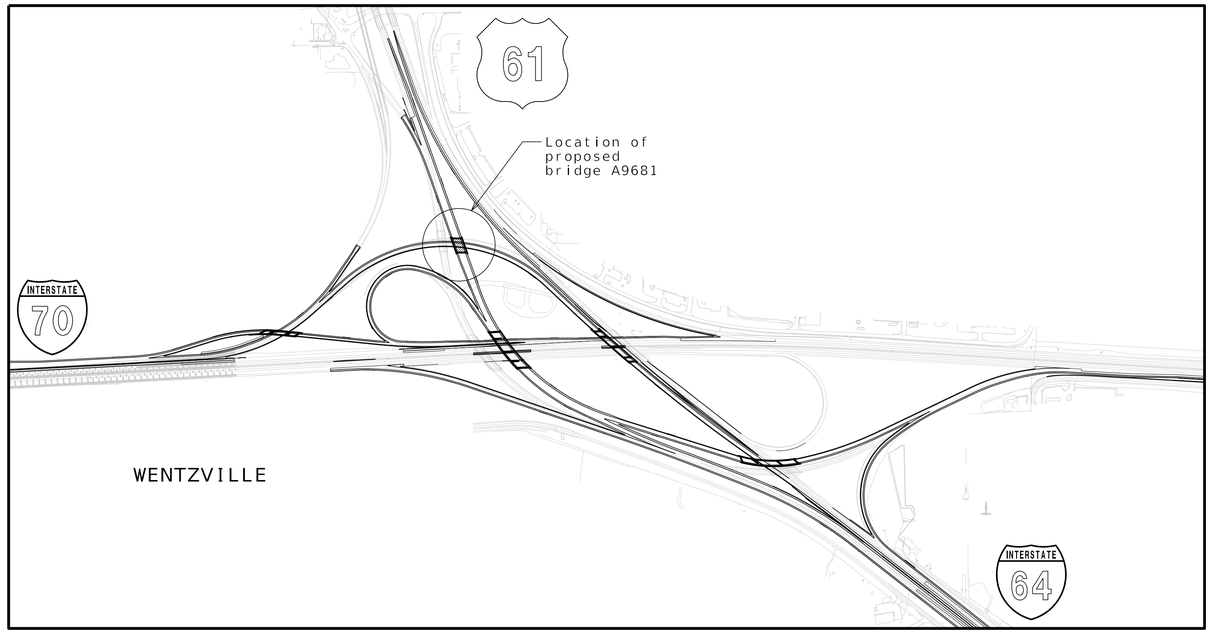
(97') PRESTRESSED CONCRETE NU-GIRDER SPAN



LOCATION MAP

INDEX OF DRAWINGS

DATE PREPARED 5/5/2025
ROUTE US-61 | STATE MO
DISTRICT BR | SHEET NO. 1
COUNTY ST. CHARLES
JOB NO. JST0020
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9681

DESCRIPTION | DATE

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

IMPROVE 70 ALLIANCE

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270

Bartlett & West
601 RIDGE ST., SUITE 201 - JEFFERSON CITY, MO 65101
PHONE: 573-635-2418
CERTIFICATE OF AUTHORITY NO. 000117 - ENGINEERING
WWW.BARTLETTWEST.COM

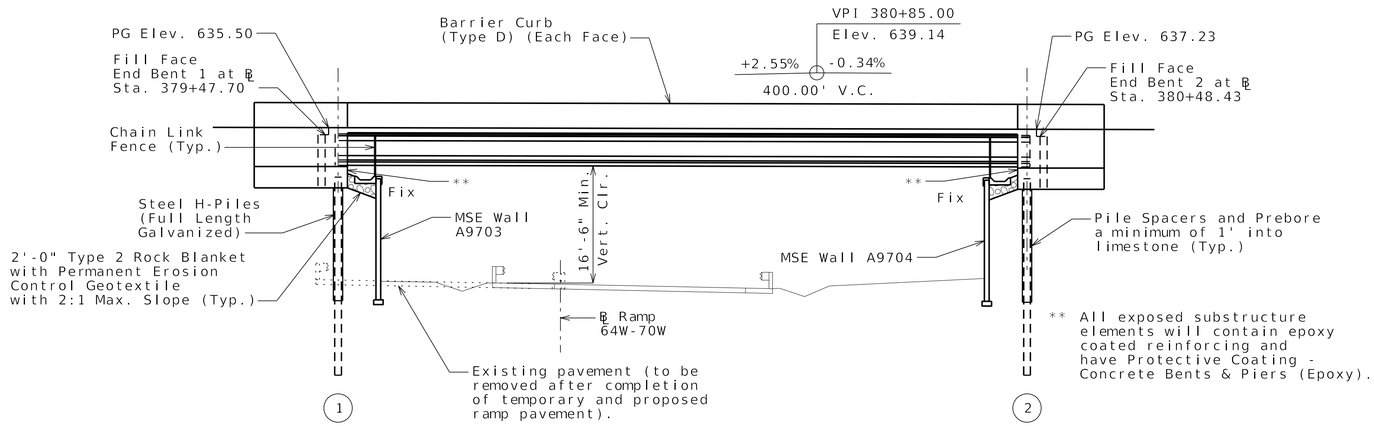
BRIDGE: 61S OVER RAMP 64W-70W
ROUTE * FROM * TO *
ABOUT * MILES * OF *
___ STATION _____

Designed JUL 2025
Detailed JUL 2025
Checked JUL 2025

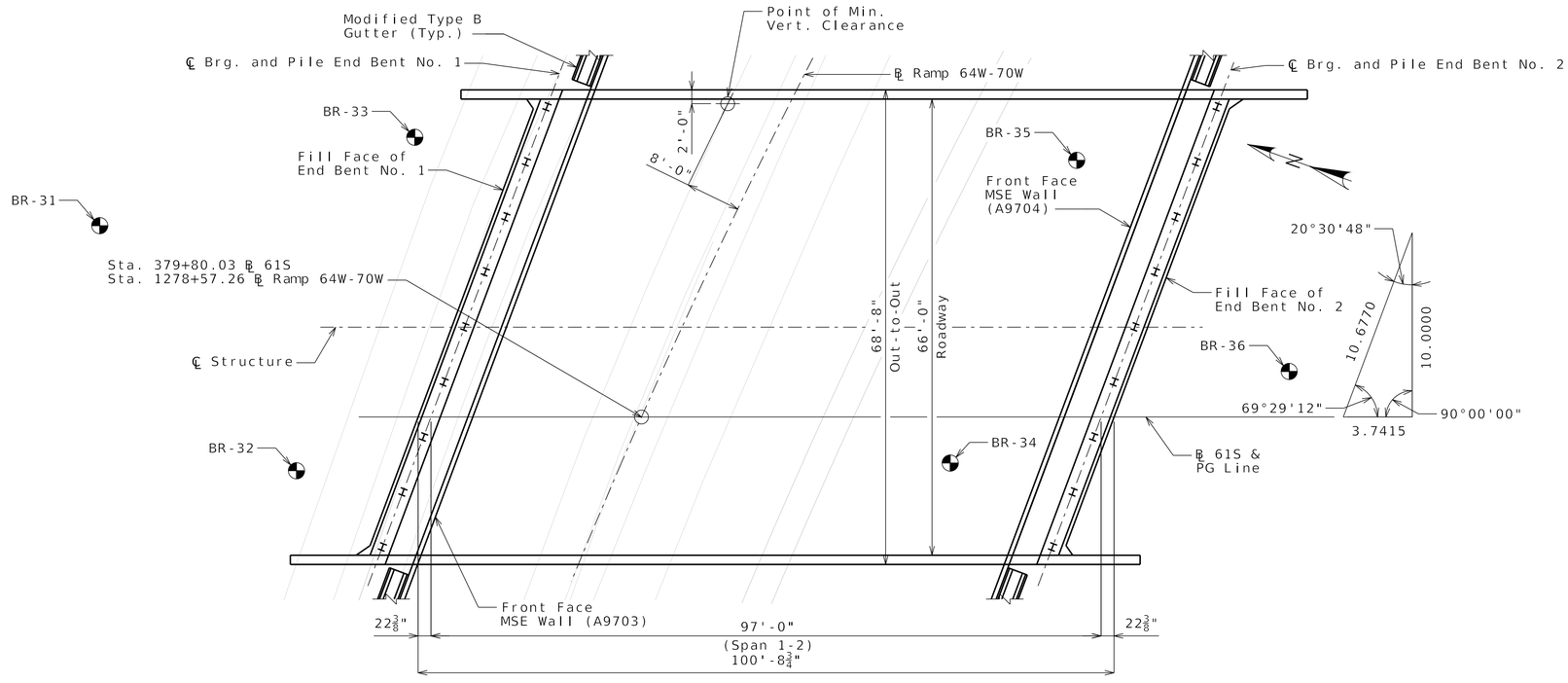
Note: This drawing is not to scale. Follow dimensions.

B_A9681_001_JST0020_TITLE.dgn 12:23:10 PM 5/5/2025

(97') PRESTRESSED CONCRETE NU-GIRDER SPAN



GENERAL ELEVATION



PLAN

Indicates location of borings.

Notice and Disclaimer Regarding Boring Log Data

The locations of all subsurface borings for this structure are shown above. These borings are depicted in profile on Sheets No. XX and XX. The longs, laboratory test results, rock core photographs and other information obtained at these borings are available in the geotechnical memorandum prepared by HNTB for this structure.

By nature of the exploration process, the information at subsurface borings represents only a small fracion of the total volume of material at this site. Interpolation between data samples may not be indicative of the nature and extent of the variations that actually existing between sampling locations.

Notes:

All bents are parallel.

For General Notes and Foundation Details, see Sheet No. 3.

Detailed JUL 2025
Checked JUL 2025

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

Sheet 2 of XX

GENERAL PLAN AND ELEVATION

DATE PREPARED 5/5/2025
ROUTE US-61 | STATE MO
DISTRICT BR | SHEET NO. 2
COUNTY ST. CHARLES
JOB NO. JST0020
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9681

DESCRIPTION | DATE

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

IMPROVE 70 ALLIANCE

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270

Bartlett & West
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101
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CERTIFICATE OF AUTHORITY NO. 000107 - ENGINEERING
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B_A9681_002_JST0020_GPE.dgn 12:23:42 PM 5/5/2025

Foundation Data

Type	Design Data	Bent Number 1	Bent Number 2
Load Bearing Pile	Pile Type and Size	HP *x*	HP *x*
	Number ea	*	*
	Approximate Length Per Each ft	*	*
	Pile Point Reinforcement ea	*	*
	Min. Galvanized Penetration (Elev.) ft	*	*
	Pile Driving Verification Method	(1)	(1)
	Resistance Factor	*	*
	Minimum Nominal Axial Compressive Resistance kip	*	*

Load Bearing Piles:

$$\text{Minimum Nominal Axial Compressive Resistance} = \frac{\text{Maximum Factored Loads}}{\text{Resistance Factor}}$$

Driven Piles:

All piles shall be galvanized full length.

Manufactured pile point reinforcement shall be used on all piles in this structure.

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

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

Design Specifications:

2020 AASHTO LRFD Bridge Design Specifications (9th Ed.)
Seismic Performance Category = A (Seismis Details plus Abutment Seismic Design)

Design Loading:

Vehicular = HL-93
Future Wearing Surface = 35 lb/sf (Min.)
Earth = 120 lb/cf
Equivalent Fluid Pressure = 45 lb/cf
Superstructure: Simply-Supported. Non-Composite for dead 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 A706 Grade 60)	fy = 60,000 psi
Structural Steel HP Pile (ASTM A709 Grade 50)	fy = 50,000 psi

For prestressed girder stresses, see Sheet No. 12.

Neoprene Pads:

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

Pile Protective Coatings:

Piles shall be galvanized in accordance with Sec 702 and Sec 1081.

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.

All exposed substructure elements will contain epoxy coated reinforcing.

Traffic Handling:

Vertical Clearance for Ramp 64W-70W traffic during construction shall be 15 ft. minimum over all lanes of live traffic as shown in each phase of the Maintenance of Traffic Plans.

Structure to be closed during construction. Traffic to be maintained on other structures during construction. See Maintenance of Traffic Plans for traffic control.

Concrete Protective Coatings:

Protective coating for cocrete bents (Epoxy) shall be applied to all exposed substructure surfaces and in accordance with Sec 711.

Miscellaneous:

High strength bolts, nuts and washers will be sampled for quality assurance as specifies in Sec 106.

Stay-In-Place Forms:

Corrugated steel forms, supports, closure elements and accessories shall be in accordance with grade requirements 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 girder flanges. Sheets shall be securely fastened to form supports with a minimum bearing length of one inch on each end. Form supports shall be placed in direct contact with the flange. Drilling holes in the girder flanges will not be permitted. All steel fabrication and construction shall be in accordance with Sec 1080 and 712. Certified field welders will not be required for welding of the form supports.

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

DATE PREPARED 5/5/2025
ROUTE US-61 | STATE MO
DISTRICT BR | SHEET NO. 3
COUNTY ST. CHARLES
JOB NO. JST0020
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9681

DESCRIPTION | DATE

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

IMPROVE 70 ALLIANCE

HNTB 715 KIRK DRIVE KANSAS CITY, MO 64105-1310 CERTIFICATE OF AUTHORITY NO. 001270

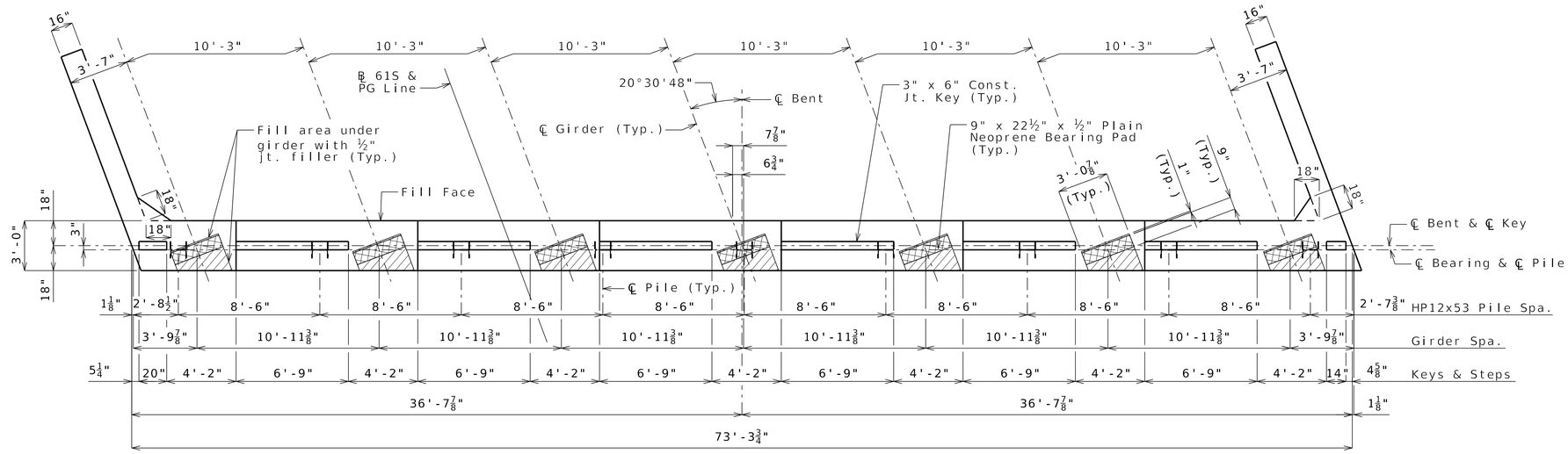
Bartlett & West 601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101 PHONE: 573-634-2448 CERTIFICATE OF AUTHORITY NO. 000107 - ENGINEERING WWW.BARTLETTWEST.COM

Detailed
Checked

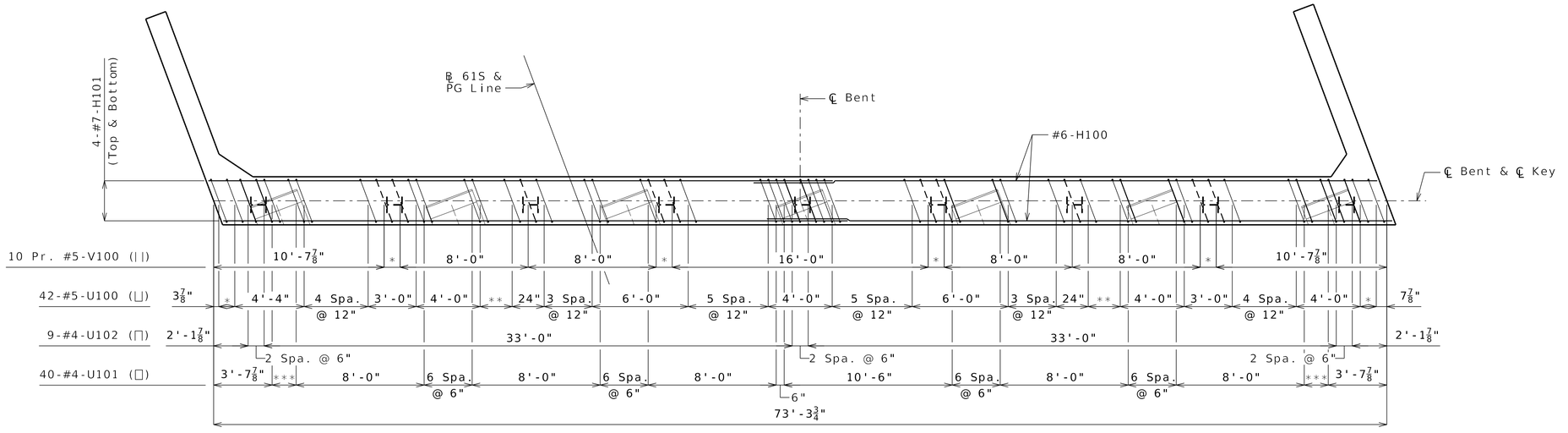
Note: This drawing is not to scale. Follow dimensions.

GENERAL NOTES

B_A9681_003_JST0020_GEN.dgn 12:23:45 PM 5/5/2025



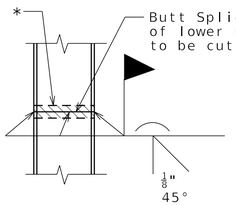
PLAN OF BEAM



PLAN OF BEAM SHOWING REINFORCEMENT

Keys not shown for clarity.

