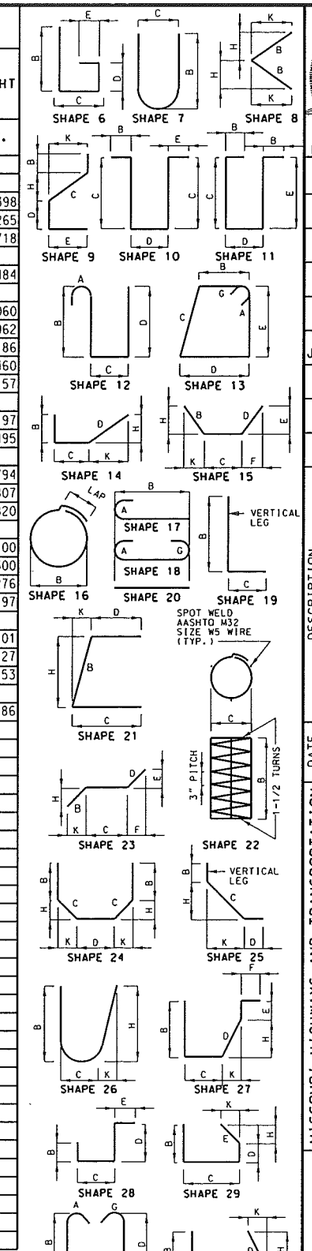
BILL OF REINFORCING STEEL

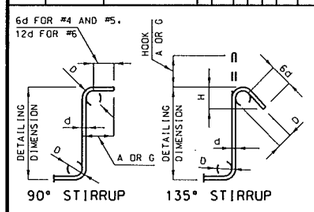
NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
			PIER 5 WB EB																
32	6	H10	WB PIER CAP	E	20		X			45 11.000							45 11	45 11	2207
16	11	H11	WB CRASHWALL	E	20		X			44 0.000							44 0	44 0	3740
44	6	H12	WB CRASHWALL	E	20		X			39 11.000							39 11	39 11	2638
28	6	H13	EB PIER CAP	E	20		X			38 8.000							38 8	38 8	1626
7	11	H14	EB CRASHWALL	E	20		X			60 0.000							60 0	60 0	2231
22	6	H15	EB CRASHWALL	E	20		X			60 0.000							60 0	60 0	1983
20	5	H16	WB PIER CAP	E	20		X			4 1.000							4 1	4 1	85
20	5	H17	EB PIER CAP	E	20		X			4 2.000							4 2	4 2	87
5	5	H18	EB PIER CAP	E	20		X			4 4.000							4 4	4 4	23
5	5	H19	EB PIER CAP	E	20		X			4 5.000							4 5	4 5	23
270	5	N2	CRASHWALL	E	20		X			4 0.000							4 0	4 0	1126
10	10	P4	WB PIER CAP	E	17		X			50 8.000							52 1	52 1	2241
10	10	P5	WB PIER CAP	E	17		X			51 2.000							52 7	52 7	2263
10	10	P6	WB PIER CAP	E	20		X			55 9.000							55 9	55 9	2399
10	10	P7	WB PIER CAP	E	20		X			44 7.000							44 7	44 7	1918
6	6	P8	WB PIER CAP	E	20		X			59 6.000							59 6	59 6	536
6	6	P9	WB PIER CAP	E	20		X			20 3.000							20 3	20 3	182
10	11	P10	EB PIER CAP	E	17		X			40 0.000							41 7	41 7	2209
10	11	P11	EB PIER CAP	E	17		X			47 3.000							48 10	48 10	2595
10	10	P12	EB PIER CAP	E	20		X			60 0.000							60 0	60 0	2582
10	10	P13	EB PIER CAP	E	20		X			25 9.000							25 9	25 9	1108
6	6	P14	EB PIER CAP	E	20		X			58 0.000							58 0	58 0	523
6	6	P15	EB PIER CAP	E	20		X			34 6.000							34 6	34 6	311
128	5	P33	COLUMN	E	34		X			3 8.000							12 5	12 3	1635
100	6	S11	WB PIER CAP	E	13	S	X			2 10.00	5 2.125	2 10.00	5 2.125				17 4	16 10	2528
126	6	S12	WB PIER CAP	E	13	S	X			2 10.00	5 5.250	2 10.00	5 5.250				17 11	17 5	3296
64	6	S13	WB PIER CAP	E	13	S	X			2 10.00	5 9.500	2 10.00	5 9.500				18 7	18 1	1738
137	6	S14	CRASHWALL	E	10	S	X				11 3.000	3 9.000					26 3	25 11	5333
39	6	S15	EB PIER CAP	E	13	S	X			4 0.000	5 0.875	4 0.000	5 0.875				19 6	19 0	1113
53	6	S16	EB PIER CAP	E	13	S	X			4 0.000	5 4.000	4 0.000	5 4.000				20 0	19 6	1552
25	6	S17	EB PIER CAP	E	13	S	X			4 0.000	4 9.000	4 0.000	4 9.000				18 10	18 4	688
8	5	SP4	COLUMN	E	35		X			3 8.000	4.000	21 0.500					761 8	750 11	6266
18	6	U9	WB PIER CAP	E	10	S	X					5 3.125	2 10.000				13 4	13 0	351
32	6	U10	WB PIER CAP	E	10	S	X					5 6.250	2 10.000				13 11	13 7	653
16	6	U11	WB PIER CAP	E	10	S	X					5 9.375	2 10.000				14 5	14 1	338
39	6	U12	PIER CAP	E	10	S	X					4 0.000	4 0.000				12 0	11 8	683
48	6	U13	CRASHWALL	E	10	S	X					4 0.000	3 9.000				11 9	11 5	823
52	5	U14	PIER CAP	E	10	S	X					3 2.000	1 11.000				8 3	8 1	438
16	6	U15	EB PIER CAP	E	10	S	X					5 6.000	4 0.000				15 0	14 8	352
8	6	U16	EB PIER CAP	E	10	S	X					5 1.000	4 0.000				14 2	13 10	166
8	6	U17	EB PIER CAP	E	10	S	X					4 9.000	4 0.000				13 6	13 2	158
120	10	V4	COLUMN	E	17		X			34 9.000							36 2	36 2	18675
170	w5	A2	A.B. Wells	E	22		X			15.000	9.125						23 0	23 0	665

