MONTANA
Department of Transportation

HYDRAULIC DATA SUMMARY AND IRRIGATION DATA SUMMARY IN AUTODESK

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Overview

This document contains the workflows necessary for Hydraulic Data Summary and Irrigation Data Summary sheets in Civil 3D.

Process Guide

Application/Tool(s):	AutoCAD / Civil 3D
Version(s):	13.6.2123.0 Civil 3D 2024.4.6 Update
Environment:	MDT Civil 3D State Kit r2024 v2.3.1
Released/Revised:	3/24/2026



SUPPORT
Open a Case

Statement of Need

The purpose of this document is to provide guidance to MDT Autodesk users for creating Hydraulic Data Summary and Irrigation Data Summary sheets for plans production in Civil 3D.

Acronyms/Definitions Used in This Document

ACC – Autodesk Construction Cloud, cloud-based construction management platform offering more capabilities than BIM 360

EMG – MDT Excel Manager file

OLE – Object Linking and Embedding. OLEs are embedded copies of information from another document.

Revisions

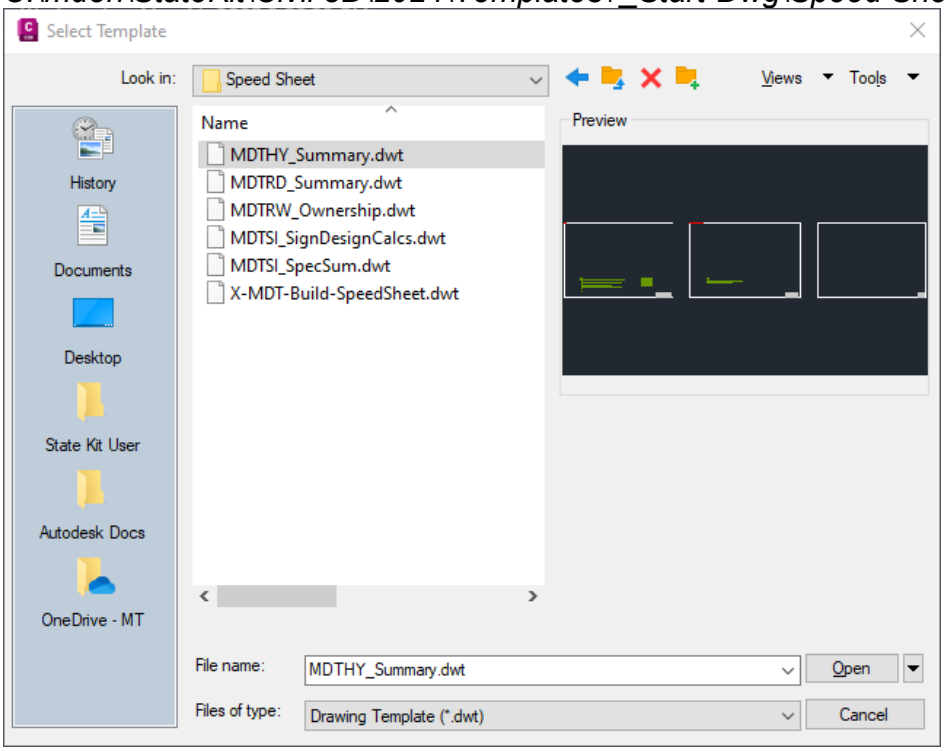
12/22/2023	Date of development
5/23/2025	Updated to the new process
3/24/2026	Updated for ADA accessibility

Process Description and Examples

Section I. Summary Frames via Speed Sheets

Procedure – Create Speed Sheet File From Template

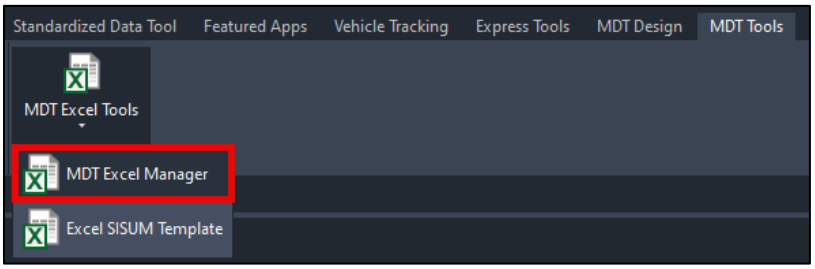
1. Create a new file from Template, navigate to the following location, and select ***MDTHY_Summary.dwt***:
   C:\mdoh\StateKit\Civil 3D\2024\Templates_Start-Dwg\Speed Sheet



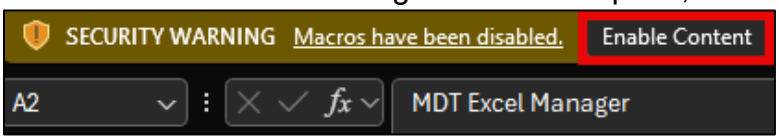
2. Save the file as ***[UPN#]HYHDS001.dwg*** (for example, *9555000HYHDS001.dwg*) in the HY folder of the project on BIM 360/ACC (or identified document management system for consultants external to MDT). Use ***CTRL+S*** or navigate to the C3D icon in the top left and save the file.