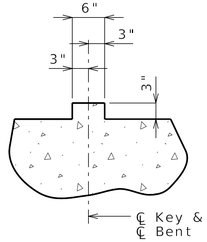
* 1 Space @ 12"
** 2 Spaces @ 12"
*** 3 Spaces @ 6"



STEEL PILE SPLICE

(If required)

* Galvanizing material shall be omitted or removed one inch clear of weld locations in accordance with Sec 702.



SECTION THRU KEY

General Notes:

Work this sheet with Sheets No. XX and XX.

All U bars and pairs of V bars shall be placed parallel to centerline of roadway.

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

DETAILS OF END BENT NO. 1

Detailed
Checked

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

DATE PREPARED 5/5/2025
ROUTE US-61 | STATE MO
DISTRICT BR | SHEET NO. 4
COUNTY ST. CHARLES
JOB NO. JST0020
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9681

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
MoDOT
IMPROVE 70 ALLIANCE
HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270
Bartlett & West
601 MONROE ST., SUITE 201 • JEFFERSON CITY, MO 65101
PHONE: (573) 635-2581
CERTIFICATE OF AUTHORITY NO. 000107 - ENGINEERING
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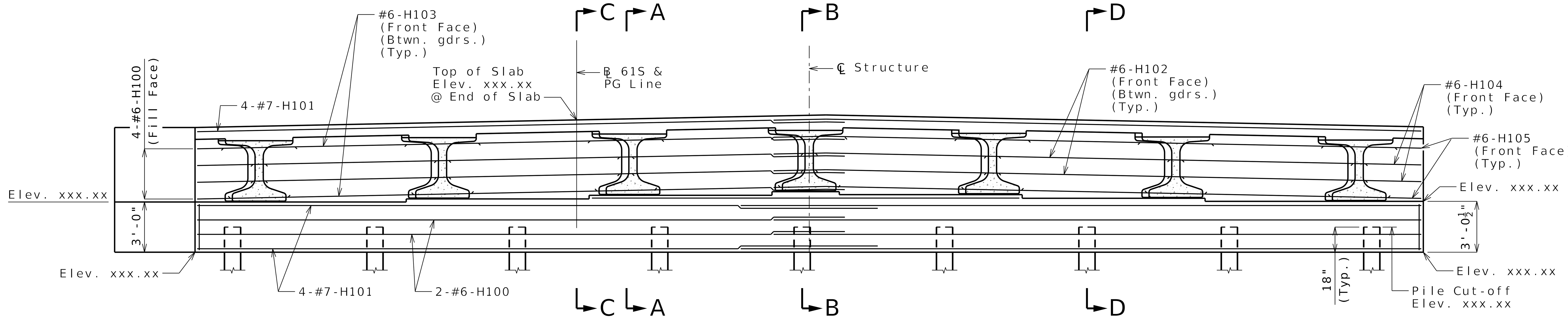
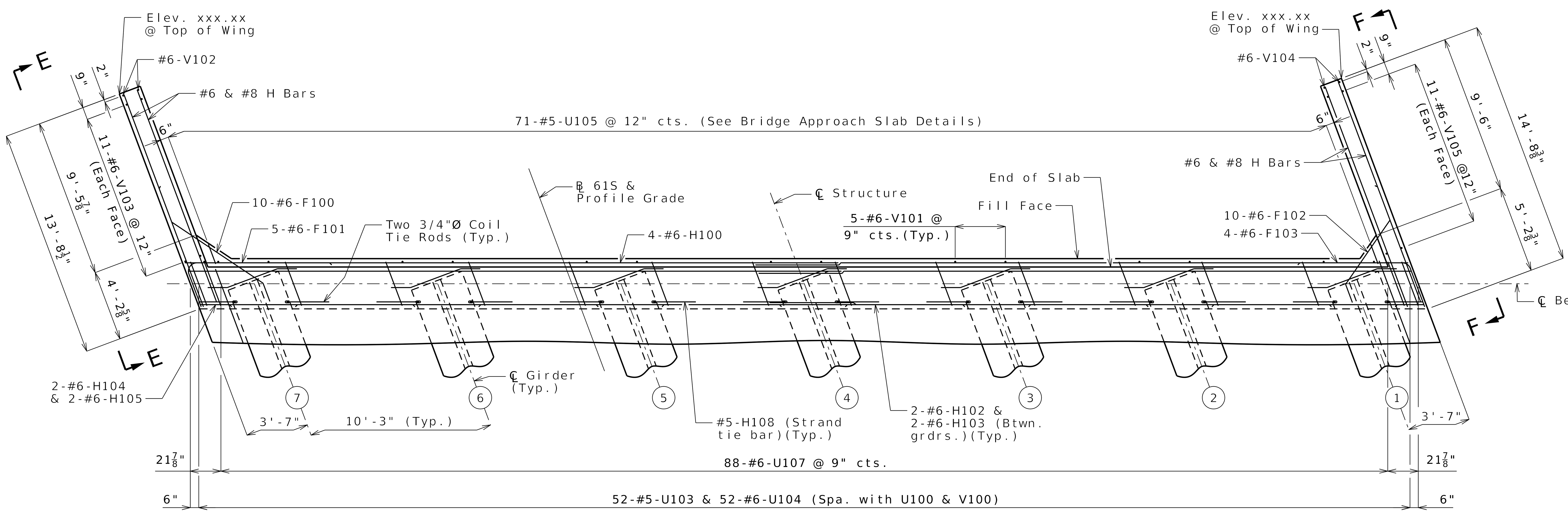
DRAFT FOR CONSTRUCTABILITY REVIEW ONLY - NOT FOR CONSTRUCTION



SECTION NEAR END BENT



PART PLAN

General Notes:

Work this sheet with Sheets No. X & X.

For Sections A-A, B-B & C-C and Elevations D-D & E-E, see Sheet No. X.

The #6-F100 and #6-F102 bars shall be bent in the field to clear girders.

The U bars shall be placed parallel to centerline of roadway.

All concrete in the end bent above top of beam and below top of slab shall be Class B-2.

Strands at end of girders shall be field bent or, if necessary, cut on field to maintain 1 1/2-inch minimum clearance to fill face of end bent.

For location of coil tie rods and #5-H108 (strand tie bar), see Sheet No. XX.

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

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

DATE PREPARED	5/5/2025
ROUTE	US-61
STATE	MO
DISTRICT	BR
SHEET NO.	5
COUNTY	ST. CHARLES
JOB NO.	JST0020
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9681

DESCRIPTION DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

MoDOT

IMPROVE 70 ALLIANCE

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY
NO. 001270

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Detailed
Checked

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

Sheet 5 of XX

DETAILS OF END BENT NO. 1

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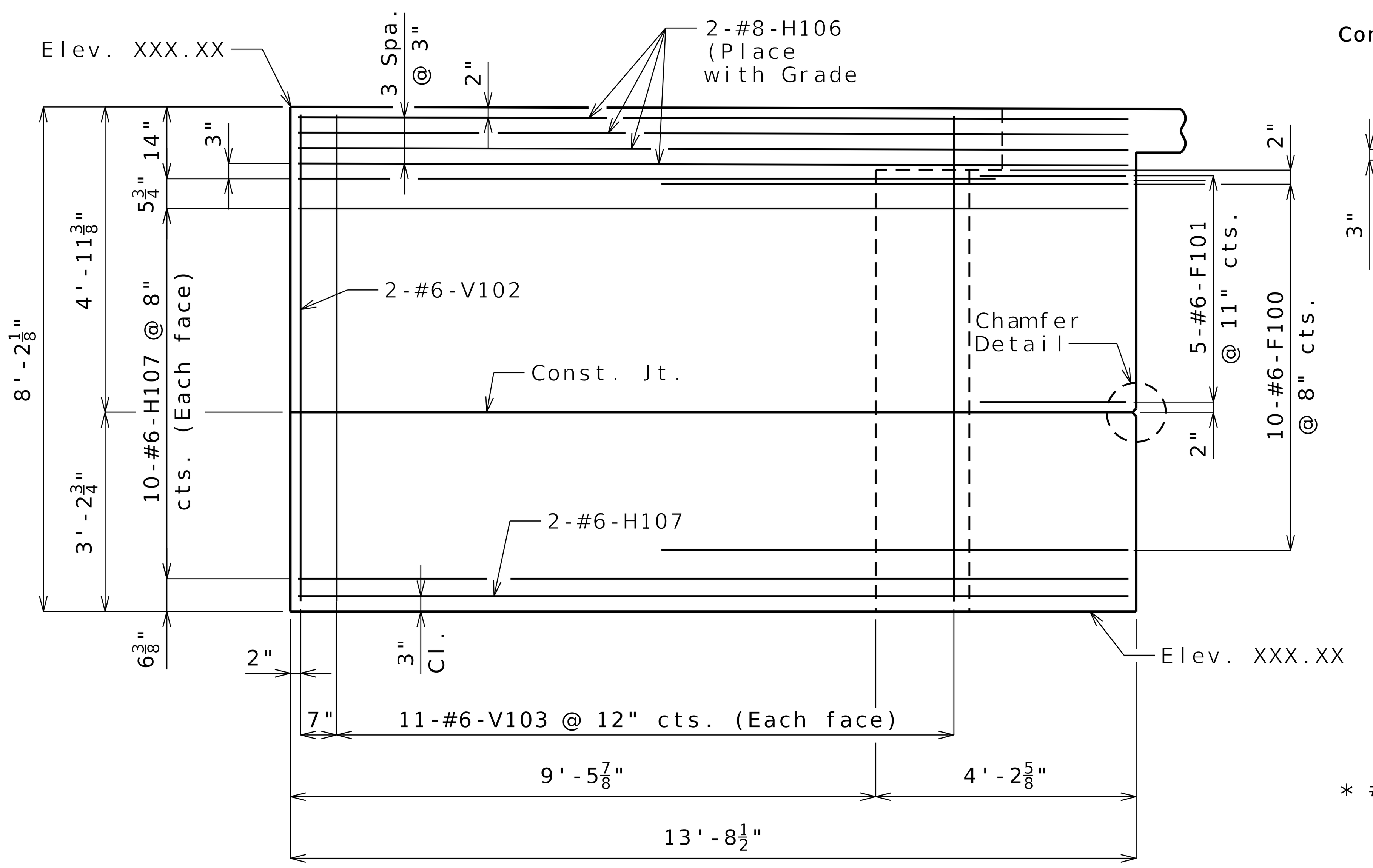
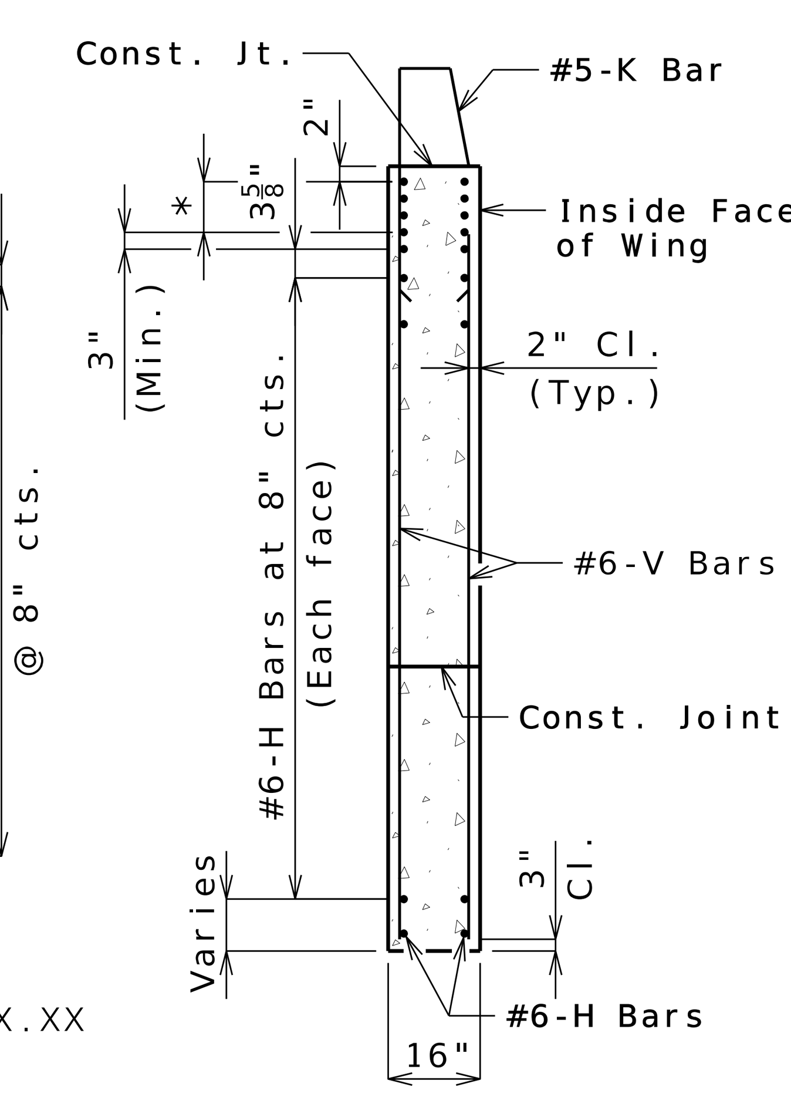
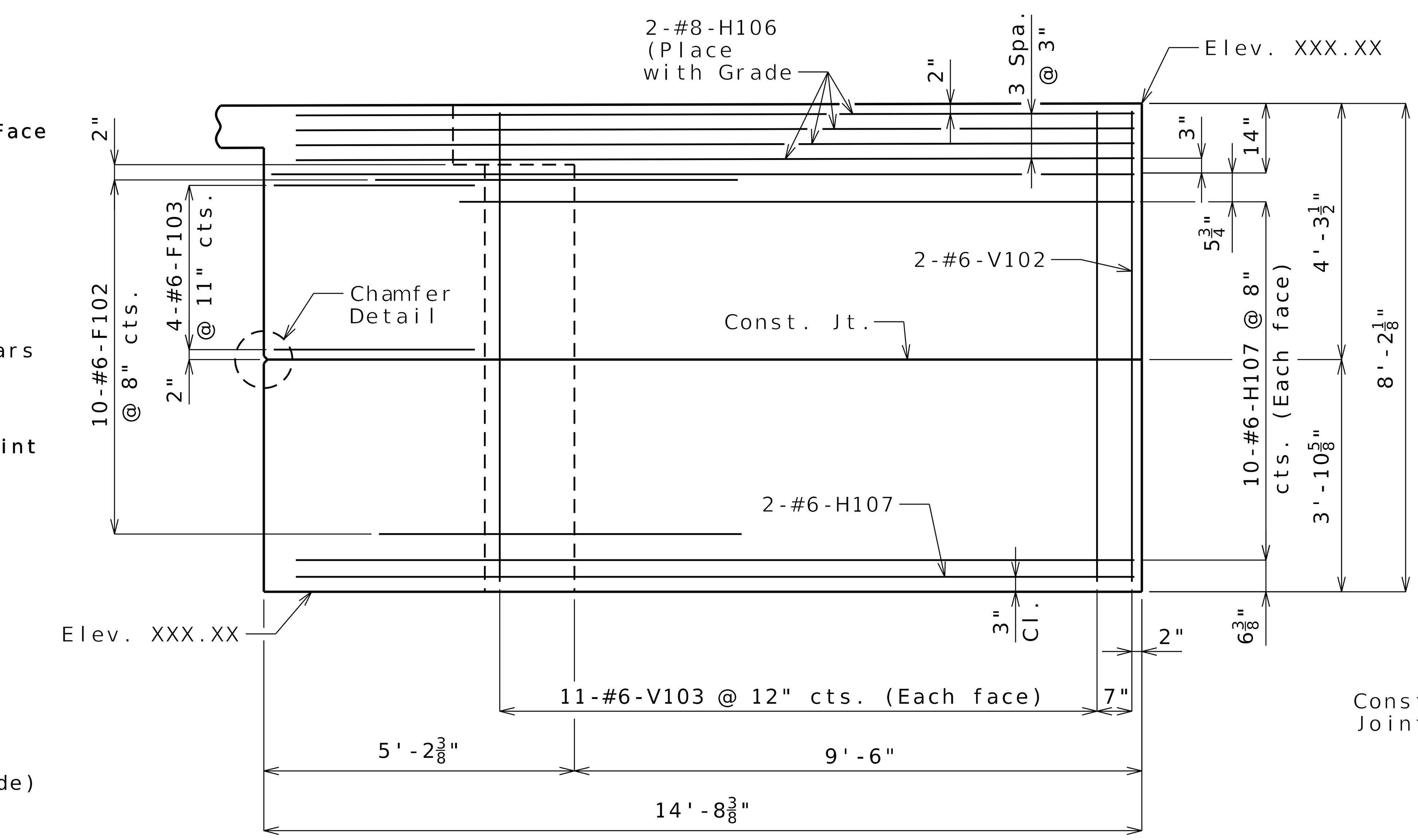


