TIPS FOR SUMMARY SHEETS IN AUTODESK

Overview

This document is a supplement to the Summary Frames in Autodesk procedure. It contains guidance for updating summary frames and for adjusting the frames after columns and rows have been added to them.

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- Author: *MDT Road Design Workflow Subcommittee*

Acronyms/Definitions Used in This Document

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

References

Summary Sheets in Autodesk

Updating Summary Frames for Project Changes

Linked OLEs should update automatically after saving changes in Excel. Data values changed in the QMG file will not have an impact to the scaling of the summary frames if the Excel sheet is not saved before tabbing or clicking into the DWG file.

As an example, the Surfacing Section wants to change the grade and size of the plant mix used from **COMM. MIX 3/8" PG 64-28** to **COMM. MIX ½" 70-28** due to an increase in traffic loads. The project manager also wants to extend the end of the project limits. Update the plant mix column in Excel to the requested surfacing recommendation. Update the end station from **719+00** to **720+00** and save the changes. Click back into the **[UPN#]RDSUM001.dwg** file and notice the updates.

Before — SURFACING

STATION FROM	STATION TO	linear feet GROSS	linear feet NET	+	-	FOR	AGGREGA tons COMM. MIX 3/8" PG 64-28
711+34.53	712+30.00	95.47	95.47				54
712+30.00	712+84.53	54.53	54.53				34
712+84.53	713+30.00	45.47	45.47				29
713+30.00	714+30.00	100.00	100.00				108
714+30.00 B.E.	717+00.00				270.00	BRIDGE	
	717+00.00						
717+00.00 B.E.	718+00.00	370.00	100.00				108
718+00.00							
718+00.00	719+00.00	100.00	100.00				63
TOTAL		765.47	495.47	0.00	270.00		396

After — SURFACING

STATION FROM	STATION TO	linear feet GROSS	linear feet NET	+	-	FOR	AGGREGA tons COMM. MIX 1/2" PG 70-28
711+34.53	712+30.00	95.47	95.47				54
712+30.00	712+84.53	54.53	54.53				34
712+84.53	713+30.00	45.47	45.47				29
713+30.00	714+30.00	100.00	100.00				108
714+30.00 B.E.	717+00.00				270.00	BRIDGE	
	717+00.00						
717+00.00 B.E.	718+00.00	370.00	100.00				108
718+00.00							
718+00.00	720+00.00	200.00	200.00				126
TOTAL		865.47	595.47	0.00	270.00		459

The OLE automatically updates to match the data in Excel. Since no formatting was changed, no scaling in Autodesk was affected. The same functionality is kept when unhiding columns in Excel. However, this functionality is not kept when inserting rows or columns into a summary frame.

Continuing the example, the project team is requesting that the project receive a chip seal due to increasing the aggregate size of the plant mix. Construction is also requesting that hydrated lime be shown in the surfacing frame for information for the contractor. A Cover – Type 1 column needs to be added to the summary frame, which will require unhiding a column in the surfacing frame. In Excel, *unhide* the columns to the left of the *Plant Mix* column to reveal the *Cover – Type 1* and *Hydrated Lime* columns. Save the changes and return to the *[UPN#]RDSUM001.dwg* file in Autodesk. Notice the changes.

Summary frame with hidden columns:

Before — SURFACING

STATION FROM	STATION TO	linear feet GROSS	linear feet NET	+	-	FOR	AGGREGATE tons COMM. MIX 3/8" PG 64-28	AGGREGATE cu. yards CRUSHED AGG. COURSE	BITUMINOUS MATERIAL gals. EMULSIFIED ASPHALT TACK	BITUMINOUS MATERIAL sq. yards AGG. TREAT.	REMARKS
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										
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											TYP. NO. 5 THEN TYP. NO. 6
718+00.00	719+00.00	100.00	100.00				63	109	34	340	TYP. NO. 6 TRANS. TO TYP. NO. 1, LT
TOTAL		765.47	495.47	0.00	270.00		396	625	205	1,692	

Summary frame after columns were unhidden:

After — SURFACING

STATION FROM	STATION TO	linear feet GROSS	linear feet NET	+	-	FOR	tons HYDRATED LIME	sq. yards COVER TYPE 1	AGGREGATE tons COMM. MIX 1/2" PG 70-28	AGGREGATE cu. yards CRUSHED AGG. COURSE	BITUMINOUS MATERIAL gals. EMULSIFIED ASPHALT TACK	BITUMINOUS MATERIAL sq. yards AGG. TREAT.	REMARKS
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												
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													TYP. NO. 5 THEN TYP. NO. 6
718+00.00	719+00.00	100.00	100.00						63	109	34	340	TYP. NO. 6 TRANS. TO TYP. NO. 1, LT
TOTAL		765.47	495.47	0.00	270.00		0	0	396	625	205	1,692	

Since Excel and Autodesk recognize the hidden cells in the link, all scaling is kept the same and the summary frame is updated without removing data from the OLE upon updating.

Undo all changes made in Excel through the previous examples. Update the summary frame by *inserting* two columns for Hydrated Lime and Cover Type 1. Save the QMG file, and notice the changes made in Autodesk.

Summary frame before inserting columns:

Summary frame after inserting columns:

The new columns are not recognized in the original OLE and data was lost from the summary frame. In this case the ***Remarks*** column was removed. The OLE in Autodesk recognizes the original column/row designation from the initial copy and paste operation. The data was not removed from the Excel file, but the OLE sees it as being replaced with new information. For this reason, **it is best practice to hide and unhide cells when working with summary frames**. If new columns or rows are needed, the original OLE must be deleted and the copy and paste special operations must be repeated.

If a column or cell is resized in Excel, some scaling changes may occur in Autodesk. If the spreadsheet is not saved before tabbing or clicking into the ***[UPN#]RDSUM001.dwg*** file, Autodesk will adjust text widths and heights to match the "new" scale of the OLE object. Additionally, saving in Excel will automatically update changes made to the summary frame in Autodesk without the need for having to tab or click into the ***[UPN#]RDSUM001.dwg*** file.