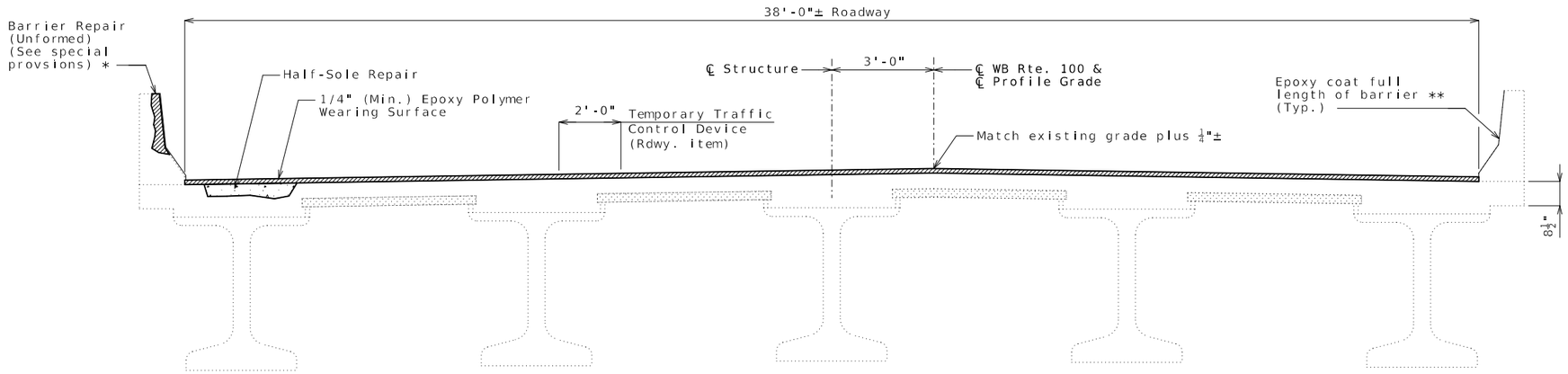
U.I.P. AND REHABILITATE EXISTING (120') COMPOSITE PRESTRESSED CONCRETE NU 53 GIRDER SPAN (SKEW 16°39'00")

SEC/SUR 11 TWP 43N RGE 1E



* Location at Northwest corner of bridge inside face.

** Work and material for Epoxy Coating to be considered incidental to Epoxy Polymer Wearing Surface.

TYPICAL SECTION THRU EXISTING BRIDGE
(Looking East)

General Notes:

Design Specifications:

2006 AASHTO LRFD 3rd Edition and 2006 Interims (Superstructure) Load and Resistance Factor Design
2002 AASHTO LFD (17th Ed.) Standard Specifications
Bridge Deck Rating = 7

Design Loading:

HL-93 (2007)
35 lb/sf Future Wearing Surface

Design Unit Stresses:

Class B2 Concrete (Half-Sole Repair) f'c = 4,000 psi
Class B1 Concrete (Barrier Repair) f'c = 4,000 psi

Miscellaneous:

Roadway surfacing adjacent to bridge ends shall match new bridge slab surface wearing surface (roadway item).

All concrete repairs shall be in accordance with Sec 704, unless otherwise noted.

Outline of existing work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before finalizing the shop drawings.

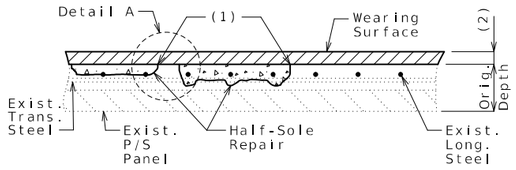
The contractor shall exercise care to ensure spillage over joint edges is prevented and that a neat line is obtained along any terminating edge of the wearing surface.

Barrier Repair (Unformed) shall be in accordance with JSP Barrier Repair (Unformed).

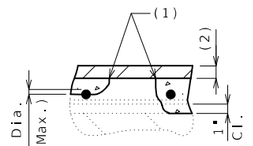
Traffic Handling:

Traffic to be maintained on structure during construction. See roadway plans for traffic control.

Estimated Quantities		
Item		Total
Epoxy Polymer Wearing Surface	sq. yard	596
Half-Sole Repair	sq. foot	50
Concrete Crack Filler	sq. yard	217
Barrier Repair (Unformed)	linear foot	20



HALF-SOLE REPAIR

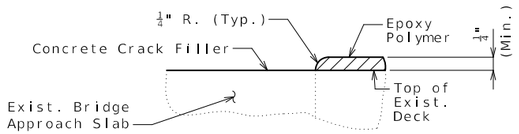


DETAIL A

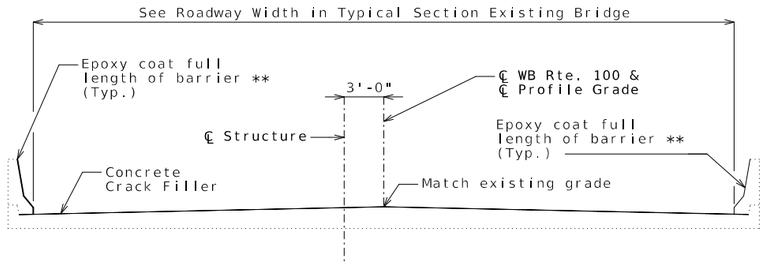
Clearance around top bar and around bottom bar at the intersection of top bar shall be required when more than half the diameter of the top bar is exposed.

(1) 1" Vertical side shall be established outside the deteriorated area.

(2) ¼" minimum Epoxy Polymer wearing surface.



SECTION AT END OF WEARING SURFACE



TYPICAL SECTION THRU EXISTING APPROACH SLAB

REPAIRS TO BRIDGE:
ROUTE 100 WB OVER MISSOURI EASTERN RAILROAD

ROUTE 100 WB FROM ROUTE M TO ROUTE I-44
ABOUT 1.7 MILES WEST OF ROUTE I-44
BEGINNING STATION 1663+32.27± (MATCH EXISTING)

Detailed August 2024
Checked August 2024

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

STATE OF MISSOURI
JARED R. WIGGER
NUMBER PE-2007032762
PROFESSIONAL ENGINEER

09/26/2024 3:46:00 PM
Jared R. Wigger - Civil
MO PE-2007032762

DATE PREPARED 9/26/2024
ROUTE 100 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY FRANKLIN
JOB NO. JSL0035
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A74531

DESCRIPTION | DATE | REV.

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

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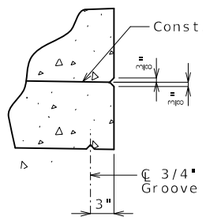
ST. LOUIS, MO 65102 (314) 436-5500
ENGINEERING CORPORATION - 000631

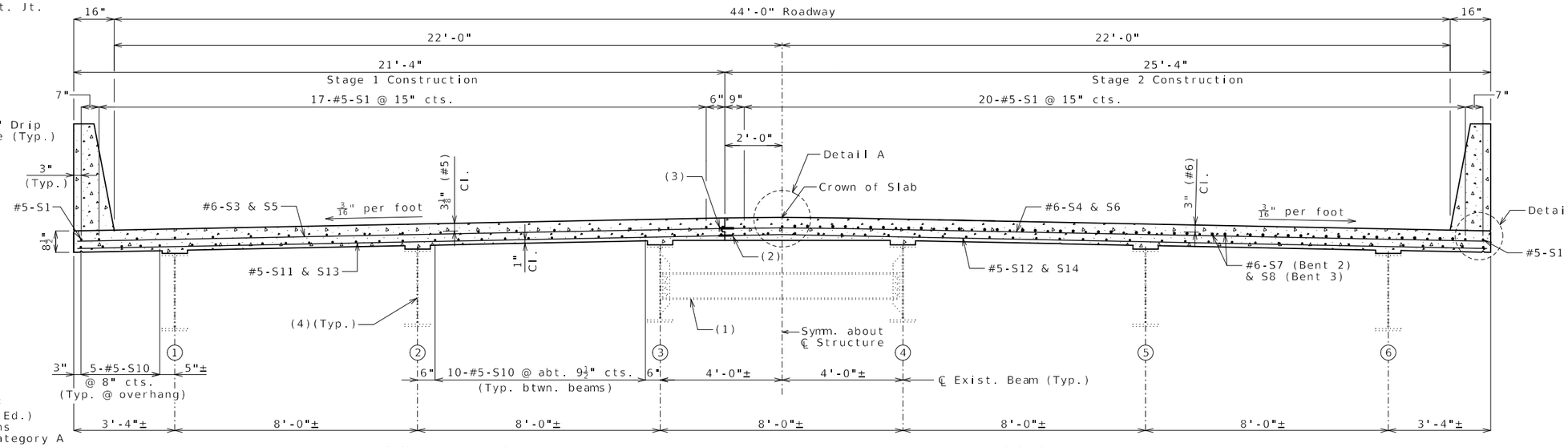
L:\MoDOT\23005734-00_Rte100FranklinCo\573400\Structures\Bridge_JSL0035_PS&E\A74531\DGN files\Plan Sheet DGNs\B_A74531_001_JSL0035_FrontSheet.dgn 3:32:16 PM 9/26/2024

U.I.P. & REDECK (37'- 48'- 32') CONTINUOUS COMPOSITE WIDE FLANGE BEAM SPANS

SEC/SUR 11 TWP 43N RGE 1E



DETAIL B



HALF SECTION NEAR MIDSPAN

TYPICAL SECTION THRU SLAB
(Looking East)

HALF SECTION NEAR INTERMEDIATE BENT

General Notes:

Design Specifications:
2002 AASHTO LFD (17th Ed.)
Standard Specifications
Seismic Performance Category A

Design Loading:
H20-44 (1965) (Existing)
HS20-44 (New Construction)
35 lb/sf Future Wearing Surface
Earth - 120 lb/cf, Equivalent Fluid Pressure 45 lb/cf

Design Unit Stresses:

Class B-1 Concrete (Barrier)	f'c = 4,000 psi
Class B-2 Concrete (End Bents & Superstructure, except Barrier)	f'c = 4,000 psi
Reinforcing Steel (Grade 60)	fy = 60,000 psi

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.

MBS refers to Mechanical Bar Splices. Mechanical bar splices shall be in accordance with Sec 706 or 710.

Miscellaneous:
Protective coating for concrete bents and piers (Epoxy) shall be applied as shown on the bridge plans and in accordance with Sec 711.

Bars bonded in existing concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, existing bars shall extend into new concrete at least 40 diameters for plain bars and 30 diameters for deformed bars, unless otherwise noted.

Roadway surfacing adjacent to bridge ends shall match new bridge slab surface. (Roadway item)

Outline of existing work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before finalizing shop drawings.

The area exposed by the removal of concrete and not covered with new concrete shall be coated with an approved qualified special mortar in accordance with Sec 704.

For adjusted girder deflection due to the weight of the new deck and barriers, see Bridge Electronic Deliverables.

Substructure Repair (Unformed) that is deemed necessary by the engineer at either Bents No. 1 or 4 shall be in accordance with Sec 704.

The existing bridge rails shall be stored at a location as designated by the engineer on the MoDOT Maintenance Lot at St. Clair Bridge Maintenance building.

Traffic Handling:
Traffic to be maintained on structure during construction. See roadway plans for traffic control and Sheet No. 2 for Staged Construction Typical Section.

Detailed August 2024
Checked August 2024

Required Lap Length For Bar Splices **	
Bar Size	Splice Length
5	3'-3"
6	3'-10"

** Unless otherwise shown.

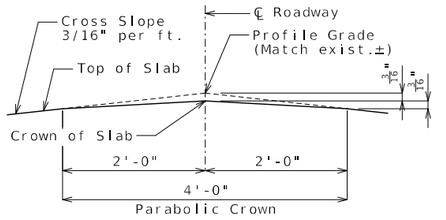
Notes:

See Sheet No. 8 for Partial Plan of Transverse Slab Reinforcement and Additional Longitudinal Reinforcing at Intermediate Bents.

(1) Prior to Stage 1 deck removal, between beams 3 and 4, remove one side of intermediate crossframe bolts. After Stage 2 deck pour, reinstall the crossframe. New bolts to be installed where existing bolts were removed. Bolts should match existing size and material. Diaphragms at bents to remain. This work will be considered completely covered by the contract unit price for Removal of Existing Bridge Deck.

(2) 4-MBS S11-S12 & 217-MBS S13-S14
(3) 4-MBS S3-S4 & 236-MBS S5-S6

(4) Clean and paint existing steel with System G in accordance with Sec 1081 unless otherwise noted.



