

# Design Services Update

3/16/2016

## Table of Contents

Due to the extensive number of updates contained within this release, the following table of contents has been provided in order to help users identify topics of interest.

<u>Page</u>	<u>Topic</u>
1	Links to Previous “Design Services” & “MDOT_02 Workspace” Update Memos
1	Power GEOPAK / Civil Suite SS4 Software Support
2	Power GEOPAK / Civil Suite SS2 & SS3 Software Support
3	Development Guide Updates
3	Workspace File Update Summary
3	Configuration Variables
3	User Interface
3	Display Styles
3	Apps – Active Angle Assistant
4	Apps – SS3 Cell Selector
4	Apps – SS4 Cell Selector
5	Levels & Level Filters
5	Printing
5	Sheets & Sheet Labeling
6	Boundary
6	Environmental
7	Roadway – Modeling
8	Roadway – Drafting
8	Roadside – Architectural
9	ROW Mapping
9	Drainage
9	SUE / SUDA
10	Structures
11	Survey App – HEC-RAS Report
11	Survey
12	Traffic & Safety – ITS
12	Traffic & Safety – Pavement Markings
12	Traffic & Safety – Signals
12	Traffic & Safety – Maintaining Traffic / Work Zone
13	Utilities & Lighting
14	MDOT Technical Support

## Links to Previous “Design Services” & “MDOT 02 Workspace” Update Memos

Web: [http://www.michigan.gov/mdot/0,4616,7-151-9625\\_21540\\_36037\\_69214---,00.html](http://www.michigan.gov/mdot/0,4616,7-151-9625_21540_36037_69214---,00.html)

## Power GEOPAK / Civil Suite SS4 Software Support

- MDOT is currently in the process of developing a Power GEOPAK SS4 installation package for upgrade of internal users from SS3 to SS4. A follow up notice will be sent out in April 2016 when the MDOT\_02 workspace is required. MDOT will be upgraded to the Priority Build of Power GEOPAK SS4 shortly thereafter.

- Consultants are free to upgrade from SS3 to SS4 at any time now as long as they do not have submittals to MDOT before the middle of May 2016. Please contact Bentley and let them know you are working with MDOT and would like our Priority Build.

MDOT Priority Build:

MicroStation: 08.11.09.714

GEOPAK: 08.11.09.851 (Power and Suite)

Contains earthwork enhancements requested by MDOT, which will also be included in MR2.

- Note that some dgnlib files have been temporarily duplicated for SS3 and SS4, until the MDOT internal software is updated. Our intention is to remove the duplication once the MDOT internal software is updated.

### **Power GEOPAK / Civil Suite SS2 & SS3 Software Support**

MDOT\_01 Workspace + Power GEOPAK V8i SS2 - 08.11.07.566 + Windows 7:

- Updates are no longer being made to the MDOT\_01 Workspace.

MDOT\_02 Workspace + Power GEOPAK V8i SS3 - 08.11.09.722 + Windows 7:

- The MDOT\_02 Workspace is not backward compatible with SS3 Version 08.11.09.493.
- MDOT employees will need to contact [MDOT-PowerGEOPAKSupport@michigan.gov](mailto:MDOT-PowerGEOPAKSupport@michigan.gov) to request installation.
- The MDOT\_02 Workspace is available for download by consultants at the following link:

[http://www.michigan.gov/mdot/0,4616,7-151-9625\\_21540\\_36037-259870--,00.html](http://www.michigan.gov/mdot/0,4616,7-151-9625_21540_36037-259870--,00.html)

Consultant installation instructions are located in the "C:\MDOT\_02 Workspace\1\_Install" folder.

GEOPAK Civil Engineering Suite:

For consultants who choose to install "Geopak Civil Engineering Suite" in place of "Power Geopak", please note that the following combination of software versions is required:

MicroStation V8i (SS3) 08.11.09.608

GEOPAK Civil Engineering Suite V8i (SS3) 08.11.09.722

GEOPAK Civil Engineering Suite V8i (SS2) 08.11.07.615\*

\* Note that the version of MicroStation SS3 listed above is fully backward compatible with Civil Suite SS2 and this is the only version of MicroStation SS3 that supports both versions of Civil Suite listed above.

