

SUMMARY SHEETS IN AUTODESK

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Overview

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

Process Provenance

- Date of development: 3/21/2023
- Revision date: 6/9/2023
- Application/Tool(s): *Autodesk Civil 3D*
- Version(s): *13.4.2162.0 Civil 3D 2022.2.2*
- Environment(s): *MDT Civil 3D State Kit r2022 v1.21*
- Author: [MDT Road Design Workflow Subcommittee](#)

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

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](#)

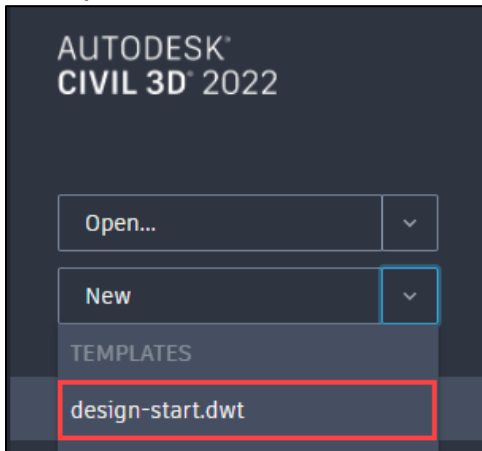
[Tips for Summary Frames in Autodesk](#)

Process Description and Examples

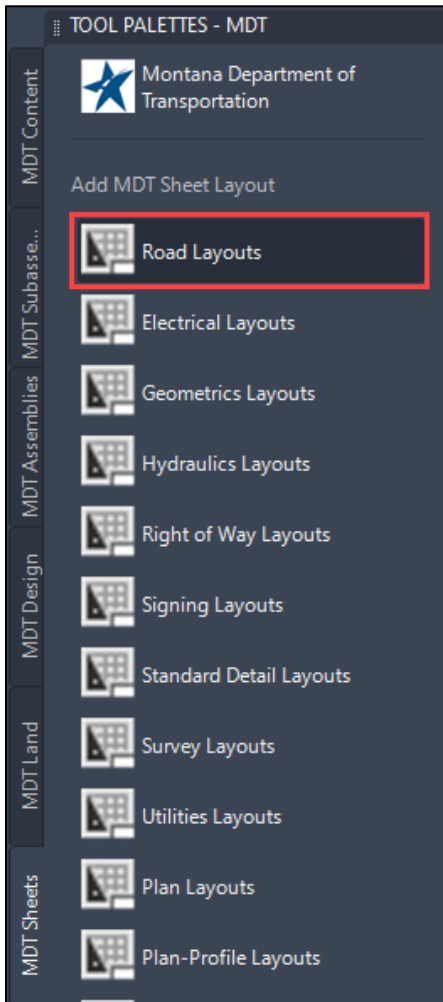
Section I. File Setup

Procedure – Civil 3D File Setup

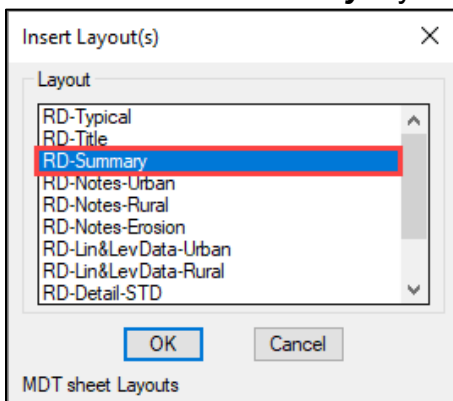
1. Create a new file using the **design-start.dwt** template. Save it as **[UPN#]RDSUM001.dwg** (for example, **9422000RDSUM001.dwg**) in the RD directory of the project on BIM 360. Use **CTRL+S** or navigate to the C3D icon in the top left and save the file.



