

(50.4' - 103.5' - 104.5' - 41.5') PRESTRESSED CONCRETE NU-GIRDER SPANS

|         |    |     |     |     |    |
|---------|----|-----|-----|-----|----|
| SEC/SUR | 30 | TWP | 47N | RGE | 2E |
|---------|----|-----|-----|-----|----|



THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREP

5 / 10 / 2025

|        |       |
|--------|-------|
| ROUTE  | STATE |
| I - 70 | MO    |

|          |           |
|----------|-----------|
| DISTRICT | SHEET NO. |
| BR       | A9683.    |

COUNTY  
ST. CHARLES

JOB NO.  
JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9683

|  |  |
|--|--|
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |


**MoDOT**  
 MISSOURI DEPARTMENT OF  
 TRANSPORTATION  
 COMMISSION



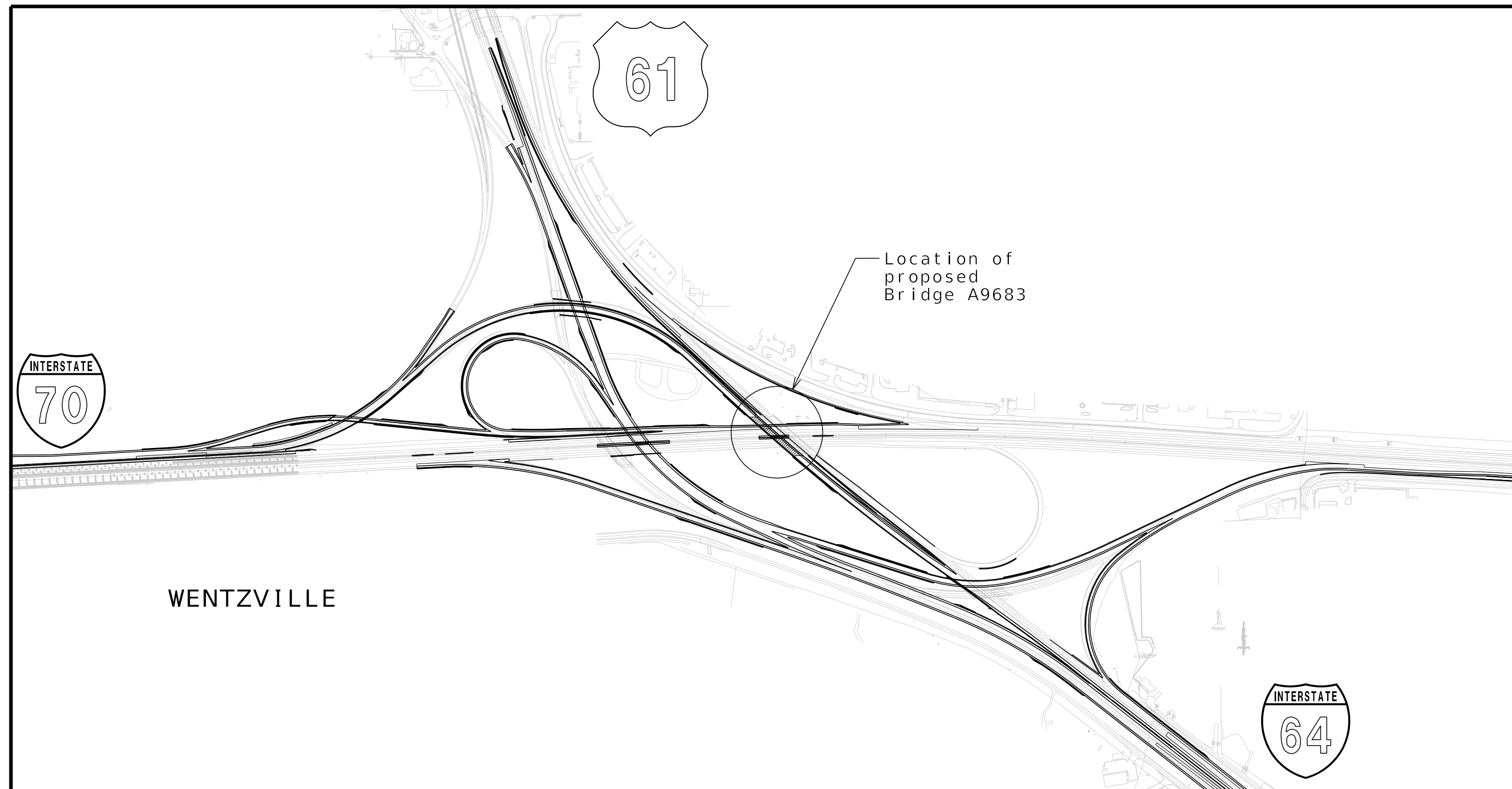
**HNTB**  
KANSAS CITY, MO 64105-1310  
CERTIFICATE OF AUTHORITY  
NO. 001270

---

**Bartlett & West**  
601 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101  
PHONE 972-834-3181

## INDEX OF DRAWINGS

- A9683-1 TITLE SHEET AND INDEX OF DRAWINGS  
A9683-2 GENERAL PLAN AND ELEVATION  
A9683-3 GENERAL NOTES  
A9683-4 SUBSTRUCTURE LAYOUT  
A9683-5 DETAILS OF END BENT NO. 1  
A9683-6 DETAILS OF END BENT NO. 1  
A9683-7 DETAILS OF END BENT NO. 1  
A9683-8 DETAILS OF END BENT NO. 1  
A9683-9 DETAILS OF END BENT NO. 1  
A9683-10 VERTICAL DRAIN AT END BENTS  
A9683-11 DETAILS OF INTERMEDIATE BENT NO. 2  
A9683-12 DETAILS OF INTERMEDIATE BENT NO. 2  
A9683-13 DETAILS OF INTERMEDIATE BENT NO. 2  
A9683-14 DETAILS OF INTERMEDIATE BENT NO. 3  
A9683-15 DETAILS OF INTERMEDIATE BENT NO. 3  
A9683-16 DETAILS OF INTERMEDIATE BENT NO. 3  
A9683-17 DETAILS OF INTERMEDIATE BENT NO. 4  
A9683-18 DETAILS OF INTERMEDIATE BENT NO. 4  
A9683-19 DETAILS OF INTERMEDIATE BENT NO. 4  
A9683-20 DETAILS OF END BENT NO. 5  
A9683-21 DETAILS OF END BENT NO. 5  
A9683-22 DETAILS OF END BENT NO. 5  
A9683-23 GIRDER LAYOUT  
A9683-24 NU-GIRDERS - SPAN (1-2)  
A9683-25 NU-GIRDERS - SPANS (2-3) AND (3-4)  
A9683-26 NU-GIRDERS - SPAN (4-5)  
A9683-27 CONCRETE DIAPHRAGM AT INTERMEDIATE BENTS NO. 2 & 4  
A9683-28 CONCRETE DIAPHRAGM AT INTERMEDIATE BENT NO. 3  
A9683-29 SLAB DRAINS  
A9683-30 DETAILS OF ENCLOSED DRAINAGE SYSTEM  
A9683-31 THEORETICAL SLAB HAUNCHING DIAGRAM, BOTTOM OF SLAB ELEVATIONS, AND GIRDER CAMBER DIAGRAM  
A9683-32 PLAN OF SLAB SHOWING REINFORCEMENT  
A9683-33 SLAB DETAILS  
A9683-34 SLAB CURVE ORDINATES  
A9683-35 TYPE D BARRIER  
A9683-36 TYPE D BARRIER AT END BENTS  
A9683-37 BRIDGE APPROACH SLAB (MAJOR)  
A9683-38 BAR BENDING DIAGRAMS  
A9683-39 BILL OF REINFORCING STEEL (1 OF 3)  
A9683-40 BILL OF REINFORCING STEEL (2 OF 3)  
A9683-41 BILL OF REINFORCING STEEL (3 OF 3)  
A9683-42 AS-BUILT PILE AND DRILLED SHAFT DATA  
A9683-43 BORING DATA (1 OF 2)  
A9683-44 BORING DATA (2 OF 2)  
A9683-45 SURVEY CONTROL POINTS  
A9683-46 SURVEY CONTROL DATA



LOCATION MAP

|          |     |      |
|----------|-----|------|
| Designed | JUN | 2025 |
| Detailed | JUN | 2025 |
| Checked  | JUN | 2025 |

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

Sheet 1 of 46

BRIDGE: RAMP 64W-70W OVER I-70

ABOUT 1.5 MILES SOUTHEAST OF WENTZVILLE

BEGINNING STATION 1289+97.51







| Foundation Data   |                                                                |                |                  |             |             |             |                                |                                |
|-------------------|----------------------------------------------------------------|----------------|------------------|-------------|-------------|-------------|--------------------------------|--------------------------------|
| Type              | Design Data                                                    | Bent Number    |                  |             |             |             |                                |                                |
|                   |                                                                | 1              | 2                | 3           | 4           | 5           | Detached Wingwall<br>Abut. 1 L | Detached Wingwall<br>Abut. 1 R |
| Load Bearing Pile | Pile Type and Size                                             | HP12x53        | --               | --          | --          | HP12x53     | HP12x53                        | HP12x53                        |
|                   | Number                                                         | ea 6           | --               | --          | --          | 6           | 3                              | 3                              |
|                   | Approximate Length Per Each                                    | ft 35          | --               | --          | --          | 28          | 36                             | 36                             |
|                   | Pile Point Reinforcement                                       | ea ALL         | --               | --          | --          | ALL         | ALL                            | ALL                            |
|                   | Min. Galvanized Penetration (Elev.)                            | ft Full Length | --               | --          | --          | Full Length | Full Length                    | Full Length                    |
|                   | Pile Driving Verification Method                               | WEAP           | --               | --          | --          | WEAP        | WEAP                           | WEAP                           |
|                   | Resistance Factor                                              | 0.5            | --               | --          | --          | 0.5         | 0.5                            | 0.5                            |
| Rock Socket       | Minimum Nominal Axial Compressive Resistance                   | kip            | 460              | --          | --          | 380         | 49                             | 49                             |
|                   | Number                                                         | ea --          | 3                | 3           | 3           | --          | --                             | --                             |
|                   | Foundation Material                                            | --             | Shale            | Shale       | Shale       | --          | --                             | --                             |
|                   | Elevation Range                                                | ft --          | 594.3-592.7      | 595-589.6   | 598.3-595.9 | --          | --                             | --                             |
|                   | Minimum Nominal Axial Compressive Resistance (Side Resistance) | ksf --         | 4.9              | 4.9         | 4.9         | --          | --                             | --                             |
|                   | Foundation Material                                            | --             | Limestone        | Limestone   | Shale       | --          | --                             | --                             |
|                   | Elevation Range                                                | ft --          | 592.7-586.8      | 589.6-580.7 | 595.9-582.2 | --          | --                             | --                             |
|                   | Minimum Nominal Axial Compressive Resistance (Side Resistance) | ksf --         | 30.0             | 30.0        | 15.7        | --          | --                             | --                             |
|                   | Foundation Material                                            | --             | Limestone/ Shale | --          | --          | --          | --                             | --                             |
|                   | Elevation Range                                                | ft --          | 586.8-569        | --          | --          | --          | --                             | --                             |
|                   | Minimum Nominal Axial Compressive Resistance (Side Resistance) | ksf --         | 11.9             | --          | --          | --          | --                             | --                             |
|                   | Minimum Nominal Axial Compressive Resistance (Tip Resistance)  | ksf --         | 184.8            | 388.9       | 212.9       | --          | --                             | --                             |

WEAP = Wave Equation Analysis of Piles

Load Bearing Piles:

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

Rock Socket (Drilled Shafts):

Minimum Nominal Axial Compressive Resistance =  $\frac{\text{Maximum Factored Loads}}{\text{Resistance Factors (Side Resistance + Tip Resistance)}}$

Driven Piles:

Prebore for piles at End Bents No. 1, No. 5 and End Bent No. 1 detached wingwalls to elevations 615.00, 610.00 and 620.00, respectively.

All piles shall be galvanized full length.

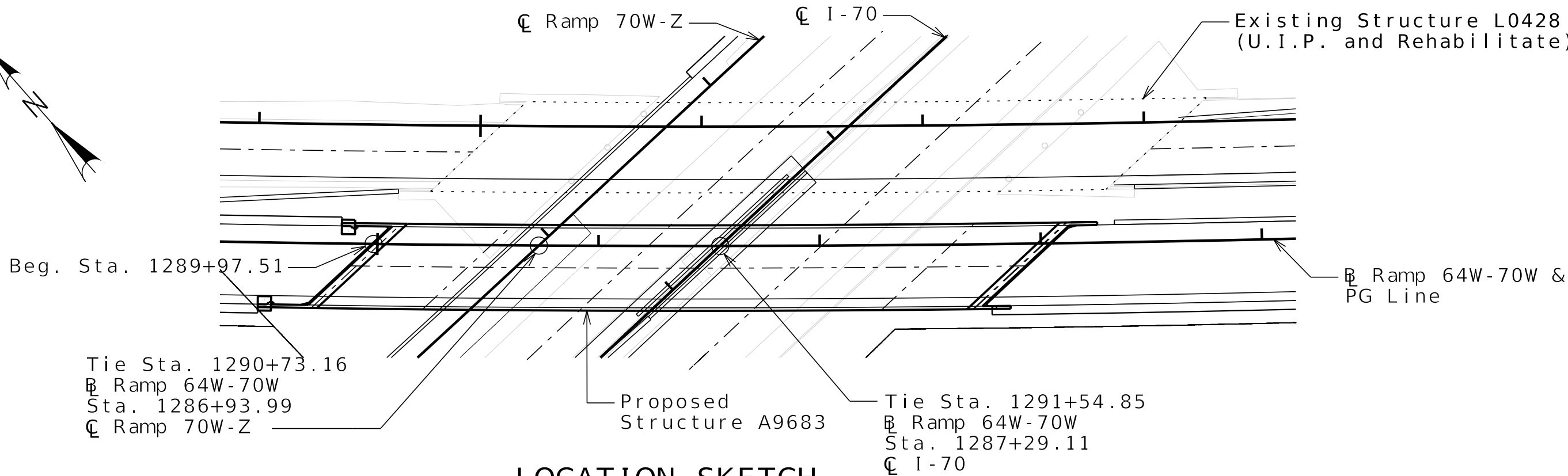
Manufactured pile point reinforcement shall be used on all piles in this structure.

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

Prebore holes shall be backfilled with sand (or other approved material), in accordance with Sec 702, before piles are driven to bearing.

Roadway fill shall be completed to the final roadway section and up to the elevation of the bottom of the concrete beam within the limits of the structure and for not less than 25 feet in back of the fill face of the end bents before any piles are driven for any bents falling within the embankment section.

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.



LOCATION SKETCH

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

General Notes:

Design Specifications:

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

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 (Substructure) f'c = 3,000 psi  
Class B-2 Concrete (Drilled Shafts & Rock Sockets) f'c = 4,000 psi  
Class B-1 Concrete (Barrier) f'c = 4,000 psi  
Class B-2 Concrete (Superstructure, except Prestressed Girders and Barrier) f'c = 4,000 psi  
Reinforcing Steel (ASTM A706 Grade 60) fy = 60,000 psi  
Structural Steel HP Pile (ASTM A709 Grade 50) fy = 50,000 psi  
Structural Steel Girder Chairs (ASTM A709 Grade 36) fy= 36,000 psi  
For prestressed girder stresses, see Sheets No. 24 thru 26.

Neoprene Pads:

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

Pile Protective Coatings:

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

Joint Filler:

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

Reinforcing Steel:

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

All exposed substructure elements will contain epoxy coated reinforcing.

Traffic Handling:

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

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

Structural Steel Coating:

Structural steel for the girder chairs shall be coated with not less than 2 mils of organic zinc primer. Scratched or damaged surfaces are to be touched up in the field before concrete is poured. In lieu of coating, the girder chairs may be galvanized in accordance with ASTM A123.

Concrete Protective Coatings:

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

Miscellaneous:

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

Stay-In-Place Forms:

Corrugated steel forms, supports, closure elements and accessories shall be in accordance with grade requirements and coating designation G165 of ASTM A653. Complete Shop drawings of the permanent steel deck forms shall be required in accordance with Sec 1080.

Corrugations of stay-in-place forms shall be filled with an expanded polystyrene material. The polystyrene material shall be placed in the forms with an adhesive in accordance with the manufacturer's recommendations.

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

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

Standard Plans:

609.00R  
617.10N  
706.35H

GENERAL NOTES



THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
6/10/2025

ROUTE  
I-70

DISTRICT  
BR

COUNTY  
ST. CHARLES

JOB NO.  
JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9683

| DESCRIPTION | DATE |
|-------------|------|
|             |      |
|             |      |
|             |      |
|             |      |
|             |      |
|             |      |
|             |      |
|             |      |
|             |      |

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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

MoDOT



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

Bartlett & West  
601 INDORE ST., SUITE 201 - JEFFERSON CITY, MO 65101  
PHONE 874-030-3181  
WWW.BARTLETTWEST.COM

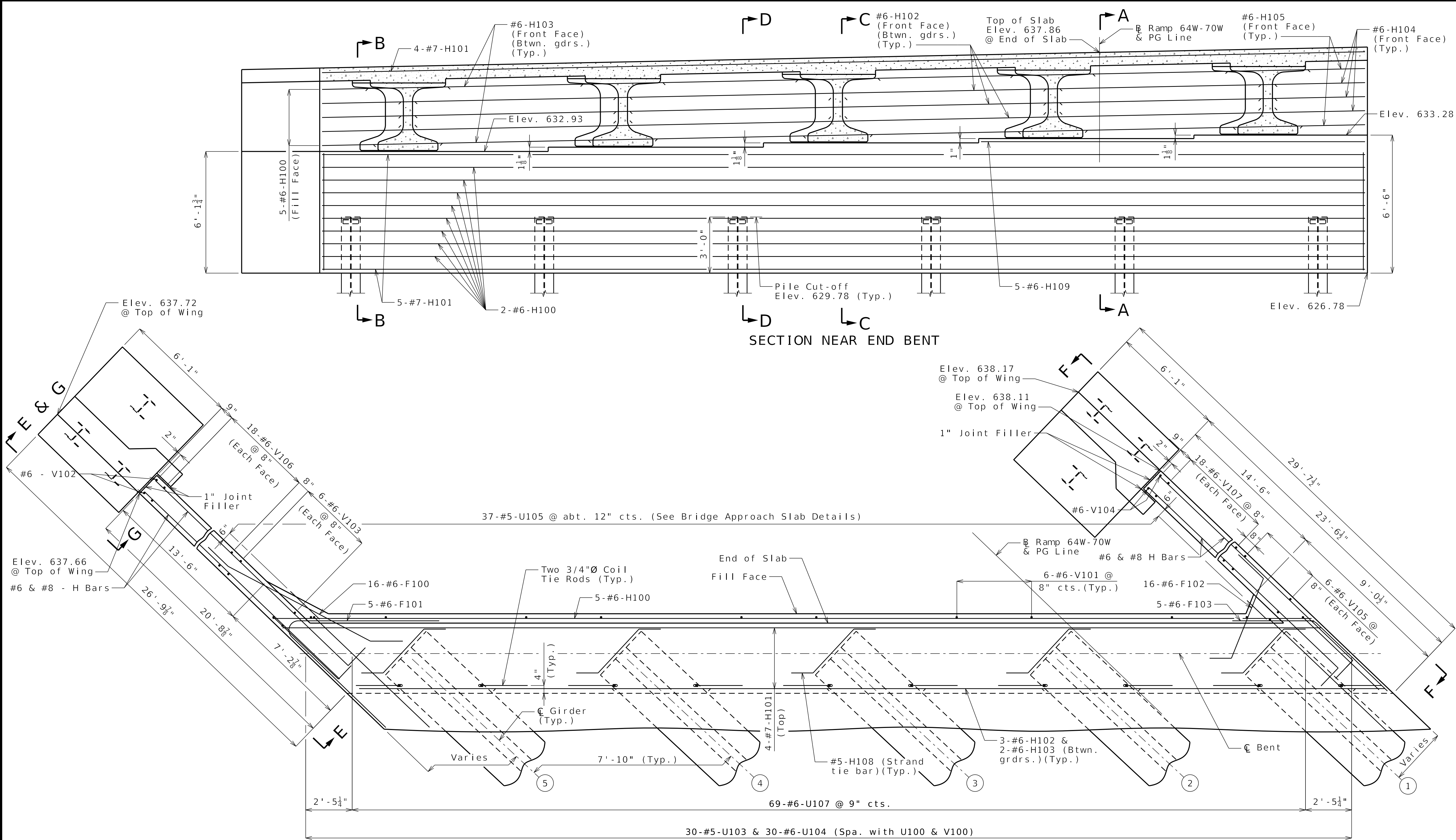


### PLAN SHOWING LAYOUT DATA FOR SUBSTRUCTURE









PART PLAN  
Keys not shown for clarity.

General Notes:

- Work this sheet with Sheets No. 5, 7, 8 and 9.
- For Sections A-A, B-B, C-C & D-D and Elevations E-E, F-F & G-G see Sheet No. 7, 8, and 9.
- The #6-F100 and #6-F102 bars shall be bent in the field to clear girders.
- The U bars shall be placed parallel to skewed steps.
- All concrete in the end bent above top of beam and below top of slab shall be Class B-2.

- Strands at end of girders shall be field bent or, if necessary, cut on field to maintain 1 1/2-inch minimum clearance to fill face of end bent.
- For location of coil tie rods and #5-H108 (strand tie bar), see Sheet No. 24.
- For details of vertical drain at end bents, see Sheet No. 10.
- For details of bridge approach slab, see Sheet No. 37.

STATE OF MISSOURI  
DAVID MORANDEIRA  
NUMBER  
PE-2021035906  
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
6/10/2025

ROUTE  
I-70

STATE  
MO

DISTRICT  
BR

SHEET NO.  
A9683-6

COUNTY  
ST. CHARLES

JOB NO.  
JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9683

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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

MoDOT

IMPROVE70  
ALLIANCE

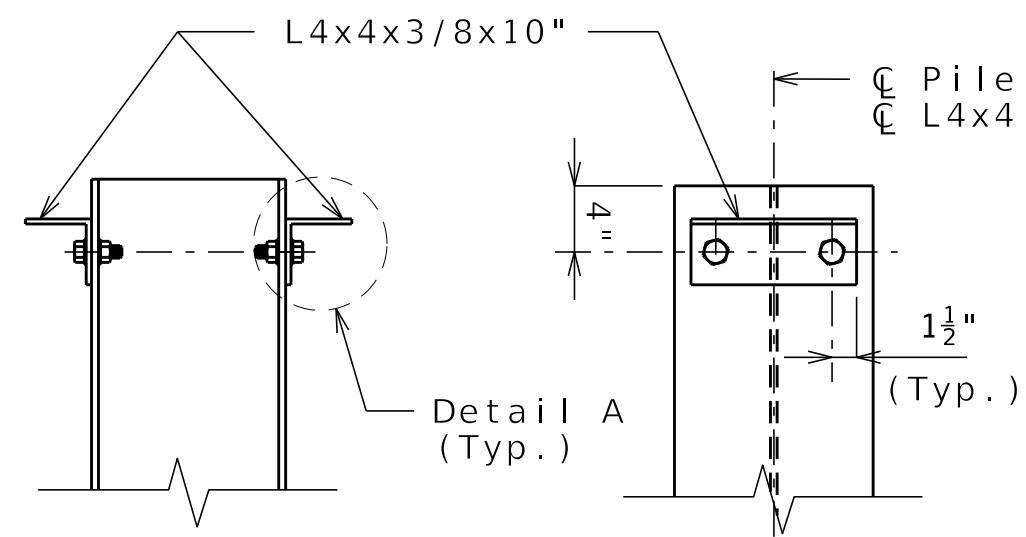
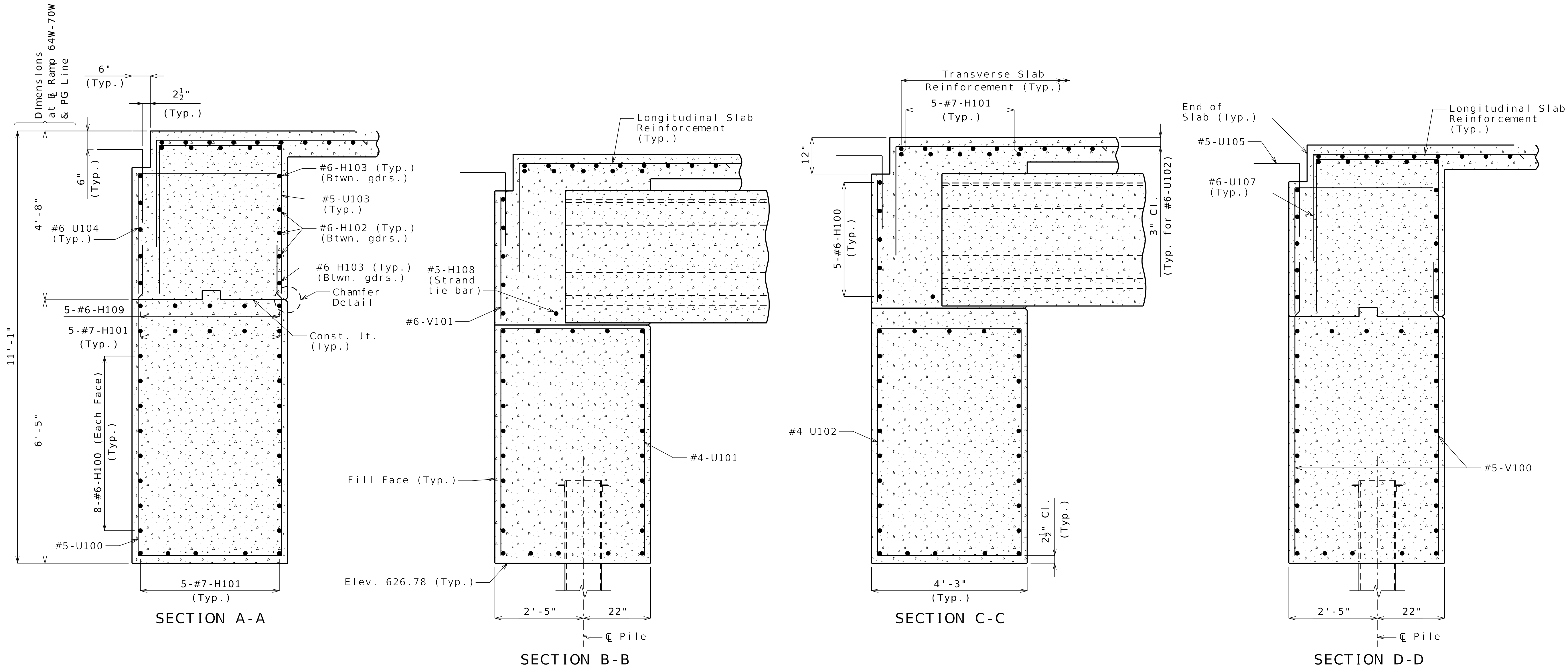
HNTB  
715 KIRK DRIVE  
KANSAS CITY, MO 64105-1310  
CERTIFICATE OF AUTHORITY  
NO. 001270

Bartlett & West

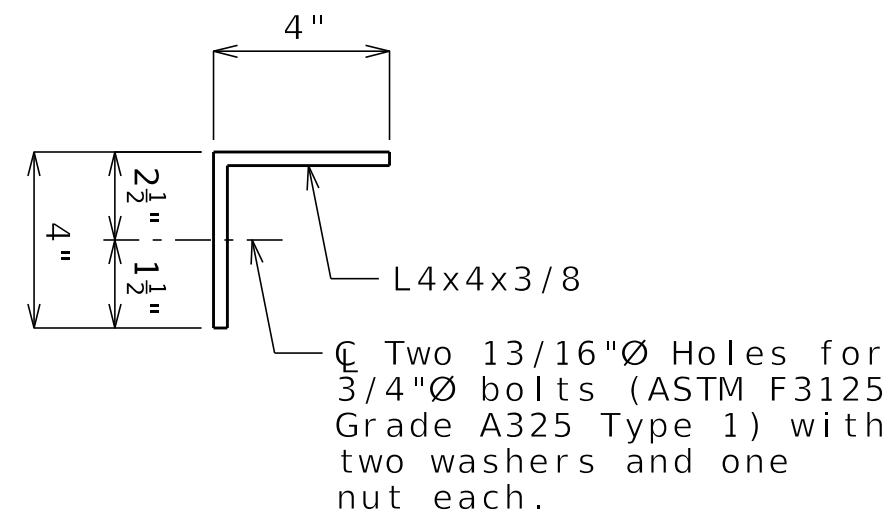
601 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101  
PHONE 873-633-3181  
WWW.BARTLETTWEST.COM

B\_A9683\_005\_JST0020\_BENT1-2.dgn 7:16:01 AM 6/10/2025



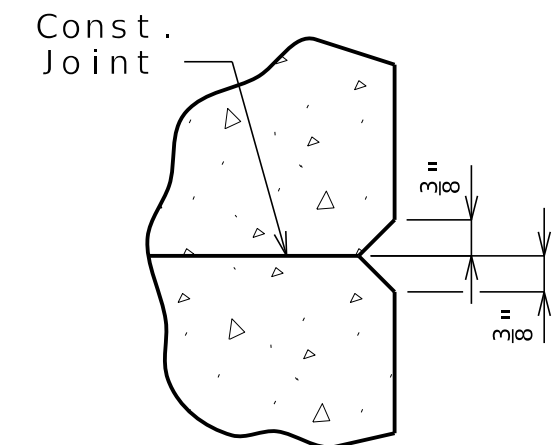


DETAILS OF HP PILE ANCHORS



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.



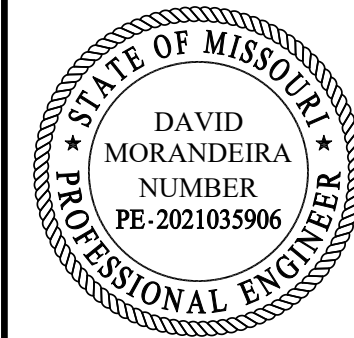
CHAMFER DETAIL

General Notes:

Work this sheet with Sheets No. 5, 6, 8 and 9.

For reinforcement of the barrier, see Sheet No. 36.

DETAILS OF END BENT NO. 1



THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
6/10/2025

ROUTE  
I - 70

DISTRICT  
BR

COUNTY  
ST. CHARLES

JOB NO.  
JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9683

| DESCRIPTION | DATE |
|-------------|------|
|             |      |
|             |      |
|             |      |
|             |      |
|             |      |
|             |      |
|             |      |
|             |      |
|             |      |

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

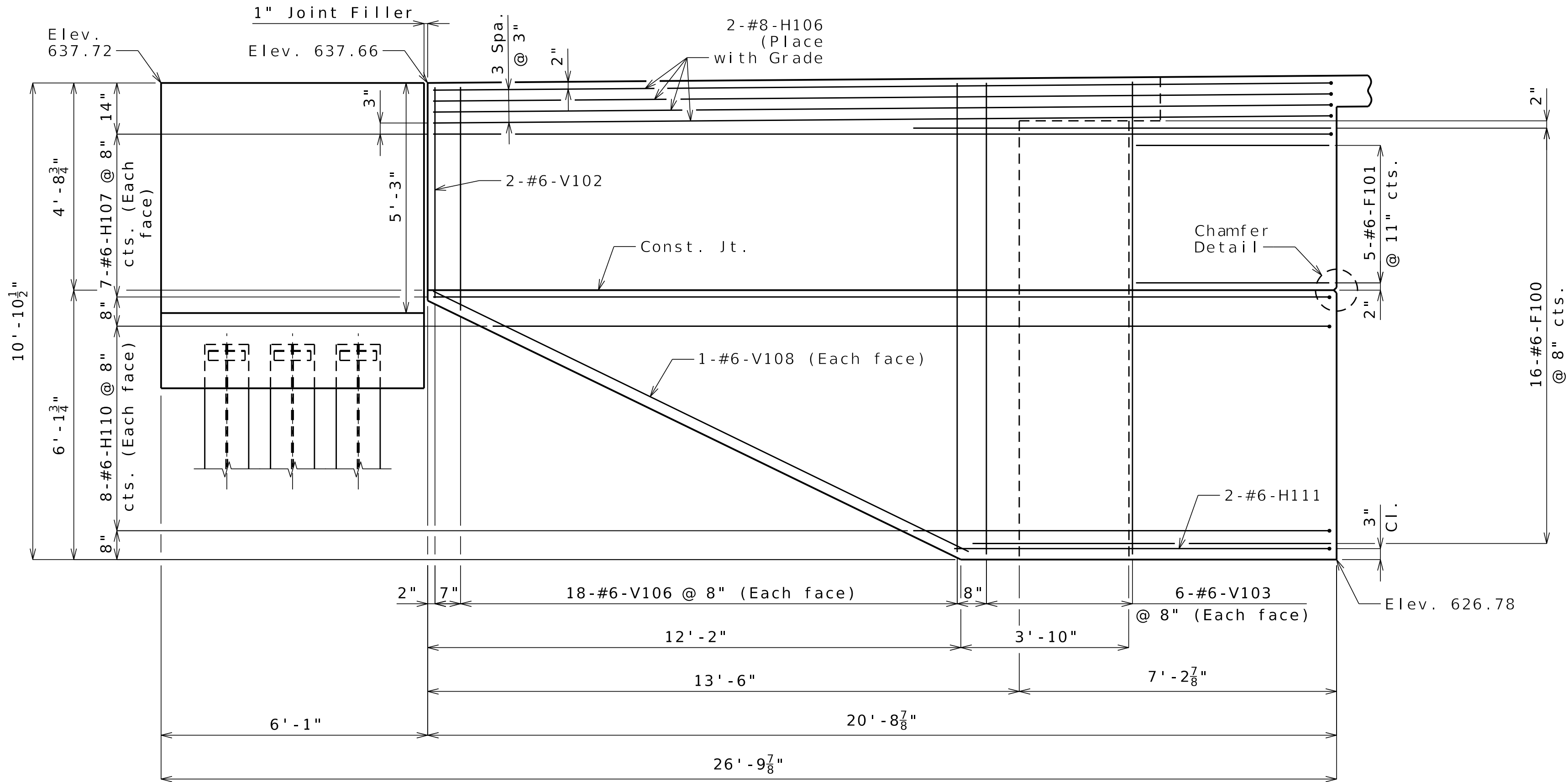
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)



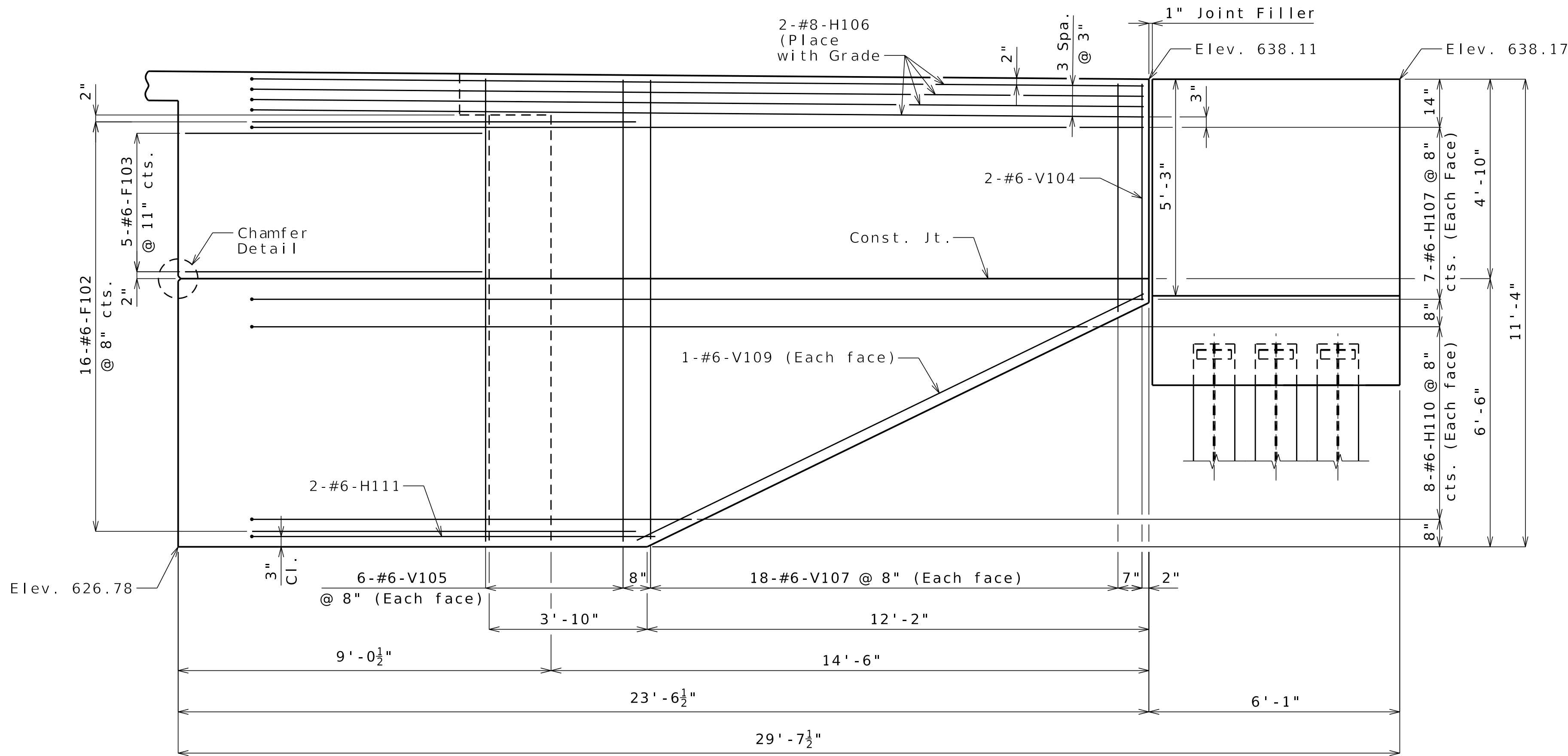
HNTB  
715 KIRK DRIVE  
KANSAS CITY, MO 64105-1310  
CERTIFICATE OF AUTHORITY  
NO. 001270

Bartlett & West  
601 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101  
PHONE 872-633-3181  
CERTIFICATE OF AUTHORITY  
WWW.BARTLETTWEST.COM

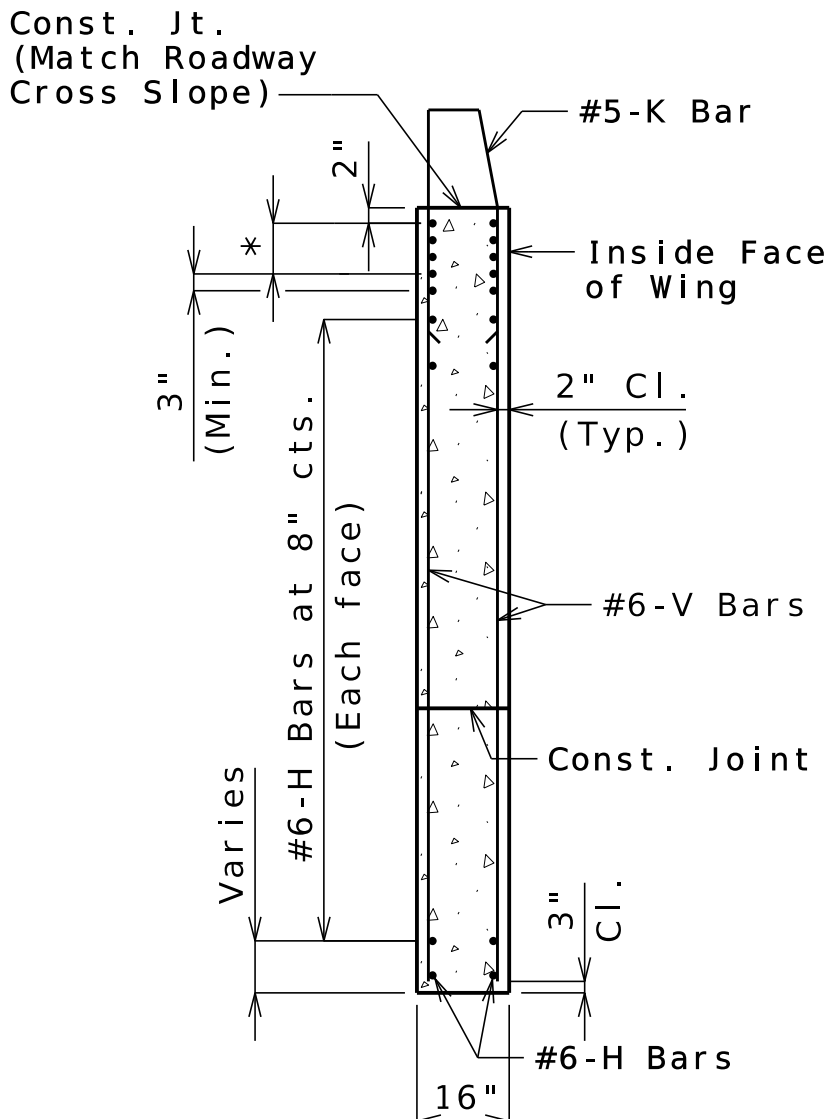




ELEVATION E-E



ELEVATION F-F



TYPICAL SECTION THRU WING  
\* #8-H Bars at 3" cts. (Each face)(Place with grade)

General Notes:  
Work this sheet with Sheets No. 5, 6, 7 and 9.  
For reinforcement of the barrier, see Sheet No. 36.