ELEVATION E-E

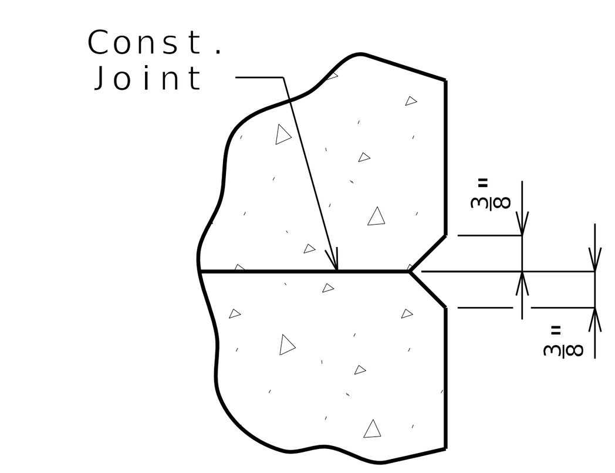


TYPICAL SECTION THRU WING

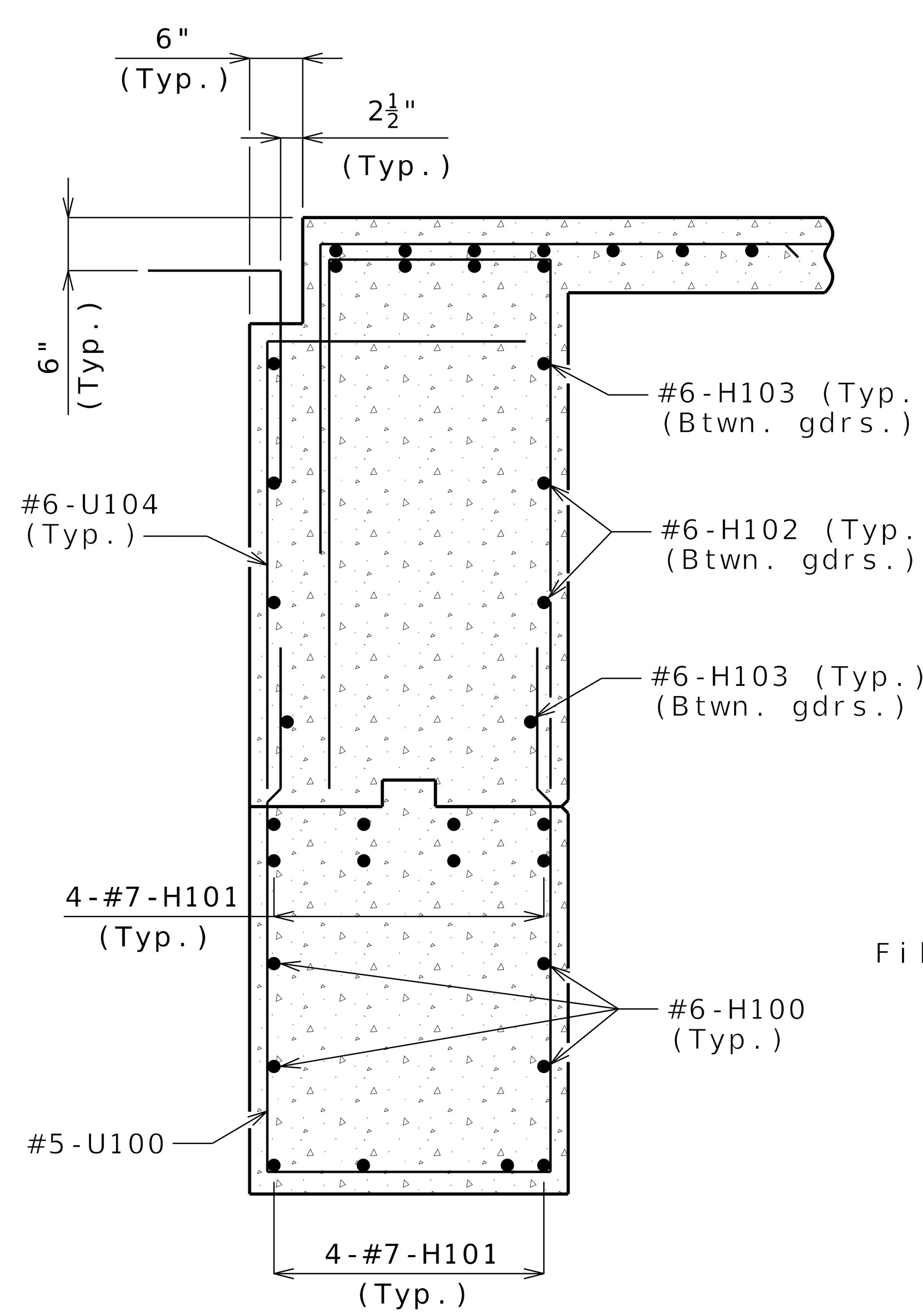
* #8-H Bars at 3" cts. (Each face)(Place with grade)



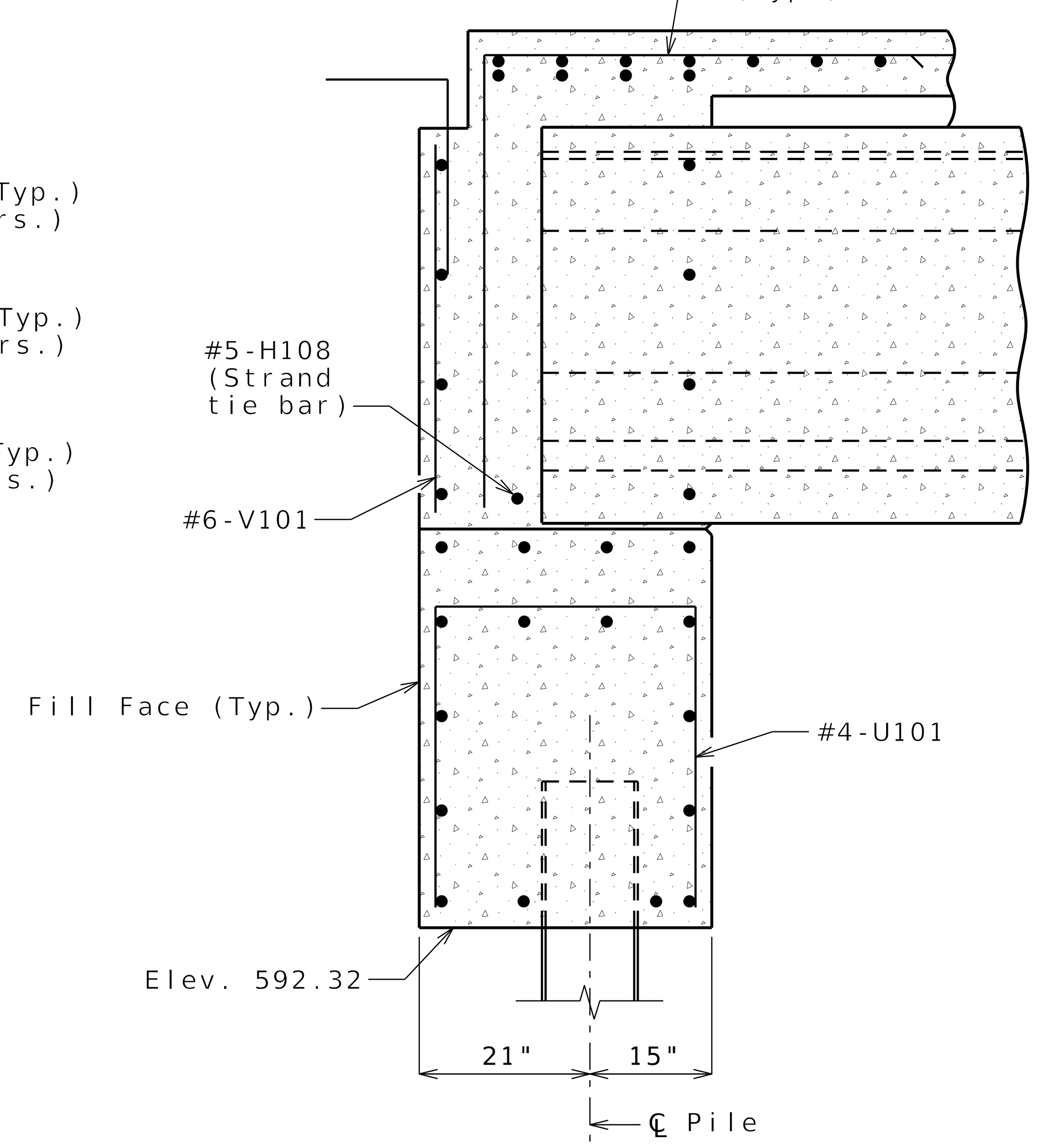
ELEVATION F-F



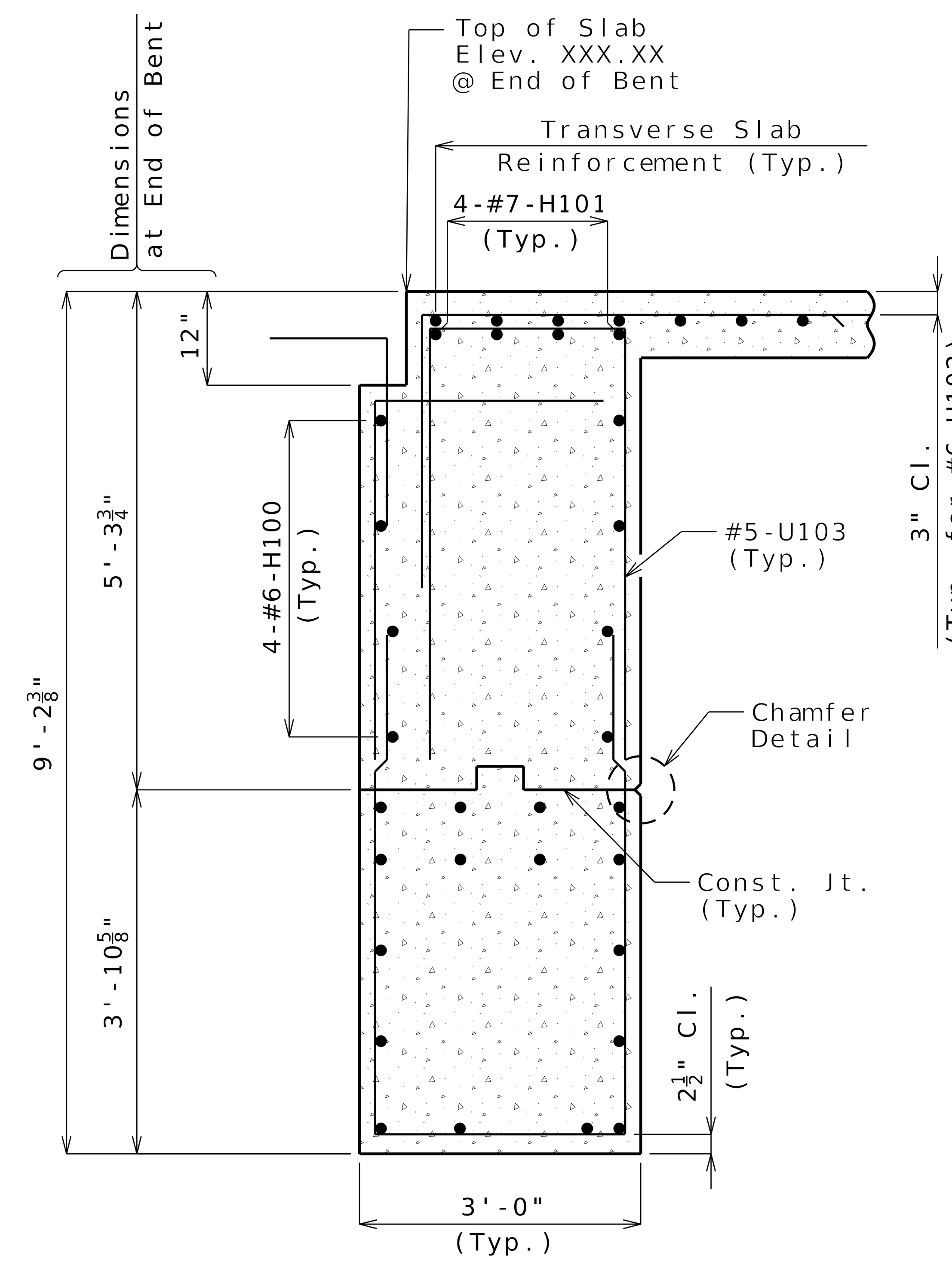
CHAMFER DETAIL



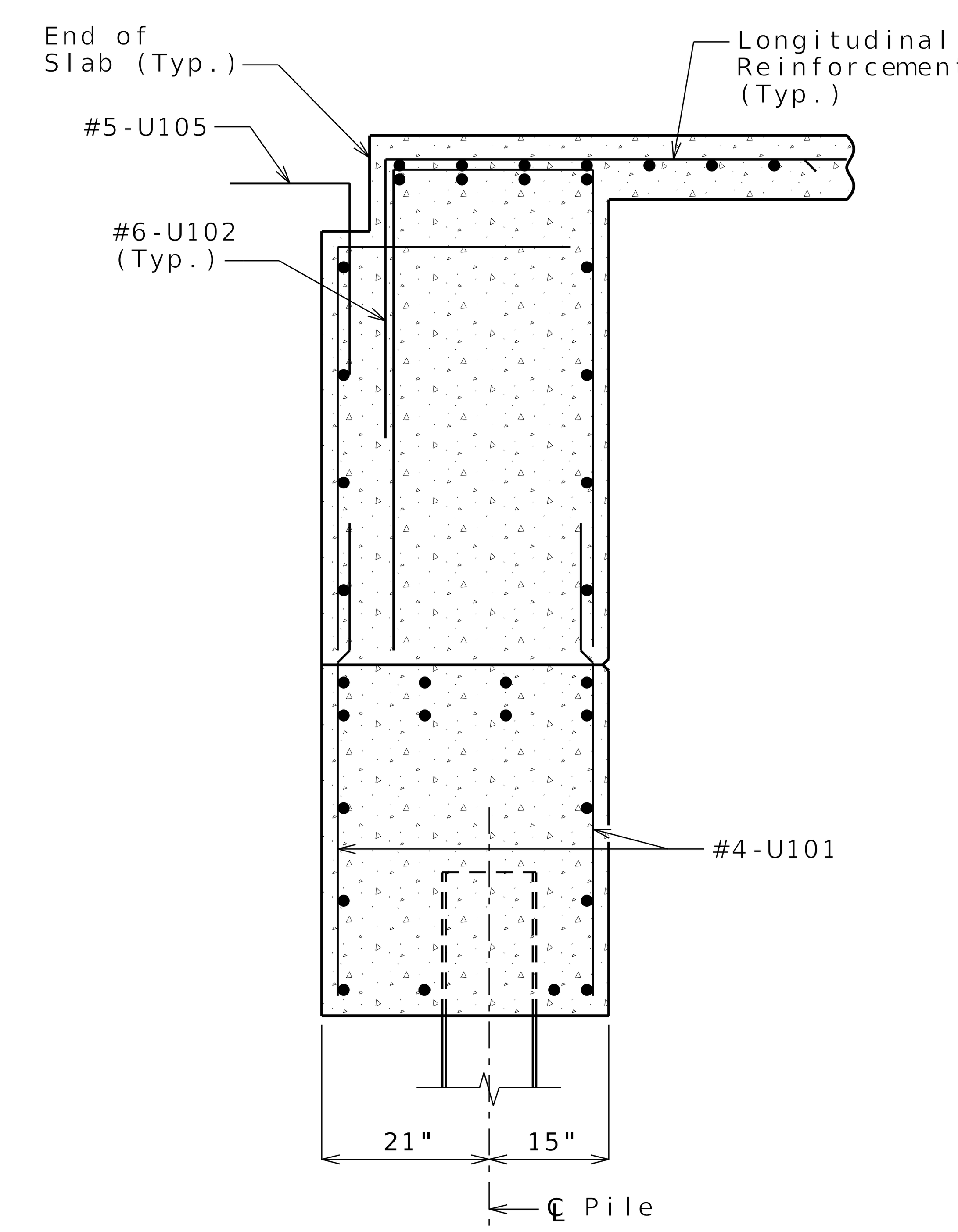
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

General Notes:

Work this sheet with Sheets No. X & X.

For reinforcement of the barrier, see Sheet No. XX.

DETAILS OF END BENT NO. 1

DATE PREPARED	5/5/2025
ROUTE	US-61
STATE	MO
DISTRICT	BR
SHEET NO.	6
COUNTY	ST. CHARLES
JOB NO.	JST0020
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9681

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

IMPROVE 70 ALLIANCE

HNTB 715 KIRK DRIVE KANSAS CITY, MO 64105-1310 CERTIFICATE OF AUTHORITY NO. 001270

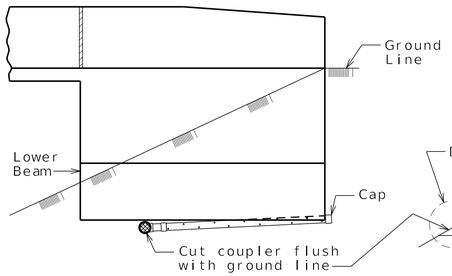
Bartlett & West

Detailed
Checked

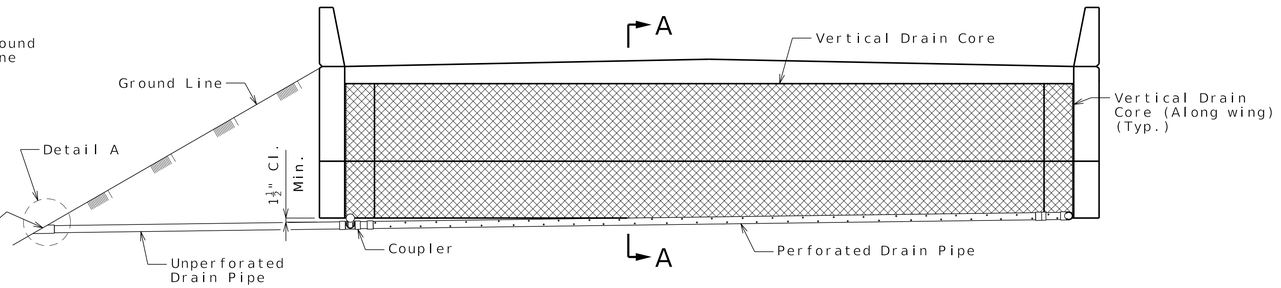
Note: This drawing is not to scale. Follow dimensions.