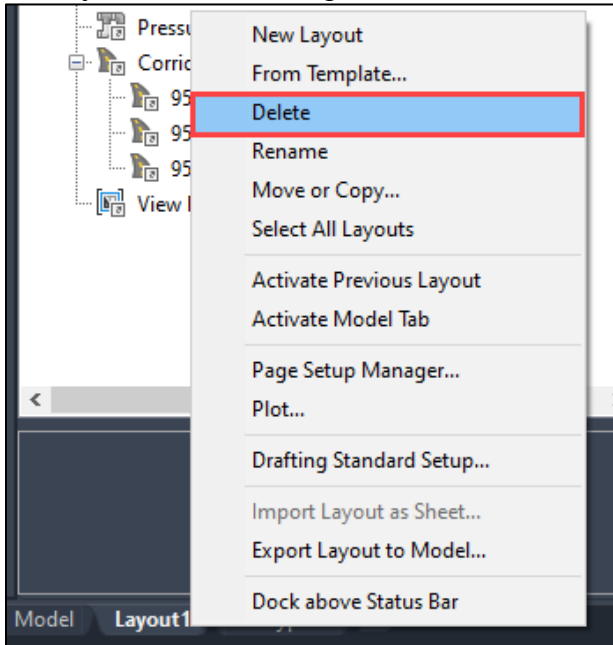
2. Create a new layout using the **Road Layouts** within the **MDT Sheets** tab of the **MDT Tool Palette**.



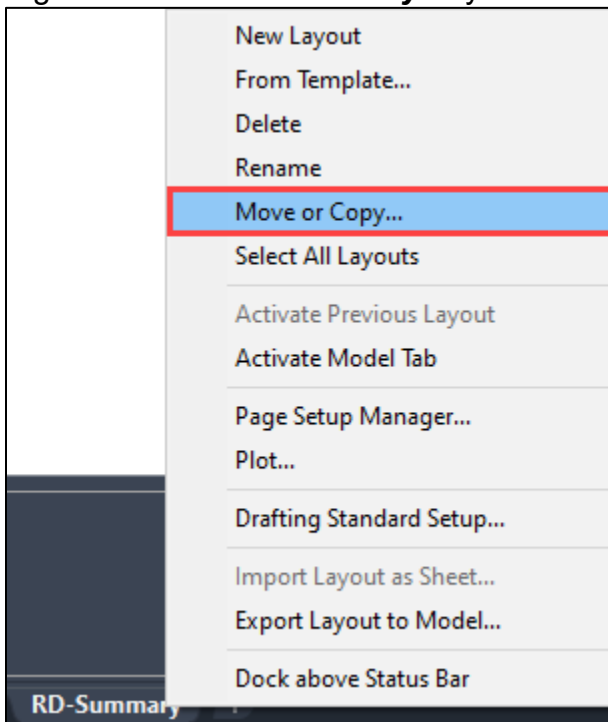
3. Select the **RD-Summary** layout.



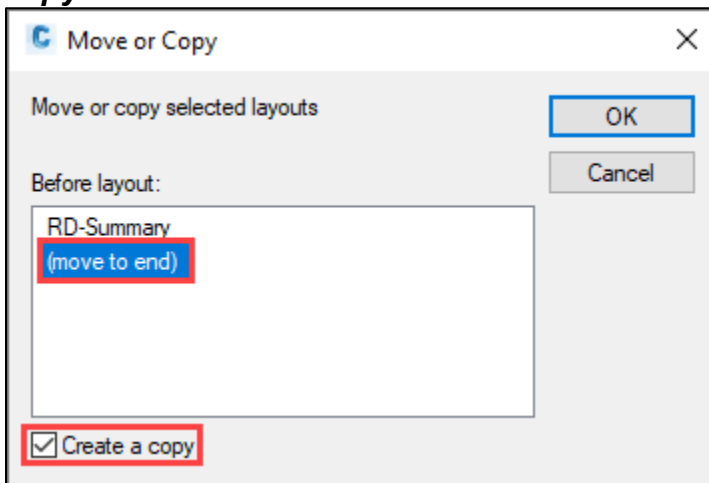
4. Delete the default **Layout1** from the drawing to clear up space by right clicking the layout and selecting **Delete**.



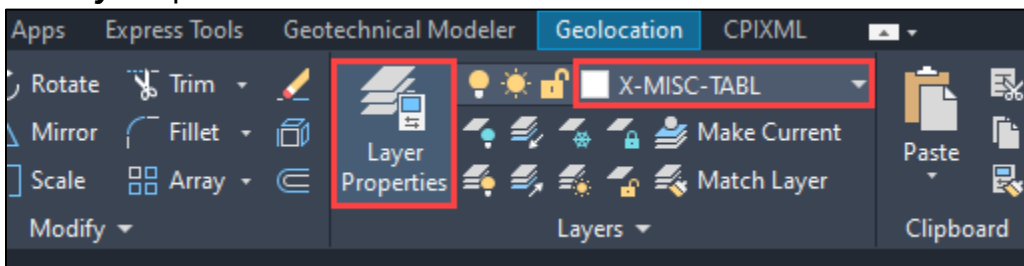
5. Copy Layouts: Copy the **RD-Summary** layout to create more layout sheets. Right click the **RD-Summary** Layout and select **Move or Copy...** from the list.



