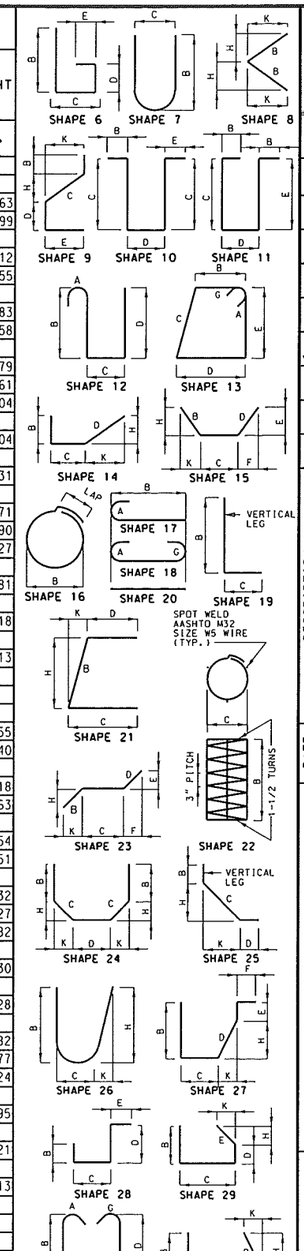
BILL OF REINFORCING STEEL

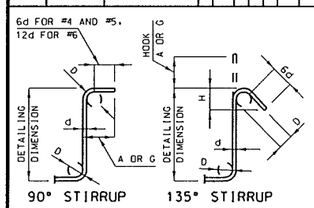
NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
			PIER 1																
16	6	H	CRASHWALL	E	20		X			17 0.000							17 0	17 0	409
7	11	H1	CRASHWALL	E	20		X			17 0.000							17 0	17 0	632
4	8	H2	PIER CAP	E	20		X			9 4.000							9 4	9 4	100
35	5	N	INSERTS	E	20		X			2 9.000							2 9	2 9	100
18	10	N1	COLUMN	E	17		X			13 6.000							14 11	14 11	1155
8	11	P	PIER CAP	E	20		X			9 4.000							9 4	9 4	397
7	4	P23	PIER CAP	E	34	S	X			3 8.000							12 5	12 5	58
17	7	S	FOOTING	E	10		X				6 7.000	4 5.000					17 7	17 3	599
17	7	S1	CRASHWALL	E	10		X				8 3.000	4 5.000					20 11	20 7	715
9	5	S2	PIER CAP	E	13		X			4 0.000	3 10.000	4 0.000	310.000				16 7	16 2	152
1	5	SP	COLUMN	E	35		X			3 8.000	4.000	46 0.000					1606 0	1606 0	1675
48	8	T	FOOTING	E	20		X			11 8.000							11 8	11 8	1495
9	6	U	CRASHWALL	E	10		X				4 0.000	4 3.500					12 3	11 12	162
4	6	U1	PIER CAP	E	10		X				4 0.000	3 10.000					11 10	11 6	69
7	4	U7	PIER CAP	E	10		X				12.000	4 0.000					6 0	5 9	27
18	10	V	COLUMN	E	17		X			35 0.000							36 5	36 5	2821
22	8	W	FOOTING	E	20		X			16 11.000							16 11	16 11	994
2	w5	A	A.B. Wells	E	22		X			12.000	9.125						19 9	19 9	13
			PIER 2																
16	6	H3	CRASHWALL	E	20		X			15 5.000							15 5	15 5	370
7	11	H4	CRASHWALL	E	20		X			15 5.000							15 5	15 5	573
4	8	H5	PIER CAP	E	20		X			7 8.000							7 8	7 8	82
35	5	N	INSERTS	E	20		X			2 9.000							2 9	2 9	100
15	10	N1	COLUMN	E	17		X			13 6.000							14 11	14 11	963
8	11	P1	PIER CAP	E	20		X			7 8.000							7 8	7 8	326
7	4	P24	PIER CAP	E	34	S	X			3 2.000							10 10	10 10	51
16	7	S3	FOOTING	E	10		X				6 7.000	3 5.000					16 7	16 3	531
16	7	S4	CRASHWALL	E	10		X				8 3.000	3 5.000					19 11	19 7	640
8	5	S5	PIER CAP	E	13		X			4 0.000	3 6.000	4 0.000	3 6.000				15 11	15 6	129
1	5	SP1	COLUMN	E	35		X			3 2.000	4.000	36 0.000					1090 7	1090 7	1137
42	8	T	FOOTING	E	20		X			11 8.000							11 8	11 8	1308
9	6	U2	CRASHWALL	E	10		X				4 0.000	3 3.000					11 3	10 11	148
4	6	U3	PIER CAP	E	10		X				4 0.000	3 4.000					11 4	11 0	66
7	4	U8	PIER CAP	E	10		X				12.000	3 4.000					5 4	5 1	24
15	10	V1	COLUMN	E	17		X			23 9.000							25 2	25 2	1624
22	8	W1	FOOTING	E	20		X			15 5.000							15 5	15 5	906
2	w5	A	A.B. Wells	E	22		X			12.000	9.125						19 9	19 9	13

