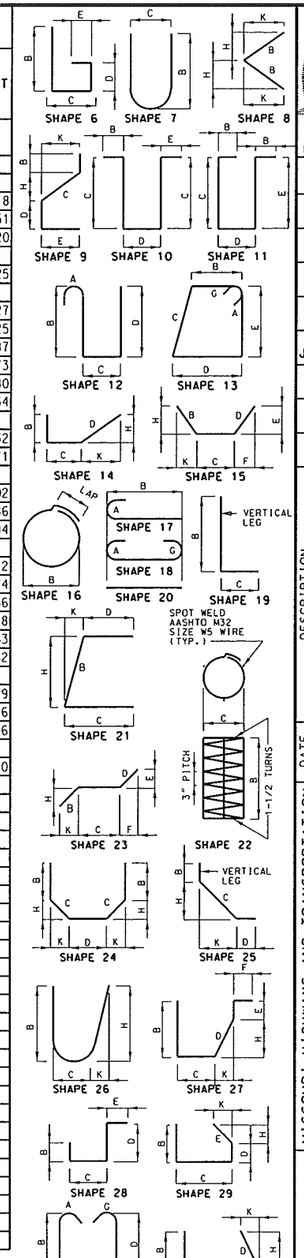
BILL OF REINFORCING STEEL

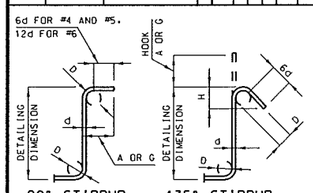
NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
			PIER BC1																
24	6	H22	PIER CAP	E	20		X			37 9.000							37 9	37 9	1361
24	11	H27	CRASHWALL	E	20		X			41 4.000							41 4	41 4	5270
16	5	H28	CRASHWALL	E	20		X			37 2.000							37 2	37 2	620
140	5	N2	CRASHWALL	E	20		X			4 0.000							4 0	4 0	584
32	5	P25	PIER CAP	E	20		X			3 6.000							3 6	3 6	147
24	5	P26	PIER CAP	E	20		X			3 10.000							3 10	3 10	121
8	5	P27	PIER CAP	E	20		X			7 2.000							7 2	7 2	75
18	6	P28	PIER CAP	E	20		X			4 9.000							4 9	4 9	114
12	9	P29	PIER CAP	E	17		X			28 0.000							29 5	29 5	1266
12	9	P30	PIER CAP	E	17		X			57 6.000							58 11	58 11	2535
12	9	P31	PIER CAP	E	20		X			57 6.000							57 6	57 6	2474
12	9	P32	PIER CAP	E	20		X			28 0.000							28 0	28 0	1205
80	5	P33	COLUMN	E	34		X			3 8.000							12 5	12 3	1022
24	5	P35	PIER CAP	E	20		X			2 9.000							2 9	2 9	69
78	6	S20	PIER CAP	E	13	S	X			7 2.000	4 8.000	7 2.000	4 8.000				25 0	24 6	2870
72	6	S23	CRASHWALL	E	10	S	X				4 9.000	4 0.000					13 6	13 2	1424
5	5	SP10	COLUMN	E	35		X			3 8.000	4.000	24 2.625					871 6	859 1	4480
35	6	U23	PIER CAP	E	10	S	X				4 8.000	5 10.000					16 6	16 2	850
20	4	U24	PIER CAP	E	10	S	X				1 6.000	5 10.000					8 10	8 8	116
74	5	U25	PIER CAP	E	10	S	X				5 7.000	2 9.000					13 11	13 9	1061
16	6	U26	PIER CAP	E	10	S	X				4 0.000	5 10.000					13 10	13 6	324
12	5	U30	CRASHWALL	E	10	S	X				4 0.000	4 0.000					12 0	11 10	148
36	5	U33	PIER CAP	E	10	S	X				5 7.000	18.000					12 8	12 6	469
40	4	U34	PIER CAP	E	10	S	X				3 6.000	3 5.000					10 5	10 3	274
30	4	U35	PIER CAP	E	10	S	X				3 10.000	3 5.000					11 1	10 11	219
10	4	U36	PIER CAP	E	10	S	X				7 2.000	3 5.000					17 9	17 7	117
60	4	U37	PIER CAP	E	10	S	X				2 9.000	18.000					7 0	6 10	274
90	10	V10	COLUMN	E	17		X			31 5.125							32 10	32 10	12715
64	w5	A2	A.B.Wells	E	22		X			15.000	9.125						23 0	23 0	250

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 D1																
12	6	H21	PIER CAP	E	20		X			39 10.000							39 10	39 10	718
14	11	H25	CRASHWALL	E	20		X			38 4.000							38 4	38 4	2851
8	5	H26	CRASHWALL	E	20		X			38 4.000							38 4	38 4	320
78	5	N2	CRASHWALL	E	20		X			4 0.000							4 0	4 0	325
12	9	P19	PIER CAP	E	18		X			39 10.000							42 4	42 4	1727
12	9	P20	PIER CAP	E	20		X			39 10.000							39 10	39 10	1625
9	6	P21	PIER CAP	E	20		X			6 5.000							6 5	6 5	87
9	6	P22	PIER CAP	E	20		X			5 5.000							5 5	5 5	73
36	5	P33	COLUMN	E	34		X			3 8.000							12 5	12 3	480
12	5	P36	PIER CAP	E	20		X			2 9.000							2 9	2 9	34
40	6	S19	PIER CAP	E	13	S	X			7 2.000	3 6.000	7 2.000	3 6.000				22 8	22 2	1332
39	6	S22	CRASHWALL	E	10	S	X				4 9.000	4 0.000					13 6	13 2	771
1	5	SP8	COLUMN	E	35		X			3 8.000	4.000	24 4.625					877 3	864 10	902
1	5	SP9	COLUMN	E	35		X			3 8.000	4.000	23 11.375					862 2	849 11	886
1	5	SP11	COLUMN	E	35		X			3 8.000	4.000	24 2.000					869 8	857 4	894
21	6	U20	PIER CAP	E	10	S	X				3 7.000	7 2.000					14 4	14 0	442
26	4	U21	PIER CAP	E	10	S	X				1 6.000	7 2.000					10 2	10 0	174
16	6	U22	PIER CAP	E	10	S	X				4 0.000	7 2.000					15 2	14 10	356
12	5	U29	CRASHWALL	E	10	S	X				4 0.000	4 0.000					12 0	11 10	148
18	5	U38	PIER CAP	E	10	S	X				6 4.000	18.000					14 2	14 0	263
18	4	U39	PIER CAP	E	10		X				2 9.000	18.000					7 0	6 10	82
18	10	V8	COLUMN	E	17		X			30 7.125							32 0	32 0	2479
18	10	V9	COLUMN	E	17		X			30 1.875							31 7	31 7	2446
18	10	V11	COLUMN	E	17		X			30 4.500							31 10	31 10	2446
12	w5	A2	A.B.Wells	E	22		X			15.000	9.125						23 0	23 0	70

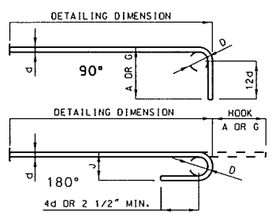
FOR INFORMATION ONLY





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. ALSSURY
081-0081
STATE OF ILLINOIS
EXPIRES 11-30-16

DATE	12/1/2015
DATE PREPARED	
ROUTE	I-64
STATE	IL
DISTRICT	STL
SHEET NO.	52
COUNTY	ST. CLAIR
JOB NO.	J6I2377C/J6I2377D
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

REV.

Detailed Nov 2015
Checked Nov 2015

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