



**User Guide to Standard Plans Section ES – ELECTRICAL
SYSTEMS – TEMPORARY WOOD POLES**

Appendix A: Worksheet for Calculation of d_p

Span ID: _____

Project ID: _____

Pole ID for start of Span: _____

By: _____

Pole ID For End of Span: _____

Date: _____

Item	*Design Diameter d (in)	Number Of Units	Multiplier	Depth Contribution (in)
3/8" Messenger Wire	0.375	x 1	x 1 =	0.375
*		x 1	x 1 =	
		x _____	x 0.3 =	
		x _____	x 0.3 =	
		x _____	x 0.3 =	
		x _____	x 0.3 =	
		x _____	x 0.3 =	
		x _____	x 0.3 =	
		x _____	x 0.3 =	
		x _____	x 0.3 =	
			x 0.3 =	
			x 0.3 =	
			Total:	
Round up to next multiple of 0.5". Use this value for the tables on the xs-sheets				

* Use the largest diameter item for this row.



Caltrans User Guide to Standard Plans Section ES – ELECTRICAL
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 Appendix A: Worksheet for Calculation of d_p

Diameters & Self Weight of Conductors Including Required Insulation		
Conductor or Data Cable Type	Design Diameter d (in)	Weight w (plf)
3 Conductor Signal Cable (3CSC)	0.400	0.0980
5 Conductor Signal Cable (5CSC)	0.500	0.1560
9 Conductor Signal Cable (9CSC)	0.650	0.2760
12 Conductor Signal Cable (12CSC)	0.800	0.3970
28 Conductor Signal Cable (28CSC)	0.900	0.6490
1-#14	0.166	0.0235
1-#12	0.185	0.0330
1-#10	0.210	0.0476
1-#8	0.271	0.0774
1-#6	0.310	0.1130
1-#4	0.359	0.1690
1-#3	0.388	0.2080
1-#2	0.420	0.2560
1-#1	0.498	0.3340
SIC (6-Conductor)	0.350	0.0860
SIC (12-Conductor)	0.500	0.1440
Detector Lean-in Cable (DLC)	0.310	0.0440
12 to 48-Strand Fiber Optic Cable (FO48)	0.424	0.0600
72-Strand Fiber Optic Cable (FO72)	0.484	0.0770
96-Strand Fiber Optic Cable (FO96)	0.535	0.1050
144-Strand Fiber Optic Cable (FO144)	0.670	0.1890
3/8" diameter Messenger Wire	0.375	0.2730



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Appendix A: Worksheet for Calculation of d_p

Span ID: Span 1

Project ID: Example

Pole ID for start of Span: Pole 1

By: Stan J

Pole ID For End of Span: Pole 2

Date: 10-2-12

For this example, a messenger wire carries 2-DLC, 6-#8, and 2-#10

Item	*Design Diameter d (in)	Number Of Units	Multiplier	Depth Contribution (in)
3/8" Messenger Wire	0.375	x 1	x 1 =	0.375
* DLC	0.310	x 1	x 1 =	0.310
DLC	0.310	x 1	x 0.3 =	0.093
#8	0.271	x 6	x 0.3 =	0.488
#10	0.210	x 2	x 0.3 =	0.126
		x	x 0.3 =	
		x	x 0.3 =	
		x	x 0.3 =	
		x	x 0.3 =	
		x	x 0.3 =	
			x 0.3 =	
			x 0.3 =	
Total:				1.392
Round up to next multiple of 0.5". Use this value for the tables on the xs-sheets				1.5