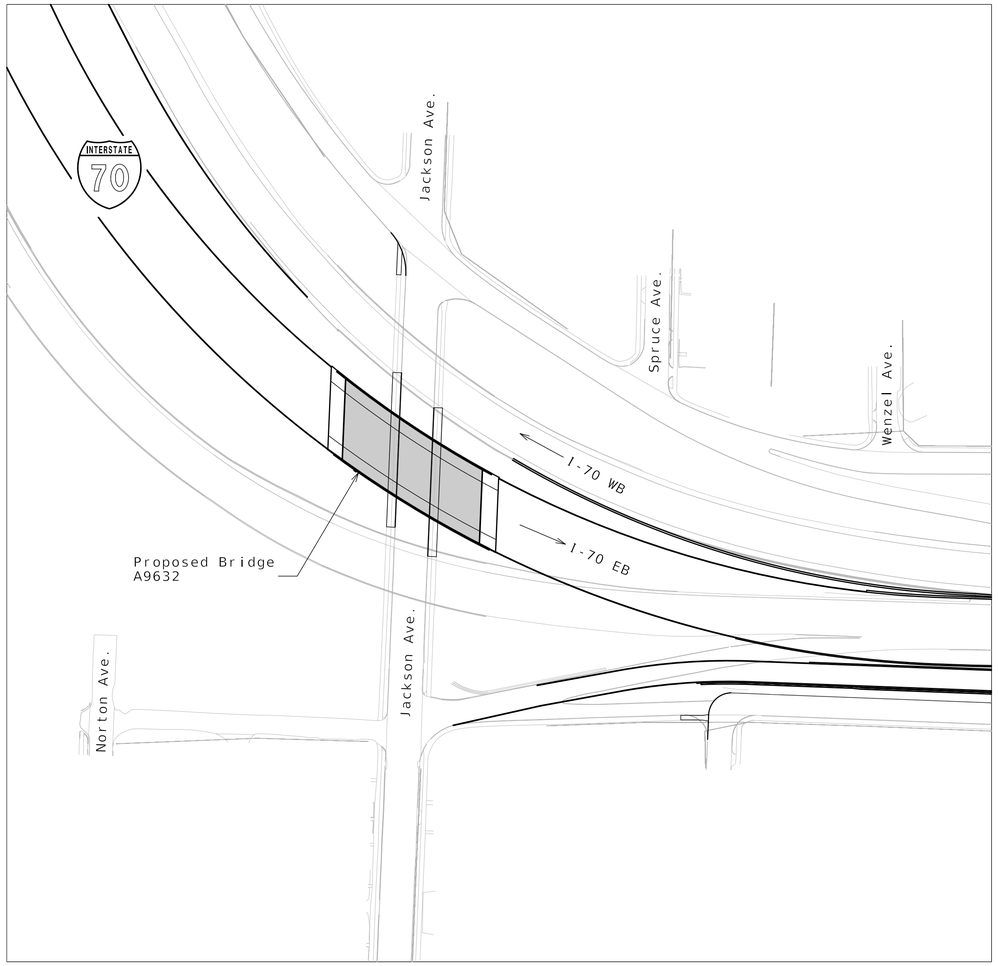
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

Note:
See Civil Package 2: Early Grading for project reference points and project coordinate points.



LOCATION SKETCH

INDEX OF DRAWINGS

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
Van W. Robbins
04-11-25

DATE PREPARED
04/11/2025

ROUTE	STATE
I-70	MO

DISTRICT	SHEET NO.
BR	B04-01

COUNTY
JACKSON

JOB NO.
J4I1486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9632

DESCRIPTION	DATE
REV 0 - RFC SUBMITTAL	04/11/25

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

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

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

BRIDGE: ROUTE I-70 EB OVER JACKSON AVE

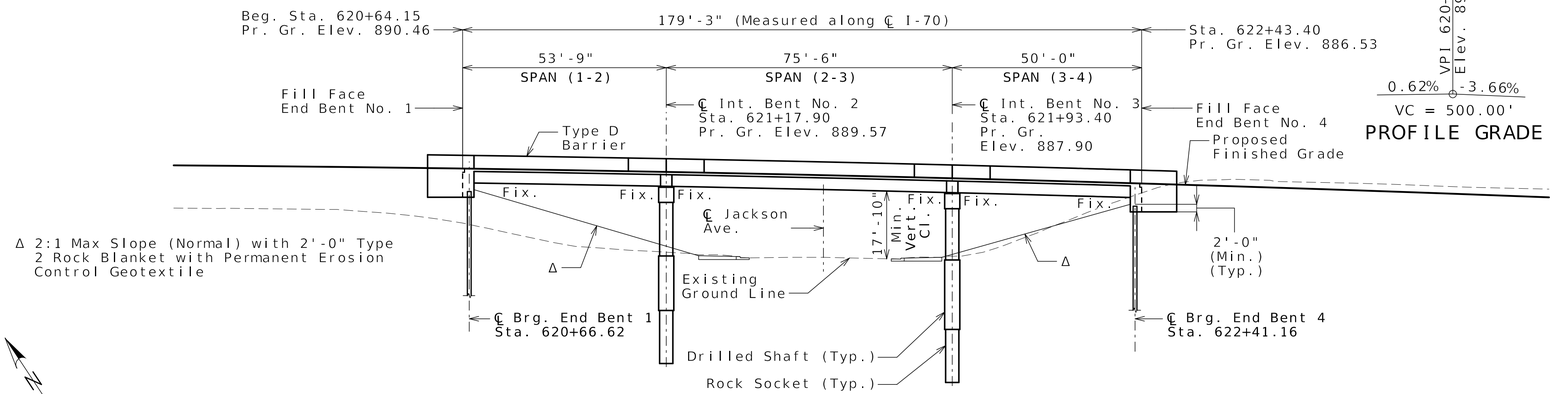
ROUTE I-70 EB FROM ROUTE I-670 TO ROUTE 40
ABOUT 2.9 MILES EAST OF ROUTE I-670
BEGINNING STATION 620+64.15

Detailed DEC 2024
Checked JAN 2025

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

B_A9632_B04-01_J4I1486D.dgn 1:07:21 PM 4/10/2025

(53.8'-75.5'-50.0') Prestressed Concrete NU Girder Spans

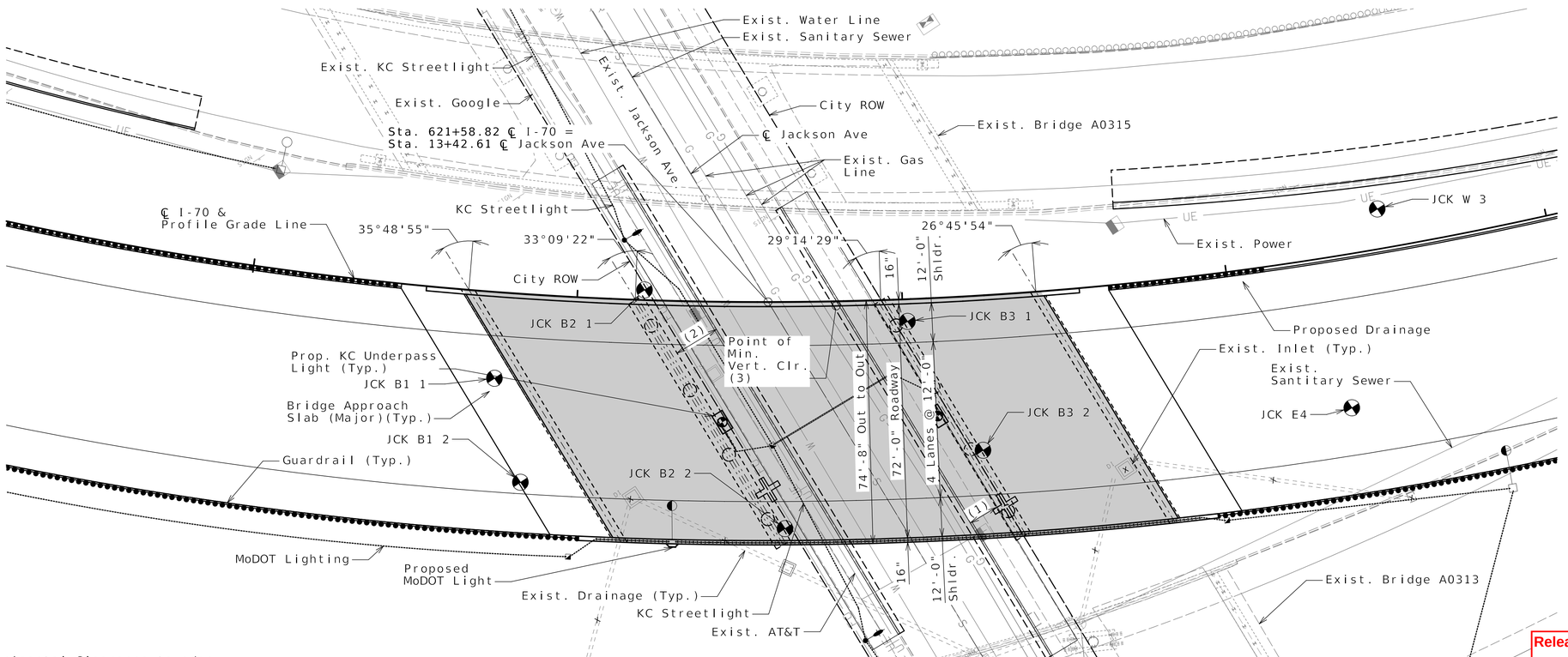


ELEVATION

PROFILE GRADE

CURVE DATA

CURVE I-70
PI = 622+31.53
PC = 615+60.05
PT = 627+66.80
Δ = 62°34'18.1" (LT)
D = 5°11'06.5"
L = 1,206.75'
T = 671.48'
R = 1,105.00'



PLAN

Minimum Horizontal Clearance to edge of existing lane:
(1) 9'-5"
(2) 14'-0"

(3) Sta. 621+80.52, 1.40' Rt.
℄ I-70

◓ Indicates location of borings.

Notice and Disclaimer Regarding Boring Log Data
The locations of all subsurface borings performed by the design-build team for this structure are shown on the plan sheets for this structure. The logs for all locations indicated are provided on Sheets No. B04-35 thru B04-41. Labrotory test results, rock core photographs and other information obtained at these borings are available in the corresponding Foundation Reccommendations Memo prepared by HNTB. By the nature of the exploration process, the information gathered at these borings represents only a small fraction of the total volume of material at the Site. Interpolation between data samples may not be indicative of the nature and extent of the variations that actually exist between sampling locations.

Notes:
All Elevations are based on NAVD88 datum unless otherwise noted.
All dimensions are horizontal.
All Bents are parallel.
Existing Bridge A0313 to be removed in accordance with Sec 216.
For Elevations of drilled shafts and rock sockets, see Sheets No. B04-09 and B04-11.
See Civil Package 6: I-70 Mainline for Jackson Ave. typical section details.

GENERAL PLAN AND ELEVATION

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VAN WILLIAM ROBBINS
PE-2017015106
STATE OF MISSOURI
PROFESSIONAL ENGINEER
04-11-25

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-02
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DATE	DESCRIPTION
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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CERTIFICATE OF AUTHORITY NO. 001270

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Design Specifications:
2020 AASHTO LRFD Bridge Design Specifications (9th Ed.) and 2023 AASHTO Guide Specifications for LRFD Seismic Bridge Design (3rd Edition)
Seismic Design Category = A (Nonseismic)
Design earthquake response spectral acceleration coefficient at 1.0 second period. $S_{D1} \leq 0.15$
Acceleration Coefficient (effective peak ground acceleration coefficient), A_s = N/A

Design Loading:
Vehicular = HL-93
Future Wearing Surface = 35 lb/sf
Earth - 120 lb/cf
Equivalent Fluid Pressure - 45 lb/cf
Superstructure: Simply-Supported, non-composite for dead load.
Continuous composite for live load.

Design Unit Stresses:

Class B Concrete (End Bents below Const. Jt.)	f'c = 3,000 psi
Class B-1 Concrete (Intermediate Bents except Drilled Shafts and Rock Sockets)	f'c = 4.000 psi
Class B-2 Concrete (Drilled Shafts and Rock Sockets)	f'c = 4.000 psi
Class B-2 Concrete (Superstructure, except Prestressed Girders, and Barrier)	f'c = 4,000 psi
Class B-1 Concrete (Barrier)	f'c = 4.000 psi
Reinforcing Steel (ASTM A615 Grade 60)	fy = 60,000 psi
Structural HP Steel Pile (ASTM A709 Grade 50)	fy = 50,000 psi

For prestressed girder stresses, see Sheets No. B04-17 thru B04-19.

Neoprene Pads:
Neoprene Bearing Pads shall be 60 durometer and shall be in accordance with Sec 716.

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

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

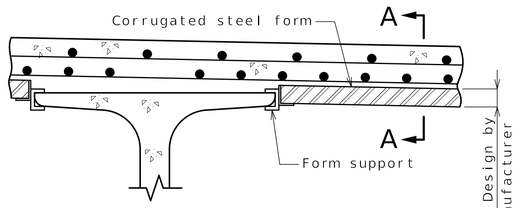
All reinforcing in the barriers, light blisters, slab, concrete diaphragms, End Bents No. 1 and 4 and Intermediate Bents No. 2 & 3 shall be epoxy coated. Reinforcing in the rock sockets and drilled shaft shall be uncoated.

Concrete Protective Coatings:
Concrete and masonry protective coating shall be applied on all exposed concrete and stone areas as noted in the plans in accordance with Sec 711 See Sheet No. B04-31.

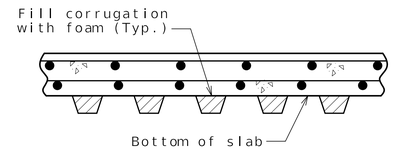
Sacrificial graffiti protective coating shall be applied on all exposed concrete and stone areas as noted in the plans in accordance with Sec 711 See Sheet No. B04-31.

Miscellaneous:
Outline of old work is indicated by light dashed lines. Heavy lines indicate new work U.N.O.

Abbreviations:
E.F. denotes Each Face
N.F. denotes Near Face
F.F. denotes Far face
U.N.O. denotes Unless Noted Otherwise



STAY-IN-PLACE
CORRUGATED STEEL FORM DETAIL



SECTION A-A

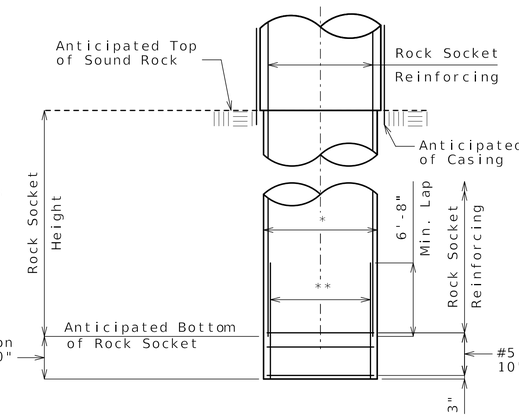
Stay-In-Place Corrugated Steel Form Notes:

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

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



ROCK SOCKET OVER EXCAVATION DETAIL
For Rock Socket Details see Intermediate Bent Details

Load Bearing Piles:
Minimum Nominal Axial Compressive Resistance = Maximum Factored Loads/Resistance Factor
HP piles are anticipated to be driven to refusal on rock. Review all borings for depth of rock and restrict driving as appropriate to comply with hard rock driving criteria in accordance with Sec 702. When pile refusal on rock occurs, as approved by the engineer, the minimum nominal axial compressive resistance is verified and no additional pile driving verification method is required.
All piles shall be galvanized down to the minimum galvanized penetration (elevation).
Pile point reinforcement need not 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. Deviations in penetration less than 5 feet of minimum will be considered acceptable provided the contractor makes the necessary corrections to ensure the minimum penetration is achieved on subsequent piles.
DT = Dynamic Testing

Rock Socket (Drilled Shafts):
Minimum Nominal Axial Compressive Resistance (Side Resistance + Tip Resistance) = Maximum Factored Loads/Resistance Factors
Thickness of permanent steel casing shall be in accordance with Project AAS.
Sonic logging testing shall be performed on all drilled shafts and rock sockets.
Drilled shafts shall be constructed in accordance with project Drilled Shaft AAS.

Foundation Data

Type	Design Data		Bent Number 1	2	3	4
Load Bearing Pile	Pile Type and Size		HP 12x53	---	---	HP 12x53
	Number	ea	10	---	---	10
	Approximate Length Per Each	ft	32	---	---	46
	Pile Point Reinforcement	ea	All	---	---	All
	Min. Galvanized Penetration (Elev.)	ft	Full Length	---	---	Full Length
	Minimum Tip Penetration (Elev.)	ft	---	---	---	---
	Criteria for Min. Tip Penetration		---	---	---	---
	Pile Driving Verification Method		DT	---	---	DT
	Resistance Factor		0.65	---	---	0.65
	Minimum Nominal Axial Compressive Resistance	kip	361	---	---	361
Rock Socket	Number	ea	---	4	4	---
	Layer 1 Foundation Material		---	SHALE	SHALE	---
	Layer 1 Elevation Range	ft	---	848-832	844-833	---
	Layer 1 Minimum Nominal Axial Compressive Resistance (Side Resistance)	ksf	---	2.0	2.0	---
	Minimum Nominal Axial Compressive Resistance (Tip Resistance)	ksf	---	82.6	82.6	---

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Package: BRD-04-EB-70-Jackson

GENERAL NOTES

Detailed DEC 2024
Checked JAN 2025

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

STATE OF MISSOURI
VAN WILLIAM ROBBINS
PE-2017015106
PROFESSIONAL ENGINEER
04-11-25

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-03
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DESCRIPTION	DATE
REV 0 - RFC SUBMITTAL	04/11/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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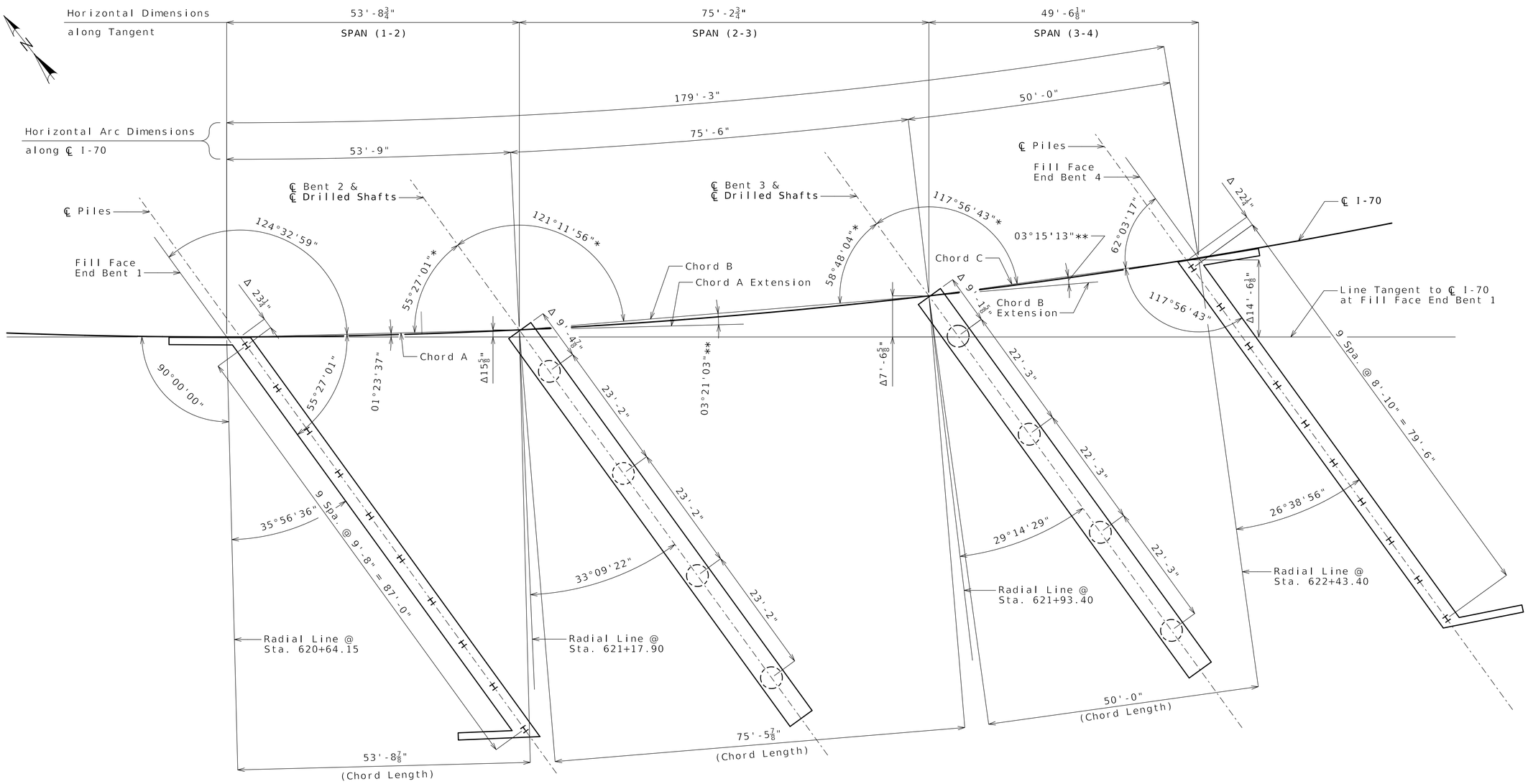
CLARKSON RADMACHER JOINT VENTURE
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270
HNTB



SUBSTRUCTURE LAYOUT

Notes:
All stations are given along ℄ I-70.
All dimensions are horizontal.
∗ Angle between ℄ Bent and chord.
∗∗ Angle between extended chord and chord.
Δ Measured to ℄ I-70.

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Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

SUBSTRUCTURE LAYOUT

Detailed DEC 2024
Checked JAN 2025

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STATE OF MISSOURI
WILLIAM JOSEPH STURGEON
PE-2014017021
PROFESSIONAL ENGINEER
4/11/2025

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-04
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DATE	DESCRIPTION
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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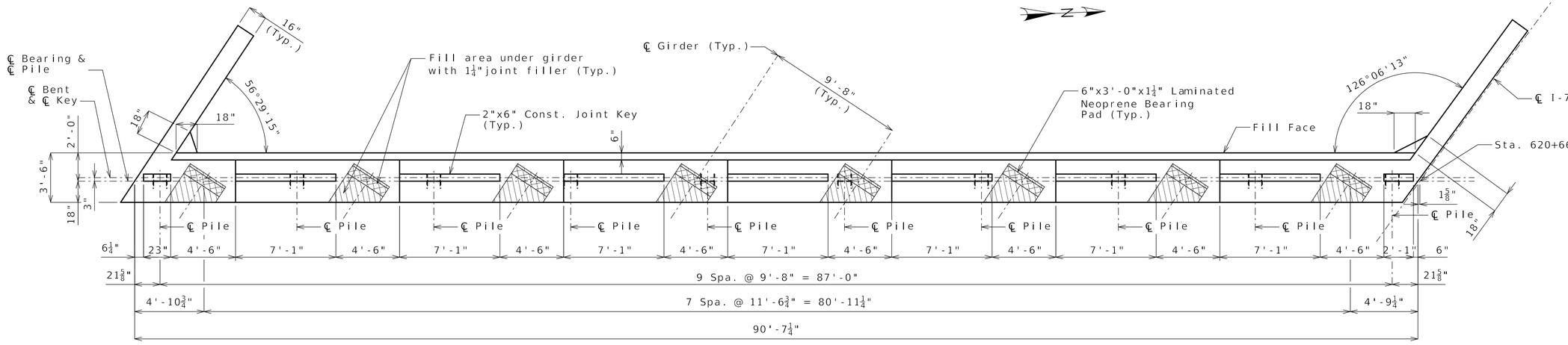
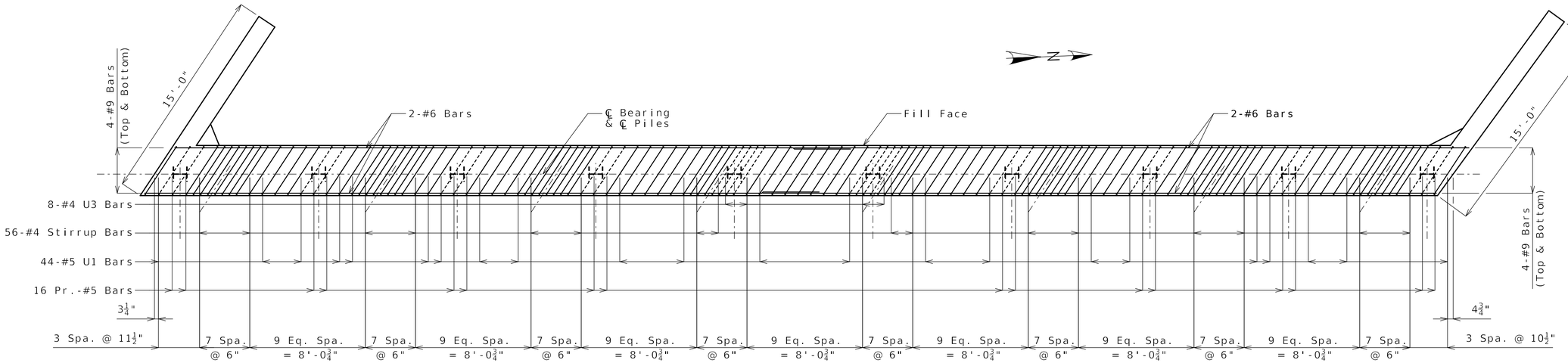
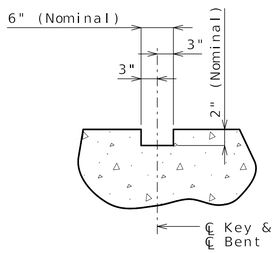


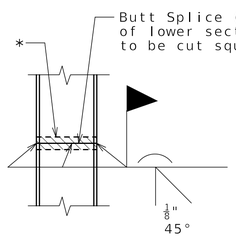
PLAN OF BEAM



PLAN OF BEAM SHOWING REINFORCING
(Key and steps not shown for clarity)

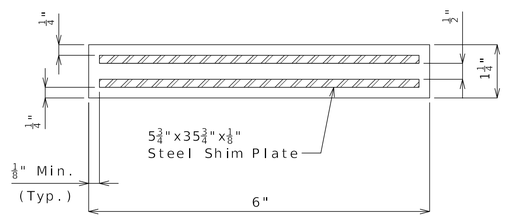


SECTION THRU KEY



STEEL PILE SPLICE
(If required)

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



TYPICAL SECTION THRU
LAMINATED NEOPRENE BEAING PAD
8 Required per Bent

Notes:
Work this sheet with Sheets No. B04-06 and B04-07.
All U bars and pairs of vertical bars shall be placed along skew. Reinforcing steel shall be shifted to clear piles. U-bars shall clear piles by at least 1½".
All concrete above the construction joint shall be Class B-2.
For details of bridge approach slab, see Sheet No. B04-33.
For location of coil tie rods, see Sheet No. B04-17.