DETAIL A

Estimated Quantities

Item		Total
Removal of Miscellaneous ACM (Non-Friable)	sq. foot	23
Removal and Storage of Existing Bridge Rail	linear foot	237
Removal of Existing Bridge Deck	sq. foot	5614
Removal of Existing Approach Slab	sq. foot	1790
Bridge Approach Slab (Major)	sq. yard	199
Slab on Steel	sq. yard	623
Type D Barrier	linear foot	277
Substructure Repair (Unformed)	sq. foot	20
Mechanical Bar Splice	each	473
Protective Coating - Concrete Bents and Piers (Epoxy)	lump sum	1
Surface Preparation for Recoating Structural Steel	sq. foot	4800
Field Application of Organic Zinc Primer	sq. foot	4800
Intermediate Field Coat (System G)	sq. foot	900
Finish Field Coat (System G)	sq. foot	900
Non-Destructive Testing	linear foot	56
Vertical Drain at End Bents	each	2
Open Cell Foam Joint Seal	linear foot	91

Cost of any required excavation for bridge will be considered completely covered by the contract unit price for other items.

Estimated Quantities for Slab on Steel

Item		Total
Class B-2 Concrete	cu. yard	180
Reinforcing Steel (Epoxy Coated)	pound	51,987

The table of Estimated Quantities for Slab on Steel 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 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 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 conventional forming or stay-in-place corrugated steel forms. Precast prestressed panels will not be permitted.

For Optional Stay-In-Place Form Details, see Sheet No. 2.

REPAIRS TO BRIDGE:
ROUTE 100 EB OVER MISSOURI EASTERN RAILROAD

ROUTE 100 EB FROM ROUTE M TO ROUTE I-44
ABOUT 1.7 MILES WEST OF ROUTE I-44
BEGINNING STATION 1663+07.85± (MATCH EXISTING)

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

STATE OF MISSOURI
JARED R. WIGGER
NUMBER PE-2007032762
PROFESSIONAL ENGINEER
09/26/2024 3:48:43 PM
Jared R. Wigger - Civil
MO PE-2007032762

DATE PREPARED 9/26/2024
ROUTE 100 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY FRANKLIN
JOB NO. JSL0035
CONTRACT ID.
PROJECT NO.
BRIDGE NO. H03532

DESCRIPTION | DATE | REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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General Notes:

Stay-In-Place 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 beam 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 beam 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 beam loading.

The contractor shall provide a method of preventing the direct contact of the stay-in-place forms and connection components with uncoated weathering steel members that is approved by the engineer.

Pouring and Finishing Slab:

The contractor shall provide bracing necessary for lateral and torsional stability of the beams during construction of the concrete slab and remove the bracing after the slab has attained 75% design strength. Contractor shall not weld on or drill holes in the beams. The cost for furnishing, installing, and removing bracing will be considered completely covered by the contract unit price for Slab on Steel.

Slab shall be poured upgrade from end to end at a minimum rate of 25 cubic yards per hour.

Alternate pour sequences may be submitted to the engineer for approval. Keyed construction joints shall be provided between pours.

Haunching:

(1) Slab is to be considered a uniform thickness as shown on the plans. Haunching will vary. See front sheet for slab thickness.

Structural Steel Protective Coating:

Protective Coating: System G In accordance with Sec 1081.

Surface Preparation: Surface preparation of the existing steel shall be in accordance with Sec 1081 for Recoating of Structural Steel (System G) with organic zinc primer. The cost of surface preparation will be considered completely covered by the contract unit price per sq.foot for Surface Preparation for Recoating Structural Steel.

Prime Coat: The cost of prime coat will be considered completely covered by the contract unit price per sq. foot for Field Application of Organic Zinc Primer.

Field Coat(s): The color of the field coat(s) shall be Gray (Federal Standard #26373). The cost of the intermediate field coat will be considered completely covered by the contract unit price per sq. foot for Intermediate Field Coat (System G). The cost of the finish field coat will be considered completely covered by the contract unit price per sq. foot for Finish Field Coat (System G).

Railroad Construction:

Any shoring system that impacts the Railroad operations and/or supports Railroad embankment shall be designed and constructed per the Railroad temporary shoring requirements.

All demolition within the Railroad right-of-way and/or demolition that may impact the Railroad tracks or operations shall comply with the Railroad demolition requirements.

Erection over the Railroad right-of-way shall be designed to cause no interruption to all Railroad operations.

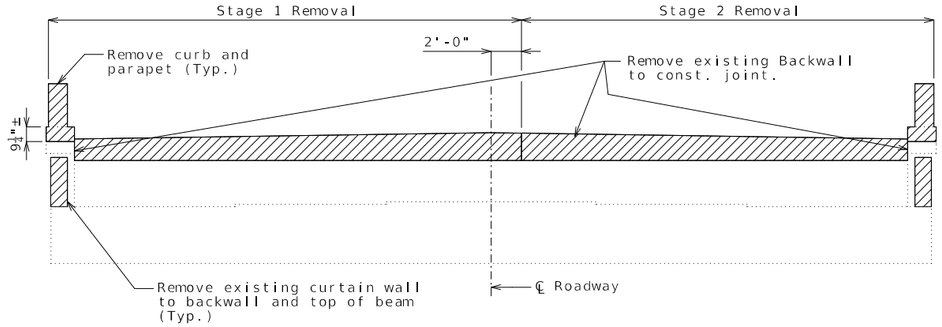
The proposed grade separation project shall not change the quantity and/or characteristics of the flow in the Railroad ditches and/or drainage structures.

The contractor must submit a proposed method of erosion and sediment control and have a method approved by the Railroad prior to beginning any grading on the project site.

Temporary Construction Clearances, including falsework clearances, shall comply with Minimum Construction Clearance Diagram on this sheet.

Contractor to submit all design and construction submittals to the Railroad for their review and approval.

Track closure time will need to be coordinated with the on-site flagman during deck demolition, forming of deck and other superstructure erection as directed by the Railroad.

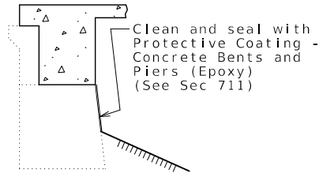


DETAILS OF CONCRETE REMOVAL AT END BENTS

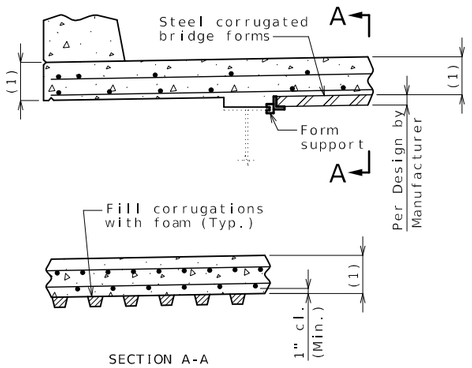
(Looking at Ahead Station at Bent No. 4. Bent No. 1 similiar.)

The cost of concrete removal as shown will be considered completely covered by the contract unit price for Removal of Existing Bridge Deck, Vertical backwall and wingwall reinforcement to be cut off one inch below concrete removal surface and the resulting holes shall be filled with a qualified special mortar.

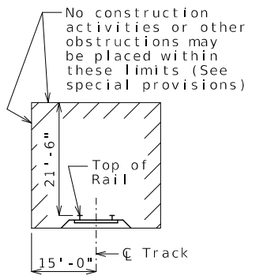
A smooth, level surface shall be provided at Bents No. 1 & 4 removal lines.



TYPICAL SECTION THRU END BENTS NO. 1 & 4 SHOWING PROTECTIVE COATING

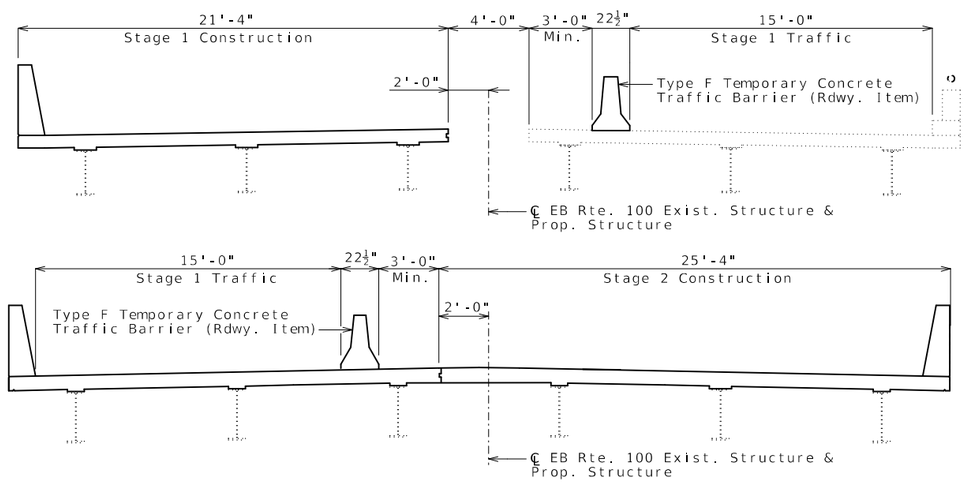


OPTIONAL STAY-IN-PLACE FORM DETAILS



MINIMUM CONSTRUCTION CLEARANCES

(Normal to railroad)
(Not to scale)



STAGED CONSTRUCTION TYPICAL SECTIONS

(Looking East)

Detailed August 2024
Checked August 2024

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

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STATE OF MISSOURI
JARED R. WIGGER
NUMBER PE-2007032762
PROFESSIONAL ENGINEER
09/26/2024 3:50:06 PM
Jared R. Wigger - Civil
MO PE-2007032762

DATE PREPARED: 9/26/2024
ROUTE: 100 | STATE: MO
DISTRICT: BR | SHEET NO.: 2
COUNTY: FRANKLIN
JOB NO.: JSL0035
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: H03532

