Foundation Data

Type	Design Data		Bent Number 1	2	3	4
Load Bearing Pile	Pile Type and Size		CECIP 16"	CECIP 16"	CECIP 16"	CECIP 16"
	Number	ea	4	5	5	4
	Approximate Length Per Each	ft	39	42	42	25
	Pile Point Reinforcement	ea	ALL	ALL	ALL	ALL
	Min. Galvanized Penetration (Elev.)	ft	Full Length	Full Length	Full Length	Full Length
	Est. Max. Scour Depth 100 (Elev.)	ft	-	802.9	803.8	-
	Minimum Tip Penetration (Elev.)	ft	803.46	783.56	783.73	802.86
	Criteria for Min. Tip Penetration		Lat Stability	Scour	Scour	Lat Stability
	Pile Driving Verification Method		WEAP	WEAP	WEAP	WEAP
	Resistance Factor		0.5	0.5	0.5	0.5
	Minimum Nominal Axial Compressive Resistance	kip	295	319	319	294

CECIP= Closed Ended Cast-In-Place concrete pile

WEAP= Wave Equation Analysis of Piles

Load Bearing Pile:
Minimum Nominal Axial Compressive Resistance = Maximum Factored Loads/Resistance Factor

Pile point reinforcement need not be galvanized. Shop drawings will not be required for pile point reinforcement.

All piles shall be galavanized down to the minimum galavanized penetration (elevation).

The contractor shall make every effort to achieve the minimum galvanized penetration (elevation) shown on the plans for all piles. Deviations in penetration less that 5 feet of the minimum will be considered acceptable provided the contractor makes the necessary corrections to ensure the minimum penetration is achieved on subsequent piles.

Prebore for piles at Bents No. 2 and 3 to elevations 802.9 and 803.8, respectively.

Estimated Maximum Scour Depth (Elevation) shown is for verifying Minimum Nominal Axial Compressive Resistance using dynamic testing only where pile resistance contribution above this elevation shall not be considered.

Hydrologic Data

Drainage Area = 11 mi^2
Design Flood Frequency = 15.5 years
Design Flood Discharge = 2800 cfs
Design Flood (D.F.) Elevation = 822.5
Base Flood (100-year)
Base Flood Elevation = 826.1
Base Flood Discharge = 4600 cfs
Estimated Backwater = 0.6 ft
Average Velocity thru Opening = 5.4 ft/s
Freeboard (50-year)
Freeboard = 1.1 ft
Roadway Overtopping
Overtopping Flood Discharge = 2900 cfs
Overtopping Flood Frequency = 17.5 years
Overtopping Flood Elevation = 823.7

Estimated Quantities

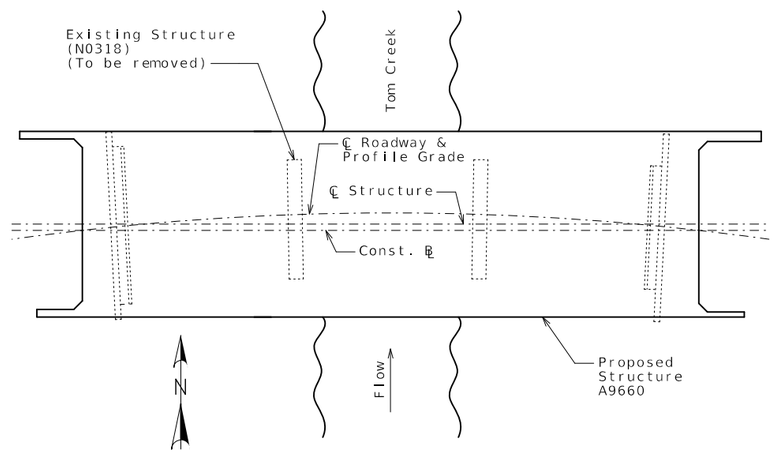
Item		Substr.	Superstr.	Total
Class 1 Excavation	cu. yard	90		90
Removal of Bridges	lump sum			1
Bridge Approach Slab (Minor)	sq. yard		136	136
Galvanized Cast-In-Place Concrete Piles (16 in.)	linear foot	676		676
Pile Wave Analysis	each	4		4
Pre-Bore for Piling	linear foot	135		135
Pile Point Reinforcement	each	18		18
Class B Concrete (Substructure)	cu. yard	55.1		55.1
Slab on Concrete I-Girder	sq. yard		390	390
Type D Barrier	linear foot		255	255
Type 2 (32 in.), P/S Concrete I-Girder	linear foot		419	419
Reinforcing Steel (Bridges)	pound	4190		4190
Slab Drain	each		8	8
Vertical Drain at End Bents	each			2
Plain Neoprene Bearing Pad	each		8	8
Laminated Neoprene Bearing Pad	each		16	16
1 4850				

All concrete above the construction joint in the end bents is included in the Estimated Quantities for Slab on Concrete I-Girder.

All reinforcement in the end bents and all reinforcement in cast-in-place pile at end bents is included in the Estimated Quantities for Slab on Concrete I- Girder.

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 I-Girder.

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



LOCATION SKETCH

Estimated Quantities for Slab on Concrete I-Girder

Item		1 29,100	Total
Class B-2 Concrete	cu. yard		112.4
Reinforcing Steel (Epoxy Coated)	pound		28,600

The table of Estimated Quantities for Slab on Concrete I-Girder represents the quantities used by the State in preparing the cost estimate for concrete slabs. 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 prestressed panels, 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.

Class B-2 Concrete quantity is based on minimum top flange thickness and minimum joint material thickness.

The prestressed panel quantities are not included in the table of Estimated Quantities for Slab on Concrete I-Girder.