DETAILS OF END BENT NO. 1

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GINA D. HORNER PE-30413 PROFESSIONAL ENGINEER STATE OF MISSOURI
Gina D. Horner 4/11/2025

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-05
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

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

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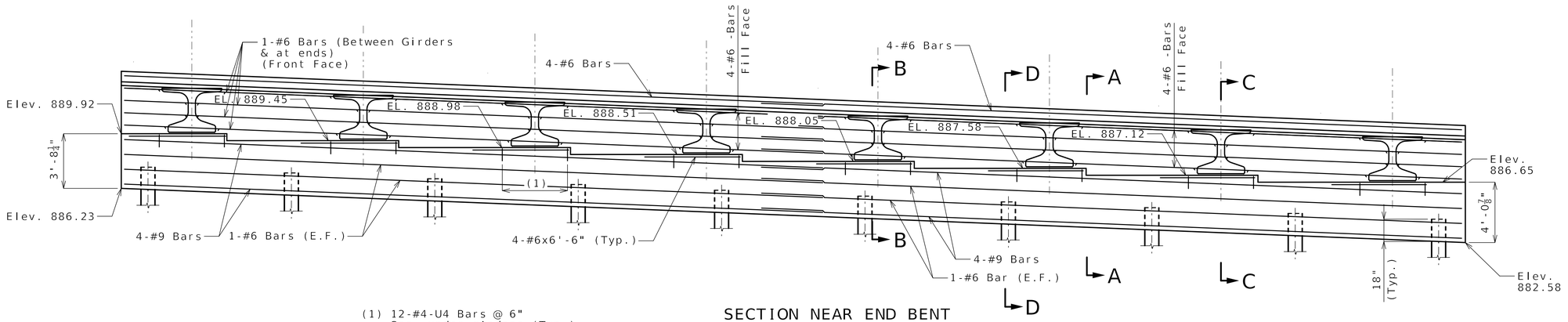
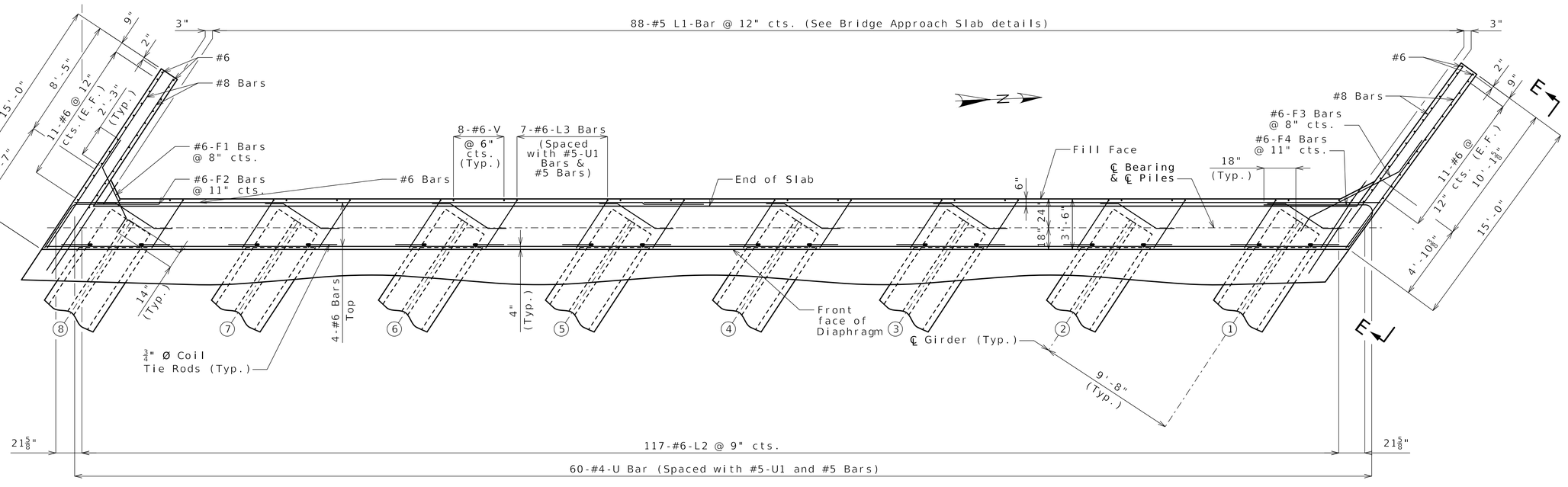


(1) 12-#4-U4 Bars @ 6" Spa. under girders (Typ.)

SECTION NEAR END BENT
(Looking Back Station)

Notes:
Lap Splice for #6 bars = 4'-3" (Min.)
Lap Splice for #9 bars = 6'-5" (Min.)



PART PLAN

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Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

General Notes:
Work this sheet with Sheets No. B04-05 and B04-07.
For Sections A-A, B-B, C-C and D-D and Elevation E-E, see Sheet No. B04-07.
Strands at end of the girders shall be field bent or, if necessary, cut in field to maintain 1 1/2-inch minimum clearance to fill face of end bent.
The #6-F bars shall be bent in the field to clear girders.

(1) Denotes girder number

DETAILS OF END BENT NO. 1

Detailed DEC 2024
Checked JAN 2025

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

Sheet No. B04-06 of B04-41

GINA D. HORNER PE-30413
PROFESSIONAL ENGINEER
STATE OF MISSOURI
Gina D. Horner 4/11/2025

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-06
COUNTY JACKSON
JOB NO. J4I1486D
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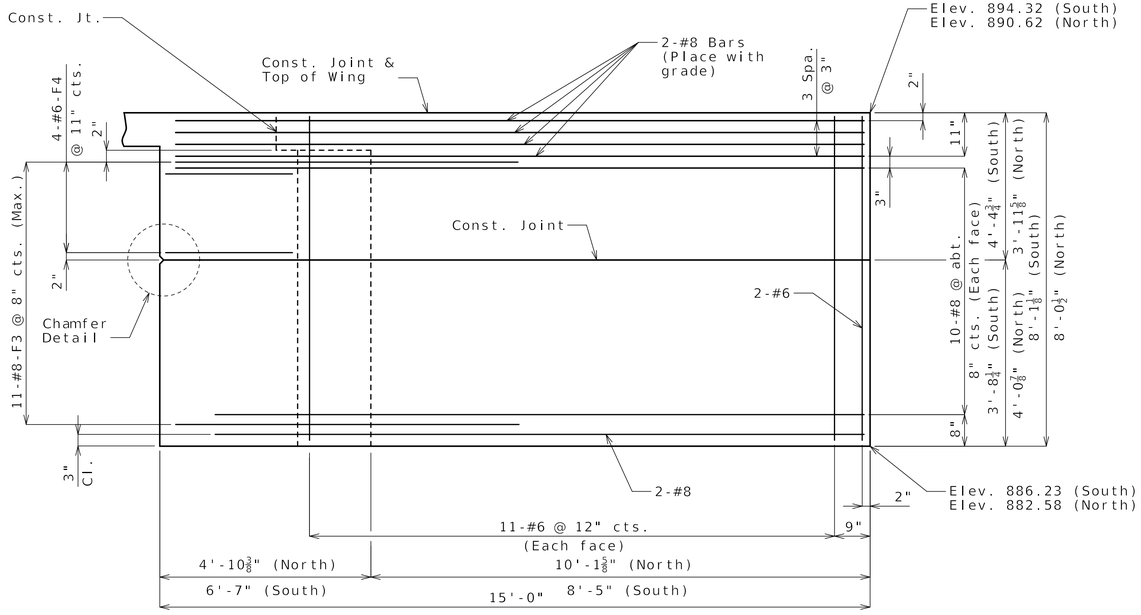
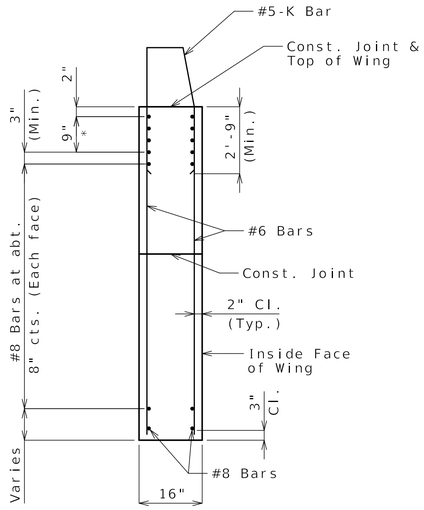


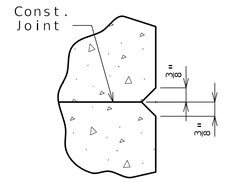
ELEVATION E-E

(North Wingwall shown, South wingwall similar except opposite hand)

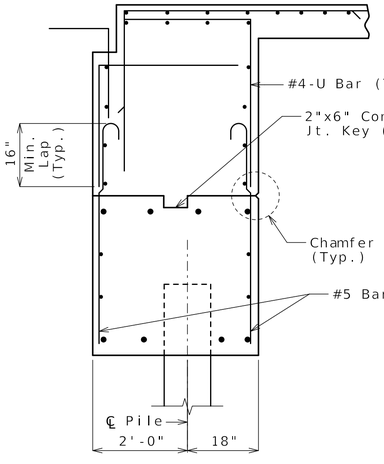


TYPICAL SECTION THRU WING

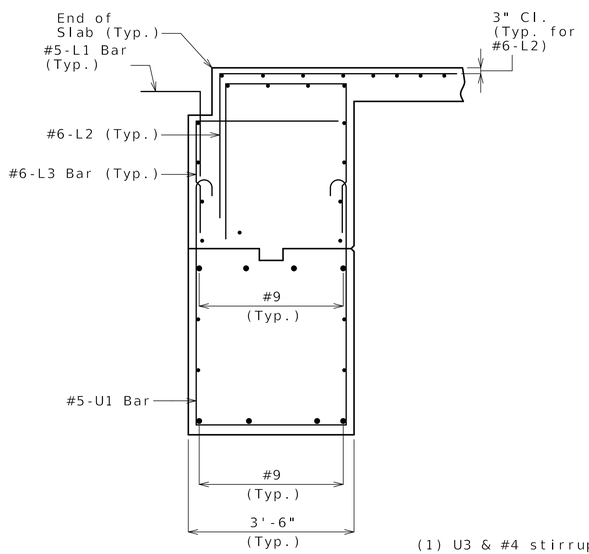
*#8 Bars at 3" cts. (Each face)(Place with grade) See Elevation E-E for number of bars



CHAMFER DETAIL

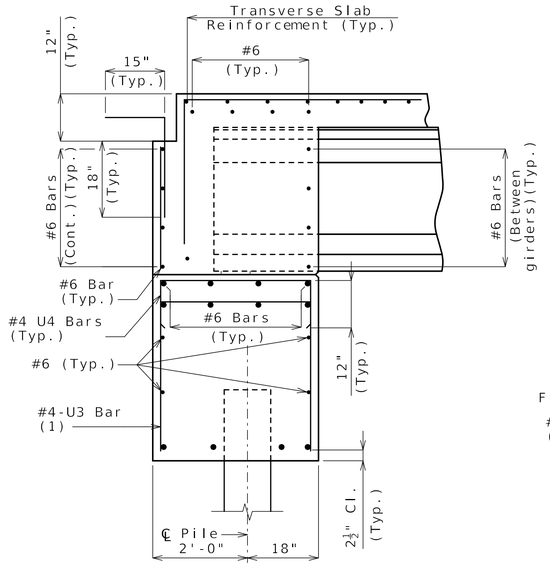


SECTION D-D

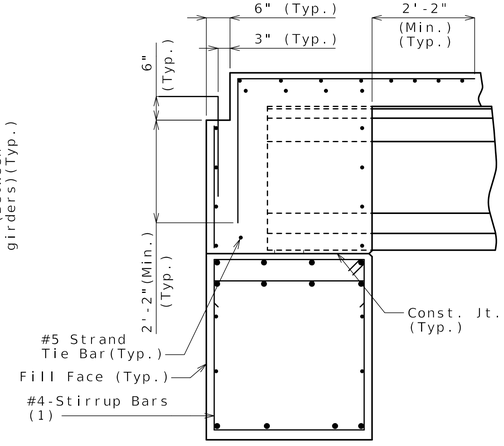


SECTION A-A

(1) U3 & #4 stirrup bar vertical leg = 3'-1½"



SECTION B-B



SECTION C-C

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Not to Scale
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Package: BRD-04-EB-70-Jackson

General Notes:
Work this sheet with Sheets No. B04-05 and B04-06.
For location of Sections A-A, B-B, C-C, D-D and Elevation E-E, see Sheet No. B04-06.
For reinforcement of the Type D Barrier, see Sheet No. B04-29.

DETAILS OF END BENT NO. 1

GINA D. HORNER PE-30413 PROFESSIONAL ENGINEER STATE OF MISSOURI
Gina D. Horner 4/11/2025

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-07
COUNTY JACKSON
JOB NO. J4I1486D
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HNTB

Detailed DEC 2024
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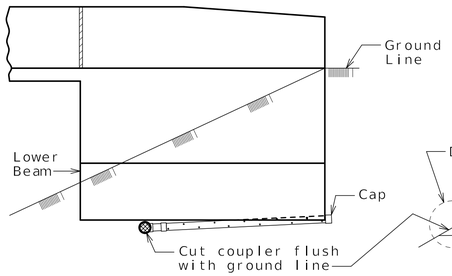
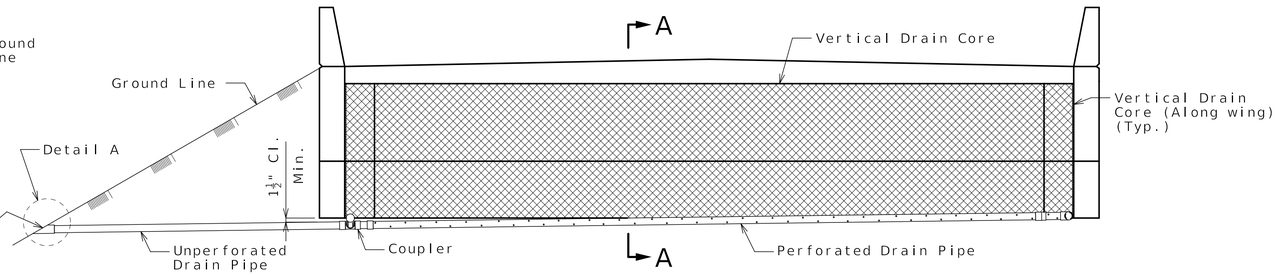
Note: This drawing is not to scale. Follow dimensions.

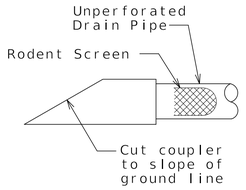
B_A9632_B04-07_J4I1486D.dgn 1:09:03 PM 4/10/2025



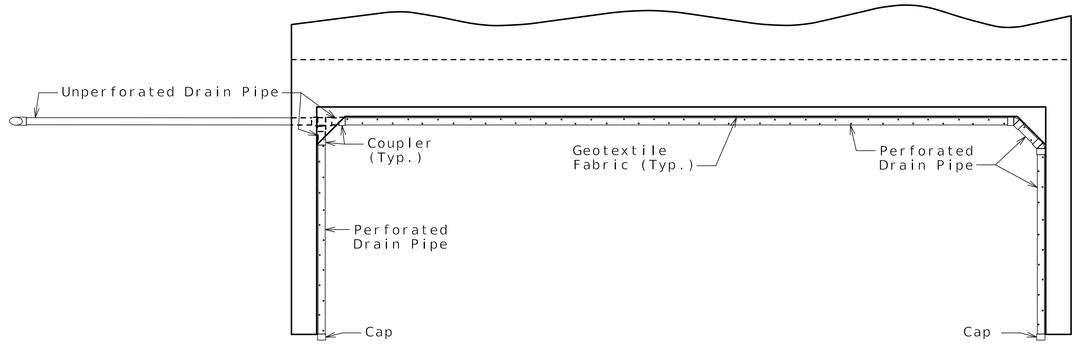
ELEVATION OF WING



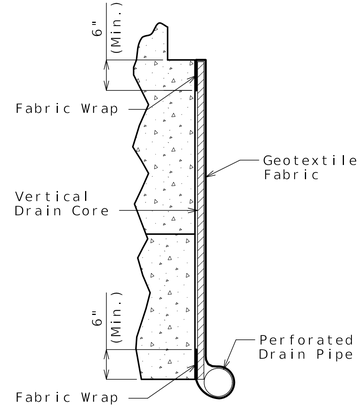
ELEVATION OF END BENT



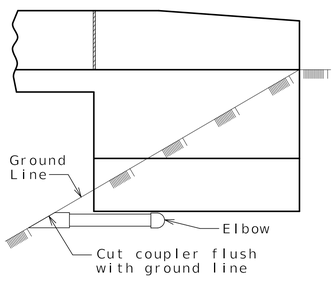
DETAIL A



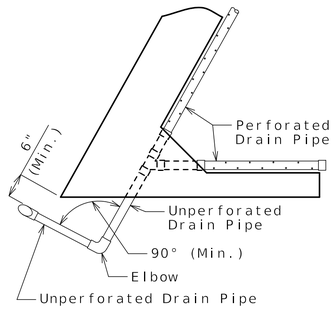
PLAN OF END BENT



PART SECTION A-A
(Section thru wing similar)



ELEVATION OF WING



PART PLAN

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

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

General Notes:

Squared end bent shown, skewed end bent similar.

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.

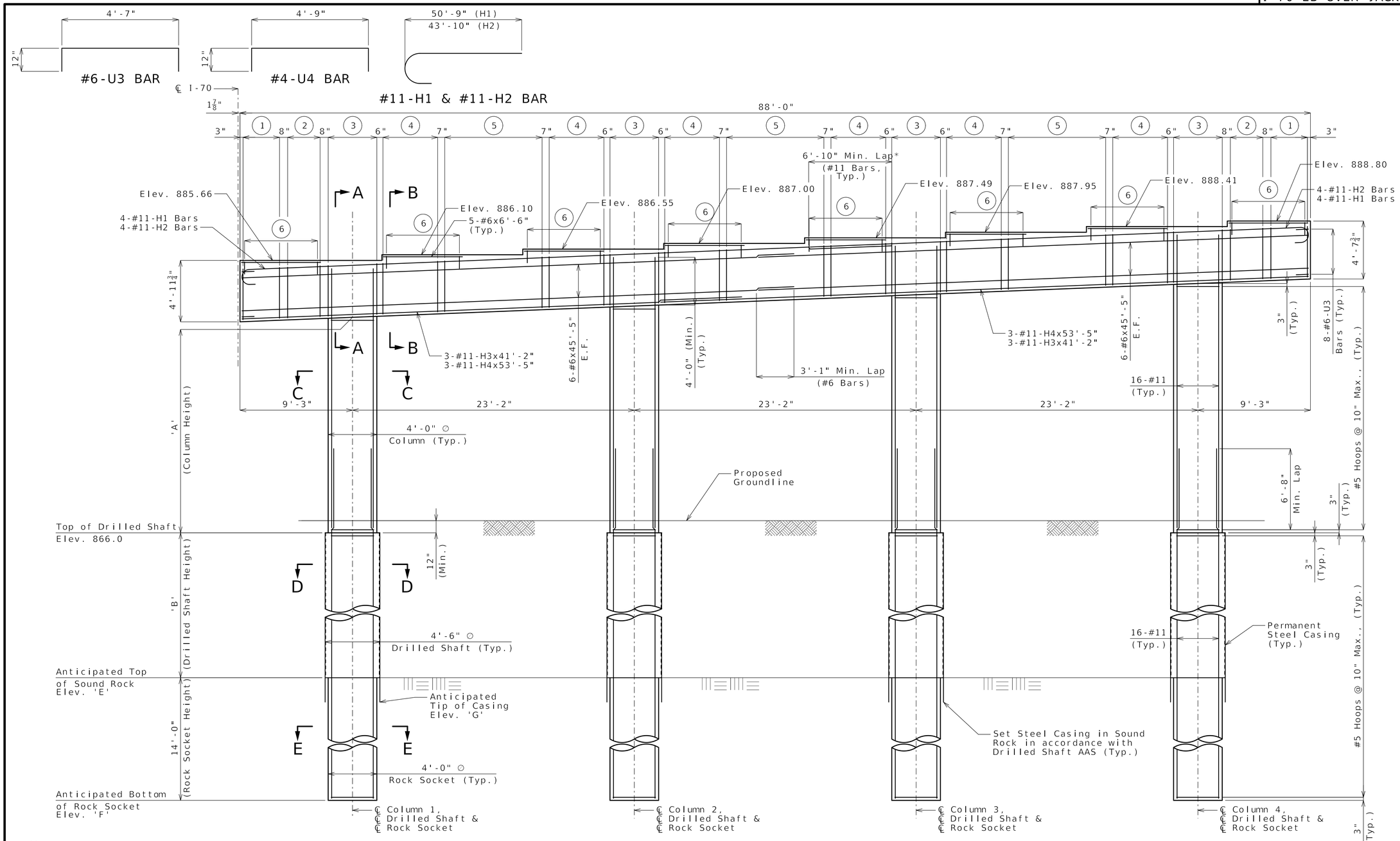
VERTICAL DRAIN AT END BENTS

GINA D. HORNER PE-30413
STATE OF MISSOURI PROFESSIONAL ENGINEER
Gina D. Horner 4/11/2025

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-08
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DATE	DESCRIPTION
04/11/25	REV 0 - RFC SUBMITTAL

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
CLARKSON RADMACHER JOINT VENTURE
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270
HNTB



ELEVATION

1. 4-#6-U2 @ 12" cts.
2. 5-#6-U2 @ 8" cts.
3. 5-#6-U1 @ 12" cts.
4. 10-#6-U2 @ 6" cts.
5. 9-#6-U2 @ 12" cts.
6. 13-#4-U4 @ 6" Spa.

Table of Variables

Column Number	"A"	"B"	"E"	"F"	"G"
1	15'-0½"	9'-6"	856.5	842.5	854.5
2	15'-11½"	12'-0"	854.0	840.0	852.0
3	16'-10½"	14'-6"	851.5	837.5	849.5
4	17'-9½"	17'-0"	849.0	835.0	847.0

Notes:
* Alternate location of lap splices between adjacent bars about centerline of bent. Alternate lap splice not shown.
Prior to placing concrete for columns, position of vertical reinforcement shall be verified so as to provide clearance for capbeam reinforcement as applicable.
Work this sheet with Sheet No. B04-10.
Use ½" joint filler up vertical face of capbeam steps.
For location of drilled shafts, see Sheet No. B04-04.
For Sections A-A thru E-E, see Sheet No. B04-10.

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

DETAILS OF INTERMEDIATE BENT NO. 2

Detailed DEC 2024
Checked JAN 2025

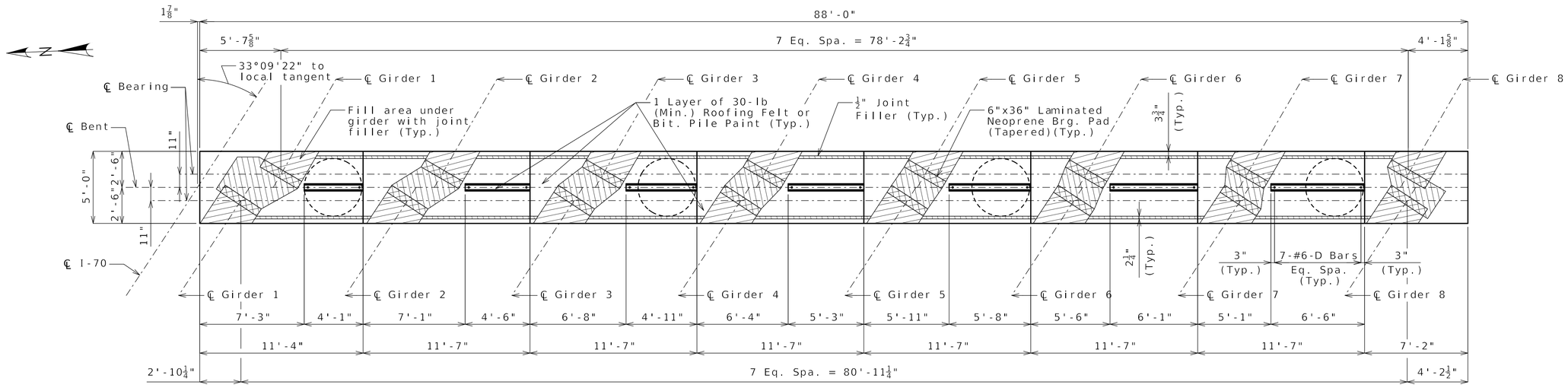
Note: This drawing is not to scale. Follow dimensions.

WILLIAM JOSEPH STURGEON
PE-2014017021
STATE OF MISSOURI
PROFESSIONAL ENGINEER
4/11/2025

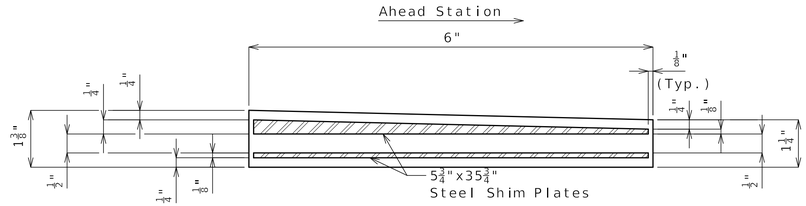
DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-09
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DATE	DESCRIPTION
04/11/25	REV 0 - RFC SUBMITTAL

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
CLARKSON RADMACHER JOINT VENTURE
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270
HNTB

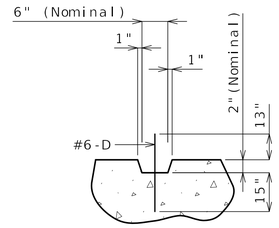


PLAN OF CAPBEAM

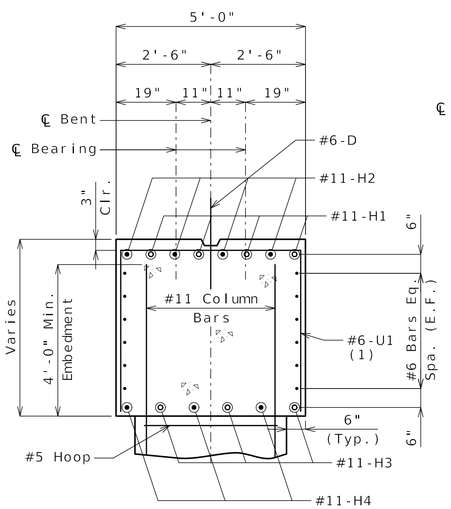


TYPICAL SECTION THRU LAMINATED NEOPRENE BEARING PAD (TAPERED)

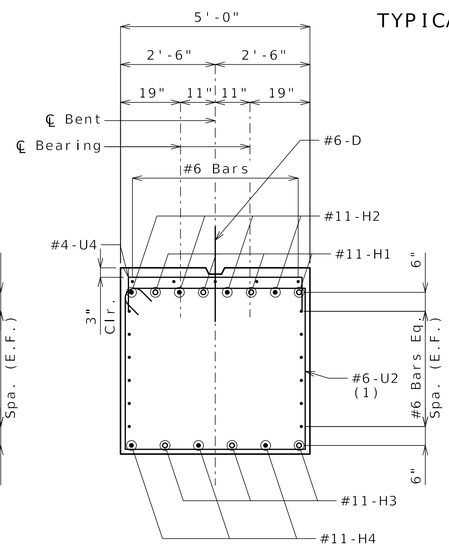
16 Required



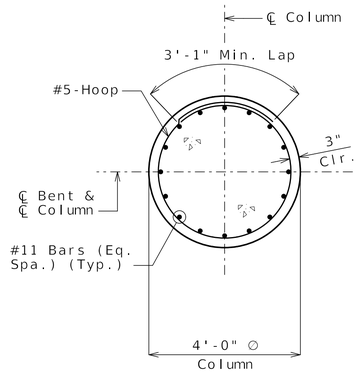
SECTION THRU KEY



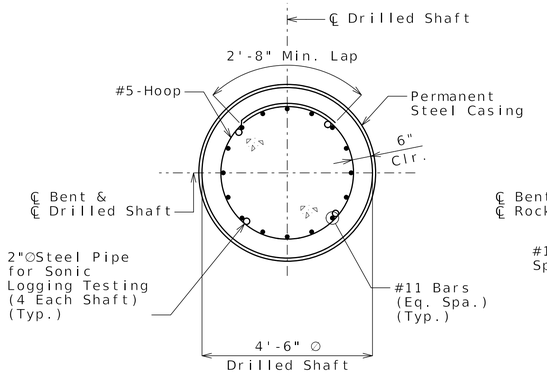
SECTION A-A



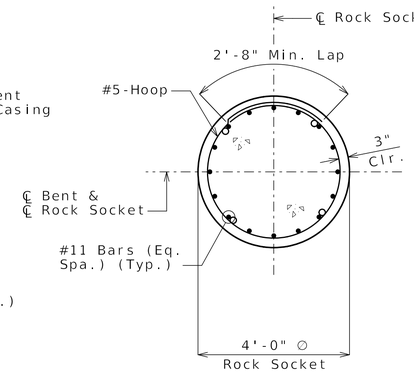
SECTION B-B



SECTION C-C



SECTION D-D



SECTION E-E

(1) U1 & U2 vertical leg = 4'-2"

Notes:
Work this sheet with Sheet No. B04-09.
Hoop splices shall be staggered around the drilled shaft and rock socket at 90 degree intervals.