DESCRIPTION | DATE | REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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JEFFERSON CITY, MO 65102
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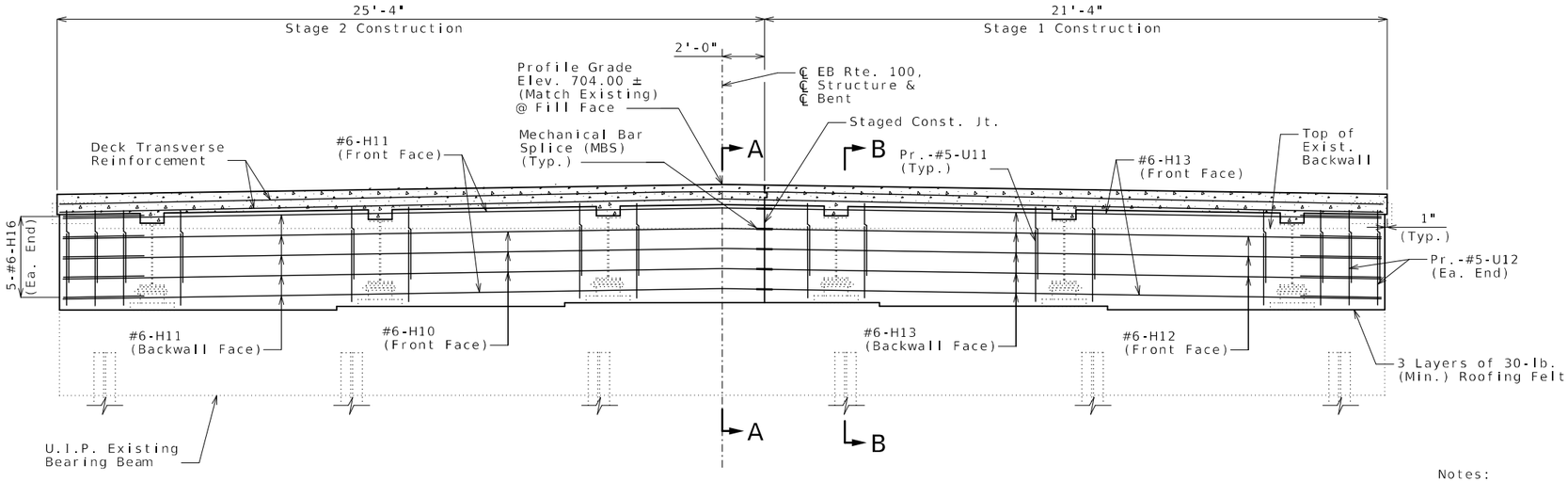
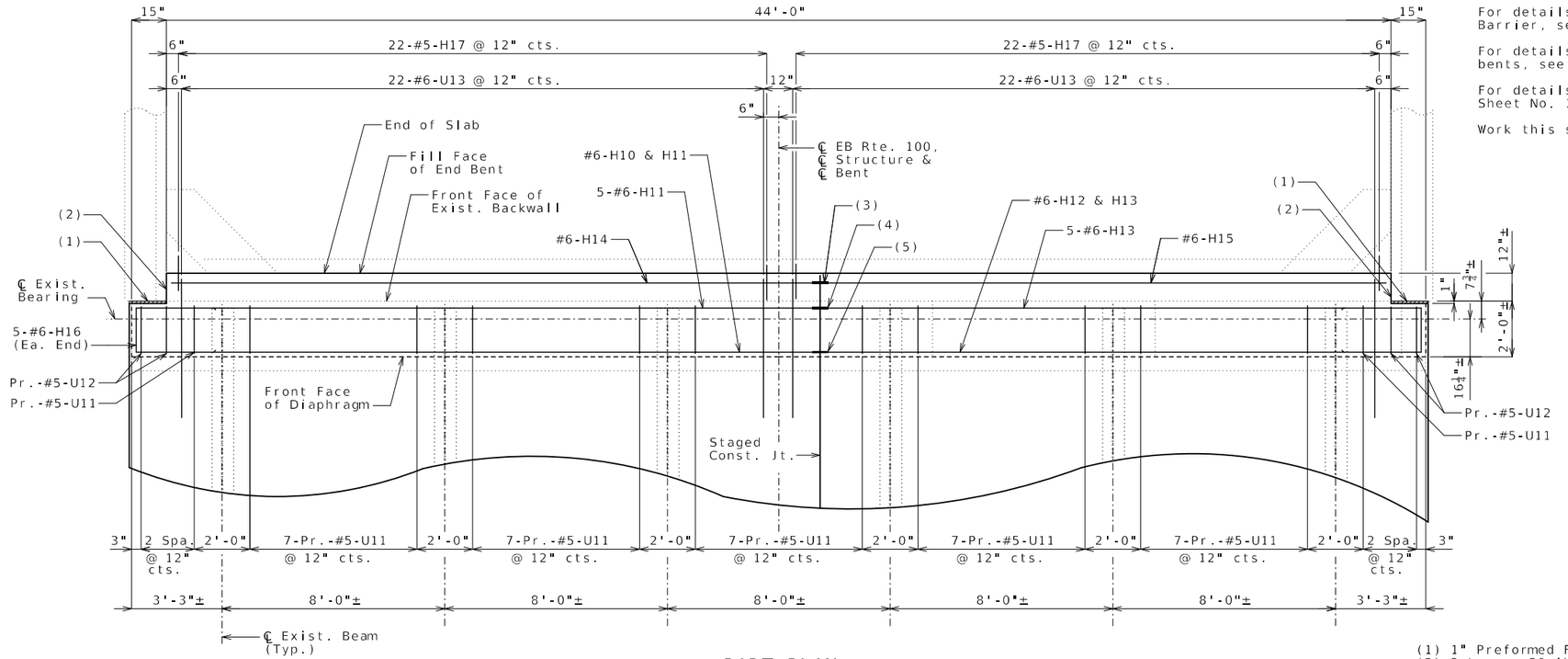


SECTION NEAR END BENT

Notes:

Existing steel end diaphragms not shown for clarity (leave-in-place).

Type D Barrier and Longitudinal Deck Reinforcement not shown for clarity.



PART PLAN

Notes:

All concrete and reinforcement in End Bent diaphragm is included in the Table of Estimated Quantities for Slab on Steel and will be considered completely covered by the contract unit price for Slab on Steel.

For Section A-A and B-B, see Sheet No. 4

For details and reinforcement of Type D Barrier, see Sheets No. 9 & 10.

For details of vertical drain at end bents, see Sheet No. 5.

For details of bridge approach slab, see Sheet No. 11.

Work this sheet with Sheet No. 4.

(1) 1" Preformed Flexible Foam Expansion Joint Filler
(2) 3 Layers 30-lb (Min.) Roofing Felt
(3) 1-MBS H14-H15
(4) 5-MBS H11-H13
(5) 3-MBS H10-H12 & 2-MBS H11-H13

DETAILS OF END BENT NO. 1

Detailed August 2024
Checked August 2024

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

L:\MoDOT\23005734-00_Rte100FranklinCo\573400\Structures\Bridge_JSL0035_PS&E\H03532\DGN files\Plan Sheet DGNs\B_H03532_003_JSL0035_EndBentNo1.dgn 3:32:25 PM 9/26/2024

STATE OF MISSOURI
JARED R. WIGGER
NUMBER PE-2007032762
PROFESSIONAL ENGINEER
09/26/2024 3:51:23 PM
Jared R. Wigger - Civil
MO PE-2007032762

DATE PREPARED 9/26/2024
ROUTE 100 | STATE MO
DISTRICT BR | SHEET NO. 3
COUNTY FRANKLIN
JOB NO. JSL0035
CONTRACT ID.
PROJECT NO.
BRIDGE NO. H03532

DESCRIPTION | DATE | REV.

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JEFFERSON CITY, MO 65102
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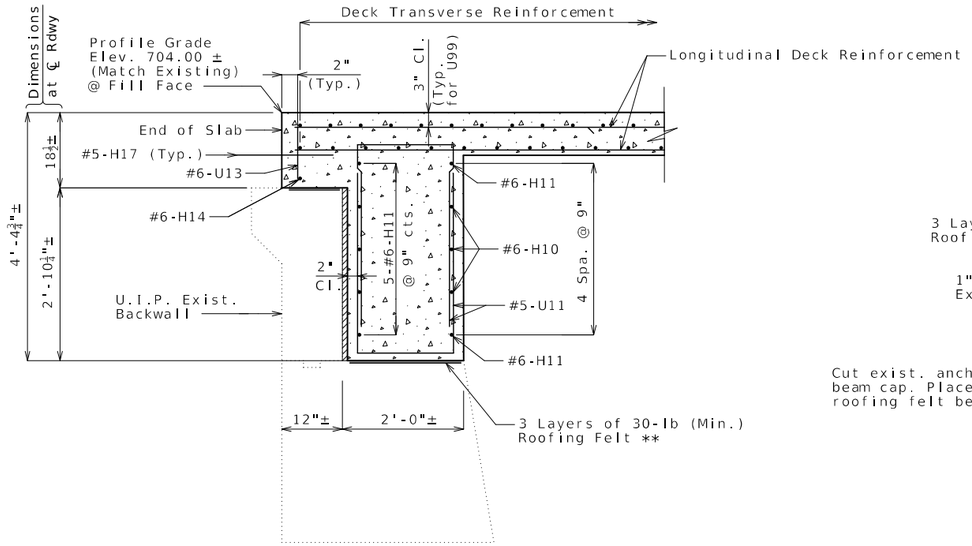
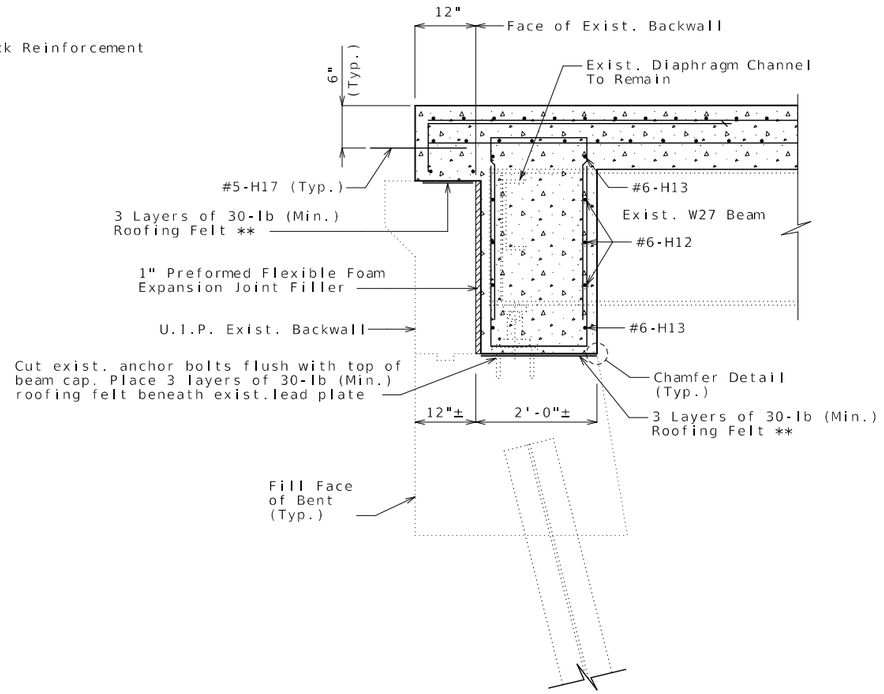
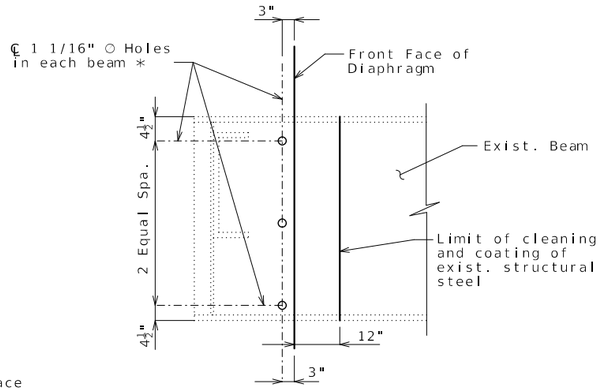


SECTION A-A



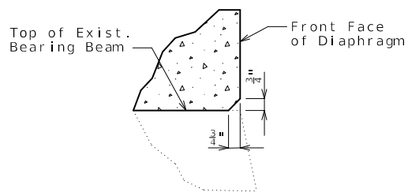
SECTION B-B

** Entire length of diaphragm



DETAIL OF WEB HOLES AT END BENTS

* Cost of field drilling holes in existing wide flange beam webs will be completely covered by the contract unit price for Slab on Steel.



CHAMFER DETAIL

Notes:

The exposed and accessible surfaces of the existing structural steel and bearings that will be encased in concrete shall be cleaned with a minimum of SSPC-SP-3 surface preparation and coated with a minimum of one coat of gray epoxy-mastic primer (non-aluminum) in accordance with Sec 1081 to produce a dry film thickness of not less than 3 mils before concrete is poured. The surface preparation and coating for beams shall extend a minimum of one foot outside the face of the beam encasement. Payment for cleaning and coating steel to be encased in concrete will be considered completely covered by the contract unit price for Slab on Steel.

The H10 and H12 bars are segmented for ease of placement through beam web holes. The total bar length for H10 & H12 bars shown in Bill of Reinforcing Steel allows for one lap splice with the length of 3'-10". Actual bar segment lengths to be determined by contractor for ease of installing bars. The contractor may use a mechanical bar splice in lieu of lap splice. When a mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacturer's recommendations for installation and ease of construction. The cost of furnishing and installing the bar splices will be considered completely covered by the contract unit price per Slab on Steel. No adjustment of the quantity of reinforcing steel will be allowed for the use of mechanical bar splices.

The #6-H11 & H13 bars are segmented for ease of placement and are long enough to span from outside edge of bent to the planned location of MBS at the respective stage of construction. Contractor to place the bars between beams.

Work the sheet with Sheet No. 3.

Cost of cutting existing anchor bolts and placing felt will be considered completely covered by the contract unit price for Slab on Steel.

END BENT NO. 1 DETAILS

Detailed August 2024
Checked August 2024

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

DATE PREPARED 9/26/2024

ROUTE	STATE
100	MO
DISTRICT	SHEET NO.
BR	4

COUNTY FRANKLIN

JOB NO. JSL0035

CONTRACT ID.

PROJECT NO.

