



The purpose of this document is to compile all the links into one single location so that it is easier for the users to navigate to any ORD related reference material quickly. Below you will find links to various Bentley and NCDOT specific training manuals, videos, Project Conversion guidelines and other helpful resources.

The Training content in this document is broken down into three categories:

1. **Bentley Learn Sites** – These are introductory training videos, documents provided by Bentley for users to understand the basic layout, tools and build-up their skills from scratch.
2. **NCLUG** – This is a Local User Group of designers that provide demonstration and training videos on various NCDOT CADD topics. This is a good place for users to get familiar with NCDOT project CADD workflow, files and other settings.
3. **NCDOT ORD specific training** – This section provides discipline specific training manuals, videos and datasets for users to understand OpenX suite CADD workflow related to NCDOT projects and file management.

We also have formal training classes available on NCDOT Learning Center (LMS) linked below that can be accessed using the NCID login credentials:

- [ORD: Sheeting & Plan Production](#)
- [ORD: Corridor Modeling & Super Elevation \(Highlights\)](#)
- [MicroStation Connect I \(ORD\)](#)
- [ORD 101](#)
- [ProjectWise Basics](#)

The screenshot displays the NC Learning Center logo and navigation menu. The main content area shows an event titled "MicroStation Connect I (ORD)" with a duration of 18 hours.

ne	Learning	Leadership Training	Reports	Performance	New Connect
EVENT					
<b>MicroStation Connect I (ORD)</b>					
Duration 18 hours					



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## **BENTLEY LEARN SITES**

The links below provide the Openroads Designer Bentley Video tutorials, Datasets, and training documents. Use this link [Choose an Account \(bentley.com\)](#) to access the Bentley login page required to access the training material. To be clear, these are **Bentley training and not NCDOT specific training classes**.

### **HOW DO I ACCESS THE LEARN SITES?**

- **Step 1.** Go to the Bentley LearnServer site here: <https://learn.bentley.com/app/Public>
- **Step 2.** Sign into your account. You may only need to enter your email. DOT employees already have accounts that are tied to the DOT emails.

A screenshot of the Bentley login page. The Bentley logo is at the top. Below it is a text input field containing a redacted email address followed by "@ncdot.gov". To the right of the input field is a close button (an 'X' in a circle). Below the input field is a link that says "Use another account". At the bottom of the form is a link that says "Don't have an account? Register now."



# NCDOT ORD training resources

- **Step 3.** In the “My Learning History” area choose Preferred Brand = OpenRoads, Preferred Product = OpenRoads Designer, then click on the orange **[Find Training]** button.

The screenshot shows the Bentley LEARNserver user interface. At the top, the Bentley logo is on the left, and the user's name 'Hello, Craig' along with 'Help', 'Profile', and 'Sign Out' links are on the right. Below the header is a promotional banner for 'Explore LEARNserver's YouTube Corner' with a 'LEARN MORE' button. A navigation bar below the banner contains a link to support or raise a ticket. The main content area is divided into several sections: 'My Learning History' (with a 'View' link), 'Preference' (with dropdowns for 'Preferred Brand' set to 'OpenRoads' and 'Preferred Product' set to 'OpenRoads Designer', and a 'Find Training' button), 'Recommended Learning Paths' (with a 'View' link), 'My Active Training' (with a 'View' link), 'My Learning Paths' (with a 'View' link), 'Live Training Schedule' (with a 'View' link), and 'Live User Programs' (with a 'View' link'). Red arrows and circled numbers 1, 2, and 3 point to the 'Preferred Brand' dropdown, the 'Preferred Product' dropdown, and the 'Find Training' button, respectively. The footer contains links for 'Training & Learning', 'Support & Services', 'Communities', and 'Social Media' (Facebook, Twitter, YouTube, LinkedIn), along with 'Contact Us', 'Privacy', and 'Terms of Use' links, and a copyright notice for Bentley Systems, Incorporated.



- **Step 4.** At the next screen select your language

Home Find Training My Learning Paths

Home » Find Training

### Find Training

All training courses are presented in learning paths. Learning paths provide the recommended sequences of courses for your products, solutions, or role to optimize your training experience. Use the learning paths to find live training and on-demand training, view course descriptions, and register.

