MONTANA
Department of Transportation

SUMMARY SHEETS IN AUTODESK

Contents

Overview

This document contains the workflows necessary for creating summary sheets in Civil 3D.

Process Provenance

- Date of development: 3/21/2023
- Revision date: *2/27/2025*
- Application/Tool(s): *AutoCAD / Civil 3D*
- Version(s): *13.6.1986.0 Civil 3D 2024.4.2*
- Environment(s): *MDT Civil 3D State Kit r2024 v2.1.0*
- Author: *MDT EngOps Workflow Steering Committee*

Statement of Need

The purpose of this document is to provide guidance to MDT Autodesk users for creating summary sheets for plans production in Civil 3D. This workflow is intended to be used for any MDT work type, such as pavement preservation and reconstruction projects.

Acronyms/Definitions Used in This Document

ACC – Autodesk Construction Cloud, Autodesk's new cloud storage ecosystem with enhanced tools, which will replace BIM 360 when it is retired

EMG – MDT Excel Manager file (new)

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

QMG – Excel Quantity Manager file

References

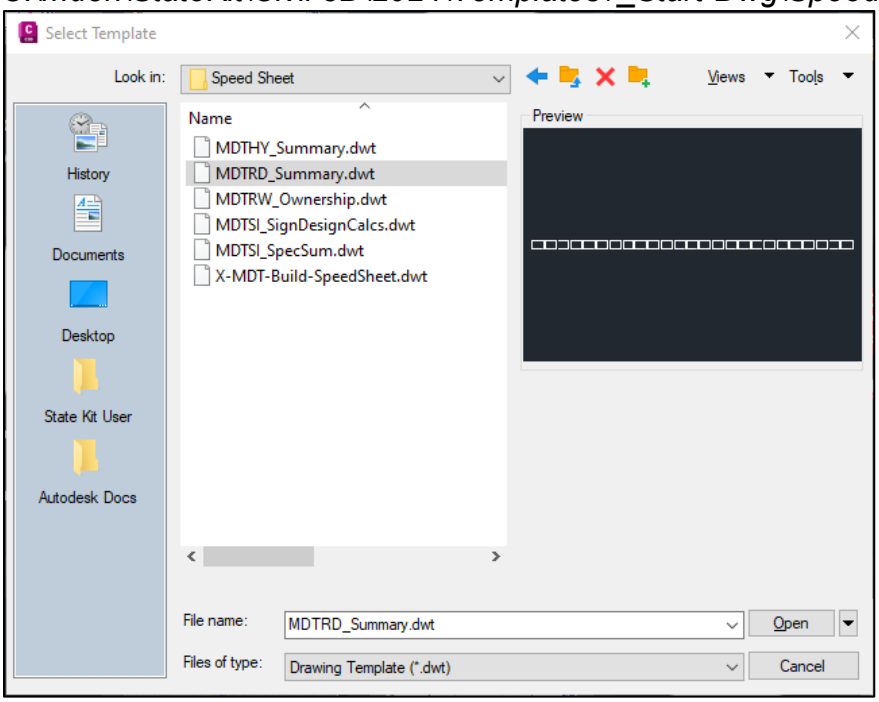
Road Design Manual Chapter 13: Quantity Summaries

Process Description and Examples

Section I. Summary Frames via Speed Sheets

Procedure – Create Speed Sheet File From Template

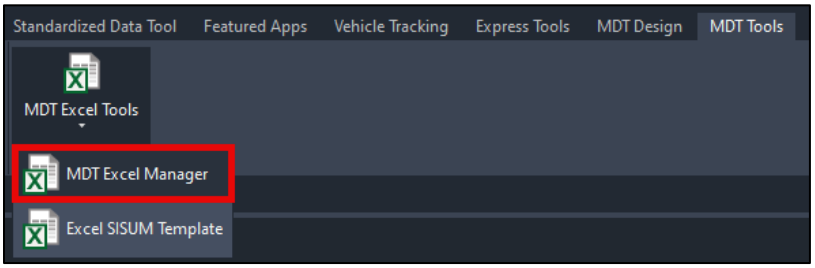
1. Create a new file from Template, navigate to the following location, and select ***MDTRD_Summary.dwt***:
   C:\mdoh\StateKit\Civil 3D\2024\Templates_Start-Dwg\Speed Sheet