DETAILS OF END BENT NO. 1



THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
6/10/2025

ROUTE  
1-70

DISTRICT  
BR

COUNTY  
ST. CHARLES

JOB NO.  
JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9683

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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

IMPROVE70  
ALLIANCE

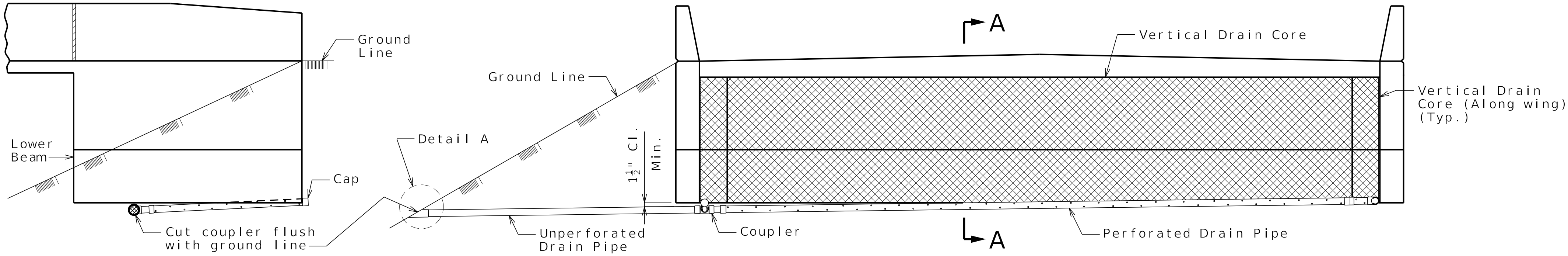
HNTB  
715 KIRK DRIVE  
KANSAS CITY, MO 64105-1310  
CERTIFICATE OF AUTHORITY  
NO. 001270

Bartlett & West  
601 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101  
PHONE 572-630-3181 - ENGINEERING  
WWW.BARTLETTWEST.COM



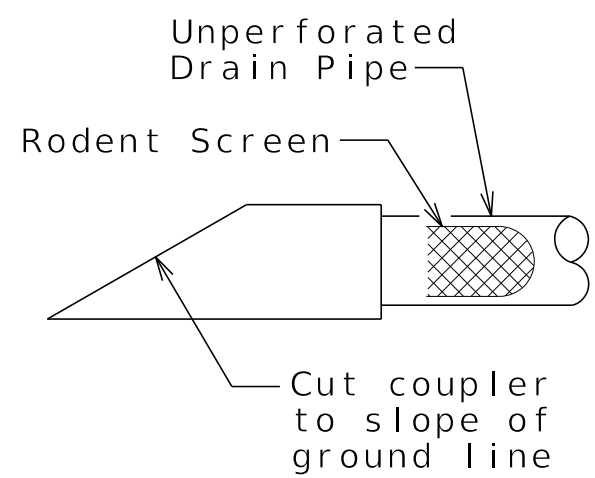




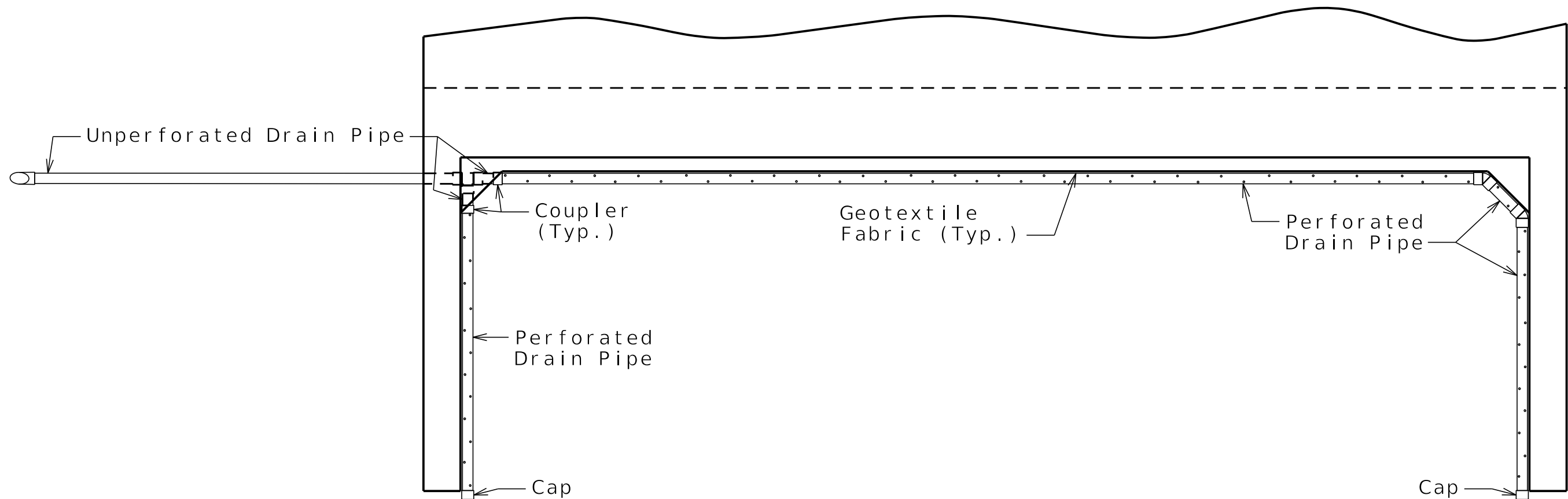


ELEVATION OF WING

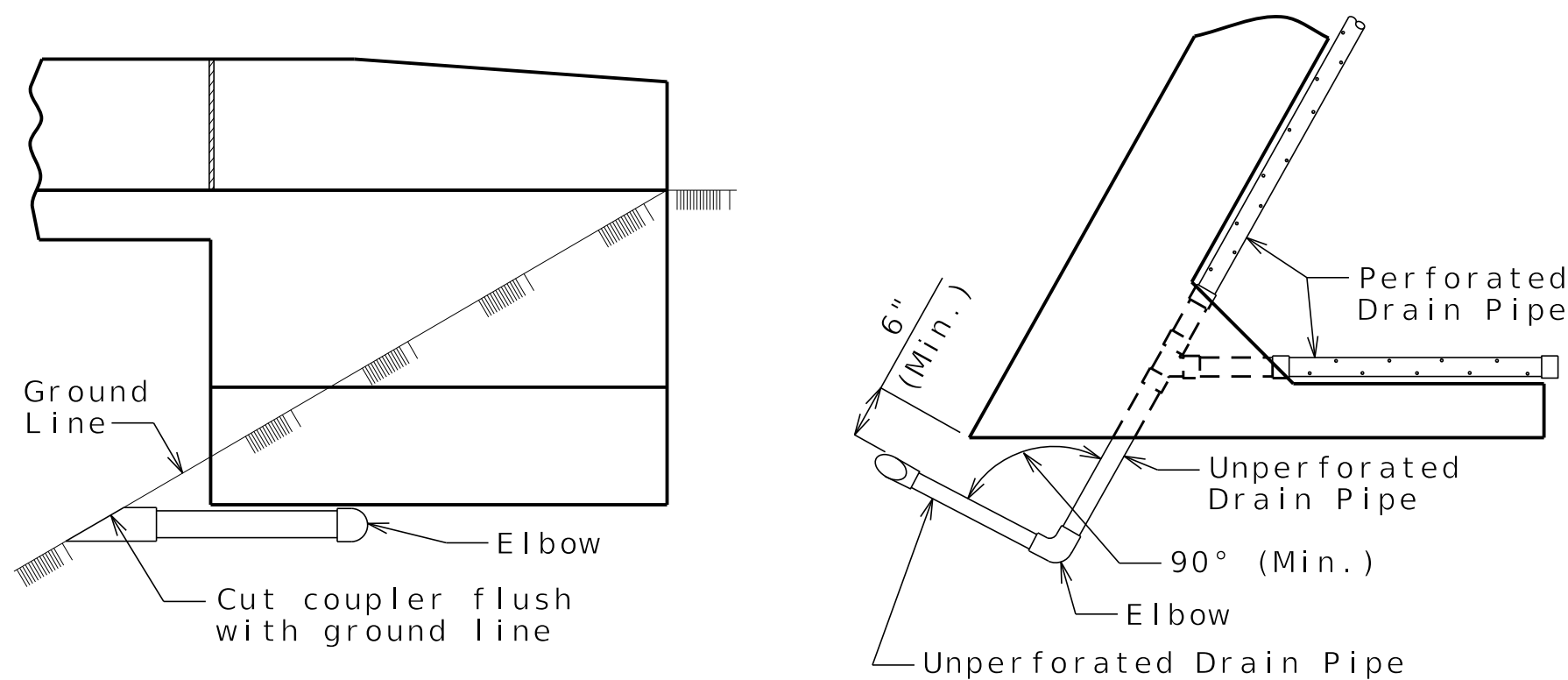
ELEVATION OF END BENT



DETAIL A



PLAN OF END BENT

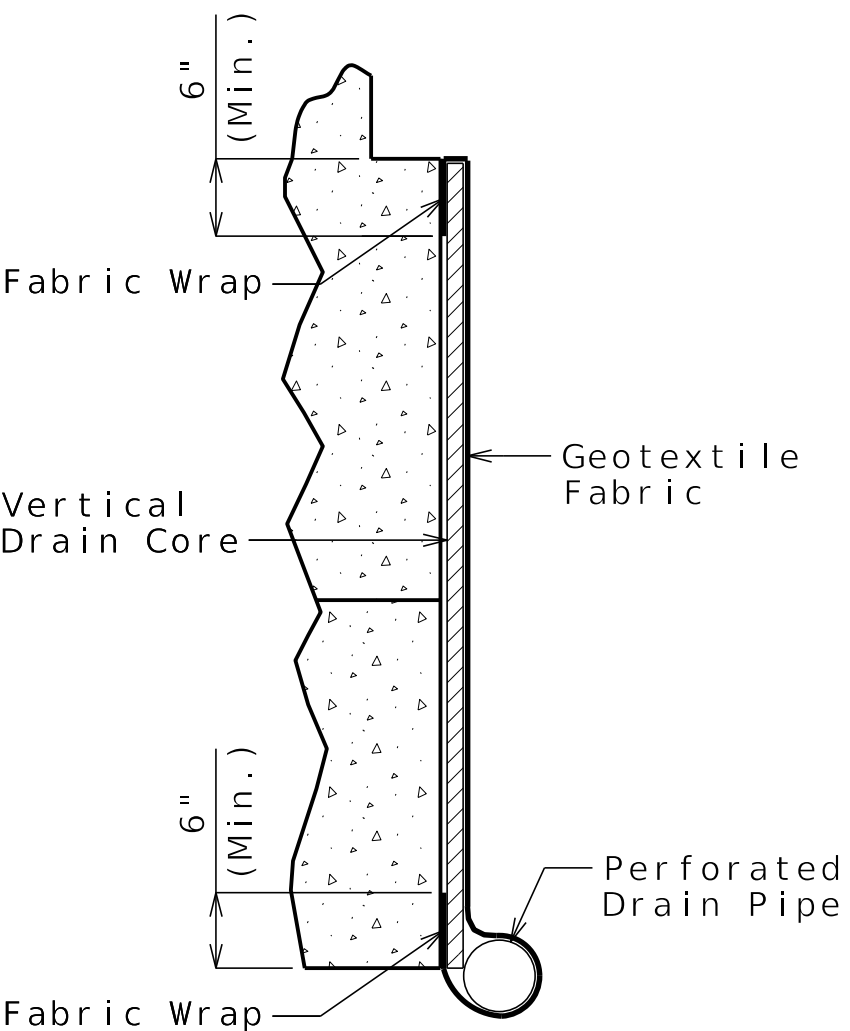


ELEVATION OF WING

PART PLAN

OPTIONAL TURNED DRAIN

(Use only when straight drain is not practical.)



PART SECTION A-A  
(Section thru wing similar)

General Notes:

All drain pipe shall be sloped 1 to 2 percent.

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

Drain pipe shall be placed at fill face of end bent and inside face of wings. The pipe shall slope to lowest grade of ground line, also missing the lower beam of end bent by a minimum of 1 1/2 inches.

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



THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED

6/10/2025

ROUTE STATE

I - 70 MO

DISTRICT SHEET NO.

BR A9683-10

COUNTY

ST. CHARLES

JOB NO.

JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

A9683

DESCRIPTION

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

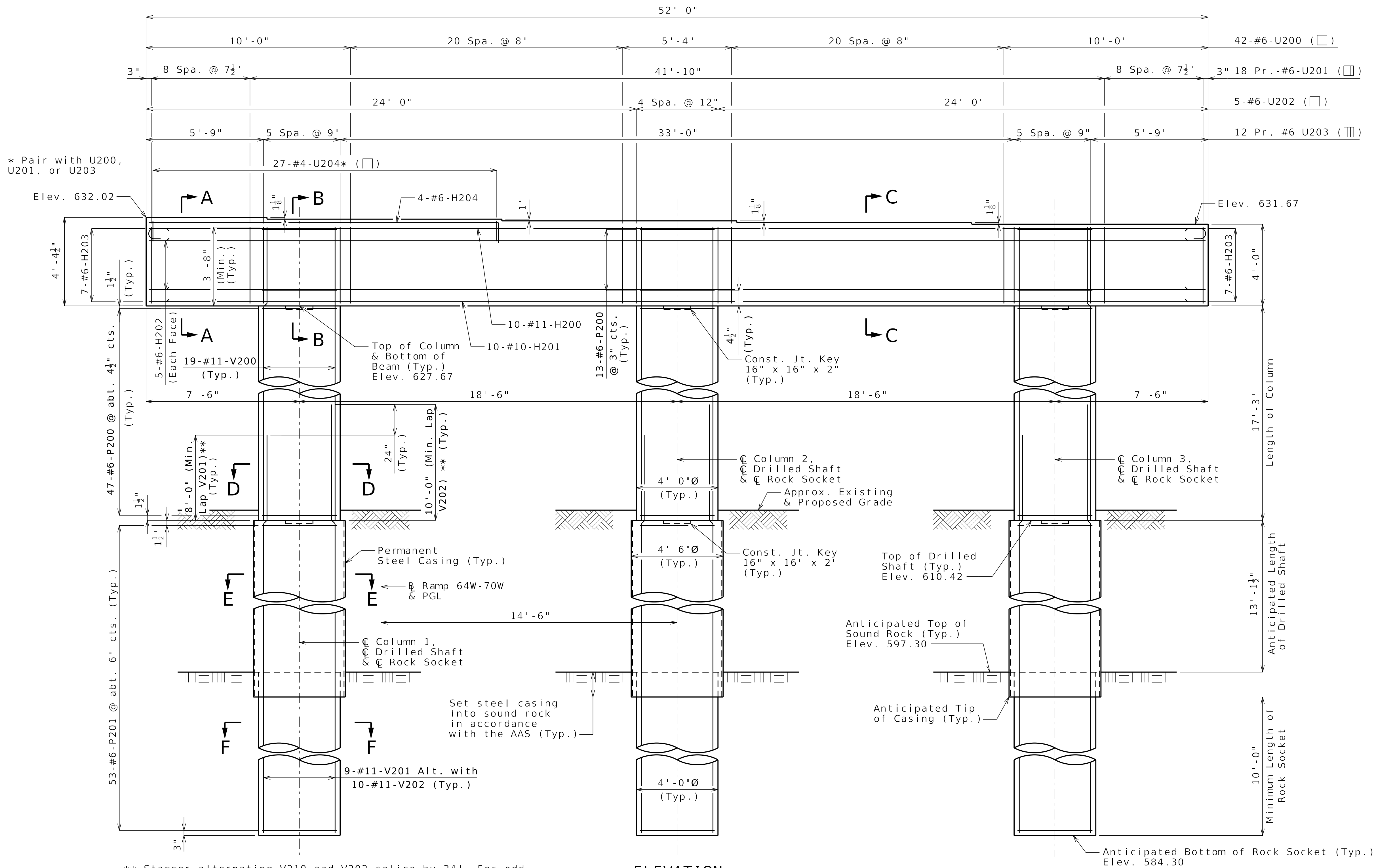
DATE

DATE

DATE

DATE





\*\* Stagger alternating V210 and V202 splice by 24". For odd number of bars, two bars in each column may splice at the same location. Cut bars as needed.

**ELEVATION**  
Beam keys not shown for clarity.

- General Notes:
- Work this sheet with Sheets No. 12 and 13 .
  - Drilled shafts shall be constructed and inspected in accordance with the Bridge Geotechnical Memo and the project Drilled Shaft Construction AAS.
  - Thickness of permanent steel casing shall be in accordance with Drilled Shaft Construction AAS.
  - An additional 4 feet has been added to V-bar lengths and additional 24-#6-P201 bars have been added for possible change in drilled shaft or rock socket length. The additional V-bar length shall be cut off or included in the reinforcement lap if not required. The P bars shall be spaced similarly to that shown in Elevation. If required, or a lesser spacing if not required but not less than 6-inch centers.

- Sonic logging testing shall be performed on all drilled shafts and rock sockets.
- Contractor shall locate lumen line to avoid conflict during shaft drilling activity.
- The tip of casing shall not extend into the rock socket elevation range reported in the Foundation Data table without approval by the engineer.



|                                                              |                       |
|--------------------------------------------------------------|-----------------------|
| THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY. |                       |
| DATE PREPARED<br>6/10/2025                                   |                       |
| ROUTE<br>1 - 70                                              | STATE<br>MO           |
| DISTRICT<br>BR                                               | SHEET NO.<br>A9683-11 |
| COUNTY<br>ST. CHARLES                                        |                       |
| JOB NO.<br>JST0020                                           |                       |
| CONTRACT ID.                                                 |                       |

|                     |  |
|---------------------|--|
| PROJECT NO.         |  |
| BRIDGE NO.<br>A9683 |  |

| DATE | DESCRIPTION |
|------|-------------|
|      |             |
|      |             |
|      |             |
|      |             |
|      |             |
|      |             |
|      |             |
|      |             |
|      |             |

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

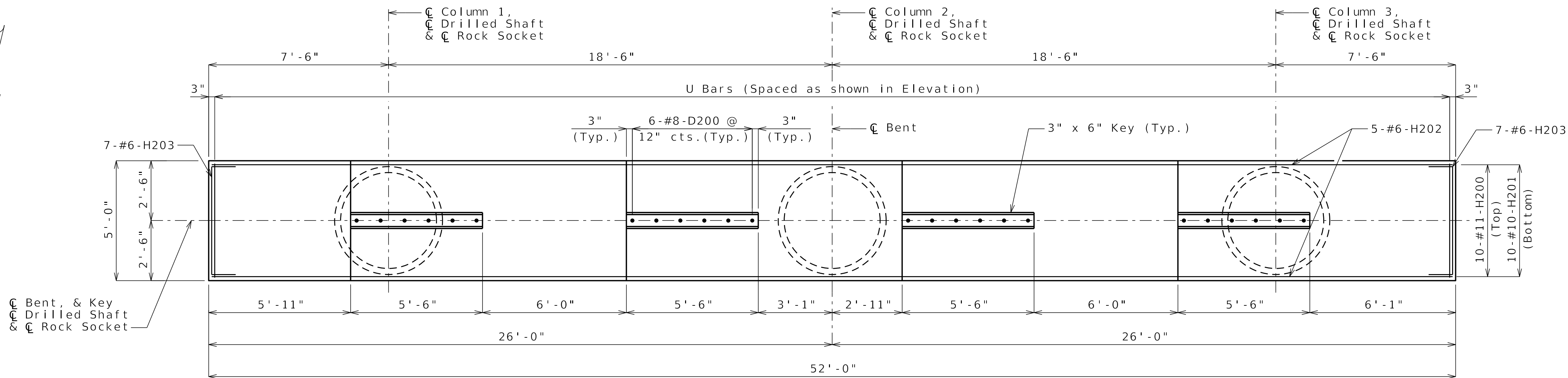
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)



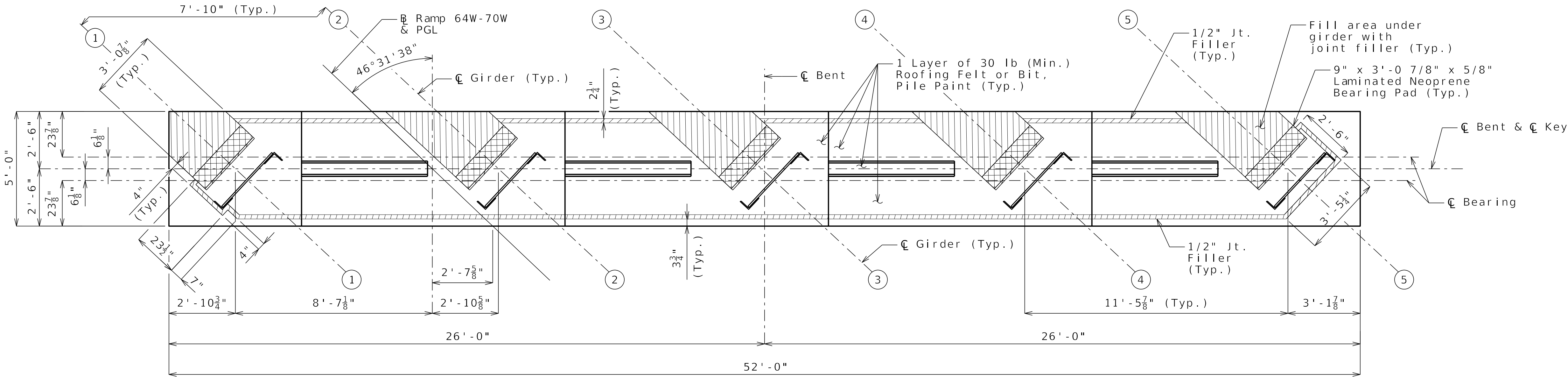
715 KIRK DRIVE  
KANSAS CITY, MO 64105-1310  
CERTIFICATE OF AUTHORITY  
NO. 001270

601 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101  
PHONE 872-630-3181  
FAX 872-630-3182  
WWW.BARTLETTWEST.COM

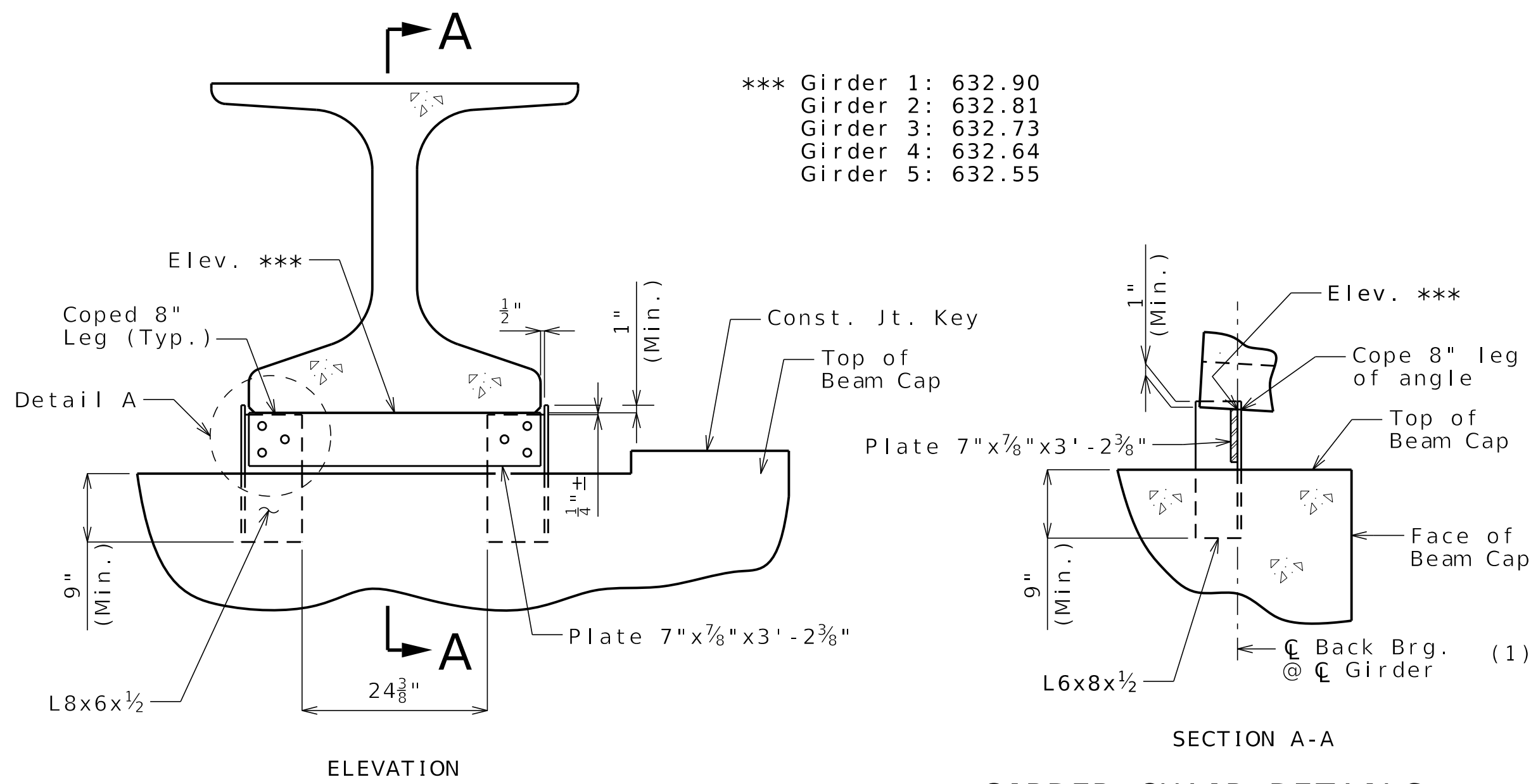




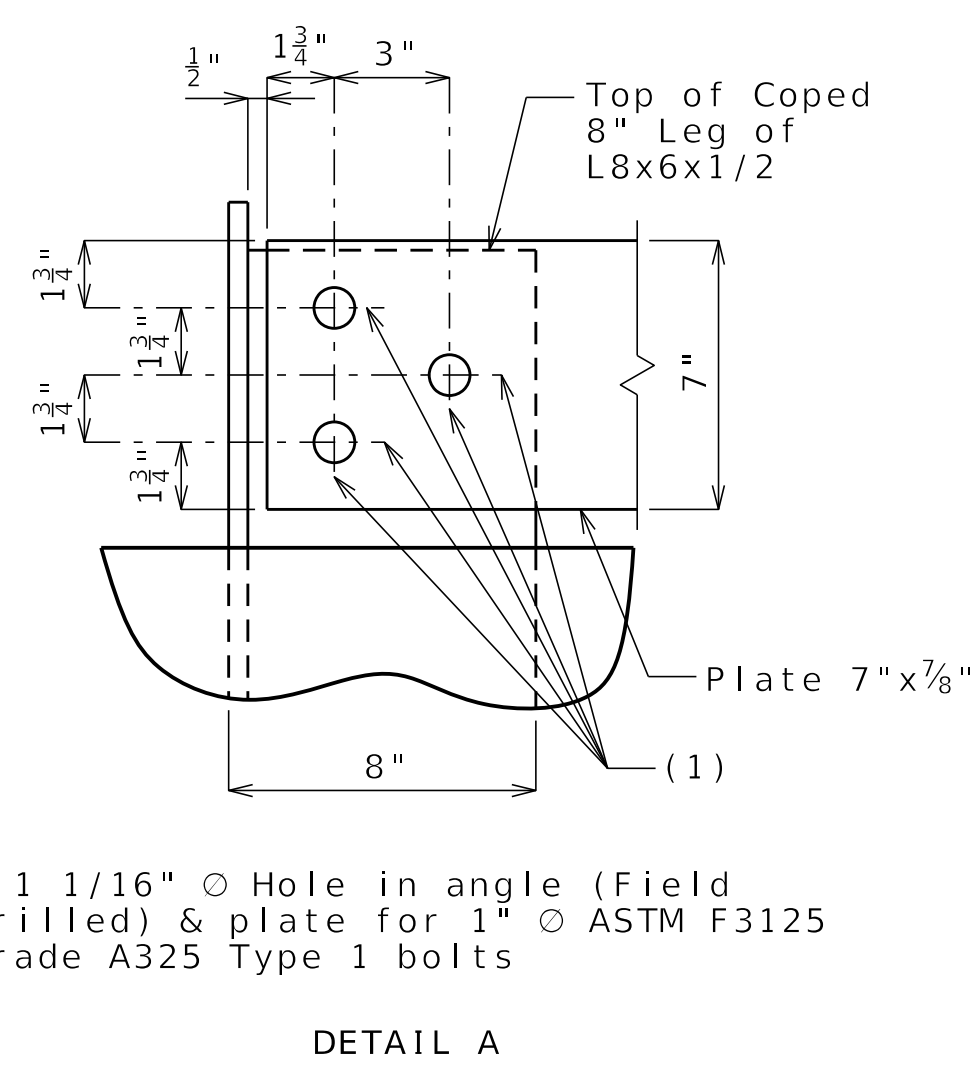
PLAN SHOWING REINFORCEMENT



PLAN OF BEAM



GIRDER CHAIR DETAILS



DETAIL A

General Notes:

Work this sheet with Sheets No. 11 and 13.

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

Structural steel for the girder beam chairs shall be coated with not less than 2 mils of inorganic zinc primer. Scratched or damaged surfaces are to be touched up in the field before concrete is poured. In lieu of coating, the girder beam chairs may be galvanized in accordance with ASTM A123.

Steel for chairs shall be ASTM A709 Grade 36.

Reinforcing steel shall be shifted to clear chairs.

DETAILS OF INTERMEDIATE BENT NO. 2

Detailed JUN 2025  
Checked JUN 2025

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

Sheet 12 of 46



THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
6/10/2025

ROUTE  
1-70

STATE  
MO

DISTRICT  
BR

SHEET NO.  
A9683-12

COUNTY  
ST. CHARLES

JOB NO.  
JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9683

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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

MoDOT

IMPROVE70  
ALLIANCE

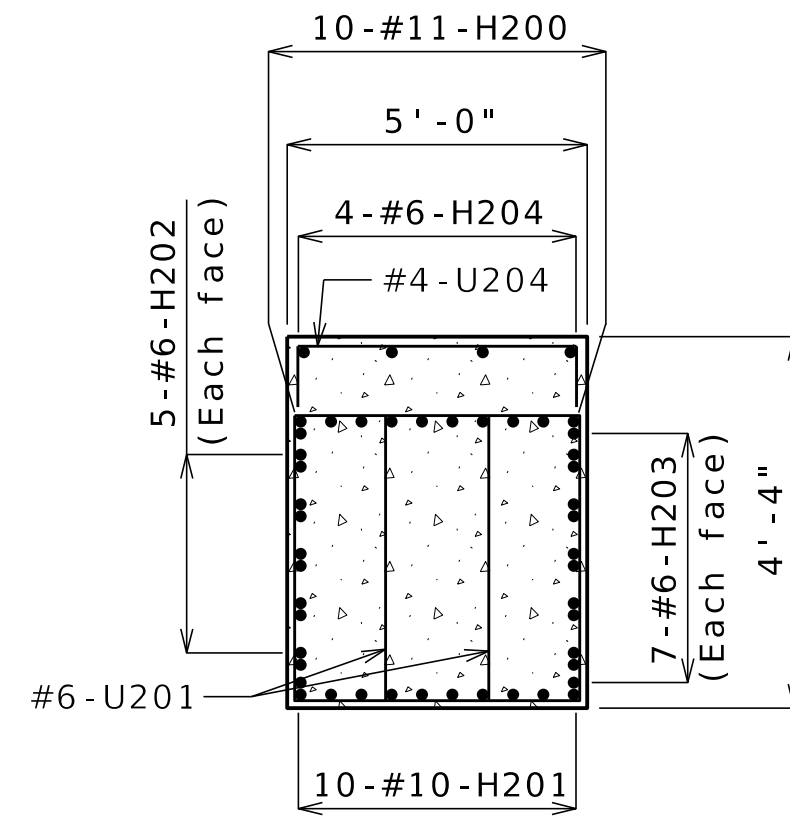
HNTB

Bartlett & West

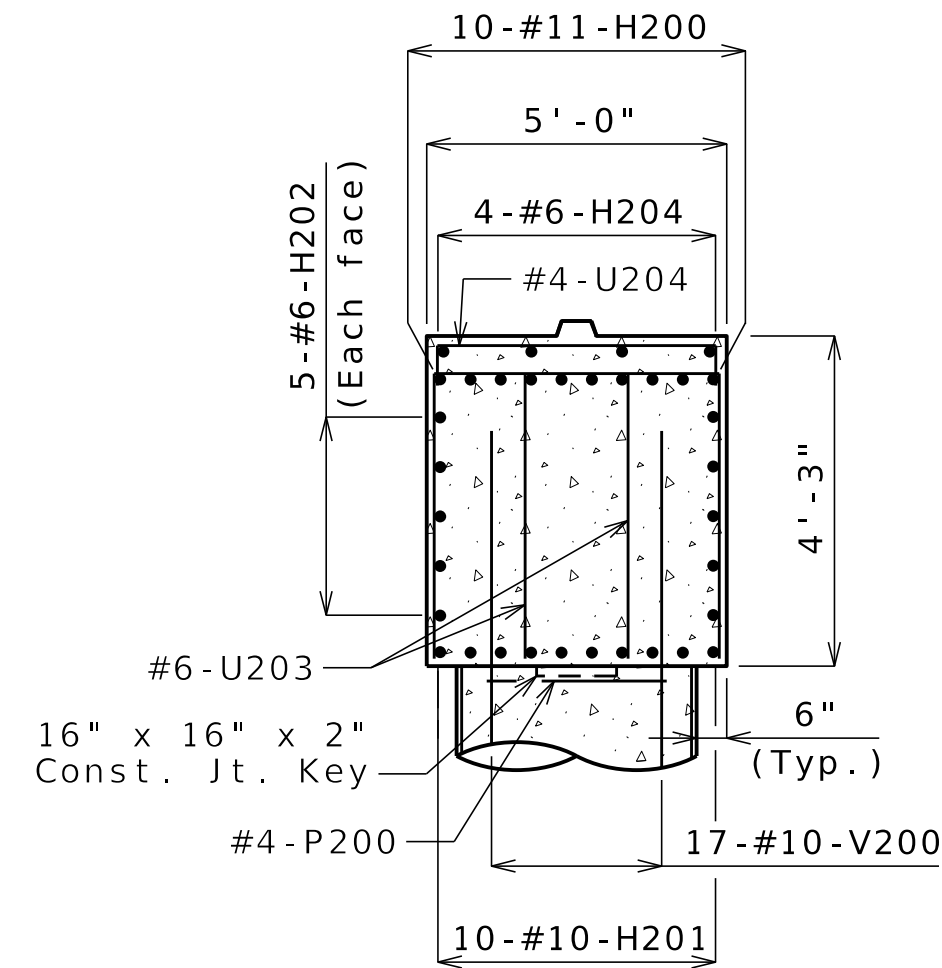
715 KIRK DRIVE  
KANSAS CITY, MO 64105-1310  
CERTIFICATE OF AUTHORITY  
NO. 001270

601 IRONIDE ST., SUITE 201 - JEFFERSON CITY, MO 65101  
PHONE 872-633-3181  
FAX 872-633-3181  
WWW.BARTLETTWEST.COM

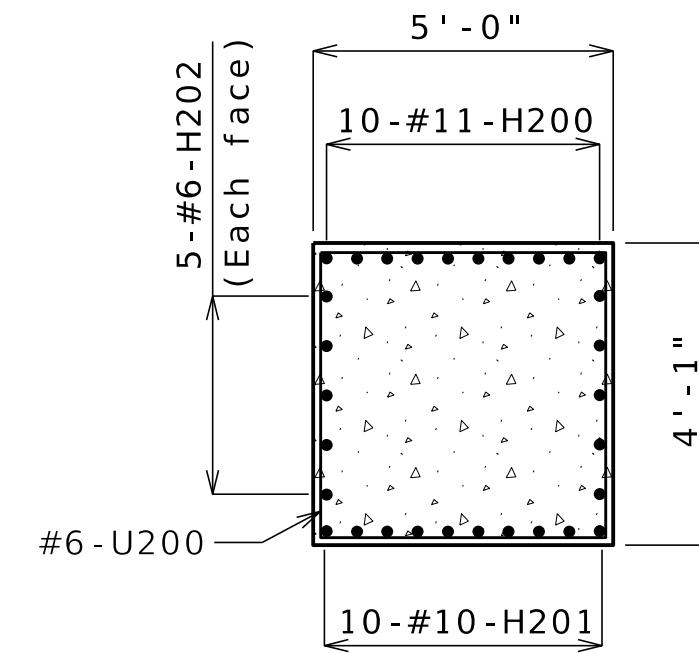




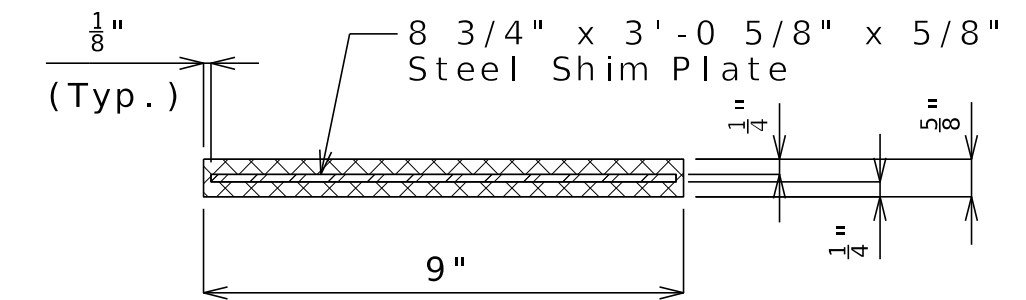
SECTION A-A



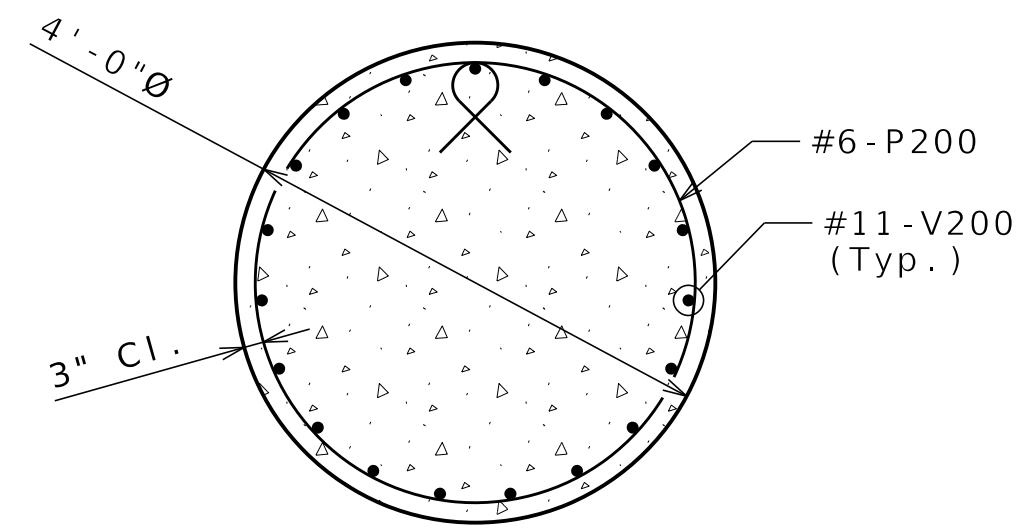
SECTION B - B



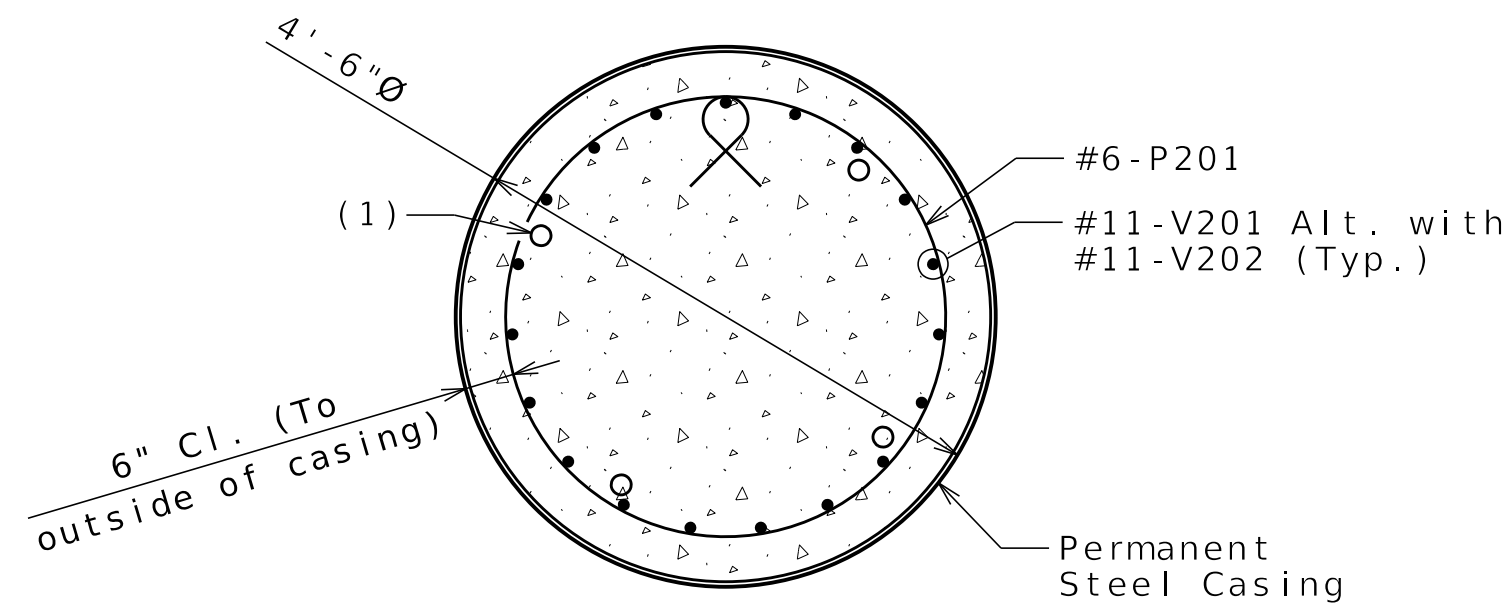
SECTION C-C



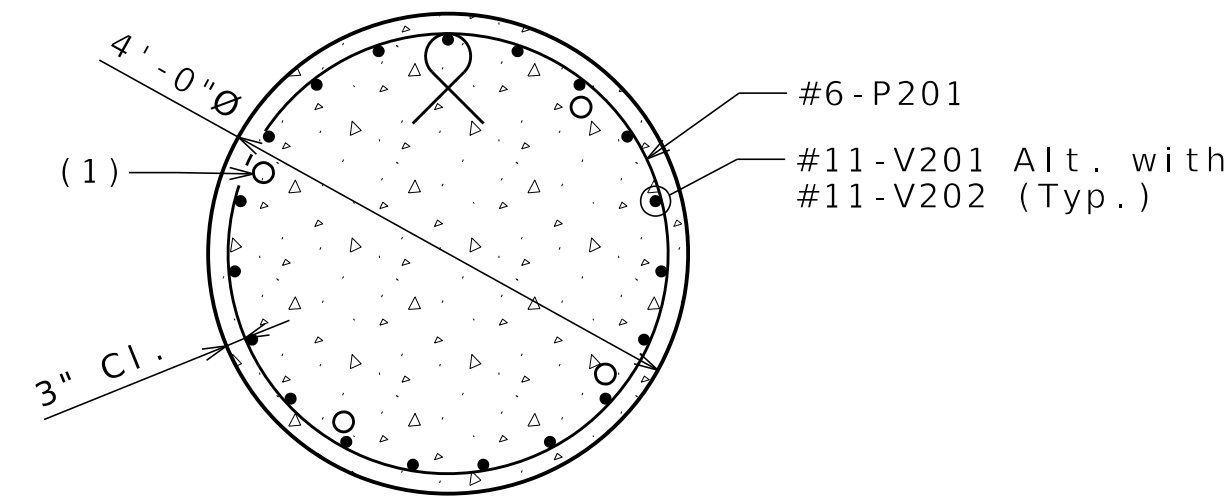
SECTION THRU LAMINATED  
NEOPRENE BEARING PAD



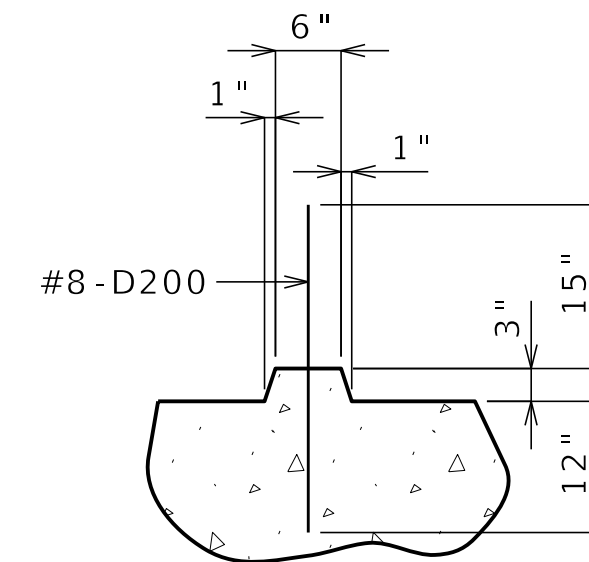
SECTION D-D



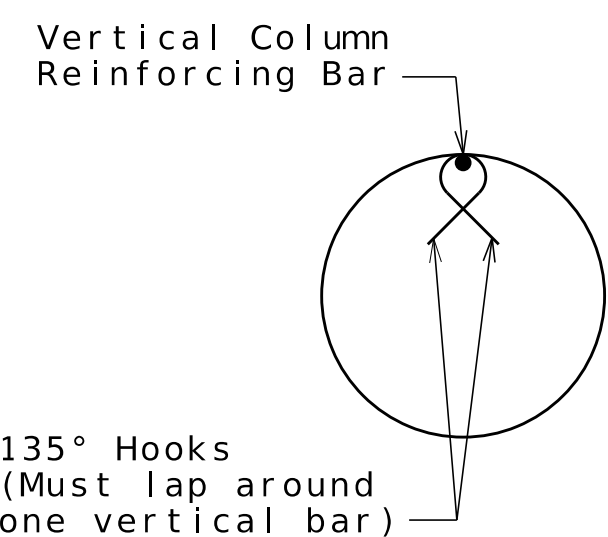
SECTION E - E



SECTION F - F



SECTION THRU KEY



SEISMIC STIRRUP BAR  
(#6-P200 & P201)

Note: Seismic stirrups hooks shall be staggered around the column at about one-third of the hoop circumference.

General Notes:

Work this sheet with Sheets No. 11 and 12.



THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
1/10/2025

7/10/2025

|        |       |
|--------|-------|
| ROUTE  | STATE |
| I - 70 | MO    |

|          |         |
|----------|---------|
| DISTRICT | SHEET N |
| DD       | 10000   |

|        |         |
|--------|---------|
| BR     | A9683 - |
| COUNTY |         |

ST. CHARLES

JOB NO.

JST0020

CONTRACT ID.

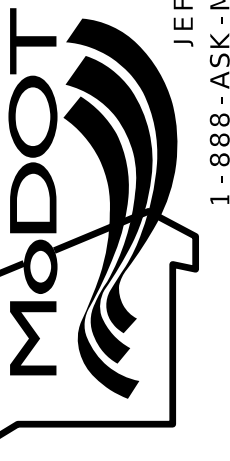
PROJECT NO.

