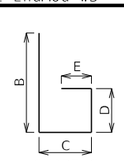
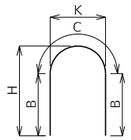


SHAPE 6
or 6S



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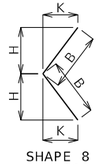

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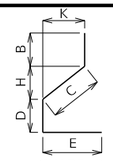
or 8S



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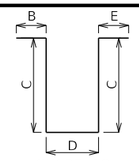
or 9S



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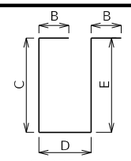

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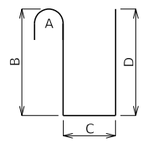
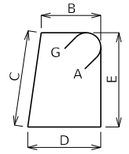
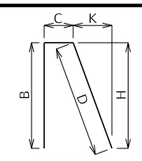


SHAPE 12



SHAPE 13S



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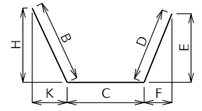
or 14S



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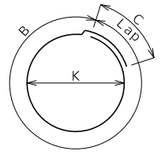
or 15S



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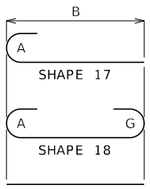
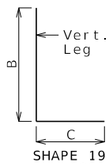


SHAPE 17
SHAPE 18
SHAPE 20



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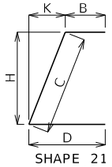
or 19S



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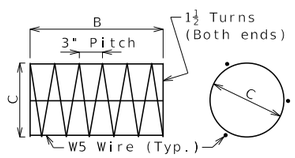
or 21S



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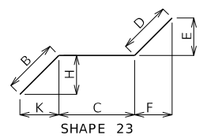

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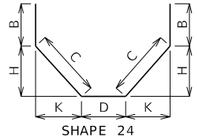
or 23S



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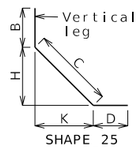
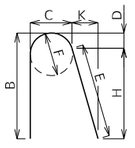
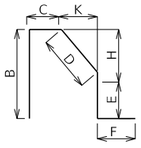
or 24S



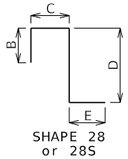
SHAPE 25
or 25S



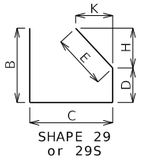
SHAPE 26



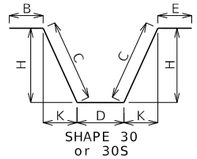
SHAPE 27S



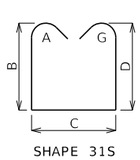
SHAPE 28
or 28S



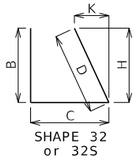
SHAPE 29
or 29S



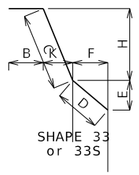
SHAPE 30
or 30S



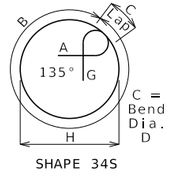
SHAPE 31S



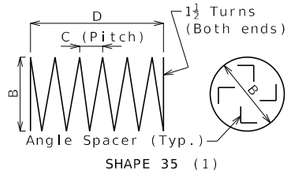
SHAPE 32
or 32S



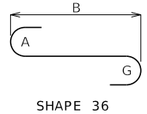
SHAPE 33
or 33S



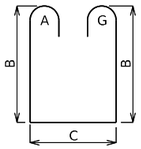
C = Bend Dia. D
SHAPE 34S



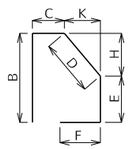
SHAPE 35 (1)



SHAPE 36



SHAPE 37S



SHAPE 38S

BENDING DIAGRAMS

Nominal lengths are based on out to out dimensions shown in bending diagrams and are listed to the nearest inch for fabricator's use. Actual lengths are measured along centerline bar to the nearest inch. Weights are based on actual lengths.

All bars shall be Grade 60.

Codes: C = Required coatings, where E = Epoxy Coated and G = Galvanized.

SH = Required shape, see bending diagrams.