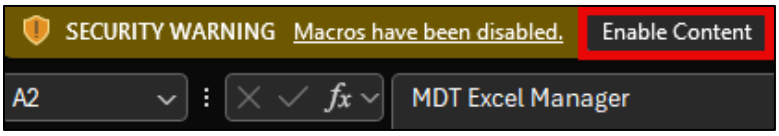
2. Save the file as ***[UPN#]RDSUM001.dwg*** (for example, *9555000RDSUM001.dwg*) in the RD folder of the project on BIM 360/ACC. Use ***CTRL+S*** or navigate to the C3D icon in the top left and save the file.

Procedure – Create Excel EMG File

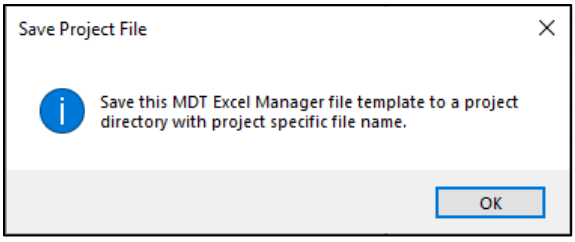
1. In the *MDT Tools* tab in the ribbon, select the *MDT Excel Tools* dropdown from the *MDT Excel* panel and select the ***MDT Excel Manager*** button to open the Excel EMG.



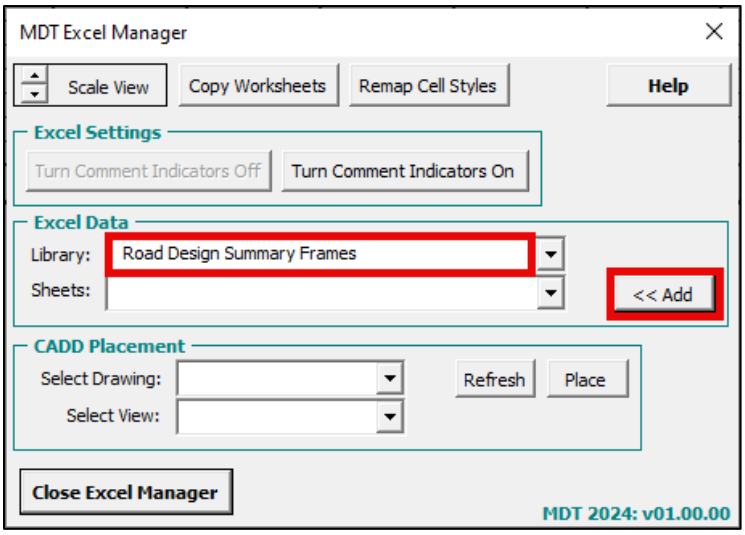
2. When the MDT Excel Manager workbook opens, select ***Enable Content***.



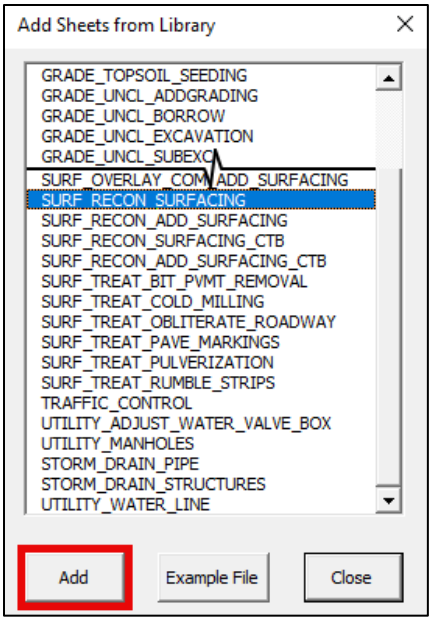
3. Enabling the content will pop up a notification to save the file. Select ***OK***, then save the file to the RD folder of the project on BIM 360/ACC. Name the file ***[UPN#]RDEMG001.xlsm***.



