

First-Round Winner

Innovations Challenge
<http://wwwi/intranet/cr/SolutionsAtWork/Innovations.htm>

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 Missouri Department of Transportation

Cable Conduit Quantity Worksheet

The Conduit Length Worksheet makes adjustments to the conduit length.

Sample:

FROM	TO	C-C	SOURCE	P.S. (TYPE 1or2)	CONTROLLER or PAD MOUNTED P.S.	PULL BOX	SIGNAL POST (F or C)	SIGNAL POST (A)	ITS DEVICE	TOTAL	SIZES	TYPES
			+0	+0	+4	-1	+2	+4	+5			
		DIST	#	#	#	#	#	#	#	LENGTH		
SOURCE	UPS	9	1	1	1					13	3"	T
UPS	CA	11			2					19	3"	T
CA	PB1	10			1	1				13	2x3"	T
PB1	PB2	91				2				89	3"	P
PB1	D71	31				1				30	1"	L

Description

Cable Conduit Quantity Worksheet is an automated Excel spreadsheet to calculate signal or ITS conduit and cable quantities. It allows the designer to input the features of the signalized intersection or ITS system, such as center to center distance between features and the types of features connected in various tabs. The charts are set up to make adjustments to cable and conduit quantities in accord with EPG 902.15. Additionally, the spreadsheet can automatically check pull box and conduit sizing and provide output in format consistent with the D37B sheet, so data can easily be transferred to Microstation using Quantab. The Excel file also allows the user to manually check conduit capacity and determine the required breaker ratings. The file is setup to be used by someone with a basic understanding of Excel. However, tips are included in the instructions to allow a more advanced Excel user to further manipulate the file to a particular intersection or ITS system if the basic setup is insufficient.

Benefit

The spreadsheet automates a number of the calculations and checks that are necessary in determining signal conduit and cable quantities in designing signalized intersections and ITS systems. This automation saves time and work for the designer, and if changes are made during the design, less rework is required, saving money as well. The automated calculations and checks reduce errors that could result in change orders during construction, saving time and work for construction inspectors.

For More Information:

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Additional photos can be seen at the Innovations Challenge homepage: <http://wwwi/intranet/cr/SolutionsAtWork/Innovations.htm>