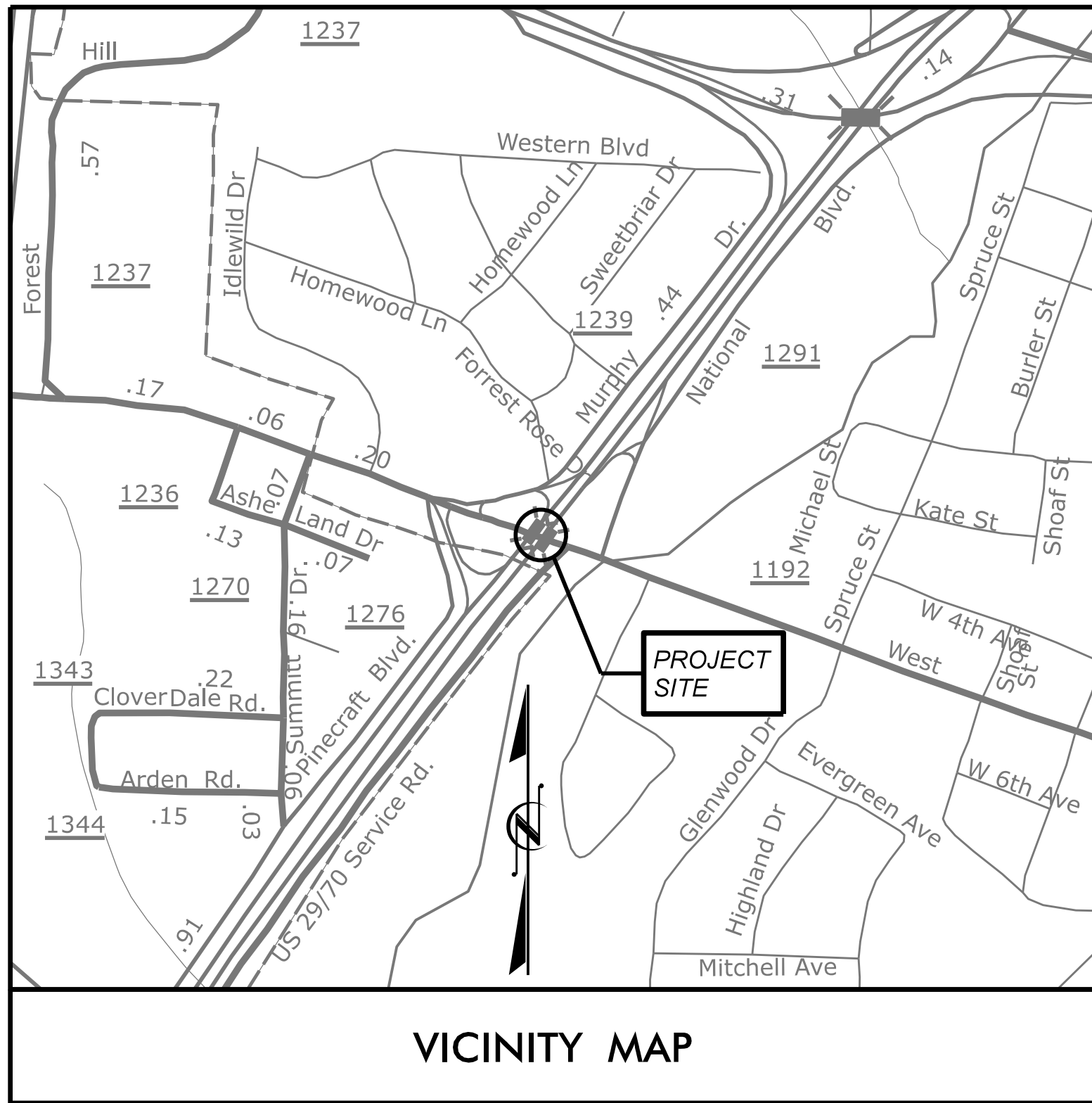


TIP PROJECT: BR-0015

CONTRACT: C205037



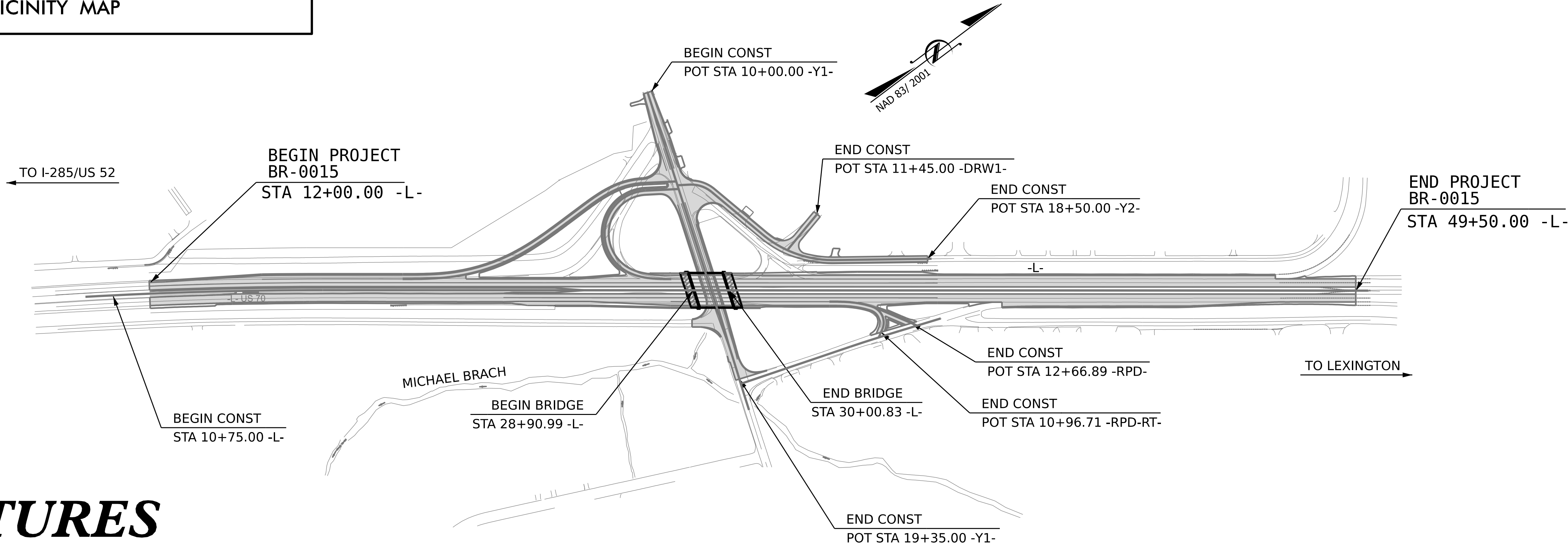
VICINITY MAP

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**DAVIDSON COUNTY**

LOCATION: REPLACE EXISTING BRIDGE NO. 280067 & NO. 280068  
WITH NEW BRIDGE NO. 280905 ON US 29/US 70 NB  
& SB OVER SR 1192 (W. 5TH AVE.)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, WIDENING, SIGNALS,  
RETAINING WALL, AND STRUCTURE

| STATE           | STATE PROJECT REFERENCE NO. | SHEET NO.   | TOTAL SHEETS |
|-----------------|-----------------------------|-------------|--------------|
| N.C.            | BR-0015                     | 1           |              |
| STATE PROJ. NO. | F.A. PROJ. NO.              | DESCRIPTION |              |
| 67015.1.1       | -                           | P.E.        |              |
| 67015.2.1       | -                           | R.W. UTIL   |              |
| 67015.3.1       | -                           | CONST.      |              |
|                 |                             |             |              |
|                 |                             |             |              |
|                 |                             |             |              |



**STRUCTURES**



DESIGN DATA

ADT (2025)= 15150  
ADT (2045)= 18700  
K = 8 %  
D = 55 %  
T = 9 % \*  
V = 60 MPH  
\* (TTST 5 %, DUAL 4 %)

FUNC CLASS=PRINCIPAL ARTERIAL  
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT BR-0015 = 0.689 MILES  
LENGTH STRUCTURE TIP PROJECT BR-0015 = 0.021 MILES  
TOTAL LENGTH TIP PROJECT BR-0015 = 0.710 MILES

Prepared In the Office of:  
**DIVISION OF HIGHWAYS**  
STRUCTURES MANAGEMENT UNIT  
1000 BIRCH RIDGE DR.  
RALEIGH, N.C. 27610

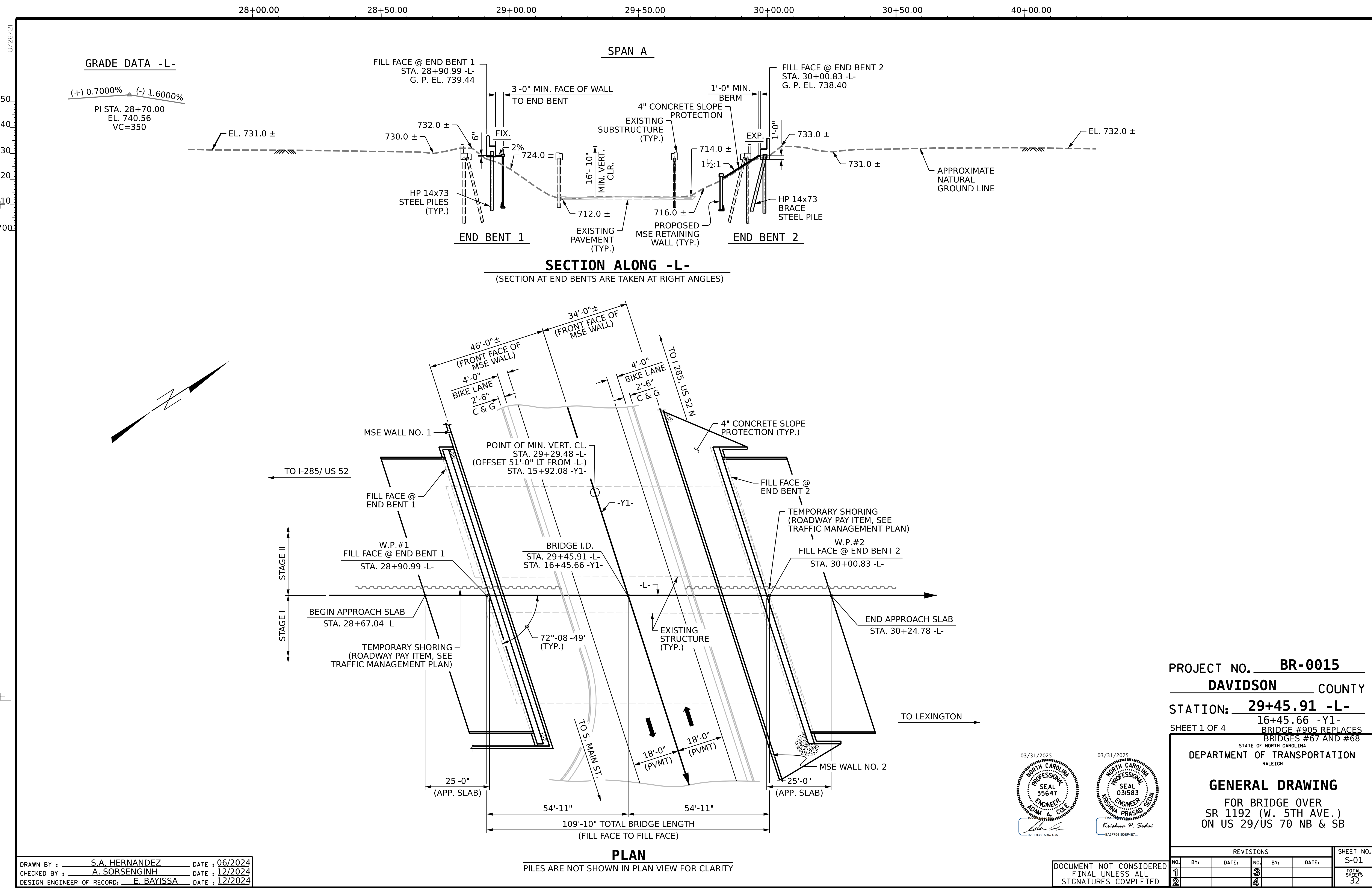
2024 STANDARD SPECIFICATIONS

LETTING DATE :

JUNE 17, 2025

ADAM COLE, PE  
PROJECT ENGINEER

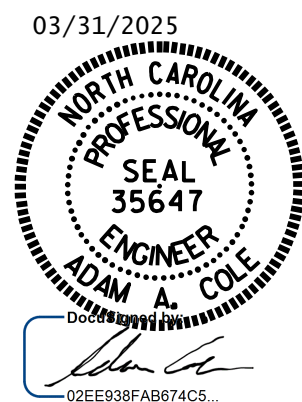
KRISHNA SEDAI, PE  
PROJECT DESIGN ENGINEER



DRAWN BY : S.A. HERNANDEZ DATE : 06/2024  
CHECKED BY : A. SORSENGINH DATE : 12/2024  
DESIGN ENGINEER OF RECORD: E. BAYISSA DATE : 12/2024

3/31/2025  
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ksedai

**PLAN**  
PILES ARE NOT SHOWN IN PLAN VIEW FOR CLARITY



DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

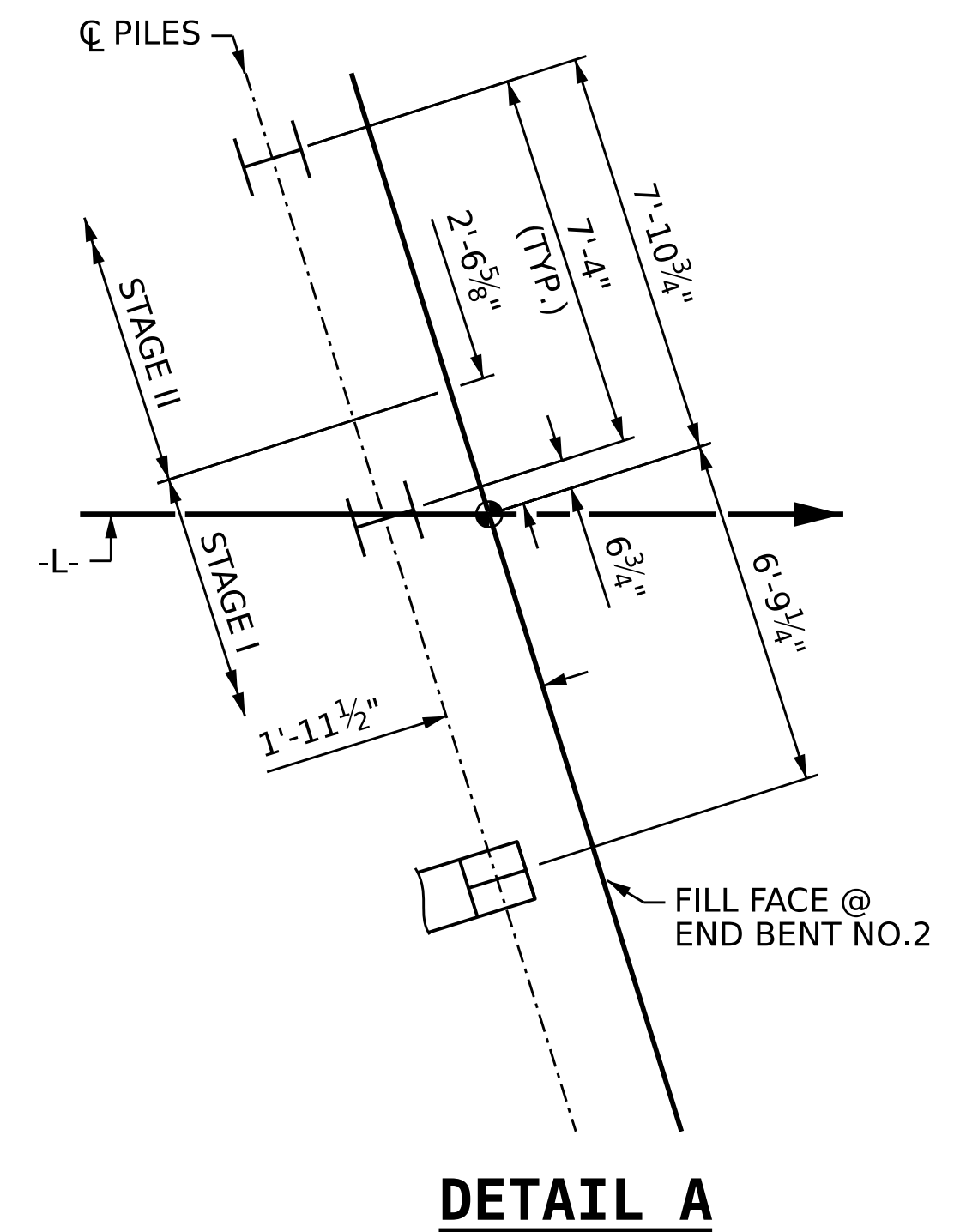
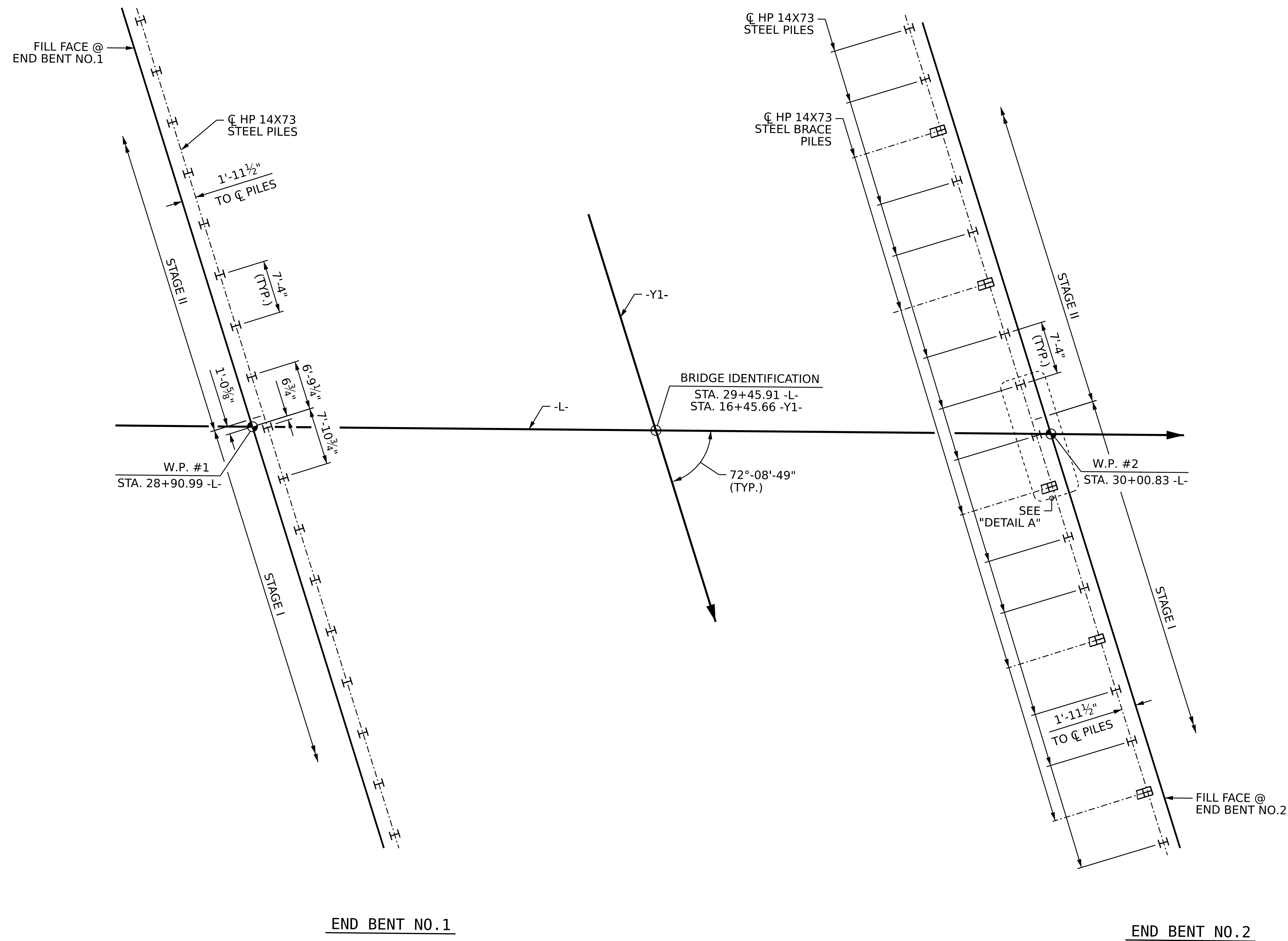
PROJECT NO. BR-0015  
DAVIDSON COUNTY  
STATION: 29+45.91 -L-  
SHEET 1 OF 4  
BRIDGE #905 REPLACES  
BRIDGES #67 AND #68

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**GENERAL DRAWING**  
FOR BRIDGE OVER  
SR 1192 (W. 5TH AVE.)  
ON US 29/US 70 NB & SB

| REVISIONS |     |       |     |     |       | SHEET NO.    |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO.       | BY: | DATE: | NO. | BY: | DATE: | S-01         |
| 1         |     |       | 3   |     |       | TOTAL SHEETS |
| 2         |     |       | 4   |     |       | 32           |



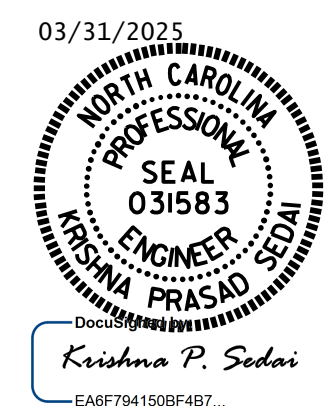


PROJECT NO. BR-0015  
DAVIDSON COUNTY  
STATION: 29+45.91 -L-  
SHEET 2 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**GENERAL DRAWING**

