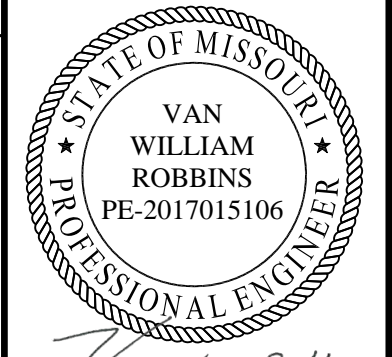


Note:
See Civil Package 2: Early Grading for project reference points and project coordinate points.



Van W. Robbins
06-03-25

DATE PREPARED
06/02/2025

ROUTE STATE
I - 70 MO

DISTRICT SHEET NO.
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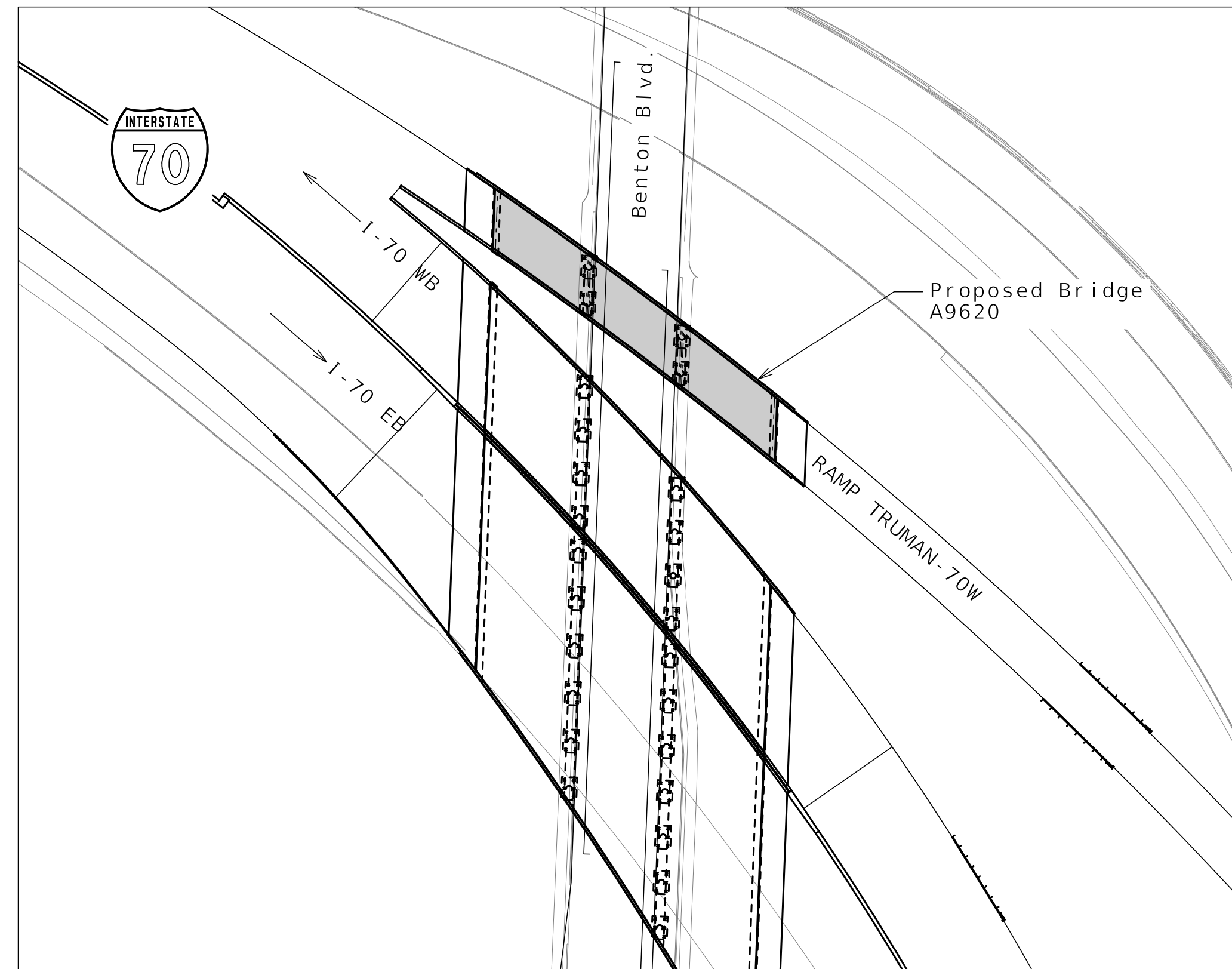
COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9620



LOCATION SKETCH

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- B0-02 General Plan and Elevation
- B0-03 General Notes
- B0-04 Substructure Layout
- B0-05 Details of End Bent No. 1
- B0-06 Details of End Bent No. 1
- B0-07 Details of End Bent No. 1
- B0-08 Vertical Drain at End Bents
- B0-09 Details of Intermediate Bent No. 2
- B0-10 Details of Intermediate Bent No. 2
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- B0-14 Details of End Bent No. 4
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- B0-16 As-Built Pile Data
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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

Released For Construction
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Revision: 0.0
Date: 06/09/2025
Package: BRD-06-WBRamp-Benton-Subst

BRIDGE : RAMP TRUMAN-70W OVER BENTON BLVD.

RAMP TRUMAN-70W FROM ROUTE 40 TO ROUTE I-670
ABOUT 3.0 MILES WEST OF ROUTE 40
BEGINNING STATION 1431+26.12

General Notes:
 For additional bridge details not shown, see A9620 (I-70 WB On Ramp Over Benton) Superstructure Package.

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, $S_{p1} \leq 0.15$
 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) $f'c = 4,000$ psi
 Class B-2 Concrete (End Bents above construction joint) $f'c = 4,000$ psi
 Reinforcing Steel (ASTM A615 Grade 60) $f_y = 60,000$ psi
 Structural HP Steel Pile (ASTM A709 Grade 50) $f_y = 50,000$ psi

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 End Bents No. 1 and 4 and Intermediate Bents No. 2 & 3 shall be epoxy coated. Reinforcing in the Intermediate Bents No. 2 & 3 pile cap footings shall be uncoated.

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

Concrete Protective Coatings:
 Concrete and masonry protective coating shall be applied to concrete column and end bent wingwall exposed areas in accordance with Sec 711.

Sacrificial graffiti protective coating shall be applied to concrete column and end bent wingwall exposed areas in accordance with Sec 711.

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

Foundation Data					
Type	Design Data	Bent Number			
		1	2	3	4
Load Bearing Pile	Pile Type and Size	HP 12x53	HP 12x74	HP 12x74	HP 12x53
	Number	ea 5	12	12	5
	Approximate Length Per Each (1)	ft 110	88	88	105
	Pile Point Reinforcement	ea All	All	All	All
	Min. Galvanized Penetration (Elev.)	ft 839	826	824	835
	Minimum Tip Penetration (Elev.)	ft ---	---	---	---
	Criteria for Min. Tip Penetration	---	---	---	---
	Pile Driving Verification Method	DF	DF	DF	DF
	Resistance Factor	0.40	0.40	0.40	0.40
	Minimum Nominal Axial Compressive Resistance	kip 498	514	514	498

(1) Pile length is maximum estimated for bent and includes embedment into concrete. Adjust as needed for bottom of concrete variations at each bent.

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.
 DF = FHWA-modified Gates Dynamic Pile Formula

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Sheet No. B06-03 of B06-23

GENERAL NOTES



Van W. Robbins
 06-03-25

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DISTRICT SHEET NO.
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JOB NO.
 J411486D

CONTRACT ID.
 240807-C01

PROJECT NO.

BRIDGE NO.
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DATE	DESCRIPTION
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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



Gina D. Horner
06/03/25

DATE PREPARED

06/02/2025

ROUTE STATE

I-70 MO

DISTRICT SHEET NO.

BR B06-04

COUNTY

JACKSON

JOB NO.

J411486D

CONTRACT ID.

240807-C01

PROJECT NO.

BRIDGE NO.

A9620

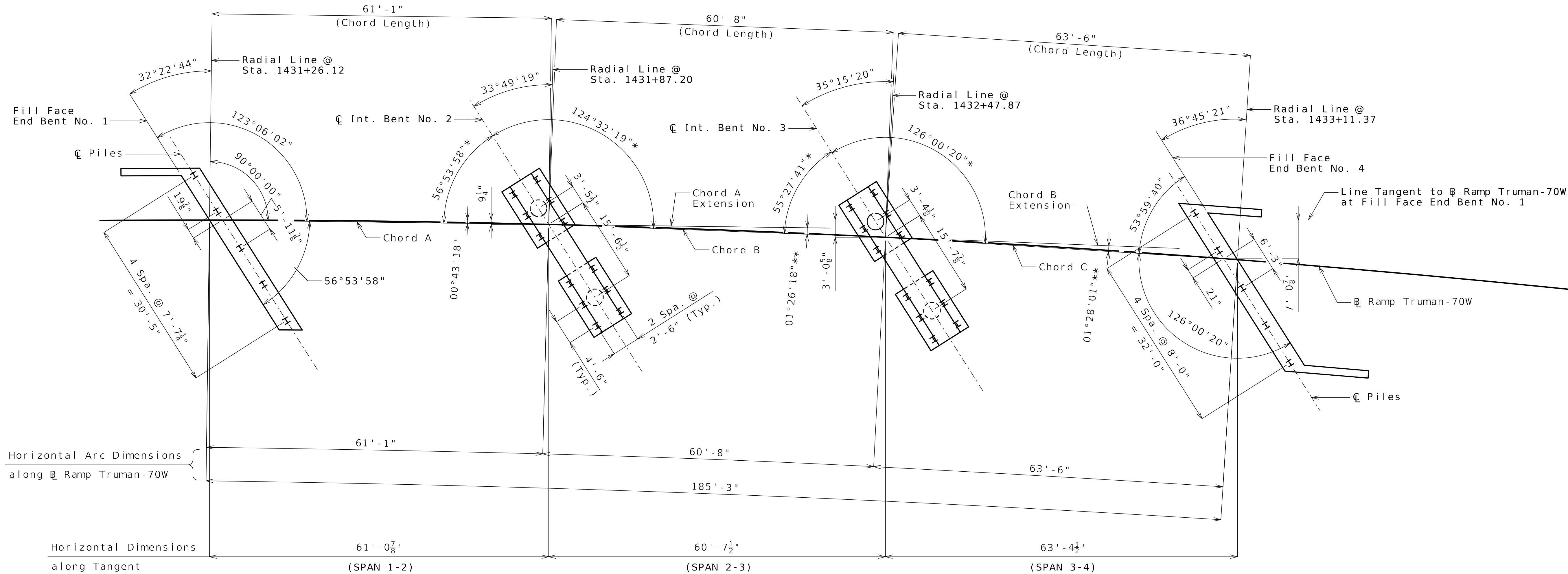
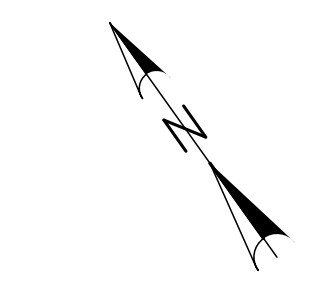
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CLARKSON RADMACHER JOINT VENTURE
 715 KIRK DRIVE KANSAS CITY, MO 64105-1310
 CERTIFICATE OF AUTHORITY NO. 001270

HNTB



SUBSTRUCTURE LAYOUT

Notes:
 All stations are given along Ramp Truman-70W.
 All dimensions are horizontal.
 * Angle between Cent. Bent and chord.
 ** Angle between extended chord and chord.

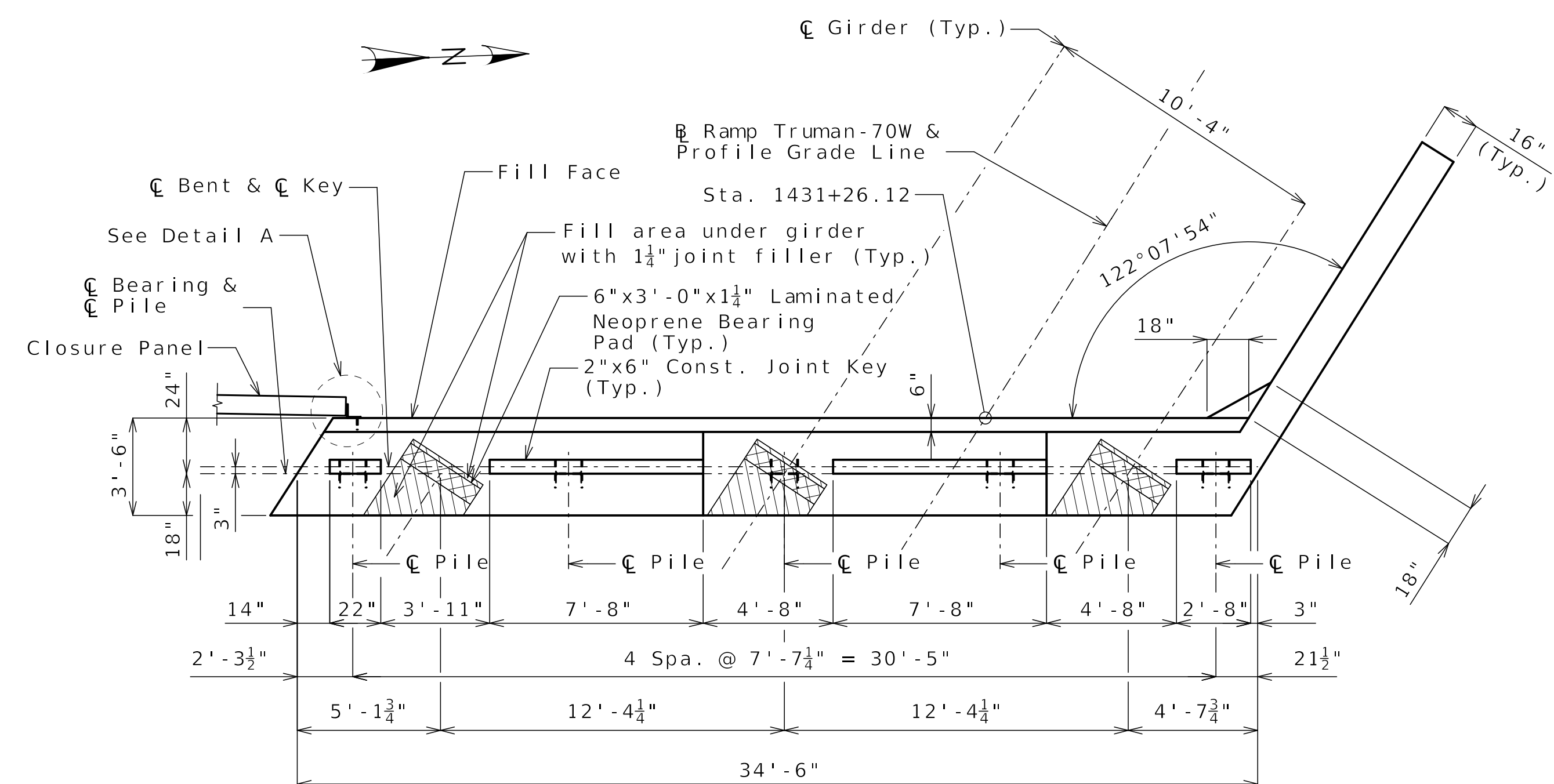
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SUBSTRUCTURE LAYOUT

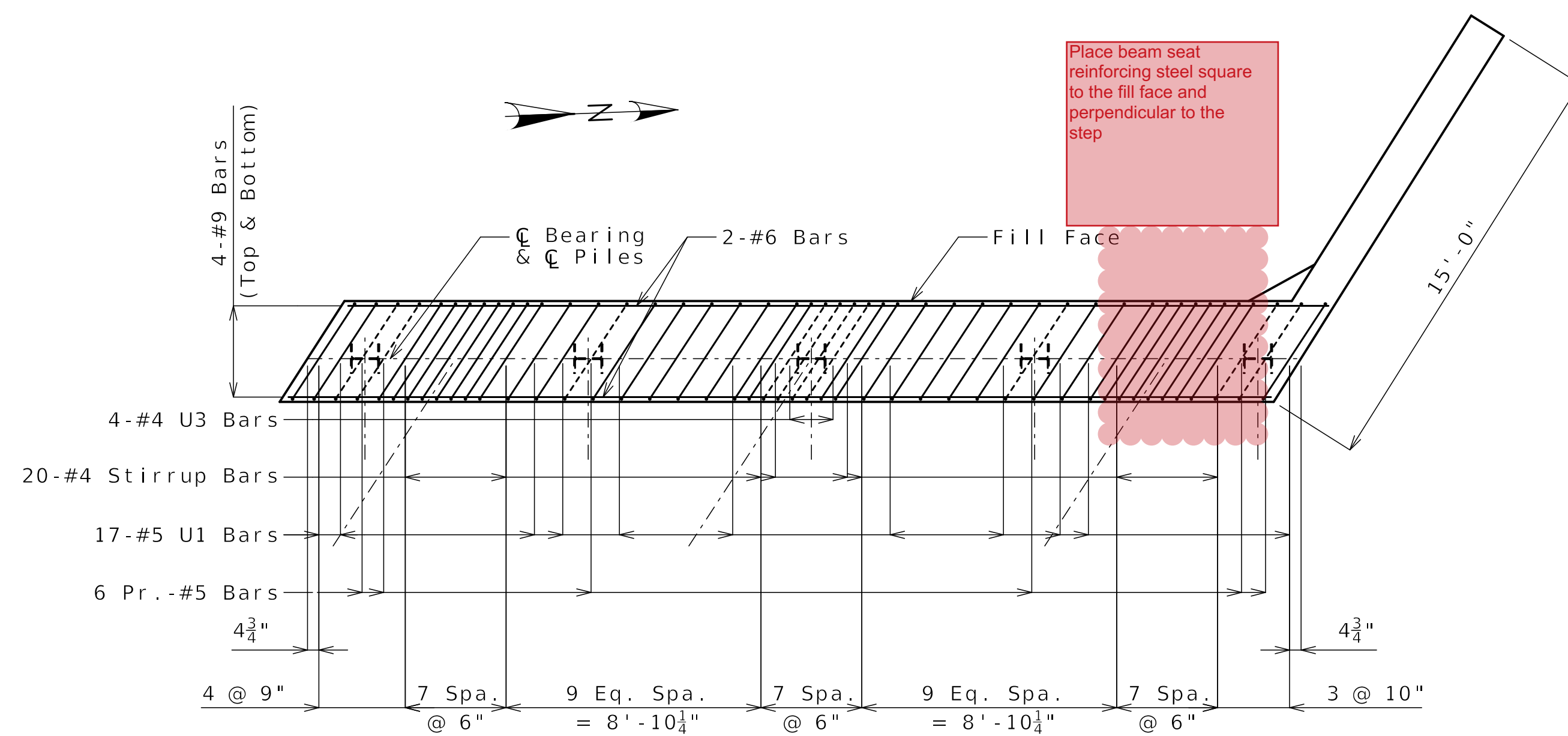
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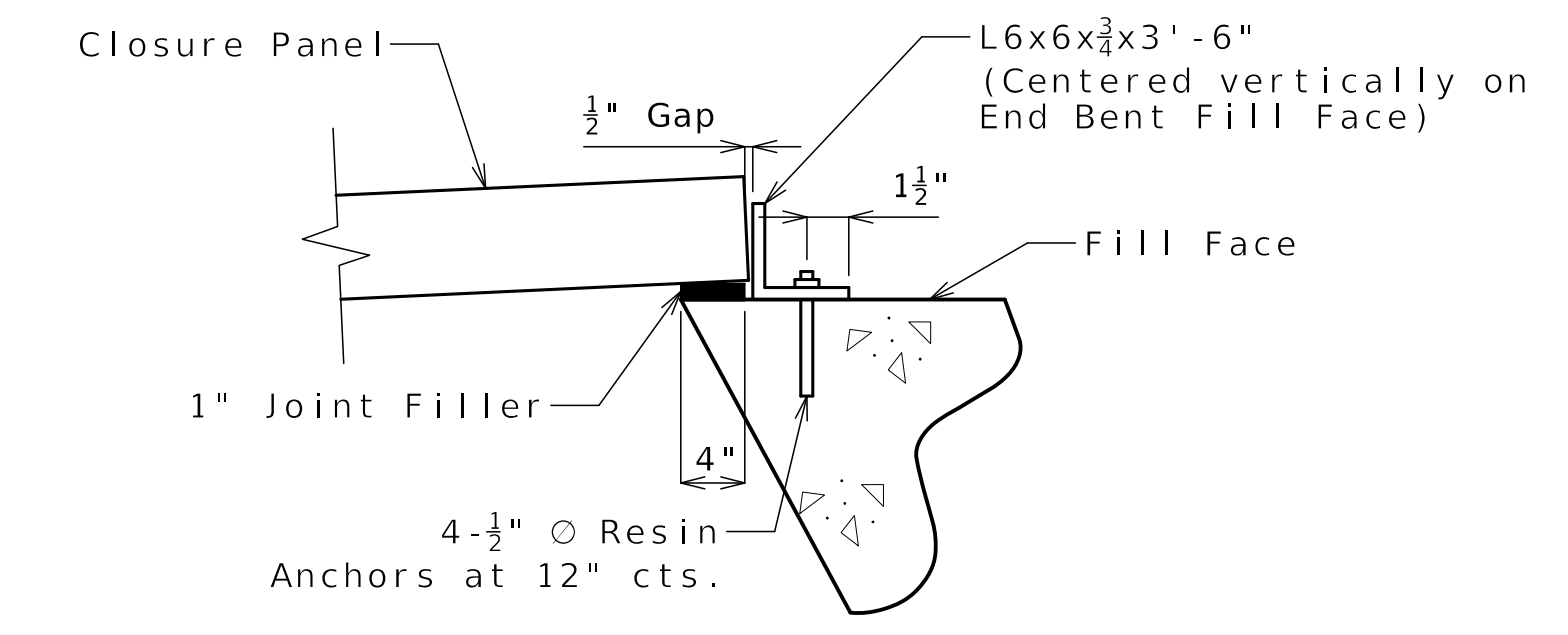
Sheet No. B06-04 of B06-23



PLAN OF BEAM



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



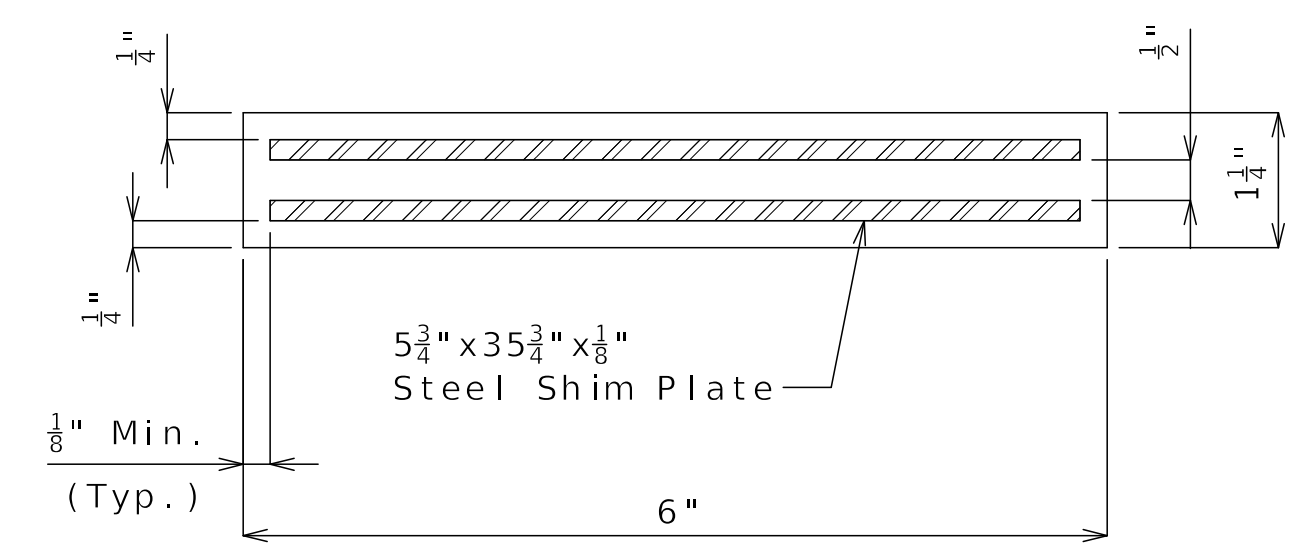
DETAIL A



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.

