

CADD NEWS

ISSUE
02
Volume 24

NCDIT Transportation Engineering Design & CADD Services Newsletter

July 2024

Mid-Year Update

Hard to believe July is almost over, and we have made it halfway through another year. So, what's been happening in the ORD/Connect world? Bentley has recently released the Latest versions of OpenRoads Designer and OpenBridge Designer. A brand-new Bentley Learn website that should be easier to navigate and much more responsive than the "original version," along with some new and updated training material.

The North Carolina Local User Group annual summer conference will be held August 20-22, 2024, at the Mckimmon Center on the campus of NC State University. The conference is an excellent opportunity to expand your knowledge of all things Bentley, earn some PDHs, and network with fellow users from the PEF, DOT, and local government communities. Also, the NCLUG will celebrate 15 years of service to the Carolinas and beyond.

Finally, I hope you find this issue of CADD News useful and informative. Please let us know if you have any suggestions or would like to submit an article or two. Thanks for reading.

-The Editor

"There are years that ask questions and years that answer."

- Zora Neale Hurston

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- **NCLUG**
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Inquiring minds want know what is happening with CADD at NCDOT

NC DIT
TRANSPORTATION
cadd services



NCLUG Summer Conference Update

The North Carolina Local Users Group (NCLUG) annual **Summer Conference is August 20-22, 2024**, at the Mckimmon Center on the campus of NC State University. For additional information, visit the NCLUG website at NCLUG.COM.

| Day 1 - Aug 20 | | | | |
|---------------------|---|--|---|--|
| | Workshop A | Workshop B | Lecture A | Lecture B |
| 8:00 am - 8:25 am | Registration | | | |
| 8:30 am - 9:00 am | Networking Breakfast | | | |
| 9:00 am - 10:00 am | Keynote Address: Jennifer Evans, NCDOT Deputy Director of Technical Services | | | |
| 10:00 am - 10:15 am | Break | | | |
| 10:15 am - 11:15 am | Keynote Address: TBD | | | |
| 11:15 am - 11:30 am | Break | | | |
| 11:30 am - 12:30 pm | Keynote Address: Dr. Daniel Findley, NC State University, Associate Director, Institute for Transportation Research and Education | | | |
| 12:30 pm - 1:30 pm | Lunch | | | |
| 1:30 pm - 2:30 pm | ORD Sheeting Lily Cloud, NCDOT | Printing Designs and Drawings Ethan Schwartz, Bentley | Introduction to OpenRoads Designer Najib Azougagh, Bentley | Ethics David Evans, NCBELS |
| 2:30 pm - 2:45 pm | Break | Break | Break | Break |
| 2:45 pm - 3:45 pm | Break | Break | What's New in OpenRoads Designer 2023 Christiana Holmes, Bentley | Geometry Connector: An ORD Replacement for Geopak Incomplete Alignments Edgar Leicht, STV |
| 3:45 pm - 4:00 pm | Break | Break | Break | Break |
| 4:00 pm - 5:00 pm | Break | Creating Drainage Reports Jordan Hatfield, Bentley | Modeling Retaining Walls and Side Slopes Najib Azougagh, Bentley | I-Twin Design Reviews Dan Gleason, VHB |

