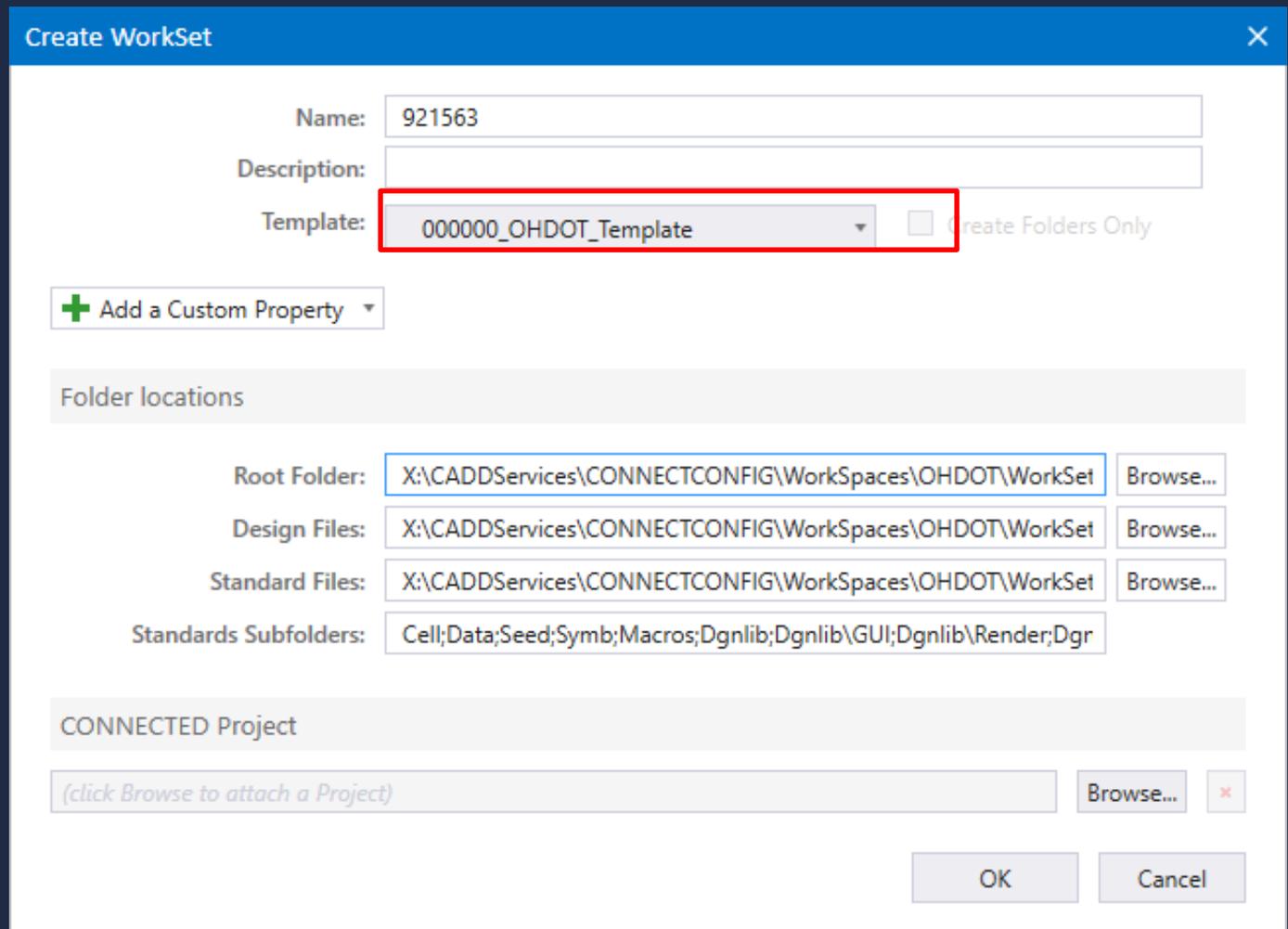
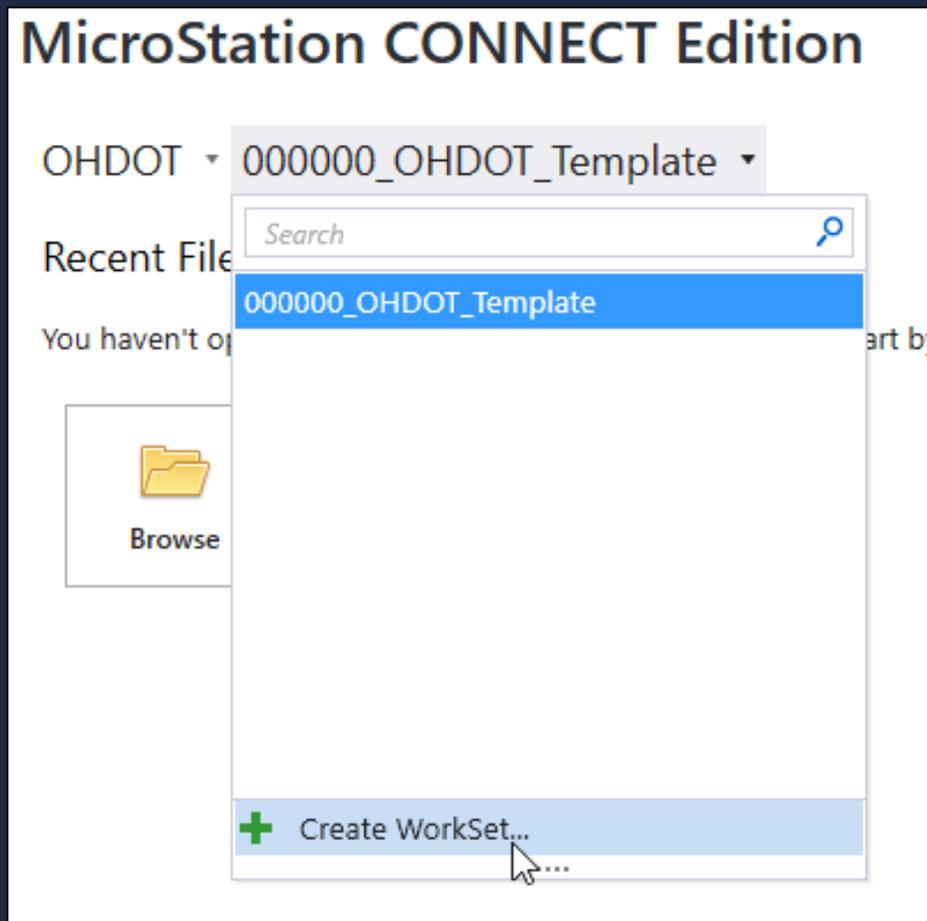
Server

- Sync Tool
- Notification System
- Start Menu Folder
- Installs ODOT Fonts
- Registry Keys for Google Analytics
- Sets Custom Configuration Directory
- Sets up OHDOT WorkSpace cfg file

Client

- ~~Sync Tool~~
- Notification System
- Start Menu Folder
- Installs ODOT Fonts
- Registry Keys for Google Analytics
- Sets Custom Configuration Directory
- ~~Sets up OHDOT WorkSpace cfg file~~

CREATING WORKSETS



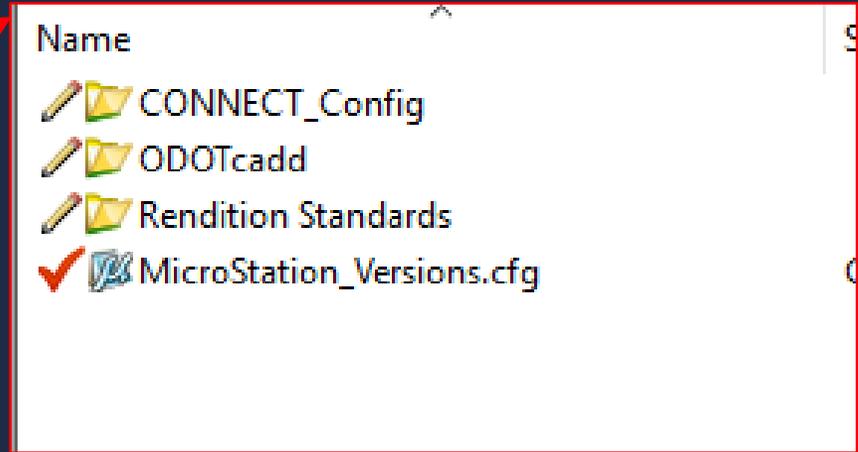
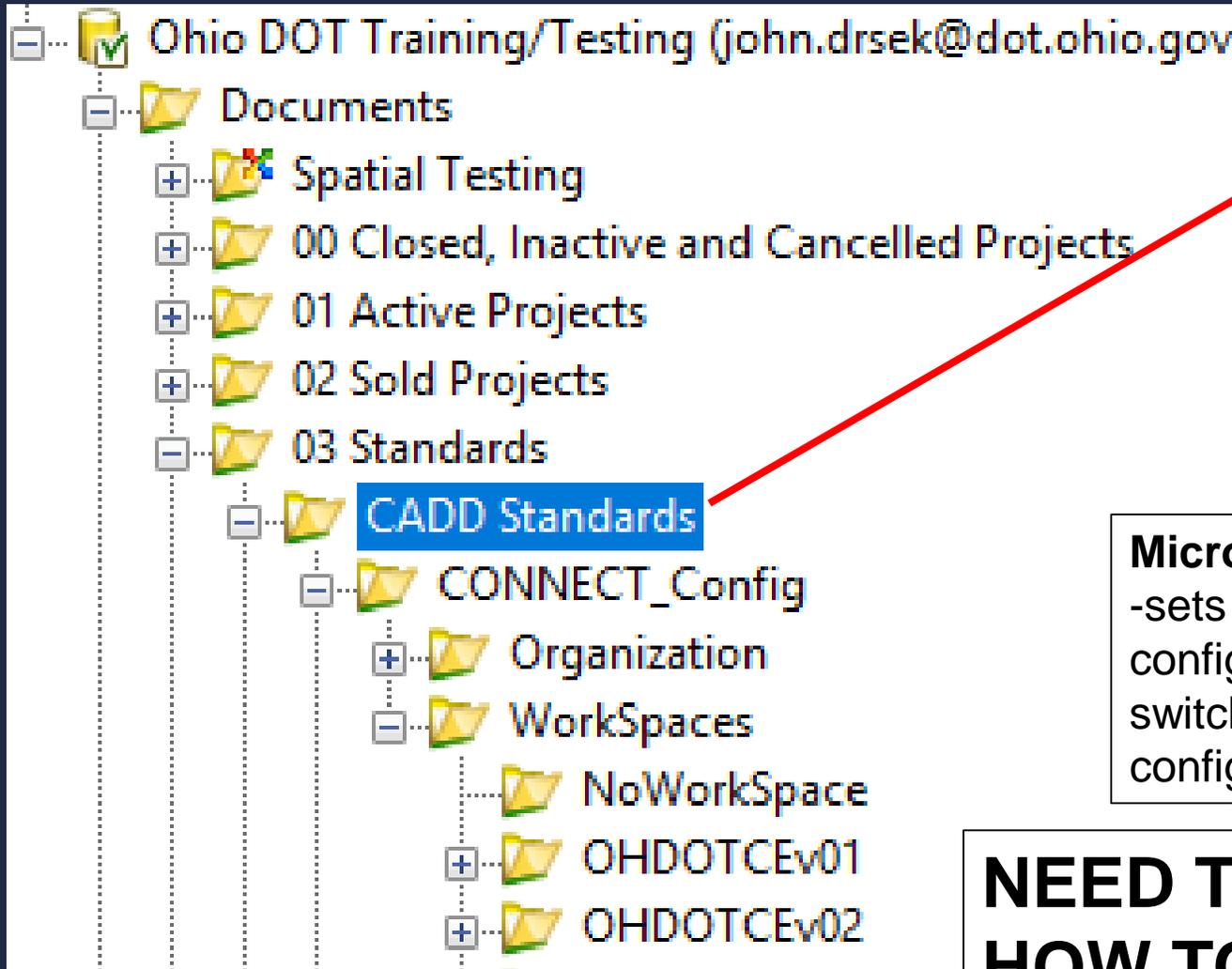
3RD OPTION FOR SETTING UP OHDOT STANDARDS

- ZIP File download of standards
- Your on your own
- No sync tool (Make sure Templates get updated)
- No Notification system for updates
- Auto-Opt in of Google Analytics
- Have to manually configure.
- Fonts are not installed.

CONNECT MANAGED WORKSPACE

John Drsek P.E.

MIMIC OUR WORKSPACE OUTSIDE OF PROJECTWISE

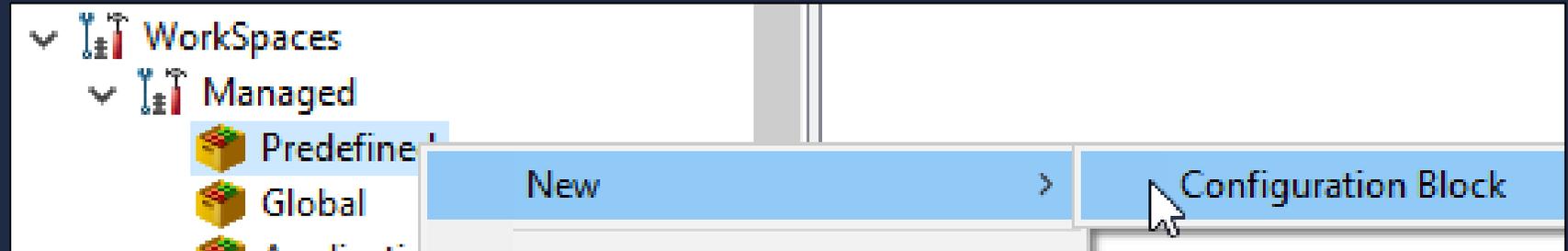
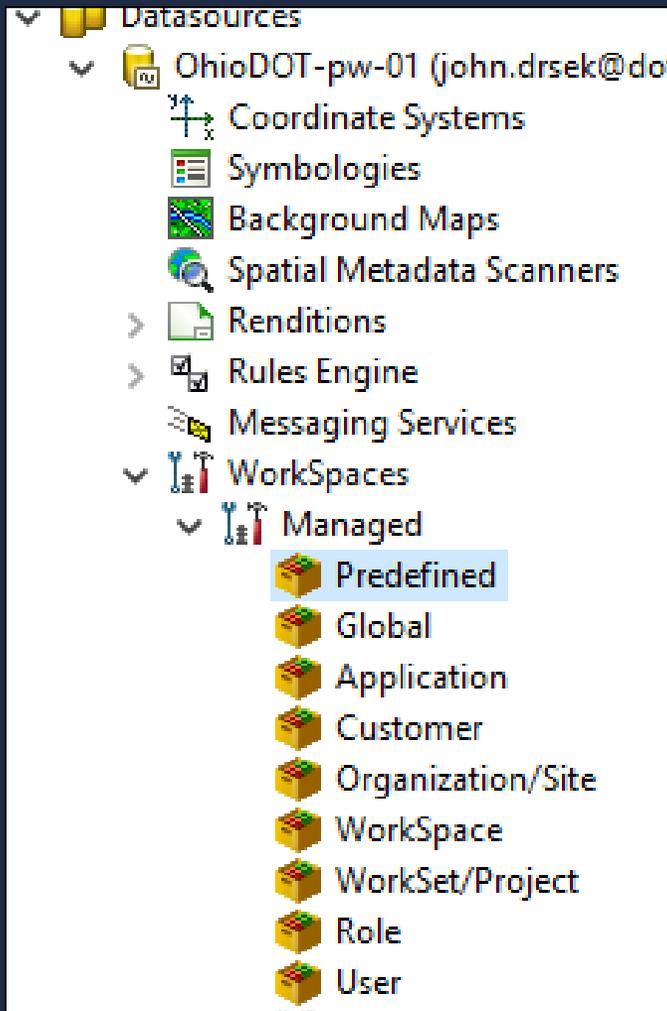


MicroStation_Versions.cfg

-sets if statement to control how configuration should be run. Specifically to switch between CONNECT config and v8i config.

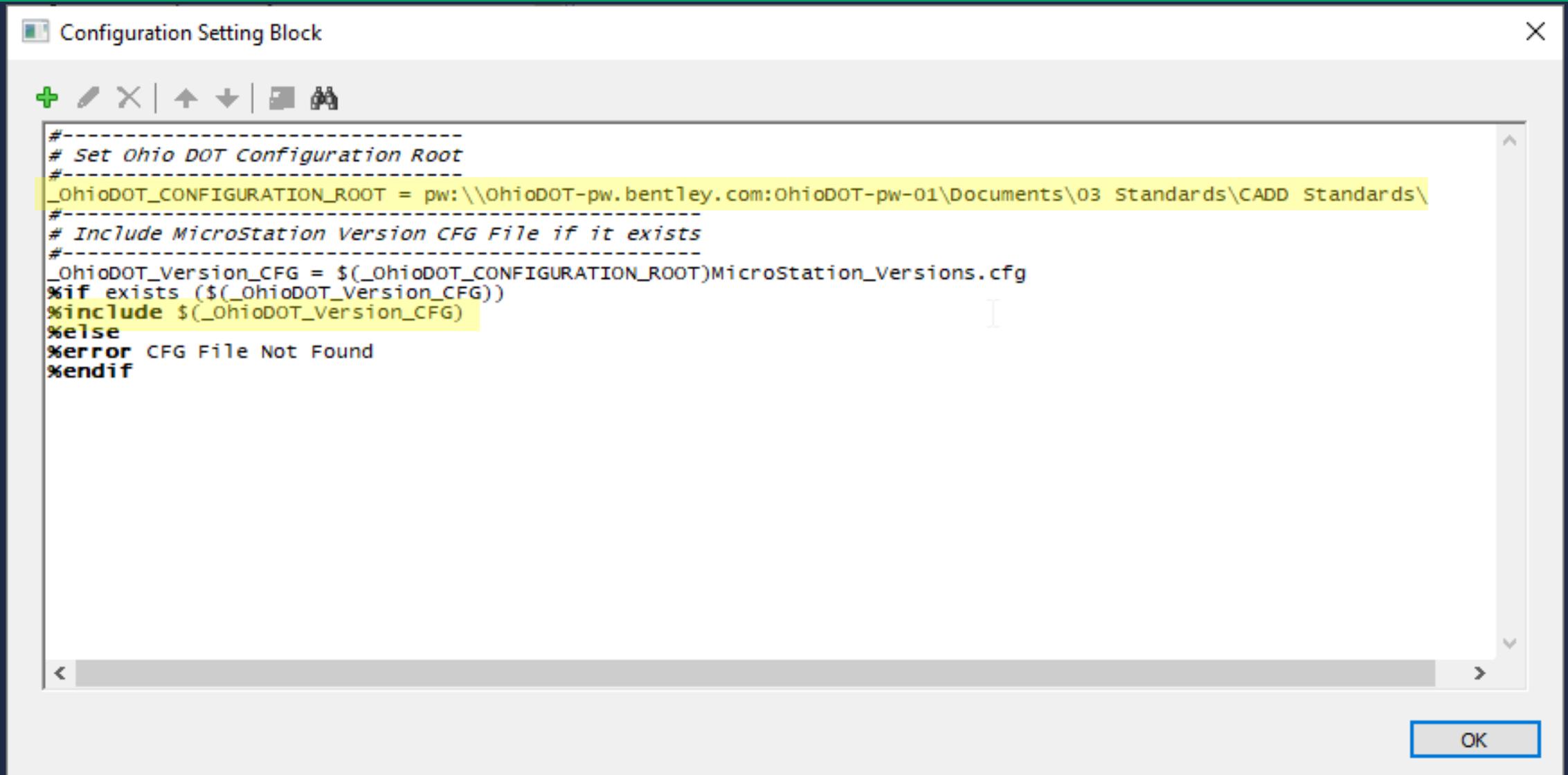
**NEED TO TELL PROJECTWISE
HOW TO RUN this cfg file!!!!**

SETTING UP MANAGED WORKSPACE



- -Use Configuration Settings Block (CSB) (ProjectWise Administrator)
- -Create CSB at Predefined level to call **MicroStation_Versions.cfg**
- -Add Association to datasource (ProjectWise Administrator)

PREDEFINED CSB



The screenshot shows a window titled "Configuration Setting Block" with a close button in the top right corner. Below the title bar is a toolbar with icons for adding, editing, deleting, and moving blocks. The main area is a text editor containing the following configuration code:

```
#-----  
# Set Ohio DOT Configuration Root  
#-----  
_OhioDOT_CONFIGURATION_ROOT = pw:\\OhioDOT-pw.bentley.com:OhioDOT-pw-01\Documents\03 Standards\CADD Standards\  
#-----  
# Include MicroStation Version CFG File if it exists  
#-----  
_OhioDOT_Version_CFG = $_OhioDOT_CONFIGURATION_ROOT)MicroStation_Versions.cfg  
%if exists ($_OhioDOT_Version_CFG)  
%include $_OhioDOT_Version_CFG  
%else  
%error CFG File Not Found  
%endif
```

An "OK" button is located at the bottom right of the dialog box.

KICKING OFF THE MANAGED WORKSPACE

The process involves the following steps:

- Right-clicking on the workspace in the workspace tree and selecting **Properties**.
- In the **Properties** dialog, navigating to the **Managed WorkSpace** tab.
- Clicking on **Add Association** to open the **Select Configuration Blocks** dialog.
- Clicking **OK** in the **Select Configuration Blocks** dialog to confirm the selection of the **Load Ohio DOT MicroStation Configuration** block.

MICROSTATION_VERSIONS.CFG

```
#####  
#  
# Available Variables that were defined in the MicroStation application command line or CSBs  
#  
# PW Application Variable Value  
#  
# CSB Block Level Variable  
# Load OhioDOT MicroStation Configuration Pre-defined _OhioDOT_CONFIGURATION_ROOT @:\Standards\CADD Standards\  
#  
#####  
# If user is running MicroStation CE, Set configuration location  
# MicroStation will load all CFG files in _USTN_ORGANIZATION  
%if defined (_VERSION_10_0)  
    OHIODOT_MICROSTATION_CONFIGURATION_TYPE = CONNECT Edition  
    _USTN_CONFIGURATION = $_OhioDOT_CONFIGURATION_ROOT)CONNECT_Config/  
    %lock _USTN_CONFIGURATION  
  
    # Set DEFAULT Workspace Name to OhioDOTCEv01 and DEFAULT WorkSet to NoWorkSet (this gets overwritten if opened from inside works  
    _USTN_WORKSPACENAME = OHDOTCEv01  
  
# If user is running MicroStation V8i, set the appropriate variables to load OhioDOT CADD standards.  
# Configure variables needed to be in place before running z_ODOT_redirect.cfg at the system level  
%elif defined (_VERSION_8_11)  
    OHIODOT_MICROSTATION_CONFIGURATION_TYPE = V8i  
    ...  
%else  
    OHIODOT_MICROSTATION_CONFIGURATION_TYPE = Not Supported|  
%endif
```

CONFIGURATION

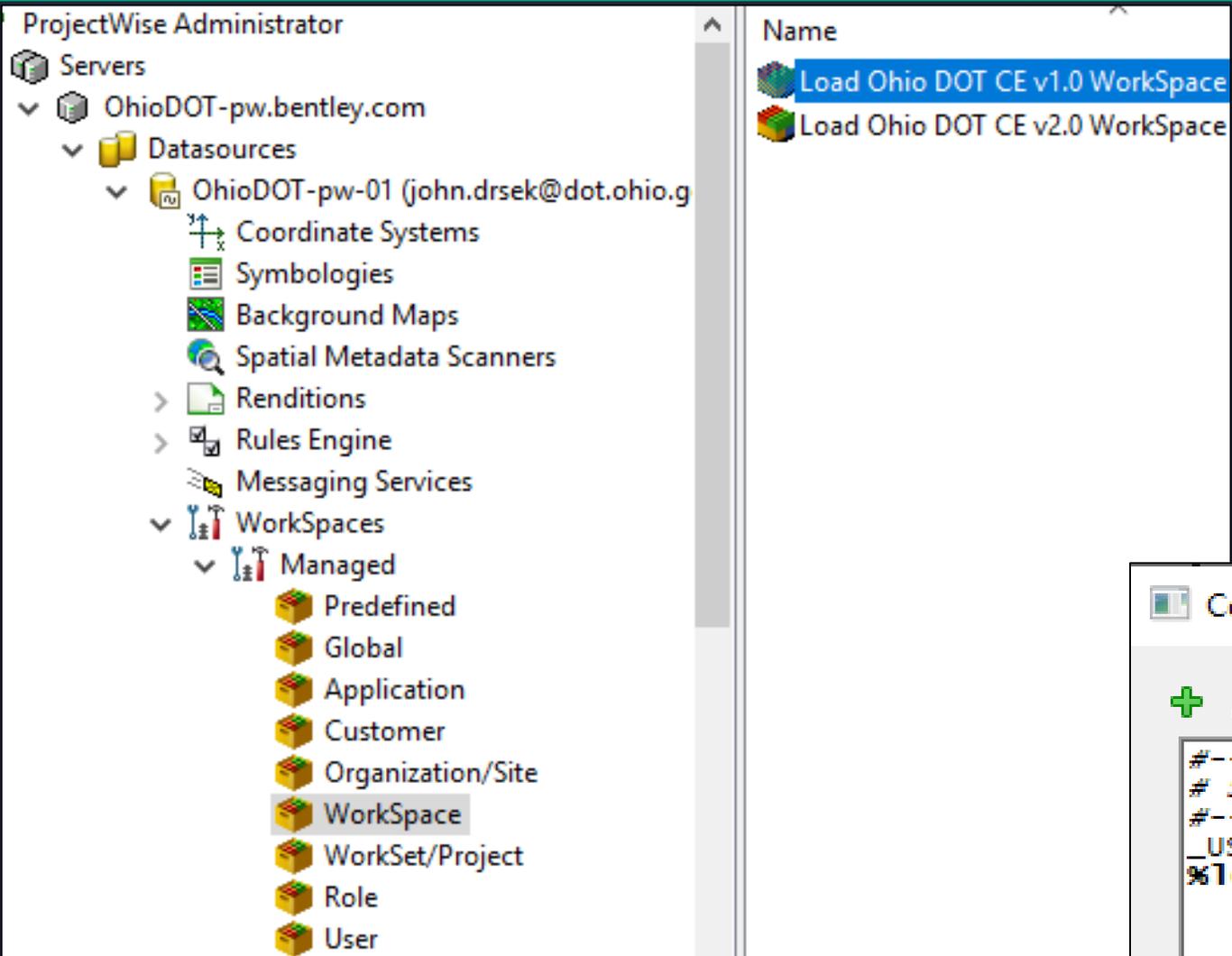
The image shows a file explorer view of the configuration files for MicroStation. The main view shows a tree structure under '03 Standards' with sub-folders 'CADD Standards', 'CONNECT_Config', 'Organization', and 'WorkSpaces'. The 'CONNECT_Config' folder is highlighted. A red box highlights the 'CONNECT_Config' folder and its contents: 'Organization', 'WorkSpaces', and 'WorkSpaceSetup.cfg'. Red arrows point from the 'CONNECT_Config' folder in the tree to the red box, and from the 'Organization' and 'WorkSpaces' folders in the red box to the word 'Defaults' in a red text box. Another red arrow points from the 'WorkSpaceSetup.cfg' file in the red box to a white text box that says 'If not using defaults can use WorkSpaceSetUp.cfg to define locations'. A smaller inset view shows the contents of the 'WorkSpaces' folder: 'NoWorkSpace', 'OHDOTCEv01', and 'OHDOTCEv02'.

Defaults

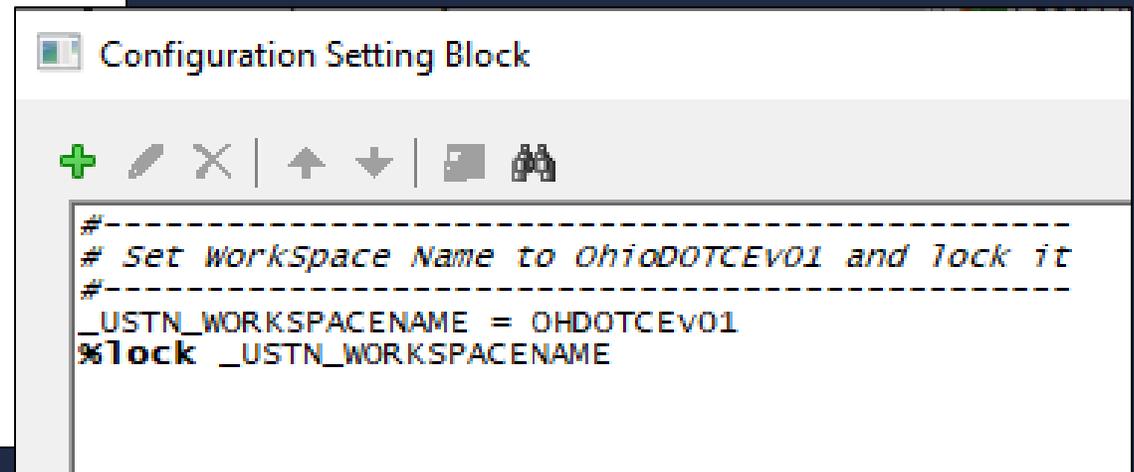
If not using defaults can use WorkSpaceSetUp.cfg to define locations

- Microstation knows where to look for workspaces but not which one to use...unlike outside projectwise the user is not selecting the workspace from the start up dialog.