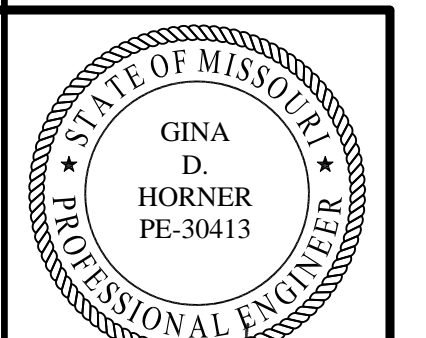


TYPICAL SECTION THRU LAMINATED NEOPRENE BEARING PAD
3 Required per Bent

Notes:
Work this sheet with Sheets No. B06-06 and B06-07.
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 1 1/2".
For details of bridge approach slab, see A9620 (I-70 On Ramp Over Benton) Superstructure Package.
For angle of girders relative to C Bent, see A9620 (I-70 WB On Ramp Over Benton) Superstructure Package.
For Closure Panel details, see A9622 (I-70 WB Over Benton) Superstructure Package.

DETAILS OF END BENT NO. 1

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GINA D. HORNER
06/03/25

DATE PREPARED 06/02/2025	
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DISTRICT BR	SHEET NO. B06-05
COUNTY JACKSON	
JOB NO. J411486D	
CONTRACT ID. 240807-C01	
PROJECT NO.	

BRIDGE NO.
A9620

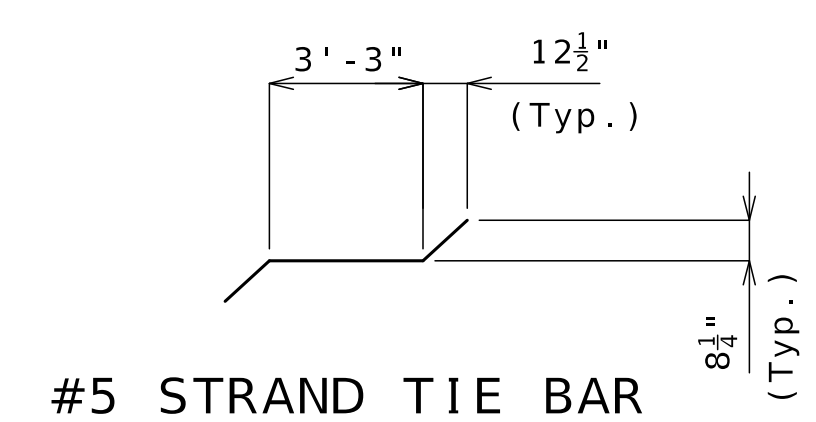
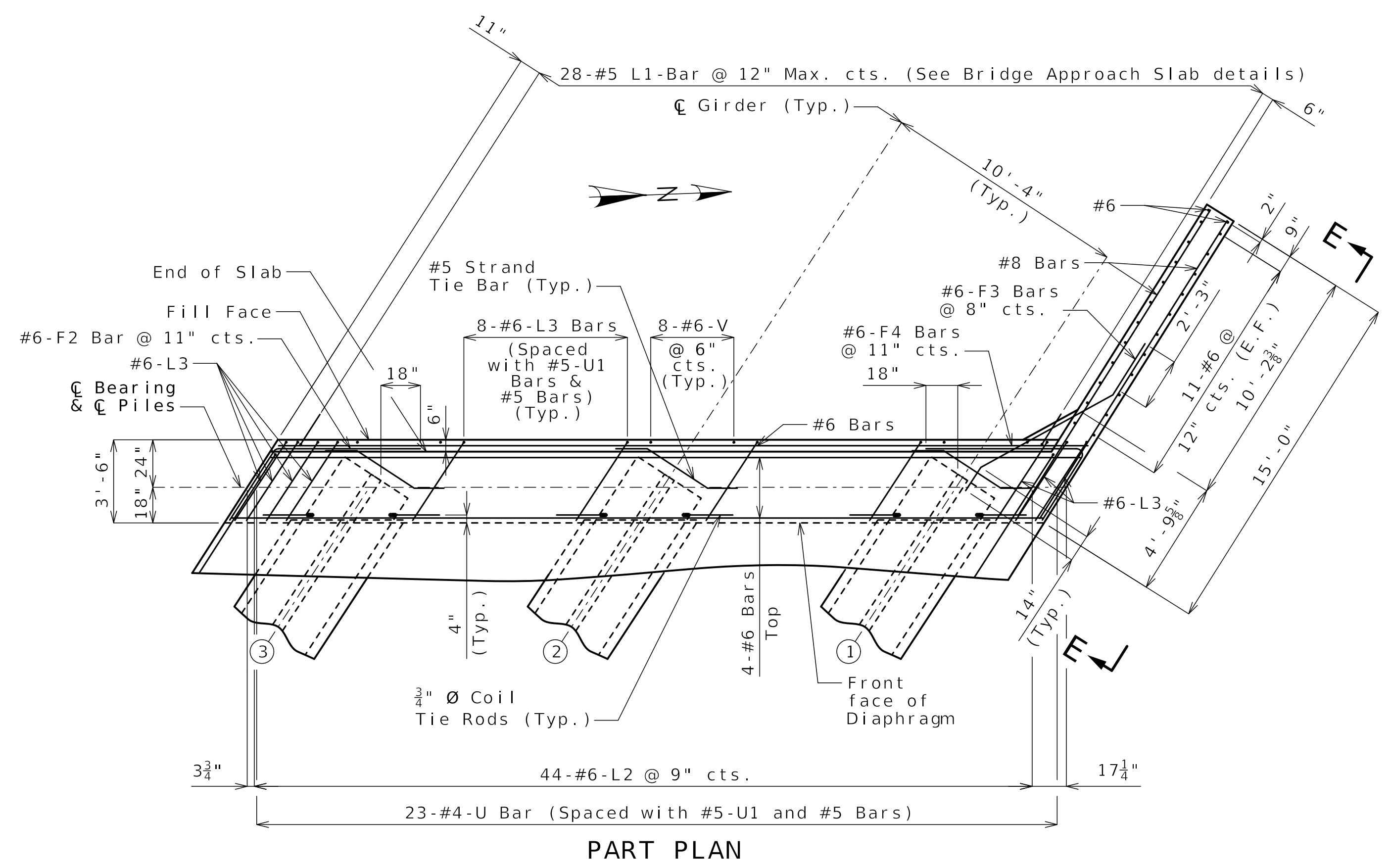
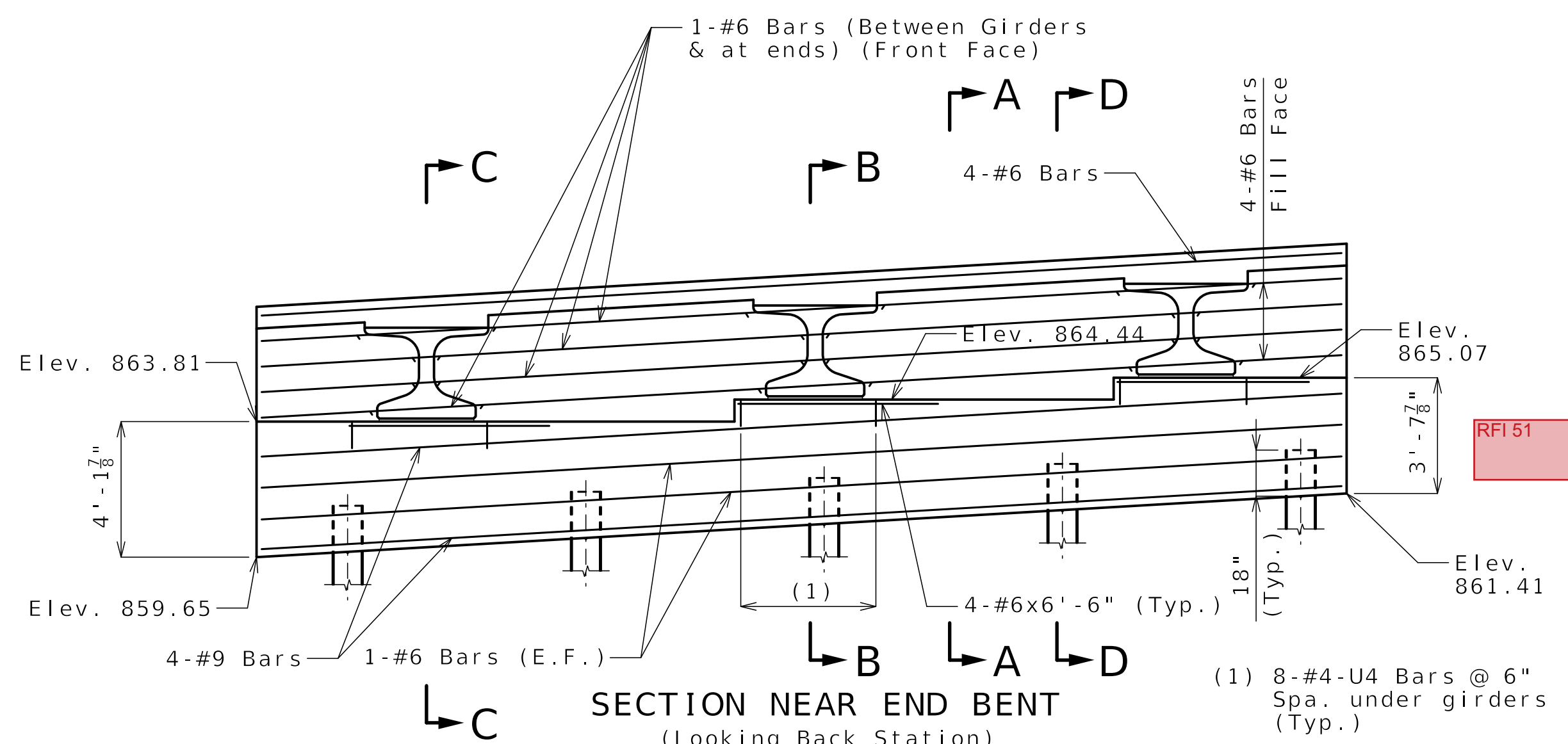
DATE	DESCRIPTION
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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



General Notes:
 Work this sheet with Sheets No. B06-05 and B06-07.
 For Sections A-A, B-B, C-C and D-D and Elevation E-E, see Sheet No. B06-07.
 For location of coil tie rods, see A9620 (I-70 WB On Ramp Over Benton) Superstructure Package.
 Strans 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.

(X) Denotes girder number

DETAILS OF END BENT NO. 1

Released For Construction
 Not to Scale
 Revision: 0.0
 Date: 06/09/2025
 Package: BRD-06-WBRamp-Benton-Subst

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Sheet No. B06-06 of B06-23

Detailed FEB 2025
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Gina D. Horner

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ROUTE STATE
1-70 MO

DISTRICT SHEET NO.
BR B06-06

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JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
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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



Gina D. Horner
06/03/25

DATE PREPARED
06/02/2025

ROUTE STATE
I-70 MO

DISTRICT SHEET NO.
BR B06-07

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9620

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MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

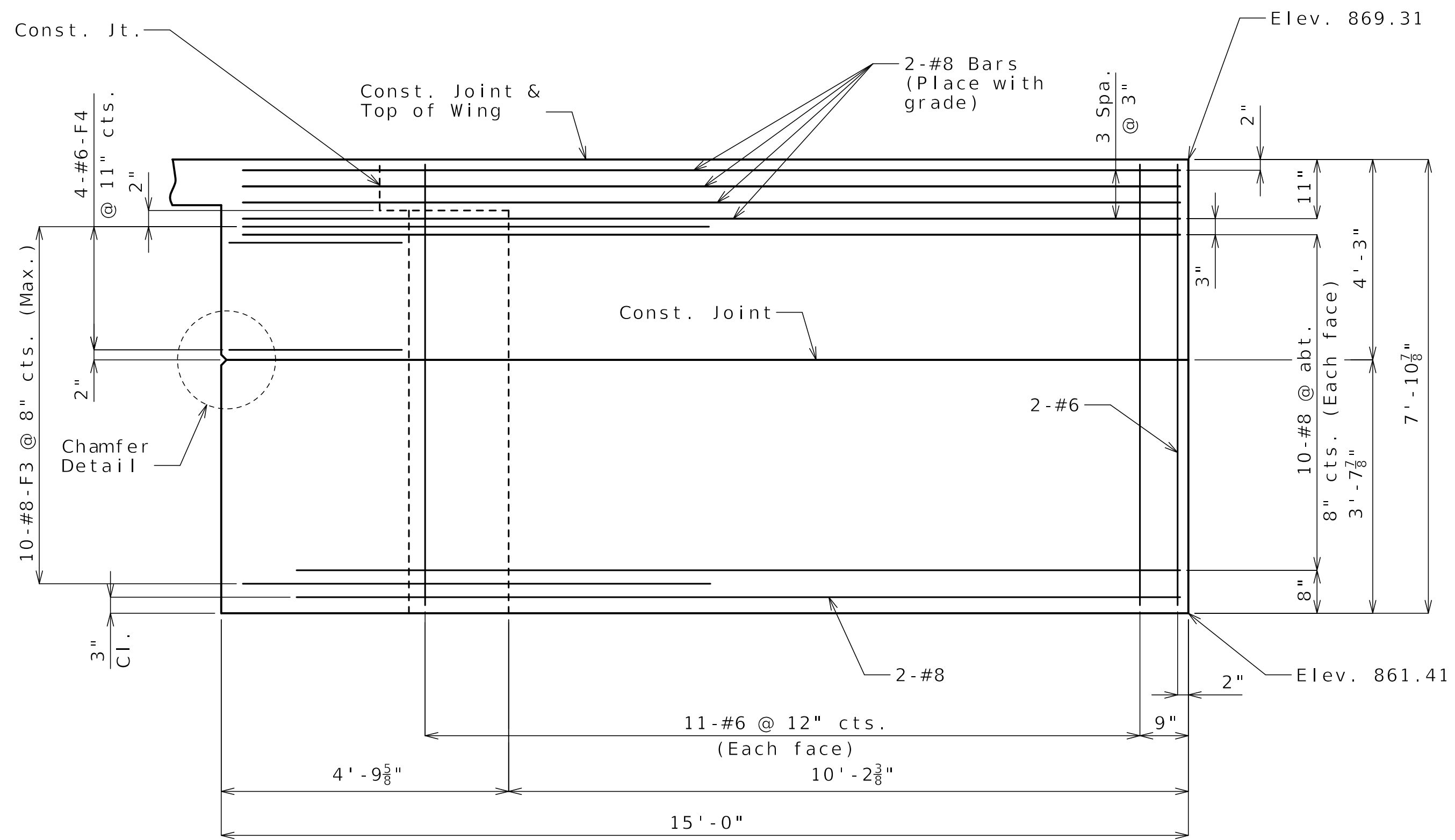
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105 WEST CAPITOL
JEFFERSON CITY, MO 65102

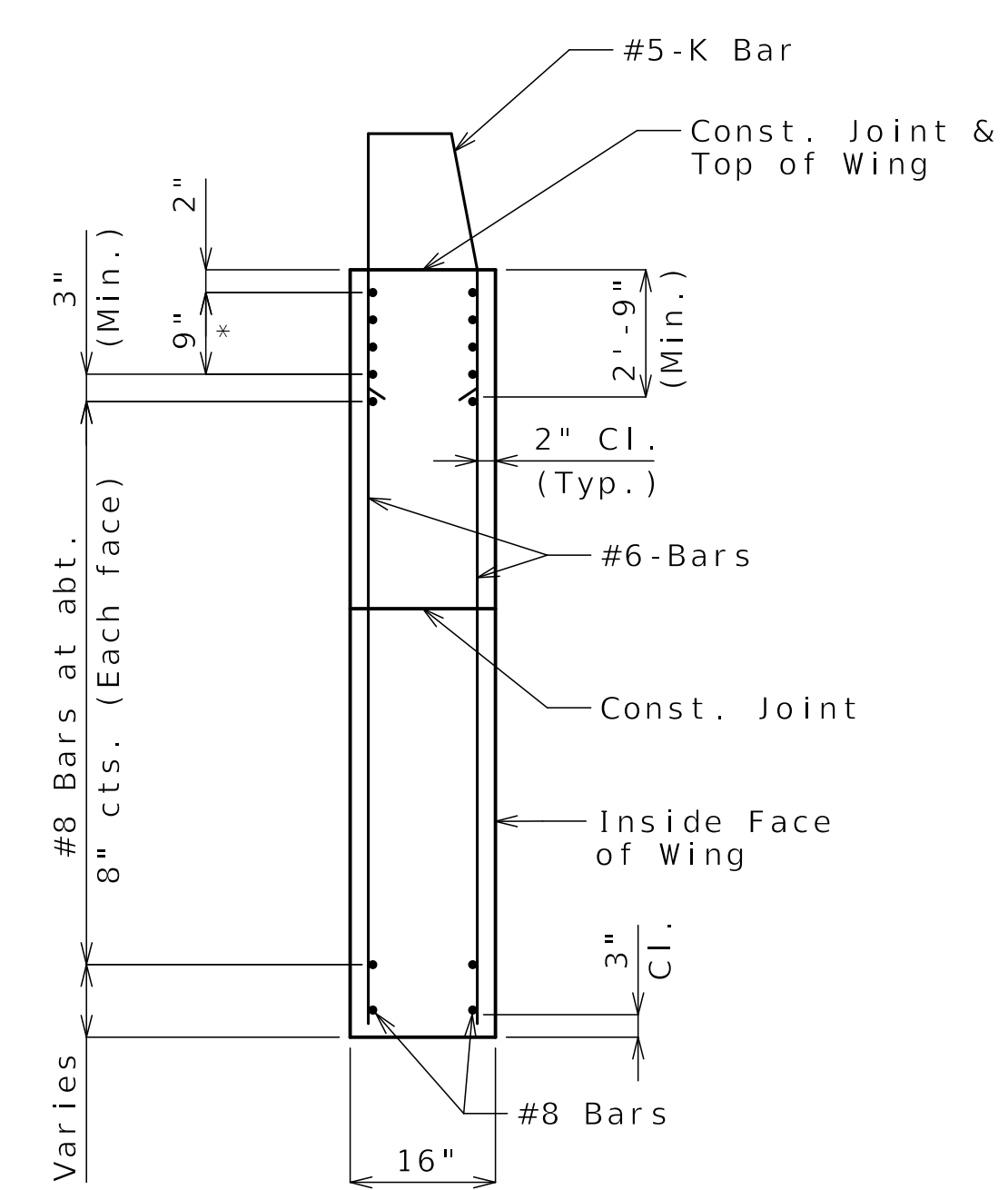
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715 KIRK DRIVE
KANSAS CITY, MO 64105-1310