- In the **Move or Copy** dialog, select **(move to end)** and check the **Create a copy** box. Then select **OK**.



- Right click the newly created layouts and select **Rename**. **Rename** the layout tabs as **RDSUM001**, **RDSUM002**, etc. as necessary.
- Set the active layer to **X-MISC-TABL** by selecting it from the layer dropdown in the **Layers** panel on the **Home** tab.



- Type the command **OLEFRAME**, press **Enter**, and change the variable to <2> by typing **2** then hitting **Enter**. This allows the frames to display grip handles but will not plot the border frame. Changing the value to 1 will plot the border frame.

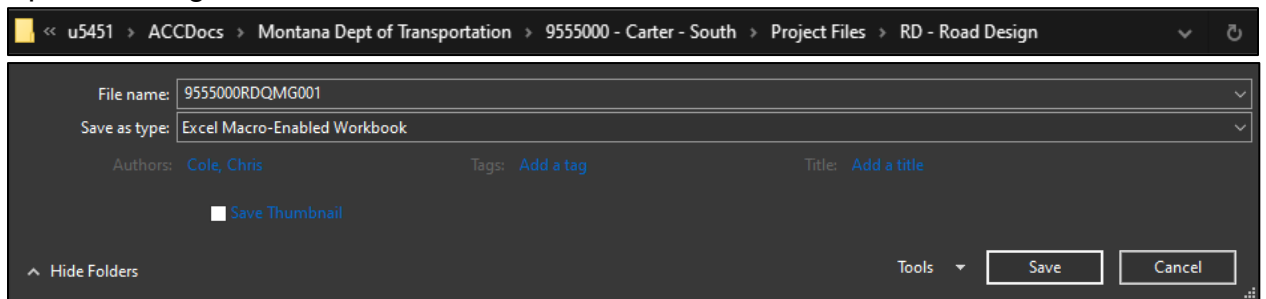
NOTE: Because this process pertains to a system variable and not a file, it only needs to be completed once. It will also need to be completed each time after updating the State Kit.

Procedure – Excel Quantity Manager File Setup

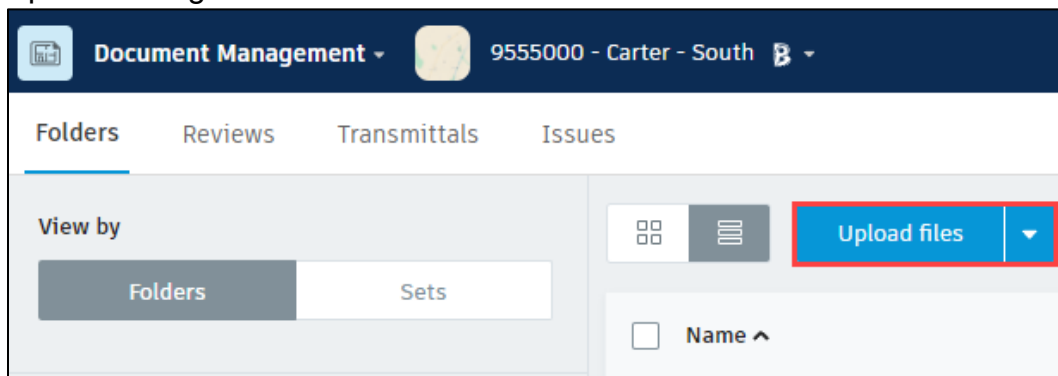
1. Create a new Excel Quantity Manager sheet by navigating to the **Road Design** page on the MDT Intranet and selecting the **Excel Quantity Manager** link under the **Estimating** header and follow the instructions on the page, or by opening Microstation and selecting **Road Tools > Summary Sheets > Create Excel QMG File**.
2. Save the file as **[UPN#]RDQMG001.xlsx** and browse to the RD directory within the project through ACCDocs, or save the file locally and upload the file to BIM 360 via the web version.