BRIDGE NO. H03532

REV.	DESCRIPTION	DATE

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

CMT
CRAWFORD, MURPHY & TILLY, INC.
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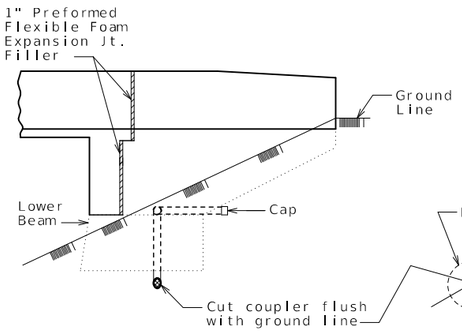
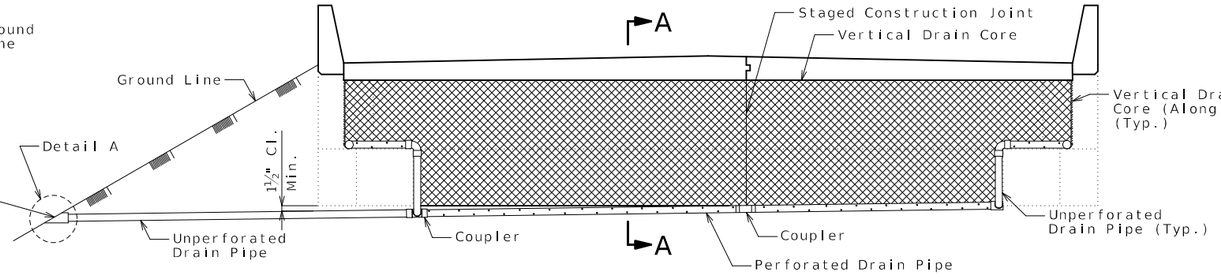
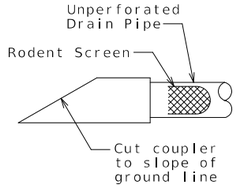


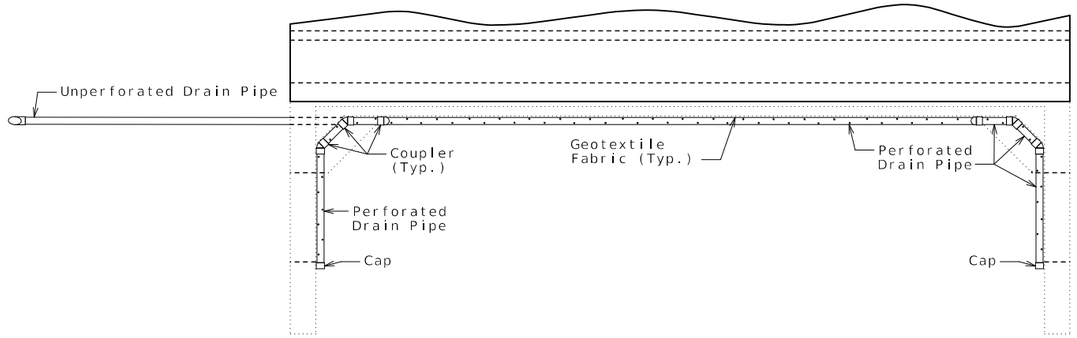
ELEVATION OF WING



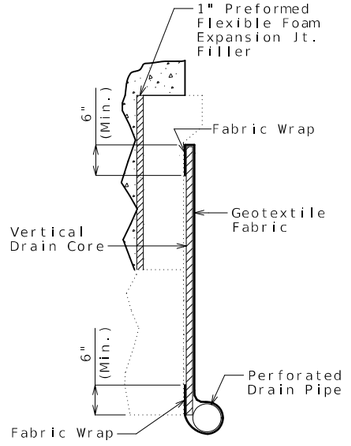
ELEVATION OF END BENT



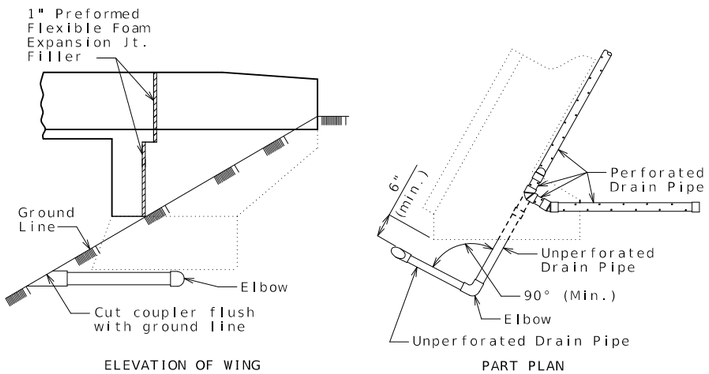
DETAIL A



PLAN OF END BENT



PART SECTION A-A
(Section thru wing similar)



ELEVATION OF WING PART PLAN

OPTIONAL TURNED DRAIN
(Use only when straight drain is not practical)

General Notes:

All drain pipe shall be sloped 1 to 2 percent.

Drain pipe may be either 6-inch diameter corrugated metallic-coated steel pipe underdrain, 4-inch diameter corrugated polyethylene (PE) drain pipe.

Drain pipe shall be placed at fill face of end bent and inside face of wings. The pipe shall slope to the lowest grade of ground line, also missing the lower beam of the end bent by a minimum of 1½ inches.

Perforated pipe shall be placed at fill face side and inside face of wings at the bottom of end bent and plain pipe shall be used where the vertical drain ends to the exit at ground line.

VERTICAL DRAIN AT END BENTS
(Squared end bent shown, skewed end bent similar)

Detailed August 2024
Checked August 2024

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

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JARED R. WIGGER
NUMBER PE-2007032762
PROFESSIONAL ENGINEER
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Jared R. Wigger - Civil
MO PE-2007032762

DATE PREPARED 10/2/2024
ROUTE 100 | STATE MO
DISTRICT BR | SHEET NO. 5
COUNTY FRANKLIN
JOB NO. JSL0035
CONTRACT ID.
PROJECT NO.
BRIDGE NO. H03532

DESCRIPTION | DATE | REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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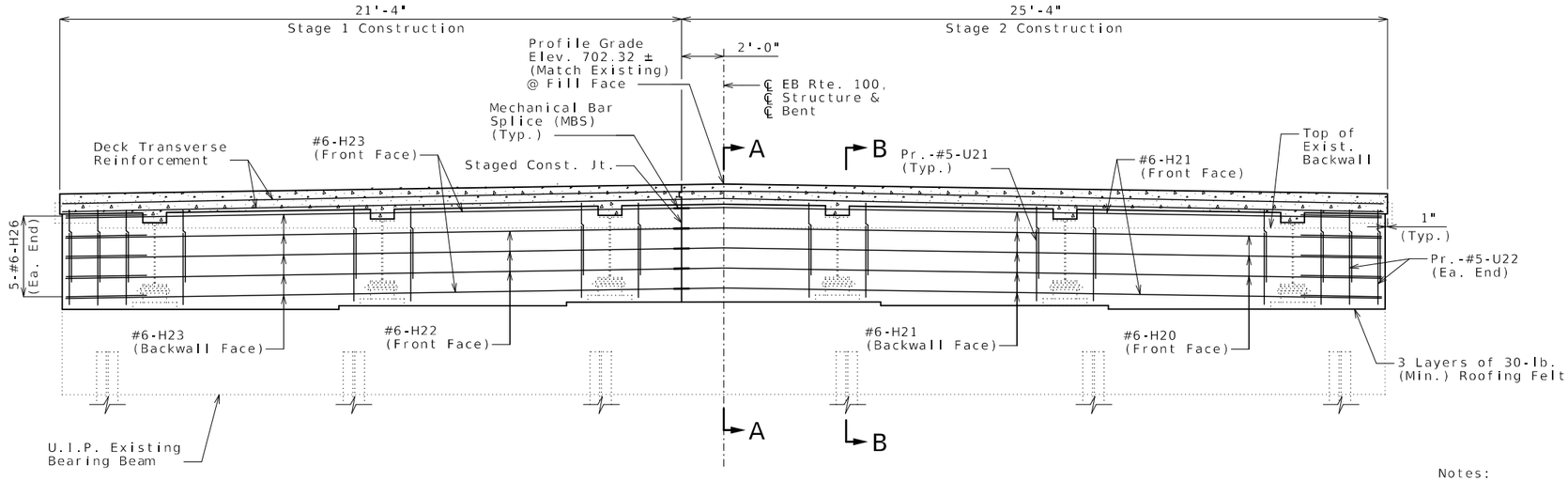


SECTION NEAR END BENT

Notes:

Existing steel end diaphragm not shown for clarity (leave-in-place).

Type D Barrier and Longitudinal Deck Reinforcement not shown for clarity.

Notes:

All concrete and reinforcement in the end bent diaphragm is included in the Table of Estimated Quantities for Slab on Steel and will be considered completely covered by the contract unit price for Slab on Steel.

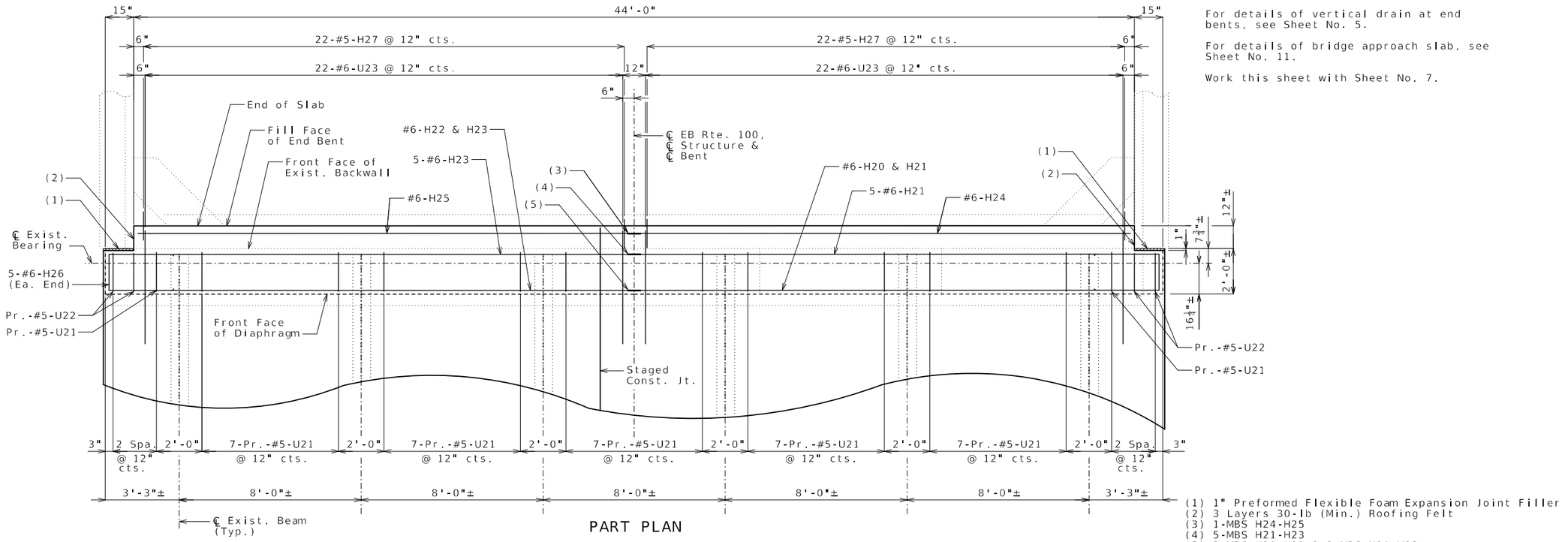
For Section A-A and B-B, see Sheet No. 7.

For details and reinforcement of Type D Barrier, see Sheets No. 9 & 10.

For details of vertical drain at end bents, see Sheet No. 5.

For details of bridge approach slab, see Sheet No. 11.

Work this sheet with Sheet No. 7.