Brand: MicroStation Product: MicroStation Search

MicroStation [X] MicroStation [X] English [X]

Type: Select Generation: Select Language: English Level: Select Learning Path Status: Select Course Status: Select

**LEARNING PATH**  
**01 - Before You Begin: Configuring the Dataset for a MicroStation CONNECT Edition Course** » (CONNECT Edition - English - Fundamental - Completed)  
This is where it all starts - configuring a training dataset for a MicroStation CONNECT Edition training course. In this lesson you will learn how to configure a training dataset and get ready to tak... [More »](#)

**COURSE**  
**Ch. 2: Controlling the Display of Designs for Civil Designers** » (CONNECT Edition - English - Fundamental - Not Started)

- **Step 5.** Then in the “Search” field type in “openroads designer - roadway design & modeling learning path”.

Find Training

All training courses are presented in learning paths. Learning paths provide the recommended sequences of courses for your products, solutions, or role to optimize your training experience. Use the learning paths to find live training and on-demand training, view course descriptions, and register.

Brand: OpenRoads Product: OpenRoads Designer Search: openroads designer - roadway design & modeling learning path

OpenRoads [X] OpenRoads Designer [X] English [X]

Type: Select Generation: Select Language: English Level: Select Learning Path Status: Select Course Status: Select

**LEARNING PATH** **Enroll**



# NCDOT ORD training resources

- **Step 6.** At the next window select **“Bentley Civil User Accreditation – Road Design Modeling”**.

Type	Generation	Language	Level	Learning Path	Status	Course	Status
Select	Select	English	Select	Select	Select	Select	Select

<b>LEARNING PATH</b> <a href="#">Enroll</a>	<a href="#">View</a>	<a href="#">Copy</a>
<b>*Bentley Civil User Accreditation - OpenRoads Modeling Core Skills</b> » (CONNECT Edition - English - Fundamental - Not Started)	<a href="#">Add</a>	
The OpenRoads Modeling Core Skills accreditation is a fundamental level verification of OpenRoads Designer knowledge and skills as it relates to the tools found in the OpenRoads Modeling workflow. It ... <a href="#">More »</a>	<a href="#">View</a>	<a href="#">Copy</a>
	<a href="#">Add</a>	
	<a href="#">View</a>	<a href="#">Copy</a>
<b>COURSE</b>		
<b>Bentley Civil User Accreditation - OpenRoads Modeling Core Skills Accreditation</b> » (CONNECT Edition - English - Fundamental - Not Started)	<a href="#">View</a>	<a href="#">Copy</a>
The OpenRoads Modeling Core Skills accreditation is a fundamental level verification of OpenRoads Designer knowledge and skills as it relates to the tools found in the OpenRoads Modeling workflow.	<a href="#">Add</a>	
	<a href="#">View</a>	<a href="#">Copy</a>
	<a href="#">Add</a>	
<b>LEARNING PATH</b>	<a href="#">View</a>	<a href="#">Copy</a>
<b>*Bentley Civil User Accreditation - Road Design Modeling</b> » (CONNECT Edition - English - Fundamental - Completed)	<a href="#">Add</a>	<a href="#">Personalize</a>
The Road Design Modeling accreditation is an intermediate level verification of OpenRoads Designer knowledge and skills as it relates to roadway design. It consists of a skills assessment test a... <a href="#">More »</a>		



- **Step 7.** In the “Navigating the Interface” section click on “Find Training (1)” to expand the training resources and select the first video in the series to begin a tutorial on how to navigate the new Microstation Connect Edition interface.

**Bentley Civil User Accreditation - Road Design Modeling with OpenRoads Designer** |||

This course provides an overview of the Bentley Civil User Accreditation program, information on the Road Design Modeling accreditation, and instructions on how to proceed with the accreditation. This... [More>](#)

▼ Find Training (1)

On-Demand

Title	Language	Generation	Release Detail	Type	Duration	Status	Launch
▼ Bentley Civil User Accreditation - Road Design Modeling with OpenRoads Designer CONNECT Edition	English	CONNECT Edition	2021 Release 1 2021 Release 2 2022 Release 1 2022 Release 2				
Preparing for Road Design Modeling Accreditation - Program Overview				Lecture	4m	📺	Launch
Preparing for Road Design Modeling Accreditation - Instructions				Lecture	6m	📺	Launch
Preparing for Road Design Modeling Accreditation - Project Task Overview				Lecture	17m	📺	Launch
Preparing for Road Design Modeling Accreditation PDF Download				Hands-on	1h	📺	Download