CERTIFICATE OF AUTHORITY
NO. 001270

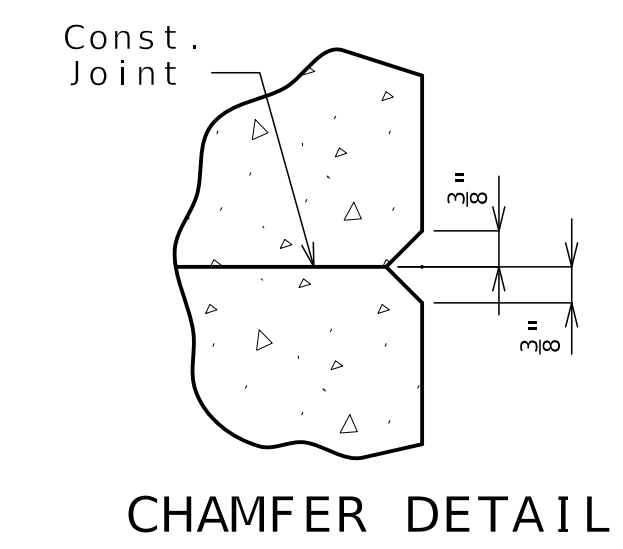


ELEVATION E-E

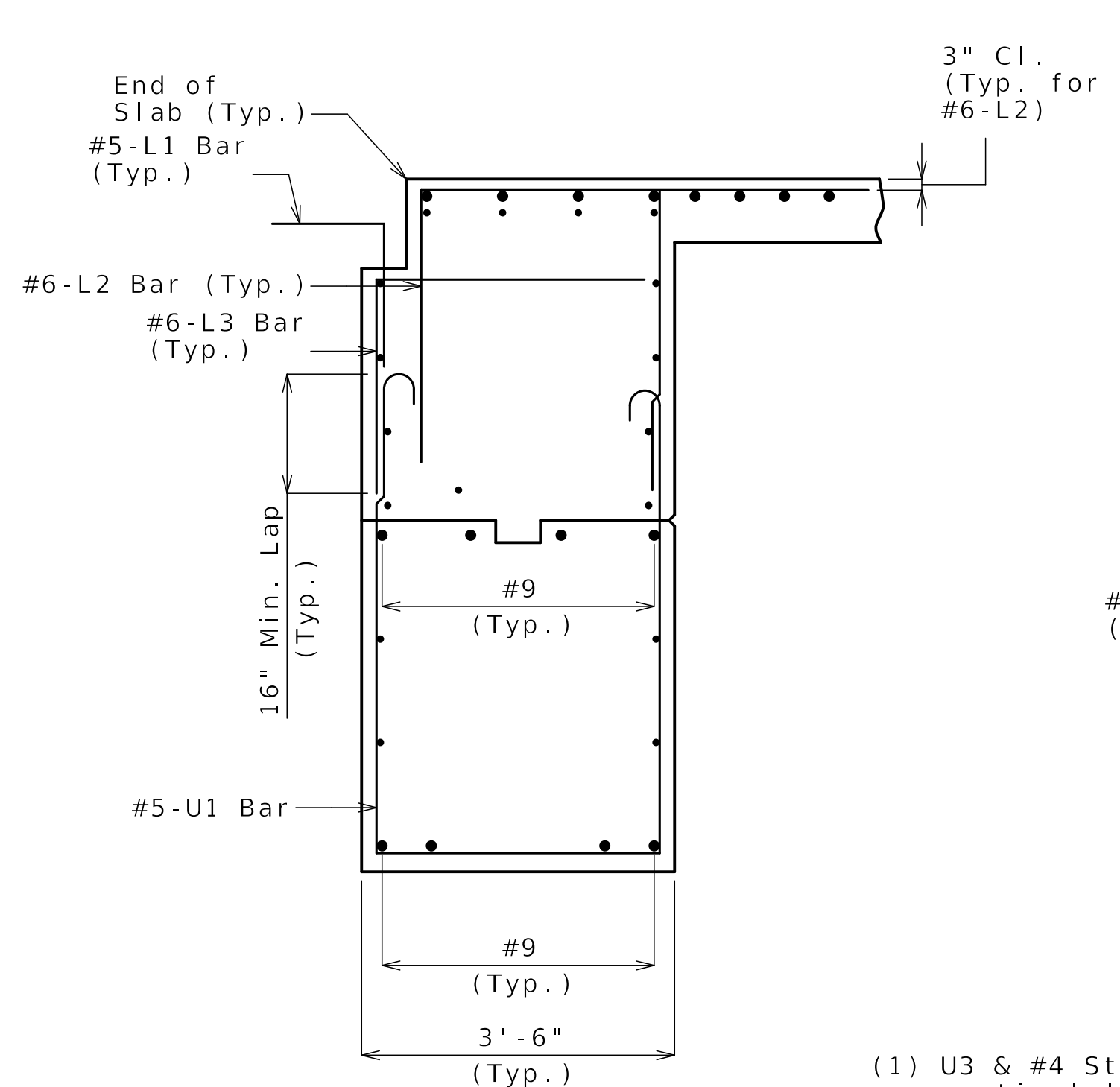


TYPICAL SECTION THRU WING

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

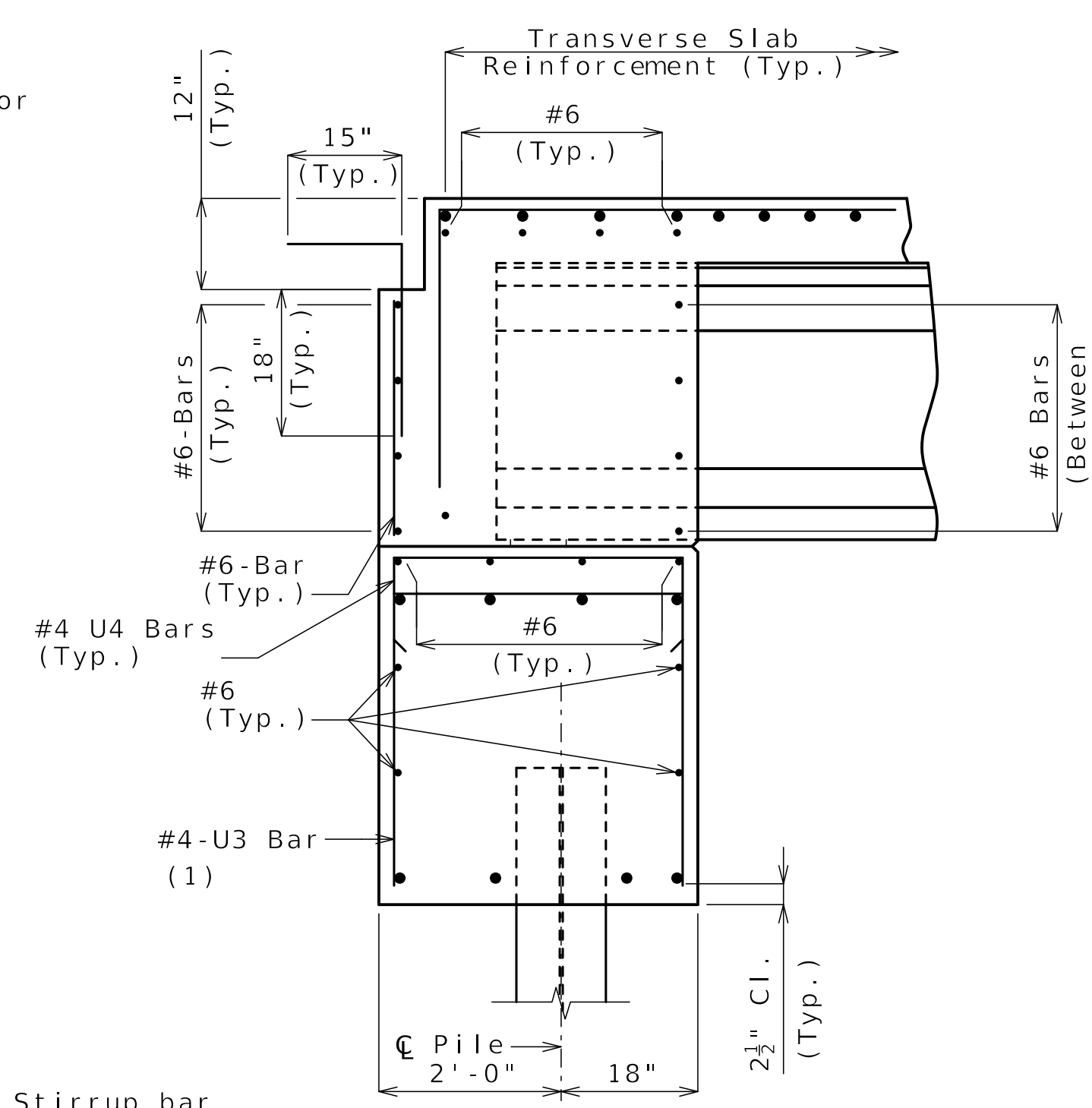


CHAMFER DETAIL

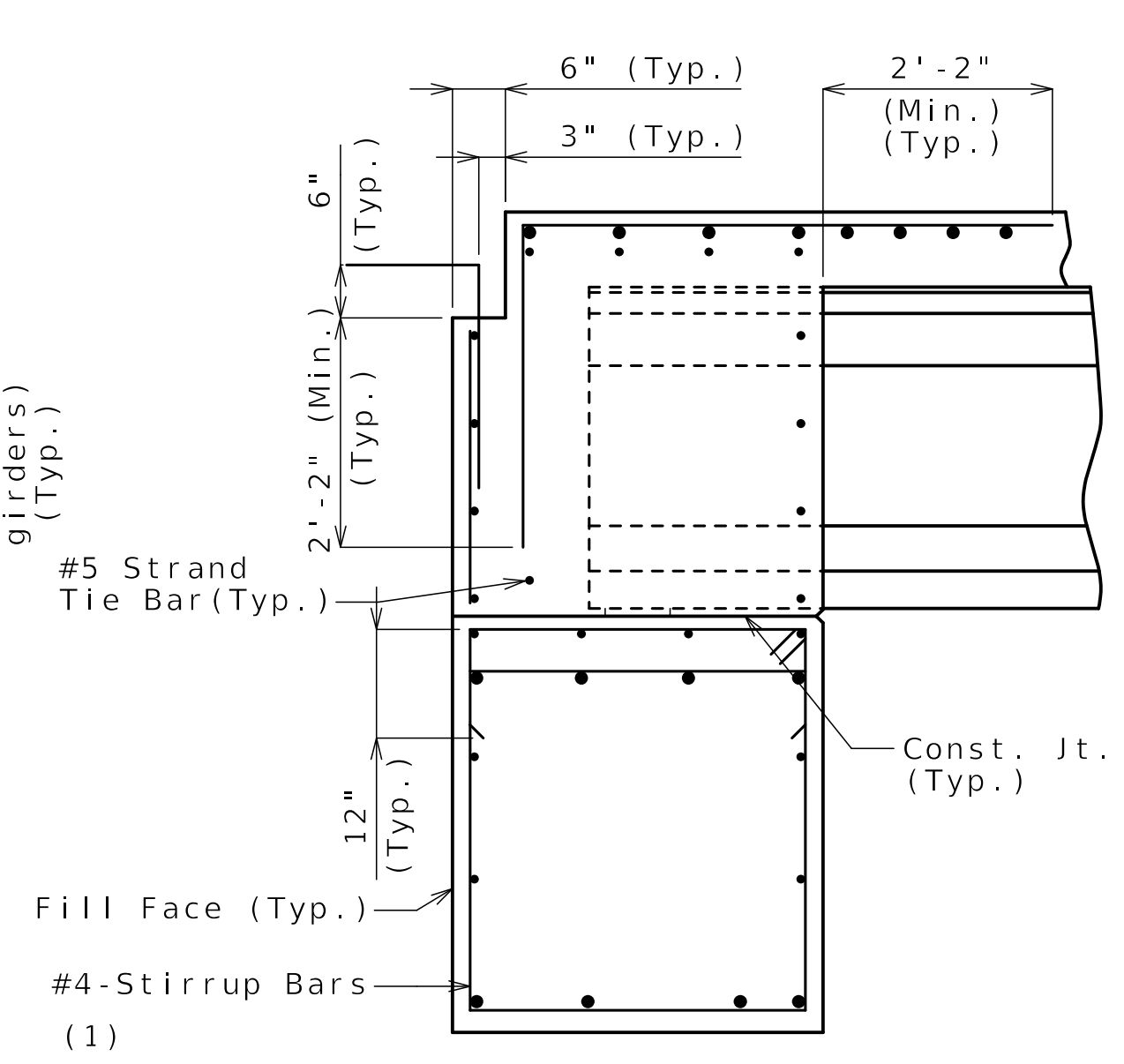


SECTION A-A

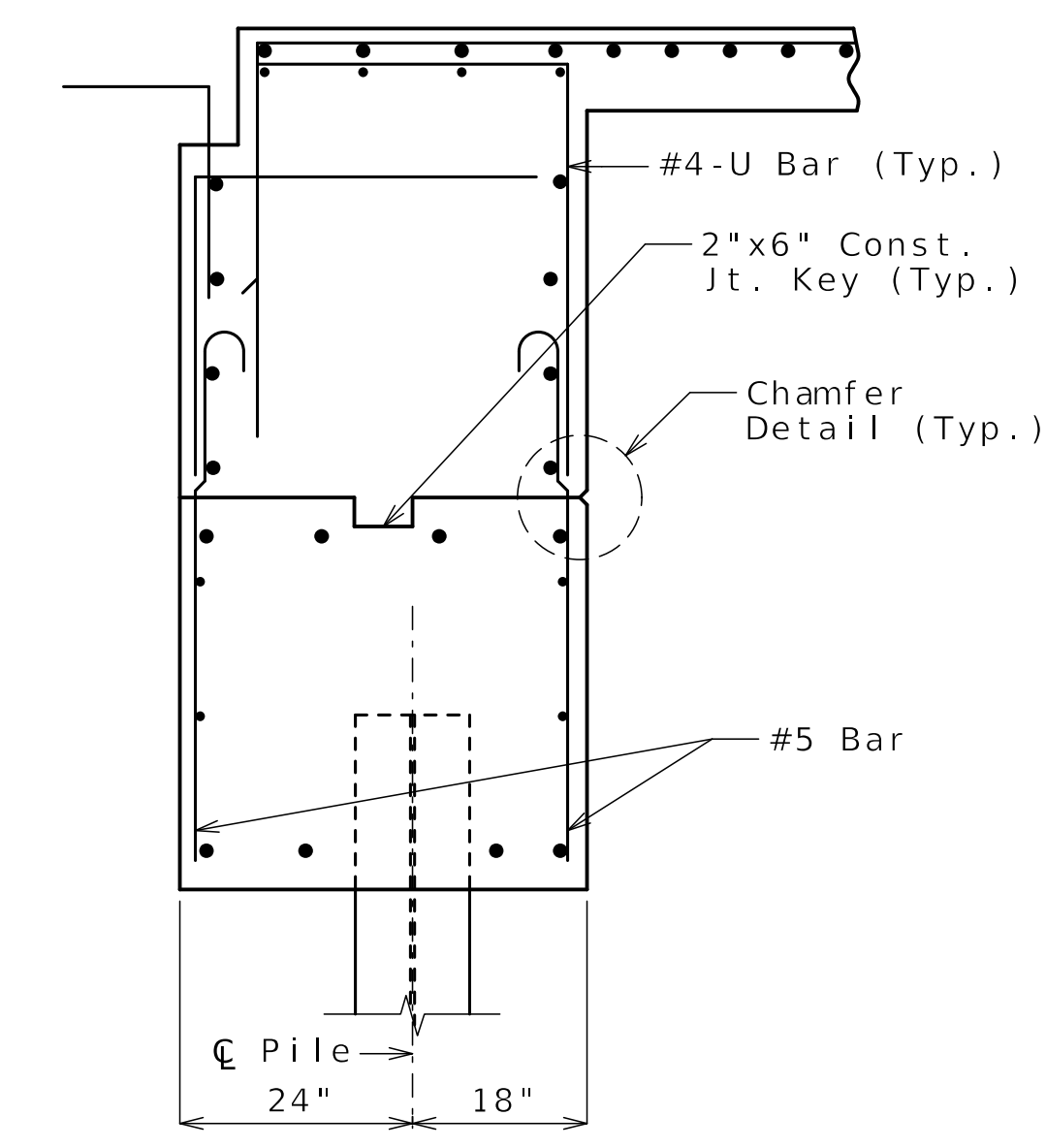
(1) U3 & #4 Stirrup bar vertical leg = 3'-1"



SECTION B-B



SECTION C-C



SECTION D-D

General Notes:
Work this sheet with Sheets No. B06-05 and B06-06.
For location of Sections A-A, B-B, C-C, D-D and Elevation E-E, see Sheet B06-06.
For reinforcement of the Type D Barrier, see A9620 (I-70 WB On Ramp Over Benton) Superstructure Package.

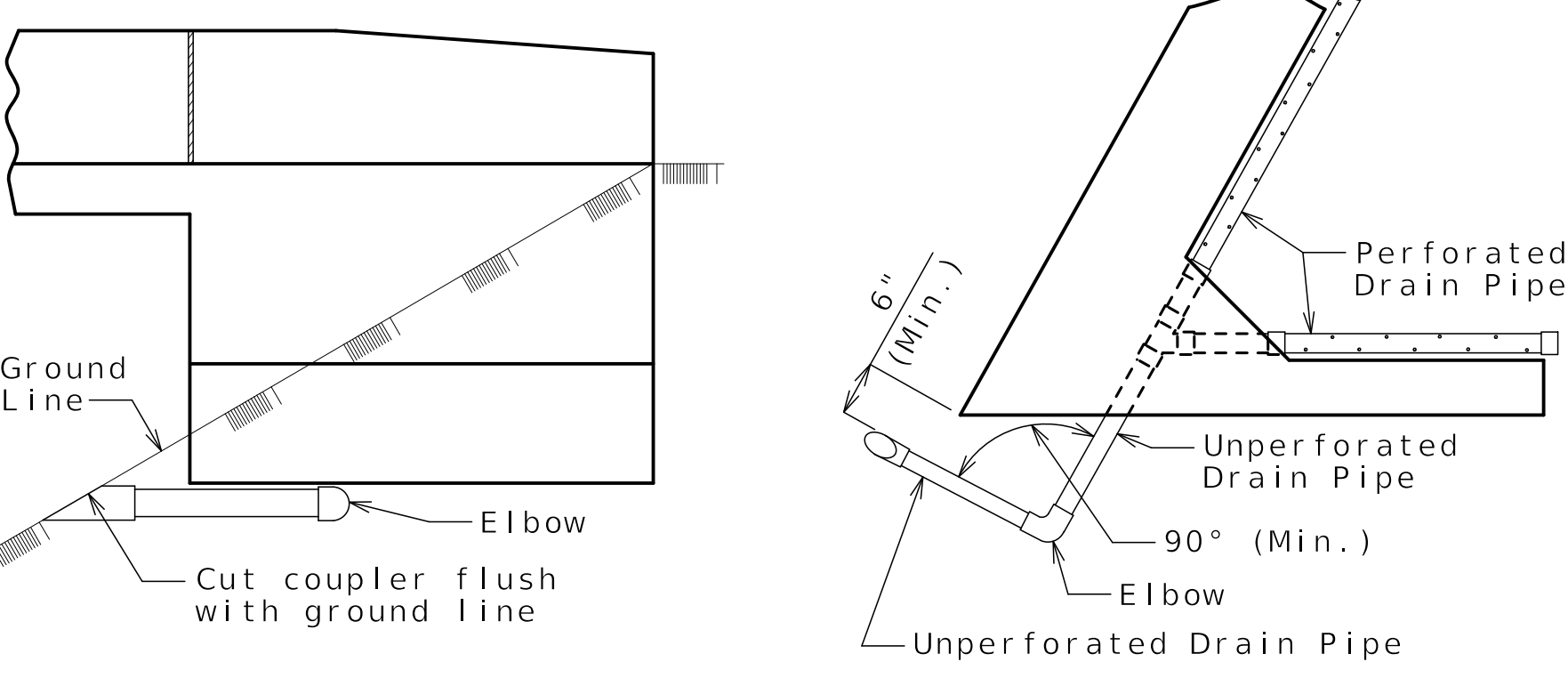
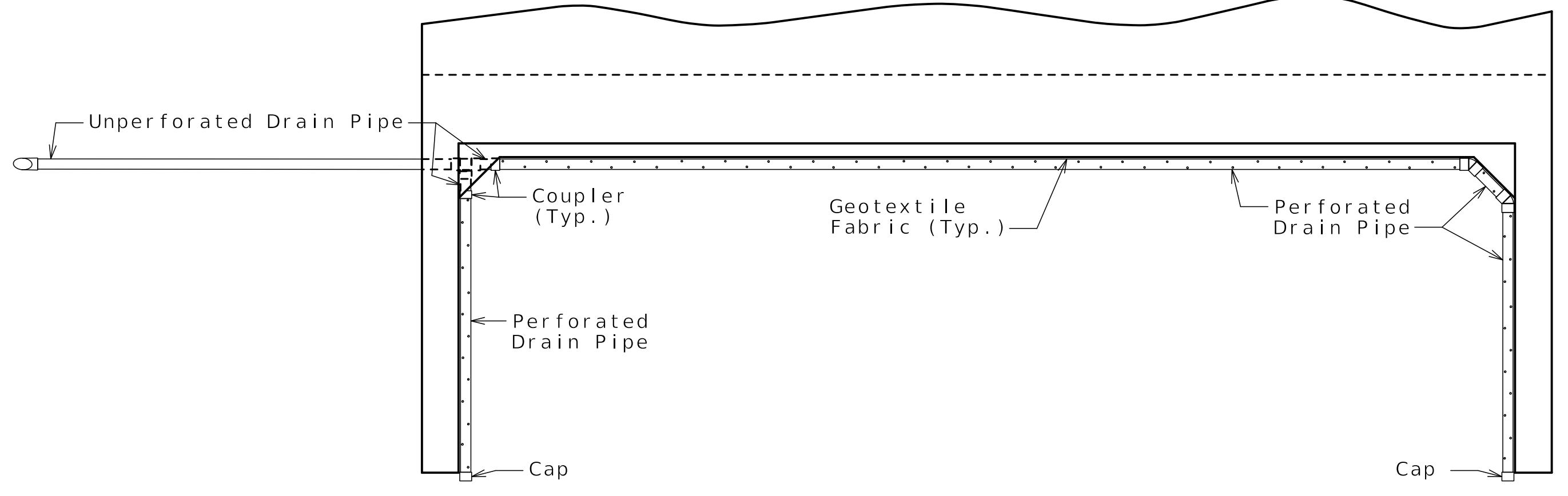
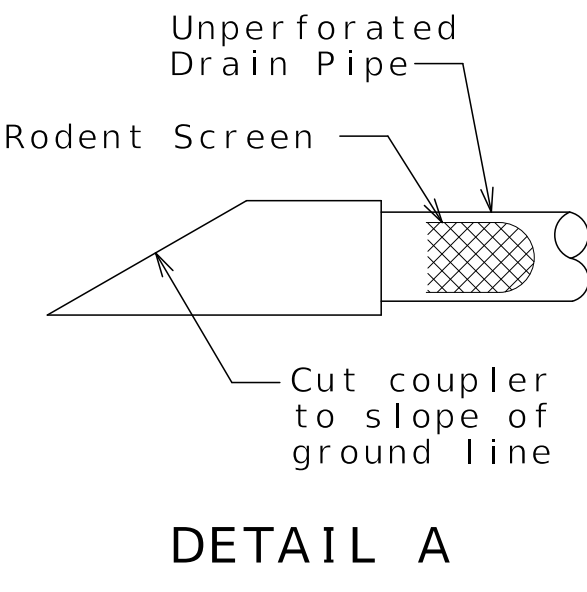
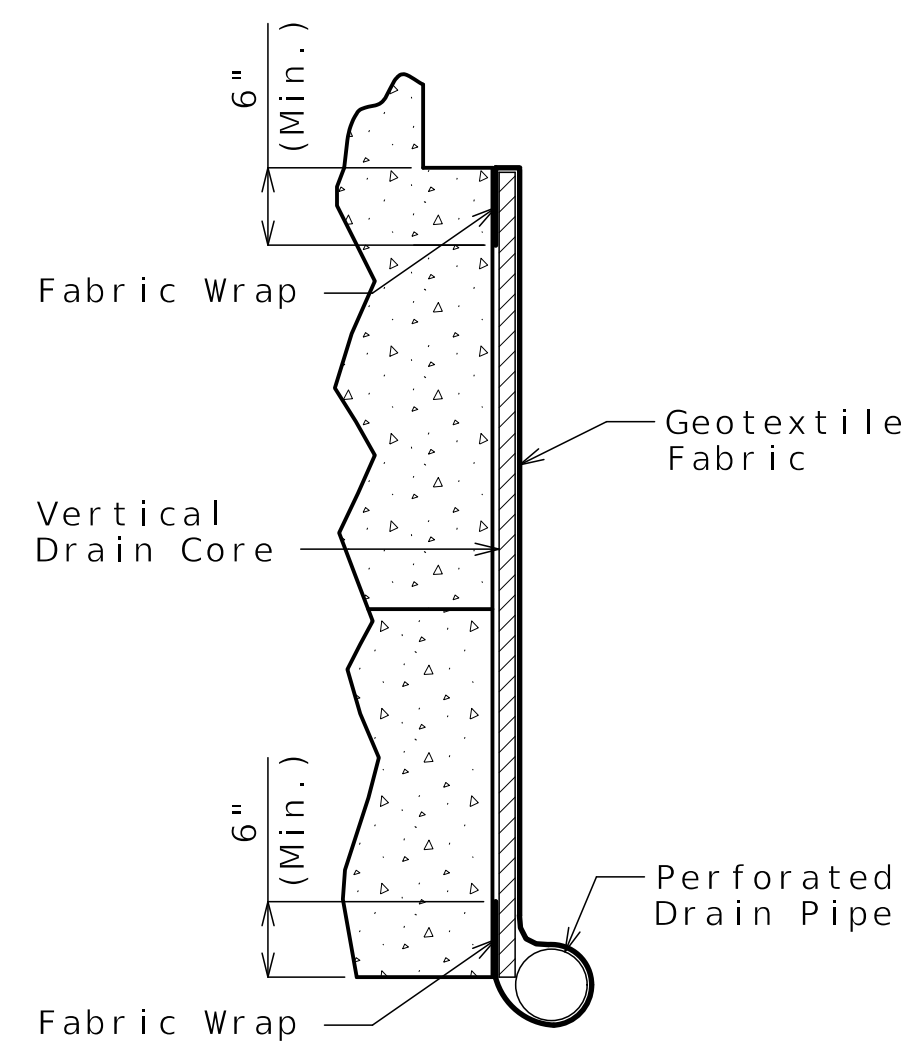
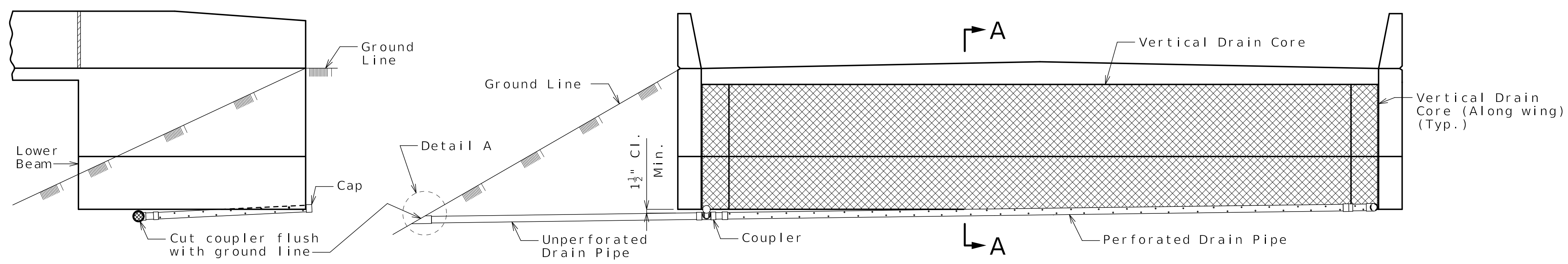
DETAILS OF END BENT NO. 1

