

Estimated Quantities			
Item	Substr.	Superstr.	Total
Class 1 Excavation	cu. yard	195	195
Removal of Bridges (A4642)	lump sum		1
Bridge Approach Slab (Major)	sq. yard		174
(78 in.) Chain-Link Railroad Fence (Structures)	linear foot		314
Drilled Shafts (5 ft. 6 in. Dia.)	linear foot	1322.9	1322.9
Drilled Shafts (6 ft. 6 in. Dia.)	linear foot	523.2	523.2
Rock Sockets (5 ft. 0 in. Dia.)	linear foot	251.0	251.0
Rock Sockets (6 ft. 0 in. Dia.)	linear foot	110.5	110.5
Video Camera Inspection	each	14	14
Foundation Inspection Holes	linear foot	509.5	509.5
Sonic Logging Testing	each	14	14
Galvanized Cast-In-Place Concrete Piles (16 in.)	linear foot	384	384
Galvanized Cast-In-Place Concrete Piles (24 in.)	linear foot	400	400
Dynamic Pile Testing	each	9	9
Pile Point Reinforcement	each	6	6
Pile Point Reinforcement for 24 in. CIP Piles	each	8	8
Class B Concrete (Substructure)	cu. yard	679.5	679.5
Class B-1 Concrete (Substructure)	cu. yard	314.3	314.3
Class B-2 Concrete (Superstructure Solid Slab)	cu. yard		72.0
Type D Barrier	linear foot		2100
Slab on Concrete NU-Girder	sq. yard		4351
NU 43, Prestressed Concrete NU-Girder	linear foot		1088
NU 53, Prestressed Concrete NU-Girder	linear foot		2201
NU 78, Prestressed Concrete NU-Girder	linear foot		1550
Reinforcing Steel (Bridges)	pound	519,730	519,730
Reinforcing Steel (Epoxy Coated)	pound	93,570	93,570
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1	1
Steel Intermediate Diaphragm for P/S Concrete Girders	each		61
Drainage System (On Structure)	lump sum		1
Galvanized Permanent Sheet Pile Wall	sq. foot	210	210
Vertical Drain at End Bents	each	2	2
Laminated Neoprene Bearing Pad	each		20
Laminated Neoprene Bearing Pad (Tapered)	each		35
Laminated Neoprene Bearing Pad Assembly	each		25
Strip Seal Expansion Joint System	linear foot		135

Estimated Quantities for Slab on Concrete NU-Girder	
Item	Total
Class B-2 Concrete	cu. yard 1488
Reinforcing Steel (Epoxy Coated)	pound 435,030

The tables of Estimated Quantities for Slab on Concrete NU-Girder represents the quantities used by the State in preparing the cost estimate for concrete slabs in Units 1-3. The area of the concrete slab will be measured to the nearest square yard longitudinally from end of slab to end of slab and transversely from out to out of bridge slab (or with the horizontal dimensions as shown on the plan of slab). Payment for stay-in-place corrugated steel forms, conventional forms, all concrete and epoxy coated reinforcing steel will be considered completely covered by the contract unit price for the slab. Variations may be encountered in the estimated quantities but the variations cannot be used for an adjustment in the contract unit price.

Method of forming the slab shall be as shown on the plans and in accordance with Sec 703. All hardware for forming the slab to be left in place as a permanent part of the structure shall be coated in accordance with ASTM A123 or ASTM B633 with a thickness class SC 4 and a finish type I, II or III.

Slab shall be cast-in-place with corrugated steel forms. Precast panels will not be permitted.

Revised Unit 4 Slab Reinforcement

126,400

STAY-IN-PLACE CORRUGATED STEEL FORMS:

Corrugated steel forms, supports, closure elements and accessories shall be in accordance with grade requirement and coating designation G165 of ASTM A653. Complete shop drawings of the permanent steel deck forms shall be required in accordance with Sec 1080.

Corrugations of stay-in-place forms shall be filled with an expanded polystyrene material. The polystyrene material shall be placed in the forms with an adhesive in accordance with the manufacturer's recommendations.

Form sheets shall not rest directly on the top of the girder flanges. Sheets shall be securely fastened to form supports with a minimum bearing length of one inch on each end. Form supports shall be placed in direct contact with the flange. Welding on or drilling holes in the girder flanges will not be permitted. All steel fabrication and construction shall be in accordance with Sec 1080 and 712. Certified field welders will not be required for welding of the form supports.

The design of stay-in-place corrugated steel forms is per manufacturer which shall be in accordance with Sec 703 for false work and forms. Maximum actual weight of corrugated steel forms allowed shall be 4 psf assumed for girder loading.