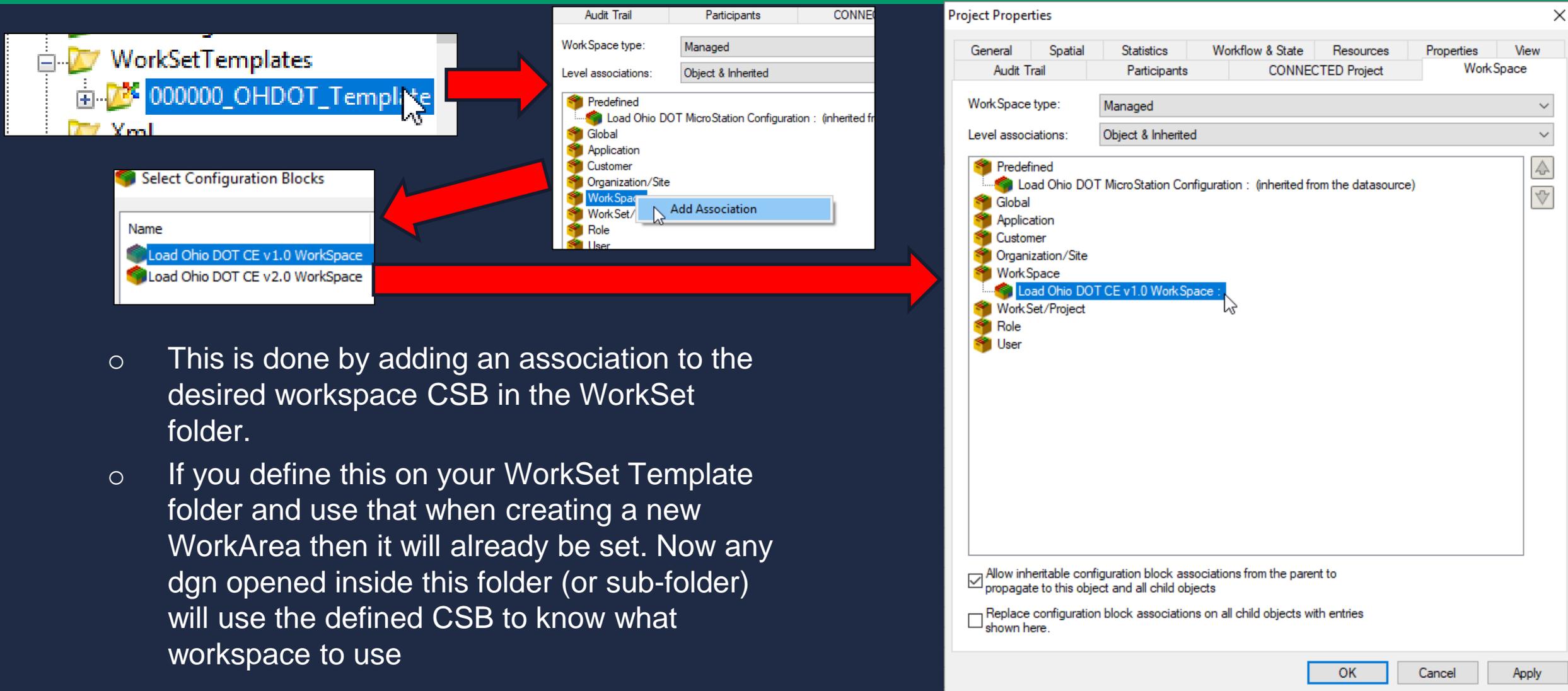
SETTING UP WORKSPACE(S)



- ..Back to CSB
- Each workspace would have its own CSB in the workspace section.
- Only need to set `_USTN_WORKSPACENAME` (MicroStation config will find the config file)
- ...still need to tell ProjectWise when to use what CSB file.



TELLING PROJECTWISE WHICH WORKSPACE TO USE

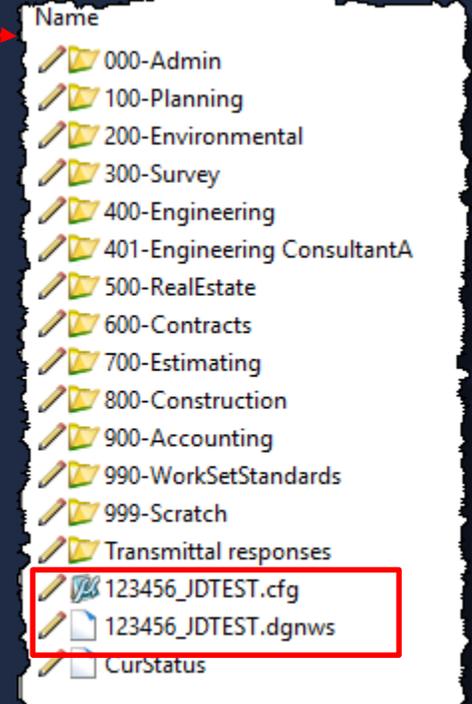
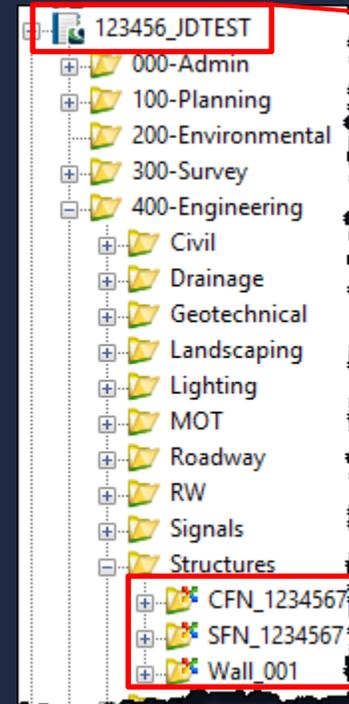


The image shows a sequence of three screenshots illustrating how to configure a workspace in ProjectWise. The first screenshot shows a file explorer with a folder named 'WorkSetTemplates' containing a sub-folder '000000_OHDOT_Template'. A red arrow points from this folder to the second screenshot. The second screenshot shows the 'Project Properties' dialog box with the 'WorkSpace' type set to 'Managed' and 'Level associations' set to 'Object & Inherited'. A red arrow points from the 'WorkSpace' folder in the tree to the third screenshot. The third screenshot shows the 'Project Properties' dialog box with the 'WorkSpace' type set to 'Managed' and 'Level associations' set to 'Object & Inherited'. A red arrow points from the 'WorkSpace' folder in the tree to the 'Load Ohio DOT CE v1.0 Workspace' entry in the list. The 'Load Ohio DOT CE v1.0 Workspace' entry is highlighted, and a red arrow points from it to the 'Add Association' button. The 'Add Association' button is highlighted, and a red arrow points from it to the 'Load Ohio DOT CE v1.0 Workspace' entry in the list. The 'Load Ohio DOT CE v1.0 Workspace' entry is highlighted, and a red arrow points from it to the 'Load Ohio DOT CE v1.0 Workspace' entry in the list. The 'Load Ohio DOT CE v1.0 Workspace' entry is highlighted, and a red arrow points from it to the 'Load Ohio DOT CE v1.0 Workspace' entry in the list.

- This is done by adding an association to the desired workspace CSB in the WorkSet folder.
- If you define this on your WorkSet Template folder and use that when creating a new WorkArea then it will already be set. Now any dgn opened inside this folder (or sub-folder) will use the defined CSB to know what workspace to use

WORKSET BACKGROUND

- Next need to set what Workset to use and where the workset cfg file is.
- OHDOT has set up their Worksets in projectwise as follows:
 - WorkSet Root is a WorkArea
 - WorkSet cfg file is inside WorkSet Root
 - WorkSetdgnws file is inside WorkSet Root
 - There are sub-WorkAreas inside the WorkSet



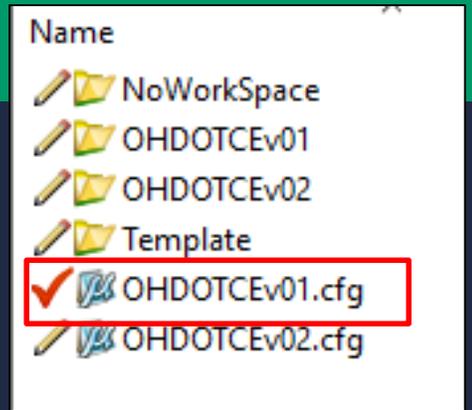
WORKSPACE LEVEL

```
%if defined (_PWEXPLORER)
  %if exists (dms_parentproject (_dgndir))
    %if exists ($(dms_parentproject (_dgndir))$(lastdirpiece ($(dms_parentproject (_dgndir))))).cfg)
      # CASE 1 - The File is in a Structural Sub Work Area - PID Work Area is the parent project
      _USTN_WORKSETSROOT = $(dms_parentproject (_dgndir))
      %lock _USTN_WORKSETSROOT
    %else
      # CASE 2 - The File is in the PID Work Area
      _USTN_WORKSETSROOT = $(dms_project (_dgndir))
      %lock _USTN_WORKSETSROOT
    %endif
  %else
    # CASE 2 - The File is in the PID Work Area
    _USTN_WORKSETSROOT = $(dms_project (_dgndir))
    %lock _USTN_WORKSETSROOT
  %endif

  _USTN_WORKSETNAME = $(lastdirpiece (_USTN_WORKSETSROOT))
  %lock _USTN_WORKSETNAME

  %if defined (_USTN_WORKSETNAME) && exists ($( _USTN_WORKSETSROOT)$( _USTN_WORKSETNAME).cfg)
    _USTN_WORKSETCFG = $( _USTN_WORKSETSROOT)$( _USTN_WORKSETNAME).cfg
    %lock _USTN_WORKSETCFG
  %else
    %error cant find workset cfg
  %endif

%else
  %error outside PW
  # File is outside ProjectWise so we will use the regular template for a new WorkSet CFG file
  _USTN_WORKSETTEMPLATE = $( _USTN_WORKSPACEROOT)Standards/WorkSetTemplates/000000_OHDOT_Template.cfg
%endif
```



- Still need to specify workset!...do this dynamically with workspace config
- Dependent on how WorkSet folder structure is set up.
- Need to Find the root WorkSet (which is also a WorkArea).
- OHDOT also chose to have the WorkSet cfg inside the root WorkSet.
- **MUST SET _USTN_WORKSETSROOT**

WORKSPACE LEVEL CONTINUED

- The Workspace cfg also calls OHDOTs main configuration file (matches what configuration outside projectwise does)

```
#=====
# Include the OHDOT WorkSpace Standards
#=====

_OhioDOT_WORKSPACECONFIGURATIONFILE = $_USTN_WORKSPACEROOT)Standards/Config/OHDOT_WorkSpace.cfg

%if exists ($_OhioDOT_WORKSPACECONFIGURATIONFILE)
    %include ($_OhioDOT_WORKSPACECONFIGURATIONFILE)
%else
    %error ($_OhioDOT_WORKSPACECONFIGURATIONFILE) NOT FOUND (Check Access Control)
%endif

# Reset the following variables to their defaults if ProjectWise was launched
# They were defined to the current DGN Directory and would need to change every tim
# a DGN is opened from a different folder
%if defined (_PWEXPLORER)
    MS_BACKUP = $_USTN_OUT) # Redefine to _USTN_OUT

    %ifdef MS_REPORT_OUTPUT # Remove this variable
        %undef MS_REPORT_OUTPUT
    %endif

    %ifdef MS_RFDIR # Remove this variable since references are managed by ProjectWise
        %undef MS_RFDIR
    %endif
%endif
```

WORKSET LEVEL

- OHDOT also puts the dgnws file at the root level of the WorkSet. Need to define some variables to achieve this
- Some other things defined here...

```
USTN_WORKSETROOT = $( USTN_WORKSETSROOT)
```

```
USTN_WORKSETDGNWS = $( _USTN_WORKSETROOT )$( _USTN_WORKSETNAME ).dgnws
```

```
# Search path for design files
MS_DEF = $( _USTN_WORKSETROOT )400-Engineering/ #Project Location

MS_SEEDFILES = $( _USTN_WORKSETSTANDARDS )/seed/ # Search Directory
MS_DESIGNSEED = $( OHDOT_PID )_DesignSeed2d.dgn # Default Seed File.
MS_DESIGNMODELSEED = $( OHDOT_PID )_DesignSeed2d.dgn
MS_DESIGNMODELSEEDNAME = Design
MS_DRAWINGMODELSEED = OHDOT_DrawingSeed2d.dgn
MS_DRAWINGMODELSEEDNAME = Drawing
MS_SHEETMODELSEED = OHDOT_SheetSeed2d.dgn
MS_SHEETMODELSEEDNAME = Sheet

MS_GEOCOORDINATE_USERLIBRARIES = $( _USTN_WORKSETSTANDARDS )GCS/$( OHDOT_PID )_Custom.dty
CIVIL_ROADWAY_TEMPLATE_LIBRARY = $( _USTN_WORKSETSTANDARDS )Template Library/$( OHDOT_PID )
MS_PRINTDEF_PATH = $( _USTN_WORKSETROOT )/000-Admin/PlanReviews/ # Search
MS_PLTFILES = $( _USTN_WORKSETROOT )000-Admin/PlanReviews/ # Output
MS_REF_DEFAULTATTACHDIRECTORY = $( _USTN_WORKSETDGNWS ) # Set the default directory when
MS_RFDIR < $( _USTN_WORKSETROOT )300-Survey/Basemaps/
```

RECAP

Create Pre-Defined CSB that calls `MicroStationVersions.cfg`

This is what defines how to start the configuration



Add association to Pre-Defined CSB to the datasource

This is how the configuration gets kicked off



Create `MicroStationVersions.cfg` with the switch between v8i and CONNECT configuration

CONNECT configuration sets `_USTN_CONFIGURATION`



Create WorkSpace CSB that sets the WorkSpace Name

This is what defines what WorkSpace to use



Add association to WorkSpace CSB to WorkSet Template

This is what tells MicroStation to use this WorkSpace



Create WorkSpace `cfg` file that dynamically sets the `worksetroot`

This is how MicroStation knows and finds what workset to configure.

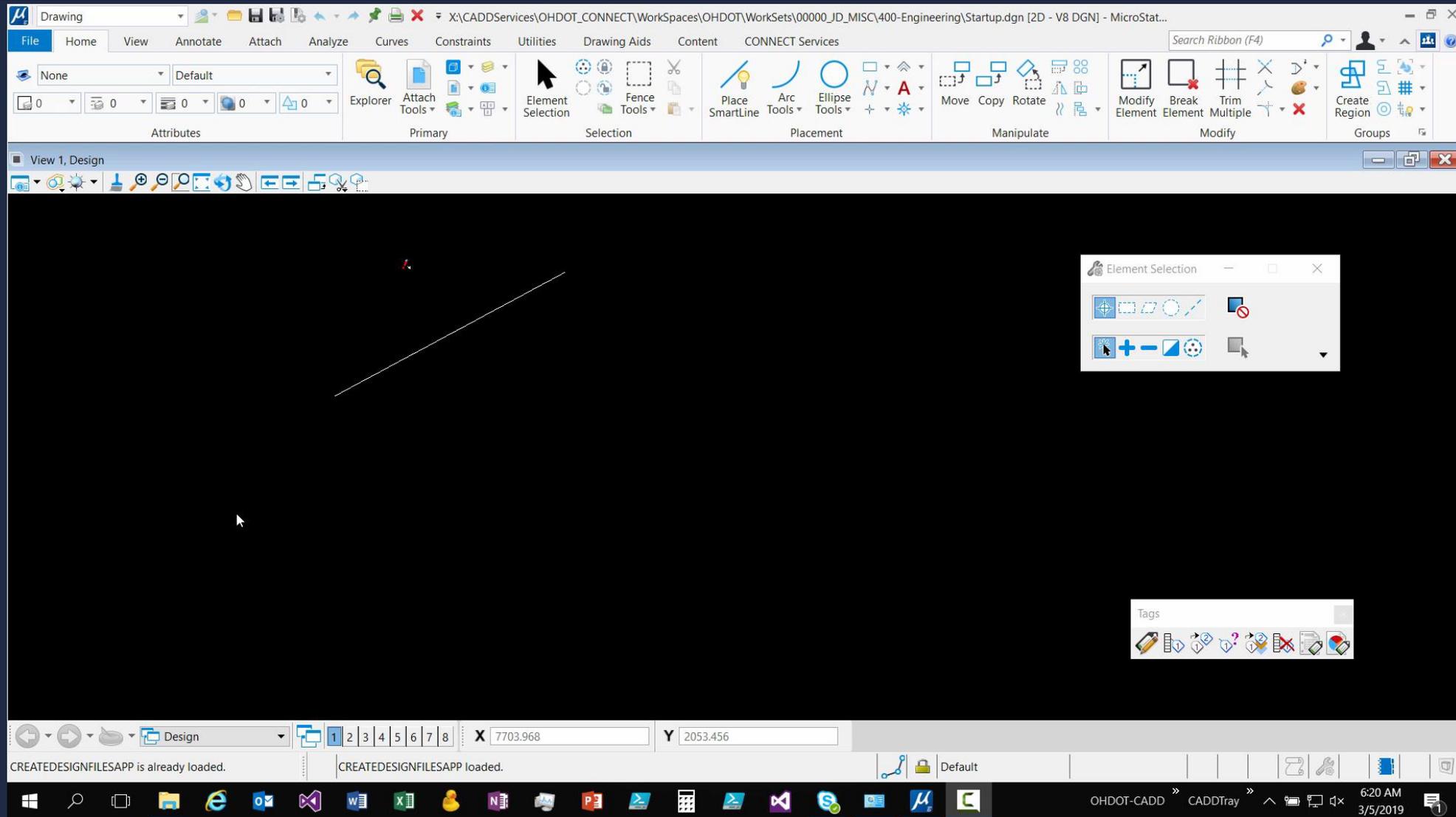
CREATING WORKSET

- Need 3 things
 - Folder Template
 - WorkSet cfg
 - WorkSet dgnws
- Steps to create
 - Create New WorkArea and select template
 - Copy and renamed Template WorkSet cfg file
 - Let MicroStation create the dgnws from template when user opens microstation file within WorkSet.
 - ****need to define _USTN_WORKSETDGNWSTEMPLATE****
- OHDOT has created an application to streamline this process and set up access control

DELIVERING THE MANAGED WORKSPACE

- Working on delivery method
- Initial delivery helping to simplify set up process
- Later introduce sync tool similar to outside projectwise
- What do you want??
 - Attribute Exchange Rules??, workflows??, environments??

NEW CREATE DESIGN FILES ADDIN DEMO



QUESTIONS



SPEC YEAR 2019 - GENSUM

- New version of the GenSum v2019.02.25
- Contains 2016 and 2019 spec year Item Masters
 - Removed 2013 and added 2019 item masters
- Export to XML for estimator!!!!
- Updated ItemMaster Excel Addon to remove 2013 item master and add 2019 item master

UPDATING AN OLD GENSUM TO A NEWER VERSION

- Youtube video! <https://www.youtube.com/watch?v=Xfx-FGlfqM&list=PLdyShNRgZlb4S1QpyT0V9mxBs82Qz11KU&index=4>

CONTRACT ID: SUM123456		REQUIRED (EX. FRA99999)	
ENTER DATA IN THESE COLUMNS			
ITEM CODE	HEADING OR ADDITIONAL DESCRIPTION	QTY NOT FROM SHEET	SEE SHEET NO.
202E23500	ROADWAY		
202E38000			
209E60200			
209E72001			5
606E15050			
606E26050			
606E26150			
606E27820			
690E50100			7
690E50200			7
659E10000	EROSION CONTROL		
659E20000			
659E31000			
659E35000			
832E30000		1000	
251E01000	PAVEMENT		
254E01000			
407E10000			
411E10000	(FIELD DRIVES)		
441E50101			6
617E10101			7
621E10000	TRAFFIC CONTROL		
621E54000			
646E10000			
646E10100			
646E10200			
646E10300			
646E10400			
646E10800			
646E20110			
646E20300	TRAFFIC SIGNALS		

SHEET NUM.														PART.				ALT (X)	ITE
5	6	7	8	11	12	13	14	15	16	18	01S:2/PV	02S:2/P VINFRA	03S:2/R	04S:2/D TINFRA					
				134	3410		2913				682	3622		2913		202			
		400									62	338				202			
773											142	631				209			
							2250							2250		604			
							1							1		604			
							18							18		604			
							12							12		604			
											9	8				SPEC			
											2					SPEC			
				22226							3445	18781				659			
				5.41							0.84	4.57				659			
				4.59							0.71	3.88				659			
				120							19	101				659			
											150	850				832			
											45			255		25			
	300										18513	125336				254			
				120009			23840				2790	18887				407			
				18002	88		3587				2	4				411			
											830	5502				441			
											148	859				617			
											74					621			
											49	131				646			
											2.26	12.8				646			
											15.06					646			
											0.19	0.19				646			
											8.14	7.02				646			
											1.12					646			
											1176	1176				646			
											170	170				646			
											57	57				646			
											2					646			
											27	27				646			

GENSUM - DEMO

CTY-PID-GENSUM.xlsm - Excel | Drsek, John

File Home Insert Page Layout Formulas Data Review View Developer Add-ins LOAD TEST ProjectWise Team ODOT Tell me what you want to do Share

Search Item Master Refresh Add-In Info Auto-Fix Links Fix Links Combine Data Preferences Help

K23

Item Master last refreshed on: 1/24/2019 @ 07:22 AM

CONTRACT ID: SUM123456				SPEC YEAR: 2016				REFRESH DATA TAB	REFRESH ITEM MASTER	INSERT PAY ITEMS	INSERT ROW(S) ABOVE SELECTION (NO UNDO)	DELETE ROW(S) IN SELECTION (NO UNDO)	IMPORT ESTIMATOR XML FILE	CREATE ESTIMATOR XML														
REQUIRED (EX. FRA99999)				CHANGE DESC. WIDTH: 11				SHEET COLUMNS: 4				PART COLUMNS																
ENTER DATA IN THESE COLUMNS				ENTER DATA IN THESE COLUMNS								ENTER "X"				DO NOT ENTER DATA IN THESE COLUMNS												
ITEM CODE	HEADING OR ADDITIONAL DESCRIPTION	QTY NOT FROM SHEET	SEE SHEET NO.	SHEET NUM.								PART.				ALT (X)	ITEM	ITEM EXT	GRAND TOTAL	UNIT								
				5	6	7	8	11	12	13	14	15	16	18	01S:2IPV	02S:2P VINFR	03S:2B R	04S:2D TNFR										
	ROADWAY							134	3410	760					682	3622				202	23500	4,304	SY		ROADWAY			
	202E23500																			202	38000	2,913	FT		WEARING COURSE REMOVED			
	202E38000										2913									209	60200	400	STA		GUARDRAIL REMOVED			
	209E60200				400										62	338				209	72001	773	STA		LINEAR GRADING			
	209E72001		5												142	631				208	15050	2,250	FT		PREPARING SUBGRADE FOR SHOULDER			
	606E15050																			606	26050	1	EACH		GUARDRAIL TYPE MGS			
	606E26050										2250									606	26050	1	EACH		ANCHOR ASSEMBLY, MGS TYPE B			
	606E26150										18									606	26150	18	EACH		ANCHOR ASSEMBLY, MGS TYPE E			
	606E27820										12									SPECIAL	69050100	17	EACH		MAILBOX SUPPORT SYSTEM, SINGLE			
	690E0100		7				17								9	8				SPECIAL	69050200	2	EACH		MAILBOX SUPPORT SYSTEM, DOUBLE			
	690E50200		7				2																			EROSION CONTROL		
	EROSION CONTROL																										EROSION CONTROL	
	659E10000					22226									3445	18781				659	10000	22,226	SY		SEEDING AND MULCHING			
	659E20000					5.41									0.84	4.57				659	20000	5.41	TON		COMMERCIAL FERTILIZER			
	659E31000					4.59									0.71	3.88				659	31000	4.59	ACRE		LIME			
	659E35000					120									19	101				659	35000	120	MGAL		WATER			
	832E30000		1000												150	850				832	30000	1,000	EACH		EROSION CONTROL			
	PAVEMENT																										PAVEMENT	
	251E01000					300									45					251	01000	300	SY		PARTIAL DEPTH PAVEMENT REPAIR (441)			
	254E01000							120009		23840					18513	125336				254	01000	143,849	SY		PAVEMENT PLANING, ASPHALT CONCRET			
	407E10000							18002	88	3587					2790	18887				407	10000	21,677	GAL		TACK COAT			
	411E10000	(FIELD DRIVES)													2	4				411	10000	6	CY		STABILIZED CRUSHED AGGREGATE (FIEL			
	441E50101		6					5001	213	1043					830	5502				441	50101	6,332	CY		ASPHALT CONCRETE SURFACE COURSE			
	617E10101		7					804		203					148	859				617	10101	1,007	CY		COMPACTED AGGREGATE, AS PER PLAN			
	TRAFFIC CONTROL																										TRAFFIC CONTROL	
	621E10000																										TRAFFIC CONTROL	
	621E54000														74	180				621	54000	180	EACH		RAISED PAVEMENT MARKER REMOVED			
	646E10000														49	131				646	10000	15.06	MILE		EDGE LINE 4"			
	646E10100														2.26	12.8				646	10100	0.19	MILE		LANE LINE 4"			
	646E10200														1.12	7.02				646	10200	8.14	MILE		CENTER LINE			
	646E10300														1176	1176				646	10300	1,176	FT		CHANNELIZING LINE, 8"			
	646E10400														170	170				646	10400	170	FT		STOP LINE			
	646E10800														57	57				646	10800	57	SF		ISLAND MARKING			
	646E20110														2	2				646	20110	2	EACH		SCHOOL SYMBOL MARKING, 96"			
	646E20300														27	27				646	20300	27	EACH		LANE ARROW			
	TRAFFIC SIGNALS																										TRAFFIC SIGNALS	

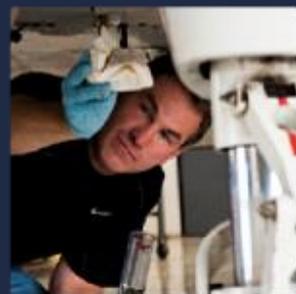
ProjectInfo General Summary DGNClip SimpleForm Data Info

Ready | 70% | 7:27 AM 3/5/2019

QUESTIONS



CADD MEETING • MARCH 6, 2019



OHIO DEPARTMENT OF
TRANSPORTATION

TRANSITIONING TO OPENROADS DESIGNER: WHAT CAN I EXPECT?

Eric Thomas
CADD Consultant
CADD & Mapping Services

TOPICS

- Bentley Software Support Timeline
- Licensing and Software Updates
- Software Compatibility
- OHDOT WorkSpace/WorkSets
- ORD Software Introduction

BENTLEY SOFTWARE SUPPORT TIMELINE

SUPPORT STATUS	CONTINUOUS SUPPORT	FULL SUPPORT	EXPIRING SUPPORT	SUPPORT DISCONTINUED
CONNECT Edition	■			
V8i (Latest SELECTseries) Refer to <i>Latest V8i Applications SELECTseries</i>		■	As of July 1, 2019	As of January 1, 2021
V8i (Earlier SELECTseries)			■	As of July 1, 2019
V8, XM, 2004, ...				■

<https://www.bentley.com/en/desktop-applications>

BENTLEY SOFTWARE SUPPORT TIMELINE

- GEOPAK v8i SS4 Support:
 - *July 2019 Support Status: “EXPIRING SUPPORT”*
 - No longer available for download
 - No OS compatibility or maintenance updates
 - No access to support analysts

BENTLEY SOFTWARE SUPPORT TIMELINE

- GEOPAK v8i SS4 Support:
 - *Jan 2021 Support Status: “SUPPORT DISCONTINUED”*
 - No service request submittals
 - No online knowledge base
 - No online learning content

OPENROADS DESIGNER LICENSING & UPDATES

- MicroStation Connect Edition (CE)
 - Released Sept. 2015
 - 64 bit version
 - Already on Update 12
- OpenRoads Designer (ORD)
 - Built on MicroStation Connect Edition
 - Next generation of Bentley Civil products
 - Replaces InRoads, GEOPAK, MX Road
 - ORD can be installed simultaneously with SS4

OPENROADS DESIGNER LICENSING & UPDATES

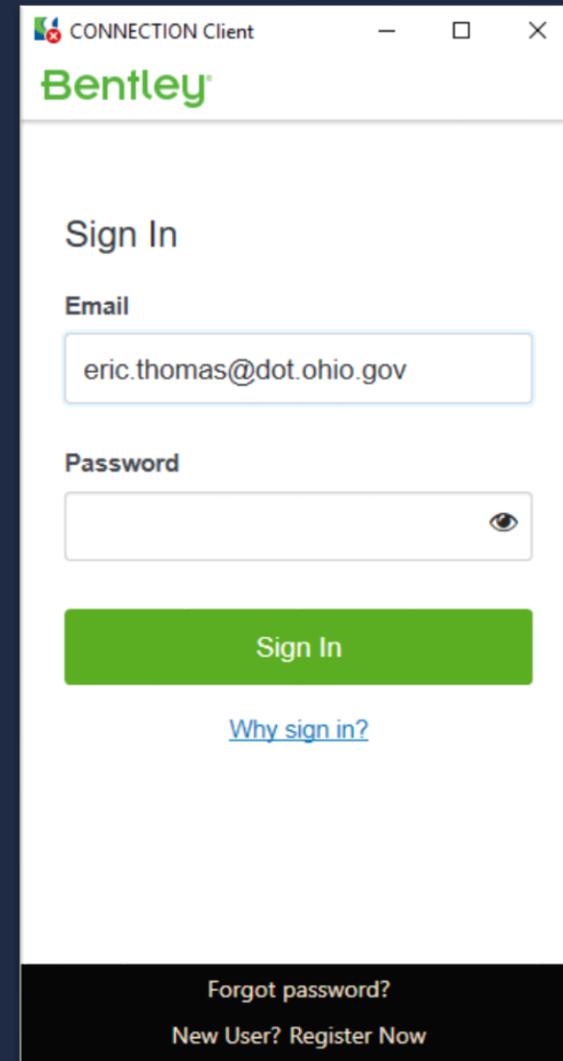
- OpenBridge Modeler
 - ODOT is not using it at this time
- OpenRail Designer
 - ODOT is not using it at this time
- Consultants may choose to use these applications

OPENROADS DESIGNER LICENSING & UPDATES

- 2019 Bentley Connect Licensing
 - Required for all Bentley products
 - ORD/MicroStation CE are two separate licenses
 - Contact you Bentley account representative

OPENROADS DESIGNER LICENSING & UPDATES

- Requires users to log in to Bentley Connection Client
- ODOT users:
 - Sign in with your ODOT email address
 - Password is automatically applied



The screenshot shows a web browser window titled "CONNECTION Client" with the Bentley logo at the top. Below the logo, the text "Sign In" is displayed. There are two input fields: "Email" with the value "eric.thomas@dot.ohio.gov" and "Password" which is currently empty. A green "Sign In" button is positioned below the fields. A link labeled "Why sign in?" is located below the button. At the bottom of the page, there are two links: "Forgot password?" and "New User? Register Now".

OPENROADS DESIGNER LICENSING & UPDATES

- ORD Software Updates
 - Quarterly update cycle
 - Updates to the ORD Standards (DGNLIBs) may not be backwards compatible with previous versions of the software
 - Current Version:
 - 2018 Release 4 Update 6 - Version 10.06.00.38
 - Keeping all users are on the same version as ODOT is essential!
 - Don't fall behind, stay current!

