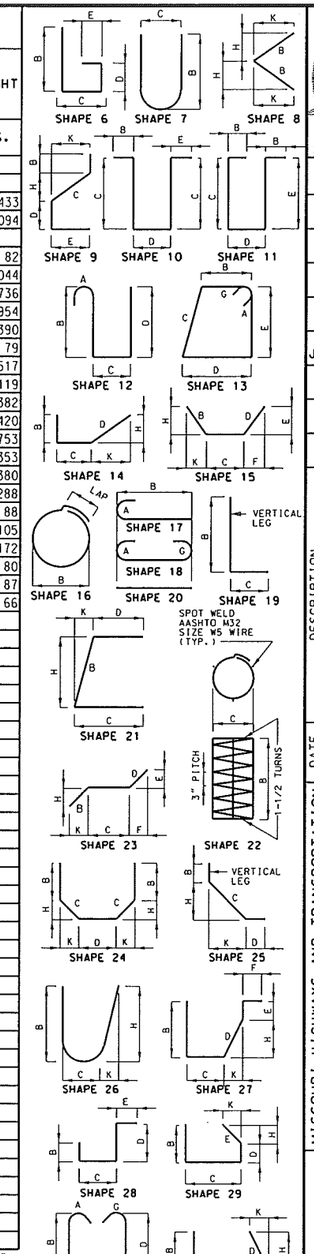
BILL OF REINFORCING STEEL

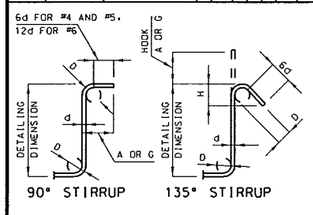
NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
			SLAB																
1280	6	A	SLAB	E	20					6 6.000							6 6	6 6	12497
262	6	A1	SLAB	E	20					9 9.000							9 9	9 9	3837
104	6	A2	SLAB	E	20					9 1.000							9 1	9 1	1419
84	6	A3	SLAB	E	20					8 5.000							8 5	8 5	1062
35	6	A4	SLAB	E	20					8 1.000							8 1	8 1	425
199	6	A5	SLAB	E	20					10 9.000							10 9	10 9	3213
107	6	A6	SLAB	E	20					12 2.000							12 2	12 2	1955
49	6	A7	SLAB	E	20					13 6.000							13 6	13 6	994
48	6	A8	SLAB	E	20					14 10.000							14 10	14 10	1069
48	6	A9	SLAB	E	20					15 6.000							15 6	15 6	1117
48	6	A10	SLAB	E	20					16 2.000							16 2	16 2	1166
48	6	A11	SLAB	E	20					17 10.000							17 10	17 10	1286
48	6	A12	SLAB	E	20					17 6.000							17 6	17 6	1262
48	6	A13	SLAB	E	20					18 2.000							18 2	18 2	1310
187	6	A14	SLAB	E	20					9 9.000							9 9	9 9	2739
44	6	A15	SLAB	E	20					9 1.000							9 1	9 1	600
80	6	A16	SLAB	E	20					8 5.000							8 5	8 5	1011
24	6	A17	SLAB	E	20					8 1.000							8 1	8 1	291
146	6	A18	SLAB	E	20					10 9.000							10 9	10 9	2357
57	6	A19	SLAB	E	20					11 5.000							11 5	11 5	977
42	6	A20	SLAB	E	20					12 2.000							12 2	12 2	768
36	6	A21	SLAB	E	20					12 10.000							12 10	12 10	694
35	6	A22	SLAB	E	20					13 6.000							13 6	13 6	710
35	6	A23	SLAB	E	20					14 2.000							14 2	14 2	745
35	6	A24	SLAB	E	20					14 10.000							14 10	14 10	780
35	6	A25	SLAB	E	20					15 6.000							15 6	15 6	815
35	6	A26	SLAB	E	20					16 2.000							16 2	16 2	850
35	6	A27	SLAB	E	20					16 11.000							16 11	16 11	889
35	6	A28	SLAB	E	20					17 7.000							17 7	17 7	924
10	6	A29	SLAB	E	20			V	2	5 0.000							5 0	5 0	
			INCR=3911N							18 0.000							18 0	18 0	173
10	6	A30	SLAB	E	20			V	2	5 0.000							5 0	5 0	
			INCR=3911N							18 0.000							18 0	18 0	173
151	6	A31	SLAB	E	20			V	1	16 0.000							16 0	16 0	
			INCR=0.1251N							17 9.000							17 9	17 9	3827
108	6	A32	SLAB	E	20			V	1	16 0.000							16 0	16 0	
			INCR=0.251N							17 9.000							17 9	17 9	2737
54	6	A33	SIGN SUPPORT	E	20					5 3.000							5 3	5 3	426
830	5	B	SLAB	E	20					29 10.000							29 10	29 10	25826
46	6	B1	SLAB	E	20					53 0.000							53 0	53 0	3662
46	6	B2	SLAB	E	20					27 0.000							27 0	27 0	1865
3	5	B3	SLAB	E	20					23 9.000							23 9	23 9	74
7	5	B4	SLAB	E	20					27 6.000							27 6	27 6	201
5	5	B5	SLAB	E	20					23 9.000							23 9	23 9	124
1	5	B6	SLAB	E	20					33 0.000							33 0	33 0	34
1	5	B7	SLAB	E	20					17 0.000							17 0	17 0	18
80	5	B8	SLAB	E	20					26 0.000							26 0	26 0	2169
72	5	B9	SLAB	E	20					34 0.000							34 0	34 0	2553
14	5	B10	SIGN SUPPORT	E	20					13 0.000							13 0	13 0	190
288	5	B11	SLAB	E	20					2 10.000							2 10	2 10	851