| Day 2 - Aug 21 | | | | |
|---------------------|--|---|--|--|
| | Workshop A | Workshop B | Lecture A | Lecture B |
| 8:00 am - 8:25 am | Registration | | | |
| 8:30 am - 9:30 am | Keynote Address: Dan Vogen, Bentley VP Transportation Bentley | | | |
| 9:30 am - 10:30 am | Break | Break | Geometry for Surveyor Ethan Schwartz, Bentley | Annotating Drainage Profiles Jordan Hatfield, Bentley |
| 10:30 am - 11:00 am | Break | Break | Break | Break |
| 11:00 am - 12:00 pm | Break | Break | Setting up Drawing Sheet Seed Definitions Christiana Holmes, Bentley | Hydraulic Unit Update NCDOT |
| 12:00 pm - 1:00 pm | Lunch | | | |
| 1:00 pm - 2:00 pm | NCDOT Location & Surveys - R/W Acquisition Process Brian Barwatt, NCDOT | Drainage Plans, Profiles and Cross Sections Jordan Hatfield, Bentley | Working Together: ORD, ProjectWise and iTwin Integration Christiana Holmes and Jordan Hatfield, Bentley | Ethics David Evans, NCBELS |
| 2:00 pm - 2:30 pm | Break | Break | Break | Break |
| 2:30 pm - 3:30 pm | Break | Break | Creating Title Sheets, Detail Sheets and Typical Section Sheets Jordan Hatfield, Bentley | Making Transition to 3D Workflows (FL, GA, SC, and NC) Andrew Poszich, RS&H |
| 3:30 pm - 4:00 pm | Break | Break | Break | Break |
| 4:00 pm - 5:00 pm | Break | Design and Model ADA Ramps (Lectures) Jordan Hatfield, Bentley | Understanding Terrain Models Najib Azougagh, Bentley | Roadway Design Plan Production Oak Thammavong, NCDOT |

| Day 3 - Aug 22 | | | | |
|---------------------|---|--|--|--|
| | Workshop A | Workshop B | Lecture A | Lecture B |
| 8:00 am - 8:25 am | Registration | | | |
| 8:30 am - 9:30 am | Keynote Address: Dan Vogen, Bentley VP Transportation Bentley | | | |
| 9:30 am - 10:30 am | ORD Corridor Templates Oak Thammavong, NCDOT | Editing and Managing Geometry Najib Azougagh, Bentley | Creating Staged Cross Sections Christiana Holmes, Bentley | Delivering a "MALD" Project (Model as the Legal Document) - Andrew Poszich, RS&H |
| 10:30 am - 11:00 am | Break | Break | Break | Break |
| 11:00 am - 12:00 pm | Break | Break | Grading Design and Modeling at Bridge Abutments Steve Willoughby, Bentley | Geotechnical Unit Update Tim Merrill, NCDOT |
| 12:00 pm - 1:00 pm | Lunch | | | |
| 1:00 pm - 2:00 pm | Plans Production with OpenBridge Modeler Steve Willoughby, Bentley | Using OpenRoads Designer to Identify and Manage Utility Clashes in Transportation Projects Jordan Hatfield, Bentley | Project Wise Managed Workspaces Jeffrey Garland, NCDIT | Break |
| 2:00 pm - 2:30 pm | Break | Break | Break | Break |
| 2:30 pm - 3:30 pm | Advance Template Design Andrew Poszich, RS&H | Getting the Most Out of OpenRoads Visualization Christiana Holmes, Bentley | CADD Inegration Team Updates Vasim Barodawala, NCDOT | Break |
| 3:30 pm - 4:00 pm | Break | Break | Break | Break |
| 4:00 pm - 5:00 pm | Break | Best Practices for Organizing Files and References Najib Azougagh, Bentley | Item Type creation and Quantity Reports Dan Gleason, VHB | Break |



Linn Cove Viaduct

In Person Training

NCDOT has two CADD Training labs available for CADD Training. One is the ET-Lab in Building B of the Century Center in Raleigh. The second is the Division 13 Computer Lab located in Marion at the District 3 maintenance building. The following in-person courses are currently scheduled.

ET LAB

| Date | Course |
|----------------|------------------------------|
| September 3-4 | ORD 101 |
| October 2-3 | ORD 101 |
| October 15-17 | MicroStation Connect I (ORD) |
| November 19-21 | MicroStation Connect I (ORD) |
| | |
| | |

Marion Computer Lab

| Date | Course |
|--------------|---------|
| August 7-8 | ORD 101 |
| November 6-7 | ORD 101 |
| | |
| | |

What classes does CADD Services Teach

Cadd Services is currently teaching two courses in person and online via teams.

MicroStation Connect I (ORD)

It is a three-day course covering the basics of using MicroStation within Open Roads Designer. This course is recommended for all users, whether old hands or fresh out-of-school newbies, particularly if you don't use MicroStation regularly.