OPENROADS TECHNOLOGY VS. ORD

- OpenRoads Technology
 - Refers to the OpenRoads Functions embedded in SELECTseries Products
 - Introduced in SS2
 - Included with InRoads, GEOPAK, and MX Road
 - Common tools across all platforms
 - Geometry, Survey, Terrains, and 3D Modeling
 - Rely on legacy software for plan production functions

OPENROADS TECHNOLOGY VS. ORD

- OpenRoads Designer (ORD)
 - Refers to a new 64 bit version of the software built on MicroStation Connect Edition
 - Removes the legacy software (InRoads, GEOPAK, MX Road)
 - Adds new plan production tools
 - Sheet clipping
 - Labeling
 - Earthworks
 - etc...

OPENROADS TECHNOLOGY VS. ORD

- OpenRoads Designer (ORD)
 - Everything is DGN based
 - No GPK file
 - No SMD file
 - No TIN file

SOFTWARE COMPATIBILITY

- I have a project already started in SS4.
Can I convert it to ORD?

SOFTWARE COMPATIBILITY

ODOT CADD Standards Version	Corresponding Bentley Software
V7std	V7
ODOTstd	SS1/SS2/SS3
ODOTcadd	SS4
OHDOT	ORD/CE

SOFTWARE COMPATIBILITY

- SS4 to ORD
 - SS4 Civil Data is not forward compatible with ORD
 - SS4 DGN files can be referenced by ORD
 - Referenced SS4 Terrains can be leveraged with limited value
 - In general, migrating SS4 data to ORD is a conversion process
 - Not impossible, but difficult
 - Could be time consuming

SOFTWARE COMPATIBILITY

- I'm working in ORD, but my sub-consultant is working in SS4. Can the sub use my ORD data?

SOFTWARE COMPATIBILITY

- ORD data with SS4
 - ORD Civil Data is *not* backwards compatible
 - Your team should be on the same platform
 - ODOT does not want mismatched sources of data

- WorkSpace
 - Defines the CADD Standards
 - Defines the location of the WorkSets
 - Selected from the Work Session page after opening ORD

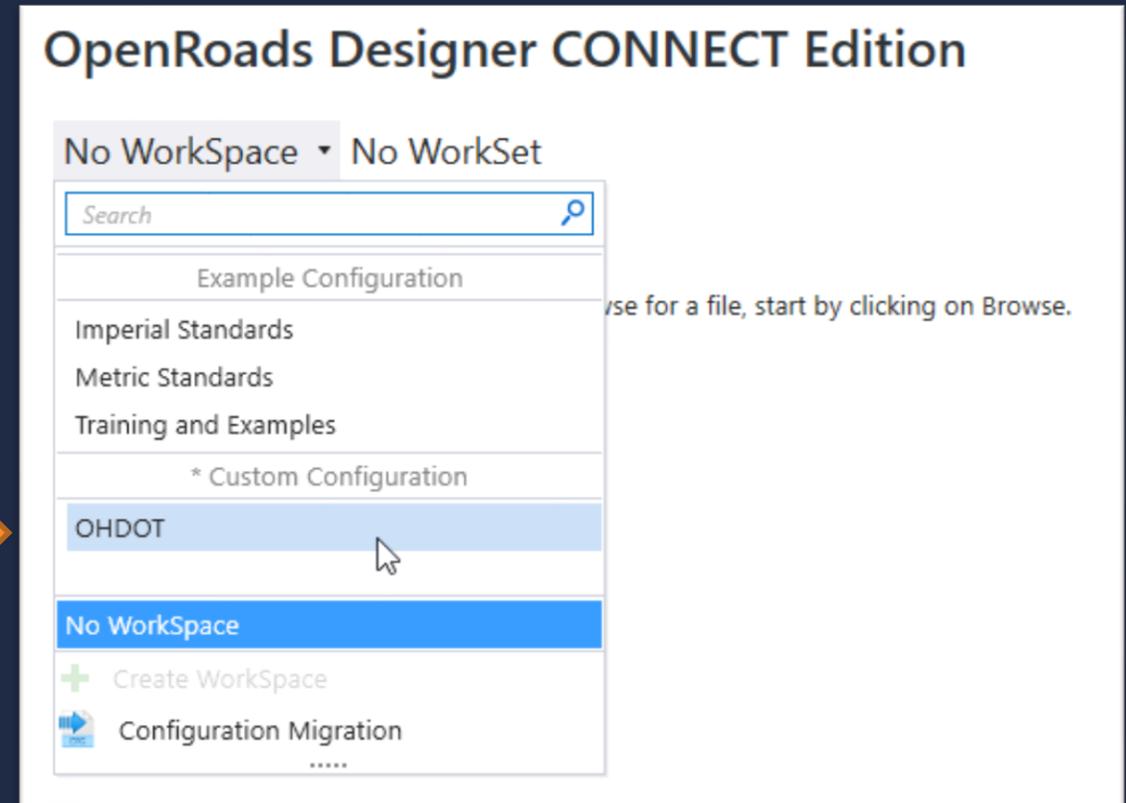
- OHDOT WorkSpace
 - First draft released January 18, 2018
 - Will be taken out of draft April 1, 2019
 - Defines Ohio DOT CADD Standards for Connect products
 - Not compatible with SS4
 - Complete active projects using current software versions according to ODOT's ORD migration policy

OHDOT WORKSPACE

- OHDOT WorkSpace: Updates
 - Updated as needed (not on a quarterly schedule)
 - Use ODOT's Synchronization Tool

OHDOT WORKSPACE

- OHDOT WorkSpace
- Selected from the ORD Work Session page



WORKSETS

- WorkSet (ORD) = Project (SS4)
- OHDOT WorkSet
 - Folder Structure modified for ORD/ProjectWise
 - Supports workflows
 - Adds administrative value

File

Home

Share

View



Pin to Quick access	Copy	Paste	Cut Copy path Paste shortcut	Move to Copy to	Delete Rename	New folder	New item Easy access	Properties Open Edit History	Select all Select none Invert selection		
Clipboard				Organize		New		Open		Select	

← → ↕ ↑ << WorkSpaces > OHDOT > WorkSets > 000000_OHDOT_Template

Search 000000_OHDOT_Templ... 🔍

WorkSpaces

OHDOT

WorkSets

000000_OHDOT_Template

000000_SurveyLabeling

94319_D03_Survey

103718_Geotech

105153_RW_TEST

121212

123456_2018_Q3

555555

731193_SCI73_Survey

731193_TEST

Name

Title

Comments

000-Admin

100-Planning

200-Environmental

300-Survey

400-Engineering

500-RealEstate

600-Contracts

700-Estimating

800-Construction

900-Accounting

990-WorkSetStandards

999-Scratch

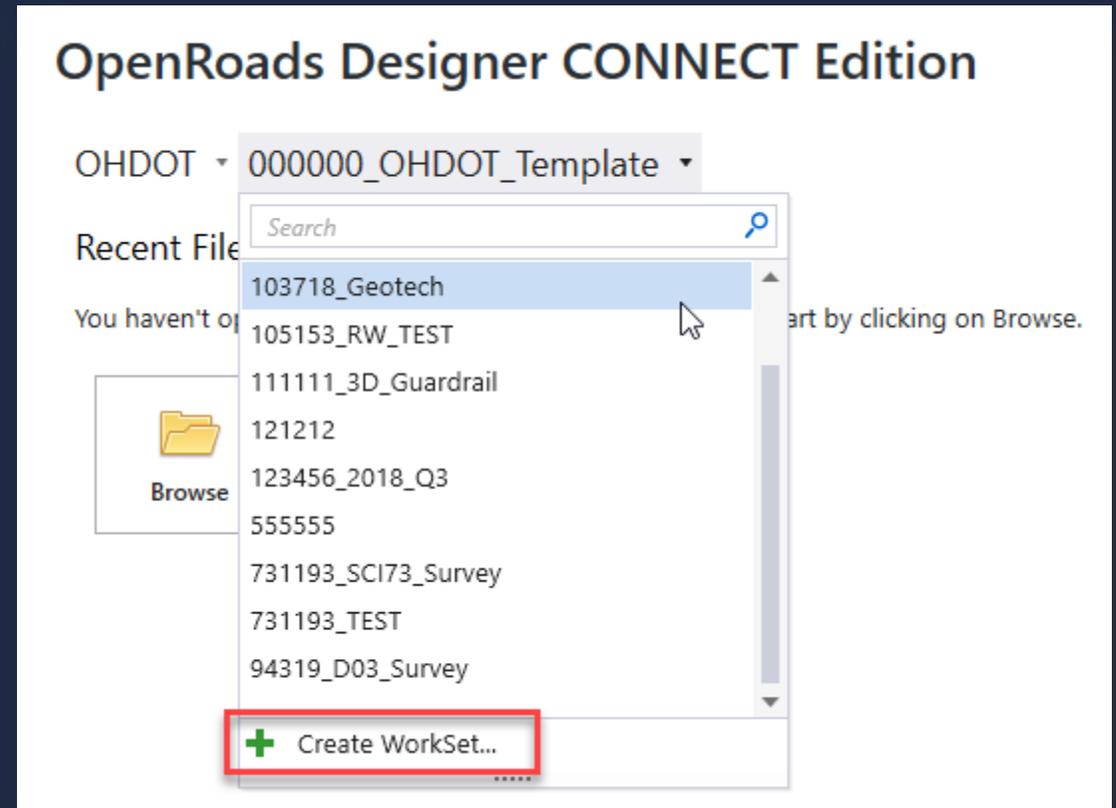


WORKSETS

- 300-Survey
 - Survey information is separate from Design
- 400-Engineering
- 990-Standards
 - Standards folder moved to allow all users access
- There is no more GEOPAK folder

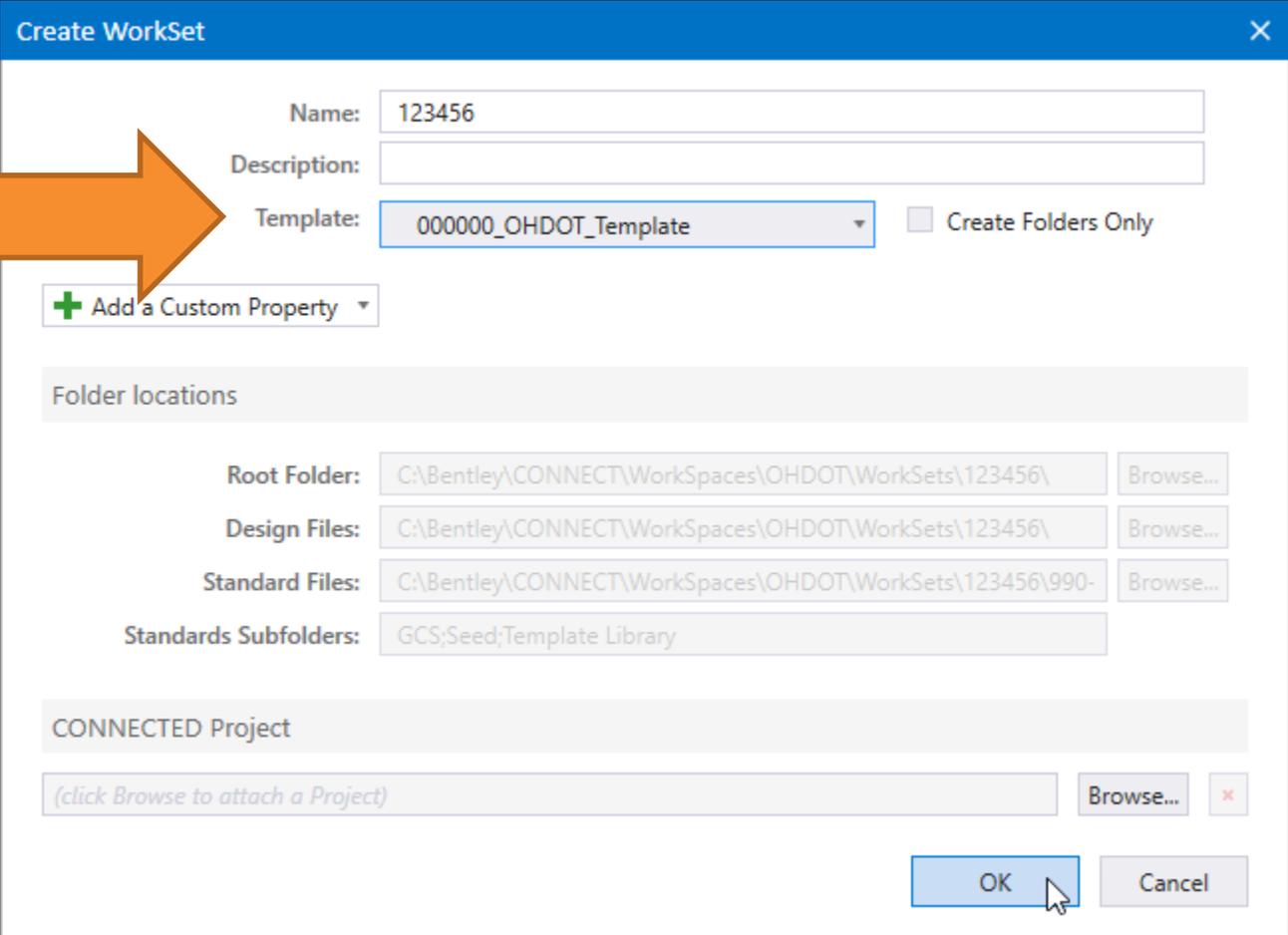
WORKSETS

- WorkSet Selection
 - Selected from the ORD Work Session page



WORKSETS

- WorkSet Creation
 - Outside of ProjectWise, a Template is used



The screenshot shows the 'Create WorkSet' dialog box with the following details:

- Name:** 123456
- Description:** (empty)
- Template:** 000000_OHDOT_Template (indicated by an orange arrow)
- Create Folders Only
- + Add a Custom Property** (dropdown)
- Folder locations:**
 - Root Folder:** C:\Bentley\CONNECT\WorkSpaces\OHDOT\WorkSets\123456\ (Browse...)
 - Design Files:** C:\Bentley\CONNECT\WorkSpaces\OHDOT\WorkSets\123456\ (Browse...)
 - Standard Files:** C:\Bentley\CONNECT\WorkSpaces\OHDOT\WorkSets\123456\990- (Browse...)
 - Standards Subfolders:** GCS;Seed;Template Library
- CONNECTED Project:** (click Browse to attach a Project) (Browse...)
- Buttons:** OK, Cancel

WORKSETS

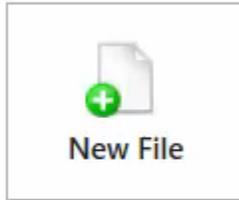
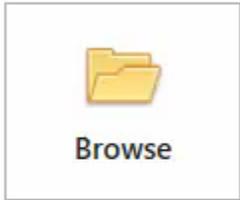
- Startup.dgn
 - Located in 400-Engineering
 - Used as a starting place to open the new WorkSet
 - Upon first use, a VBA app is used to rename the default files with the ODOT PID Number
 - This VBA is not applicable in ProjectWise
 - After completion, the user is prompted to create design files for the project

OpenRoads Designer CONNECT Edition

No Workspace ▾ No WorkSet

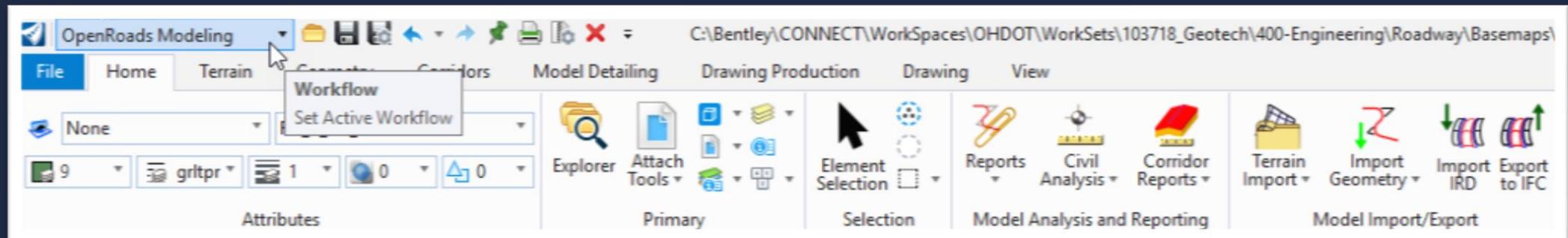
Recent Files

You haven't opened any files recently. To browse for a file, start by clicking on Browse.



OPENROADS DESIGNER GUI

- Uses the Ribbon Interface



OPENROADS DESIGNER GUI

- WorkFlows
 - Located in the upper left of the interface
 - Allows access to groups of tools grouped logically for specific workflows

OPENROADS DESIGNER GUI

- Search Ribbon
 - Located in the upper right of the interface
 - Easily find commands
 - Lists the various locations where the tool can be accessed

OPENROADS DESIGNER GUI

- Non-drawing related tools are located on the “backstage”
 - Configuration Variables
 - User Preferences, function key menus
 - DGN File Settings
 - Etc...

File Home Terrain Geometry Corridors Model Detailing Drawing Production Drawing View

Search Ribbon (F4)

Attributes: None, Default, 0, 0, 0, 0, 0

Primary: Explorer, Attach Tools

Selection: Element Selection

Model Analysis and Reporting: Reports, Civil Analysis, Corridor Reports

Model Import/Export: Terrain Import, Import Geometry, Import IRD, Export to IFC

View 1, Design

Properties Explorer

Navigation icons: Pan, Rotate, Zoom, etc.



Element Selection

Selection tools: Window, Lasso, Circle, Polygon, etc.

Filtering tools: +, -, Select, etc.

Navigation icons: Back, Forward, Home, etc.

Design | 1 2 3 4 5 6 7 8

Element Selection > Identify element to a

Default

OPENROADS SURVEY

- Survey Processing
 - The ORD process is nearly identical to SS4
 - Annotation process has changed

OPENROADS SURVEY

- OHDOT Procedures:
 - Parent Folder: 300-Survey/Basemaps/
 - Process survey in the Field Book (FB) design file
 - Exporting to a Survey Basemap (BE) is discontinued
 - Design personnel will reference the FB file from the 300-Survey/Basemaps/ folder

OPENROADS SURVEY

- Survey Annotation
 - Survey Decorators
 - Used to display point names, descriptions, etc.
 - This information is *not* written to the DGN file
 - Cannot be viewed across reference attachments
 - Settings defined in the User Preferences

OPENROADS SURVEY

- Survey Annotation
 - Element/Model Annotation
 - Written to the DGN file
 - Annotations that might be shown on the plan
 - Format defined by the Feature Definition
 - Annotated by element or model

File Home Terrain Geometry Corridors Model Detailing Drawing Production Drawing View

Attributes: None, Default, 0, 0, 0, 0, 0

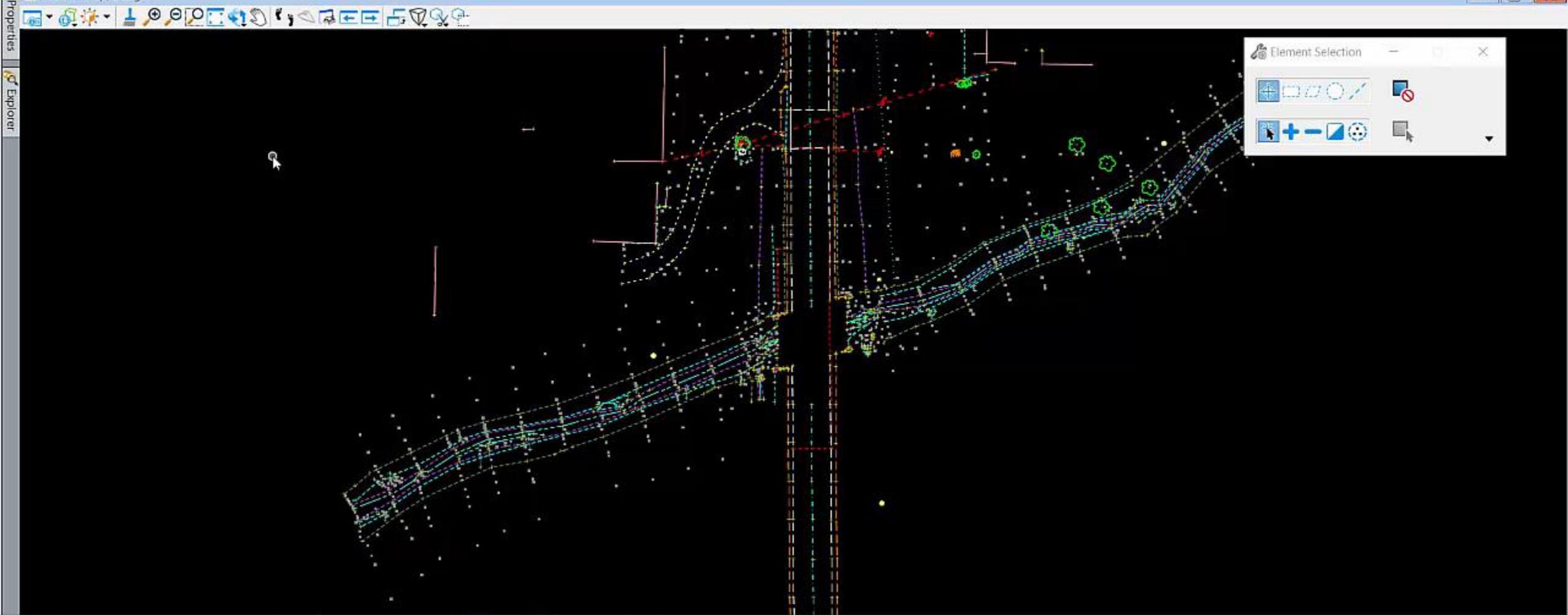
Primary: Explorer, Attach Tools

Selection: Element Selection

Model Analysis and Reporting: Reports, Civil Analysis, Corridor Reports

Model Import/Export: Terrain Import, Import Geometry, Import IRD, Export to IFC

View 1 - Top, Design



Element Selection

Selection tools: Box, Circle, Polygon, Lasso, Erase, Copy, Paste, Undo, Redo, Select All, Select None, Select Invert, Select Similar, Select Connected, Select Hidden, Select Visible, Select Locked, Select Unlocked, Select Frozen, Select Unfrozen, Select Locked/Unlocked, Select Frozen/Unfrozen, Select Locked/Frozen, Select Unlocked/Unfrozen, Select Locked/Frozen/Unfrozen.

Navigation and tool icons: Home, Previous, Next, Design, 1, 2, 3, 4, 5, 6, 7, 8, X, and other utility icons.

Element Selection > Identify element to a

- Geographic Coordinate Systems
 - DTY file used to define custom coordinate systems
 - Customizing the DTY file is currently not supported by ORD/CE
 - Bentley Map Connect Edition is required
 - Current Options:
 - Purchase a single license of Bentley Map
 - Edit the DTY file in SS4 to be used in ORD/CE
 - Leave the coordinate system undefined

- Drainage Field Codes/Features
 - Removed the generic field codes for structures and pipes:
 - CBR, CBS, CI, MI, STMH, SSMH
 - See ODOT's SS4 OpenRoads Survey training guide for more information

RIGHT-OF-WAY AND PARCELS

- There is not an equivalent to the GEOPAK COGO Parcel elements in ORD
- Use closed geometry for parcel components
 - Parent Tract
 - Present Road Occupied
 - Taking Areas, Easements
 - Etc...

RIGHT-OF-WAY AND PARCELS

- Store parcel areas as closed ORD geometry
- Feature Definitions are available in the OHDOT WorkSpace for the various parcel component areas
- Reports are available for closures and legal descriptions

File Home Terrain Geometry Corridors Model Detailing Drawing Production Drawing View

Search Ribbon (F4)

Element Selection Selection Clip Create Saved View Update View Settings Apply Saved View Place Table Place Note Place Label Place Text Edit Text Change Text Attributes Annotations Element Annotation Model Annotation Named Boundary Drawing Scales

1:20 ACS Plane Lock Annotation Scale Lock

No Feature Definition

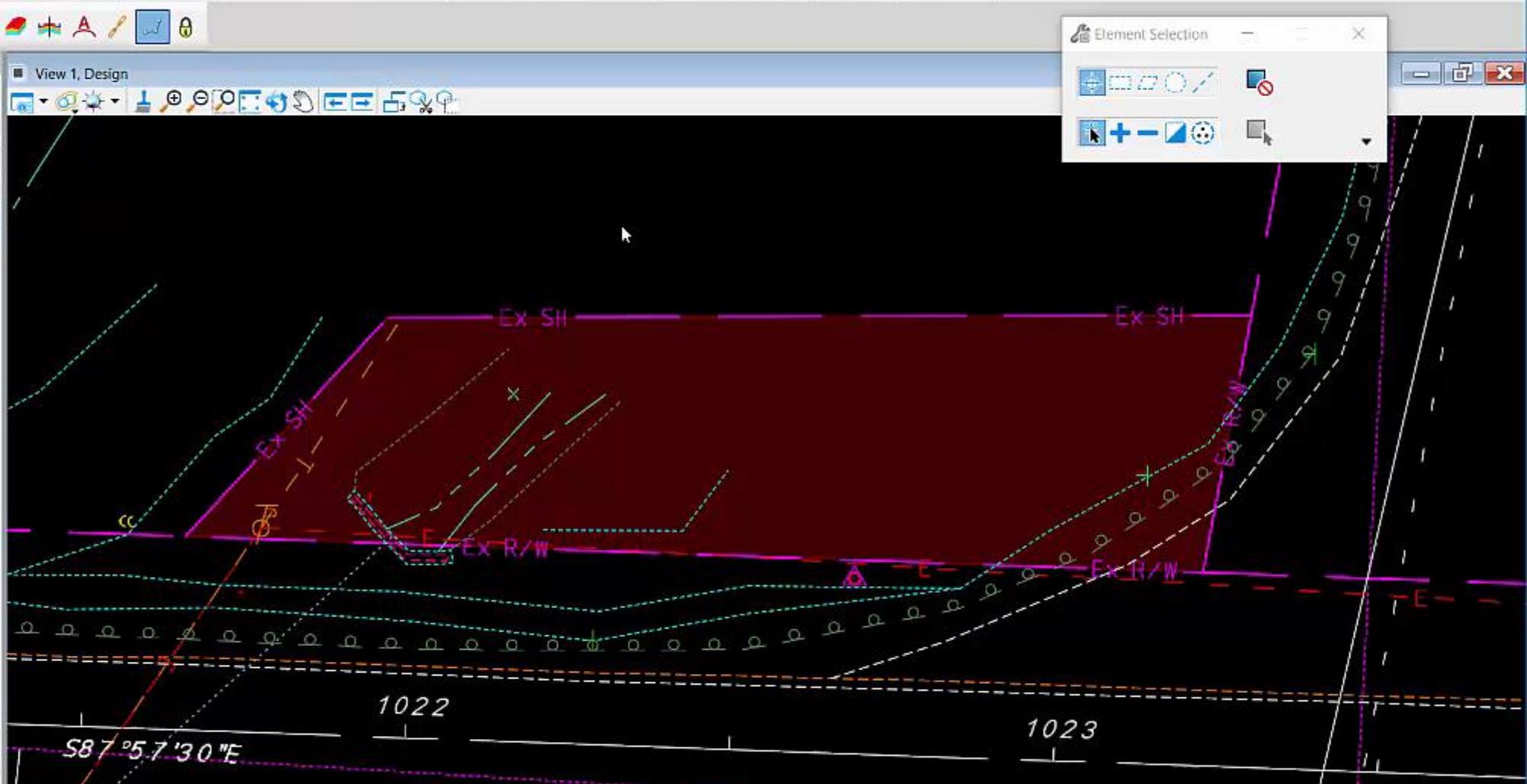
Explorer

- File
- Items
- OpenRoads Model
- Sheet Index
- OpenRoads Standards
- Subsurface Utilities Model
- Survey

Standards

- Libraries
 - Feature Definitions
 - Feature Definition (OHDOT_Feature_...)
 - Alignment
 - Terrain
 - Corridor
 - Superelevation
 - Linear Template
 - Surface Template
 - Linear
 - Buildings
 - Divisions
 - Drainage

Search



Element Selection

Tools for selecting and manipulating elements in the drawing, including pan, zoom, and selection tools.