Sheet 6 of XX

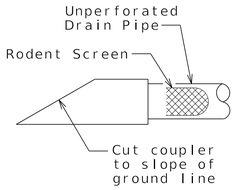
B_A9681_006_JST0020_BENT1-3.dgn 12:23:53 PM 5/5/2025



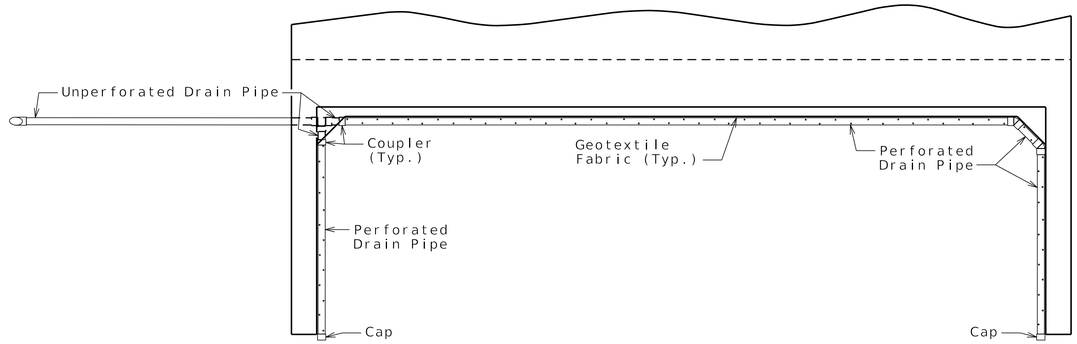
ELEVATION OF WING



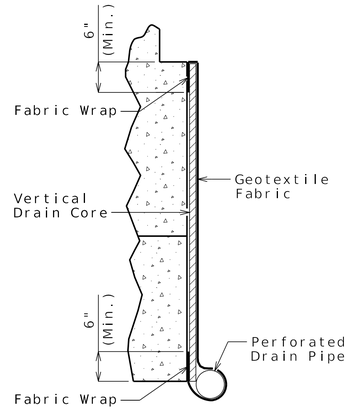
ELEVATION OF END BENT



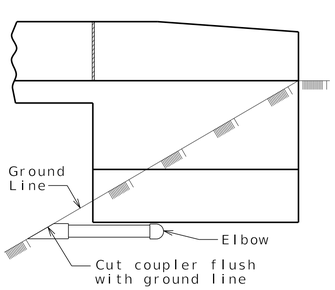
DETAIL A



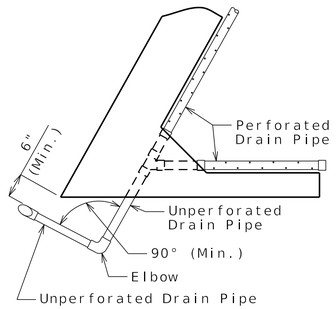
PLAN OF END BENT



PART SECTION A-A
(Section thru wing similar)



ELEVATION OF WING



PART PLAN

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

(Squared end bent shown, skewed end bent similar)

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 polyvinyl chloride (PVC) drain pipe, or 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 lowest grade of ground line, also missing the lower beam of end bent by a minimum of 1 1/2 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

Detailed
Checked

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

DATE PREPARED: 5/5/2025
ROUTE: US-61 | STATE: MO
DISTRICT: BR | SHEET NO.: 7
COUNTY: ST. CHARLES
JOB NO.: JST0020
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.: A9681

DESCRIPTION | DATE

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

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270

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PHONE: 573-635-2644
CERTIFICATE OF AUTHORITY NO. 000107 - ENGINEERING
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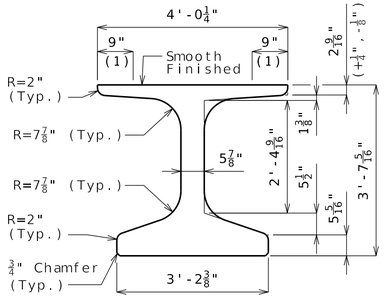
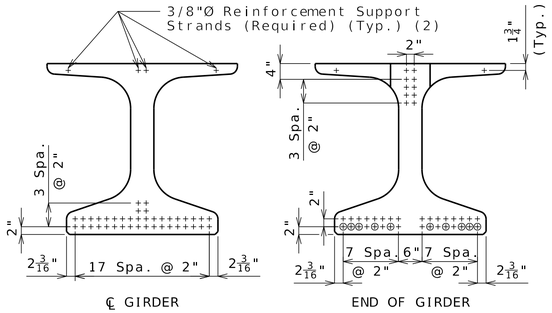
(1) Fabricator shall apply a bond breaker to this region.



DIMENSIONS

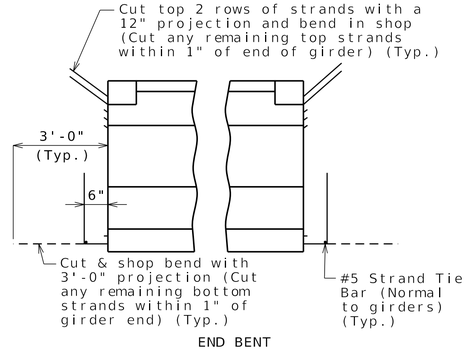
(2) Outer strands tensioned to 2.02 kips/strand and inner strands to 8 kips/strand. Placed symmetrical about ℄ Girder. May be moved laterally in pairs.



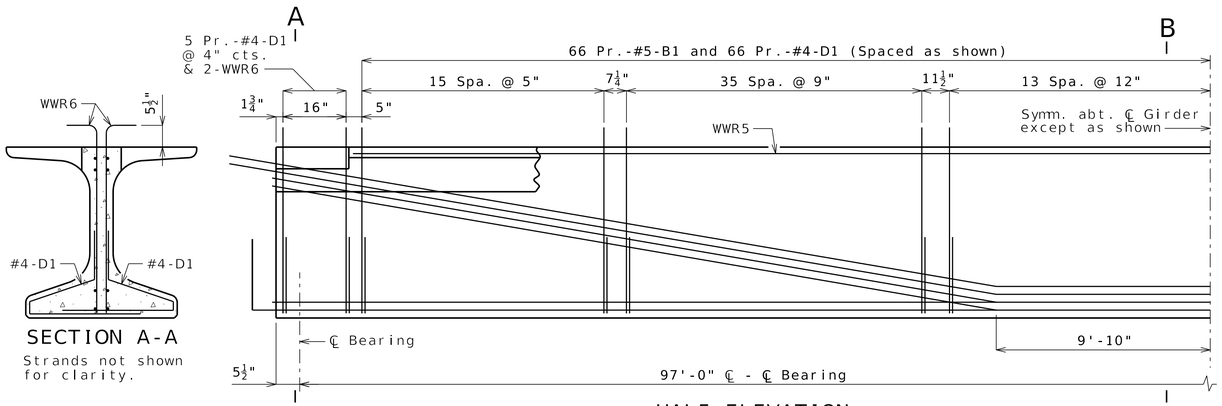
STRAND ARRANGEMENT

+ Indicates prestressing strand.

○ Indicates cut & shop bend with 3'-0" projection.



STRANDS AT GIRDER ENDS

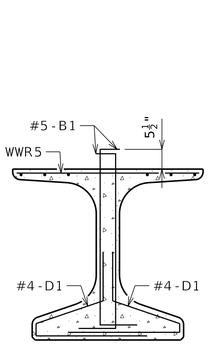


SECTION A-A

Strands not shown for clarity.

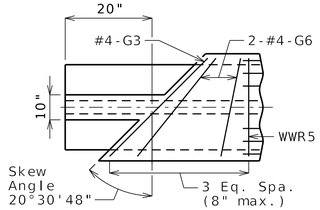
HALF ELEVATION

Reinforcement support strands not shown for clarity.



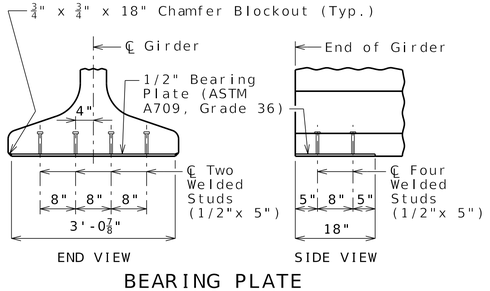
SECTION B-B

Strands not shown for clarity.

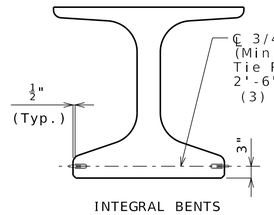


TOP FLANGE BLOCKOUT

Mirror for right advanced.



BEARING PLATE



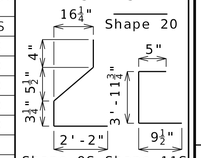
INTEGRAL BENTS

COIL TIES

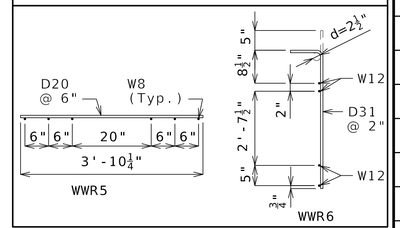
Exclude coil tie at exterior face of exterior girders except at integral end bents.

Bill of Reinforcing Steel - Each Girder			
No.	Size/ Mark	Length	Shape
262	5 B1	5'-0"	11S
282	4 D1	4'-0"	9S
2	4 G3	4'-1"	20
2	4 G4	2'-3"	20
2	4 G5	2'-10"	20
4	4 G6	Varies	20

Bending Diagrams



Welded Wire Reinforcement - Each Girder



All dimensions are out to out.

Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures, Stirrup and Tie Dimensions.

Actual bar lengths are measured along centerline of bar to the nearest inch.

Minimum clearance to reinforcing shall be one inch.

All bar reinforcement shall be Grade 60.

The two D1 bars may be furnished as one bar at the fabricator's option.

All B1 bars shall be epoxy coated.

G4 and G5 not required for interior girders. Half no. of G3, G4, G5 and G6 not required for ext. girders.

General Notes:

Concrete for prestressed girders shall be Class A-1 with f'c = 8500 psi and f'ci = 6500 psi.

Use 44 strands, 0.6"Ø Grade 270, with an initial prestress force of 1933 kips.

Pretensioned members shall be in accordance with Sec 1029.

Fabricator shall be responsible for location and design of lifting devices.

Exterior and interior girders are the same except: coil ties, top flange blockout, and application of bond breaker.

The contractor shall provide bracing necessary for lateral and torsional stability of the girders during construction of the concrete slab and remove the bracing after the slab has attained 75% design strength. Contractor shall not drill holes in the girders.

For Girder Camber Diagram, see Sheet No. .

For location of coil ties at integral bents, see Sheets No. and .

DATE PREPARED 5/5/2025

ROUTE US-61 | STATE MO

DISTRICT BR | SHEET NO. 12

COUNTY ST. CHARLES

JOB NO. JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A9681

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

IMPROVE 70 ALLIANCE

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270

Bartlett & West
601 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101
PHONE: 573-893-4336 FAX: 573-893-4338
CERTIFICATE OF AUTHORITY NO. 000107 - ENGINEERING
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Note: This drawing is not to scale. Follow dimensions.

Sheet 12 of XX

NU-GIRDERS - SPAN (1-2)

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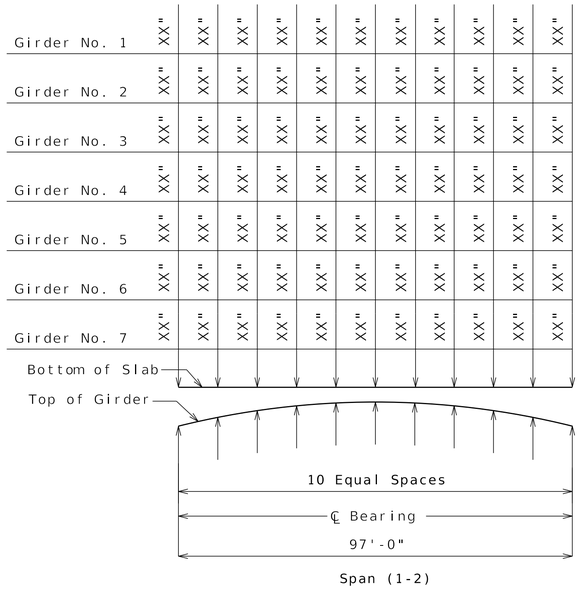
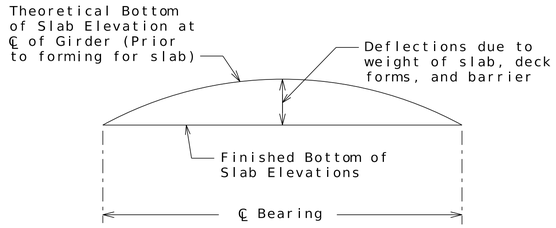


THEORETICAL SLAB HAUNCHING DIAGRAM (ESTIMATED AT 90 DAYS)

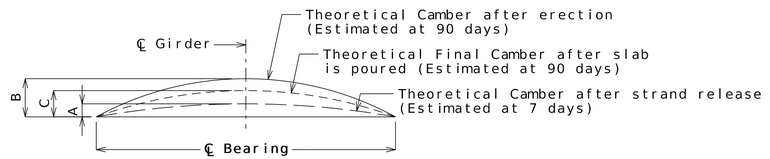


TYPICAL SLAB ELEVATIONS DIAGRAM

Theoretical Bottom of Slab Elevations at Centerline of Girder (Prior to forming for slab) (Estimated at 90 days)

Girder Number	Span (1-2) (97'-0" ℄ Brg. - ℄ Brg.)										
	℄ Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	℄ Brg.
1											
2											
3											
4											
5											
6											
7											

Elevations are based on a constant slab thickness of 8 1/2" and include allowance for theoretical dead load deflections due to weight of slab (including deck forms and barrier).



Girder	Span (1-2)		
	A	B	C
Exterior	"	"	"
Interior	"		

GIRDER CAMBER DIAGRAM

Conversion Factors for Girder Camber (Estimated at 90 days):

0.1 pt. = 0.314 x 0.5 pt.
0.2 pt. = 0.593 x 0.5 pt.
0.3 pt. = 0.813 x 0.5 pt.
0.4 pt. = 0.952 x 0.5 pt.

If girder camber is different from that shown in the camber diagram, in order to maintain minimum slab thickness, and adjustment of the slab haunches, an increase in slab thickness or a raise in grade uniformly throughout the structure shall be necessary. The haunch shall be limited to ensure the projecting girder reinforcement is embedded into the slab at least 2 inches.

Detailed
Checked

THEORETICAL SLAB HAUNCHING DIAGRAM, BOTTOM OF SLAB ELEVATIONS, AND GIRDER CAMBER DIAGRAM

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

DATE PREPARED 5/5/2025
ROUTE US-61 | STATE MO
DISTRICT BR | SHEET NO. 14
COUNTY ST. CHARLES
JOB NO. JST0020
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9681

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
IMPROVE 70 ALLIANCE
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270
HNTB
Bartlett & West
601 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101
PHONE: 573-634-2488
CERTIFICATE OF AUTHORITY NO. 000107 - ENGINEERING
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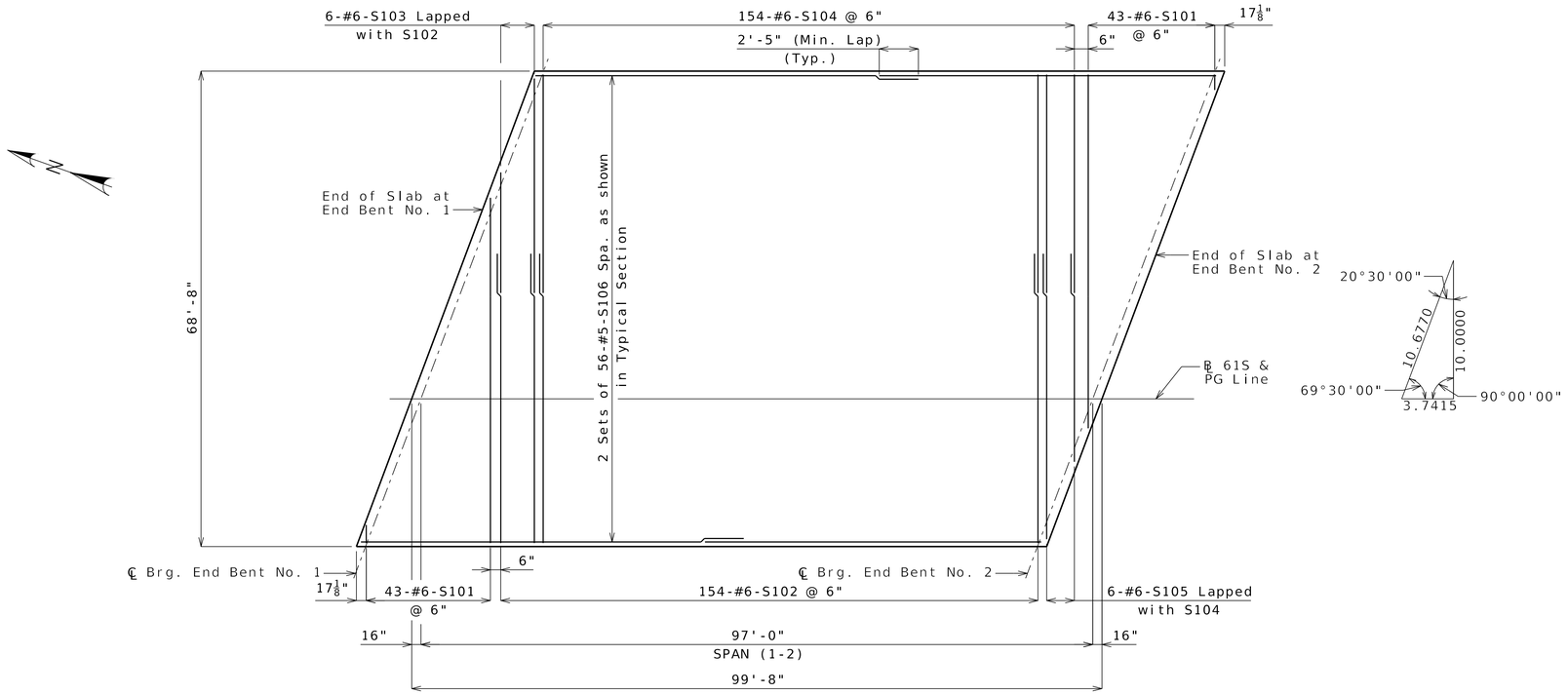
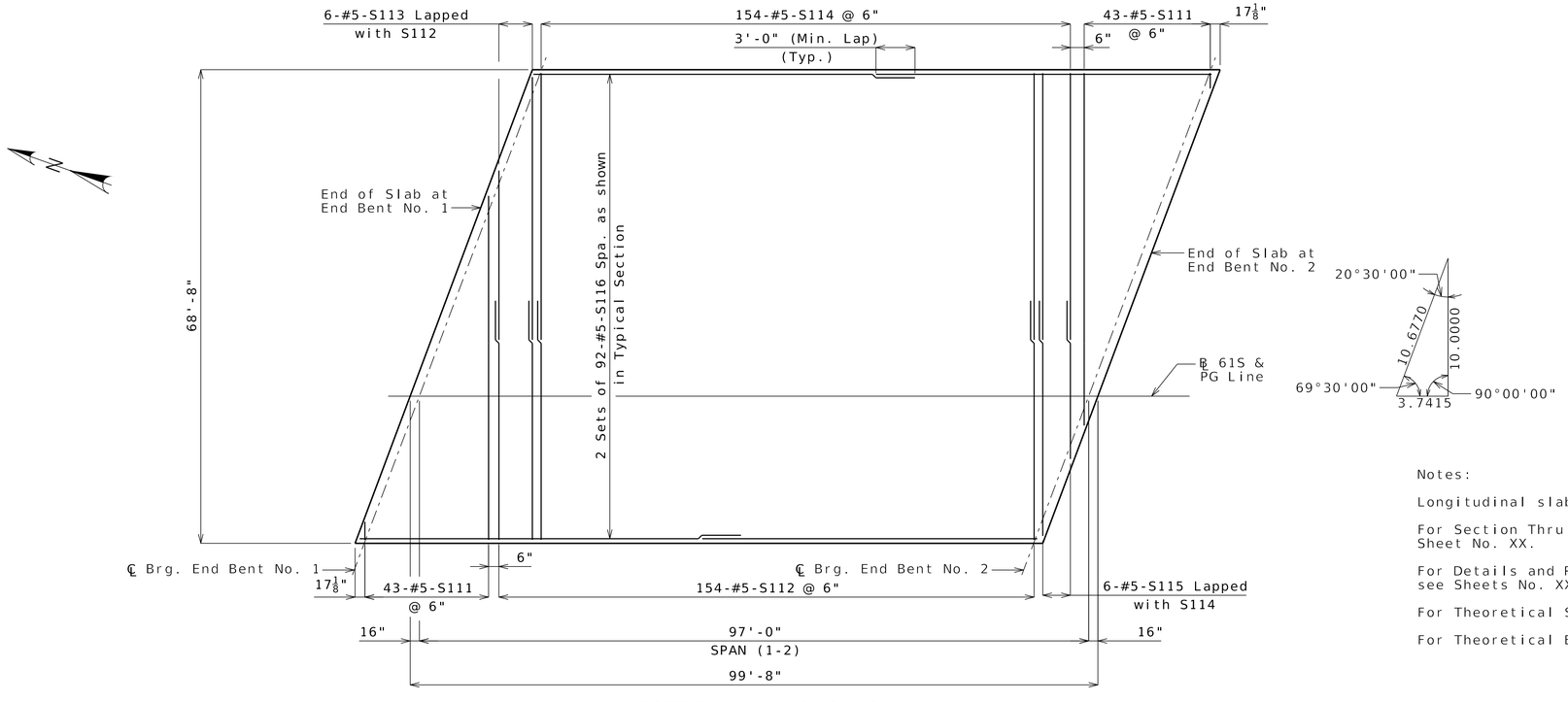


TOP REINFORCING PLAN



BOTTOM REINFORCING PLAN

Notes:

Longitudinal slab dimensions are measured horizontally.