FOR BRIDGE OVER  
SR 1192 (W. 5TH AVE.)  
ON US 29/US 70 NB & SB



DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

| REVISIONS |     |       |     |     |       | SHEET NO.<br>S-02     |
|-----------|-----|-------|-----|-----|-------|-----------------------|
| NO.       | BY: | DATE: | NO. | BY: | DATE: |                       |
| 1         |     |       | 3   |     |       | TOTAL<br>SHEETS<br>32 |
| 2         |     |       | 4   |     |       |                       |

DRAWN BY : S.A. HERNANDEZ DATE : 2/2024  
 CHECKED BY : A. SORSENGINH DATE : 6/2024  
 DESIGN ENGINEER OF RECORD: E. BAYISSA DATE : 6/2024

3/31/2025  
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ksedaj

8/26/21

SUMMARY OF PILE INFORMATION/INSTALLATION

(Blank entries indicate item is not applicable to structure)

| End Bent / Bent No,<br>Pile(s) #(-#)<br>(e.g., "Bent 1,<br>Piles 1-5") | Number<br>of<br>Piles<br>per Line | Factored<br>Resistance<br>per Pile<br><b>KIPS</b> | Pile Cut-Off<br>(Top of Pile)<br>Elevation<br>FT | Estimated<br>Pile Length<br>per Pile<br>FT | Scour<br>Critical<br>Elevation<br>FT | Driven Piles   |  |                                      | Predrilling for Piles **                    |  |  | Drilled-In Piles  |   |   |
|--|-----------------------------------|---|--|--|--------------------------------------|--|--|--------------------------------------|---|--|--|---|---|---|
|  |                                   |   |  |  |                                      | Minimum<br>Pile Tip<br>(Tip No Higher Than)<br>Elevation<br>FT | Required Driving<br>Resistance (RDR)*<br>per pile<br><b>KIPS</b> | Pile<br>Redrives<br>Quantity<br>EACH | Predrilling<br>Length<br>per Pile<br>LIN FT | Predrilling<br>Elevation<br>(Elevation<br>Not To Predrill Below)<br>FT | Maximum<br>Predrilling<br>Diameter<br>INCHES | Pile<br>Excavation<br>(Bottom of Hole)<br>Elevation<br>FT | Pile<br>Excavation<br>Not In Soil<br>per Pile<br>LIN FT | Pile<br>Excavation<br>In Soil<br>per Pile<br>LIN FT |
| End Bent No. 1, Piles 1-17   | 17                                | 264   |  | 45   |                                      |  | 440  |                                      |   |  |  |   |   |   |
| End Bent No. 2, Piles 1-17   | 17                                | 264   |  | 65   |                                      |  | 440  |                                      |   |  |  |   |   |   |
|  |                                   |   |  |  |                                      |  |  |                                      |   |  |  |   |   |   |
|  |                                   |   |  |  |                                      |  |  |                                      |   |  |  |   |   |   |
|  |                                   |   |  |  |                                      |  |  |                                      |   |  |  |   |   |   |
| TOTAL QUANTITY:  |                                   |   |  |  |                                      |  |  |                                      |   |  |  |   |   |   |
|  |                                   |   |  |  |                                      |  |  |                                      |   |  |  |   |   |   |

\*  $RDR = \frac{Factored\ Resistance + Factored\ Drag\ Load + Factored\ Dead\ Load}{Dynamic\ Resistance\ Factor} + Nominal\ Drag\ Load\ Resistance + Nominal\ Resistance\ from\ Scourable\ Material$

\*\* Predrilling for Piles is required for end bents/bents with a predrilling length and at the Contractor's option for end bents/bents with predrilling information but no predrilling length.

PILE DESIGN INFORMATION

(Blank entries indicate item is not applicable to structure)

| End Bent / Bent No,<br>Pile(s) #(-#)<br>(e.g., "Bent 1, Piles 1-5") | Factored<br>Axial<br>Load<br>per Pile<br><b>KIPS</b> | Factored<br>Drag<br>Load<br>per Pile<br><b>KIPS</b> | Factored<br>Dead<br>Load *<br>per Pile<br><b>KIPS</b> | Dynamic<br>Resistance<br>Factor | Nominal<br>Drag<br>Resistance<br>per Pile<br><b>KIPS</b> | Nominal<br>Scour<br>Resistance<br>per Pile<br><b>KIPS</b> |
|---|--|---|---|---------------------------------|--|---|
| End Bent No. 1, Piles 1-17  | 264  |   |   | 0.60                            |  |   |
| End Bent No. 2, Piles 1-17  | 264  |   |   | 0.60                            |  |   |
|   |  |   |   |                                 |  |   |
|   |  |   |   |                                 |  |   |
|   |  |   |   |                                 |  |   |

\* Factored Dead Load is factored weight of pile above the ground line.

NOTES:

1. The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Michael H. Stephens, #028893) on 08-16-2024.
2. Total Pile Driving Equipment Setup quantity (not shown in Pile Foundation Tables) equals the number of driven piles, i.e., the number of piles with a Required Driving Resistance.
3. The Engineer may adjust the quantity for DPT Testing and Pipe Pile Plates when necessary.

FOUNDATION NOTES

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT NO. 1 & NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 264 KIPS PER PILE.

DRIVE PILES AT END BENT NOS. 1 AND 2 PRIOR TO MSE WALL CONSTRUCTION.

OBSERVE A 2 MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT, END BENT AND BRIDGE APPROACH FILL BEFORE BEGINNING APPROACH SLAB CONSTRUCTION AT END BENT NOS. 1 AND 2. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS. BEFORE BEGINNING THE WAITING PERIOD, INSTALL HUBS IN THE SUBGRADE AT LOCATIONS CORRESPONDING TO THE CENTER OF THE APPROACH SLAB AND AT EACH CORNER OF THE END OF THE APPROACH SLAB. SURVEY THE HUBS INITIALLY AND EVERY 3 TO 4 DAYS THEREAFTER FOR RELATIVE MOVEMENT AND SUBMIT THE DATA TO THE ENGINEER WEEKLY. THE ENGINEER WILL DETERMINE WHEN THE WAITING PERIOD ENDS AND BRIDGE APPROACH SLAB CONSTRUCTION CAN BEGIN.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 40,000 FT-LBS PER BLOW TO 80,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT NOS. 1 AND 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

PROJECT NO. **BR-0015**  
**DAVIDSON** COUNTY  
STATION: **29+45.91 -L-**

SHEET 3 OF 4



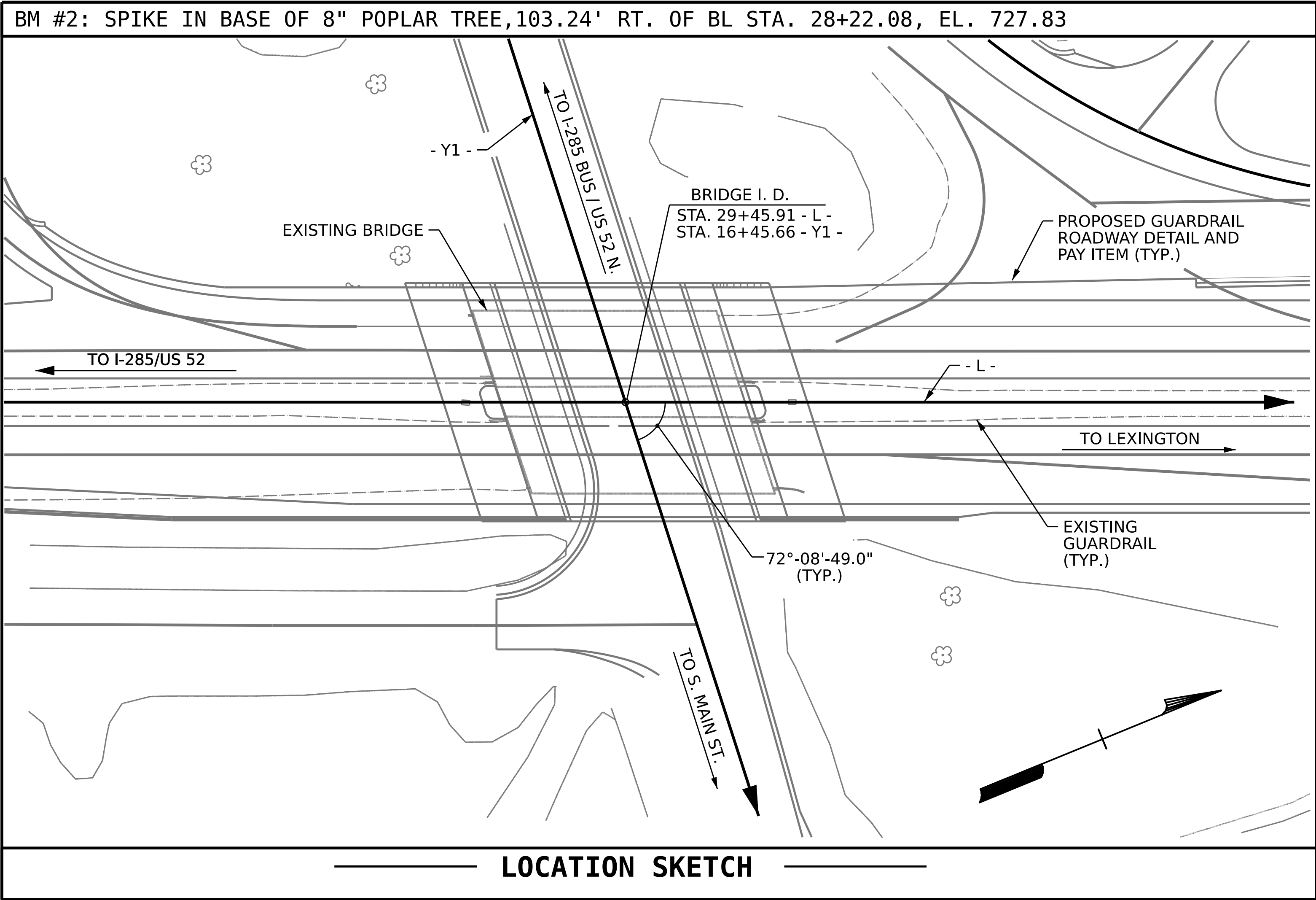
|  |     |       |     |      |
|--|-----|-------|-----|------|
| STATE OF NORTH CAROLINA<br>DEPARTMENT OF TRANSPORTATION<br>RALEIGH |     |       |     |      |
| PILE FOUNDATION<br>TABLES  |     |       |     |      |
| REVISIONS  |     |       |     |      |
| NO.  | BY: | DATE: | NO. | BY:  |
| 1  |     |       | 3   |      |
| 2  |     |       | 4   |      |
| SHEET NO.  |     |       |     | S-03 |
| TOTAL SHEETS   |     |       |     | 32   |

|                                       |               |
|---------------------------------------|---------------|
| DRAWN BY : S.A. HERNANDEZ             | DATE : 2/2024 |
| CHECKED BY : A. SORSENGINH            | DATE : 6/2024 |
| DESIGN ENGINEER OF RECORD: E. BAYISSA | DATE : 6/2024 |

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED



8/26/21



NOTE: FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIRMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

AFTER SERVING AS A TEMPORARY STRUCTURE, THE EXISTING STRUCTURES CONSISTING OF 3 SPANS (1 @ 35'-0", 1 @ 45'-0" AND 1 @ 35'-0"). A CLEAR ROADWAY WIDTH OF 30'-0". REINFORCED CONCRETE DECK ON I-BEAMS AND REINFORCED CONCRETE CAP ON END BENT AND INTERIOR BENT STEEL PILES AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT. FOR REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

FOR TEMPORARY GUARDRAIL, SEE TRAFFIC MANAGEMENT PLANS.

TEMPORARY SHORING WILL BE REQUIRED IN THE AREAS INDICATED IN THE PLAN VIEW

FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.

FOR MAINTENANCE AND PROTECTION OF TRAFFIC BENEATH PROPOSED STRUCTURE, SEE SPECIAL PROVISIONS

THE ELEVATIONS AND CLEARANCES SHOWN ON THE PLANS AT THE POINTS OF MINIMUM VERTICAL CLEARANCE ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE ELEVATIONS ON THE EXISTING PAVEMENT AND CHECK THE CLEARANCE. REPORT ANY VARIATIONS TO THE ENGINEER. ANY PLAN REVISIONS NECESSARY TO ACHIEVE THE REQUIRED MINIMUM VERTICAL CLEARANCE WILL BE PROVIDED BY THE DEPARTMENT.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

FOR ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD. THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COST RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 29+45.91 -L-."

REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.

NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.

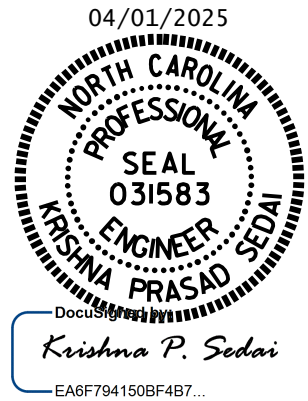
FOR MSE WALLS, SEE GEOTECHNICAL SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

|                | REMOVAL OF EXISTING STRUCTURES AT STA. 28+45.91 - L- | ASBESTOS ASSESMENT | REINFORCED CONCRETE DECK SLAB | GROOVING BRIDGE FLOORS | CLASS A CONCRETE | BRIDGE APPROACH SLAB | REINFORCING STEEL | 54" PRESTRESSED CONCRETE GIRDERS |          | PILE DRIVING EQUIPMENT SETUP FOR HP14X73 STEEL PILES | HP 14 X 73 STEEL PILES |          | CONCRETE BARRIER RAIL | CONCRETE MEDIAN BARRIER | 4" SLOPE PROTECTION | ELASTOMERIC BEARINGS | FOAM JOINT SEALS |
|----------------|--|--------------------|-------------------------------|------------------------|------------------|----------------------|-------------------|----------------------------------|----------|--|------------------------|----------|-----------------------|-------------------------|---------------------|----------------------|------------------|
|                | LUMP SUM   | LUMP SUM           | SQ. FT.                       | SQ. FT.                | CU. YDS.         | LUMP SUM             | LBS.              | NO.                              | LIN. FT. | EACH   | NO.                    | LIN. FT. | LIN. FT.              | LIN. FT.                | SQ. YDS.            | LUMP SUM             | LUMP SUM         |
| SUPERSTRUCTURE |  |                    | 11,760                        | 15,082                 |                  | LUMP SUM             |                   | 14                               | 1,488.89 |  |                        |          | 215.3                 | 157.6                   |                     | LUMP SUM             | LUMP SUM         |
| END BENT NO. 1 |  |                    |                               |                        | 91               |                      | 12,353            |                                  |          | 17   | 17                     | 765      |                       |                         | 40                  |                      |                  |
| END BENT NO.2  |  |                    |                               |                        | 98.1             |                      | 12,885            |                                  |          | 17   | 17                     | 1,105    |                       |                         | 270                 |                      |                  |
| TOTAL          | LUMP SUM   | LUMP SUM           | 11,760                        | 15,082                 | 189.1            | LUMP SUM             | 25,238            | 14                               | 1488.89  | 34   | 34                     | 1,870    | 215.3                 | 157.6                   | 310                 | LUMP SUM             | LUMP SUM         |

PROJECT NO. **BR-0015**  
**DAVIDSON** COUNTY  
STATION: **29+45.91 -L-**

SHEET 4 OF 4



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**GENERAL DRAWING**  
FOR BRIDGE OVER  
SR 1192 (W. 5TH AVE.)  
ON US 29/US 70 NB & SB

DRAWN BY : **S.A. HERNANDEZ** DATE : **9/2024**  
CHECKED BY : **A. SORSENGINH** DATE : **9/2024**  
DESIGN ENGINEER OF RECORD: **S.A. HERNANDEZ** DATE : **9/2024**

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

| REVISIONS |     |       |     |     |       | SHEET NO.    |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO.       | BY: | DATE: | NO. | BY: | DATE: | TOTAL SHEETS |
| 1         |     |       | 3   |     |       |              |
| 2         |     |       | 4   |     |       | 32           |

8/26/21

LOAD FACTORS:

| DESIGN<br>LOAD<br>RATING<br>FACTORS | LIMIT STATE | γ <sub>DC</sub> | γ <sub>DW</sub> |
|-------------------------------------|-------------|-----------------|-----------------|
|                                     | STRENGTH I  | 1.25            | 1.50            |
|                                     | SERVICE III | 1.00            | 1.00            |

| LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS |                                      |                      |                                 |                                   |               |                           |                              |               |      |                 |   |                              |               |      |                 |   |                           |                              |               |      |                 |                |   |  |
|---|--------------------------------------|----------------------|---------------------------------|-----------------------------------|---------------|---------------------------|------------------------------|---------------|------|-----------------|---|------------------------------|---------------|------|-----------------|---|---------------------------|------------------------------|---------------|------|-----------------|----------------|---|--|
| LEVEL   | VEHICLE                              | WEIGHT (W)<br>(TONS) | CONTROLLING<br>LOAD RATING<br>⬡ | MINIMUM<br>RATING FACTORS<br>(RF) | TONS = W X RF | STRENGTH I LIMIT STATE    |                              |               |      |                 |   |                              |               |      |                 | SERVICE III LIMIT STATE                   |                           |                              |               |      |                 | COMMENT NUMBER |   |  |
|   |                                      |                      |                                 |                                   |               | LIVELOAD<br>FACTORS (γLL) | MOMENT                       |               |      |                 |   | SHEAR                        |               |      |                 |   | LIVELOAD<br>FACTORS (γLL) | MOMENT                       |               |      |                 |                |   |  |
|   |                                      |                      |                                 |                                   |               |                           | DISTRIBUTION<br>FACTORS (DF) | RATING FACTOR | SPAN | GIRDER LOCATION | DISTANCE FROM<br>LEFT END OF<br>SPAN (ft) | DISTRIBUTION<br>FACTORS (DF) | RATING FACTOR | SPAN | GIRDER LOCATION | DISTANCE FROM<br>LEFT END OF<br>SPAN (ft) |                           | DISTRIBUTION<br>FACTORS (DF) | RATING FACTOR | SPAN | GIRDER LOCATION |                | DISTANCE FROM<br>LEFT END OF<br>SPAN (ft) |  |
| DESIGN<br>LOAD<br>RATING  | HL-93(Inventory)                     | N/A                  | ⬡1                              | 1.09                              | --            | 1.75                      | 0.800                        | 1.40          | A    | 14              | 52.47                                     | 0.929                        | 1.09          | A    | 13              | 7   | 0.80                      | 0.800                        | 1.17          | A    | 14              | 52.47          |   |  |
|   | HL-93(Operating)                     | N/A                  | --                              | 1.41                              | --            | 1.35                      | 0.800                        | 1.81          | A    | 14              | 52.47                                     | 0.929                        | 1.41          | A    | 13              | 7   | N/A                       | --                           | --            | --   | --              | --             |   |  |
|   | HS-20(Inventory)                     | 36.000               | ⬡2                              | 1.50                              | 54.12         | 1.75                      | 0.800                        | 1.98          | A    | 14              | 52.47                                     | 0.929                        | 1.50          | A    | 2               | 7   | 0.80                      | 0.800                        | 1.65          | A    | 14              | 52.47          |   |  |
|   | HS-20(Operating)                     | 36.000               | --                              | 1.95                              | 70.16         | 1.35                      | 0.800                        | 2.56          | A    | 14              | 52.47                                     | 0.929                        | 1.95          | A    | 2               | 7   | N/A                       | --                           | --            | --   | --              | --             |   |  |
| LEGAL<br>LOAD<br>RATING   | SINGLE VEHICLE<br>(SV)               | SNSH                 | 13.500                          | --                                | 3.94          | 53.16                     | 1.40                         | 0.800         | 5.90 | A               | 14  | 52.47                        | 0.929         | 4.66 | A               | 2   | 7                         | 0.80                         | 0.800         | 3.94 | A               | 14             | 52.47                                     |  |
|   |                                      | SNGARBS2             | 20.000                          | --                                | 2.84          | 56.78                     | 1.40                         | 0.800         | 4.25 | A               | 14  | 55.96                        | 0.929         | 3.25 | A               | 2   | 7                         | 0.80                         | 0.800         | 2.84 | A               | 14             | 52.47                                     |  |
|   |                                      | SNAGRIS2             | 22.000                          | --                                | 2.65          | 58.31                     | 1.40                         | 0.800         | 3.97 | A               | 14  | 55.96                        | 0.929         | 3.00 | A               | 2   | 7                         | 0.80                         | 0.800         | 2.65 | A               | 14             | 52.47                                     |  |
|   |                                      | SNCOTTS3             | 27.250                          | --                                | 1.96          | 53.32                     | 1.40                         | 0.800         | 2.93 | A               | 14  | 52.47                        | 0.929         | 2.32 | A               | 2   | 7                         | 0.80                         | 0.800         | 1.96 | A               | 14             | 52.47                                     |  |
|   |                                      | SNAGGRS4             | 34.925                          | --                                | 1.60          | 55.82                     | 1.40                         | 0.800         | 2.39 | A               | 14  | 52.47                        | 0.929         | 1.88 | A               | 2   | 7                         | 0.80                         | 0.800         | 1.60 | A               | 14             | 52.47                                     |  |
|   |                                      | SNS5A                | 35.550                          | --                                | 1.57          | 55.65                     | 1.40                         | 0.800         | 2.35 | A               | 14  | 52.47                        | 0.929         | 1.89 | A               | 2   | 7                         | 0.80                         | 0.800         | 1.57 | A               | 14             | 52.47                                     |  |
|   |                                      | SNS6A                | 39.950                          | --                                | 1.42          | 56.79                     | 1.40                         | 0.800         | 2.13 | A               | 14  | 52.47                        | 0.929         | 1.71 | A               | 2   | 7                         | 0.80                         | 0.800         | 1.42 | A               | 14             | 52.47                                     |  |
|   |                                      | SNS7B                | 42.000                          | --                                | 1.35          | 56.83                     | 1.40                         | 0.800         | 2.03 | A               | 14  | 52.47                        | 0.929         | 1.66 | A               | 2   | 7                         | 0.80                         | 0.800         | 1.35 | A               | 14             | 52.47                                     |  |
|   | TRUCK TRACTOR SEMI-TRAILER<br>(TTST) | TNAGRIT3             | 33.000                          | --                                | 1.73          | 57.06                     | 1.40                         | 0.800         | 2.59 | A               | 14  | 52.47                        | 0.929         | 2.04 | A               | 2   | 7                         | 0.80                         | 0.800         | 1.73 | A               | 14             | 52.47                                     |  |
|   |                                      | TNT4A                | 33.075                          | --                                | 1.73          | 57.31                     | 1.40                         | 0.800         | 2.60 | A               | 14  | 52.47                        | 0.929         | 2.01 | A               | 2   | 7                         | 0.80                         | 0.800         | 1.73 | A               | 14             | 52.47                                     |  |
|   |                                      | TNT6A                | 41.600                          | --                                | 1.40          | 58.36                     | 1.40                         | 0.800         | 2.10 | A               | 14  | 52.47                        | 0.929         | 1.73 | A               | 2   | 7                         | 0.80                         | 0.800         | 1.40 | A               | 14             | 52.47                                     |  |
|   |                                      | TNT7A                | 42.000                          | --                                | 1.40          | 58.90                     | 1.40                         | 0.800         | 2.10 | A               | 14  | 52.47                        | 0.929         | 1.70 | A               | 2   | 7                         | 0.80                         | 0.800         | 1.40 | A               | 14             | 52.47                                     |  |
|   |                                      | TNT7B                | 42.000                          | --                                | 1.43          | 60.19                     | 1.40                         | 0.800         | 2.14 | A               | 14  | 55.96                        | 0.929         | 1.63 | A               | 2   | 7                         | 0.80                         | 0.800         | 1.43 | A               | 14             | 52.47                                     |  |
|   |                                      | TNAGRIT4             | 43.000                          | --                                | 1.38          | 59.19                     | 1.40                         | 0.800         | 2.06 | A               | 14  | 52.47                        | 0.929         | 1.58 | A               | 2   | 7                         | 0.80                         | 0.800         | 1.38 | A               | 14             | 52.47                                     |  |
| EV LOAD<br>RATING   | EV2                                  | 28.750               | --                              | 2.00                              | 57.38         | 1.30                      | 0.800                        | 3.22          | A    | 14              | 55.96                                     | 0.929                        | 2.45          | A    | 2               | 7   | 0.80                      | 0.800                        | 2.00          | A    | 14              | 52.47          |   |  |
|   | EV3                                  | 43.000               | ⬡4                              | 1.32                              | 56.60         | 1.30                      | 0.800                        | 2.12          | A    | 14              | 52.47                                     | 0.929                        | 1.65          | A    | 2               | 7   | 0.80                      | 0.800                        | 1.32          | A    | 14              | 52.47          |   |  |