DETAILS OF INTERMEDIATE BENT NO. 2

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

Detailed DEC 2024
Checked JAN 2025

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

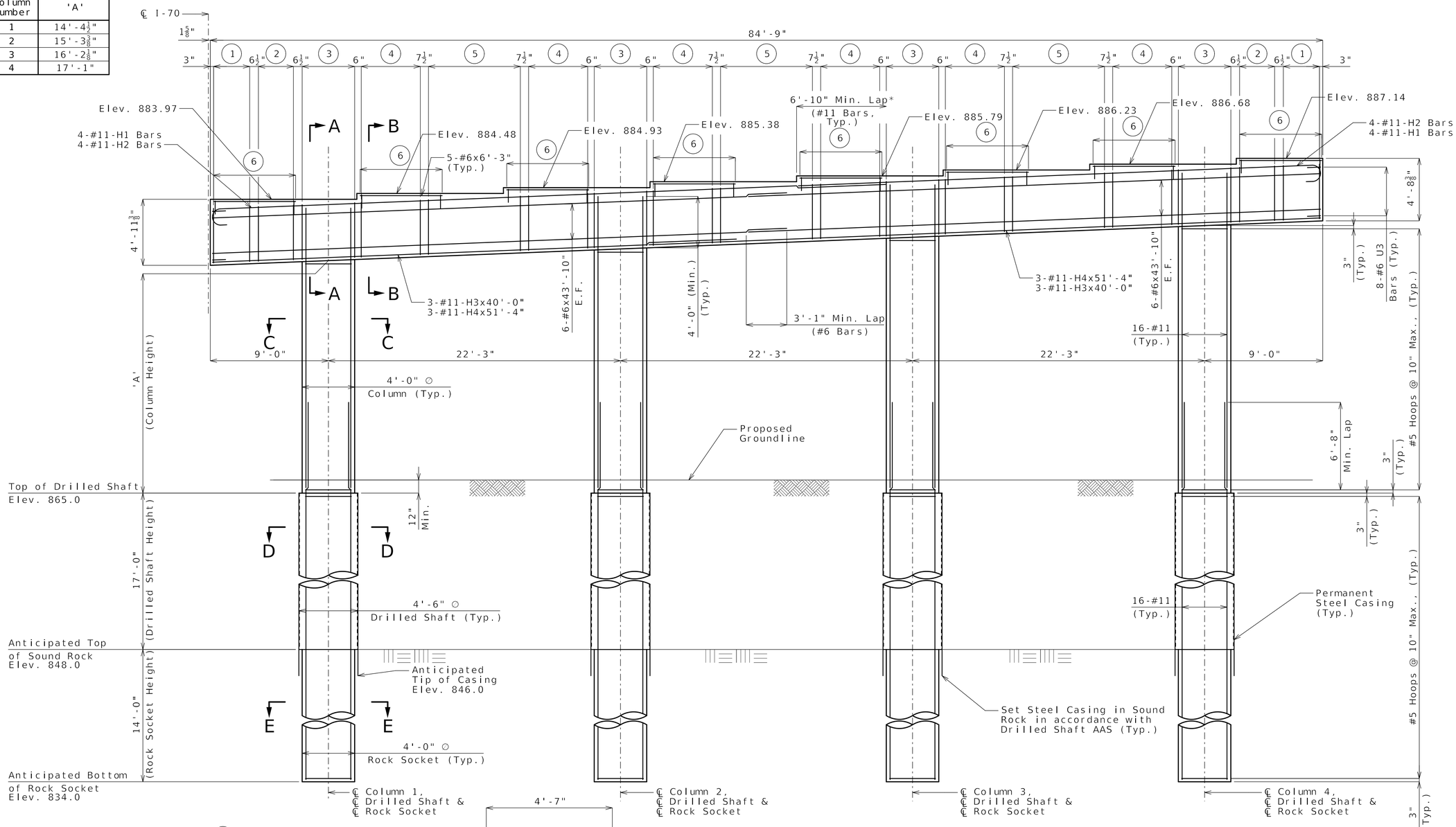
WILLIAM JOSEPH STURGEON
PE-2014017021
STATE OF MISSOURI
PROFESSIONAL ENGINEER
4/11/2025

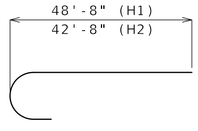
DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-10
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DATE	DESCRIPTION
04/11/25	REV 0 - RFC SUBMITTAL

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
CLARKSON RADMACHER JOINT VENTURE
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270
HNTB

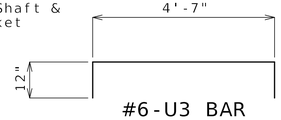
Table of Variables	
Column Number	'A'
1	14'-4½"
2	15'-3⅜"
3	16'-2⅛"
4	17'-1"



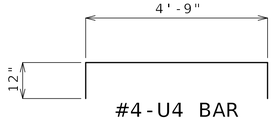


#11-H1 & #11-H2 BAR

1. 4-#6-U2 @ 12" cts.
2. 5-#6-U2 @ 8" cts.
3. 5-#6-U1 @ 12" cts.
4. 10-#6-U2 @ 6" cts.
5. 8-#6-U2 @ 12" cts.
6. 13-#4-U4 @ 6" Spa.



#6-U3 BAR



#4-U4 BAR

ELEVATION

Notes:
* Alternate location of lap splices between adjacent bars about centerline of bent. Alternate lap splice not shown.
Prior to placing concrete for columns, position of vertical reinforcement shall be verified so as to provide clearance for capbeam reinforcement as applicable.
Work this sheet with Sheet No. B04-12.
Use ½" joint filler up vertical face of capbeam steps.
For location of drilled shafts, see Sheet No. B04-04.
For Sections A-A thru E-E, see Sheet No. B04-12.

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

DETAILS OF INTERMEDIATE BENT NO. 3

Detailed DEC 2024
Checked JAN 2025

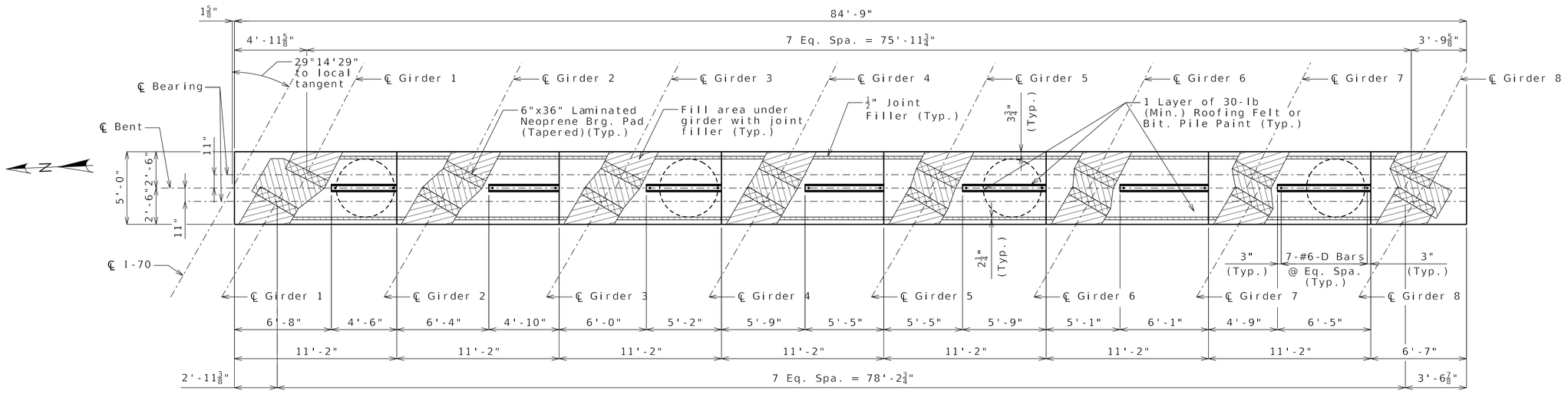
Note: This drawing is not to scale. Follow dimensions.

WILLIAM JOSEPH STURGEON
PE-2014017021
STATE OF MISSOURI
PROFESSIONAL ENGINEER
4/11/2025

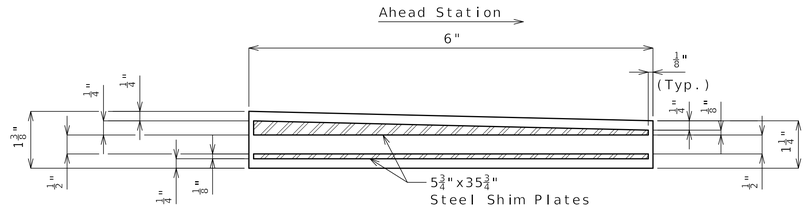
DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-11
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DATE	DESCRIPTION
04/11/25	REV 0 - RFC SUBMITTAL

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
CLARKSON RADMACHER JOINT VENTURE
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270
HNTB

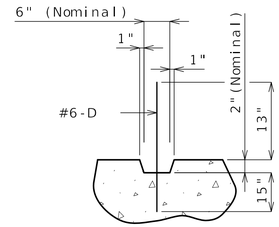


PLAN OF CAPBEAM

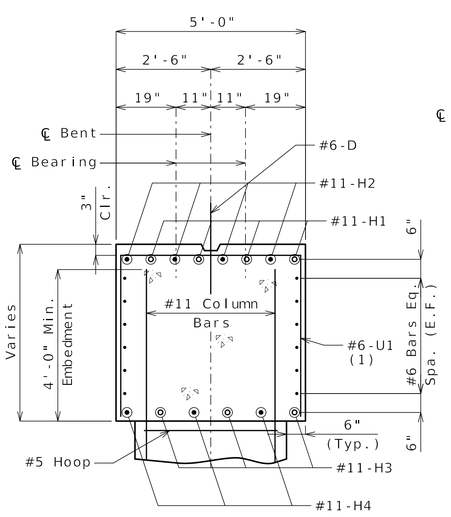


TYPICAL SECTION THRU LAMINATED NEOPRENE BEARING PAD (TAPERED)

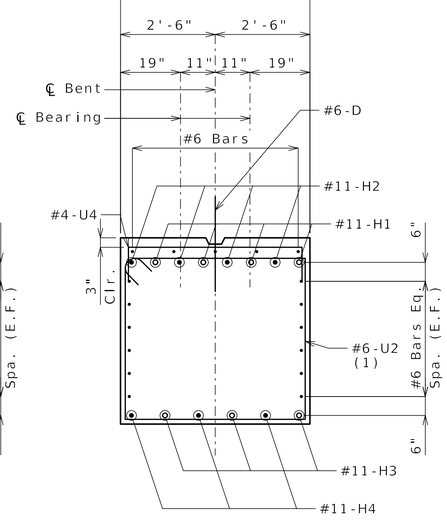
16 Required



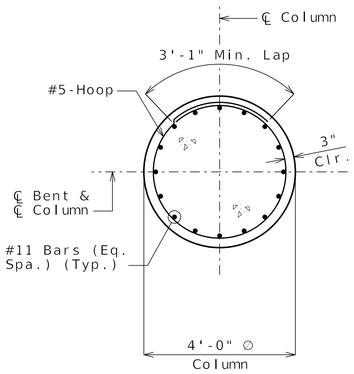
SECTION THRU KEY



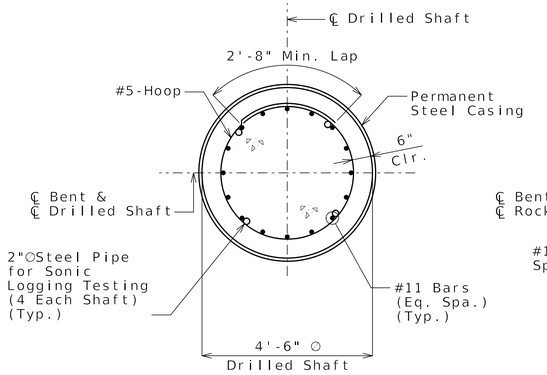
SECTION A-A



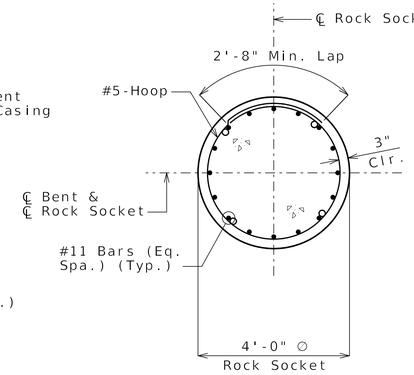
SECTION B-B



SECTION C-C



SECTION D-D



SECTION E-E

(1) U1 & U2 vertical leg = 4'-2"

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

Notes:
Work this sheet with Sheet No. B04-11.
Hoop splices shall be staggered around the drilled shaft and rock socket at 90 degree intervals.

DETAILS OF INTERMEDIATE BENT NO. 3

Detailed DEC 2024
Checked JAN 2025

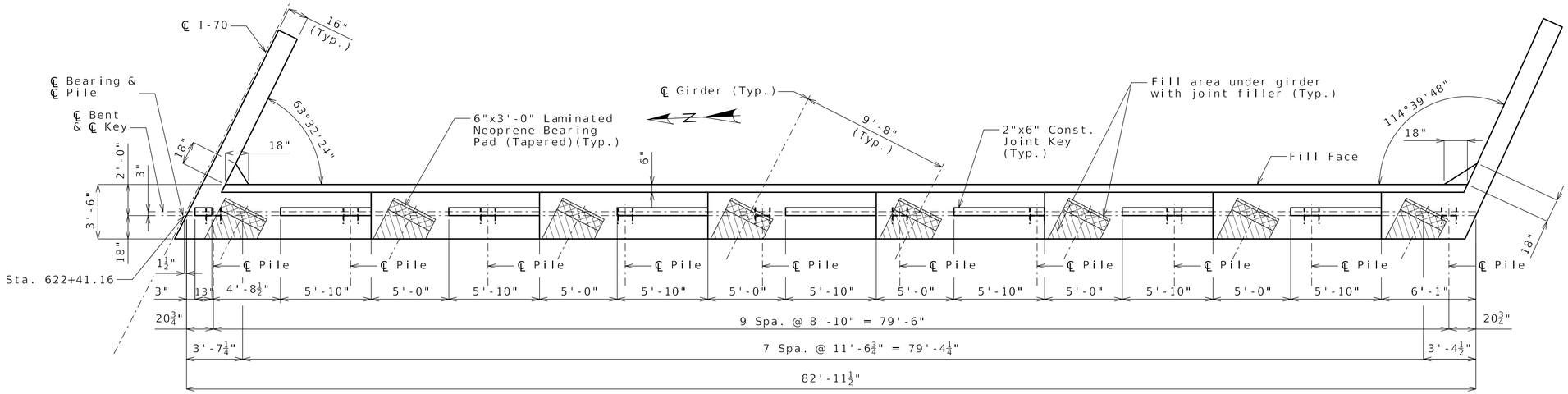
Note: This drawing is not to scale. Follow dimensions.

WILLIAM JOSEPH STURGEON
PE-2014017021
PROFESSIONAL ENGINEER
STATE OF MISSOURI
4/11/2025

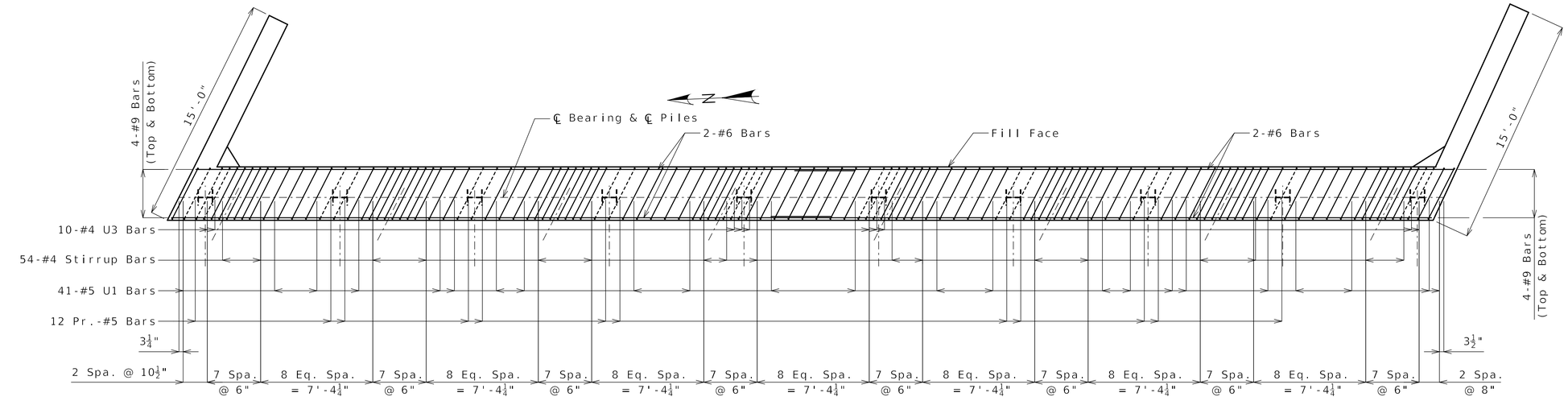
DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-12
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DESCRIPTION	DATE
REV 0 - RFC SUBMITTAL	04/11/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
CLARKSON RADMACHER JOINT VENTURE
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270
HNTB

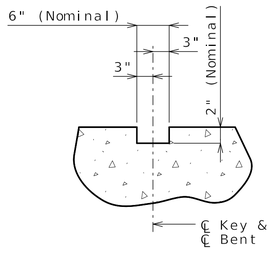


PLAN OF BEAM

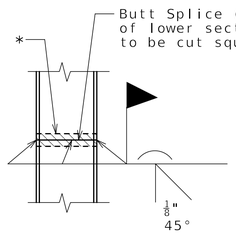


PLAN OF BEAM SHOWING REINFORCING

(Key and steps not shown for clarity.)



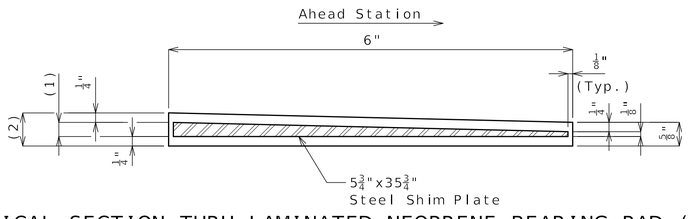
SECTION THRU KEY



STEEL PILE SPLICE

(If required)

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



TYPICAL SECTION THRU LAMINATED NEOPRENE BEARING PAD (TAPERED)

8 Required

(1) 1/4" for Girders 1 thru 5
3/8" for Girders 6 thru 8

(2) 3/4" for Girders 1 thru 5
7/8" for Girders 6 thru 8

Notes:

Work this sheet with Sheets No. B04-14 and B04-15.

All U bars and pairs of vertical bars shall be placed parallel to centerline of girders.

Reinforcing steel shall be shifted to clear piles. U-bars shall clear piles by at least 1½".

All concrete above the construction joint shall be Class B-2.

For details of bridge approach slab, see Sheet No. B04-33.

For location of coil tie rods, see Sheet No. B04-19.

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

DETAILS OF END BENT NO. 4

Detailed DEC 2024
Checked JAN 2025

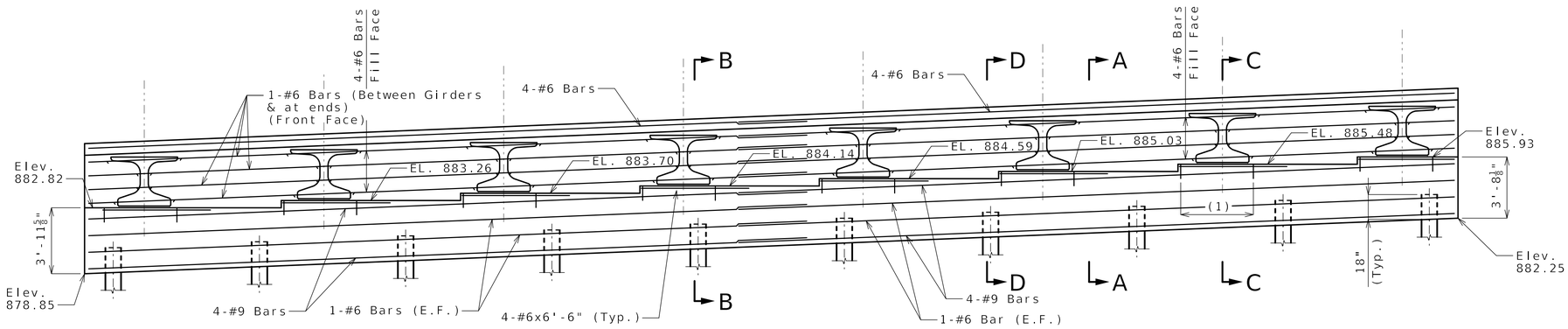
Note: This drawing is not to scale. Follow dimensions.

STATE OF MISSOURI
GINA D. HORNER PE-30413
PROFESSIONAL ENGINEER
Gina D. Horner 4/11/2025

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-13
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DATE	DESCRIPTION
04/11/25	REV 0 - RFC SUBMITTAL

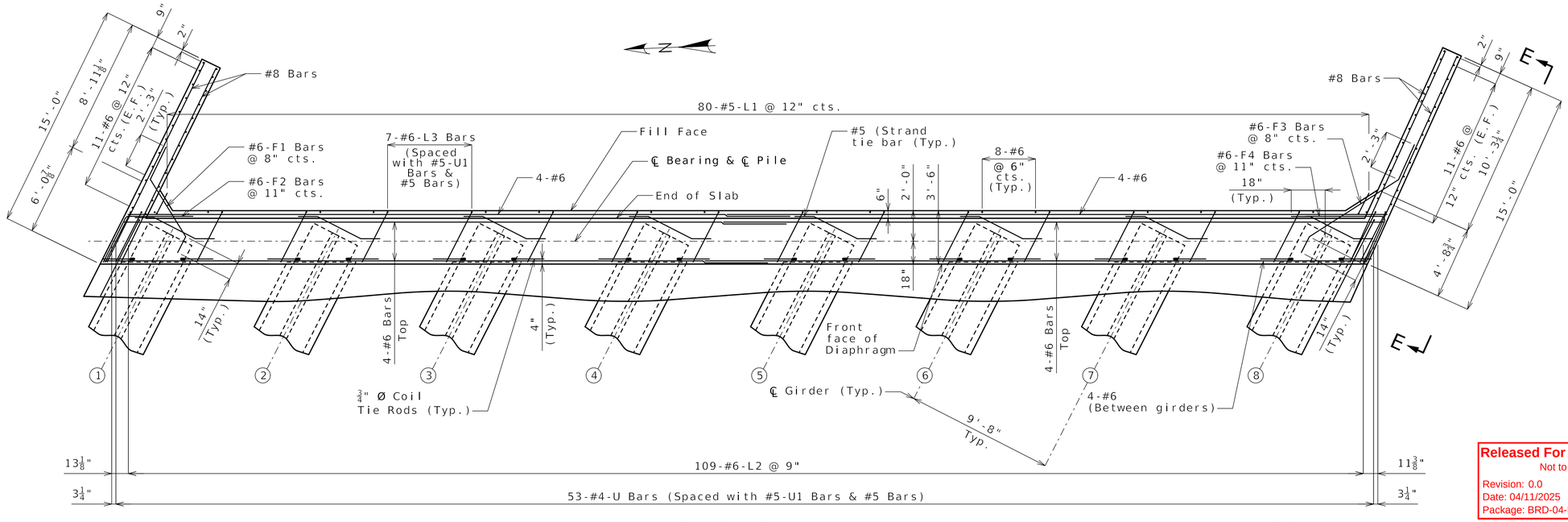
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
CLARKSON RADMACHER JOINT VENTURE
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270
HNTB



SECTION NEAR END BENT

(1) 12-#4-U4 Bars @ 6" Spa. undergirders (Typ.)

Notes:
Lap Splice for #6 bars = 4'-3" (Min.)
Lap Splice for #9 bars = 6'-5" (Min.)



PART PLAN

General Notes:
Work this sheet with Sheets No. B04-13 and B04-15.
For location of Sections A-A, B-B, C-C and D-D and Elevation E-E, see Sheet No. B04-15.
Strands at end of girders shall be field bent or, if necessary, cut in field to maintain 1 1/2-inch minimum clearance to fill face of end bent.
The #6-F bars shall be bent in the field to clear girders.

(X) Denotes girder number

DETAILS OF END BENT NO. 4

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

GINA D. HORNER PE-30413
STATE OF MISSOURI PROFESSIONAL ENGINEER
Gina D. Horner 4/11/2025

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-14
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DATE	DESCRIPTION
04/11/25	REV 0 - RFC SUBMITTAL

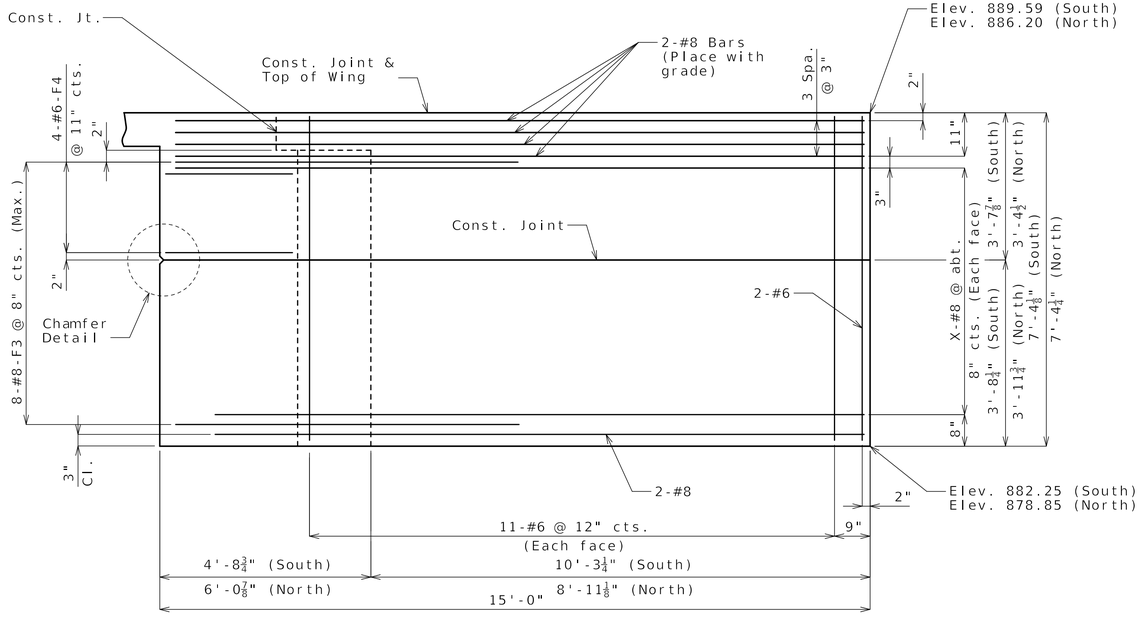
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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

Detailed DEC 2024
Checked JAN 2025

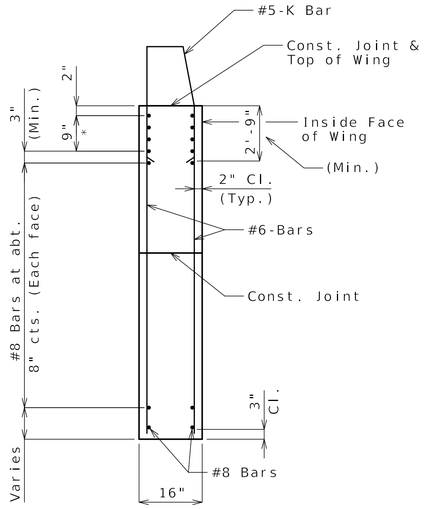
Note: This drawing is not to scale. Follow dimensions.