All concrete above the construction joint in End Bent No. 1 is included in the Estimated Quantities for Slab on Concrete NU-Girder.

All reinforcement in End Bent No. 1 and all reinforcement in cast-in-place pile at End Bent No. 1 is included in the Estimated Quantities for Slab on Concrete NU-Girder.

All reinforcement in End Bent No. 10 and all reinforcement in cast-in-place pile at End Bent No. 10 is included in Reinforcing Steel (Epoxy Coated).

All concrete above the construction joint in End Bent No. 10 is included in Class B-2 Concrete (Superstructure Solid Slab).

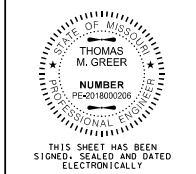
All reinforcement in the intermediate bent concrete diaphragms except reinforcement embedded in the beam cap is included in the Estimated Quantities for Slab on Concrete NU-Girder.

All concrete above the intermediate beam cap is included in the Estimated Quantities for Slab on Concrete NU-Girder.

All concrete for Unit 4 solid slab is included in Class B-2 Concrete (Superstructure Solid Slab).

All reinforcing steel for Unit 4 solid slab is included in Reinforcing Steel (Epoxy Coated).

Removal of Bridges (A4642) shall include removal of the gravity block wall Bridge No. A8081 located on the west side of the south approach roadway. Payment for Removal of Bridges (A8081) will be considered completely covered by the contract unit price for Removal of Bridges (A4642).



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE

DATE PREPARED

3/17/2026

ROUTE STATE

169 MO

DISTRICT SHEET NO.

BR 6

COUNTY

CLAY

JOB NO.

JKU0099

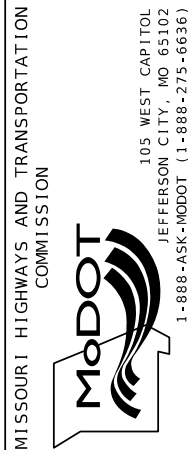
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

A9606

DATE	DESCRIPTION
03-11-26	Addendum 2
03-18-26	Addendum 3



Burns & McDonnell Engineering Co., Inc.
 9400 Ward Parkway
 Kansas City, Missouri 64114
 816-333-9400
 Certificate of Authority
 No. : 000165
 BMcD Project No. 154749



