ORD File Exchange and Workflow – *Structures*

During project development and delivery of an ORD project, it is anticipated that multiple disciplines will work on a project which will result in project file(s) being exchanged via the project team. The tables noted below detail the **.dgn** file names and types for the interaction between **Roadway Design** and **Structures**.

A single workset with a single sheet index will be turned-in as part of the Construction Planset submittal (or PS&E for a PDN project). This single workset and associated sheet index will include the design files and sheet models of all applicable disciplines to complete a project's design. The **Roadway Design** Workset will be the master workset that all other disciplines' work will be added to. During the development of plans, the **Roadway Design** Workset should be provided via zip file, which includes the files noted in the tables below, as part of the handoff and interaction between **Roadway Design** and **Structures**.

<u>**Roadway Design and Structures (Bridges) Interaction**</u>: Roadway Design and Structures (Bridges) utilize two different softwares to design their respective models. Roadway Design will use OpenRoads Designer (ORD) for modeling and plans production, while Structures (Bridges) will use OpenBridge Modeler (OBM) for modeling bridges and either OBM or ORD for plans production. Due to this, Roadway Design and Structures (Bridges) will be receiving worksets with files that can only be opened in their native softwares. Therefore, the Roadway Design Lead (and Roadway Design team) **should not** open OBM files received from Structures (Bridges) in ORD. Similarly, the Structures Lead (and Structures team) **should not** open ORD files received from Roadway Design in OBM. Opening files with incompatible softwares will prompt user to open as "Read Only", therefore; the user should <u>reference</u> needed files into their applicable workset files to complete their design. When referencing these files, if the worksets between Roadway Design and Structures do not have the same name, a message may appear noting that this file does not belong to the active workset. The user may select **OK** and continue. This should not occur if the worksets are named the exact same between Roadway Design and Structures[1].

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[1] This is one reason it is recommended to work off a shared server and shared workset between all disciplines – even more so for Roadway Design and Structures because of the interaction between ORD and OBM.

Roadway Design and Structures (Retaining Walls) Interaction: Currently OBM is not capable of modeling retaining walls. Therefore, retaining walls will be designed by the Structures Lead and then guidance shall be provided to the Roadway Design Lead on how the design is to be modeled in ORD. This will require coordination between Roadway Design and Structures (Retaining Walls) to communicate impacts, challenges, and changes of the design, as well as discuss how they impact the other functional areas of work/design. As a result, the Roadway Design Lead should provide the necessary files to the Structures Lead once the retaining wall(s) is modeled because it is the responsibility of the Structures Lead to complete the associated retaining wall plan sheets. As highlighted in the footnote above, it is recommended to work off a shared server and shared workset to assist in this collaboration.

It should be noted, as a **statement of understanding**, that it is the responsibility of the Roadway Design Lead to add the applicable Structures design files to the Roadway Workset, disassociate any sheet files, and add them to the Roadway Workset's Sheet Index. It is the responsibility of the Structures Lead to provide all design files to the Roadway Design Lead ahead of a project's final submittal, to allow time to add the Structures sheets to the master workset. Reference Appendix A of this document which details the procedure of disassociating a workset.

The file naming convention information noted in these tables references the TDOT ORD File Naming Convention Standards document. (**Note:** For example, SR-1 in Cheatham County would be **11S001-SHT-Proposed Layout.dgn**. This file will contain all proposed sheet models along with the motif model and drawing model(s).)

ROADWAY DESIGN >> STRUCTURES (Bridges / Retaining Walls)

As a reminder, the **Roadway Design** Workset will be provided. The files below will be most useful to the **Structures Lead** to complete their design.

Document Description	File Naming Convention	Notes
Horizontal and Vertical Alignments	PRJ NAME-SUR-Alignment	Survey preliminary centerline horizontal alignment with profile, existing ROW, property lines, parcel lines, property owners, tract numbers, and projected existing drainage and utilities (profile only). If an existing bridge is being modeled, this file is applicable to reference.
Field Survey Data	PRJ NAME-SUR-Model	Existing graphics imported from the original Field Book(s).
Existing Terrain	PRJ NAME-SUR-Terrain	Combined field survey TIN and aerial survey TIN, if applicable.
Roadway Alignments / Profiles	PRJ NAME-DES-Alignments-Master	All Horizontal and Vertical Alignment(s). This file should be used to locate the specific alignment file needed to complete design, which can then be referenced.
Roadway Corridor	PRJ NAME-DES-Corridor-Master	All Corridor Models Including Roadways and Structures in the Project Area.
Retaining Wall Reference File	PRJ NAME-DES-Retaining Wall	File containing all necessary retaining wall plan and profile information that will be referenced into the sheet models.
Proposed ROW Linework, Patterning and Text	PRJ NAME-DES-ROW	
Roadway Superelevation	PRJ NAME-DES-Superelevation-Master	All Superelevation Models in the Project Area.
All Proposed Terrain Files merged with the Existing Terrain	PRJ NAME-DES-Terrain-Merged	Required Terrain type.
Roadway Layout Sheets	PRJ NAME-SHT-Proposed Layout	File containing the motif model, drawing model(s), and sheet model(s) for all Proposed Layout Sheets.
Roadway Profile Sheets	PRJ NAME-SHT-Proposed Profiles	File containing the motif model, drawing model(s), and sheet model(s) for all Proposed Mainline Profile Sheets.
Side Road Profile Sheets	PRJ NAME-SHT-Proposed Sideroad Profiles	File containing the motif model, drawing model(s), and sheet model(s) for all Proposed Sideroad Profile Sheets.