Design

1 2 3 4 5 6 7 8

Element Selection > Identify element to a

Default

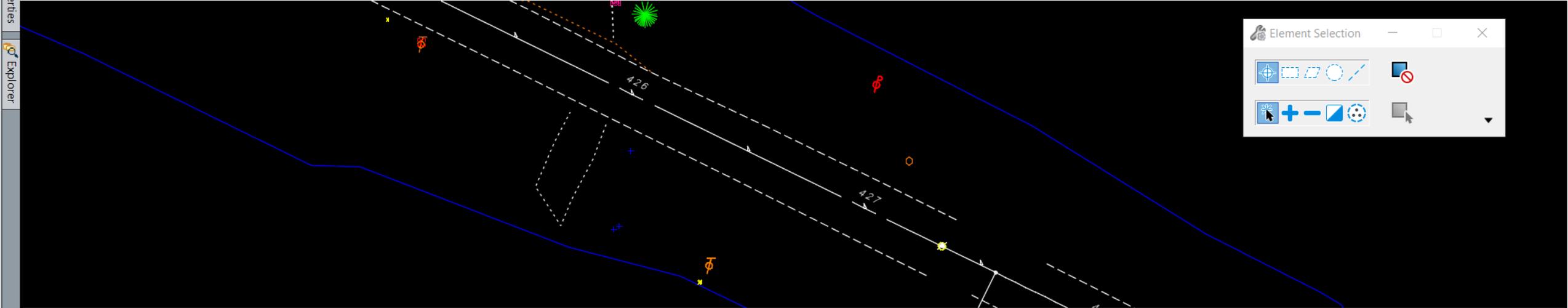
ALIGNMENTS AND PROFILES

- No GPK File
 - Alignments and profiles are stored in DGN files
 - Typically one alignment per file
 - Profiles are a sub-component of the alignment
 - Can be imported from the GPK
 - Can export to LandXML

ALIGNMENTS AND PROFILES

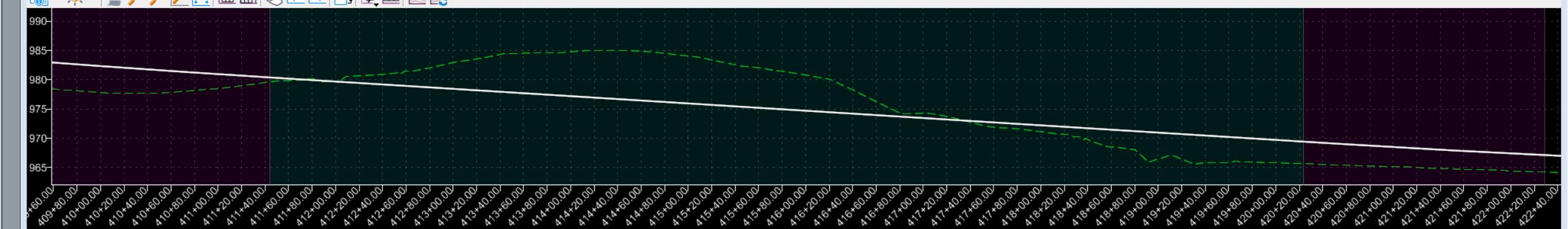
○ Profiles

- Profiles are stored in the same design file as the geometry
- Not specifically written to the DGN file
- Displayed in a separate view window
- Can be imported from the GPK
- Can export to LandXML



Element Selection

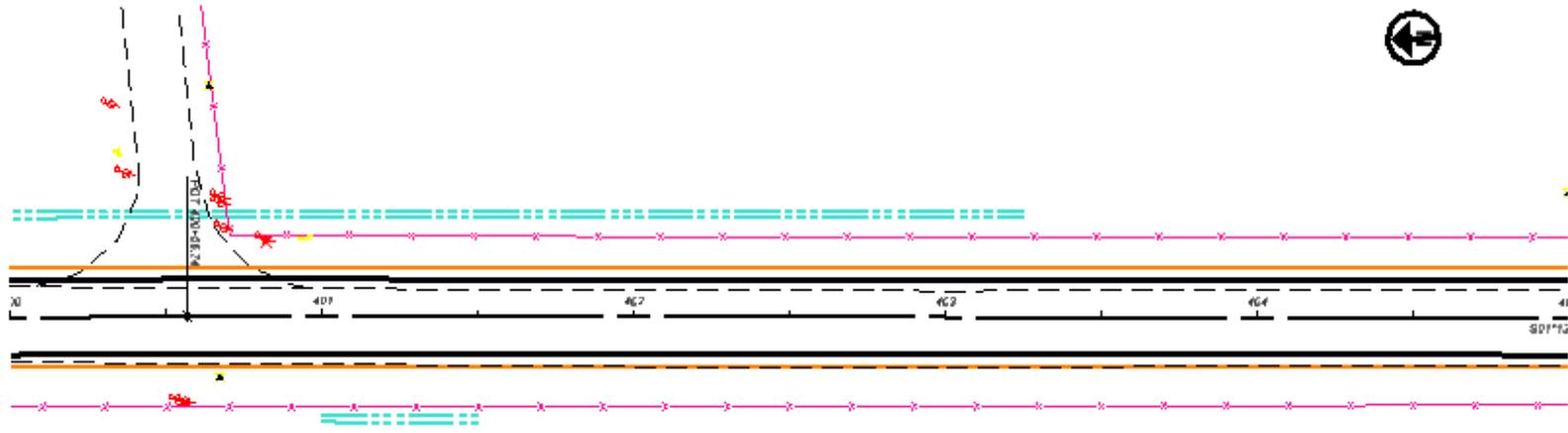
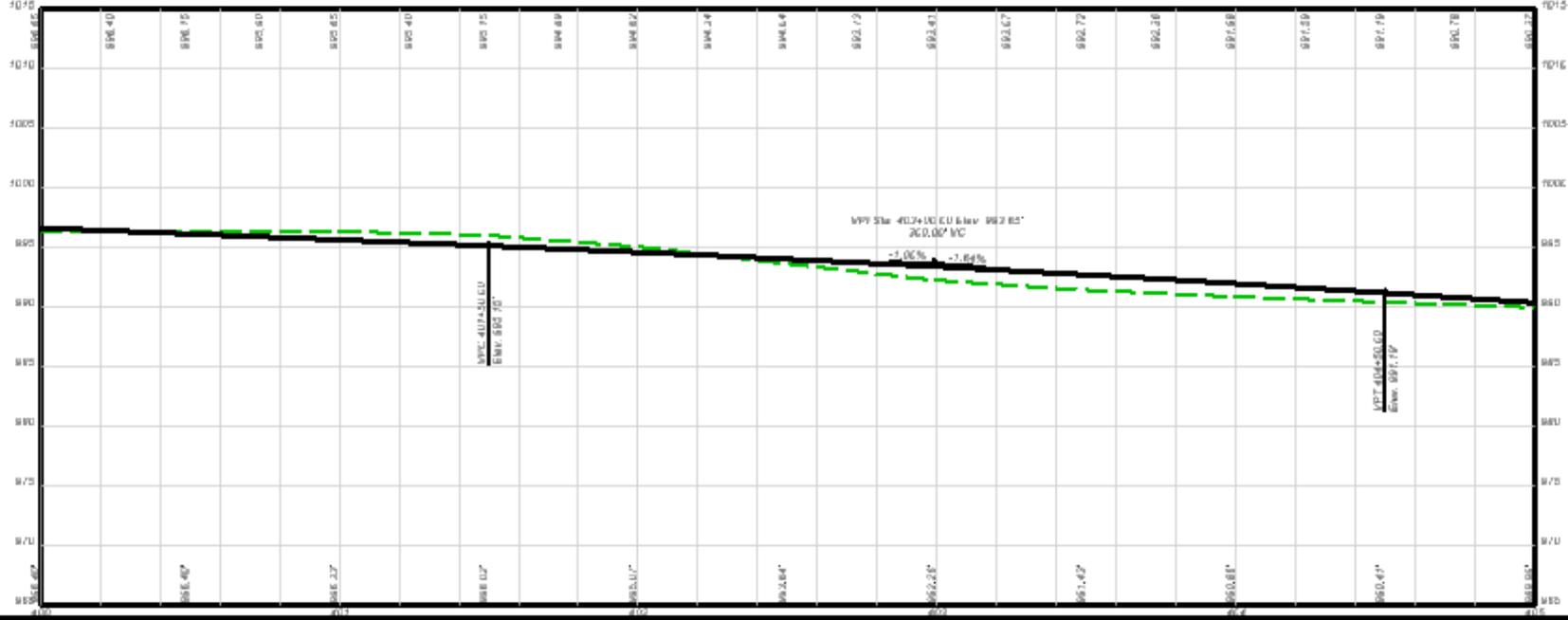
- Navigation icons: pan, zoom in, zoom out, home, viewports, and a red prohibition sign.
- Selection icons: a mouse cursor, a plus sign, a minus sign, a square, a circle, and a grey square.



ANNOTATION AND SHEET CLIPPING

- Eric's Disclaimer (not official ODOT policy)
 - Modern appearance
 - Content over presentation
 - Not everyone in ODOT has seen this stuff yet...





DATE	11/05/21
XX	XX
BY	MM-DD-Y
SCALE	1" = 40'
PROJECT	
SHEET	1

PLAN AND PROFILE
SHEET SUB-TITLE



ANNOTATION AND SHEET CLIPPING

○ Fonts

- Arial will be used for ODOT plans
- OHDOTSymbols True Type Font added for special characters not found in standards fonts

ANNOTATION AND SHEET CLIPPING

- Alignment Annotation
 - Annotation is defined by the Feature Definition
 - Annotation is dynamically updated if the geometry is changed
 - This uses a MicroStation Field
 - Annotation can be placed in the geometry basemap or the sheet Drawing Model

ANNOTATION AND SHEET CLIPPING

- Alignment Annotation
 - Stations, tics, and curve data are annotated in three
 - Each set is defined with different spacing for the station text (100', 500', 1000')
 - Curve and Spiral data is annotated independently
 - Don't waste time reformatting a combined SCS curve data presentation
 - Just go with it! The necessary information is there

File Home Terrain Geometry Corridors Model Detailing Drawing Production Drawing View

Search Ribbon (F4)

Element Selection | Selection | Clip | Create Saved View | Update View Settings | Apply Saved View | Place Table | Place Note | Place Label | Place Text | Edit Text | Change Text Attributes | Element Annotation | Model Annotation | Named Boundary | Drawing Scales

No Feature Definition

Explorer | View 1, Design

File | Items | OpenRoads Model | Sheet Index | OpenRoads Standards | Standards

Level Display - View 1

View Display

(none) Levels

123456_BK001.dgn, Design

Ref, 123456_BK001.dgn, Design-3D

Name	Used
Default	•
GE_P_Alignment	•
GE_P_Alignment_100_Curve_Data	
GE_P_Alignment_100_Stations	
GE_P_Alignment_500_Curve_Data	
GE_P_Alignment_500_Stations	
GE_P_Alignment_1000_Curve_Data	
GE_P_Alignment_1000_Stations	
AP_P_Airside	
AP_P_Airspace	
AP_P_Landside	
AP_P_PCI_Pavement	
AP_P_PCI_Samples	
AP_P_PCI_Text	
AP_P_Runway	
AP_P_Text	
AP_X_Airside	

Element Selection

Selection tools: pan, zoom, rotate, etc.

Design | 1 2 3 4 5 6 7 8 | Element Selection > Identify element to a | Default

ANNOTATION AND SHEET CLIPPING

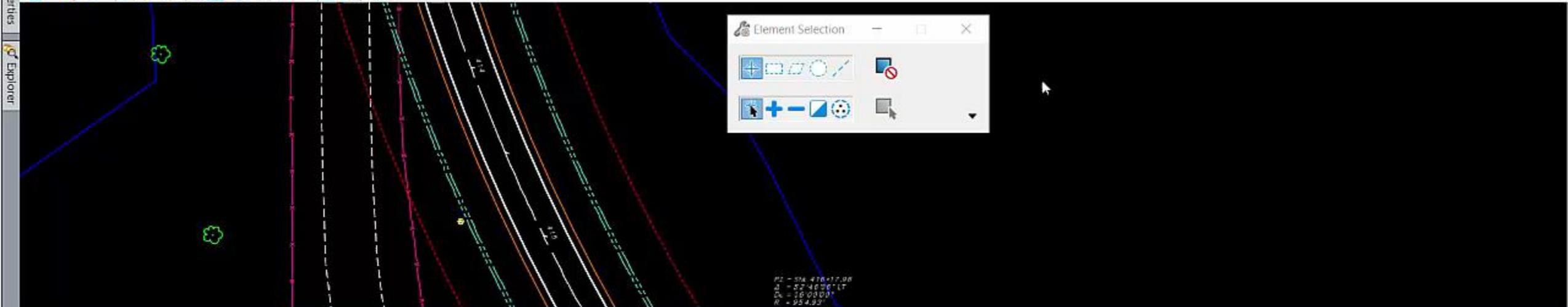
- Sheet Clipping
 - Uses MicroStation Named Boundaries
 - DGNLIB Managed
 - Offers more options
 - Sheet borders have been improved
 - All sheets are clipped into the active file

File Home Terrain Geometry Corridors Model Detailing Drawing Production Drawing View Search Ribbon (F4)

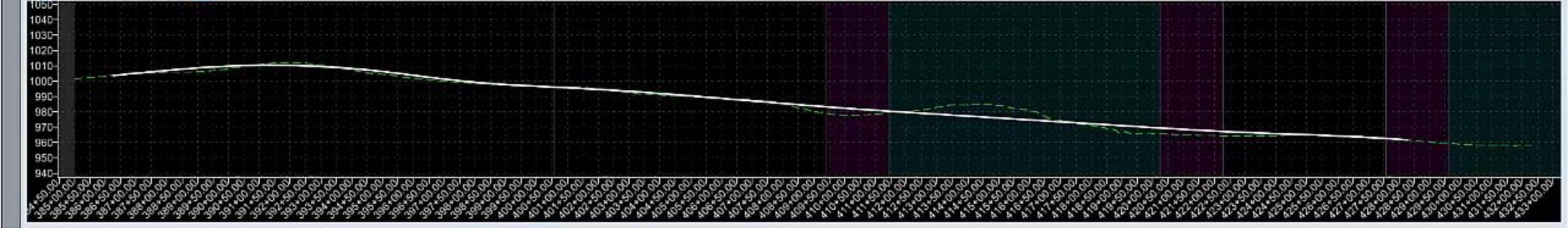
Element Selection Selection Clip Volume Clip Create Saved View Update Saved View Settings Saved Views Apply Saved View Tables Place Table Place Note Place Label Place Text Edit Text Change Text Attributes Text Annotations Element Annotation Model Annotation Named Boundary Drawing Scales

View 1, Design

Properties Explorer



View 4, AttachedLongSection - CLP_S1B5



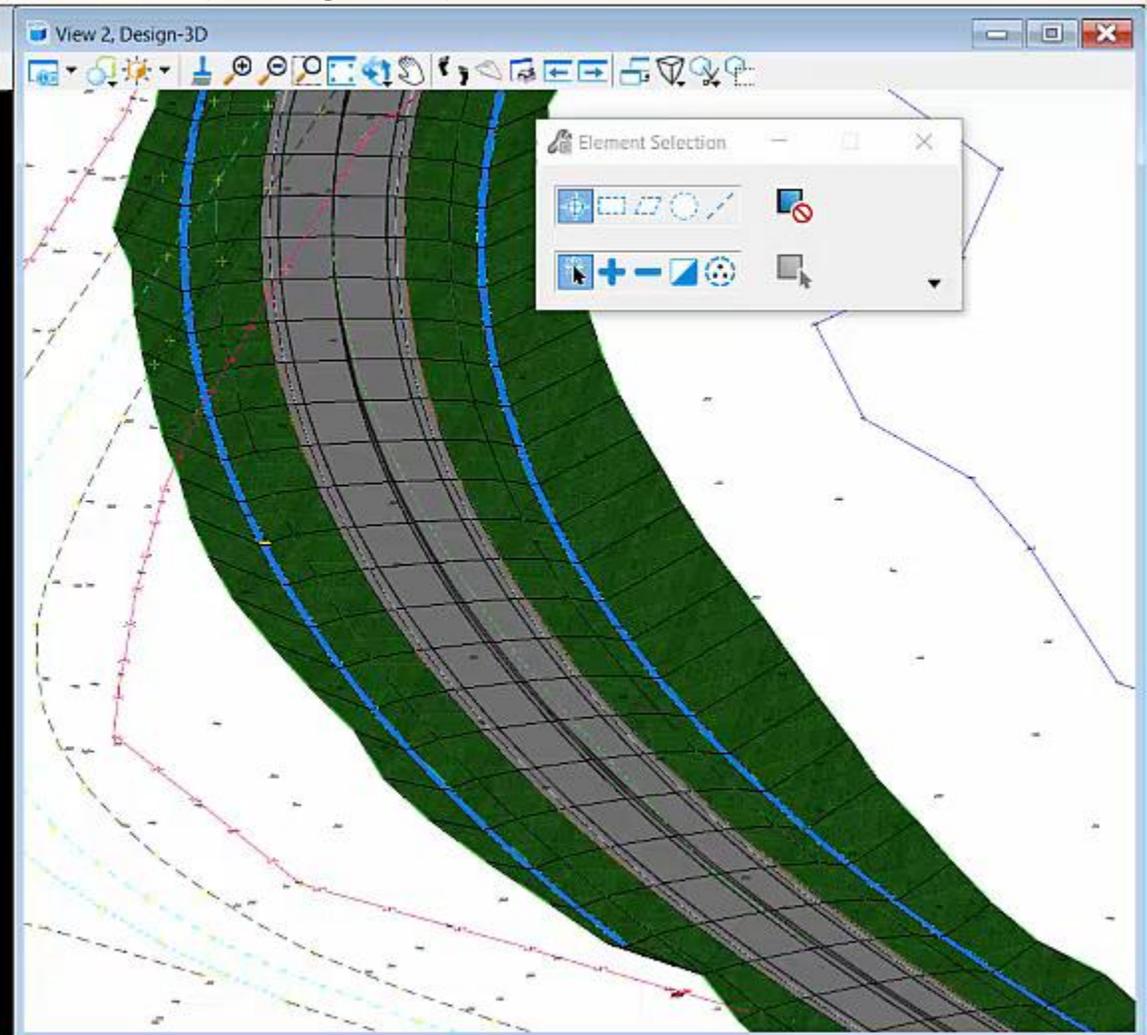
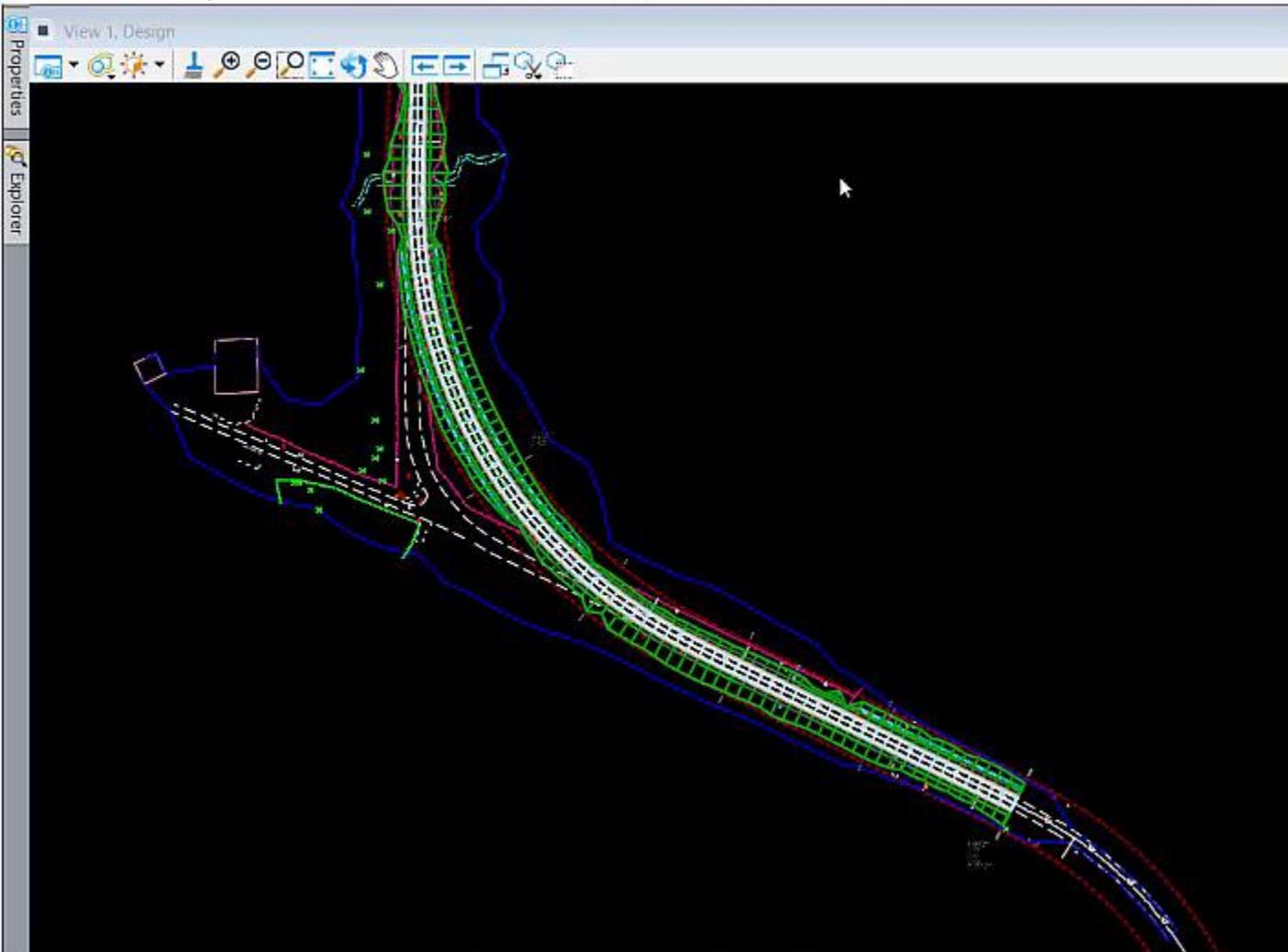
Multi-Model Views 1 2 3 4 5 6 7 8

Element Selection > Identify element to a

Default

File Home Terrain Geometry Corridors Model Detailing Drawing Production Drawing View Search Ribbon (F4)

Element Selection Selection Clip Volume Clip Create Saved View Update Saved View Settings Apply Saved View Place Table Place Note Place Label Place Text Edit Text Change Text Attributes Annotations Element Annotation Model Annotation Named Boundary Drawing Scales



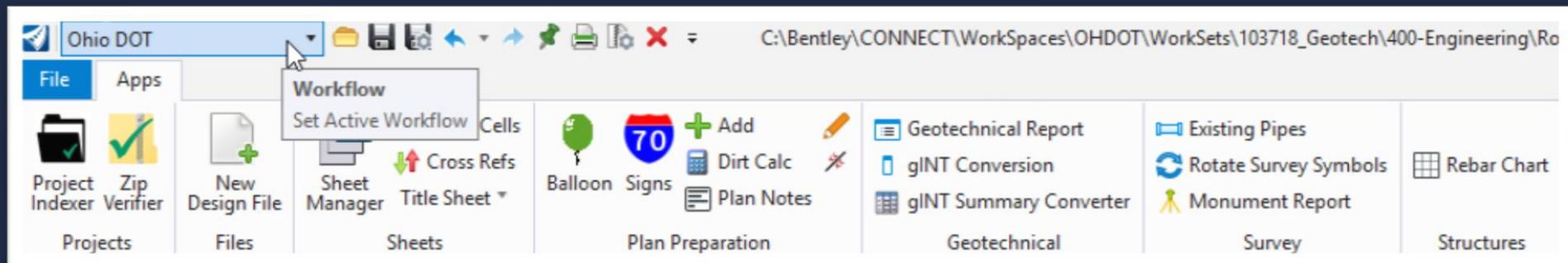
Multi-Model Views 1 2 3 4 5 6 7 8

Element Selection > Identify element to a

Default

CUSTOM APPLICATIONS

- An OHDOT Worklow is added to the GUI for VBA Applications



CUSTOM APPLICATIONS

- VBA Applications
 - Anything that reads the GPK file is discontinued
 - Bentley delivered VBA apps for ORD are included in the OHDOT workspace
 - ViewSet.mvba
 - SmartObjects.mvba
 - SnappableToggle.mvba

QUESTIONS



Last updated 3/25/2019



How we Reduced Estimated Construction Cost by 30% Using OpenRoads Tools



Welcome

March 6, 2019

Alexandra Monda
Jan Barnhart

Who We Are

Mead&Hunt

EMPLOYEE-OWNED
ENGINEERING &
ARCHITECTURE FIRM

~700
EMPLOYEES



#139

TOP 500 DESIGN FIRM
BY ENGINEERING NEWS RECORD

ONE OF THE BEST
PLACES TO WORK
BY CE NEWS

\$137
MILLION

REVENUES IN FY 2018



30+
OFFICES
NATIONWIDE SERVICE AREA

ZWEIG GROUP

HOT
FIRM
LIST

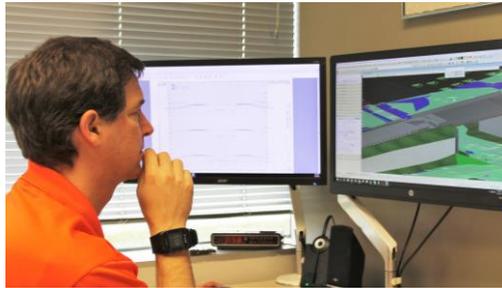
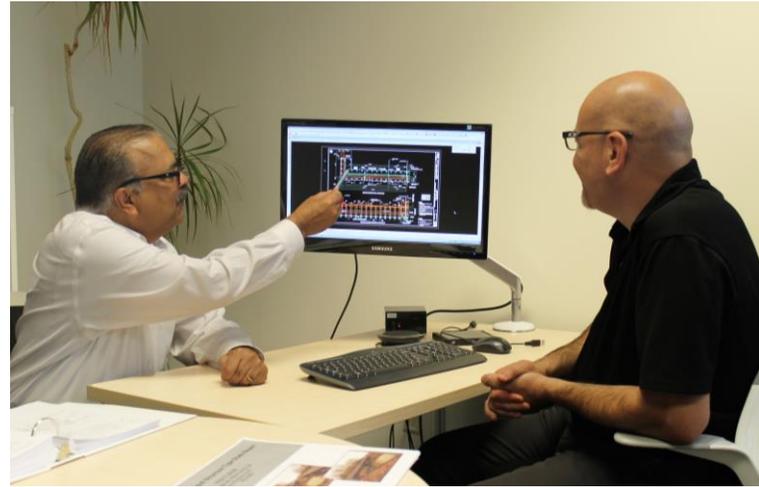


Alexandra Monda, PE
Alex.Monda@Meadhunt.com

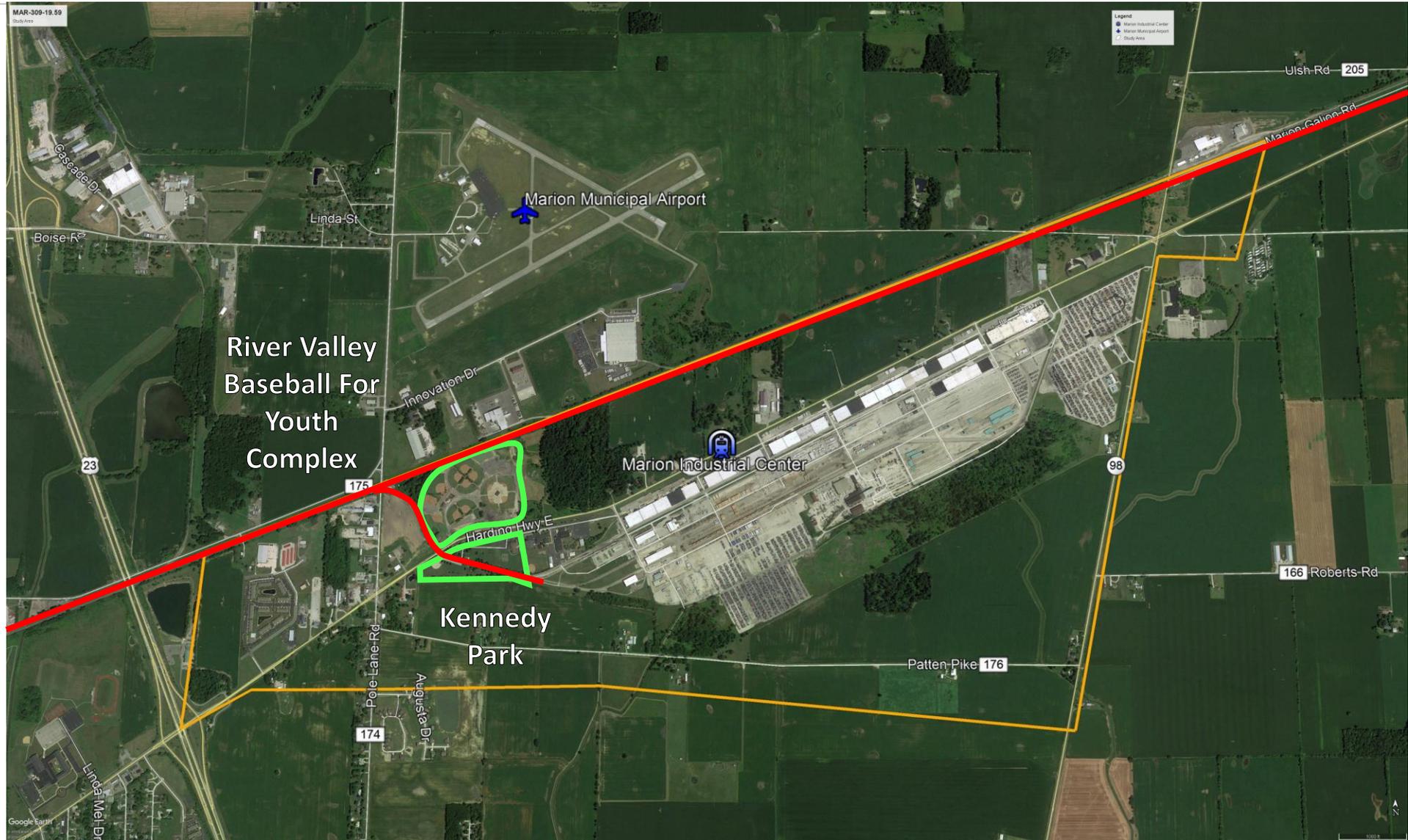
Dan Barnhart
Dan.Barnhart@Meadhunt.com



Who We Are



MAR-309 Study Area



MAR-309 Alternates-minor improvements



MAR-309 Alternates-Relocation with Underpass



MAR-309 Alternates-Relocation with Overpass



MAR-309 Alternates-Another Overpass



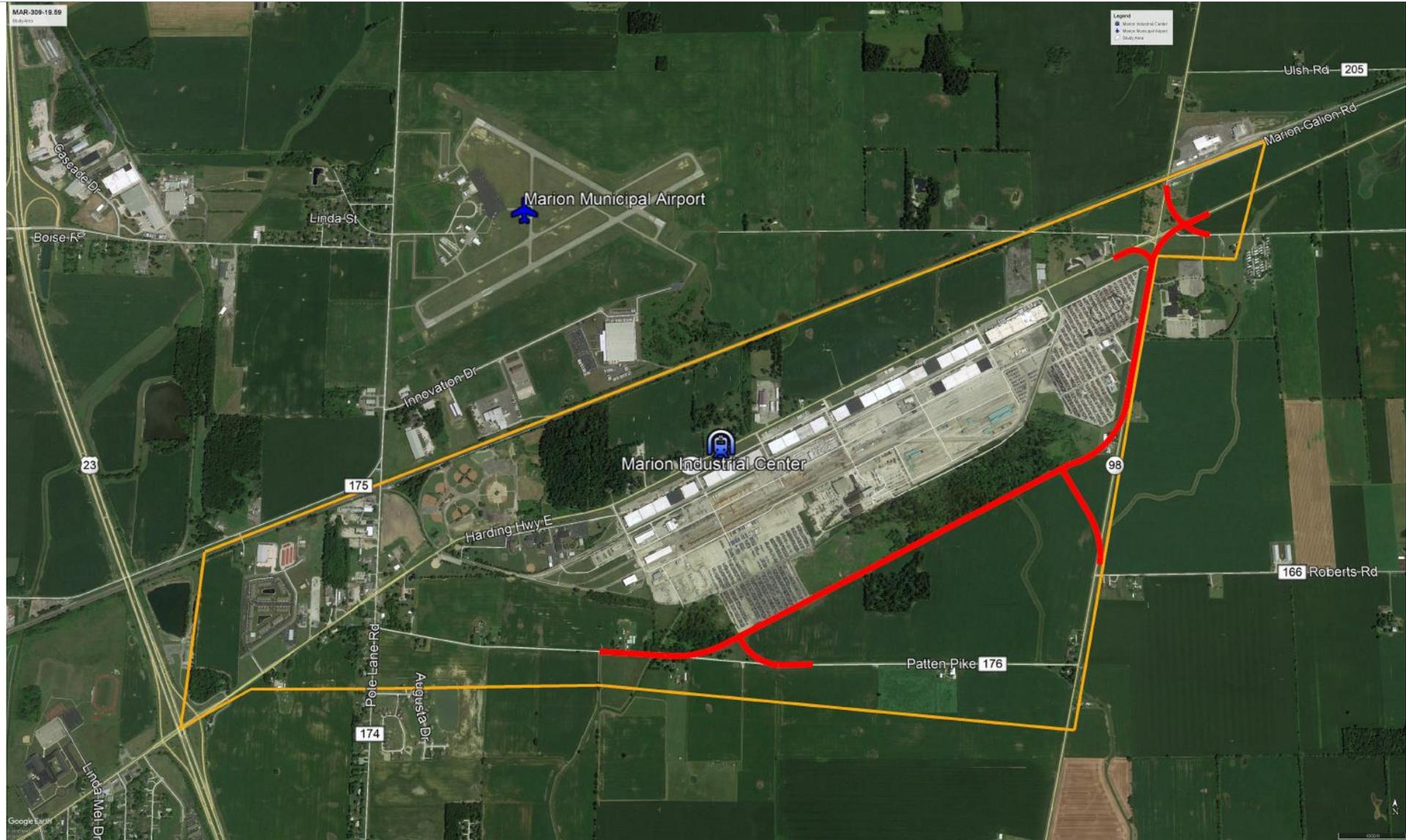
MAR-309 Alternates-Relocating Rail Spur



MAR-309 Alternates-Relocation w/o Separation



MAR-309 Alternates-Another One



MAR-309 Alternates-Another One



MAR-309 Alternates-No Build



MAR-309 Preferred Alternative



Design Kickoff Meeting

- Thanks for the team's hard work, but...
 - The project schedule has now been accelerated, and...
 - We only have funding for about 2/3 of the preliminary cost estimate

Design Kickoff Meeting

- Thanks for the team's hard work, but...
 - The project schedule has now been accelerated, and...
 - We only have funding for about 2/3 of the preliminary cost estimate
- Any suggestions...?