B_A9632_B04-16_J4I1486D.dgn 1:10:12 PM 4/10/2025



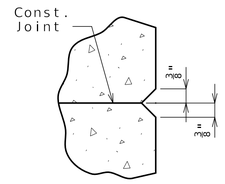
ELEVATION E-E

(South Wingwall shown, North wingwall similar except opposite hand)

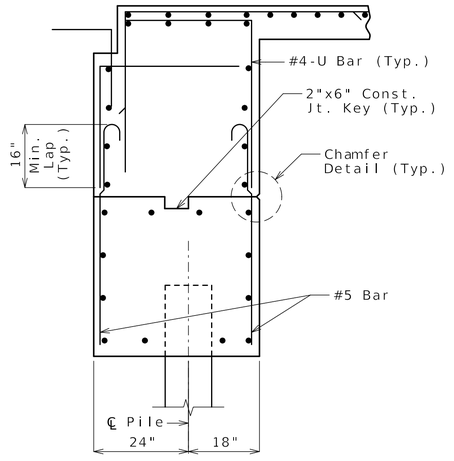


TYPICAL SECTION THRU WING

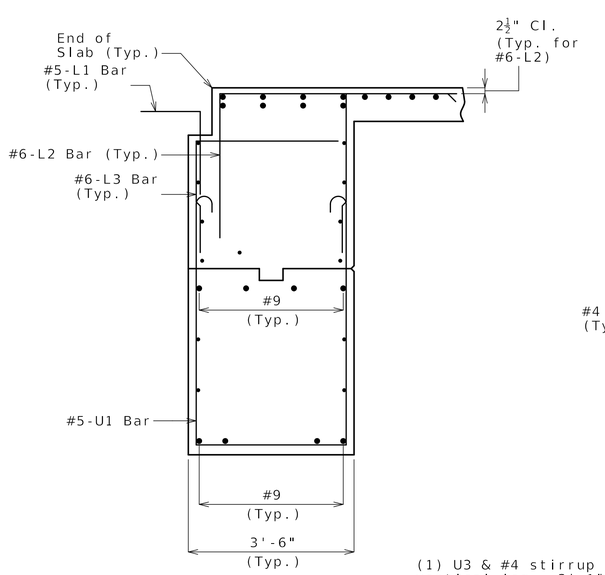
*#8 Bars at 3" cts.
(Each face)(Place with grade)
See Elevation E-E for number of bars



CHAMFER DETAIL

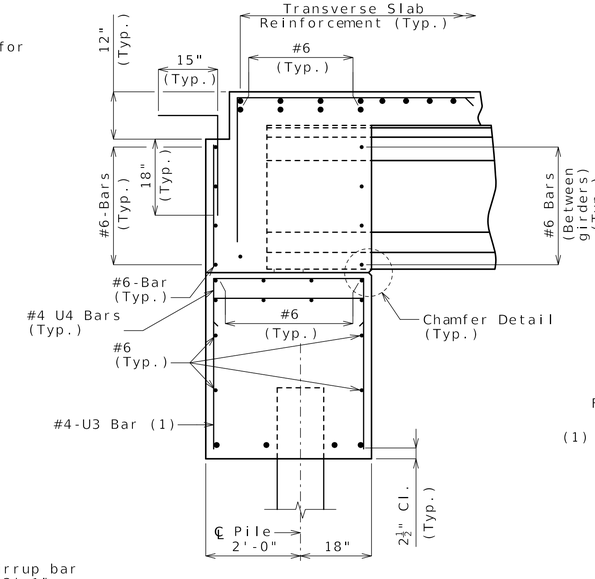


SECTION D-D

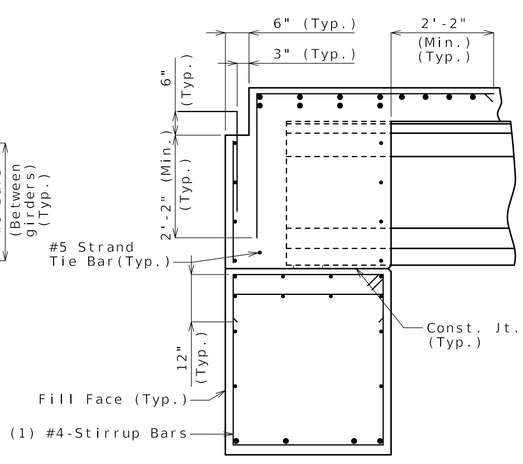


SECTION A-A

(1) U3 & #4 stirrup bar vertical leg = 3'-1"



SECTION B-B



SECTION C-C

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

General Notes:
Work this sheet with Sheets No. B04-13 and B04-14.
For location of Sections A-A, B-B, C-C, D-D and Elevation E-E, see Sheet No. B04-14.
For reinforcement of the Type D Barrier, see Sheet No. B04-29.

DETAILS OF END BENT NO. 4

GINA D. HORNER PE-30413 PROFESSIONAL ENGINEER STATE OF MISSOURI
Gina D. Horner 4/11/2025

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-15
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DATE	DESCRIPTION
04/11/25	REV 0 - RFC SUBMITTAL

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

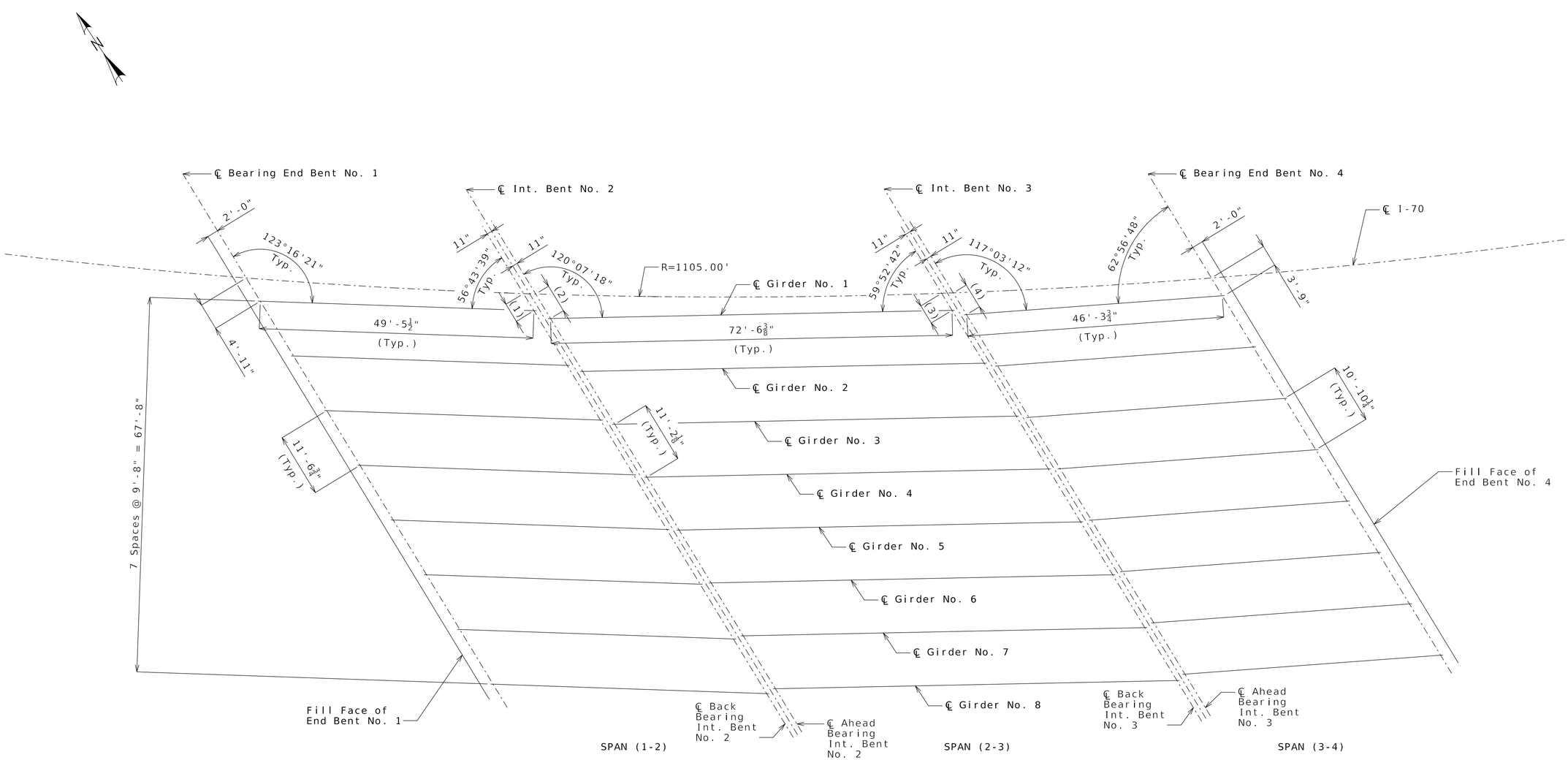
CLARKSON RADMACHER JOINT VENTURE
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270

HNTB

Detailed DEC 2024
Checked JAN 2025

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

B_A9632_B04-17_J4I1486D.dgn 1:10:19 PM 4/10/2025



FRAMING PLAN

(1) 3'-7 3/8"
(2) 5'-2 1/4"
(3) 3'-7 1/8"
(4) 4'-7 1/8"

Notes:
All dimensions are horizontal.
Girders within a span are parallel.
All bents are parallel.

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

FRAMING PLAN

Detailed DEC 2024
Checked JAN 2025

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

B_A9632_B04-18_J4I1486D.dgn 1:10:28 PM 4/10/2025

STATE OF MISSOURI
KALEB S. HAWK
NUMBER PE-2024007443
PROFESSIONAL ENGINEER
Kaleb S. Hawk
9-11-25

DATE PREPARED 04/11/2025

ROUTE	STATE
I-70	MO
DISTRICT	SHEET NO.
BR	B04-16

COUNTY: JACKSON
JOB NO.: J4I1486D
CONTRACT ID.: 240807-C01
PROJECT NO.:
BRIDGE NO.: A9632

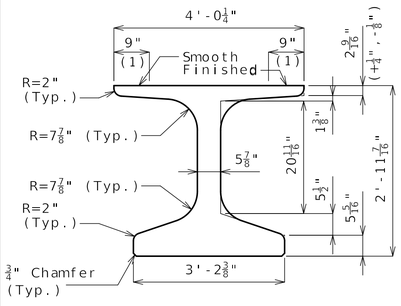
DATE	DESCRIPTION
04/11/25	REV 0 - RFC SUBMITTAL

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

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

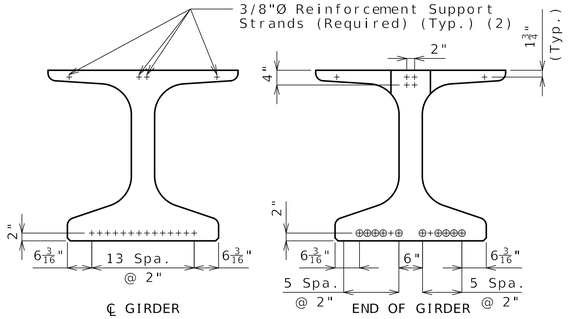
HNTB

(1) Fabricator shall apply a bond breaker to this region.



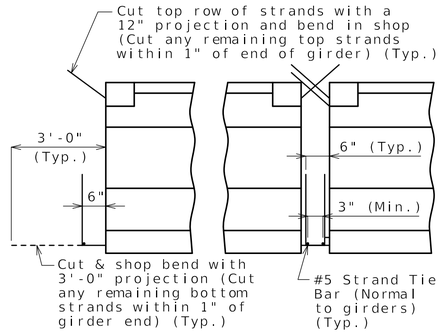
DIMENSIONS

(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.



℄ GIRDER END OF GIRDER

STRAND ARRANGEMENT

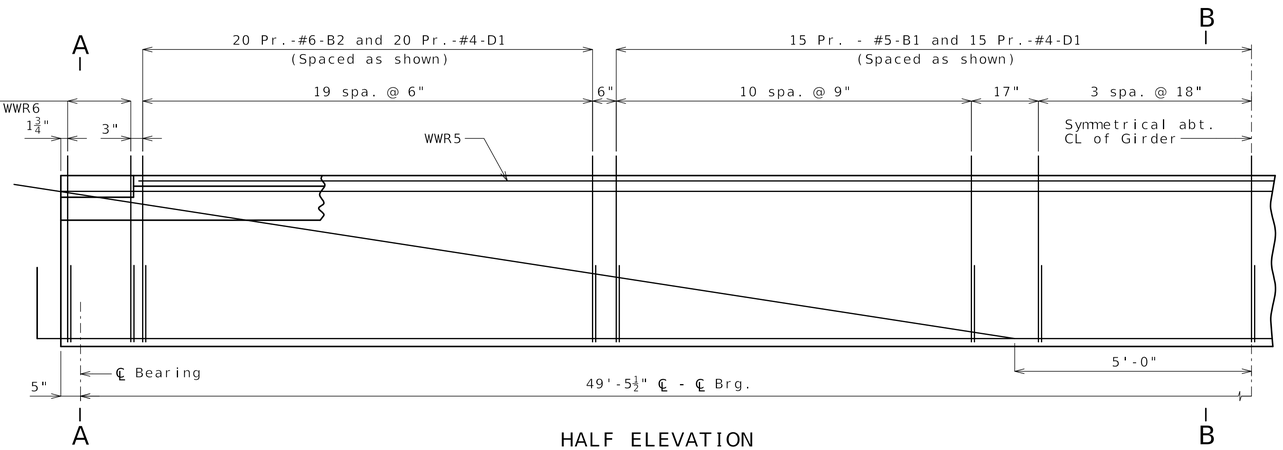


END BENT INTERMEDIATE BENT

STRANDS AT GIRDER ENDS

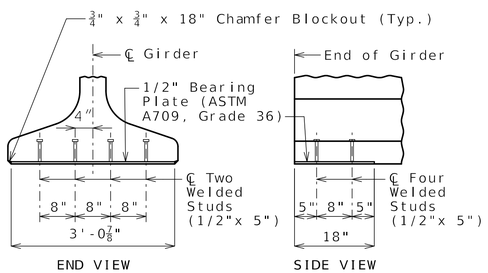
+ Indicates prestressing strand.

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



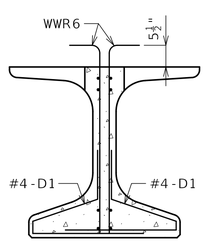
HALF ELEVATION

Reinforcement support strands not shown for clarity.



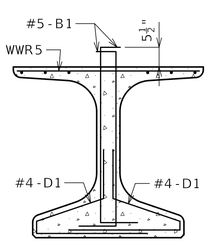
END VIEW SIDE VIEW

BEARING PLATE



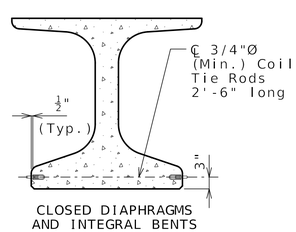
SECTION A-A

Strands not shown for clarity.



SECTION B-B

Strands not shown for clarity.



CLOSED DIAPHRAGMS AND INTEGRAL BENTS

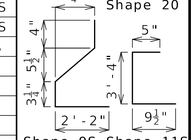
COIL TIES

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

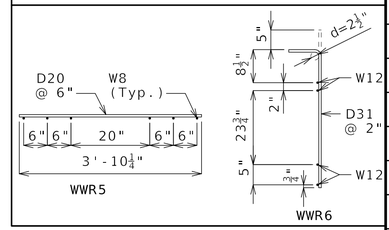
Bill of Reinforcing Steel - Each Girder

No.	Size/ Mark	Length	Shape
58	5 B1	4'-4"	11S
80	6 B2	4'-3"	11S
158	4 D1	4'-0"	9S

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. G3 and G6 not required for exterior girders of intermediate spans. Half no. of G3, G4, G5 and G6 not required for ext. girders of end spans.

General Notes:

Concrete for prestressed girders shall be Class A-1 with f'c = 10000 psi and f'ci = 7500 psi.

Use 14 strands, 0.6"Ø Grade 270, with an initial prestress force of 616 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, application of bond breaker.

For Girder Camber Diagram, see Sheet No. B04-22.

For location of coil ties at concrete diaphragms and integral bents, see Sheets No. B04-06 and B04-21.

For additional NU Girder Details, see Sheet B04-20.

STATE OF MISSOURI
KALEB S. HAWK NUMBER PE-2024007443
PROFESSIONAL ENGINEER
9-11-25

DATE PREPARED 04/11/2025

ROUTE	STATE
I-70	MO
DISTRICT	SHEET NO.
BR	B04-17

COUNTY JACKSON

JOB NO. J4I1486D

CONTRACT ID. 240807-C01

PROJECT NO.

BRIDGE NO. A9632

DATE	DESCRIPTION
04/11/25	REV 0 - RFC SUBMITTAL

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
MoDOT
CLARKSON RADMACHER JOINT VENTURE
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270
HNTB

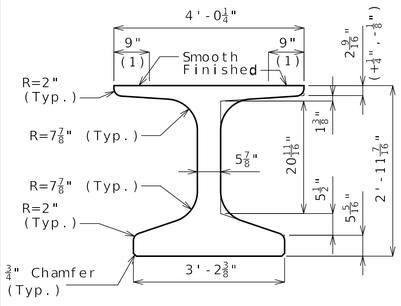
Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

NU-GIRDERS - SPAN (1-2)

Detailed DEC 2024
Checked JAN 2025

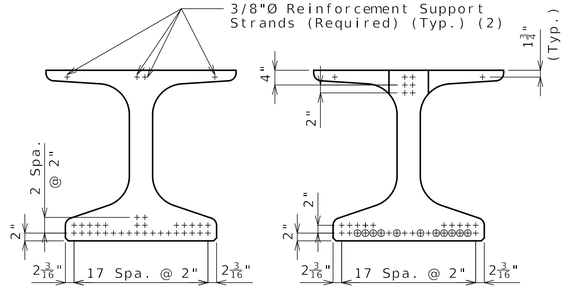
Note: This drawing is not to scale. Follow dimensions.

(1) Fabricator shall apply a bond breaker to the region.



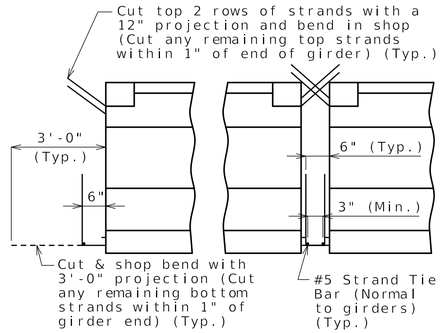
DIMENSIONS

(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.



℄ GIRDER END OF GIRDER

STRAND ARRANGEMENT

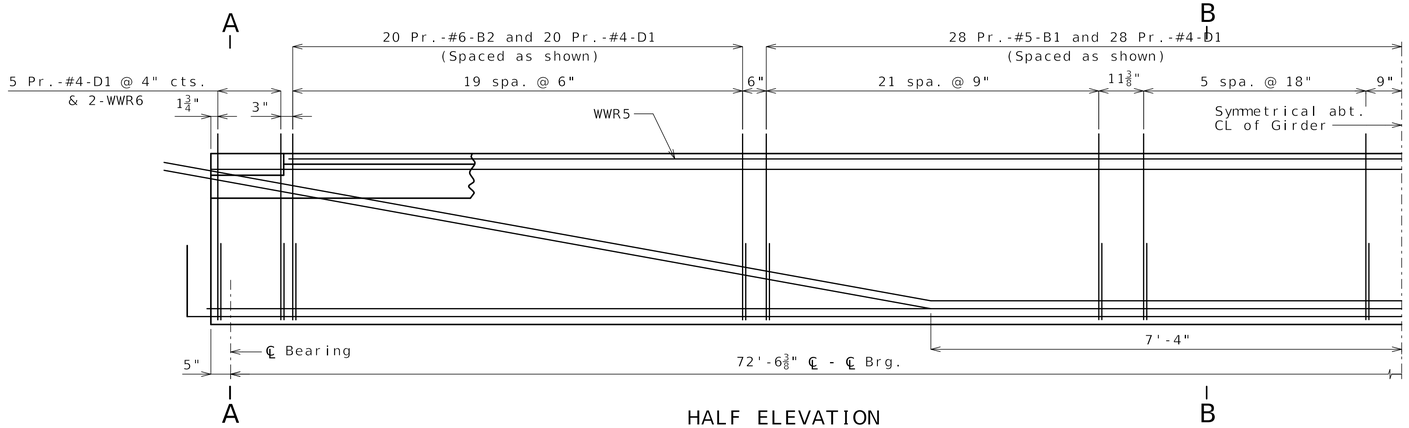


INTERMEDIATE BENT INTERMEDIATE BENT

STRANDS AT GIRDER ENDS

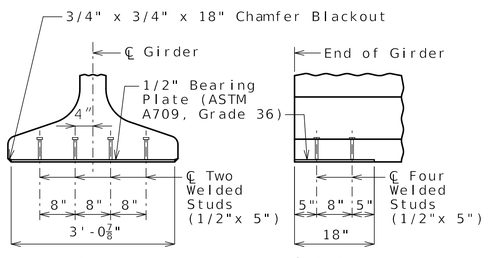
\+ Indicates prestressing strand.

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



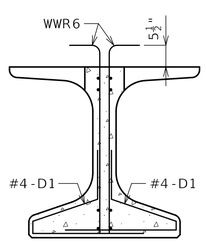
HALF ELEVATION

Reinforcement support strands not shown for clarity.



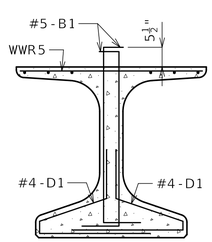
END VIEW SIDE VIEW

BEARING PLATE



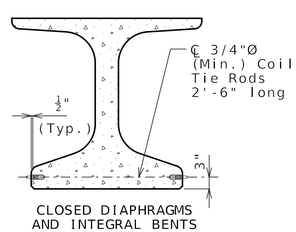
SECTION A-A

Strands not shown for clarity.



SECTION B-B

Strands not shown for clarity.



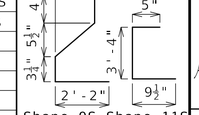
CLOSED DIAPHRAGMS AND INTEGRAL BENTS

COIL TIES

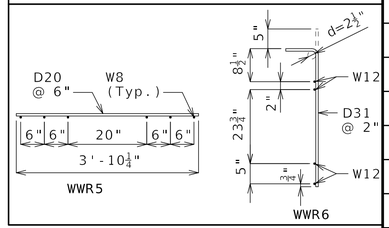
Exclude coil tie at exterior face of exterior girders.

Bill of Reinforcing Steel - Each Girder			
No.	Size/ Mark	Length	Shape
112	5 B1	4'-4"	11S
80	6 B2	4'-3"	11S
208	4 D1	4'-0"	9S

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. G3 and G6 not required for exterior girders of intermediate spans. Half no. of G3, G4, G5 and G6 not required for ext. girders of end spans.

General Notes:

Concrete for prestressed girders shall be Class A-1 with f'c = 10000 psi and f'ci = 7500 psi.

Use 32 strands, 0.6"Ø Grade 270, with an initial prestress force of 1407 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, application of bond breaker.

For Girder Camber Diagram, see Sheet No. B04-22.

For location of coil ties at concrete diaphragms and integral bents, see Sheet No. B04-21.

For additional NU Girder Details, see Sheet No. B04-20.

STATE OF MISSOURI
KALEB S. HAWK NUMBER PE-2024007443
PROFESSIONAL ENGINEER
9-11-25

DATE PREPARED 04/11/2025

ROUTE I-70 | STATE MO

DISTRICT BR | SHEET NO. B04-18

COUNTY JACKSON

JOB NO. J4I1486D

CONTRACT ID. 240807-C01

PROJECT NO.

BRIDGE NO. A9632

DESCRIPTION	DATE	REV
REV 0 - RFC SUBMITTAL	04/11/25	

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

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

HNTB

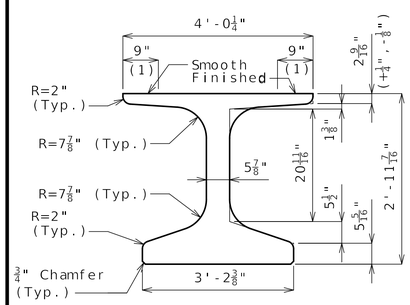
Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

NU-GIRDERS - SPAN (2-3)

Detailed DEC 2024
Checked JAN 2025

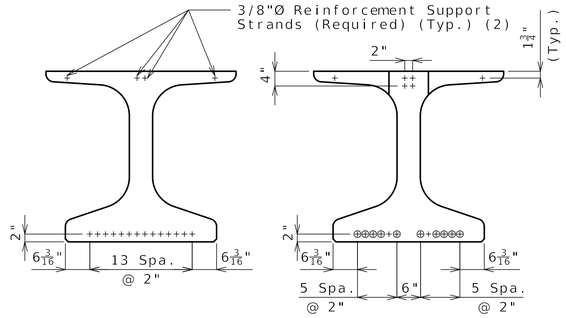
Note: This drawing is not to scale. Follow dimensions.

(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.

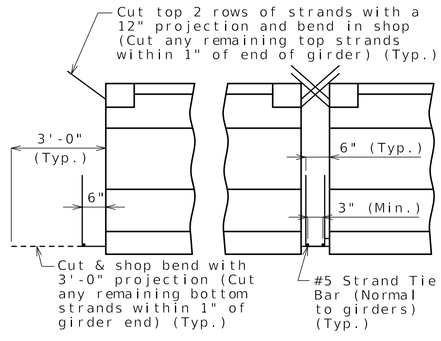


℄ GIRDER END OF GIRDER

STRAND ARRANGEMENT

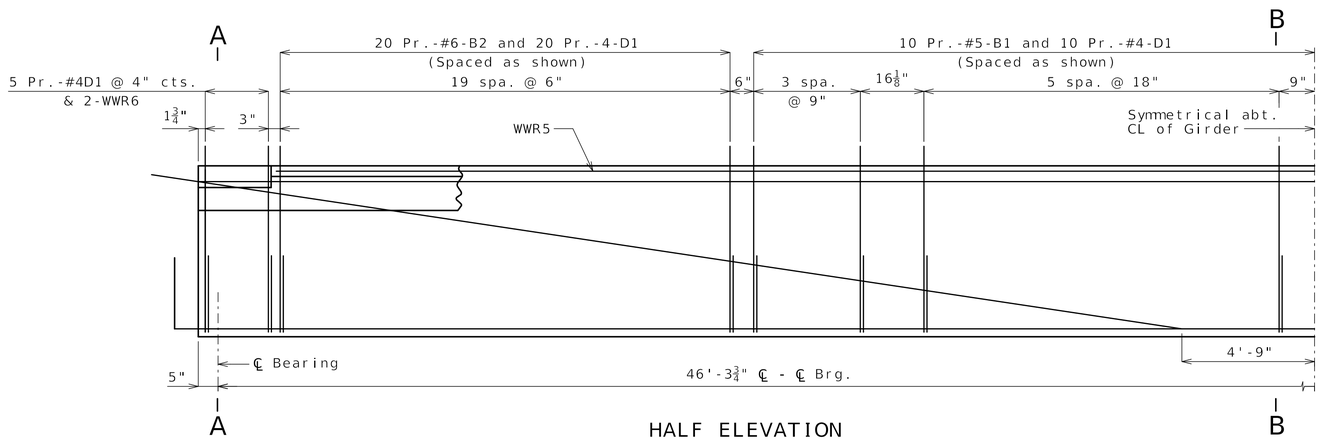
\+ Indicates prestressing strand.

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



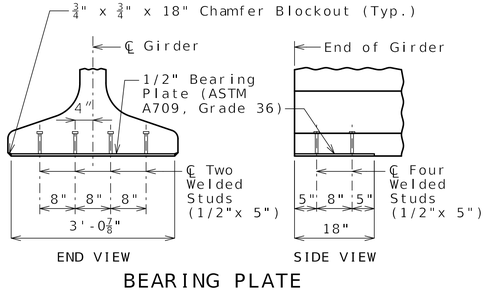
END BENT INTERMEDIATE BENT

STRANDS AT GIRDER ENDS



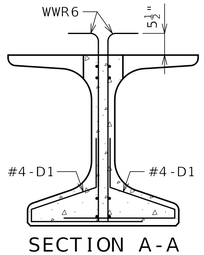
HALF ELEVATION

Reinforcement support strands not shown for clarity.



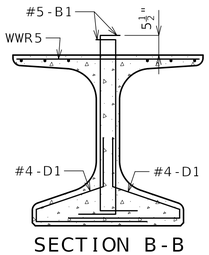
END VIEW SIDE VIEW

BEARING PLATE



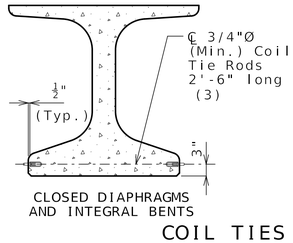
SECTION A-A

Strands not shown for clarity.



SECTION B-B

Strands not shown for clarity.



CLOSED DIAPHRAGMS AND INTEGRAL BENTS

COIL TIES

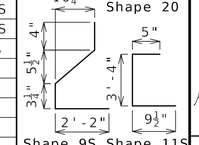
Exclude coil tie at exterior face of exterior girders except at integral end bents.