(1) 1" Preformed Flexible Foam Expansion Joint Filler
(2) 3 Layers 30-lb (Min.) Roofing Felt
(3) 1-MBS H24-H25
(4) 5-MBS H21-H23
(5) 3-MBS H20-H22 & 2-MBS H21-H23

PART PLAN

DETAILS OF END BENT NO. 4

Detailed August 2024
Checked August 2024

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

L:\MoDOT\23005734-00_Rte100FranklinCo\573400\Structures\Bridge_JSL0035_PS&E\H03532\DGN files\Plan Sheet DGNs\B_H03532_006_JSL0035_EndBentNo4.dgn 3:32:28 PM 9/26/2024

STATE OF MISSOURI
JARED R. WIGGER
NUMBER PE-2007032762
PROFESSIONAL ENGINEER
09/26/2024 3:56:16 PM
Jared R. Wigger - Civil
MO PE-2007032762

DATE PREPARED
9/26/2024

ROUTE	STATE
100	MO
DISTRICT	SHEET NO.
BR	6

COUNTY
FRANKLIN

JOB NO.
JSL0035

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
H03532

REV.	DESCRIPTION	DATE

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105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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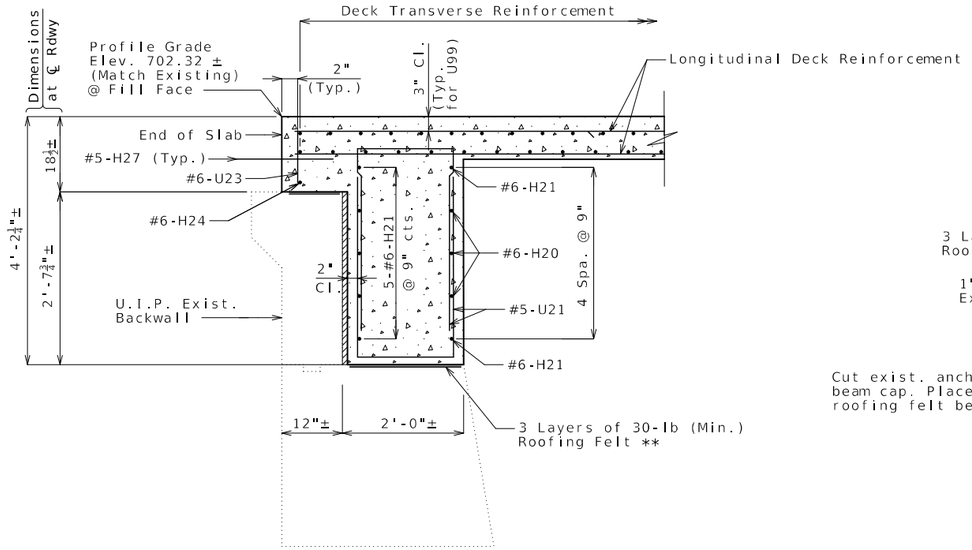
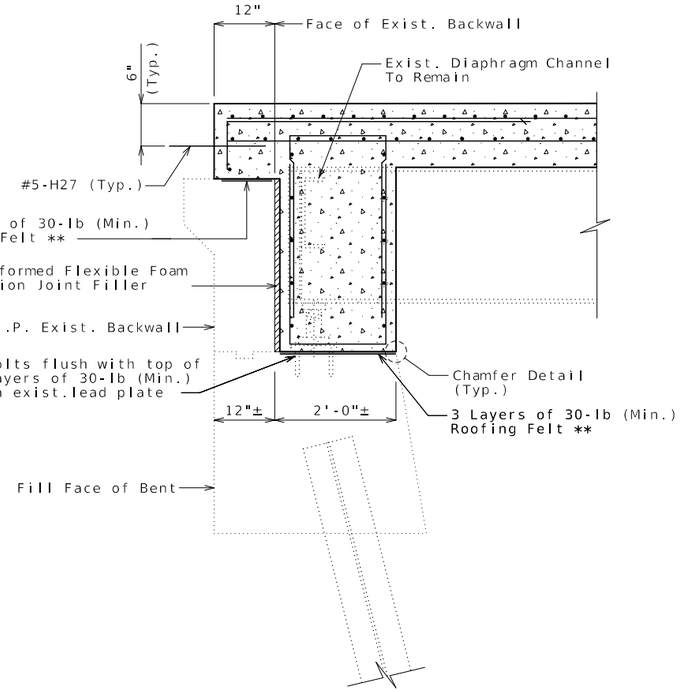
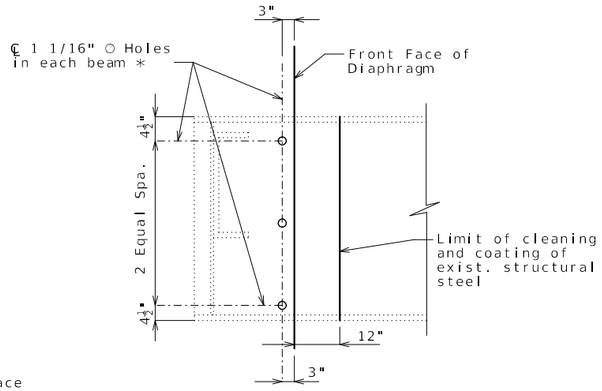


SECTION A-A



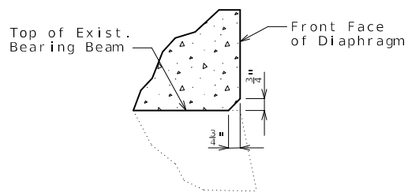
SECTION B-B

** Entire length of diaphragm



DETAIL OF WEB HOLES AT END BENTS

* Cost of field drilling holes in existing wide flange beam webs will be completely covered by the contract unit price for Slab on Steel.



CHAMFER DETAIL

Notes:

The exposed and accessible surfaces of the existing structural steel and bearings that will be encased in concrete shall be cleaned with a minimum of SSPC-SP-3 surface preparation and coated with a minimum of one coat of gray epoxy-mastic primer (non-aluminum) in accordance with Sec 1081 to produce a dry film thickness of not less than 3 mils before concrete is poured. The surface preparation and coating for beams shall extend a minimum of one foot outside the face of the beam encasement. Payment for cleaning and coating steel to be encased in concrete will be considered completely covered by the contract unit price for Slab on Steel.

The H20 and H22 bars are segmented for ease of placement through beam web holes. The total bar length for H20 & H22 bars shown in Bill of Reinforcing Steel allows for one lap splice with the length of 3'-10". Actual bar segment lengths to be determined by contractor for ease of installing bars. The contractor may use a mechanical bar splice in lieu of lap splice. When a mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacturer's recommendations for installation and ease of construction. The cost of furnishing and installing the bar splices will be considered completely covered by the contract unit price per Slab on Steel. No adjustment of the quantity of reinforcing steel will be allowed for the use of mechanical bar splices.

The #6-H21 & H23 bars are segmented for ease of placement and are long enough to span from outside edge of bent to the planned location of MBS at the respective stage of construction. Contractor to place the bars between beams.

Work the sheet with Sheet No. 6.

Cost of cutting existing anchor bolts and placing felt will be considered completely covered by the contract unit price for Slab on Steel.

END BENT NO. 4 DETAILS

Detailed August 2024
Checked August 2024

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

DATE PREPARED 9/26/2024

ROUTE	STATE
100	MO
DISTRICT	SHEET NO.
BR	7

COUNTY FRANKLIN

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CONTRACT ID.

PROJECT NO.

BRIDGE NO. H03532

REV.	DESCRIPTION	DATE

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105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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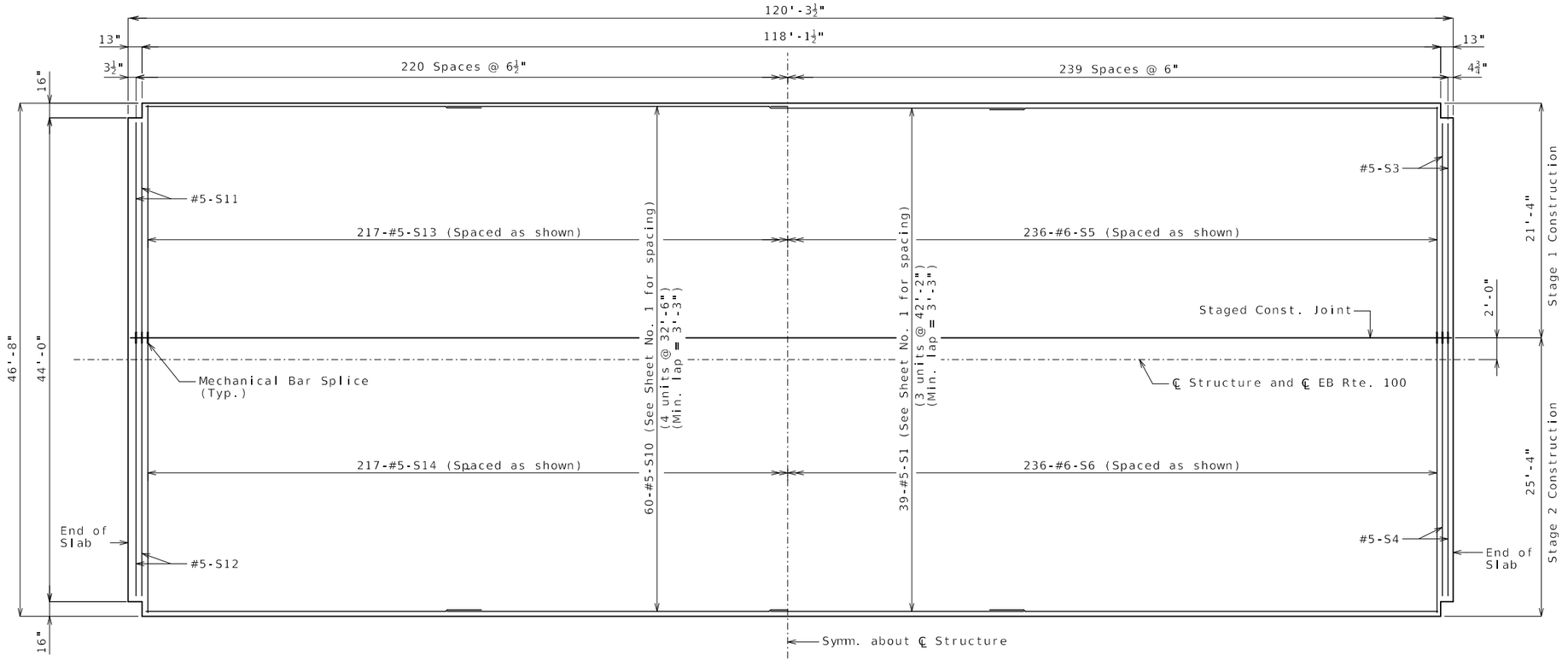


REINFORCEMENT @ BOTTOM OF SLAB

REINFORCEMENT @ TOP OF SLAB

PLAN OF REINFORCEMENT

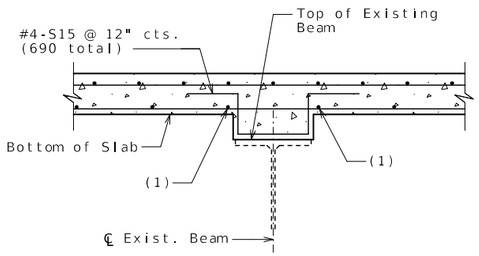
Notes:

See Sheet No. 1 for Typical Section Thru Slab.

Longitudinal reinforcement to span full length of slab.

Longitudinal reinforcement to clear staged construction joint by 1½".

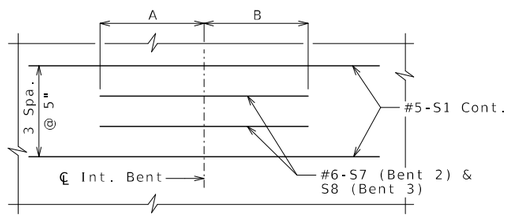
S7 & S8 bars not shown. See below.



PART SECTION SHOWING HAIRPIN BARS IN SLAB HAUNCH

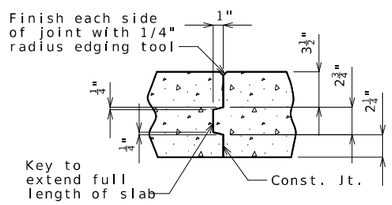
Hairpin bars may be placed at an angle to meet clearances.

(1) Adjust longitudinal deck reinforcement for use as hairpin tie bars.