**Navigating the Interface** |||

&#10;This course was previously called &quot;QuickStart - Navigating the Interface&quot;. &#10;&#10;This course is designed for all users just getting started with the software. You... [More>](#)

▼ Find Training (1)

On-Demand

Title	Language	Generation	Release Detail	Type	Duration	Status	Launch
▼ Navigating the Interface	English	CONNECT Edition	2020 Release 2 2021 Release 1 2022 Release 1				
Getting Started with the Interface				Lecture	9m	📺	FREE
Using Element Selection to Explore Civil Elements and Features				Lecture	15m	📺	FREE
Element Properties and Explorer				Lecture	4m	📺	FREE
Navigating Multiple Views and Models				Lecture	10m	📺	FREE
View Controls				Lecture	11m	📺	FREE
Analyzing Civil Data				Lecture	4m	📺	FREE
Navigating the Interface PDF and Dataset Download (2020 Release 2)				Hands-on	1h	📺	Free Download
Navigating the Interface PDF and Dataset Download (2021 Release 1)				Hands-on	1h	📺	Download
Navigating the Interface Skills Assessment				Skills Assessment		📺	Skills Assessment



**TRAINING TOPICS IN LEARN SITES THAT CAN HELP USERS:**

- **MicroStation Connect Edition Basics for Civil Designers**
  - These classes are focused on existing AUTOCAD users and new users to familiarize themselves with MicroStation Connect tools and features.
  - [View Learning Path \(bentley.com\)](#)
- **ORD Feature Videos**
  - Short videos for all aspects of design tools ranging from basic OpenRoads drafting tools to quantity estimate, reports, subsurface tools and many more.
  - [View Learning Path \(bentley.com\)](#)
- **Best Practices**
  - Best Practice recommendations for organizing design files, project management and working in design files.
  - [View Learning Path \(bentley.com\)](#)
- **ORD CADD Administrator**
  - Setting up an OpenRoads Designer Workspace including migrating data from existing V8i Workspaces. Bentley specific workspace ONLY. NOT NCDOT workspace.
  - [View Learning Path \(bentley.com\)](#)
- **ORD Roadway Design & Modeling**
  - Standard Out of the Box Bentley Roadway Design tools and workflow. This is not NCDOT Roadway Training Modules. See NCDOT Roadway website or link in this document for Department specific training
  - [View Learning Path \(bentley.com\)](#)
- **ORD Survey**
  - Standard Out of the Box Bentley Survey tools and workflow. Hands-on courses and various Learn Conferences, Special Interest Group (SIG) and Bentley Tech Talk videos related to Survey.
  - [View Learning Path \(bentley.com\)](#)
- **ORD Drainage & Utilities**
  - Standard Out of the Box Bentley Hydraulics tools and workflow.
  - [View Learning Path \(bentley.com\)](#)
- **ProjectWise Explorer CONNECT Edition**
  - Standard Out of the Box Bentley ProjectWise tools and workflow.
  - [View Learning Path \(bentley.com\)](#)



## NCLUG TECH TALK EVENTS

The link below provides the updates on all the latest ongoing and past recorded industry events to communicate the OpenRoads and other OpenX suite development, training and tip & tricks videos and PowerPoint slides.

LINK: [NCLUG - ORD Presentations](#)

PRESENTATION ARCHIVE

2022 TECH Talks

2021 TECH Talks

[Click to view past conference presentations](#)

2020 TECH Talks

[Click to view past conference presentations](#)

SUMMER AND WINTER CONFERENCES

[Click to view past conference presentations](#)

The graphic is a vertical stack of colored rectangular sections. At the top is a black bar with the text "PRESENTATION ARCHIVE" in white. Below that is a light blue bar with "2022 TECH Talks" in white. The next section is a white bar containing the "NCLUG TECH Talks" logo, where "NC" is a large blue outline of North Carolina, "LUG" is in white on a blue background, and "TECH Talks" is in black. This is followed by a bright blue bar with "2021 TECH Talks" in white and a link "Click to view past conference presentations" below it. The next is a medium blue bar with "2020 TECH Talks" in white and a link "Click to view past conference presentations" below it. The final section is a dark blue bar with "SUMMER AND WINTER CONFERENCES" in white and a link "Click to view past conference presentations" below it.