Design Kickoff Meeting

- Thanks for the team's hard work, but...
 - The project schedule has now been accelerated, and...
 - We only have funding for about 2/3 of the preliminary cost estimate
- Any suggestions...? Anyone...?

Design Kickoff Meeting

- Thanks for the team's hard work, but...
 - The project schedule has now been accelerated, and...
 - We only have funding for about 2/3 of the preliminary cost estimate
- Any suggestions...? Anyone...? Bueller...?

Design Kickoff Meeting

- Thanks for the team's hard work, but...
 - The project schedule has now been accelerated, and...
 - We only have funding for about 2/3 of the preliminary cost estimate
- Any suggestions...? Anyone...? Bueller...? Bueller?



Design Kickoff Meeting

- Thanks for the team's hard work, but...
 - The project schedule has now been accelerated, and...
 - We only have funding for about 2/3 of the preliminary cost estimate
- Any suggestions...? Anyone...? Bueller...? Bueller?



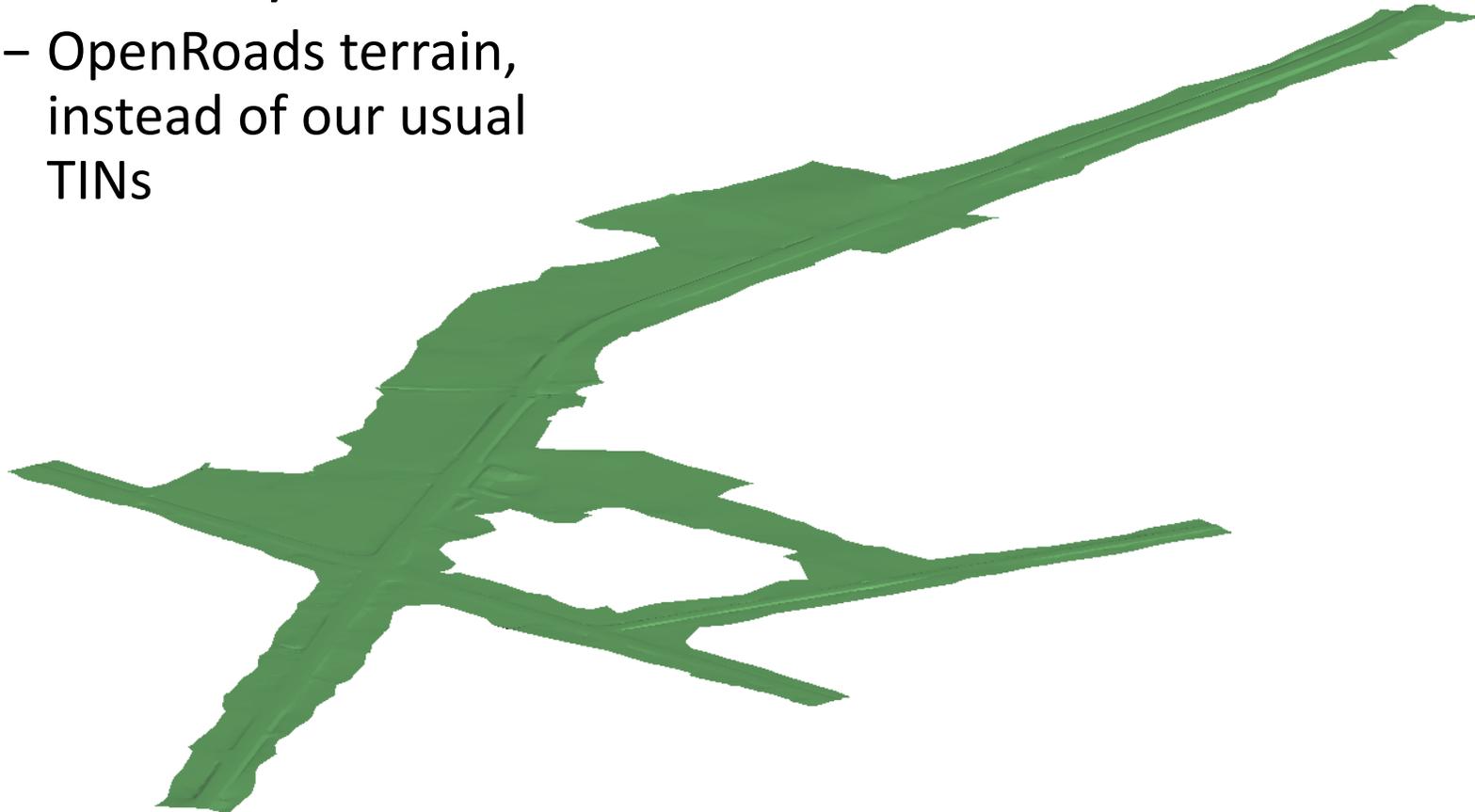
Design Kickoff Meeting

- Let's use OpenRoads technology and model it!!!



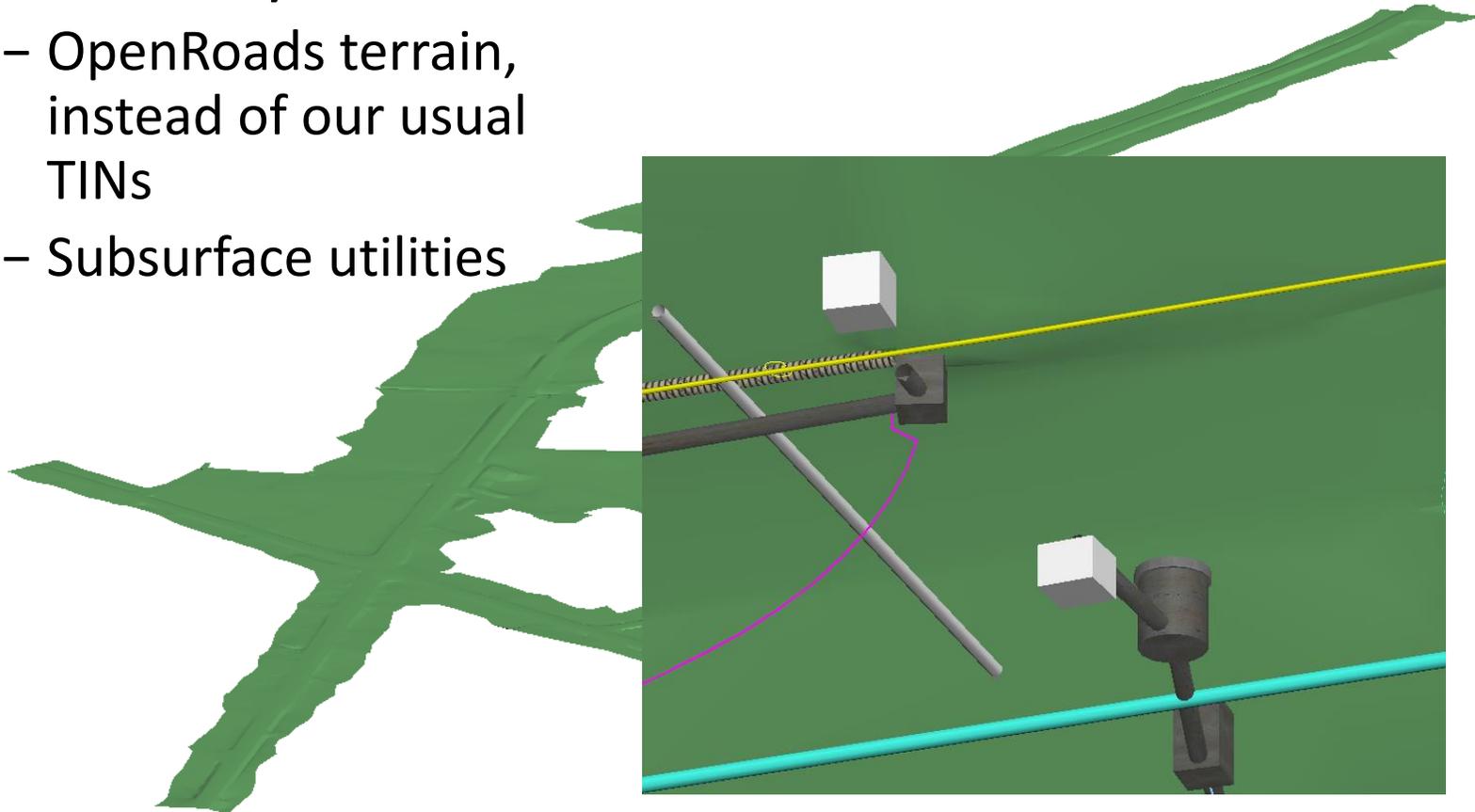
So, now what?

- Field survey
 - OpenRoads terrain, instead of our usual TINs



So, now what?

- Field survey
 - OpenRoads terrain, instead of our usual TINs
 - Subsurface utilities

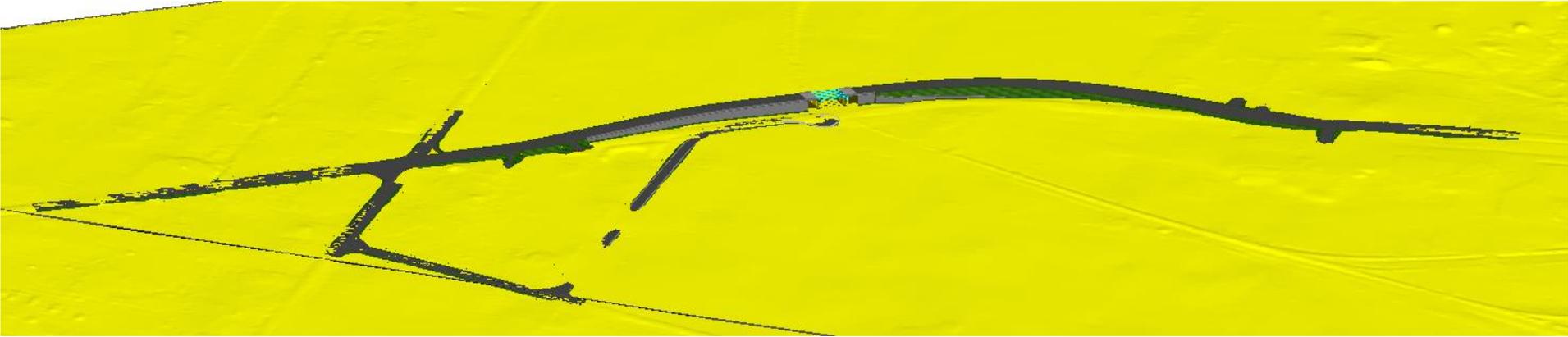


What can we get rid of?

- Start with the big ticket items
 - Pavement
 - Retaining Walls



Pavement - Profile Adjustments

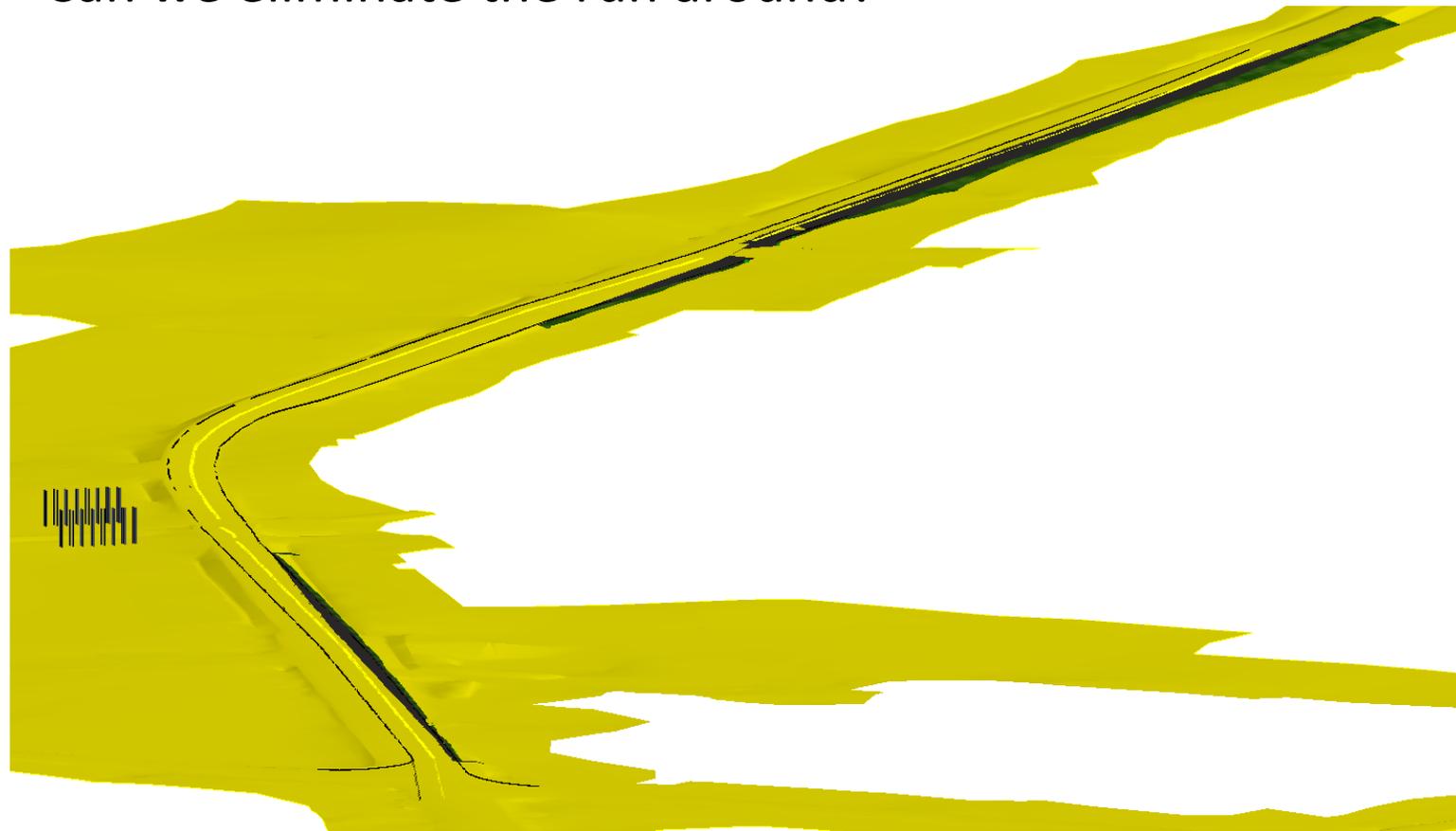


- Eliminated almost 900' on the west leg
- Eliminated 100' from the north leg



Pavement - MOT Models

- Phase 1
 - Temporary widening to the south
 - Can we eliminate the run around?



Pavement - MOT Models

- Phase 2
 - Bridge, retaining walls and embankment



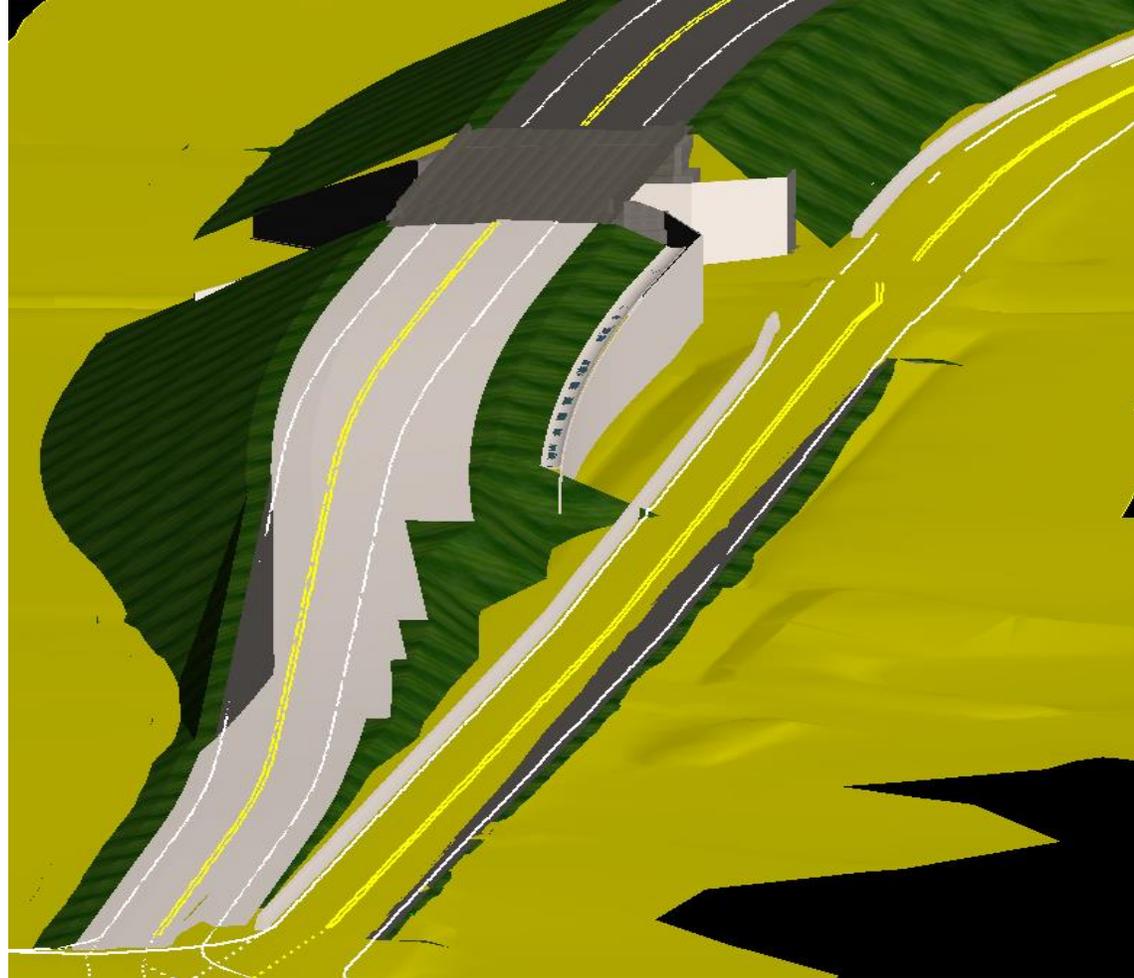
Pavement - MOT Models

- Phase 2
 - Bridge, retaining walls and embankment



Pavement - MOT Models

- Proof that we could maintain traffic without the temporary detour road



Pavement - MOT Models

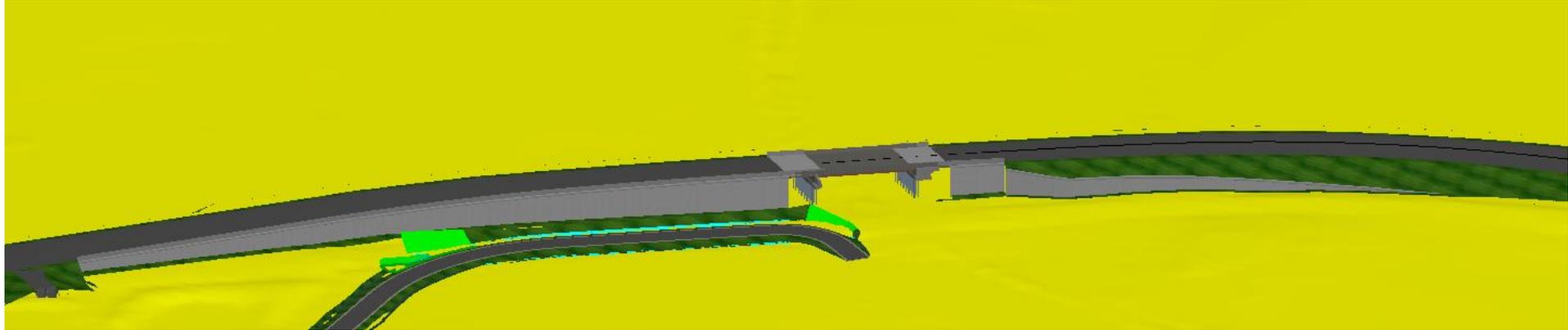
- Proof that we could maintain traffic without the temporary detour road



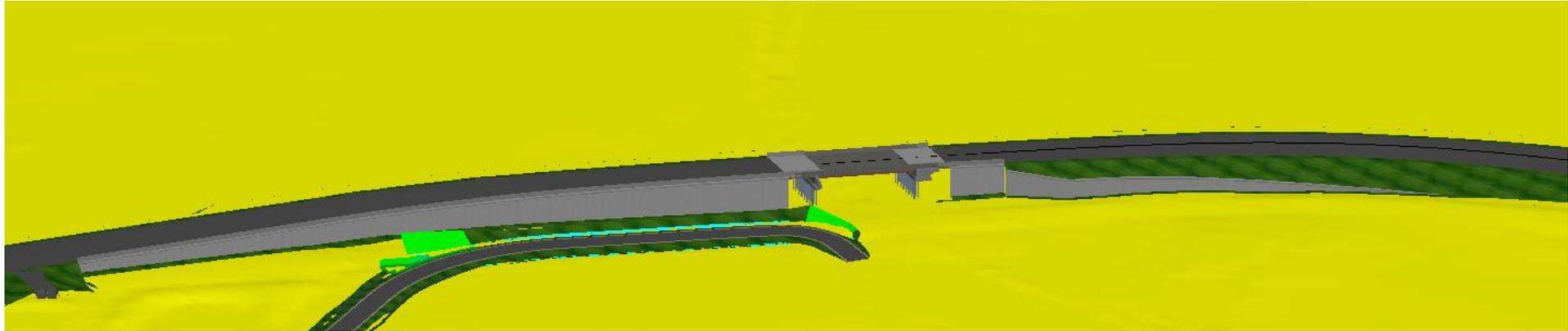
Pavement - Profile/MOT Models



Retaining Walls



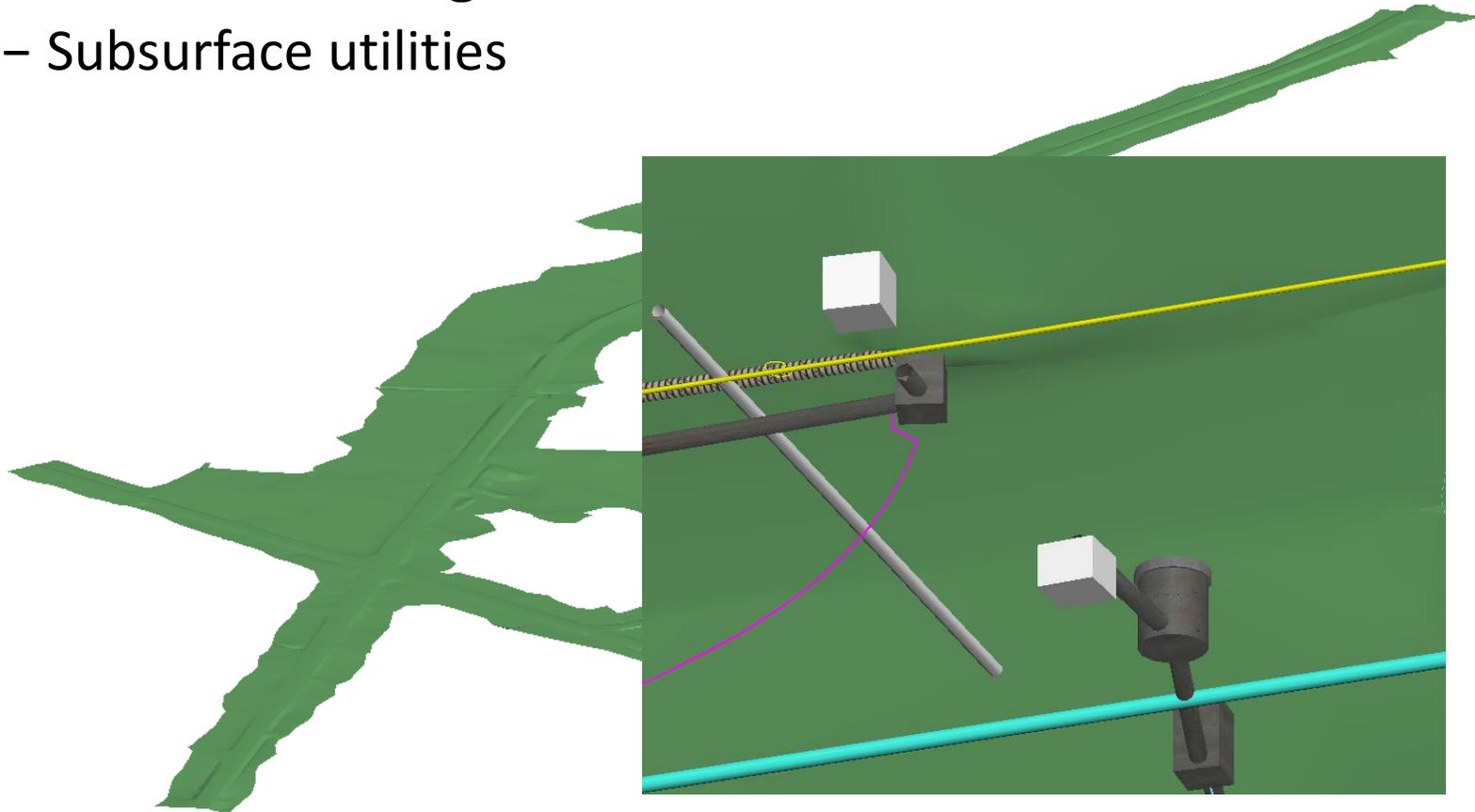
Retaining Walls



- Eliminated over 20,300 square feet

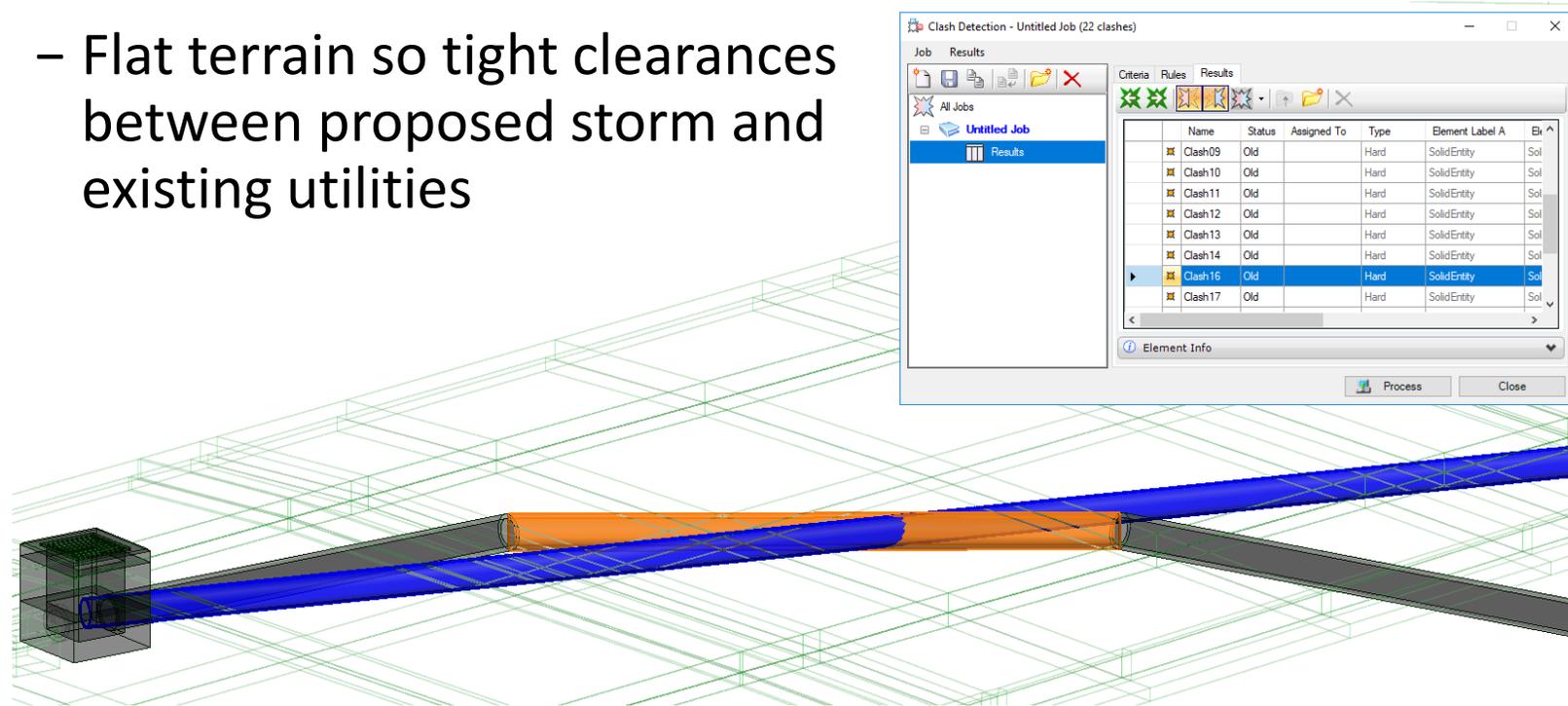
Okay, new project limits - now what?