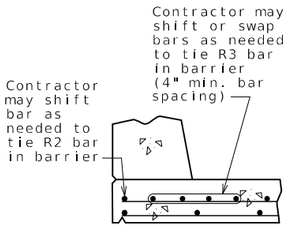


Location	Bar	A	B
Int. Bent No. 2	#6-S7	14'-0"	14'-0"
Int. Bent No. 3	#6-S8	15'-0"	15'-0"

ADDITIONAL LONGITUDINAL REINFORCING AT INTERMEDIATE BENTS



SLAB CONSTRUCTION JOINT DETAIL



OPTIONAL SHIFTING TOP BARS AT BARRIER

Detailed August 2024
Checked August 2024

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

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STATE OF MISSOURI
JARED R. WIGGER
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DATE PREPARED
9/26/2024

ROUTE	STATE
100	MO
DISTRICT	SHEET NO.
BR	8

COUNTY
FRANKLIN

JOB NO.
JSL0035

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
H03532

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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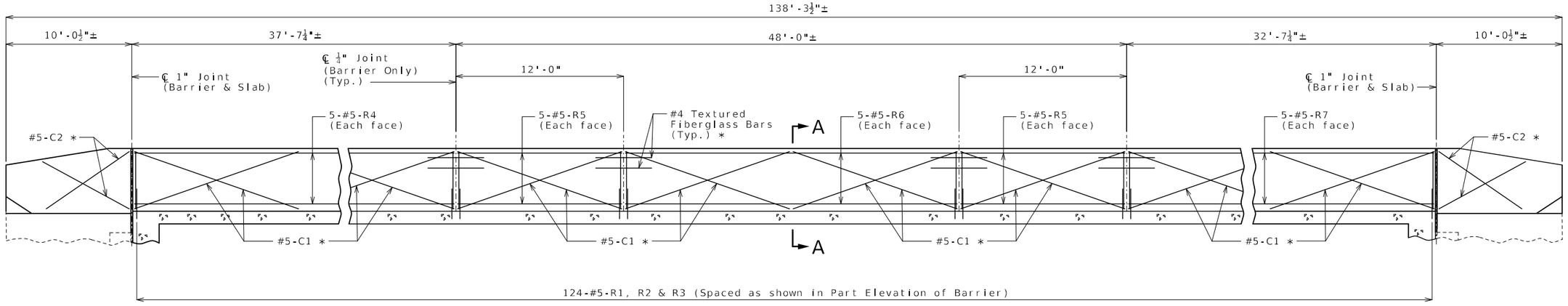
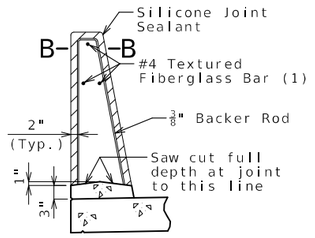
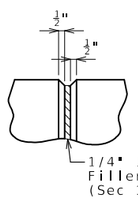


ELEVATION OF BARRIER

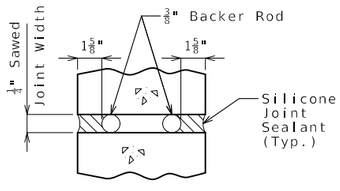
(Left barrier shown, right barrier similar)
Longitudinal dimensions are horizontal.



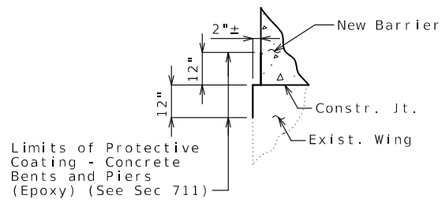
SECTION THRU SAW CUT JOINT



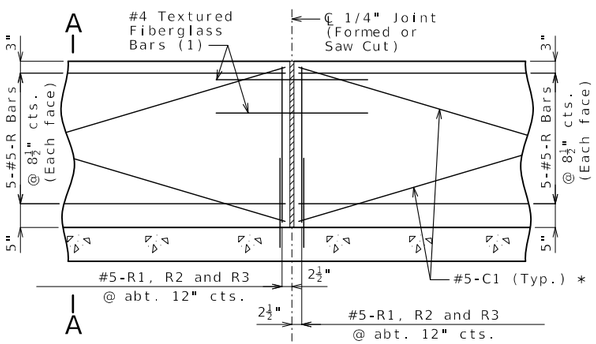
PART ELEVATION AT FORMED JOINT



SECTION B-B

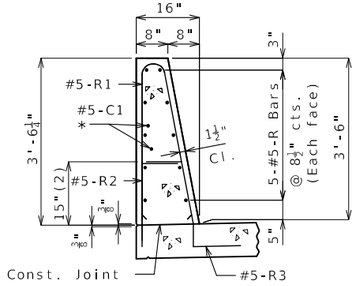


PART SECTION THRU WINGS SHOWING PROTECTIVE COATING AT END BENTS



PART ELEVATION OF BARRIER

(1) Four feet long, centered on joint, slip-formed option only

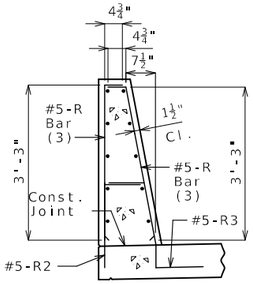


SECTION A-A

Use a minimum lap of 3'-1" for #5 horizontal barrier bars.

The cross-sectional area above the slab is 3.52 square feet.

(2) To top of bar



R-BAR PERMISSIBLE ALTERNATE SHAPE

(3) The R1 bar may be separated into two bars as shown, at the contractor's option, only when slip forming is not used. (All dimensions are out to out.)

TYPE D BARRIER

General Notes:

* Slip-formed option only.

Conventional forming or slip forming may be used. Saw cut joints may be used with conventional forming.

Top of barrier shall be built parallel to grade and barrier joints (except at end bents) normal to grade.

All exposed edges of barrier shall have either a 1/2-inch radius or a 3/8-inch bevel, unless otherwise noted.

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for Type D Barrier per linear foot.

Concrete in barrier shall be Class B-1.

Measurement of barrier is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.

Concrete traffic barrier delineators shall be placed on top of the barrier as shown on Missouri Standard Plan 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for Type D Barrier.

Joint sealant and backer rods shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

For slip-formed option, both sides of barrier shall have a vertically broomed finish and the top shall have a transversely broomed finish.

STATE OF MISSOURI
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DATE PREPARED 10/2/2024
ROUTE 100 | STATE MO
DISTRICT BR | SHEET NO. 9
COUNTY FRANKLIN
JOB NO. JSL0035
CONTRACT ID.
PROJECT NO.
BRIDGE NO. H03532

REV.	DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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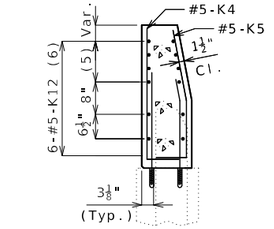
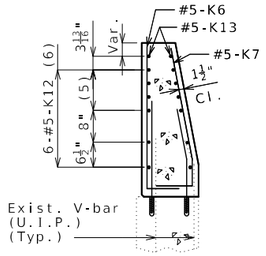
Detailed August 2024
Checked August 2024

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

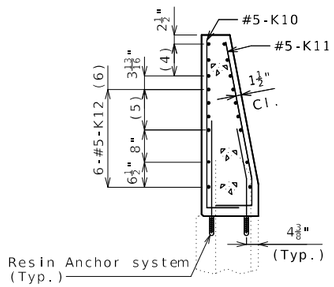
L:\MoDOT\23005734-00_Rte100FranklinCo\573400\Structures\Bridge_JSL0035_PS&E (Re-Submit Sheets)\H03532\DGN files\Plan Sheet DGNs\B_H03532_009_JSL0035_BarrierDetails.dgn 8:44:27 AM 10/2/2024



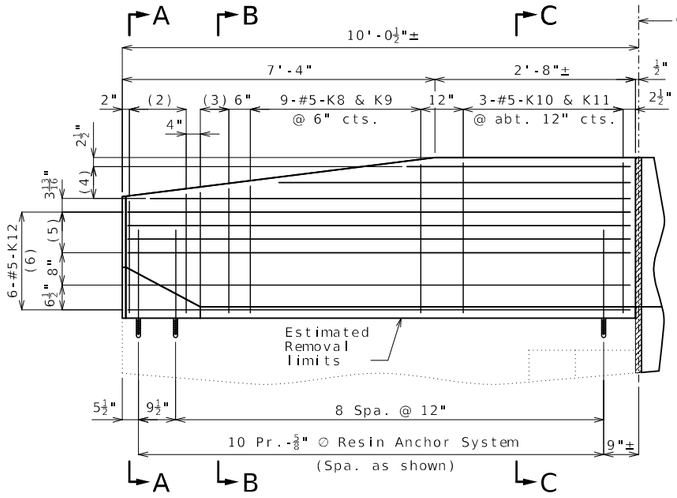
SECTION A-A

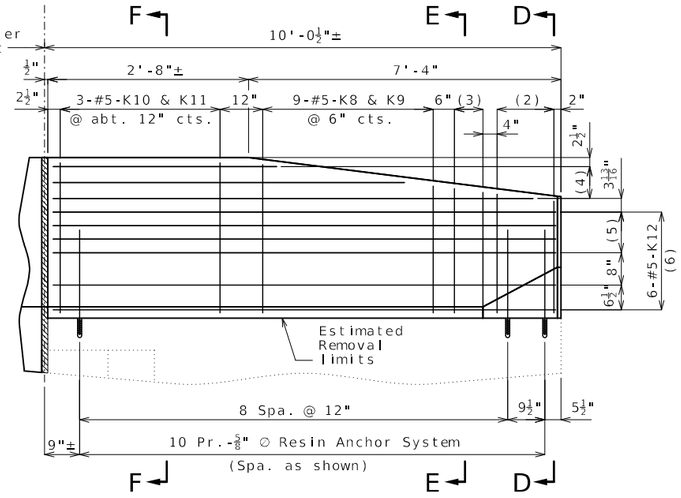


SECTION B-B

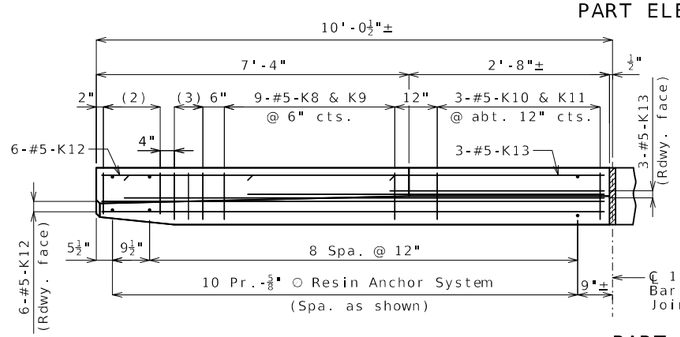


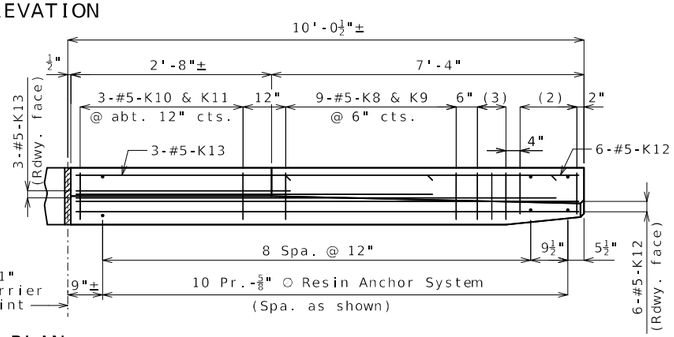
SECTION C-C





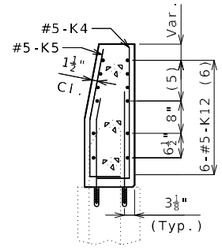
PART ELEVATION



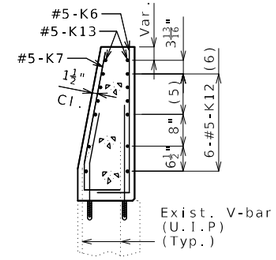


PART PLAN

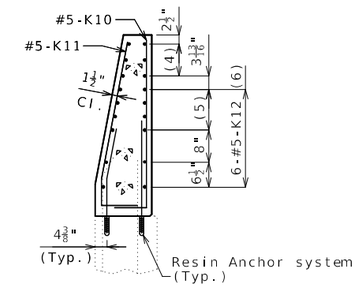
(2) 5-#5-K4 & K5 @ 4" cts.
(3) 3-#5-K6 & K7 @ 4" cts.
(4) 3-#5-K13 @ 4½" cts., each face
(5) 3 Spaces @ 3 13/16"
(6) Spaced as shown, each face



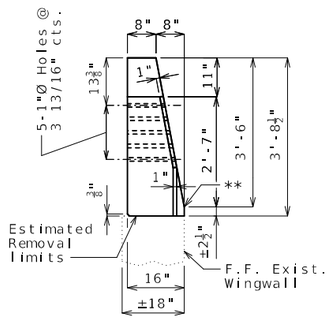
SECTION D-D



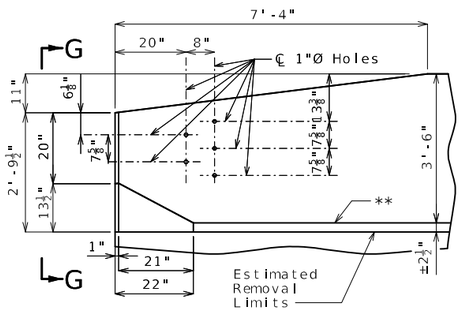
SECTION E-E



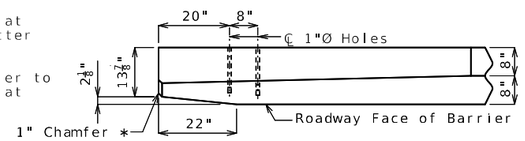
SECTION F-F



ELEVATION G-G



ELEVATION



PLAN

DETAILS OF GUARD RAIL ATTACHMENT

* Transition to zero at Type A curb for gutter lines to match.

** Front Face of barrier to meet Roadway Grade at this point.

General Notes:

Concrete traffic barrier delineators shall be placed on top of the barrier as shown on Missouri Standard Plan 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for Type D Barrier.

Reinforcing Steel:

Minimum clearance to reinforcing steel shall be 1 1/2" except as shown for bars embedded into end bent.

Miscellaneous:

Dimensions should be confirmed in the field before ordering material.

Resin Anchor System:

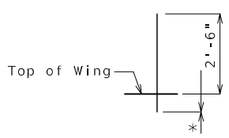
The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

Cost of furnishing and installing the resin anchor systems, complete in place, will be considered completely covered by the contract unit price for Type D Barrier.

The minimum embedment depth in concrete with f'c = 4000 psi for the resin anchor systems shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

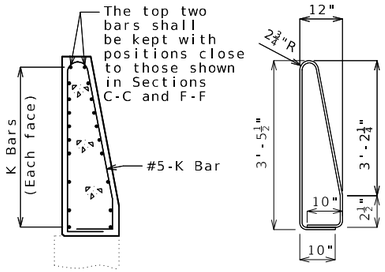
An epoxy coated #5 Grade 60 reinforcing bar extending 2'-6" into new concrete shall be substituted for the 5/8" threaded rod for resin anchor system.

Resin anchor system shall be bent in field at roadway face.



DETAILS OF RESIN ANCHOR SYSTEM

* Manufacturer's recommended embedment length (5" min.)



K10-K11 BAR PERMISSIBLE ALTERNATE SHAPE

(Other K bars not shown for clarity)

The K10-K11 bar combination may be furnished as one bar as shown, at the contractor's option.

All dimensions are out to out.

TYPE D BARRIER AT END BENTS

(Left barrier shown, right barrier similar)

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

Detailed August 2024
Checked August 2024

STATE OF MISSOURI
JARED R. WIGGER
NUMBER PE-2007032762
PROFESSIONAL ENGINEER
10/02/2024 3:06:46 PM
Jared R. Wigger - Civil
MO PE-2007032762

DATE PREPARED 10/2/2024

ROUTE	STATE
100	MO
DISTRICT	SHEET NO.
BR	10

COUNTY: FRANKLIN
JOB NO.: JSL0035
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: H03532

DESCRIPTION | DATE | REV.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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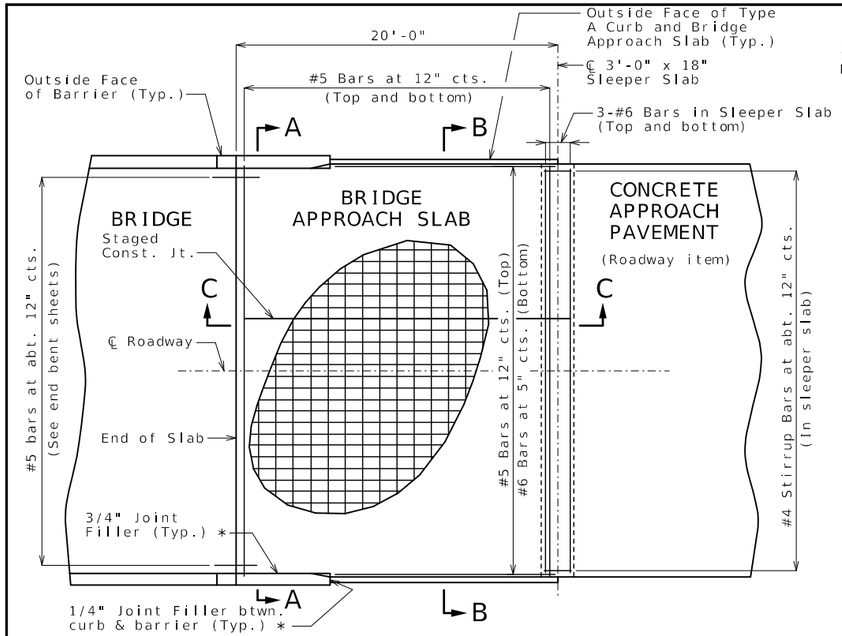
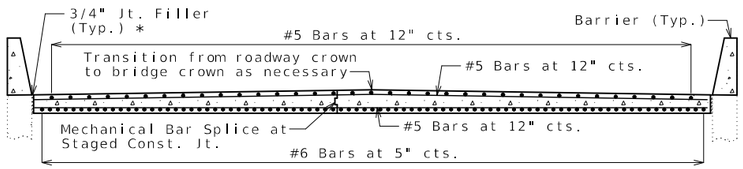
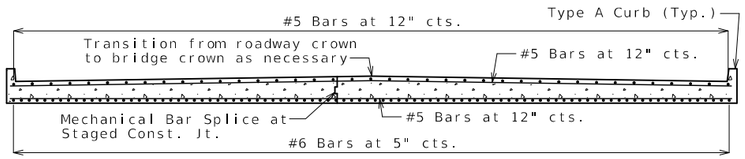


PART PLAN SHOWING REIFORCEMENT

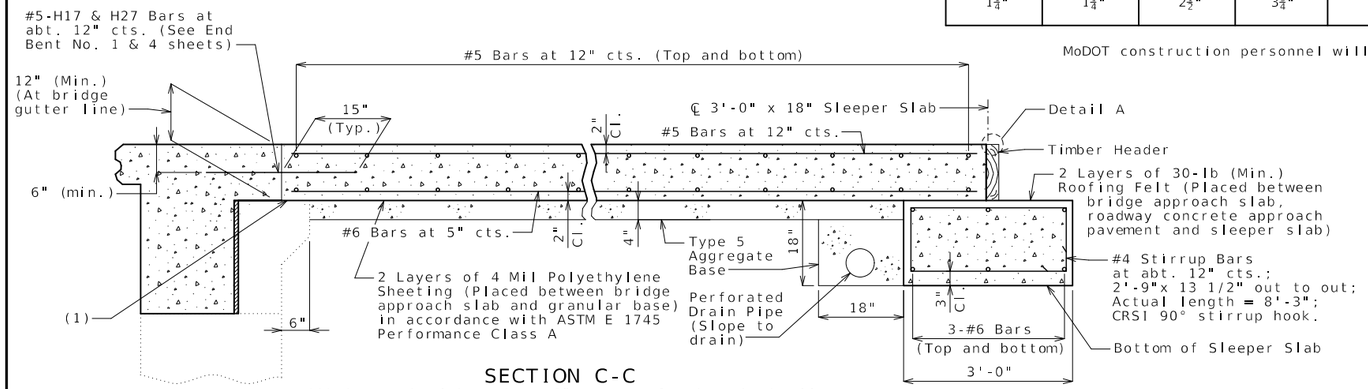


SECTION A-A



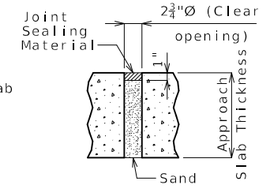
SECTION B-B

With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.



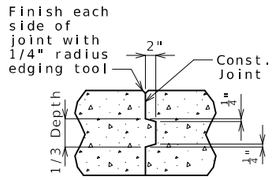
SECTION C-C

(1) Approach slab to bear 6" on top of exist. backwall seat

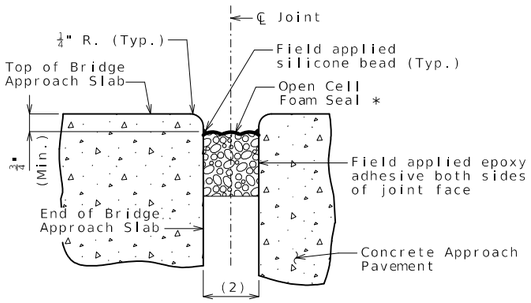


UNDERSEAL ACCESS HOLE DETAIL

(If required)



CONSTRUCTION JOINT DETAIL

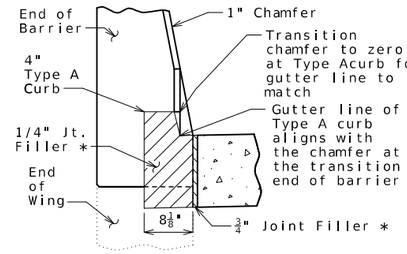


DETAIL A

NO SKEW

* Manufacturer's recommended size

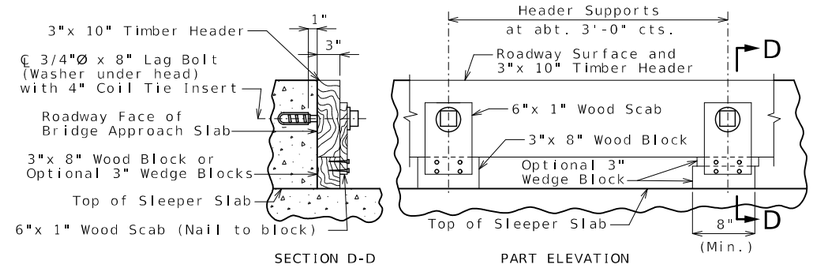
Extend seal full width of approach slab.



SECTION BETWEEN CURB AND BARRIER

Movement Parallel to Rdwy	Movement Normal to Joint	Min. Jt. Width (Normal to Joint)	Max. Jt. Width (Normal to Joint)	(1) Allowed Installation Gap (±) Normal to Joint at Roadway Surface at Air/Surface Temperature				Manufacturer	Seal Name
				@ 40°F	@ 50°F	@ 60°F	@ 70°F		
1¼"	1¼"	2½"	3¾"	3 3/16"	3 1/16"	3"	2 15/16"		

MoDOT construction personnel will record the manufacturer and seal name that was used.



SECTION D-D PART ELEVATION

DETAILS OF TIMBER HEADER

Remove timber header when concrete pavement is placed.

General Notes:

All concrete for the bridge approach slab and sleeper slab shall be in accordance with Sec 503 (f'c = 4,000 psi).

The reinforcing steel in the bridge approach slab and the sleeper slab shall be epoxy coated Grade 60 with fy = 60,000 psi.

Drain pipe may be either 6" diameter corrugated metallic-coated pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.

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

The reinforcing steel in the bridge approach slab and the sleeper slab shall be continuous. The transverse reinforcing steel may be made continuous by providing a minimum lap splice of 29 inches for #5 bars and 44 inches for #6 bars, or by mechanical bar splice.

Mechanical bar splices shall be in accordance with Sec 710. (Estimated 46 splices per slab)

All joint filler shall be in accordance with Sec 1057 for preformed fiber expansion joint filler except as noted.

The contractor shall pour and satisfactorily finish the bridge slab before placing the bridge approach slab.

Longitudinal construction joints in approach slab and sleeper slab shall be aligned with longitudinal construction joints in bridge slab.

For concrete approach pavement details, see roadway plans.

See Missouri Standard Plan 609.00 for details of Type A curb.

Payment for furnishing all materials, labor and excavation necessary to construct the approach slab, including the timber header, sleeper slab, underdrain, Type 5 aggregate base, joint filler and all other appurtenances and incidental work as shown on this sheet, complete in place, will be considered completely covered by the contract unit price for Bridge Approach Slab (Major) per square yard.

* Seal joint between vertical face of approach slab and wing with sealant in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

Removal of Existing Approach Slab shall be in accordance with Job Special Provision Removal of Existing Approach Slab.

Open cell foam joint seal size (width and depth) shall be determined by the manufacturer. Manufacturer recommended seal size shall meet the movement and installation gap requirements and skew effect.

The open cell foam joint seal shall be installed according to the manufacturer's recommendations.

The installation temperature shall be taken as the actual air temperature averaged over the 24-hour period immediately preceding installation.

(2) Allowed installation gap (±) normal to joint at roadway surface (see table).

Detailed August 2024
Checked August 2024

BRIDGE APPROACH SLAB (MAJOR)

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

Sheet No. 11 of 13

STATE OF MISSOURI
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MO PE-2007032762

DATE PREPARED 9/26/2024

ROUTE	STATE
100	MO
DISTRICT	SHEET NO.
BR	11

COUNTY FRANKLIN

JOB NO. JSL0035

CONTRACT ID.

PROJECT NO.

BRIDGE NO. H03532

REV.	DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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L:\MoDOT\23005734-00_Rte100FranklinCo\573400\Structures\Bridge_JSL0035_PS&E\H03532\DGN files\Plan Sheet DGNs\B_H03532_011_JSL0035_ApproachSlab.dgn 3:32:36 PM 9/26/2024

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
		END BENT 1													
3	6 H10	DIAPHRAGM	E	20		29 0.00							29 0	29 0	131
7	6 H11	DIAPHRAGM	E	20		25 2.00							25 2	25 2	265
3	6 H12	DIAPHRAGM	E	20		25 0.00							25 0	25 0	113
7	6 H13	DIAPHRAGM	E	20		21 2.00							21 2	21 2	223
1	6 H14	DIAPHRAGM	E	20		23 11.00							23 11	23 11	36
1	6 H15	DIAPHRAGM	E	20		19 11.00							19 11	19 11	30
10	6 H16	DIAPHRAGM	E	10			2 10.00	18.00					7 2	6 10	103
44	5 H17	DIAPHRAGM	E	20		2 6.00							2 6	2 6	115
74	5 U11	DIAPHRAGM	E	10S			3 6.00	20.00					8 8	8 5	650
8	5 U12	DIAPHRAGM	E	10S			3 6.00	19.00					8 7	8 4	70
44	6 U13	DIAPHRAGM	E	19	2	9.50	5 1.00						5 11	5 9	
		INCR. = 0.19 IN.				13.50	5 1.00						6 3	6 1	392
		END BENT 4													
3	6 H20	DIAPHRAGM	E	20		29 0.00							29 0	29 0	131
7	6 H21	DIAPHRAGM	E	20		25 2.00							25 2	25 2	265
3	6 H22	DIAPHRAGM	E	20		25 0.00							25 0	25 0	113
7	6 H23	DIAPHRAGM	E	20		21 2.00							21 2	21 2	223
1	6 H24	DIAPHRAGM	E	20		23 11.00							23 11	23 11	36
1	6 H25	DIAPHRAGM	E	20		19 11.00							19 11	19 11	30
10	6 H26	DIAPHRAGM	E	10S			2 10.00	18.00					7 2	6 10	103
44	5 H27	DIAPHRAGM	E	20		2 6.00							2 6	2 6	115
74	5 U21	DIAPHRAGM	E	10S			3 4.00	20.00					8 4	8 1	624
8	5 U22	DIAPHRAGM	E	10S			3 4.00	19.00					8 3	8 0	67
44	6 U23	DIAPHRAGM	E	19	2	9.50	5 1.00						5 11	5 9	
		INCR. = 0.19 IN.				13.50	5 1.00						6 3	6 1	392
		SLAB													
117	5 S1	SLAB	E	20		42 2.00							42 2	42 2	5,146
4	6 S3	SLAB	E	20		19 10.00							19 10	19 10	120
4	6 S4	SLAB	E	20		23 10.00							23 10	23 10	144
236	6 S5	SLAB	E	20		21 2.00							21 2	21 2	7,503
236	6 S6	SLAB	E	20		25 2.00							25 2	25 2	8,921
72	6 S7	SLAB	E	20		28 0.00							28 0	28 0	3,029
72	6 S8	SLAB	E	20		30 0.00							30 0	30 0	3,245
240	5 S10	SLAB	E	20		32 6.00							32 6	32 6	8,136
4	5 S11	SLAB	E	20		19 10.00							19 10	19 10	83
4	5 S12	SLAB	E	20		23 10.00							23 10	23 10	100
217	5 S13	SLAB	E	20		21 2.00							21 2	21 2	4,791
217	5 S14	SLAB	E	20		25 2.00							25 2	25 2	5,696
690	4 S15	SLAB	E	10		6.00	4.00	7.00	6.00				2 3	1 10	846
		BARRIER													
248	5 R1	BARRIER	E	26		3 3.00	5.50	2.25	3 1.25	5.50	3 0.75	6.75	6 11	6 8	1,725
248	5 R2	BARRIER	E	19S		20.50	9.50						2 6	2 5	626
248	5 R3	BARRIER	E	27S			9.50	15.25	5.00	12.00	15.00	3.00	3 6	3 4	863
20	5 R4	BARRIER	E	20		37 3.00							37 3	37 3	778
40	5 R5	BARRIER	E	20		11 8.00							11 8	11 8	487
20	5 R6	BARRIER	E	20		23 8.00							23 8	23 8	494
20	5 R7	BARRIER	E	20		32 3.00							32 3	32 3	673

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
20	5 K4	BARRIER	E	19S	4	2 6.75	10.00						3 5	3 3	
		INCR. = 0.5 IN.				2 8.75	10.00						3 7	3 5	70
20	5 K5	BARRIER	E	38S	4			18.25	12.00	8.25	18.00	4.00	3 3	3 1	
		INCR. = 0.5 IN.						20.50	12.00	8.25	20.00	4.50	3 5	3 3	67
12	5 K6	BARRIER	E	19S		2 9.25	10.00						3 7	3 6	44
12	5 K7	BARRIER	E	38S				2 6.50	2.50	10.00	2 6.00	6.25	3 7	3 6	44
36	5 K8	BARRIER	E	19S	4	2 11.00	10.00						3 9	3 8	
		INCR. = 0.75 IN.				3 5.00	10.00						4 3	4 2	148
36	5 K9	BARRIER	E	38S	4			2 8.50	2.50	10.00	2 7.75	6.75	3 9	3 8	
		INCR. = 0.75 IN.						3 2.50	2.50	10.00	3 1.75	7.75	4 3	4 2	148
12	5 K10	BARRIER	E	19S		3 5.50	10.00						4 4	4 2	53
12	5 K11	BARRIER	E	38S				3 3.00	2.50	10.00	3 2.25	7.75	4 4	4 2	53
48	5 K12	BARRIER	E	20		9 8.00							9 8	9 8	484
12	5 K13	BARRIER	E	20	4	8 11.00							8 11	8 11	
		INCR. = 36 IN.				2 11.00							2 11	2 11	75
		SLIP FORM OPTION													
32	5 C1	SLIP FORM	E	20		12 0.00							12 0	12 0	401
8	5 C2	SLIP FORM	E	20		7 9.00							7 9	7 9	65

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. 13.

Detailed August 2024
Checked August 2024

All bars shall be Grade 60.

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.

BILL OF REINFORCING STEEL

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

STATE OF MISSOURI
JARED R. WIGGER
NUMBER PE-2007032762
PROFESSIONAL ENGINEER
09/26/2024 4:27:18 PM
Jared R. Wigger - Civil
MO PE-2007032762

DATE PREPARED 9/26/2024
ROUTE 100 | STATE MO
DISTRICT BR | SHEET NO. 12
COUNTY FRANKLIN
JOB NO. JSL0035
CONTRACT ID.
PROJECT NO.
BRIDGE NO. H03532

REV.	DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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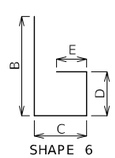
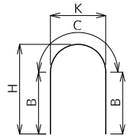
ENGINEERING CORPORATION - 000631



SHAPE 6
or 6S



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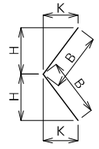
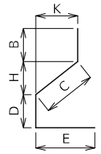
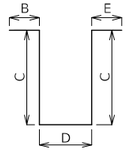


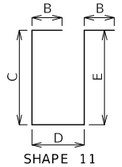
SHAPE 8
or 8S



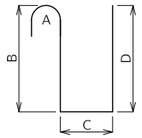
SHAPE 9
or 9S



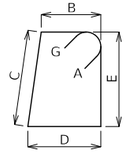
SHAPE 10
or 10S



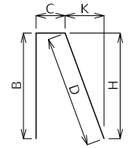
SHAPE 11
or 11S



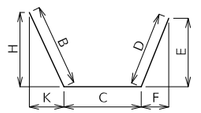
SHAPE 12



SHAPE 13S



SHAPE 14
or 14S



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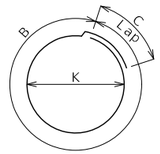

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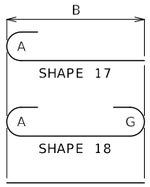
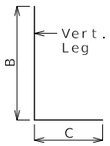


SHAPE 17
SHAPE 18
SHAPE 20



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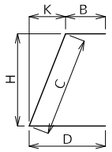
or 19S



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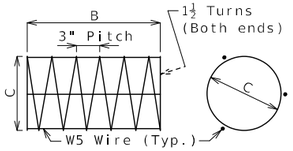
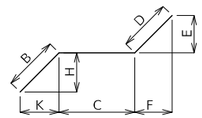
or 21S



SHAPE 22



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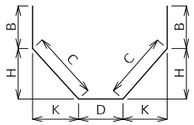
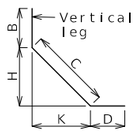
or 23S



SHAPE 24
or 24S



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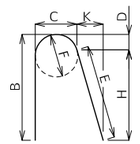
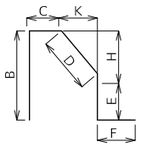
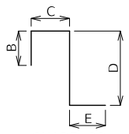
or 25S



SHAPE 26



SHAPE 27S



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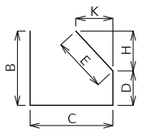
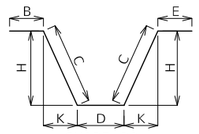
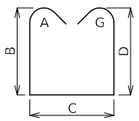
or 28S



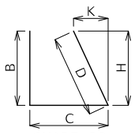
SHAPE 29
or 29S



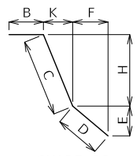
SHAPE 30
or 30S



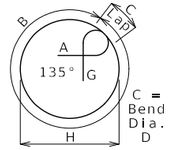
SHAPE 31S



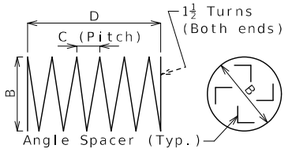
SHAPE 32
or 32S



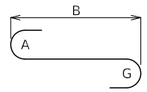
SHAPE 33
or 33S



SHAPE 34S



SHAPE 35 (1)

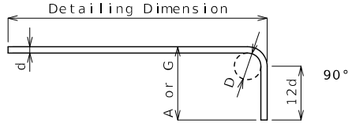


SHAPE 36

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"	21⅜"
#18	1	24"	41½"	36¼"	28½"

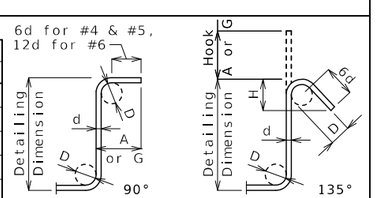


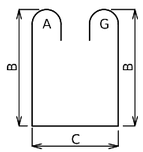
Stirrup Pin Bend Shapes (S)

Size	Case	D	A or G			H	J
			90°	135°	180°	135°	180°
#4	2	2"	4¼"	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"

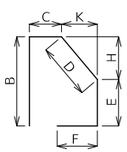
Applicable for all grades of steel.

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)

		Substructure		Superstructure				Entire Bridge	
				Slab					
	Size	Plain	Epoxy	Plain	Epoxy	Barrier	Slip Form	Plain	Epoxy
By Size	W5	0	0	0	0	0	0	0	0
	4	0	0	0	846	0	0	0	846
	5	0	0	0	25593	6832	466	0	32891
	6	0	0	0	25548	0	0	0	25548
	7	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0
	9	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0	0
	14	0	0	0	0	0	0	0	0
	18	0	0	0	0	0	0	0	0
By Type		0	0	0	51987	6832	466	0	59285

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

Detailed August 2024
Checked August 2024

BENDING DIAGRAMS AND REINFORCING STEEL TOTALS

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

STATE OF MISSOURI
JARED R. WIGGER
NUMBER PE-2007032762
PROFESSIONAL ENGINEER
09/26/2024 4:04:10 PM
Jared R. Wigger - Civil
MO PE-2007032762

DATE PREPARED 9/26/2024
ROUTE 100 | STATE MO
DISTRICT BR | SHEET NO. 13
COUNTY FRANKLIN
JOB NO. JSL0035
CONTRACT ID.
PROJECT NO.
BRIDGE NO. H03532

DESCRIPTION | DATE | REV.

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

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ENGINEERING CORPORATION - 000631