ORD 101

This two-day course covers the basics of using OpenRoads Designer (ORD). It is not an in-depth course but is intended to give the designer the basics to get





How to sign up Training (NCDOT employees only)

To Sign up for these or any other course offered by EDCS, visit the State of NC Integrated HR-Payroll System website at:

[portal.osc.nc.gov/
app](https://portal.osc.nc.gov/app)

Log in with your NCID credentials and then select LMS & NCVIP from the top of the page to be taken to the Learning Management System (LMS), where you can sign up for these and other training courses.

Note: to sign up, you must have a valid NCID login and be a state employee

TEAMs Training

In addition to In-person training, Engineering Design & CADD Services (EDCS) also offers our current courses online via TEAMs. Our TEAMs class is the same as our In-Person ones delivered over the network. To take a class via teams, you should have at least two monitors, a microphone, and a camera for the best experience.

ORD 101 on TEAMs

| Date | Course |
|----------------|---------|
| November 23-24 | ORD 101 |
| December 4-5 | ORD 101 |
| | |
| | |
| | |

MicroStation Connect I (ORD) on TEAMs

| Date | Course |
|-----------------|------------------------------|
| September 24-26 | MicroStation Connect I (ORD) |
| December 10-12 | MicroStation Connect I (ORD) |
| | |
| | |
| | |

ProjectWise Q&A Session

This is a working session for NCDOT ProjectWise users to join and ask questions about utilizing ProjectWise. The NCDIT Engineering Design and CADD Services ProjectWise Team will facilitate this working session.

Wednesday, July 31, 2024, 1:00 PM-2:00 PM

For more information and an invitation to the TEAMs session, email Jeff Garland at jmgarland@ncdot.gov.



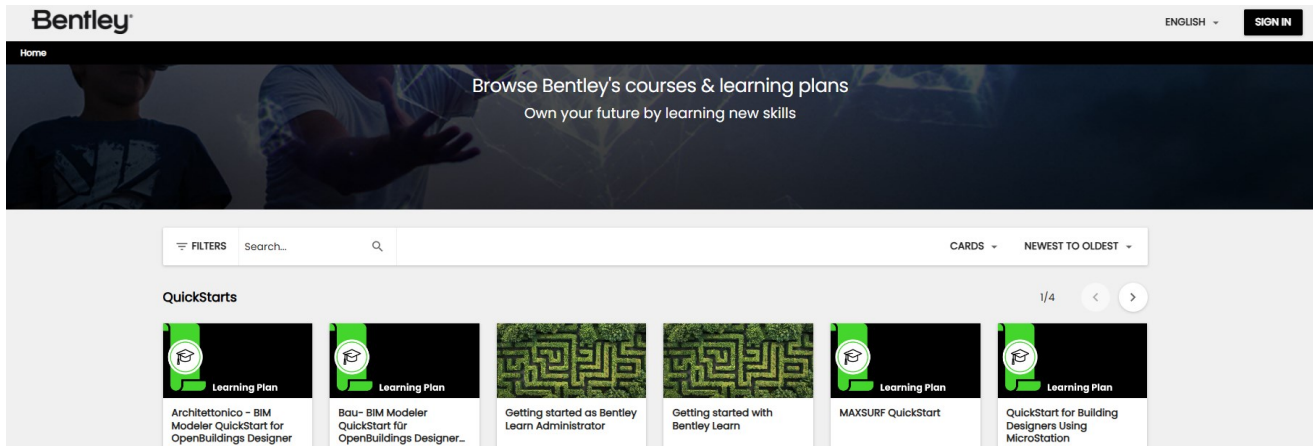
Current NCDOT CADD Software Versions

(as of 18 July 2024)

| Product | Version |
|--|---------------------|
| PowerGEOPAK SS4 | 08.11.09.878 |
| PowerGEOPAK SS10 | 08.11.09.918 |
| OpenRoads Designer | 23.00.00.129 |
| OpenBridge Designer | 23.00.01.024 |
| Open Rail Designer | 23.00.00.129 |
| ProjectWise Explorer Client | 10.00.03.453 |
| Connection Client | 23.00.00.10 |
| Interplot Client | 08.11.11.56 |
| Operating System - Windows 10 Professional | 64 Bit |
| Productivity Suite – Microsoft Office 365 | 32-bit |
| AutoTurn | 11.05.42 |
| GuideSign Plus | 24.8.20.150 |
| Torus | 6.03.4 |
| Trimble Business Center | 5.90.1 |
| Bluebeam REVU x64 Extreme | 20.2.70 |
| <i>GEOPAK SS2*</i> | <i>08.11.07.615</i> |
| UpdateWS | 19.12.19.1 |
| | |