General Notes:

Design Specifications:

2023 AASHTO Guide Specifications for LRFD Seismic Bridge Design (3rd Ed.)
Seismic Design Category = A (Nonseismic)
Design earthquake response spectral acceleration coefficient at 1.0 second period, SD1 < 0.15
Acceleration Coefficient (effective peak ground acceleration coefficient), As = 0.048g

Design Loading:

Vehicular = HL-93
Future Wearing Surface = 35 lb/sf
Earth = 120 lb/cf
Eqivalent Fluid Pressure = 45 lb/cf (Min.)
Superstructure: Simply-Supported, Non-Composite for dead load.
Continuous Composite for live load.

Design Unit Stresses:

Class B Concrete (Substructure)	f'c = 3,000 psi
Class B-1 Concrete (Barrier)	f'c = 4,000 psi
Class B-2 Concrete (Superstructure, except Prestressed Girders and Barrier)	f'c = 4,000 psi
Reinforcing Steel (ASTM A615 Grade 60)	fy = 60,000 psi
Welded or Seamless steel shell (pipe) for CIP pile (ASTM A252 Modified Grade 3)	fy = 50,000 psi

For precast prestressed panel stresses, see Sheet No. 16.

For prestressed girder stresses, see Sheets No. 13 & 14.

Neoprene Pads:

Neoprene bearing pads shall be 60 durometer and shall be in accordance with Sec 716.

Joint Filler

All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Reinforcing Steel:

Minimum clearance to reinforcing steel shall be 1 1/2", unless otherwise shown.

Minimum clearance between galvanized piles and uncoated (plain) reinforcing steel including bar supports shall be 1 1/2". Nylon, PVC, or polyethylene spacers shall be used to maintain clearance. Nylon cable ties shall be used to bind the spacers to the reinforcement.

Traffic Handling:

Structure to be closed during construction. Traffic to be maintained on other routes. See roadway plans for traffic control.

Miscellaneous:

MoDOT Construction personnel will indicate the type of joint filler option used under the precast panels for this structure:
☐ Constant Joint Filler
☐ Variable Joint Filler

1 Revised 1/27/26

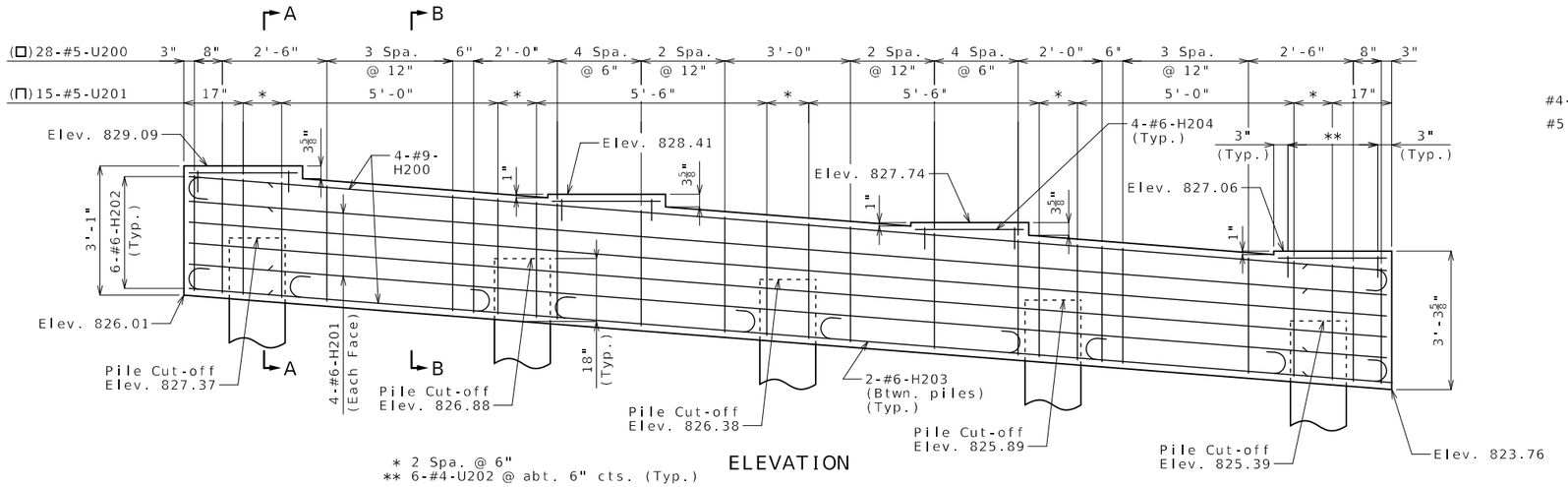
STATE OF MISSOURI
TRENTON B. CRAWFORD
NUMBER PE-2012018053
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 1/30/2026
ROUTE U | STATE MO
DISTRICT BR | SHEET NO. 2
COUNTY CALDWELL
JOB NO. JNW0144
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9660