4. Select the ***RUN MDT Excel Manager*** button.
5. Select the ***Road Design Summary Frames*** 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.

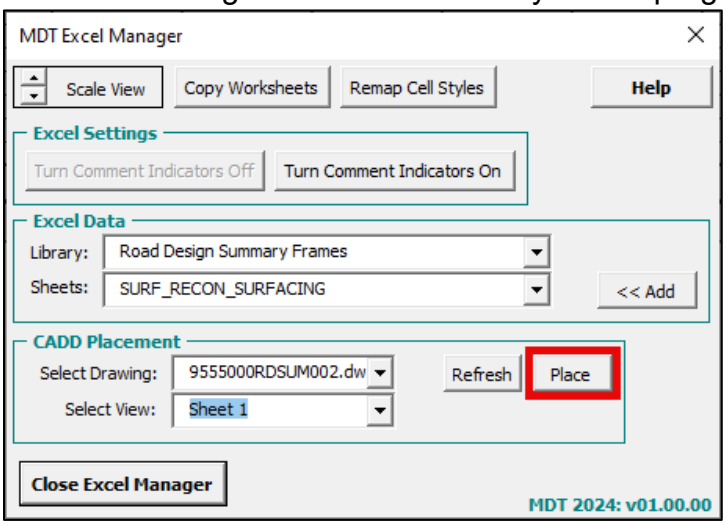


NOTE: All summary frames in the library contain an example file. To access the example file, select a sheet, then select the ***Example File*** button.

7. Populate the sheets as necessary.

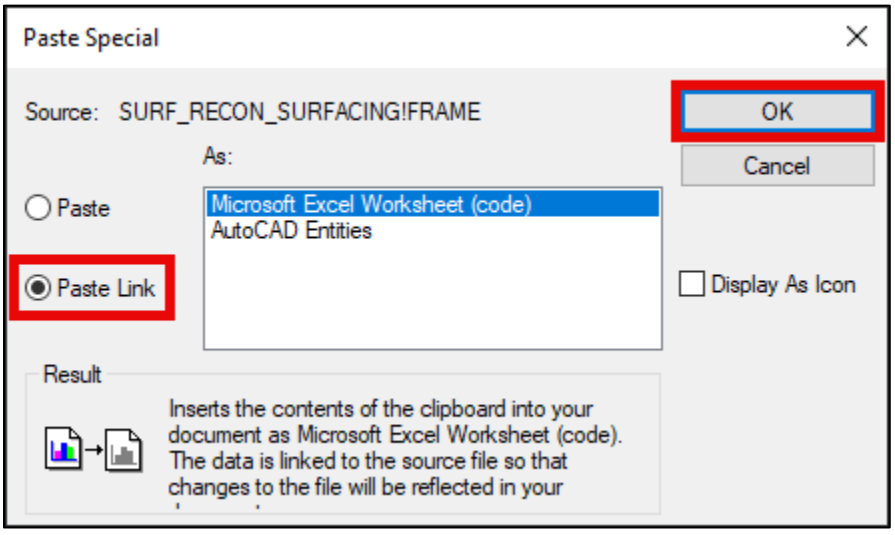
Procedure – Add Summary Frames to Speed Sheet File

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#]RDSUM001.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.