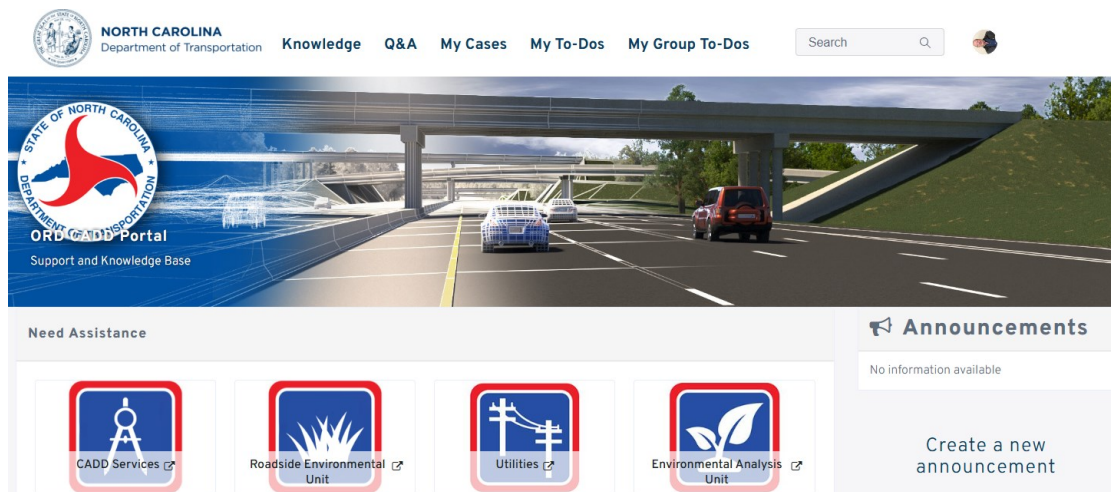


The Bentley Learn Server



Training can be found on the Bentley Learn Server (www.learning.bentley.com/learn). The Training (though not NCDOT-specific) is available to anyone with access to the Bentley Learn website.

NCDOT ORD CADD Portal



Additionally, NCDOT has created a new Service Now Portal to act as a ORD support and knowledge base

<https://ncdot.service-now.com/ordsp>

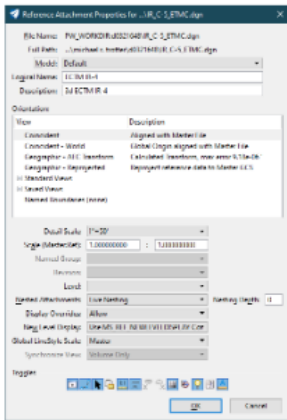
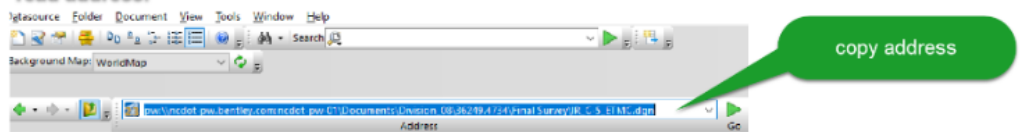


Division Design & Construct Users Group

The Division Design & Construction Users Group (DDCUG) meets on TEAMS every other Thursday from 2:00—2:30 p.m. to discuss and work through issues encountered by division ORD and Connect users. While it is focused on ORD use in the division DDC units, anyone is welcome to attend and share their knowledge. For more information and a TEAMS invite, contact **Michael R Trotter (mtrotter@ncdot.gov)**.