DESCRIPTION | DATE

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

Detailed Sep. 2025
Checked Oct. 2025



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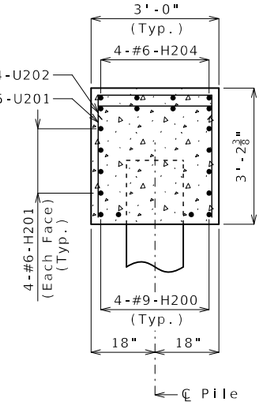
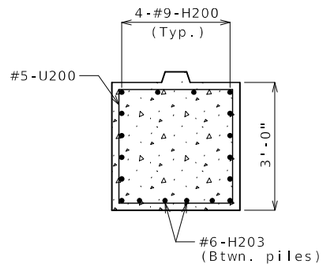
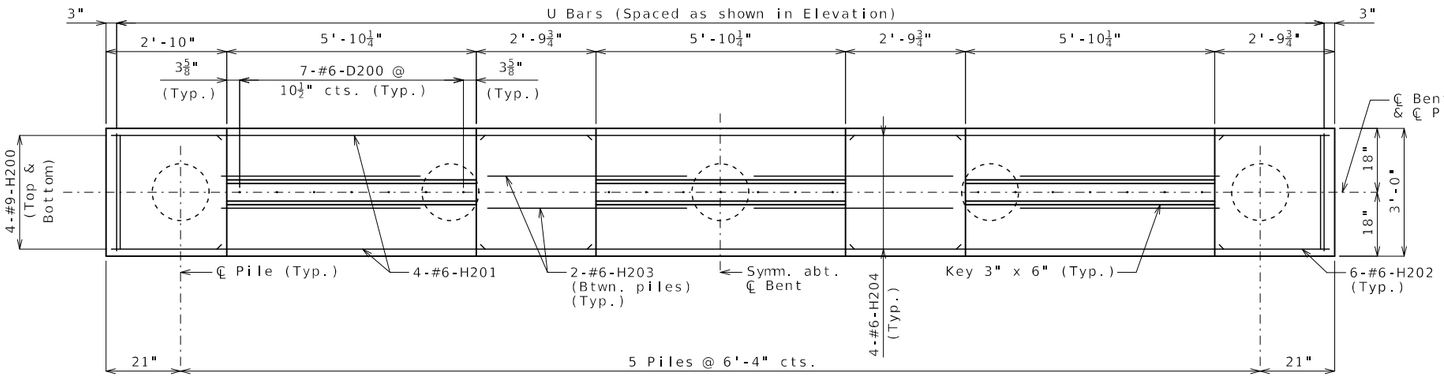


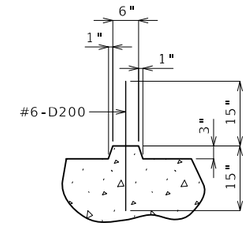
SECTION A-A



SECTION B-B



PLAN OF BEAM SHOWING REINFORCEMENT



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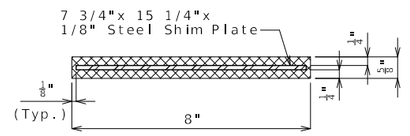
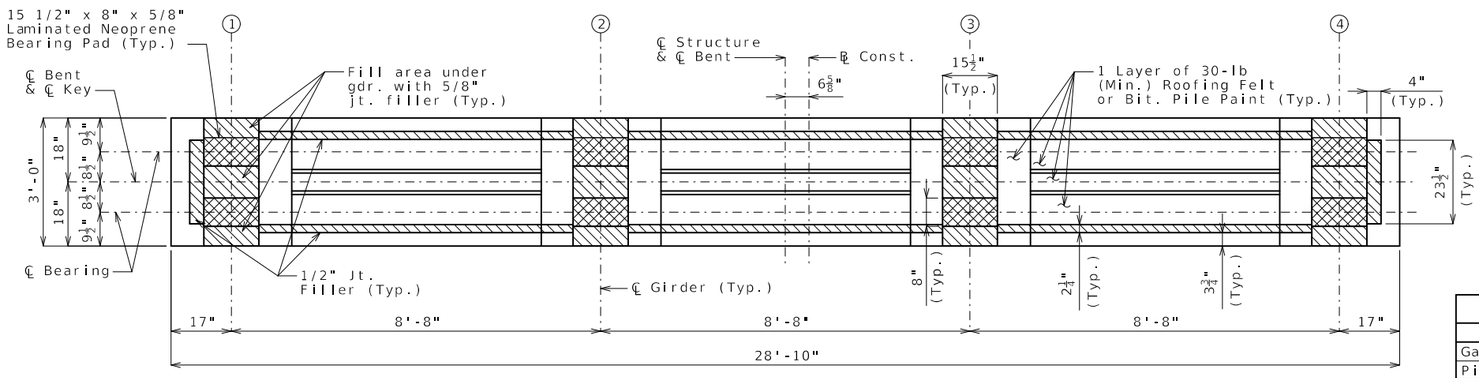


TYPICAL SECTION THRU LAMINATED NEOPRENE BEARING PAD



PLAN OF BEAM

Notes:

For steps 2 inches or more, use 2 1/4 x 1/2 inch joint filler up vertical face.

Reinforcing steel shall be shifted to clear piles. U bars shall clear piles by at least 1 1/2 inches.

1 Revised 1/27/26

Substructure Quantity Table for Int. Bent No. 2		
Item		Quantity
Galvanized Cast-In-Place Concrete Piles (16 in.)	linear foot	210
Pile Wave Analysis	each	1
Pre-Bore for Piling	linear foot	55
Pile Point Reinforcement	each	5
Class B Concrete (Substructure)	cu. yard	9.6
Reinforcing Steel (Bridges)	pound	2090
1 2430		

These quantities are included in the Estimated Quantities table on Sheet No. 2.