For Section Thru Slab and Slab Pouring Sequence, see Sheet No. XX.

For Details and Reinforcement of Barrier Curb not shown, see Sheets No. XX, XX & XX.

For Theoretical Slab Haunching Diagram, see Sheet No. XX.

For Theoretical Bottom of Slab Elevations, see Sheet No. XX.

PLAN OF SLAB SHOWING REINFORCEMENT

Detailed
Checked

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

DATE PREPARED 5/5/2025
ROUTE US-61 | STATE MO
DISTRICT BR | SHEET NO. 15
COUNTY ST. CHARLES
JOB NO. JST0020
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9681

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
MoDOT
IMPROVE 70 ALLIANCE
HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270
Bartlett & West
601 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101
PHONE: 573-635-2446
CERTIFICATE OF AUTHORITY NO. 000107 - ENGINEERING
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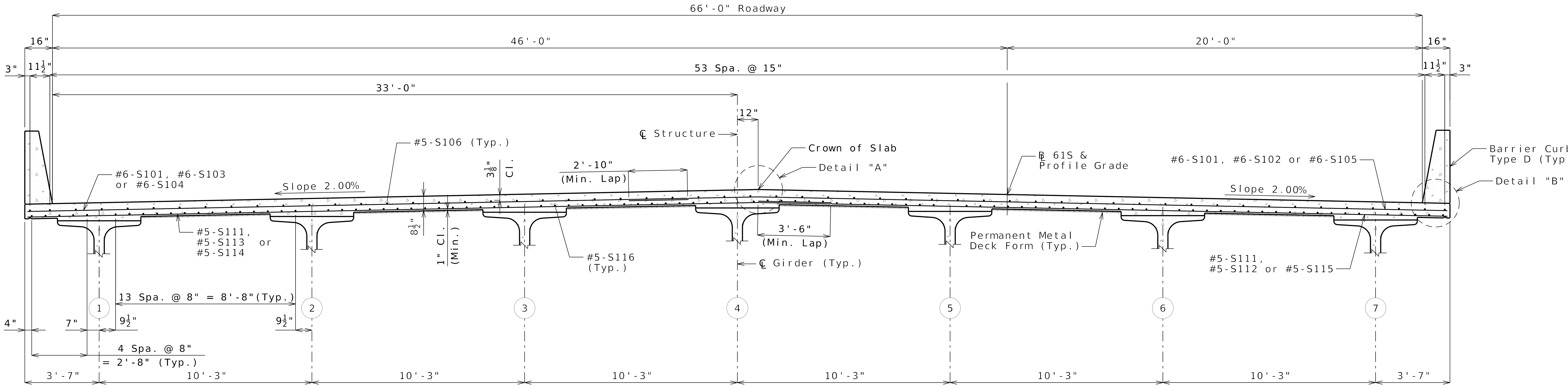
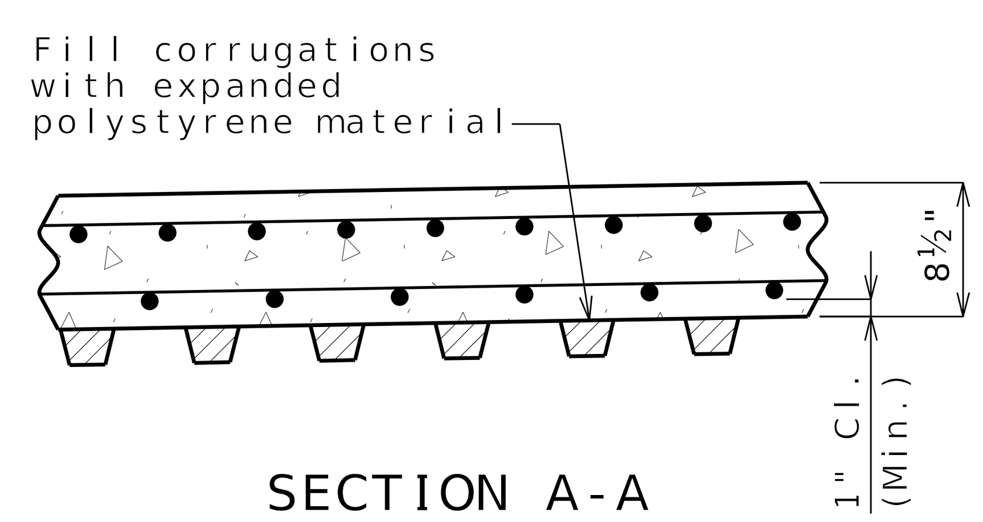
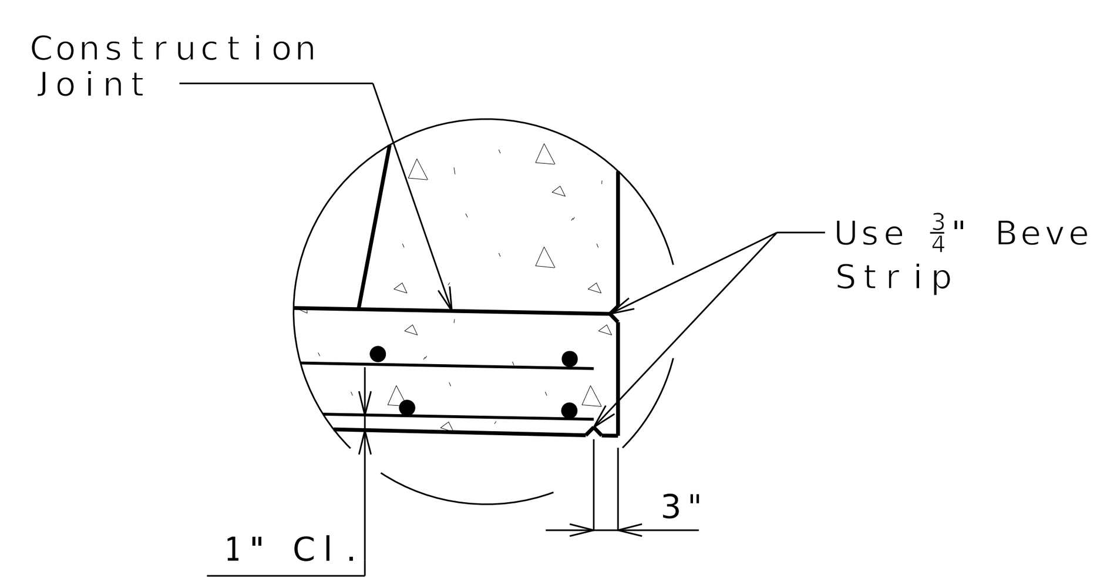


SPAN (1-2)
TYPICAL SECTION THRU SLAB

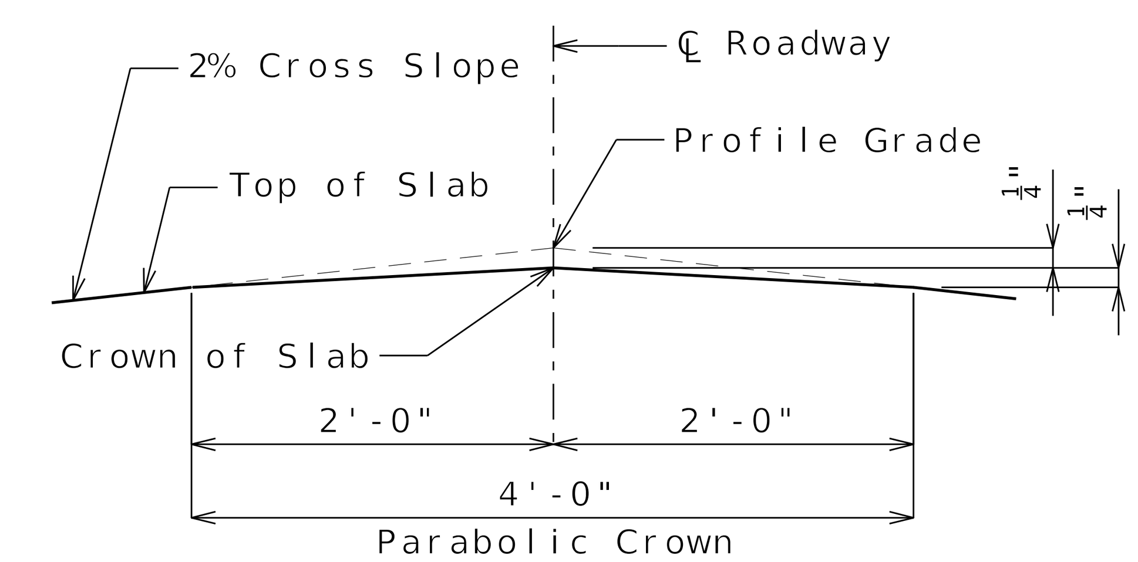


SECTION A-A



DETAIL "B"

Notes: Contractor may shift bars as necessary to tie in barrier bars.



DETAIL A

	SEQUENCE OF POURS	Min. Rate of Pour Cu. Yds./Hr.
	Direction	With Retarder
Basic Sequence	End to End	50

The contractor shall furnish an approved retarder to retard the set of the concrete to 2.5 hours, and shall pour and satisfactorily finish the slab pours at the rate given.

Bridge deck must be poured upgrade.

The concrete diaphragm at the integral end bents shall be poured a minimum of 30 minutes and a maximum of 2 hours before the slab is poured.

SLAB POURING SEQUENCE

Notes:

Barrier Curb reinforcement not shown for clarity.

For Plan of Slab Showing Reinforcement and additional notes, see Sheet No. XX.

For metal deck form notes, see General Notes.

SLAB DETAILS

DATE PREPARED	5/5/2025
ROUTE	US-61
STATE	MO
DISTRICT	BR
SHEET NO.	16
COUNTY	ST. CHARLES
JOB NO.	JST0020
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9681

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

IMPROVE 70 ALLIANCE

HNTB 715 KIRK DRIVE KANSAS CITY, MO 64105-1310 CERTIFICATE OF AUTHORITY NO. 001270

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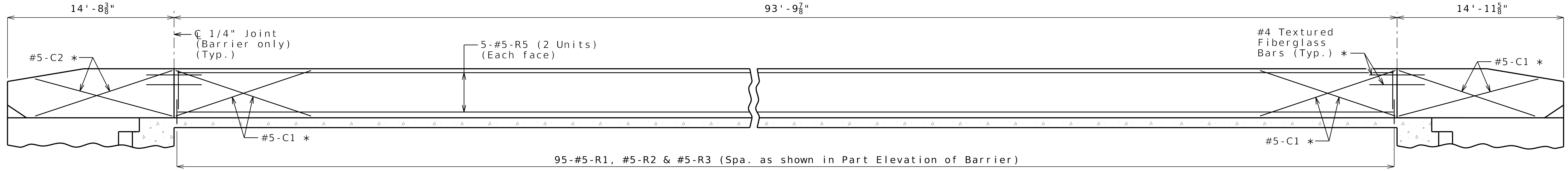
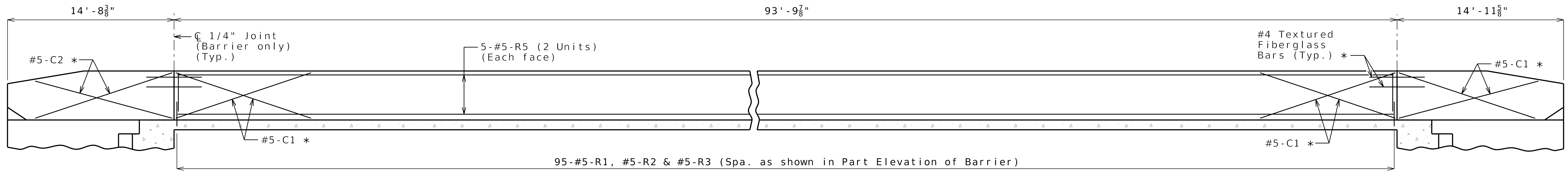
Note: This drawing is not to scale. Follow dimensions.

DRAFT FOR CONSTRUCTABILITY REVIEW ONLY - NOT FOR CONSTRUCTION



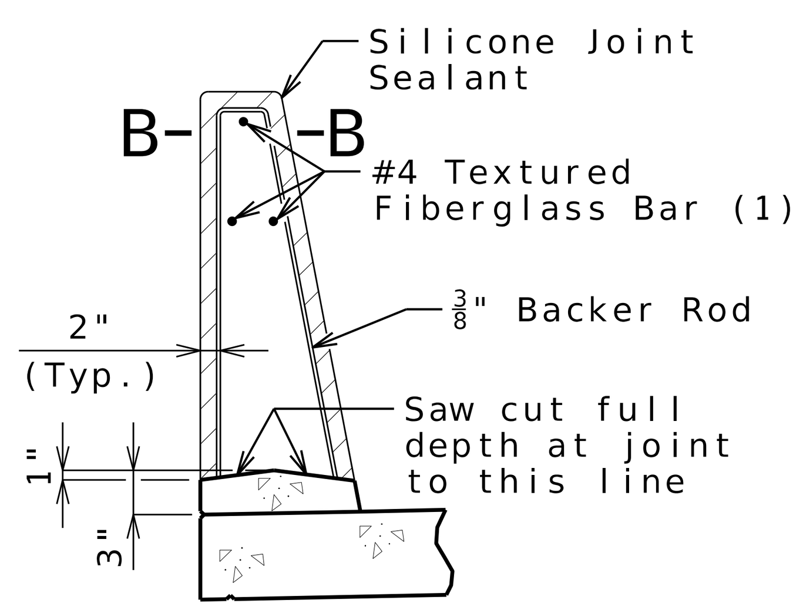
ELEVATION OF RIGHT BARRIER

Longitudinal dimensions are horizontal.

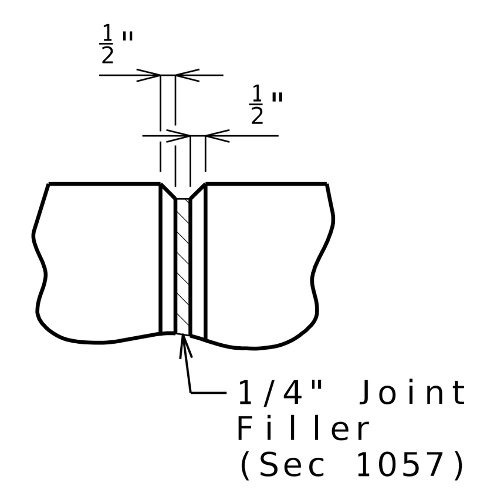


ELEVATION OF LEFT BARRIER

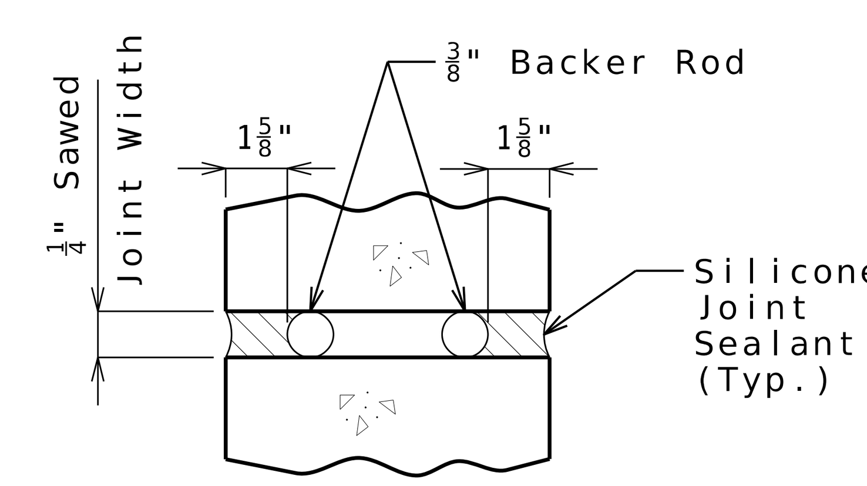
Longitudinal dimensions are horizontal.