Revised 03-18-2026

Revised 03-11-2026

SUMMARY OF ESTIMATED QUANTITIES

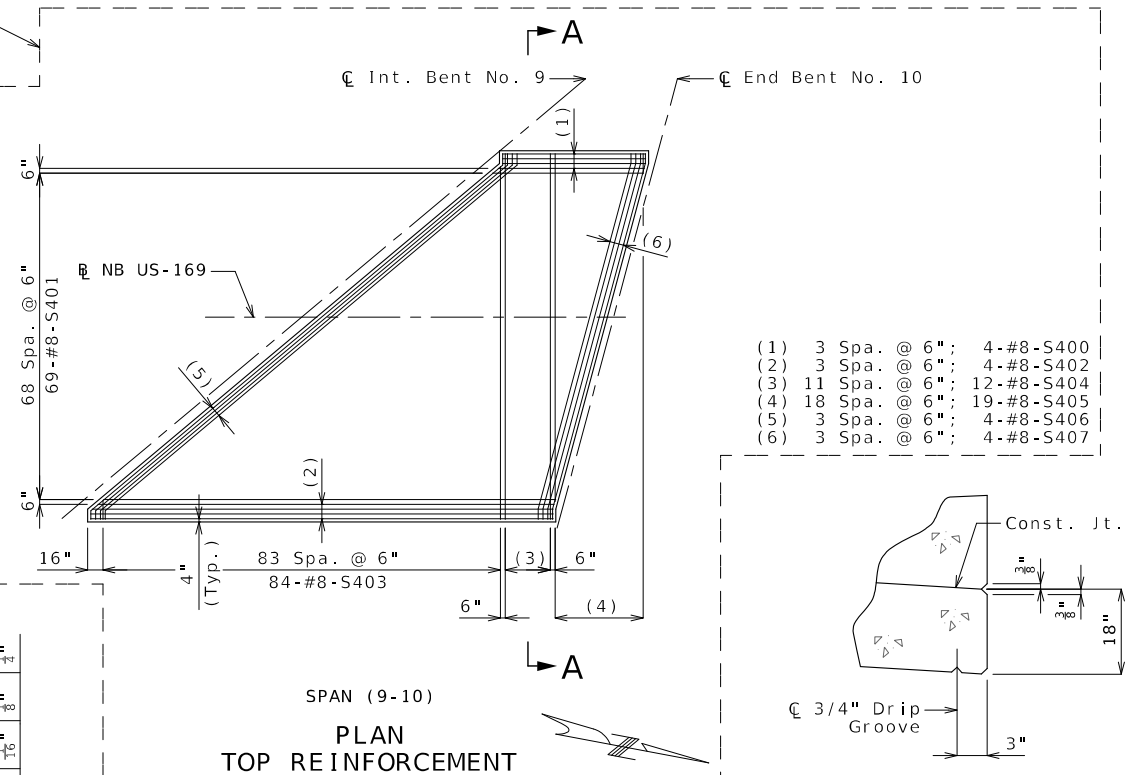
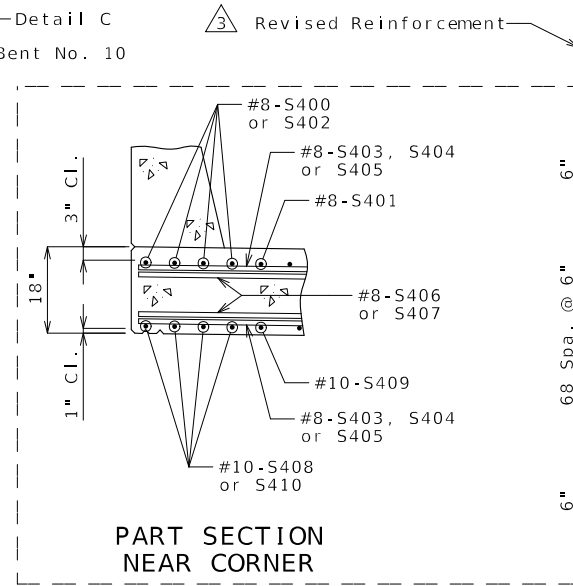
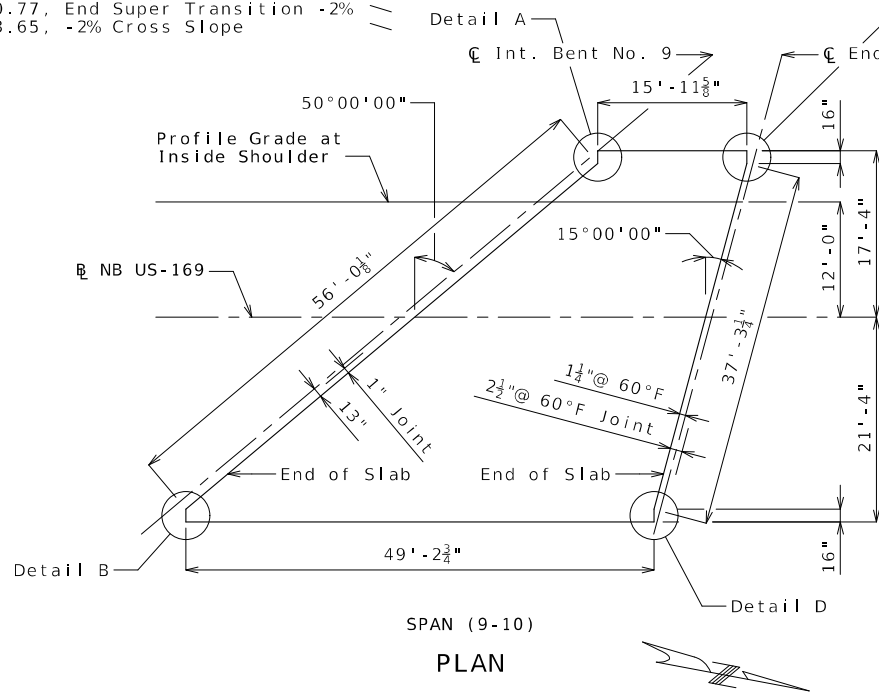
Detailed: Oct. 2025
 Checked: Oct. 2025

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

Sheet No. 6 of 132

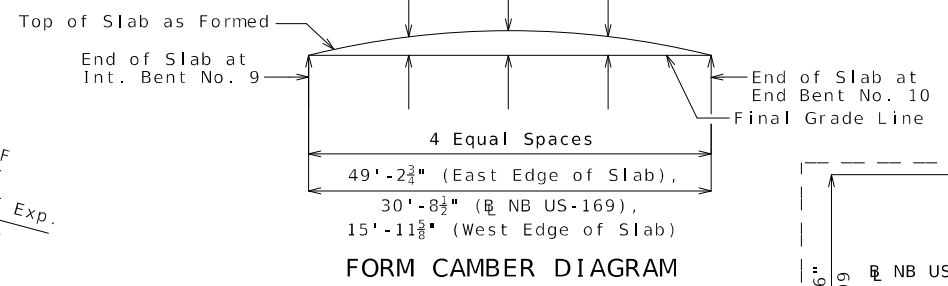
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