Dual Workspace Installation Procedure:

The procedure for dual installation of both the MDOT\_01 and MDOT\_02 Workspace with "MicroStation / GEOPAK Civil Engineering Suite" is presented in a document titled "\_MDOT\_0201 Geopak CivilSuite Workspace Installation Procedure.doc", which is located in the MDOT\_02 Workspace at "M:\MDOT\_02 Workspace\1\_Install\Resource Files\CivilSuite Configuration". Any questions regarding the installation process should be directed to [MDOT-CADDSupport@michigan.gov](mailto:MDOT-CADDSupport@michigan.gov).

Note: If installing only the MDOT\_02 Workspace, the following procedure may be used to manually modify the "MDOT\_02 / Power GEOPAK SS3" installation process for use with "MDOT\_02 / MicroStation SS3 / GEOPAK Civil Engineering Suite SS3":

1. Follow and complete the Power GEOPAK installation procedure.
2. Relocate the "MDOT\_02\_Local.ucf" and/or "MDOT\_02\_Server.ucf" files as shown below:  
 From Here: C:\ProgramData\Bentley\PowerGEOPAK V8i (SELECTseries 3)\WorkSpace\Users  
 To Here: C:\ProgramData\Bentley\MicroStation V8i (SELECTseries)\WorkSpace\Users
3. Delete the folder named C:\ProgramData\Bentley\PowerGEOPAK V8i (SELECTseries 3) and all subfolders.

4. Delete the custom icons that are specific to Power GEOPAK and use the generic icons that get added during software installation.

## **Development Guide Updates**

The following Sections/Files have been updated:

- Design Submittal Requirements [Chapter 5 – RID Process](#) has been updated to clarify that zip files do not need to be submitted at milestones, and are only required for the final RID submittal.
- Design Submittal Requirements [Chapter 1 - ProjectWise Pre-Bid Processes](#) updated to include the RID Preparation folder where the RID Review Checklist.xlsm and RID Index.xlsm will be kept.

## **Workspace File Update Summary**

### Configuration Variables

File: MDOT\_02.pcf

Location: M:\MDOT\_02 Workspace\Projects

Changes:

- Added IF statement to allow loading of the Workspace for MicroStation SS3 when Civil Suite is not installed.
- Modified the MS\_LEVEL\_AUTO\_SYNC\_ATTRIBUTE\_LIST configuration variable to synchronize the Level Manager "Plot" setting with the level library, in order to address recent changes to this setting for Corridor, SUDA, & plot shape levels.

### User Interface

File: Interface\_MDOT\_02\_SS3.dgnlib

Location: M:\MDOT\_02 Workspace\Interfaces\MDOT\mdot\_02

Change: Added Environmental level filter and renamed the ROW\_Mapping level filter. Add ITS level filter.

File: Interface\_MDOT\_02\_SS4.dgnlib

Location: M:\MDOT\_02 Workspace\Interfaces\MDOT\mdot\_02

Change: Added new interface file that is customized specifically for SS4.

### Display Styles

File: Display\_Styles\_MDOT.dgnlib

Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Display\Display Styles

Change: Updates to color settings for RID display styles.

### Apps – Active Angle Assistant

File: ActiveAngleAssistant.mvba

File: genMicroStation.mvba

Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Apps\VBA\Active Angle Assistant

Change: Add VBA to set active angle, which replaces key-ins and custom icons provided in older workspaces.

File: Interface\_MDOT\_02\_SS3.dgnlib

Location: M:\MDOT\_02 Workspace\Interfaces\MDOT\mdot\_02

Change: Added ActiveAngleAssistant VBA to drop down menu at “MDOT Tools > Set Active Angle”.

File: MDOT\_02.pcf

Location: M:\MDOT\_02 Workspace\Projects

Change: Added path variable to find ActiveAngleAssistant VBA.

#### Apps – SS3 Cell Selector

File: mdot\_cellselector.dat

Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Apps\VBA\data

Change: Eliminated filtering for most level libraries in order to simplify sell searching.

#### Apps – SS4 Cell Selector

File: CellSelector.dll

File: CellSelector\_HelpFile.docx

File: MDOT\_CellSelector.dat

Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Apps\DLL\Cell Selector

Change:

- Added newly redesigned Cell Selector app (written in C#) for use with SS4.
- The app supports both True Scale (TS) and Annotation Scale (AS) cell libraries. True scale cells are to be used for drawing scales of 50 or below and Annotation Scale cells may be used for vicinity sheets or drawing scales of 80 or above.
- TS cell libraries are loaded by default and AS cell libraries are loaded on demand by the app.
- Sheet border and sheet labeling cell libraries use AS and have been include in both the TS and AS cell library group.
- If the MDOT\_02 Workspace is located on a server, you will need to assign permissions to run the DLL from a server using CaspolGUI.exe (see below).