BRIDGE NO.  
A0683

|       |  |  |  |  |  |
|-------|--|--|--|--|--|
| A9685 |  |  |  |  |  |
|       |  |  |  |  |  |

[illegible]

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



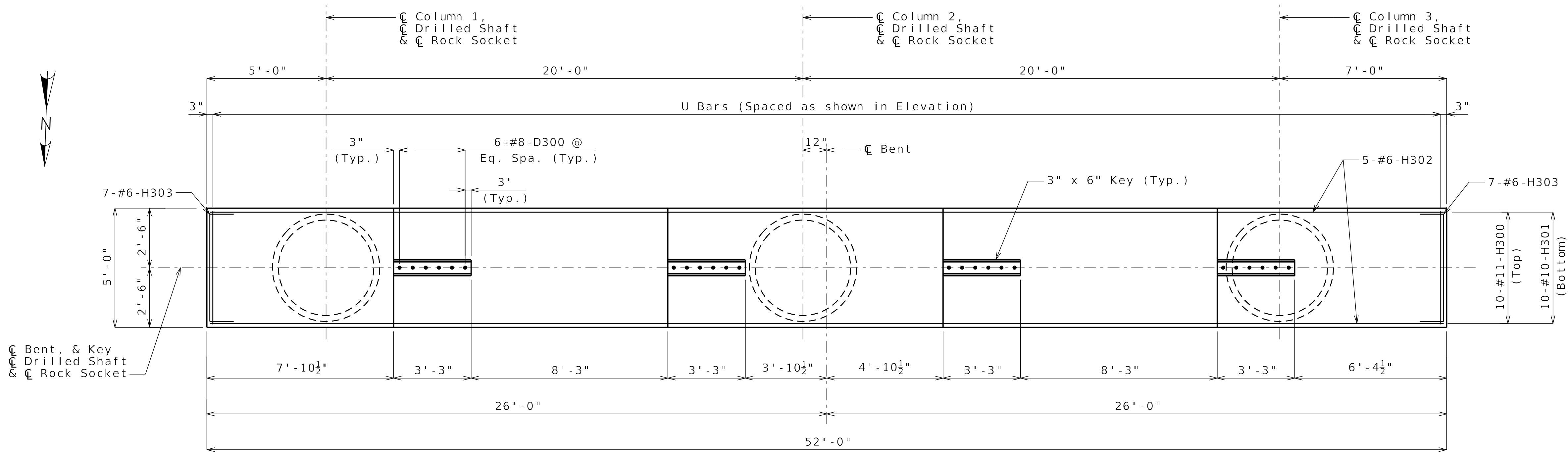
**HNTB**  
115 N. Main Street  
Kansas City, MO 64105-1310  
Certificate of Authority  
No. 001270

**Bartlett & West**  
601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101  
PHONE 573-634-3181  
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING  
[WWW.BARTLETTWEST.COM](http://WWW.BARTLETTWEST.COM)

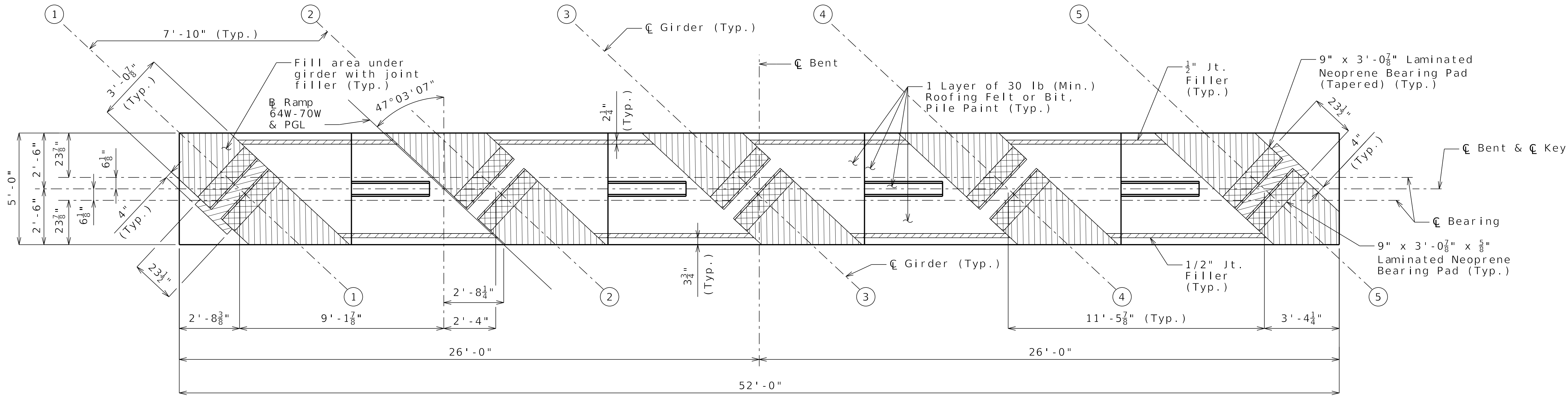








PLAN SHOWING REINFORCEMENT



PLAN OF BEAM

General Notes:  
Work this sheet with Sheets No. 14 and 16.  
For steps 2 inches or more, use 2 1/4x 1/2-inch joint filler up vertical face.

STATE OF MISSOURI  
DAVID MORANDEIRA  
NUMBER  
PE-2021035906  
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
6/10/2025

ROUTE  
1-70

STATE  
MO

DISTRICT  
BR

SHEET NO.  
A9683-15

COUNTY  
ST. CHARLES

JOB NO.  
JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9683

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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

MoDOT

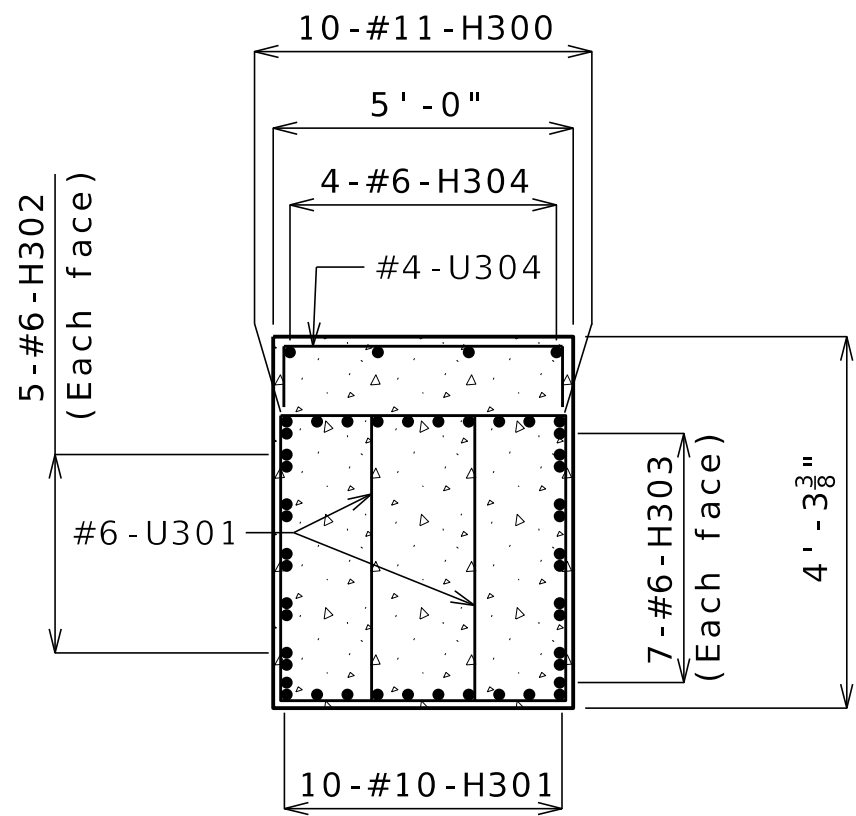
IMPROVE70  
ALLIANCE

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

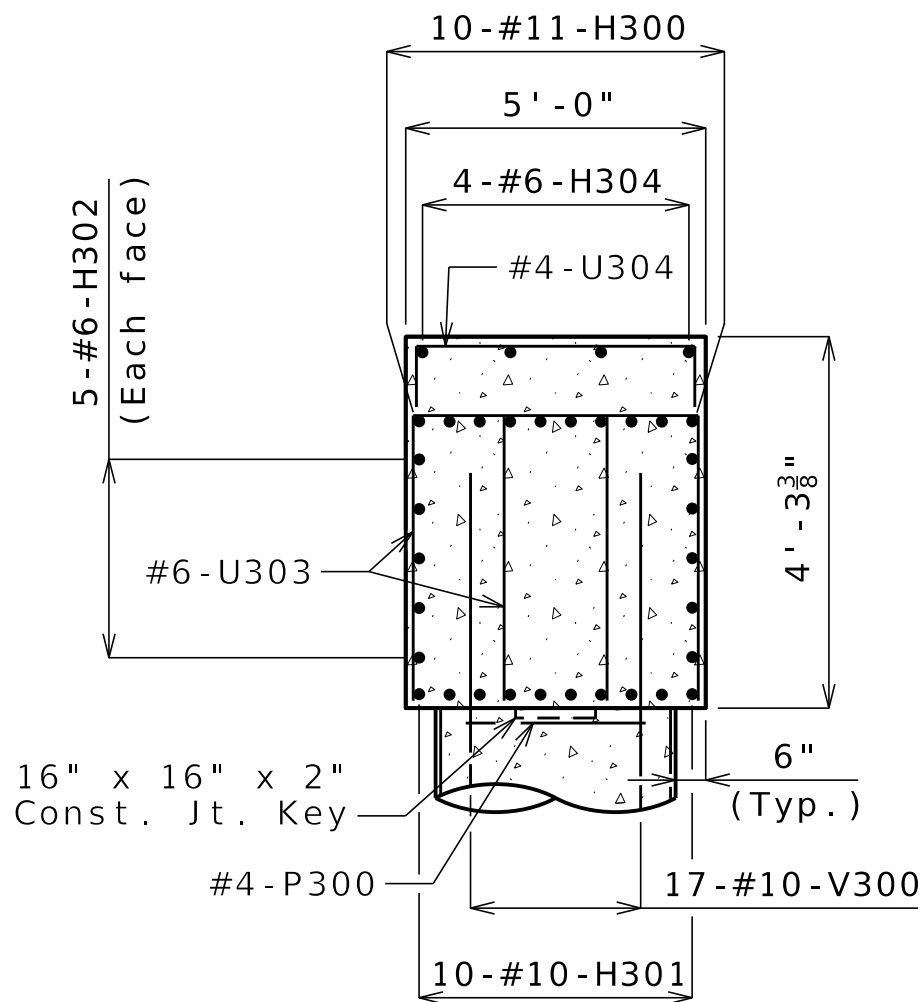
Bartlett & West

601 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101  
PHONE 872-630-3181  
CERTIFICATE OF  
WWW.BARTLETTWEST.COM

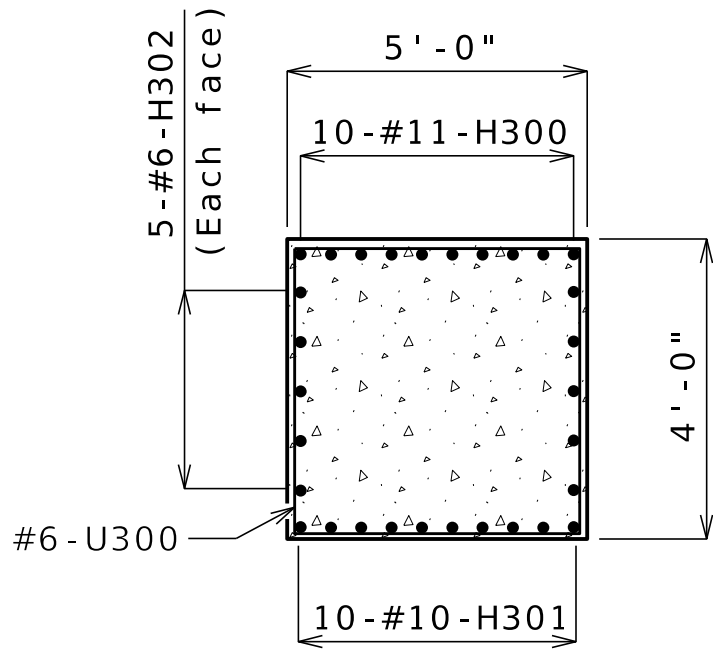




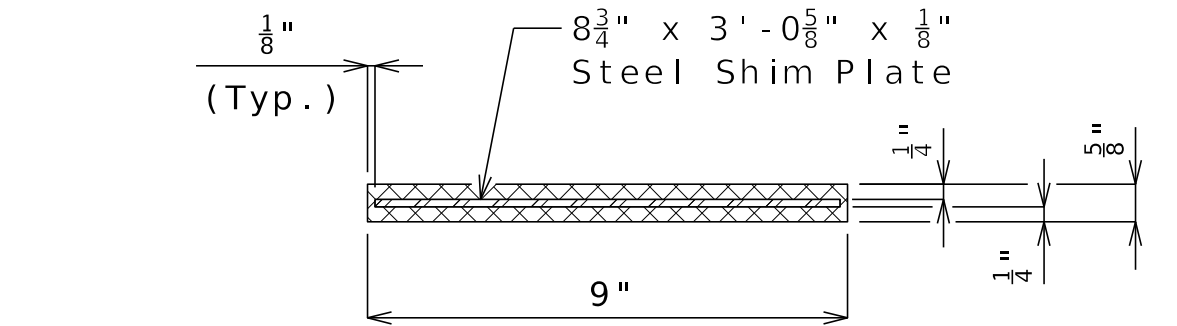
SECTION A-A



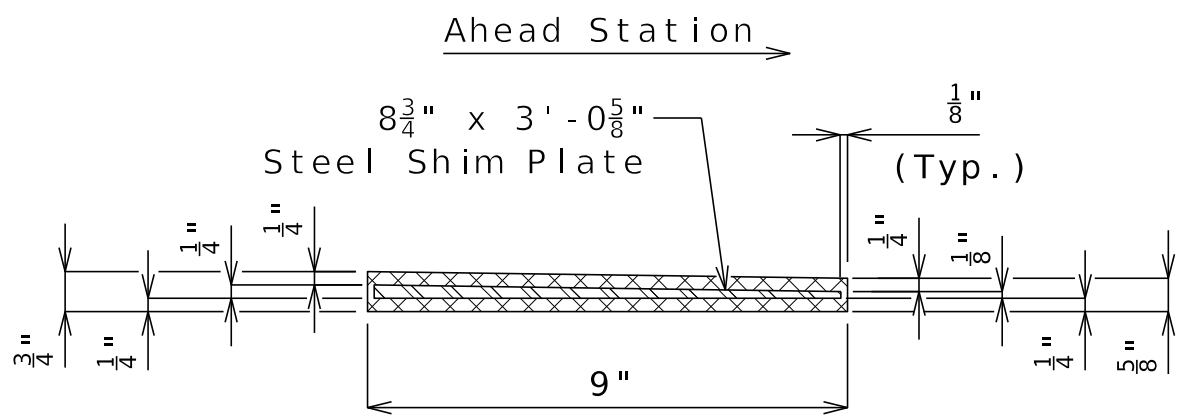
SECTION B-B



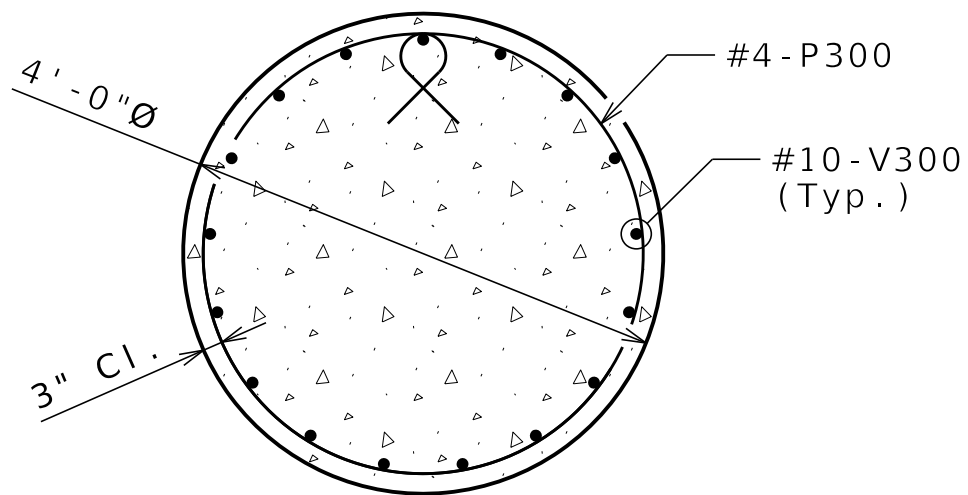
SECTION C-C



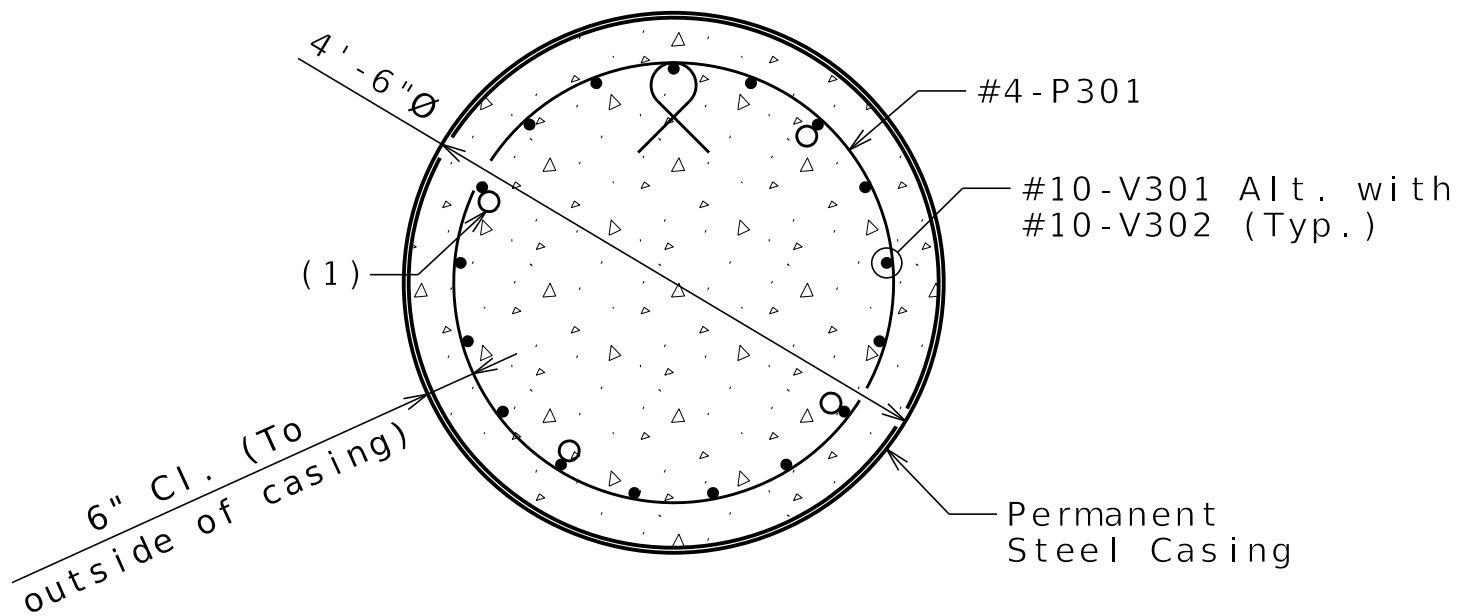
SECTION THRU LAMINATED NEOPRENE BEARING PAD (BACK BEARING)  
(5 REQUIRED)



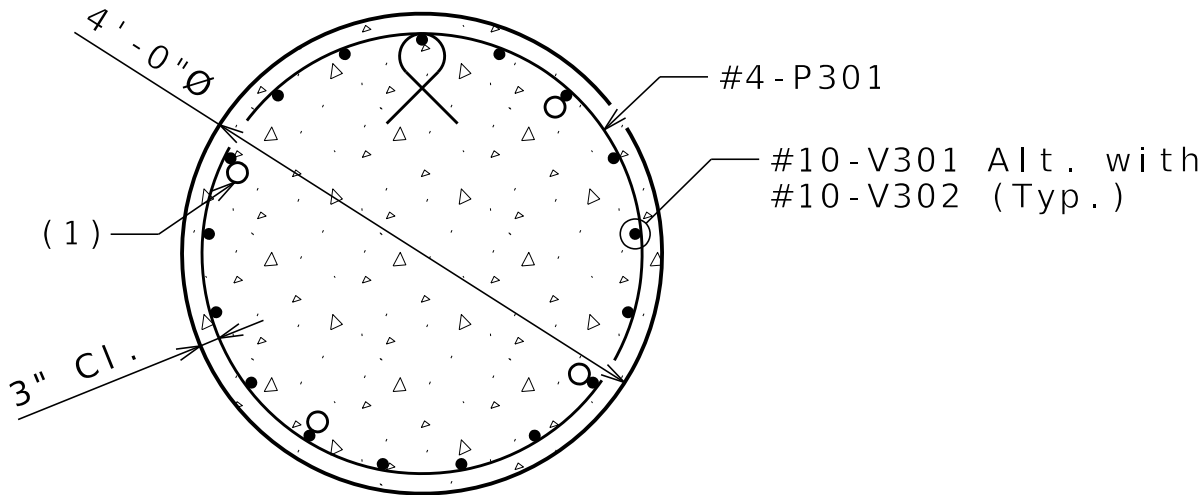
SECTION THRU LAMINATED NEOPRENE BEARING PAD (TAPERED) (AHEAD BEARING)  
(5 REQUIRED)



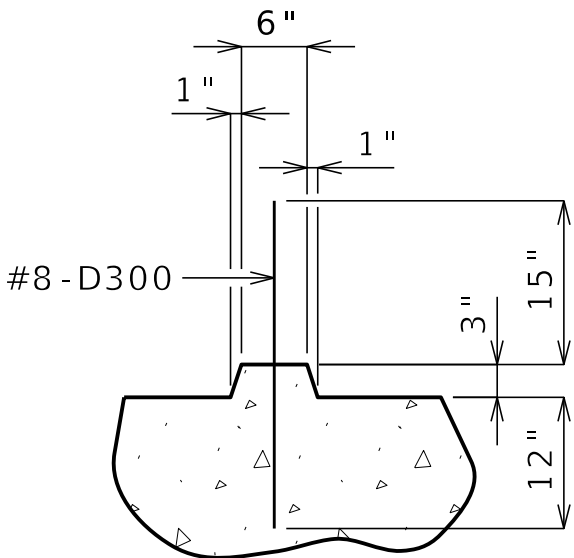
SECTION D-D



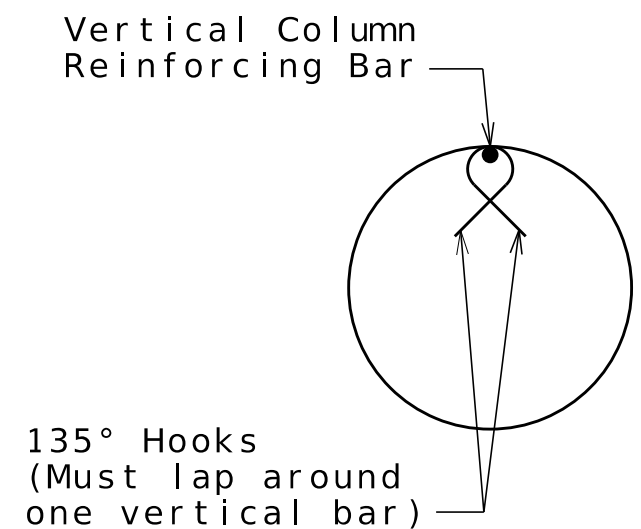
SECTION E-E



SECTION F-F



SECTION THRU KEY



SEISMIC STIRRUP BAR  
(#4-P300 & P301)

Note: Seismic stirrups hooks shall be staggered around the column at about one-third of the hoop circumference.

General Notes:  
Work this sheet with Sheets No. 14 and 15.

STATE OF MISSOURI  
DAVID MORANDEIRA  
NUMBER  
PE-2021035906  
PROFESSIONAL ENGINEER

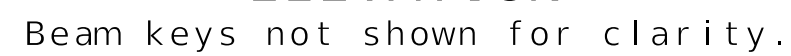
THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.  
DATE PREPARED  
6/10/2025  
ROUTE  
1-70  
STATE  
MO  
DISTRICT  
BR  
SHEET NO.  
A9683-16  
COUNTY  
ST. CHARLES  
JOB NO.  
JST0020  
CONTRACT ID.  
PROJECT NO.  
BRIDGE NO.  
A9683

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

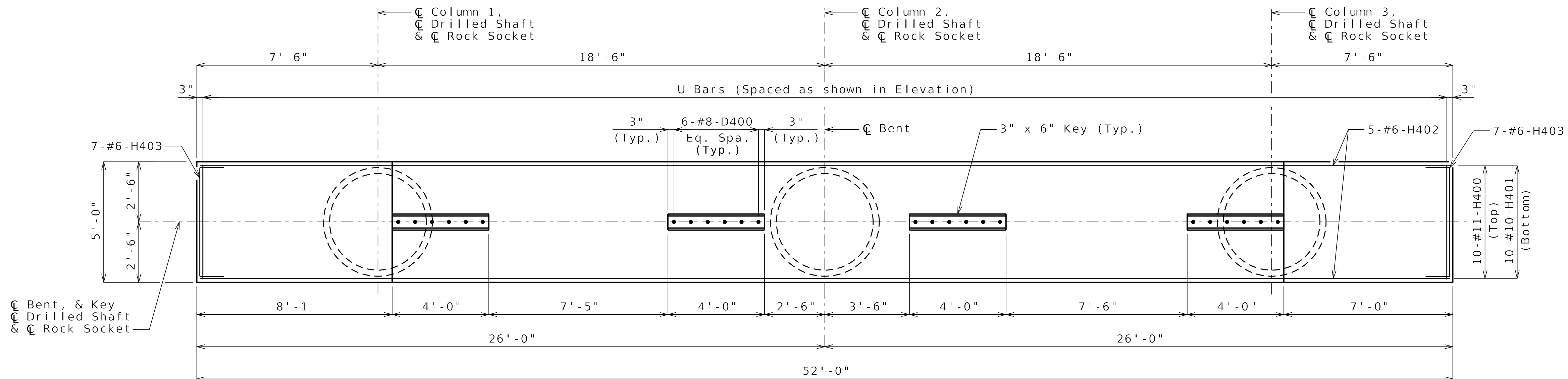
IMPROVE70  
ALLIANCE

715 KIRK DRIVE  
KANSAS CITY, MO 64105-1310  
KANSAS CITY, MO 65102  
CERTIFICATE OF AUTHORITY  
NO. 001270  
HNTB  
Bartlett & West  
601 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101  
PHONE 872-630-3181 - ENGINEERING  
WWW.BARTLETTWEST.COM

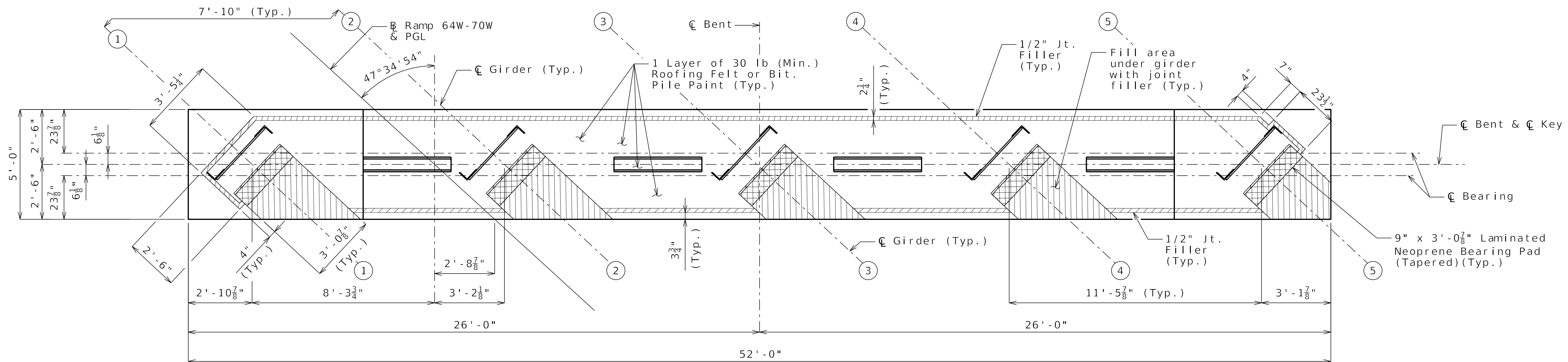




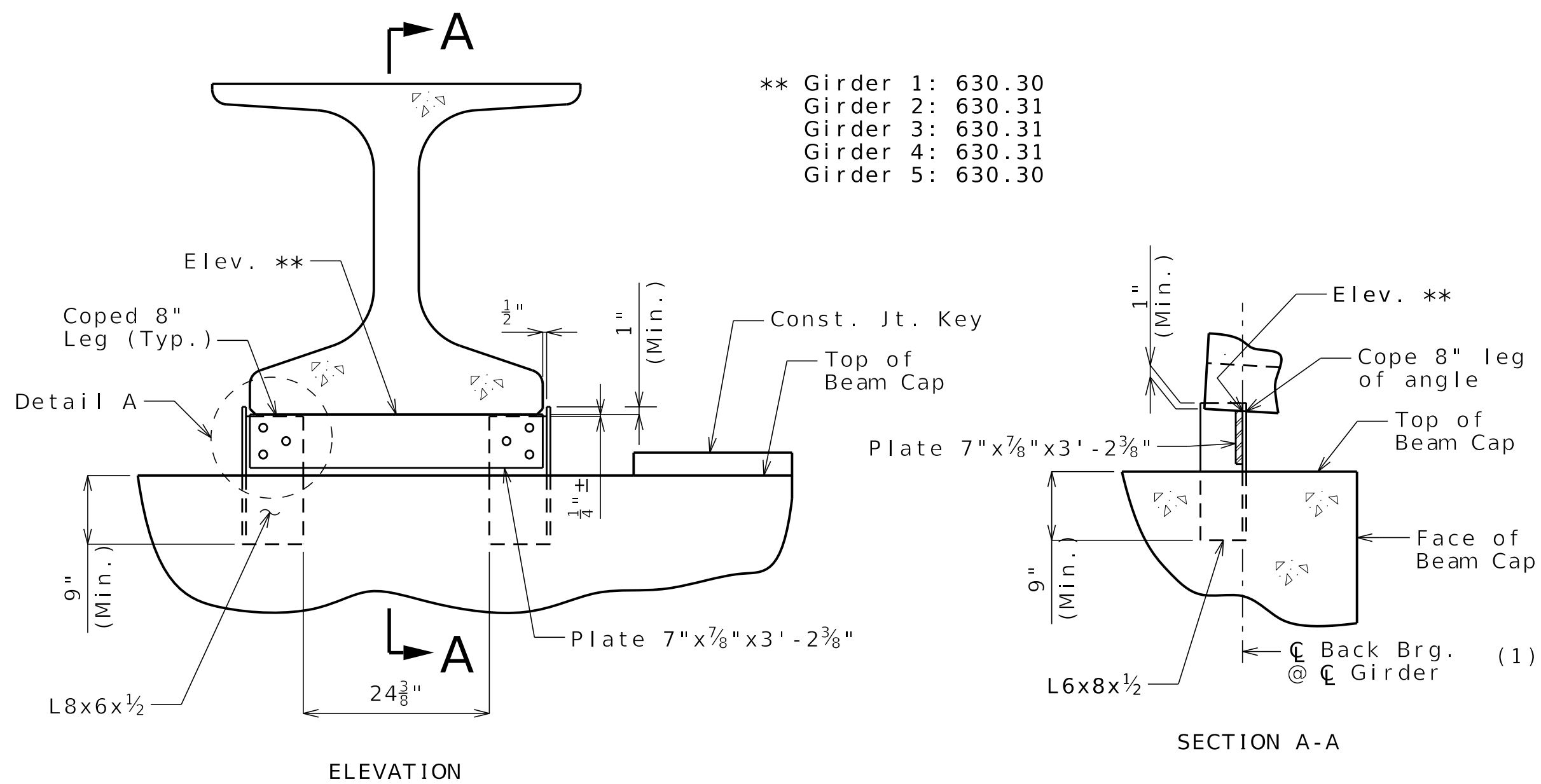




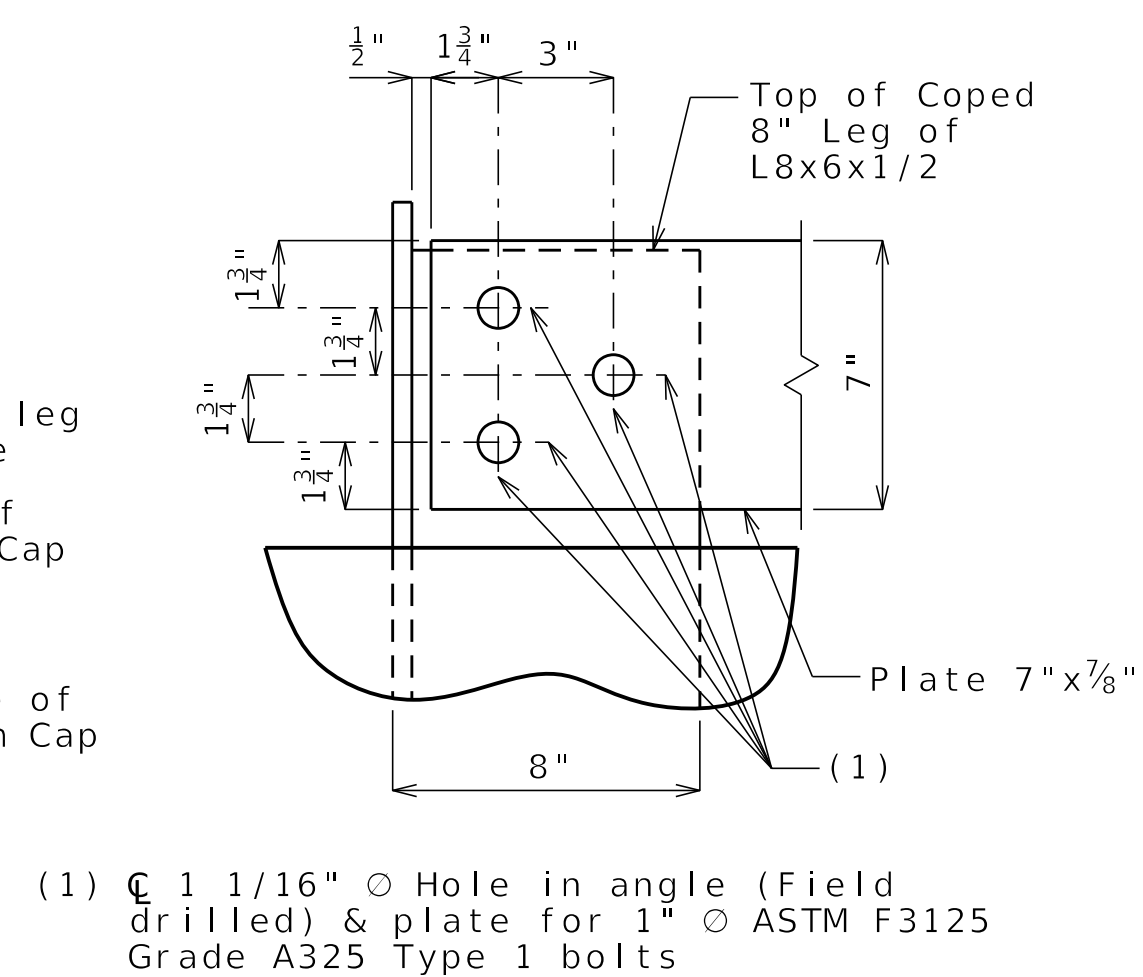
### PLAN SHOWING REINFORCEMENT



## PLAN OF BEAM



## GIRDER CHAIR DETAILS



DETAIL A

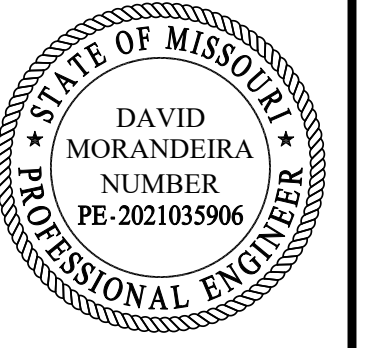
General Notes:

Work this sheet with Sheets No. 17 and 19.

Structural steel for the girder beam chairs shall be coated with not less than 2 mils of inorganic zinc primer. Scratched or damaged surfaces are to be touched up in the field before concrete is poured. In lieu of coating, the girder beam chairs may be galvanized in accordance with ASTM A123.

Steel for chairs shall be ASTM A709 Grade 36.

Reinforcing steel shall be shifted to clear chairs.



THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED

/ 10 / 2025

|       |       |
|-------|-------|
| ROUTE | STATE |
| 1-70  | MO    |

|          |    |
|----------|----|
| 1 - 70   | MO |
| 71 - 100 | MO |

|          |           |
|----------|-----------|
| DISTRICT | SHEET NO. |
| RR       | A0683 18  |

|        |          |
|--------|----------|
| DR     | A9083-18 |
| COUNTY |          |

ST CHARLES

JOB NO.

JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

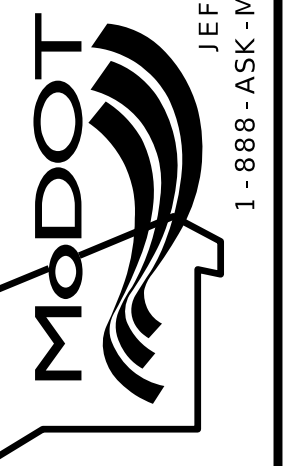
A9683

|  |  |
|--|--|
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |



MISSOURI DEPARTMENT OF  
TRANSPORTATION  
COMMISSION

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

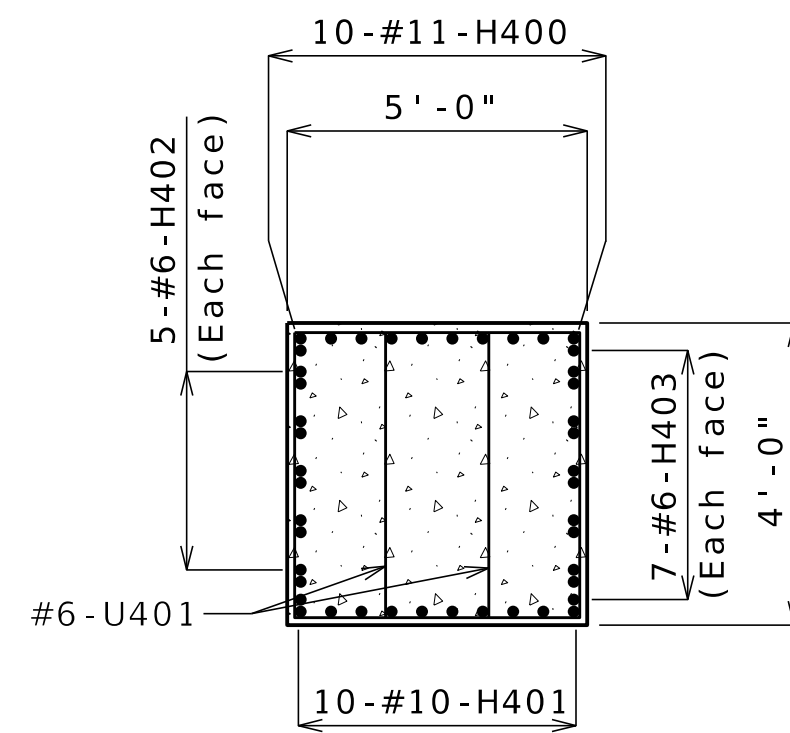


**HNTB**  
KANSAS CITY, MO 64105-4310  
CERTIFICATE OF AUTHORITY  
NO. 001270

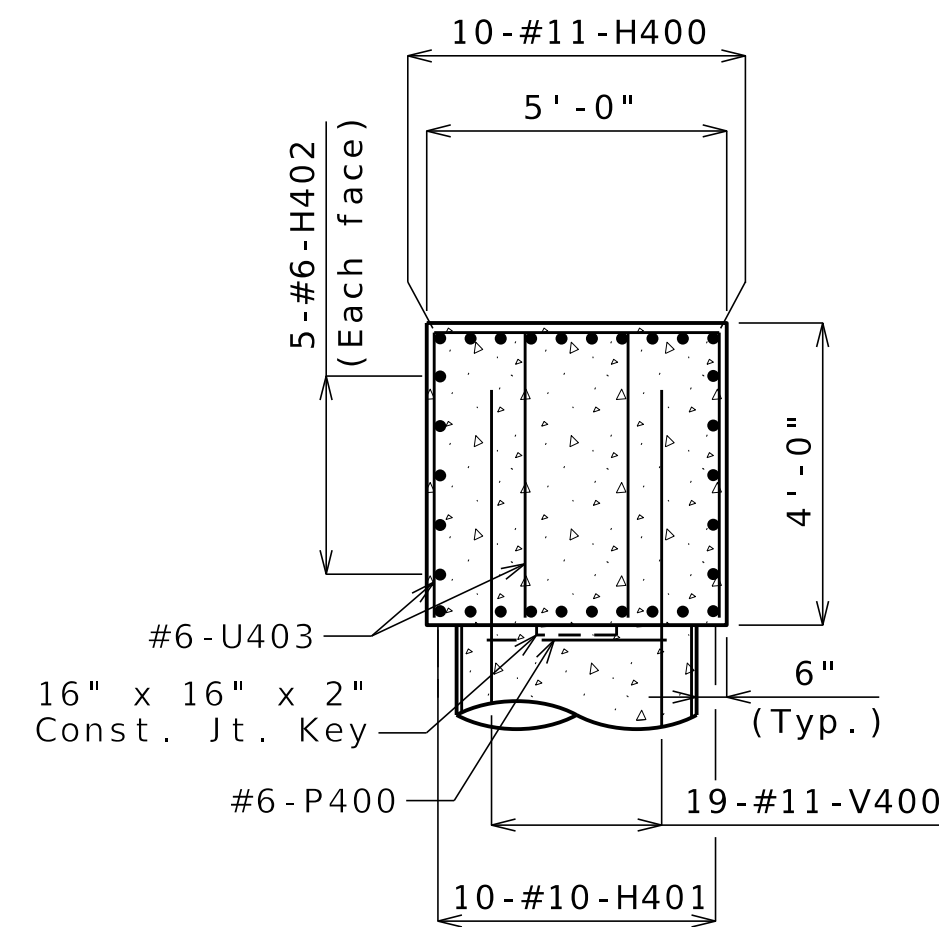
---

**Bartlett & West**  
501 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101  
PHONE 573-634-3181  
FAX 573-634-3187  
CERTIFICATE OF AUTHORITY NO. 000007  
[WWW.BARTLETTWEST.COM](http://WWW.BARTLETTWEST.COM)