(3) 18" at exterior face of exterior girders at end bents

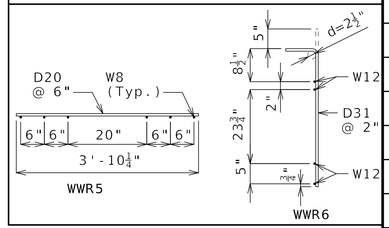
Bill of Reinforcing Steel - Each Girder

No.	Size/ Mark	Length	Shape
40	5 B1	4'-4"	11S
80	6 B2	4'-3"	11S
140	4 D1	4'-0"	9S

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. G3 and G6 not required for exterior girders of intermediate spans. Half no. of G3, G4, G5 and G6 not required for ext. girders of end spans.

General Notes:

Concrete for prestressed girders shall be Class A-1 with f'c = 10000 psi and f'ci = 7500 psi.

Use 14 strands, 0.6"Ø Grade 270, with an initial prestress force of 615 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, application of bond breaker.

For Girder Camber Diagram, see Sheet No. B04-22.

For location of coil ties at concrete diaphragms and integral bents, see Sheets No. B04-14 and B04-21.

For additional NU Girder Details, see Sheet No. B04-20.

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

STATE OF MISSOURI
KALEB S. HAWK NUMBER PE-2024007443
PROFESSIONAL ENGINEER
9-11-25

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-19
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DATE	DESCRIPTION
04/11/25	REV 0 - RFC SUBMITTAL

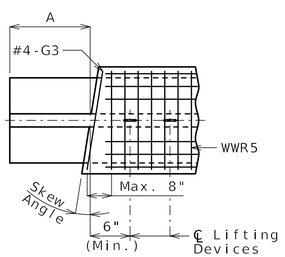
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
CLARKSON RADMACHER JOINT VENTURE
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270
HNTB

Detailed DEC 2024
Checked JAN 2025

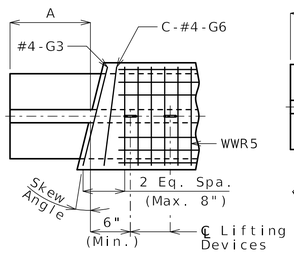
Note: This drawing is not to scale. Follow dimensions.

NU-GIRDERS - SPAN (3-4)

Note: 'C' = zero for Detail 1

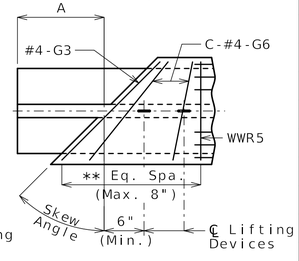


DETAIL 1
(0° to 7° Skew)

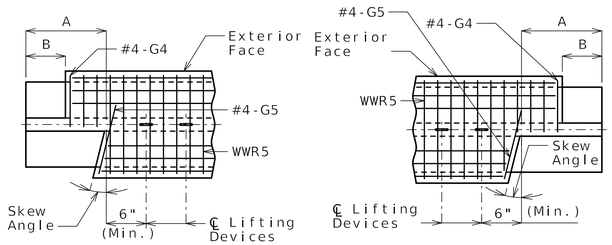


DETAIL 2
(>7° to 14° Skew)

** number of spaces = C+1



DETAIL 3
(>14° Skew)



DETAIL 4
(Left exterior girder shown, rotate 180° for right exterior girder)

TOP FLANGE BLOCKOUT DETAILS

(See Table of Variables for detail assignment to specific girders)
(Left advance skew shown, mirror for right advance skew)

TABLE OF VARIABLES									
Span No.	Girder No.	Bent No.	Detail	A	B	C	D	E	F
1-2	1	1	3	2'-0 1/2"	---	5	4'-8"	3'-3"	Varies
1-2	2	1	3	2'-0 1/2"	---	5	4'-8"	3'-3"	Varies
1-2	3	1	3	2'-0 3/8"	---	5	4'-8"	3'-3"	Varies
1-2	4	1	3	2'-0 3/8"	---	5	4'-8"	3'-3"	Varies
1-2	5	1	3	2'-0 1/2"	---	5	4'-8"	3'-3"	Varies
1-2	6	1	3	2'-0 1/2"	---	5	4'-8"	3'-3"	Varies
1-2	7	1	3	2'-0 3/8"	---	5	4'-8"	3'-3"	Varies
1-2	8	1	3	2'-0 3/8"	---	5	4'-8"	3'-3"	Varies
1-2	1	2	4	23 1/4"	8 3/8"	---	4'-8"	3'-3"	---
1-2	2	2	3	23 1/4"	---	5	4'-8"	3'-3"	Varies
1-2	3	2	3	23 1/4"	---	5	4'-8"	3'-3"	Varies
1-2	4	2	3	23 1/4"	---	5	4'-8"	3'-3"	Varies
1-2	5	2	3	23 1/4"	---	5	4'-8"	3'-3"	Varies
1-2	6	2	3	23 1/4"	---	5	4'-8"	3'-3"	Varies
1-2	7	2	3	23 1/4"	---	5	4'-8"	3'-3"	Varies
1-2	8	2	4	23 1/4"	8 1/2"	---	4'-8"	3'-3"	---

TABLE OF VARIABLES									
Span No.	Girder No.	Bent No.	Detail	A	B	C	D	E	F
2-3	1	2	4	21 3/8"	7 1/8"	---	4'-6"	3'-2"	---
2-3	2	2	3	21 3/8"	---	4	4'-6"	3'-2"	Varies
2-3	3	2	3	21 3/8"	---	4	4'-6"	3'-2"	Varies
2-3	4	2	3	21 3/8"	---	4	4'-6"	3'-2"	Varies
2-3	5	2	3	21 3/8"	---	4	4'-6"	3'-2"	Varies
2-3	6	2	3	21 3/8"	---	4	4'-6"	3'-2"	Varies
2-3	7	2	3	21 3/8"	---	4	4'-6"	3'-2"	Varies
2-3	8	2	4	21 3/8"	7 1/8"	---	4'-6"	3'-2"	---
2-3	1	3	4	23"	8 3/4"	---	4'-6"	3'-2"	---
2-3	2	3	3	23"	---	4	4'-6"	3'-2"	Varies
2-3	3	3	3	23"	---	4	4'-6"	3'-2"	Varies
2-3	4	3	3	23"	---	4	4'-6"	3'-2"	Varies
2-3	5	3	3	23"	---	4	4'-6"	3'-2"	Varies
2-3	6	3	3	23"	---	4	4'-6"	3'-2"	Varies
2-3	7	3	3	23"	---	4	4'-6"	3'-2"	Varies
2-3	8	3	4	23"	8 3/4"	---	4'-6"	3'-2"	---
3-4	1	3	4	20 1/2"	6 3/4"	---	4'-5"	3'-0"	---
3-4	2	3	3	20 1/2"	---	4	4'-5"	3'-0"	Varies
3-4	3	3	3	20 3/8"	---	4	4'-5"	3'-0"	Varies
3-4	4	3	3	20 3/8"	---	4	4'-5"	3'-0"	Varies
3-4	5	3	3	20 1/2"	---	4	4'-5"	3'-0"	Varies
3-4	6	3	3	20 1/2"	---	4	4'-5"	3'-0"	Varies
3-4	7	3	3	20 1/2"	---	4	4'-5"	3'-0"	Varies
3-4	8	3	4	20 1/2"	6 5/8"	---	4'-5"	3'-0"	---
3-4	1	4	3	2'-0 3/4"	---	4	4'-5"	3'-0"	Varies
3-4	2	4	3	2'-0 7/8"	---	4	4'-5"	3'-0"	Varies
3-4	3	4	3	2'-0 7/8"	---	4	4'-5"	3'-0"	Varies
3-4	4	4	3	2'-0 7/8"	---	4	4'-5"	3'-0"	Varies
3-4	5	4	3	2'-0 3/4"	---	4	4'-5"	3'-0"	Varies
3-4	6	4	3	2'-0 3/4"	---	4	4'-5"	3'-0"	Varies
3-4	7	4	3	2'-0 3/4"	---	4	4'-5"	3'-0"	Varies
3-4	8	4	3	2'-0 7/8"	---	4	4'-5"	3'-0"	Varies

BILL OF REINFORCING STEEL - EACH GIRDER				
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
2	4 G3	D	20	SHAPE 20
2	4 G4	2'-1"	20	
2	4 G5	E	20	
*	4 G6	F	20	

* Total for each girder is the total value of the two "C" variables per span provided in the Table of Variables

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

Notes:
For additional Girder notes, see Sheets No. B04-17 thru B04-19.

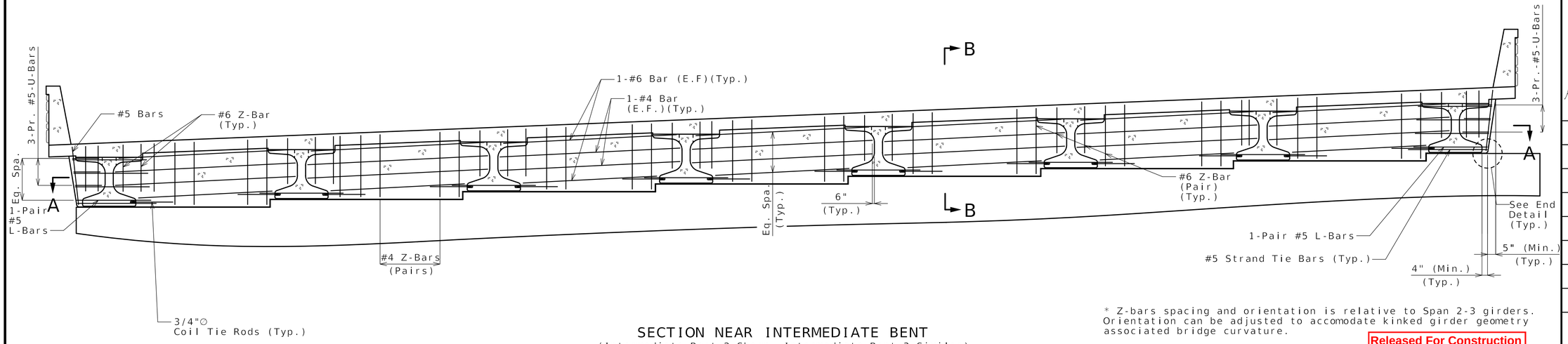
NU GIRDER DETAILS

KALEB S. HAWK
NUMBER PE-2024007443
PROFESSIONAL ENGINEER
STATE OF MISSOURI
9-11-25

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-20
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DATE	DESCRIPTION
04/11/25	REV 0 - RFC SUBMITTAL

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
CLARKSON RADMACHER JOINT VENTURE
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270
HNTB

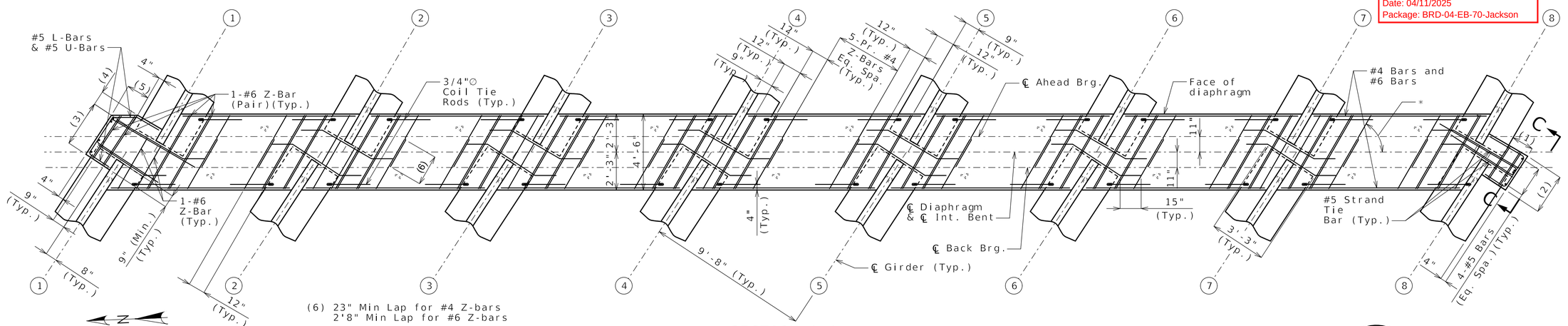


SECTION NEAR INTERMEDIATE BENT

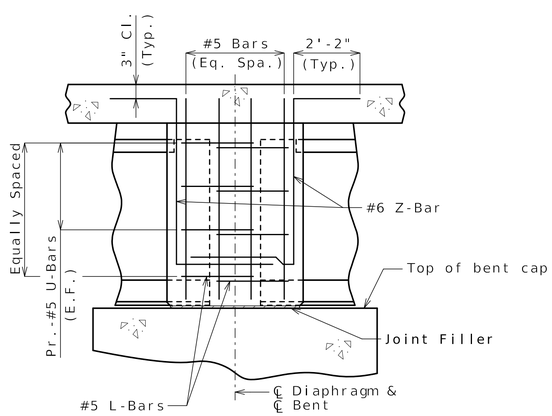
(Intermediate Bent 2 Shown, Intermediate Bent 3 Similar)
(Normal to ℄ Girders)

* Z-bars spacing and orientation is relative to Span 2-3 girders. Orientation can be adjusted to accomodate kinked girder geometry associated bridge curvature.

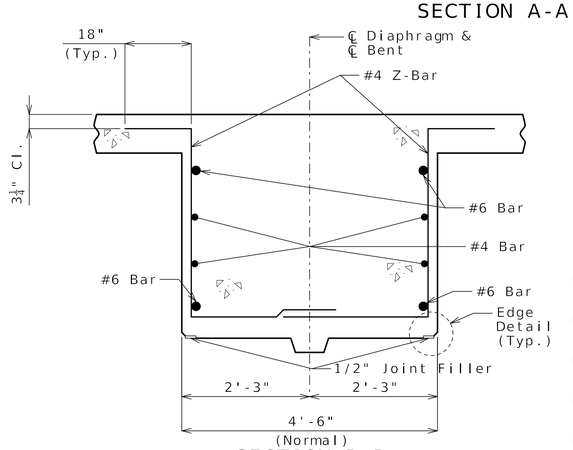
Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson



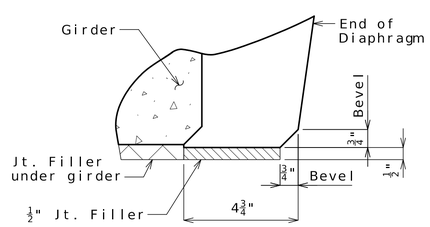
SECTION A-A



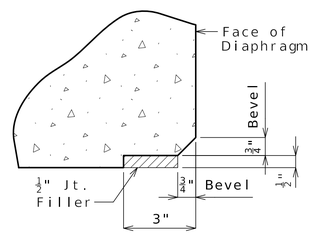
ELEVATION C-C



SECTION B-B



END DETAIL



EDGE DETAIL

(1) $15\frac{5}{8}$" (Int. Bent No. 2)
$17\frac{5}{8}$" (Int. Bent No. 3)
(2) 2'-$4\frac{3}{4}$" (Int. Bent No. 2)
2'-$3\frac{5}{8}$" (Int. Bent No. 3)
(3) 2'-$9\frac{1}{8}$" (Int. Bent No. 2)
2'-$8\frac{1}{4}$" (Int. Bent No. 3)
(4) $10\frac{1}{4}$" (Int. Bent No. 2)
$5\frac{5}{8}$" (Int. Bent No. 3)
(5) $16\frac{1}{8}$" (Int. Bent No. 2)
$10\frac{1}{8}$" (Int. Bent No. 3)

Notes:
Diaphragms shall be built vertical.
For location of #5 Strand Tie Bars, see Sheets No. B04-17 thru B04-19.
For location of coil ties, see Sheets No. B04-17 thru B04-19.
For Bearing Details, see Sheets No. B04-10 and B04-12.
For Bent Details for cap beam step geometry, bearing location, dowel placement, shear key details, roofing felt details, joint filler details, and notes not shown here, see Sheets No. B04-09 thru B04-12.

(X) Denotes Girder number

CONCRETE DIAPHRAGM AT INTERMEDIATE BENTS

Detailed DEC 2024
Checked JAN 2025

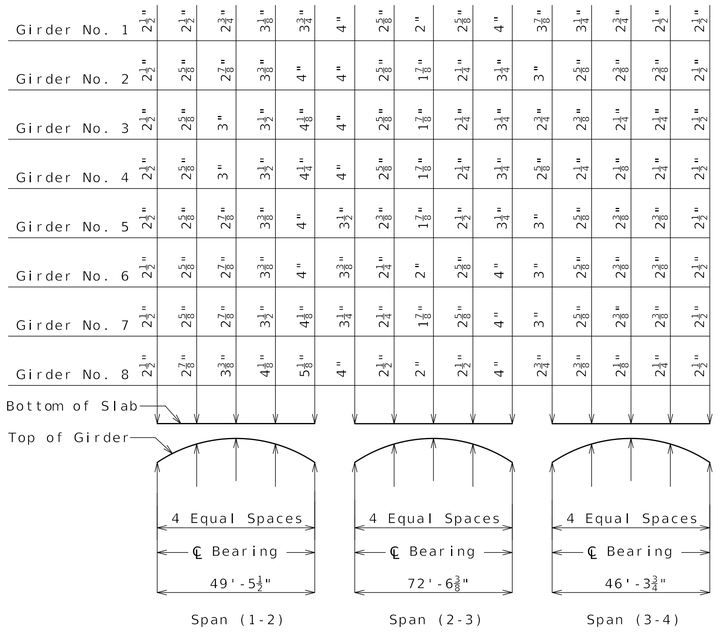
Note: This drawing is not to scale. Follow dimensions.

STATE OF MISSOURI
KALEB S. HAWK
NUMBER PE-2024007443
PROFESSIONAL ENGINEER
Kaleb S. Hawk
9-11-25

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-21
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

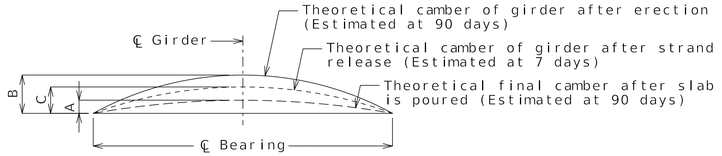
DATE	DESCRIPTION
04/11/25	REV 0 - RFC SUBMITTAL

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
CLARKSON RADMACHER JOINT VENTURE
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270
HNTB



THEORETICAL SLAB HAUNCHING DIAGRAM

THEORETICAL SLAB HAUNCHING DIAGRAM



Girder	Span (1-2)			Span (2-3)			Span (3-4)		
	A	B	C	A	B	C	A	B	C
1	½"	⅞"	½"	2¼"	3½"	2⅜"	½"	¾"	½"
2	½"	⅞"	½"	2"	3½"	2⅜"	½"	¾"	½"
3	½"	⅞"	½"	2"	3½"	2⅜"	½"	¾"	½"
4	½"	⅞"	½"	2"	3½"	2⅜"	½"	¾"	½"
5	½"	⅞"	½"	2"	3½"	2⅜"	½"	¾"	½"
6	½"	⅞"	½"	2"	3½"	2⅜"	½"	¾"	½"
7	½"	⅞"	½"	2"	3½"	2⅜"	½"	¾"	½"
8	½"	⅞"	½"	2¼"	3½"	2⅜"	½"	¾"	½"

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.

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

Notes:
If girder camber is different from that shown in the camber diagram, in order to maintain minimum slab thickness, adjustment of the slab haunches, or a raise in grade uniformly throughout the structure shall be necessary.

CAMBER DIAGRAM & THEORETICAL SLAB HAUNCHING DIAGRAM

Detailed DEC 2024
Checked JAN 2025

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

STATE OF MISSOURI
KALEB S. HAWK
NUMBER PE-2024007443
PROFESSIONAL ENGINEER
Kaleb S Hawk
4-11-25

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-22
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DESCRIPTION	DATE
REV 0 - RFC SUBMITTAL	04/11/25

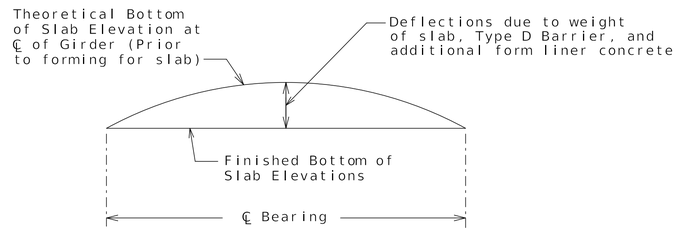
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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

Theoretical Bottom of Slab Elevations at Centerline of Girder (Prior to forming for slab)**

Girder Number	Span (1-2) (49'-5 1/2" ℄ Brg. - ℄ Brg.)				
	℄ Brg.	.25	.50	.75	1.00
1	889.92	889.72	889.51	889.28	889.03
2	890.38	890.19	889.98	889.74	889.49
3	890.85	890.65	890.44	890.21	889.96
4	891.31	891.12	890.90	890.67	890.42
5	891.78	891.58	891.37	891.14	890.88
6	892.25	892.05	891.84	891.60	891.35
7	892.71	892.52	892.30	892.07	891.82
8	893.18	892.98	892.76	892.53	892.29
Girder Number	Span (2-3) (72'-6 3/8" ℄ Brg. - ℄ Brg.)				
	℄ Brg.	.25	.50	.75	1.00
1	889.05	888.72	888.34	887.88	887.37
2	889.50	889.19	888.81	888.35	887.81
3	889.95	889.64	889.26	888.79	888.26
4	890.39	890.08	889.71	889.24	888.72
5	890.84	890.53	890.16	889.70	889.17
6	891.30	890.99	890.61	890.15	889.62
7	891.75	891.44	891.06	890.60	890.08
8	892.20	891.87	891.49	891.04	890.54
Girder Number	Span (3-4) (46'-3 3/4" ℄ Brg. - ℄ Brg.)				
	℄ Brg.	.25	.50	.75	1.00
1	887.35	887.04	886.72	886.39	886.04
2	887.79	887.48	887.16	886.83	886.48
3	888.23	887.92	887.60	887.27	886.92
4	888.66	888.36	888.04	887.71	887.36
5	889.10	888.80	888.49	888.15	887.81
6	889.55	889.24	888.93	888.60	888.25
7	889.99	889.69	889.37	889.04	888.70
8	890.43	890.13	889.82	889.49	889.15

**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 Type D Barrier and additional form liner concrete).



TYPICAL SLAB ELEVATIONS DIAGRAM

KALEB S. HAWK
NUMBER PE-2024007443
PROFESSIONAL ENGINEER
STATE OF MISSOURI
9-11-25

DATE PREPARED 04/11/2025

ROUTE	STATE
I-70	MO
DISTRICT	SHEET NO.
BR	B04-23

COUNTY: JACKSON
JOB NO.: J4I1486D
CONTRACT ID.: 240807-C01
PROJECT NO.:
BRIDGE NO.: A9632

DESCRIPTION	DATE
REV 0 - RFC SUBMITTAL	04/11/25

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

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

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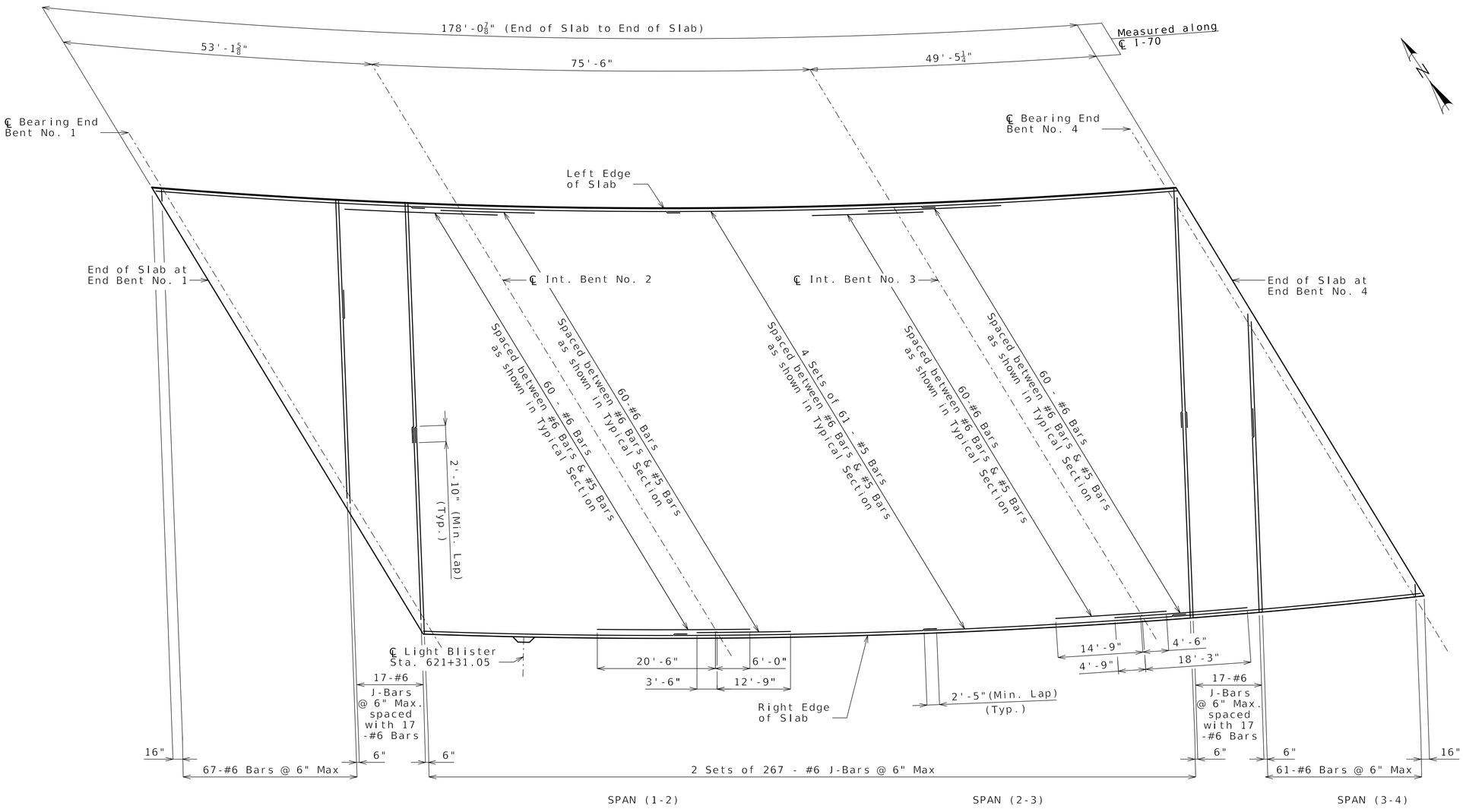
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

THEORETICAL BOTTOM OF SLAB ELEVATIONS

Detailed DEC 2024
Checked JAN 2025

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

B_A9632_B04-24_J4I1486D.dgn 1:11:26 PM 4/10/2025



TOP REINFORCEMENT

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Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

Notes:
Work this sheet with Sheet No. B04-25.
For Typical Section, see Sheet No. B04-26.
For Slab Pouring Sequence, see Sheet No. B04-25.
For Details and Reinforcement of Barrier, see Sheet No. B04-28.
For Theoretical Slab Haunching Diagram and Girder Camber Diagram, see Sheet No. B04-22.
For Theoretical Bottom of Slab Elevations, see Sheet No. B04-23.
Longitudinal slab dimensions are measured horizontally.
For Light Blister reinforcing and details, see Sheet No. B04-30.