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Sheet No. B06-07 of B06-23



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

General Notes:

Details shown are illustrative and not necessarily representative of one or both end bents on this bridge. Construction phasing and bridge geometry will require utilizing a combination of the details shown to construct a vertical drain system that maintains positive flow out and away from the end bents.

Square 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
06/03/25

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ROUTE I-70	STATE MO
DISTRICT BR	SHEET NO. B06-08
COUNTY JACKSON	
JOB NO. J411486D	
CONTRACT ID. 240807-C01	
PROJECT NO.	

BRIDGE NO.
A9620

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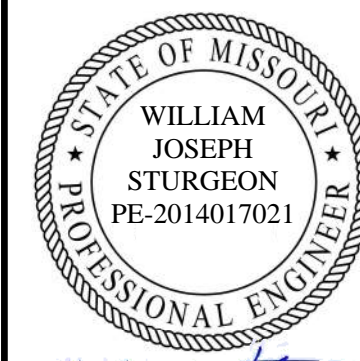
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105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

CLARKSON RADMACHER JOINT VENTURE

715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY
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ROUTE STATE
1-70 MO

DISTRICT SHEET NO.
BR B06-09

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9620

DESCRIPTION

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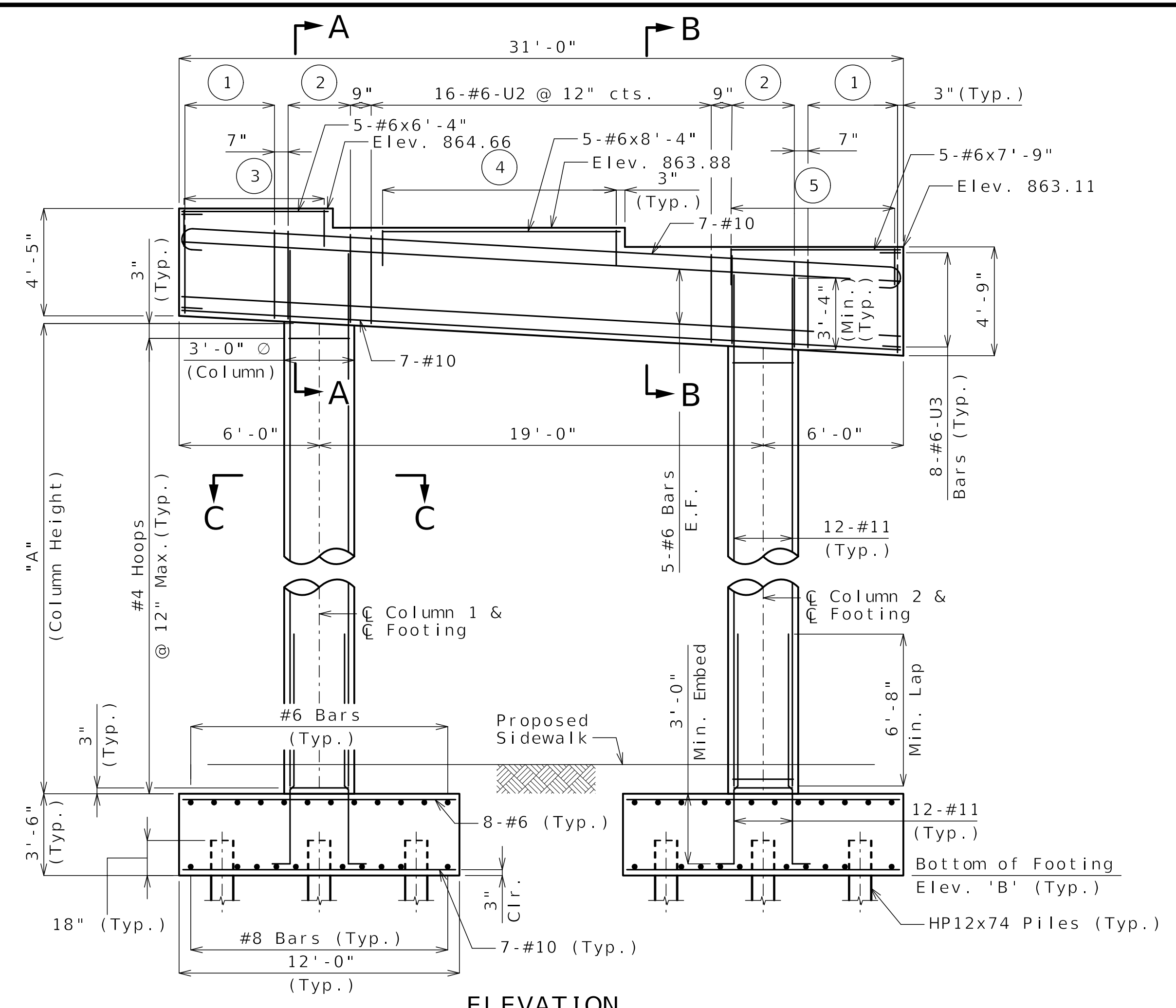
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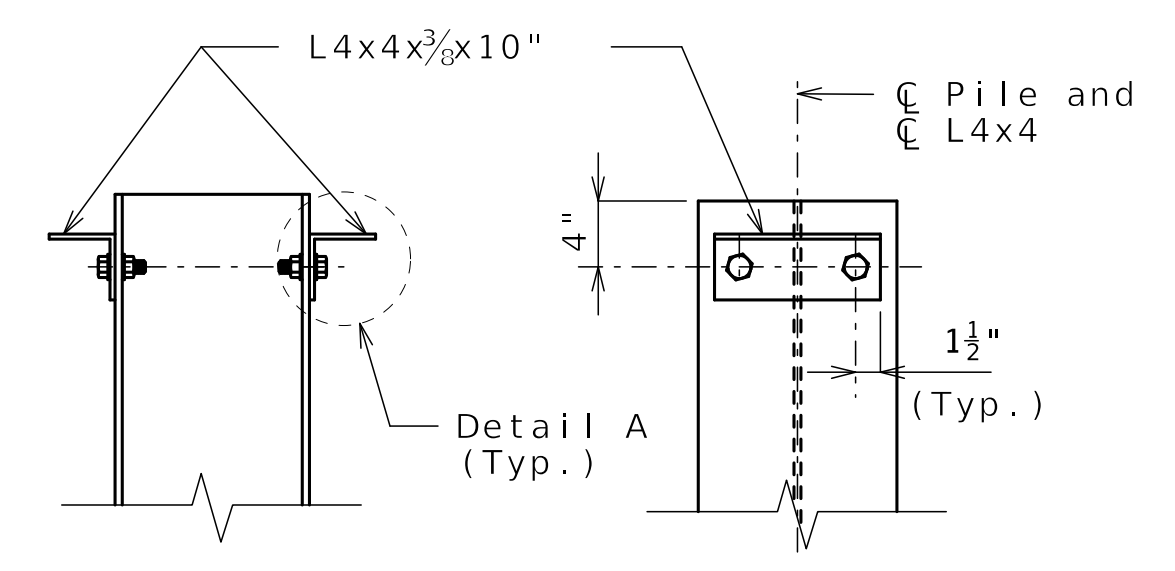
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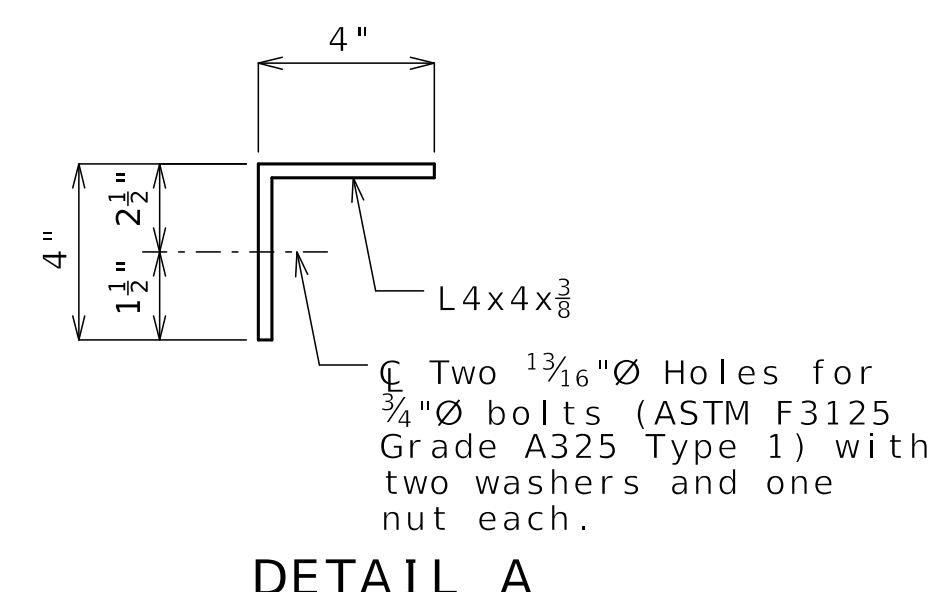
ELEVATION

Column Number	"A"	"B"
1	14'-10 1/2"	841.50
2	14'-8 3/8"	840.50

- ① 8-#6-U2 @ Eq. Spa. = 3'-11"
- ② 3-#6-U1 @ 15" cts.
- ③ 13-#4-U4 @ 6" Spa.
- ④ 17-#4-U4 @ 6" Spa.
- ⑤ 16-#4-U4 @ 6" Spa.

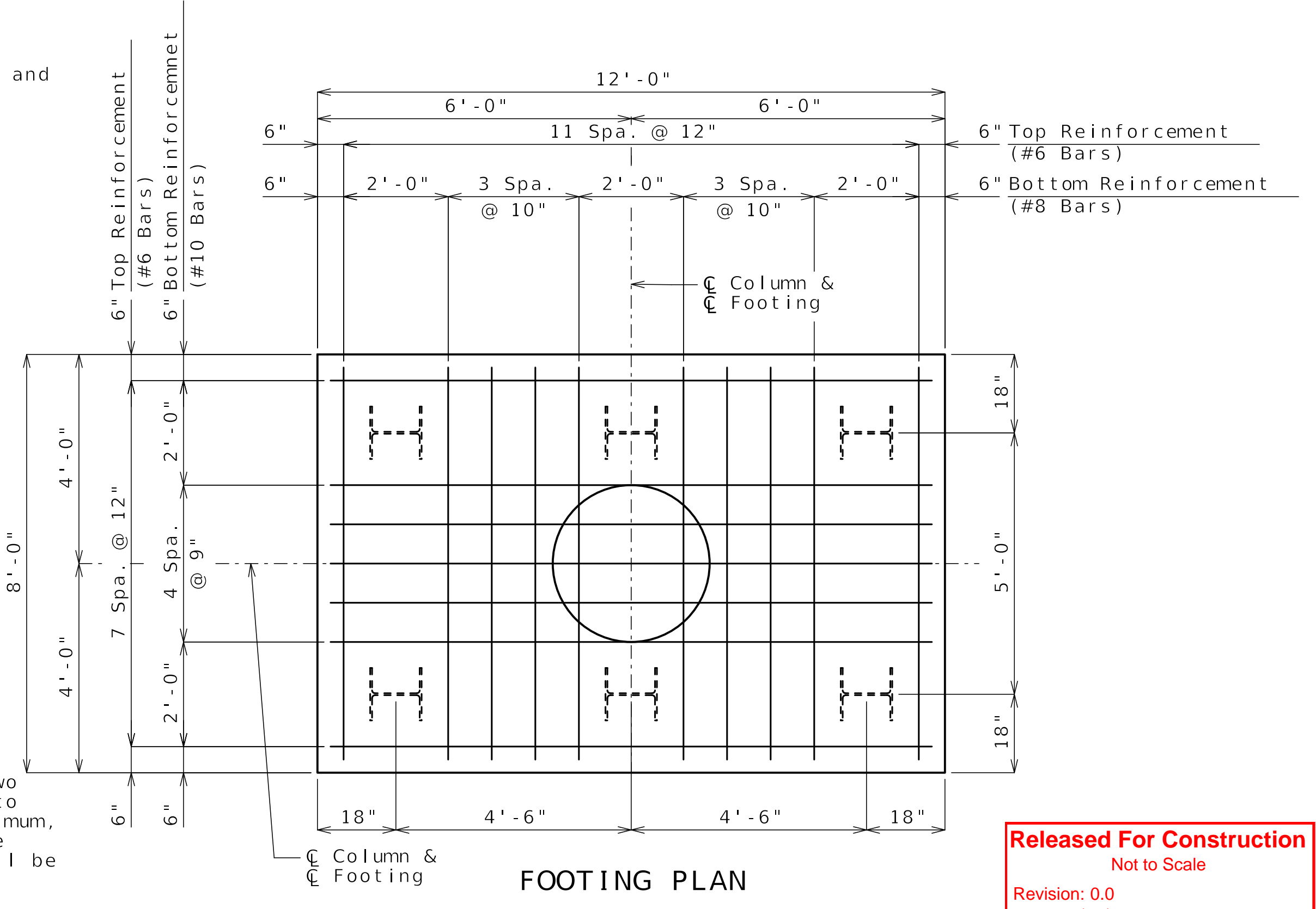


DETAILS OF HP PILE ANCHORS

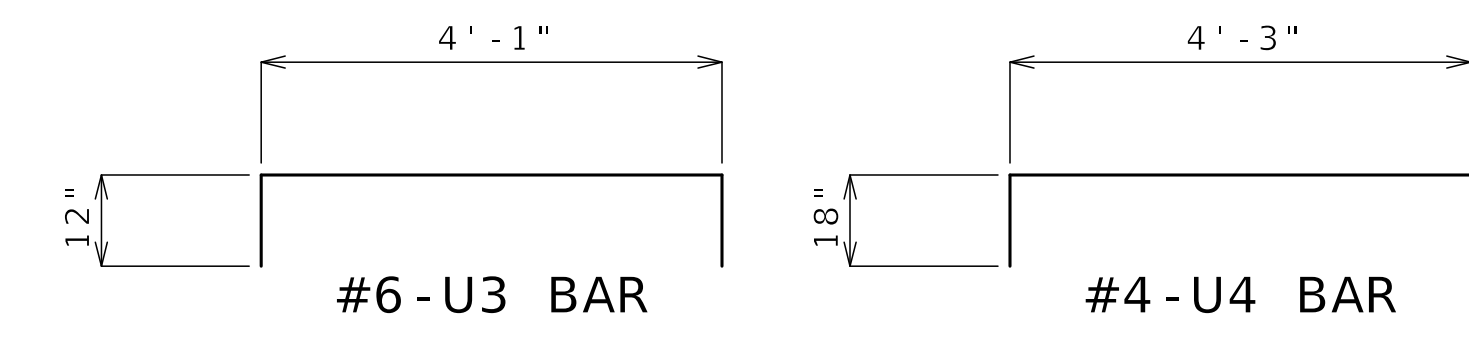


DETAIL A

Angles shall be coated with a minimum of two coats of non-aluminum epoxy mastic primer to provide a dry film thickness of 4 mils minimum, 8 mils maximum, or galvanized in accordance with Sec 1081. Bolts, washers and nuts shall be galvanized in accordance with AASHTO M 232 (ASTM A153), Class C.



FOOTING PLAN



Notes:
 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. B06-10.
 For location of footings, see Sheet B06-04.
 For Sections A-A thru C-C, see Sheet B06-10.
 For Steel Pile Splice detail, see Sheet No. B06-05.