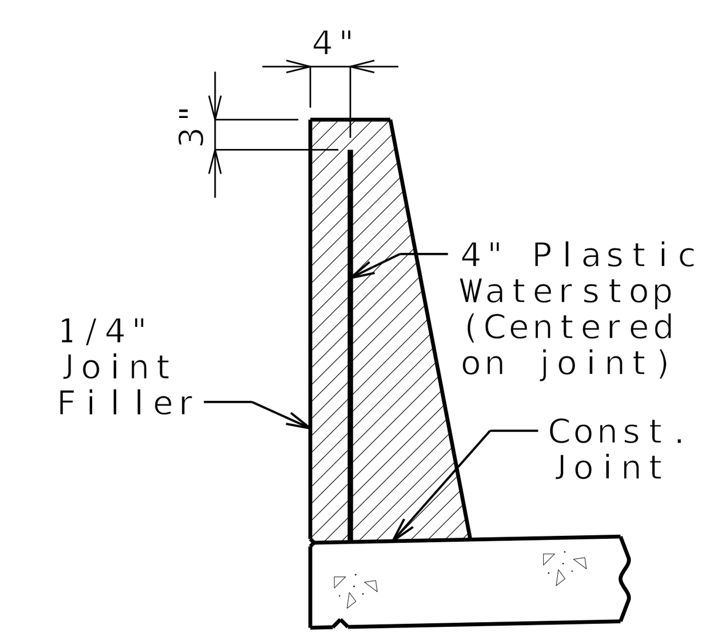
SECTION THRU SAW CUT JOINT



PART ELEVATION AT FORMED JOINT

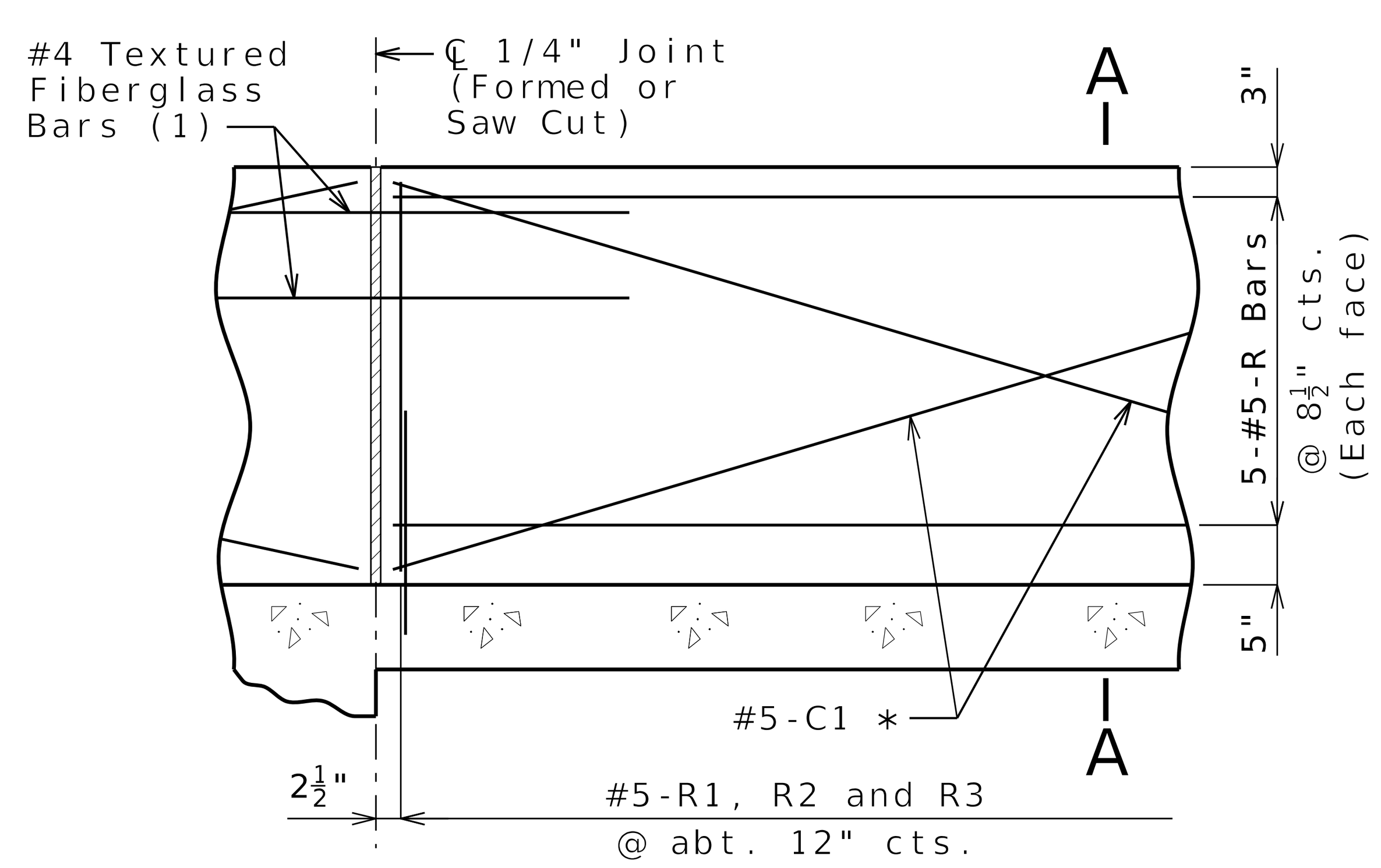


SECTION B-B



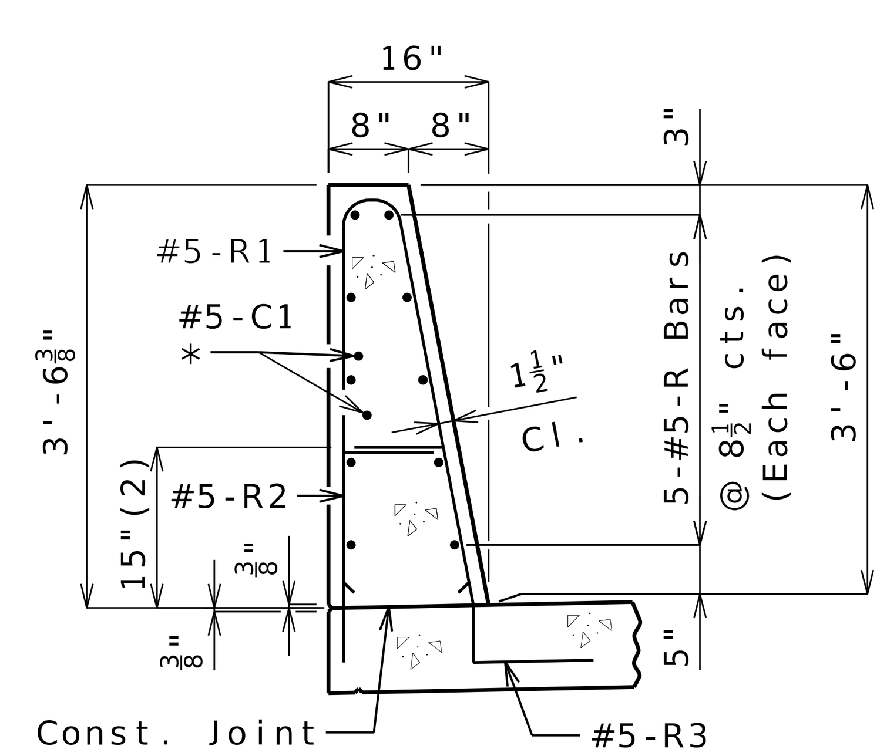
WATERSTOP DETAIL

Plastic waterstop shall be placed in all formed joints, except structures with superelevation, use on lower joints only.



PART ELEVATION OF BARRIER

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

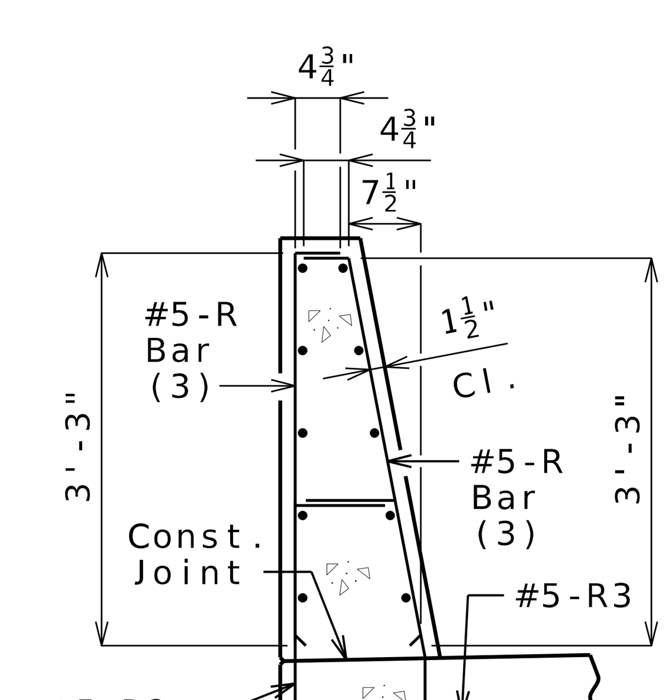


SECTION A-A

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.)

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.

Concrete in barrier shall be Class B-1.

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.

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.

Plastic waterstop shall not be used with saw cut joints.

TYPE D BARRIER

Detailed
Checked

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

Sheet 17 of XX

DATE PREPARED	5/5/2025
ROUTE	US-61
STATE	MO
DISTRICT	BR
SHEET NO.	17
COUNTY	ST. CHARLES
JOB NO.	JST0020
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9681

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

IMPROVE 70 ALLIANCE

HNTB 715 KIRK DRIVE KANSAS CITY, MO 64105-1310 CERTIFICATE OF AUTHORITY NO. 001270

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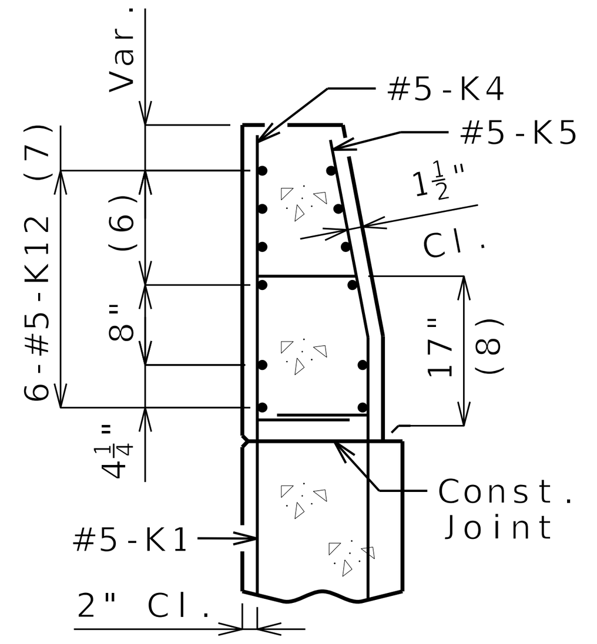
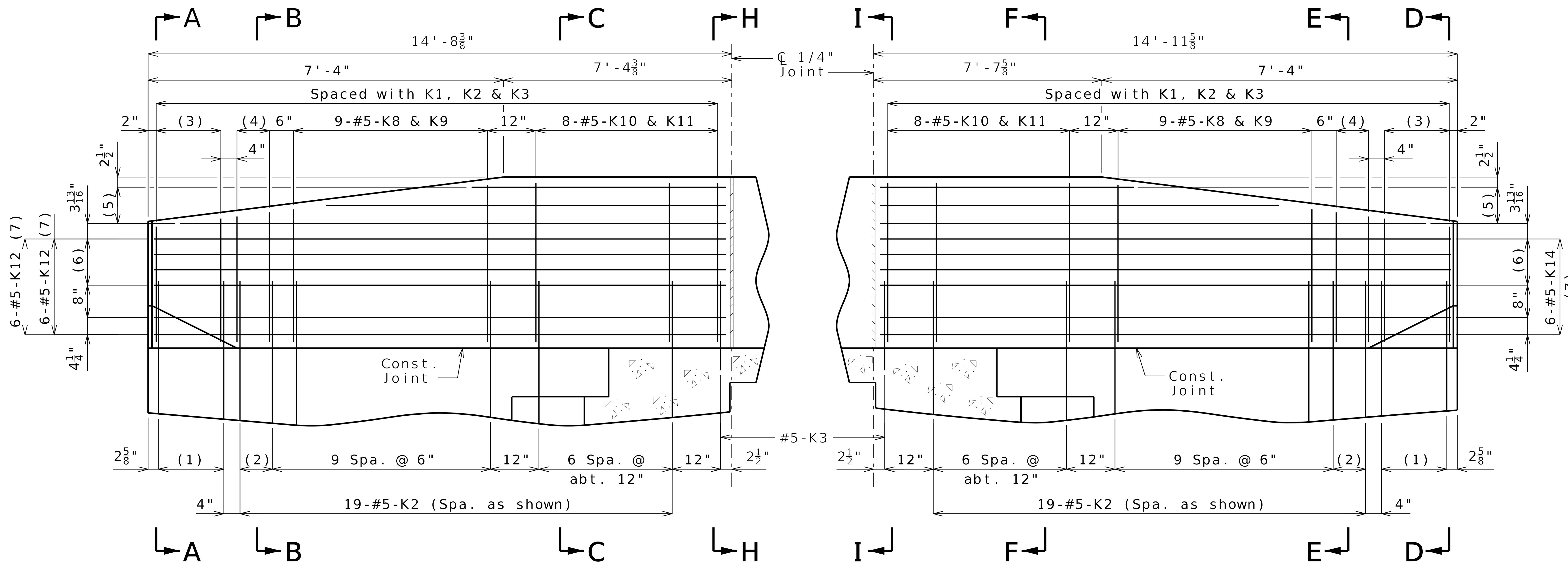
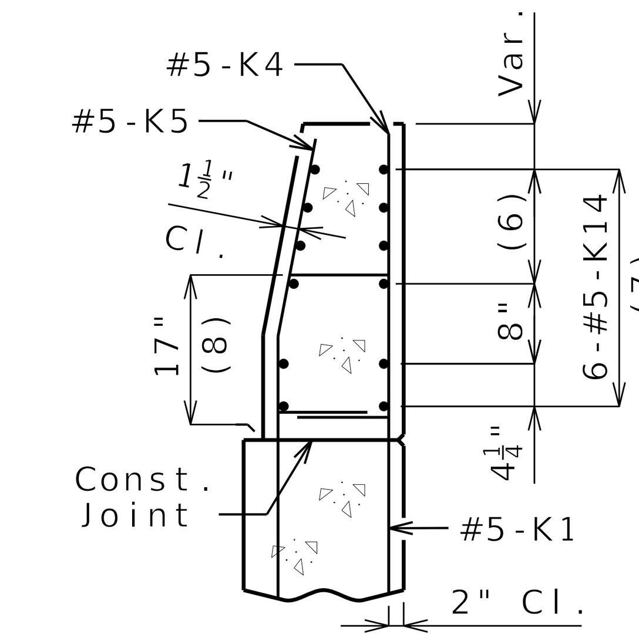