File: CaspolGUI.exe

Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Apps\DLL

Change: Bentley now supports C# in SS4 as a more powerful alternative to VBA for app development, with apps developed in C# compiled as DLLs. One temporary limitation of this approach is that Bentley’s V8i software (SS2, SS3, & SS4) are based on a version of the Microsoft .NET Code Access Security Policy (CASPol) that gives permission to run EXE and BAT files from a server, but not DLLs. To resolve this issue, Microsoft includes an app with Windows called CasPol.exe that will need to be run from each user’s machine in order to grant permissions for run DLLs from a server. Note that this issue has been resolved in Bentley’s Connect generation of software (excluding SS4 with Connect Client), which will eliminate this problem in the future. Also note that this procedure can be skipped if the workspace is stored locally on the user’s hard drive.

Using MDOT’s server as an example, the parent folder to which permissions must be granted and the required syntax for Caspol.exe are as follows:

Parent Folder:

M:\MDOT\_02 Workspace\Projects\MDOT\_02\Apps\DLL

Example Command Syntax:

C:\WINDOWS\Microsoft.NET\Framework\v4.0.30319\CasPol.exe -machine -addgroup All\_Code -url "M:\MDOT\_02 Workspace\Projects\MDOT\_02\Apps\DLL\\*" FullTrust

A free app has been included with the workspace called CaspolGUI.exe, which automatically generates the required syntax and runs CasPol.exe for you. The app is located in the DLL folder described above.

File: Interface\_MDOT\_02\_SS4.dgnlib  
Location: M:\MDOT\_02 Workspace\Interfaces\MDOT\mdot\_02  
Change: Added new Cell Selector app to the user interface under MDOT Tools.

File: MDOT\_02.pcf  
Location: M:\MDOT\_02 Workspace\Projects  
Changes: Added configuration variables to support new Cell Selector in SS4.

#### Levels & Level Filters

File: Features\_General\_MDOT\_SS4.dgnlib  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\General\Features  
Change: Duplicated SS3 file and updated to SS4 file format.

File: LevelLibraryAttachAll.bas  
File: LevelLibraryDetachAll.bas  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Apps\Macros  
Change: Added Environmental & ITS level filters and renamed the ROW\_Maps level filter library to ROW\_Mapping.

#### Printing

File: Features\_General\_MDOT\_SS3.dgnlib  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\General\Features  
Changes: Updated the color settings for scratch levels to accommodate color printing. The colors for scratch levels 1, 2, & 3 have remained the same.

File: Print\_Real\_Estate\_Levels\_in\_Color.tbl  
File: Print\_Scratch\_Levels\_in\_Color.tbl  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Printing\Pen Tables  
Change: Added pen tables for color printing of scratch levels and real estate levels. Documentation for color printing with scratch levels is located in ProjectWise at the following link [HOW-TO - Microstation - Print Only Scratch Levels in Color.pdf](#) and will be available at MDOT's public web in the very near future.  
Note: Thanks to Mike Vought and the Southwest Region for sharing their pen tables.

File: PrintStyles.dgnlib  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Printing\Print Styles  
Change: Added print styles for color printing of scratch levels and real estate levels.

#### Sheets & Sheet Labeling

File: Legend\_Sheets\_MDOT\_02\_2016-03-16.dgn  
Location: M:\MDOT\_02 Workspace\Sheets  
Location: ProjectWise: [Legend Sheets MDOT 02 2016-03-16.dgn](#)  
Location: Web: [http://www.michigan.gov/mdot/0,1607,7-151-9625\\_21540\\_36037\\_54428---,00.html](http://www.michigan.gov/mdot/0,1607,7-151-9625_21540_36037_54428---,00.html)  
Change: Added new Legend Sheets to accommodate new utility CADD standards.

File: Features\_General\_MDOT\_SS3.dgnlib  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\General\Features  
Changes:

- Set transparency to 50% for all sheet border grid levels.
- Added levels for line masking cells.