NOTE: Saving the file to BIM 360 will allow dynamic updates in the summary sheets as information is edited in the Excel workbook.

Upload through Autodesk Docs:



Upload through the web:



3. Fill out the summary frames in the Excel workbook to meet the project needs.

Procedure – Insert OLE Objects

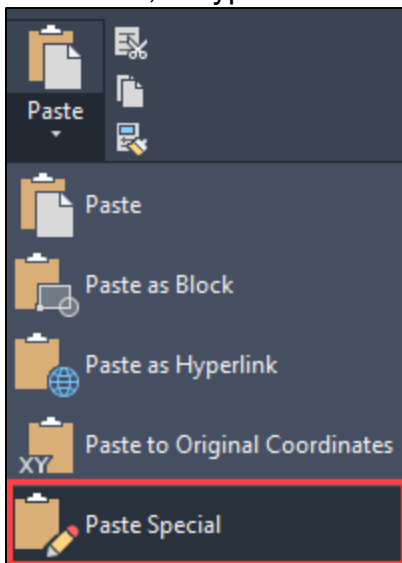
1. Within Civil 3D, open the **[UPN#]RDSUM001.dwg** file created in Step 1 of the Civil 3D File Setup procedure if not already open.
2. Select the **RDSUM001** layout tab.
3. Open the **[UPN#]RDQMG001.xlsx** workbook from ACCDocs within the project directory on Windows Explorer.

NOTE: Having both files open at the same time will ensure that the two files are updated concurrently while working within them.

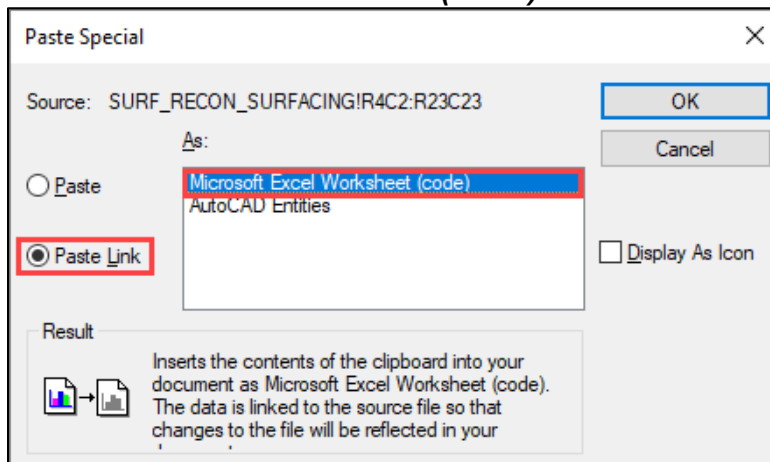
4. Select a summary frame from the QMG file. Highlight the frame as shown below, selecting the cells just outside of the borders of the frame. Copy the data to the clipboard using **CTRL+C** and return to Civil 3D.

SURFACING											
STATION		linear feet				FOR	AGGREGATE		BITUMINOUS MATERIAL		REMARKS
		GROSS	NET	+	-		tons	cu. yards	gals.	sq. yards	
FROM	TO					COMM MIX 3/8" PG 64 28	CRUSHED AGG. COURSE	EMULSIFIED ASPHALT TACK	AGG. TREAT.		
711+34.53	712+30.00	95.47	95.47			54	94	29	292	TYP. NO. 1 TRANS. TO TYP. NO. 2, RT	
712+30.00	712+84.53	54.53	54.53			34	59	19	185	TYP. NO. 2 TRANS. TO TYP. NO. 3	
712+84.53	713+30.00	45.47	45.47			29	49	15	155	TYP. NO. 3 THEN TYP. NO. 4	
713+30.00	714+30.00	100.00	100.00			108	157	54	360	TYP. NO. 4	
714+30.00 B.E.	717+00.00				270.00					BRIDGE	
717+00.00 B.E.	718+00.00	370.00	100.00			108	157	54	360	TYP. NO. 4 TRANS. TO TYP. NO. 5	
718+00.00	719+00.00	100.00	100.00			63	109	34	340	TYP. NO. 5 THEN TYP. NO. 6	
719+00.00										TYP. NO. 6 TRANS. TO TYP. NO. 1, LT	
TOTAL		765.47	495.47	0.00	270.00	396	625	205	1,692		