- Detailed Modeling
 - Subsurface utilities



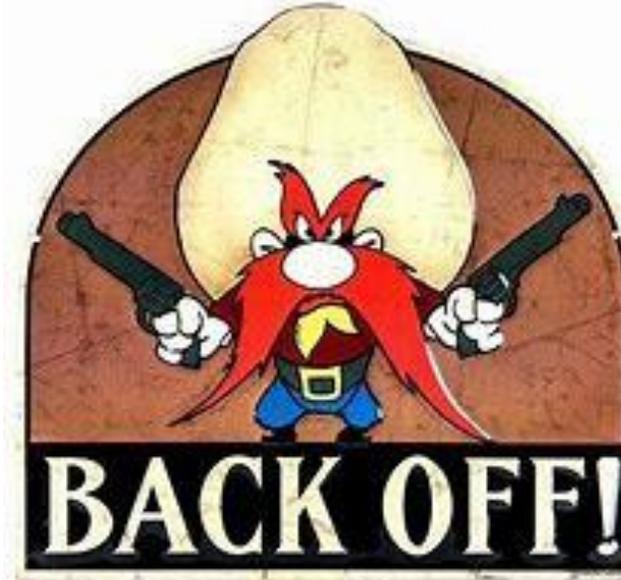
Subsurface Utilities

- Clash Detection
 - Flat terrain so tight clearances between proposed storm and existing utilities



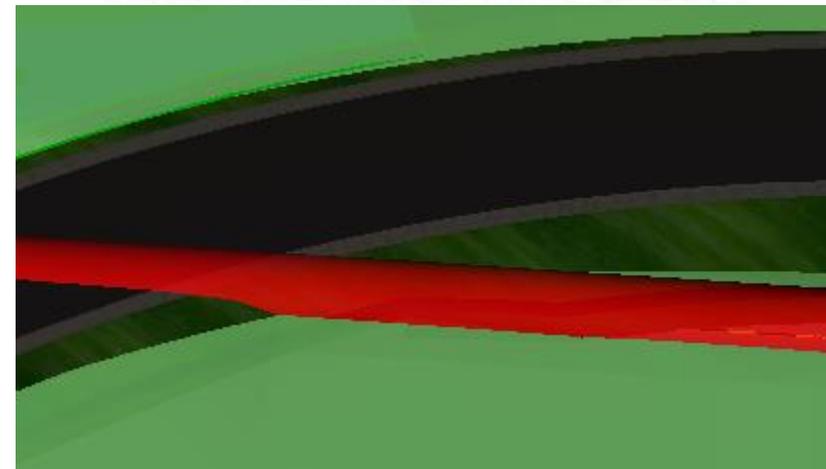
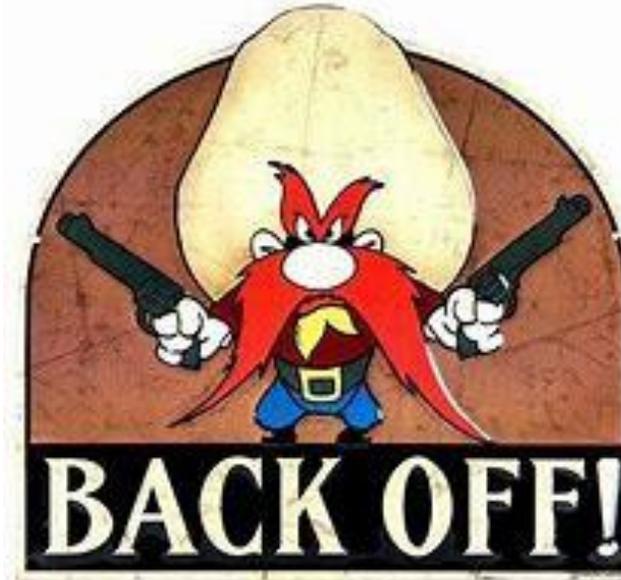
Clash Detection, right?

- Gas line clearances
 - Very specific clearances were given
 - No more than 5' of fill above
 - Minimum cover and clearance from other objects of 2'



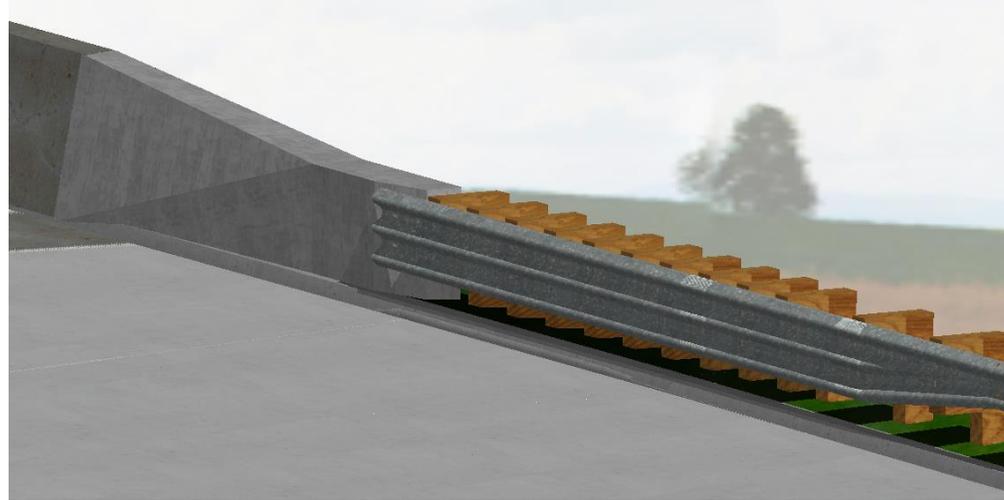
Maybe, but what about solids modeling?

- Gas line clearances
 - Very specific clearances were given
 - No more than 5' of fill above
 - Minimum cover and clearance from other objects of 2'
- Used Solids modeling to place a cylinder around the existing gas line

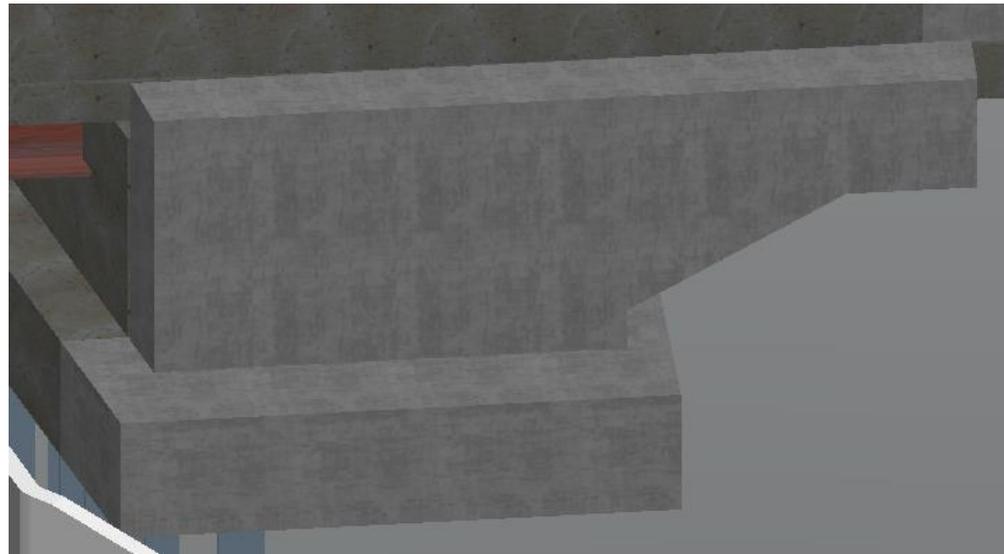


That worked pretty well - anything else?

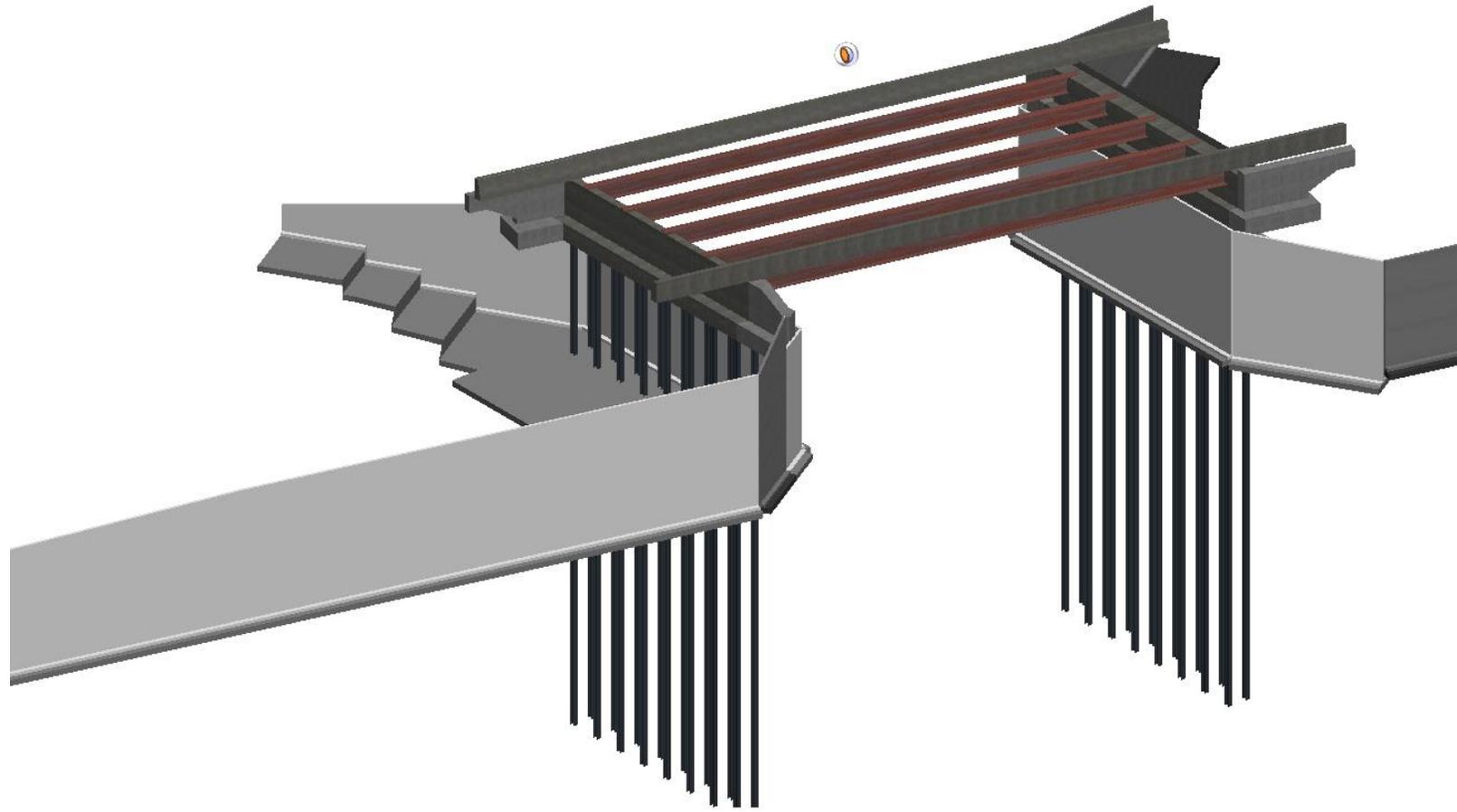
- Guardrail and end treatments



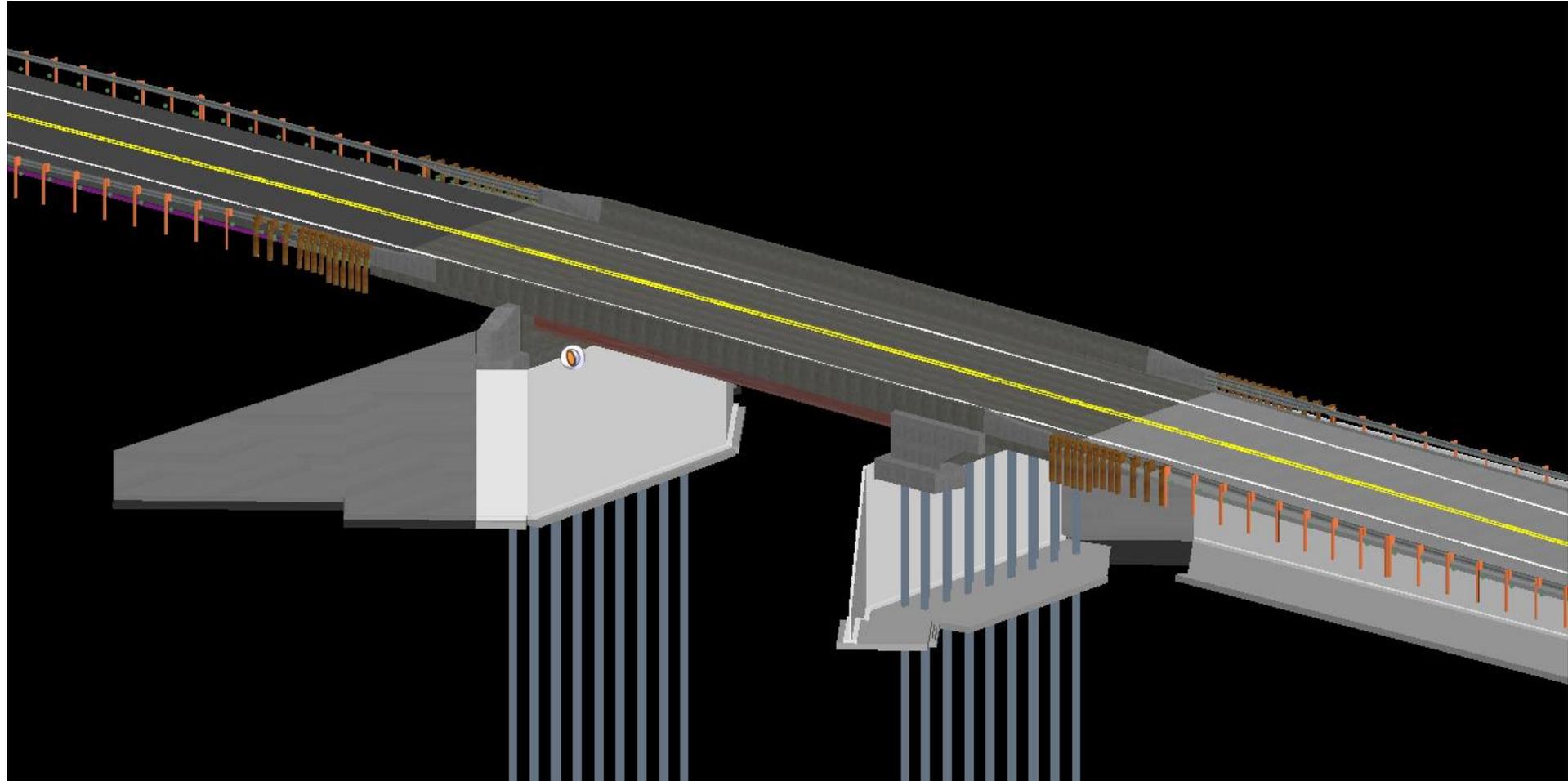
- Bridge abutments and wing walls



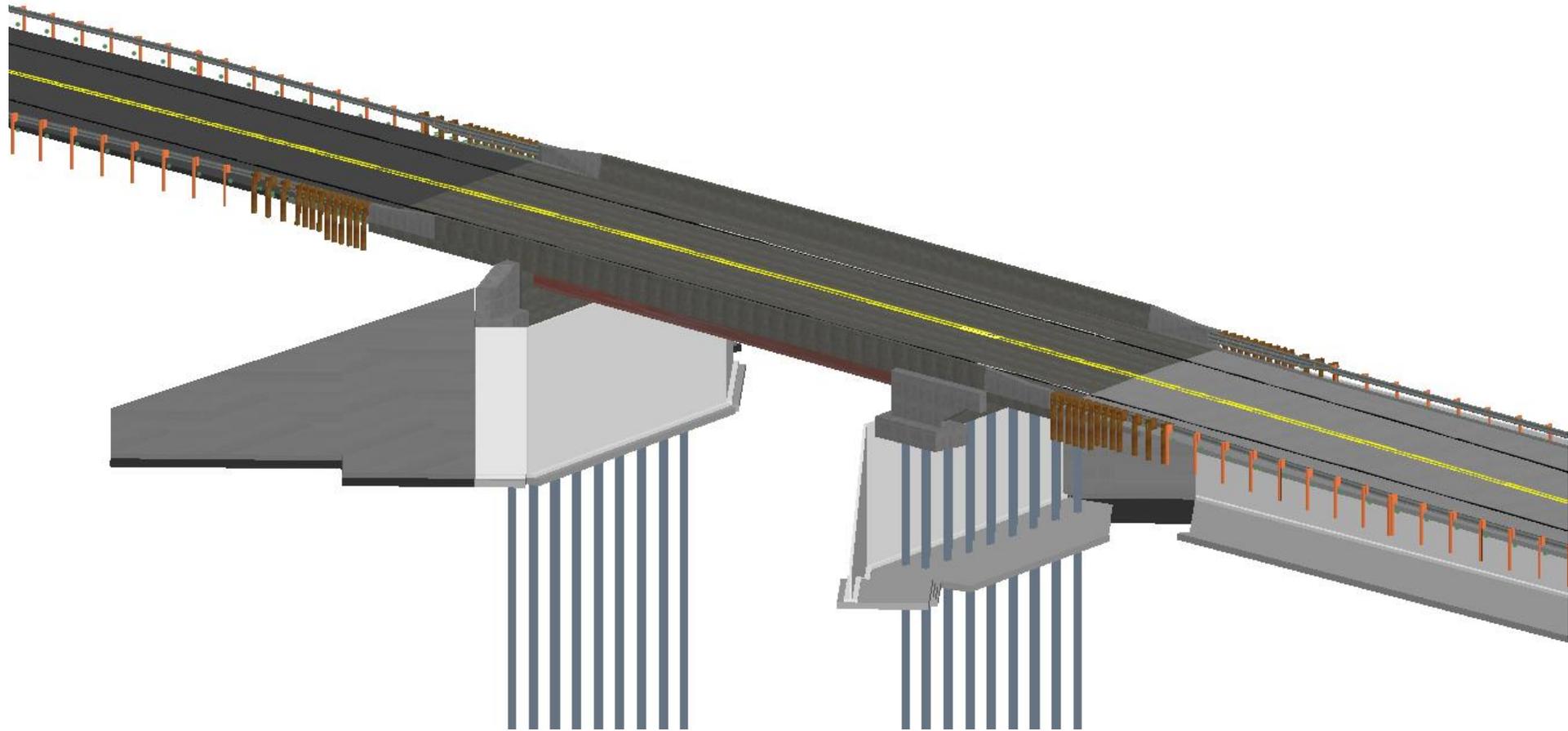
OpenBridge Modeler Utilization



OpenBridge Modeler Utilization

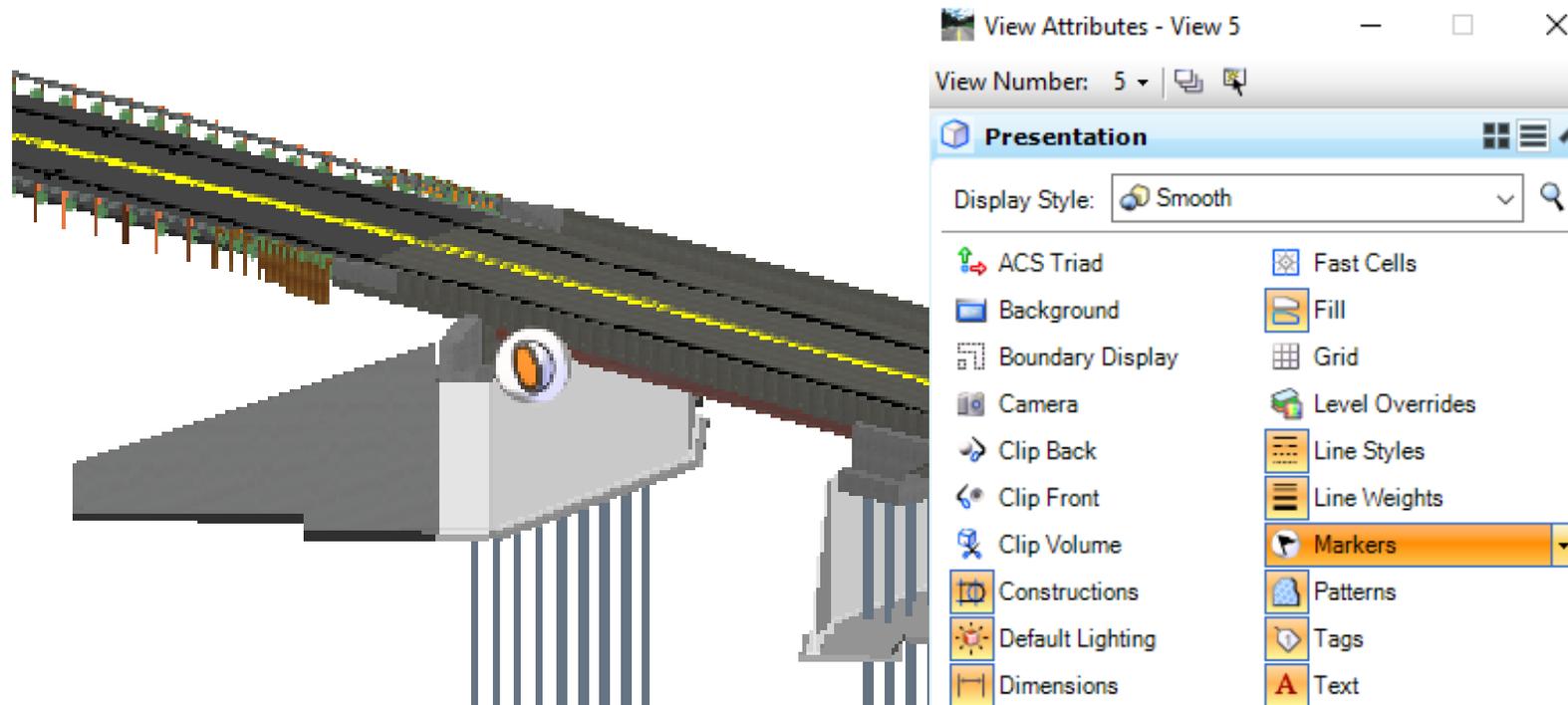


OpenBridge Modeler Utilization



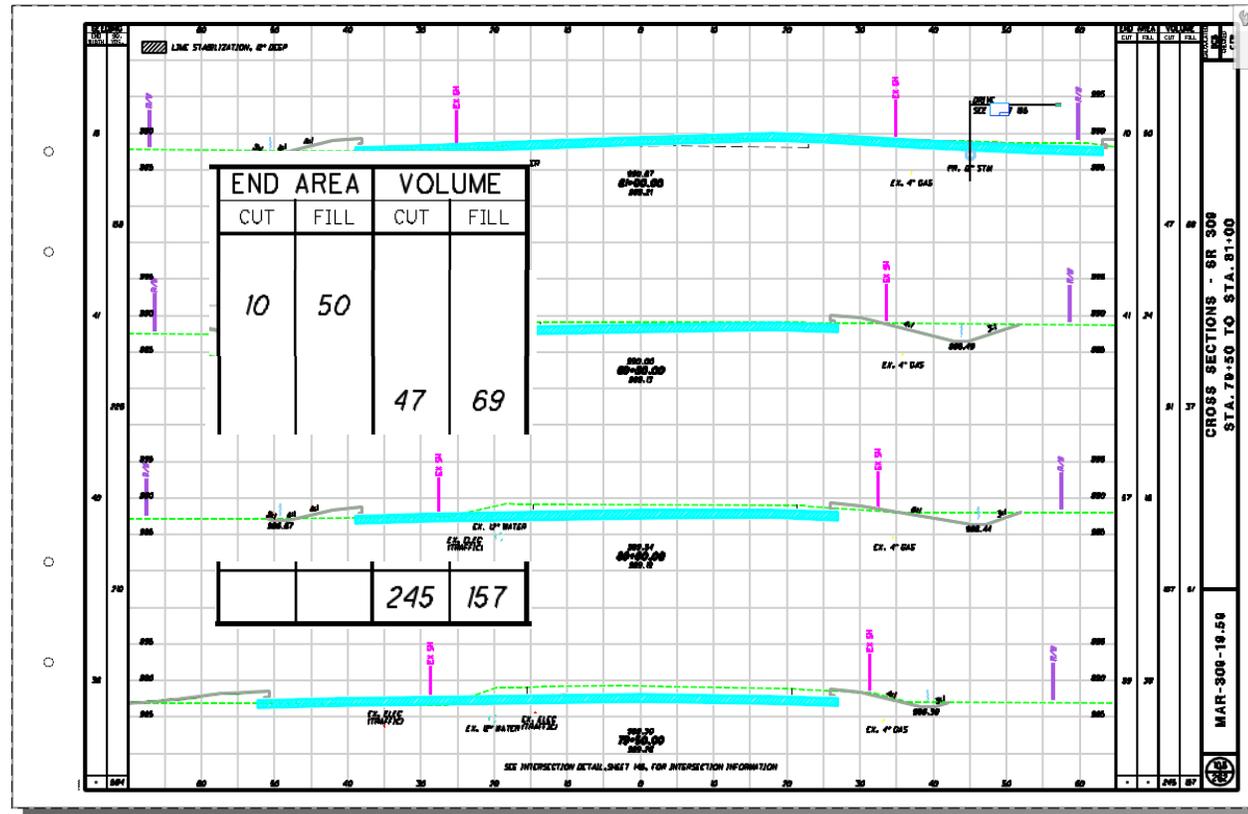
OpenBridge Modeler Utilization

- Turn off Markers in View Attributes



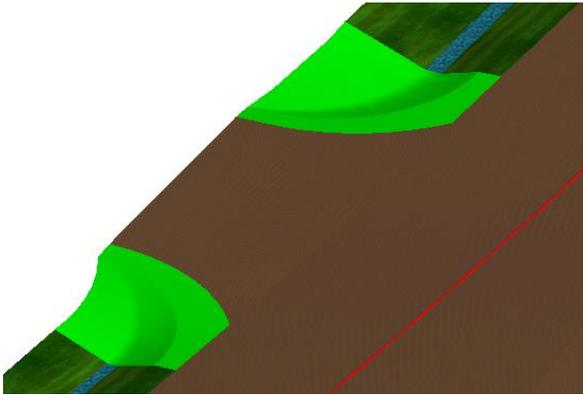
Quantities

- Conventional methods



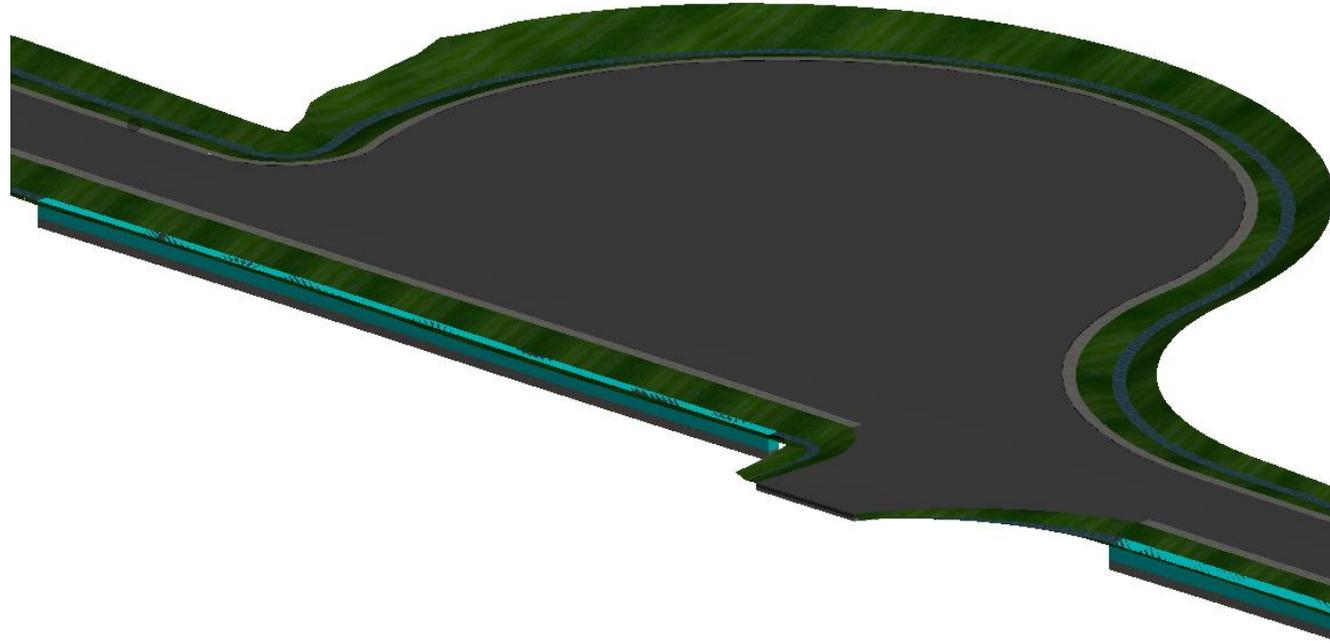
Quantities

- Harvested from 3D models
- Better embankment and excavation values from drives that were all site modeled