File: Bd\_ROW\_Labeling.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Moved sheet labeling cells to Sh\_Sheet\_Labels.cel library.

File: Sh\_Sheet\_Labels.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change:

- Removed italics from all cells within library.
  - Added cells for Typical XS grade labeling.
  - Added the following cells for masking of dimension and break lines: Mask\_Dimension, Mask\_LineBreak\_Wt0, Mask\_LineBreak\_Wt1.
- Note: Thanks to Mike Vought and the Southwest Region for sharing their masking cells.

### Boundary

File: Custom\_Line\_Styles\_MDOT.rsc  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Styles\Custom Line Styles  
Changes: Added the following line styles for section lines: SEC 1/4, SEC 1/8, & SEC 1/16.

File: Old: Bd\_Boundary.cel  
File: New: Bd\_Boundary\_Survey.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Renamed cell library. Deleted unused Parcel\_Ownership\_Common cell. Moved sheet labeling cells to Sh\_Sheet\_Labels.cel library.

File: Bd\_ROW\_Labeling.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Moved sheet labeling cells to Sh\_Sheet\_Labels.cel library.

### Environmental

File: Features\_General\_MDOT\_SS3.dgnlib  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\General\Features  
Changes: Moved environmental levels from Earth category to Environmental category to match legend sheet organization, including Contam, ErsnCtrl, & Wetland.

File: Environmental.dgnlib  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\General\Level Filters  
Change: Added level filters for newly created environmental levels (removed from Earth\_).

File: Earth.dgnlib  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\General\Level Filters  
Change: Removed level filters for levels that were moved to the environmental level section.

File: En\_Environmental.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Changed description for "Pattern\_PotenContamSite" cells for future use with the SS4 Cell Selector.

File: Old: Pt\_Patterns.cel to  
File: New: En\_Environmental.cel.  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Moved the Potentially Contaminated Site pattern to new cell library.

File: Old: Er\_Borings.cel  
File: New: Bo\_Borings.cel.  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Renamed cell library.

File: Old: Er\_Earth.cel  
File: New: En\_Environmental.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Renamend Er\_Earth.cel to En\_Environmental.cel and updated levels from Earth to Environ.

### Roadway – Modeling

File: NA  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\Civil Cells\SS4  
Change: Added new folder to separate SS3 & SS4 Civil Cells and duplicated all SS3 civil cells for development in SS4.

File: MDOT\_Dr\_atEOP\_NoTangent.dgnlib  
File: MDOT\_Dr\_CnG\_wDetM\_NoTangent.dgnlib  
File: MDOT\_RampTerm\_ProfReqd\_AltTypeA.dgnlib  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\Civil Cells\SS4  
Change: New Civil Cells for SS4.

File: MDOT\_BoulevardCrossRoad.dgnlib  
File: MDOT\_Dr\_atEOP.dgnlib  
File: MDOT\_Dr\_CnG\_wDetL.dgnlib  
File: MDOT\_Dr\_CnG\_wDetM.dgnlib  
File: MDOT\_Dr\_CnG\_wShldr.dgnlib  
File: MDOT\_Dr\_Res\_atEOP.dgnlib  
File: MDOT\_Dr\_wShldr.dgnlib  
File: MDOT\_SideRd\_CnG\_SideRdProfReqd\_NoTaper.dgnlib  
File: MDOT\_SideRd\_CnG\_SideRdProfReqd\_wAltTypAShldrAndTaperedTie.dgnlib  
File: MDOT\_SideRd\_CnG\_wAltTypAShldrAndTaperedTie.dgnlib  
File: MDOTMaintanceCrossOver.dgnlib  
File: MDOTMiLeft\_MedianCrossOver.dgnlib  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\Civil Cells\SS4  
Change: Revised Civil Cells for use with SS4.

File: Design\_Standards\_MDOT\_Ver1\_SS4.dgnlib  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\Design Standards  
Change: Duplicated SS3 file and updated to SS4 file format.

File: MDOT\_CorMod\_Template\_Library\_Master.itl  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\Roadway Templates  
Change: Revised F4 Curb Components and added Linear Templates for Civil Cells.

File: XS\_Settings\_MDOT.xin  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\Cross Sections  
Change: Added Alternate Slope XS Labeling as a default for all scales.

File: Seed\_XS\_10\_Scale\_2D\_MDOT.dgn  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Seed Files\Design  
Change: Deleted unnecessary XS seed file.