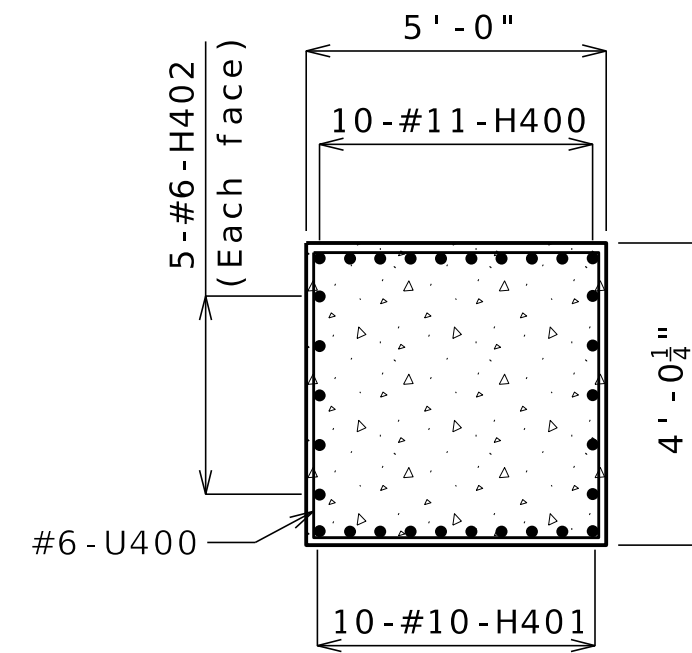




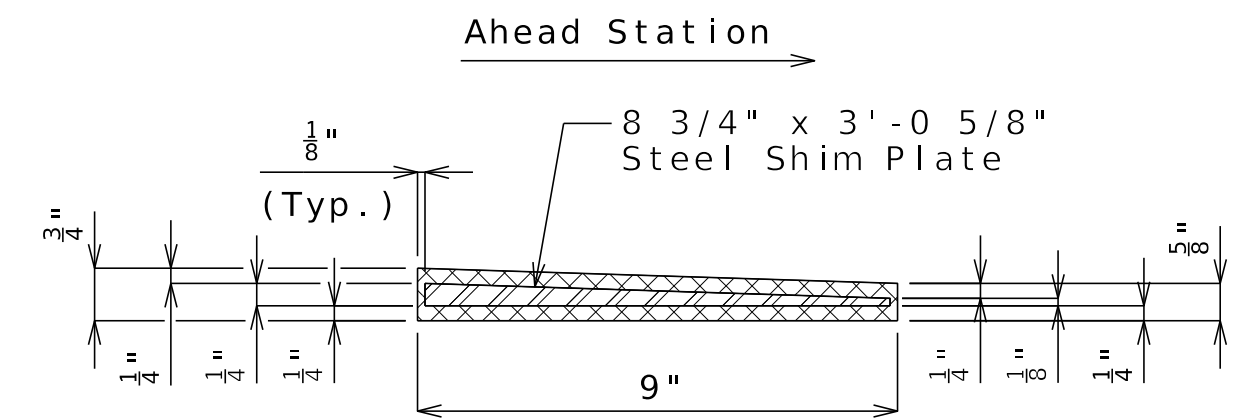
SECTION A-A



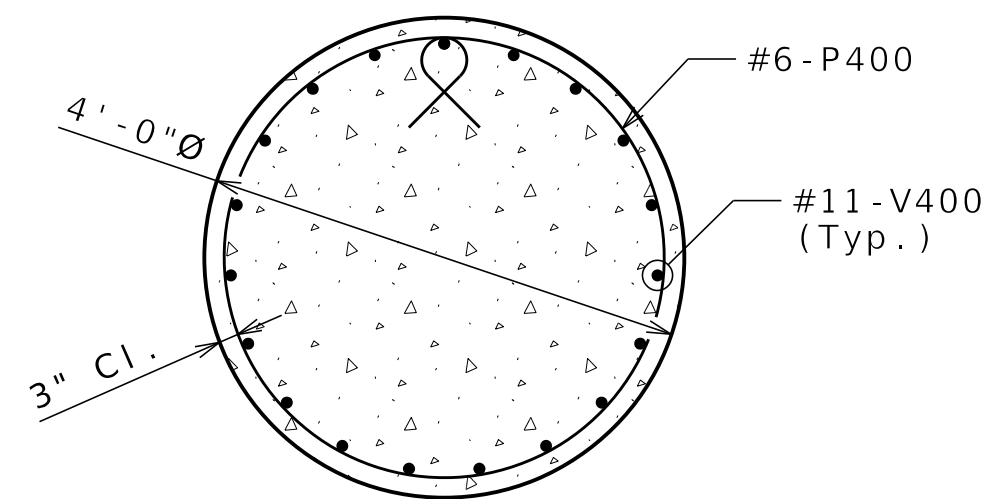
SECTION B - B



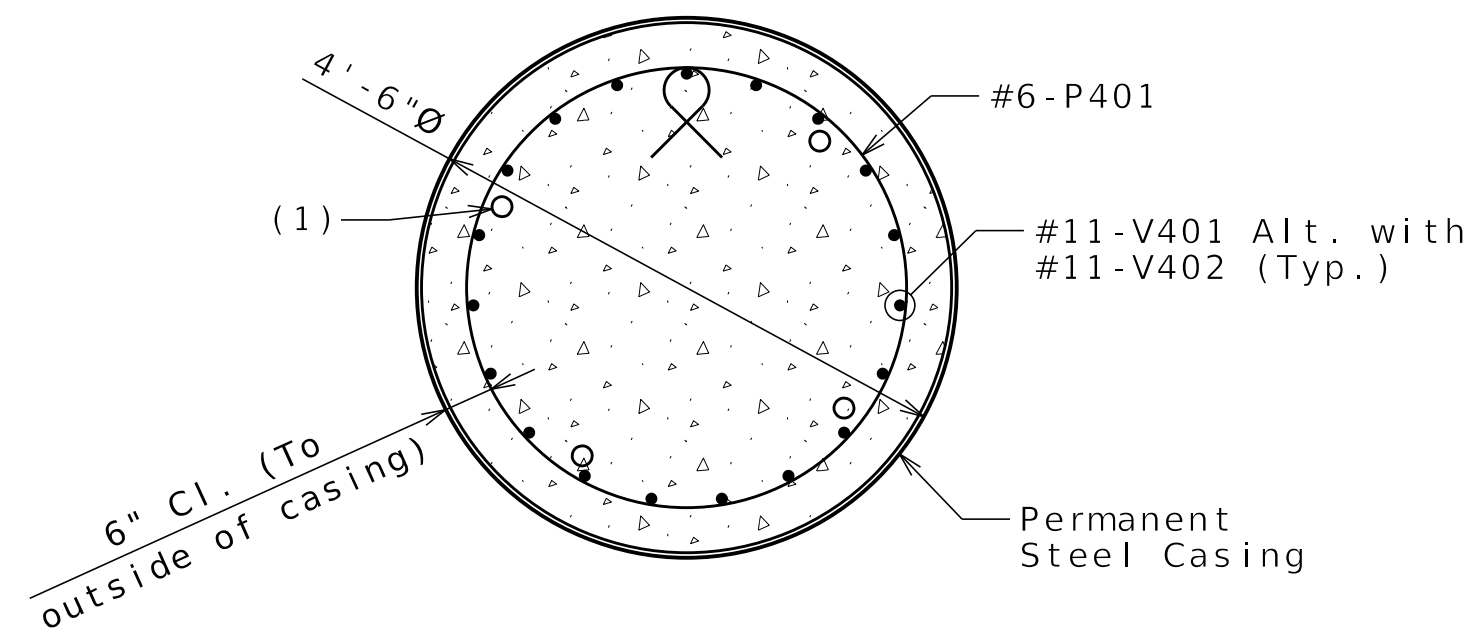
SECTION C-C



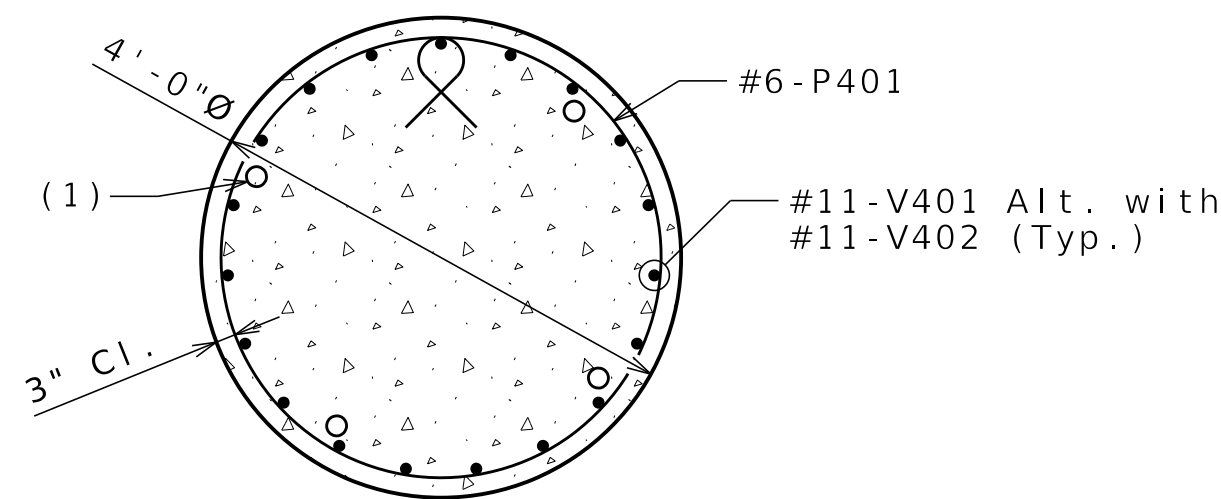
SECTION THRU LAMINATED NEOPRENE  
BEARING PAD (TAPERED)  
(7 Required)



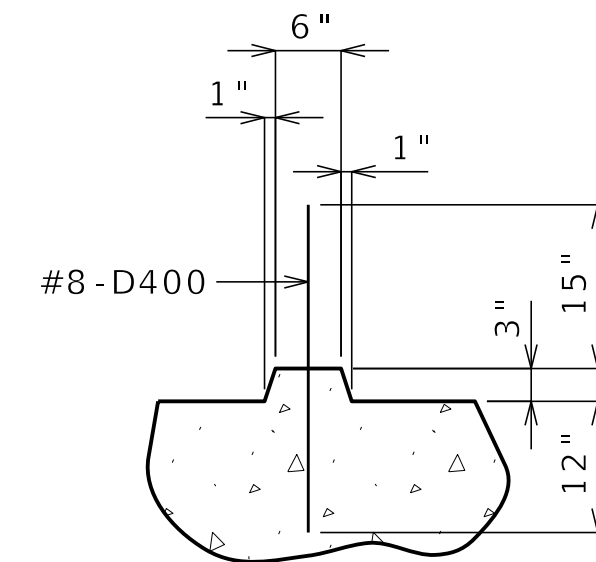
SECTION D-D



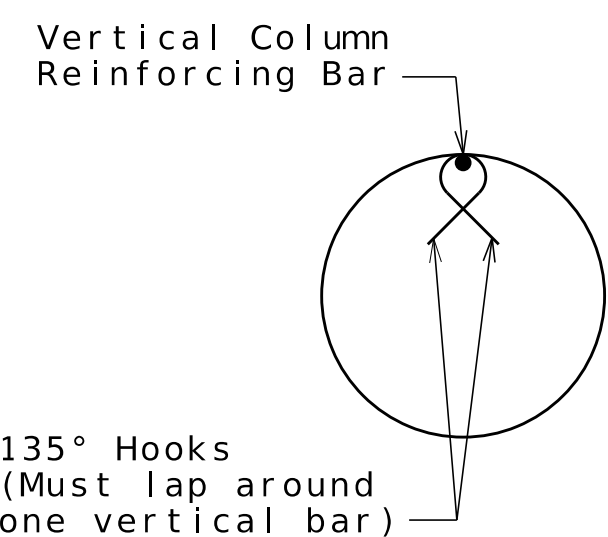
SECTION E - E



SECTION F - F



SECTION THRU KEY



SEISMIC STIRRUP BAR  
(#6 - P400 & P401)

Note: Seismic stirrups hooks shall be staggered around the column at about one-third of the hoop circumference.

General Notes:

Work this sheet with Sheets No. 17 and 18.



THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED

/ 10 / 2025

|       |       |
|-------|-------|
| ROUTE | STATE |
| I 70  | MO    |

|          |         |
|----------|---------|
| 1 - 70   | MO      |
| DISTRICT | SHEET N |

|    |         |
|----|---------|
| BR | A9683 - |
|----|---------|

COUNTY

ST. CHARLES

JOB NO.  
16T0020

JS10020

---

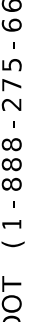
CONTRACT ID

CONTRACT ID:

PROJECT NO.

BRIDGE NO.  
10000

|       |  |  |  |  |  |  |
|-------|--|--|--|--|--|--|
| A9683 |  |  |  |  |  |  |
|       |  |  |  |  |  |  |

[illegible]

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

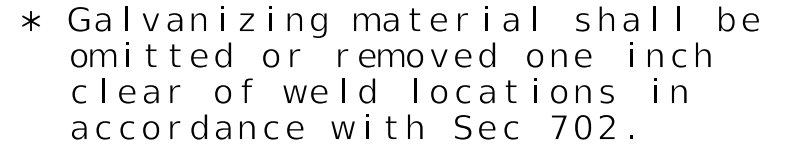
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)



**HNTB**  
KANSAS CITY, MO 64105-1310  
CERTIFICATE OF AUTHORITY  
NO. 001270

**Bartlett & West**  
601 MONROE ST. SUITE 205 - JEFFERSON CITY, MO 65101  
PHONE 573-624-3181  
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING  
[WWW.BARTLETTWEST.COM](http://WWW.BARTLETTWEST.COM)



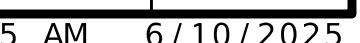


\* 1 Space @ 12"



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

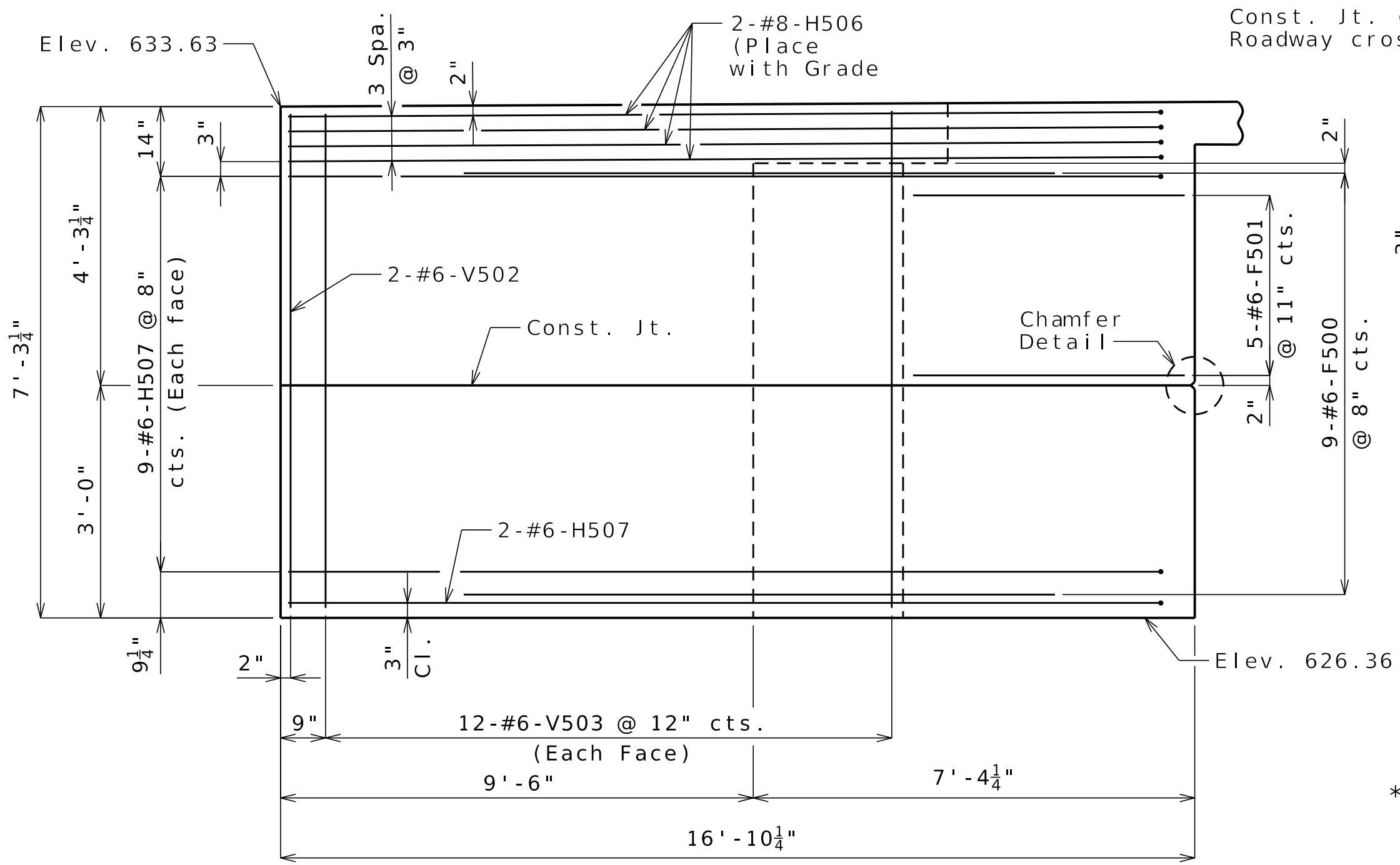
B\_A9683\_014\_JST0020\_BENT5-1.dgn 7:17:15 AM 6/10/2025



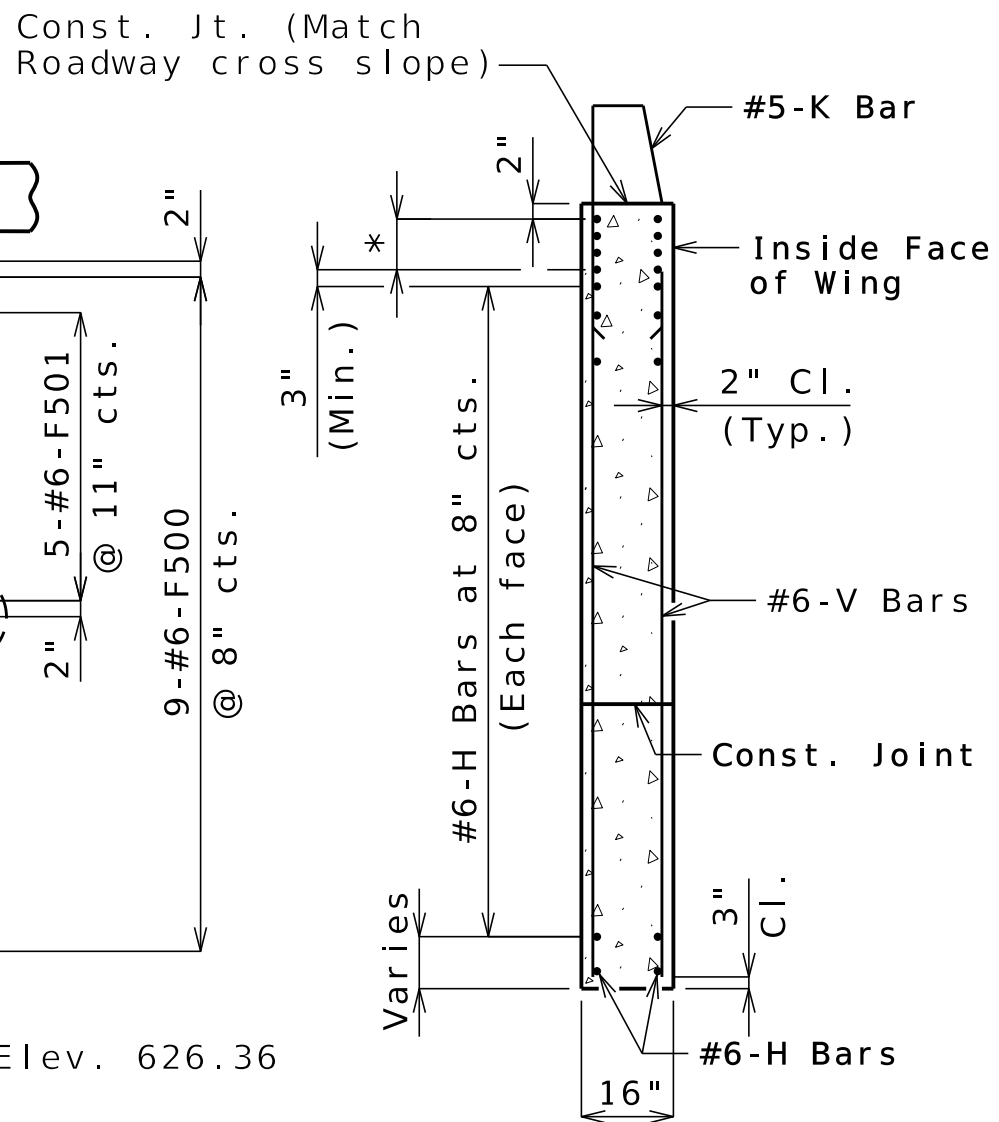




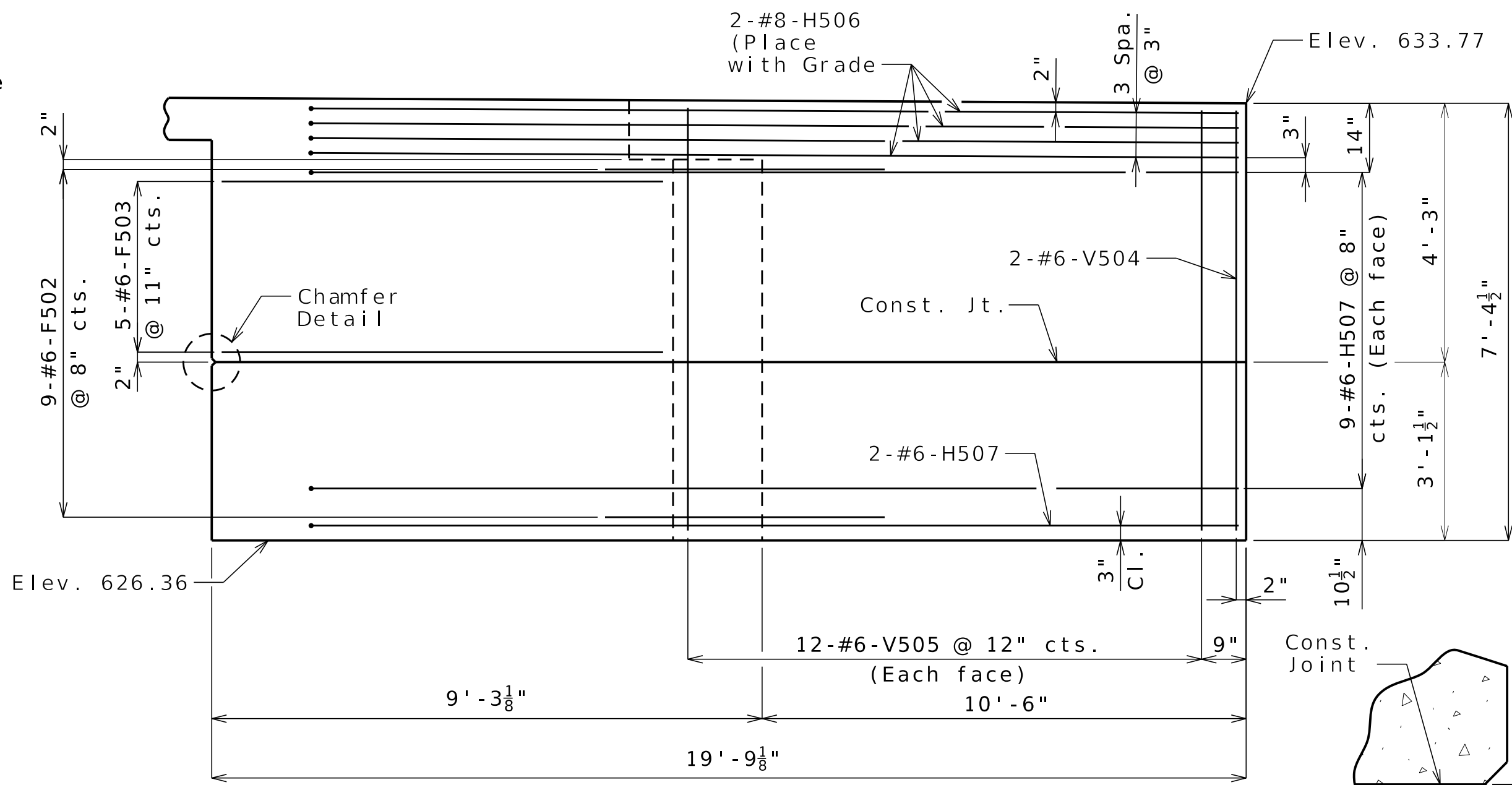




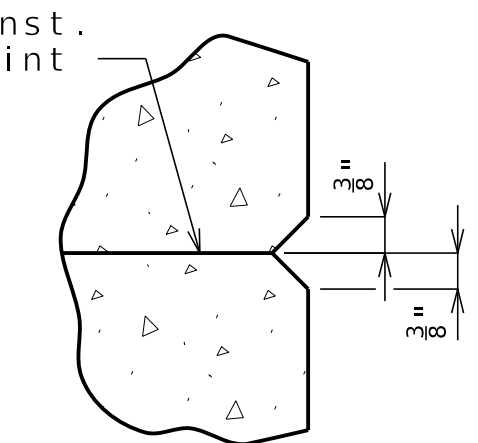
ELEVATION E-E



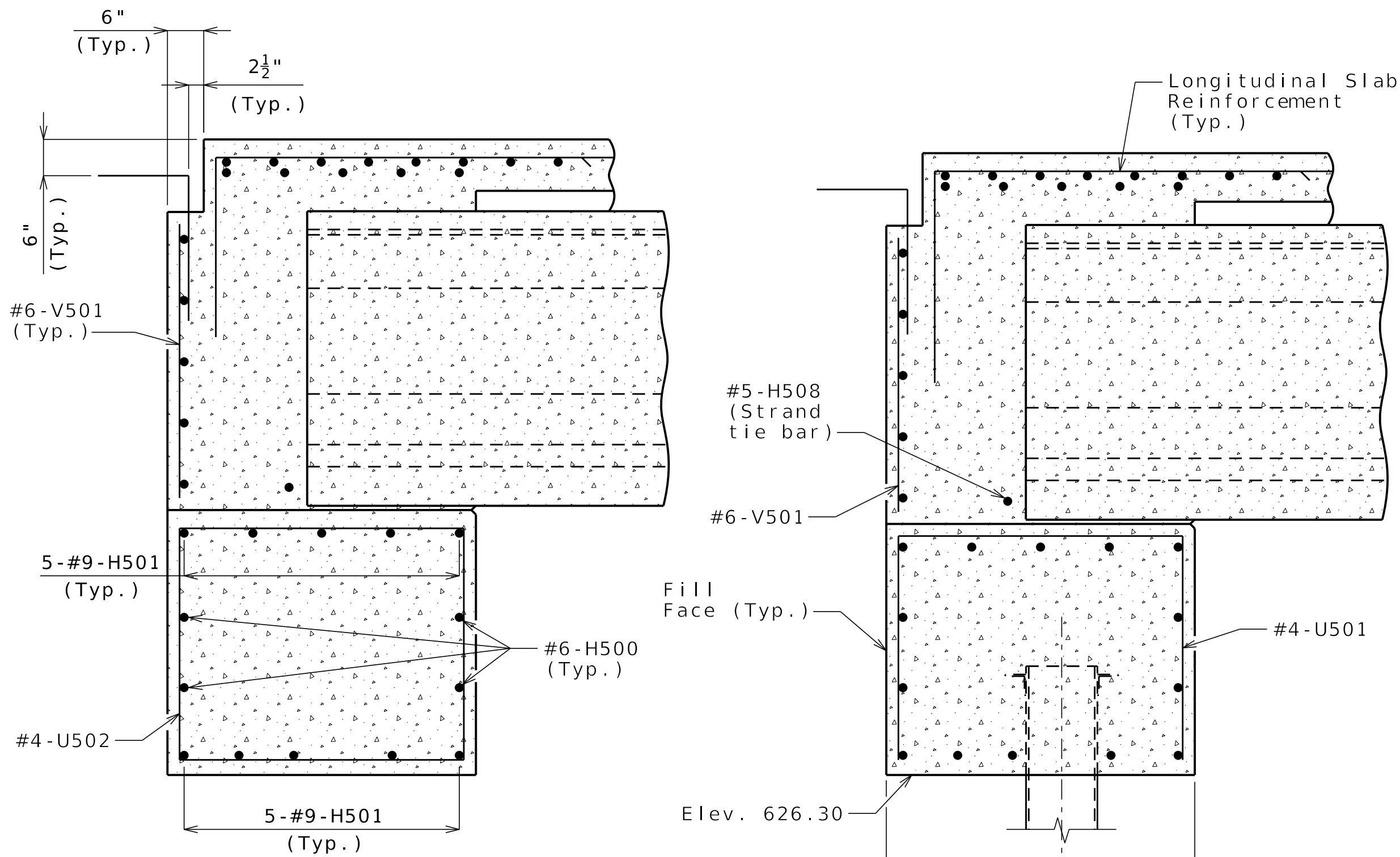
TYPICAL SECTION  
THRU WING  
\* #8-H Bars at 3" cts.  
(Each face)(Place with grade)



ELEVATION F-F

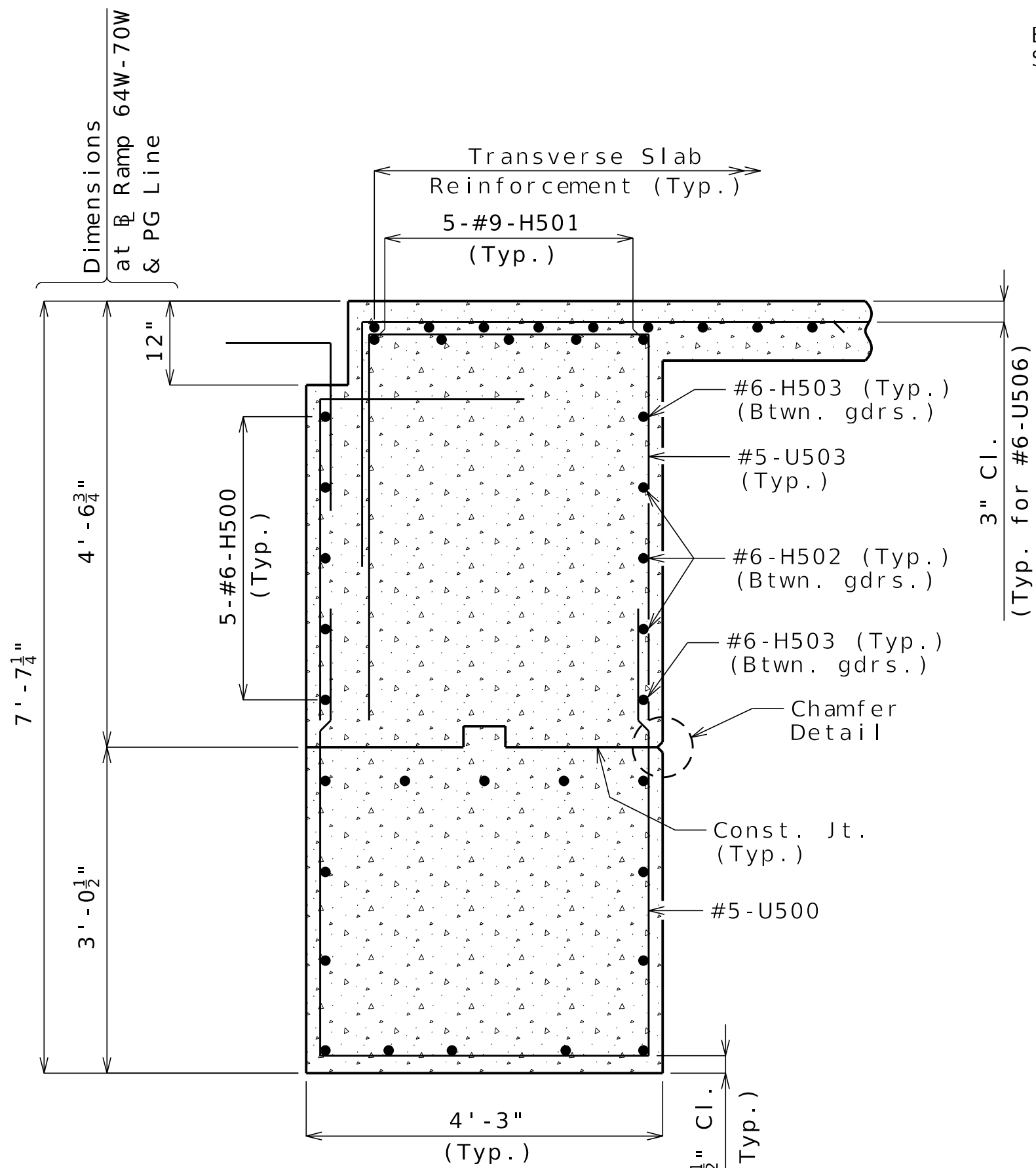


CHAMFER DETAIL

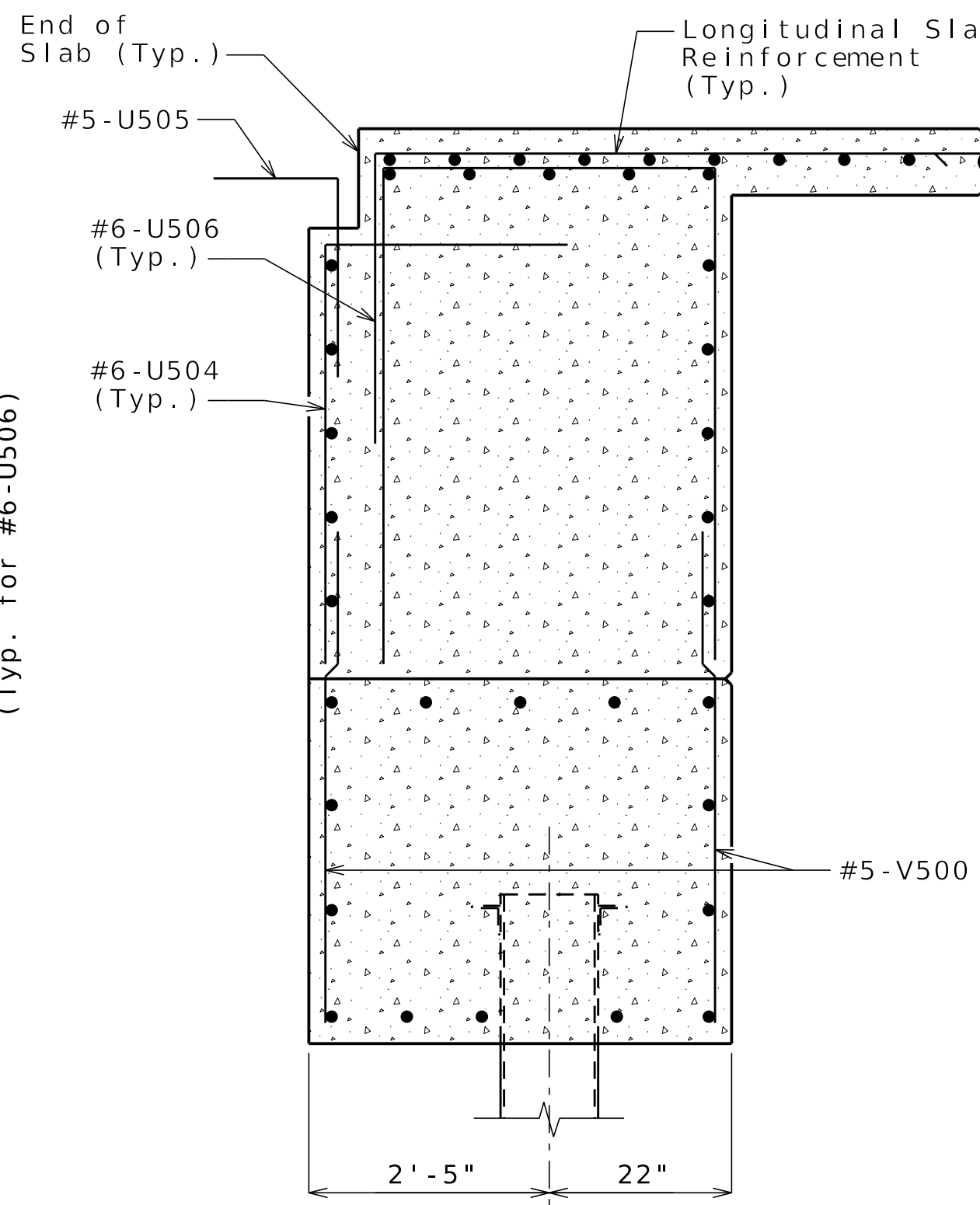


SECTION A-A

SECTION B-B



SECTION C-C



SECTION D-D

General Notes:  
Work this sheet with Sheets No. 20 and 21.  
For reinforcement of the barrier, see  
Sheet No. 36.

DETAILS OF END BENT NO. 5

Detailed JUN 2025  
Checked JUN 2025

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

Sheet 22 of 46



THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
6/10/2025

ROUTE  
1-70

DISTRICT  
BR

COUNTY  
ST. CHARLES

JOB NO.  
JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9683

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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

IMPROVE70  
ALLIANCE

HNTB

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

Bartlett & West

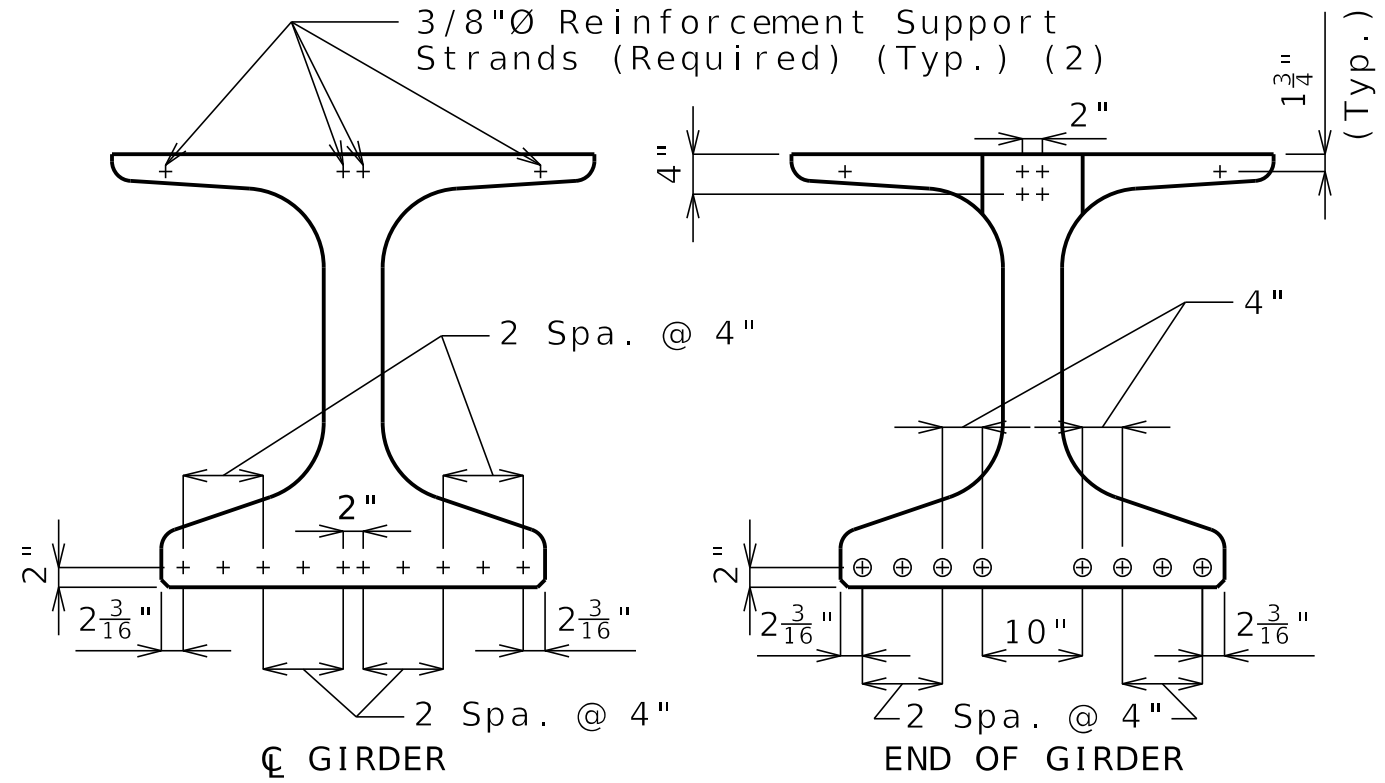
601 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101  
PHONE 873-633-3181  
WWW.BARTLETTWEST.COM





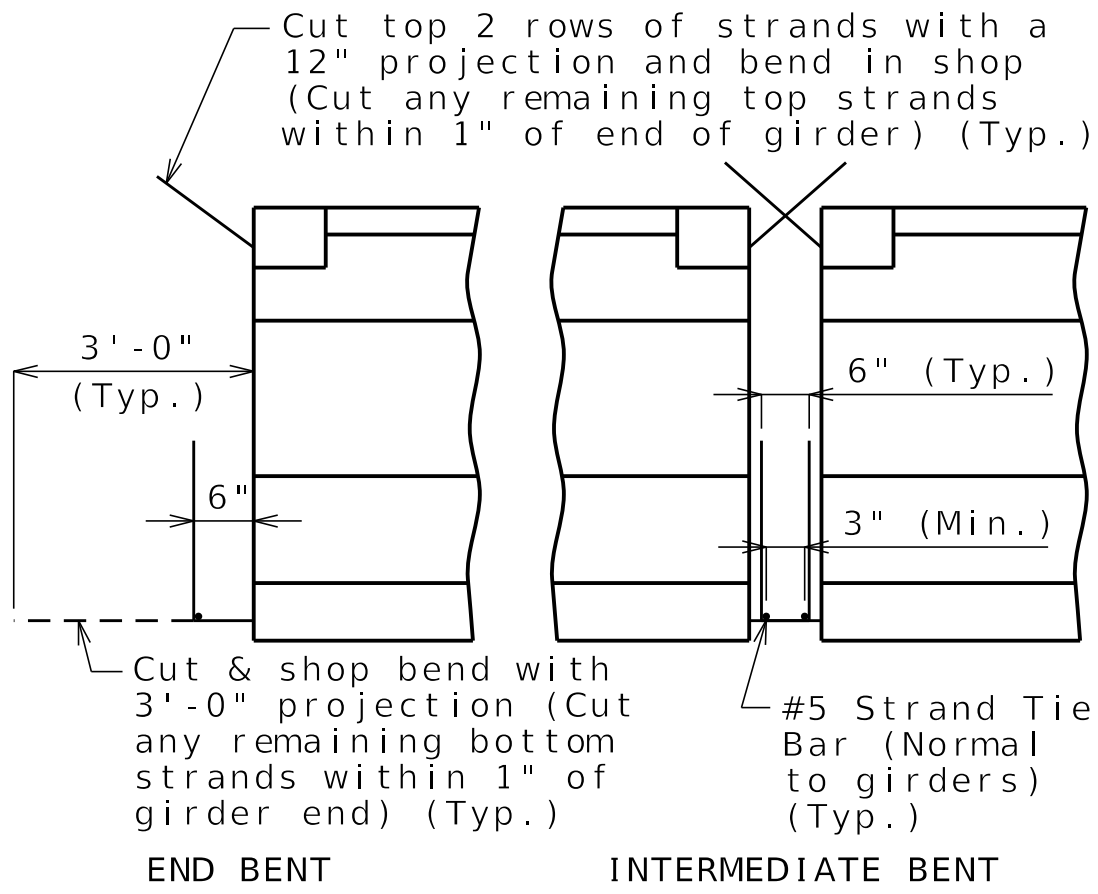


(2) Outer strands tensioned to 2.02 kips/strand and inner strands to 8 kips/strand. Placed symmetrical about  $\text{C}$  Girder. May be moved laterally in pairs.