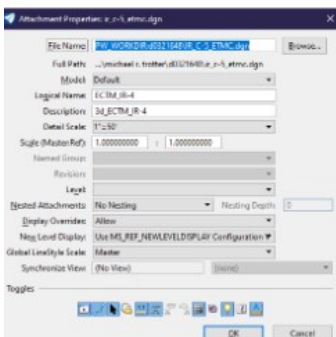
From the DDCUG Chat Archive

If you are attaching the same reference file to different ORD files on ProjectWise you can use the key in **reference attach "pw:\ncdot-pw.bentley.com:ncdot-pw-01\Documents\Division_08\{project folder}\{project sub folder}\{file name}.dgn"**, the file path can be copied from the ProjectWise Address Bar. The quotation marks (" ") have to be put around the address for ProjectWise to read address.

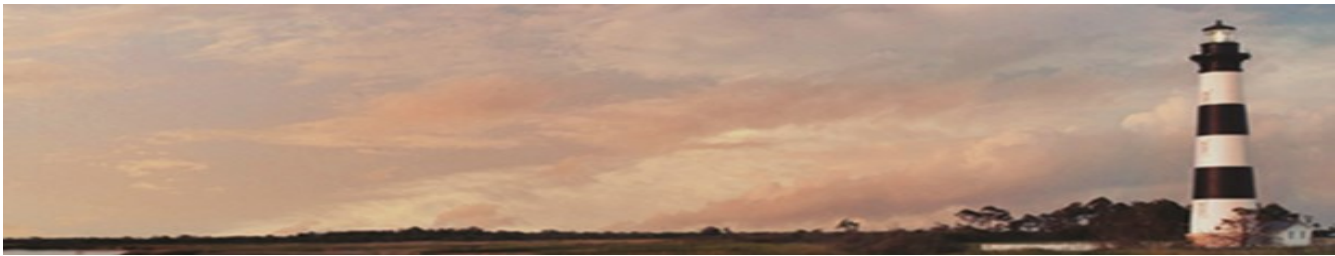


The reference file box will open and just click ok.

attach a reference file with only a key in



To attach a reference file with a key in without the reference file box opening the key in is **reference attach "pw:\ncdot-pw.bentley.com:ncdot-pw-01\Documents\Division_08\36249.4734\Final Survey\IR_C-5_ETMC.dgn" Default,ECTM_IR-4,3d_ECTM_IR-4 ***. The command key in after the quotation marks at the end are separated by commas, and set set the Model of the file to be referenced, next sets the Logical Name, the next part sets the Description, and the asterisk (*) keys in OK. The reference file will then attach with out any more user input. The name of the Model must be known. The Logical Name and Description can be names about what ever you like, but you can not use spaces in the name. This command can be used in batch files



More From the DDCUG Chat Archive

(from the ORD Oracle of Division 8)

To see the Elevation and Station in the profile view.

A quick way to check the station and elevation in the profile view is to Snap to what you want to check. For this to work you have to use the mouse to Snap (big white cross hair) and NOT the Smart Snap (small yellow X). The station and elevation is on the bottom toward the left. In Cross Section view Snapping to a point, the read out will show the elevation and offset.

| |
|-------------------|
| Enter Start Point |
| Station 1+16.82 |
| Z 734.1000 |

Expanding the Measure Distance Tool Settings Box

The expanded tool box for Measure Distance will show the X & Y for the start and end point (the points being are measuring between) and give the horizontal & vertical distance between the points. Comes in handy if you are tiring to find the slope. Also handy when working in a 3D model

Measure Distance

Method: Between Points Use reference scale

Distance: 8.9865' Flatten to File Z: 8.9865'

Total: 8.9865' 8.9865'

Method: Between Points Use reference scale

Distance: 8.9865' Flatten to File Z: 8.9865'

Total: 8.9865' 8.9865'

| X | Y |
|------------------------|-----------|
| Start Point: -94.6755' | 734.2257' |
| End Point: -93.6470' | 734.7442' |
| Delta: 8.9716' | 0.5186' |