File: Features\_General\_MDOT\_SS3.dgnlib  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\General\Features  
Changes:

- Add shading to Surface element templates for XS earthwork shapes.
- Created single element template for XS point labeling, assigned to all applicable linear features which places a point element with Wt=2 at all XS points, stripped out text style based XS point labels from all element templates. Done in preparation for upcoming transition to SS4.
- Add variation to colors and line styles for pavement joint levels.

### Roadway – Drafting

File: Custom\_Line\_Styles\_MDOT.rsc  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Styles\Custom Line Styles  
Changes:

- Modified the true scale guardrail lines styles to include thickness of guardrail beam and display posts at 6.25' interval.
- Added annotation scale based left & right guardrail line styles.

File: Rd\_Barrier.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Replaced guardrail ending cells with true scale cells.  
Note: Thanks to Mike Vought and the Southwest Region for sharing their cell library.

File: Old: Pt\_Patterns.cel  
File: New: Rd\_Surfacing\_Patterns.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Moved all surfacing patterns to new cell library.

File: Old: Rd\_Surfacing.cel  
File: New: Rd\_Surfacing\_Patterns.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Moved detectable warning surface cell to Rd\_Surfacing\_Patterns.cel in order to eliminate cell library.

File: Pt\_Patterns.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Eliminated empty cell library.

File: Rd\_Typical.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Added new work zone cells.

### Roadside - Architectural

File: Rs\_Architectural.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Moved electrical, lighting, & pattern cells to other cell libraries.

File: Rs\_Architectural\_Patterns.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Added new cell library to organize pattern cell previously located in the Architectural.cel library.

#### ROW Mapping

File: Features\_General\_MDOT\_SS3.dgnlib  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\General\Features  
Changes: Added ROW Mapping levels (Level 1 – Level 63), in order to phase out the Real Estate 2010 workspace.

File: Old: Bd\_ROW.cel  
File: New: Bd\_ROW\_Mapping.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Renamed cell library. This file is identical to the ROW.cel library in the Real Estate 2010 workspace and has been added to this workspace in preparation for phase out of the Real Estate 2010 workspace.

File: Old: ROW\_Maps.dgnlib  
File: New: ROW\_Mapping.dgnlib.  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\General\Level Filters  
Change: Rename level filter library.

#### Drainage

File: Dr\_Drain\_2D.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Updated drain casting level and location point

File: Custom\_Line\_Styles\_MDOT.rsc  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Styles\Custom Line Styles  
Changes: Added storm sewer removal line style.

File: MDOT\_DrainTab.mvba  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Apps\VBA\Drainage Reports  
Change: Updated the Storm sewer slope to use the actual pipe length. Fixed downstream junction loss values.

File: MDOT\_HGLTab\_format.drf  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Apps\VBA\Drainage Reports  
Change: Fixed downstream junction loss values.

File: MDOT\_Drain\_Lib.dlb  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Classic\Drainage  
Change: Added elliptical pipe headwalls.

File: MDOT\_Drain\_Pref.dpf  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Classic\Drainage  
Change: Updated cell library directory.

#### SUE / SUDA

File: Drain\_3D\_MDOT.cel  
File: Util\_3D\_MDOT.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\SUDA

Change: Ongoing SUE development.

## Structures

File: Features\_General\_MDOT\_SS3.dgnlib  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\General\Features  
Changes: Updated level display priority settings for structure levels.

File: bridgenotes.dat  
File: Bridgenotes\_Graphic.dat  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Apps\VBA\data  
Change:

- Updated note 8.07.07.L to match updates in Bridge Manual.
- Added note 8.06.01L to match Bridge Design Manual
- Update per bridge standards.

File: Features\_General\_MDOT\_SS3.dgnlib  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\General\Features  
Change: Removed the "Str\_Fdn+Pile\_Sheet\_Pile\_" level group following renaming to "Str\_Sub\_Sheet\_Pile\_" in previous workspace update.

File: St\_Approach.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Profile grids moved to Symbols.cel library.

File: St\_Barrier.cel  
File: St\_Conc\_Beam.cel  
File: St\_Fence.cel  
File: St\_Pile.cel  
File: St\_Steel.cel  
File: St\_Substructure.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Cells updated for drawing accuracy and to-scale drafting.