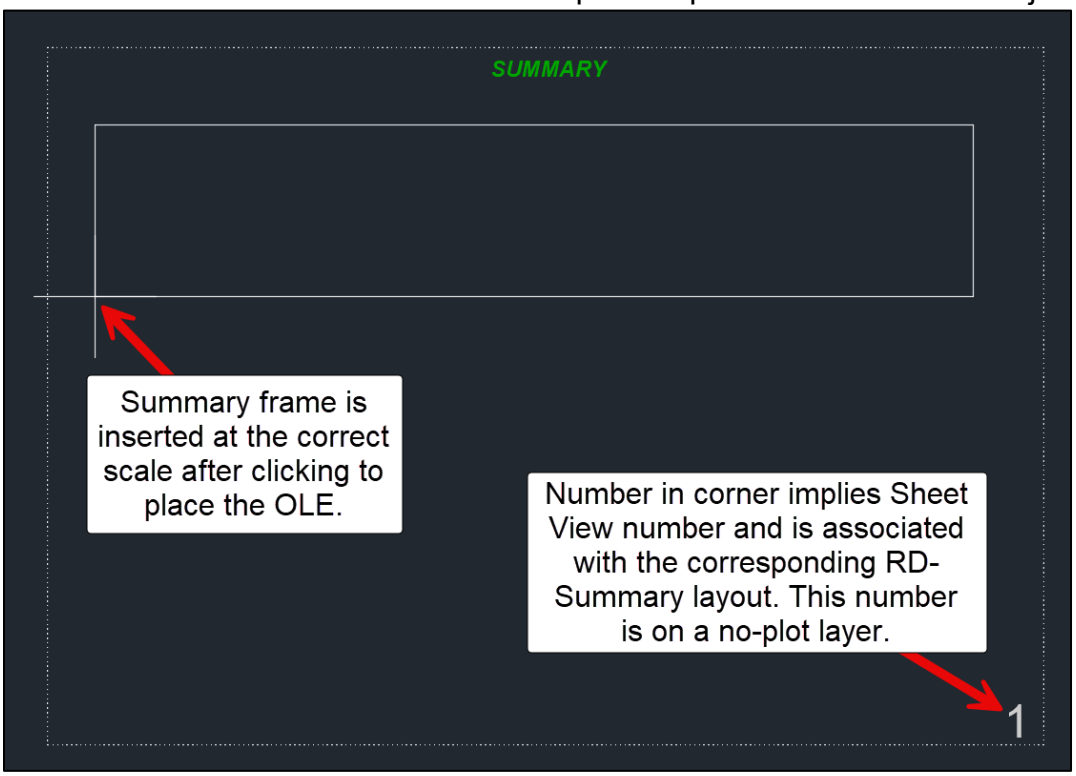


NOTE: If the summary frame DWG was not open in Civil 3D prior to this step, it will not show in the *Select Drawing* dropdown. While the manager is still open, open the summary frame file, then select the ***Refresh*** button for the file to appear in the *Select Drawing* dropdown.

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.



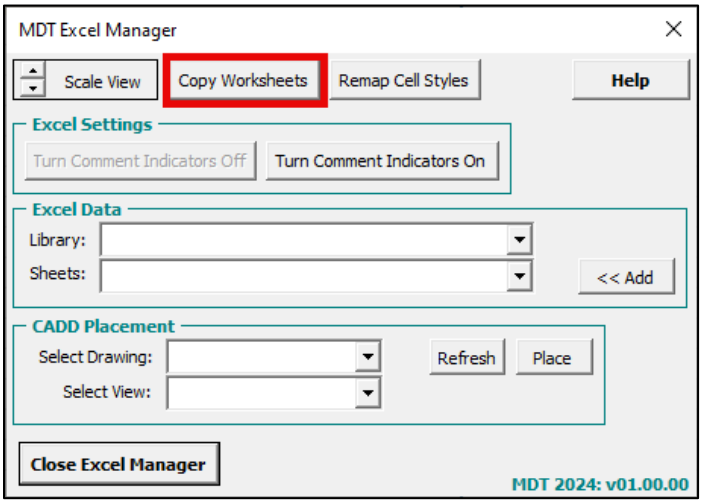
5. Repeat steps 2-4 to place OLE object links, changing the *Excel Data Sheet* and the *Select View* option as appropriate.