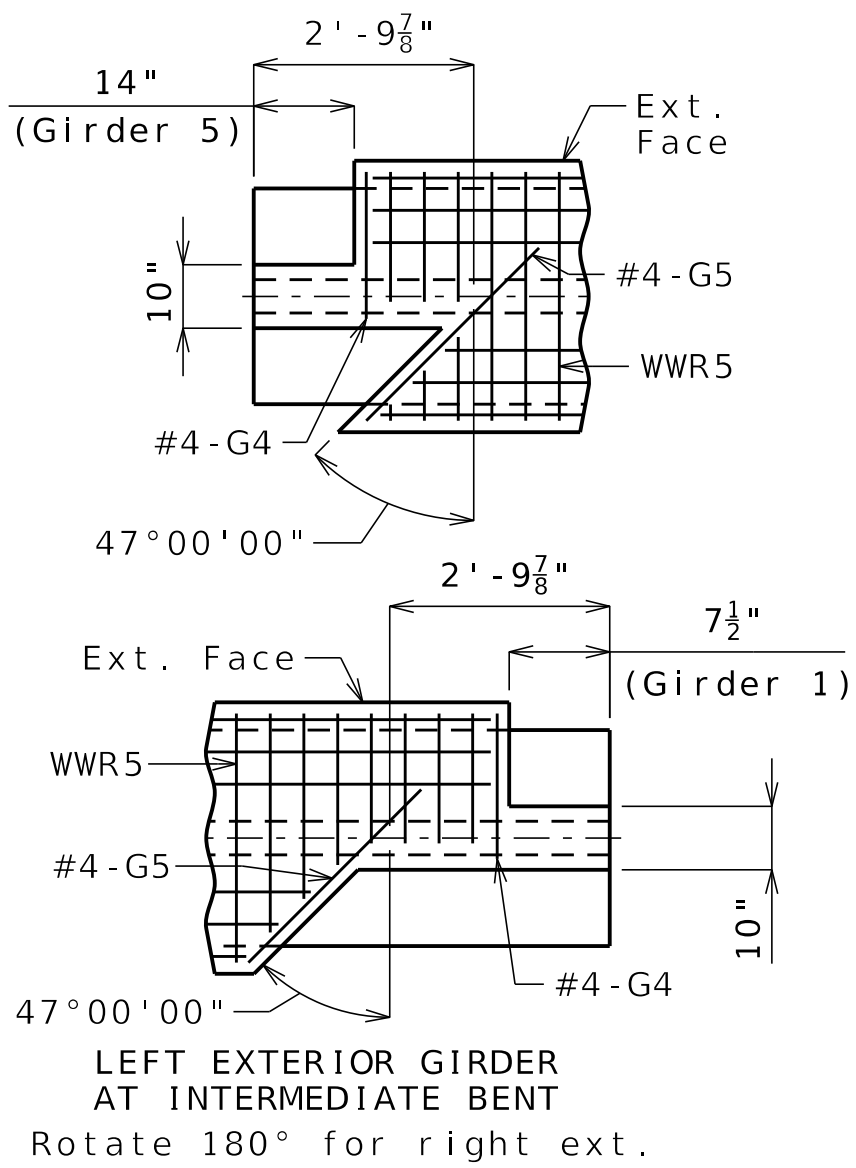


## STRAND ARRANGEMENT

- + Indicates prestressing strand.
- o Indicates cut & shop bend with 3'-0" projection.

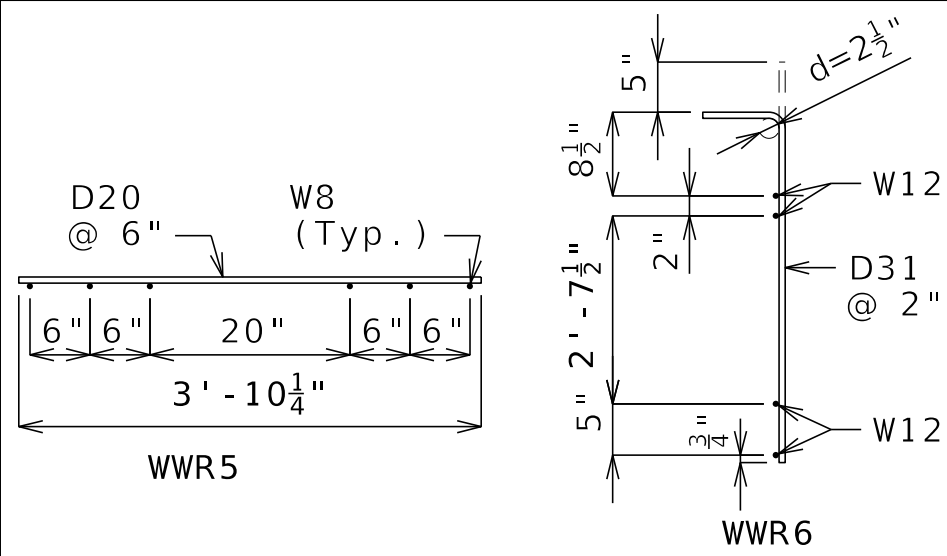


## STRANDS AT GIRDER ENDS



LEFT EXTERIOR GIRDER  
AT INTERMEDIATE BENT  
Rotate 180° for right ext.

Welded Wire Reinforcement - Each Girder



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

Minimum clearance to reinforcing shall be one inch.

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

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

Concrete for prestressed girders shall be Class A-1 with  $f'_c = 8500$  psi and  $f'_{ci} = 6500$  psi.

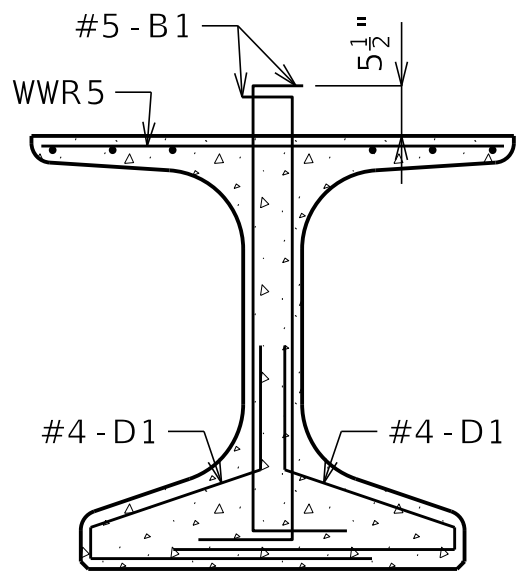
Pretensioned members shall be in accordance with Sec 1029.

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

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

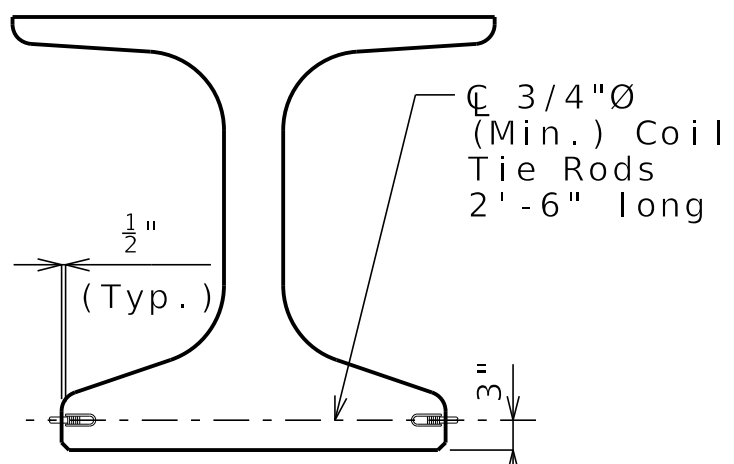
For location of coil inserts at slab drains, see Sheet No. 29.

For location of coil ties at concrete diaphragms and integral bents, see Sheets No. 6 and 27.



SECTION B-B

Strands not shown  
for clarity.



CLOSED DIAPHRAGMS  
AND INTEGRAL BENTS  
COIL TIES

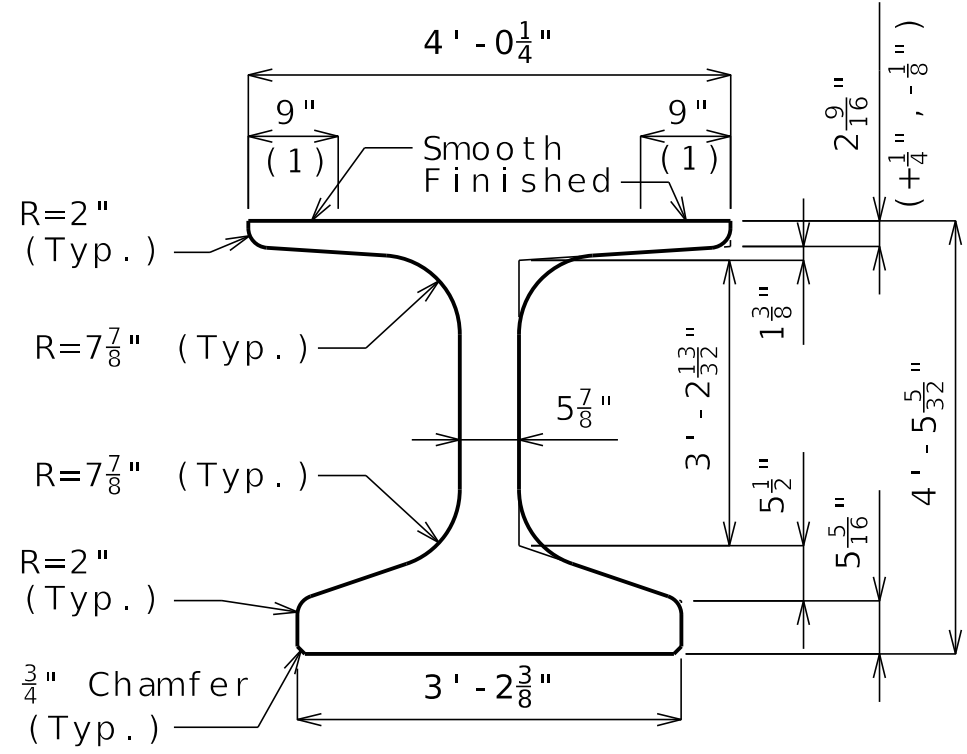
Exclude coil tie at exterior face of exterior girders except at integral end bents.



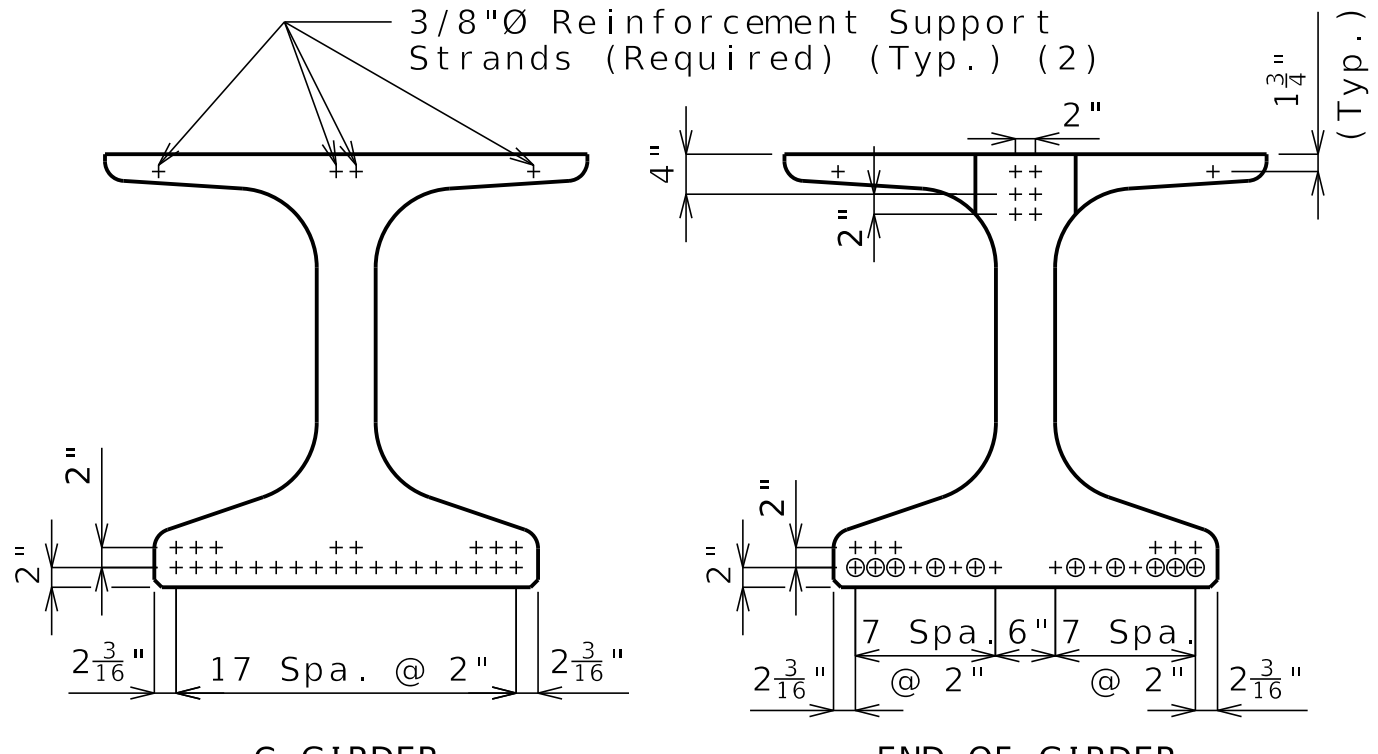


(1) Fabricator shall apply a bond breaker to this region.

(2) Outer strands tensioned to 2.02 kips/strand and inner strands to 8 kips/strand. Placed symmetrical about  $\bar{C}$  Girder. May be moved laterally in pairs.

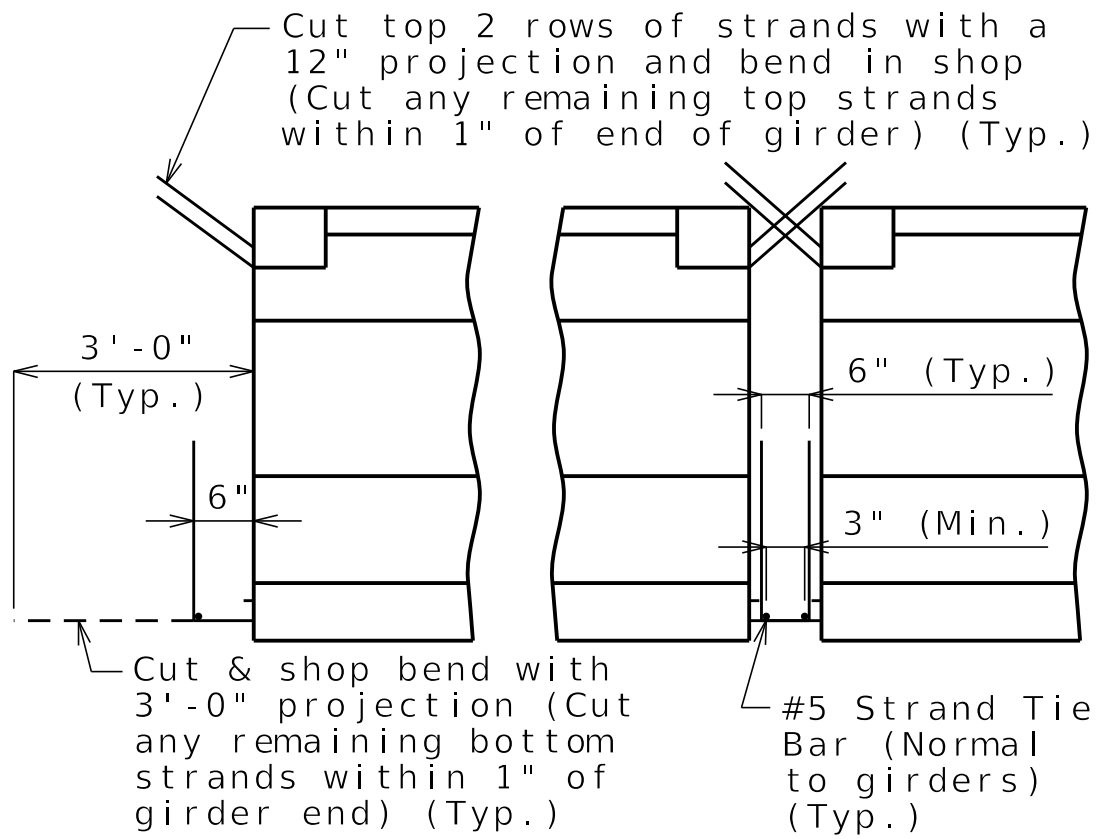


DIMENSIONS

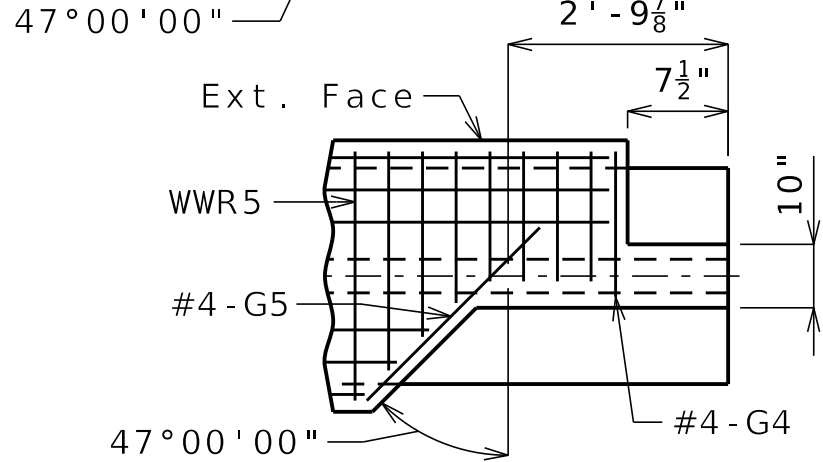
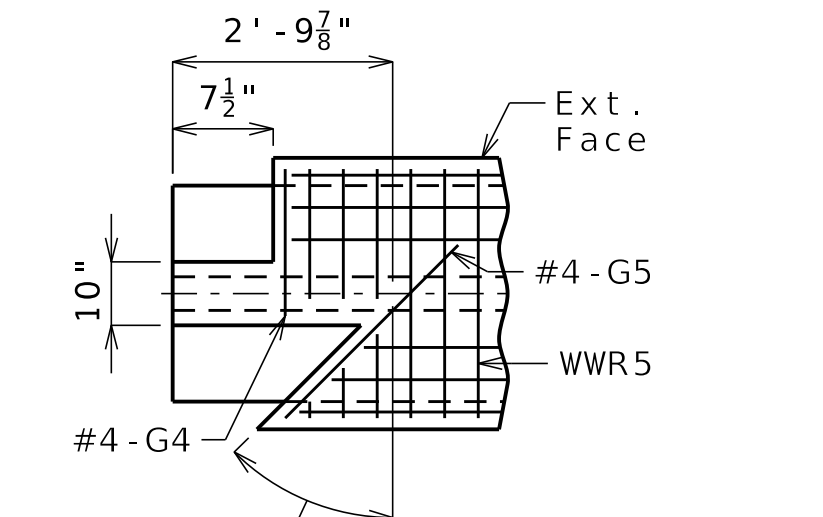


STRAND ARRANGEMENT

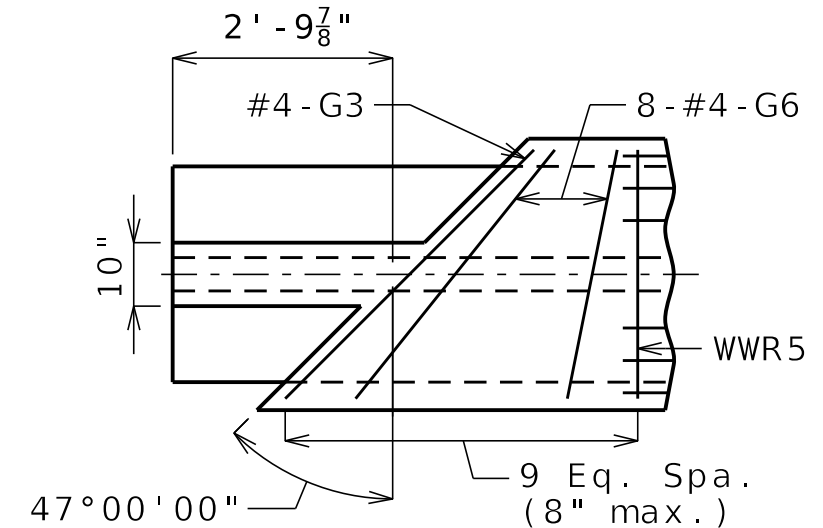
+ Indicates prestressing strand.      ○ Indicates cut & shop bend with 3'-0" projection.



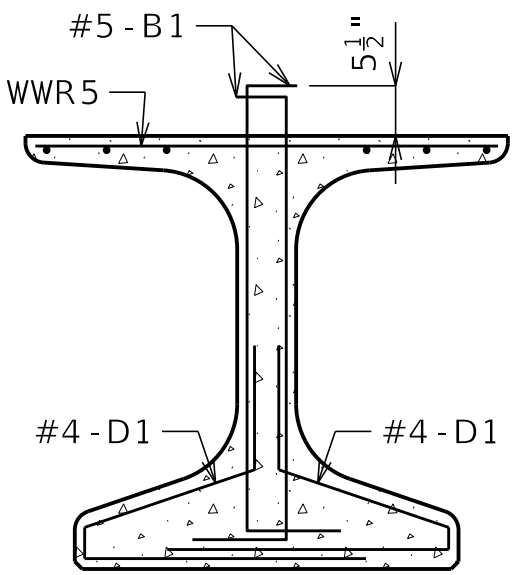
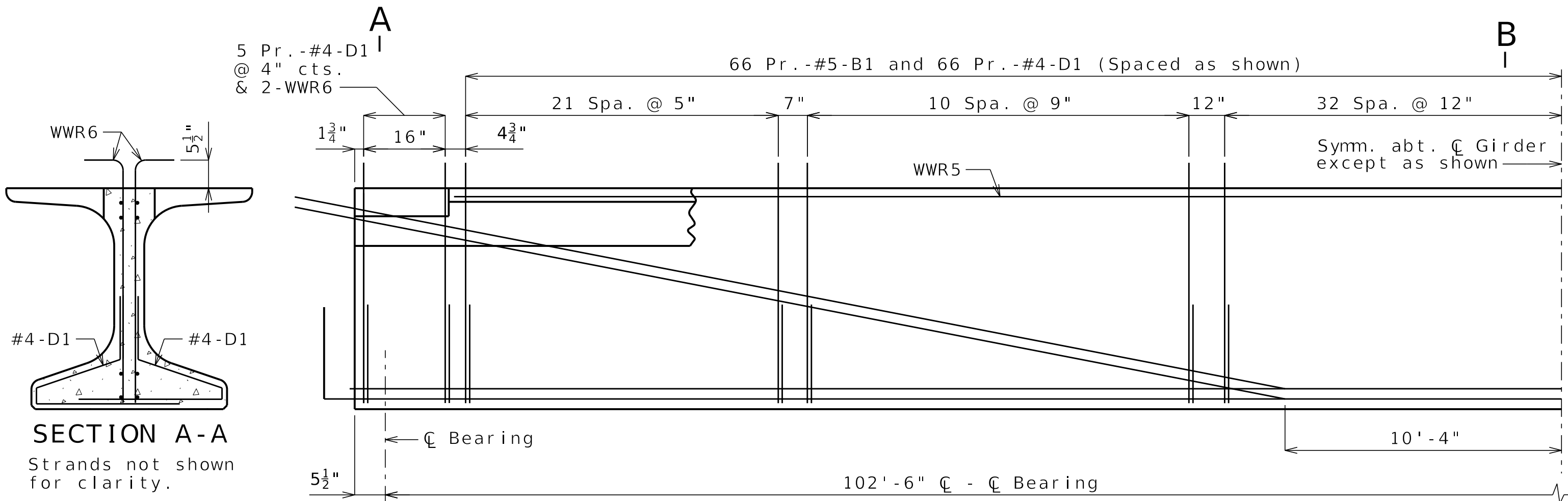
STRANDS AT GIRDER ENDS



LEFT EXTERIOR GIRDER AT INTERMEDIATE BENT  
Rotate 180° for right ext.

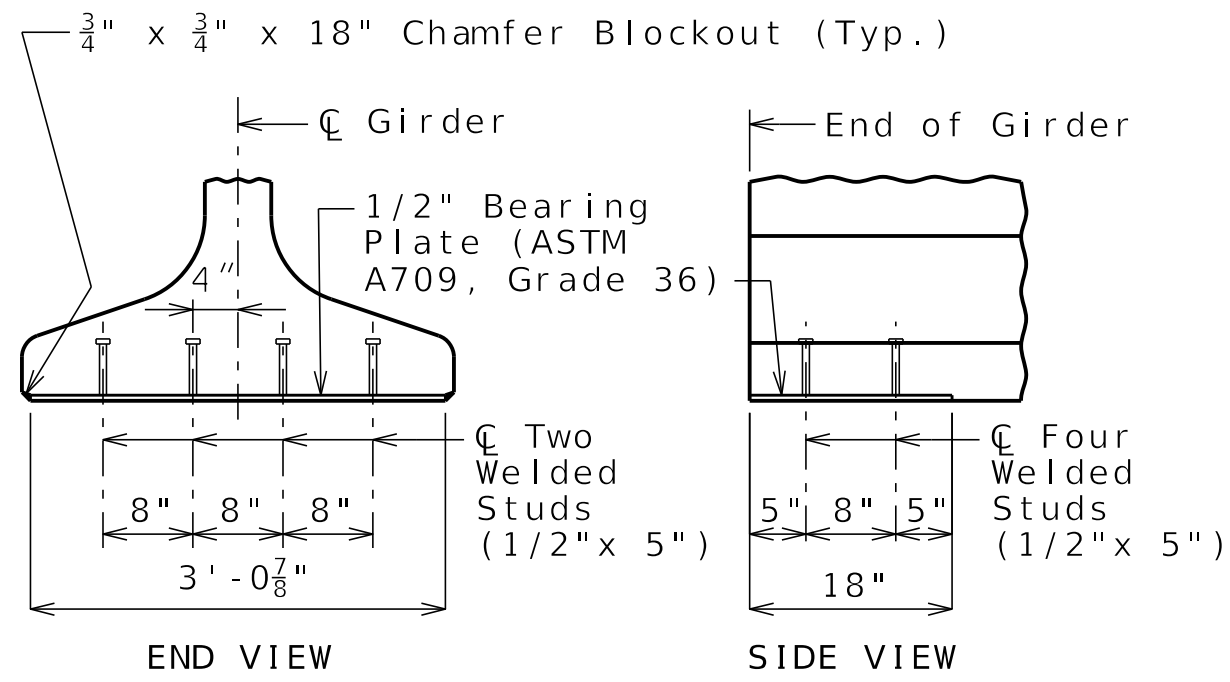


INTERIOR GIRDER AT ALL BENTS  
TOP FLANGE BLOCKOUT

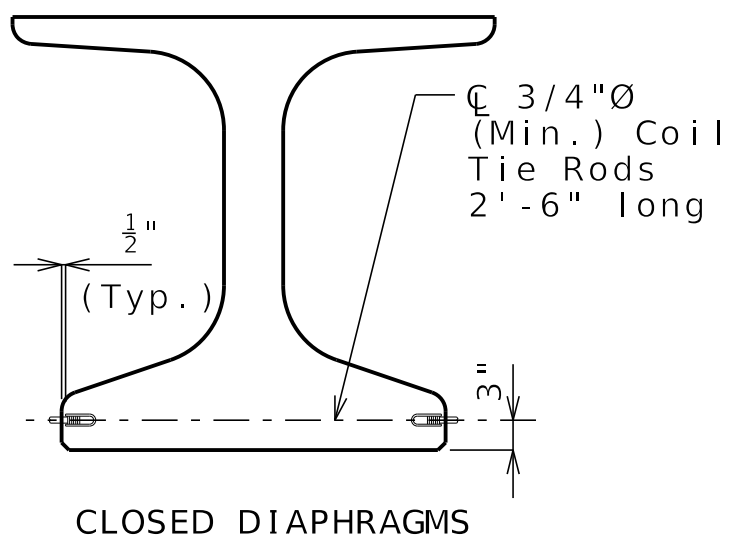


SECTION B-B  
Strands not shown for clarity.

HALF ELEVATION  
Reinforcement support strands not shown for clarity.



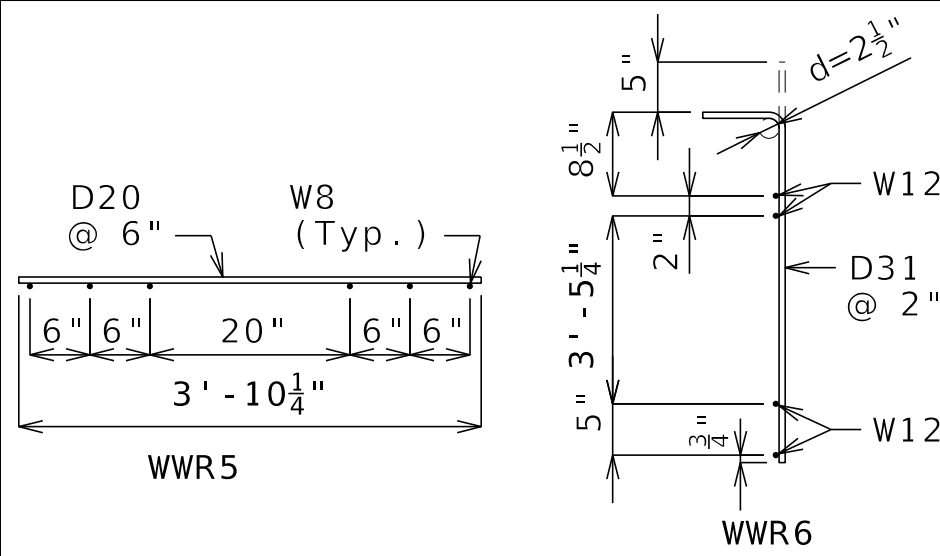
BEARING PLATE



COIL TIES  
Exclude coil tie at exterior face of exterior girders.

| Bill of Reinforcing Steel - Each Girder |           |        |       |                  |
|-----------------------------------------|-----------|--------|-------|------------------|
| No.                                     | Size/Mark | Length | Shape | Bending Diagrams |
| 262                                     | 5 B1      | 5'-10" | 11S   | Shape 20         |
| 282                                     | 4 D1      | 4'-0"  | 9S    |                  |
| 2                                       | 4 G3      | 5'-7"  | 20    | Shape 95         |
| 2                                       | 4 G4      | 2'-3"  | 20    |                  |
| 2                                       | 4 G5      | 3'-11" | 20    | Shape 11S        |
| 16                                      | 4 G6      | Varies | 20    |                  |

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.

### General Notes:

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

Use 26 strands, 0.6"Ø Grade 270, with an initial prestress force of 1142 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, coil inserts for slab drains, and holes for intermediate diaphragms.

For Girder Camber Diagram, see Sheet No. 31.

The 1 1/2"Ø holes shall be cast in the web for steel intermediate diaphragms. Drilling is not allowed. For location of holes and details of steel intermediate diaphragms, see Sheet No. 23.

For location of coil inserts at slab drains, see Sheet No. 29.

For location of coil inserts at drainage system, see Sheet No. 30.

For location of coil ties at concrete diaphragms, see Sheets No. 27 and 28.



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED  
6/10/2025

ROUTE 1-70 STATE MO

DISTRICT BR SHEET NO. A9683-25

COUNTY ST. CHARLES

JOB NO. JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A9683

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

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

MODOT

IMPROVE 70 ALLIANCE

HNTB

715 KIRK DRIVE

KANSAS CITY, MO 64105-1310

CERTIFICATE OF AUTHORITY NO. 001270

Bartlett & West

601 INDORE ST, SUITE 201, JEFFERSON CITY, MO 65101

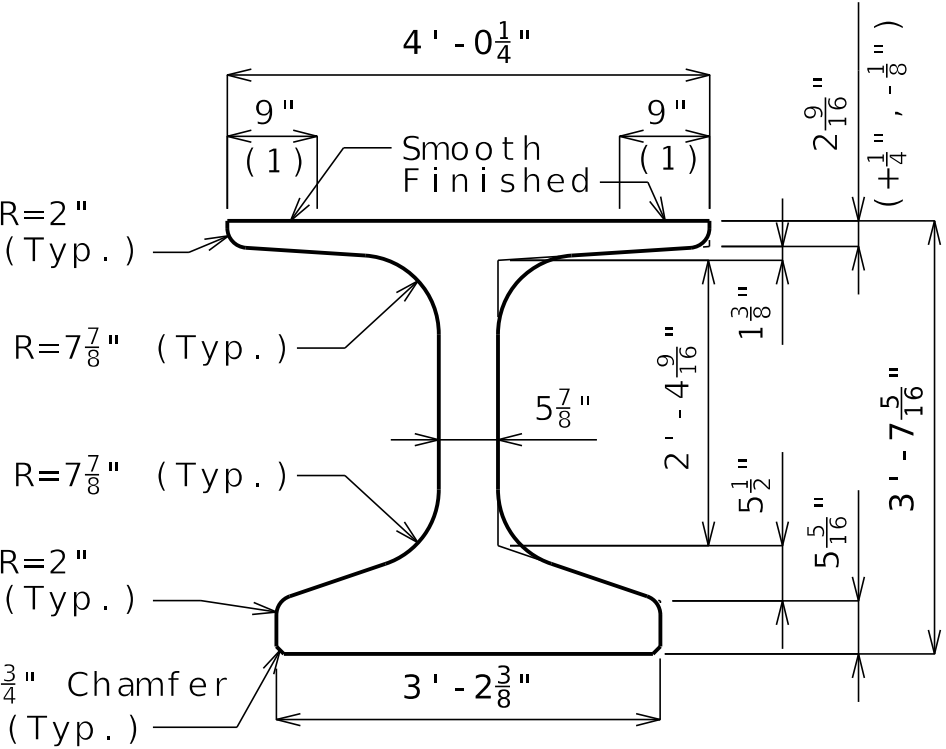
PHONE 872-033181

CERTIFICATE OF ENGINEERING

WWW.BARTLETTWEST.COM

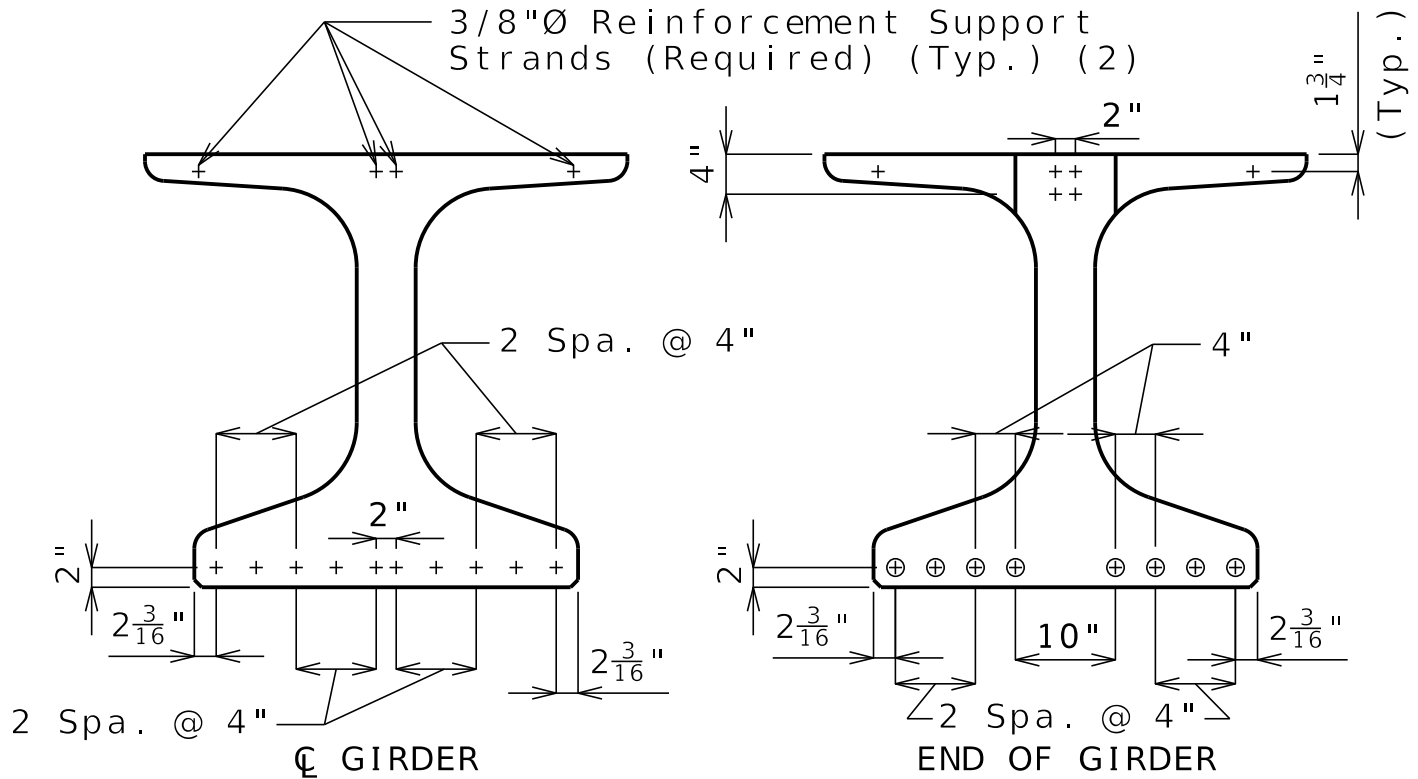


(1) Fabricator shall apply a bond breaker to this region.



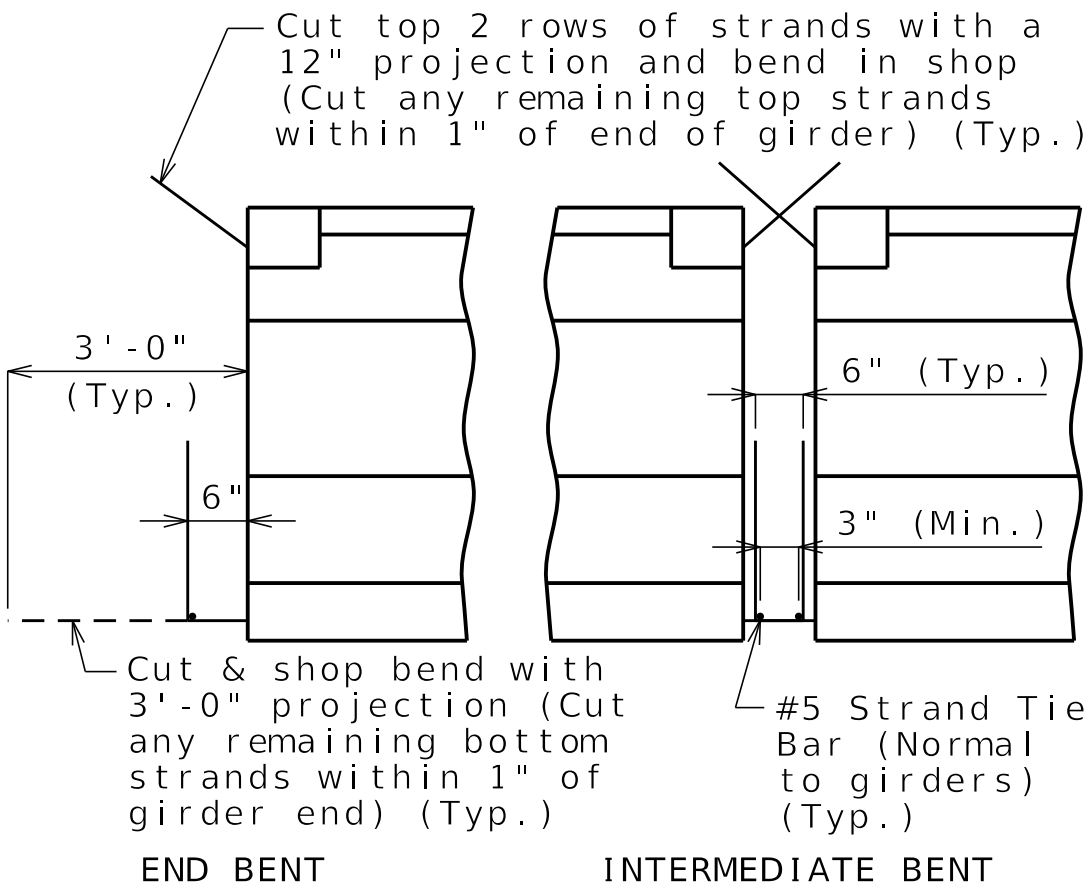
DIMENSIONS

(2) Outer strands tensioned to 2.02 kips/strand and inner strands to 8 kips/strand. Placed symmetrical about  $\bar{C}$  Girder. May be moved laterally in pairs.

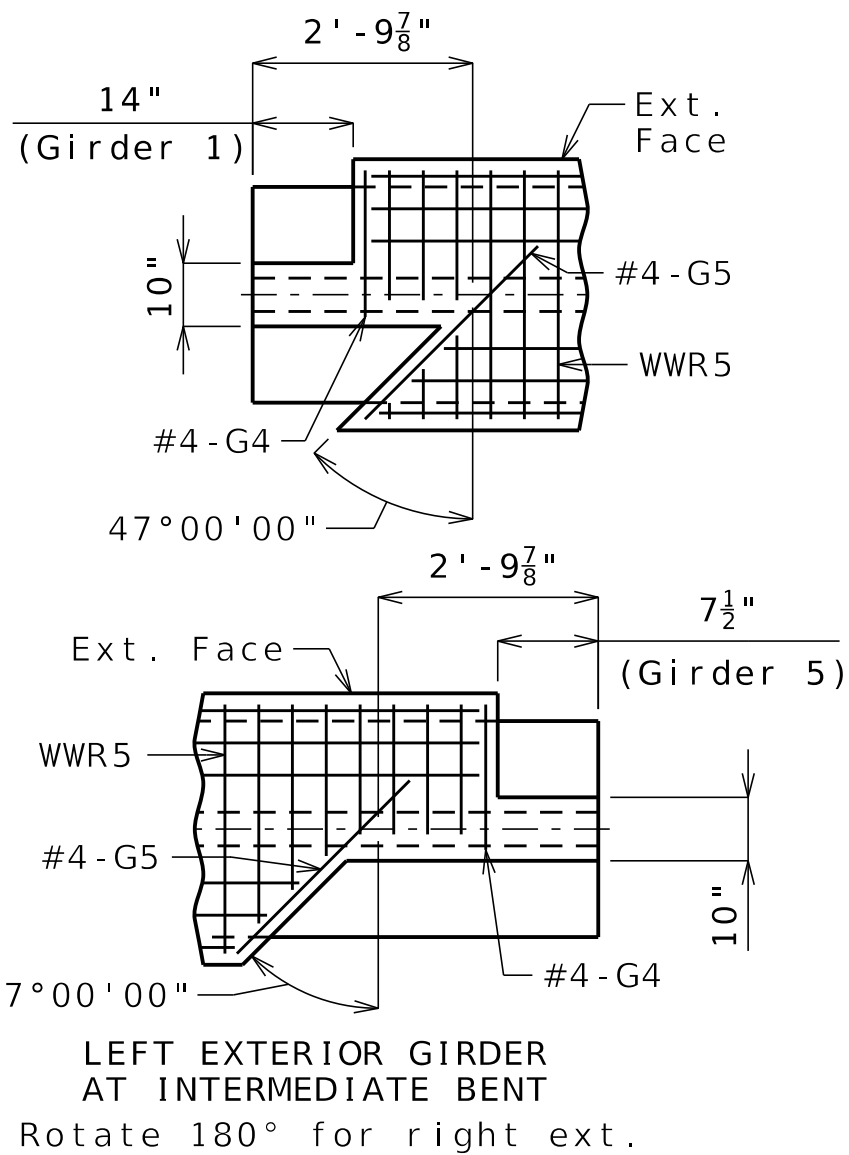


STRAND ARRANGEMENT

+ Indicates prestressing strand.      o Indicates cut & shop bend with 3'-0" projection.

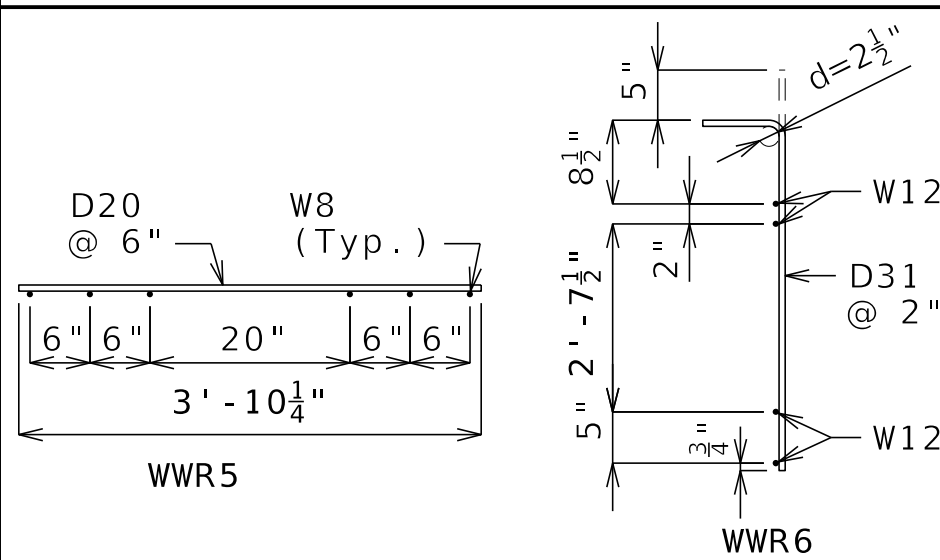


STRANDS AT GIRDER ENDS



| Bill of Reinforcing Steel - Each Girder |           |        |       |                  |
|-----------------------------------------|-----------|--------|-------|------------------|
| No.                                     | Size/Mark | Length | Shape | Bending Diagrams |
| 122                                     | 5 B1      | 5'-0"  | 11S   |                  |
| 142                                     | 4 D1      | 4'-0"  | 9S    |                  |
| 2                                       | 4 G3      | 5'-7"  | 20    |                  |
| 2                                       | 4 G4      | 2'-3"  | 20    |                  |
| 2                                       | 4 G5      | 3'-11" | 20    |                  |
| 16                                      | 4 G6      | Varies | 20    |                  |

Welded Wire Reinforcement - Each Girder



All dimensions are out to out.