File: St\_Deckre.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Added note to allow SFMC in lieu of Grade D Conc in joint replacements. Additional cell changes for drafting modernization.

File: St\_Rebar.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Bar chart updated to contain transparency on every 5th row.

File: St\_Slab.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Cells updated for drawing accuracy and to-scale drafting, changes in Design Guide 6.20.03A, 6.20.04, 6.20.04B incorporated.

File: St\_Symbols.cel  
File: St\_Tables.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Cells updated for more annotation cells.

## Survey App – HEC-RAS Report

File: HRR.dll  
File: HRR.dll.config  
File: HRR\_Help.docx  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Apps\DLL\HEC-RAS Report  
Change: Added new HEC-RAS Report app (written in C#) for use with SS4, which generates a csv file for import of hydro and high point chains into HEC-RAS. Note: If the MDOT\_02 Workspace is located on a server, you will need to assign permissions to run the DLL from the server using CaspolGUI.exe (see below).

File: CaspolGUI.exe  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Apps\DLL  
Change: Bentley now supports C# in SS4 as a more powerful alternative to VBA for app development, with apps developed in C# compiled as DLLs. One temporary limitation of this approach is that Bentley's V8i software (SS2, SS3, & SS4) are based on a version of the Microsoft .NET Code Access Security Policy (CASPol) that gives permission to run EXE and BAT files from a server, but not DLLs. To resolve this issue, Microsoft includes an app with Windows called CasPol.exe that will need to be run from each user's machine in order to grant permissions for run DLLs from a server. Note that this issue has been resolved in Bentley's Connect generation of software (excluding SS4 with Connect Client), which will eliminate this problem in the future. Also note that this procedure can be skipped if the workspace is stored locally on the user's hard drive.

Using MDOT's server as an example, the parent folder to which permissions must be granted and the required syntax for Caspol.exe are as follows:

Parent Folder:

M:\MDOT\_02 Workspace\Projects\MDOT\_02\Apps\DLL

Example Command Syntax:

C:\WINDOWS\Microsoft.NET\Framework\v4.0.30319\CasPol.exe -machine -addgroup All\_Code -url "M:\MDOT\_02 Workspace\Projects\MDOT\_02\Apps\DLL\\*" FullTrust

A free app has been included with the workspace called CaspolGUI.exe, which automatically generates the required syntax and runs CasPol.exe for you. The app is located in the DLL folder described above.

File: Interface\_MDOT\_02\_SS4.dgnlib  
Location: M:\MDOT\_02 Workspace\Interfaces\MDOT\mdot\_02  
Change: Added the HEC-RAS Report app to the user interface under MDOT Tools > Survey.

File: MDOT\_02.pcf  
Location: M:\MDOT\_02 Workspace\Projects  
Change: Added config variables to load the HEC-RAS Report app (dll).

## Survey

File: Sv\_Survey.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Reduced diameter of the Terrain\_Spot (XYZ) cell from 2' to 0.5'.

File: Features\_Survey\_MDOT.mdb  
File: Features\_Survey\_MDOT.smd  
File: Features\_Survey\_MDOT.xml  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\Survey  
Change: Updated the OWELL cell name. Updates to cell names and addition of new cells for ITS.

File: Features\_General\_MDOT\_SS3.dgnlib  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\General\Features  
Change: Relinked survey features (Features\_Survey\_MDOT.xml).

File: Sn\_Sign\_Plan.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Changes: Truss signs are now to be collected as linear features with the start and end point of the line on opposite sides of the road. Cells representing the bases will be automatically place at each end of the linear feature.

#### Traffic & Safety – ITS

File: Tr\_ITS.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Added new cell library.

File: ITS.dgnlib  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\General\Level Filters  
Change: Add ITS level filter library.

File: Features\_General\_MDOT\_SS3.dgnlib  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\General\Features  
Changes: Additional of new level group for ITS.

File: Custom\_Line\_Styles\_MDOT.rsc  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Styles\Custom Line Styles  
Changes: Added ITS line styles.

#### Traffic & Safety – Pavement Markings

File: Custom\_Line\_Styles\_MDOT.rsc  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Styles\Custom Line Styles  
Changes:

- Added pavement marking line styles for 18 & 24 in stop bars.
- Added pavement marking line style for roundabout yield line.

#### Traffic & Safety – Signals

File: Features\_General\_MDOT\_SS3.dgnlib  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\General\Features  
Changes: Extensive changes to levels for Signals.