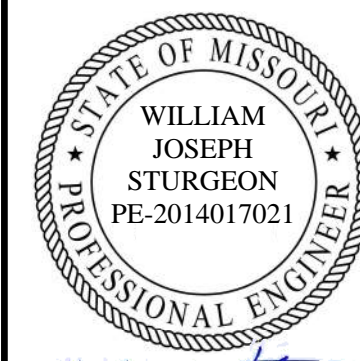
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DETAILS OF INTERMEDIATE BENT NO. 2



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





6/3/2025

DATE PREPARED
06/02/2025

ROUTE STATE
1-70 MO

DISTRICT SHEET NO.
BR B06-10

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CONTRACT ID.
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BRIDGE NO.
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MISSOURI HIGHWAYS AND TRANSPORTATION
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105 WEST CAPITOL
JEFFERSON CITY, MO 65102

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

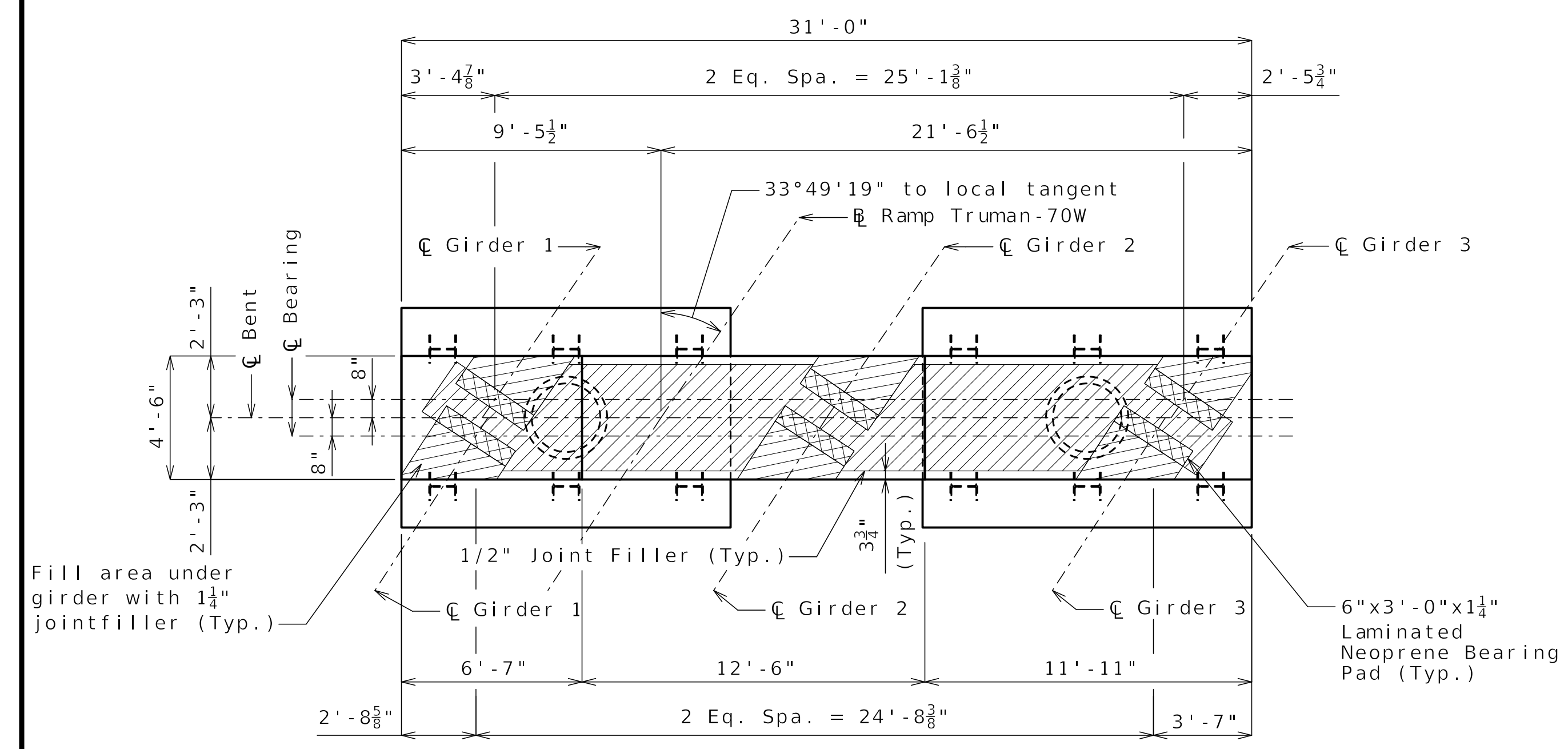
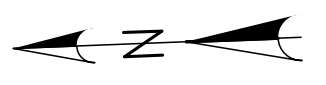
MoDOT

CLARKSON
RADMACHER
JOINT VENTURE

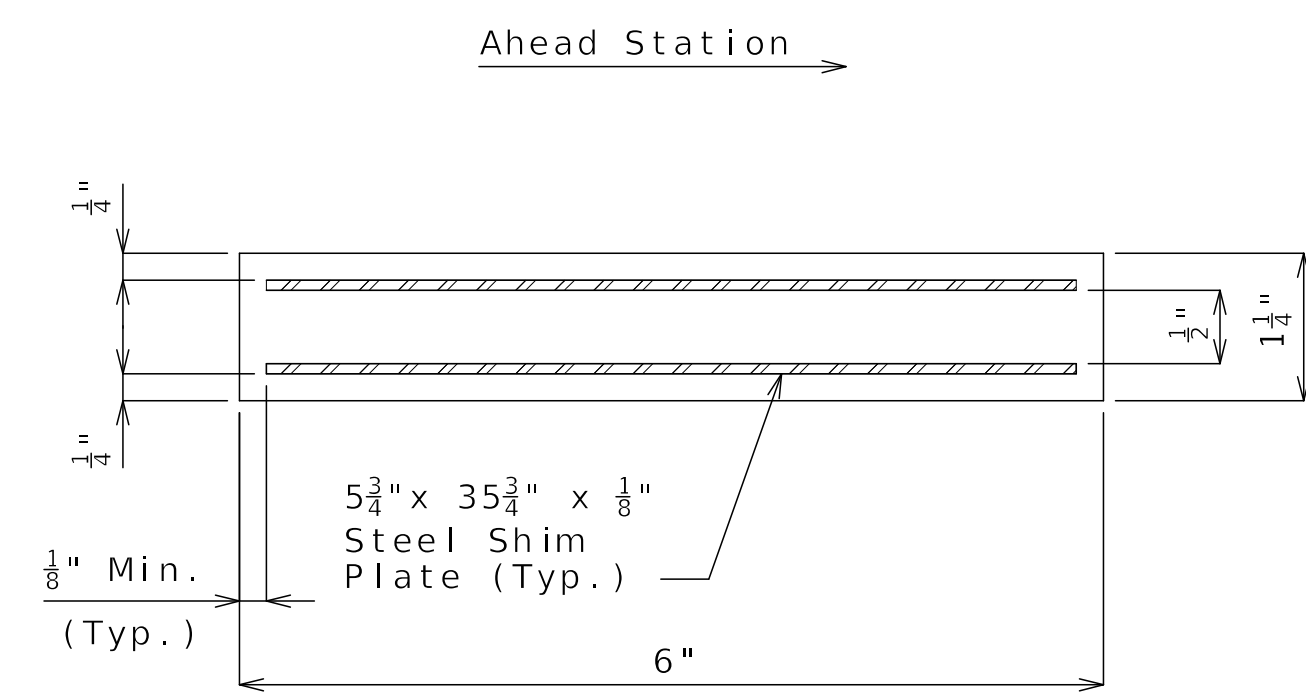
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310

CERTIFICATE OF AUTHORITY
NO. 001270

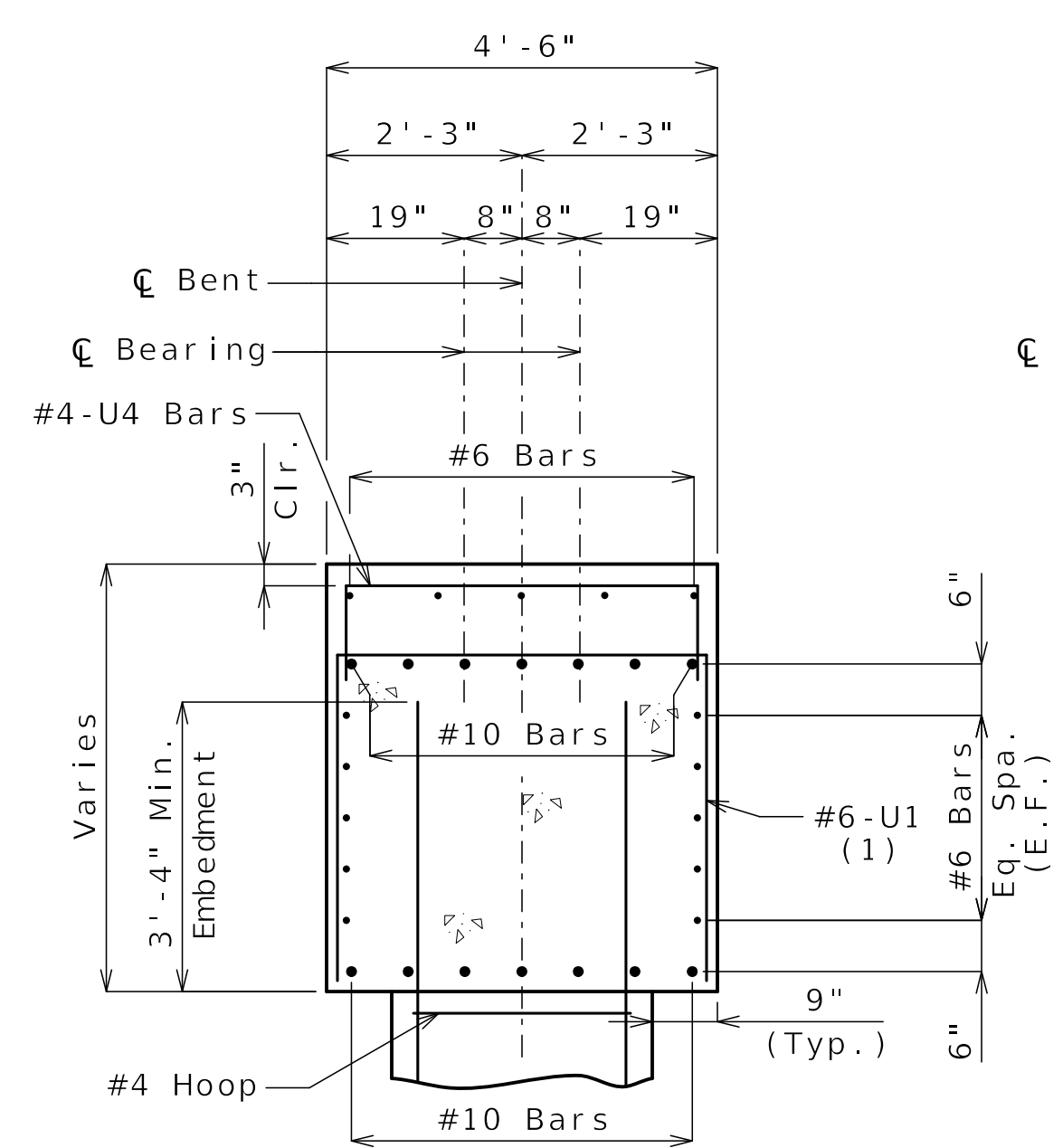
HNTB



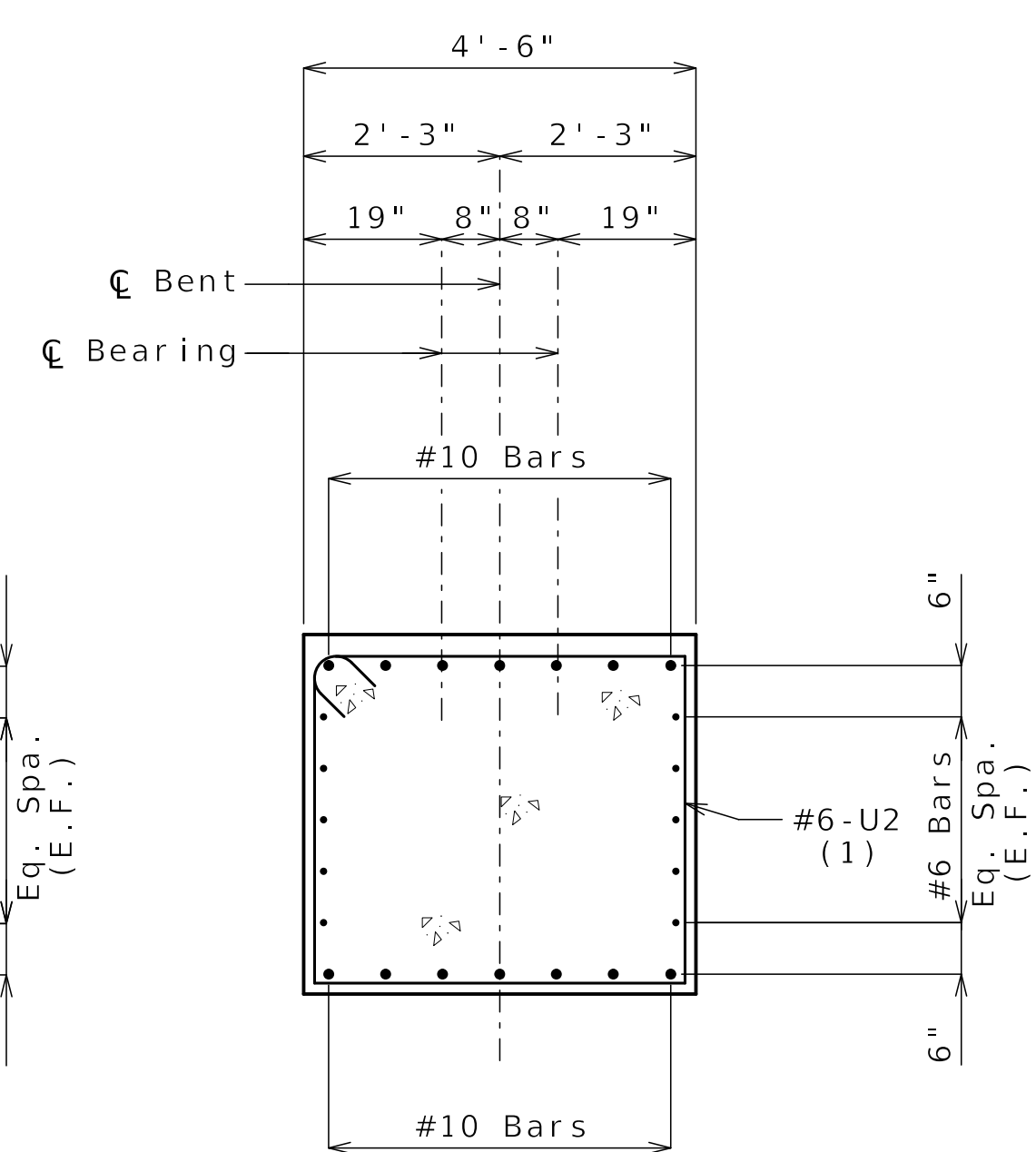
PLAN OF CAPBEAM



LAMINATED NEOPRENE BEARING PAD
(6 Required)

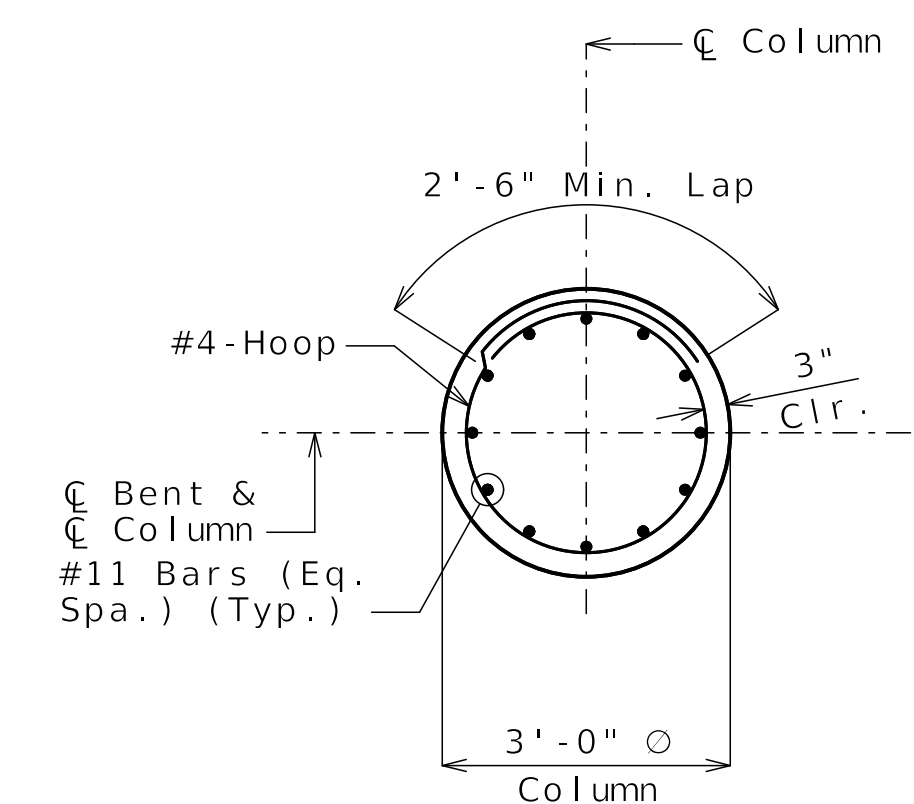


SECTION A-A



SECTION B-B

(1) U1 and U2 vertical leg = 3'-7 1/2"



SECTION C-C

Notes:
Work this sheet with Sheet No. B06-09.
For angle of girders relative to Bent, see A9620 (I-70 WB On Ramp Over Benton) Superstructure Package.
For additional joint filler layout details, see concrete diaphragm details sheet in A9620 (I-70 WB On Ramp Over Benton) Superstructure Package.
For steps 2 inches or more, use 2 1/4" x 1/2" inch joint filler up vertical face.

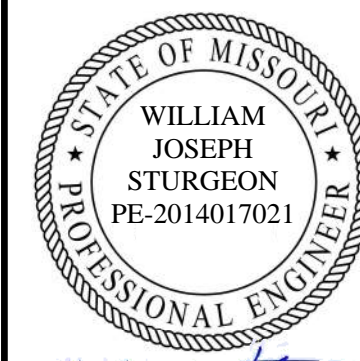
DETAILS OF INTERMEDIATE BENT NO. 2

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/09/2025
Package: BRD-06-WB-Ramp-Benton-Subst

Detailed FEB 2025
Checked MAR 2025

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

Sheet No. B06-10 of B06-23



6/3/2025

DATE PREPARED
06/02/2025

ROUTE 1-70 STATE MO

DISTRICT BR SHEET NO. B06-11

COUNTY JACKSON

JOB NO. J411486D

CONTRACT ID. 240807-C01

PROJECT NO.

BRIDGE NO. A9620

DESCRIPTION

REV 0 - RFC SUBMITTAL

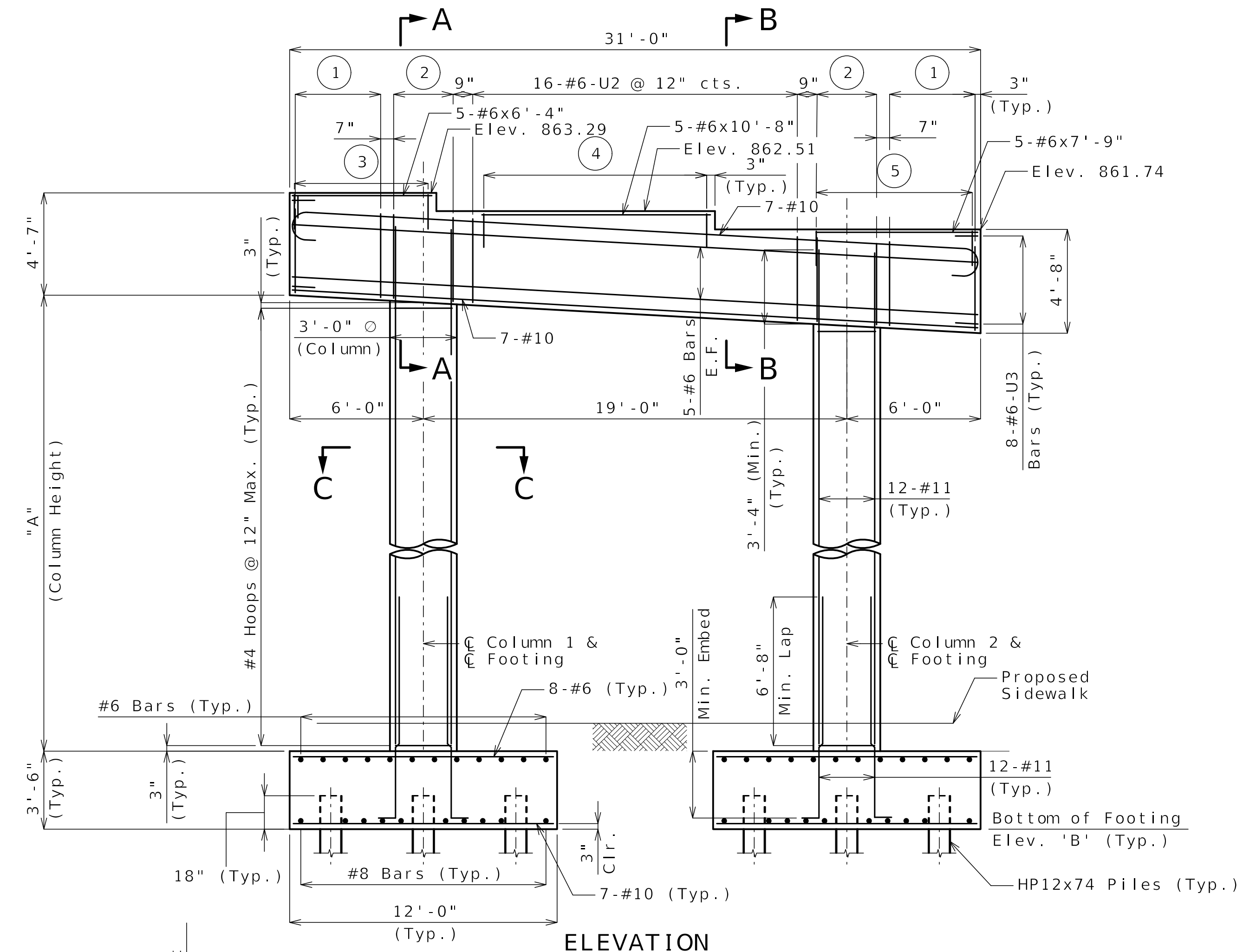
DATE 06/02/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

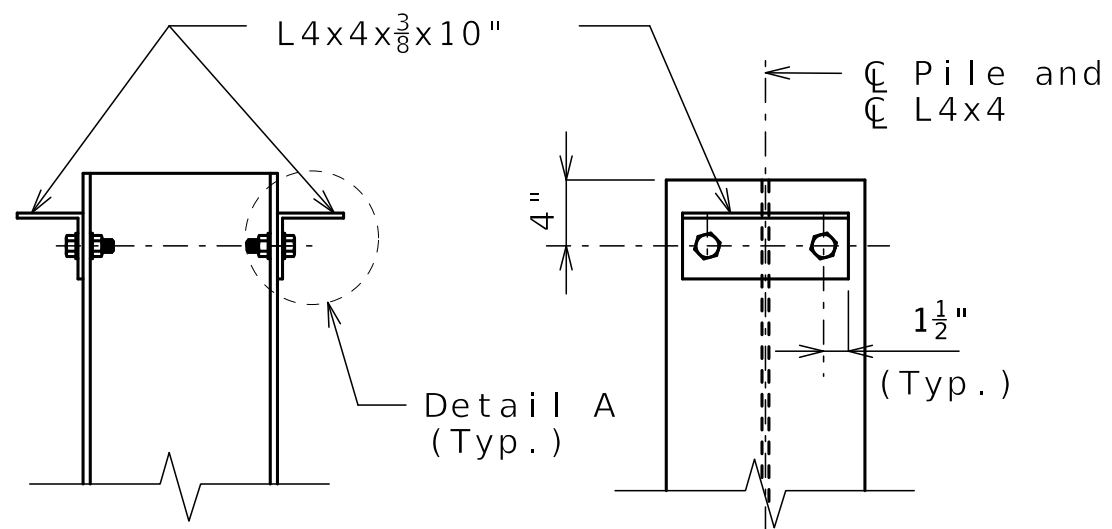
105 WEST CAPITOL JEFFERSON CITY, MO 65102

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

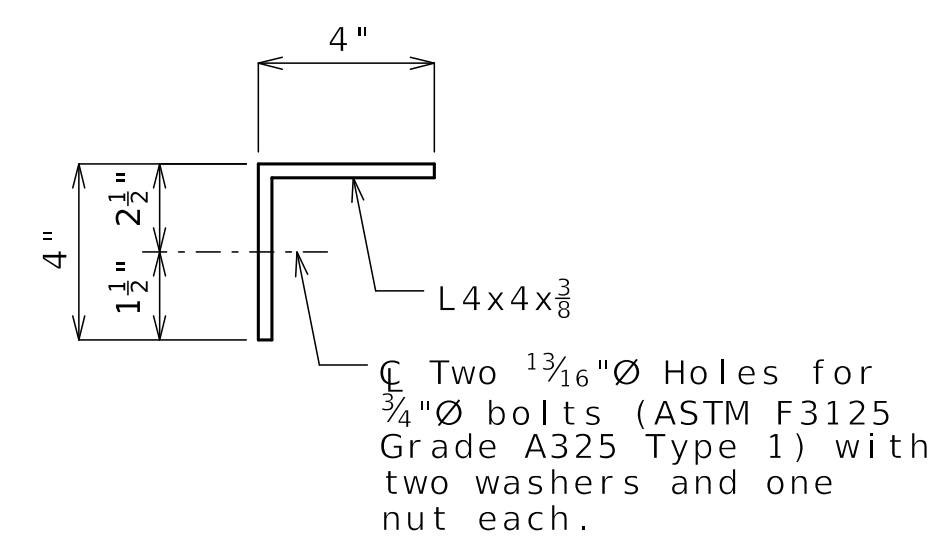


Column Number	"A"	"B"
1	15'-2 1/4"	839.70
2	15'-1"	838.80

- ① 8-#6-U2 @ Eq. Spa. = 3'-11"
- ② 3-#6-U1 @ 15" cts.
- ③ 13-#4-U4 @ 6" Spa.
- ④ 22-#4-U4 @ 6" Spa.
- ⑤ 16-#4-U4 @ 6" Spa.