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

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

Minimum clearance to reinforcing shall be one inch.

All bar reinforcement shall be Grade 60.

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

All B1 bars shall be epoxy coated.

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

### General Notes:

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

Use 10 strands, 0.6"Ø Grade 270, with an initial prestress force of 439 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 blackout, application of bond breaker, and coil inserts for slab drains.

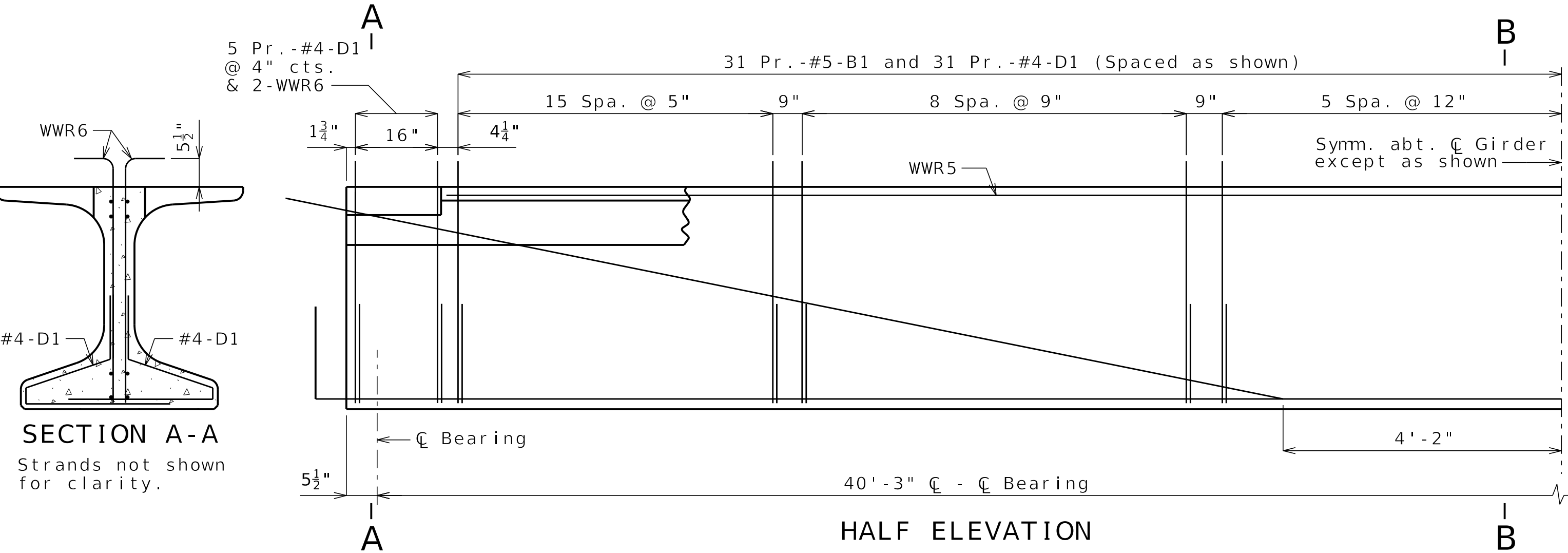
The contractor shall provide bracing necessary for lateral and torsional stability of the girders during construction of the concrete slab and remove the bracing after the slab has attained 75% design strength. Contractor shall not drill holes in the girders.

For Girder Camber Diagram, see Sheet No. 31.

For location of coil inserts at slab drains, see Sheet No. 29.

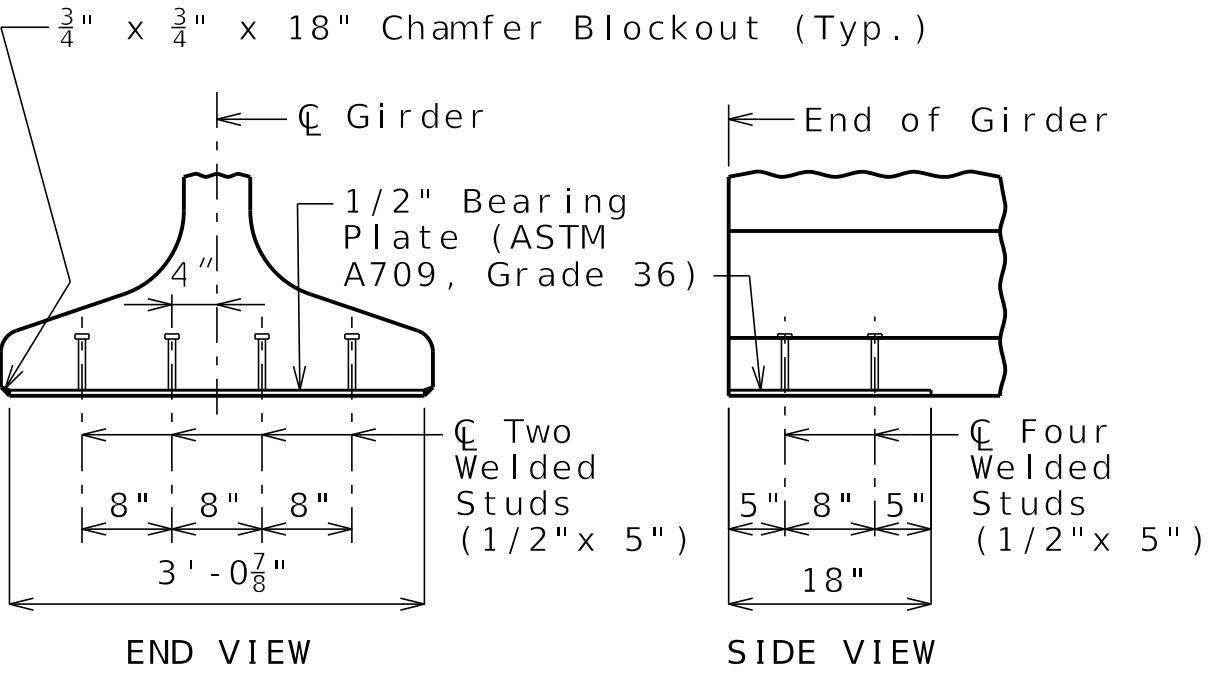
For location of coil inserts at drainage system, see Sheet No. 30.

For location of coil ties at concrete diaphragms and integral bents, see Sheets No. 21 and 27.

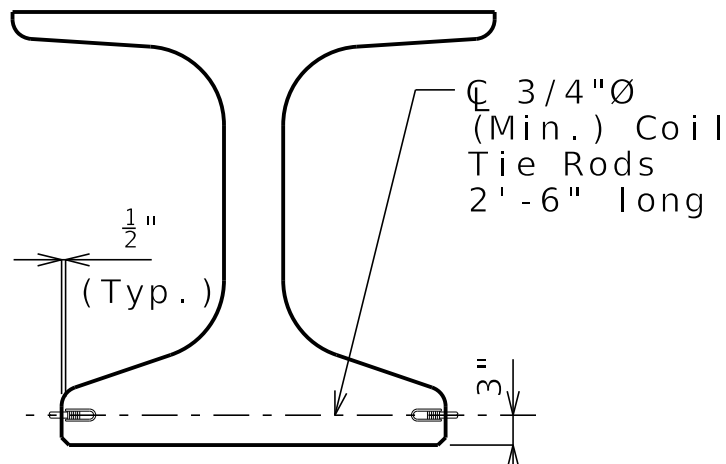


HALF ELEVATION

Reinforcement support strands not shown for clarity.



BEARING PLATE



COIL TIES

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



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED  
6/10/2025

ROUTE 1-70 STATE MO

DISTRICT BR SHEET NO. A9683-26

COUNTY ST. CHARLES

JOB NO. JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A9683

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102

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

MoDOT

IMPROVE70 ALLIANCE

HNTB

Bartlett & West

715 KIRK DRIVE KANSAS CITY, MO 64105-1310

601 INDORE ST, SUITE 201, JEFFERSON CITY, MO 65101

PHONE 874-3331 PHONE 874-3331

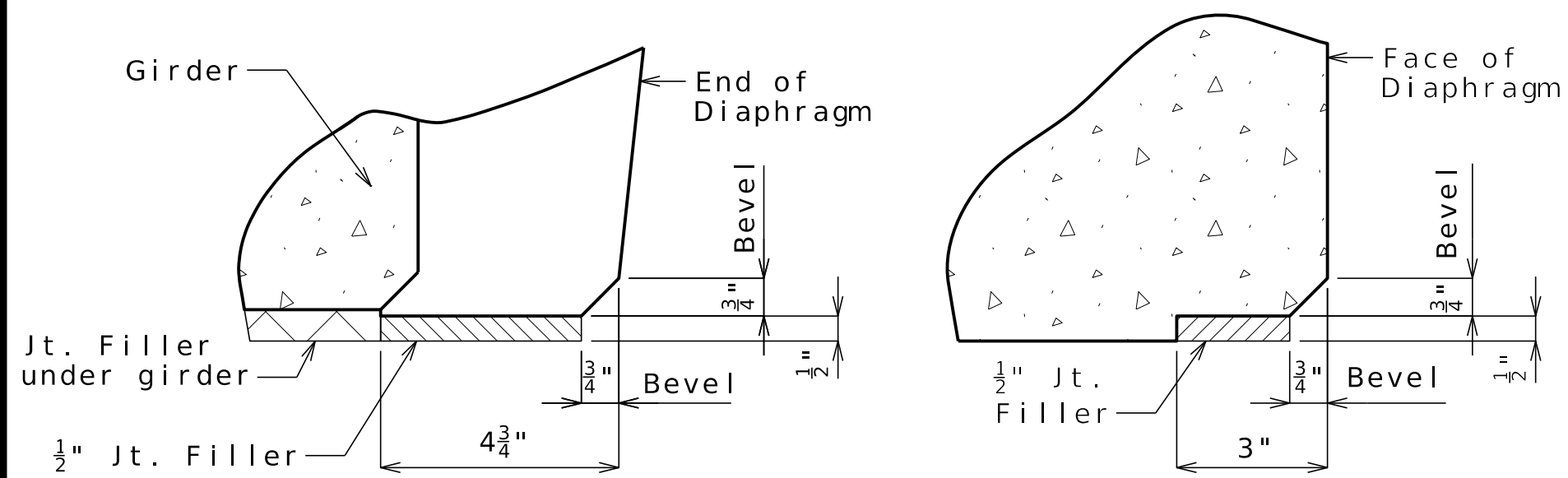
CERTIFICATE OF AUTHORITY NO. 001270

CERTIFICATE OF AUTHORITY NO. 001270

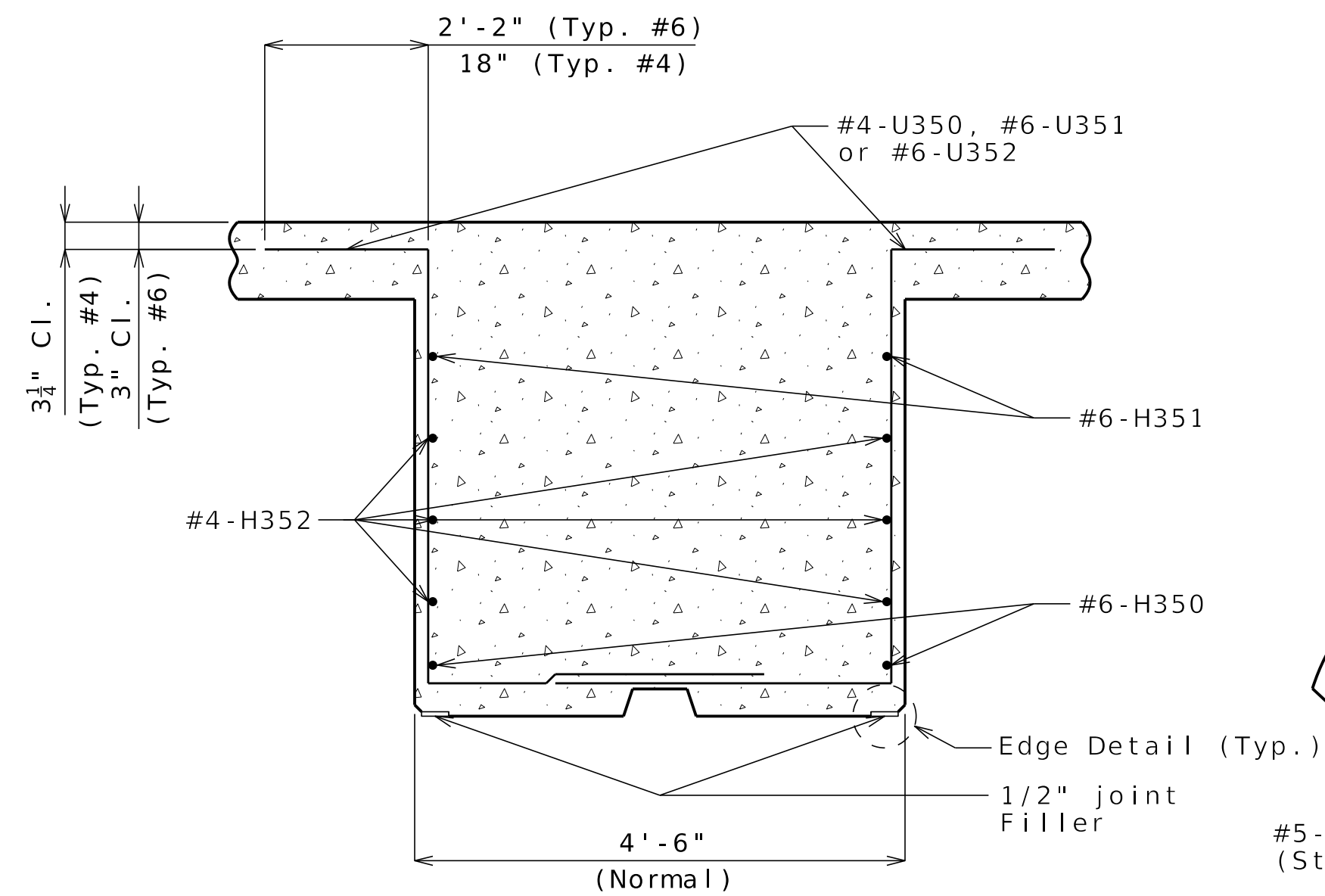




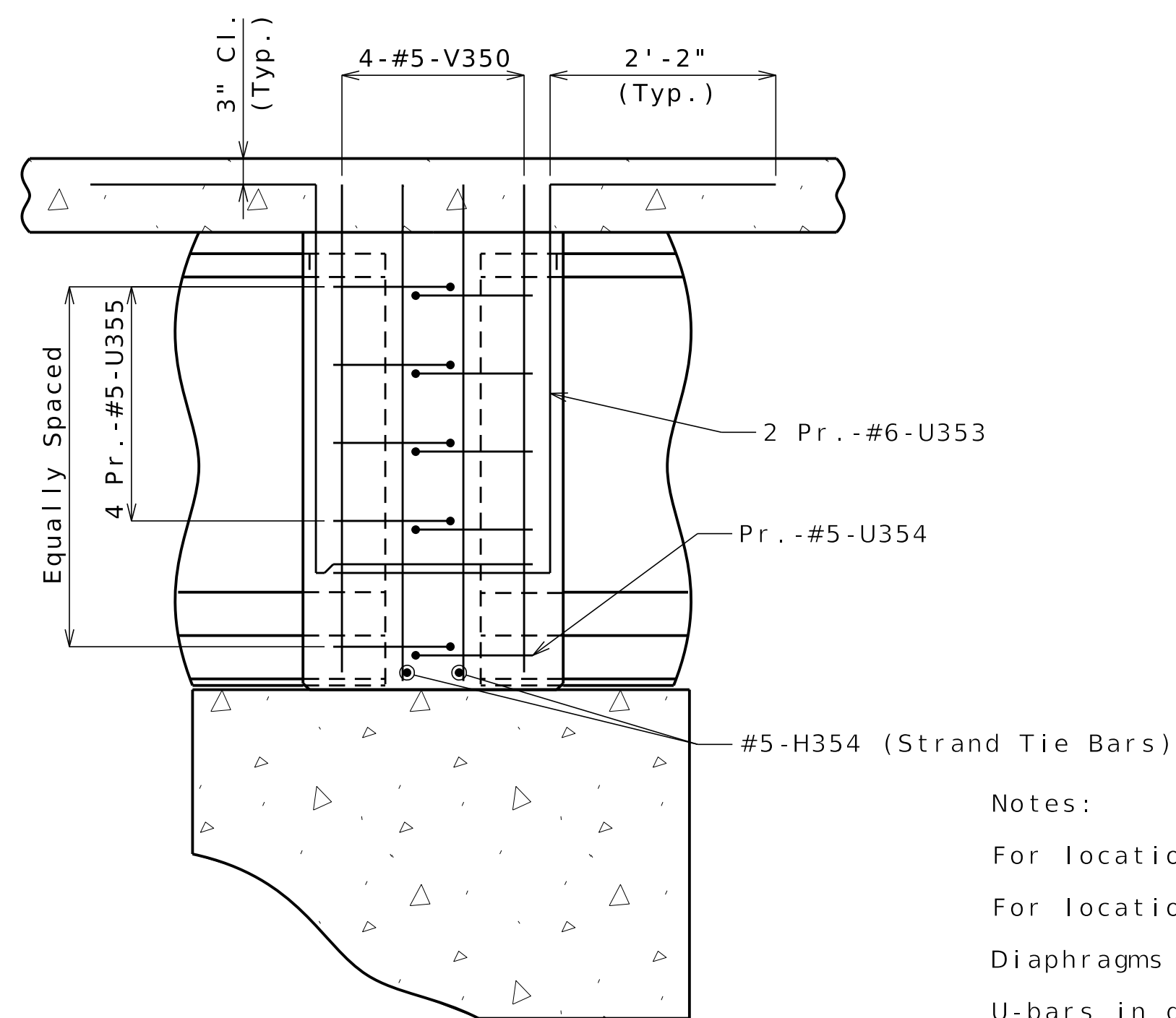




### EDGE DETAIL



SECTION B-B



ELEVATION C-C

Notes:

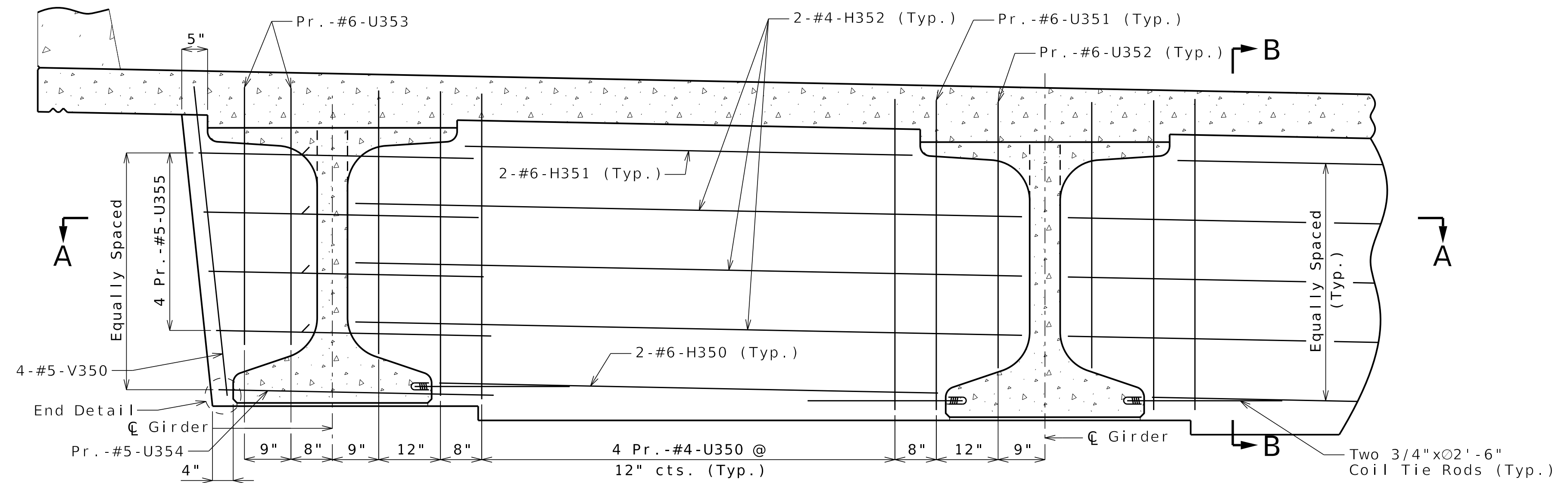
For location of Strand Tie Bars, see Sheet No. 25.

For location and details of Coil Tie Rods, see Sheet No. 25.

Diaphragms at intermediate bents shall be built vertical.

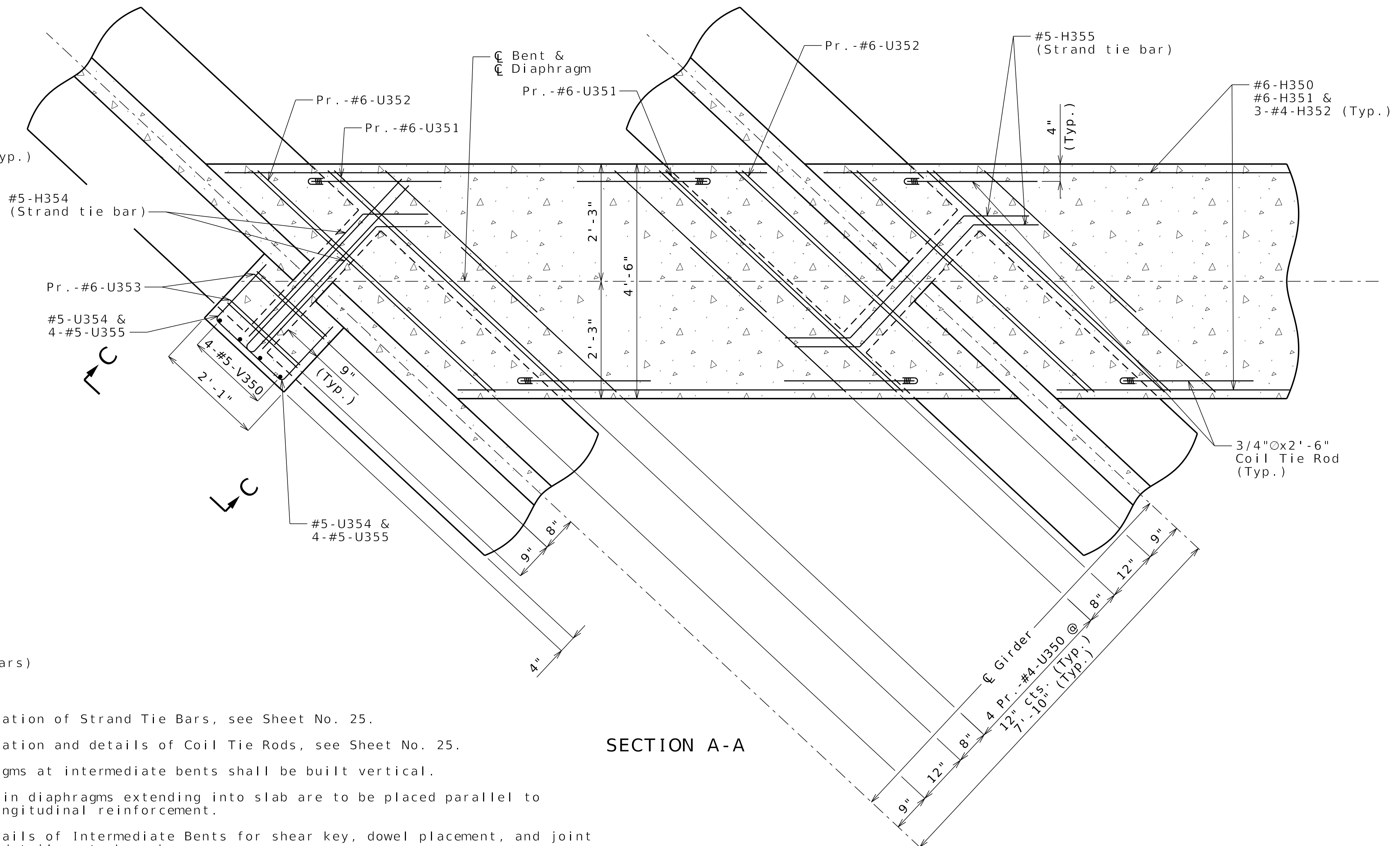
U-bars in diaphragms extending into slab are to be placed parallel to slab longitudinal reinforcement.

See Details of Intermediate Bents for shear key, dowel placement, and joint filler details not shown here.



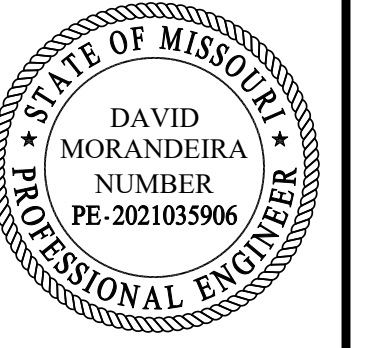
SECTION NEAR INTERMEDIATE BENT

Normal to  $\mathbb{C}$  Structure  
(Looking Ahead Station)



SECTION A-A

### CONCRETE DIAPHRAGM AT INTERMEDIATE BENT NO. 3



THIS SHEET HAS BEEN  
DESIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
1/10/2025

| ROUTE | STATE |
|-------|-------|
|-------|-------|

|        |    |
|--------|----|
| I - 70 | MO |
|--------|----|

|          |           |
|----------|-----------|
| DISTRICT | SHEET NO. |
| BB       | 10000-00  |

|        |          |
|--------|----------|
| BR     | A9683-28 |
| COUNTY |          |

ST CHARLES

JOB NO.

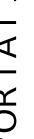
JST0020

CONTRACT ID.

PROJECT NO.

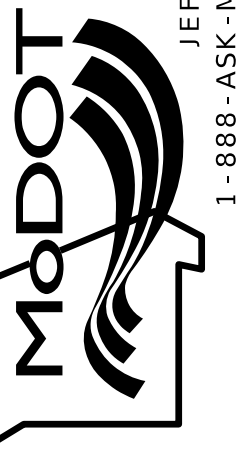
BRIDGE NO.

A9683

[illegible]

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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



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

---

**Bartlett & West**  
601 MONROE ST. SUITE 201 • JEFFERSON CITY, MO 65101  
PHONE 573-624-3198  
CERTIFICATE OF AUTHORITY NO. 000167 • ENGINEERING  
[WWW.BARTLETTWEST.COM](http://WWW.BARTLETTWEST.COM)

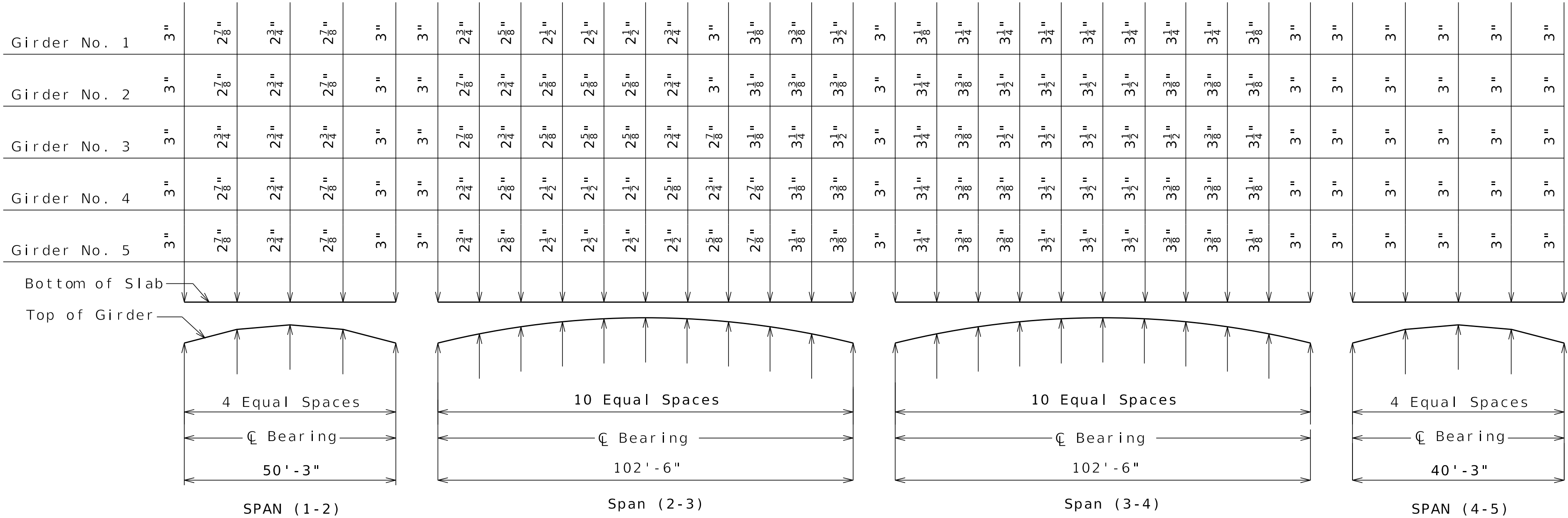




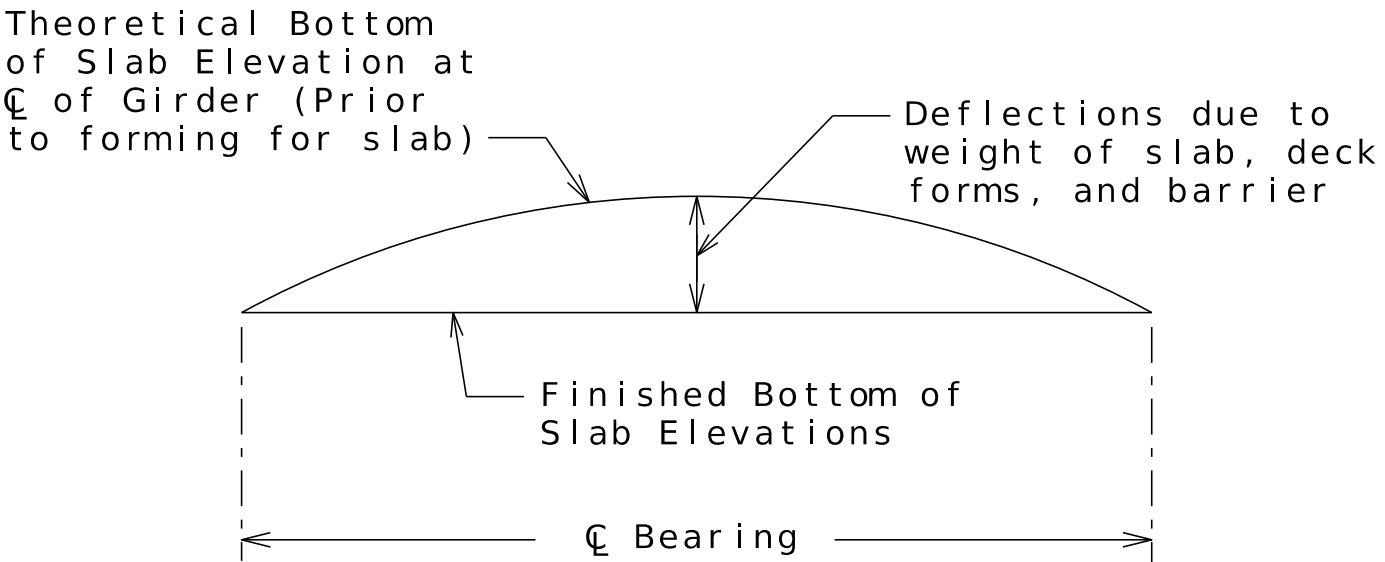




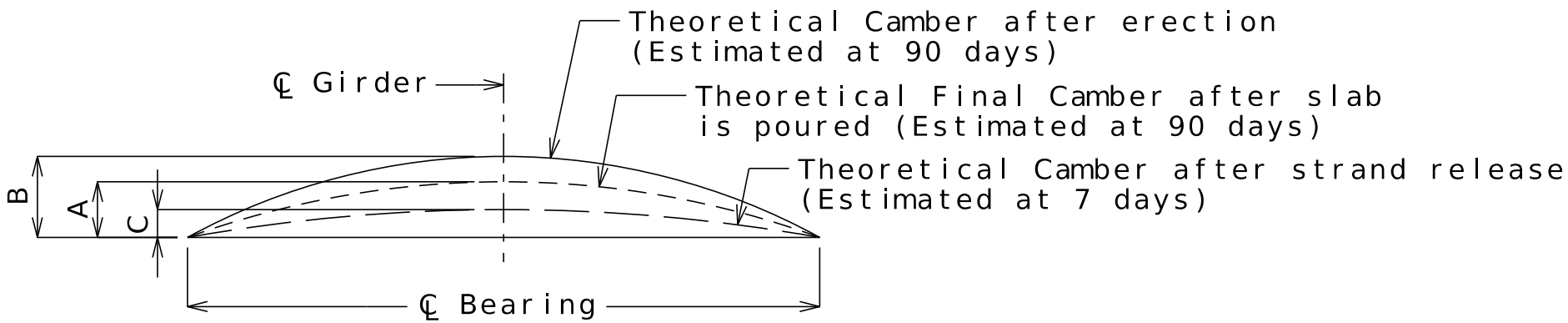




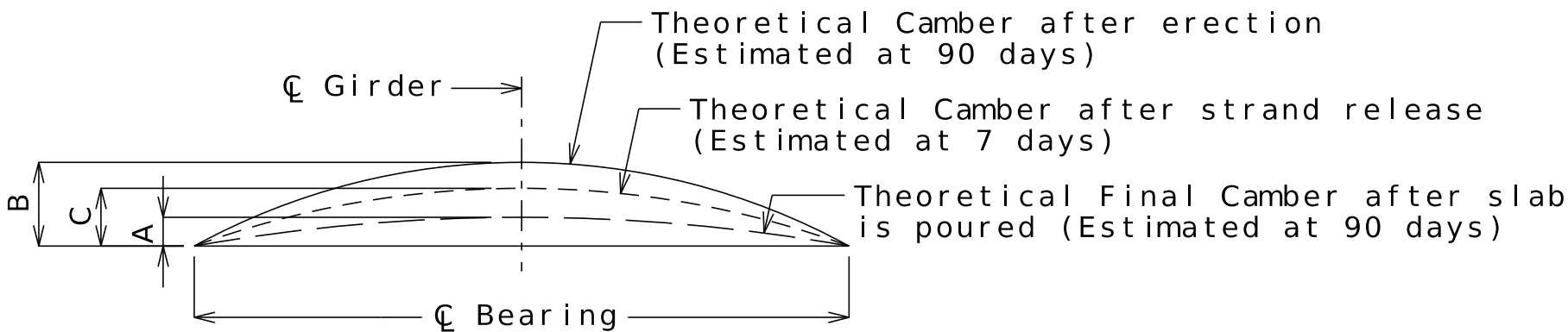
THEORETICAL SLAB HAUNCHING DIAGRAM (ESTIMATED AT 90 DAYS)



TYPICAL SLAB ELEVATIONS DIAGRAM



| Girder   | Span (1-2)      |                 |                 | Span (4-5)      |                 |                 |
|----------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|          | A               | B               | C               | A               | B               | C               |
| Exterior | $\frac{1}{4}$ " | $\frac{3}{8}$ " | $\frac{1}{4}$ " | $\frac{1}{4}$ " | $\frac{1}{4}$ " | $\frac{1}{8}$ " |
| Interior |                 |                 |                 |                 |                 |                 |



| Girder       | Span (2-3)      |                                 |                                 | Span (3-4)      |                                 |                                 |
|--------------|-----------------|---------------------------------|---------------------------------|-----------------|---------------------------------|---------------------------------|
|              | A               | B                               | C                               | A               | B                               | C                               |
| Girder No. 1 | 1"              | 2 <sup>3</sup> / <sub>8</sub> " |                                 | 1"              | 2 <sup>3</sup> / <sub>8</sub> " |                                 |
| Interior     |                 | 2 <sup>1</sup> / <sub>4</sub> " | 1 <sup>3</sup> / <sub>8</sub> " |                 | 2 <sup>1</sup> / <sub>4</sub> " | 1 <sup>3</sup> / <sub>8</sub> " |
| Girder No. 5 | $\frac{3}{4}$ " | 2 <sup>3</sup> / <sub>8</sub> " |                                 | $\frac{3}{4}$ " | 2 <sup>3</sup> / <sub>8</sub> " |                                 |

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.

0.25 pt. = 0.7125 x 0.5 pt.

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

| Theoretical Bottom of Slab Elevations at Centerline of Girder<br>(Prior to forming for slab) (Estimated at 90 days) |                                     |        |        |        |        |        |        |        |        |        |        |
|---------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Girder<br>Number                                                                                                    | Span (1-2) (50-3" C Brg. - C Brg.)  |        |        |        |        |        |        |        |        |        |        |
|                                                                                                                     | C Brg.                              |        | .25    | .50    | .75    | C Brg. |        |        |        |        |        |
| 1                                                                                                                   | 637.18                              |        | 637.08 | 636.98 | 636.87 | 636.76 |        |        |        |        |        |
| 2                                                                                                                   | 637.10                              |        | 637.00 | 636.90 | 636.79 | 636.67 |        |        |        |        |        |
| 3                                                                                                                   | 637.01                              |        | 636.91 | 636.81 | 636.70 | 636.59 |        |        |        |        |        |
| 4                                                                                                                   | 636.92                              |        | 636.82 | 636.72 | 636.61 | 636.50 |        |        |        |        |        |
| 5                                                                                                                   | 636.83                              |        | 636.74 | 636.63 | 636.53 | 636.41 |        |        |        |        |        |
| Girder<br>Number                                                                                                    | Span (2-3) (102-6" C Brg. - C Brg.) |        |        |        |        |        |        |        |        |        |        |
|                                                                                                                     | C Brg.                              | .10    | .20    | .30    | .40    | .50    | .60    | .70    | .80    | .90    | C Brg. |
| 1                                                                                                                   | 636.75                              | 636.70 | 636.64 | 636.58 | 636.51 | 636.43 | 636.33 | 636.23 | 636.11 | 635.97 | 635.82 |
| 2                                                                                                                   | 636.66                              | 636.61 | 636.56 | 636.50 | 636.43 | 636.35 | 636.26 | 636.15 | 636.04 | 635.90 | 635.76 |
| 3                                                                                                                   | 636.57                              | 636.53 | 636.48 | 636.42 | 636.35 | 636.27 | 636.17 | 636.07 | 635.95 | 635.83 | 635.69 |
| 4                                                                                                                   | 636.49                              | 636.44 | 636.39 | 636.33 | 636.26 | 636.18 | 636.09 | 635.98 | 635.87 | 635.75 | 635.61 |
| 5                                                                                                                   | 636.40                              | 636.36 | 636.31 | 636.25 | 636.19 | 636.11 | 636.01 | 635.91 | 635.79 | 635.66 | 635.53 |
| Girder<br>Number                                                                                                    | Span (3-4) (102-6" C Brg. - C Brg.) |        |        |        |        |        |        |        |        |        |        |
|                                                                                                                     | C Brg.                              | .10    | .20    | .30    | .40    | .50    | .60    | .70    | .80    | .90    | C Brg. |
| 1                                                                                                                   | 635.80                              | 635.72 | 635.62 | 635.50 | 635.37 | 635.22 | 635.05 | 634.86 | 634.65 | 634.42 | 634.19 |
| 2                                                                                                                   | 635.74                              | 635.67 | 635.58 | 635.47 | 635.35 | 635.20 | 635.04 | 634.85 | 634.65 | 634.43 | 634.20 |
| 3                                                                                                                   | 635.67                              | 635.60 | 635.52 | 635.42 | 635.31 | 635.17 | 635.01 | 634.83 | 634.64 | 634.43 | 634.20 |
| 4                                                                                                                   | 635.60                              | 635.54 | 635.46 | 635.37 | 635.26 | 635.13 | 634.98 | 634.81 | 634.62 | 634.42 | 634.20 |
| 5                                                                                                                   | 635.52                              | 635.47 | 635.40 | 635.32 | 635.22 | 635.10 | 634.95 | 634.79 | 634.60 | 634.40 | 634.19 |
| Girder<br>Number                                                                                                    | Span (4-5) (40-3" C Brg. - C Brg.)  |        |        |        |        |        |        |        |        |        |        |
|                                                                                                                     | C Brg.                              |        | .25    | .50    | .75    | C Brg. |        |        |        |        |        |
| 1                                                                                                                   | 634.16                              |        | 633.95 | 633.74 | 633.52 | 633.29 |        |        |        |        |        |
| 2                                                                                                                   | 634.17                              |        | 633.97 | 633.76 | 633.55 | 633.33 |        |        |        |        |        |
| 3                                                                                                                   | 634.17                              |        | 633.98 | 633.78 | 633.57 | 633.36 |        |        |        |        |        |
| 4                                                                                                                   | 634.17                              |        | 633.99 | 633.79 | 633.59 | 633.38 |        |        |        |        |        |
| 5                                                                                                                   | 634.16                              |        | 633.99 | 633.80 | 633.61 | 633.40 |        |        |        |        |        |

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

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

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

Sheet 31 of 46



THIS SHEET HAS BEEN  
SIGNED, SEALED, AND DATED  
ELECTRONICALLY.