SUPERELEVATION DATA
 Sta. 181+86.77, Full Super -6%
 Sta. 183+30.77, End Super Transition -2%
 Sta. 185+33.65, -2% Cross Slope

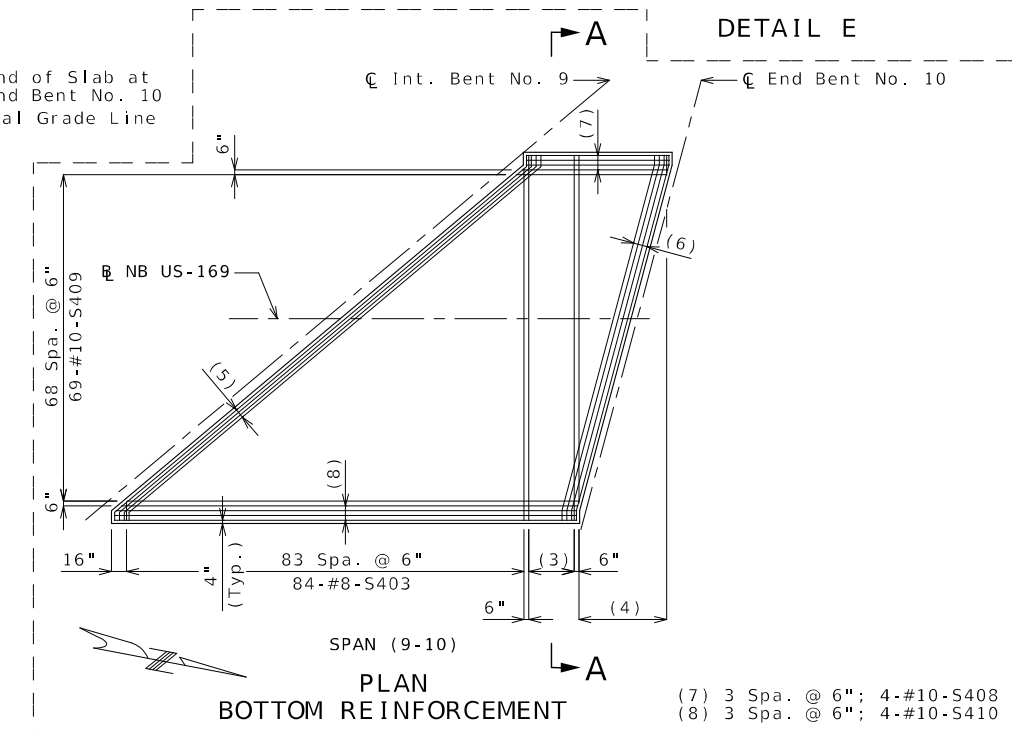
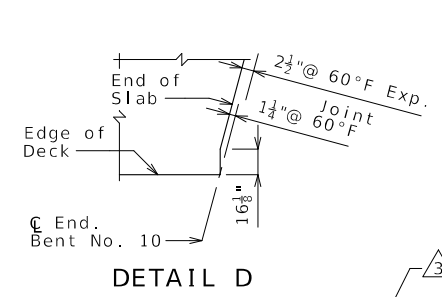
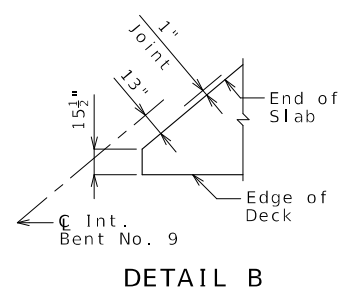
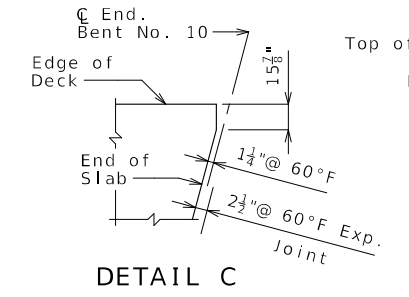
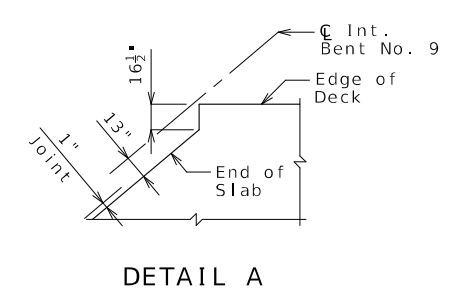