INTERMEDIATE BENT NO. 2

Detailed Oct. 2025
Checked Oct. 2025

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

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TRENTON B. CRAWFORD
NUMBER PE-2012018053
PROFESSIONAL ENGINEER
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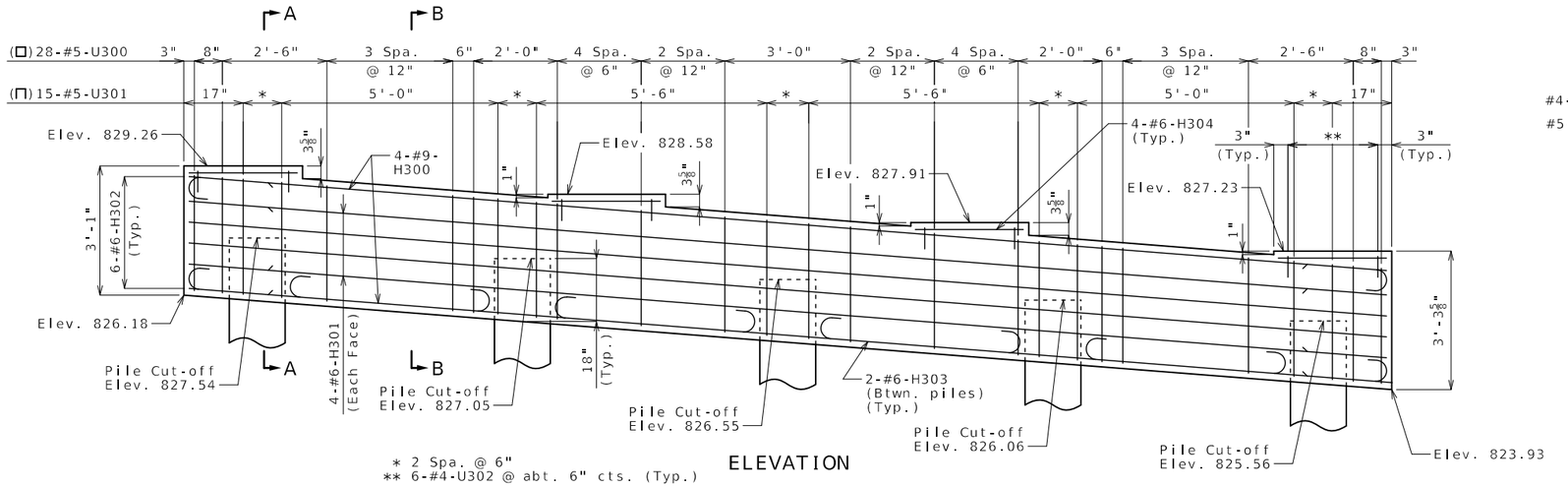
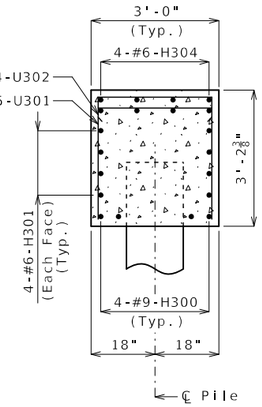
DATE PREPARED 1/30/2026
ROUTE U | STATE MO
DISTRICT BR | SHEET NO. 9
COUNTY CALDWELL
JOB NO. JNW0144
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9660

DESCRIPTION
DATE

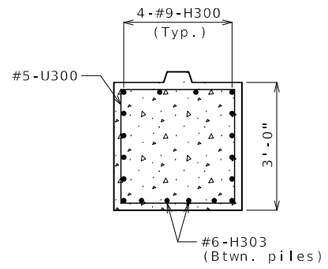
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