Procedure – Create Excel EMG File

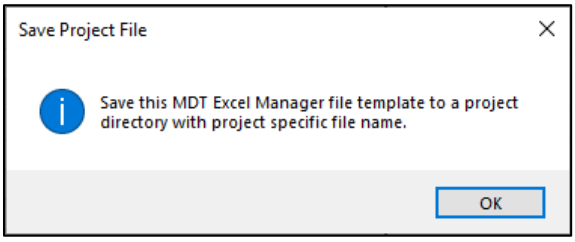
1. In the *MDT Tools* tab in the ribbon, select the *MDT Excel Tools* dropdown from the *MDT Excel* panel and select the ***MDT Excel Manager*** button to open the Excel EMG.



2. When the MDT Excel Manager workbook opens, select ***Enable Content***.

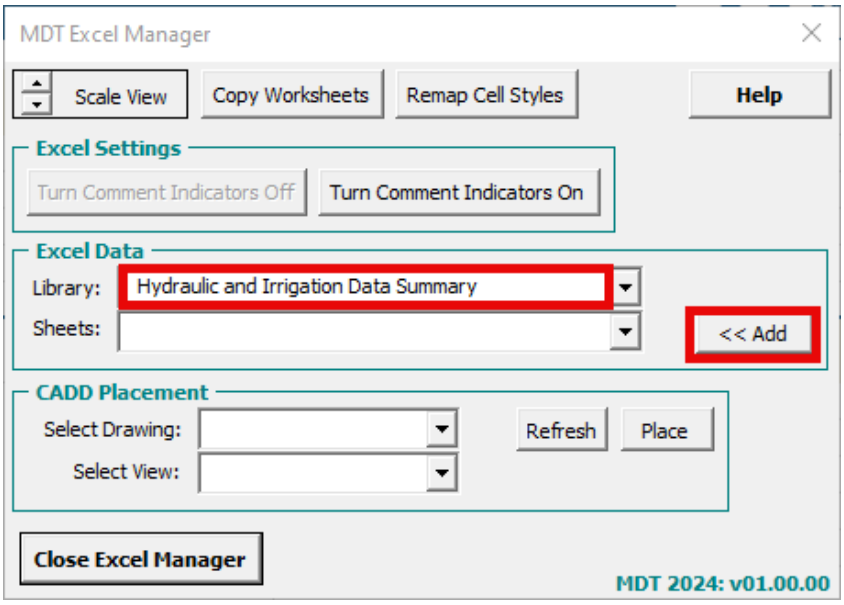


3. Enabling the content will pop up a notification to save the file. Select ***OK***, then save the file to the HY folder of the project on BIM 360/ACC (or identified document management system for consultants external to MDT). Name the file ***[UPN#]HYEMG001.xlsm***.

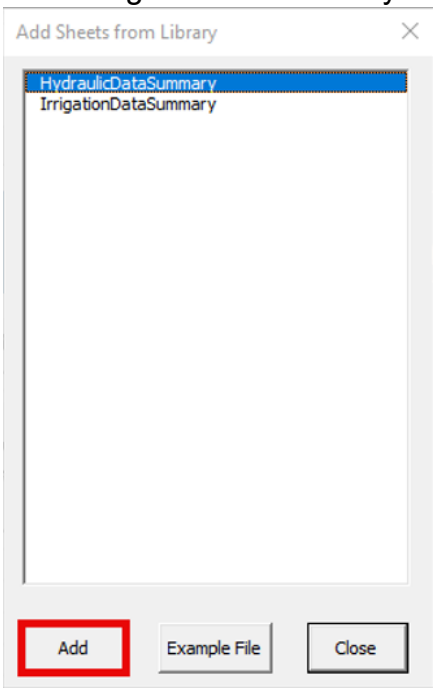


4. Select the ***RUN MDT Excel Manager*** button.

5. Select the ***Hydraulic and Irrigation Data Summary*** library, then select the ***<<Add*** button.



6. In the *Add Sheets from Library* dialog, select the desired summary frame then select ***Add*** to insert the frame as a sheet in the workbook. Repeat for the remaining desired summary frames.