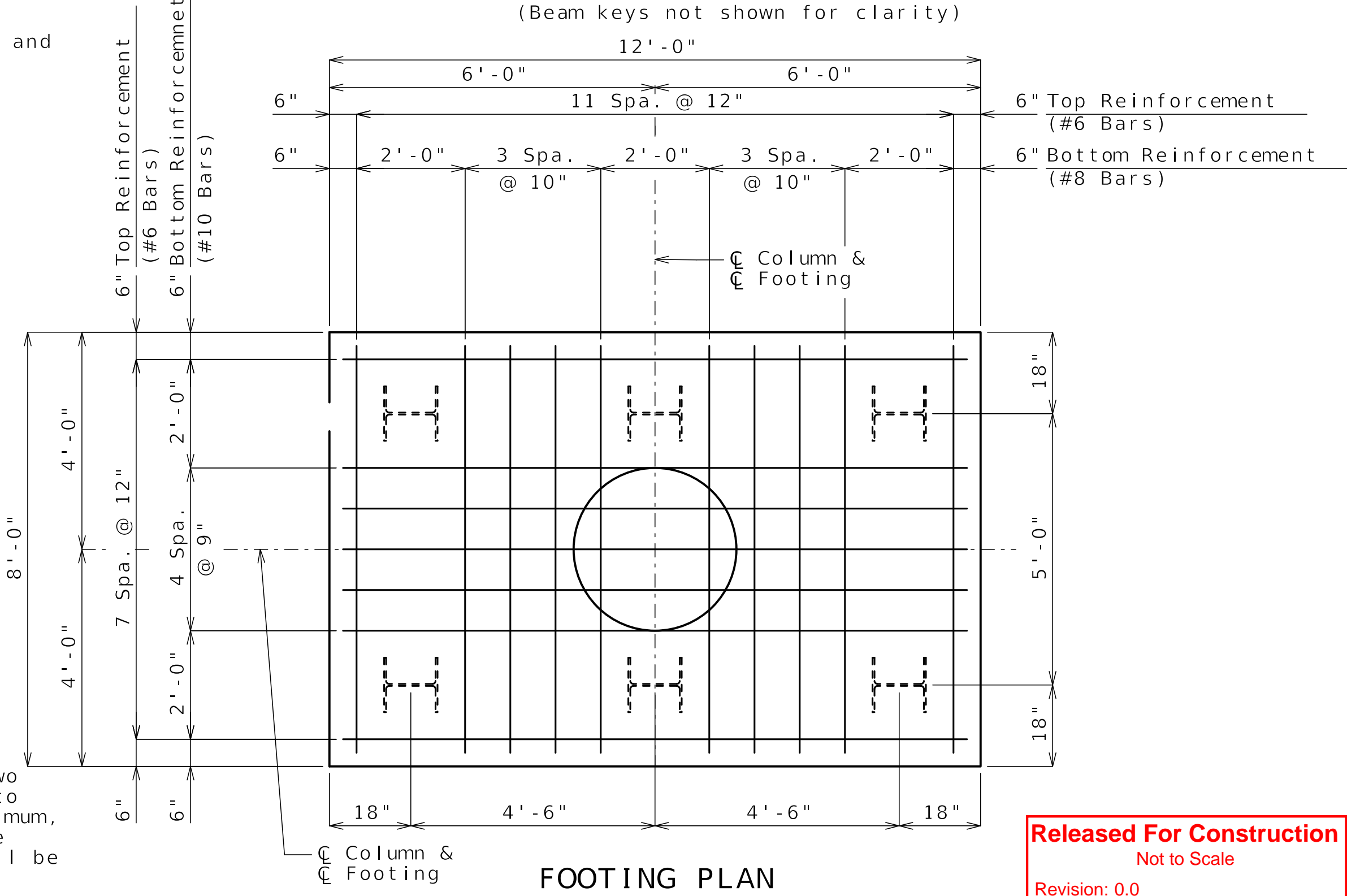


DETAILS OF HP PILE ANCHORS

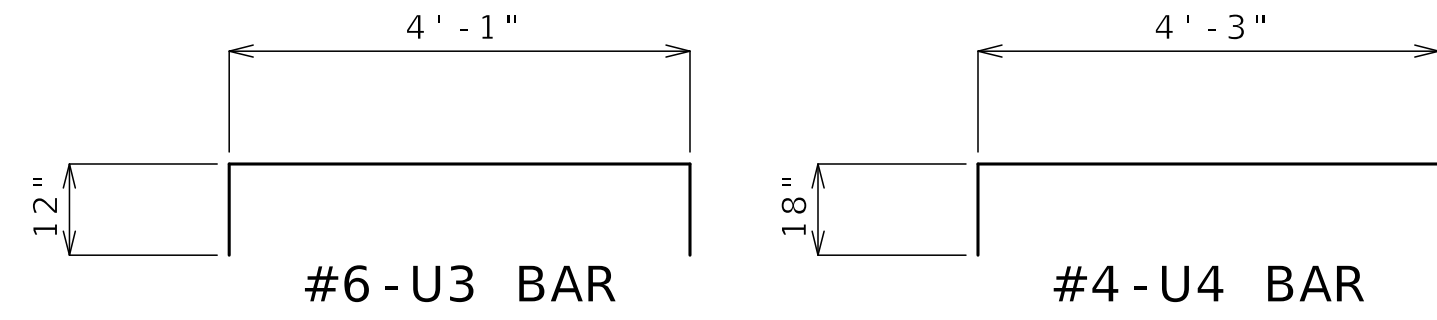


DETAIL A

Angles shall be coated with a minimum of two coats of non-aluminum epoxy mastic primer to provide a dry film thickness of 4 mils minimum, 8 mils maximum, or galvanized in accordance with Sec 1081. Bolts, washers and nuts shall be galvanized in accordance with AASHTO M 232 (ASTM A153), Class C.



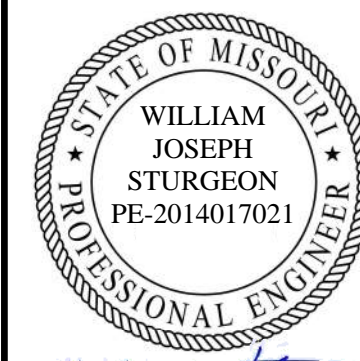
FOOTING PLAN



Notes:
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. B06-12.
For location of footings, see Sheet B06-04.
For Sections A-A thru C-C, see Sheet B06-12.
For Steel Pile Splice detail, see Sheet No. B06-05.

DETAILS OF INTERMEDIATE BENT NO. 3

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/09/2025
Package: BRD-06-WBRamp-Benton-Subst



6/3/2025

DATE PREPARED
06/02/2025

ROUTE STATE
I-70 MO

DISTRICT SHEET NO.
BR B06-12

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9620

DESCRIPTION

REV 0 - RFC SUBMITTAL

DATE

06/02/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

105 WEST CAPITOL JEFFERSON CITY, MO 65102

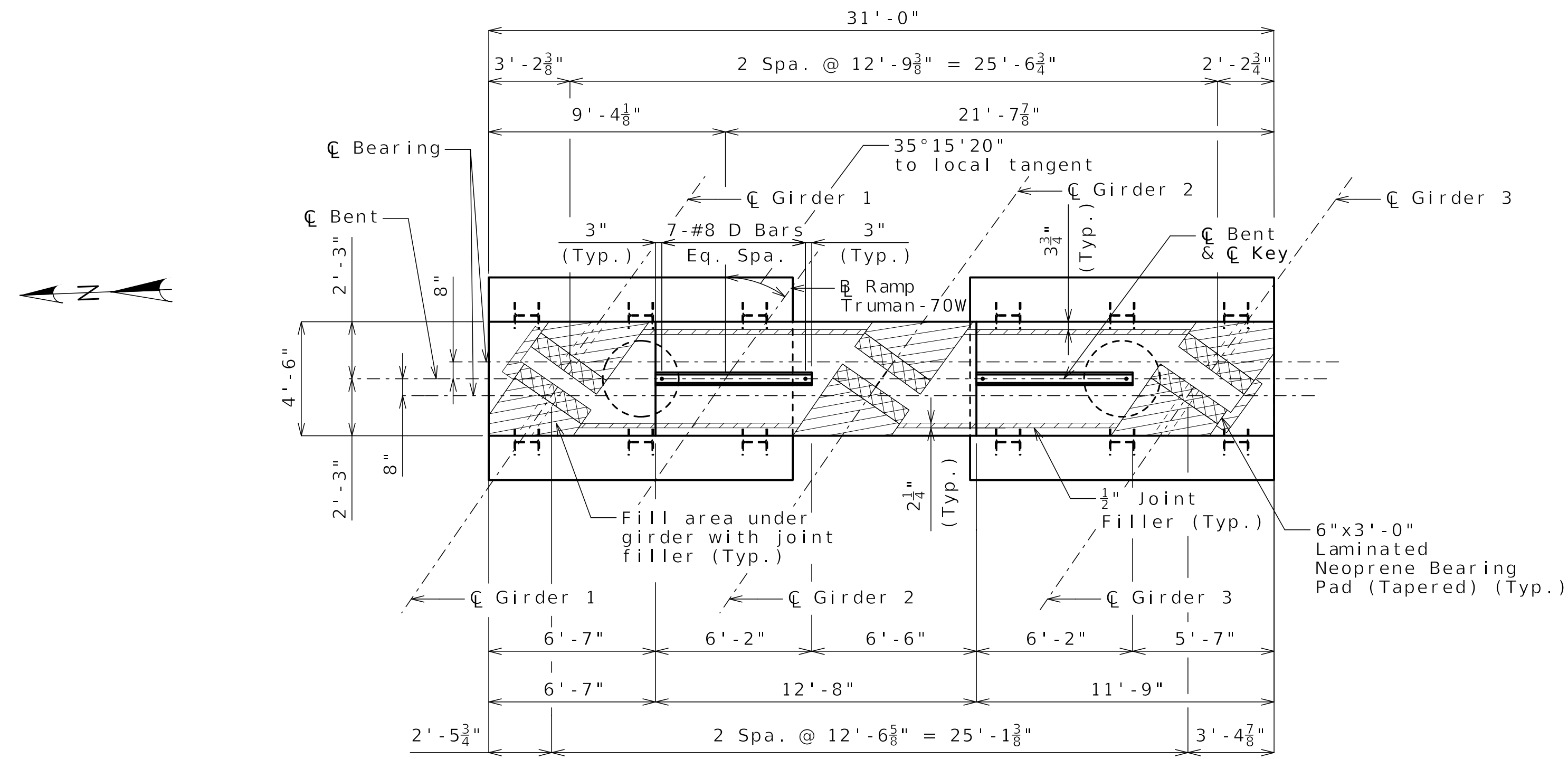
1-888-ASK-MODOT (1-888-275-6636)