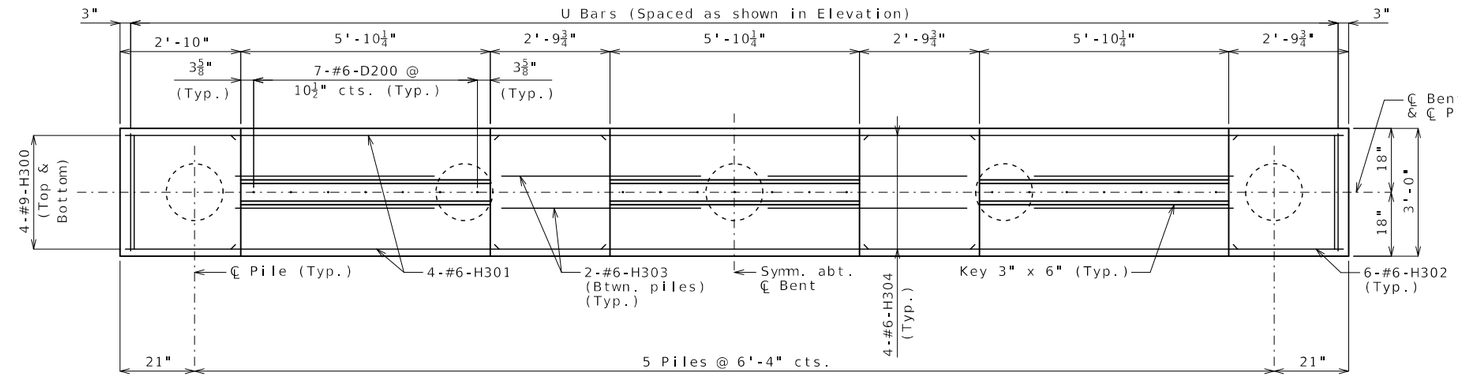
ELEVATION



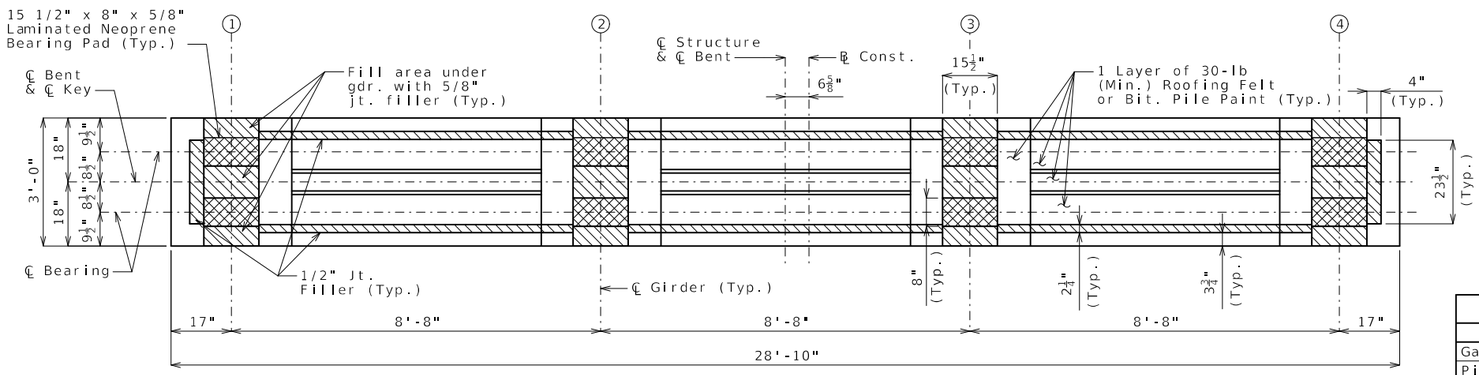
SECTION A-A



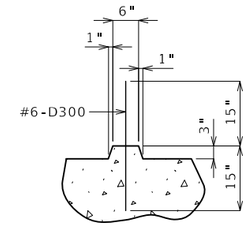
SECTION B-B



PLAN OF BEAM SHOWING REINFORCEMENT



PLAN OF BEAM



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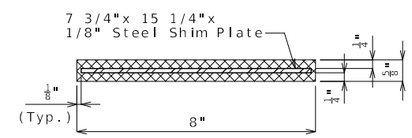

TYPICAL SECTION THRU LAMINATED NEOPRENE BEARING PAD

Notes:

For steps 2 inches or more, use 2 1/4 x 1/2 inch joint filler up vertical face.

Reinforcing steel shall be shifted to clear piles. U bars shall clear piles by at least 1 1/2 inches.

1 Revised 1/27/26

Substructure Quantity Table for Int. Bent No. 3		
Item		Quantity
Galvanized Cast-In-Place Concrete Piles (16 in.)	linear foot	210
Pile Wave Analysis	each	1
Pre-Bore for Piling	linear foot	80
Pile Point Reinforcement	each	5
Class B Concrete (Substructure)	cu. yard	9.6
Reinforcing Steel (Bridges)	pound	2090
1 2430		

These quantities are included in the Estimated Quantities table on Sheet No. 2.

INTERMEDIATE BENT NO. 3

Detailed Oct. 2025
Checked Oct. 2025

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

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ROUTE U | STATE MO
DISTRICT BR | SHEET NO. 10
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JOB NO. JNW0144
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PROJECT NO.
BRIDGE NO. A9660

DESCRIPTION
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105 WEST CAPITOL
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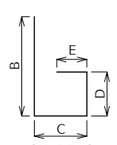

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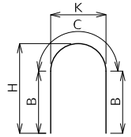

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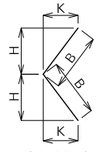

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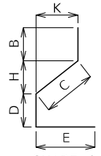

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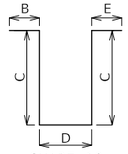

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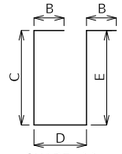

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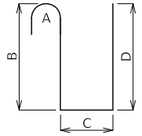

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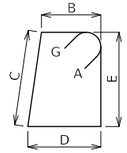

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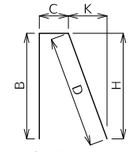

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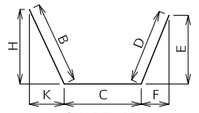

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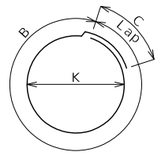

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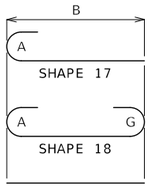
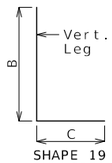


SHAPE 17
SHAPE 18
SHAPE 20



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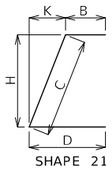

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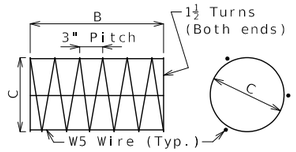

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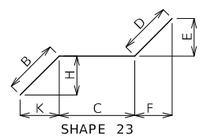

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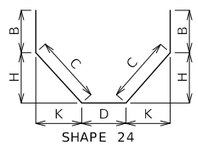

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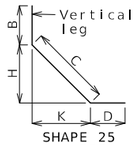

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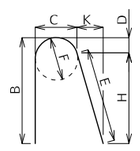

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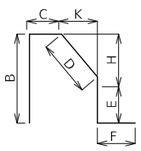

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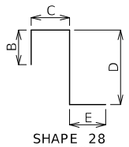

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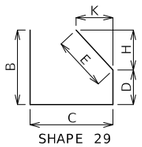
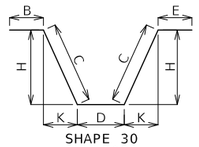
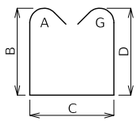


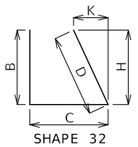
SHAPE 29
or 29S



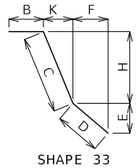
SHAPE 30
or 30S



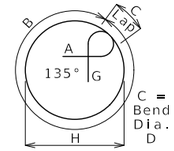
SHAPE 31S



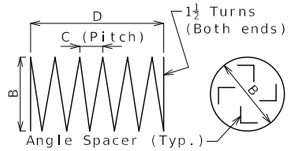
SHAPE 32
or 32S



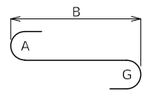
SHAPE 33
or 33S



SHAPE 34S



SHAPE 35 (1)