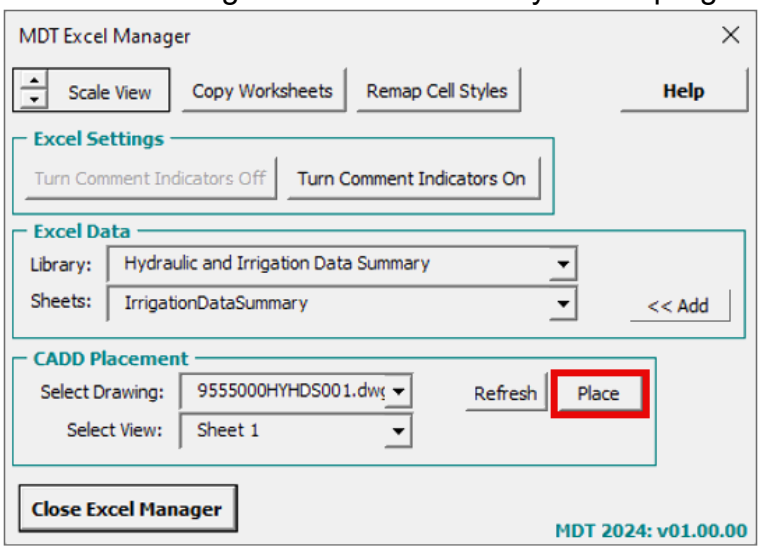


NOTE: All summary frames in the library contain an example file. To access the example file, select a sheet, then select the ***Example File*** button.

7. Populate the sheets as necessary.

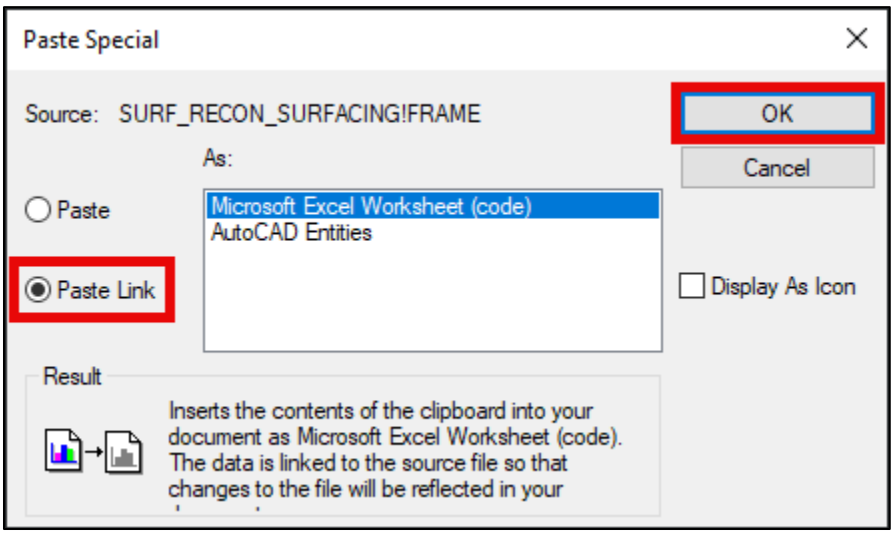
Procedure – Add Summary Frames to Speed Sheet File

1. In the *MDT Excel Manager* dialog, select the ***Turn Comment Indicators Off*** button to prevent the comment indicators from plotting.
2. Select the desired sheet from the *Excel Data* group. In the *CADD Placement* group, select the ***[UPN#]HYHDS001.dwg*** from the *Select Drawing* dropdown and select ***Sheet 1*** from the *Select View* dropdown. Then select the ***Place*** button. Selecting this will automatically switch programs from Excel to Civil 3D.



NOTE: If the summary frame DWG was not open in Civil 3D prior to this step, it will not show in the *Select Drawing* dropdown. While the manager is still open, open the summary frame file, then select the ***Refresh*** button for the file to appear in the *Select Drawing* dropdown.