CERTIFICATE OF AUTHORITY NO. 001270

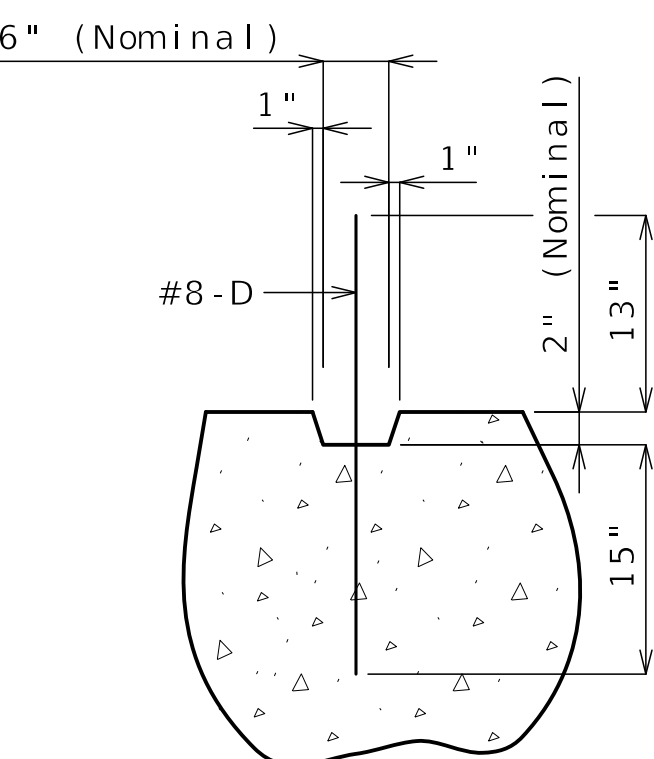
CLARKSON RADMACHER JOINT VENTURE

715 KIRK DRIVE KANSAS CITY, MO 64105-1310

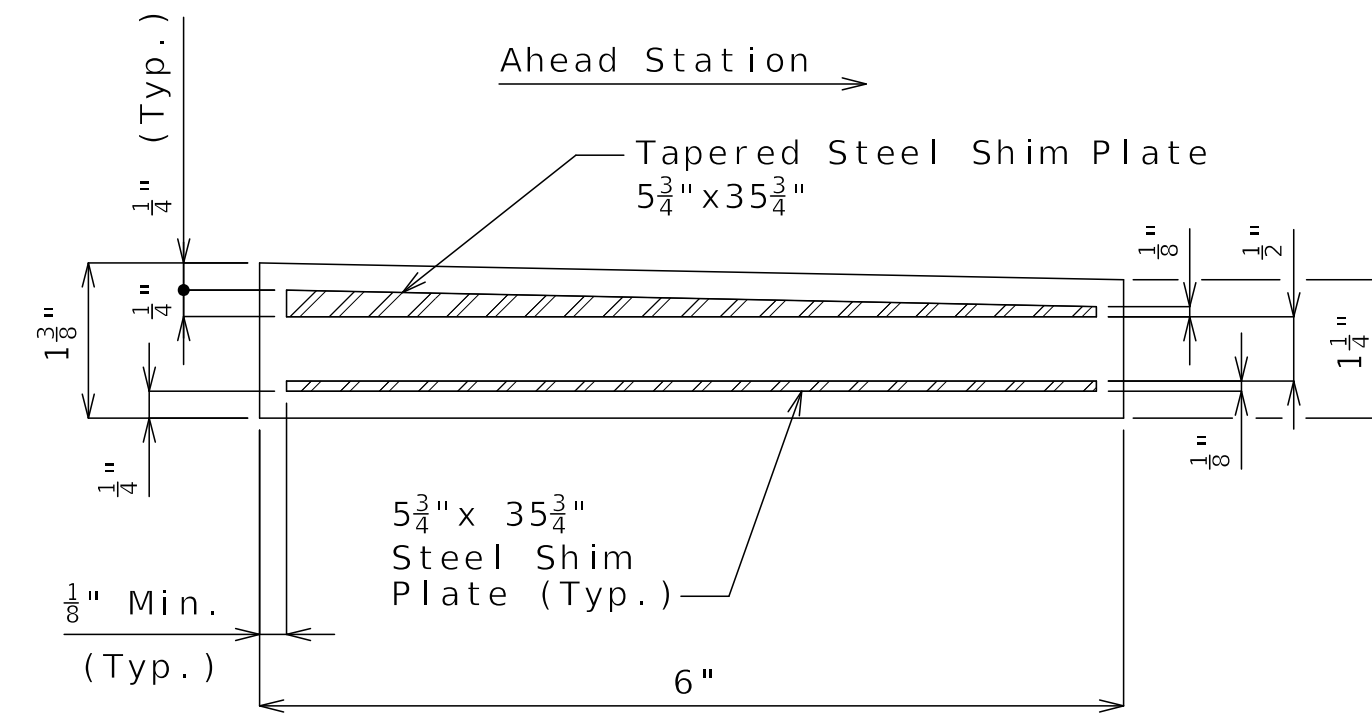
HNTB



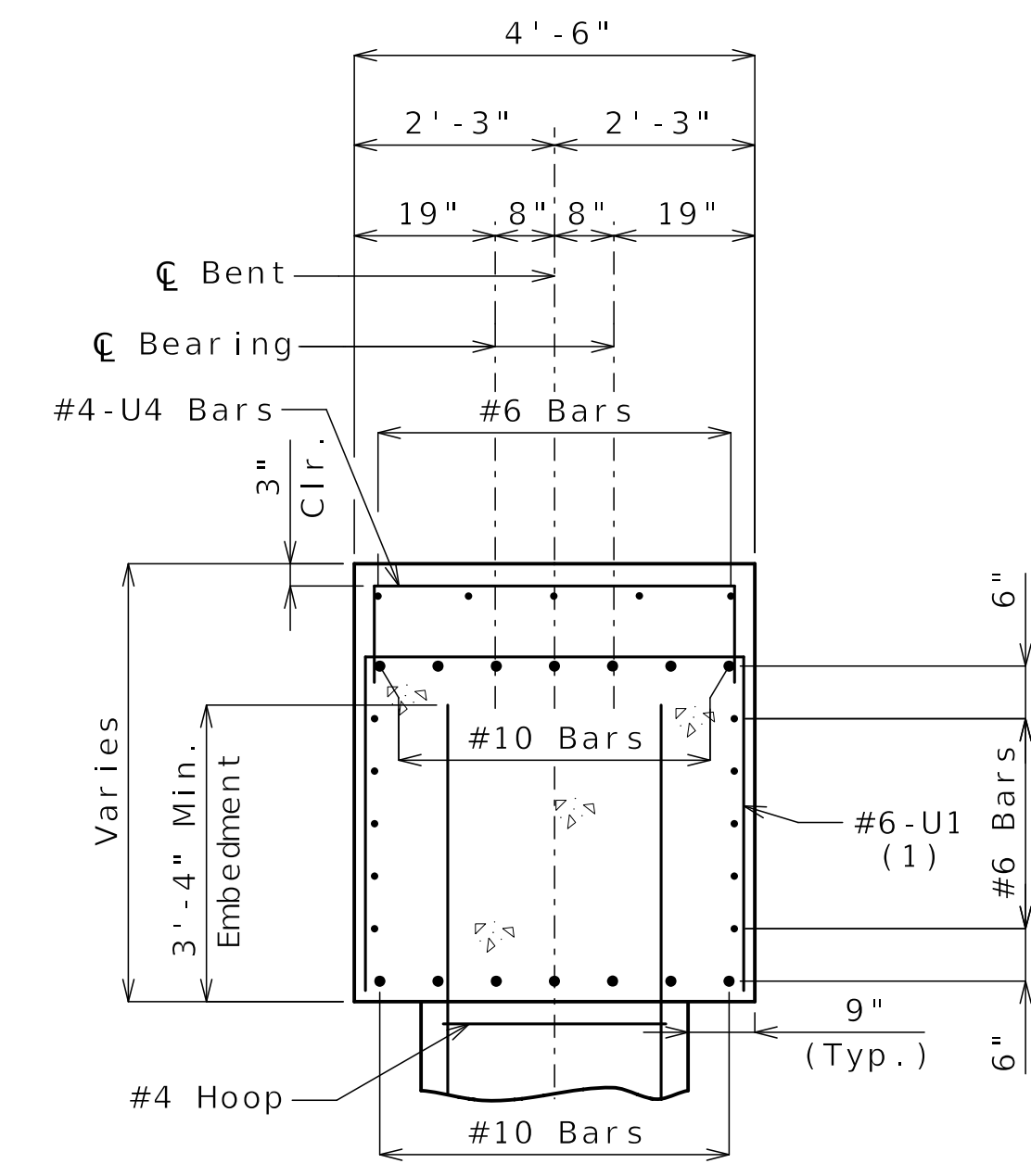
PLAN OF CAPBEAM



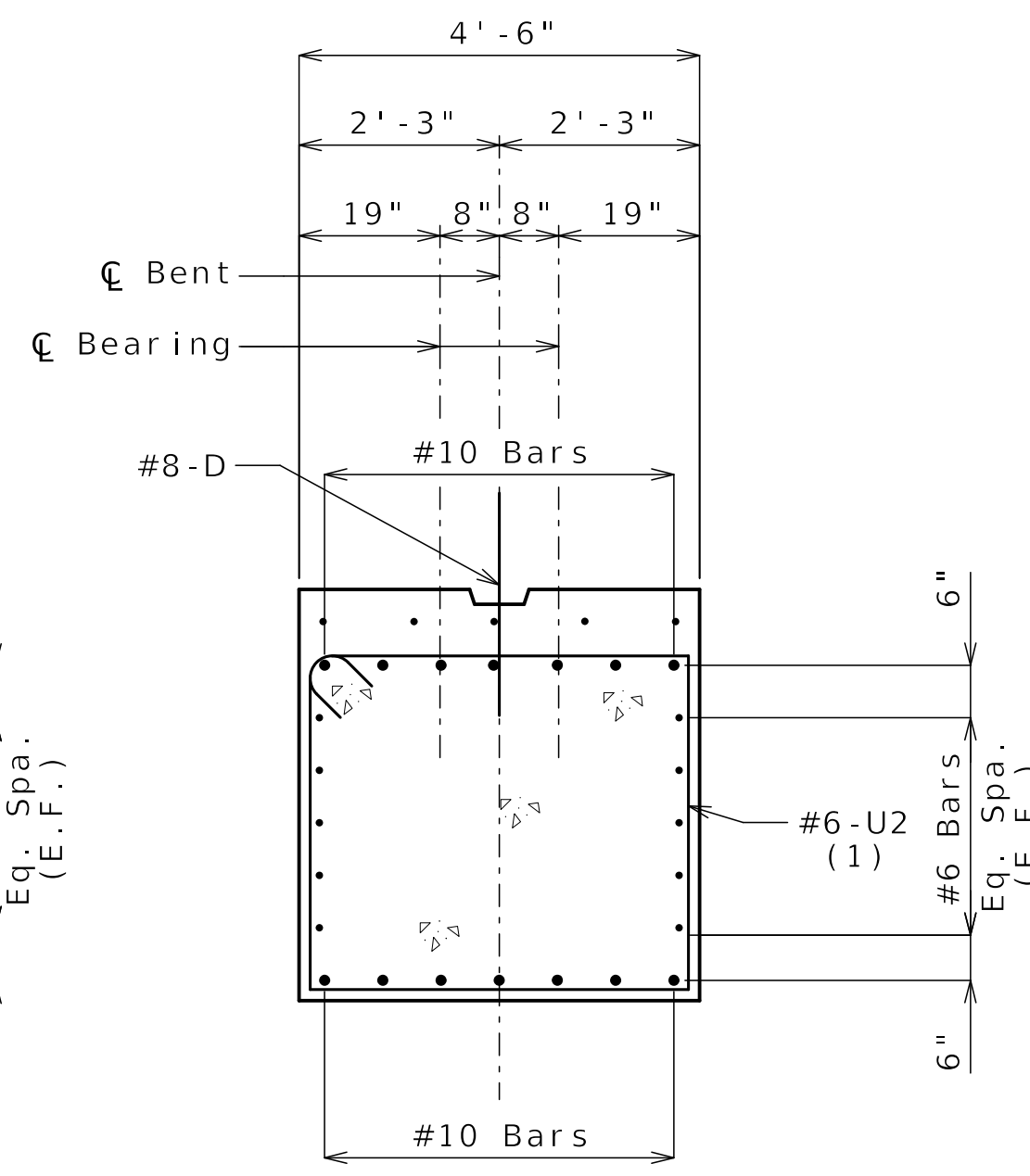
SECTION THRU KEY



LAMINATED NEOPRENE BEARING PAD (TAPERED) (6 Required)

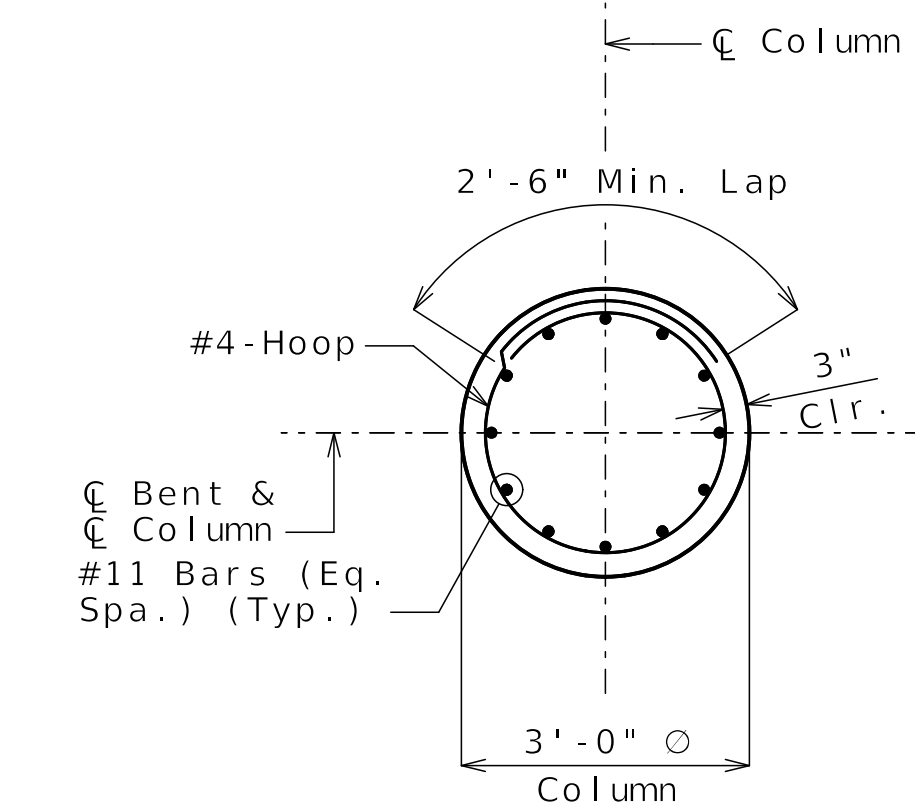


SECTION A-A



SECTION B-B

(1) U1 and U2 vertical leg = 3'-7 1/2"



SECTION C-C

Notes:
Work this sheet with Sheet No. B06-11.
For angle of girders relative to \bar{C} Bent, see A9620 (I-70 WB On Ramp Over Benton) Superstructure Package.
For additional joint filler layout details, see concrete diaphragm details sheet in A9620 (I-70 WB On Ramp Over Benton) Superstructure Package.
For steps 2 inches or more, use 2 1/4" x 1/2" inch joint filler up vertical face.

DETAILS OF INTERMEDIATE BENT NO. 3

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/09/2025
Package: BRD-06-WBRamp-Benton-Subst



Gina D. Horner
06/03/25
DATE PREPARED

06/02/2025

ROUTE 1-70 STATE MO
DISTRICT BR SHEET NO. B06-13

COUNTY JACKSON

JOB NO. J411486D

CONTRACT ID. 240807-C01

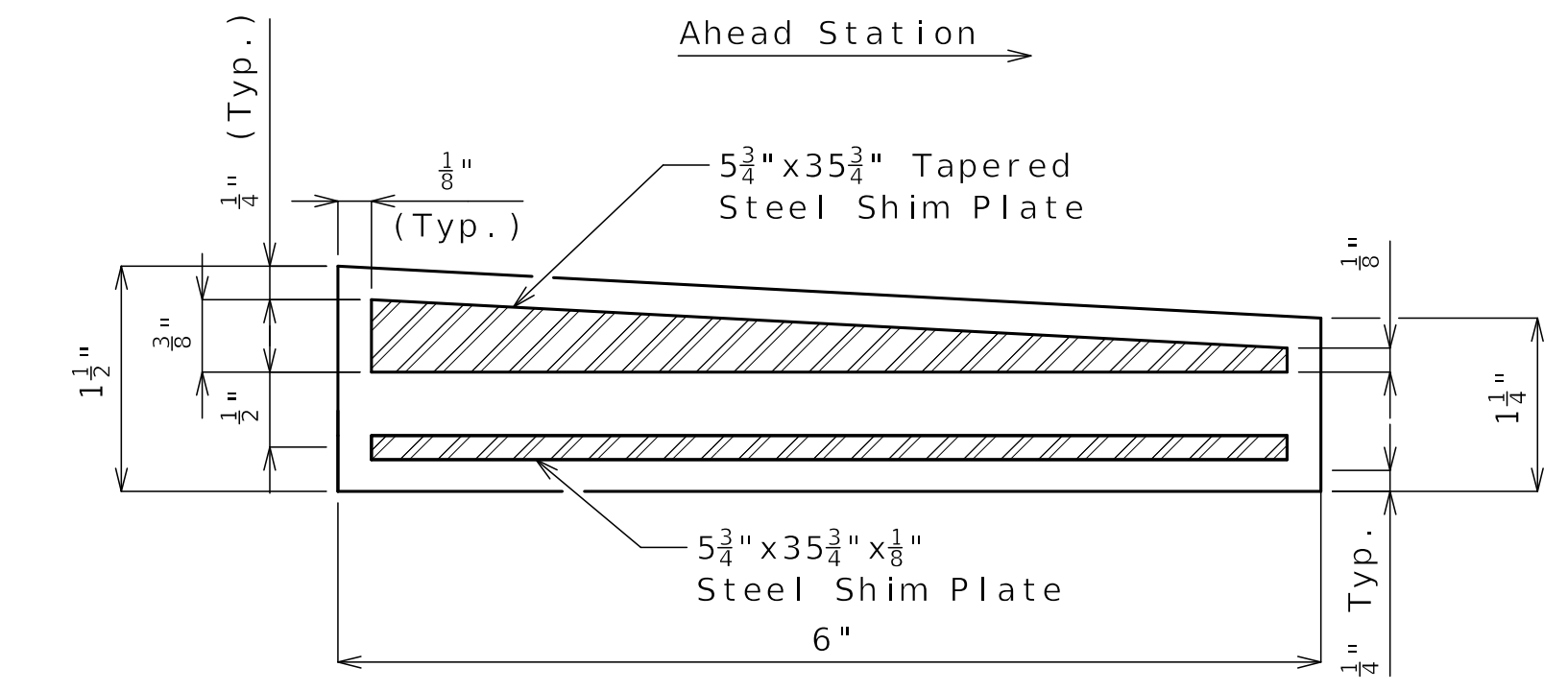
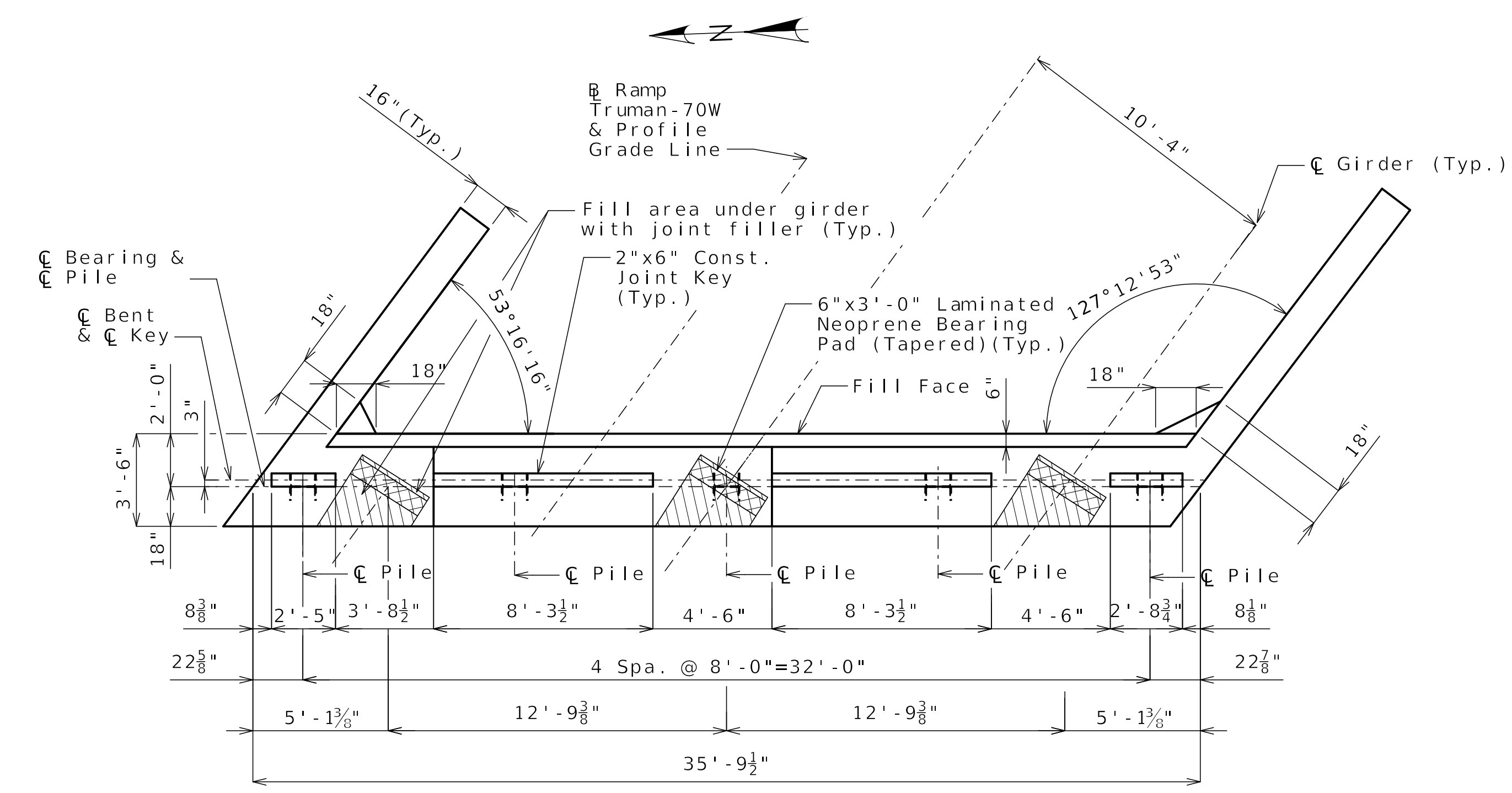
PROJECT NO.

BRIDGE NO. A9620

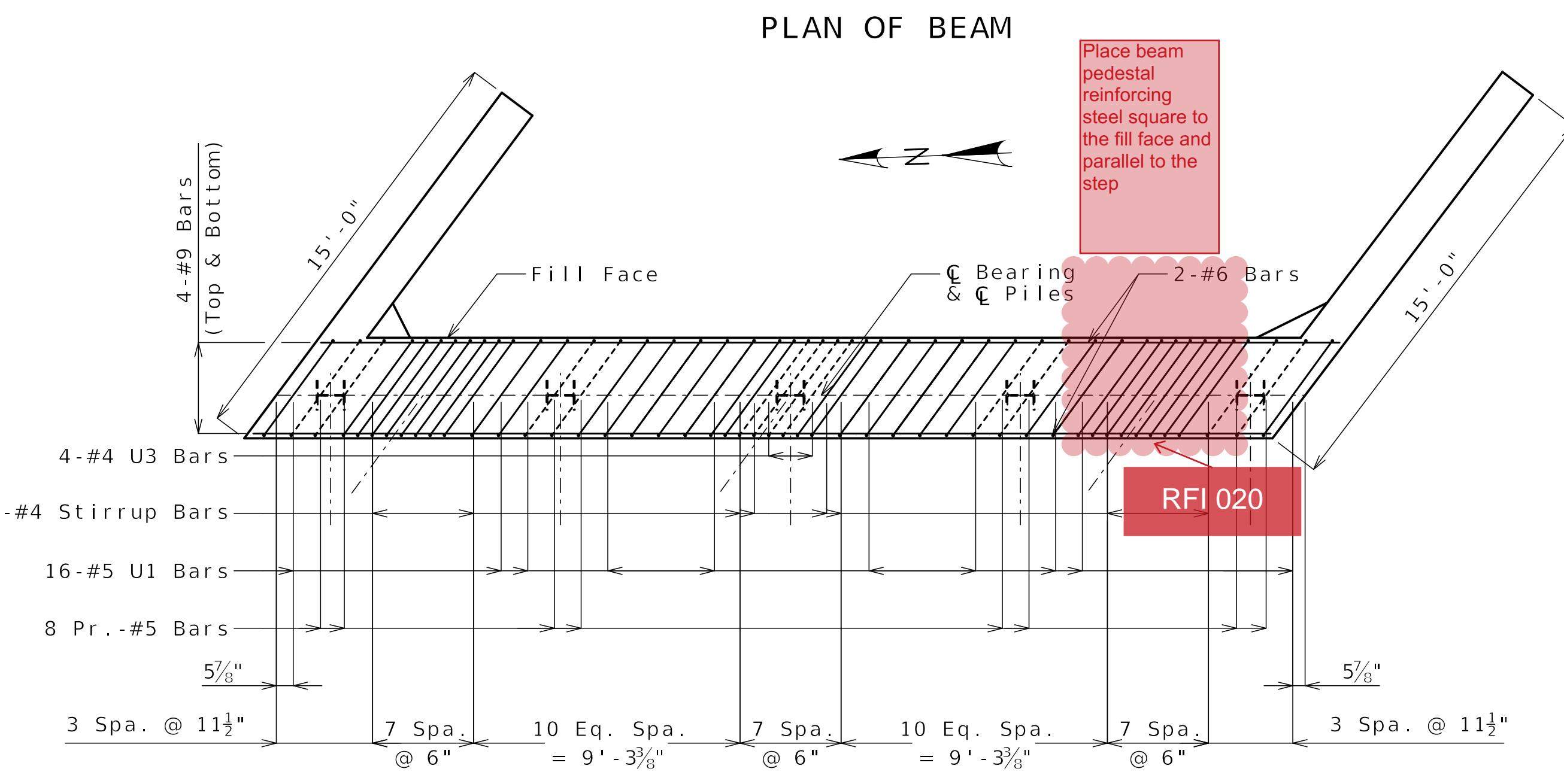
DATE	DESCRIPTION
06/02/25 <td>REV 0 - RFC SUBMITTAL</td>	REV 0 - RFC SUBMITTAL

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

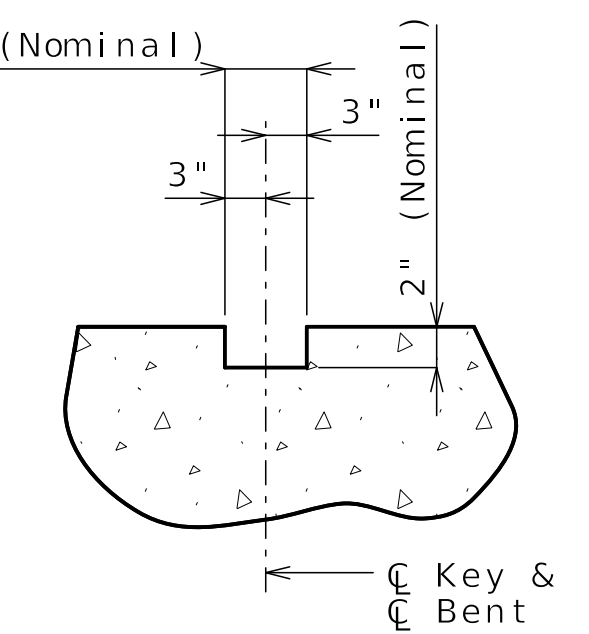
CLARKSON RADMACHER JOINT VENTURE
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY
NO. 001270
HNTB



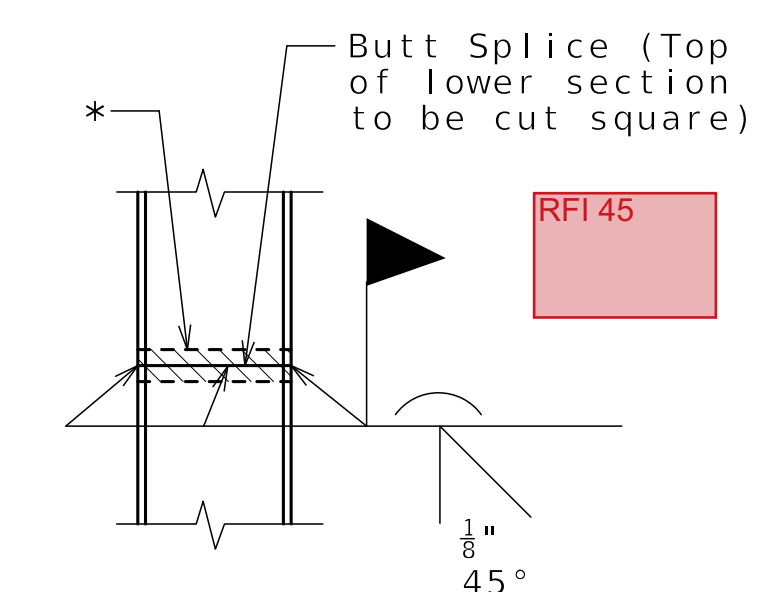
TYPICAL SECTION THRU LAMINATED NEOPRENE BEARING PAD (TAPERED)
3 Required



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.

Notes:
Work this sheet with Sheets No. B06-14 and B06-15.
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 1 1/2".
For details of bridge approach slab, see A9620 (I-70 WB On Ramp Over Benton) Superstructure Package.
For angle of girders relative to Bent, see A9620 (I-70 WB On Ramp Over Benton) Superstructure Package.