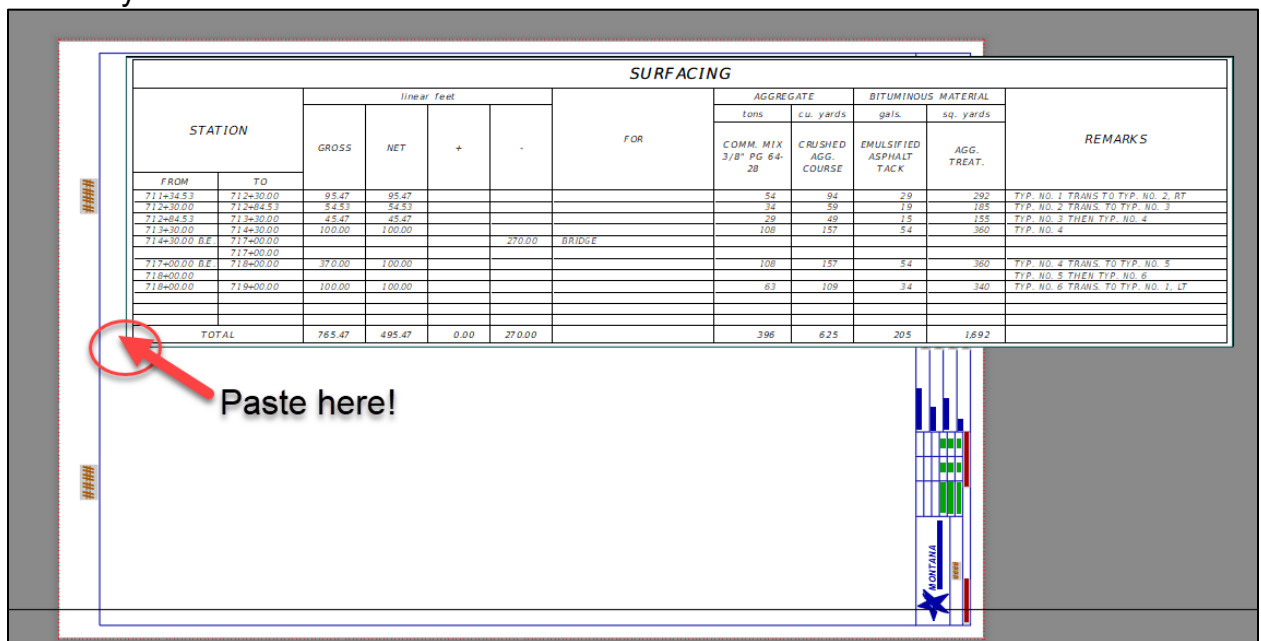
5. Select **Paste Special** from the **Paste** dropdown in the **Clipboard** panel on the **Home** tab, or type **PASTESPEC** and press **Enter**.



- In the **Paste Special** dialog box, select **Paste Link** and set the source as **Microsoft Excel Worksheet (code)**. Then select **OK**.

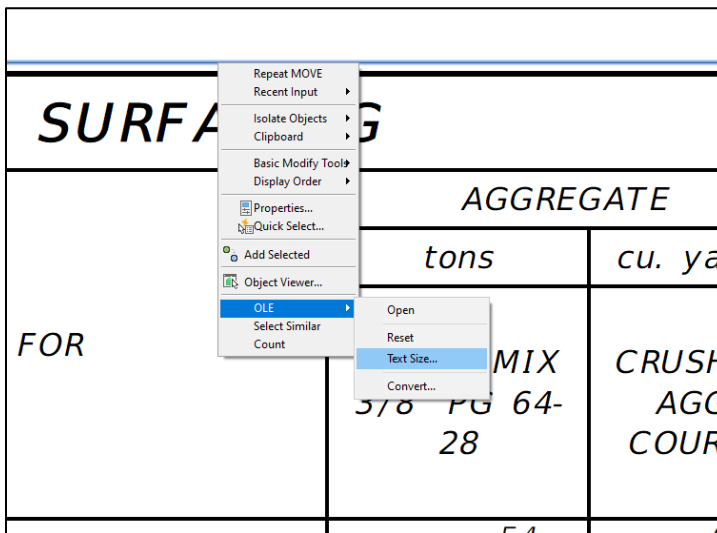


- Select a point in paper space on the **RDSUM001** layout tab to paste the linked summary frame.