File: Old: Sg\_Signals.cel  
File: New: Sg\_Signal\_Detail\_Head.cel  
File: New: Sg\_Signal\_Detail\_Sign.cel  
File: New: Sg\_Signal\_Misc.cel  
File: New: Sg\_Signal\_Plan.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Divide the Sg\_Signal.cel library into multiple cell libraries in order to improvement cell management and isolated plan view cells for creation of an annotation scale based cell library.

## Traffic & Safety – Signs

File: Sn\_Sign\_WZ.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Added workzone cell W20-7a (Flagman) to cell library.

File: Old: Sn\_Sign\_Road.cel  
File: New: Sn\_Sign\_Plan.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Changes:

- Renamed file.
- Created Dimension Driven Cells for proposed cantilever/truss sign structures and signal mast arm poles, which allow the length of these structures vary based on user input. Please see the training video [here](#) to learn how to place these cells correctly.

Note: Existing cantilever and signal mast arm poles will be placed at a true north orientation within a survey file. Please be sure to rotate these cells to the constructed orientation, to show these facilities correctly in the Topo file.

## Traffic & Safety – Maintaining Traffic / Work Zone

File: Tr\_Work\_Zone.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Added new work zone cells and work “area” pattern to cell library.

File: Features\_General\_MDOT\_SS3.dgnlib  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\General\Features  
Changes: Added level MT\_Work\_Area\_Pattern.

## Utilities & Lighting

File: Features\_General\_MDOT\_SS3.dgnlib  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Civil Standards\General\Features  
Changes:

- Added levels for Unknown Utility, Irrigation line, and overhead fiber optic line.
- Extensive changes to Electrical & Lighting levels.

File: Custom\_Line\_Styles\_MDOT.rsc  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Styles\Custom Line Styles  
Changes:

- Changed appearance of the electric “cable in conduit” line style.
- Added overhead fiber optic line style.
- Added line styles for Unknown Utility and Irrigation line.

File: Ut\_Electric.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Updated/reorganized electric cells.

File: Ut\_Electrical\_Architectural.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Added cell library to contain electrical cells for architectural building design.

File: Ut\_Lighting.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change: Updated lighting cells.

File: Ut\_Uilities.cel  
Location: M:\MDOT\_02 Workspace\Projects\MDOT\_02\Elements\Cells\True Scale  
Change:

- Updated utility cells.
- Renamed Oil Well to Petroleum Well.
- Rescaled fire hydrant.

## **MDOT Technical Support**

Technical support is available through the following email addresses, which can also be found on the [Development Guide Help](#) page:

Design Surveys:	<a href="mailto:MDOT-Survey_Support@michigan.gov">MDOT-Survey_Support@michigan.gov</a>
Bridge Design:	<a href="mailto:MDOT-BridgeDesignSupport@michigan.gov">MDOT-BridgeDesignSupport@michigan.gov</a>
Drawing Tools, Printing, Workspace & Software Installation:	<a href="mailto:MDOT-CADDSupport@michigan.gov">MDOT-CADDSupport@michigan.gov</a>
Geometry Tools and Corridor Modeling:	<a href="mailto:MDOT-PowerGEOPAKSupport@michigan.gov">MDOT-PowerGEOPAKSupport@michigan.gov</a>
Geopak Drainage & Subsurface Utilities:	<a href="mailto:MDOT-Drainage-Utility@michigan.gov">MDOT-Drainage-Utility@michigan.gov</a>
Reference Information Documents (RID):	<a href="mailto:MDOT-RIDSupport@michigan.gov">MDOT-RIDSupport@michigan.gov</a>
ProjectWise - General (MDOT staff only):	<a href="mailto:MDOT-ProjectWise@michigan.gov">MDOT-ProjectWise@michigan.gov</a>
ProjectWise - Letting:	<a href="mailto:MDOT-ePROPOSAL@michigan.gov">MDOT-ePROPOSAL@michigan.gov</a>
ProjectWise - Consultant:	<a href="mailto:MDOT-ProjectWiseConsultant@michigan.gov">MDOT-ProjectWiseConsultant@michigan.gov</a>
ProjectWise - Construction:	<a href="mailto:MDOT-ProjectWiseCONST@michigan.gov">MDOT-ProjectWiseCONST@michigan.gov</a>