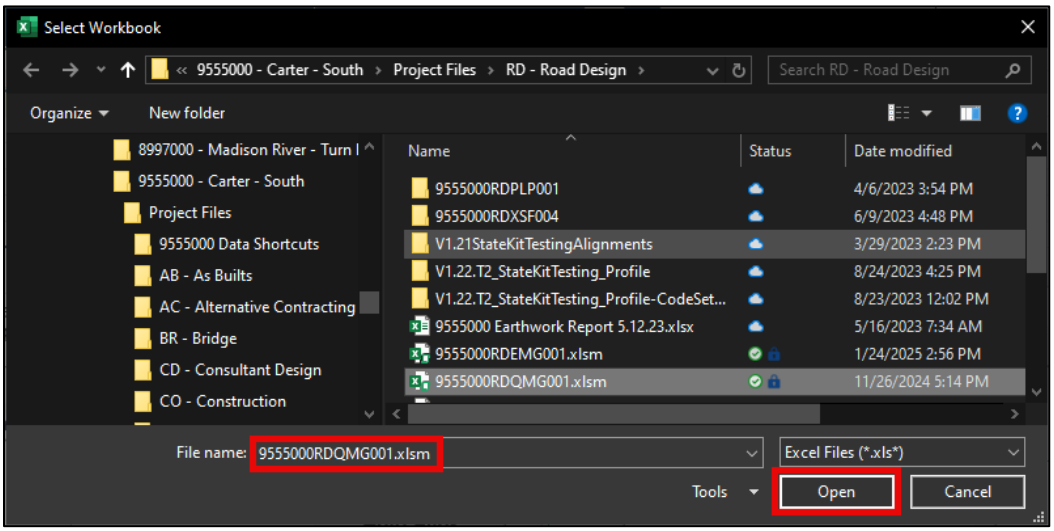
6. Add only the sheets containing OLEs to the project's sheet set when complete.

Procedure – Copy Worksheets From an Existing Workbook Into the EMG

Since support will no longer be continued for the Excel Quantity Manager (QMG) file, it is recommended to copy the sheets from an old QMG file into a new EMG file.

1. Follow Steps 1-3 of the Create Excel EMG File procedure if one has not yet been created.
2. Select ***RUN MDT Excel Manager***, then select ***Copy Worksheets***. Navigate to a previously saved QMG workbook, select the file, then select ***Open***. All the sheets from the QMG file except the Start and ReadMe Guide sheets will be copied into the new EMG file.



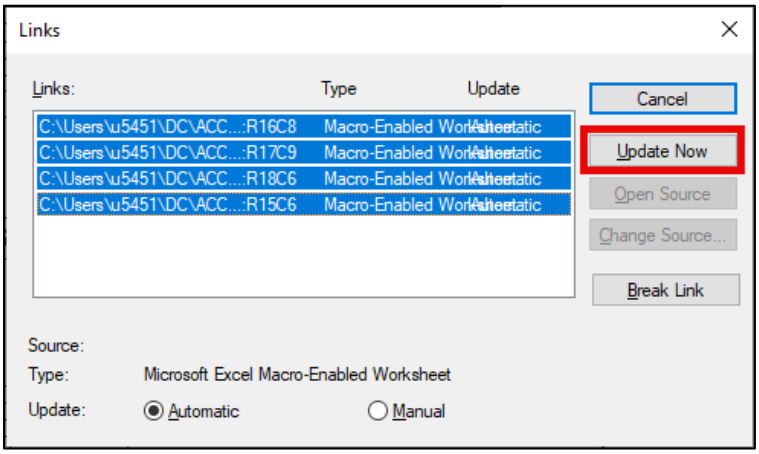


Section II. Tips for OLEs

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***.