HOME ABOUT ► CONTACT EVENTS JOIN US PRESENTATION ARCHIVE ▼

Presentation Archive

- 2022 TECH TALKS
- 2021 TECH TALKS
- 2020 TECH TALKS
- CONFERENCE PRESENTATIONS

# UPCOMING EVENTS

NCLUG YOUTUBE LINK:

<https://www.youtube.com/playlist?list=PLTRf2HeNs6AK7Omdx5AigCkHgXOINHvwj>

Search

1 unavailable video is hidden

2021 10 06 NCLUG Tech Talk Guardrail  
Paddy Jordan  
58:51

2021 10 20 NCLUG Tech Talk Alignments  
Paddy Jordan  
1:15:17

NCLUG



## NCDOT ORD SPECIFIC TRAINING GUIDES AND HELP DOCUMENTS

The links below provide NCDOT specific Training, guidelines and help documents for the ORD workflow and design process:

- **PHOTOGRAMMETRY UNIT TRAINING – UNDER DEVELOPMENT**
  - In Progress, link will be posted once finalized.
  - Click here to go to the [Photogrammetry Page](#)
- **LOCATION SURVEY UNIT TRAINING**
  - [Location & Surveys \(ncdot.gov\)](#)
  - Training videos are located near bottom of page as shown in screenshot below
  - Go to bottom of page and click on ORD Survey Training Materials (zip file)

The screenshot shows a webpage with a list of video training links. The links are: Microstation ORD, Creating Attestation Sheets, Creating NCDOT Right-Of-Way Plans, NCUTIL MDL Application, Trimble Traverse Adjustment, Intro to Trimble Business Center, Performing Site Calibration In Trimble Business Center, Survey Control Sheets Technical Overview, and ORD Survey Training Files. Below the list is an 'Employee Directory' link. Red arrows point to 'Microstation ORD' and 'ORD Survey Training Files'. Red text next to the arrows says 'Training videos on Youtube' and 'Example .dgn files and workspace in .zip file'.

**Video Training Links**

- Microstation ORD
- Creating Attestation Sheets
- Creating NCDOT Right-Of-Way Plans
- NCUTIL MDL Application
- Trimble Traverse Adjustment
- Intro to Trimble Business Center
- Performing Site Calibration In Trimble Business Center
- Survey Control Sheets Technical Overview
- ORD Survey Training Files
- Location and Surveys Safety Video

**Employee Directory**  
Staff contacts for *Location & Surveys*.

Training videos on Youtube

Example .dgn files and workspace in .zip file



<a href="#">NCDOT Location and Surveys Unit Property Survey Manual</a> 2018-07-25 11:48:54	PDF
<a href="#">NCDOT Mapping Manual</a> 2021-02-24 09:12:37	
<a href="#">Location &amp; Surveys Project Review Checklist</a> 2021-04-14 13:36:25	
<a href="#">ORD Survey Training Materials</a> 2021-11-29 15:45:05	ZIP
<a href="#">Report of Final RW and Permanent Easement Survey Revised (8-23-2017)</a> 2018-08-08 12:49:56	W
<a href="#">SUE Guidelines</a> 2018-07-25 11:48:54	PDF

**Employee Directory**  
Staff contacts for *Location & Surveys*.



B. Attach the Final Survey file *R-2635C-ncdot-fs-SS2.dgn* and the Existing Terrain Model *R-2635C-LS-ETM.dgn* from the FinalSurvey Folder.  
*C:\NCDOT Training\Roadway\Module 3 Horizontal Alignment\R-2635C\FinalSurvey*

**In the training document**



- **UTILITIES UNIT TRAINING –**
  - Go to website [Utilities Unit Training](#) page for more information

## OpenRoads Designer (ORD) Training and Development

ORD Training Manual, ORD Training Videos, ORD Training Project and Data

↑ Connect NCDOT > Local Governments > Utilities > OpenRoads Designer (ORD) Training and Development

### OpenRoads Designer (ORD) Utilities Training Videos

The screenshot shows a video player interface. On the left is the NCDOT logo. The main area displays the video title 'Ch01A - Create DGN for Utility Design' over a background image of a utility design software interface. On the right, there is a 'Share' button and a '1/25' indicator.