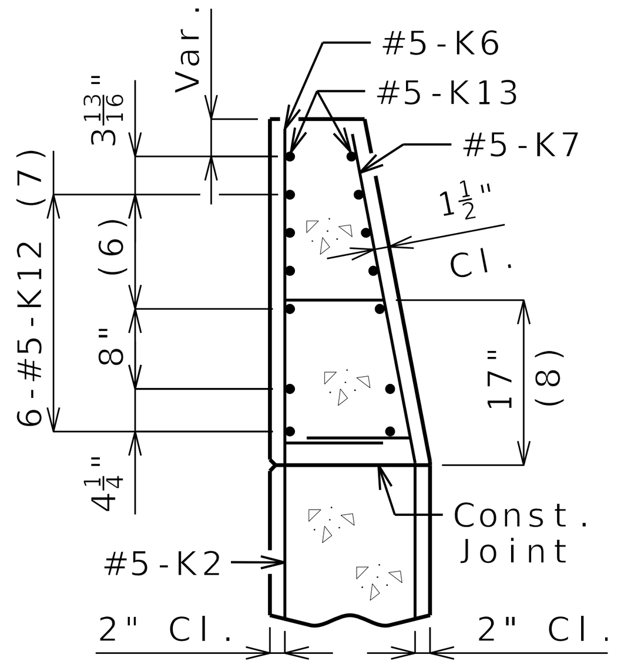
SECTION A-A



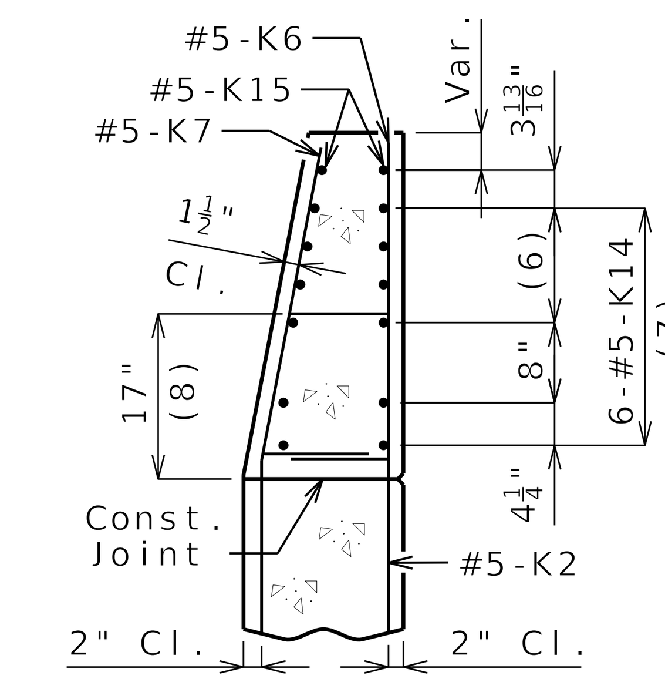
PART ELEVATION



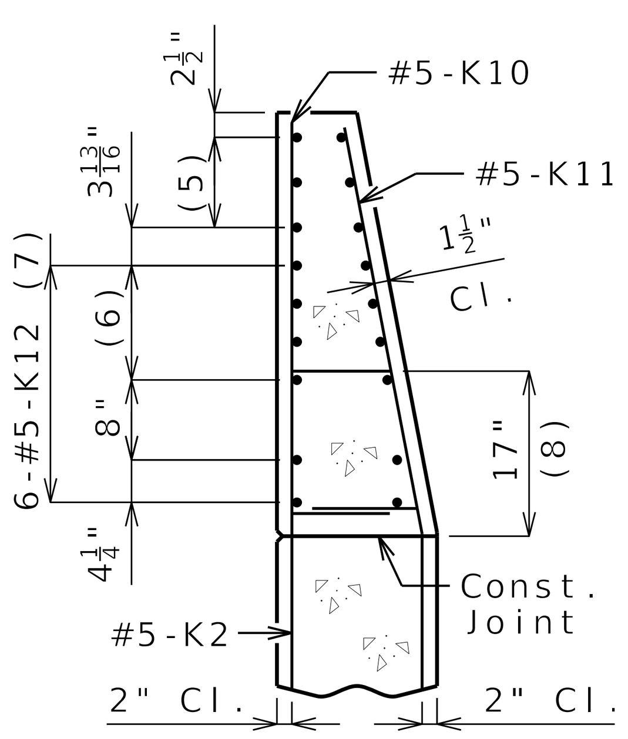
SECTION D-D



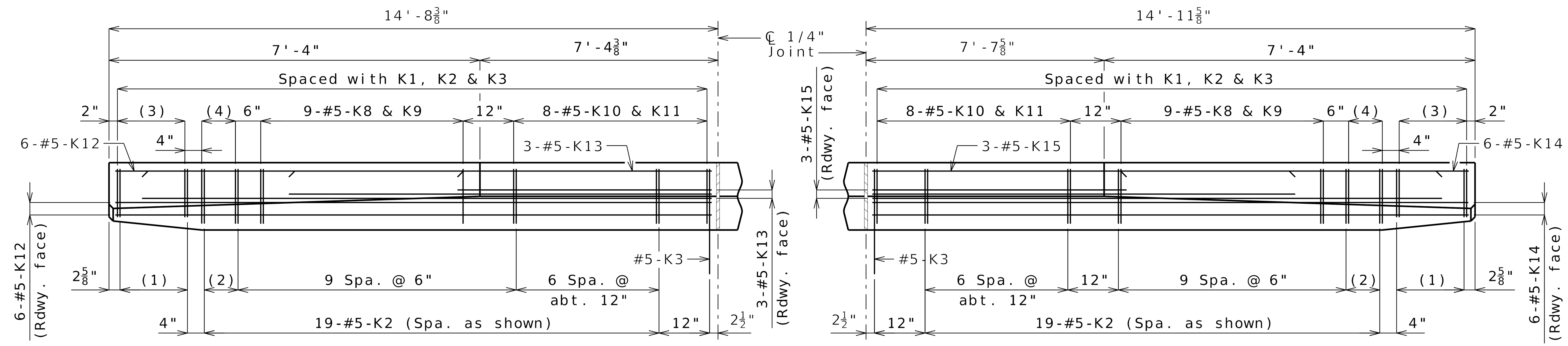
SECTION B-B



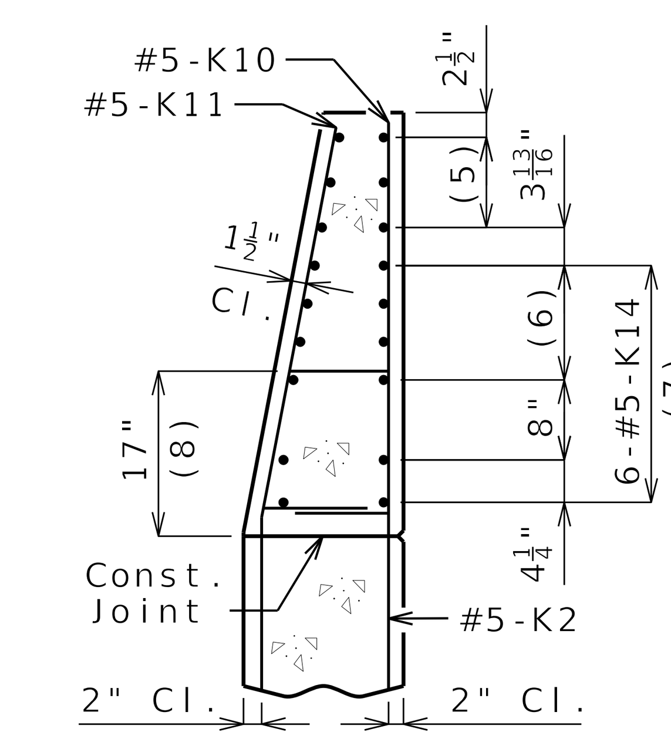
SECTION E-E



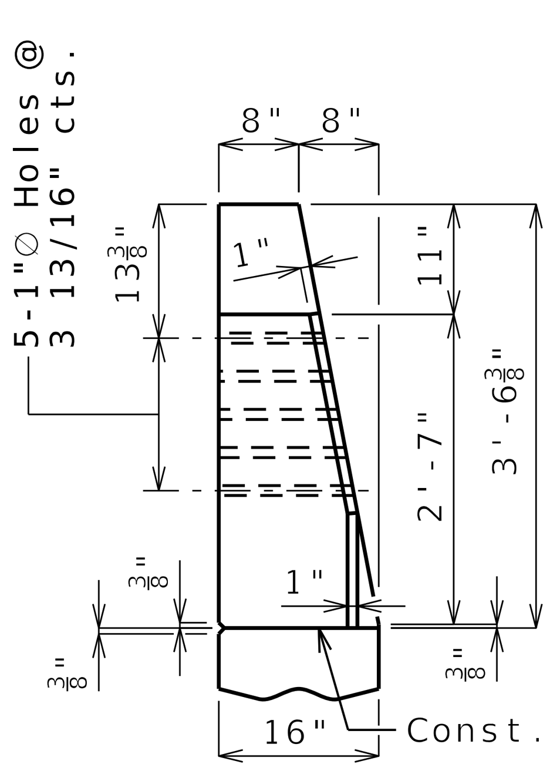
SECTION C-C



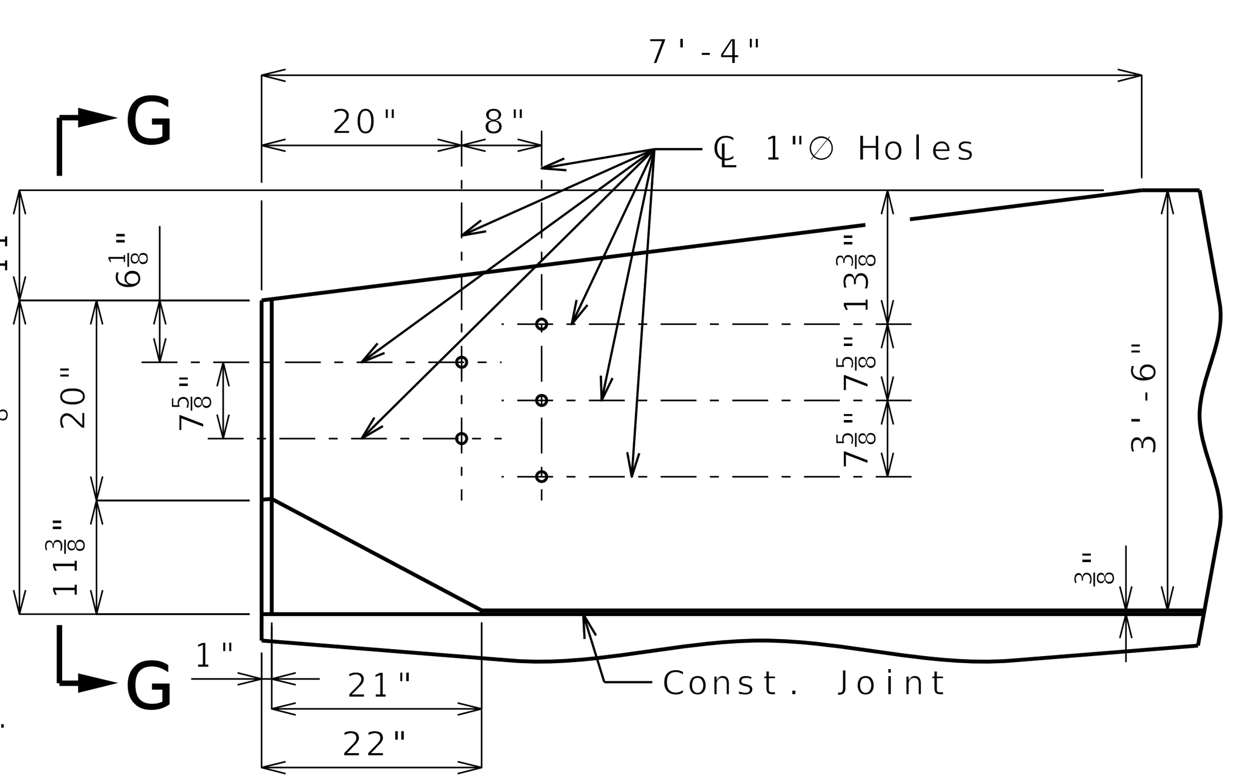
PART PLAN



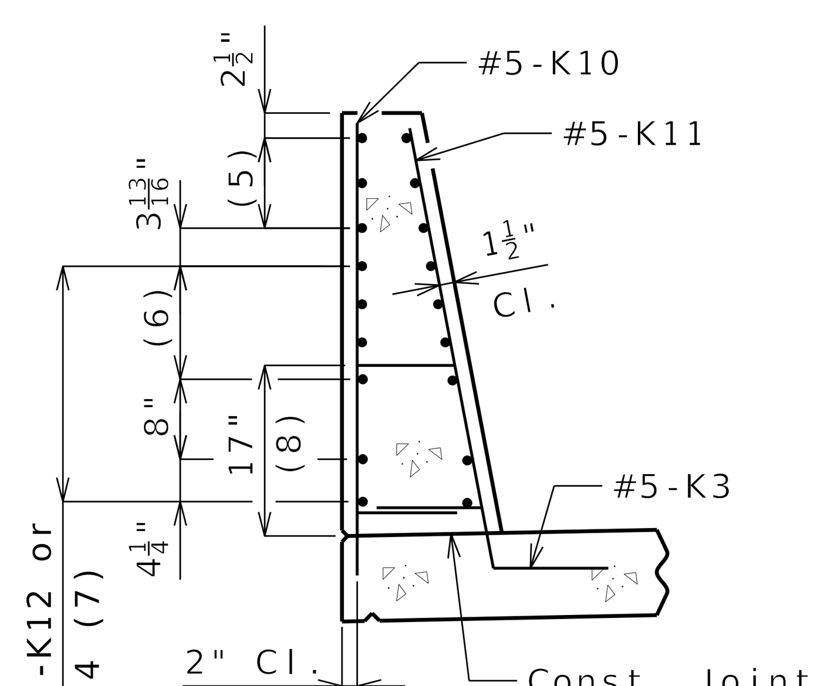
SECTION F-F



ELEVATION G-G

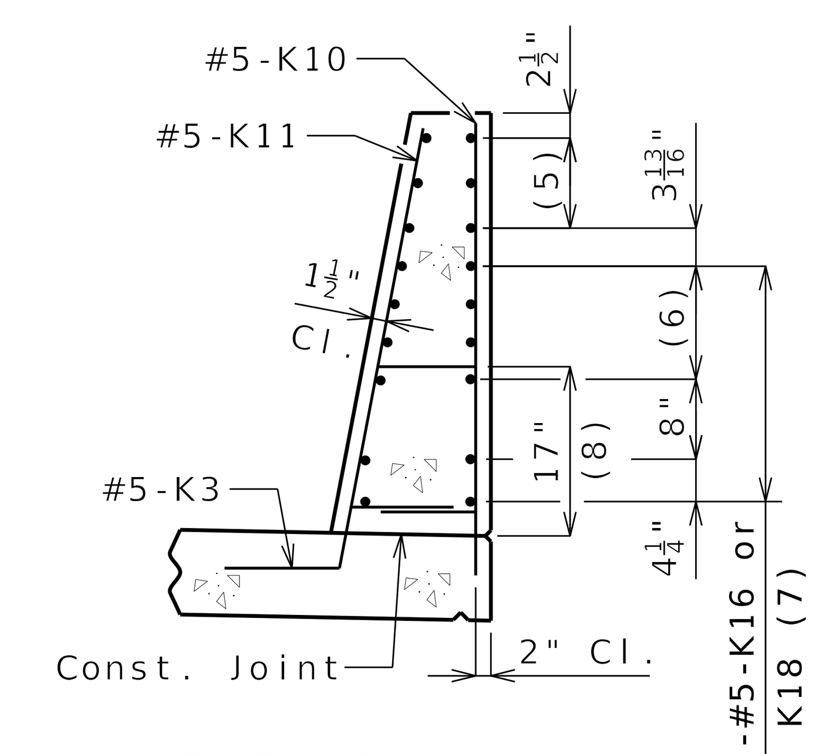


ELEVATION

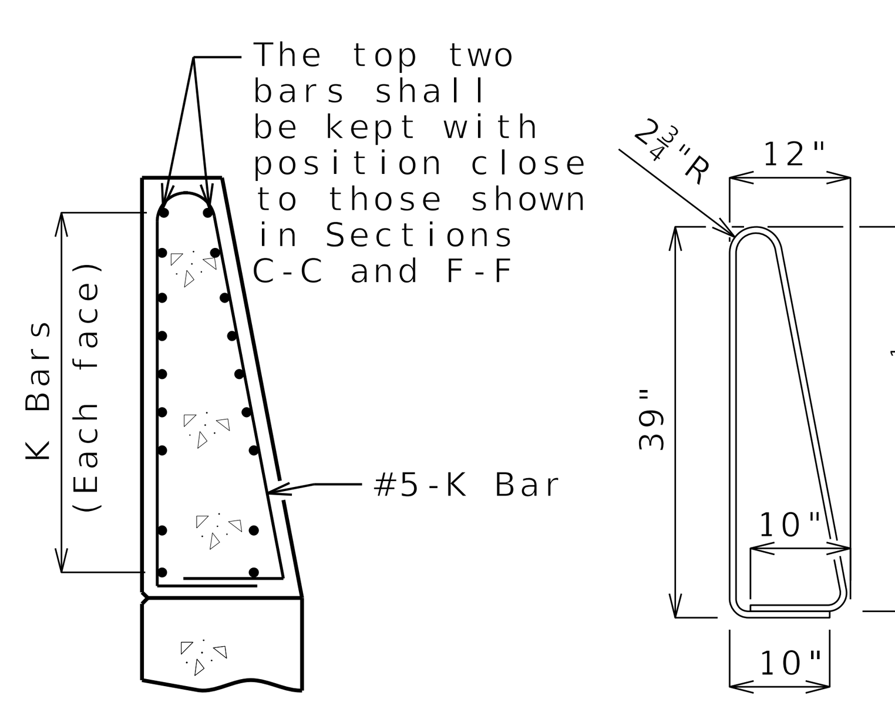


SECTION H-H

(1) 5-#5-K1 @ 4" cts.
(2) 2 spaces @ 4"
(3) 5-#5-K4 & K5
(4) 3-#5-K6 & K7
(5) 3-#5-K13 or K15 @ 4½" cts., each face
(6) 3 spaces @ 3 13/16"
(7) Spaced as shown, each face
(8) To top of bar



SECTION I-I

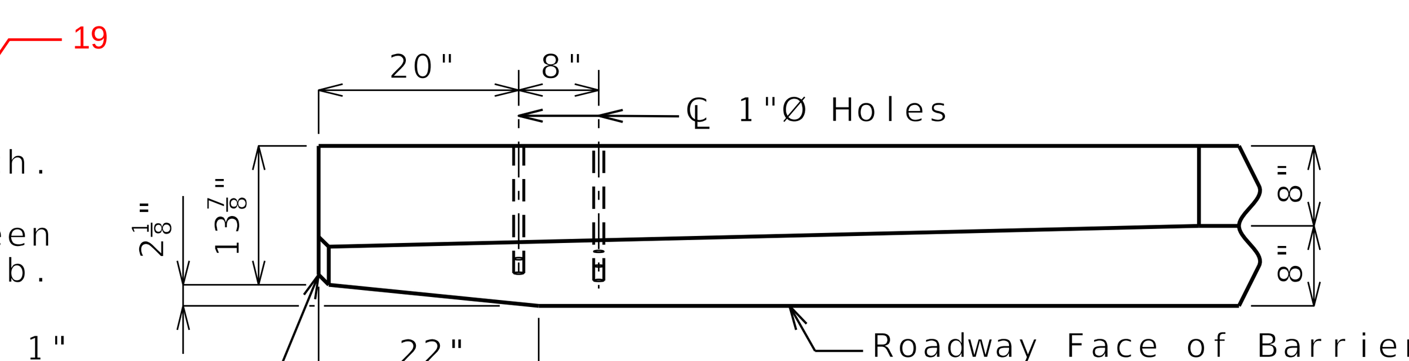


K10-K11 BAR PERMISSIBLE ALTERNATE SHAPE
(Other K bars not shown for clarity)

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

All dimensions are out to out.

* Transition to zero at Type A curb for gutter lines to match. See Sheet No 18 for section detail between barrier wall and curb.



PLAN

DETAILS OF GUARD RAIL ATTACHMENT

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.