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/09/2025
Package: BRD-06-WBRamp-Benton-Subst

DETAILS OF END BENT NO. 4



Gina D. Horner
06/03/25

DATE PREPARED
06/02/2025

ROUTE STATE
I-70 MO

DISTRICT SHEET NO.
BR B06-14

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9620

DESCRIPTION
REV 0 - RFC SUBMITTAL

DATE
06/02/25

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102

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

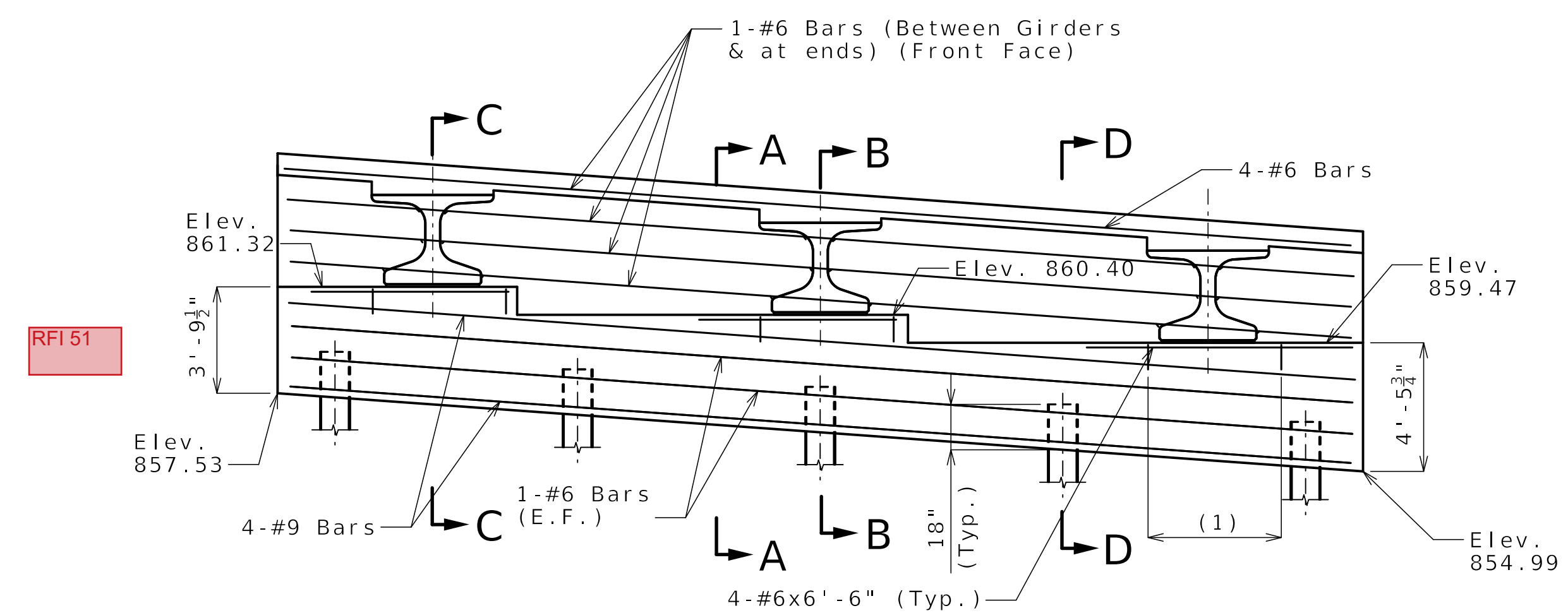
MoDOT

CLARKSON
RADMACHER
JOINT VENTURE

715 KIRK DRIVE
KANSAS CITY, MO 64105-1310

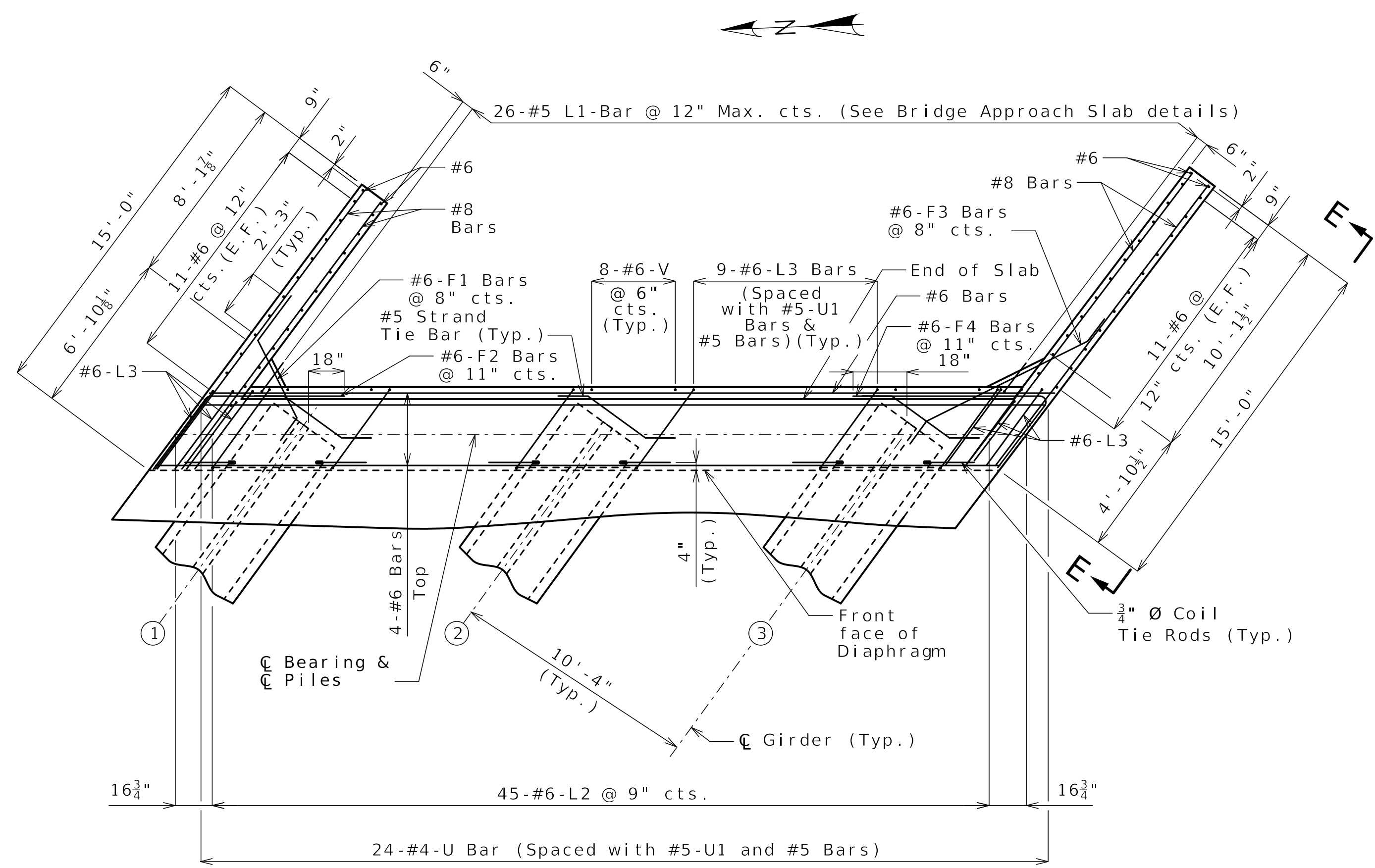
CERTIFICATE OF AUTHORITY
NO. 001270

HNTB

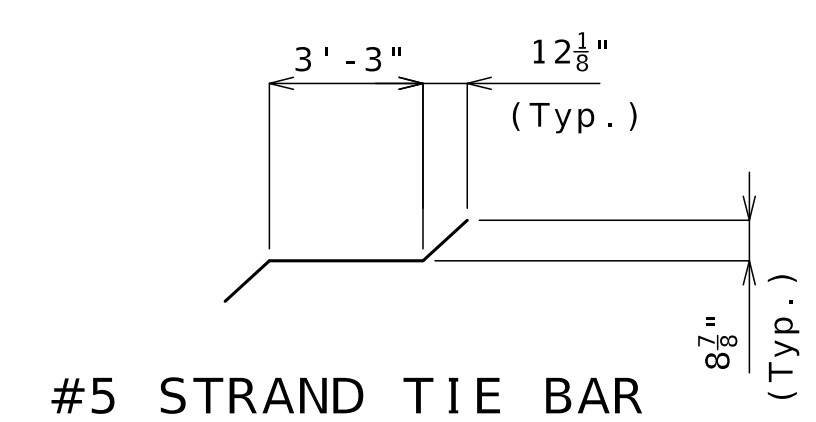


SECTION NEAR END BENT

(1) 8-#4-U4 Bars @ 6" Spa. under girders (Typ.)



PART PLAN



General Notes:
Work this sheet with Sheets No. B06-13 and B06-15.
For Sections A-A, B-B, C-C and D-D and Elevation E-E, see Sheet No. B06-15.
For location of coil tie rods, see A9620 (I-70 WB On Ramp Over Benton) Superstructure Package.
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.
⊗ Denotes girder number

DETAILS OF END BENT NO. 4

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/09/2025
Package: BRD-06-WBRamp-Benton-Subst



Gina D. Horner
06/03/25

DATE PREPARED
06/02/2025

ROUTE STATE
I-70 MO

DISTRICT SHEET NO.
BR B06-16

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9620

BRIDGE NO.
A9620

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A9620

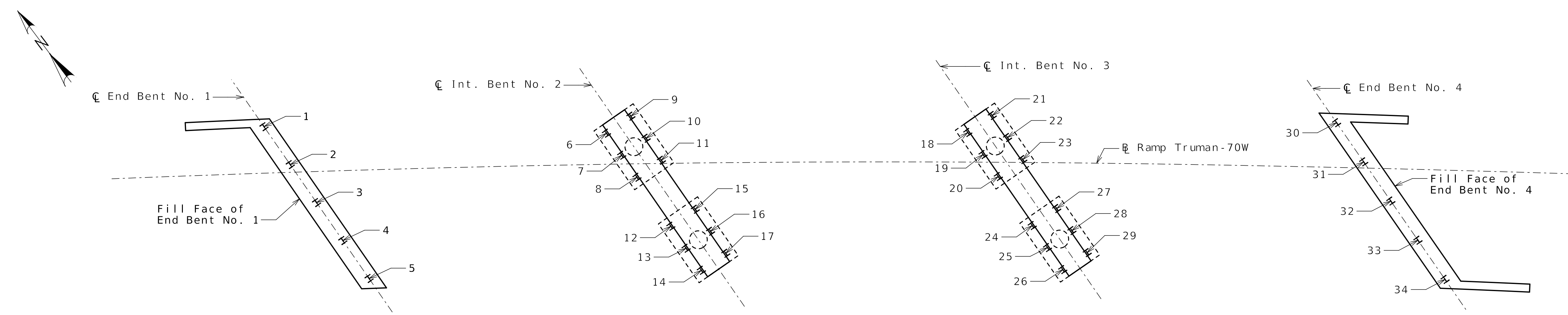
BRIDGE NO.
A9620

BRIDGE NO.
A9620

BRIDGE NO.
A9620

BRIDGE NO.
A9620

BRIDGE NO.
A9620



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

As-Built Pile Data			
Pile No.	Length in Place (ft)	Computed Nominal Axial Compressive Resistance (kips)	Remarks
End Bent No. 1			
1			
2			
3			
4			
5			
Int. Bent No. 2			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

As-Built Pile Data			
Pile No.	Length in Place (ft)	Computed Nominal Axial Compressive Resistance (kips)	Remarks
Int. Bent No. 3			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
End Bent No. 4			
30			
31			
32			
33			
34			

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

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/09/2025
Package: BRD-06-WBRamp-Benton-Subst

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

AS-BUILT PILE DATA

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



SOIL BORING NUMBER: Ben_B1_3
Page 3 of 4

PROJECT Improve I 70 KC Design Build **NORTHING/EASTING** 1066804.2 / 2776238.9
DRILLING FIRM PPI **DRILLER** Josh S. **DATE STARTED** 12/05/2024
LOGGED BY Cameron Dupont/Zachary Boyd **DATE COMPLETED** 12/09/2024
SURFACE ELEVATION 860.2' **RIG TYPE** CME-550
METHOD Auger/Water Rotary/NQ Core **TOOLING** 4-1/2" Continuous Flight Auger, 3-3/4" Rotary Drill

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab			
										During Drilling (ft):	After Drilling (ft):	Atterberg Limits (LL-PL-Pi)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)
78 ft										43.7	41.2				
			J-11	18	7-8-12 (20)	100		2.0							
80 ft															
88 ft			J-12	17	8-11-11 (22)	94		<0.5							
90 ft															
95 ft															
100 ft															
103 ft			J-13	16	9-15-16 (31)	89		<0.25							
105 ft															
105.9 ft			C-1	49		98									
106.9 ft															
110.1 ft			C-2	60		100									
110 ft															



SOIL BORING NUMBER: Ben_B1_3
Page 4 of 4

PROJECT Improve I 70 KC Design Build **NORTHING/EASTING** 1066804.2 / 2776238.9
DRILLING FIRM PPI **DRILLER** Josh S. **DATE STARTED** 12/05/2024
LOGGED BY Cameron Dupont/Zachary Boyd **DATE COMPLETED** 12/09/2024
SURFACE ELEVATION 860.2' **RIG TYPE** CME-550
METHOD Auger/Water Rotary/NQ Core **TOOLING** 4-1/2" Continuous Flight Auger, 3-3/4" Rotary Drill

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab			
										During Drilling (ft):	After Drilling (ft):	Atterberg Limits (LL-PL-Pi)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)
115 ft			C-2	60		100				43.7	41.2				
			C-3	10		100	100								
115.9 ft															
120 ft															
125 ft															
130 ft															
135 ft															
140 ft															
145 ft															



6/3/2025

DATE PREPARED
06/02/2025

ROUTE 1-70 STATE MO
DISTRICT BR SHEET NO. B06-18

COUNTY JACKSON

JOB NO. J411486D

CONTRACT ID. 240807-C01

PROJECT NO. A9620

BRIDGE NO. A9620

DATE	DESCRIPTION
06/02/25	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



Released For Construction
 Not to Scale
 Revision: 0.0
 Date: 06/09/2025
 Package: BRD-06-WBRamp-Benton-Subst

Notes:
 For locations of borings, see Sheet No. B06-02 and Geotechnical Report.

BORING LOGS



SOIL BORING NUMBER: Ben_B2_4

Page 1 of 3

PROJECT Improve I 70 KC Design Build NORTHING/EASTING 1066775.2 / 2776281.1
 DRILLING FIRM PPI DRILLER Ray A. DATE STARTED 11/13/2024
 LOGGED BY Alex Wen DATE COMPLETED 11/14/2024
 SURFACE ELEVATION 849.9' RIG TYPE CME-55
 METHOD Auger, Water Rotary, NQ Core TOOLING 4-1/2" Continuous Flight Auger

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab			
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-Pi)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)
										Visual Classification and Remarks					
										FILL, dark brown, moist, LEAN TO FAT CLAY (CL-CH), few grass rootlets at surface					
										- bundled streetlight power cables, trace tree roots at 1.5'					
4.5		J-1		3	5-6-6 (12)	17									
										FILL, brown, dry to moist, LEAN TO FAT CLAY (CL-CH), occasional red-brown mottling					
										- becomes moist at 9.5'					
9.5		J-2		3	2-4-4 (8)	17									
										12.5 837.4					
										Brown, mottled gray, red-brown, soft, moist, LEAN CLAY with SILT (CL-ML)					
13.3		J-3		7	5-3-3 (6)	39		2.5							
										49-19-30 25.2					
										- becomes gray mottled red-brown, very soft at 23.3'					
18.3		J-4		18	x-2-1 (3)	100		0.25							
										35-18-17 28.4 97.2 0.652					
23.3		U-1		23		96		0.25							
										WOH-WOH-WOH					
25.3		J-5						0.25							
										- becomes soft at 28'					
28.3		J-6			1-1-2 (3)			0.5							
33.3		U-2		23		96		0.25							
35															



SOIL BORING NUMBER: Ben_B2_4

Page 2 of 3

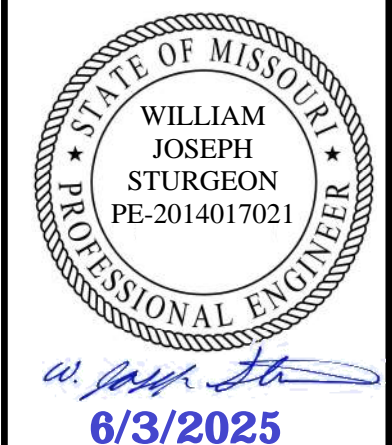
PROJECT Improve I 70 KC Design Build NORTHING/EASTING 1066775.2 / 2776281.1
 DRILLING FIRM PPI DRILLER Ray A. DATE STARTED 11/13/2024
 LOGGED BY Alex Wen DATE COMPLETED 11/14/2024
 SURFACE ELEVATION 849.9' RIG TYPE CME-55
 METHOD Auger, Water Rotary, NQ Core TOOLING 4-1/2" Continuous Flight Auger

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab			
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-Pi)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)
										Visual Classification and Remarks					
										Brown, firm, moist, LEAN CLAY (CL)					
										41.5 808.4					
38.3		J-7		18	2-3-3 (6)	100		1.0							
										Orangish brown, stiff, moist, FAT CLAY (CH), minor gray-brown mottling, dark gray carbonaceous particles					
43.3		U-3		19		79		2.0							
										42-16-26 24.7 101.0 1.7					
48.3		J-8		18	4-6-9 (15)	100		2.0							
										- becomes very stiff at 53.6'					
53.3		J-9		18	6-6-10 (16)	100		2.75							
										18.2					
58.3		J-10		18	4-5-7 (12)	100		2.5							
										65.6 784.3					
65										Orangish brown, medium dense, wet, fine to coarse grained, CLAYEY SAND (SC), few fine to coarse subangular gravel					
68.3		J-11		18	14-9-8 (17)	100									
										16.9					

Released For Construction
 Not to Scale
 Revision: 0.0
 Date: 06/09/2025
 Package: BRD-06-WBRamp-Benton-Subst

Notes:
 For locations of borings, see Sheet No. B06-02 and Geotechnical Report.

BORING LOGS



DATE PREPARED	06/02/2025
ROUTE	1 - 70
STATE	MO
DISTRICT	BR
SHEET NO.	B06 - 19
COUNTY	JACKSON
JOB NO.	J411486D
CONTRACT ID.	240807 - C01
PROJECT NO.	
BRIDGE NO.	A9620

DATE	DESCRIPTION
06/02/25 <td>REV 0 - RFC SUBMITTAL</td>	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



SOIL BORING NUMBER: Ben_B4_4

Page 1 of 3

PROJECT Improve I 70 KC DB Project [0] **NORTHING/EASTING** 1066708.5 / 2776385.3
DRILLING FIRM PPI **DRILLER** Josh Starkey **DATE STARTED** 11/06/2024
LOGGED BY Cameron Dupont **DATE COMPLETED** 11/07/2024
SURFACE ELEVATION 845.7' **RIG TYPE** CME-55LC
METHOD Hollow Stem Auger **TOOLING** 4-1/4" Hollow Stem Auger

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab				
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-PI)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)	
										Visual Classification and Remarks						
										FILL, dark brown to brown, soft to firm, moist, LEAN CLAY with SAND (CL), trace organics						
3.5 ft		J-1	8	4-3-4 (7)	44		0.5					40-20-20	32.7			
8 ft		J-2	13	3-4-5 (9)	72		1.5			8.0	837.7					
										Dark brown to brown, firm to stiff, moist, LEAN CLAY (CL), trace organics						
13 ft		U-1	18			100	1.5									
18 ft		J-3	18	1-2-3 (5)	100		0.25									- becomes soft to firm at 18'
23 ft		J-4	18	1-2-2 (4)	100		0.25						37.9			
28 ft		U-2	24			100	0.5					32-19-13	25.4	103.7	0.76	
33 ft		J-5	14	4-5-7 (12)	78		3.0			33.0	812.7					
										Brownish gray, firm to stiff, moist, LEAN CLAY with SILT (CL-ML)						



SOIL BORING NUMBER: Ben_B4_4

Page 2 of 3

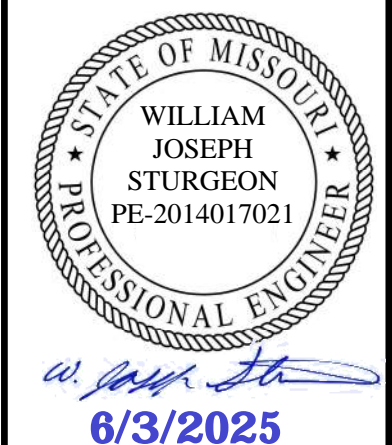
PROJECT Improve I 70 KC DB Project [0] **NORTHING/EASTING** 1066708.5 / 2776385.3
DRILLING FIRM PPI **DRILLER** Josh Starkey **DATE STARTED** 11/06/2024
LOGGED BY Cameron Dupont **DATE COMPLETED** 11/07/2024
SURFACE ELEVATION 845.7' **RIG TYPE** CME-55LC
METHOD Hollow Stem Auger **TOOLING** 4-1/4" Hollow Stem Auger

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab				
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-PI)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)	
										Visual Classification and Remarks						
38 ft		J-6	18	3-5-8 (13)	100		4.0									Brownish gray, firm to stiff, moist, LEAN CLAY with SILT (CL-ML)
43 ft		U-3	19			79	2.0					38-14-24	20.3	108.1	2.74	
48 ft		J-7			4-5-6 (11)		2.0			48.0	797.7					
										Brownish gray, firm to stiff, LEAN CLAY with SAND (CL), trace organics						
53 ft		J-8			4-6-8 (14)		3.0									
58.3 ft		J-9	18	13-20-25 (45)	100		2.5			58.3	787.4					
										Tan-brown, medium dense, WELL-GRADED SAND with CLAY (SW-SC)						
63 ft		J-10	18	18-23-30 (53)	100		2.5									- becomes dense, fine to medium grained at 61.5'
68.2 ft		J-11			47-45-30 (75)											
										- limestone boulder at 68'						
69.0 ft										69.0	776.7					
										Tan-brown, dense, WELL-GRADED SAND (SW), with trace gravel						

Released For Construction
 Not to Scale
 Revision: 0.0
 Date: 06/09/2025
 Package: BRD-06-WBRamp-Benton-Subst

Notes:
 For locations of borings, see Sheet No. B06-02 and Geotechnical Report.

BORING LOGS



DATE PREPARED: 06/02/2025
 ROUTE: I-70 STATE: MO
 DISTRICT: BR SHEET NO.: B06-22
 COUNTY: JACKSON
 JOB NO.: J411486D
 CONTRACT ID: 240807-C01
 PROJECT NO.:
 BRIDGE NO.: A9620

DATE	DESCRIPTION
06/02/25	REV 0 - RFC SUBMITTAL

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