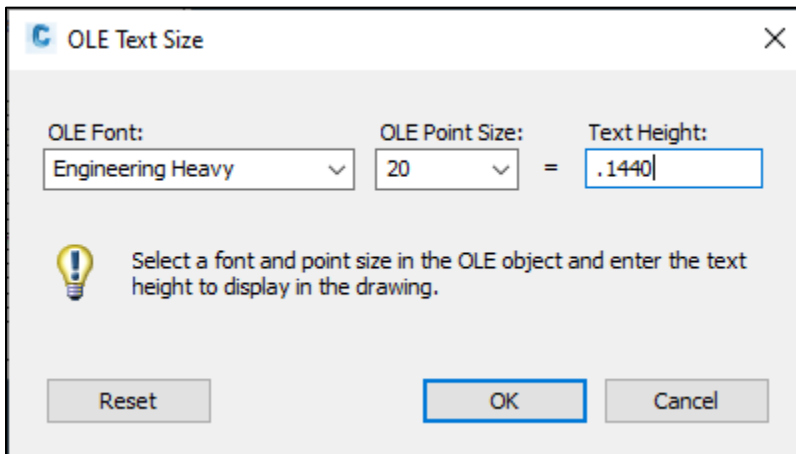


NOTE: The OLE will be too large for the summary sheet and must be scaled to fit.

8. Select the summary frame, right click, and hover over **OLE** and select **Text Size...**



9. Set the text size to **OLE 20 = Text Height 0.1444** for the Engineering Heavy font.



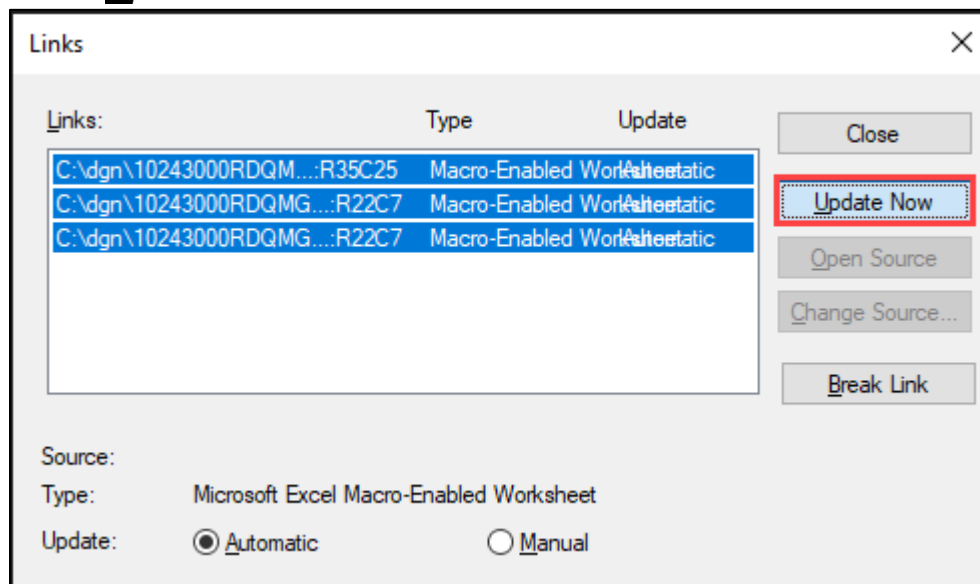
NOTE: The font displayed in the OLE Text Size window is the typically largest text size detected in the linked Excel spreadsheet. Updating any font text height will update all other font text heights in the OLE. Use the following table for converting text heights other than OLE Point Size 20:

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

10. Repeat Steps 4-9 and paste into the additional layouts as necessary.
11. After the summary frames have been imported and scaled into the layout, arrange them by using the **Move** command under the **Modify** panel in the **Home** tab, typing **MOVE** then pressing **Enter**, or by holding a left click and dragging the linked summary frame to its desired location in the paper space.

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

- a. Type the command **OLELINKS** and press **Enter**.
- b. In the popup box, select all the links using a shift select, or select a specific frame that needs to be updated.
- c. Select **Update Now**.



- d. When the update is complete, select **Close**.