NOTES:  
MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.  
ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

⬡ CONTROLLING LOAD RATING

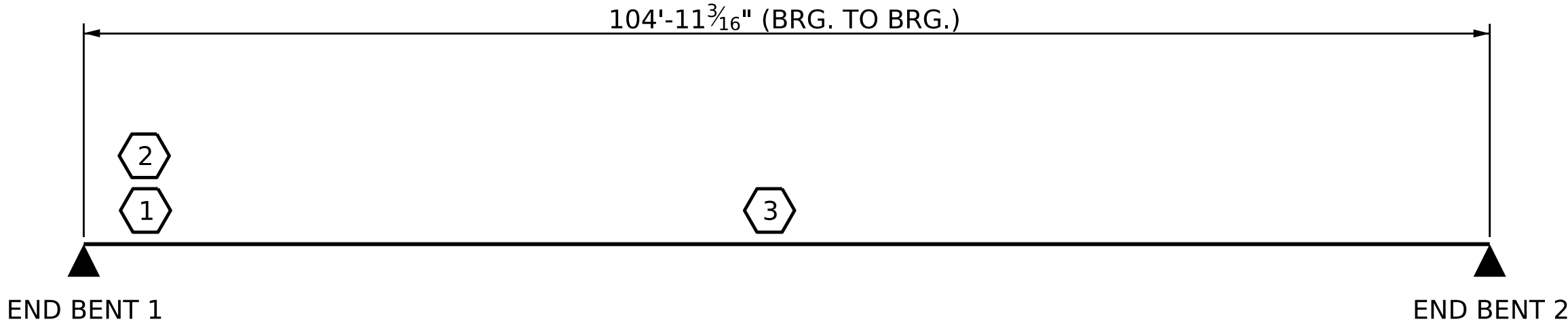
⬡1 DESIGN LOAD RATING (HL-93)

⬡2 DESIGN LOAD RATING (HS-20)

⬡3 LEGAL LOAD RATING \*\*  
\*\* SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER  
EL - EXTERIOR LEFT GIRDER  
ER - EXTERIOR RIGHT GIRDER



PROJECT NO. **BR-0015**  
**DAVIDSON** COUNTY  
STATION: **29+45.91 -L-**



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
LRFR SUMMARY FOR  
PRESTRESSED  
CONCRETE GIRDERS  
(NON-INTERSTATE TRAFFIC)

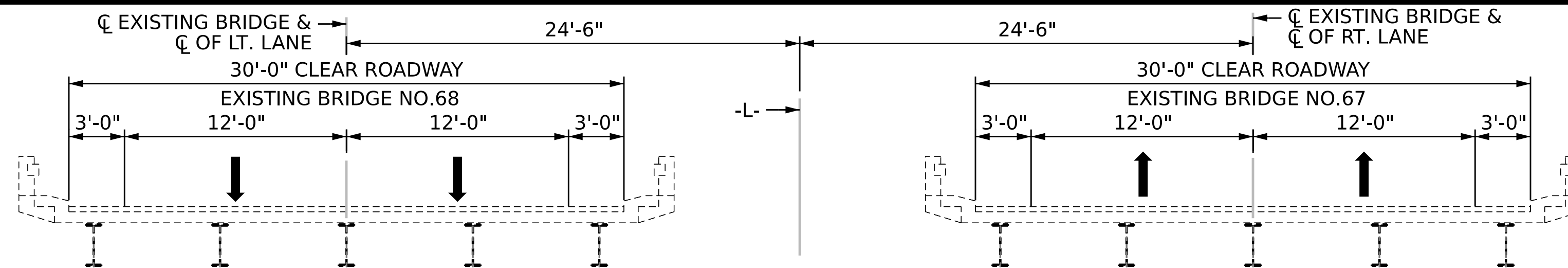
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| NO.       | BY: | DATE: | NO. | BY: |                 |
| 1         |     |       | 3   |     | S-05            |
| 2         |     |       | 4   |     | TOTAL SHEETS 32 |

|                            |                        |
|----------------------------|------------------------|
| ASSEMBLED BY: S. HERNANDEZ | DATE : 06/2024         |
| CHECKED BY : A. SORSENGINH | DATE : 06/2024         |
| DRAWN BY : MAA 1/08        | REV. 11/12/08RR MAA/GM |
| CHECKED BY : GM/DI 2/08    | REV. 10/1/11 MAA/GM    |

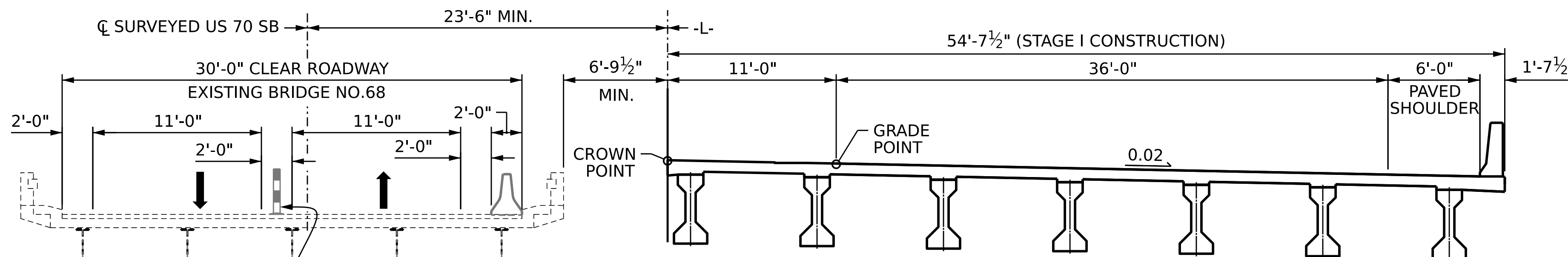
DOCUMENT NOT CONSIDERED  
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SIGNATURES COMPLETED



8/26/21

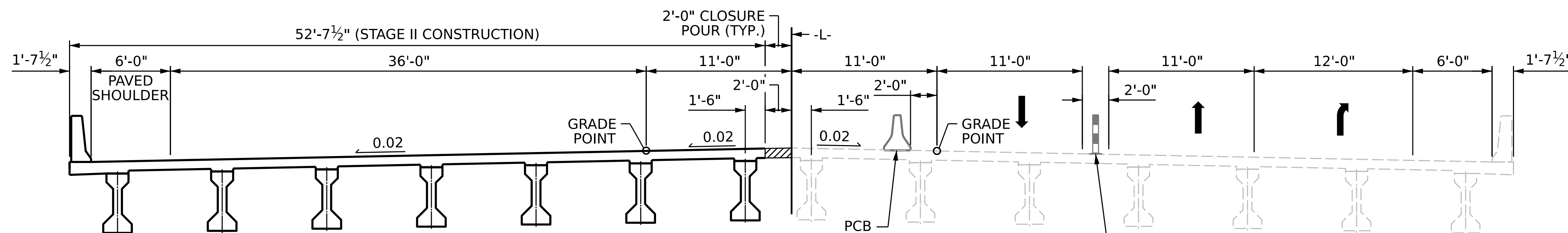


EXISTING SECTION



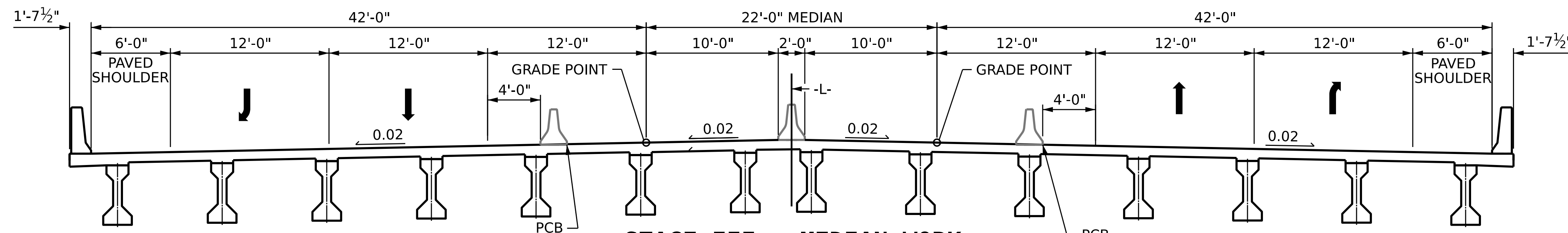
STAGE I

TRANSFER ALL TRAFFIC TO EXISTING BRIDGE NO.68  
DEMOLISH EXISTING BRIDGE NO.67  
CONSTRUCT RIGHT SIDE OF PROPOSED BRIDGE



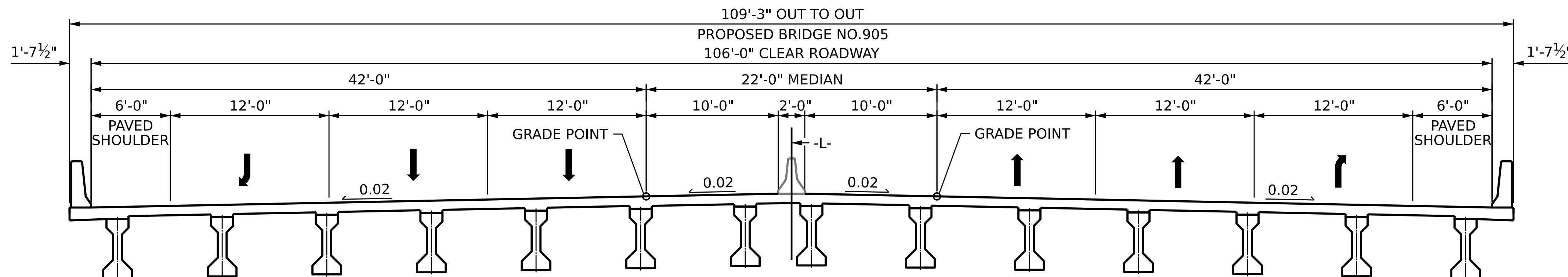
STAGE II & CLOSURE POUR

TRANSFER ALL TRAFFIC TO RIGHT SIDE OF PROPOSED BRIDGE  
CONSTRUCT LEFT SIDE OF PROPOSED BRIDGE AND CLOSURE POUR



STAGE III - MEDIAN WORK

INSTALL MEDIAN BARRIER RAIL



FINAL TYPICAL SECTION

NOTES:

FOR PHASING, MAINTENANCE OF TRAFFIC,  
LOCATION OF TEMPORARY SHORING AND  
PORTABLE CONCRETE BARRIER, SEE TRAFFIC  
CONTROL PLANS.

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**DAVIDSON** COUNTY

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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

CONSTRUCTION STAGING  
SEQUENCE

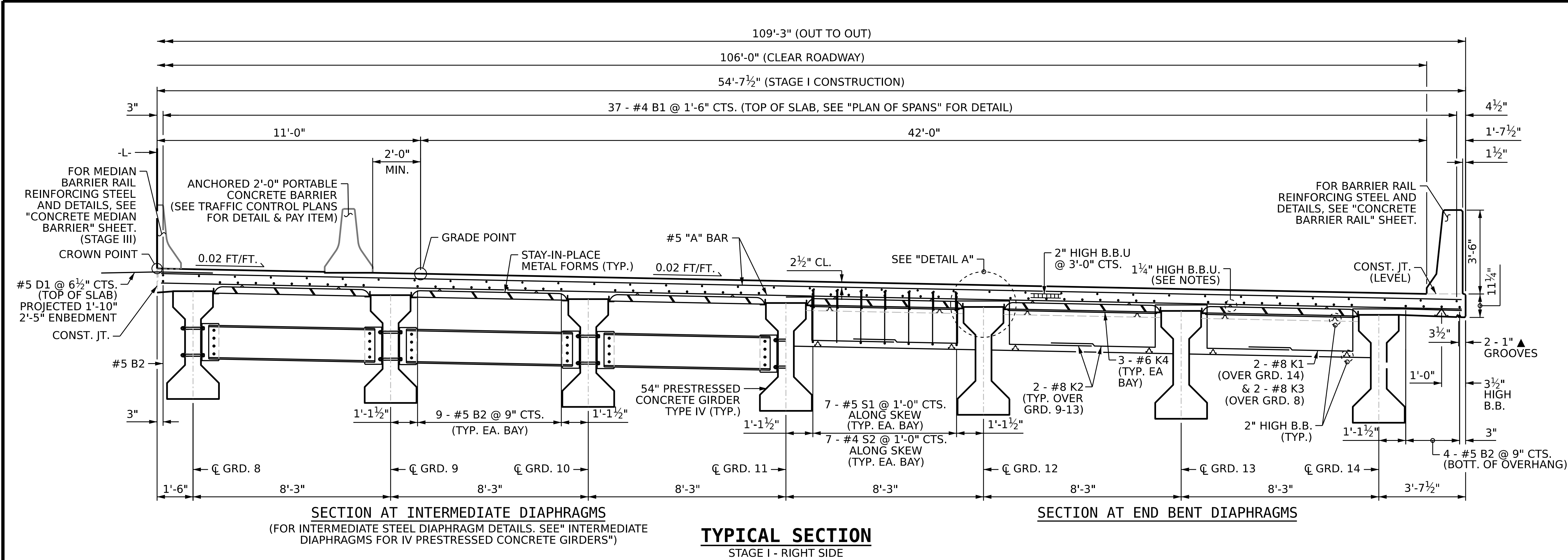
DRAWN BY : **S.A. HERNANDEZ** DATE : **4/2024**  
CHECKED BY : **A. SORSENGINH** DATE : **5/2024**  
DESIGN ENGINEER OF RECORD: **E. BAYISSA** DATE : **5/2024**

3/31/2025  
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| REVISIONS    |     |       |     |     |       | SHEET NO. |
|--------------|-----|-------|-----|-----|-------|-----------|
| NO.          | BY: | DATE: | NO. | BY: | DATE: |           |
| 1            |     |       | 3   |     |       | S-06      |
| 2            |     |       | 4   |     |       |           |
| TOTAL SHEETS |     |       |     |     |       | 32        |

8/26/21



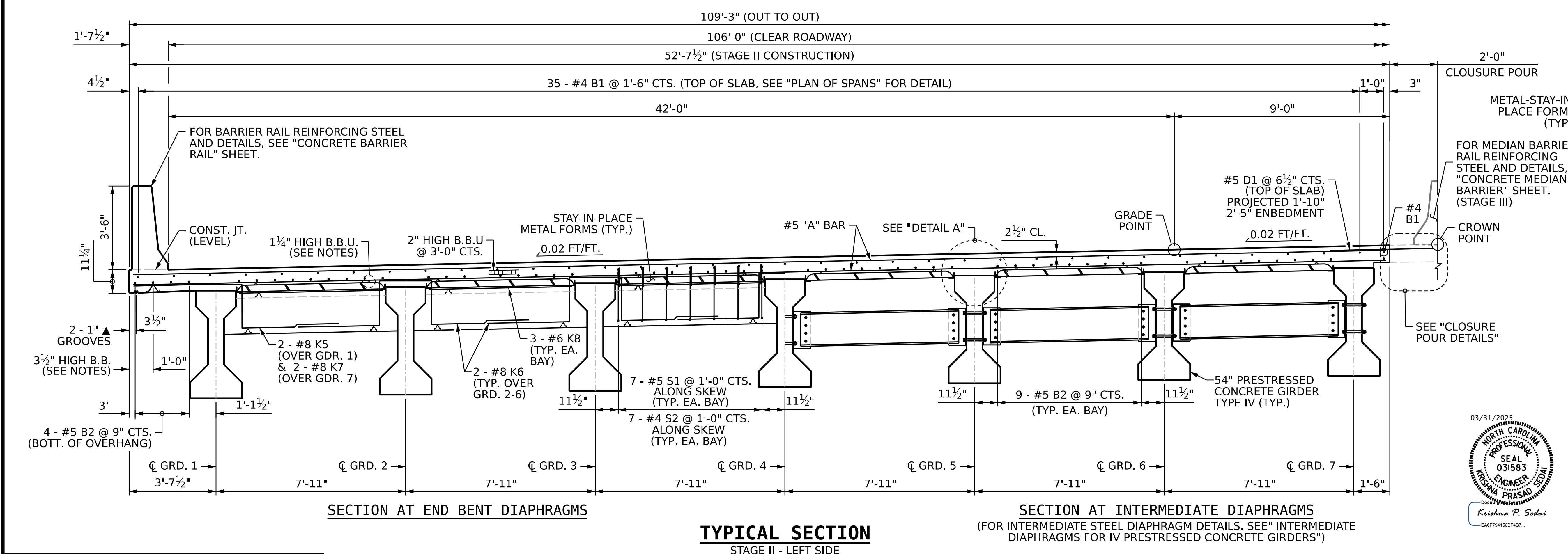
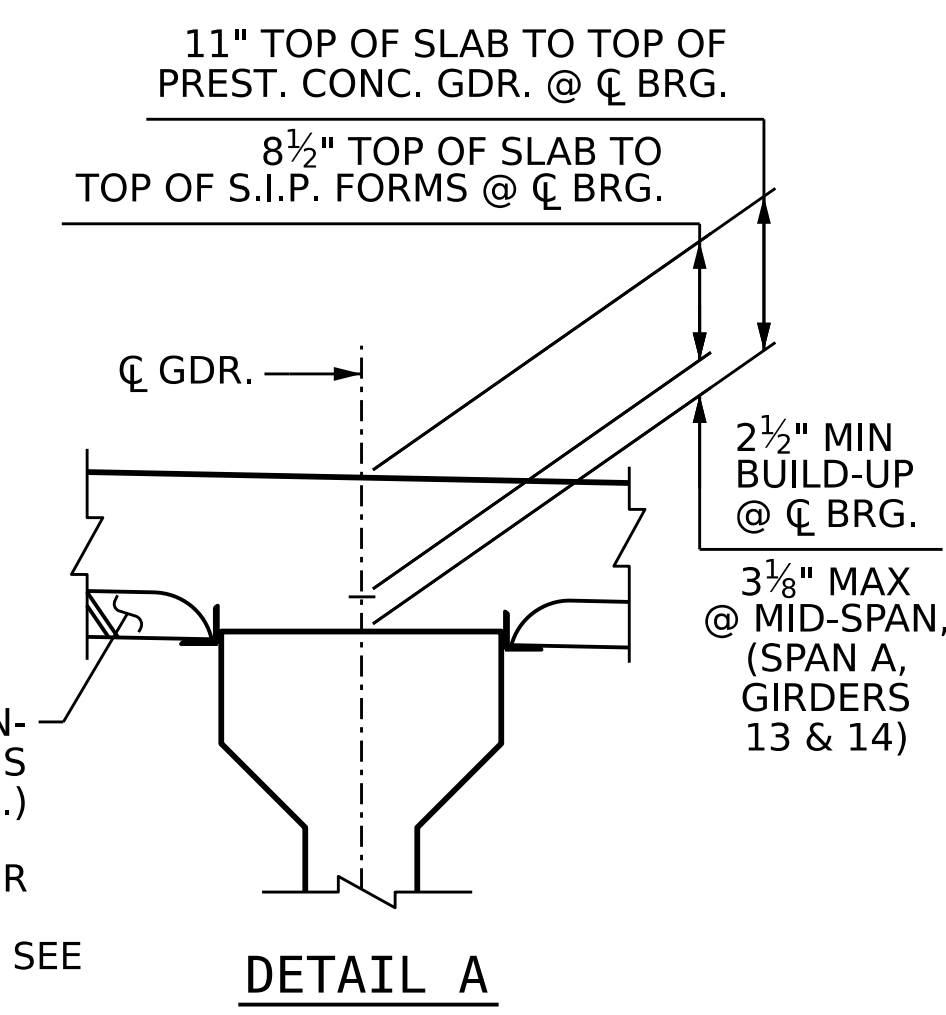
**NOTES:**

PROVIDE 1¼" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF 'A' BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) @ 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF 'A' BARS A CLEAR DISTANCE OF 2½" ABOVE THE TOP OF THE REMOVABLE FORM.