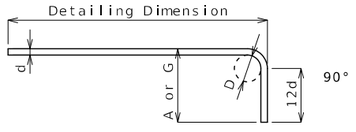


SHAPE 36

Finished Bend Diameters D and Hook Dimensions

Standard Pin Bend Shapes

Size	Case	D	A or G		J
			90°	180°	180°
#4	1	3"	8"	6"	4"
#5	1	3¾"	10"	7"	5"
#6	1	4½"	12"	8¼"	6"
#7	2	5¼"	14"	9¾"	7"
	3	7"	15"	11½"	8¾"
#8	2	6"	16"	11"	8"
	3	8"	17"	13¼"	10"
#9	1	9½"	19½"	15½"	11¾"
#10	1	10¾"	22"	17½"	13¼"
#11	1	12"	24½"	19½"	14⅞"
#14	1	18¼"	31¼"	27½"	21⅝"
#18	1	24"	41½"	36¾"	28½"

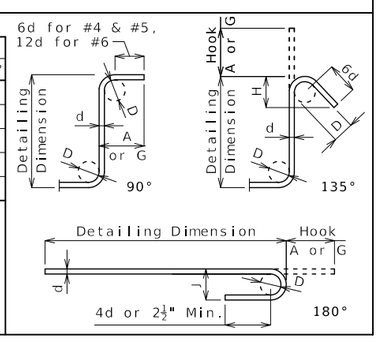


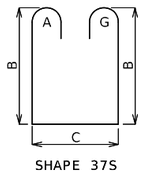
Stirrup Pin Bend Shapes (S)

Size	Case	D	A or G			H	J
			90°	135°	180°	135°	180°
#4	2	2"	4½"	4½"	5"	2⅝"	3"
	3	3"	5"	5¼"	6"	3"	4"
#5	2	2½"	5¾"	5¾"	5¾"	3⅝"	3¾"
	3	3¾"	6¼"	6½"	7"	3⅞"	5"
#6	1	4½"	12"	7¾"	8¼"	4⅝"	6"

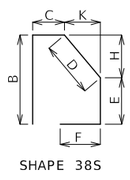
Applicable for all grades of steel.

Case 1 applies to all reinforcement. Case 2 applies to all reinforcement except for galvanized bars. Case 3 applies to galvanized bars only.





SHAPE 37S



SHAPE 38S

BENDING DIAGRAMS

All dimensions are out to out.

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.

(1) Shall be a deformed or plain spiral bar or wire.

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 Plain	Substructure Epoxy	Superstructure Slab	Superstructure Barrier	Superstructure Slip Form	Entire Bridge Plain	Entire Bridge Epoxy
By Size	W5	0	0	0	0	0	0	0
	4	168	0	690	0	0	168	690
	5	926	0	9,102	7,093	482	926	16,677
	6	1,396	0	17,780	0	0	1,396	17,780
	7	0	0	0	0	0	0	0
	8	0	0	1,024	0	0	0	1,024
	9	1,696	0	0	0	0	1,696	0
	10	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0
	14	0	0	0	0	0	0	0
	18	0	0	0	0	0	0	0
By Type		4,186	0	28,596	7,093	482	4,186	36,171

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

⚠1 deleted

Reinforcing Steel Totals (Pounds)

	Size	Substructure Plain	Substructure Epoxy	Superstructure Slab	Superstructure Barrier	Superstructure Slip Form	Entire Bridge Plain	Entire Bridge Epoxy
By Size	W5	0	0	0	0	0	0	0
	4	336	0	816	0	0	336	816
	5	926	0	9,102	7,093	482	926	16,677
	6	1,896	0	18,154	0	0	1,896	18,154
	7	0	0	0	0	0	0	0
	8	0	0	1,024	0	0	0	1,024
	9	1,696	0	0	0	0	1,696	0
	10	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0
	14	0	0	0	0	0	0	0
	18	0	0	0	0	0	0	0
By Type		4,854	0	29,096	7,093	482	4,854	36,671

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

⚠1 added

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

⚠1 Revised 1/27/26

Detailed Nov. 2025
Checked Nov. 2025

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

STATE OF MISSOURI
TRENTON B. CRAWFORD
NUMBER PE-2012018053
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 1/30/2026
ROUTE U | STATE MO
DISTRICT BR | SHEET NO. 26
COUNTY CALDWELL
JOB NO. JNW0144
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9660