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
			PARAPETS																
933	5	D	PARAPET	E	SP					5 7.000							5 7	5 7	5433
933	6	D1	SLAB	E	SP					7 11.000							7 11	7 11	11094
7	4	E	PARAPET	E	20					17 7.000							17 7	17 7	82
91	4	E1	PARAPET	E	20					17 2.000							17 2	17 2	1044
56	4	E2	PARAPET	E	20					19 8.000							19 8	19 8	736
84	4	E3	PARAPET	E	20					17 0.000							17 0	17 0	954
35	4	E4	PARAPET	E	20					16 8.000							16 8	16 8	390
7	4	E5	PARAPET	E	20					16 10.000							16 10	16 10	79
42	4	E6	PARAPET	E	20					18 5.000							18 5	18 5	517
14	4	E7	PARAPET	E	20					12 9.000							12 9	12 9	119
4	8	E8	PARAPET	E	20					35 9.000							35 9	35 9	382
8	8	E9	PARAPET	E	20					19 8.000							19 8	19 8	420
8	8	E10	PARAPET	E	20					35 3.000							35 3	35 3	753
4	8	E11	PARAPET	E	20					33 1.000							33 1	33 1	353
4	8	E12	PARAPET	E	20					35 7.000							35 7	35 7	380
3	8	E13	PARAPET	E	20					35 11.000							35 11	35 11	288
4	4	E14	PARAPET	E	20					32 9.000							32 9	32 9	88
8	4	E15	PARAPET	E	20					19 8.000							19 8	19 8	105
8	4	E16	PARAPET	E	20					32 3.000							32 3	32 3	172
4	4	E17	PARAPET	E	20					30 1.000							30 1	30 1	80
4	4	E18	PARAPET	E	20					32 7.000							32 7	32 7	87
3	4	E19	PARAPET	E	20					33 2.000							33 2	33 2	66

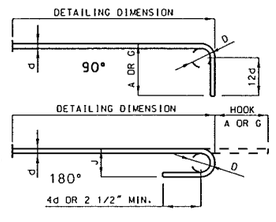
FOR INFORMATION ONLY





STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK: HOOK A OR G	135° HOOK: HOOK A OR G	135° HOOK: APPROX. H
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"
#6	4 1/2"	12"	8"	4 1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



END HOOK DIMENSIONS				
BAR SIZE	D (IN.)	ALL GRADES: 180° HOOKS A OR G	ALL GRADES: 180° HOOKS J	ALL GRADES: 90° HOOKS A OR G
#3	2 1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3 3/4"	7"	5"	10"
#6	4 1/2"	8"	6"	12"
#7	5 1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9 1/2"	15"	11 3/4"	19"
#10	10 3/4"	17"	13 1/4"	22"
#11	12"	19"	14 3/4"	2'-0"
#14	18 1/4"	2'-3"	21 3/4"	2'-7"

NOTE:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
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.
REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

LICENSED STRUCTURAL ENGINEER
STEPHEN E. ALSSURY
081-0281
STATE OF ILLINOIS
EXPIRES 11-30-16

DATE	12/1/2015
DATE PREPARED	
ROUTE	I-64
STATE	IL
DISTRICT	STL
SHEET NO.	53
COUNTY	ST. CLAIR
JOB NO.	J612377C/J612377D
CONTRACT ID.	–
PROJECT NO.	–
BRIDGE NO.	082-0005

DESCRIPTION
DATE

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

ABNA
4140 Lindell Boulevard
St. Louis, MO 63104
314-454-0222
Certificate of Authority: 001507

Detailed Nov 2015
Checked Nov 2015

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

REV.

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