- (1) 3 Spa. @ 6"; 4-#8-S400
- (2) 3 Spa. @ 6"; 4-#8-S402
- (3) 11 Spa. @ 6"; 12-#8-S404
- (4) 18 Spa. @ 6"; 19-#8-S405
- (5) 3 Spa. @ 6"; 4-#8-S406
- (6) 3 Spa. @ 6"; 4-#8-S407

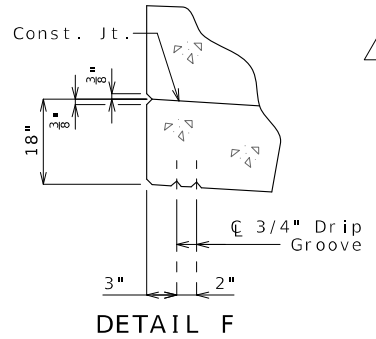
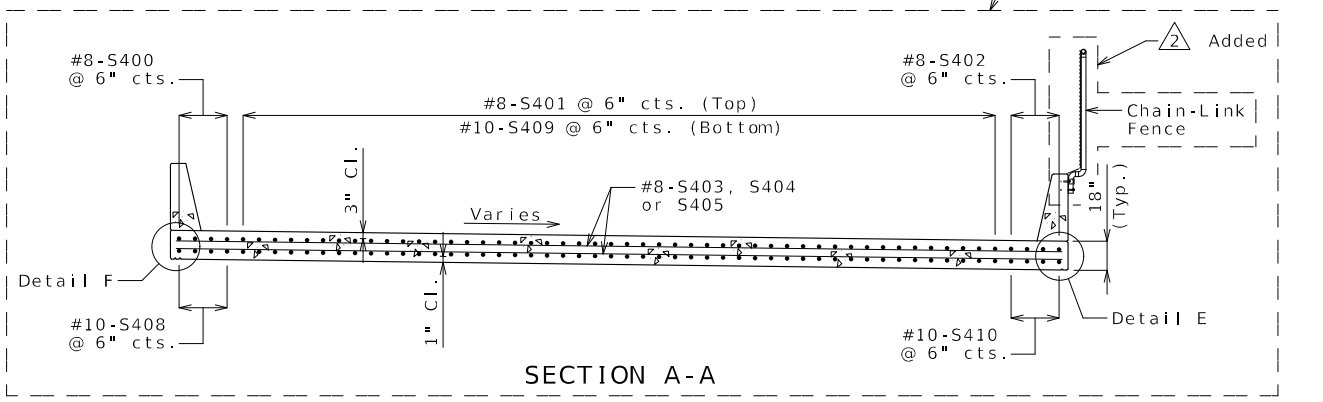
East Edge of Slab	1"	2"	1"
NB US-169	1"	1"	1"
West Edge of Slab	1"	1"	1"



This diagram illustrates the form camber required to compensate for the anticipated ultimate dead load deflection. The dimensions shown do not account for form deflection or falsework settlement.



- (7) 3 Spa. @ 6"; 4-#10-S408
- (8) 3 Spa. @ 6"; 4-#10-S410



Note:
 All dimensions are horizontal.
 For Blockout Details for Strip Seal Expansion Joint System at End Bent No. 10, see Sheet No. 78.
 Work this sheet with Sheet No. 92.

Falsework shall be in accordance with Sec 703. The Contractor shall submit detailed plans for falsework, including the supporting design computations. The Engineer's acceptance of the plans will not relieve the Contractor of the responsibility for obtaining satisfactory results.

SLAB PLAN - UNIT 4 REINFORCEMENT

Detailed: Oct. 2025
 Checked: Oct. 2025

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

Sheet No. 88 of 132

Revised 03-18-2026
 Revised 03-11-2026

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE	
DATE PREPARED 3/17/2026	
ROUTE 169	STATE MO
DISTRICT BR	SHEET NO. 88
COUNTY CLAY	
JOB NO. JKU0099	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A9606	
DESCRIPTION	DATE
Addendum 2	03-11-26
Addendum 3	03-18-26

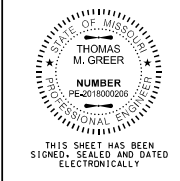
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
 JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275-6636)

BURNS & MCDONNELL

9400 Ward Parkway
 Kansas City, Missouri 64114
 816-333-9400
 Certificate of Authority
 No. : 000165
 BmC Project No. 154749

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



DATE

DATE PREPARED
3/16/2026

ROUTE
169

STATE
MO

DISTRICT
BR

SHEET NO.
107

COUNTY
CLAY

JOB NO.
JKU0099

CONTRACT ID.