SLAB PLAN SHOWING TOP REINFORCEMENT

Detailed DEC 2024
Checked JAN 2025

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

BENJAMIN LICHTY
NUMBER PE-2023038803
PROFESSIONAL ENGINEER
STATE OF MISSOURI
04-11-2025

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-24
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DATE	DESCRIPTION
04/11/25	REV 0 - RFC SUBMITTAL

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
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KANSAS CITY, MO 64105-1310
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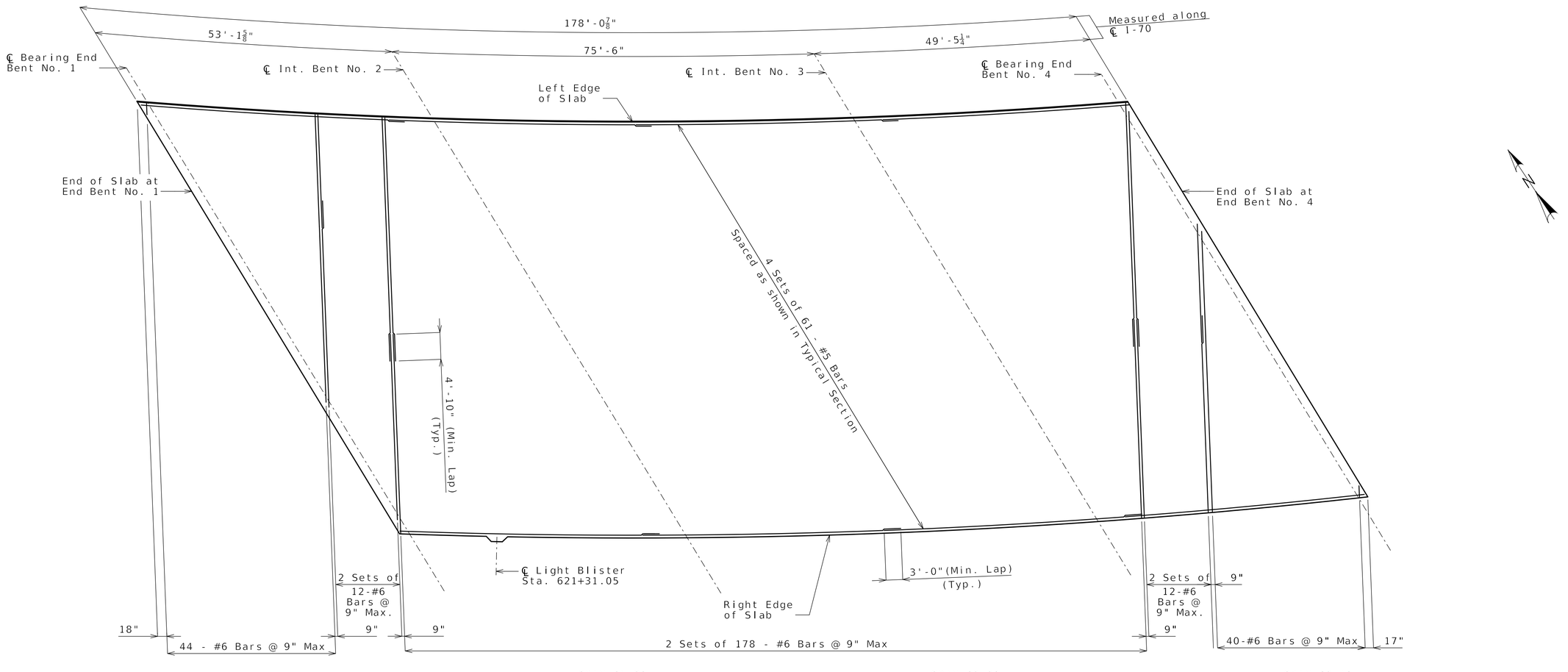
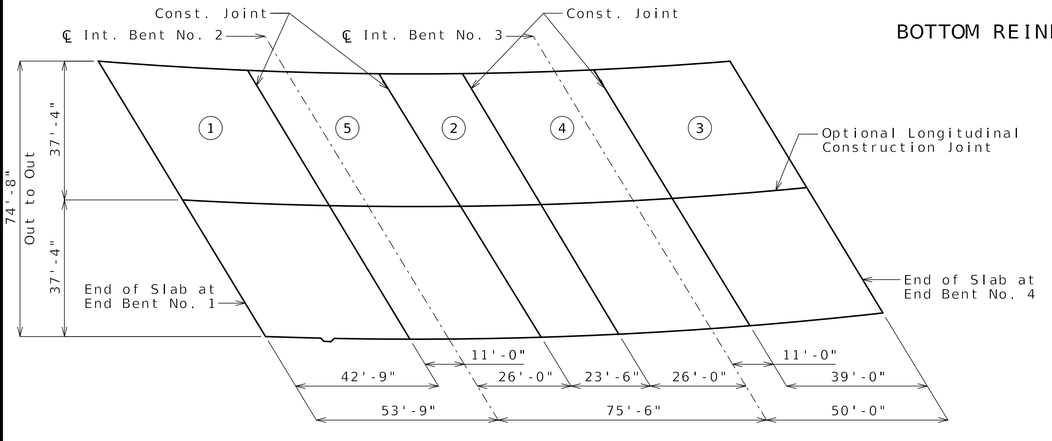
HNTB



BOTTOM REINFORCEMENT

Note:
Work this sheet with Sheet No. B04-24.



SLAB POURING SEQUENCE

	Sequence of Pours					Min. Rate of Pour Cu. Yds./Hr.
	Direction					With Retarder
Basic Sequence	3	4	2	5	1	25*
	End to 4	3 to 2	4 to 5	2 to 1	5 to End	
Alternate pours to the basic sequence are subject to the approval of the engineer in accordance with Sec 703.						
Alternate A Pours	3		4 + 2		5 + 1	45
	End to 4		3 to 5		2 to End	
Alternate B Pours	3 + 4 + 2			5 + 1		45
	End to 5			2 to End		
Alternate C Pours	3 + 4 + 2 + 5 + 1					45
	End to End					

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.

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

* A minimum finishing rate of 20 LF/HR shall be maintained, otherwise the optional longitudinal construction joint shall be required.

SLAB PLAN SHOWING BOTTOM REINFORCEMENT

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PROFESSIONAL ENGINEER ★ STATE OF MISSOURI ★
04-11-2025

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-25
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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CERTIFICATE OF AUTHORITY NO. 001270
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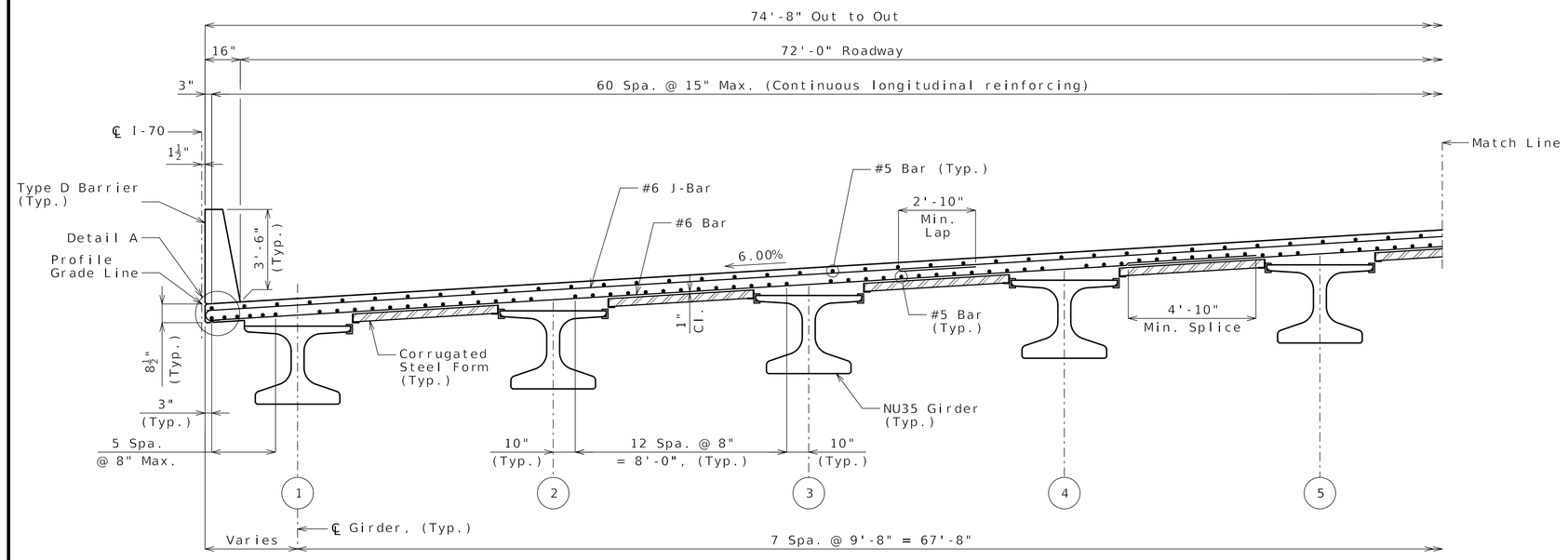

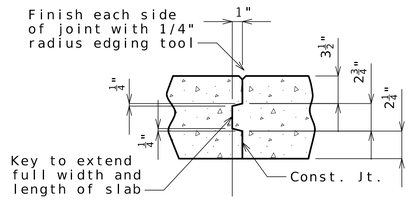

SLAB CONSTRUCTION JOINT

Released For Construction
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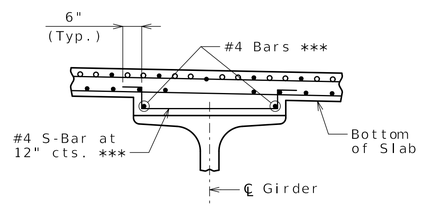
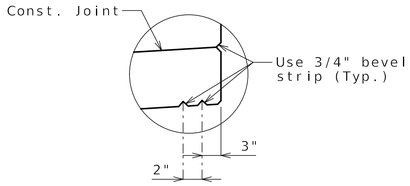
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

HALF SECTION NEAR MIDSPAN

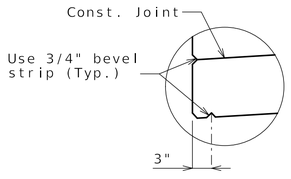


HAUNCH REINFORCING DETAIL
(Prestressed Girders)

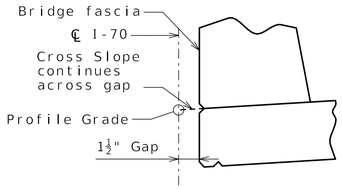
*** Contractor shall provide #4 Bars and #4 S-Bars as necessary where the haunch exceeds 4 inches measured at centerline of girder. See Theoretical Slab Haunching Diapgram on Sheet No. B04-22 for haunch thickness.



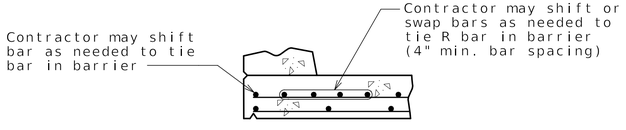
DETAIL B
(High side of slab)



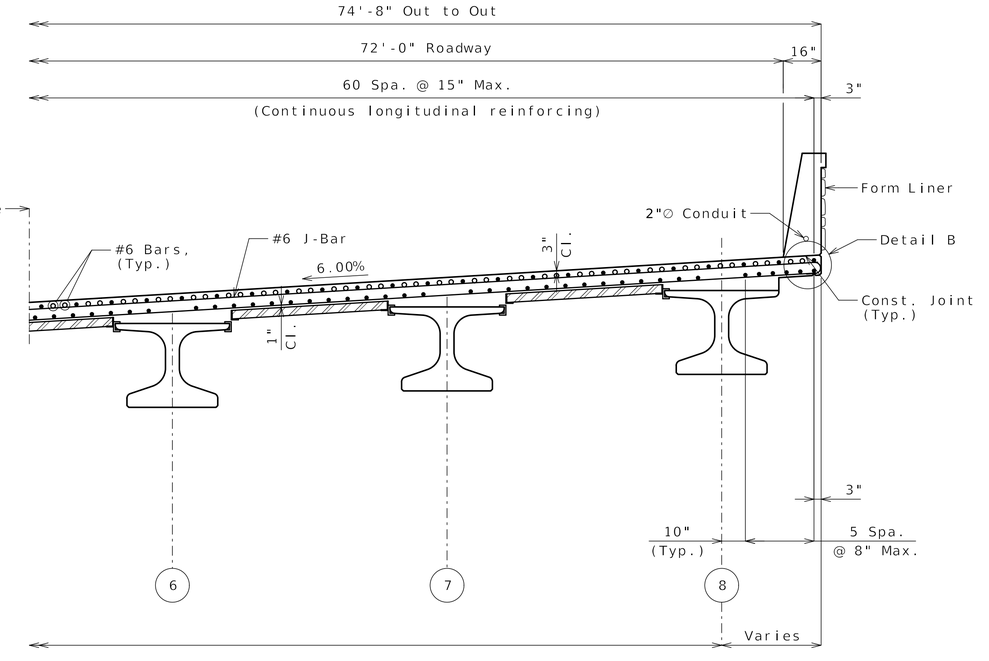
DETAIL A
(Low side of slab)



PROFILE GRADE DETAIL



OPTIONAL SHIFTING
TOP BARS AT BARRIER



HALF SECTION NEAR INTERMEDIATE BENT

TYPICAL SECTION
(Looking Ahead Sta.)

Notes:
Cant #6 transverse hooked bars as needed to provide clearance.
For Plan of Slab showing Top and Bottom Reinforcement, see Sheets No. B04-24 and B04-25.
For reinforcement of Type D barrier not shown, see Sheet No. B04-28.
For Details of Conduit System on Structure, see Sheet No. B04-32.
For Form Liner and Aesthetic Stain Details not shown, see Sheet No. B04-31.

(X) Denotes girder number.

SLAB DETAILS

Detailed DEC 2024
Checked JAN 2025

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STATE OF MISSOURI
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PROFESSIONAL ENGINEER
04-11-2025

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-26
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DESCRIPTION	DATE
REV 0 - RFC SUBMITTAL	04/11/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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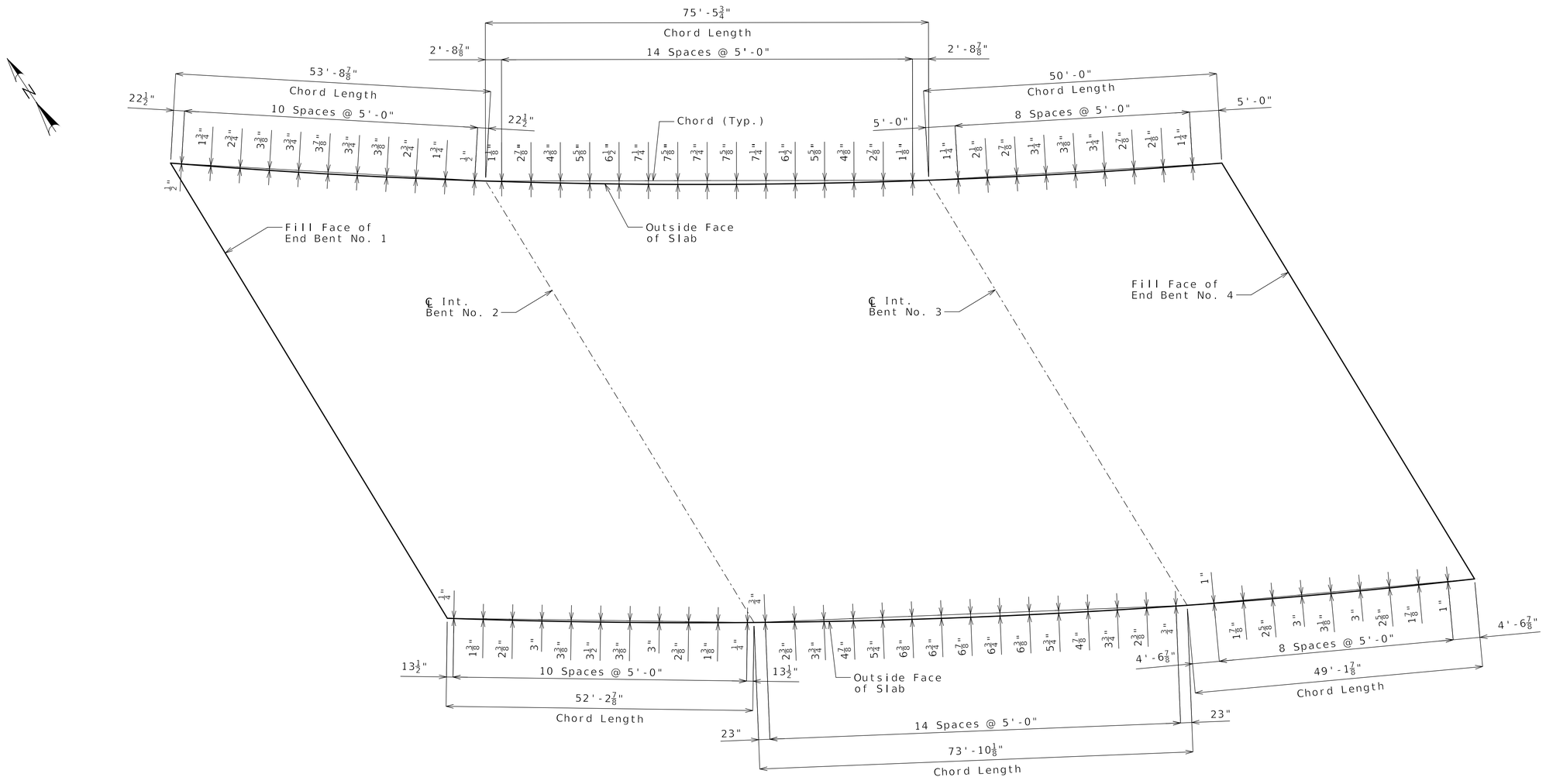
1-888-ASK-MODOT (1-888-275-6636)

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

HNTB



PLAN

(CL I-70 not shown for clarity)

Notes:
All dimensions are horizontal.
All bents are parallel.

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SLAB CURVE ORDINATES

Detailed DEC 2024
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DISTRICT BR | SHEET NO. B04-27
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DESCRIPTION	DATE
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1-888-ASK-MODOT (1-888-275-6636)

CLARKSON RADMACHER JOINT VENTURE
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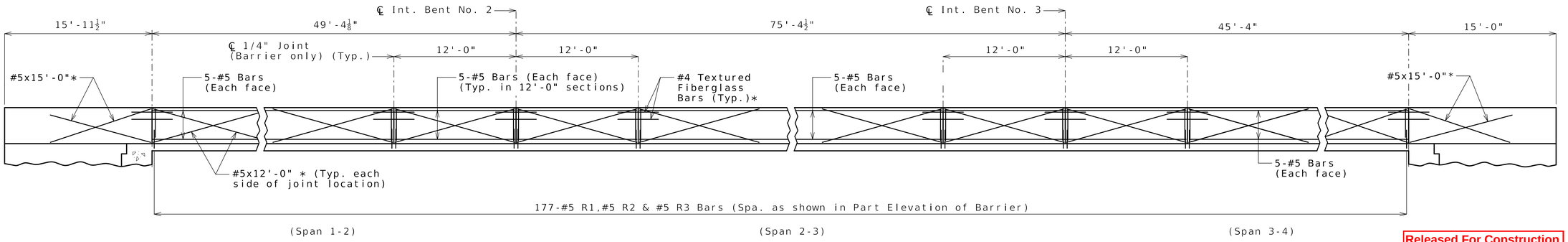
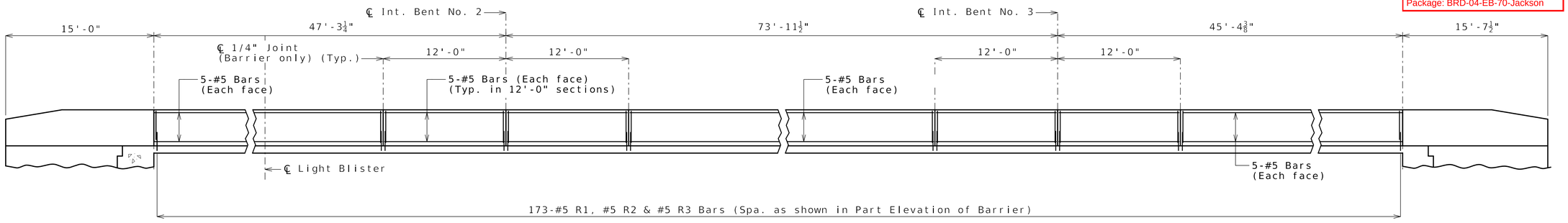
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270

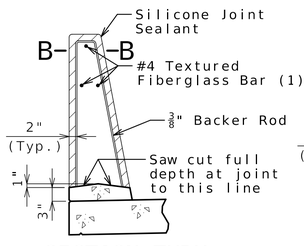
HNTB



ELEVATION OF LEFT BARRIER

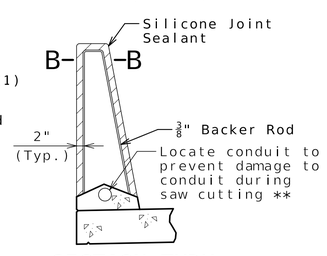
Longitudinal dimensions are horizontal and measured along the outside of slab.





SECTION THRU SAW CUT JOINT

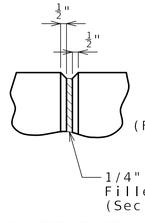
(Left Barrier)



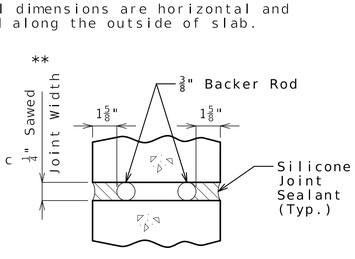
SECTION THRU SAW CUT JOINT

(Right Barrier)

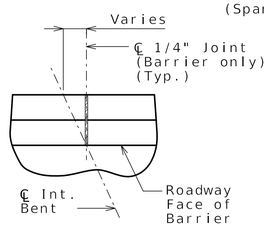
(Form liner and aesthetic details not shown.)



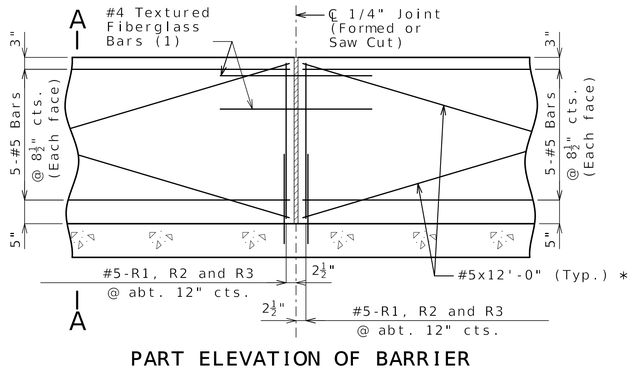
PART ELEVATION AT FORMED JOINT



SECTION B-B

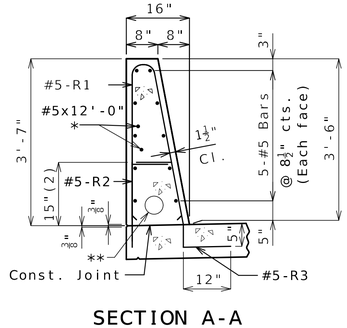


PART PLAN SHOWING JOINT LOCATION



PART ELEVATION OF BARRIER

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

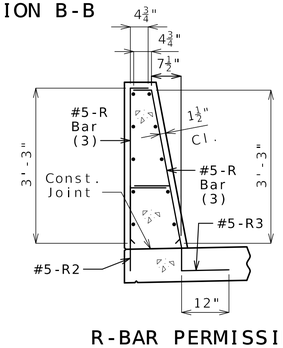


SECTION A-A

(Form liner aesthetic details on right barrier not shown.)

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

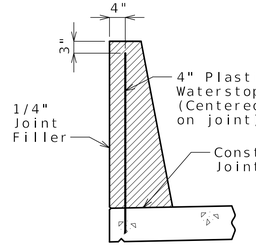
(2) To top of bar



R-BAR PERMISSIBLE ALTERNATE SHAPE

(Form liner aesthetic details on right barrier not shown.)

(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.)



WATERSTOP DETAIL

Plastic waterstop shall be placed in formed joints on lower side of superelevation.

General Notes:

∗ Left Barrier Slip-formed option only.

** 2" Ø PVC Conduit (Right barrier only) For Details of Conduit System on Structure, see Sheet No. B04-32.

Conventional forming or slip forming may be used with left barrier. Conventional forming shall be used with right barrier. 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. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides.

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.

For Form Liner and Aesthetic Stain details of right barrier not shown, see Sheet No. B04-31.

For Light Blister details, see Sheet No. B04-30.

TYPE D BARRIER

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Not to Scale
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BENJAMIN LICHTY NUMBER PE-2023038803
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DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-28
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DESCRIPTION	DATE
REV 0 - RFC SUBMITTAL	04/11/25

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HNTB

Detailed DEC 2024
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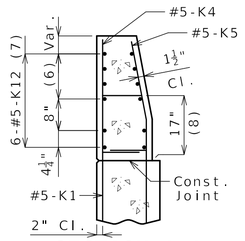
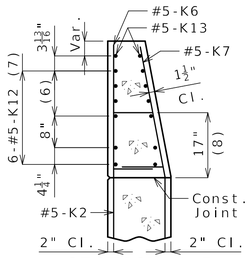
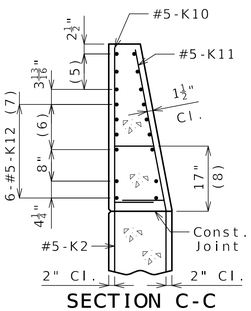


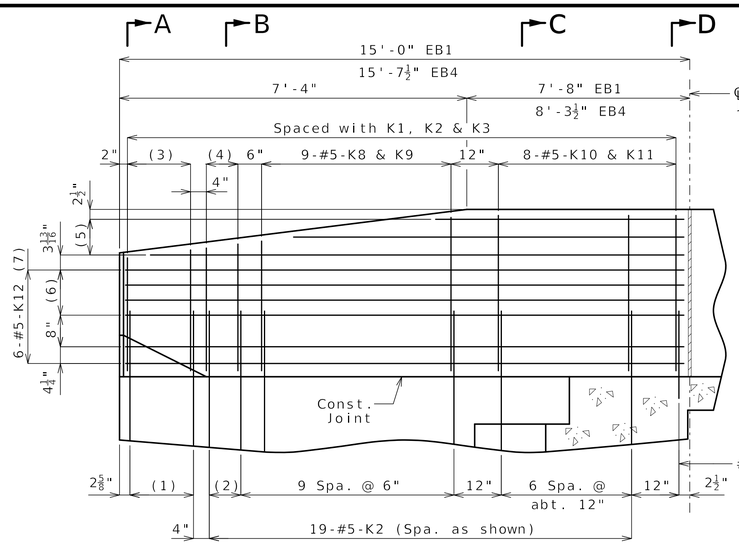
SECTION A-A



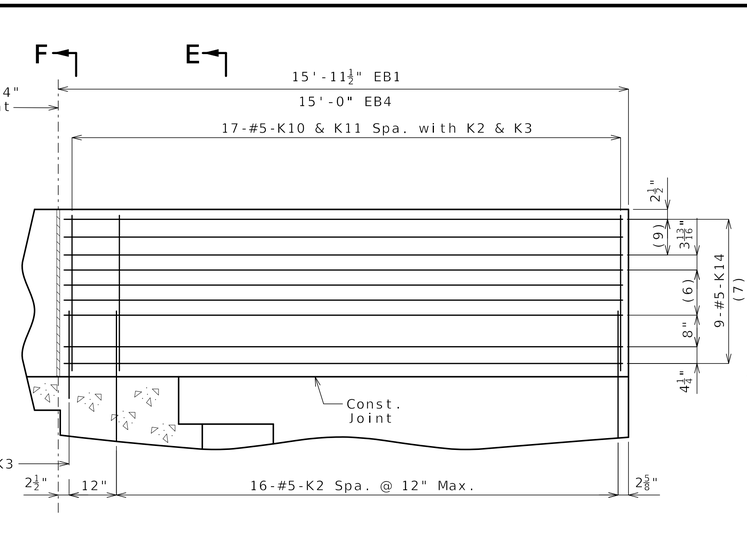
SECTION B-B



SECTION C-C

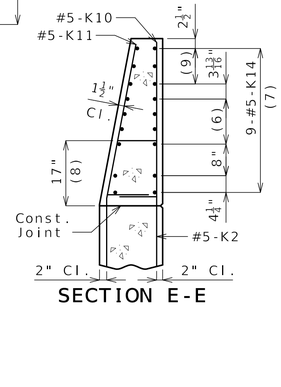


RIGHT BARRIER

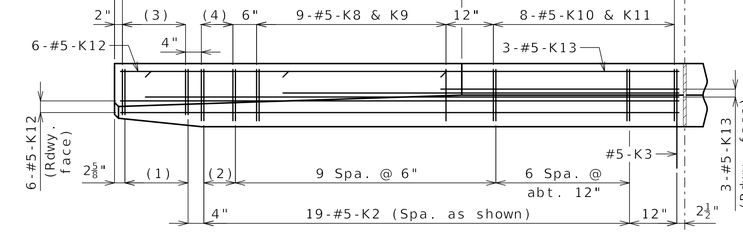


LEFT BARRIER

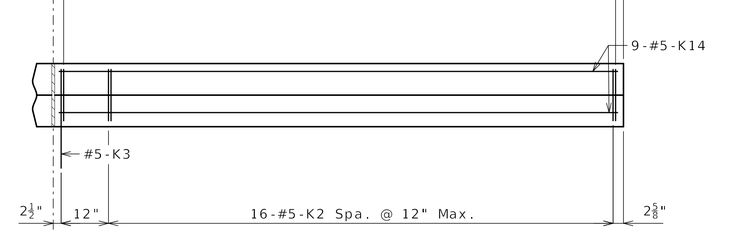
PART ELEVATION



SECTION E-E

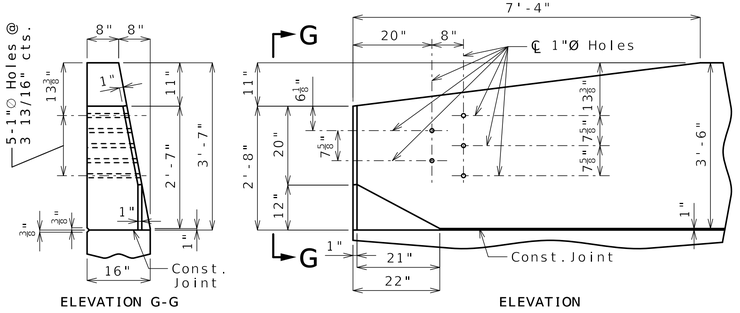


RIGHT BARRIER



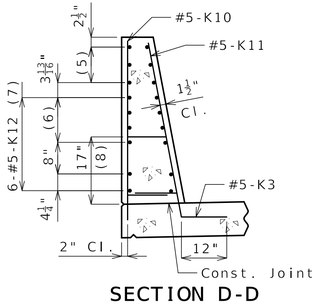
PART PLAN

LEFT BARRIER



ELEVATION G-G

ELEVATION



SECTION D-D

(1) 5-#5-K1 @ 4" cts.

