



Productivity

April 2025

Prepared by Transportation Planning
Missouri Department of Transportation

Standard Plans Rebar Calculator

Collar Quantity: **13**

Please Input Data in YELLOW Cells from Drainage Sheets for each Collar.
(20 individual collars can be entered)

	1	2	3	4	5	6	7	8	9	10
Enter Large Pipe DIA. (Inches):	36	24	36	36	36	36	36	36	36	30
Enter Small Pipe DIA. (Inches):	36	24	36	36	36	36	36	36	36	30
Rebar Required (Pounds):	128	97	128	128	128	128	128	128	128	114
Concrete Required (CY):	0.76	0.36	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.60
Area Calculated	1.296	5/8	1.296	1.296	1.296	1.296	1.296	1.296	1.296	900

	11	12	13	14	15	16	17	18	19	20
Enter Large Pipe DIA. (Inches):	36	48	48							
Enter Small Pipe DIA. (Inches):	36	48	48							
Rebar Required (Pounds):	128	158	158	0	0	0	0	0	0	0
Concrete Required (CY):	0.76	1.03	1.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Required Steel	Rebar Conversion Factors	Required Concrete	Concrete Conversion Factor
#4 Rebar:	68 LBS	5.24123		
#5 Rebar:	781 LBS	60.09285	9.86 CY	0.7585
#6 Rebar:	827 LBS	63.62164		

Informational	
Bar Size	LB/FT
4	0.668
5	1.043
6	1.502
7	2.044
8	2.670

Total Rebar Weight: **1676 LBS** > (Can be used to verify with Standard Plan 604.40G)

Calculations Based on Standard Plan 604.40G, Dated: 07/01/2021

Description and Benefit

Our standard plans were developed in the 1980's based on material reporting requirements at that time. Our current reporting process is more detailed and requires knowledge of rebar layout in addition to calculating the required pounds for each size. The standard plans have 139 different rebar configurations within the three pay items of pipe collars, signal bases and sign bolt down footings that require hand calculations each time one of these is included in a project to determine how many pounds of rebar are required. This calculator has been created to maximize staff's efficiency to reduce calculating the same items over and over each time one of the pay items is used. Once all the quantities are entered, the output is entered into AASHTO Ware to populate the material acceptance criteria. The weight of each rebar size and concrete quantity is also displayed as a reference to verify the output verses the plans. The calculator has been uploaded to Templates in eProjects to provide statewide access.

For More Information Contact

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