V = Sets of varied bars and number of bars of each length. Bar dimensions vary in equal increments between dimensions shown on this line and the following line and the actual length dimension shown on this line and the following line vary by the specified increment.

All dimensions are out to out.

Shapes ending with an S shall be bent in accordance with stirrup pin bend shapes.

Unless otherwise noted, finished bending diameter D is the same for all bends of a shape.

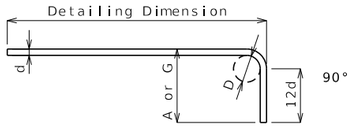
(1) Shall be a deformed or plain spiral bar or wire.

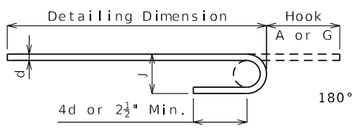
Four angle or channel spacers are required for each column spiral. Spacers are to be placed on inside of spirals. Length and weight of column spirals do not include splices or spacers.

Finished Bend Diameters D and Hook Dimensions

Standard Pin Bend Shapes

Size	Case	D	A or G 90°	A or G 180°	J 180°
#4	1	3"	8"	6"	4"
#5	1	3¾"	10"	7"	5"
#6	1	4½"	12"	8¼"	6"
#7	2	5¼"	14"	9¾"	7"
	3	7"	15"	11½"	8¾"
#8	2	6"	16"	11"	8"
	3	8"	17"	13¼"	10"
#9	1	9½"	19½"	15½"	11¾"
#10	1	10¾"	22"	17½"	13¼"
#11	1	12"	24½"	19½"	14⅞"
#14	1	18¼"	31¼"	27½"	21⅝"
#18	1	24"	41½"	36¼"	28½"



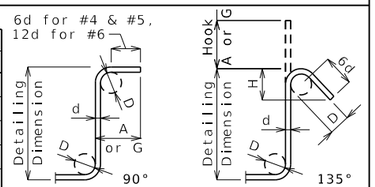


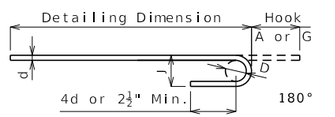
Stirrup Pin Bend Shapes (S)

Size	Case	D	A or G 90°	A or G 135°	A or G 180°	H 135°	J 180°
#4	2	2"	4½"	4½"	5"	2⅞"	3"
	3	3"	5"	5¼"	6"	3"	4"
#5	2	2½"	5¾"	5¾"	5¾"	3⅝"	3¾"
	3	3¾"	6¼"	6½"	7"	3⅞"	5"
#6	1	4½"	12"	7¾"	8¼"	4⅝"	6"

Applicable for all grades of steel.

Case 1 applies to all reinforcement. Case 2 applies to all reinforcement except for galvanized bars. Case 3 applies to galvanized bars only.





Reinforcing Steel Totals (Pounds)

	Size	Substructure Plain	Substructure Epoxy	Superstructure Slab	Superstructure Barrier	Superstructure Slip Form	Entire Bridge Plain	Entire Bridge Epoxy
By Size	4	0	0	0	0	0	0	0
	5	0	0	0	473	0	0	473
	6	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0
By Type		0	0	0	473	0	0	473

All superstructure reinforcing steel shall be epoxy coated unless otherwise specified.

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	SH	V	Dimensions B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb
		End Post Mod.													
4	5 R1	MODIFIED END	E	10S			9.00	8.00					2 2	1 11	8
24	5 R2	MODIFIED END	E	10S			9.00	9.00					2 3	2 0	50
20	5 R3	MODIFIED END	E	10S			2 7.00	6.00					5 8	5 5	113
12	5 R4	MODIFIED END	E	10S	4		2 6.75	7.00					5 9	5 6	
		Incr. = 2.000"					2 4.25	8.50					5 5	5 2	67
40	5 R5	MODIFIED END	E	20		4 9.00							4 9	4 9	198
12	5 R6	MODIFIED END	E	15S		11.25	2 1.50				1.25	11.25	3 1	2 11	37

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Detailed
Checked

Note: This drawing is not to scale. Follow dimensions.

DATE PREPARED 5/7/2024
ROUTE 142 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY BUTLER
JOB NO. J9S3673
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A28392

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)