(2) 2 spaces @ 4"

(3) 5-#5-K4 & K5

(4) 3-#5-K6 & K7

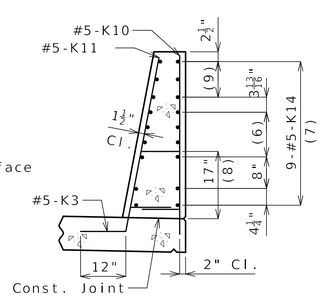
(5) 3-#5-K13 or K15 @ 4½" cts., each face

(6) 3 spaces @ 3 13/16"

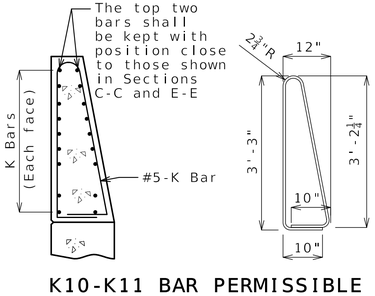
(7) Spaced as shown, each face

(8) To top of bar

(9) 2 spaces @ 4½"



SECTION F-F



K10-K11 BAR PERMISSIBLE ALTERNATE SHAPE

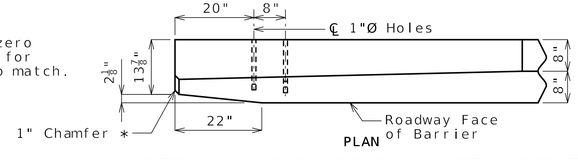
(Other K bars not shown for clarity)

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

All dimensions are out to out.

EB1 denotes End Bent No. 1
EB4 denotes End Bent No. 4

PVC conduit in right barrier not shown.



PLAN

DETAILS OF GUARD RAIL ATTACHMENT

(Right Barrier Only)

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

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.

For Form Liner and Aesthetic Stain details of right barrier not shown, see Sheet No. B04-31.

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

TYPE D BARRIER AT END BENTS

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

BENJAMIN LICHTY NUMBER PE-2023038803
PROFESSIONAL ENGINEER — STATE OF MISSOURI
04-11-2025

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

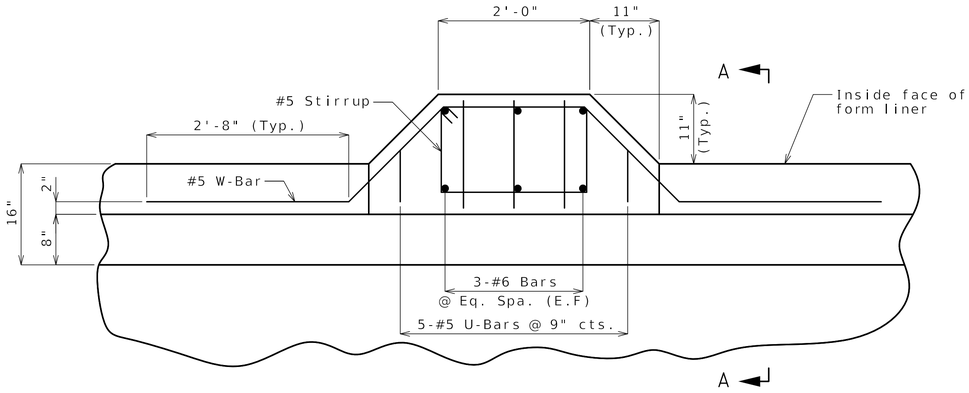
CLARKSON RADMACHER JOINT VENTURE
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270
HNTB

DESCRIPTION	DATE
REV 0 - RFC SUBMITTAL	04/11/25

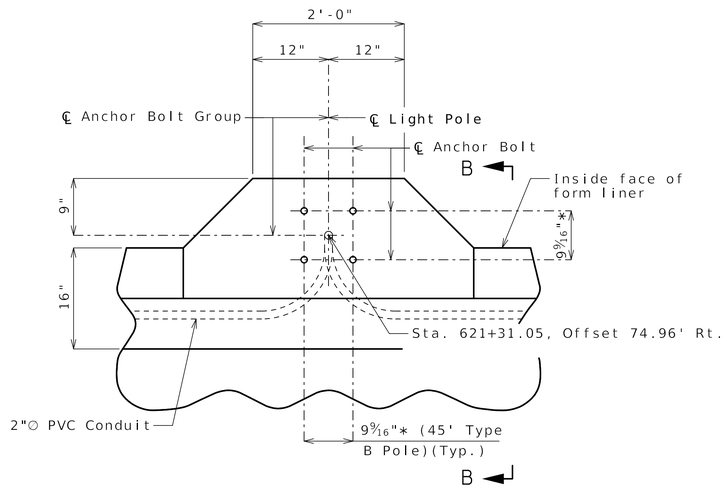
DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-29
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

Detailed DEC 2024
Checked JAN 2025

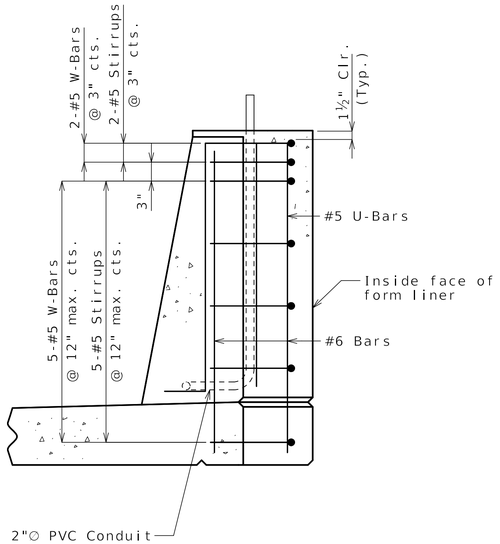
Note: This drawing is not to scale. Follow dimensions.



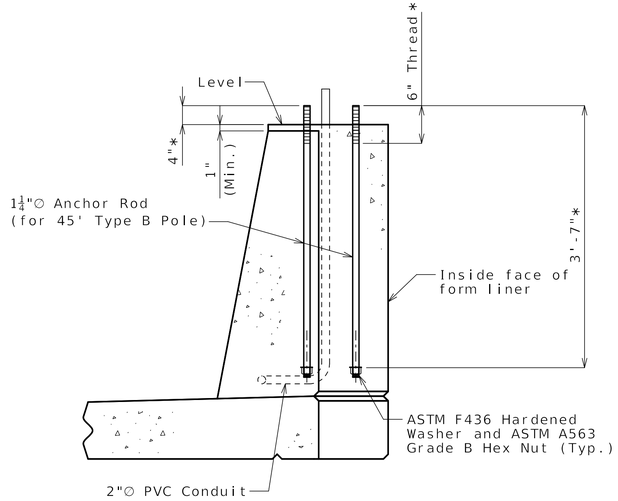
LIGHT POLE MOUNTING PLAN SHOWING REINFORCEMENT



LIGHT POLE MOUNTING PLAN



SECTION A-A



SECTION B-B

Notes:

∗ Contractor shall confirm dimension with light pole manufacturer before setting anchor bolts.

Anchor bolts and nuts shall be ASTM F1554 Grade 55. Anchor bolts, nuts and washers shall be galvanized in accordance with AASHTO M 232 (ASTM A153), Class C or ASTM B695, Class 55.

Top of light standard supports shall be made horizontal; anchor rods shall be placed vertically.

Contractor has the option to splice vertical bars with mechanical bar splices. Mechanical bar splices shall be in accordance with Sec 710.

For locations of light blister, see Sheets No. B04-24 and B04-25.

For Form Liner and Aesthetic Stain Details not shown, see Sheet No. B04-31.

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Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

LIGHT BLISTER DETAILS

BENJAMIN LICHTY NUMBER PE-2023038803
PROFESSIONAL ENGINEER — STATE OF MISSOURI
04-11-2025

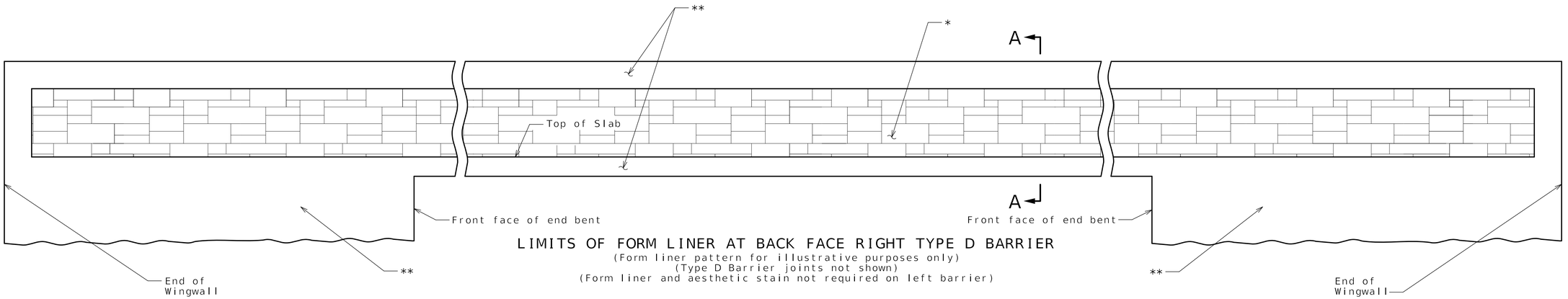
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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

HNTB

DESCRIPTION	DATE
REV 0 - RFC SUBMITTAL	04/11/25

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-30
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632



LIMITS OF FORM LINER AT BACK FACE RIGHT TYPE D BARRIER

(Form liner pattern for illustrative purposes only)
(Type D Barrier joints not shown)
(Form liner and aesthetic stain not required on left barrier)

Form Liner and Aestetic Concrete Stain for bridges are not a part of the base contract and are not yet contracted for this Project with MoDOT.

General Notes:

**Concrete and masonry protective coating and sacrificial graffiti protective coating shall be applied in accordance with Sec 711 to surfaces to receive form liner treatment and as noted in details on this sheet.

Protective coatings shall be compatible with Aesthetic Concrete Stain.

Concrete Form Liner Notes:

Form liner shall be constructed in accordance with Special Provisions.

The following is a list of form liner manufacturers and types which may be used. Depth of relief for all form liner pattern's shall vary up to 1 1/2". The height of any single "stone" shall be 15" maximum.

-Scott System, Inc.: Form liner pattern #167 "Ashlar Stone"

-Fitzgerald Formliners: Form liner pattern #16986 "Ashlar Stone"

-Greenstreak: Form liner pattern #330 "Ashlar Stone"

-Spec Formliners: Form liner pattern #1515 "Ashlar Stone"

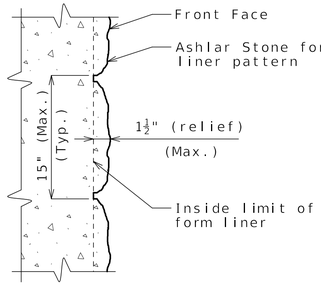
-Customrock: Form liner pattern #12020 "Tollway Ashlar"

-An approved equal

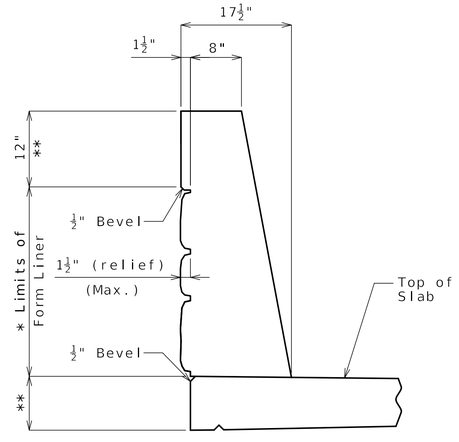
Aesthetic Concrete Stain Notes:

* Surface to receive Aesthetic Concrete Stain. The color shall be Federal Standard #37150.

Aesthetic Concrete Stain shall be applied in accordance with Sec 711 as shown in the plans.



FORM LINER DETAIL



SECTION A-A

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Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

FORM LINER AND AESTHETIC STAIN DETAILS

BENJAMIN LICHTY NUMBER PE-2023038803
PROFESSIONAL ENGINEER
STATE OF MISSOURI
04-11-2025

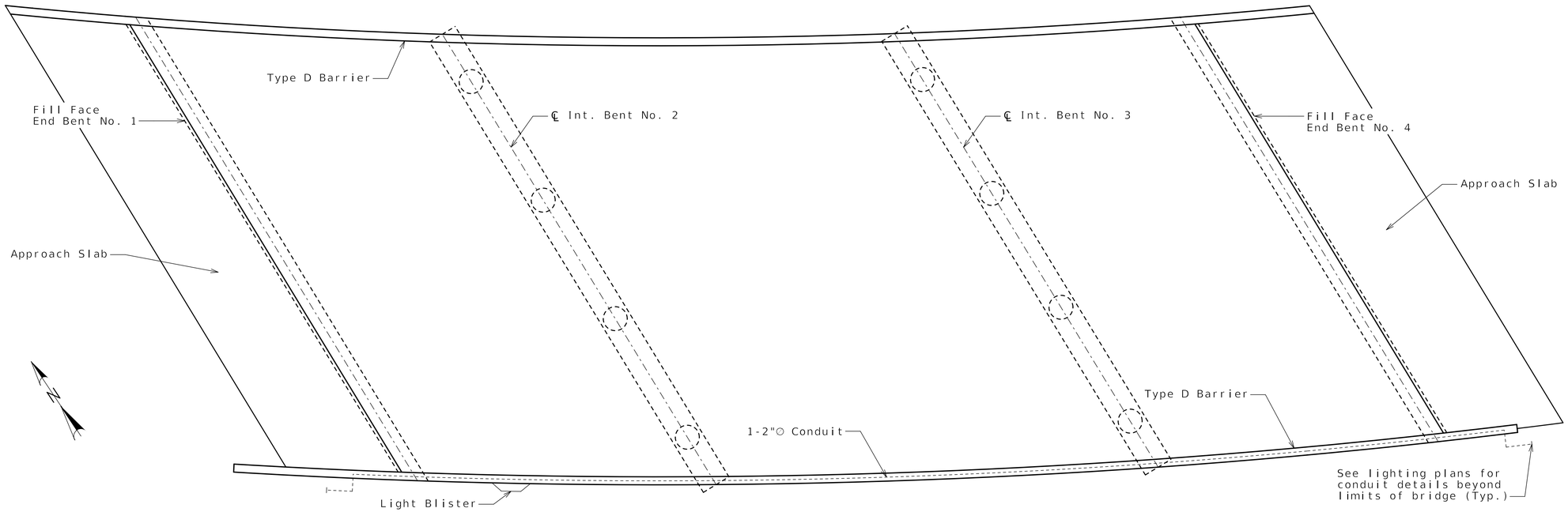
DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-31
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DATE	DESCRIPTION
04/11/25	REV 0 - RFC SUBMITTAL

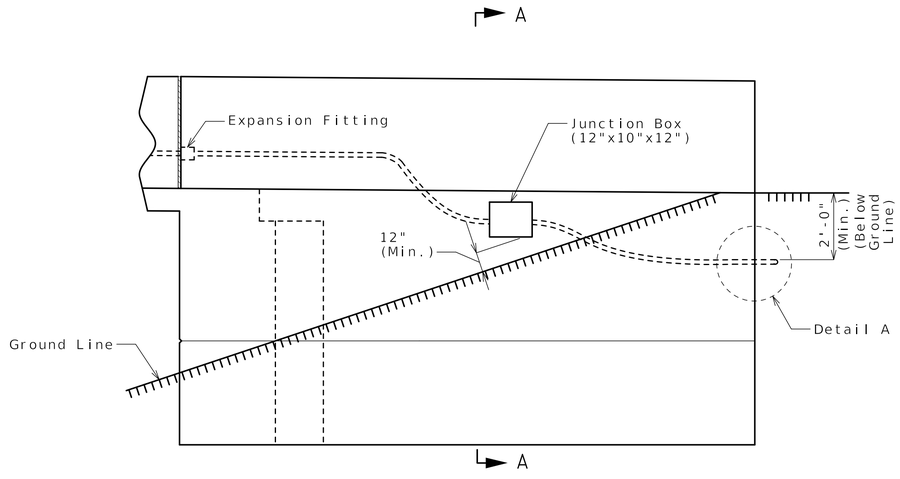
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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

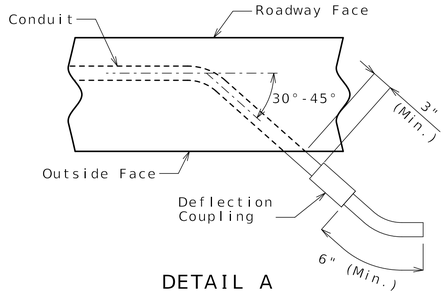
HNTB



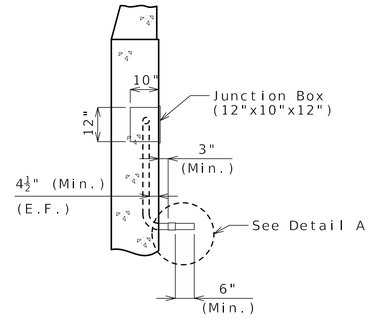
PLAN OF CONDUIT SYSTEM



PART WINGWALL ELEVATION



DETAIL A



PART SECTION A-A

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Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

Notes:

All conduit shall be rigid non-metallic schedule 40 heavy wall PVC (polyvinyl chloride plastic) with 4½" minimum cover in concrete. Each section of conduit shall bear the Underwriters laboratories (UL) label.

Shift reinforcing steel in field where necessary to clear conduit and junction boxes.

Expansion fittings shall be placed as shown and set in accordance with the manufacturer's requirements and based on the air temperature at the time of setting given an estimated total movement of 1 inch at filled joints using a maximum temperature range of 120°F and a maximum temperature of 110°F.

All end bent junction boxes shall be PVC molded in accordance with Sec. 1062 and designed for flush mounting. The conduit terminations shall be permanent or separable. The terminations and covers shall be of watertight construction and shall meet requirements for NEMA 4X enclosure.

Drainage shall be provided at low points or other critical locations of all conduits and all junction boxes in accordance with Sec 707. All conduits shall be sloped to drain where possible.

For additional form liner details not shown see Sheet No. B04-31.

DETAILS OF CONDUIT SYSTEM ON STRUCTURE

Detailed DEC 2024
Checked JAN 2025

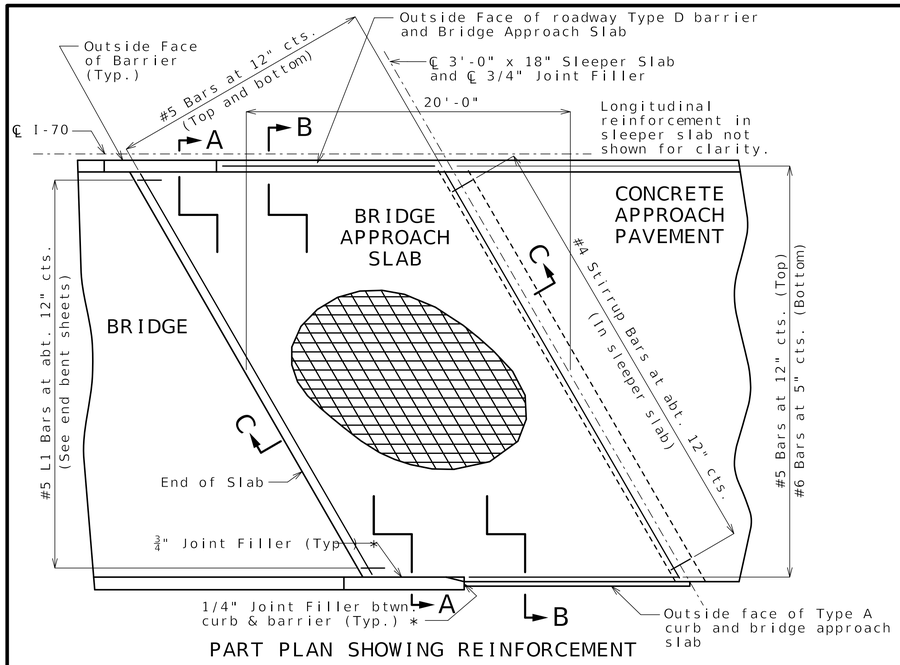
Note: This drawing is not to scale. Follow dimensions.

STATE OF MISSOURI
BENJAMIN LICHTY
NUMBER PE-2023038803
PROFESSIONAL ENGINEER
04-11-2025

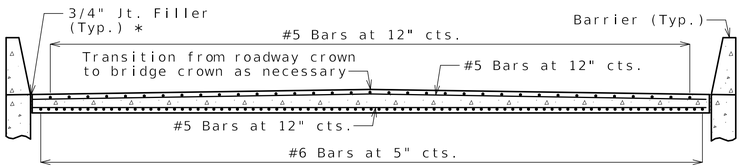
DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-32
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DATE	DESCRIPTION
04/11/25	REV 0 - RFC SUBMITTAL

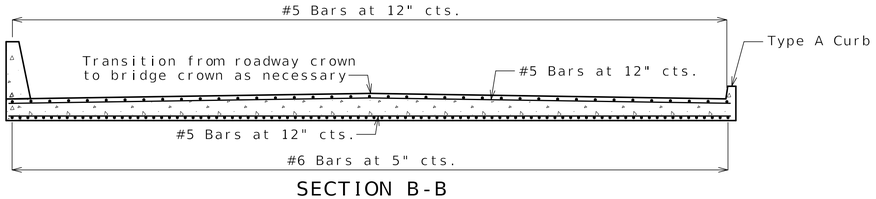
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
CLARKSON RADMACHER JOINT VENTURE
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270
HNTB



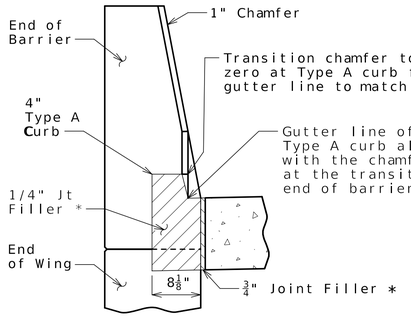
PART PLAN SHOWING REINFORCEMENT



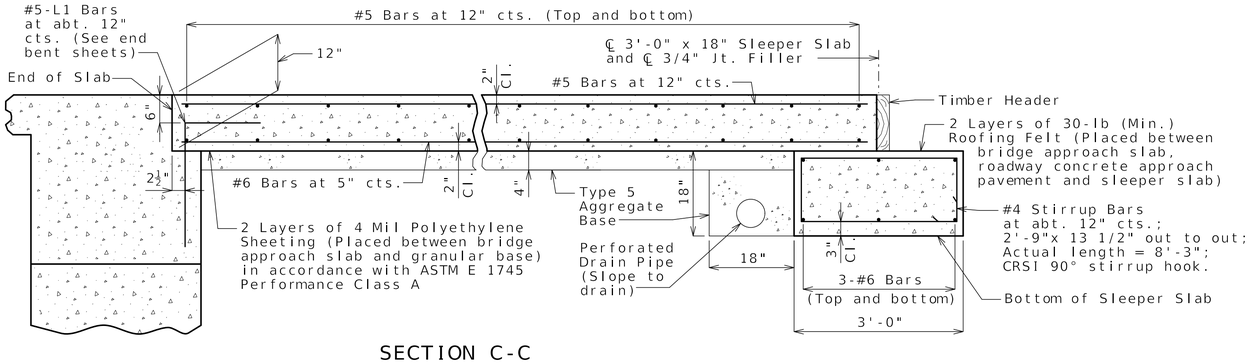
SECTION A-A



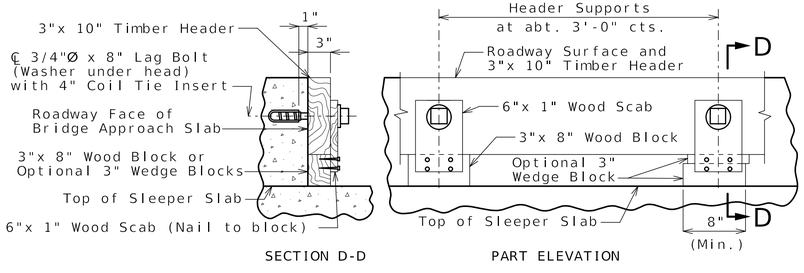
SECTION B-B



SECTION BETWEEN CURB AND BARRIER



SECTION C-C



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.

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.

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

BRIDGE APPROACH SLAB (MAJOR)

Detailed DEC 2024
Checked JAN 2025

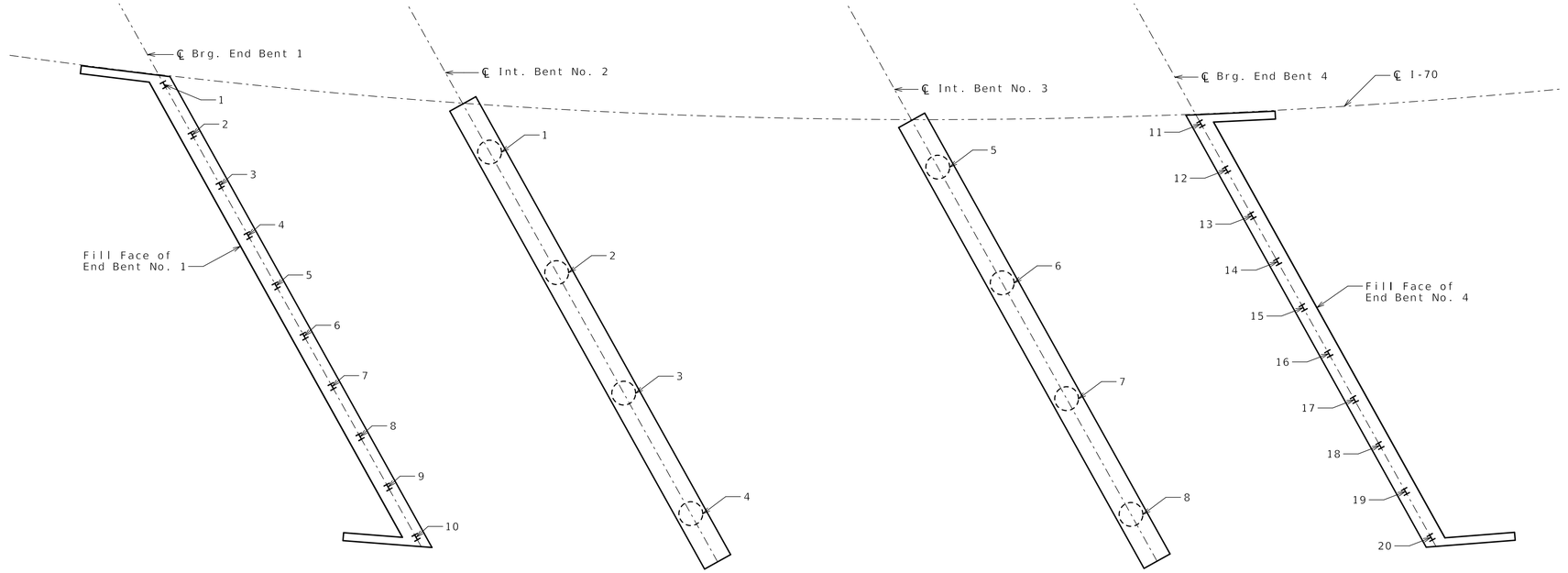
Note: This drawing is not to scale. Follow dimensions.