DATE PREPARED  
6/10/2025

ROUTE  
I - 70

STATE  
MO

DISTRICT  
BR

SHEET NO.  
A9683-31

COUNTY  
ST. CHARLES

JOB NO.  
JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9683

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

IMPROVE 70  
ALLIANCE

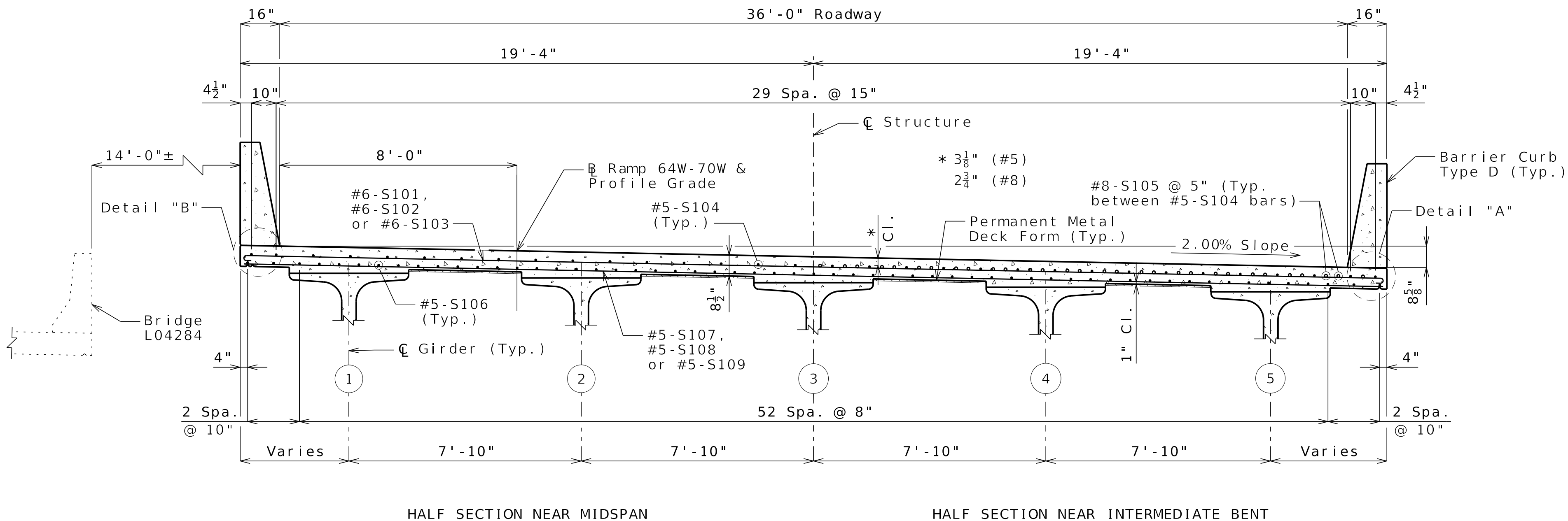
Bartlett & West

715 KIRK DRIVE  
KANSAS CITY, MO 64105-1310  
PHONE 872-63-3181  
FAX 872-63-3181  
WWW.BARTLETTWEST.COM

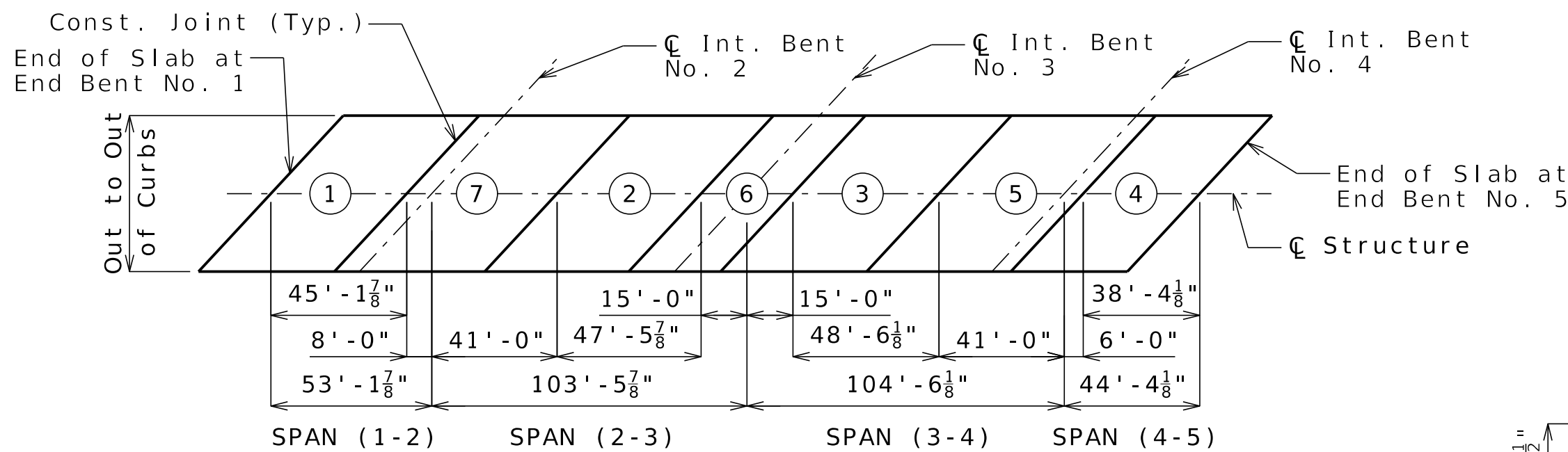








TYPICAL SECTION THRU SLAB  
(Shown normal to Ramp)



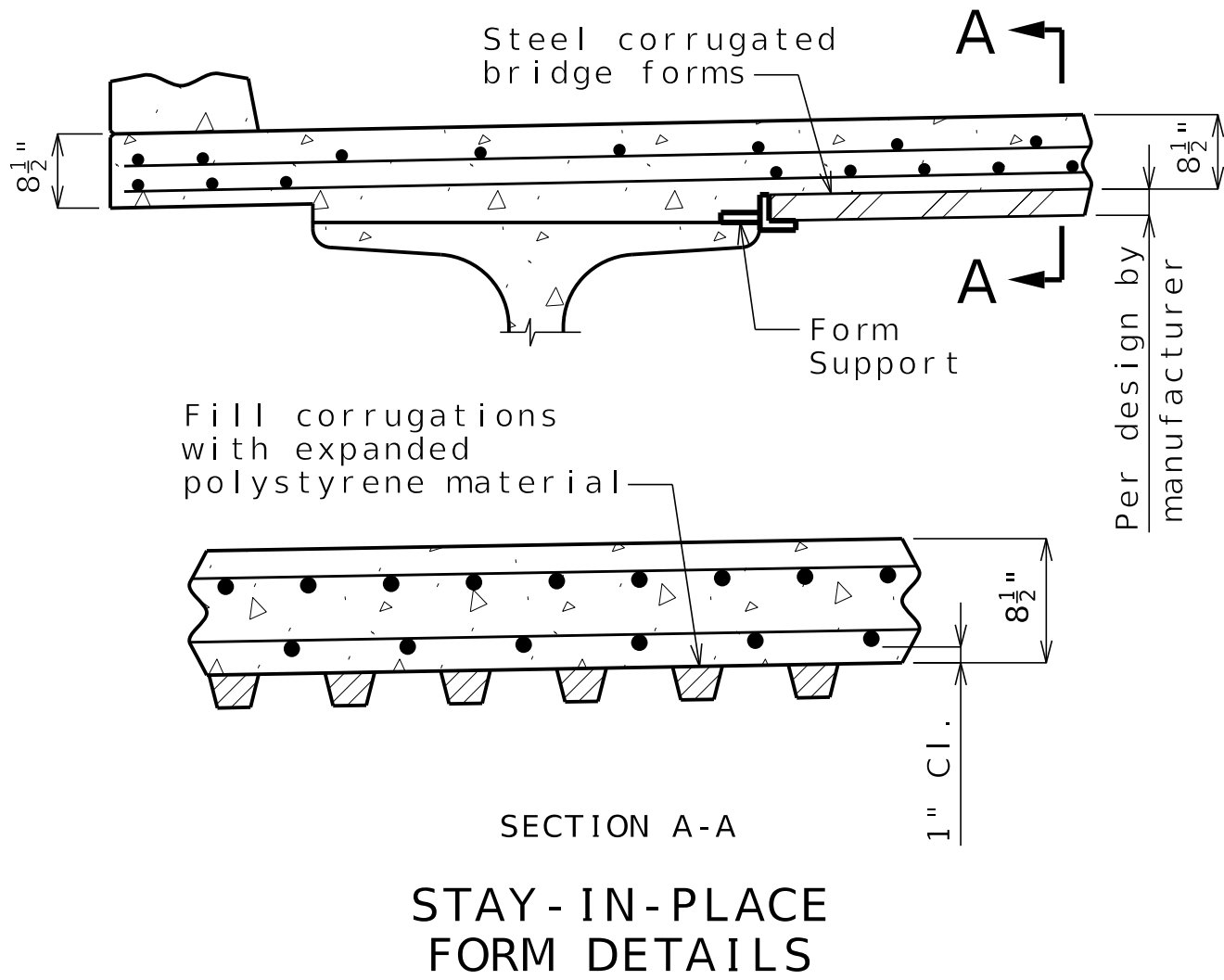
|                                                                                                                    | Sequence of Pours         |   |        |        |               |          |          | Min. Rate of Pour<br>Cu. Yds./Hr. |    |
|--------------------------------------------------------------------------------------------------------------------|---------------------------|---|--------|--------|---------------|----------|----------|-----------------------------------|----|
|                                                                                                                    | Direction                 |   |        |        |               |          |          | With Retarder                     |    |
| Basic<br>Sequence                                                                                                  | 1                         | 2 | 3      | 4      | 5             | 6        | 7        | 25                                |    |
|                                                                                                                    | Either Direction          |   |        |        |               |          |          |                                   |    |
| Alternate pours to the basic skip sequence are subject to the approval of the engineer in accordance with Sec 703. |                           |   |        |        |               |          |          |                                   |    |
| Alternate A<br>Pours                                                                                               | 1                         |   | 7 + 2  |        | 6 + 3         |          | 5 + 4    |                                   | 32 |
|                                                                                                                    | 7 to End                  |   | 6 to 1 |        | 5 to 2        |          | End to 3 |                                   |    |
| Alternate B<br>Pours                                                                                               | 1 + 7 + 2                 |   |        | 6 + 3  |               | 5 + 4    |          |                                   | 32 |
|                                                                                                                    | 6 to End                  |   |        | 5 to 2 |               | End to 3 |          |                                   |    |
| Alternate C<br>Pours                                                                                               | 1 + 7 + 2                 |   |        |        | 6 + 3 + 5 + 4 |          |          |                                   | 32 |
|                                                                                                                    | 6 to End                  |   |        |        | End to 2      |          |          |                                   |    |
| Alternate D<br>Pours                                                                                               | 4 + 5 + 3 + 6 + 2 + 7 + 1 |   |        |        |               |          |          |                                   | 32 |
|                                                                                                                    | End to End (Upgrade)      |   |        |        |               |          |          |                                   |    |

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

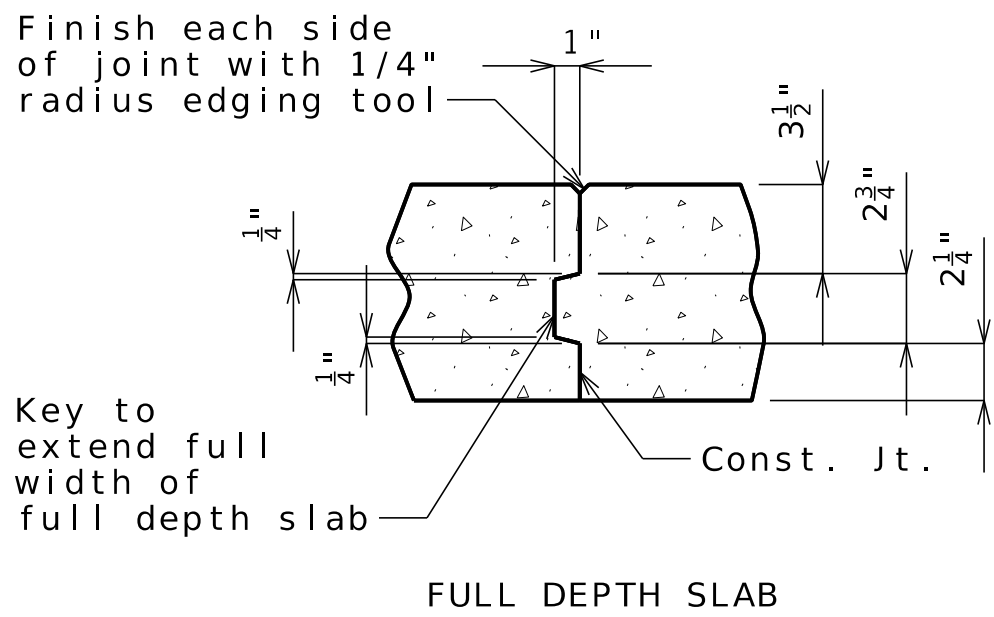
Bridge deck must be poured upgrade.

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

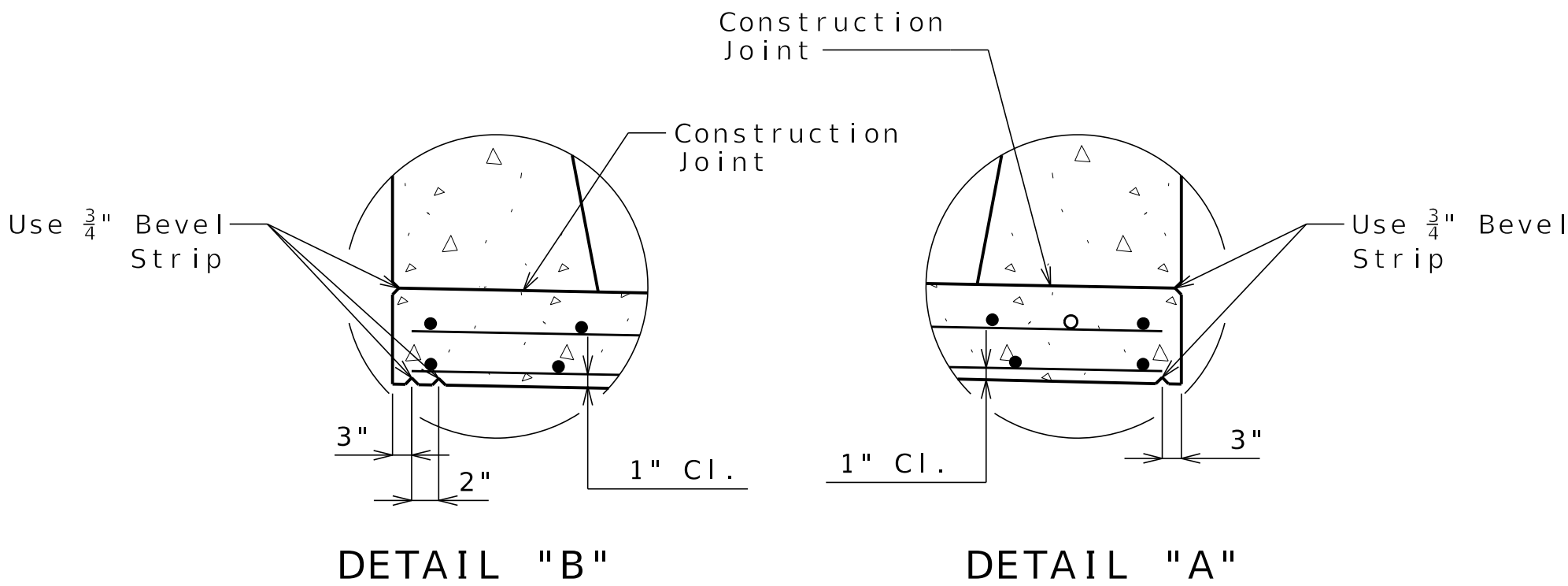
SLAB POURING SEQUENCE



SECTION A-A  
STAY-IN-PLACE  
FORM DETAILS



FULL DEPTH SLAB  
SLAB CONSTRUCTION JOINT



Notes:

Barrier Curb reinforcement not shown for clarity.

For Plan of Slab Showing Reinforcement and additional notes, see Sheet No. 32.

For metal deck form notes, see General Notes.

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

SLAB DETAILS



THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
6/10/2025

ROUTE  
I-70

STATE  
MO

DISTRICT  
BR

SHEET NO.  
A9683-33

COUNTY  
ST. CHARLES

JOB NO.  
JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9683

DESCRIPTION

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

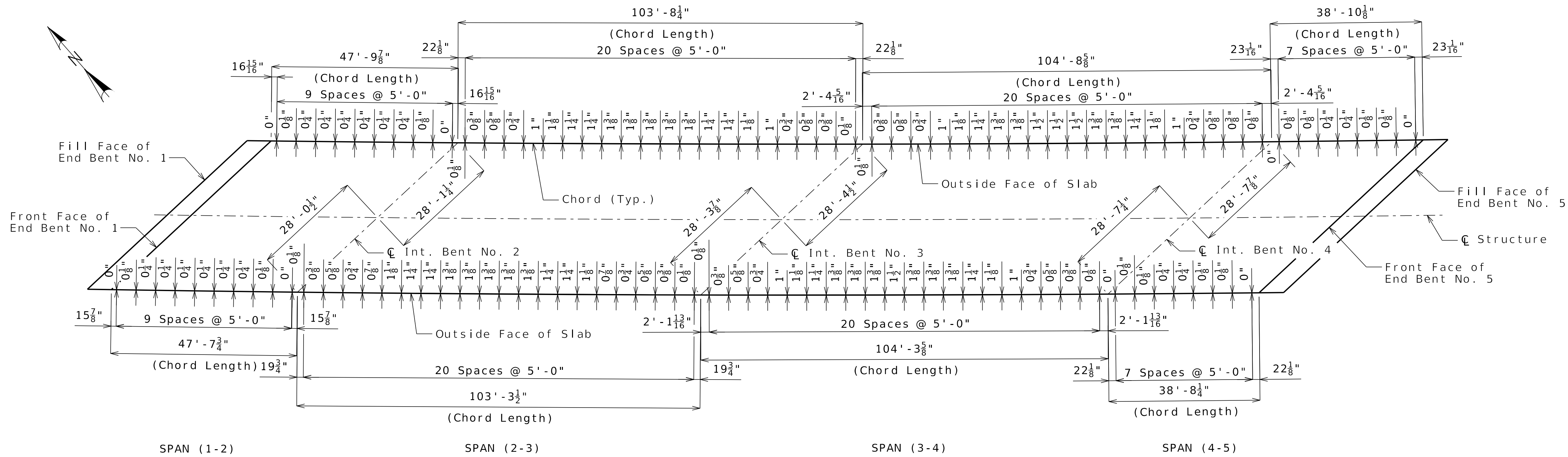
DATE

DATE

DATE

DATE





PLAN  
All dimensions are horizontal.  
All bents are parallel

STATE OF MISSOURI  
DAVID MORANDEIRA  
NUMBER  
PE-2021035906  
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
6/10/2025

ROUTE  
1 - 70

STATE  
MO

DISTRICT  
BR

SHEET NO.  
A9683 - 34

COUNTY  
ST. CHARLES

JOB NO.  
JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9683

| DESCRIPTION | DATE |
|-------------|------|
|             |      |
|             |      |
|             |      |
|             |      |
|             |      |

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

MoDOT

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

IMPROVE 70  
ALLIANCE

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

Bartlett & West

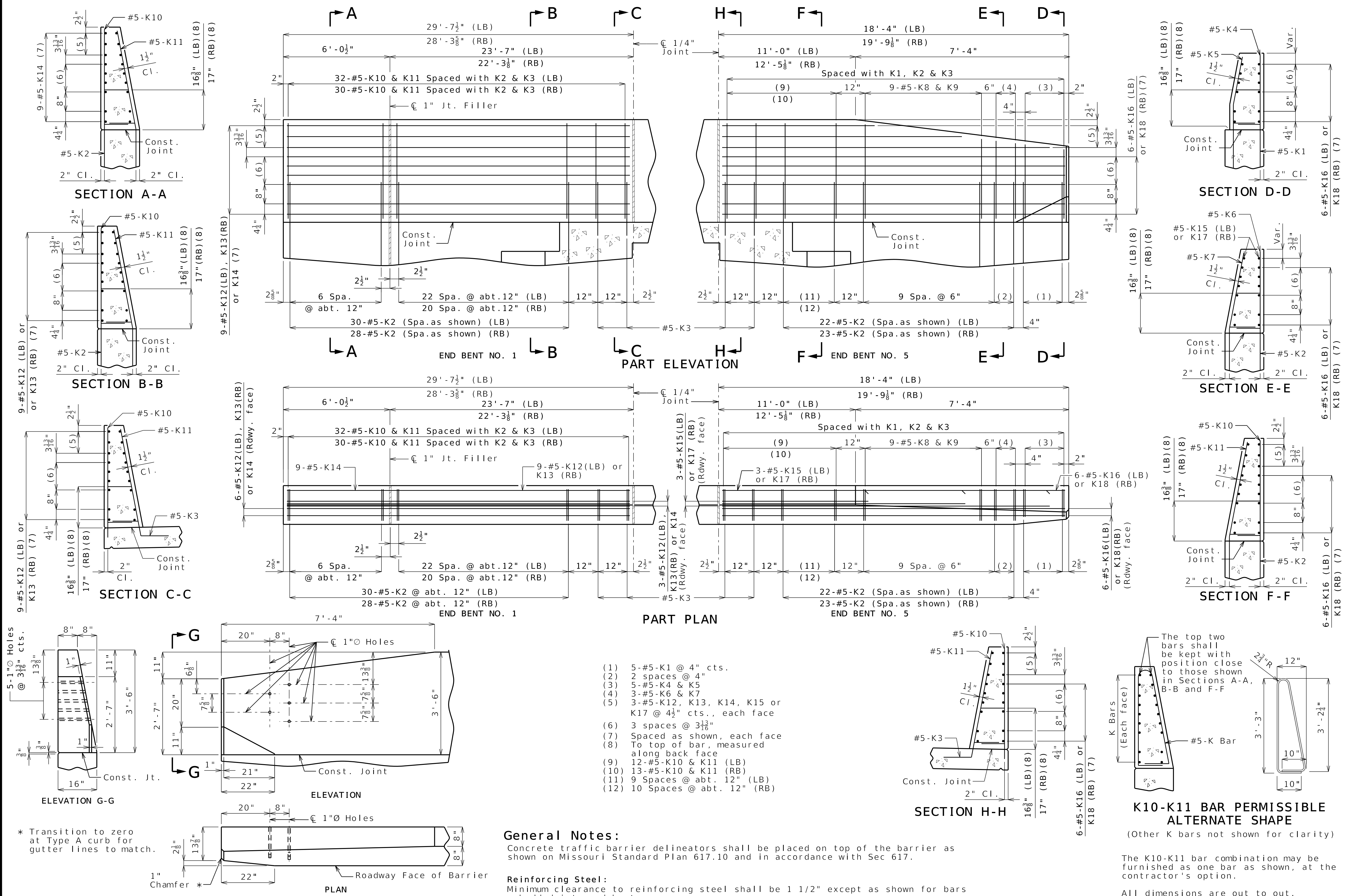
601 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101  
PHONE 572-630-3181 - ENGINEERING  
WWW.BARTLETTWEST.COM



B A9683 028 JST0020 BARELEV.dgn 7:17:54 AM 6/10/2025







**DETAILS OF GUARD RAIL ATTACHMENT**  
(End Bent No. 5 shown. For details of guard rail attachment on full height barrier at End Bent No. 1, see bridge anchor section and connector plate details shown on Missouri Standard Plans 606.22 and 617.10.)

**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.

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

**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.

STATE OF MISSOURI

DAVID MORANDEIRA

NUMBER PE-2021035906

PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 6/10/2025

ROUTE 1-70

DISTRICT BR

COUNTY ST. CHARLES

JOB NO. JST0020

CONTRACT ID. A9683-36

PROJECT NO.

BRIDGE NO. A9683

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

IMPROVE70 ALLIANCE

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

HNTB

Bartlett & West 601 HUNDS ST., SUITE 201, JEFFERSON CITY, MO 65101 PHONE 572-630-3181 CERTIFICATE OF AUTHORITY NO. 001270

TYPE D BARRIER AT END BENTS

B\_A9683\_029\_JST0020\_BARDET.dgn 7:17:57 AM 6/10/2025



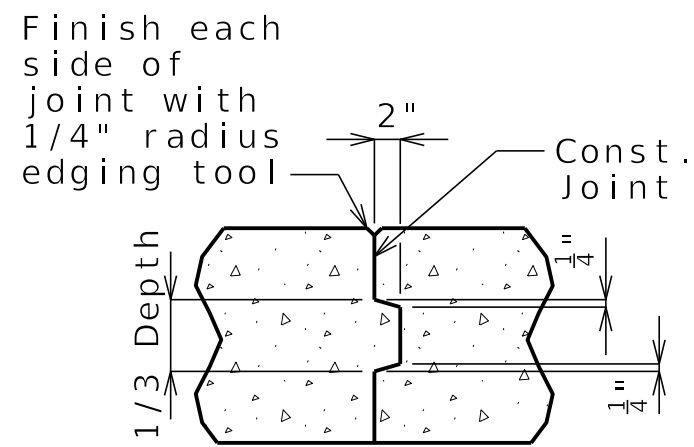


Diagram illustrating the transition chamfer for a Type A curb and gutter assembly. The diagram shows a cross-section of the curb and gutter, with the following components and dimensions labeled:

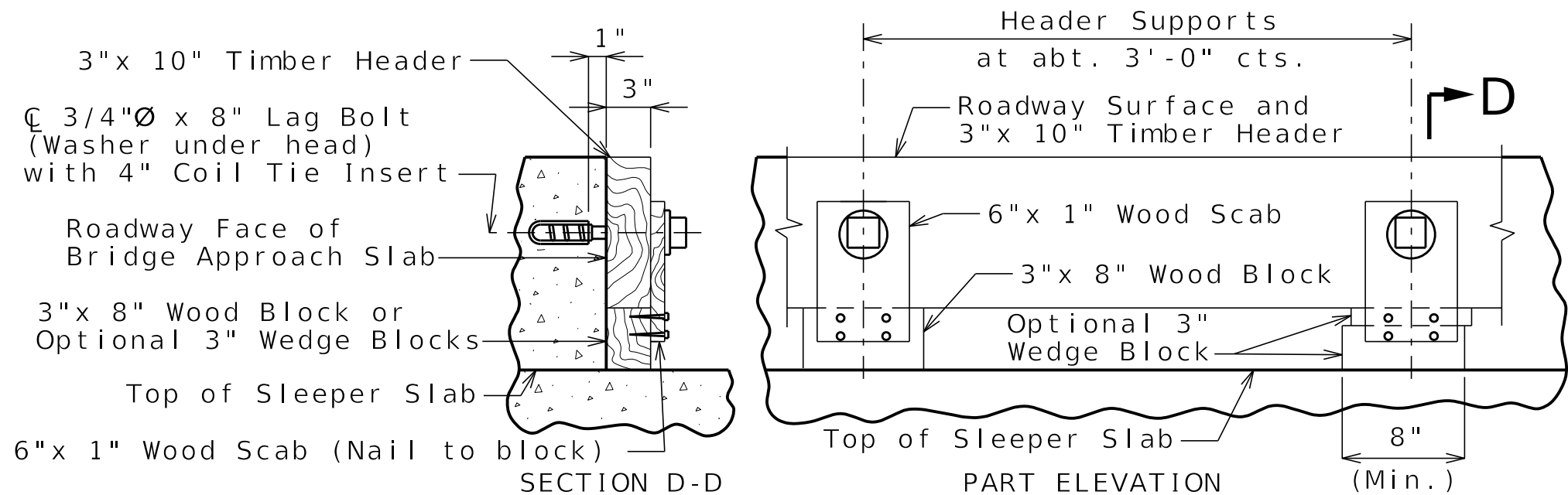
- End of Barrier
- 1" Chamfer
- Transition chamfer to zero at Type A curb for gutter line to match
- 4" Type A Curb
- Gutter line of Type A curb aligns with the chamfer at the transition end of barrier
- 1/4" Jt. Filler \*
- End of Wing
- 8 1/8"
- 4 1/2" Joint Filler \*

Diagram illustrating the cross-section of a concrete slab with reinforcement bars and a barrier. The diagram shows a concrete slab with a top layer of #5 Bars at 12" cts. and a bottom layer of #6 Bars at 5" cts. A 3/4" Jt. Filler (Typ.) is shown at the top. A Barrier (Typ.) is shown on the right side. The diagram also indicates #5 Bars at 12" cts. within the slab.

Diagram illustrating the cross-section of a Type A Curb (Typ.). The curb is shown with a top width of 12 inches and a base width of 12 inches. The reinforcement details are as follows:

- Top reinforcement: #5 Bars at 12" cts.
- Bottom reinforcement: #6 Bars at 5" cts.
- Side reinforcement: #5 Bars at 12" cts.

(End Bent No. 5 Only)



Remove timber header when concrete pavement is placed.

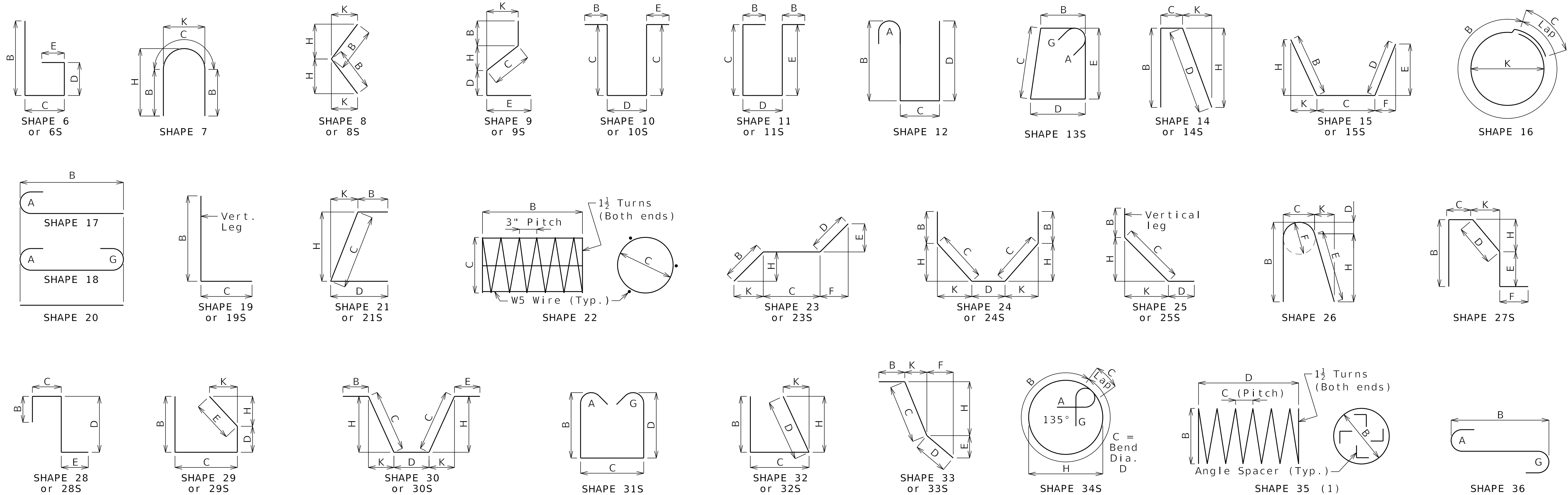
Detailed JUN 2025  
Checked JUN 2025

Sheet 37 of 46

\* 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.

**BC** 601 CER

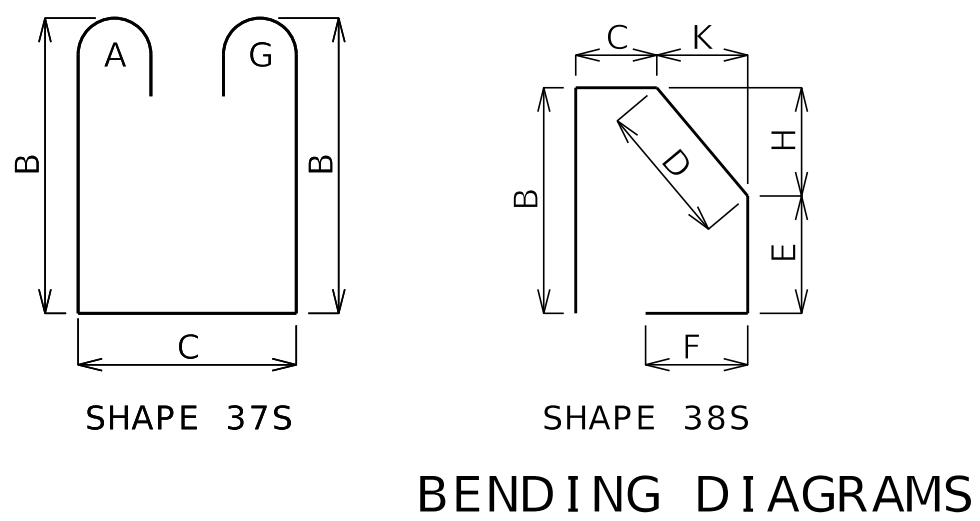




| Finished Bend Diameters D and Hook Dimensions |      |         |         |         |         |  |
|-----------------------------------------------|------|---------|---------|---------|---------|--|
| Standard Pin Bend Shapes                      |      |         |         |         |         |  |
| Size                                          | Case | D       | A or G  |         | J       |  |
|                                               |      |         | 90°     | 180°    | 180°    |  |
| #4                                            | 1    | 3"      | 8"      | 6"      | 4"      |  |
| #5                                            | 1    | 3 3/4"  | 10"     | 7"      | 5"      |  |
| #6                                            | 1    | 4 1/2"  | 12"     | 8 1/4"  | 6"      |  |
| #7                                            | 2    | 5 1/4"  | 14"     | 9 3/4"  | 7"      |  |
|                                               | 3    | 7"      | 15"     | 11 1/2" | 8 3/4"  |  |
| #8                                            | 2    | 6"      | 16"     | 11"     | 8"      |  |
|                                               | 3    | 8"      | 17"     | 13 1/4" | 10"     |  |
| #9                                            | 1    | 9 1/2"  | 19 1/2" | 15 1/2" | 11 3/4" |  |
| #10                                           | 1    | 10 3/4" | 22"     | 17 1/2" | 13 1/4" |  |
| #11                                           | 1    | 12"     | 24 1/2" | 19 1/2" | 14 3/8" |  |
| #14                                           | 1    | 18 1/4" | 31 1/4" | 27 1/2" | 21 3/8" |  |
| #18                                           | 1    | 24"     | 41 1/2" | 36 1/4" | 28 1/2" |  |

| Stirrup Pin Bend Shapes (S) |      |        |        |        |        |        |
|-----------------------------|------|--------|--------|--------|--------|--------|
| Size                        | Case | D      | A or G |        | H      |        |
|                             |      |        | 90°    | 135°   | 180°   | 180°   |
| #4                          | 2    | 2"     | 4 1/2" | 4 1/2" | 5"     | 2 7/8" |
|                             | 3    | 3"     | 5"     | 5 1/4" | 6"     | 3"     |
| #5                          | 2    | 2 1/2" | 5 3/4" | 5 3/4" | 5 3/4" | 3 3/4" |
|                             | 3    | 3 3/4" | 6 1/4" | 6 1/4" | 7"     | 3 5/8" |
| #6                          | 1    | 4 1/2" | 12"    | 7 3/4" | 8 1/4" | 4 5/8" |

Applicable for all grades of steel.  
Case 1 applies to all reinforcement. Case 2 applies to all reinforcement except for galvanized bars. Case 3 applies to galvanized bars only.



All dimensions are out to out.

Shapes ending with an S shall be bent in accordance with stirrup pin bend shapes.

Unless otherwise noted, finished bending diameter D is the same for all bends of a shape.

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

Four angle or channel spacers are required for each column spiral. Spacers are to be placed on inside of spirals. Length and weight of column spirals do not include splices or spacers.

STATE OF MISSOURI  
DAVID MORANDEIRA  
NUMBER  
PE-2021035906  
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN  
SIGNED, SEALED, AND DATED  
ELECTRONICALLY.

DATE PREPARED  
6/10/2025

ROUTE  
1 - 70

DISTRICT  
BR

COUNTY  
ST. CHARLES

JOB NO.  
JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9683

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

MoDOT

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

IMPROVE 70  
ALLIANCE

HNTB  
715 KIRK DRIVE  
KANSAS CITY, MO 64105-1310  
PHONE 874-630-3181  
FAX 874-630-3181  
WWW.HNTB.COM

Bartlett & West  
601 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101  
PHONE 573-633-3181  
FAX 573-633-3181  
WWW.BARTLETTWEST.COM



| No.<br>Req. | Size/<br>Mark | Location         | Codes            |    | Dimensions |       |       |       |       |       |       |       | Nom.<br>Length |       | Actual<br>Length |    | Weight<br>lb |      |    |     |
|-------------|---------------|------------------|------------------|----|------------|-------|-------|-------|-------|-------|-------|-------|----------------|-------|------------------|----|--------------|------|----|-----|
|             |               |                  |                  |    | B          | C     | D     | E     | F     | H     | K     |       |                |       |                  |    |              |      |    |     |
|             |               |                  | C                | SH | V          | ft    | in.   | ft    | in.   | ft    | in.   | ft    | in.            | ft    | in.              | ft |              | in.  | ft | in. |
|             |               | End Bent No. 1   |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
| 16          | 6             | F100             | Wing Brace       | E  | 23S        | 19.75 | 9     | 7.25  | 19.75 | 17.50 | 9.25  | 5.50  | 19.00          | 12    | 11               | 12 | 10           | 308  |    |     |
| 5           | 6             | F101             | Diaphragm        | E  | 21S        | 7     | 9.38  | 5     | 7.50  |       | 5     | 4.75  | 5              | 7.25  | 13               | 5  | 12           | 8    | 95 |     |
| 16          | 6             | F102             | Wing Brace       | E  | 23S        | 20.00 | 3     | 4.50  | 19.88 | 18.50 | 7.25  | 18.50 | 7.50           | 6     | 8                | 6  | 7            | 158  |    |     |
| 5           | 6             | F103             | Diaphragm        | E  | 23S        | 5     | 8.75  | 5     | 2.50  |       |       | 3     | 11.50          | 4     | 1.75             | 10 | 11           | 10   | 9  | 81  |
| 21          | 6             | H100             | Beam & Diaphragm | E  | 20         | 55    | 6.75  |       |       |       |       |       |                | 55    | 7                | 55 | 7            | 1753 |    |     |
| 15          | 6             | H101             | Beam & Diaphragm | E  | 20         | 55    | 6.75  |       |       |       |       |       |                | 55    | 7                | 55 | 7            | 1252 |    |     |
| 12          | 6             | H102             | Diaphragm        | E  | 20         | 9     | 11.25 |       |       |       |       |       |                | 9     | 11               | 9  | 11           | 179  |    |     |
| 8           | 6             | H103             | Diaphragm        | E  | 20         | 6     | 5.50  |       |       |       |       |       |                | 6     | 6                | 6  | 6            | 78   |    |     |
| 6           | 6             | H104             | Diaphragm        | E  | 20         | 3     | 4.25  |       |       |       |       |       |                | 3     | 4                | 3  | 4            | 30   |    |     |
| 4           | 6             | H105             | Diaphragm        | E  | 17         | 19.50 |       |       |       |       |       |       |                | 2     | 4                | 2  | 4            | 14   |    |     |
| 16          | 8             | H106             | Wing Wall        | E  | 6          | 18    | 0.00  | 16.00 |       |       |       |       |                | 19    | 4                | 18 | 11           | 808  |    |     |
| 28          | 6             | H107             | Wing Wall        | E  | 6          | 18    | 0.00  | 12.00 |       |       |       |       |                | 19    | 0                | 18 | 8            | 785  |    |     |
| 5           | 5             | H108             | Strand Tie       | E  | 23         | 15.25 | 3     | 2.25  | 15.25 | 11.00 | 10.50 | 11.00 | 10.50          | 5     | 9                | 5  | 8            | 30   |    |     |
| 5           | 6             | H109             | Beam             | E  | 20         | 19    | 10.25 |       |       |       |       |       |                | 19    | 10               | 19 | 10           | 149  |    |     |
| 32          | 6             | H110             | Wingwall         | E  | 6          | 4     | 8     | 3.25  | 12.00 |       |       |       |                | 9     | 3                | 9  | 0            |      |    |     |
|             |               | Increment = 16"  |                  |    |            | 17    | 7.25  | 12.00 |       |       |       |       |                | 18    | 7                | 18 | 4            | 655  |    |     |
| 4           | 6             | H111             | Wingwall         | E  | 6          | 8     | 2.00  | 12.00 |       |       |       |       |                | 9     | 2                | 8  | 10           | 53   |    |     |
| 32          | 5             | H150             | Detached Wingwal | E  | 18         | 6     | 2.00  |       |       |       |       |       |                | 7     | 4                | 7  | 4            | 245  |    |     |
| 36          | 4             | H151             | Detached Wingwal | E  | 18         | 5     | 8.00  |       |       |       |       |       |                | 6     | 8                | 6  | 8            | 160  |    |     |
| 10          | 4             | H152             | Detached Wingwal | E  | 28         |       | 5     | 8.00  | 17.00 | 12.25 |       |       |                | 8     | 1                | 7  | 11           | 53   |    |     |
| 10          | 4             | H153             | Detached Wingwal | E  | 23         | 20.88 |       | 16.00 | 3     | 11.38 | 2     | 9.50  | 14.75          | 14.75 | 7                | 0  | 7            | 0    | 47 |     |
| 6           | 5             | H154             | Detached Wingwal | E  | 20         | 3     | 9.75  |       |       |       |       |       |                | 3     | 10               | 3  | 10           | 24   |    |     |
| 10          | 8             | H155             | Detached Wingwal | E  | 20         | 5     | 8.00  |       |       |       |       |       |                | 5     | 8                | 5  | 8            | 151  |    |     |
| 10          | 8             | H156             | Detached Wingwal | E  | 20         | 5     | 8.00  |       |       |       |       |       |                | 5     | 8                | 5  | 8            | 151  |    |     |
| 2           | 4             | H157             | Detached Wingwal | E  | 18         | 20.00 |       |       |       |       |       |       |                | 2     | 8                | 2  | 8            | 4    |    |     |
| 4           | 4             | H158             | Detached Wingwal | E  | 20         | 2     | 2.00  |       |       |       |       |       |                | 2     | 2                | 2  | 2            | 6    |    |     |
| 18          | 5             | U100             | Beam             | E  | 10S        |       | 9     | 4.50  | 5     | 9.00  |       |       |                | 24    | 6                | 24 | 3            | 455  |    |     |
| 3           | 4             | U101             | Beam             | E  | 10S        |       | 5     | 9.75  | 5     | 9.00  |       |       |                | 17    | 5                | 17 | 2            | 34   |    |     |
| 46          | 4             | U102             | Beam             | E  | 13S        | 5     | 9.00  | 5     | 9.75  | 5     | 9.00  | 5     | 9.75           | 23    | 11               | 23 | 7            | 725  |    |     |
| 30          | 5             | U103             | Diaphragm        | E  | 10S        |       | 4     | 3.50  | 4     | 11.00 |       |       |                | 13    | 6                | 13 | 3            | 415  |    |     |
| 30          | 6             | U104             | Diaphragm        | E  | 19S        | 3     | 4.00  | 5     | 7.50  |       |       |       |                | 9     | 0                | 8  | 10           | 398  |    |     |
| 37          | 5             | U105             | Diaphragm        | E  | 19S        | 2     | 0.00  | 15.00 |       |       |       |       |                | 3     | 3                | 3  | 2            | 122  |    |     |
| 20          | 4             | U106             | Diaphragm        | E  | 10S        |       | 5     | 5.00  | 5     | 9.00  |       |       |                | 6     | 7                | 6  | 5            | 86   |    |     |
| 69          | 6             | U107             | Diaphragm        | E  | 19S        | 3     | 0.50  | 7     | 8.25  |       |       |       |                | 10    | 9                | 10 | 7            | 1097 |    |     |
| 24          | 5             | V100             | Beam             | E  | 20         | 9     | 4.50  |       |       |       |       |       |                | 9     | 5                | 9  | 5            | 236  |    |     |
| 30          | 6             | V101             | Diaphragm        | E  | 20         | 3     | 4.25  |       |       |       |       |       |                | 3     | 4                | 3  | 4            | 150  |    |     |
| 2           | 6             | V102             | Wingwall         | E  | 20         | 4     | 10.00 |       |       |       |       |       |                | 4     | 10               | 4  | 10           | 15   |    |     |
| 12          | 6             | V103             | Wingwall         | E  | 20         | 10    | 5.50  |       |       |       |       |       |                | 10    | 6                | 10 | 6            | 189  |    |     |
| 2           | 6             | V104             | Wingwall         | E  | 20         | 4     | 10.00 |       |       |       |       |       |                | 4     | 10               | 4  | 10           | 15   |    |     |
| 6           | 6             | V105             | Wingwall         | E  | 20         | 10    | 11.00 |       |       |       |       |       |                | 10    | 11               | 10 | 11           | 98   |    |     |
| 36          | 6             | V106             | Wingwall         | E  | 20         | 2     | 5     | 1.75  |       |       |       |       |                | 5     | 2                | 5  | 2            |      |    |     |
|             |               | Increment=3 5/8" |                  |    |            | 10    | 2.75  |       |       |       |       |       |                | 10    | 3                | 10 | 3            | 417  |    |     |
| 36          | 6             | V107             | Wingwall         | E  | 20         | 2     | 5     | 2.00  |       |       |       |       |                | 5     | 2                | 5  | 2            |      |    |     |
|             |               | Increment=3 7/8" |                  |    |            | 10    | 8.00  |       |       |       |       |       |                | 10    | 8                | 10 | 8            | 428  |    |     |
| 2           | 6             | V108             | Wingwall         | E  | 20         | 13    | 4.75  |       |       |       |       |       |                | 13    | 5                | 13 | 5            | 40   |    |     |
| 2           | 6             | V109             | Wingwall         | E  | 20         | 13    | 5.00  |       |       |       |       |       |                | 13    | 5                | 13 | 5            | 40   |    |     |
| 20          | 4             | V150             | Detached Wingwal | E  | 20         | 4     | 11.00 |       |       |       |       |       |                | 4     | 11               | 4  | 11           | 66   |    |     |
| 20          | 6             | V151             | Detached Wingwal | E  | 20         | 4     | 11.00 |       |       |       |       |       |                | 4     | 11               | 4  | 11           | 148  |    |     |
| 8           | 4             | V152             | Detached Wingwal | E  | 20         | 3     | 8.00  |       |       |       |       |       |                | 3     | 8                | 3  | 8            | 20   |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |
|             |               |                  |                  |    |            |       |       |       |       |       |       |       |                |       |                  |    |              |      |    |     |

Nominal lengths are based on out to out dimensions shown in bending diagrams and are listed to the nearest inch for fabricator's use. Actual lengths are measured along centerline bar to the nearest inch. Weights are based on actual lengths.

For bending diagrams, see Sheet No. 38.

Detailed JUN 2025  
Checked JUN 2025

Codes: C = Required coatings, where E = Epoxy Coated and G = Galvanized.