DESCRIPTION | DATE

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

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	SH	V	Dimensions B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb
		Substructure													
		Int Bent 2													
21	6 D200	BEAM		20		2 6.00							2 6	2 6	79
8	9 H200	BEAM		18		28 8.00							31 2	31 2	848
8	6 H201	BEAM		20		28 8.00							28 8	28 8	344
12	6 H202	BEAM		10S			12.00	2 9.00					4 9	4 5	80
8	6 H203	BEAM		18		4 9.00							6 1	6 1	73
16	6 H204	BEAM		20		2 6.00							2 6	2 6	60
	⚠40													⚠105	
8	4 P200	CECIP PILE		34S		3 1.75	2.00				12.00		4 1	3 11	21
28	5 U200	BEAM		13S		2 9.00	2 9.00	2 9.00	2 9.00				11 11	11 7	338
15	5 U201	BEAM		10S			2 9.00	2 9.00					8 3	8	125
24	4 U202	BEAM		10S			8.25	2 9.00					4 2	3 11	63
	⚠30													⚠312	
6	6 V200	CECIP PILE		17		6 3.00							6 11	6 11	62
		Int Bent 3													
21	6 D300	BEAM		20		2 6.00							2 6	2 6	79
8	9 H300	BEAM		18		28 8.00							31 2	31 2	848
8	6 H301	BEAM		20		28 8.00							28 8	28 8	344
12	6 H302	BEAM		10S			12.00	2 9.00					4 9	4 5	80
8	6 H303	BEAM		18		4 9.00							6 1	6 1	73
16	6 H304	BEAM		20		2 6.00							2 6	2 6	60
	⚠40													⚠105	
8	4 P300	CECIP PILE		34S		3 1.75	2.00				12.00		4 1	3 11	21
28	5 U300	BEAM		13S		2 9.00	2 9.00	2 9.00	2 9.00				11 11	11 7	338
15	5 U301	BEAM		10S			2 9.00	2 9.00					8 3	8	125
24	4 U302	BEAM		10S			8.25	2 9.00					4 2	3 11	63
	⚠30													⚠312	
6	6 V300	CECIP PILE		17		6 3.00							6 11	6 11	62
		Superstructure													
		End Bent 1													
20	6 F100	WING BRACE	E	23S		20.00	5 1.00	20.00	14.25	14.00	14.25	14.00	8 5	8 4	250
4	6 F101	DIAPHRAGM	E	19S		4 9.00	2 9.00						7 6	7 4	44
7	6 H100	DIAPHRAGM	E	20		32 5.00							32 5	32 5	341
6	6 H101	DIAPHRAGM	E	20		2 4.00							2 4	2 4	21
9	6 H102	DIAPHRAGM	E	20		7 0.00							7	7	95
4	6 H103	BEAM	E	20		4 7.00							4 7	4 7	28
4	6 H104	BEAM	E	20		13 3.00							13 3	13 3	80
4	6 H105	BEAM	E	20		21 11.00							21 11	21 11	132
12	6 H106	BEAM	E	20		32 5.00							32 5	32 5	584
6	6 H107	BEAM	E	18		8 1.00							9 5	9 5	85
8	5 H108	STRAND TIE	E	20		3 11.00							3 11	3 11	33
8	8 H109	WING	E	20		10 6.00							10 6	10 6	224
18	6 H110	WING	E	20		9 0.00							9	9	243
8	8 H111	WING	E	20		13 6.00							13 6	13 6	288
26	6 H112	WING	E	20		12 0.00							12	12	469
12	6 H113	DIAPHRAGM	E	20		6 2.00							6 2	6 2	111
4	6 H114	DIAPHRAGM	E	20		2 4.00							2 4	2 4	14
	⚠32													⚠84	
8	4 P100	CECIP PILE	E	34S		3 1.75	2.00				12.00		4 1	3 11	21
2	4 U100	BEAM	E	10S			3 4.00	2 9.00					9 5	9 3	12
2	4 U101	BEAM	E	10S			4 0.25	2 9.00					10 10	10 7	14
1	5 U102	BEAM/DIAPHRAGM	E	37S		4 7.50	2 9.00						13	12 9	13
7	5 U103	BEAM/DIAPHRAGM	E	37S		5 5.00	2 9.00						14 7	14 4	105
6	5 U104	BEAM/DIAPHRAGM	E	37S		6 0.50	2 9.00						15 10	15 7	98
1	5 U105	BEAM/DIAPHRAGM	E	37S		6 2.00	2 9.00						16 1	15 10	17
6	5 U106	BEAM/DIAPHRAGM	E	37S		6 9.00	2 9.00						17 3	17	106
2	5 U107	BEAM/DIAPHRAGM	E	37S		7 2.00	2 9.00						18 1	17 10	37
3	4 U108	BEAM	E	13S		2 9.00	2 8.00	2 9.00	2 8.00				11 7	11 4	23
2	4 U109	BEAM	E	13S		2 9.00	3 4.00	2 9.00	3 4.00				12 11	12 8	17
2	4 U110	BEAM	E	13S		2 9.00	4 0.25	2 9.00	4 0.25				14 4	14	19
3	4 U111	BEAM	E	13S		2 9.00	4 8.25	2 9.00	4 8.25				15 8	15 4	31
27	5 U112	DIAPHRAGM	E	37S		3 2.50	2 3.00						9 8	9 5	265
27	6 U113	DIAPHRAGM	E	19S		2 2.00	2 9.00						4 11	4 9	193
40	6 U114	DIAPHRAGM	E	19S		2 7.00	4 2.50						6 10	6 8	401
30	5 U115	APPROACH TIE	E	19S		2 0.00	15.00						3 3	3 2	99
4	5 V100	BEAM/DIAPHRAGM	E	17		5 0.00							5 7	5 7	23
4	5 V101	BEAM/DIAPHRAGM	E	17		7 1.00							7 8	7 8	32
12	6 V102	DIAPHRAGM	E	20		2 4.00							2 4	2 4	42
18	6 V103	WING	E	20		6 1.00							6 1	6 1	164
24	6 V104	WING	E	20		8 7.00							8 7	8 7	309
6	6 V105	CECIP PILE	E	17		6 3.00							6 11	6 11	62