PROJECT NO.

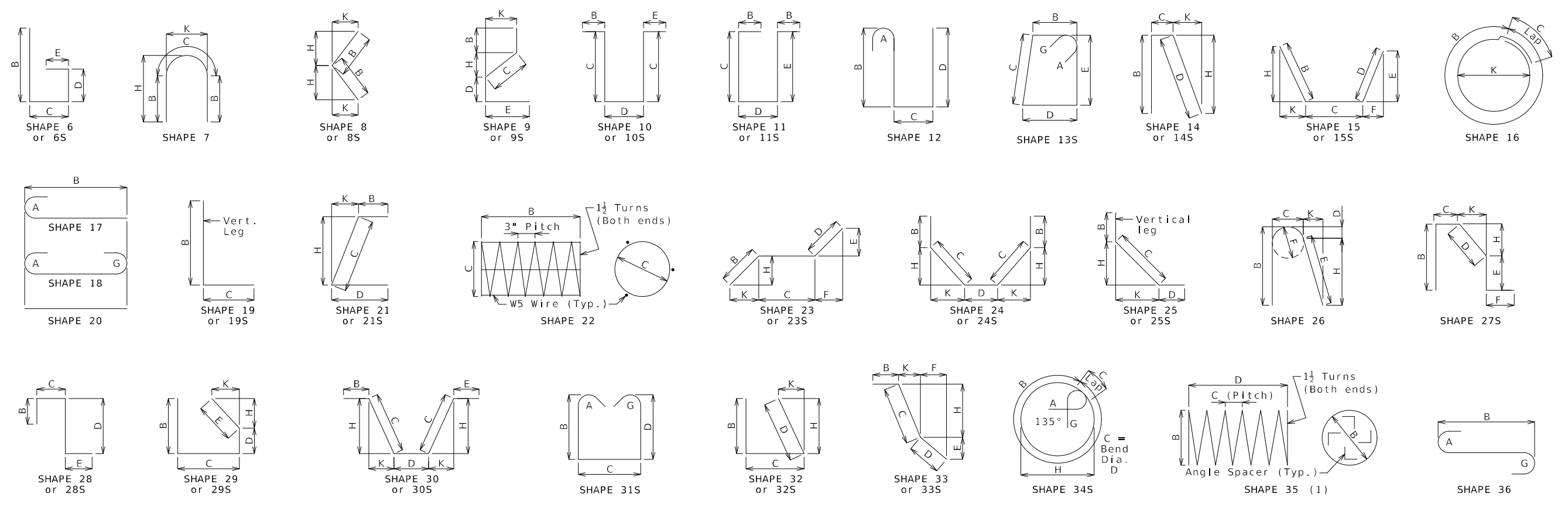
BRIDGE NO.
A9606

DATE	DESCRIPTION
03-18-26	Addendum 3

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION



Burns & McDonnell Engineering Co., Inc.
9400 Ward Parkway
Kansas City, Missouri 64114
816-333-9400
Certificate of Authority
No. : 000165
BMCd Project No. 154749

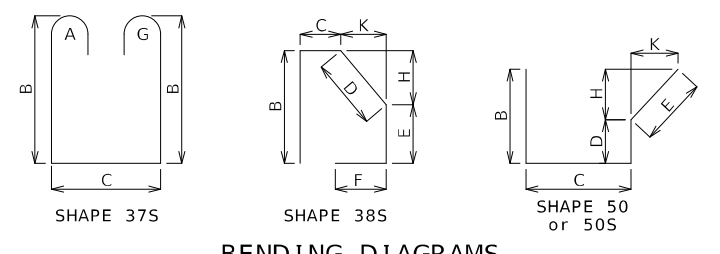


Finished Bend Diameters D and Hook Dimensions

Standard Pin Bend Shapes					
Size	Case	D	A or G		
			90°	180°	180°
#4	1	3"	8"	6"	4"
#5	1	3 3/4"	10"	7"	5"
#6	1	4 1/2"	12"	8 1/2"	6"
#7	2	5 1/4"	14"	9 3/4"	7"
	3	7"	15"	11 1/2"	8 3/4"
#8	2	6"	16"	11"	8"
	3	8"	17"	13 1/4"	10"
#9	1	9 1/2"	19 1/2"	15 1/2"	11 3/4"
#10	1	10 3/4"	22"	17 1/2"	13 1/4"
#11	1	12"	24 1/2"	19 1/2"	14 7/8"
#14	1	18 1/4"	31 1/4"	27 1/2"	21 5/8"
#18	1	24"	41 1/2"	36 1/4"	28 1/2"

Stirrup Pin Bend Shapes (S)							
Size	Case	D	A or G			H	J
			90°	135°	180°		
#4	2	2"	4 1/2"	4 1/2"	5"	2 5/8"	3"
	3	3"	5"	5 1/4"	6"	3"	4"
#5	2	2 1/2"	5 3/4"	5 3/4"	5 3/4"	3 3/8"	3 3/8"
	3	3 3/4"	6 1/4"	6 1/4"	7"	3 3/8"	5"
#6	1	4 1/2"	12"	7 3/4"	8 1/4"	4 3/8"	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.