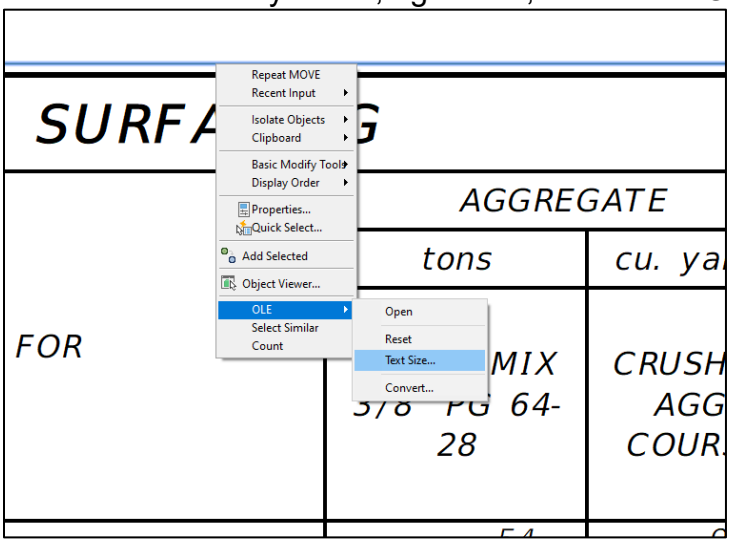
Procedure – Update OLE Text Size in Existing RDSUM Files

For RDSUM files created prior to the v2.1.0 State Kit update, it may not be desired to create a new RDSUM 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.

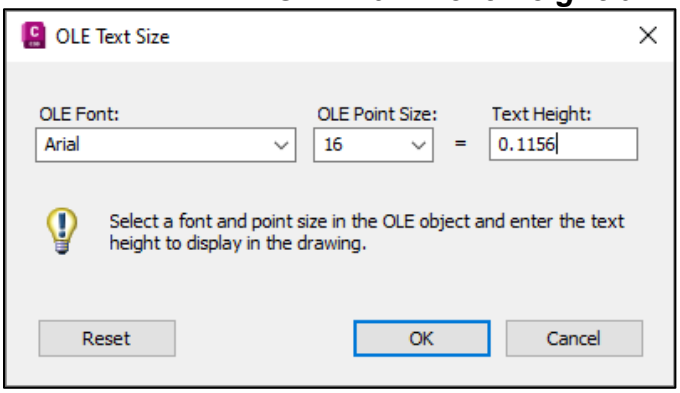
NOTE: The *RD-Summary* layouts are no longer accessible in the *Road Layouts* within the *MDT Sheet Layouts* of the State Kit. An existing *RD-Summary* layout must be copied if a new summary layout is needed.

1. Select a summary frame from the EMG 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 ***RD-Summary*** 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.

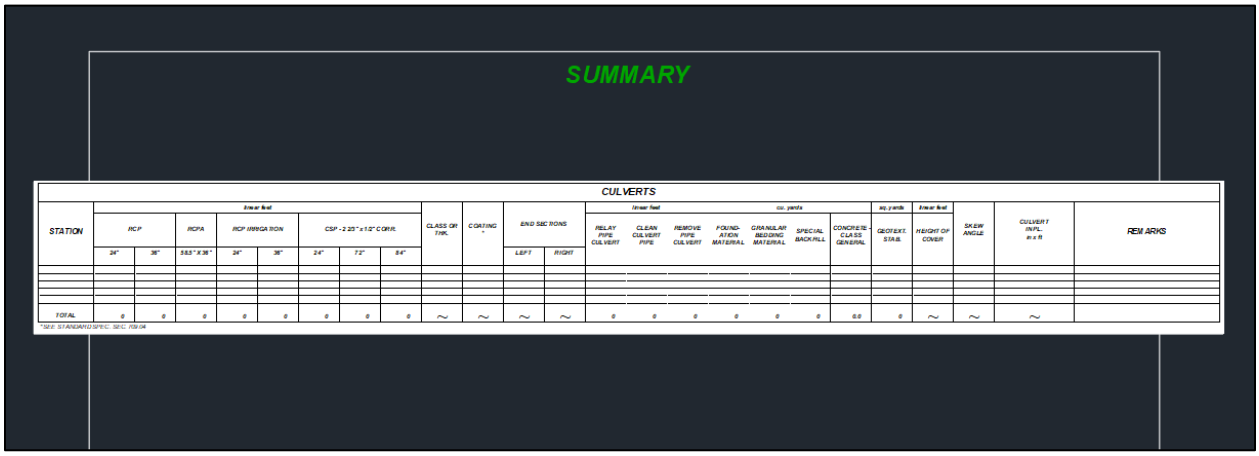


NOTE: The initial point size displayed in the OLE Point Size window is the typically largest text size detected in the linked Excel spreadsheet. Other text sizes detected in the frame are available in the OLE Point Size dropdown. Updating any text height will update all other font text heights in the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

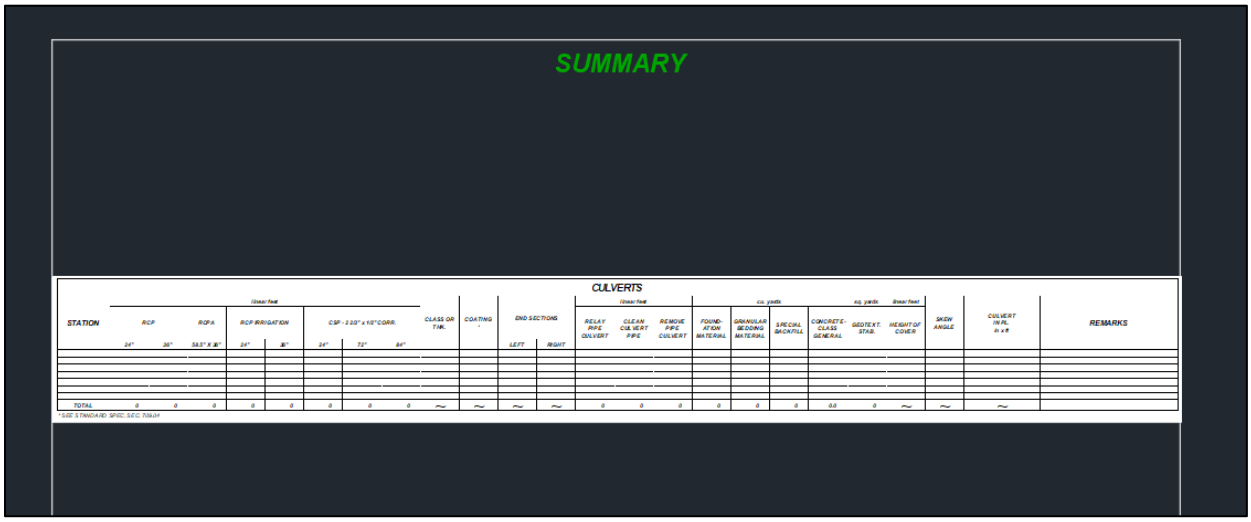
OLE Point Size	OLE Text Height
12	0.0867
14	0.1011
16	0.1156
18	0.1300
20	0.1444
22	0.1589
24	0.1733

Tip – Change OLE System Variable to Fit Large Frames

There may be certain frames, such as the Culverts frame, that are too wide to fit within the viewport borders within the Speed Sheet file, like shown below:



The ***MSOLESCALE*** system variable command controls the scale of the OLEs inserted into the drawing. This variable is set to ***0.5*** within the Speed Sheet template; however, it can be changed to accommodate larger frames. In this example, the ***MSOLESCALE*** was set to ***0.45*** so that the extents of the frame fit within the viewport border.



NOTE: If the ***MSOLESCALE*** system variable is adjusted, it must be set back to the default value of ***0.5*** after inserting the frame that required a variable change. Otherwise, the remaining frames inserted into the drawing will be inserted at the adjusted scale and not the default scale.