LONGITUDINAL STEEL MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO AVOID INTERFERENCE WITH STIRRUPS IN PRESTRESSED CONCRETE GIRDERS.

DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP SLAB REINFORCING STEEL.

DIRECTION OF CASTING DECK CONCRETE SHALL BE FROM THE FIXED BEARING END TOWARD THE EXPANSION BEARING END OF THE SPAN.



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SHEET 1 OF 2

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**TYPICAL SECTIONS**

| REVISIONS |     |       |     |     |       | SHEET NO.       |
|-----------|-----|-------|-----|-----|-------|-----------------|
| NO.       | BY: | DATE: | NO. | BY: | DATE: | S-07            |
| 1         |     |       | 3   |     |       | TOTAL SHEETS 32 |
| 2         |     |       | 4   |     |       |                 |

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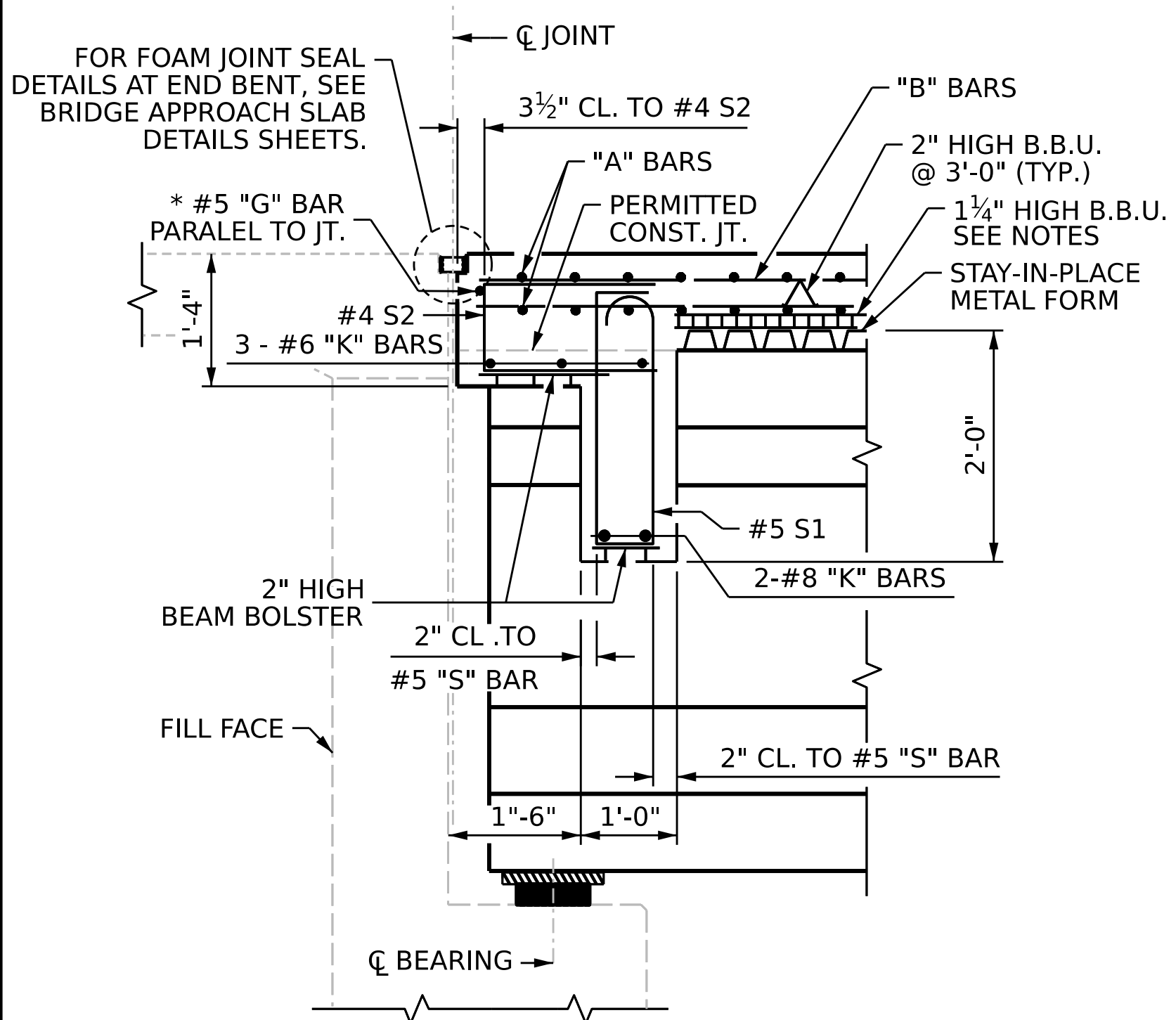
DRAWN BY : S.A. HERNANDEZ DATE : 4/2024  
CHECKED BY : A.SORSENGINH DATE : 6/2024  
DESIGN ENGINEER OF RECORD : E. BAYISSA DATE : 6/2024



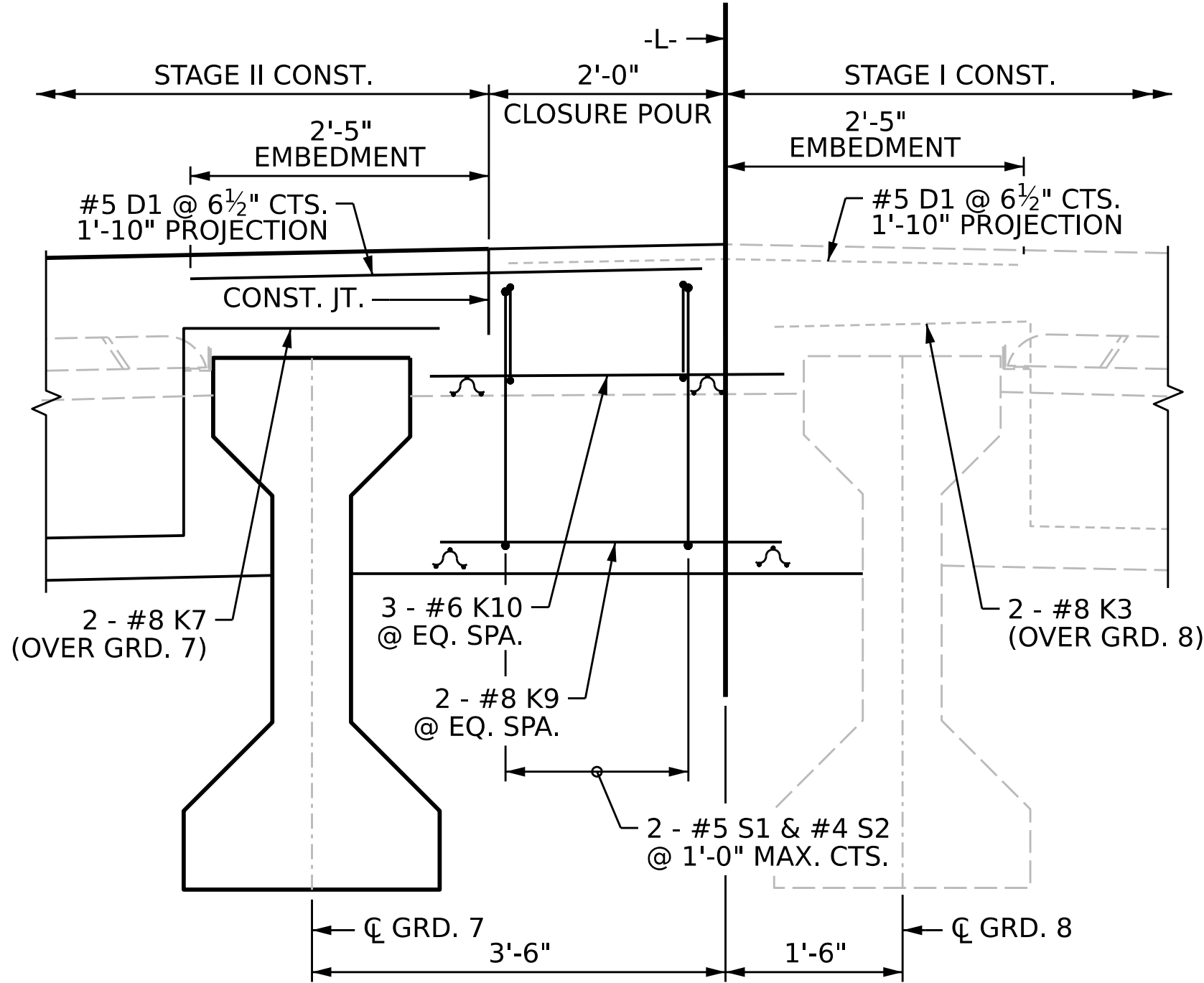
8/26/21

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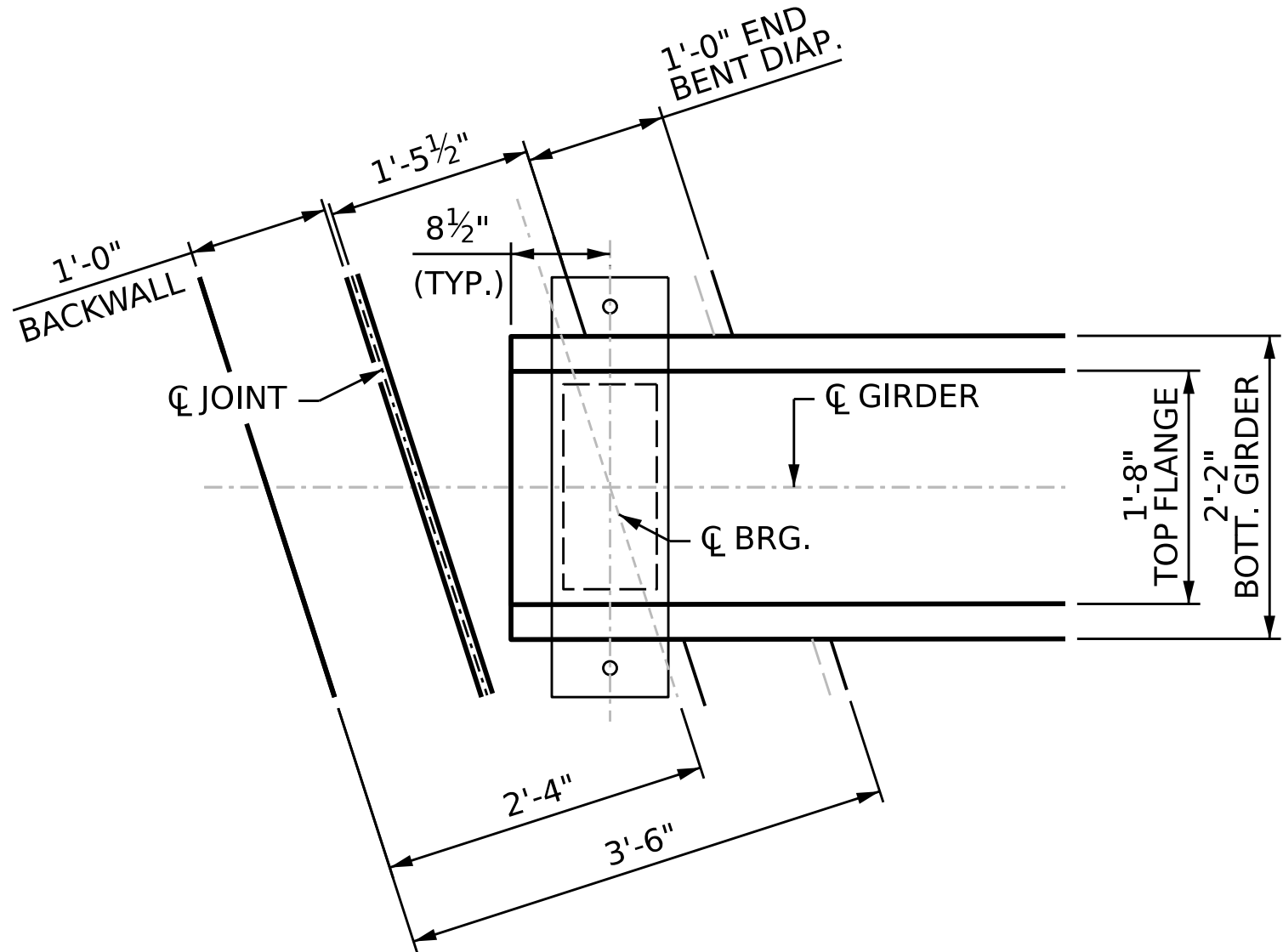
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SECTION THROUGH END BENT DIAPHRAGM



CLOSURE POUR DETAIL  
DECK CLOSURE POUR DETAIL @ END BENT

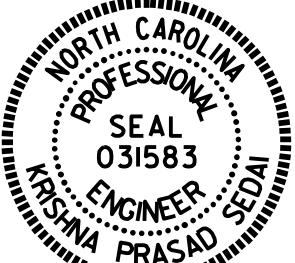


END BENT DIAPHRAGM

DRAWN BY : S.A. HERNANDEZ DATE : 4/2024  
CHECKED BY : A. SORSENGINH DATE : 6/2024  
DESIGN ENGINEER OF RECORD : E. BAYISSA DATE : 6/2024

3/31/2025  
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ksedai

03/31/2025



Krishna P. Sedai  
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**DAVIDSON** COUNTY  
STATION: **29+45.91 -L-**

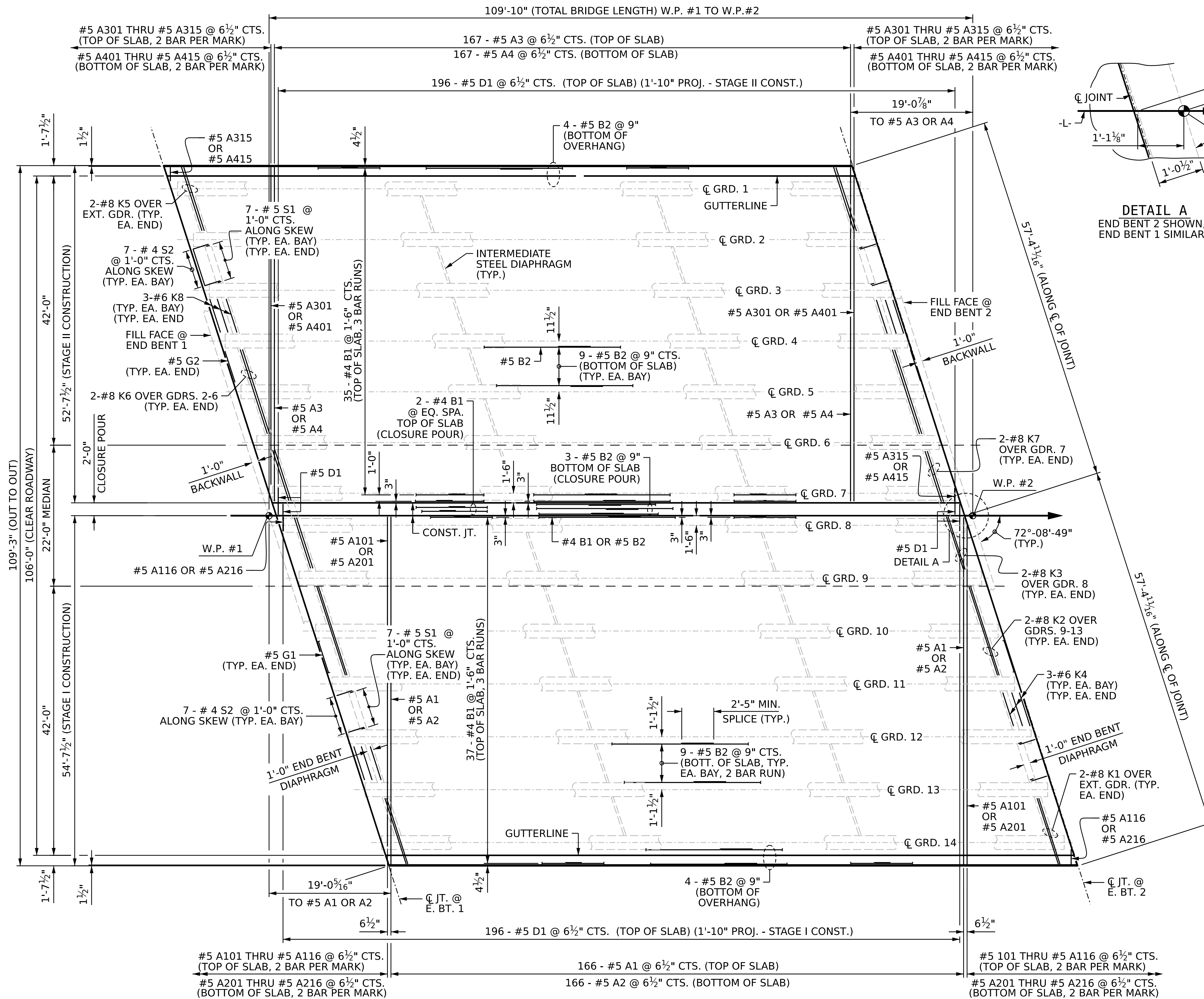
SHEET 2 OF 2

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

TYPICAL SECTIONS

DOCUMENT NOT CONSIDERED  
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| REVISIONS    |     |       |     |     | SHEET NO. |
|--------------|-----|-------|-----|-----|-----------|
| NO.          | BY: | DATE: | NO. | BY: |           |
| 1            |     |       | 3   |     | S-08      |
| 2            |     |       | 4   |     |           |
| TOTAL SHEETS |     |       |     |     | 32        |