- **HYDRAULICS UNIT TRAINING**
  - Go to Hydraulics website [Resources for ORD Drainage](#)
  - Click on links for NCDOT Drainage Manual and Ditch Design Manual

## Resources for ORD Drainage

▶ Connect NCDOT ▶ Resources ▶ Hydraulics ▶ Resources for ORD Drainage

### OpenRoads Designer Applications

ORD version 10.09 or higher must be used.

<a href="#">NCDOT ORD Drainage Manual</a>	PDF
<a href="#">NCDOT ORD Ditch Design Manual</a>	PDF
<a href="#">Updating Local ORD WorkSpaces</a>	PDF



- **STRUCTURES MANAGEMENT UNIT**
  - Go to the Structure Management Unit website  
<https://connect.ncdot.gov/resources/Structures/Pages/default.aspx>
  - Use the direct link to access the training manual pdf: [SMU OpenBridge Designer \(ncdot.gov\)](#)

## Structures Design & Management

Structures Design & Management

↑ ▶ Connect NCDOT ▶ Resources ▶ Structures

### AGC and ACEC Minutes

Committee members and meeting minutes

[Read More →](#)

### Culvert Standards

Standard Drawing Files in PDF and DGN

[Read More →](#)

### Drawing Submittal Status and Design Notes

Review current status of drawing requests and design notes for drawings

[Read More →](#)

### Policy Memos and Form Letters

Structures Policy Memos and Structures Standard Letters

[Read More →](#)

### Project Special Provisions

Structures Project Special Provisions

### Featured Downloads

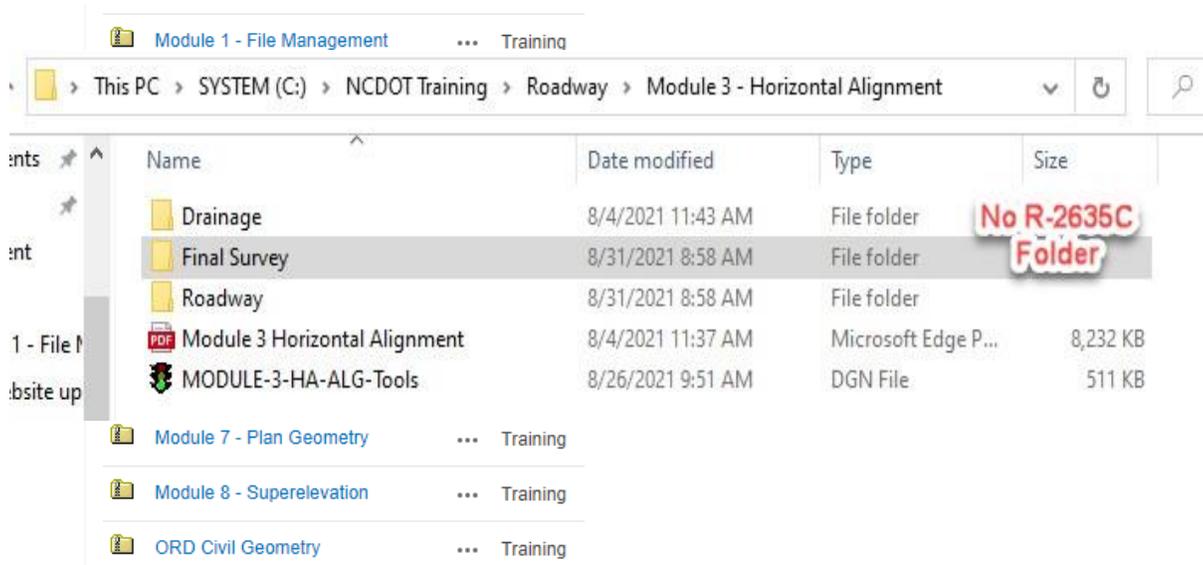
- Temporary Bridge Inspection Report  
2017-01-10 13:08:42
- Temporary Bridge Inspection Report Notes.pdf  
2013-12-11 08:28:07
- SMU File Naming Convention  
2019-02-27 16:33:04
- 12 Month Letting - Preservation/Repair Projects  
2021-12-02 12:51:36
- NCDOT Structure Management Unit OpenBridge Manual\_Ver10.10  
2022-02-14 07:47:51
- 12 Month Letting -Bridge Replacement (Central Letting)  
2022-09-27 13:53:07