	⚠24													⚠249	
		End Bent 4													
20	6 F400	WING BRACE	E	23S		20.00	5 1.00	20.00	14.25	14.00	14.25	14.00	8 5	8 4	250
4	6 F401	DIAPHRAGM	E	19S		4 9.00	2 9.00						7 6	7 4	44
7	6 H400	DIAPHRAGM	E	20		32 5.00							32 5	32 5	341
6	6 H401	DIAPHRAGM	E	20		2 4.00							2 4	2 4	21
9	6 H402	DIAPHRAGM	E	20		7 0.00							7	7	95
4	6 H403	BEAM	E	20		4 7.00							4 7	4 7	28
4	6 H404	BEAM	E	20		13 3.00							13 3	13 3	80
4	6 H405	BEAM	E	20		21 11.00							21 11	21 11	132
12	6 H406	BEAM	E	20		32 5.00							32 5	32 5	584
6	6 H407	BEAM	E	18		8 1.00							9 5	9 5	85
8	5 H408	STRAND TIE	E	20		3 11.00							3 11	3 11	33
8	8 H409	WING	E	20		10 6.00							10 6	10 6	224
18	6 H410	WING	E	20		9 0.00							9	9	243
8	8 H411	WING	E	20		13 6.00							13 6	13 6	288
26	6 H412	WING	E	20		12 0.00							12	12	469
12	6 H413	DIAPHRAGM	E	20		6 2.00							6 2	6 2	111
4	6 H414	DIAPHRAGM	E	20		2 4.00							2 4	2 4	14
	⚠32													⚠84	
8	4 P400	CECIP PILE	E	34S		3 1.75	2.00					12.00	4 1	3 11	21
2	4 U400	BEAM	E	10S			3 4.00	2 9.00					9 5	9 3	12
2	4 U401	BEAM	E	10S			4 0.25	2 9.00					10 10	10 7	14
1	5 U402	BEAM/DIAPHRAGM	E	37S		4 7.50	2 9.00						13	12 9	13
7	5 U403	BEAM/DIAPHRAGM	E	37S		5 5.00	2 9.00						14 7	14 4	105
6	5 U404	BEAM/DIAPHRAGM	E	37S		6 0.50	2 9.00						15 10	15 7	98
1	5 U405	BEAM/DIAPHRAGM	E	37S		6 2.00	2 9.00						16 1	15 10	17
6	5 U406	BEAM/DIAPHRAGM	E	37S		6 9.00	2 9.00						17 3	17	106
2	5 U407	BEAM/DIAPHRAGM	E	37S		7 2.00	2 9.00						18 1	17 10	37
3	4 U408	BEAM	E	13S		2 9.00	2 8.00	2 9.00	2 8.00				11 7	11 4	23
2	4 U409	BEAM	E	13S		2 9.00	3 4.00	2 9.00	3 4.00				12 11	12 8	17
2	4 U410	BEAM	E	13S		2 9.00	4 0.25	2 9.00	4 0.25				14 4	14	19
3	4 U411	BEAM	E	13S		2 9.00	4 8.25	2 9.00	4 8.25				15 8	15 4	31
27	5 U412	DIAPHRAGM	E	37S		3 2.50	2 3.00						9 8	9 5	265
27	6 U413	DIAPHRAGM	E	19S		2 2.00	2 9.00						4 11	4 9	193
40	6 U414	DIAPHRAGM	E	19S		2 7.00	4 2.50						6 10	6 8	401
30	5 U415	APPROACH TIE	E	19S		2 0.00	15.00						3 3	3 2	99
4	5 V400	BEAM/DIAPHRAGM	E	17		5 0.00							5 7	5 7	23
4	5 V401	BEAM/DIAPHRAGM	E	17		7 1.00							7 8	7 8	32
12	6 V402	DIAPHRAGM	E	20		2 4.00							2 4	2 4	42
18	6 V403	WING	E	20		6 1.00							6 1	6 1	164
24	6 V404	WING	E	20		8 7.00							8 7	8 7	309
6	6 V405	CECIP PILE	E	17		6 3.00							6 11	6 11	62
	⚠24													⚠249	
		Int Diaphragms													
12	6 H500	DIAPHRAGM	E	20		6 3.00							6 3	6 3	113
12	6 H501	DIAPHRAGM	E	20		6 7.00							6 7	6 7	119
24	4 H502	DIAPHRAGM	E	20		7 2.00							7 2	7 2	115
8	5 H503	STRAND TIE	E	20		2 10.00							2 10	2 10	24
8	5 H504	STRAND TIE	E	20		3 11.00							3 11	3 11	33
72	4 U500	DIAPHRAGM	E	28S			15.00	3 2.00	2 0.00				6 5	6 3	301
24	6 U501	DIAPHRAGM	E	28S			22.00	2 11.00	2 0.00				6 9	6 5	231
32	5 U502	DIAPHRAGM	E	19S		2 7.50	10.00						3 6	3 4	111
16	5 V500	DIAPHRAGM	E	20		3 3.00							3 3	3 3	54
		Slab													
56	5 S1	SLAB	E	20		54 8.00							54 8	54 8	3,193
50	5 S2	SLAB	E	20		19 9.00							19 9	19 9	1,030
50	5 S3	SLAB	E	20		26 3.00							26 3	26 3	1,369
205	6 S4	SLAB	E	20		32 5.00							32 5	32 5	9,981
16	5 S5	SLAB	E	20		54 11.00							54 11	54 11	916

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. 26.

Detailed Nov. 2025
Checked Nov. 2025

All bars shall be Reinforcing steel (ASTM A615 Grade 60) fy= 60,000 psi

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

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.

⚠1 Revised 1/27/26

BILL OF REINFORCING STEEL

STATE OF MISSOURI
TRENTON B. CRAWFORD
NUMBER PE-2012018053
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 1/30/2026

ROUTE	STATE
U	MO
DISTRICT	SHEET NO.
BR	27

COUNTY CALDWELL
JOB NO. JNW0144
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9660

DESCRIPTION | DATE

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