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.
			PIER A1																
12	7	H20	PIER CAP	E	20		X			57 0.000							57 0	57 0	1398
14	11	H23	CRASHWALL	E	20		X			57 4.000							57 4	57 4	4265
12	5	H24	CRASHWALL	E	20		X			57 4.000							57 4	57 4	718
116	5	N2	CRASHWALL	E	20		X			4 0.000							4 0	4 0	484
12	10	P16	PIER CAP	E	18		X			57 0.000							59 10	59 10	2060
12	10	P17	PIER CAP	E	20		X			57 0.000							57 0	57 0	1962
18	6	P18	PIER CAP	E	20		X			4 9.000							4 9	4 9	86
36	5	P33	COLUMN	E	34		X			3 8.000							12 5	12 3	460
20	5	P34	PIER CAP	E	20		X			2 9.000							2 9	2 9	57
66	6	S18	PIER CAP	E	13	S	X			7 2.00	3 6.000	7 2.00	3 6.000				22 8	22 2	2197
58	6	S21	CRASHWALL	E	10	S	X				6 9.000	4 0.000					17 6	17 2	1495
1	5	SP5	COLUMN	E	35		X			3 8.000	4.000	21 4.000					771 9	760 10	794
1	5	SP6	COLUMN	E	35		X			3 8.000	4.000	21 8.500					784 9	773 7	807
1	5	SP7	COLUMN	E	35		X			3 8.000	4.000	22 0.875					797 4	786 0	820
20	4	U18	PIER CAP	E	10	S	X				1 6.000	4 8.000					7 8	7 6	100
16	6	U19	PIER CAP	E	10	S	X				4 0.000	4 10.000					12 10	12 6	300
16	6	U27	PIER CAP	E	10	S	X				3 6.000	4 10.000					11 10	11 6	276
16	5	U28	CRASHWALL	E	10	S	X				4 0.000	4 0.000					12 0	11 10	197
18	10	V5	COLUMN	E	17		X			29 6.500							31 0	31 0	2401
18	10	V6	COLUMN	E	17		X			29 11.000							31 4	31 4	2427
18	10	V7	COLUMN	E	17		X			30 3.375							31 8	31 8	2453
22	w5	A2	A.B. Wells	E	22		X			15.000	9.125						23 0	23 0	86

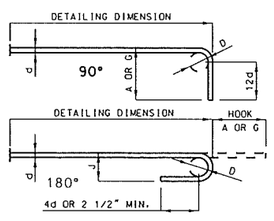
FOR INFORMATION ONLY





STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK	135° HOOK	
		HOOK A OR G	HOOK A OR G	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		90° HOOKS
		A OR G	J	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. ALSBURY
081-0281
STATE OF ILLINOIS
EXPIRES 11-30-16

DATE: 12/1/2015
DATE PREPARED

ROUTE	STATE
I-64	IL
DISTRICT	SHEET NO.
STL	51

COUNTY: ST. CLAIR
JOB NO.: J612377C/J612377D
CONTRACT ID.: –
PROJECT NO.: –
BRIDGE NO.: 082-0005

DATE	DESCRIPTION

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

HNTB
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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