- **ROADWAY DESIGN UNIT TRAINING**

- The NCDOT Roadway Design Unit OpenRoads Designer Roadway training manuals and dataset are uploaded in zip format.
- The training is strategically separated into 17 modules that focus on individual roadway design stages and guide the user with the necessary tools for each focus area.
- Link to training material:
  - <https://connect.ncdot.gov/projects/Roadway/ORD/Forms/AllItems.aspx>
- When looking for files used in the training document, the actual file path may be slightly different than what is shown. The directories in the zip files are correct, all the unit folders (Roadway, Final Survey, etc.) should be directly under the Module folder. **If the folder structure is unchanged, all references should work properly.** For example as seen in the screenshots below, the R-2635C folder does not exist, so it can be ignored.

B. Attach the Final Survey file *R-2635C-ncdot-fs-SS2.dgn* **In the training document** and the Existing Terrain Model *R-2635C-LS-ETM.dgn* from the FinalSurvey Folder.  
*C:\NCDOT Training\Roadway\Module 3 Horizontal Alignment\R-2635C\FinalSurvey*





All Documents

Find a file 

- ✓  Name
-  Appendix B - Project Conversion Guidelines
-  Creating 2D Microstation Custom Line Styles
-  Design Scripts & Pen Tables\_9-8-22\_Presentation
-  Earthwork with Oak\_4-19-22\_Meeting Recording
-  Module 1 - File Management
- ✓  Module 10 - Intermediate Corridor Modeling
-  Module 11 - Detailed Modeling
-  Module 13 - Sheeting
-  Module 13A - Design Scripts and Pen Tables
-  Module 2 - Existing Terrain Model
-  Module 3 - Horizontal Alignment
-  Module 4 - Vertical Alignment
-  Module 6 - Initial Corridor Modeling
-  Module 7 - Plan Geometry
-  Module 8 - Superelevation
-  Monthly Agency Call\_06-09-22
-  NCDOT ORD Migration Plan\_11-1-2019
-  ORD Civil Geometry
-  ORD QuickStart
-  ORD Workspace Setup Flashcard
-  ORD-Templates
-  STREAM Video Captures - How to modify access