Quantities

- Cul-de-sac that was site modeled

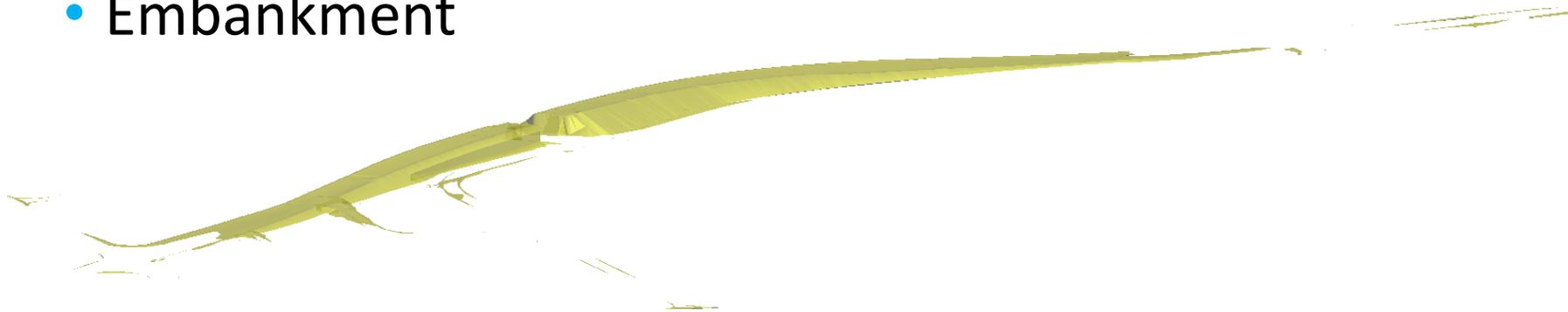


Quantities

- Excavation

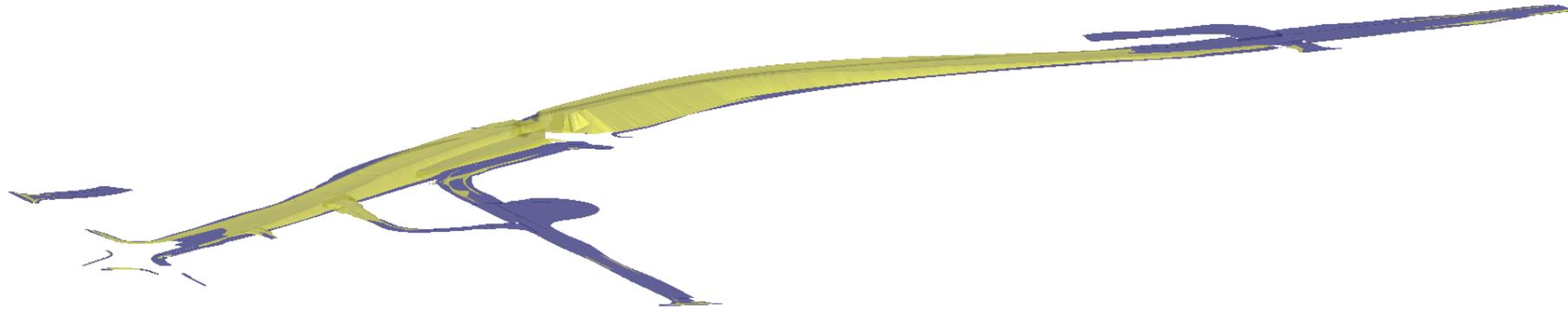


- Embankment

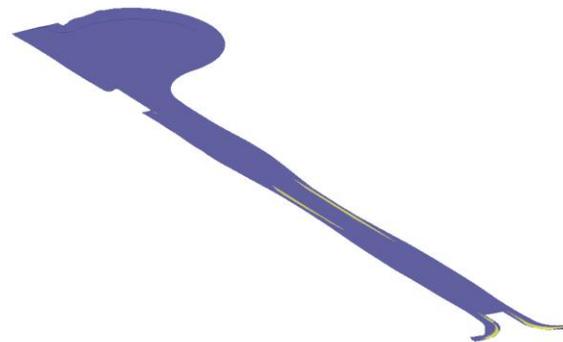


Quantities

- Combined Overall



- County Portion



Quantities

- Component quantities

	Material	Surface Area	Volume	Units	Unit Cost	Total Cost/Material
▶	Cut Volume	0.0000	1223.5029	CuY	1.00	1223.50
	Fill Volume	0.0000	53843.3730	CuY	1.00	53843.37
	MD_P_Aggregate_Base	0.0000	2691.2882	CuY	1.00	2691.29
	MD_P_Asphalt_Concrete_Base	0.0000	1738.9505	CuY	1.00	1738.95
	MD_P_Asphalt_Concrete_Intermediate_Course	0.0000	500.9771	CuY	1.00	500.98
	MD_P_Asphalt_Concrete_Surface_Course	0.0000	429.4089	CuY	1.00	429.41
	MD_P_Chemically_Stabilized_Subgrade	0.0000	2571.7925	CuY	1.00	2571.79
	MD_P_Curb	0.0000	6.8818	CuY	1.00	6.88
	MD_P_Finished Grade	923.1927	0.0000	SqF	1.00	923.19
	MD_P_Jointed_Concrete_Pavement	0.0000	1305.9879	CuY	1.00	1305.99

Report

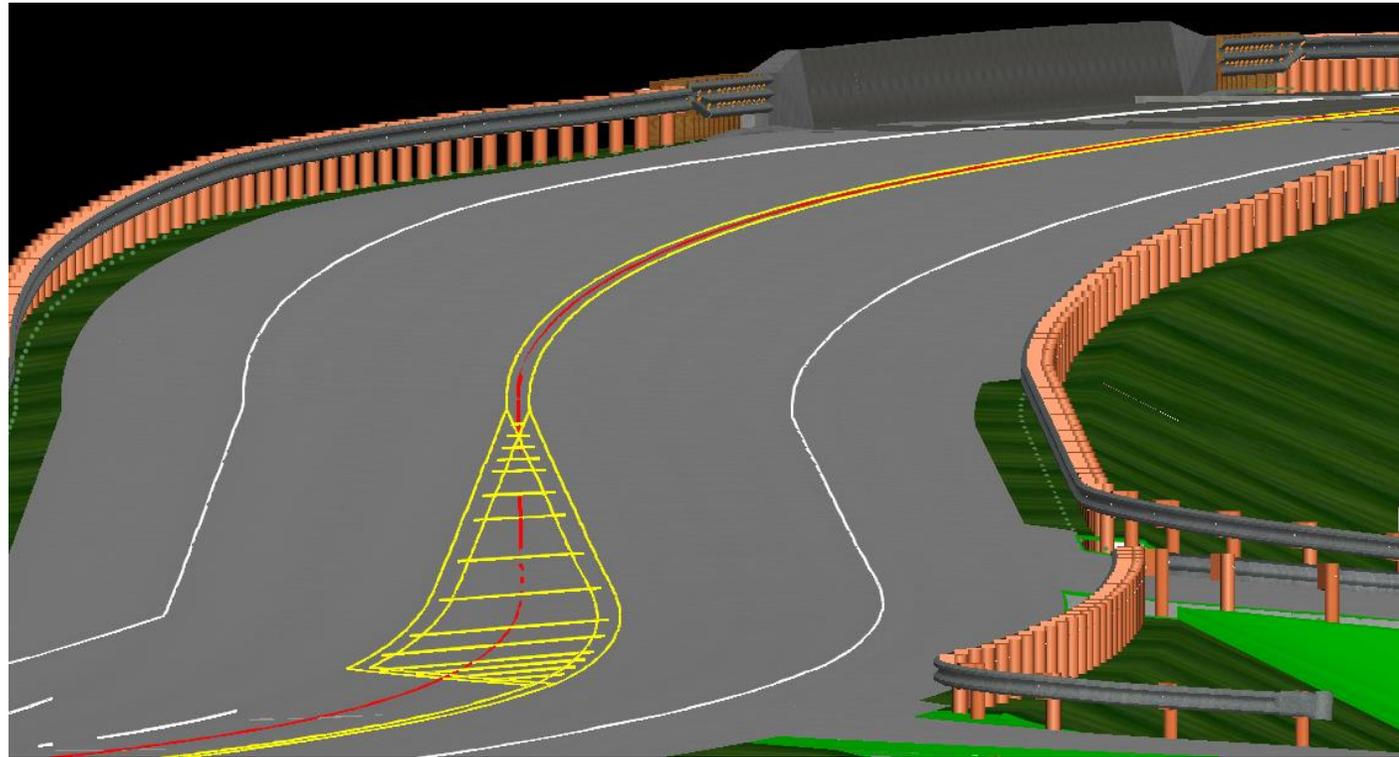
Total Estimated Cost: 65235.35

Corridor Name: SR309

Clipping is not considered in quantities.

Sight Concerns

- Alleviate concerns over sight distances from any location



Greatest Experience Ever!!!



Not Even Close

- Cli



Rainbows and Unicorns



Success!!!



Success!!!



Success!!!



Success!!!



Success!!!



Success!!!



Success!!!



Success!!!

- ContextCapture Reality Model



Success!!!

- ContextCapture Reality Model



Success!!!

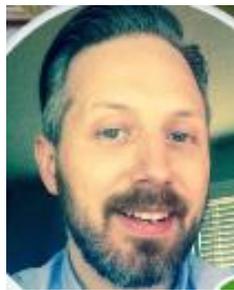
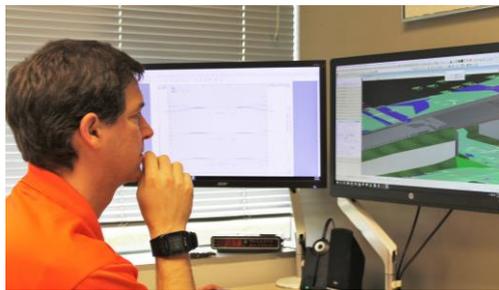
- ContextCapture Reality Model



Cultural Shift

- Specialized, sometimes isolated and fragmented
 - Survey
 - Roads
 - Drainage
 - Structures
- Highly interactive
- Collaborative

MAR-309 Team – Frustrated? Little bit...



OpenRoads Designer Pilot Project

LOCATION MAP
 LATITUDE: 40°12'58" LONGITUDE: 82°57'10"
 SCALE IN MILES

PORTION TO BE IMPROVED

INTERSTATE HIGHWAY _____

FEDERAL ROUTES _____

STATE ROUTES _____

COUNTY & TOWNSHIP ROADS _____

OTHER ROADS _____

DESIGN DESIGNATION

CURRENT ADT (20)	CR 21	CR 72
DESIGN YEAR ADT (20)	6,418 (2018)	6,499 (2018)
DESIGN HOURLY VOLUME (20)	9,922	10,500
DIRECTIONAL DISTRIBUTION	992	1,060
TRUCKS (24 HOUR B&C)	0.53	0.53
DESIGN SPEED	4%	4%
LEGAL SPEED	55 MPH	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	04 MINOR ARTERIAL	05 MAJOR COLLECTOR

NHS PROJECT _____ NO

DESIGN EXCEPTIONS

UNDERGROUND UTILITIES

OHIO811.org
Before You Dig

PLAN PREPARED BY:
Mead & Hunt
 4706 LANDMARK CT. STE 110
 COLUMBUS, OH 43219
 (614) 769-9910 PHONE

DELAWARE COUNTY OFFICE OF THE COUNTY ENGINEER

DEL-CR21-3.85 DEL-CR72-3.45

AFRICA AND CHESHIRE ROAD WIDENING

INDEX OF SHEETS:

TITLE SHEET	1
SCHEMATIC PLANS	2-4
TYPICAL SECTIONS	5-6
GENERAL NOTES	7-8
MAINTENANCE OF TRAFFIC	9-11
GENERAL SUMMARY	12-14
SUBSUMMARIES	15-20
CALCULATIONS	21-23
PLAN - CR 21	24-35
PLAN - CR 72	36-40
CROSS SECTIONS - CR 21/LEWIS CENTER RD	41-49
CROSS SECTIONS - CR 21/PLUMB RD	50-58
INTERSECTION DETAILS	59-60
DRIVE DETAILS	61
TRAFFIC CONTROL	62-78
STRUCTURES (OVER 20' SPAN)	79-94

FEDERAL PROJECT NUMBER
161(357)

PROJECT DESCRIPTION
THIS PROJECT CONSISTS OF MINOR WIDENING AND RESURFACING OF AFRICA ROAD AND CHESHIRE ROAD INCLUDING CONSTRUCTING PAVED SHOULDERS, REPLACING DEFICIENT GUARDRAIL AND ROAD SIGNS. LEFT AND RIGHT TURN LANES WILL BE ADDED AT THE LEWIS CENTER ROAD AND PLUMB ROAD INTERSECTIONS.

EARTH DISTURBED AREAS
 PROJECT EARTH DISTURBED AREA: ACRES
 ESTIMATED CONTRACTOR EARTH DISTURBED AREA: ACRES
 NOTICE OF INTENT EARTH DISTURBED AREA: ACRES

2016 SPECIFICATIONS
THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS AND CHANGES LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

ENGINEERS SEAL:

SIGNED: _____

DATE: _____

ENGINEERS SEAL:

SIGNED: _____

DATE: _____

STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
BP-3.1	7/18/14	TC-41.20	10/18/13	AS-1-15	7/17/15	800-2019	1/18/18
BP-4.1	7/18/13	TC-42.20	10/18/13	AS-2-15	1/15/18	832	10/16/18
BP-5.1	1/18/19	TC-43.10	10/18/13	BR-1-13	1/17/14	848	10/20/17
		TC-43.20	7/22/19	EX-A3-41	7/19/02		
CB-2.2	7/20/19	TC-45.10	5/7/14				
CB-4.2	1/18/13	TC-45.11	12/1/17				
		TC-71.10	1/18/18				
MGS-1.1	1/18/18						
MGS-2.1	1/18/18	MT-67.10	7/19/14				
MGS-3.1	1/18/18	MT-67.11	10/0/17				
MGS-4.3	1/18/13	MT-69.20	7/22/18				
MGS-5.2	7/15/16	MT-101.90	12/1/17				
MGS-5.3	7/15/16	MT-108.10	7/19/13				
MGS-6.7	1/18/18						

APPROVED: _____

DATE: _____ CHIEF DEPUTY COUNTY ENGINEER

APPROVED: _____

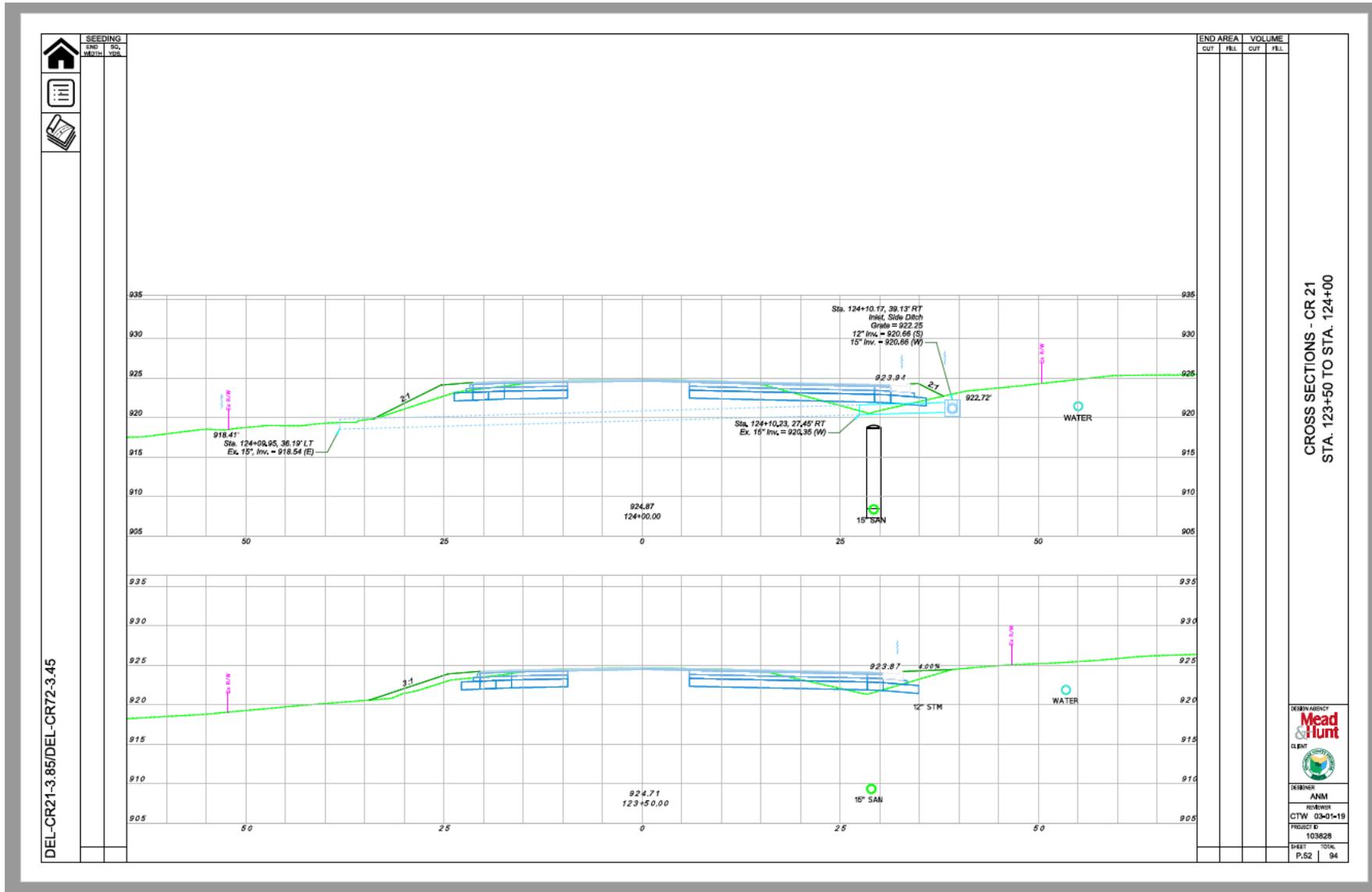
DATE: _____ DELAWARE COUNTY ENGINEER

DEL-CR21-3.85/DEL-CR72-3.45

TITLE SHEET

OHIO DEPARTMENT OF TRANSPORTATION
Mead & Hunt
 CLIENT
 DESIGN ANM
 REVISION CTW 03-01-19
 PROJECT 103828
 SHEET TOTAL
 P.01 94

OpenRoads Designer Pilot Project



OpenRoads Designer Pilot – Lessons Learned

- Plan ahead and be organized
 - Folder Structure
 - Standards
 - Software
 - Staff
 - Schedule



OpenRoads Designer Pilot – Lessons Learned

- Be reasonable
 - Corridor length
 - Don't exceed a 5000'
 - Processing time
 - Start with “conceptual”
 - Template complexity
 - Just because you CAN do someth SHOULD
 - No. of template drops
 - Collaboration
 - Model/sheet access



Current Progress and Questions???



Contact Information



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Alex.Monda@Meadhunt.com

Dan Barnhart, PE
Dan.Barnhart@Meadhunt.com



Thank you.

CADD USERS GROUP • MARCH 6, 2019



OHIO DEPARTMENT OF
TRANSPORTATION

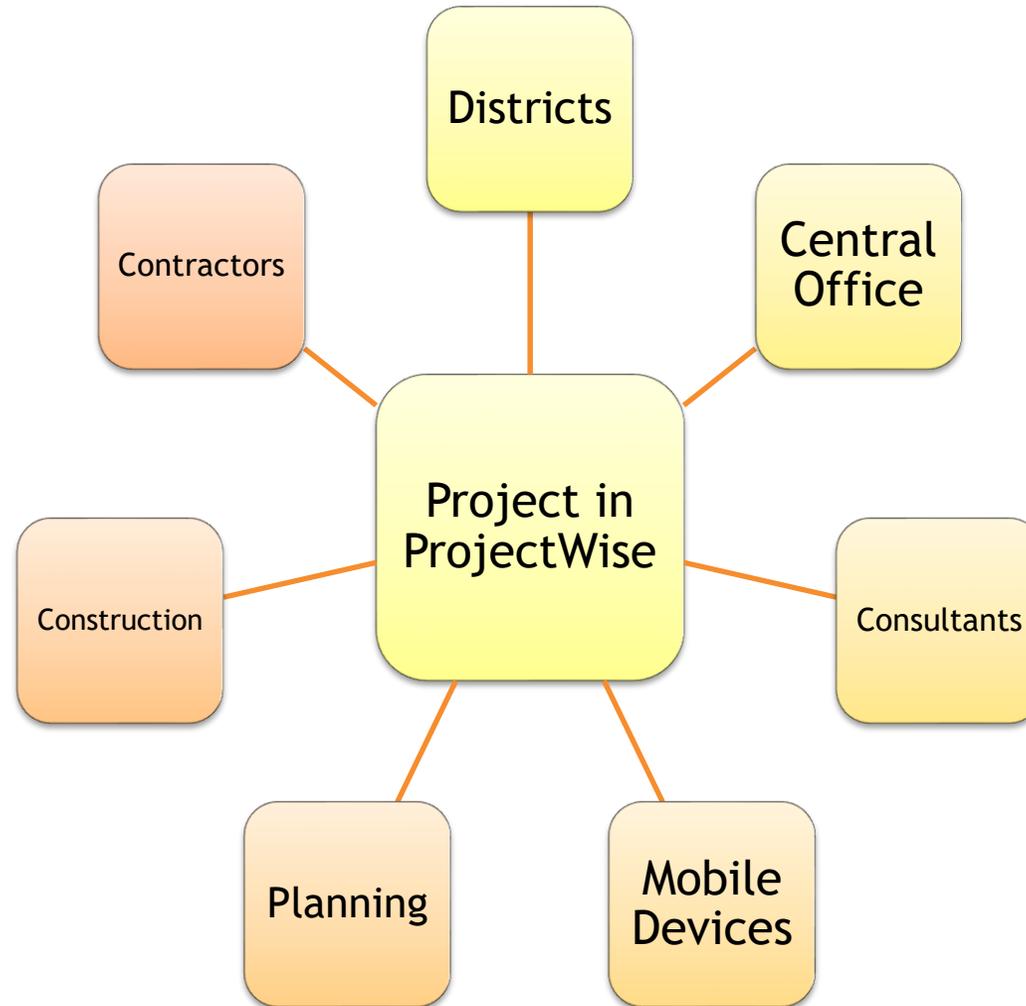
PROJECTWISE

Jack Kerstetter

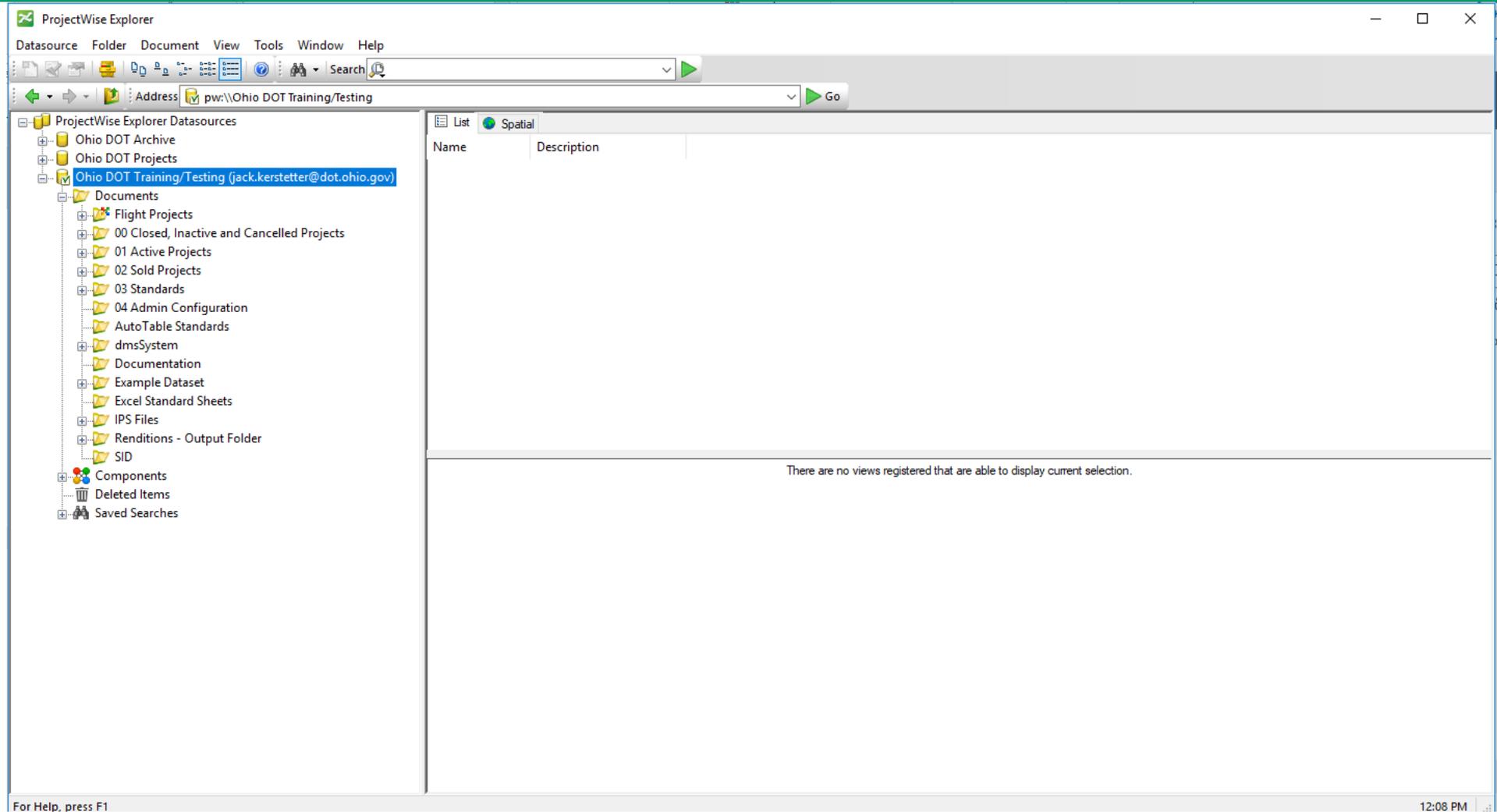
PROJECTWISE

- ProjectWise
 - Engineering Document Management
 - New project directory structure
 - Connected Projects Web portal
 - Plan Vault Archive
 - Managed Workspace
 - Workflows
 - Implementation with ORD
 - Pilot projects by the end of 2018

PROJECTWISE



PROJECTWISE



PROJECTWISE

The screenshot displays the ProjectWise Explorer application window. The left pane shows a hierarchical tree of project folders, including 'Ohio DOT Archive', 'Ohio DOT Projects', and various districts. The right pane shows a list of project categories and a detailed 'Properties' table for a specific project.