BARRIER DETAILS AT END BENTS

DATE PREPARED	5/5/2025
ROUTE	US-61
STATE	MO
DISTRICT	BR
SHEET NO.	18
COUNTY	ST. CHARLES
JOB NO.	JST0020
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9681

DESCRIPTION
DATE

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

IMPROVE 70 ALLIANCE

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715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270

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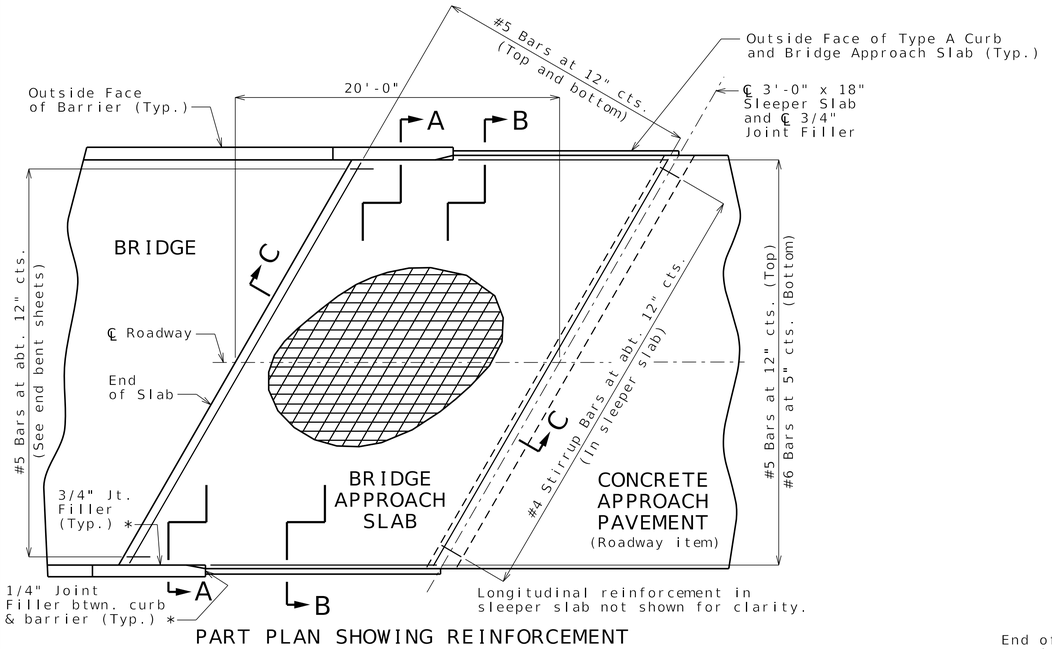
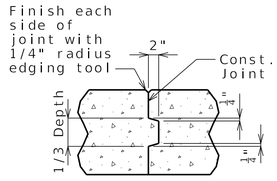
Note: This drawing is not to scale. Follow dimensions.



PART PLAN SHOWING REINFORCEMENT



CONSTRUCTION
JOINT DETAIL

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.

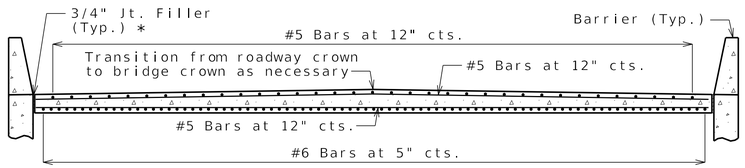
All joint filler shall be in accordance with Sec 1057 for preformed fiber expansion joint filler except as noted.

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

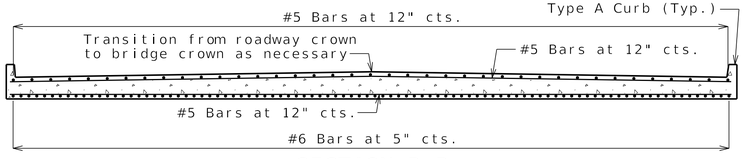
For concrete approach pavement details, see roadway plans.

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

* 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.



SECTION A-A



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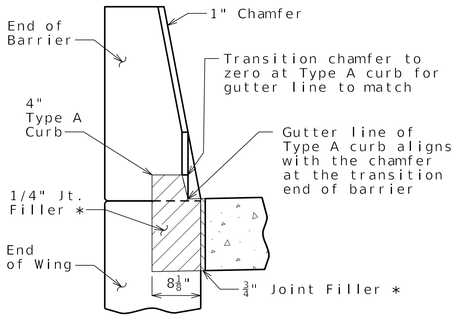
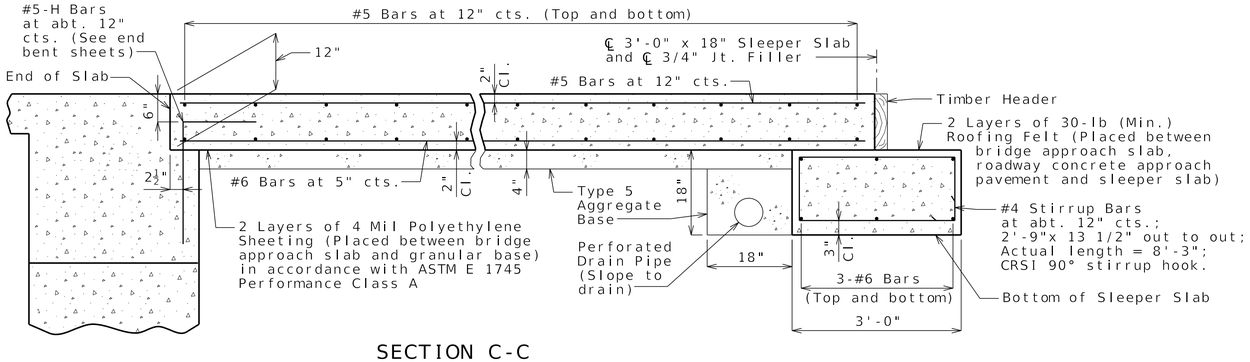


SECTION BETWEEN
CURB AND BARRIER



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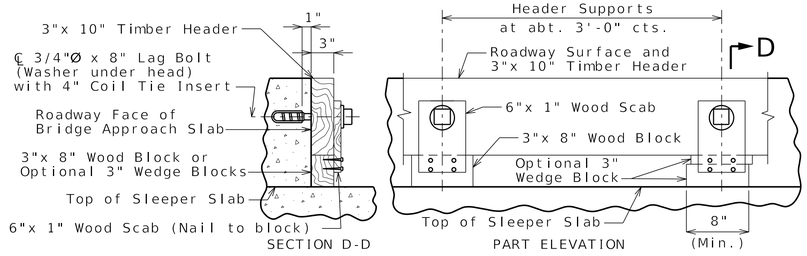

DETAILS OF TIMBER HEADER

Remove timber header when concrete pavement is placed.

BRIDGE APPROACH SLAB (MAJOR)

DATE PREPARED	5/5/2025
ROUTE	US-61
STATE	MO
DISTRICT	BR
SHEET NO.	19
COUNTY	ST. CHARLES
JOB NO.	JST0020
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9681

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
MoDOT
IMPROVE 70 ALLIANCE
HNTB 715 KIRK DRIVE KANSAS CITY, MO 64105-1310 CERTIFICATE OF AUTHORITY NO. 001270
Bartlett & West 601 MONROE ST., SUITE 201, JEFFERSON CITY, MO 65101 (573) 635-2748 CERTIFICATE OF AUTHORITY NO. 000107 - ENGINEERING WWW.BARTLETTWEST.COM

Detailed
Checked

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

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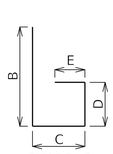
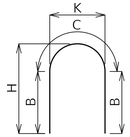


SHAPE 6
or 6S



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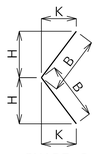

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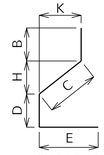

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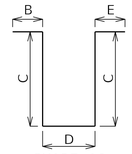

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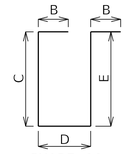

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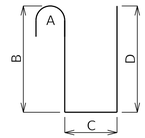

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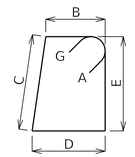

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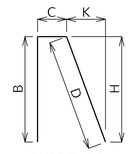

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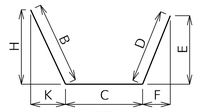

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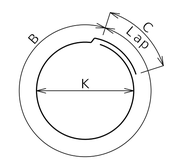

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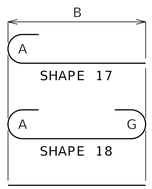
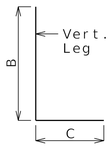


SHAPE 17
SHAPE 18
SHAPE 20



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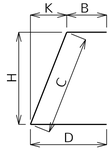

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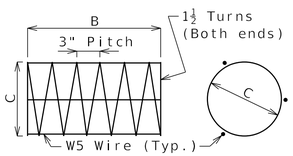

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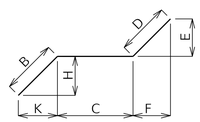

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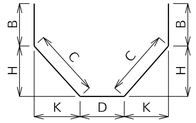

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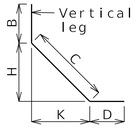

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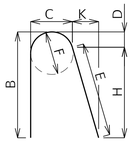

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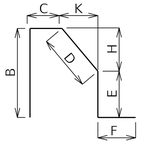

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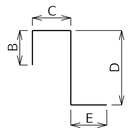

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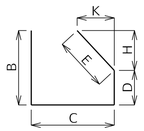

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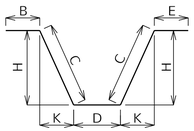

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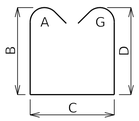

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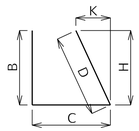

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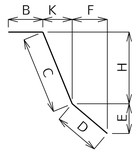

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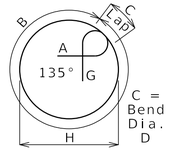

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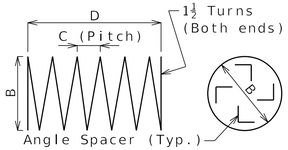

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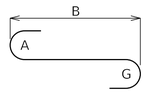
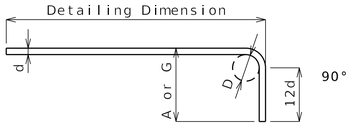


SHAPE 36

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"	36¼"	28½"

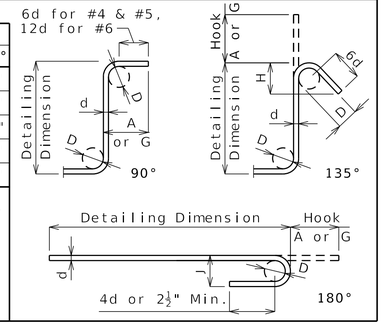


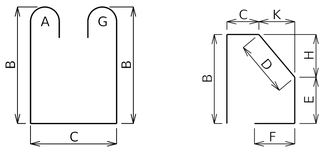
Stirrup Pin Bend Shapes (S)

Size	Case	D	A or G			H	J
			90°	135°	180°	135°	180°
#4	2	2"	4½"	4¼"	5"	2⅞"	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.





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.

DESCRIPTION

DATE

DATE PREPARED
5/5/2025

ROUTE	STATE
US-61	MO
DISTRICT	SHEET NO.
BR	20

COUNTY
ST. CHARLES

JOB NO.
JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9681

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

IMPROVE 70 ALLIANCE

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270

Bartlett & West
601 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101
PHONE: 573-635-2446
CERTIFICATE OF AUTHORITY NO. 000707 - ENGINEERING
WWW.BARTLETTWEST.COM

Detailed
Checked

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

BAR BENDING DIAGRAMS

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	Codes SH	Codes V	Dimensions B ft in.	Dimensions C ft in.	Dimensions D ft in.	Dimensions E ft in.	Dimensions F ft in.	Dimensions H ft in.	Dimensions K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	Codes SH	Codes V	Dimensions B ft in.	Dimensions C ft in.	Dimensions D ft in.	Dimensions E ft in.	Dimensions F ft in.	Dimensions H ft in.	Dimensions K ft in.	Nom. Length ft in.	Actual Length ft in.	Weight lb

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, see Sheet No. 18.

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.

All bars shall be Grade 60.

Detailed
Checked

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

BILL OF REINFORCING STEEL (1 OF 2)

DATE PREPARED 5/5/2025
ROUTE US-61 | STATE MO
DISTRICT BR | SHEET NO. 21
COUNTY ST. CHARLES
JOB NO. JST0020
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9681

DESCRIPTION
DATE

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

IMPROVE 70 ALLIANCE

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY
NO. 001270

Bartlett & West

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	Codes SH	Codes 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

Bill of Reinforcing Steel

No. Req.	Size/ Mark	Location	Codes C	Codes SH	Codes 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

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, see Sheet No. 18.

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.

All bars shall be Grade 60.

Detailed
Checked

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

BILL OF REINFORCING STEEL (2 OF 2)

DATE PREPARED	5/5/2025
ROUTE	US-61
STATE	MO
DISTRICT	BR
SHEET NO.	22
COUNTY	ST. CHARLES
JOB NO.	JST0020
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	A9681

DESCRIPTION

DATE

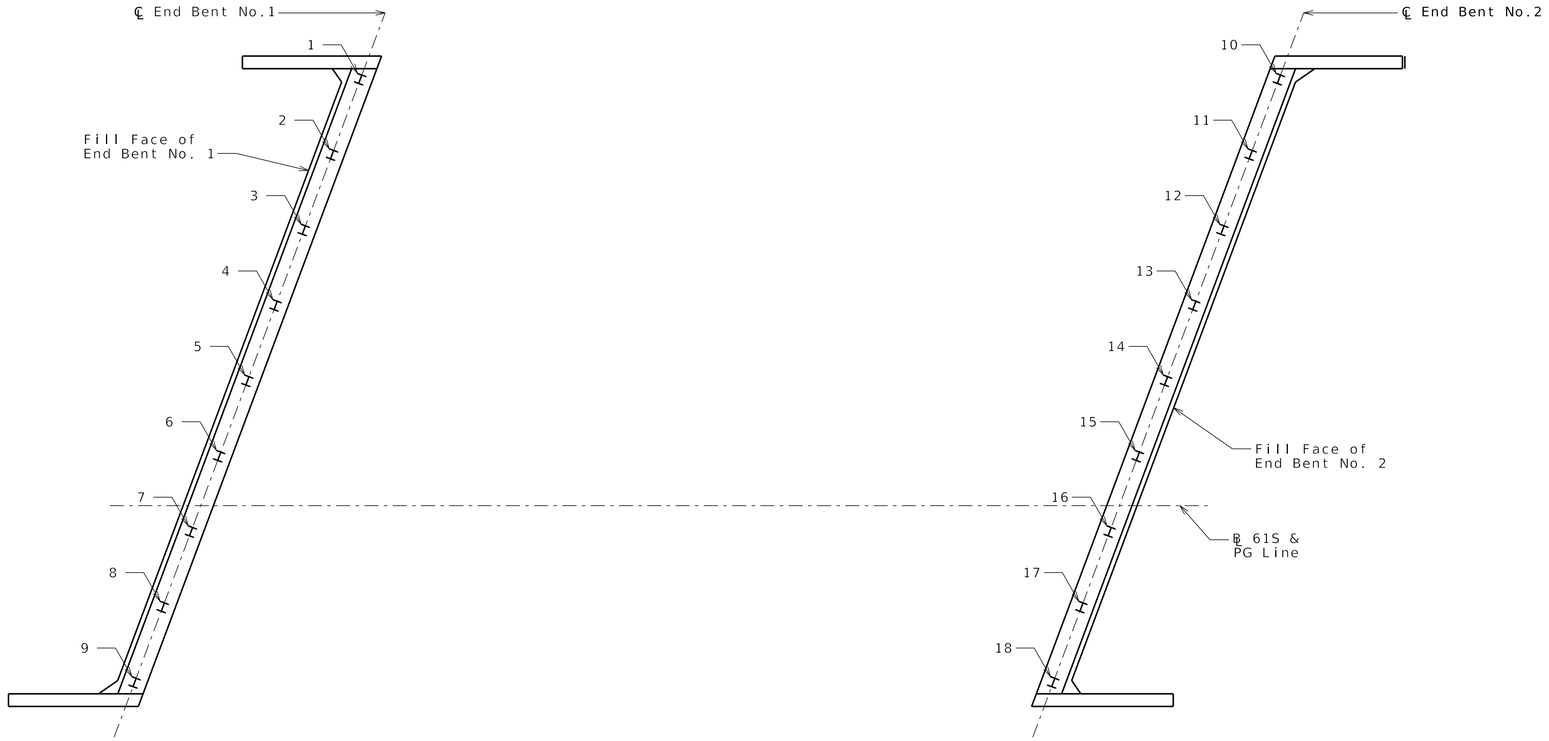
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT

MoDOT

IMPROVE 70 ALLIANCE

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY
NO. 001270

Bartlett & West



PART PLAN SHOWING PILE NUMBERING FOR RECORDING AS-BUILT PILE DATA

As-Built Pile Data			
Pile No.	Length in Place (ft)	Computed Nominal Axial Compressive Resistance (kips)	Remarks
			End Bent No. 1
1			
2			
3			
4			
5			
6			
7			
8			
9			

As-Built Pile Data			
Pile No.	Length in Place (ft)	Computed Nominal Axial Compressive Resistance (kips)	Remarks
			End Bent No. 2
10			
11			
12			
13			
14			
15			
16			
17			
18			

Note:
Indicate in remarks column:
A. Pile type and grade
B. Batter
C. Driven to practical refusal

This sheet to be completed by MoDOT construction personnel.

AS-BUILT PILE DATA

Detailed
Checked

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

DATE PREPARED
5/5/2025

ROUTE	STATE
US-61	MO
DISTRICT	SHEET NO.
BR	23

COUNTY
ST. CHARLES

JOB NO.
JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9681

DESCRIPTION	DATE

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

IMPROVE 70 ALLIANCE

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY
NO. 000270

Bartlett & West
601 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101
PHONE: 573-634-2448
CERTIFICATE OF AUTHORITY NO. 000107 - ENGINEERING
WWW.BARTLETTWEST.COM

Standard Drawing Guidance:
(Do not show on plans)

See Instructions & Tips, MicroStation & Projectwise, AttachBoringPDFsToBridgePlans on Development Section Sharepoint page for instructions for attaching PDFs as rasters.

For one 11x17 Geotechnical Data sheet, snap to top left corner of left guidance box and snap anywhere for other corner, filling as much of the available space as possible.
Delete boxes or turn off Bridge-Guidance level.

DATE PREPARED
5/5/2025

ROUTE	STATE
US-61	MO
DISTRICT	SHEET NO.
BR	24

COUNTY
ST. CHARLES

JOB NO.
JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9681

DESCRIPTION	DATE

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

IMPROVE 70 ALLIANCE

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY
NO. 001270

Bartlett & West
601 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101
PHONE: (573) 635-2418
CERTIFICATE OF AUTHORITY NO. 000107 - ENGINEERING
WWW.BARTLETTWEST.COM

Detailed
Checked

Note: For locations of borings, see Sheet No. 2.

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

Sheet 25 of XX

BORING DATA (1 OF XX)