BENDING DIAGRAMS

All dimensions are out to out. (1) Shall be a deformed or plain spiral bar or wire.

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.

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 Totals (Pounds)

Size	Substructure		Superstructure			Entire Bridge		
	Plain	Epoxy	Slab		Slip Form	Plain	Epoxy	
			Plain	Epoxy				
W5	0	275	0	0	0	0	275	
4	0	126	0	7,725	0	0	7,851	
5	4,716	2,541	0	132,287	51,428	1,603	4,716	187,859
6	97,895	31,412	0	135,657	0	0	97,895	167,069
7	26,030	2,501	0	15,376	0	0	26,030	17,877
8	8,588	235	0	143,986	0	0	8,588	144,221
9	6,235	7,258	0	0	0	0	6,235	7,258
10	7,346	6,726	0	0	0	0	7,346	6,726
11	368,918	42,492	0	0	0	0	368,918	42,492
14	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0
By Type	519,728	93,566	0	435,031	51,428	1,603	519,728	581,628

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

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

Detailed: Oct. 2025
Checked: Oct. 2025

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

Sheet No. 107 of 132

No. Req.	Size/ Mark	Location	Codes		Dimensions								Nom. Length ft in.	Actual Length ft in.	Weight lb				
			C	SH	V	B	C	D	E	F	H	K							
						ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.							
3 Revised Reinforcement Bill of Reinforcing Steel																			
UNIT 4 SLAB																			
4	8 S400	Slab	E	20		15	7.500							15	8	15	8	167	
69	8 S401	Slab	E	20	1	16	5.000							16	5	16	5		
		Inc. = 5.544"				47	10.00							47	10	47	10	5,918	
4	8 S402	Slab	E	20		48	4.000							48	4	48	4	516	
168	8 S403	Slab	E	20	2	2	0.500							2	1	2	1		
		Inc. = 5.03"				36	10.00							36	10	36	10	8,728	
24	8 S404	Slab	E	20		38	4.000							38	4	38	4	2,456	
38	8 S405	Slab	E	20	2	2	6.500							2	7	2	7		
		Inc. = 22.389"				36	1.500							36	2	36	2	1,966	
8	8 S406	Slab	E	23		12	0.000	56	0.000	12	0.000	9	2.500	7	7.500	9	2.500	7	7.500
8	8 S407	Slab	E	23		13	5.000	37	3.000	13	5.000	3	5.000	13	0.000	3	5.000	13	0.000
4	10 S408	Slab	E	20		15	7.500							15	8	15	8	270	
69	10 S409	Slab	E	20	1	16	5.000							16	5	16	5		
		Inc. = 5.544"				47	10.00							47	10	47	10	9,538	
4	10 S410	Slab	E	20		48	4.000							48	4	48	4	832	
BARRIER																			
5	5 K1	Barrier	E	27S		5	2.000	9	2.500	5	3.750	4	8.750			5	2.500	1	0.000
48	5 K2	Barrier	E	27S		3	8.000	9	2.500	14	5.000	2	5.750			14	2.500	2	7.500
22	5 K3	Barrier	E	27S		2	1.500	9	2.500	17	2.500	8	5.000	12	0.000	17	0.000	3	2.500
5	5 K4	Barrier	E	19S	1	3	10.25	10	0.000							4	8	4	7
		Inc. = 0.500"				4	0.250	10	0.000							4	10	4	9
5	5 K5	Barrier	E	38S	1					18	5.000	2	3.500	8	2.500	18	0.000	4	0.000
		Inc. = 0.500"								20	5.000	2	3.500	8	2.500	20	0.000	4	5.000
3	5 K6	Barrier	E	19S		4	0.750	10	0.000							4	11	4	9
3	5 K7	Barrier	E	38S						2	6.375	18	2.500	10	0.000	2	5.750	6	2.500
9	5 K8	Barrier	E	19S	1	4	2.500	10	0.000							5	1	4	11
		Inc. = 0.750"				4	8.500	10	0.000							5	7	5	5
9	5 K9	Barrier	E	38S	1					2	8.250	18	2.500	10	0.000	2	7.500	6	7.500
		Inc. = 0.750"				3	2.250	18	2.500	10	0.000	3	1.500	7	7.500	5	7	5	5
70	5 K10	Barrier	E	19S		3	3.000	10	0.000							4	1	4	0
70	5 K11	Barrier	E	21S		3	3.000	10	0.000							4	1	4	1
18	5 K12	Barrier	E	20		22	6.000									22	6	22	6
18	5 K13	Barrier	E	20		22	9.000									22	9	22	9
16	5 K14	Barrier	E	20		10	9.000									10	9	10	9
6	5 K15	Barrier	E	20	2	10	0.000									10	0	10	0
		Inc. = 3'-0"				4	0.000									4	0	4	0
4	5 K16	Barrier	E	19S		4	9.000	10	0.000							5	7	5	6
4	5 K17	Barrier	E	38S						3	3.000	18	2.500	10	0.000	3	2.250	7	7.500
18	5 K18	Barrier	E	20		20	7.000									20	7	20	7
16	5 K19	Barrier	E	27S		5	2.000	9	2.500	14	5.000	3	11.75			14	2.500	2	7.500
2065	5 R1	Barrier	E	26		3	3.000	5	5.000	2	2.250	3	1.375	5	5.000	3	0.750	6	7.500
2065	5 R2	Barrier	E	19S		20	5.000	9	5.000							2	6	2	5
2065	5 R3	Barrier	E	27S				9.500	15	2.500	5	0.000	12	0.000	15	0.000	3	0.000	
240	5 R4	Barrier	E	20		11	8.000									11	8	11	8
20	5 R5	Barrier	E	20		55	9.000									55	9	55	9
20	5 R6	Barrier	E	20		51	1.000									51	1	51	1
20	5 R7	Barrier	E	20		44	2.000									44	2	44	2
20	5 R8	Barrier	E	20		50	8.000									50	8	50	8
20	5 R9	Barrier	E	20		57	11.000									57	11	57	11
20	5 R10	Barrier	E	20		52	2.000									52	2	52	2
20	5 R11	Barrier	E	20		44	2.000									44	2	44	2
20	5 R12	Barrier	E	20		49	6.000									49	6	49	6
20	5 R13	Barrier	E	20		53	2.000									53	2	53	2
20	5 R14	Barrier	E	20		48	6.000									48	6	48	6
20	5 R15	Barrier	E	20		40	7.000									40	7	40	7
20	5 R16	Barrier	E	20		32	7.000									32	7	32	7
30	5 R17	Barrier	E	20		45	8.000									45	8	45	8