Name	Description	File Name	SHEET TITLE	SHEET NUMBER	TOTAL (SET)	S
000-Admin						
100-Planning						
200-Environmental						
300-Survey						
301-Survey-BuckleyGroup						
400-Engineering						
401-Engineering-Gannett Fleming						
500-RealEstate						
600-Contracts						
700-Estimating						
800-Construction						
900-Accounting						
990-WorkSetStandards						
999-Scratch						

Properties (Project Type - Ohio DOT Projects)	
PID	93006
County	Muskingum
Work Category	Major Reconstruction
Project Description	Major rehabilitation of Mus - IR 70 through Zanesville. Removal/Replacement of existing concrete mainline
Project Engineer	HATEM, MARGARET E
Estimated Begin Construction	04/01/2021
Estimated End Construction	10/31/2024
File Date	10/01/2020
Award Date	01/01/2021
Sale Date	01/01/2021
LPA	No
Area Engineer	HATEM, MARGARET E
Construction Project Number	
Designers	
District	5
Environmental Project Manager	TATMAN, BRIAN S
Right of Way Project Manager	PHILABAUM, LAURA

PLAN VAULT ARCHIVE

- Create multi-page PDF's from all the Plan Sets available in Digital Paper
- Link the Project Data from ELLIS and location data from the Roadway Inventory
- Bulk load all the PDF Plans into ProjectWise with the meta data
- Create an application to easily search these plan sets in ProjectWise
- Eventually build a geospatial portal for internal and external access to ODOT's Plan Vault

PLAN VAULT ARCHIVE

ProjectWise Explorer

Datasource Folder Document View Tools Window Help

Address: pwr:\OhioDOT-pw.bentley.com:OhioDOT-pw-01\Documents\04 Archive Projects\District 5\Plan Sets\00000-M

View: Plansets

Name	PID	DISTRICT_NBR	LOCALE_SHORT_N...	PRIMARY_WORK_CATEGORY	PROJECT_NME	PROJECT_DESC1_TXT	LETTING_SHOR...	TRANS_ROUTE_CD	TRANS_ROUTE_ID	LOGPOINT_COUNTY_B
00000-MUS-146-3096--01.pdf			MUS				SR	146	30.96	
00000-MUS-208-32-1976-01.pdf			MUS	Slip Repair			SR	208	3.2	
00000-MUS-60-24-1918-01.pdf			MUS			ZANSVILLE DRESDEN ROAD...	SR	60	24	
00000-MUS-60-324-1932-01.pdf			MUS	Realignment		ZANSVILLE McCONNELSVI...	SR	60	3.24	
00000-MUS-70-1163-1978-01.pdf			MUS	Signing			IR	70	11.63	
11333-MUS-40-1135-2001-01.pdf	11333	5	MUS	Bridge Replacement	MUS US 40 11.33	REMOVE AND REPLACE TH...	ODOT Let	US	40	11.35
11723-GUE-209-1116-2002-01.pdf	11723	5	GUE	Major Reconstruction	GUE SR 209 11....	Revise existing roadway fro...	ODOT Let	SR	209	11.16
12970-MUS-93-3311-2002-01.pdf	12970	5	MUS	Culvert Construction/Recons...	MUS SR 93 33.11	REPLACE A DEFICIENT BRID...	ODOT Let	SR	93	33.11
13122-KNO-36-622-1999-01.pdf	13122	5	KNO	Bridge Replacement	KNO US 36 06.22	REPLACE CONCRETE BEAM...	ODOT Let	US	36	6.22
13281-FAI-33-027-2001-01.pdf	13281	5	FAI	New Construction	FAI US 33 00.04...	Improve access to existing ...	ODOT Let	US	33	0.27
13323-KNO-13-917-2003-01.pdf	13323	5	KNO	Resurfacing, Undivided System...	KNO SR 13 9.18	Part 1 (Kno-13-S Main St) =...	ODOT Let	SR	13	9.17
13411-COS-36-701-2004-01.pdf	13411	5	COS	Bridge Repair	COS US 36 07.01	Rehabilitate deficient steel ...	ODOT Let	US	36	7.01
13412-COS-60-1086-2002-01.pdf	13412	5	COS	Bridge Replacement	COS SR 60 10.54	REPLACE A STEEL BEAM BR...	ODOT Let	SR	60	10.86
13413-COS-751-993-2002-01.pdf	13413	5	COS	Bridge Replacement	COS SR 751 09....	REPLACE A DEFICIENT CO...	ODOT Let	SR	751	9.93
13414-FAI-90-357-2001-01.pdf	13414	5	FAI	Bridge Replacement	FAI SR 793 03.89	REPLACEMENT OF DEFICIE...	ODOT Let	CR	90	3.57
13416-GUE-340-076-2002-01.pdf	13416	5	GUE	Bridge Replacement	GUE SR 340 01....	REPLACE DEFICIENT STEEL ...	ODOT Let	SR	340	0.76
13419-GUE-821-185-2002-01.pdf	13419	5	GUE	Bridge Replacement	GUE SR 821 01....	Replace deficient concrete ...	ODOT Let	SR	821	1.85
13421-LIC-40-1255-2003-01.pdf	13421	5	LIC	Bridge Replacement	LIC US 40 12.57	REPLACE A DEFICIENT CO...	ODOT Let	US	40	12.55
13824-GUE-77-88-1998-01.pdf	13824	5	GUE	Bridge Repair	GUE IR 77 08.92	REMOVE & REPLACE THRE...	ODOT Let	IR	77	8.8
13930-KNO-36-1936-2001-01.pdf	13930	5	KNO	Major Widening	KNO US 36 19.36	Revise the roadway by wide...	Local Let	US	36	19.36
14142-COS-36-2092-1996-01.pdf	14142	5	COS	Major Widening	COS US 36 20.92	Grade, drain & pave two (2)...	ODOT Let	US	36	20.92
15290-LIC-16-1978-1999-01.pdf	15290	5	LIC	Resurfacing, Divided System	LIC SR 16 19.80	REMOVE AND REPLACE EXL...	ODOT Let	SR	16	19.78
15655-LIC-70-1246-1999-01.pdf	15655	5	LIC	Spot Safety	LIC IR 70 12.47	Widen off ramps from IR 70...	ODOT Let	IR	70	12.46
1597-PER-345-777-1994-01.pdf	1597		PER	Culvert Replacement		Culvert Replacement	SR	345	7.77	
16096-GUE-761-0-2002-01.pdf	16096	5	GUE	Culvert Construction/Recons...	GUE SR 761 00....	Resurfacing with related wo...	ODOT Let	SR	761	0
16105-LIC-661-024-2000-01.pdf	16105	5	LIC	Bridge Replacement	LIC SR 661 00.24	Rehabilitate 61.265 steel be...	ODOT Let	SR	661	0.24

Document Properties Folder Properties Personal Portal Photo Preview Dependency Viewer Access Control Deliverables Management Components

View: Plansets

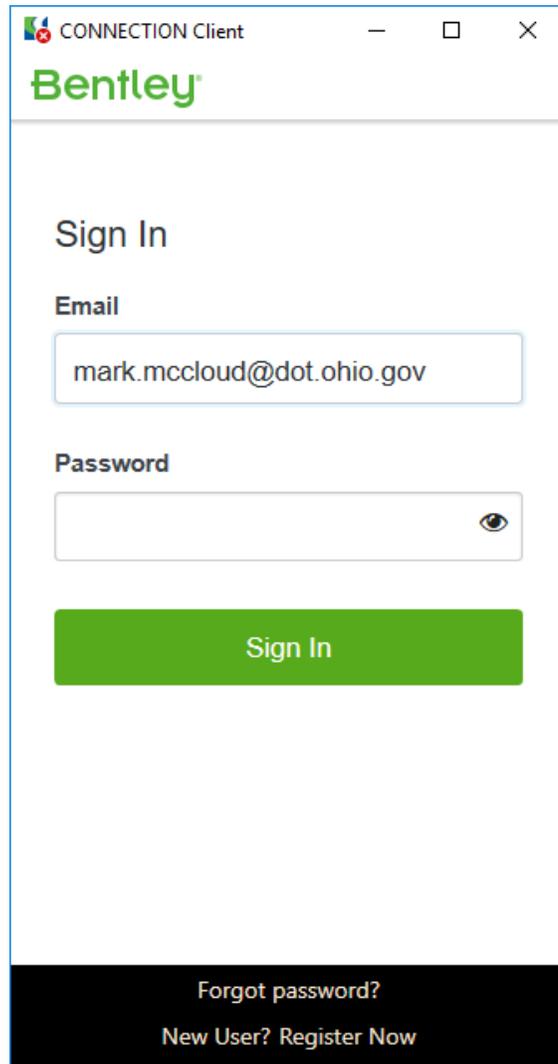
Property name	Property value	Property name	Property value
Name	00000-MUS-146-3096--01.pdf	PID	
DISTRICT_NBR		LOCALE_SHORT_NME	MUS
PRIMARY_WORK_CATEGORY		PROJECT_NME	
PROJECT_DESC1_TXT		LETTING_SHORT_NME	
TRANS_ROUTE_CD	SR	TRANS_ROUTE_ID	146
LOGPOINT_COUNTY_BEGIN_NBR	30.96	LOGPOINT_COUNTY_END_NBR	31.61
NLF_ID	SMUSSR00146**C	PROJECT_NUMBER	
STATE_PROJECT_NUM		SFN	
HIGHWAY		FILE_DATE	
END_CONSTRUCTION_DATE		YEAR	
File Name	00000-MUS-146-3096--01.pdf	IMAGES	
COUNTY_ABBREV3_CD		LATITUDE_BEGIN_NBR	
LATITUDE_END_NBR		LONGITUDE_BEGIN_NBR	
LONGITUDE_END_NBR		PROJ_STATUS_SHORT_NME	
PROJECT_TYPE_SHORT_NME		RIGHT_OF_WAY	

For Help, press F1

PLAN VAULT ARCHIVE

DEMO

PROJECTWISE



CONNECTION Client

Bentley

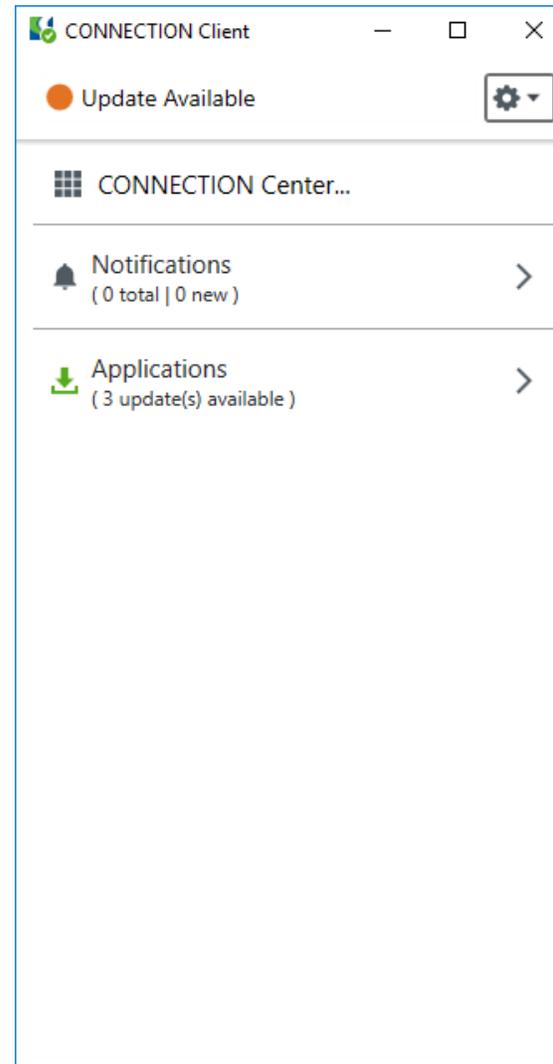
Sign In

Email

Password

[Sign In](#)

[Forgot password?](#)
[New User? Register Now](#)



CONNECTION Client

Update Available 

 CONNECTION Center...

 **Notifications**
(0 total | 0 new) 

 **Applications**
(3 update(s) available) 

CONNECTION CENTER

Home Ohio DOT Assets Projects Mark McC

CONNECTION Center

Learn



ProjectWise Connection Services

Use our suite of ProjectWise Connection Services to improve how you exchange critical documents and manage key workflows within your projects.

[Learn more...](#)

- ProjectWise Connection Services
- Share
- Deliverables Management
- Performance Dashboards
- Issues Resolution
- Field Data Management

My Activity **Week** Month Quarter All **Projects** Applications

No Activity Recorded

[View Report](#)

ProjectWise Projects

- 93263 COS-16-8.99 and COS-541-19.10 Bridge...
- ProjectWise Connections 1
- ContextShare Connection
- Shared Files 258
- Open Forms 1
- Open Issues 3

SEPTEMBER, 2018

Su	Mo	Tu	We	Th	Fr	Sa
26	27	28	29	30	31	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	1	2	3	4	5	6

Upcoming Events

Today *Showing 4 of 4*

- 7:00 AM** Webinar: SIG Workshop: MicroStation en Español - Septiembre
- 9:00 AM** Webinar: SIG Workshop: gINT - September
- 5:00 PM** Webinar: SIG Workshop: gINT - September
- 10:00 PM** Seminar: Bentley 公路市政BIM专业技术&协同工作解决方案研讨会

[View All](#)

My Support EDIT

CONNECTION CENTER



Home

Ohio DOT

Assets

Projects



Mark M

ProjectWise Projects

Register a Project

My Projects Favorites Recent Search

★	Project Number	Project Name	Asset Name	Asset Type	Location
☆	93263	COS-16-8.99 and COS-541-19.10 Bridge Replacement		Bridges	
☆	106261	GEA US 322 07.64 - Safety Project US-322 (Mayfield Road)		Roads	
☆	93006	MUS IR 70 10.66 - Major Rehabilitation through Zanesville		Roads	
☆	999999	JD TEST		Roads	
☆	21515	PW Share Testing		Roads	
☆	P104799 <small>External</small>	ODOT Construction Inspection	Ohio DOT	Roads	Columbus, Ohio
☆	P010706-001 <small>External</small>	Ohio DOT - ProjectWise Upgrade Consulting	Ohio DOT	Roads	

Videos



How to Register Projects 1:46
In this video you will learn



Create Transmittals 8:24
Use ProjectWise Deliverables



Share Content 1:44
Use ProjectWise Share to exchange files quickly and

CONNECTION CENTER

ProjectWise

COS-16-8.99 and COS-541-19.10 Bridge Replacement 



Project Details	Team Members	Notifications
<p>Registered: Friday, May 11, 2018</p> <p>Modified: Tuesday, May 29, 2018</p> <p>Industry: Roads and Highways</p> <p>Asset Type: Bridges</p> <p>Latitude: 40.27518°</p> <p>Longitude: -81.876478°</p> <p>Project Country: US</p> <p>Time Zone: Eastern Standard Time</p> <p>Data Center Location: East US</p> <hr/> <p> ProjectWise Connections 1</p> <p> ContextShare Connection </p> <p> SharePoint Connections 0</p> <p>Edit Project Details</p>	<p>Team Members</p> <ul style="list-style-type: none"> Brandon Williams Brian Harlow Fanita Cheek Jack Kerstetter John Drsek <p>Manage Members</p>	<p>Notifications</p> <p><i>Thursday, September 27, 2018 01:05 PM</i></p> <ul style="list-style-type: none"> John Drsek has invited you to a project 123456_JDTEST

ProjectWise Connection Services



Share



Deliverables Management



Performance Dashboards



Issue Resolution



Field Data Management



Project Synchronization

CONNECTION CENTER

Home Ohio DOT Assets Projects 93263 COS-16-8.99 and COS-541-19.10 Bridge Re... Jack Kerstetter JK

ProjectWise Share

Share

- All
- In Progress
- Recycle Bin
- 93263

Home

+ New

Name	Type	File Size	Modified	Modified By
300-Survey	Folder		Jun 18, 2018 08:16 AM	Mark McCloud

Manage Connections

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CONNECTION CENTER



Home

Ohio DOT

Assets

Projects

93263

COS-16-8.99 and COS-541-19.10 Bridge Re...



Jack Kerstetter



ProjectWise Share



Share



93263



All

In Progress

93263

+ New



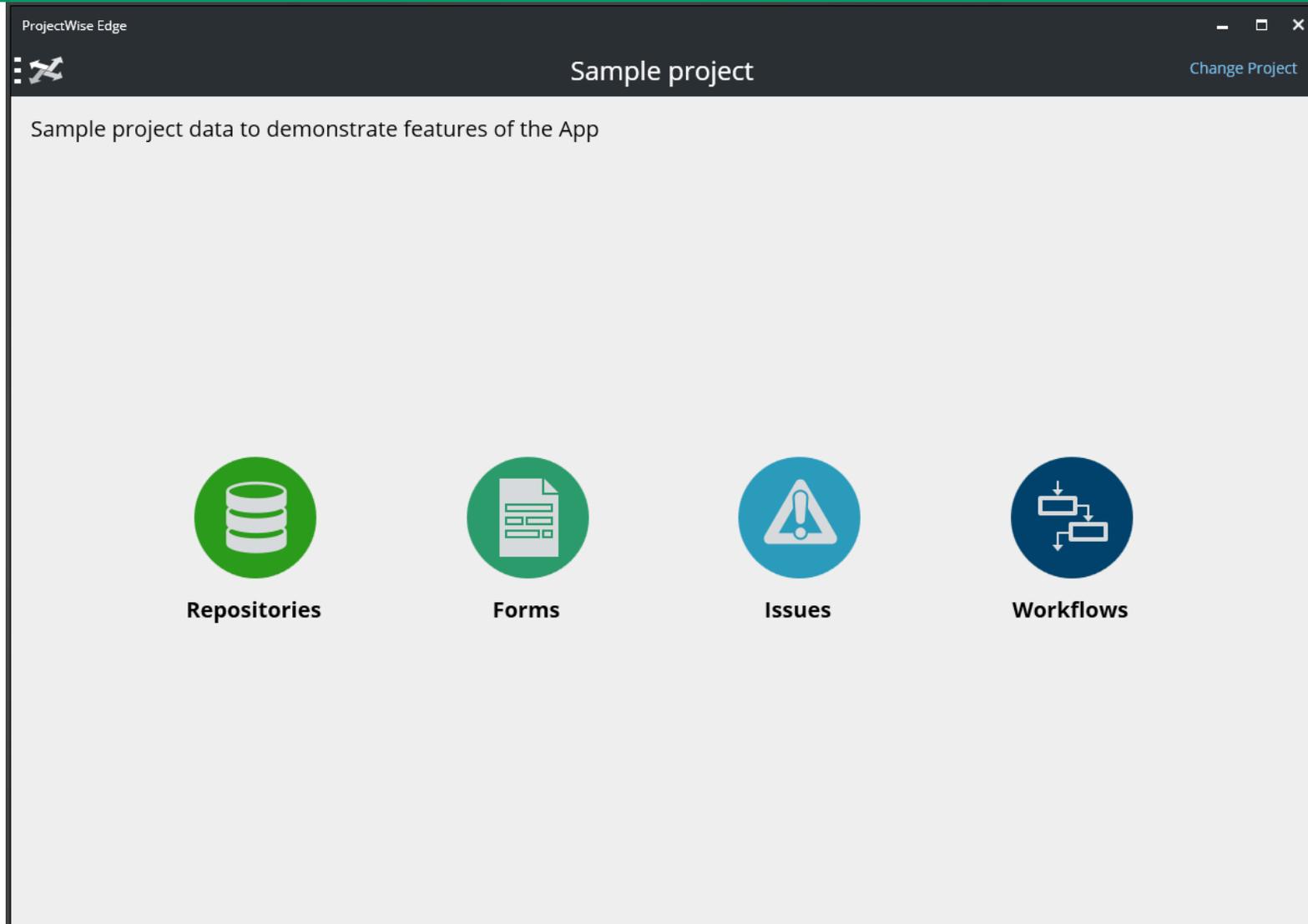
Search...



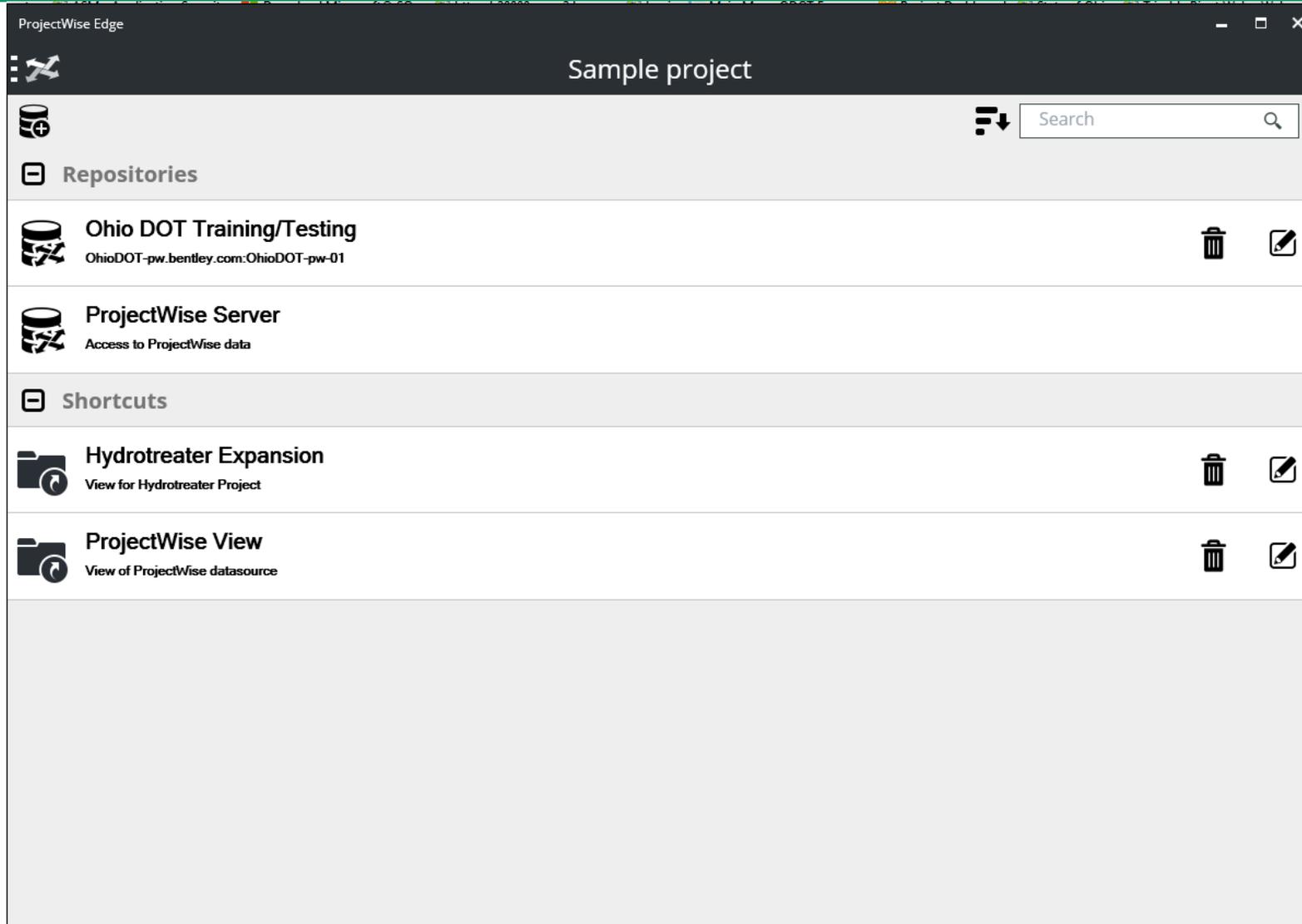
<input type="checkbox"/> Name	<input type="checkbox"/> Version	<input type="checkbox"/> Description	<input type="checkbox"/> File Name	<input type="checkbox"/> File Size
<input type="checkbox"/> 000-Admin				
<input type="checkbox"/> 100-Planning				
<input type="checkbox"/> 200-Environmental				
<input type="checkbox"/> 300-Survey				
<input type="checkbox"/> 301-Survey Consultant				
<input type="checkbox"/> 400-Engineering				
<input type="checkbox"/> 401-Engineering Consultant				
<input type="checkbox"/> 402-Engineering Consultant A				
<input type="checkbox"/> 500-RealEstate				
<input type="checkbox"/> 600-Estimating				
<input type="checkbox"/> 700-PlanPackage				

Manage Connections

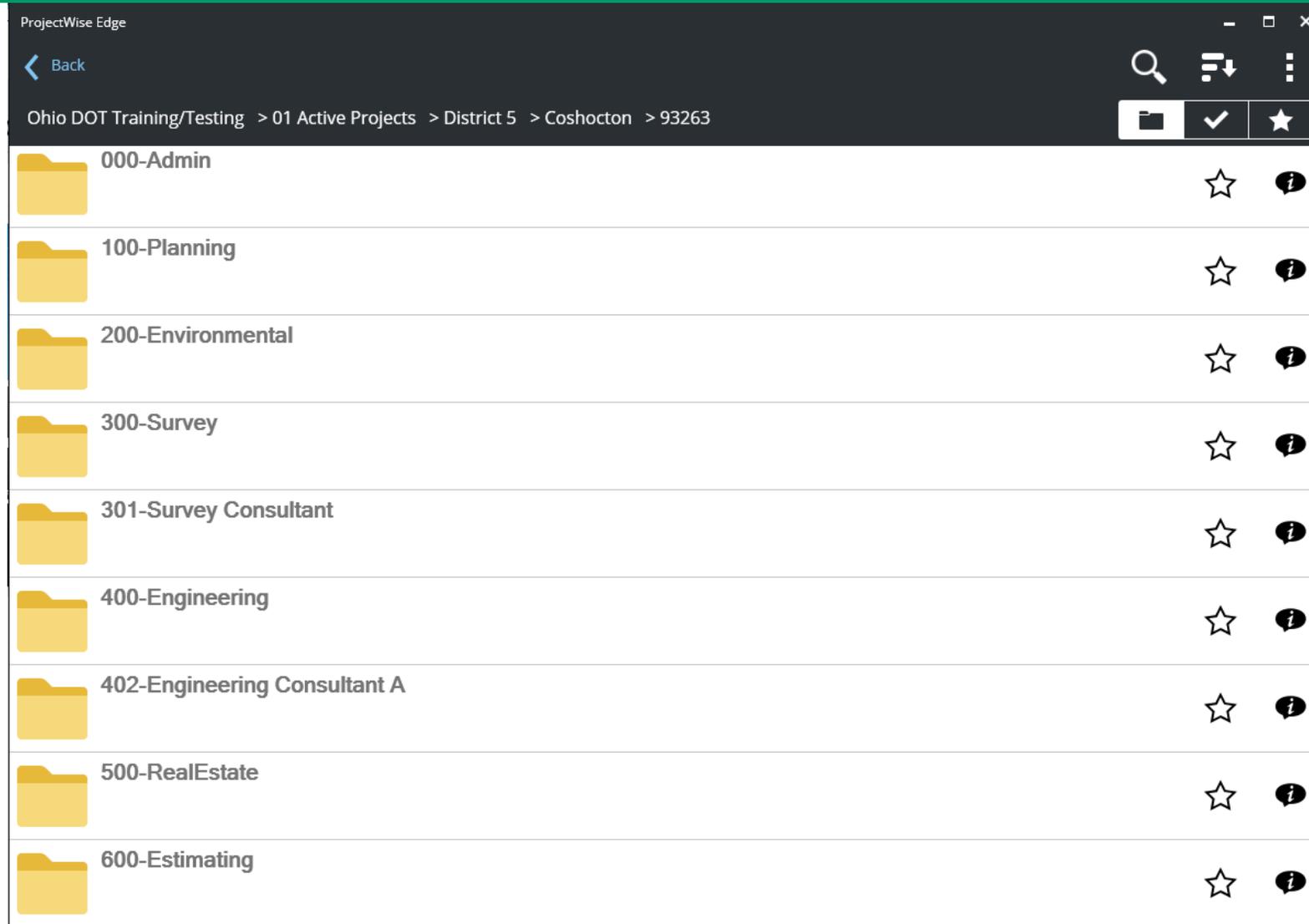
PROJECTWISE EDGE



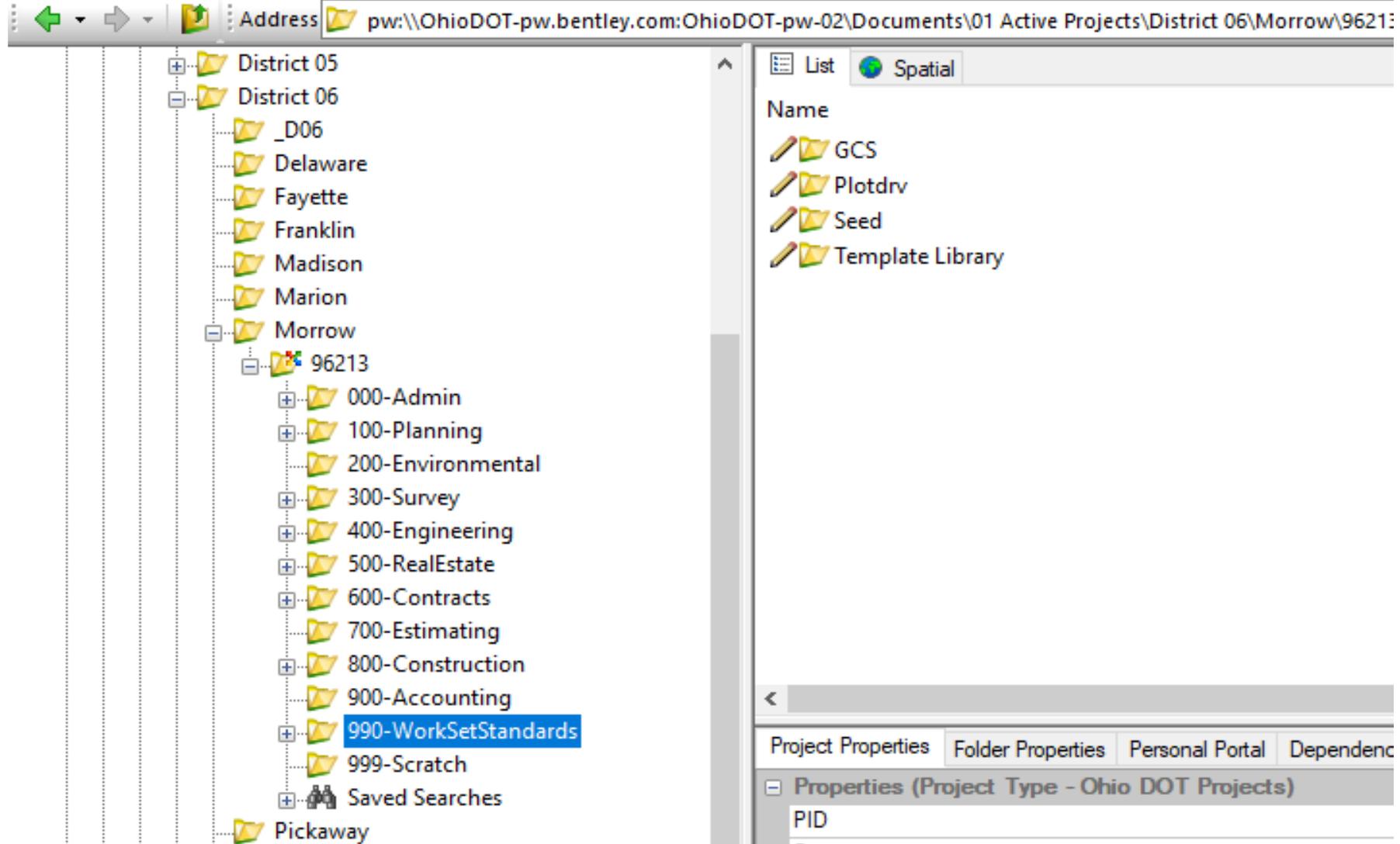
PROJECTWISE EDGE



PROJECTWISE EDGE



PROJECTWISE CONFIG



PROJECTWISE CONFIG

The screenshot shows the ProjectWise Explorer Datasources interface. The address bar indicates the path: `pw:\\OhioDOT-pw.bentley.com:OhioDOT-pw-01\Documents\03 Standards\CADD Standards\MicroStation_Ve`. The left pane displays a tree view of the ProjectWise Explorer Datasources, with the following structure:

- ProjectWise Explorer Datasources
 - Ohio DOT Archive
 - Ohio DOT Projects (jack.kerstetter@dot.ohio.gov)
 - Ohio DOT Training/Testing (jack.kerstetter@dot.ohio.gov)
 - Documents
 - Flight Projects
 - 00 Closed, Inactive and Cancelled Projects
 - 01 Active Projects
 - 02 Sold Projects
 - 03 Standards
 - CADD Standards**
 - CONNECT_Config
 - ODOTcadd
 - Rendition Standards
 - Help Documents
 - Pick Lists
 - ProjectWise Templates
 - 04 Admin Configuration
 - AutoTable Standards
 - dmsSystem
 - Documentation
 - Example Dataset

The right pane shows a list of files and folders under the selected path. The list is displayed in a table format with columns for Name and Status.

Name	Status
CONNECT_Config	
ODOTcadd	
Rendition Standards	
MicroStation_Versions.cfg	Checked In

At the bottom of the interface, there are tabs for Document Properties, Folder Properties, Personal Portal, and Photo Preview.

PROJECTWISE CONFIG

```
#          CSB Block                               Level          Variable
#          Load OhioDOT MicroStation Configuration Pre-defined  _OhioDOT_CONFIGURATION_ROOT
#
#####

# If user is running MicroStation CE, use the Workspace Level to load OhioDOT standards
# MicroStation will load all CFG files in _USTN_ORGANIZATION during %level Organization
%if defined (_VERSION_10_0)
    OHIODOT_MICROSTATION_CONFIGURATION_TYPE = CONNECT Edition
    _USTN_CONFIGURATION = $_OhioDOT_CONFIGURATION_ROOT)CONNECT_Config/
    %lock _USTN_CONFIGURATION

    # Set Workspace Name to OhioDOTCEv01 and lock it
    _USTN_WORKSPACENAME = OHDOTCEv01
|    # %lock _USTN_WORKSPACENAME

# If user is running MicroStation V8i, set the appropriate variables to load OhioDOT CADD standards.
# Configure variables needed to be in place before running z_ODOT_redirect.cfg at the system level
%elif defined (_VERSION_8_11)
    OHIODOT_MICROSTATION_CONFIGURATION_TYPE = V8i

    # Set the location in ProjectWise for this workspace
    _OHIODOT_PW_WORKSPACEPATH = $_OhioDOT_CONFIGURATION_ROOT)ODOTcadd/
```

QUESTIONS



QUESTIONS

- When do we get to use ProjectWise?
- How do we get ODOT's Managed Workspace?
- How do I deliver a ProjectWise project?
-