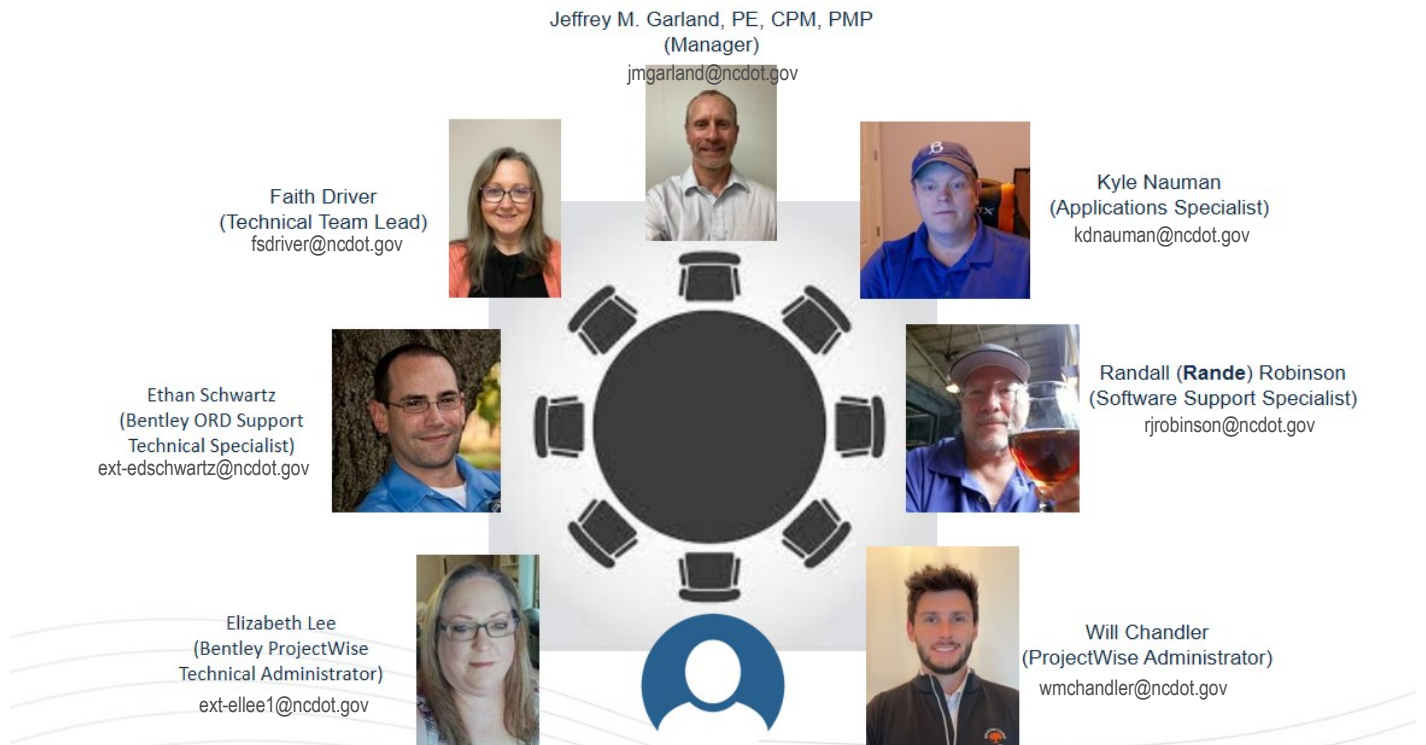
8.9716

8.9865

0.5186



The Engineering Design & CADD Services Team



CADD Support

What is the quickest way to get help if you have a problem or a question about ProjectWise, MicroStation, ORD, OBD, or any other CADD/Engineering software?

Simple, email your question or issue to either:

CADD-sup@ncdot.gov

for questions about MicroStation, ORD, etc.

Dot.pwsupport@ncdot.gov

for all things ProjectWise related.

Last Words

Deep Thoughts



Bluebeam License Update

We are aware of the issue with the availability of Bluebeam licenses at times and want to assure you that we are working diligently to resolve it over the next few months. We recently signed a new contract with Bluebeam, which will provide more licenses.

Unfortunately, they have changed the licensing scheme, so we will no longer have “pooled” licenses. Which means we must license each user and PC (remember the old geopak days)?

IT is working on exactly how to distribute and manage them. Until then, we will continue to use the current license pool. Hopefully, this will all be resolved soon.

- Engineering Design & CADD Services Unit

Contact Us

NCDIT - Transportation,
ETS ,EAS, Engineering De-
sign CADD Services

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