Document Description	File Naming Convention	Notes
Roadway XS Sheets	PRJ NAME-SHT-XS-Road Name	File containing the motif model, End-Area Calcs, drawing model(s), and sheet model(s) for all Roadway XS Sheets.
Side Road XS Sheets	PRJ NAME-SHT-XS-Side Road	File containing the motif model, End-Area Calcs, drawing model(s), and sheet model(s) for all Side Road XS Sheets. (Each Side Road gets its own file.)

STRUCTURES (Bridges) >> ROADWAY DESIGN

The **Structures Lead** should provide the files listed below to the **Roadway Design Lead**.

Document Description	File Naming Convention	Notes
Bridge Reference File(s)	*PRJ NAME-DES-Bridge Master*	File containing all necessary Structural plan information that will be referenced into the sheet models. It is the responsibility of the Roadway Engineer to apply necessary bridge information to the Proposed Profile Sheets.
Signature Sheet (ORD)	PRJ NAME-SHT-*Bridge* Signature	Add the Structures signature and applicable sheets.
Bridge Index Sheet(s)	*PRJ NAME-SHT-Bridge Index*	File containing the sheet model(s) for all Bridge Indexes.
Bridge Notes Sheet(s)	*PRJ NAME-SHT-Bridge Notes*	File containing the sheet model(s) for all Bridge Notes.
Bridge Detail Sheet(s)	*PRJ NAME-SHT-Bridge Details*	File containing the sheet model(s) for all Bridge Details and Typical Sections.
Bridge Layout Sheets	*PRJ NAME-SHT-Bridge Layouts*	File containing the motif model, drawing model(s), and sheet model(s) for all Bridge Layout Sheets.
Bridge XS Sheets	PRJ NAME-SHT-XS-*Bridge*	File containing the motif model of all references needed for the Bridge XS, including construction phasing.

RED TEXT = New file or new portion of file name.

STRUCTURES (Retaining Walls) >> ROADWAY DESIGN

The **Structures Lead** should provide the files listed below to the **Roadway Design Lead**.

Document Description	File Naming Convention	Notes
Signature Sheet	PRJ NAME-SHT-*Retaining Wall* Signature	Add the Structures signature and applicable sheets.
Retaining Wall Index Sheet(s)	*PRJ NAME-SHT-Retaining Wall Index*	File containing the sheet model(s) for all Retaining Wall Indexes.
Retaining Wall Notes	*PRJ NAME-SHT-Retaining Wall Notes*	File containing the sheet model(s) for all Retaining Wall notes.
Retaining Wall Details Sheet(s)	*PRJ NAME-SHT-Retaining Wall Details*	File containing the sheet model(s) for all Retaining Wall details.

RED TEXT = New file or new portion of file name.

Appendix A. Disassociate a Workset in ORD

The most common reason to dissociate a workset is when receiving sheet models from another discipline using a different workset to complete their portion of a project. After disassociating sheet models from their original workset, a designer has the ability to add any sheets to an overall sheet index, and thus the Roadway Workset. **Note:** This workflow is not needed if a shared workset is used across all functional areas of a project.

1. Copy all applicable files received from another discipline using a different workset into the overall workset.

2. Open one of the copied files using the **TDOT Standards** workspace. When opening this file for the first time, you may receive a message to select which workset to open the file with. Select the workset it has originally been created with.

3. In the Search Ribbon, type **Key-in** and then select the Key-in tool.
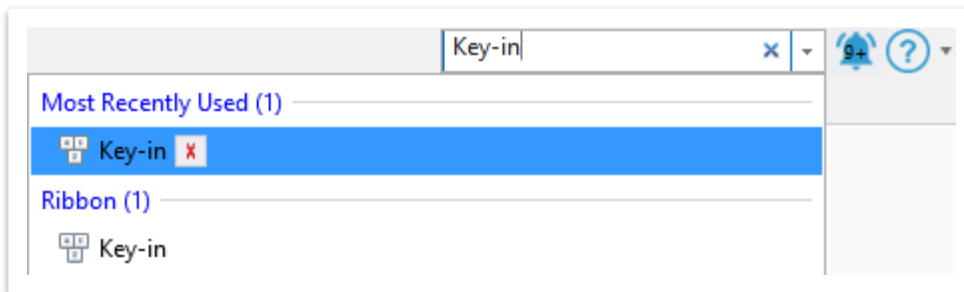
4. Within the **Key-in** tool, type **file**. Notice that the two options appear in the second column. Select **disassociateworkset** and then click **Enter**. The file is now disassociated from its original workset, and any sheet models that may be included in the file may now be added to the **Roadway Workset** sheet index.