SH = Required shape, see bending diagrams.

V = Sets of varied bars and number of bars of each length. Bar dimensions vary in equal increments between dimensions shown on this line and the following line and the actual length dimension shown on this line and the following line vary by the specified increment.

All bars shall be Grade 60.

# BILL OF REINFORCING STEEL (1 OF 3)

| Bill of Reinforcing Steel |            |                |                  |    |     |            |       |    |       |       |       |       |      |       |     |             |       |               |     |        |     |    |     |      |
|---------------------------|------------|----------------|------------------|----|-----|------------|-------|----|-------|-------|-------|-------|------|-------|-----|-------------|-------|---------------|-----|--------|-----|----|-----|------|
| No. Req.                  | Size/ Mark | Location       | Codes            |    |     | Dimensions |       |    |       |       |       |       |      |       |     | Nom. Length |       | Actual Length |     | Weight |     |    |     |      |
|                           |            |                |                  |    |     | B          |       | C  |       | D     |       | E     |      | F     |     |             |       |               |     |        | H   |    | K   |      |
|                           |            | End Bent No. 5 | C                | SH | V   | ft         | in.   | ft | in.   | ft    | in.   | ft    | in.  | ft    | in. | ft          | in.   | ft            | in. | ft     | in. | ft | in. | lb   |
|                           |            |                |                  |    |     |            |       |    |       |       |       |       |      |       |     |             |       |               |     |        |     |    |     |      |
| 9                         | 6          | F500           | Wing Brace       | E  | 23S | 20.00      |       | 9  | 10.25 | 19.75 |       | 17.75 |      | 8.75  |     | 5.25        | 19.25 | 13            | 2   | 13     | 1   |    |     | 177  |
| 5                         | 6          | F501           | Diaphragm        | E  | 21S |            |       | 9  | 11.88 | 5     | 10.75 |       |      |       | 6   | 8.50        | 7     | 4.75          | 15  | 11     | 15  | 1  |     | 113  |
| 9                         | 6          | F502           | Wing Brace       | E  | 23S | 19.75      |       | 3  | 6.00  | 19.75 |       | 7.00  |      | 18.50 |     | 18.50       | 7.00  | 6             | 10  | 6      | 9   |    |     | 91   |
| 5                         | 6          | F503           | Diaphragm        | E  | 23S | 5          | 10.38 | 7  | 5.75  |       |       |       |      |       | 3   | 11.50       | 4     | 4.00          | 13  | 4      | 13  | 2  |     | 99   |
| 9                         | 6          | H500           | Beam & Diaphragm | E  | 20  | 57         | 1.75  |    |       |       |       |       |      |       |     |             |       | 57            | 2   | 57     | 2   |    |     | 773  |
| 15                        | 9          | H501           | Beam & Diaphragm | E  | 20  | 57         | 1.75  |    |       |       |       |       |      |       |     |             |       | 57            | 2   | 57     | 2   |    |     | 2916 |
| 12                        | 6          | H502           | Diaphragm        | E  | 20  | 9          | 11.00 |    |       |       |       |       |      |       |     |             |       | 9             | 11  | 9      | 11  |    |     | 179  |
| 8                         | 6          | H503           | Diaphragm        | E  | 20  | 6          | 5.50  |    |       |       |       |       |      |       |     |             |       | 6             | 6   | 6      | 6   |    |     | 78   |
| 6                         | 6          | H504           | Diaphragm        | E  | 20  | 4          | 3.75  |    |       |       |       |       |      |       |     |             |       | 4             | 4   | 4      | 4   |    |     | 39   |
| 4                         | 6          | H505           | Diaphragm        | E  | 20  | 2          | 7.00  |    |       |       |       |       |      |       |     |             |       | 2             | 7   | 2      | 7   |    |     | 16   |
| 16                        | 8          | H506           | Wing Wall        | E  | 6   | 14         | 0.00  |    | 16.00 |       |       |       |      |       |     |             |       | 15            | 4   | 14     | 11  |    |     | 637  |
| 40                        | 6          | H507           | Wing Wall        | E  | 6   | 14         | 0.00  |    | 12.00 |       |       |       |      |       |     |             |       | 15            | 0   | 14     | 8   |    |     | 881  |
| 5                         | 5          | H508           | Strand Tie       | E  | 23  | 15.25      |       | 3  | 2.25  | 15.25 |       | 11.00 |      | 10.50 |     | 11.00       | 10.50 | 5             | 9   | 5      | 8   |    |     | 30   |
|                           |            |                |                  |    |     |            |       |    |       |       |       |       |      |       |     |             |       |               |     |        |     |    |     |      |
| 19                        | 5          | U500           | Beam             | E  | 10S |            |       | 6  | 1.25  | 5     | 11.00 |       |      |       |     |             |       | 18            | 2   | 17     | 11  |    |     | 355  |
| 2                         | 4          | U501           | Beam             | E  | 10S |            |       | 2  | 8.00  | 5     | 11.00 |       |      |       |     |             |       | 11            | 3   | 11     | 1   |    |     | 15   |
| 51                        | 4          | U502           | Beam             | E  | 13S | 5          | 11.00 |    |       | 5     | 11.00 |       |      |       |     |             |       | 12            | 7   | 12     | 4   |    |     | 420  |
| 31                        | 5          | U503           | Diaphragm        | E  | 10S |            |       | 4  | 1.75  | 5     | 2.00  |       |      |       |     |             |       | 13            | 6   | 13     | 3   |    |     | 428  |
| 31                        | 6          | U504           | Diaphragm        | E  | 19S | 3          | 2.00  | 5  | 11.00 |       |       |       |      |       |     |             |       | 9             | 1   | 8      | 11  |    |     | 415  |
| 36                        | 5          | U505           | Diaphragm        | E  | 19S | 2          | 0.00  |    | 15.00 |       |       |       |      |       |     |             |       | 3             | 3   | 3      | 2   |    |     | 119  |
| 72                        | 6          | U506           | Diaphragm        | E  | 19S | 3          | 0.50  | 7  | 1.00  |       |       |       |      |       |     |             |       | 10            | 2   | 10     | 0   |    |     | 1081 |
|                           |            |                |                  |    |     |            |       |    |       |       |       |       |      |       |     |             |       |               |     |        |     |    |     |      |
| 24                        | 5          | V500           | Beam             | E  | 20  | 6          | 1.25  |    |       |       |       |       |      |       |     |             |       | 6             | 1   | 6      | 1   |    |     | 152  |
| 50                        | 6          | V501           | Diaphragm        | E  | 20  | 3          | 2.50  |    |       |       |       |       |      |       |     |             |       | 3             | 3   | 3      | 3   |    |     | 244  |
| 2                         | 6          | V502           | Wing Wall        | E  | 20  | 6          | 10.00 |    |       |       |       |       |      |       |     |             |       | 6             | 10  | 6      | 10  |    |     | 21   |
| 24                        | 6          | V503           | Wing Wall        | E  | 20  | 6          | 10.00 |    |       |       |       |       |      |       |     |             |       | 6             | 10  | 6      | 10  |    |     | 246  |
| 2                         | 6          | V504           | Wing Wall        | E  | 20  | 6          | 11.00 |    |       |       |       |       |      |       |     |             |       | 6             | 11  | 6      | 11  |    |     | 21   |
| 24                        | 6          | V505           | Wing Wall        | E  | 20  | 6          | 11.00 |    |       |       |       |       |      |       |     |             |       | 6             | 11  | 6      | 11  |    |     | 249  |
|                           |            |                |                  |    |     |            |       |    |       |       |       |       |      |       |     |             |       |               |     |        |     |    |     |      |
|                           |            |                | Int. Bent No. 2  |    |     |            |       |    |       |       |       |       |      |       |     |             |       |               |     |        |     |    |     |      |
| 24                        | 8          | D200           | Key              | E  | 20  | 2          | 6.00  |    |       |       |       |       |      |       |     |             |       | 2             | 6   | 2      | 6   |    |     | 160  |
|                           |            |                |                  |    |     |            |       |    |       |       |       |       |      |       |     |             |       |               |     |        |     |    |     |      |
| 10                        | 11         | H200           | Beam             | E  | 18  | 51         | 8.00  |    |       |       |       |       |      |       |     |             |       | 54            | 10  | 54     | 10  |    |     | 2913 |
| 10                        | 10         | H201           | Beam             | E  | 20  | 51         | 8.00  |    |       |       |       |       |      |       |     |             |       | 51            | 8   | 51     | 8   |    |     | 2223 |
| 10                        | 6          | H202           | Beam             | E  | 20  | 51         | 8.00  |    |       |       |       |       |      |       |     |             |       | 51            | 8   | 51     | 8   |    |     | 776  |
| 14                        | 6          | H203           | Beam             | E  | 10  |            |       |    | 12.00 | 4     | 7.50  |       |      |       |     |             |       | 6             | 8   | 6      | 4   |    |     | 133  |
| 4                         | 6          | H204           | Beam             | E  | 19  | 11.38      |       | 17 | 2.00  |       |       |       |      |       |     |             |       | 18            | 1   | 18     | 0   |    |     | 108  |
|                           |            |                |                  |    |     |            |       |    |       |       |       |       |      |       |     |             |       |               |     |        |     |    |     |      |
| 180                       | 6          | P200           | Column & Beam    | E  | 34S | 10         | 12.00 |    | 4.50  |       |       |       |      |       | 3   | 6.00        |       | 12            | 8   | 12     | 7   |    |     | 3402 |
| 183                       | 6          | P201           | Drilled Shaft    |    | 34S | 10         | 12.00 |    | 4.50  |       |       |       |      |       | 3   | 6.00        |       | 12            | 8   | 12     | 7   |    |     | 3459 |
|                           |            |                |                  |    |     |            |       |    |       |       |       |       |      |       |     |             |       |               |     |        |     |    |     |      |
| 42                        | 6          | U200           | Beam             | E  | 13S | 4          | 9.00  | 3  | 9.00  | 4     | 9.00  | 3     | 9.00 |       |     |             |       | 18            | 4   | 17     | 10  |    |     | 1125 |
| 36                        | 6          | U201           | Beam             | E  | 13S | 3          | 2.00  | 3  | 9.00  | 3     | 2.00  | 3     | 9.00 |       |     |             |       | 15            | 2   | 14     | 8   |    |     | 793  |
| 5                         | 6          | U202           | Beam             | E  | 10S |            |       | 3  | 9.00  | 4     | 9.00  |       |      |       |     |             |       | 12            | 3   | 11     | 11  |    |     | 89   |
| 24                        | 6          | U203           | Beam             | E  | 10S |            |       | 3  | 9.00  | 3     | 2.00  |       |      |       |     |             |       | 10            | 8   | 10     | 4   |    |     | 372  |
| 27                        | 4          | U204           | Beam             | E  | 10S |            |       |    | 11.38 | 4     | 9.00  |       |      |       |     |             |       | 6             | 8   | 6      | 6   |    |     | 117  |
|                           |            |                |                  |    |     |            |       |    |       |       |       |       |      |       |     |             |       |               |     |        |     |    |     |      |
| 57                        | 11         | V200           | Column           | E  | 20  | 20         | 11.00 |    |       |       |       |       |      |       |     |             |       | 20            | 11  | 20     | 11  |    |     | 6334 |
| 27                        | 11         | V201           | Drilled Shaft    |    | 20  | 38         | 0.00  |    |       |       |       |       |      |       |     |             |       | 38            | 0   | 38     | 0   |    |     | 5451 |
| 30                        | 11         | V202           | Drilled Shaft    |    | 20  | 40         | 0.00  |    |       |       |       |       |      |       |     |             |       | 40            | 0   | 40     | 0   |    |     | 6376 |
|                           |            |                |                  |    |     |            |       |    |       |       |       |       |      |       |     |             |       |               |     |        |     |    |     |      |
|                           |            |                | Int. Bent No. 3  |    |     |            |       |    |       |       |       |       |      |       |     |             |       |               |     |        |     |    |     |      |
| 24                        | 8          | D300           | Key              | E  | 20  | 2          | 6.00  |    |       |       |       |       |      |       |     |             |       | 2             | 6   | 2      | 6   |    |     | 160  |
|                           |            |                |                  |    |     |            |       |    |       |       |       |       |      |       |     |             |       |               |     |        |     |    |     |      |
| 10                        | 11         | H300           | Beam             | E  | 18  | 51         | 8.00  |    |       |       |       |       |      |       |     |             |       | 54            | 10  | 54     | 10  |    |     | 2913 |
| 10                        | 10         | H301           | Beam             | E  | 20  | 51         | 8.00  |    |       |       |       |       |      |       |     |             |       | 51            | 8   | 51     | 8   |    |     | 2223 |
| 10                        | 6          | H302           | Beam             | E  | 20  | 51         | 8.00  |    |       |       |       |       |      |       |     |             |       | 51            | 8   | 51     | 8   |    |     | 776  |
| 14                        | 6          | H303           | Beam             | E  | 10  |            |       |    | 12.00 | 4     | 7.50  |       |      |       |     |             |       | 6             | 8   | 6      | 4   |    |     | 133  |
| 4                         | 6          | H304           | Beam             | E  | 19  | 11.63      |       | 7  | 7.50  |       |       |       |      |       |     |             |       | 8             | 7   | 8      | 5   |    |     | 51   |
|                           |            |                |                  |    |     |            |       |    |       |       |       |       |      |       |     |             |       |               |     |        |     |    |     |      |
| 120                       | 4          | P300           | Column & Beam    | E  | 34S | 10         | 12.00 |    | 2.00  |       |       |       |      |       | 3   | 6.00        |       | 11            | 11  | 11     | 10  |    |     | 949  |
| 207                       | 4          | P301           | Drilled Shaft    |    | 34S | 10         | 12.00 |    | 2.00  |       |       |       |      |       | 3   | 6.00        |       | 11            | 11  | 11     | 10  |    |     | 1636 |
|                           |            |                |                  |    |     |            |       |    |       |       |       |       |      |       |     |             |       |               |     |        |     |    |     |      |
| 46                        | 6          | U300           | Beam             | E  | 13S | 4          | 9.00  | 3  | 9.00  | 4     | 9.00  | 3     | 9.00 |       |     |             |       | 18            | 4   | 17     | 10  |    |     | 1232 |
| 26                        | 6          | U301           | Beam             | E  | 13S | 3          | 2.00  | 3  | 9.00  | 3     | 2.00  | 3     | 9.00 |       |     |             |       | 15            | 2   | 14     | 8   |    |     | 573  |
| 5                         | 6          | U302           | Beam             | E  | 10S |            |       | 3  | 9.00  | 4     | 9.00  |       |      |       |     |             |       | 12            | 3   | 11     | 11  |    |     | 89   |
| 20                        | 6          | U303           | Beam             | E  | 10S |            |       | 3  | 9.00  | 3     | 2.00  |       |      |       |     |             |       | 10            | 8   | 10     | 4   |    |     | 310  |
| 11                        | 4          | U304           | Beam             | E  | 19S |            |       |    | 11.63 | 4     | 9.00  |       |      |       |     |             |       | 1             | 0   | 0      | 11  |    |     | 7    |
|                           |            |                |                  |    |     |            |       |    |       |       |       |       |      |       |     |             |       |               |     |        |     |    |     |      |
| 51                        | 10         | V300           | Column           | E  | 20  | 21         | 2.00  |    |       |       |       |       |      |       |     |             |       | 21            | 2   | 21     | 2   |    |     | 4645 |
| 24                        | 10         | V301           | Drilled Shaft    |    | 20  | 35         | 1.75  |    |       |       |       |       |      |       |     |             |       | 35            | 2   | 35     | 2   |    |     | 3632 |
| 27                        | 10         | V302           | Drilled Shaft    |    | 20  | 37         | 1.75  |    |       |       |       |       |      |       |     |             |       | 37            | 2   | 37     | 2   |    |     | 4318 |



THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED

6 / 10 / 2025

| ROUTE | STATE |
|-------|-------|
|-------|-------|

|        |    |
|--------|----|
| I - 70 | MO |
|--------|----|

|          |           |
|----------|-----------|
| DISTRICT | SHEET NO. |
|----------|-----------|

|    |            |
|----|------------|
| BR | A9683 - 39 |
|----|------------|

COUNTY

ST. CHARLES

JOB NO.

JST0020

CONTRACT ID.

PROJECT NO

BRIDGE NO.

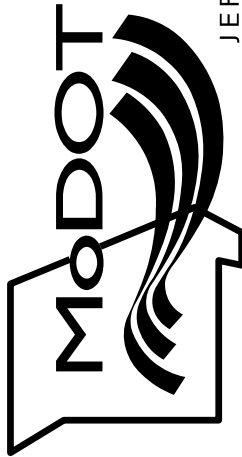
A9683

| DATE | DESCRIPTION |
|------|-------------|
|      |             |
|      |             |
|      |             |
|      |             |
|      |             |
|      |             |

**MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION**

**MoDOT**

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT / 1-888-275-6826



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

---

**Bartlett & West**  
601 MONROE ST., SUITE 200, WILMINGTON, MD 21801  
PHONE 410-254-5518  
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING



| Bill of Reinforcing Steel |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|---------------------------|---------------|-----------------|-------|-----|---|------------|-------|-------|-------|------|-------|-------|----------------|------------------|--------|----|-----|
| No.<br>Req.               | Size/<br>Mark | Location        | Codes |     |   | Dimensions |       |       |       |      |       |       | Nom.<br>Length | Actual<br>Length | Weight |    |     |
|                           |               |                 |       |     |   | B          | C     | D     | E     | F    | H     | K     |                |                  |        |    |     |
|                           |               |                 | C     | SH  | V | ft         | in.   | ft    | in.   | ft   | in.   | ft    | in.            | ft               | in.    | ft | in. |
|                           |               | Int. Bent No. 4 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
| 24                        | 8 D400        | Key             | E     | 20  |   | 2          | 6.00  |       |       |      |       |       |                | 2                | 6      | 2  | 6   |
| 10                        | 11 H400       | Beam            | E     | 18  |   | 51         | 8.00  |       |       |      |       |       |                | 54               | 10     | 54 | 10  |
| 10                        | 10 H401       | Beam            | E     | 20  |   | 51         | 8.00  |       |       |      |       |       |                | 51               | 8      | 51 | 8   |
| 10                        | 6 H402        | Beam            | E     | 20  |   | 51         | 8.00  |       |       |      |       |       |                | 51               | 8      | 51 | 8   |
| 14                        | 6 H403        | Beam            | E     | 10  |   |            |       | 12.00 | 4     | 7.50 |       |       |                | 6                | 8      | 6  | 4   |
| 198                       | 6 P400        | Column & Beam   | E     | 34S |   | 10         | 12.00 |       | 4.50  |      |       |       | 3              | 6.00             |        | 12 | 8   |
| 138                       | 6 P401        | Drilled Shaft   |       | 34S |   | 10         | 12.00 |       | 4.50  |      |       |       | 3              | 6.00             |        | 12 | 8   |
| 42                        | 6 U400        | Beam            | E     | 13S |   | 4          | 9.00  | 3     | 9.00  | 4    | 9.00  | 3     | 9.00           |                  |        | 18 | 4   |
| 36                        | 6 U401        | Beam            | E     | 13S |   | 3          | 2.00  | 3     | 9.00  | 3    | 2.00  | 3     | 9.00           |                  |        | 15 | 2   |
| 5                         | 6 U402        | Beam            | E     | 10S |   |            |       | 3     | 9.00  | 4    | 9.00  |       |                |                  |        | 12 | 3   |
| 24                        | 6 U403        | Beam            | E     | 10S |   |            |       | 3     | 9.00  | 3    | 2.00  |       |                |                  |        | 10 | 8   |
| 57                        | 11 V400       | Column          | E     | 20  |   | 23         | 5.00  |       |       |      |       |       |                |                  |        | 23 | 5   |
| 27                        | 11 V401       | Drilled Shaft   |       | 20  |   | 30         | 3.38  |       |       |      |       |       |                |                  |        | 30 | 3   |
| 30                        | 11 V402       | Drilled Shaft   |       | 20  |   | 32         | 3.38  |       |       |      |       |       |                |                  |        | 32 | 3   |
|                           |               | Int. Bent No. 2 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
| 8                         | 6 H250        | Diaphragm       | E     | 20  |   | 6          | 5.00  |       |       |      |       |       |                | 6                | 5      | 6  | 5   |
| 8                         | 6 H251        | Diaphragm       | E     | 20  |   | 5          | 2.00  |       |       |      |       |       |                | 5                | 2      | 5  | 2   |
| 20                        | 4 H252        | Diaphragm       | E     | 20  |   | 10         | 2.00  |       |       |      |       |       |                | 10               | 2      | 10 | 2   |
| 3                         | 6 H253        | Diaphragm       | E     | 20  |   | 8          | 9.00  |       |       |      |       |       |                | 8                | 9      | 8  | 9   |
| 4                         | 5 H254        | Strand Tie      | E     | 23  |   | 15.00      | 3     | 2.50  |       |      |       | 11.00 | 10.25          | 4                | 6      | 4  | 4   |
| 6                         | 5 H255        | Strand Tie      | E     | 23  |   | 15.00      | 3     | 2.50  | 15.00 |      | 11.00 | 10.25 | 11.00          | 5                | 9      | 5  | 8   |
| 1                         | 6 H256        | Diaphragm       | E     | 20  |   | 6          | 3.00  |       |       |      |       |       |                | 6                | 3      | 6  | 3   |
| 1                         | 6 H257        | Diaphragm       | E     | 23  |   | 2          | 0.00  | 3     | 1.00  |      |       |       | 17.50          | 5                | 1      | 4  | 11  |
| 4                         | 4 H258        | Diaphragm       | E     | 20  |   | 6          | 5.00  |       |       |      |       |       |                | 6                | 5      | 6  | 5   |
| 32                        | 4 U250        | Diaphragm       | E     | 28S |   |            |       | 18.00 | 4     | 9.00 | 4     | 3.00  |                | 10               | 6      | 10 | 4   |
| 16                        | 6 U251        | Diaphragm       | E     | 28S |   |            | 2     | 2.00  | 4     | 9.00 | 6     | 0.00  |                | 12               | 11     | 12 | 7   |
| 16                        | 6 U252        | Diaphragm       | E     | 28S |   |            | 2     | 2.00  | 3     | 5.00 | 6     | 0.00  |                | 11               | 7      | 11 | 3   |
| 4                         | 6 U253        | Diaphragm       | E     | 28S |   |            | 2     | 2.00  | 3     | 5.00 | 22.00 |       |                | 7                | 5      | 7  | 1   |
| 4                         | 5 U254        | Diaphragm       | E     | 19S |   | 4          | 5.00  | 12.00 |       |      |       |       |                | 5                | 5      | 4  | 22  |
| 11                        | 5 U255        | Diaphragm       | E     | 6S  |   | 4          | 5.00  | 12.00 | 16.00 |      |       |       |                | 6                | 9      | 6  | 6   |
| 2                         | 5 U256        | Diaphragm       | E     | 19S |   | 4          | 5.00  | 18.50 |       |      |       |       |                | 6                | 0      | 5  | 10  |
| 3                         | 5 U257        | Diaphragm       | E     | 6S  |   | 4          | 5.00  | 18.50 | 16.00 |      |       |       |                | 7                | 4      | 7  | 1   |
| 4                         | 6 U258        | Diaphragm       | E     | 28S |   |            | 2     | 2.00  | 3     | 5.00 | 2     | 4.50  |                | 8                | 0      | 7  | 8   |
| 9                         | 5 V250        | Diaphragm       | E     | 20  |   | 5          | 0.00  |       |       |      |       |       |                | 5                | 0      | 5  | 0   |
|                           |               | Int. Bent No. 3 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
| 8                         | 6 H350        | Diaphragm       | E     | 20  |   | 6          | 5.00  |       |       |      |       |       |                | 6                | 5      | 6  | 5   |
| 8                         | 6 H351        | Diaphragm       | E     | 20  |   | 5          | 2.00  |       |       |      |       |       |                | 5                | 2      | 5  | 2   |
| 24                        | 4 H352        | Diaphragm       | E     | 20  |   | 10         | 2.00  |       |       |      |       |       |                | 10               | 2      | 10 | 2   |
| 4                         | 5 H354        | Strand Tie      | E     | 23  |   | 15.00      | 3     | 2.50  |       |      |       | 11.00 | 10.25          | 4                | 6      | 4  | 4   |
| 6                         | 5 H355        | Strand Tie      | E     | 23  |   | 15.00      | 3     | 2.50  | 15.00 |      | 11.00 | 10.25 | 11.00          | 5                | 9      | 5  | 8   |
| 32                        | 4 U350        | Diaphragm       | E     | 28S |   |            |       | 18.00 | 4     | 9.00 | 4     | 3.00  |                | 10               | 6      | 10 | 4   |
| 16                        | 6 U351        | Diaphragm       | E     | 28S |   |            | 2     | 2.00  | 4     | 9.00 | 6     | 0.00  |                | 12               | 11     | 12 | 7   |
| 16                        | 6 U352        | Diaphragm       | E     | 28S |   |            | 2     | 2.00  | 3     | 5.00 | 6     | 0.00  |                | 11               | 7      | 11 | 3   |
| 8                         | 6 U353        | Diaphragm       | E     | 28S |   |            | 2     | 2.00  | 3     | 5.00 | 22.00 |       |                | 7                | 5      | 7  | 1   |
| 4                         | 5 U354        | Diaphragm       | E     | 19S |   | 4          | 5.00  | 12.00 |       |      |       |       |                | 5                | 5      | 5  | 4   |
| 16                        | 5 U355        | Diaphragm       | E     | 6S  |   | 4          | 5.00  | 12.00 | 16.00 |      |       |       |                | 6                | 9      | 6  | 6   |
| 8                         | 5 V350        | Diaphragm       | E     | 20  |   | 5          | 0.00  |       |       |      |       |       |                | 5                | 0      | 5  | 0   |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |
|                           |               |                 |       |     |   |            |       |       |       |      |       |       |                |                  |        |    |     |

Nominal lengths are based on out to out dimensions shown in bending diagrams and are listed to the nearest inch for fabricator's use. Actual lengths are measured along centerline bar to the nearest inch. Weights are based on actual lengths.

For bending diagrams, see Sheet No. 38.

Detailed JUN 2025  
Checked JUN 2025

Codes: C = Required coatings, where E = Epoxy Coated and G = Galvanized.  
SH = Required shape, see bending diagrams.  
V = Sets of varied bars and number of bars of each length. Bar dimensions vary in equal increments between dimensions shown on this line and the following line and the actual length dimension shown on this line and the following line vary by the specified increment.

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

Sheet 40 of 46

| Bill of Reinforcing Steel |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|---------------------------|---------------|------------------|-------|-----|---|------------|-------|-------|-------|-------|-------|-------|----------------|-------|------------------|----|--------|-------|
| No.<br>Req.               | Size/<br>Mark | Location         | Codes |     |   | Dimensions |       |       |       |       |       |       | Nom.<br>Length |       | Actual<br>Length |    | Weight |       |
|                           |               |                  |       |     |   | B          | C     | D     | E     | F     | H     | K     |                |       |                  |    |        |       |
|                           |               |                  | C     | SH  | V | ft         | in.   | ft    | in.   | ft    | in.   | ft    | in.            | ft    | in.              | ft | in.    | lb    |
|                           |               | Int. Bent No. 4  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
| 8                         | 6             | H450             |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
| 8                         | 6             | H451             | E     | 20  |   | 6          | 5.00  |       |       |       |       |       |                |       |                  | 6  | 5      | 77    |
| 8                         | 6             | H451             | E     | 20  |   | 5          | 2.00  |       |       |       |       |       |                |       |                  | 5  | 2      | 62    |
| 20                        | 4             | H452             | E     | 20  |   | 10         | 2.00  |       |       |       |       |       |                |       |                  | 10 | 2      | 136   |
| 3                         | 6             | H453             | E     | 20  |   | 8          | 9.00  |       |       |       |       |       |                |       |                  | 8  | 9      | 39    |
| 4                         | 5             | H454             | E     | 23  |   |            | 15.00 | 3     | 2.50  |       |       |       | 11.00          | 10.25 |                  | 4  | 6      | 18    |
| 6                         | 5             | H455             | E     | 23  |   |            | 15.00 | 3     | 2.50  | 15.00 |       | 11.00 | 10.25          | 11.00 | 10.25            | 5  | 9      | 35    |
| 1                         | 6             | H456             | E     | 20  |   | 6          | 3.00  |       |       |       |       |       |                |       |                  | 6  | 3      | 9     |
| 1                         | 6             | H457             | E     | 23  |   | 2          | 0.00  | 3     | 1.00  |       |       |       | 17.50          | 16.38 |                  | 5  | 1      | 7     |
| 4                         | 4             | H458             | E     | 20  |   | 6          | 5.00  |       |       |       |       |       |                |       |                  | 6  | 5      | 17    |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
| 32                        | 4             | U450             | E     | 28S |   |            |       | 18.00 | 4     | 9.00  | 4     | 3.00  |                |       |                  | 10 | 6      | 221   |
| 16                        | 6             | U451             | E     | 28S |   |            | 2     | 2.00  | 4     | 9.00  | 6     | 0.00  |                |       |                  | 12 | 11     | 302   |
| 16                        | 6             | U452             | E     | 28S |   |            | 2     | 2.00  | 3     | 5.00  | 6     | 0.00  |                |       |                  | 11 | 7      | 270   |
| 4                         | 6             | U453             | E     | 28S |   |            | 2     | 2.00  | 3     | 5.00  | 22.00 |       |                |       |                  | 7  | 5      | 43    |
| 4                         | 5             | U454             | E     | 19S |   | 4          | 5.00  | 12.00 |       |       |       |       |                |       |                  | 5  | 5      | 22    |
| 11                        | 5             | U455             | E     | 6S  |   | 4          | 5.00  | 12.00 | 16.00 |       |       |       |                |       |                  | 6  | 9      | 75    |
| 2                         | 5             | U456             | E     | 19S |   | 4          | 5.00  | 18.50 |       |       |       |       |                |       |                  | 6  | 0      | 12    |
| 3                         | 5             | U457             | E     | 6S  |   | 4          | 5.00  | 18.50 | 16.00 |       |       |       |                |       |                  | 7  | 4      | 22    |
| 4                         | 6             | U458             | E     | 28S |   |            | 2     | 2.00  | 3     | 5.00  | 2     | 4.50  |                |       |                  | 8  | 0      | 46    |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
| 9                         | 5             | V450             | E     | 20  |   | 5          | 0.00  |       |       |       |       |       |                |       |                  | 5  | 0      | 47    |
|                           |               | Slab             |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
| 76                        | 6             | S101             | E     | 17  | 1 | 2          | 3.00  |       |       |       |       |       |                |       |                  | 2  | 11     |       |
|                           |               | Increment=5 3/4" |       |     |   | 38         | 1.00  |       |       |       |       |       |                |       |                  | 38 | 9      | 2378  |
| 529                       | 6             | S102             | E     | 18  |   | 38         | 5.00  |       |       |       |       |       |                |       |                  | 39 | 9      | 31584 |
| 80                        | 6             | S103             | E     | 17  | 1 | 2          | 3.00  |       |       |       |       |       |                |       |                  | 2  | 11     |       |
|                           |               | Increment=5 1/2" |       |     |   | 38         | 1.00  |       |       |       |       |       |                |       |                  | 38 | 9      | 2503  |
| 192                       | 5             | S104             | E     | 20  |   | 53         | 0.00  |       |       |       |       |       |                |       |                  | 53 | 0      | 10614 |
| 180                       | 8             | S105             | E     | 20  |   | 28         | 6.00  |       |       |       |       |       |                |       |                  | 28 | 6      | 13697 |
| 342                       | 5             | S106             | E     | 20  |   | 53         | 6.00  |       |       |       |       |       |                |       |                  | 53 | 6      | 19084 |
| 76                        | 5             | S107             | E     | 20  | 1 | 2          | 3.00  |       |       |       |       |       |                |       |                  | 2  | 3      |       |
|                           |               | Increment=5 3/4" |       |     |   | 38         | 1.00  |       |       |       |       |       |                |       |                  | 38 | 1      | 1599  |
| 529                       | 5             | S108             | E     | 20  |   | 38         | 5.00  |       |       |       |       |       |                |       |                  | 38 | 5      | 21196 |
| 80                        | 5             | S109             | E     | 20  | 1 | 2          | 3.00  |       |       |       |       |       |                |       |                  | 2  | 3      |       |
|                           |               | Increment=5 1/2" |       |     |   | 38         | 1.00  |       |       |       |       |       |                |       |                  | 38 | 1      | 1683  |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       |                |       |                  |    |        |       |
|                           |               |                  |       |     |   |            |       |       |       |       |       |       | </             |       |                  |    |        |       |

All bars shall be Grade 60.

BILL OF REINFORCING STEEL (2 OF 3)

STATE OF MISSOURI  
DAVID MORANDEIRA  
NUMBER PE-2021035906  
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
6/10/2025

ROUTE  
1 - 70

DISTRICT  
BR

COUNTY  
ST. CHARLES

JOB NO.  
JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9683

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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

IMPROVE70  
ALLIANCE

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

HNTB

Bartlett & West

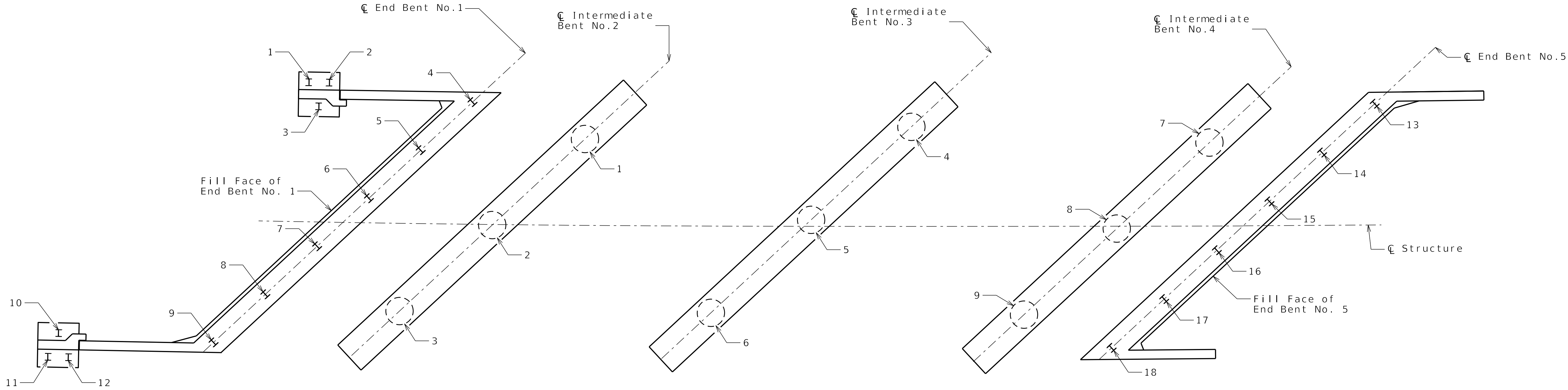
601 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101  
PHONE 572-630-3181  
CERTIFICATE OF ENGINEERING  
WWW.BARTLETTWEST.COM

B\_A9683\_033\_JST0020\_BILLREINF-2.dgn 7:18:07 AM 6/10/2025









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

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

| As-Built Pile Data |                      |                                                      |                |
|--------------------|----------------------|------------------------------------------------------|----------------|
| Pile No.           | Length in Place (ft) | Computed Nominal Axial Compressive Resistance (kips) | Remarks        |
|                    |                      |                                                      | End Bent No. 5 |
| 13                 |                      |                                                      |                |
| 14                 |                      |                                                      |                |
| 15                 |                      |                                                      |                |
| 16                 |                      |                                                      |                |
| 17                 |                      |                                                      |                |
| 18                 |                      |                                                      |                |
|                    |                      |                                                      |                |
|                    |                      |                                                      |                |
|                    |                      |                                                      |                |

| 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                           |                           |                       |                               |                         |
|                             |                           |                       |                               | Intermediate Bent No. 3 |
| 4                           |                           |                       |                               |                         |
| 5                           |                           |                       |                               |                         |
| 6                           |                           |                       |                               |                         |
|                             |                           |                       |                               | Intermediate Bent No. 4 |
| 7                           |                           |                       |                               |                         |
| 8                           |                           |                       |                               |                         |
| 9                           |                           |                       |                               |                         |

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

This sheet to be completed by the design-builder.

AS-BUILT PILE AND DRILLED SHAFT DATA

STATE OF MISSOURI  
DAVID MORANDEIRA  
NUMBER PE-2021035906  
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
6/10/2025

ROUTE  
1 - 70

STATE  
MO

DISTRICT  
BR

SHEET NO.  
A9683-42

COUNTY  
ST. CHARLES

JOB NO.  
JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9683

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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

IMPROVE70  
ALLIANCE

HNTB

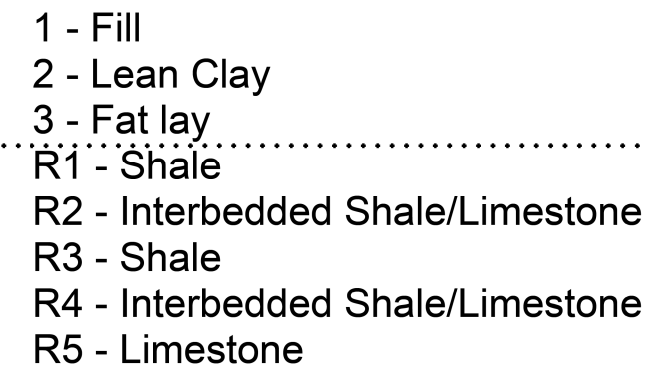
715 KIRK DRIVE  
KANSAS CITY, MO 64105-1310  
PHONE 874-630-3181  
FAX 874-630-3181  
WWW.BARTLETTWEST.COM

Bartlett & West

601 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101  
PHONE 572-630-3181  
FAX 572-630-3181  
WWW.BARTLETTWEST.COM

B\_A9683\_035\_JST0020\_ASBUILT.dgn 7:18:13 AM 6/10/2025



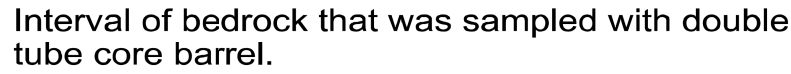


Sheet 43 of 46

B\_A9683\_036\_JST0020\_BORDATA-1.dgn 7:18:40 AM 6/10/2025







| RQD(%) | Rock Description |
|--------|------------------|
| 0-25   | Very Poor        |
| 25-50  | Poor             |
| 50-75  | Fair             |
| 75-90  | Good             |
| 90-100 | Excellent        |

Unconfined Compressive Strength of rock in pounds per square inch as determined by Laboratory Unconfined Compression Test.

|      |   |                           |
|------|---|---------------------------|
| HSA  | - | Hollow Stem Auger         |
| SSA  | - | Solid Stem Auger          |
| ST   | - | Shelby Tube               |
| SPT  | - | Standard Penetration Test |
| NATD | - | None At Time of Drilling  |
| N/A  | - | Not Available             |

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

---

**Bartlett & West**  
601 MONROE ST. SUITE 301 - JEFFERSON CITY, MO 65101  
PHONE 572-624-3181  
CERTIFICATE OF AUTHORITY NO. 005167 - ENGINEERING  
[WWW.BARTLETTWEST.COM](http://WWW.BARTLETTWEST.COM)



06/10/2025  
Released for Construction

|                                                                                                                                                           |                                                                                                                                              |                                                                                                                                              |                                                                                                                                                          |                                                                                                                                                          |                                                                                                                                                          |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <div><div>BENCHMARK 100<br/>74 /5/8x24_ROD_W/CAP</div><div></div><div><div>NORTH = 1081423.367<br/>EAST = 723104.330<br/>ELEV.= 599.597</div></div></div> |                                                                                                                                              |                                                                                                                                              | <div><div>BENCHMARK 113<br/>74 /5/8x24_ROD_W/CAP</div><div></div><div><div>NORTH = 1078977.686<br/>EAST= 728186.747<br/>ELEV.= 623.007</div></div></div> | <div><div>BENCHMARK 114<br/>74 /5/8x24_ROD_W/CAP</div><div></div><div><div>NORTH = 1082531.641<br/>EAST= 727818.620<br/>ELEV.= 633.117</div></div></div> | <div><div>BENCHMARK 115<br/>74 /5/8x24_ROD_W/CAP</div><div></div><div><div>NORTH = 1082444.293<br/>EAST= 729392.876<br/>ELEV.= 619.994</div></div></div> |  |
| <div><div>BENCHMARK 116<br/>74 /5/8x24_ROD_W/CAP</div><div></div><div><div>NORTH = 1082653.370<br/>EAST = 723222.089<br/>ELEV.= 605.972</div></div></div> | <div><div>BENCHMARK 200<br/>75 -BM 2IN SQ CUT</div><div></div><div><div>NORTH = 1078971<br/>EAST= 728573<br/>ELEV.= 613.97</div></div></div> | <div><div>BENCHMARK 208<br/>75 BM 2IN SQ CUT</div><div></div><div><div>NORTH = 1082525<br/>EAST= 721080<br/>ELEV.= 597.57</div></div></div>  | <div><div>BENCHMARK 209<br/>75 -BM 2IN SQ CUT</div><div></div><div><div>NORTH = 1082558<br/>EAST= 721763<br/>ELEV.= 599.72</div></div></div>             | <div><div>BENCHMARK 210<br/>74 /5/8x24_ROD_W/CAP</div><div></div><div><div>NORTH = 1082628.386<br/>EAST= 722867.362<br/>ELEV.= 604.348</div></div></div> | <div><div>BENCHMARK 211<br/>75 -BM 2IN SQ CUT</div><div></div><div><div>NORTH = 1082667<br/>EAST= 723955<br/>ELEV.= 602.59</div></div></div>             |  |
| <div><div>BENCHMARK 212<br/>75 -BM 2IN SQ CUT</div><div></div><div><div>NORTH = 1082716<br/>EAST= 724964<br/>ELEV.= 610.96</div></div></div>              | <div><div>BENCHMARK 213<br/>75 -BM 2IN SQ CUT</div><div></div><div><div>NORTH = 1082709<br/>EAST= 726010<br/>ELEV.= 622.86</div></div></div> | <div><div>BENCHMARK 214<br/>75 -BM 2IN SQ CUT</div><div></div><div><div>NORTH = 1082643<br/>EAST= 727148<br/>ELEV.= 631.52</div></div></div> | <div><div>BENCHMARK 215<br/>74 /5/8x24_ROD_W/CAP</div><div></div><div><div>NORTH = 1082500.421<br/>EAST= 728168.824<br/>ELEV.= 626.184</div></div></div> | <div><div>BENCHMARK 216<br/>75 -BM 2IN SQ CUT</div><div></div><div><div>NORTH = 1082415<br/>EAST= 729223<br/>ELEV.= 616.20</div></div></div>             | <div><div>BENCHMARK 217<br/>75 -BM 2IN SQ CUT</div><div></div><div><div>NORTH = 1082396<br/>EAST= 730135<br/>ELEV.= 612.21</div></div></div>             |  |
|                                                                                                                                                           | <div><div>BENCHMARK 220<br/>75 -BM 2IN SQ CUT</div><div></div><div><div>NORTH = 1080588<br/>EAST= 726887<br/>ELEV.= 602.07</div></div></div> |                                                                                                                                              |                                                                                                                                                          | <div><div>BENCHMARK 228<br/>75 -BM 2IN SQ CUT</div><div></div><div><div>NORTH = 1084862<br/>EAST= 722908<br/>ELEV.= 656.76</div></div></div>             | <div><div>BENCHMARK 229<br/>74 /5/8x24_ROD_W/CAP</div><div></div><div><div>NORTH = 1083775.980<br/>EAST= 723240.823<br/>ELEV.= 619.275</div></div></div> |  |

Detailed JUN 2025  
Checked JUN 2025

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

Sheet 45 of 46

SURVEY CONTROL POINTS

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED  
6/10/2025

ROUTE  
I - 70

STATE  
MO

DISTRICT  
BR

SHEET NO.  
A9683-45

COUNTY  
ST. CHARLES

JOB NO.  
JST0020

CONTRACT ID.

PROJECT NO.

BRIDGE NO.  
A9683

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

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

601 MONROE ST, SUITE 201 - JEFFERSON CITY, MO 65101  
PHONE 8724303181  
ENGINEERING  
CERTIFICATE OF AUTHORITY  
WWW.BARTLETTWEST.COM

B\_A9683\_038\_JST0020\_SURV-1.dgn 7:18:59 AM 6/10/2025



01 AM 6/10/2023