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.

For bending diagrams and steel reinforcing totals, see Sheet No. 107. All bars shall be Grade 60.

Detailed: Oct. 2025
Checked: Oct. 2025

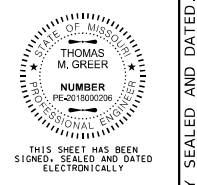
Note: This drawing is not to scale. Follow dimensions.

No. Req.	Size/ Mark	Location	Codes		Dimensions								Nom. Length ft in.	Actual Length ft in.	Weight lb				
			C	SH	V	B	C	D	E	F	H	K							
						ft in.	ft in.	ft in.	ft in.	ft in.	ft in.	ft in.							
Bill of Reinforcing Steel																			
BARRIER CONT.																			
30	5 R18	Barrier	E	20		46	7.000									46	7	46	7
10	5 R19	Barrier	E	20		15	8.000									15	8	15	8
30	5 R20	Barrier	E	20		43	5.000									43	5	43	5
30	5 R21	Barrier	E	20		48	10.000									48	10	48	10
10	5 R22	Barrier	E	20		48	10.000									48	10	48	10
SLIP FORM																			
116	5 C1	Slip Form	E	20		12	0.000									12	0	12	0
12	5 C2	Slip Form	E	20		8	0.000									8	0	8	0
2	5 C3	Slip Form	E	20		16	0.000									16	0	16	0
2	5 C4	Slip Form	E	20		8	9.000									8	9	8	9

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.

Sheet No. 113 of 132

3 Revised 03-18-2026
BILL OF REINFORCING STEEL



DATE

DATE PREPARED
3/17/2026

ROUTE 169 STATE MO

DISTRICT BR SHEET NO. 113

COUNTY CLAY

JOB NO. JKU0099

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A9606

DATE	DESCRIPTION
03-18-26	Addendum 3

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Burns & McDonnell Engineering Co., Inc.

9400 Ward Parkway
Kansas City, Missouri 64114
816-333-9400

Certificate of Authority
No. : 000165
BMcD Project No. 154749

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.