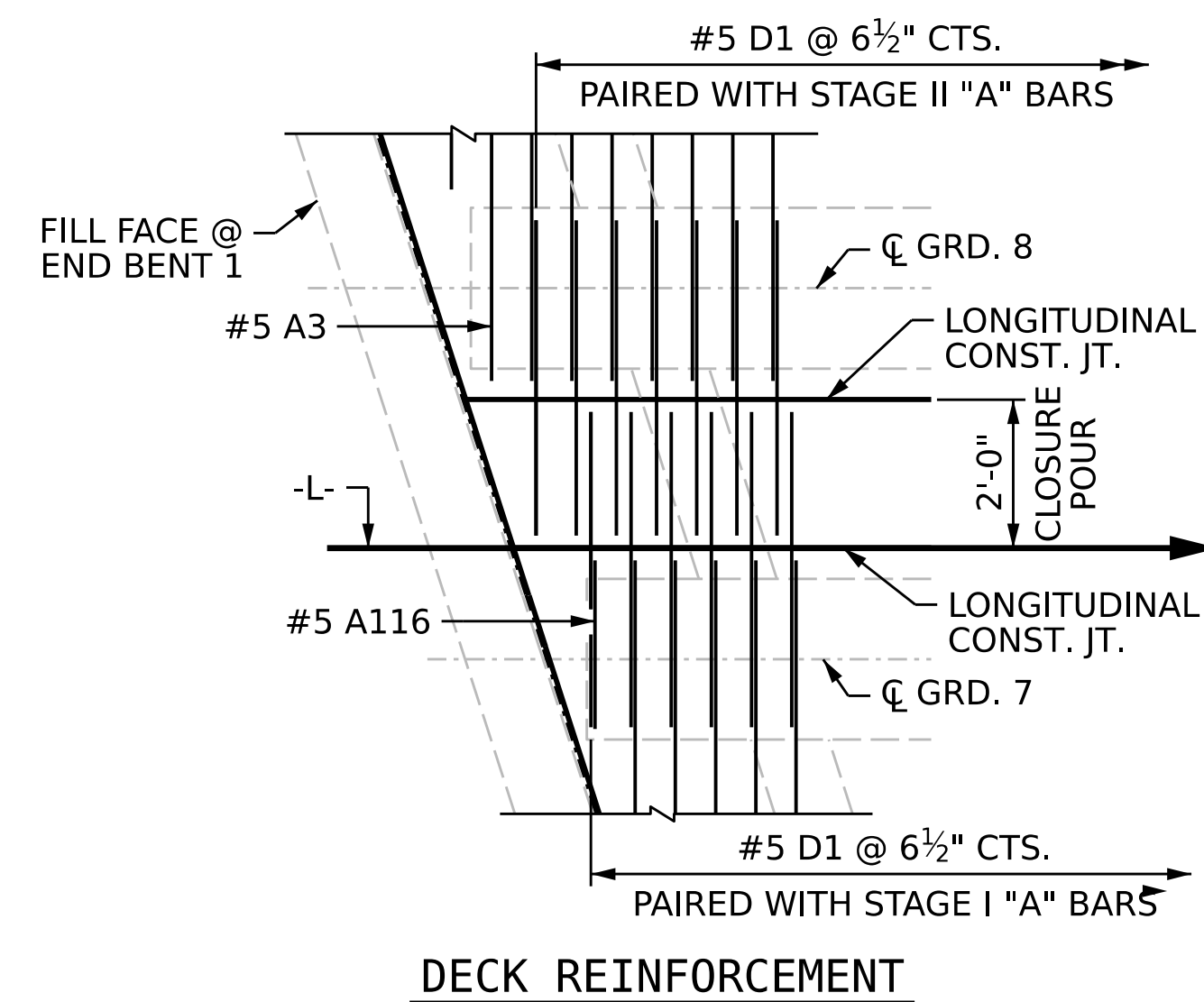
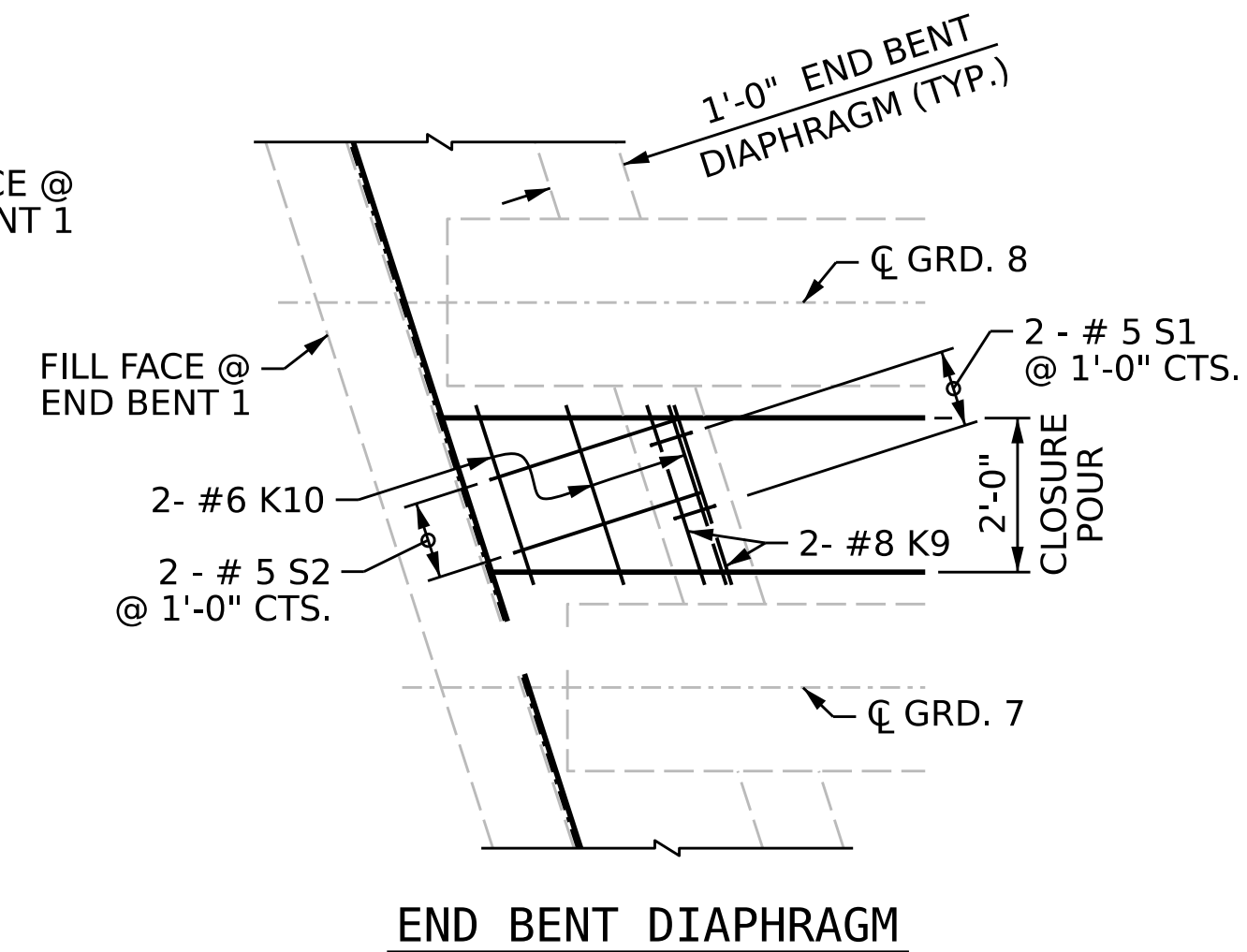
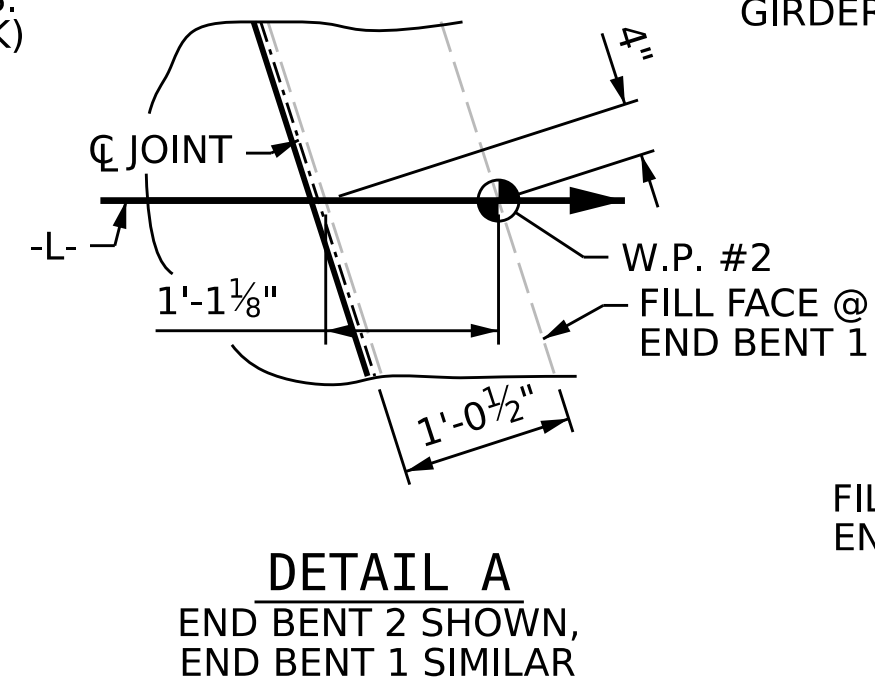


## NOTES

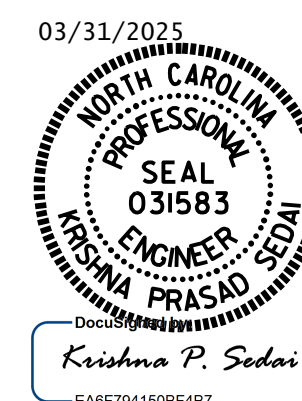
FOR CLOSURE POUR DETAILS, SEE "TYPICAL SECTION SHEET", SHEET 8 OF 32

FOR POUR SEQUENCE, SEE "BILL OF MATERIAL", SHEET 19 OF 32

FOR DETAIL OF INTERMEDIATE DIAPHRAGMS, SEE "PRESTRESS CONCRETE GIRDER", SHEET 14 OF 32



PROJECT NO. **BR-0015**  
**DAVIDSON** COUNTY  
 STATION: **29+45.91 -L-**



STATE OF NORTH CAROLINA  
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 RALEIGH

## PLAN OF SPANS

| REVISIONS |     |       |     |     |       | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|-----------|
| NO.       | BY: | DATE: | NO. | BY: | DATE: |           |
| 1         |     |       | 3   |     |       | S-09      |
| 2         |     |       | 4   |     |       |           |

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DRAWN BY: **S.A. HERNANDEZ** DATE: **05/2024**  
 CHECKED BY: **A. SORSENGINH** DATE: **05/2024**  
 DESIGN ENGINEER OF RECORD: **E. BAYISSA** DATE: **05/2024**

## PLAN OF SPAN





PROJECT NO. **BR-0015**  
**DAVIDSON** COUNTY  
 STATION: **29+45.91 -L-**

## FRAMING PLAN

|           |     |       |     |     |       |                        |
|-----------|-----|-------|-----|-----|-------|------------------------|
| REVISIONS |     |       |     |     |       | SHEET NO.<br>S-10      |
| NO.       | BY: | DATE: | NO. | BY: | DATE: |                        |
| 1         |     |       | 3   |     |       | TOTAL<br>SHEET'S<br>32 |
| 2         |     |       | 4   |     |       |                        |

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DRAWN BY : S.A. HERNANDEZ DATE : 05/2024  
 CHECKED BY : A. SORSENGINH DATE : 05/2024  
 DESIGN ENGINEER OF RECORD: E. BAYISSA DATE : 05/2024

3/31/2025  
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DEAD LOAD DEFLECTION TABLES FOR GIRDERS 1-7

| SPAN A                         |   |           |       |       |       |       |       |       |       |       |       |        |       |        |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
|--------------------------------|---|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| 0.6" Ø LOW RELAXATION          |   | GIRDER A1 |       |       |       |       |       |       |       |       |       |        |       |        |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
| 40TH POINTS                    |   | BRG.      | 0.025 | 0.050 | 0.075 | 0.100 | 0.125 | 0.150 | 0.175 | 0.200 | 0.225 | 0.250  | 0.275 | 0.300  | 0.325 | 0.350 | 0.375  | 0.400  | 0.425  | 0.450  | 0.475  | 0.500  | 0.525  | 0.550  | 0.575  | 0.600  | 0.625  | 0.650  | 0.675  | 0.700  | 0.725 | 0.750  | 0.775 | 0.800 | 0.825 | 0.850 | 0.875 | 0.900 | 0.925 | 0.950 | 0.975 | BRG.  |       |    |
| CAMBER (GIRDER ALONE IN PLACE) | ↑ | 0         | 0.019 | 0.038 | 0.056 | 0.074 | 0.091 | 0.108 | 0.125 | 0.140 | 0.154 | 0.168  | 0.180 | 0.191  | 0.202 | 0.210 | 0.218  | 0.224  | 0.229  | 0.233  | 0.235  | 0.235  | 0.235  | 0.233  | 0.229  | 0.224  | 0.218  | 0.210  | 0.202  | 0.191  | 0.180 | 0.168  | 0.154 | 0.140 | 0.125 | 0.108 | 0.091 | 0.074 | 0.056 | 0.038 | 0.019 | 0     |       |    |
| DEFLECTION DUE TO SDL*         | ↓ | 0         | 0.015 | 0.030 | 0.045 | 0.060 | 0.074 | 0.087 | 0.100 | 0.113 | 0.125 | 0.135  | 0.145 | 0.155  | 0.163 | 0.170 | 0.176  | 0.181  | 0.185  | 0.188  | 0.189  | 0.190  | 0.189  | 0.188  | 0.185  | 0.181  | 0.176  | 0.170  | 0.163  | 0.155  | 0.145 | 0.135  | 0.125 | 0.113 | 0.100 | 0.087 | 0.074 | 0.060 | 0.045 | 0.030 | 0.015 | 0     |       |    |
| FINAL CAMBER                   | ↑ | 0"        | 1/16" | 1/16" | 1/8"  | 3/16" | 3/16" | 1/4"  | 5/16" | 5/16" | 3/8"  | 3/8"   | 7/16" | 7/16"  | 7/16" | 1/2"  | 1/2"   | 1/2"   | 1/2"   | 9/16"  | 9/16"  | 9/16"  | 9/16"  | 9/16"  | 1/2"   | 1/2"   | 1/2"   | 1/2"   | 7/16"  | 7/16"  | 7/16" | 3/8"   | 3/8"  | 5/16" | 5/16" | 1/4"  | 3/16" | 3/16" | 1/8"  | 1/16" | 1/16" | 0"    |       |    |
| 0.6" Ø LOW RELAXATION          |   | GIRDER A2 |       |       |       |       |       |       |       |       |       |        |       |        |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
| 40TH POINTS                    |   | BRG.      | 0.025 | 0.050 | 0.075 | 0.100 | 0.125 | 0.150 | 0.175 | 0.200 | 0.225 | 0.250  | 0.275 | 0.300  | 0.325 | 0.350 | 0.375  | 0.400  | 0.425  | 0.450  | 0.475  | 0.500  | 0.525  | 0.550  | 0.575  | 0.600  | 0.625  | 0.650  | 0.675  | 0.700  | 0.725 | 0.750  | 0.775 | 0.800 | 0.825 | 0.850 | 0.875 | 0.900 | 0.925 | 0.950 | 0.975 | BRG.  |       |    |
| CAMBER (GIRDER ALONE IN PLACE) | ↑ | 0         | 0.019 | 0.037 | 0.056 | 0.074 | 0.091 | 0.108 | 0.124 | 0.139 | 0.153 | 0.167  | 0.179 | 0.190  | 0.200 | 0.209 | 0.217  | 0.223  | 0.228  | 0.231  | 0.233  | 0.234  | 0.233  | 0.231  | 0.228  | 0.223  | 0.217  | 0.209  | 0.200  | 0.190  | 0.179 | 0.167  | 0.153 | 0.139 | 0.124 | 0.108 | 0.091 | 0.074 | 0.056 | 0.037 | 0.019 | 0     |       |    |
| DEFLECTION DUE TO SDL*         | ↓ | 0         | 0.015 | 0.029 | 0.044 | 0.058 | 0.072 | 0.085 | 0.097 | 0.109 | 0.121 | 0.131  | 0.141 | 0.150  | 0.158 | 0.165 | 0.171  | 0.175  | 0.179  | 0.182  | 0.184  | 0.184  | 0.184  | 0.182  | 0.179  | 0.175  | 0.171  | 0.165  | 0.158  | 0.150  | 0.141 | 0.131  | 0.121 | 0.109 | 0.097 | 0.085 | 0.072 | 0.058 | 0.044 | 0.029 | 0.015 | 0     |       |    |
| FINAL CAMBER                   | ↑ | 0"        | 1/16" | 1/8"  | 1/8"  | 3/16" | 1/4"  | 1/4"  | 5/16" | 5/16" | 3/8"  | 3/8"   | 7/16" | 7/16"  | 1/2"  | 1/2"  | 9/16"  | 9/16"  | 9/16"  | 9/16"  | 9/16"  | 5/8"   | 5/8"   | 5/8"   | 9/16"  | 9/16"  | 9/16"  | 9/16"  | 9/16"  | 1/2"   | 1/2"  | 7/16"  | 7/16" | 3/8"  | 3/8"  | 5/16" | 1/4"  | 1/4"  | 3/16" | 1/8"  | 1/8"  | 1/16" | 0"    |    |
| 0.6" Ø LOW RELAXATION          |   | GIRDER A3 |       |       |       |       |       |       |       |       |       |        |       |        |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
| 40TH POINTS                    |   | BRG.      | 0.025 | 0.050 | 0.075 | 0.100 | 0.125 | 0.150 | 0.175 | 0.200 | 0.225 | 0.250  | 0.275 | 0.300  | 0.325 | 0.350 | 0.375  | 0.400  | 0.425  | 0.450  | 0.475  | 0.500  | 0.525  | 0.550  | 0.575  | 0.600  | 0.625  | 0.650  | 0.675  | 0.700  | 0.725 | 0.750  | 0.775 | 0.800 | 0.825 | 0.850 | 0.875 | 0.900 | 0.925 | 0.950 | 0.975 | BRG.  |       |    |
| CAMBER (GIRDER ALONE IN PLACE) | ↑ | 0         | 0.019 | 0.037 | 0.056 | 0.074 | 0.091 | 0.108 | 0.124 | 0.139 | 0.153 | 0.167  | 0.179 | 0.190  | 0.200 | 0.209 | 0.217  | 0.223  | 0.228  | 0.231  | 0.233  | 0.234  | 0.233  | 0.231  | 0.228  | 0.223  | 0.217  | 0.209  | 0.200  | 0.190  | 0.179 | 0.167  | 0.153 | 0.139 | 0.124 | 0.108 | 0.091 | 0.074 | 0.056 | 0.037 | 0.019 | 0     |       |    |
| DEFLECTION DUE TO SDL*         | ↓ | 0         | 0.014 | 0.029 | 0.043 | 0.057 | 0.070 | 0.083 | 0.096 | 0.107 | 0.118 | 0.129  | 0.138 | 0.147  | 0.155 | 0.161 | 0.167  | 0.172  | 0.176  | 0.178  | 0.180  | 0.181  | 0.180  | 0.178  | 0.176  | 0.172  | 0.167  | 0.161  | 0.155  | 0.147  | 0.138 | 0.129  | 0.118 | 0.107 | 0.096 | 0.083 | 0.070 | 0.057 | 0.043 | 0.029 | 0.014 | 0     |       |    |
| FINAL CAMBER                   | ↑ | 0"        | 1/16" | 1/8"  | 1/8"  | 3/16" | 1/4"  | 5/16" | 5/16" | 3/8"  | 7/16" | 7/16"  | 1/2"  | 1/2"   | 9/16" | 9/16" | 5/8"   | 5/8"   | 5/8"   | 5/8"   | 5/8"   | 5/8"   | 5/8"   | 5/8"   | 5/8"   | 5/8"   | 5/8"   | 5/8"   | 9/16"  | 9/16"  | 1/2"  | 1/2"   | 7/16" | 7/16" | 3/8"  | 5/16" | 5/16" | 1/4"  | 3/16" | 1/8"  | 1/8"  | 1/16" | 0"    |    |
| 0.6" Ø LOW RELAXATION          |   | GIRDER A4 |       |       |       |       |       |       |       |       |       |        |       |        |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
| 40TH POINTS                    |   | BRG.      | 0.025 | 0.050 | 0.075 | 0.100 | 0.125 | 0.150 | 0.175 | 0.200 | 0.225 | 0.250  | 0.275 | 0.300  | 0.325 | 0.350 | 0.375  | 0.400  | 0.425  | 0.450  | 0.475  | 0.500  | 0.525  | 0.550  | 0.575  | 0.600  | 0.625  | 0.650  | 0.675  | 0.700  | 0.725 | 0.750  | 0.775 | 0.800 | 0.825 | 0.850 | 0.875 | 0.900 | 0.925 | 0.950 | 0.975 | BRG.  |       |    |
| CAMBER (GIRDER ALONE IN PLACE) | ↑ | 0         | 0.019 | 0.037 | 0.056 | 0.074 | 0.091 | 0.108 | 0.124 | 0.139 | 0.153 | 0.167  | 0.179 | 0.190  | 0.200 | 0.209 | 0.217  | 0.223  | 0.228  | 0.231  | 0.233  | 0.234  | 0.233  | 0.231  | 0.228  | 0.223  | 0.217  | 0.209  | 0.200  | 0.190  | 0.179 | 0.167  | 0.153 | 0.139 | 0.124 | 0.108 | 0.091 | 0.074 | 0.056 | 0.037 | 0.019 | 0     |       |    |
| DEFLECTION DUE TO SDL*         | ↓ | 0         | 0.014 | 0.027 | 0.041 | 0.054 | 0.067 | 0.079 | 0.091 | 0.102 | 0.113 | 0.123  | 0.132 | 0.140  | 0.148 | 0.154 | 0.160  | 0.164  | 0.168  | 0.170  | 0.172  | 0.172  | 0.172  | 0.170  | 0.168  | 0.164  | 0.160  | 0.154  | 0.148  | 0.140  | 0.132 | 0.123  | 0.113 | 0.102 | 0.091 | 0.079 | 0.067 | 0.054 | 0.041 | 0.027 | 0.014 | 0     |       |    |
| FINAL CAMBER                   | ↑ | 0"        | 1/16" | 1/8"  | 3/16" | 1/4"  | 5/16" | 5/16" | 3/8"  | 7/16" | 7/16" | 1/2"   | 1/2"  | 9/16"  | 5/8"  | 5/8"  | 11/16" | 11/16" | 11/16" | 3/4"   | 3/4"   | 3/4"   | 3/4"   | 3/4"   | 3/4"   | 3/4"   | 11/16" | 11/16" | 11/16" | 5/8"   | 5/8"  | 9/16"  | 1/2"  | 1/2"  | 7/16" | 3/8"  | 5/16" | 5/16" | 1/4"  | 3/16" | 1/8"  | 1/16" | 0"    |    |
| 0.6" Ø LOW RELAXATION          |   | GIRDER A5 |       |       |       |       |       |       |       |       |       |        |       |        |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
| 40TH POINTS                    |   | BRG.      | 0.025 | 0.050 | 0.075 | 0.100 | 0.125 | 0.150 | 0.175 | 0.200 | 0.225 | 0.250  | 0.275 | 0.300  | 0.325 | 0.350 | 0.375  | 0.400  | 0.425  | 0.450  | 0.475  | 0.500  | 0.525  | 0.550  | 0.575  | 0.600  | 0.625  | 0.650  | 0.675  | 0.700  | 0.725 | 0.750  | 0.775 | 0.800 | 0.825 | 0.850 | 0.875 | 0.900 | 0.925 | 0.950 | 0.975 | BRG.  |       |    |
| CAMBER (GIRDER ALONE IN PLACE) | ↑ | 0         | 0.019 | 0.037 | 0.056 | 0.074 | 0.091 | 0.108 | 0.124 | 0.139 | 0.153 | 0.167  | 0.179 | 0.190  | 0.200 | 0.209 | 0.217  | 0.223  | 0.228  | 0.231  | 0.233  | 0.234  | 0.233  | 0.231  | 0.228  | 0.223  | 0.217  | 0.209  | 0.200  | 0.190  | 0.179 | 0.167  | 0.153 | 0.139 | 0.124 | 0.108 | 0.091 | 0.074 | 0.056 | 0.037 | 0.019 | 0     |       |    |
| DEFLECTION DUE TO SDL*         | ↓ | 0         | 0.014 | 0.028 | 0.042 | 0.055 | 0.068 | 0.081 | 0.093 | 0.104 | 0.115 | 0.125  | 0.134 | 0.143  | 0.150 | 0.157 | 0.162  | 0.167  | 0.171  | 0.173  | 0.175  | 0.175  | 0.175  | 0.173  | 0.171  | 0.167  | 0.162  | 0.157  | 0.150  | 0.143  | 0.134 | 0.125  | 0.115 | 0.104 | 0.093 | 0.081 | 0.068 | 0.055 | 0.042 | 0.028 | 0.014 | 0     |       |    |
| FINAL CAMBER                   | ↑ | 0"        | 1/16" | 1/8"  | 3/16" | 1/4"  | 1/4"  | 5/16" | 3/8"  | 7/16" | 7/16" | 1/2"   | 1/2"  | 9/16"  | 9/16" | 5/8"  | 5/8"   | 11/16" | 11/16" | 11/16" | 11/16" | 11/16" | 11/16" | 11/16" | 11/16" | 11/16" | 11/16" | 11/16" | 5/8"   | 5/8"   | 9/16" | 9/16"  | 1/2"  | 1/2"  | 7/16" | 7/16" | 3/8"  | 5/16" | 1/4"  | 1/4"  | 3/16" | 1/8"  | 1/16" | 0" |
| 0.6" Ø LOW RELAXATION          |   | GIRDER A6 |       |       |       |       |       |       |       |       |       |        |       |        |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
| 40TH POINTS                    |   | BRG.      | 0.025 | 0.050 | 0.075 | 0.100 | 0.125 | 0.150 | 0.175 | 0.200 | 0.225 | 0.250  | 0.275 | 0.300  | 0.325 | 0.350 | 0.375  | 0.400  | 0.425  | 0.450  | 0.475  | 0.500  | 0.525  | 0.550  | 0.575  | 0.600  | 0.625  | 0.650  | 0.675  | 0.700  | 0.725 | 0.750  | 0.775 | 0.800 | 0.825 | 0.850 | 0.875 | 0.900 | 0.925 | 0.950 | 0.975 | BRG.  |       |    |
| CAMBER (GIRDER ALONE IN PLACE) | ↑ | 0         | 0.019 | 0.037 | 0.056 | 0.074 | 0.091 | 0.108 | 0.124 | 0.139 | 0.153 | 0.167  | 0.179 | 0.190  | 0.200 | 0.209 | 0.217  | 0.223  | 0.228  | 0.231  | 0.233  | 0.234  | 0.233  | 0.231  | 0.228  | 0.223  | 0.217  | 0.209  | 0.200  | 0.190  | 0.179 | 0.167  | 0.153 | 0.139 | 0.124 | 0.108 | 0.091 | 0.074 | 0.056 | 0.037 | 0.019 | 0     |       |    |
| DEFLECTION DUE TO SDL*         | ↓ | 0         | 0.014 | 0.024 | 0.036 | 0.047 | 0.059 | 0.069 | 0.080 | 0.090 | 0.099 | 0.107  | 0.115 | 0.123  | 0.129 | 0.135 | 0.140  | 0.144  | 0.147  | 0.149  | 0.150  | 0.151  | 0.150  | 0.149  | 0.147  | 0.144  | 0.140  | 0.135  | 0.129  | 0.123  | 0.115 | 0.107  | 0.099 | 0.090 | 0.080 | 0.069 | 0.059 | 0.047 | 0.036 | 0.024 | 0.012 | 0     |       |    |
| FINAL CAMBER                   | ↑ | 0"        | 1/16" | 3/16" | 1/4"  | 5/16" | 3/8"  | 7/16" | 1/2"  | 5/8"  | 5/8"  | 11/16" | 3/4"  | 13/16" | 7/8"  | 7/8"  | 15/16" | 15/16" | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 15/16" | 15/16" | 7/8"   | 7/8"   | 13/16" | 3/4"  | 11/16" | 5/8"  | 5/8"  | 1/2"  | 7/16" | 3/8"  | 5/16" | 1/4"  | 3/16" | 1/16" | 0"    |       |    |
| 0.6" Ø LOW RELAXATION          |   | GIRDER A7 |       |       |       |       |       |       |       |       |       |        |       |        |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
| 40TH POINTS                    |   | BRG.      | 0.025 | 0.050 | 0.075 | 0.100 | 0.125 | 0.150 | 0.175 | 0.200 | 0.225 | 0.250  | 0.275 | 0.300  | 0.325 | 0.350 | 0.375  | 0.400  | 0.425  | 0.450  | 0.475  | 0.500  | 0.525  | 0.550  | 0.575  | 0.600  | 0.625  | 0.650  | 0.675  | 0.700  | 0.725 | 0.750  | 0.775 | 0.800 | 0.825 | 0.850 | 0.875 | 0.900 | 0.925 | 0.950 | 0.975 | BRG.  |       |    |
| CAMBER (GIRDER ALONE IN PLACE) | ↑ | 0         | 0.019 | 0.037 | 0.056 | 0.074 | 0.091 | 0.108 | 0.124 | 0.139 | 0.153 | 0.167  | 0.179 | 0.190  | 0.200 | 0.209 | 0.217  | 0.223  | 0.228  | 0.231  | 0.233  | 0.234  | 0.233  | 0.231  | 0.228  | 0.223  | 0.217  | 0.209  | 0.200  | 0.190  | 0.179 | 0.167  | 0.153 | 0.139 | 0.124 | 0.108 | 0.091 | 0.074 | 0.056 | 0.037 | 0.019 | 0     |       |    |
| DEFLECTION DUE TO SDL*         | ↓ | 0         | 0.012 | 0.024 | 0.036 | 0.047 | 0.059 | 0.069 | 0.080 | 0.090 | 0.099 | 0.107  | 0.115 | 0.123  | 0.129 | 0.135 | 0.140  | 0.144  | 0.147  | 0.149  | 0.150  |        |        |        |        |        |        |        |        |        |       |        |       |       |       |       |       |       |       |       |       |       |       |    |