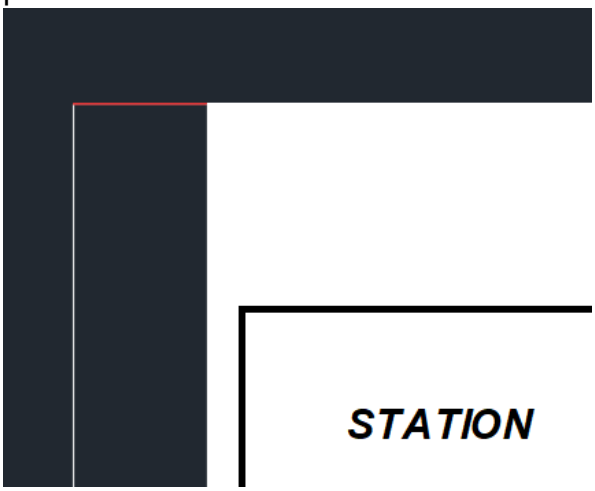
3. In the *Paste Special* dialog in Civil 3D, toggle the ***Paste Link*** radio button then select ***OK***.



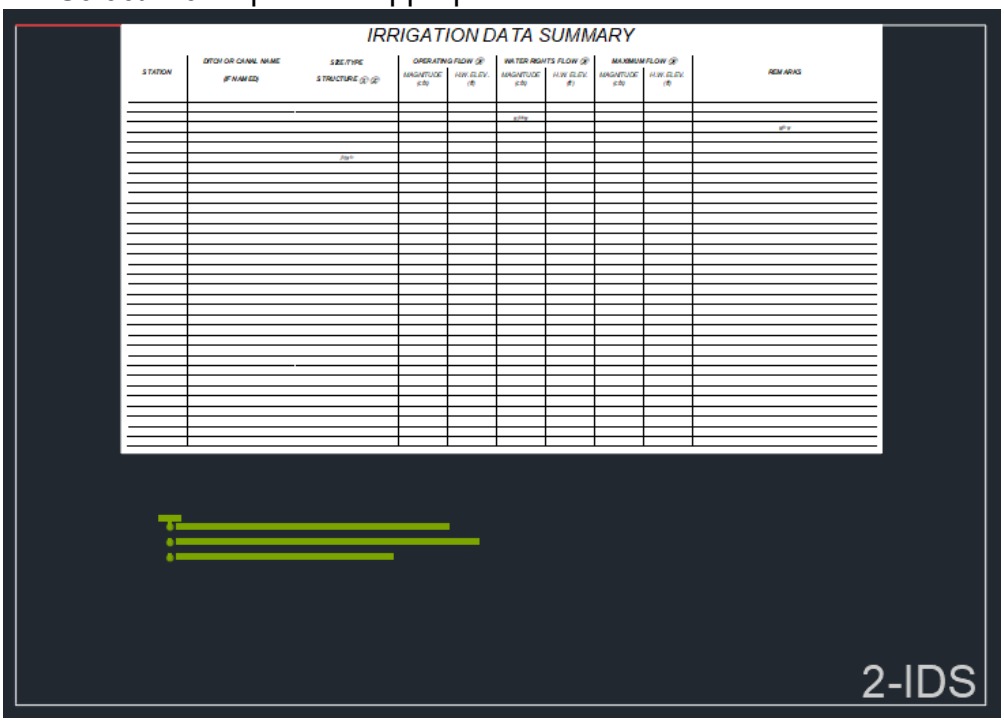
4. Click within the centered view in model space to place the linked OLE object.



5. Select OLE object and move so the top left corner intersects with the red placement line.



6. Repeat steps 2-5 to place OLE object links, changing the *Excel Data Sheet* and the *Select View* option as appropriate.

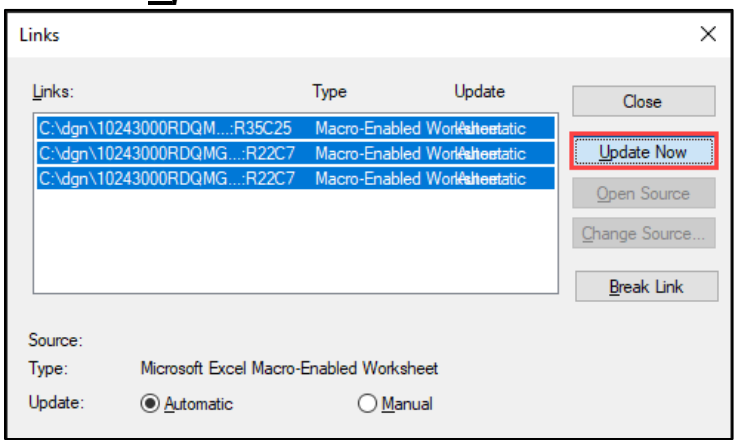


Section II. Tips for OLEs

Procedure – Update OLE Links

Linked OLEs should update automatically after saving changes in Excel. If the OLEs do not update, perform the following steps:

1. Type the command ***OLELINKS*** and press ***Enter.***
2. In the *Links* popup, select all the links using a shift select, or select a specific frame that needs to be updated.
3. Select ***Update Now***.