BENJAMIN LICHTY NUMBER PE-2023038803
PROFESSIONAL ENGINEER
STATE OF MISSOURI
04-11-2025

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-33
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

REV.	DATE	DESCRIPTION
	04/11/25	REV 0 - RFC SUBMITTAL

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)
MoDOT
CLARKSON RADMACHER JOINT VENTURE
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY NO. 001270
HNTB



PART PLAN SHOWING PILE AND DRILLED SHAFT NUMBERING FOR RECORDING AS-BUILT PILE DATA AND AS-BUILT DRILLED SHAFT DATA

As-Built Pile Data

Pile No.	Length in Place (ft)	PDA Nom. Axial Compressive Resistance (kips)	PDA End of Drive Blow Count (blows/in.)	Actual End of Drive Blow Count (blows/in.)	
					End Bent No. 1
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
					End Bent No. 4
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

As-Built Drilled Shaft Data

Shaft No.	Top of Sound Rock (Elev.)	Tip of Casing (Elev.)	Bottom of Rock Socket (Elev.)	Remarks
				Intermediate Bent No. 2
1				
2				
3				
4				
				Intermediate Bent No. 3
5				
6				
7				
8				

Note:

Indicate in remarks column:
A. Pile type and grade.
B. Batter
C. Driven to practical refusal
D. PDA test pile
E. Minimum tip elevation controlled
(Use when actual blow count is less than PDA blow count due to minimum tip elevation requirement. A plus sign (+) shall be placed after the PDA nominal axial compressive resistance value indicating actual value is higher than PDA value.)

Note:
This sheet to be completed by design-builder.

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Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

AS-BUILT PILE AND DRILLED SHAFT DATA

Detailed DEC 2024
Checked JAN 2025

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

STATE OF MISSOURI
GINA D. HORNER
PE-30413
PROFESSIONAL ENGINEER
Gina D. Horner
4/11/2025

DATE PREPARED: 04/11/2025
ROUTE: I-70 | STATE: MO
DISTRICT: BR | SHEET NO.: B04-34
COUNTY: JACKSON
JOB NO.: J4I1486D
CONTRACT ID.: 240807-C01
PROJECT NO.:
BRIDGE NO.: A9632

DATE	DESCRIPTION
04/11/25	REV 0 - RFC SUBMITTAL

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

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

SOIL BORING NUMBER: Jck_B1_1

Page 1 of 1

PROJECT Improve I 70 KC Design Build
DRILLING FIRM PPI **DRILLER** Josh Starkey
LOGGED BY Cameron Dupont
SURFACE ELEVATION 870.6'
METHOD Mud Rotary

NORTHING/EASTING 1058489.0 / 2779165.0
DATE STARTED 10/30/2024
DATE COMPLETED 10/30/2024
RIG TYPE CME-55x
TOOLING 4-1/2" Continuous Flight Auger

Groundwater Data	
During Drilling (ft):	N/A
After Drilling (ft):	N/A
After __ Hours (ft):	N/A

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Visual Classification and Remarks	Lab: Atterberg Limits (LL-PL-PI)	Lab: Moisture Content (%)	Lab: Dry Density (PCF)	Lab: UCS (tsf)
										Brown, stiff, moist, FAT CLAY, some organic material, with trace gravel				
5	3.5 ft		J-1	9	3-6-7 (13)			3.5			36-20-16	16.4		
	8.5 ft		J-2	18	4-5-8 (13)			3.0		- black mottling, stiff to moderately stiff at 8.5'				
10														
	13.5 ft		J-3	8	17-50/2" (50/2")			1.5						
	14.5 ft									14.0 856.6 Limestone with clay, highly weathered, tan-gray, iron stained				
15	15.3 ft		C-1			90	0							
			C-2			70	10					0.9	167.1	1534
										19.5 851.1 Shale with some clay, slightly weathered to weathered, fine grained, dark gray, soft				
20	20.3 ft		C-3			100	10					9.1	130.5	21
										- becomes thinly bedded, weathered at 23'				
25										24.5 846.1 Bottom of Boring at 24.5' Boring backfilled with cuttings 10/30/2024				
30														
35														

SOIL BORING NUMBER: Jck_B1_2

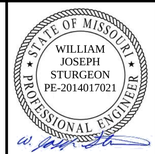
Page 1 of 1

PROJECT Improve I 70 KC Design Build
DRILLING FIRM PPI **DRILLER** Josh Starkey
LOGGED BY Cameron Dupont
SURFACE ELEVATION 869.8'
METHOD Water Rotary

NORTHING/EASTING 1058457.9 / 2779154.0
DATE STARTED 11/11/2024
DATE COMPLETED 11/11/2024
RIG TYPE CME-55LC
TOOLING 4-1/2" Continuous Flight Auger

Groundwater Data	
During Drilling (ft):	N/A
After Drilling (ft):	N/A
After __ Hours (ft):	N/A

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Visual Classification and Remarks	Lab: Atterberg Limits (LL-PL-PI)	Lab: Moisture Content (%)	Lab: Dry Density (PCF)	Lab: UCS (tsf)
										Brown, firm, moist, FAT CLAY, trace organics				
5	5 ft		U-1	24		100		2.0			45-16-29	23.3	102.5	2.36
	9 ft		U-2	24		100		1.5		- becomes wet at 9'		26.4		
10	12 ft		U-3	24		100		1.0		- iron-stained with organics, soft to firm at 12'	61-16-45	29.3	97.4	1.42
	15 ft		U-4	20		83		2.0		- some gravel, firm to stiff at 15'		22.6		
15	18.5 ft		J-1	6	9-50/5" (50/5")	55				19.0 850.8 19.4 Limestone, gray, cherty 850.4 Auger Refusal at 19.4' Monitoring well installed 11/11/2024				
20														
25														
30														
35														



DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-35
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DATE	DESCRIPTION
04/11/25	REV 0 - RFC SUBMITTAL

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

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

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

Notes:
For locations of borings, see Sheet No. B04-02 and Geotechnical Report.

BORING LOGS

Detailed DEC 2024
Checked JAN 2025

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

HNTB

SOIL BORING NUMBER: Jck_B2_1

PROJECT Improve I 70 KC Design Build
NORTHING/EASTING 1058486.2 / 2779218.5
DRILLING FIRM PPI **DRILLER** Eric P.
DATE STARTED 10/29/2024
LOGGED BY Zachary Boyd
DATE COMPLETED 10/29/2024
SURFACE ELEVATION 868.3'
RIG TYPE CME-550
METHOD Mud Rotary
TOOLING 4-1/2" Continuous Flight Auger

Groundwater Data	
During Drilling (ft):	N/A
After Drilling (ft):	N/A
After __ Hours (ft):	N/A

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Visual Classification and Remarks	Lab: Atterberg Limits (LL-PL-PI)	Lab: Moisture Content (%)	Lab: Dry Density (PCF)	Lab: UCS (tsf)
										Light to dark brown, stiff to very stiff, moist, LEAN CLAY				
5	3.5 ft		J-1	5	6-8-12 (20)	28		>4.5						
10	8.5 ft		J-2	18	2-4-6 (10)	100		2.0		- becomes stiff at 9'	47-14-33	21.7		
	12.6 ft									12.6 855.7				
15	15.1 ft		C-1	30		100	33			Limestone, weathered, light gray, hard, iron 14.1 854.2				
			C-2	60		100	78			Shale/claystone, highly weathered, gray, soft				
20	20.1 ft		C-3	60		100	0			- becomes moderately hard, no clay at 16.6'		8.5	128.4	26
25	25.1 ft		C-4	60		100	45							
30	30.1 ft		C-5	60		100	82			- becomes slightly weathered at 30.5'		4.1	138.8	186
35	35.1 ft		C-6	60		100	85			35.9 832.4				
										Limestone, weathered, light to dark gray, moderately hard				

HNTB

SOIL BORING NUMBER: Jck_B2_1

PROJECT Improve I 70 KC Design Build
NORTHING/EASTING 1058486.2 / 2779218.5
DRILLING FIRM PPI **DRILLER** Eric P.
DATE STARTED 10/29/2024
LOGGED BY Zachary Boyd
DATE COMPLETED 10/29/2024
SURFACE ELEVATION 868.3'
RIG TYPE CME-550
METHOD Mud Rotary
TOOLING 4-1/2" Continuous Flight Auger

Groundwater Data	
During Drilling (ft):	N/A
After Drilling (ft):	N/A
After __ Hours (ft):	N/A

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Visual Classification and Remarks	Lab: Atterberg Limits (LL-PL-PI)	Lab: Moisture Content (%)	Lab: Dry Density (PCF)	Lab: UCS (tsf)
40	37.5 ft		C-6	60		100				Limestone, weathered, light to dark gray, 37.9 moderately hard 830.4		1.2	146.5	286
	40.1 ft									40.1 Shale, dark gray, hard, calcareous, fresh 828.2				
	40.6 ft		C-7	24		100	96			Limestone, weathered, light to dark gray, moderately hard 42.1 826.2		0.6	165.9	1503
45										Bottom of Boring at 42.1'				
50										Boring backfilled with cuttings 10/29/2024				
55														
60														
65														
70														

WILLIAM JOSEPH STURGEON PE-2014017021
STATE OF MISSOURI PROFESSIONAL ENGINEER
4/11/2025

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-36
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DESCRIPTION: REV 0 - RFC SUBMITTAL
DATE: 04/11/25

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

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

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

Notes:
For locations of borings, see Sheet No. B04-02 and Geotechnical Report.

BORING LOGS

Detailed DEC 2024
Checked JAN 2025

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

SOIL BORING NUMBER: Jck_B2_2

PROJECT Improve I 70 KC Design Build
DRILLING FIRM PPI **DRILLER** Eric P.
LOGGED BY Zachary Boyd
SURFACE ELEVATION 866.8'
METHOD Auger

NORTHING/EASTING 1058401.1 / 2779214.0
DATE STARTED 10/31/2024
DATE COMPLETED 11/01/2024
RIG TYPE CME-550
TOOLING 4-1/2" Continuous Flight Auger

Groundwater Data	
During Drilling (ft): 17.0	▽
After Drilling (ft):	N/A
After __ Hours (ft):	N/A

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Visual Classification and Remarks	Lab: Atterberg Limits (LL-PL-PI)	Lab: Moisture Content (%)	Lab: Dry Density (PCF)	Lab: UCS (tsf)
										Dark brown, soft, moist, ORGANIC TOPSOIL 0.5 866.3				
	3.5 ft		J-1	6	5-6-6 (12)	33		>4.5		Light brown, very stiff, moist, LEAN CLAY, some organics				
5														
	8.5 ft		J-2	6	3-3-5 (8)	33					40-21-19	14.4		
10														
	13 ft		U-1	24		100		<0.5		14.0 852.8	53-17-36	27.2		
15										Light brown, soft, moist, FAT CLAY, organics with gravel				
▽														
	18.5 ft		J-3	17	6-26-50/5" (76/11")	100		>4.5		18.5 848.3 Shale, highly weathered, dark gray, soft				
20														
	23.5 ft		J-4	8	39-50/2" (50/2")	100		>4.5						
25														
	28.5 ft		J-5	5	50/5" (5")	100		>4.5						
30														
	33.5 ft		J-6	8	45-50/2" (50/2")	100		>4.5						

SOIL BORING NUMBER: Jck_B2_2

PROJECT Improve I 70 KC Design Build
DRILLING FIRM PPI **DRILLER** Eric P.
LOGGED BY Zachary Boyd
SURFACE ELEVATION 866.8'
METHOD Auger

NORTHING/EASTING 1058401.1 / 2779214.0
DATE STARTED 10/31/2024
DATE COMPLETED 11/01/2024
RIG TYPE CME-550
TOOLING 4-1/2" Continuous Flight Auger

Groundwater Data	
During Drilling (ft): 17.0	▽
After Drilling (ft):	N/A
After __ Hours (ft):	N/A

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Visual Classification and Remarks	Lab: Atterberg Limits (LL-PL-PI)	Lab: Moisture Content (%)	Lab: Dry Density (PCF)	Lab: UCS (tsf)
	~35ft		C-1	7		100	0			Shale, highly weathered, dark gray, soft 35.2 831.6				
			C-2	60		100	87			Limestone, weathered, gray, moderately hard, calcareous 36.2 830.6		9.9	123.1	69
40										Shale, highly weathered, dark gray, soft, some fossils 37.7 829.1				
	40.6 ft		C-3	60		100	45			Limestone, slightly weathered, gray, moderately hard, calcareous - becomes weathered at 40' 41.6 825.2				
45										Limey shale, slightly weathered to weathered, dark gray, soft to moderately hard, vuggy seams		2.1	157.9	510
	45.6 ft		C-4	60		100	10			- becomes highly weathered at 45'				
50										- becomes slightly weathered to weathered at 50' 51.6 815.2				
	50.6 ft		C-5	60		100	70			Limestone, slightly weathered, light gray, calcareous, some shale eyes				
55												0.6	164.0	1482
	55.6 ft		C-6	60		100	72			58.5 808.3 Shaley limestone, weathered, dark gray, pitted 60.6 806.2				
60										Bottom of Boring at 60.6' Boring backfilled with cuttings 11/1/2024				
65														

Notes:
For locations of borings, see Sheet No. B04-02 and Geotechnical Report.

BORING LOGS

Detailed DEC 2024
Checked JAN 2025

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

STATE OF MISSOURI
WILLIAM JOSEPH STURGEON
PE-2014017021
PROFESSIONAL ENGINEER
4/11/2025

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-37
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DESCRIPTION: REV 0 - RFC SUBMITTAL
DATE: 04/11/25

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

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

HNTB

SOIL BORING NUMBER: Jck_B3_1

PROJECT Improve I 70 KC Design Build
DRILLING FIRM PPI **DRILLER** Josh Starkey
LOGGED BY Cameron Dupont
SURFACE ELEVATION 867.3'
METHOD Water Rotary
NORTHING/EASTING 1058433.5 / 2779280.6
DATE STARTED 11/01/2024
DATE COMPLETED 11/01/2024
RIG TYPE CME-55x
TOOLING 4-1/2" Continuous Flight Auger

Groundwater Data	
During Drilling (ft):	N/A
After Drilling (ft):	N/A
After __ Hours (ft):	N/A

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Visual Classification and Remarks	Lab: Atterberg Limits (LL-PL-PI)	Lab: Moisture Content (%)	Lab: Dry Density (PCF)	Lab: UCS (tsf)
										0.2 TOPSOIL 867.1 Brown, stiff to hard, moist, FAT CLAY, slightly mottled				
5	3.5 ft		J-1	7	6-7-8 (15)	39		>4.5						
10	8 ft		U-1	23		96		2.5			56-18-38	19.1	104.8	4.87
15	13.5 ft		J-2	18	3-5-5 (10)	100		1.0		- soft to medium, stiff, FAT CLAY, iron stained at 13.5'				
										16.0 851.3 Limestone with clay, highly weathered, orangish brown				
										17.4 849.9 Brown, stiff, moist, FAT CLAY				
20	18.5 ft		J-3	18	8-21-44 (65)	100		3.5		18.8 848.5 Brownish gray, stiff, moist, CLAYEY SHALE, highly weathered to weathered	52-19-33	19.0		
25	23.5 ft		J-4	5	50/5" (5")	100				23.5 843.8 Shale, thinly bedded, highly weathered, gray, moist				
30	28.5 ft		J-5	4	50/4" (4")	100								
35	33.5 ft 34.1 ft 35.1 ft		J-6 C-1 C-2	5 12 60	50/5" (5")	100 100 100		54 72		33.9 833.4 Shaley limestone, slightly weathered, gray to dark gray, calcareous				

HNTB

SOIL BORING NUMBER: Jck_B3_1

PROJECT Improve I 70 KC Design Build
DRILLING FIRM PPI **DRILLER** Josh Starkey
LOGGED BY Cameron Dupont
SURFACE ELEVATION 867.3'
METHOD Water Rotary
NORTHING/EASTING 1058433.5 / 2779280.6
DATE STARTED 11/01/2024
DATE COMPLETED 11/01/2024
RIG TYPE CME-55x
TOOLING 4-1/2" Continuous Flight Auger

Groundwater Data	
During Drilling (ft):	N/A
After Drilling (ft):	N/A
After __ Hours (ft):	N/A

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Visual Classification and Remarks	Lab: Atterberg Limits (LL-PL-PI)	Lab: Moisture Content (%)	Lab: Dry Density (PCF)	Lab: UCS (tsf)
40	40.1 ft		C-2	60		100				Shaley limestone, slightly weathered, gray to 38.5 dark gray, calcareous 828.8		1.7	159.1	890
45	45.1 ft		C-3	58		97	29			Limestone with fossils, slightly weathered, gray, hard, calcareous, some shale lens's 42.5 824.8 Shale, thinly bedded, highly weathered, dark gray, soft, moist				
50	50.1 ft		C-4	56		93	39			- shale, slightly weathered to weathered at 47.5'		3.9	143.0	68
55	55.1 ft		C-5	60		100	92			51.1 816.2 Limestone, slightly weathered, gray, hard				
60			C-6	60		100	93			- limestone, fresh to slightly weathered at 54' 58.0 809.3 Shaley limestone, slightly weathered to weathered, dark gray, pitted		0.6	159.7	602
65										60.1 807.2 Bottom of Boring at 60.1' Boring backfilled with cuttings 11/1/2024				
70														

DATE PREPARED 04/11/2025
ROUTE I-70 STATE MO
DISTRICT BR SHEET NO. B04-38
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DESCRIPTION: REV 0 - RFC SUBMITTAL
DATE: 04/11/25

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

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

HNTB

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

Notes:
For locations of borings, see Sheet No. B04-02 and Geotechnical Report.

BORING LOGS

Detailed DEC 2024
Checked JAN 2025

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

HNTB

SOIL BORING NUMBER: Jck_B3_2

Page 1 of 1

PROJECT Improve I 70 KC Design Build
DRILLING FIRM PPI **DRILLER** Josh Starkey
LOGGED BY Cameron Dupont
SURFACE ELEVATION 866.3'
METHOD Auger

NORTHING/EASTING 1058387.6 / 2779278.1
DATE STARTED 10/29/2024
DATE COMPLETED 10/29/2024
RIG TYPE CME-55LC
TOOLING 4-1/2" Continuous Flight Auger

Groundwater Data	
During Drilling (ft):	N/A
After Drilling (ft):	N/A
After __ Hours (ft):	N/A

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Visual Classification and Remarks	Lab: Atterberg Limits (LL-PL-PI)	Lab: Moisture Content (%)	Lab: Dry Density (PCF)	Lab: UCS (tsf)
	1 ft		J-1	9	8-10-9 (19)	50		3.5		1.0 Brown, dry, TOPSOIL, trace gravel 865.3 Dark brown, hard, moist, FAT CLAY				
	3.2 ft		J-2	13	4-3-2 (5)	72		4.0						
5														
	8 ft		U-1	24				3.5			39-18-21	20.4	107.6	2.11
10										- becomes wet, soft to stiff at 10'				
	13 ft		J-3	18	2-2-3 (5)	100		0.5						
15														
	18 ft		J-4	18	7-15-21 (36)	100		3.5		18.0 848.3 Clayey-shale, highly weathered, grayish brown, mottled, stiff to hard				
20	20 ft		C-1	60		100	47			20.0 846.3 Shale, highly to moderately weathered, gray to dark gray, soft to moderately hard, moist				
25	25 ft		C-2	60		100	75							
30										30.0 836.3 Bottom of Boring at 30' Boring backfilled with cuttings 10/29/2024				
35														

HNTB

SOIL BORING NUMBER: Jck_E4

Page 1 of 2

PROJECT Improve I 70 KC Design Build
DRILLING FIRM PPI **DRILLER** Josh Starkey
LOGGED BY Cameron Dupont
SURFACE ELEVATION 873.1'
METHOD Mud Rotary

NORTHING/EASTING 1058335.9 / 2779379.9
DATE STARTED 10/30/2024
DATE COMPLETED 10/30/2024
RIG TYPE CME-55
TOOLING 4-1/2" Continuous Flight Auger

Groundwater Data	
During Drilling (ft):	N/A
After Drilling (ft):	N/A
After __ Hours (ft):	N/A

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Visual Classification and Remarks	Lab: Atterberg Limits (LL-PL-PI)	Lab: Moisture Content (%)	Lab: Dry Density (PCF)	Lab: UCS (tsf)
										0.8 TOPSOIL 872.3				
										1.1 FILL, GRAVEL, rough drilling 872 FILL, brown, stiff to medium stiff, dry, CLAY, mottling, some gravel, trace organics				
	3.5 ft		J-1	14	4-4-6 (10)	78		4.0						
5														
	8 ft		U-1	12		50					44-18-26	20.2		
10										10.0 863.1 Dark brown to black, soft to medium stiff, moist, FAT CLAY, with some gravel				
	13.5 ft		J-2	15	3-4-5 (9)	83		2.0						
15														
	18.5 ft		J-3	18	3-3-5 (8)	100		1.5			40-17-23	23.8		
20														
	23.5 ft		J-4	18	2-3-4 (7)	100		1.0		23.5 849.6 Gray-brown, soft, FAT CLAY, mottled with iron stains				
25														
	28.5 ft		J-5	9	40-50/3" (50/3")	100				28.8 844.3 Shale, thinly bedded, highly weathered, dark gray to gray, soft - oil observed in wash boring water at surface from 30.3' to 35.3' - slightly weathered to highly weathered at 30.5'				
	29.3 ft		C-1	12		100	58							
30	30.3 ft		C-2	60		100	38							
35	35.3 ft		C-3	48		100	40							

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

Notes:
For locations of borings, see Sheet No. B04-02 and Geotechnical Report.

BORING LOGS

WILLIAM JOSEPH STURGEON PE-2014017021
STATE OF MISSOURI PROFESSIONAL ENGINEER
4/11/2025

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-39
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DATE	DESCRIPTION
04/11/25	REV 0 - RFC SUBMITTAL

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

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

Detailed DEC 2024
Checked JAN 2025

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

B_A9632_B04-41-J4I1486D.dgn 1:15:03 PM 4/10/2025

SOIL BORING NUMBER: Jck_E4

PROJECT Improve I 70 KC Design Build
DRILLING FIRM PPI **DRILLER** Josh Starkey
LOGGED BY Cameron Dupont
SURFACE ELEVATION 873.1'
METHOD Mud Rotary
NORTHING/EASTING 1058335.9 / 2779379.9
DATE STARTED 10/30/2024
DATE COMPLETED 10/30/2024
RIG TYPE CME-55
TOOLING 4-1/2" Continuous Flight Auger

Groundwater Data	
During Drilling (ft):	N/A
After Drilling (ft):	N/A
After __ Hours (ft):	N/A

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Visual Classification and Remarks	Lab: Atterberg Limits (LL-PL-PI)	Lab: Moisture Content (%)	Lab: Dry Density (PCF)	Lab: UCS (tsf)
40			C-3	48		100				36.8 Shale, thinly bedded, highly weathered, dark gray to gray, soft 836.3 Limestone, thinly bedded, slightly weathered, dark gray, calcareous, with shale lens's and 39.3 fossils 833.8 Bottom of Boring at 39.3' Boring backfilled with cuttings 10/30/2024				
45														
50														
55														
60														
65														
70														

SOIL BORING NUMBER: Jck_W_3

PROJECT Improve I 70 KC Design Build
DRILLING FIRM PPI **DRILLER** Josh Starkey
LOGGED BY Cameron Dupont
SURFACE ELEVATION 885.1'
METHOD Water Rotary
NORTHING/EASTING 1058382.6 / 2779420.2
DATE STARTED 10/31/2024
DATE COMPLETED 10/31/2024
RIG TYPE CME-55x
TOOLING 4-1/2" Continuous Flight Auger

Groundwater Data	
During Drilling (ft):	N/A
After Drilling (ft):	N/A
After __ Hours (ft):	N/A

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Visual Classification and Remarks	Lab: Atterberg Limits (LL-PL-PI)	Lab: Moisture Content (%)	Lab: Dry Density (PCF)	Lab: UCS (tsf)
										0.4 FILL, brown, stiff, dry 884.7 FILL, dark gray, stiff to hard, dry, fine grained, CLAYEY SHALE, highly weathered to weathered				
5	3.5 ft		J-1	13	7-8-5 (13)	72		>4.5			49-19-30	14.4		
10	8.5 ft		J-2	17	3-4-6 (10)	94		2.0		8.5 876.6 FILL, orangish brown, soft to stiff, moist, CLAY, with shale fragments	55-17-38	28.8		
15	13.5 ft		J-3	18	3-4-5 (9)	100		1.5		13.5 871.6 FILL, brown, medium stiff to stiff, moist, FAT CLAY, iron stained, with trace gravel				
20	18.5 ft		U-1	16		67					56-20-36	23.2	102.3	3.02
25	23.5 ft		J-4	9	10-8-6 (14)	50		1.0		23.5 861.6 FILL, soft to medium stiff, fine grained, FAT CLAY, with gravel				
30	28.5 ft		J-5		3-2-4 (6)			1.0		28.5 856.6 Brown, soft, moist, FAT CLAY				
	33.5 ft		J-6	18	3-2-3 (5)	100		0.25						

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

Notes:
For locations of borings, see Sheet No. B04-02 and Geotechnical Report.

BORING LOGS

Detailed DEC 2024
Checked JAN 2025

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

WILLIAM JOSEPH STURGEON
PE-2014017021
STATE OF MISSOURI
PROFESSIONAL ENGINEER
4/11/2025

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-40
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DESCRIPTION: REV 0 - RFC SUBMITTAL
DATE: 04/11/25

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

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

HNTB

SOIL BORING NUMBER: Jck_W_3

PROJECT Improve I 70 KC Design Build
DRILLING FIRM PPI **DRILLER** Josh Starkey
LOGGED BY Cameron Dupont
SURFACE ELEVATION 885.1'
METHOD Water Rotary

NORTHING/EASTING 1058382.6 / 2779420.2
DATE STARTED 10/31/2024
DATE COMPLETED 10/31/2024
RIG TYPE CME-55x
TOOLING 4-1/2" Continuous Flight Auger

Groundwater Data	
During Drilling (ft):	N/A
After Drilling (ft):	N/A
After __ Hours (ft):	N/A

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Visual Classification and Remarks	Lab: Atterberg Limits (LL-PL-PI)	Lab: Moisture Content (%)	Lab: Dry Density (PCF)	Lab: UCS (tsf)
										Brown, soft, moist, FAT CLAY				
	38.5 ft									38.5 846.6				
40		X	J-7	18	2-10-30 (40)	100				Dark gray-brown, stiff to hard, fine grained, CLAYEY SHALE, weathered to highly				
										40.0 weathered 845.1				
										Bottom of Boring at 40'				
										Boring backfilled with cuttings 10/31/2024				
45														
50														
55														
60														
65														

Notes:
For locations of borings, see Sheet No. B04-02 and Geotechnical Report.

BORING LOGS

Released For Construction
Not to Scale
Revision: 0.0
Date: 04/11/2025
Package: BRD-04-EB-70-Jackson

WILLIAM JOSEPH STURGEON
PE-2014017021
STATE OF MISSOURI
PROFESSIONAL ENGINEER
4/11/2025

DATE PREPARED 04/11/2025
ROUTE I-70 | STATE MO
DISTRICT BR | SHEET NO. B04-41
COUNTY JACKSON
JOB NO. J4I1486D
CONTRACT ID. 240807-C01
PROJECT NO.
BRIDGE NO. A9632

DATE	DESCRIPTION
04/11/25	REV 0 - RFC SUBMITTAL

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

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

Detailed DEC 2024
Checked JAN 2025

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

B_A9632_B04-43-J4I1486D.dgn 1:16:08 PM 4/10/2025