## DEAD LOAD DEFLECTION TABLES FOR GIRDERS 8-14

|                                |   | SPAN A     |       |       |       |       |       |       |       |       |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       |       |        |        |       |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
|--------------------------------|---|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|--------|--------|-------|-------|--------|--------|--------|--------|--------|--------|-------|-------|--------|--------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| 0.6" Ø LOW RELAXATION          |   | GIRDER A8  |       |       |       |       |       |       |       |       |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       |       |        |        |       |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
| 40TH POINTS                    |   | BRG.       | 0.025 | 0.050 | 0.075 | 0.100 | 0.125 | 0.150 | 0.175 | 0.200 | 0.225 | 0.250 | 0.275  | 0.300 | 0.325 | 0.350  | 0.375  | 0.400 | 0.425 | 0.450  | 0.475  | 0.500  | 0.525  | 0.550  | 0.575  | 0.600 | 0.625 | 0.650  | 0.675  | 0.700 | 0.725 | 0.750  | 0.775 | 0.800 | 0.825 | 0.850 | 0.875 | 0.900 | 0.925 | 0.950 | 0.975 | BRG.  |       |    |
| CAMBER (GIRDER ALONE IN PLACE) | ↑ | 0          | 0.019 | 0.037 | 0.056 | 0.074 | 0.091 | 0.108 | 0.124 | 0.139 | 0.153 | 0.167 | 0.179  | 0.190 | 0.200 | 0.209  | 0.217  | 0.223 | 0.228 | 0.231  | 0.233  | 0.234  | 0.233  | 0.231  | 0.228  | 0.223 | 0.217 | 0.209  | 0.200  | 0.190 | 0.179 | 0.167  | 0.153 | 0.139 | 0.124 | 0.108 | 0.091 | 0.074 | 0.056 | 0.037 | 0.019 | 0     |       |    |
| DEFLECTION DUE TO SDL*         | ↓ | 0          | 0.013 | 0.025 | 0.038 | 0.050 | 0.062 | 0.073 | 0.084 | 0.095 | 0.104 | 0.114 | 0.122  | 0.130 | 0.136 | 0.142  | 0.148  | 0.152 | 0.155 | 0.157  | 0.159  | 0.159  | 0.159  | 0.157  | 0.155  | 0.152 | 0.148 | 0.142  | 0.136  | 0.130 | 0.122 | 0.114  | 0.104 | 0.095 | 0.084 | 0.073 | 0.062 | 0.050 | 0.038 | 0.025 | 0.013 | 0     |       |    |
| FINAL CAMBER                   | ↑ | 0"         | 1/16" | 1/8"  | 3/16" | 5/16" | 3/8"  | 7/16" | 1/2"  | 9/16" | 9/16" | 5/8"  | 11/16" | 3/4"  | 3/4"  | 13/16" | 13/16" | 7/8"  | 7/8"  | 7/8"   | 7/8"   | 7/8"   | 7/8"   | 7/8"   | 7/8"   | 7/8"  | 7/8"  | 13/16" | 13/16" | 3/4"  | 3/4"  | 11/16" | 5/8"  | 9/16" | 1/2"  | 7/16" | 3/8"  | 5/16" | 3/16" | 1/8"  | 1/16" | 0"    |       |    |
|                                |   |            |       |       |       |       |       |       |       |       |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       |       |        |        |       |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
| 0.6" Ø LOW RELAXATION          |   | GIRDER A9  |       |       |       |       |       |       |       |       |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       |       |        |        |       |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
| 40TH POINTS                    |   | BRG.       | 0.025 | 0.050 | 0.075 | 0.100 | 0.125 | 0.150 | 0.175 | 0.200 | 0.225 | 0.250 | 0.275  | 0.300 | 0.325 | 0.350  | 0.375  | 0.400 | 0.425 | 0.450  | 0.475  | 0.500  | 0.525  | 0.550  | 0.575  | 0.600 | 0.625 | 0.650  | 0.675  | 0.700 | 0.725 | 0.750  | 0.775 | 0.800 | 0.825 | 0.850 | 0.875 | 0.900 | 0.925 | 0.950 | 0.975 | BRG.  |       |    |
| CAMBER (GIRDER ALONE IN PLACE) | ↑ | 0          | 0.019 | 0.037 | 0.056 | 0.074 | 0.091 | 0.108 | 0.124 | 0.139 | 0.153 | 0.167 | 0.179  | 0.190 | 0.200 | 0.209  | 0.217  | 0.223 | 0.228 | 0.231  | 0.233  | 0.234  | 0.233  | 0.231  | 0.228  | 0.223 | 0.217 | 0.209  | 0.200  | 0.190 | 0.179 | 0.167  | 0.153 | 0.139 | 0.124 | 0.108 | 0.091 | 0.074 | 0.056 | 0.037 | 0.019 | 0     |       |    |
| DEFLECTION DUE TO SDL*         | ↓ | 0          | 0.015 | 0.029 | 0.044 | 0.058 | 0.071 | 0.084 | 0.097 | 0.109 | 0.120 | 0.131 | 0.140  | 0.149 | 0.157 | 0.164  | 0.170  | 0.175 | 0.178 | 0.181  | 0.183  | 0.183  | 0.183  | 0.181  | 0.178  | 0.175 | 0.170 | 0.164  | 0.157  | 0.149 | 0.140 | 0.131  | 0.120 | 0.109 | 0.097 | 0.084 | 0.071 | 0.058 | 0.044 | 0.029 | 0.015 | 0     |       |    |
| FINAL CAMBER                   | ↑ | 0"         | 1/16" | 1/8"  | 1/8"  | 3/16" | 1/4"  | 1/4"  | 5/16" | 3/8"  | 3/8"  | 7/16" | 7/16"  | 1/2"  | 1/2"  | 9/16"  | 9/16"  | 9/16" | 5/8"  | 5/8"   | 5/8"   | 5/8"   | 5/8"   | 5/8"   | 5/8"   | 5/8"  | 9/16" | 9/16"  | 9/16"  | 1/2"  | 1/2"  | 7/16"  | 7/16" | 3/8"  | 3/8"  | 5/16" | 1/4"  | 1/4"  | 3/16" | 1/8"  | 1/8"  | 1/16" | 0"    |    |
|                                |   |            |       |       |       |       |       |       |       |       |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       |       |        |        |       |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
| 0.6" Ø LOW RELAXATION          |   | GIRDER A10 |       |       |       |       |       |       |       |       |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       |       |        |        |       |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
| 40TH POINTS                    |   | BRG.       | 0.025 | 0.050 | 0.075 | 0.100 | 0.125 | 0.150 | 0.175 | 0.200 | 0.225 | 0.250 | 0.275  | 0.300 | 0.325 | 0.350  | 0.375  | 0.400 | 0.425 | 0.450  | 0.475  | 0.500  | 0.525  | 0.550  | 0.575  | 0.600 | 0.625 | 0.650  | 0.675  | 0.700 | 0.725 | 0.750  | 0.775 | 0.800 | 0.825 | 0.850 | 0.875 | 0.900 | 0.925 | 0.950 | 0.975 | BRG.  |       |    |
| CAMBER (GIRDER ALONE IN PLACE) | ↑ | 0          | 0.019 | 0.037 | 0.056 | 0.074 | 0.091 | 0.108 | 0.124 | 0.139 | 0.153 | 0.167 | 0.179  | 0.190 | 0.200 | 0.209  | 0.217  | 0.223 | 0.228 | 0.231  | 0.233  | 0.234  | 0.233  | 0.231  | 0.228  | 0.223 | 0.217 | 0.209  | 0.200  | 0.190 | 0.179 | 0.167  | 0.153 | 0.139 | 0.124 | 0.108 | 0.091 | 0.074 | 0.056 | 0.037 | 0.019 | 0     |       |    |
| DEFLECTION DUE TO SDL*         | ↓ | 0          | 0.015 | 0.029 | 0.043 | 0.057 | 0.071 | 0.084 | 0.096 | 0.108 | 0.119 | 0.130 | 0.139  | 0.148 | 0.156 | 0.163  | 0.168  | 0.173 | 0.177 | 0.180  | 0.181  | 0.182  | 0.181  | 0.180  | 0.177  | 0.173 | 0.168 | 0.163  | 0.156  | 0.148 | 0.139 | 0.130  | 0.119 | 0.108 | 0.096 | 0.084 | 0.071 | 0.057 | 0.043 | 0.029 | 0.015 | 0     |       |    |
| FINAL CAMBER                   | ↑ | 0"         | 1/16" | 1/8"  | 1/8"  | 3/16" | 1/4"  | 5/16" | 5/16" | 3/8"  | 7/16" | 7/16" | 1/2"   | 1/2"  | 9/16" | 9/16"  | 9/16"  | 5/8"  | 5/8"  | 5/8"   | 5/8"   | 5/8"   | 5/8"   | 5/8"   | 5/8"   | 5/8"  | 9/16" | 9/16"  | 9/16"  | 1/2"  | 1/2"  | 7/16"  | 7/16" | 3/8"  | 5/16" | 5/16" | 1/4"  | 3/16" | 1/8"  | 1/8"  | 1/16" | 0"    |       |    |
|                                |   |            |       |       |       |       |       |       |       |       |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       |       |        |        |       |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
| 0.6" Ø LOW RELAXATION          |   | GIRDER A11 |       |       |       |       |       |       |       |       |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       |       |        |        |       |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
| 40TH POINTS                    |   | BRG.       | 0.025 | 0.050 | 0.075 | 0.100 | 0.125 | 0.150 | 0.175 | 0.200 | 0.225 | 0.250 | 0.275  | 0.300 | 0.325 | 0.350  | 0.375  | 0.400 | 0.425 | 0.450  | 0.475  | 0.500  | 0.525  | 0.550  | 0.575  | 0.600 | 0.625 | 0.650  | 0.675  | 0.700 | 0.725 | 0.750  | 0.775 | 0.800 | 0.825 | 0.850 | 0.875 | 0.900 | 0.925 | 0.950 | 0.975 | BRG.  |       |    |
| CAMBER (GIRDER ALONE IN PLACE) | ↑ | 0          | 0.019 | 0.037 | 0.056 | 0.074 | 0.091 | 0.108 | 0.124 | 0.139 | 0.153 | 0.167 | 0.179  | 0.190 | 0.200 | 0.209  | 0.217  | 0.223 | 0.228 | 0.231  | 0.233  | 0.234  | 0.233  | 0.231  | 0.228  | 0.223 | 0.217 | 0.209  | 0.200  | 0.190 | 0.179 | 0.167  | 0.153 | 0.139 | 0.124 | 0.108 | 0.091 | 0.074 | 0.056 | 0.037 | 0.019 | 0     |       |    |
| DEFLECTION DUE TO SDL*         | ↓ | 0          | 0.014 | 0.028 | 0.042 | 0.056 | 0.069 | 0.082 | 0.094 | 0.106 | 0.117 | 0.127 | 0.136  | 0.145 | 0.153 | 0.159  | 0.165  | 0.170 | 0.174 | 0.176  | 0.178  | 0.178  | 0.178  | 0.176  | 0.174  | 0.170 | 0.165 | 0.159  | 0.153  | 0.145 | 0.136 | 0.127  | 0.117 | 0.106 | 0.094 | 0.082 | 0.069 | 0.056 | 0.042 | 0.028 | 0.014 | 0     |       |    |
| FINAL CAMBER                   | ↑ | 0"         | 1/16" | 1/8"  | 3/16" | 3/16" | 1/4"  | 5/16" | 3/8"  | 3/8"  | 7/16" | 1/2"  | 1/2"   | 9/16" | 9/16" | 5/8"   | 5/8"   | 5/8"  | 5/8"  | 11/16" | 11/16" | 11/16" | 11/16" | 11/16" | 11/16" | 5/8"  | 5/8"  | 5/8"   | 5/8"   | 9/16" | 9/16" | 1/2"   | 1/2"  | 7/16" | 3/8"  | 3/8"  | 5/16" | 1/4"  | 3/16" | 3/16" | 1/8"  | 1/16" | 1/16" | 0" |
|                                |   |            |       |       |       |       |       |       |       |       |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       |       |        |        |       |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
| 0.6" Ø LOW RELAXATION          |   | GIRDER A12 |       |       |       |       |       |       |       |       |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       |       |        |        |       |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
| 40TH POINTS                    |   | BRG.       | 0.025 | 0.050 | 0.075 | 0.100 | 0.125 | 0.150 | 0.175 | 0.200 | 0.225 | 0.250 | 0.275  | 0.300 | 0.325 | 0.350  | 0.375  | 0.400 | 0.425 | 0.450  | 0.475  | 0.500  | 0.525  | 0.550  | 0.575  | 0.600 | 0.625 | 0.650  | 0.675  | 0.700 | 0.725 | 0.750  | 0.775 | 0.800 | 0.825 | 0.850 | 0.875 | 0.900 | 0.925 | 0.950 | 0.975 | BRG.  |       |    |
| CAMBER (GIRDER ALONE IN PLACE) | ↑ | 0          | 0.019 | 0.037 | 0.056 | 0.074 | 0.091 | 0.108 | 0.124 | 0.139 | 0.153 | 0.167 | 0.179  | 0.190 | 0.200 | 0.209  | 0.217  | 0.223 | 0.228 | 0.231  | 0.233  | 0.234  | 0.233  | 0.231  | 0.228  | 0.223 | 0.217 | 0.209  | 0.200  | 0.190 | 0.179 | 0.167  | 0.153 | 0.139 | 0.124 | 0.108 | 0.091 | 0.074 | 0.056 | 0.037 | 0.019 | 0     |       |    |
| DEFLECTION DUE TO SDL*         | ↓ | 0          | 0.015 | 0.030 | 0.044 | 0.059 | 0.072 | 0.086 | 0.099 | 0.111 | 0.122 | 0.133 | 0.143  | 0.152 | 0.160 | 0.167  | 0.173  | 0.178 | 0.181 | 0.184  | 0.186  | 0.186  | 0.186  | 0.184  | 0.181  | 0.178 | 0.173 | 0.167  | 0.160  | 0.152 | 0.143 | 0.133  | 0.122 | 0.111 | 0.099 | 0.086 | 0.072 | 0.059 | 0.044 | 0.030 | 0.015 | 0     |       |    |
| FINAL CAMBER                   | ↑ | 0"         | 1/16" | 1/16" | 1/8"  | 3/16" | 1/4"  | 1/4"  | 5/16" | 5/16" | 3/8"  | 7/16" | 7/16"  | 7/16" | 1/2"  | 1/2"   | 1/2"   | 9/16" | 9/16" | 9/16"  | 9/16"  | 9/16"  | 9/16"  | 9/16"  | 9/16"  | 9/16" | 1/2"  | 1/2"   | 1/2"   | 7/16" | 7/16" | 7/16"  | 3/8"  | 5/16" | 5/16" | 1/4"  | 1/4"  | 3/16" | 1/8"  | 1/16" | 1/16" | 0"    |       |    |
|                                |   |            |       |       |       |       |       |       |       |       |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       |       |        |        |       |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
| 0.6" Ø LOW RELAXATION          |   | GIRDER A13 |       |       |       |       |       |       |       |       |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       |       |        |        |       |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
| 40TH POINTS                    |   | BRG.       | 0.025 | 0.050 | 0.075 | 0.100 | 0.125 | 0.150 | 0.175 | 0.200 | 0.225 | 0.250 | 0.275  | 0.300 | 0.325 | 0.350  | 0.375  | 0.400 | 0.425 | 0.450  | 0.475  | 0.500  | 0.525  | 0.550  | 0.575  | 0.600 | 0.625 | 0.650  | 0.675  | 0.700 | 0.725 | 0.750  | 0.775 | 0.800 | 0.825 | 0.850 | 0.875 | 0.900 | 0.925 | 0.950 | 0.975 | BRG.  |       |    |
| CAMBER (GIRDER ALONE IN PLACE) | ↑ | 0          | 0.019 | 0.037 | 0.056 | 0.074 | 0.091 | 0.108 | 0.124 | 0.139 | 0.153 | 0.167 | 0.179  | 0.190 | 0.200 | 0.209  | 0.217  | 0.223 | 0.228 | 0.231  | 0.233  | 0.234  | 0.233  | 0.231  | 0.228  | 0.223 | 0.217 | 0.209  | 0.200  | 0.190 | 0.179 | 0.167  | 0.153 | 0.139 | 0.124 | 0.108 | 0.091 | 0.074 | 0.056 | 0.037 | 0.019 | 0     |       |    |
| DEFLECTION DUE TO SDL*         | ↓ | 0          | 0.015 | 0.030 | 0.045 | 0.060 | 0.074 | 0.087 | 0.101 | 0.113 | 0.125 | 0.135 | 0.145  | 0.155 | 0.163 | 0.170  | 0.176  | 0.181 | 0.185 | 0.188  | 0.190  | 0.190  | 0.190  | 0.188  | 0.185  | 0.181 | 0.176 | 0.170  | 0.163  | 0.155 | 0.145 | 0.135  | 0.125 | 0.113 | 0.101 | 0.087 | 0.074 | 0.060 | 0.045 | 0.030 | 0.015 | 0     |       |    |
| FINAL CAMBER                   | ↑ | 0"         | 1/16" | 1/16" | 1/8"  | 3/16" | 3/16" | 1/4"  | 1/4"  | 5/16" | 3/8"  | 3/8"  | 3/8"   | 7/16" | 7/16" | 1/2"   | 1/2"   | 1/2"  | 1/2"  | 1/2"   | 1/2"   | 1/2"   | 1/2"   | 1/2"   | 1/2"   | 1/2"  | 1/2"  | 1/2"   | 1/2"   | 1/2"  | 7/16" | 7/16"  | 3/8"  | 3/8"  | 3/8"  | 5/16" | 1/4"  | 1/4"  | 3/16" | 3/16" | 1/8"  | 1/16" | 1/16" | 0" |
|                                |   |            |       |       |       |       |       |       |       |       |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       |       |        |        |       |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
| 0.6" Ø LOW RELAXATION          |   | GIRDER A14 |       |       |       |       |       |       |       |       |       |       |        |       |       |        |        |       |       |        |        |        |        |        |        |       |       |        |        |       |       |        |       |       |       |       |       |       |       |       |       |       |       |    |
| 40TH POINTS                    |   | BRG.       | 0.025 | 0.050 | 0.075 | 0.100 | 0.125 | 0.150 | 0.175 | 0.200 | 0.225 | 0.250 | 0.275  | 0.300 | 0.325 | 0.350  | 0.375  | 0.400 | 0.425 | 0.450  | 0.475  | 0.500  | 0.525  | 0.550  | 0.575  | 0.600 | 0.625 | 0.650  | 0.675  | 0.700 | 0.725 | 0.750  | 0.775 | 0.800 | 0.825 | 0.850 | 0.875 | 0.900 | 0.925 | 0.950 | 0.975 | BRG.  |       |    |
| CAMBER (GIRDER ALONE IN PLACE) | ↑ | 0          | 0.019 | 0.038 | 0.056 | 0.074 | 0.091 | 0.108 | 0.125 | 0.140 | 0.154 | 0.168 | 0.180  | 0.191 | 0.202 | 0.210  | 0.218  | 0.224 | 0.229 | 0.233  | 0.235  | 0.235  | 0.235  | 0.233  | 0.229  | 0.224 | 0.218 | 0.210  | 0.202  | 0.191 | 0.180 | 0.168  | 0.154 | 0.140 | 0.125 | 0.108 | 0.091 | 0.074 | 0.056 | 0.038 | 0.019 | 0     |       |    |
| DEFLECTION DUE TO SDL*         | ↓ | 0          | 0.015 | 0.031 | 0.046 | 0.060 | 0.075 | 0.089 | 0.102 | 0.114 | 0.126 | 0.137 | 0.147  | 0.157 | 0.165 | 0.172  | 0.178  | 0.183 | 0.187 | 0.190  | 0.192  | 0.193  | 0.192  | 0.190  | 0.187  | 0.183 | 0.178 | 0.172  | 0.165  | 0.157 | 0.147 | 0.137  | 0.126 | 0.114 | 0.102 | 0.089 | 0.075 | 0.060 | 0.046 | 0.031 | 0.015 | 0     |       |    |
| FINAL CAMBER                   | ↑ | 0"         | 1/16" | 1/16" | 1/8"  | 3/16" | 3/16" | 1/4"  | 1/4"  | 5/16" | 5/16" | 3/8"  | 3/8"   | 7/16" | 7/16" | 7/16"  | 1/2"   | 1/2"  | 1/2"  | 1/2"   | 1/2"   | 1/2"   | 1/2"   | 1/2"   | 1/2"   | 1/2"  | 1/2"  | 1/2"   | 1/2"   | 7/16" | 7/16" | 7/16"  | 3/8"  | 3/8"  | 5/16" | 5/16" | 1/4"  | 1/4"  | 3/16" | 3/16" | 1/8"  | 1/16" | 1/16" | 0" |

\* INCLUDES FUTURE WEARING SURFACE.

ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER" WHICH IS SHOWN IN INCHES (FRACTION FORM).

PROJECT NO. BR-0015

DAVIDSON COUNTY

STATION: 29+45.91 -L-

**SHEET 3 OF 3**

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

## STANDARD

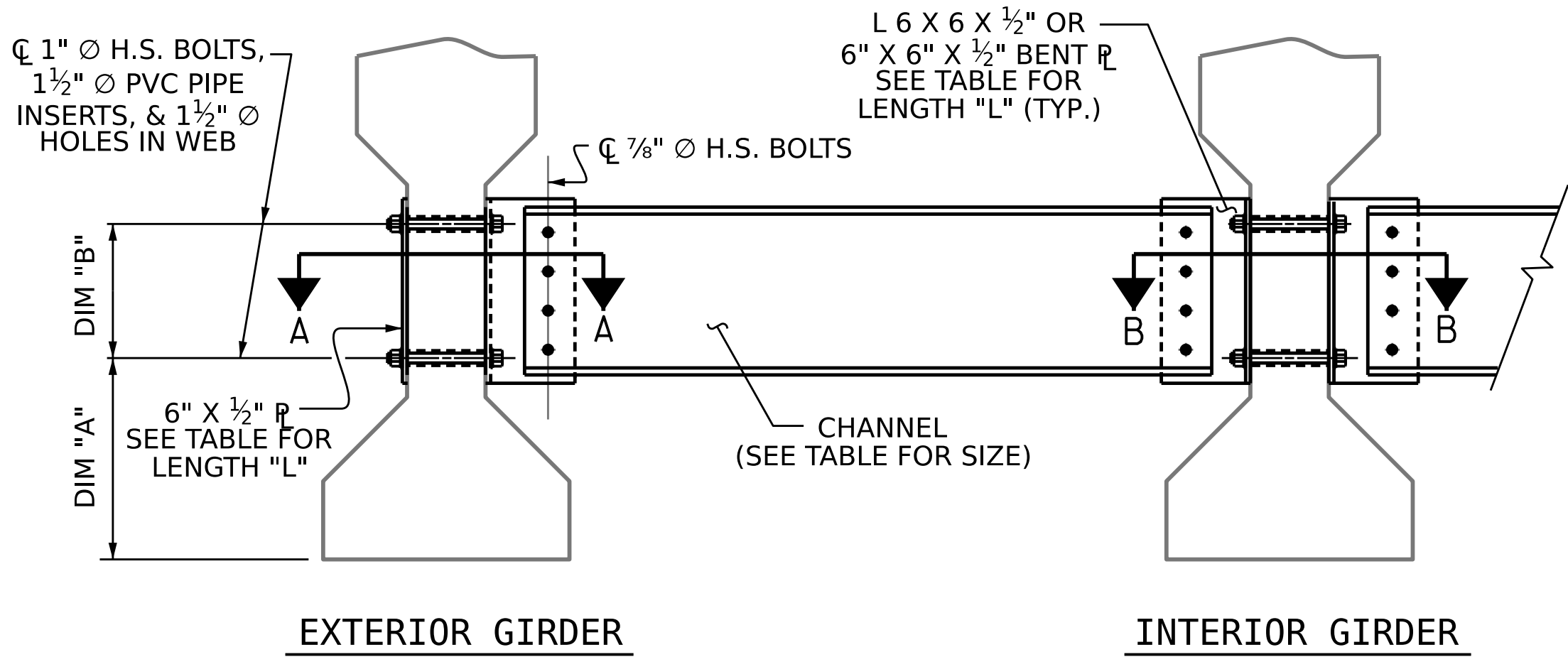
# SUPERSTRUCTURE DEAD LOAD DEFLECTIONS

| REVISIONS |     |       |     |     |       | SHEET NO.    |
|-----------|-----|-------|-----|-----|-------|--------------|
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| 1         |     |       | 3   |     |       | TOTAL SHEETS |
| 2         |     |       | 4   |     |       | 32           |

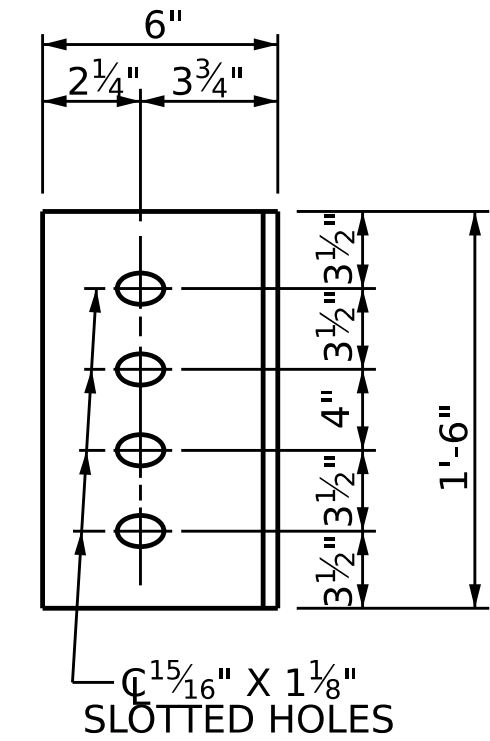
DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

DRAWN BY : S.A. HERNANDEZ DATE : 06/2024  
 CHECKED BY : A. SORSENGINH DATE : 06/2024  
 DESIGN ENGINEER OF RECORD: E. BAYISSA DATE : 06/2024

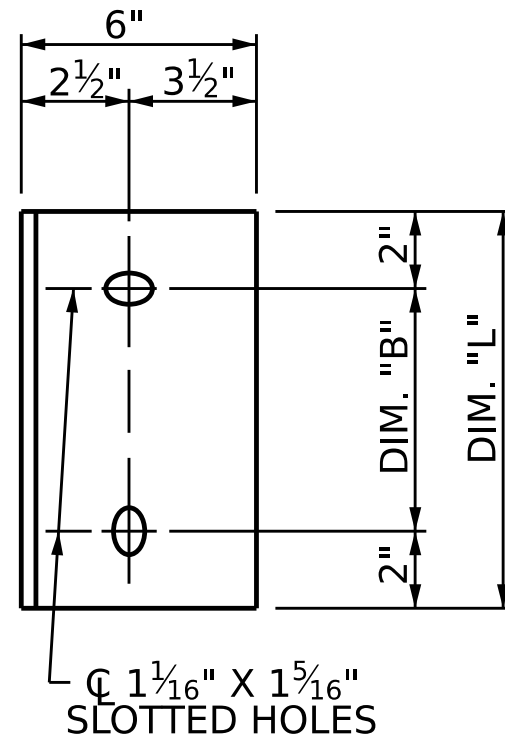




**PART SECTION AT INTERMEDIATE DIAPHRAGM**  
(TYPE IV GIRDER)

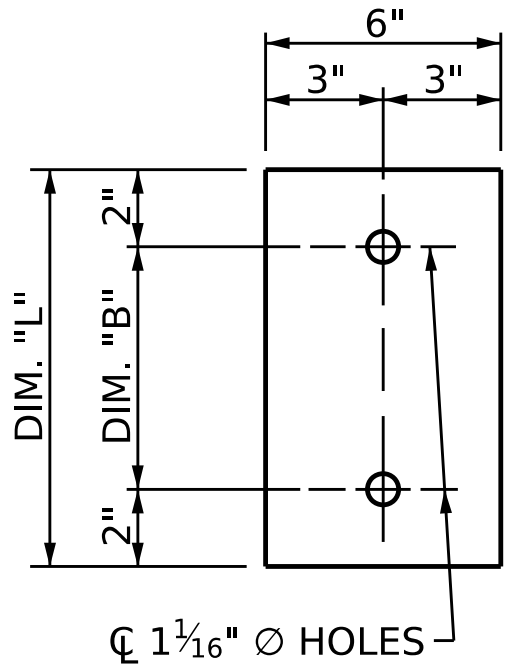


**DIAPHRAGM FACE**  
(TYPE IV GIRDER)

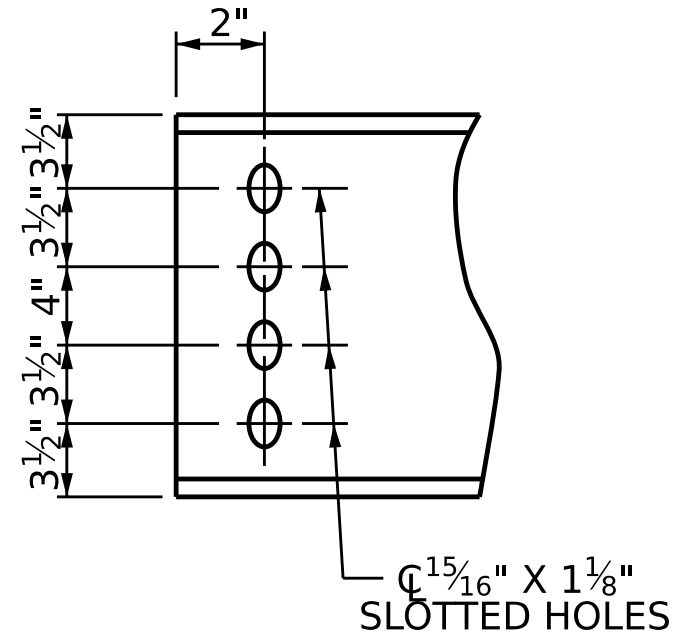


**WEB FACE**

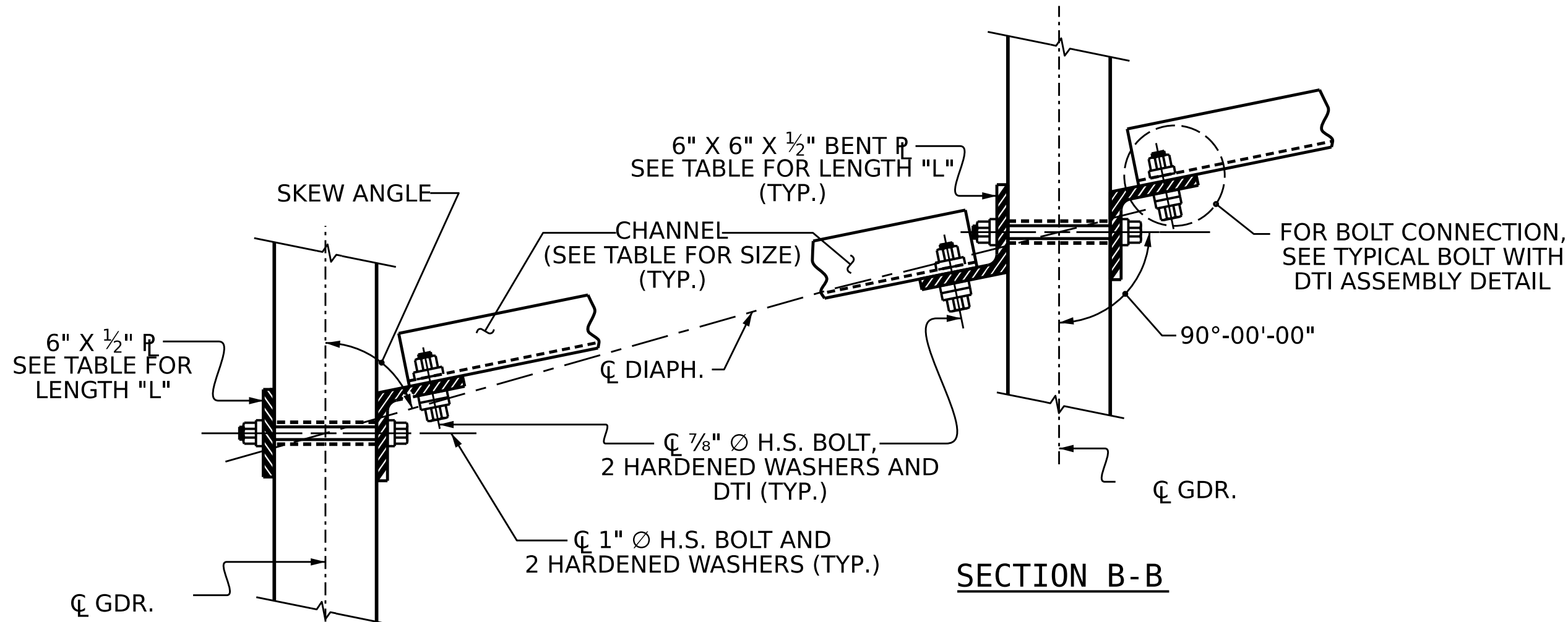
**CONNECTOR PLATE DETAILS**



**PLATE DETAILS**



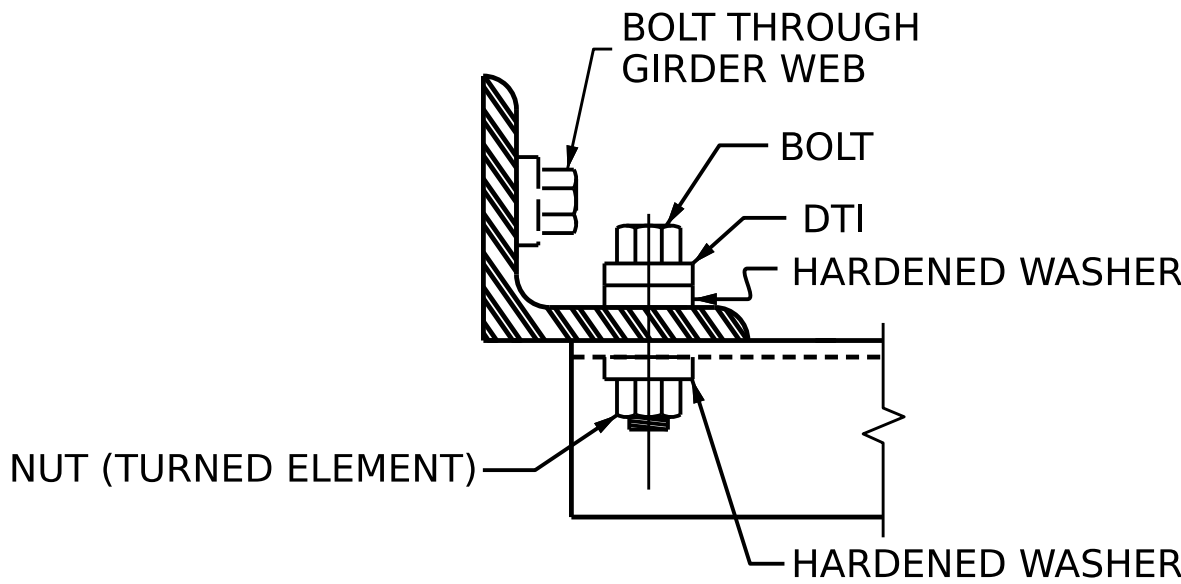
**CHANNEL END**  
(TYPE IV GIRDER)



**SECTION A-A**

**CONNECTION DETAILS**

(90° < SKEW ≤ 110° SHOWN  
70° ≤ SKEW < 90° SIM.)



**BOLT WITH DTI ASSEMBLY DETAIL**

**STRUCTURAL STEEL NOTES**

ALL INTERMEDIATE DIAPHRAGM STEEL AND CONNECTOR PLATES SHALL BE AASHTO M270 GRADE 50 OR APPROVED EQUAL.

TENSION ON THE ASTM A325 BOLTS THROUGH THE CHANNEL MEMBER SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

TENSION ON THE ASTM A449 BOLTS THROUGH THE GIRDER WEB SHALL BE SNUG TIGHTENED FOLLOWED BY AN ADDITIONAL 1/4 TURN.

THE PLATES, BENT PLATES, CHANNELS, AND ANGLES SHALL BE GALVANIZED OR METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

FOR METALLIZATION, APPLY A THERMAL SPRAYED COATING WITH A SEAL COAT TO ALL STEEL DIAPHRAGM SURFACES IN ACCORDANCE WITH THE DEPARTMENT'S THERMAL SPRAYED COATINGS (METALLIZATION) PROGRAM, THERMAL SPRAYED COATINGS SPECIAL PROVISION AND SECTION 442 OF THE STANDARD SPECIFICATIONS.

GALVANIZE THE HIGH STRENGTH BOLTS, NUTS, WASHERS AND DIRECT TENSION INDICATORS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

USE AN ASTM F436 HARDENED WASHER WITH STANDARD AND SLOTTED HOLES UNDER EACH BOLT HEAD AND NUT.

FOR BOLTS THROUGH THE GIRDER WEB, PROVIDE SUFFICIENT LENGTH OF THREADS ON ALL BOLTS TO ACCOMMODATE WASHERS AND THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST 1/4" PROJECTION BEYOND THE NUT.

INTERMEDIATE DIAPHRAGM ASSEMBLY SHALL COMPLY WITH SECTION 1072 OF THE STANDARD SPECIFICATIONS.

SUBMIT TWO SETS OF WORKING DRAWINGS FOR THE INTERMEDIATE DIAPHRAGM ASSEMBLY FOR REVIEW, COMMENTS AND ACCEPTANCE. AFTER REVIEW, COMMENTS, AND ACCEPTANCE, SUBMIT SEVEN SETS FOR DISTRIBUTION.

IN THE EXTERIOR BAYS, PLACE TEMPORARY STRUTS BETWEEN PRESTRESSED GIRDERS ADJACENT TO THE STEEL DIAPHRAGMS. STRUTS SHALL REMAIN IN PLACE 3 DAYS AFTER CONCRETE IS PLACED.

THE COST OF THE STEEL DIAPHRAGMS AND ASSEMBLIES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE GIRDERS.