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 3																
18	6	H6	CRASHWALL	E	20		X			13 5.000							13 5	13 5	363
7	11	H7	CRASHWALL	E	20		X			13 5.000							13 5	13 5	499
39	5	N	INSERTS	E	20		X			2 9.000							2 9	2 9	112
18	10	N1	COLUMN	E	17		X			13 6.000							14 11	14 11	1155
6	11	P2	PIER CAP	E	20		X			5 9.000							5 9	5 9	183
7	4	P23	PIER CAP	E	34	S	X			3 8.000							12 5	12 5	58
14	7	S6	FOOTING	E	10		X				6 7.000	3 11.000					17 1	16 9	479
14	7	S7	CRASHWALL	E	10		X				9 9.000	3 11.000					23 5	23 1	661
6	5	S8	PIER CAP	E	13		X			4 1.000	4 0.000	4 1.000	4 0.000				17 1	16 8	104
1	5	SP2	COLUMN	E	35		X			3 8.000	4.000	30 0.000					1058 7	1058 7	1104
39	8	T	FOOTING	E	20		X			15 8.000							15 8	15 8	1631
10	6	U4	CRASHWALL	E	10		X				4 0.000	3 9.000					11 9	11 5	171
4	6	U5	PIER CAP	E	10		X				5 9.000	3 10.000					15 4	15 0	90
7	4	U7	PIER CAP	E	10		X				12.000	4 0.000					6 0	5 9	27
18	10	V2	COLUMN	E	17		X			19 0.000							20 5	20 5	1581
34	8	W2	FOOTING	E	20		X			13 5.000							13 5	13 5	1218
2	w5	A	A.B. Wells	E	22		X			12.000	9.125						19 9	19 9	13
			PIER 4																
20	6	H8	CRASHWALL	E	20		X			11 10.000							11 10	11 10	355
7	11	H9	CRASHWALL	E	20		X			11 10.000							11 10	11 10	440
41	5	N	INSERTS	E	20		X			2 9.000							2 9	2 9	118
15	10	N1	COLUMN	E	17		X			13 6.000							14 11	14 11	963
6	11	P3	PIER CAP	E	20		X			4 10.000							4 10	4 10	154
7	4	P24	PIER CAP	E	34	S	X			3 2.000							10 10	10 10	51
13	7	S3	FOOTING	E	10		X				6 7.000	3 5.000					16 7	16 3	432
13	7	S9	CRASHWALL	E	10		X				10 3.000	3 5.000					23 11	23 7	627
5	5	S10	PIER CAP	E	13		X			4 1.000	3 6.000	4 1.000	3 6.000				16 1	15 8	82
1	5	SP3	COLUMN	E	35		X			3 2.000	4.000	26 0.000					795 5	795 5	830
33	8	T	FOOTING	E	20		X			11 8.000							11 8	11 8	1028
11	6	U2	CRASHWALL	E	10		X				4 0.000	3 3.500					11 4	10 12	182
4	6	U6	PIER CAP	E	10		X				4 10.000	3 6.000					13 2	12 10	77
7	4	U8	PIER CAP	E	10		X				12.000	3 4.000					5 4	5 1	24
15	10	V3	COLUMN	E	17		X			14 0.000							15 5	15 5	995
26	8	W3	FOOTING	E	20		X			11 10.000							11 10	11 10	821
2	w5	A	A.B. Wells	E	22		X			12.000	9.125						19 9	19 9	13

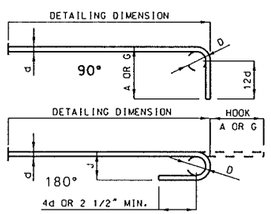
FOR INFORMATION ONLY





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				
		ALL GRADES		
BAR SIZE	D (IN.)	180° HOOKS: A OR G	180° HOOKS: J	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. ALSBURY
081-5231
STATE OF ILLINOIS
EXPIRES 11-30-16

DATE	12/1/2015
DATE PREPARED	
ROUTE	I-64
STATE	IL
DISTRICT	STL
SHEET NO.	50
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)

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.