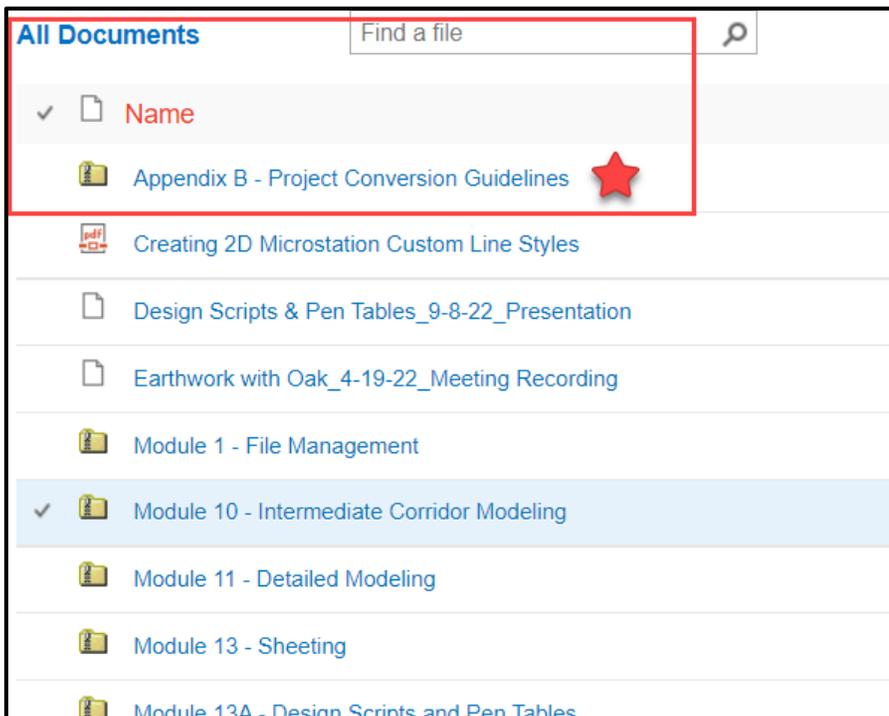


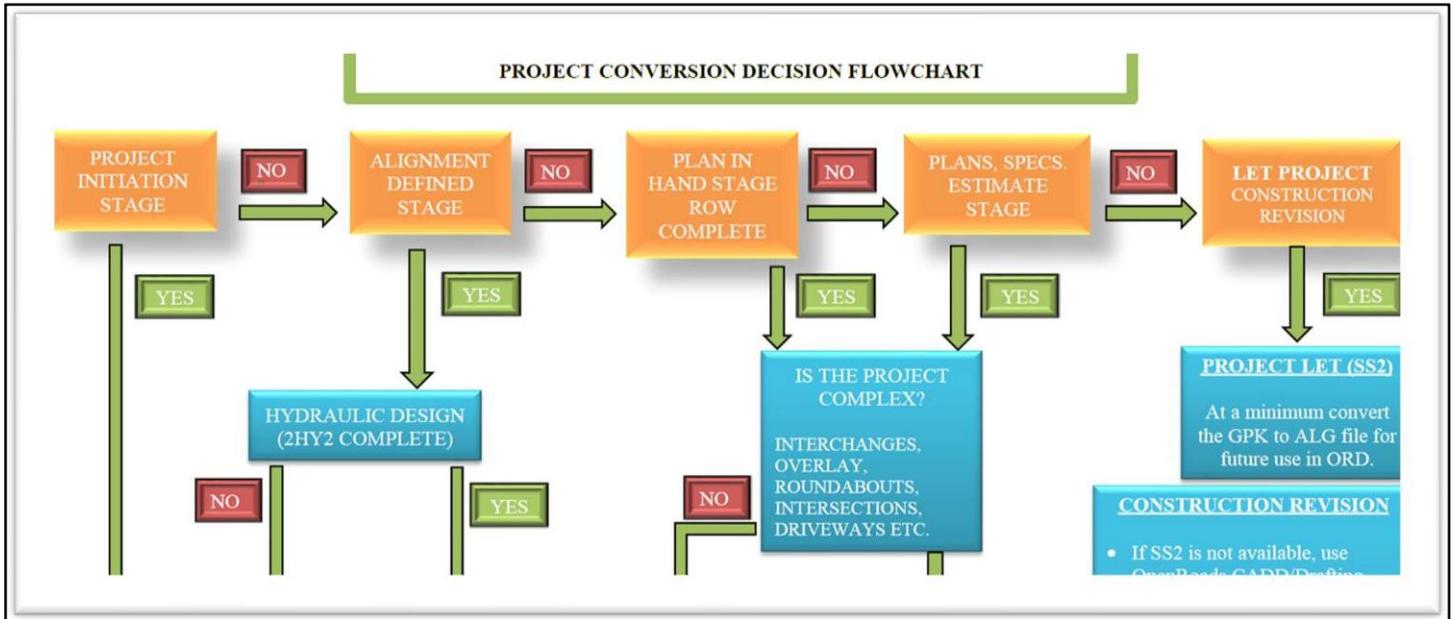
- **GEOTECHNICAL UNIT TRAINING**

- The NCDOT Geotechnical Unit is currently testing the software and have the training video available in the link below to show the project workflow in OpenRoads Designer
- [NCDOT GEOTECH TRAINING LINK](#)

- **SS2 to ORD PROJECT CONVERSION GUIDELINE AND DECISION**

- The purpose of this document is to help Project Managers identify the best solution to convert, begin a Project in OpenRoads Designer or keep the project in SS2/SS4 version.
- This document also helps the designer identify the different levels of conversions that are possible and the magnitude of work of converting the designs from SS2 version to the OpenRoads Designer at various stages.
- Navigate to [NCDOT Roadway Design unit specific training link](#) in the previous page and look for training module listed in the “Appendix B – Project Conversion Guidelines” as shown in the screenshot below:





### Levels of Conversion:

