

MoDOT's Transition to OpenRoads Designer – The Consultant's View

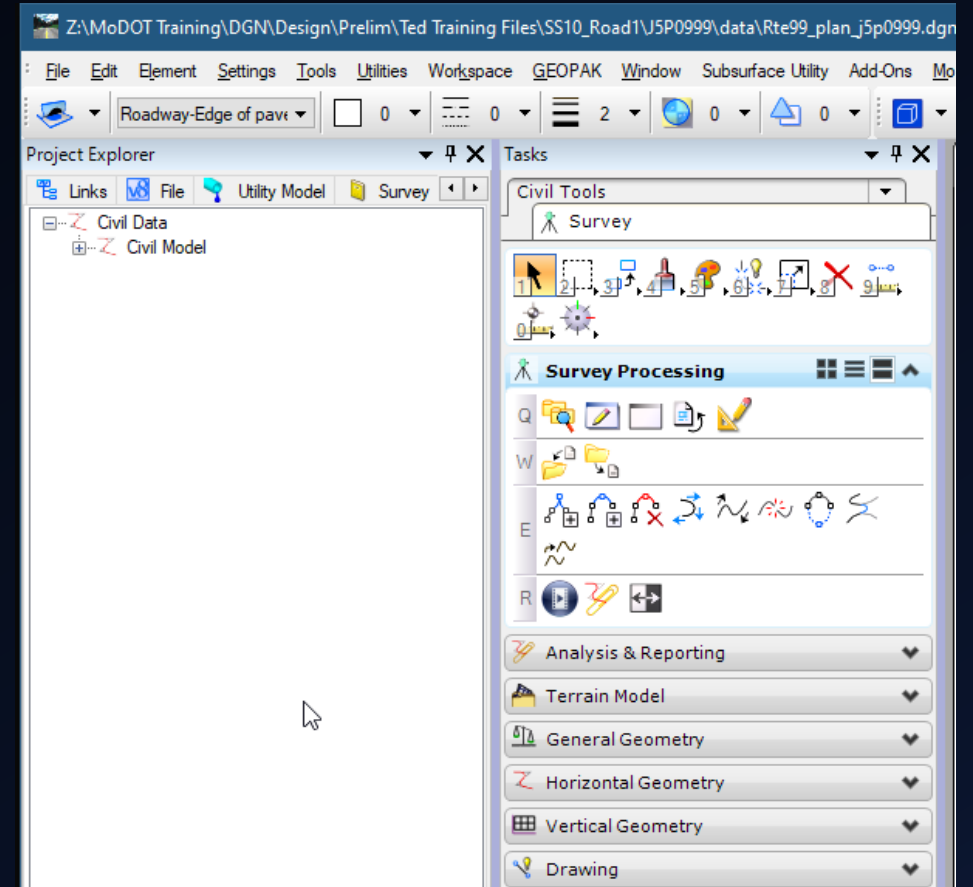
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The Background on ORD

- OpenRoads is a technology, not a software
- Has existed since Geopak SS3 initial release in 2013
- MoDOT's OpenRoads Designer (ORD) production workspace first became available in March, 2022
- An updated workspace for ORD 10.12.02 (2022R3) was released in October



EFK Moen's ORD Environment

- 25 to 35 Roadway Design Users. Most work on MoDOT projects
- Currently maintain several configurations for multiple versions and DOTs
- Both Networked and ProjectWise configurations
- Many survey projects completed
- First roadway projects recently delivered
- We do not currently have anyone pursuing Bentley certifications
- In-house trainings and videos



The Big Picture

- MoDOT's implementation of ORD has worked well for EFK Moen
- Most of the issues are general ORD concerns:
 - Crashes and crash recovery
 - How the software approaches plan development
 - Managing workspace customizations
 - Anticipating the future development roadmap
- ORD has to work for 40+ DOTs all of which do things differently.
- ORD is extraordinarily complex – we're just scratching the surface!



What we like so far with the MoDOT configuration:

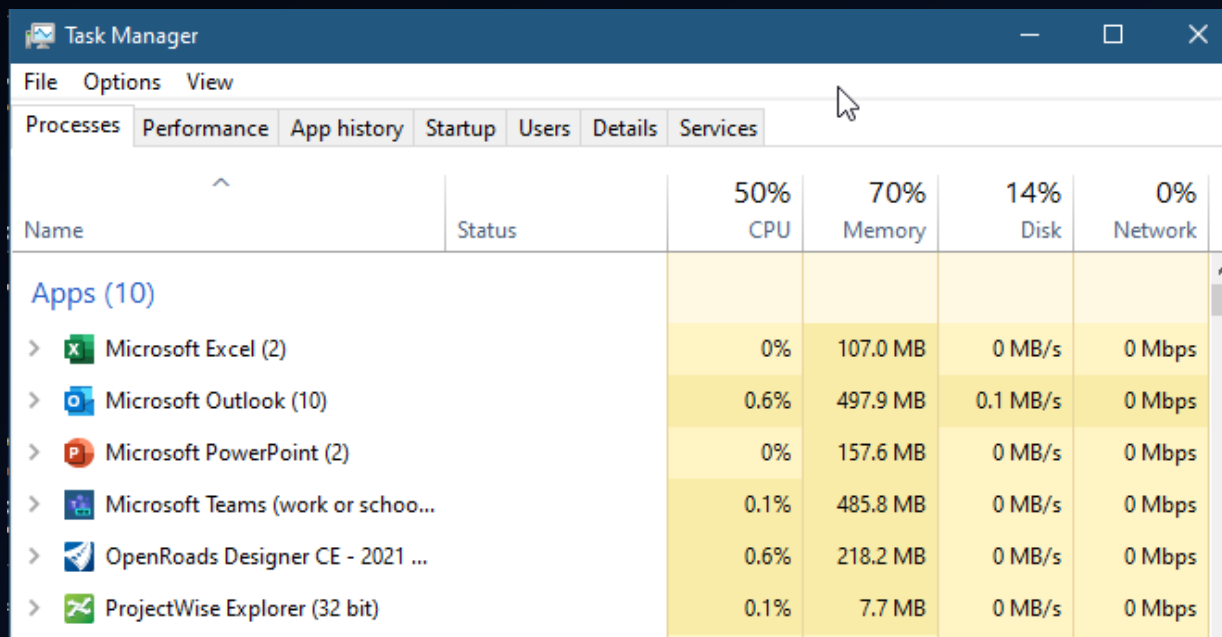


- Changes from SS10 to ORD were pretty minimal compared to other DOTs
- No big changes from 2021R2 to 2022R3
- Haven't had to move a lot of jobs from SS10 to ORD
- MoDOT CADD Detailing Workflow
- One "official" version of Quantab (Excel to ORD)
- MoDOT provides a wide array of training materials and videos specific to their configuration
- No unrealistic expectations on productivity increases



The Most Common Questions I Get:

- Why do ORD crashes tend to cascade?
- How do I preserve my preferences after crashes?
- Why do they call a Project a WorkSet?



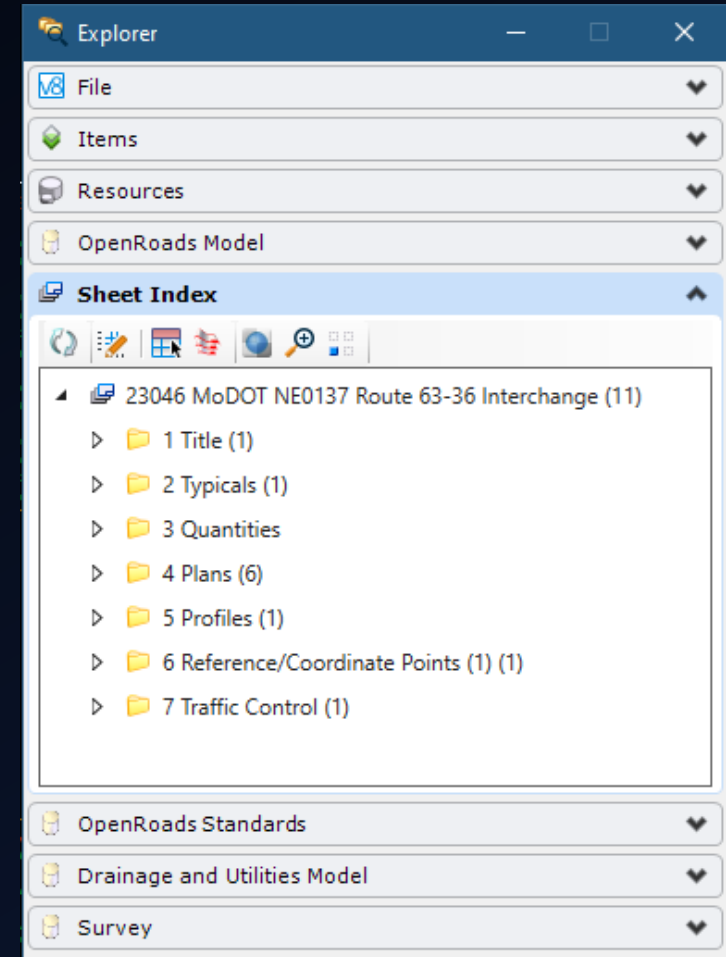
The screenshot shows the Windows Task Manager Performance tab. The table below displays the resource usage for various applications. The columns are CPU, Memory, Disk, and Network. The total usage for each resource is shown at the top of the table.

Name	Status	50% CPU	70% Memory	14% Disk	0% Network
Apps (10)					
> Microsoft Excel (2)		0%	107.0 MB	0 MB/s	0 Mbps
> Microsoft Outlook (10)		0.6%	497.9 MB	0.1 MB/s	0 Mbps
> Microsoft PowerPoint (2)		0%	157.6 MB	0 MB/s	0 Mbps
> Microsoft Teams (work or schoo...)		0.1%	485.8 MB	0 MB/s	0 Mbps
> OpenRoads Designer CE - 2021 ...		0.6%	218.2 MB	0 MB/s	0 Mbps
> ProjectWise Explorer (32 bit)		0.1%	7.7 MB	0 MB/s	0 Mbps



Common Roadway Design User Concerns

- Sheet Models, Borders and Border Text
- Users don't trust the Sheet Index yet
- Finding the best way to add something to every sheet quickly
- Perception that more manual labeling is required, particularly on cross-sections
- Confusion about how libraries interact with the DGN file
- Slow print performance



Common Surveying User Concerns

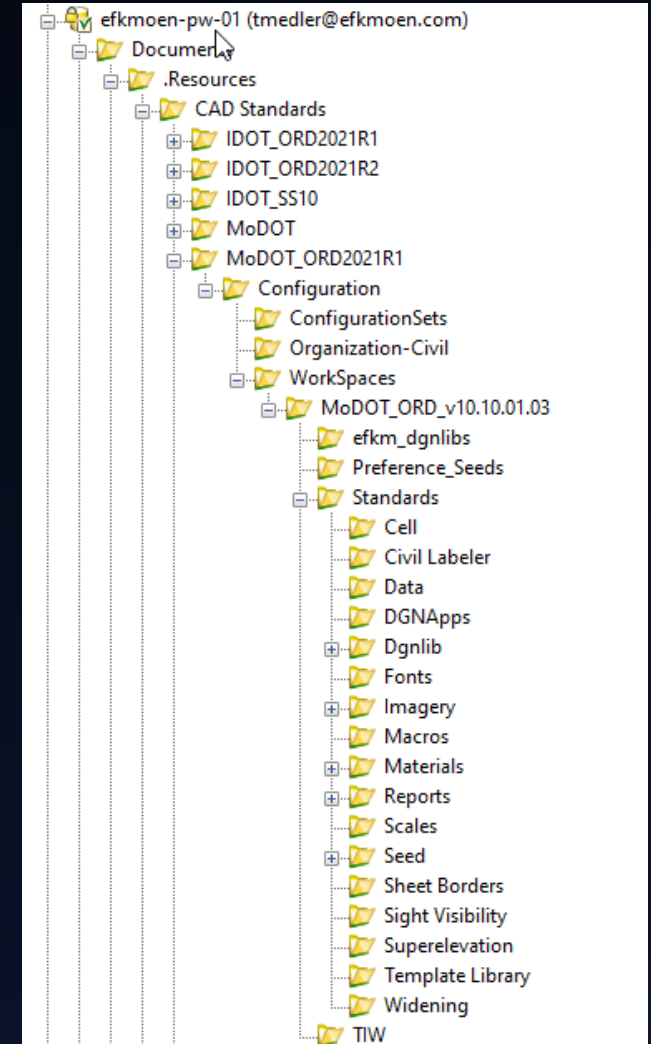


- Switching between chord definition and arc definition curves isn't convenient
- Alignments with chord definition curves and equations have had discrepancies between labels, rules and reporting
- Special line types disappearing and reappearing
- Software stability when editing terrain models
- New in 2022R3 – Code matching issues



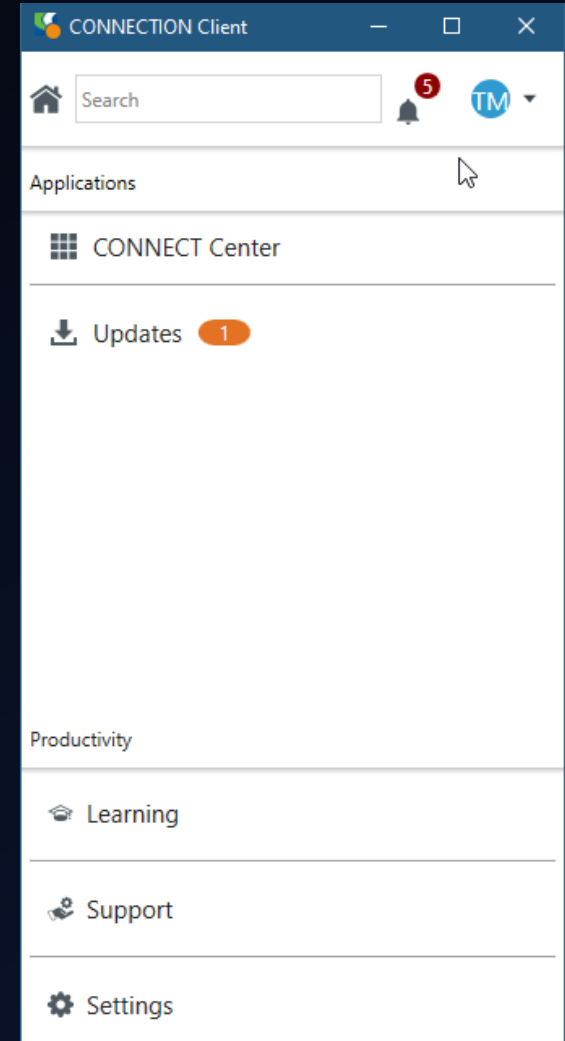
CADD Management Issues

- Many company-level customizations require editing files provided in the configuration instead of add-on libraries
- Concerns about maintaining customizations with workspace updates
- Managing user preferences and restoring them after corruption
- Hard to set up batch processes targeting just sheet models.
- Integration with AutoTURN/GuideSIGN



Licensing Concerns

- There needs to be a continuing role for Microstation CONNECT
- MS CONNECT can do a lot of basic plan production tasks
- Many SELECT firms still have Microstation licenses in their portfolio
- Re-balancing Microstation for ORD means losing total license count
- Virtuosity subscriptions aren't an answer yet



EFK Moen's MoDOT ORD Wish List...

- Would like to be able to continue to use Microstation CONNECT for standard drafting tasks
- Additional development of annotation groups to ensure standardization
- A MoDOT email address where users can submit issues specific to MoDOT's configuration without bothering staff directly
- Publish ORD Road 2 Training Materials, even if they are a work in progress



HDR's ORD Environment



- Over 1000 Roadway Designers from EITs to management
- 11 ORD Premier Scholars
- Use managed ProjectWise configurations
- Currently maintain various configurations for DOT's nationwide
- Individual users may have multiple configurations for workshare



HDR's MoDOT ORD Environment

- 18 Roadway Design Users
- 7 Bridge Section users
- Running the latest MoDOT workspace or newer versions based on workshare requirements
- Multiple active ORD Roadway projects across the state
- Standard design software going forward



MoDOT compared to other DOTs



- MoDOT issues a standard workspace
- MoDOT prioritizes communication
 - Keeps consultants up to date with workspace changes via email and CADD environment web page
 - Not all DOTs send updates when changes are made
- Some differences in workspace configuration vs Bentley standard
- Not an issue operationally, but requires some creative revisions to maintain consistency in deployment



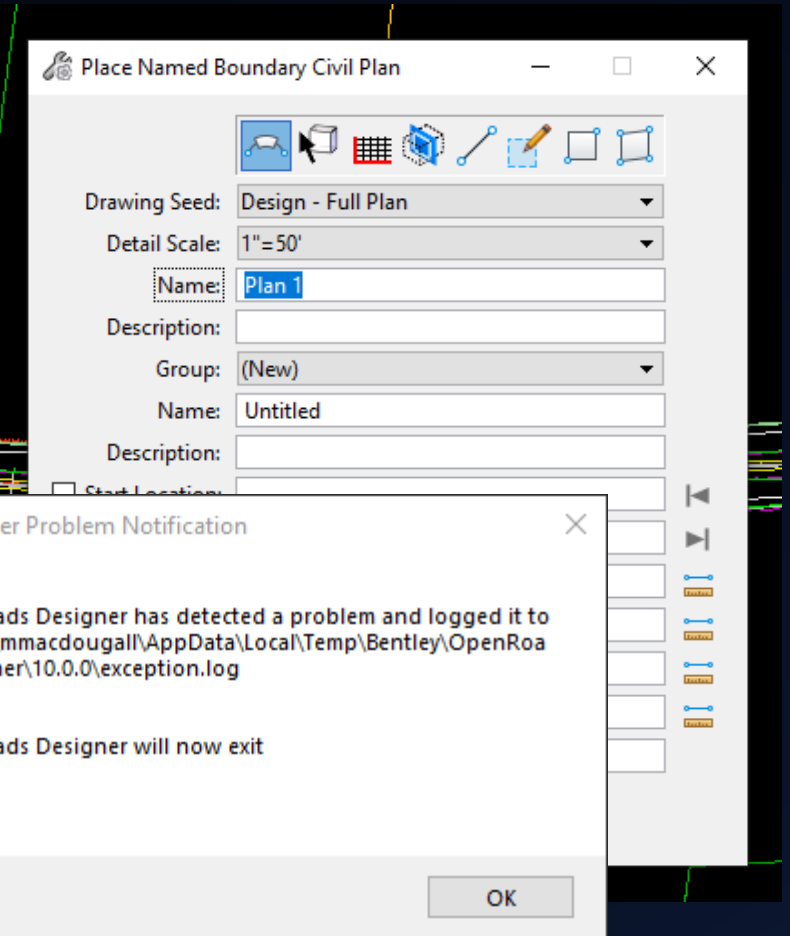
HDR ProjectWise configurations

- To maintain operations and consistency there is very little control given to most users
- Workspace folder requires heightened privileges to have write access
- In Missouri Kansas Roadway group, there are two people who have write access to workspace folders
- All customizations or changes to workspace must go through those two people or ProjectWise Administrators



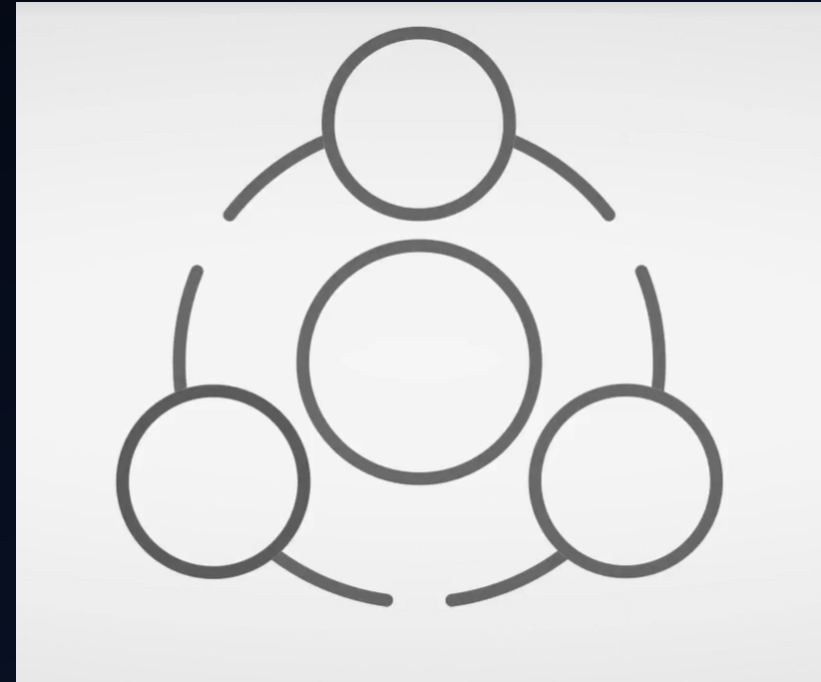
Common Challenges for ORD users

- Sheet Development
- Software bugs
- Plotting
- Migrating legacy data to ORD



HDR's Strategy for overcoming challenges

- HDR BIM for Infrastructure group
- Design Application Support network
- Monthly Q&A Sessions for OpenX Software



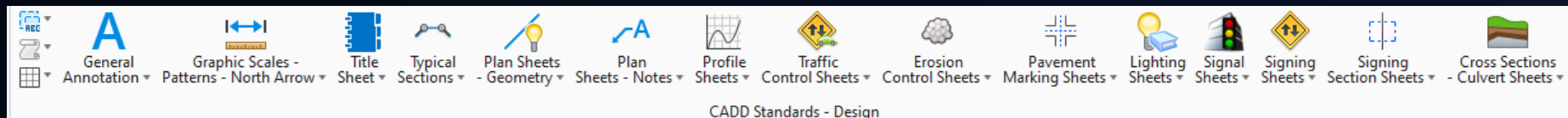
HDR's transition to ORD in Missouri Kansas group

- External Training, sending design staff to MoDOT Road 1 consultant classes
- Internal trainings using EnvisionCAD and MoDOT workspace materials
- Production of a plan production best practices manual



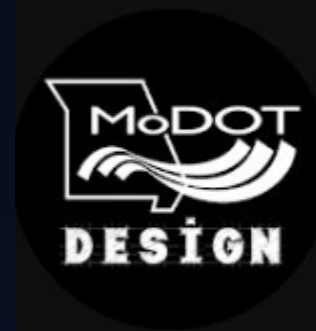
Key MoDOT ORD features that we like:

- Simple to transition from V8i Tasks detailing to ORD Workflows
- Simplified feature definition navigation
- Tables and spreadsheets are easier to integrate into drawings and sheets
 - Prebuilt 2BS and SOQ spreadsheet



Key MoDOT ORD features that we like:

- Seed files for misc. sheets are convenient
 - SOQ, Reference points, Coordinate points, etc...
- Updates to workspace are simple to deploy
- Robust YouTube channel with many helpful videos



Open Roads Designer

@openroadsdesigner2559 · 1.18K subscribers · 334 videos

More about this channel >

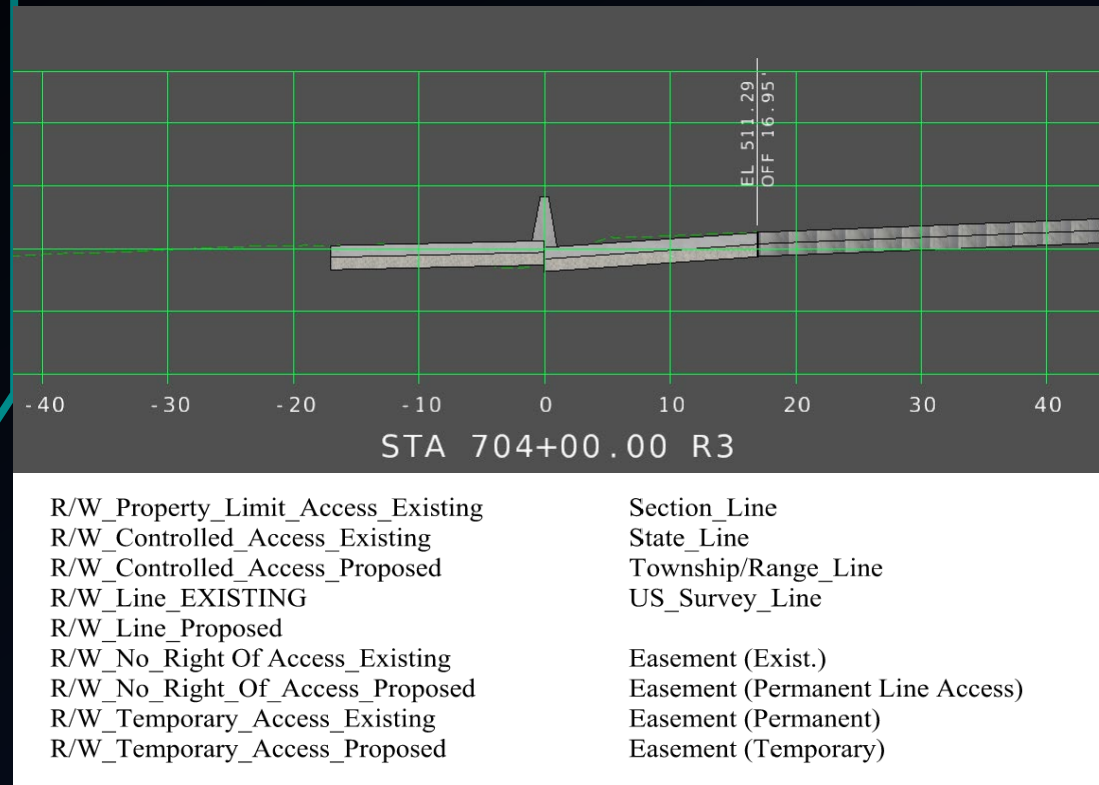
[modot.gov](https://www.modot.gov)

 **Subscribed** 



EFK•Moen
Civil Engineering Design

HDR's MoDOT ORD Wishlist



- A complete method of annotation that allows for simple labeling of all pertinent information on plans
- Road II for consultants, in person classes and/or online instruction manual
- Integration of miscellaneous sheet seeds into the CADD detailing workflow



In Summary:

- HDR's experience with MoDOT's ORD workspace has been positive
- Challenges exist but can be handled with collaboration
- We are looking forward to using ORD to its full capabilities



QUESTIONS?