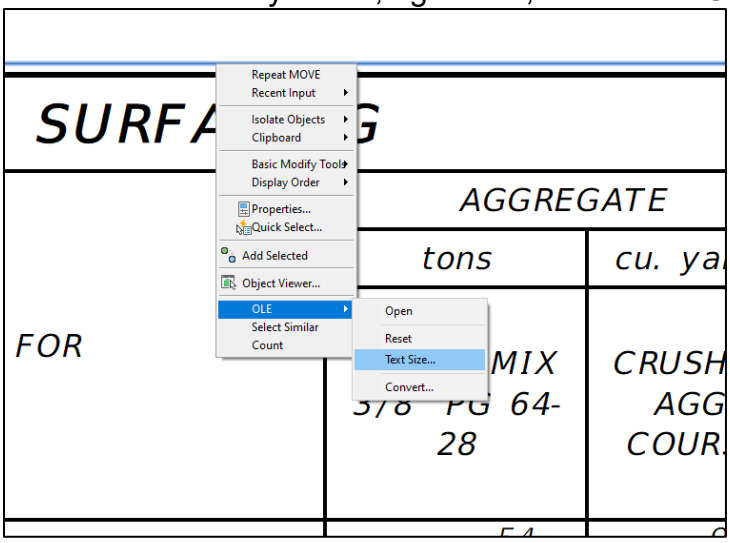
4. After the update is completed, select ***Close***.

Procedure – Update OLE Text Size in Existing HYHDS Files

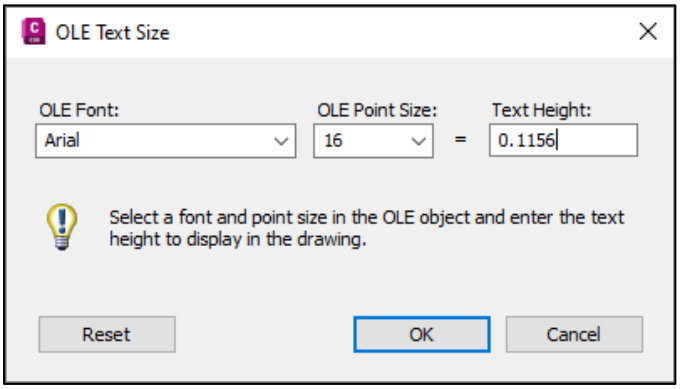
For HYHDS files created prior to the v2.1.0 State Kit update, it may not be desired to create a new HYHDS file from the speed sheet template. Follow the process below to paste a frame in paper space and update the text size in an existing file.

NOTE: The *HY-Detail-HDS and HY-Detail-IDS* layouts are no longer accessible in the *Hydraulics Layouts* within the *MDT Sheet Layouts* of the State Kit. An existing *HY-Detail-HDS or HY-Detail-IDS* layout must be copied if a new summary layout is needed.

1. Select a summary frame from the HDS or IDS Excel file. Highlight the frame, selecting the cells just outside of the borders of the frame. Copy the data to the clipboard using ***CTRL+C*** and return to Civil 3D.
2. Select ***Paste Special*** from the *Paste* dropdown in the *Clipboard* panel on the *Home* tab, or type ***PASTESPEC*** and press ***Enter***.
3. In the *Paste Special* dialog box, toggle the ***Paste Link*** radio button then select ***OK***.
4. Select a point in paper space on the ***HY-Detail-HDS or HY-Detail-IDS*** layout tab to paste the linked summary frame.
   NOTE: The OLE will be too large for the summary sheet and must be scaled to fit.
5. Select the summary frame, right click, hover over ***OLE*** and select ***Text Size…***.



6. Set the text size to ***OLE 16 = Text Height 0.1156*** for the Arial font.



NOTE: The initial point size displayed in the OLE Point Size window is the typically largest text size detected in the linked Excel spreadsheet. Other text sizes detected in the frame are available in the OLE Point Size dropdown. Updating any text height will update all other font text heights in the OLE. Use the following table for converting OLE Point Size to OLE Text Heights in Civil 3D:

OLE Point Size	OLE Text Height
12	0.0867
14	0.1011
16	0.1156
18	0.1300
20	0.1444
22	0.1589
24	0.1733