**TABLE**

| GIRDER TYPE | CHANNEL SIZE | DIM "A"   | DIM "B" | DIM "L" |
|-------------|--------------|-----------|---------|---------|
| IV          | MC 18 x 42.7 | 1'-9 1/2" | 1'-2"   | 1'-6"   |

PROJECT NO. **BR-0015**  
**DAVIDSON** COUNTY  
STATION: **29+45.91 -L-**

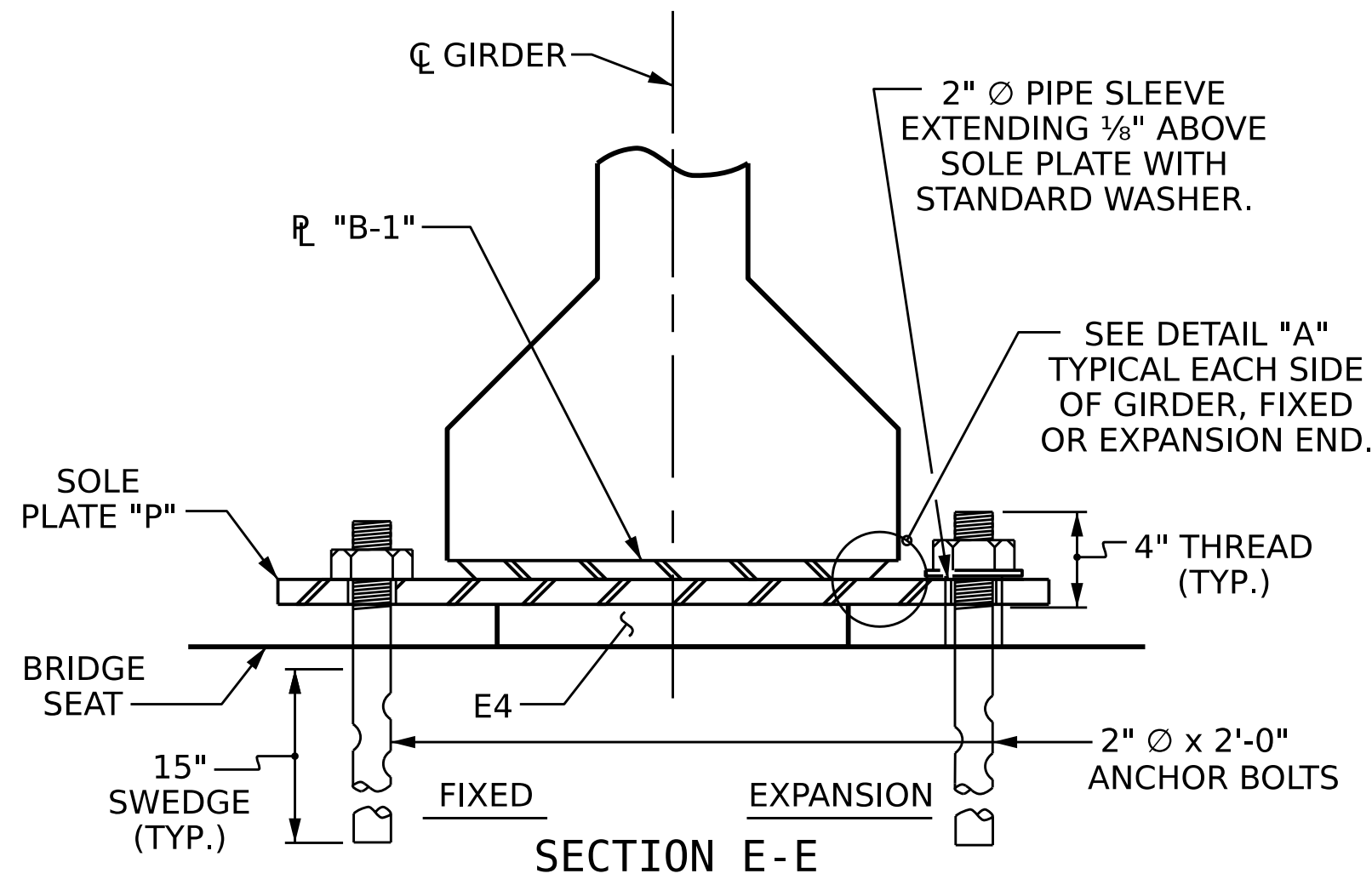


STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
**INTERMEDIATE  
STEEL DIAPHRAGMS  
FOR TYPE IV  
PRESTRESSED CONCRETE  
GIRDERS**

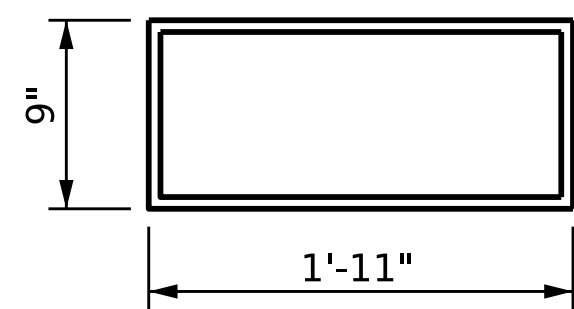
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| NO.       | BY: | DATE: | NO. | BY: |                 |
| 1         |     |       | 3   |     | S-14            |
| 2         |     |       | 4   |     | TOTAL SHEETS 32 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

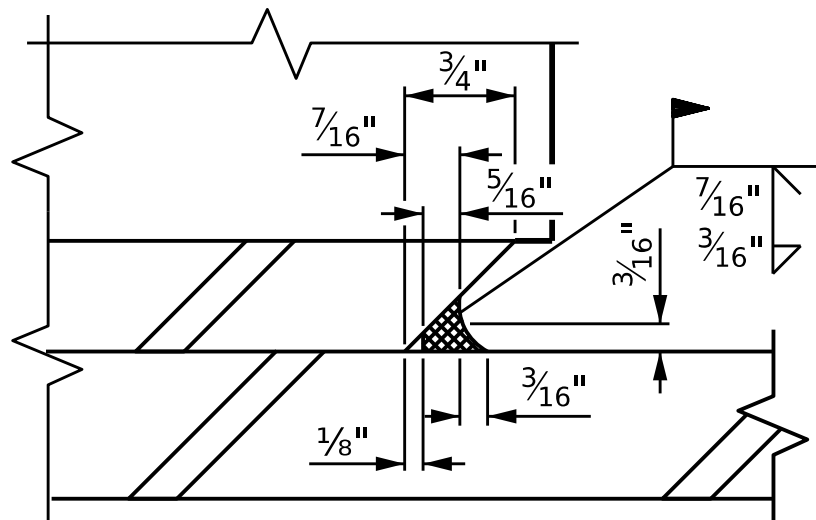
|                              |                       |
|------------------------------|-----------------------|
| ASSEMBLED BY: S.A. HERNANDEZ | DATE: 6/2024          |
| CHECKED BY: A. SORSENGINH    | DATE: 6/2024          |
| DRAWN BY: TLA 6/05           | REV. 5/1/06RRR KMM/GM |
| CHECKED BY: VC 6/05          | REV. 10/1/11 MAA/GM   |
|                              | REV. 12/17 MAA/THC    |



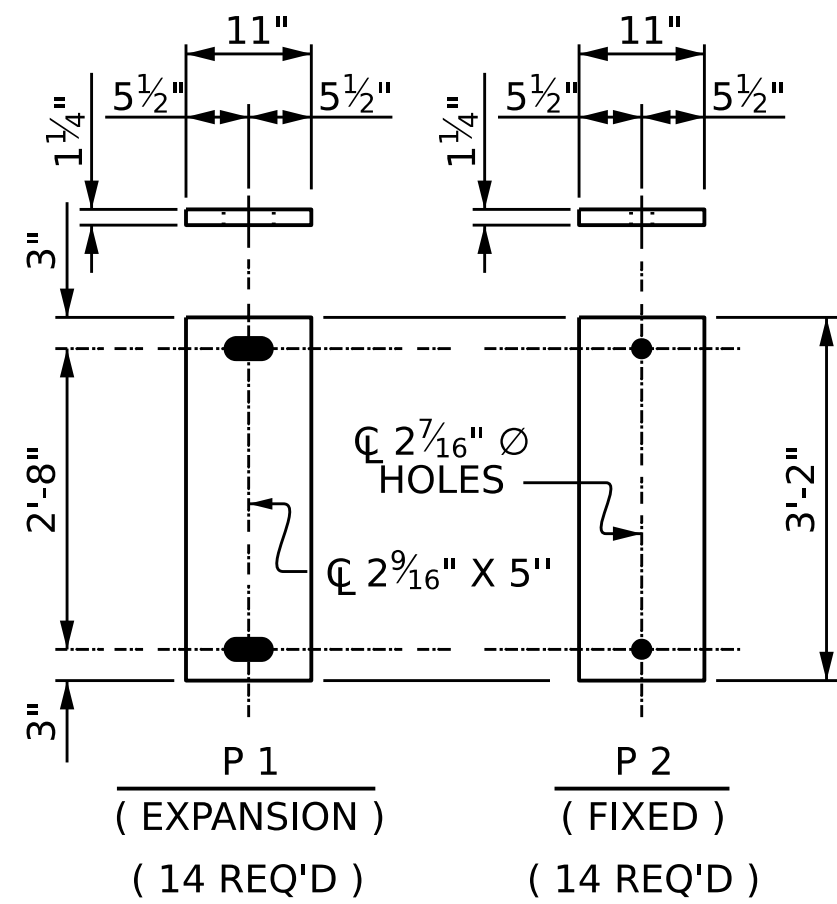
TYPICAL SECTION OF ELASTOMERIC BEARINGS



PLAN VIEW OF ELASTOMERIC BEARING

**TYPE V**

DETAIL "A"



SOLE PLATE DETAILS ( "P" )

**NOTES**

AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

THE 2" Ø PIPE SLEEVE SHALL BE CUT FROM SCHEDULE 40 PVC PLASTIC PIPE. THE PVC PLASTIC PIPE SHALL MEET THE REQUIREMENTS OF ASTM D1785.

STEEL SOLE PLATES, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

PRIOR TO WELDING, GRIND THE GALVANIZED SURFACE OF THE PORTION OF THE EMBEDDED PLATE AND SOLE PLATE THAT ARE TO BE WELDED. AFTER WELDING, DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED IN ACCORDANCE WITH THE STANDARDSPECIFICATIONS.

WHEN WELDING THE SOLE PLATE TO THE EMBEDDED PLATE IN THE GIRDER, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.

SOLE PLATE "P", BOLTS, NUTS, WASHERS, AND PIPE SLEEVE SHALL BE INCLUDED IN THE PAY ITEM FOR PRESTRESSED CONCRETE GIRDERS.

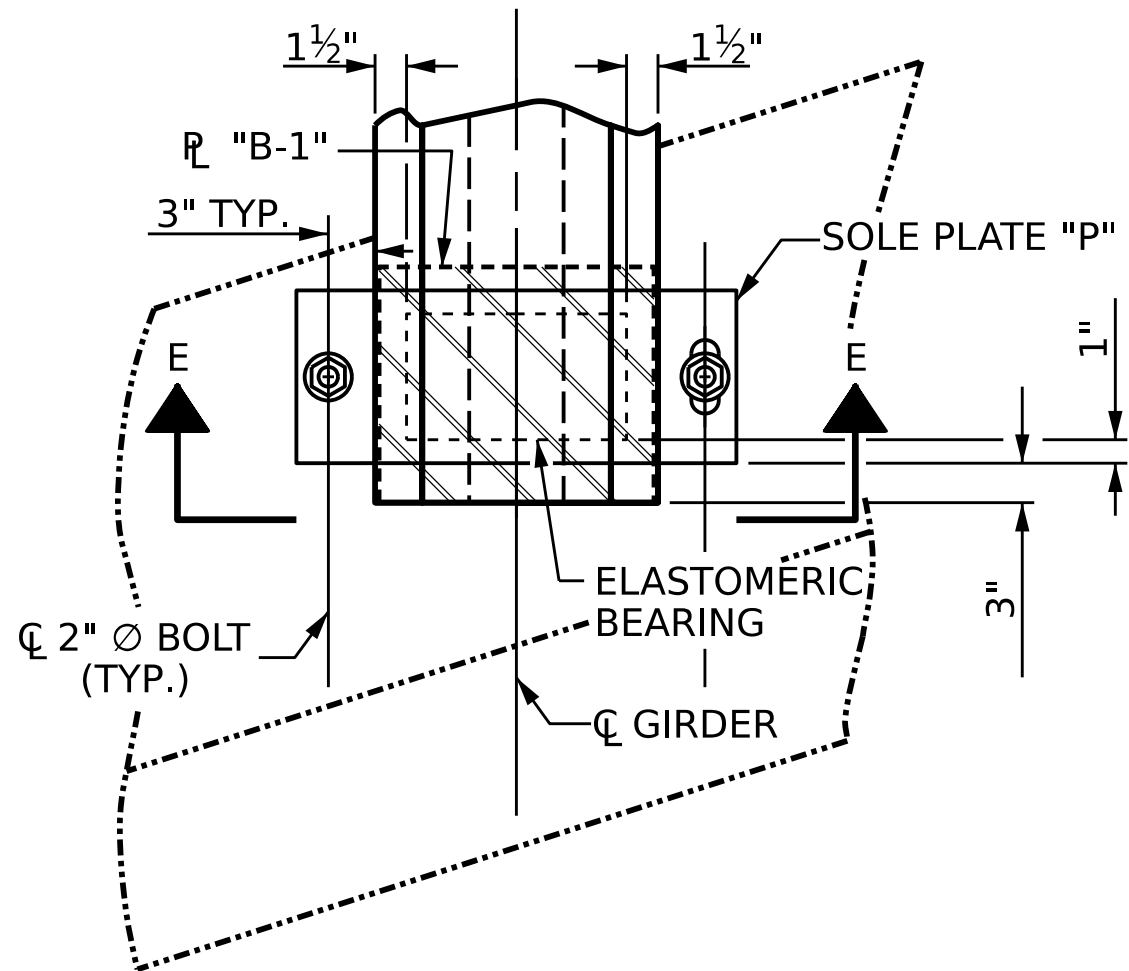
ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLT, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

THE ELASTOMER IN THE STEEL REINFORCED BEARINGS SHALL HAVE A SHEAR MODULUS OF 0.160 KSI, IN ACCORDANCE WITH AASHTO M251.

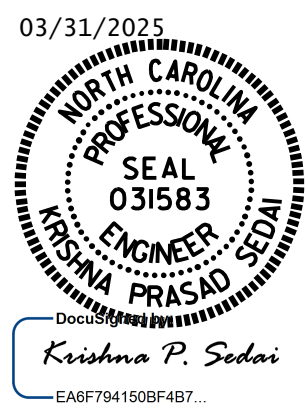
FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE STANDARD SPECIFICATIONS.

ALL SOLE PLATES SHALL BE AASHTO M270 GRADE 36.

TYPICAL HALF-PLAN  
(SHOWING FIXED END)TYPICAL HALF-PLAN  
(SHOWING EXPANSION END)

|                                 |
|---------------------------------|
| MAXIMUM ALLOWABLE SERVICE LOADS |
| D.L.+L.L. (NO IMPACT)           |
| TYPE V    365 k                 |

PROJECT NO. **BR-0015**  
**DAVIDSON** COUNTY  
STATION: **29+45.91 -L-**



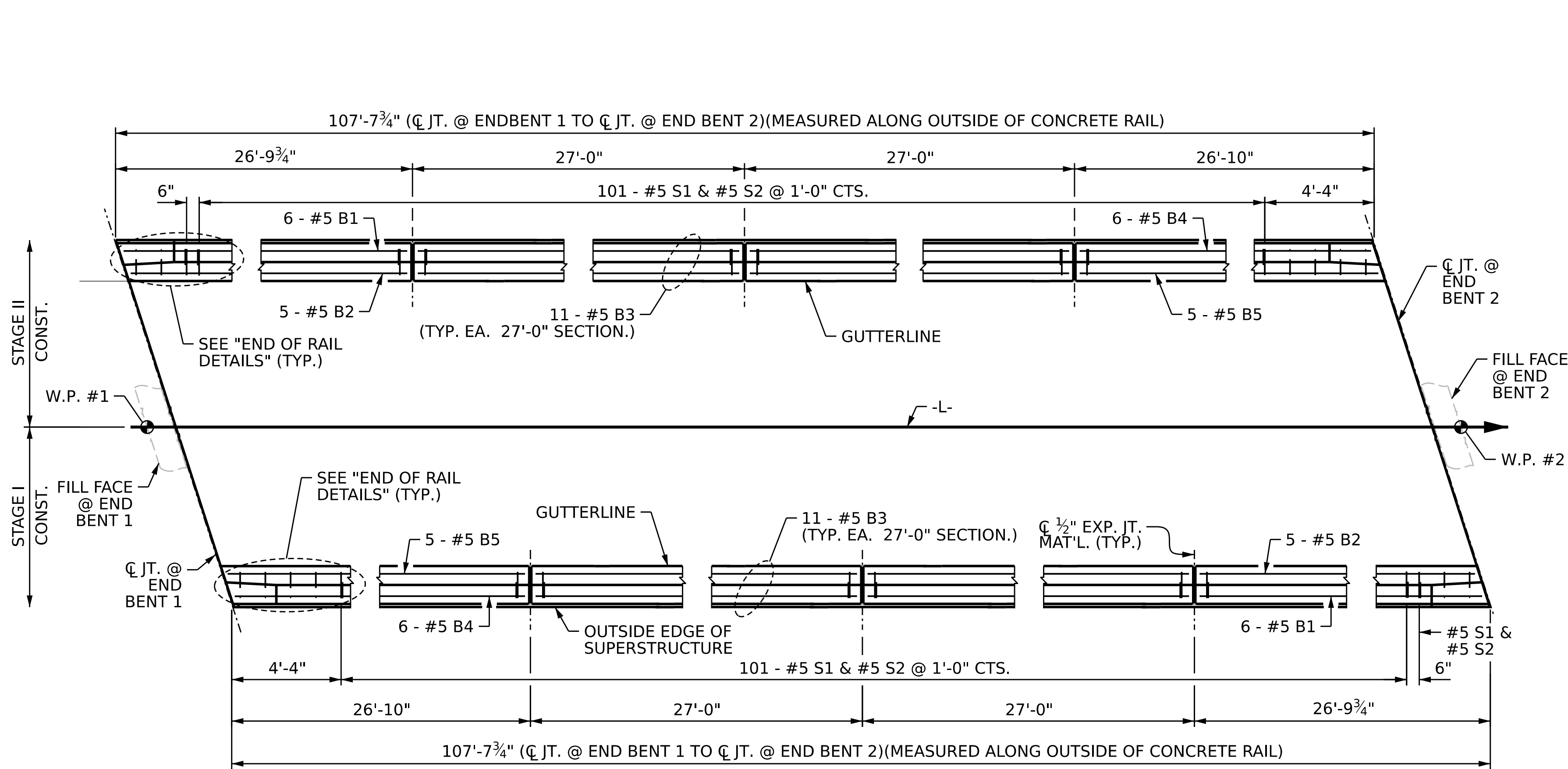
|  |  |
|--|--|
| STATE OF NORTH CAROLINA                    |  |
| DEPARTMENT OF TRANSPORTATION               |  |
| RALEIGH                                    |  |
| STANDARD                                   |  |
| <b>ELASTOMERIC BEARING DETAILS</b>         |  |
| PRESTRESSED CONCRETE GIRDER SUPERSTRUCTURE |  |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

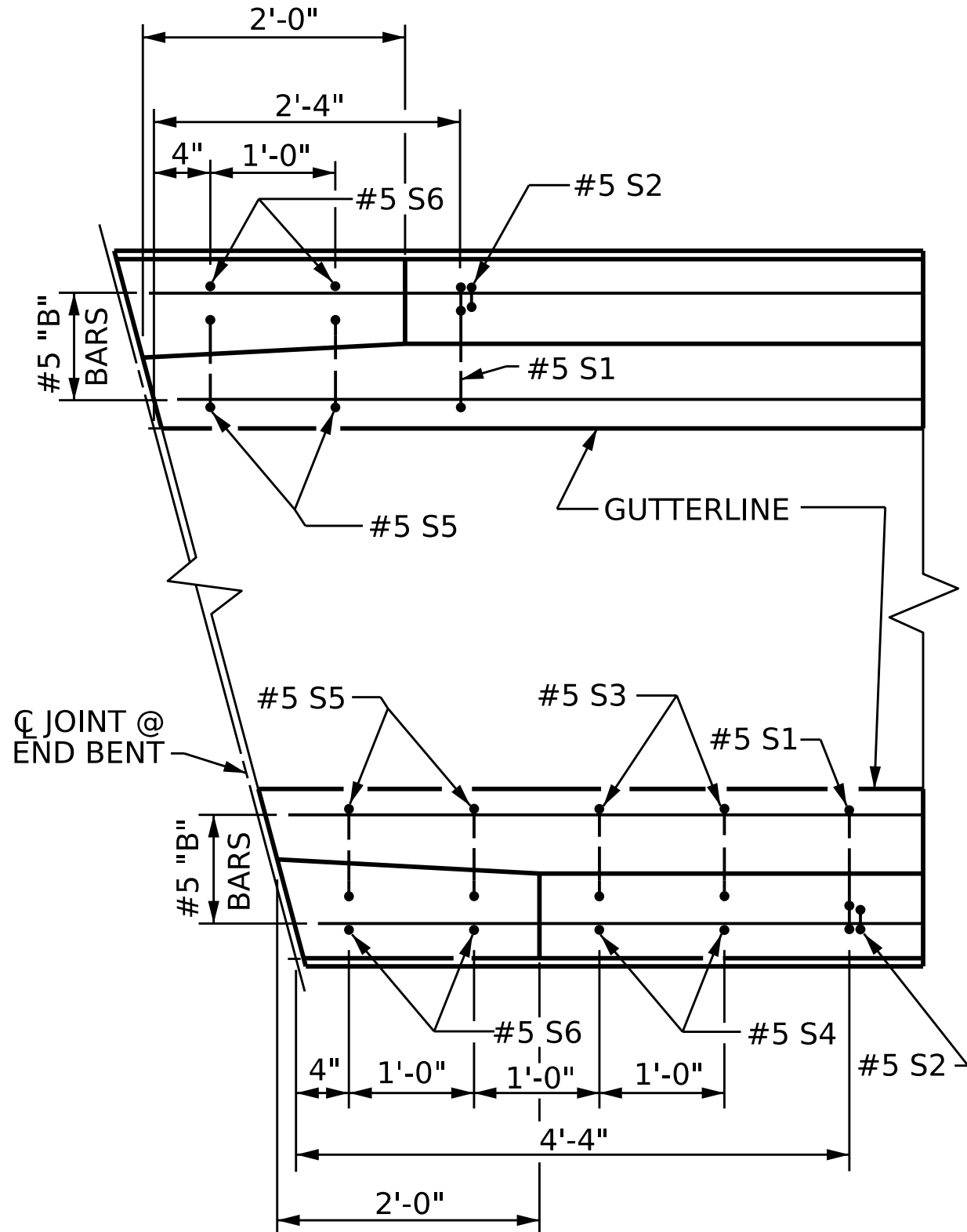
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| NO.          | BY: | DATE: | NO.       | BY: | DATE: |
| 1            |     |       | 3         |     |       |
| 2            |     |       | 4         |     |       |
| TOTAL SHEETS |     |       | S-15      |     |       |
|              |     |       | 32        |     |       |

STD. NO. EB4 (SHT. 1)

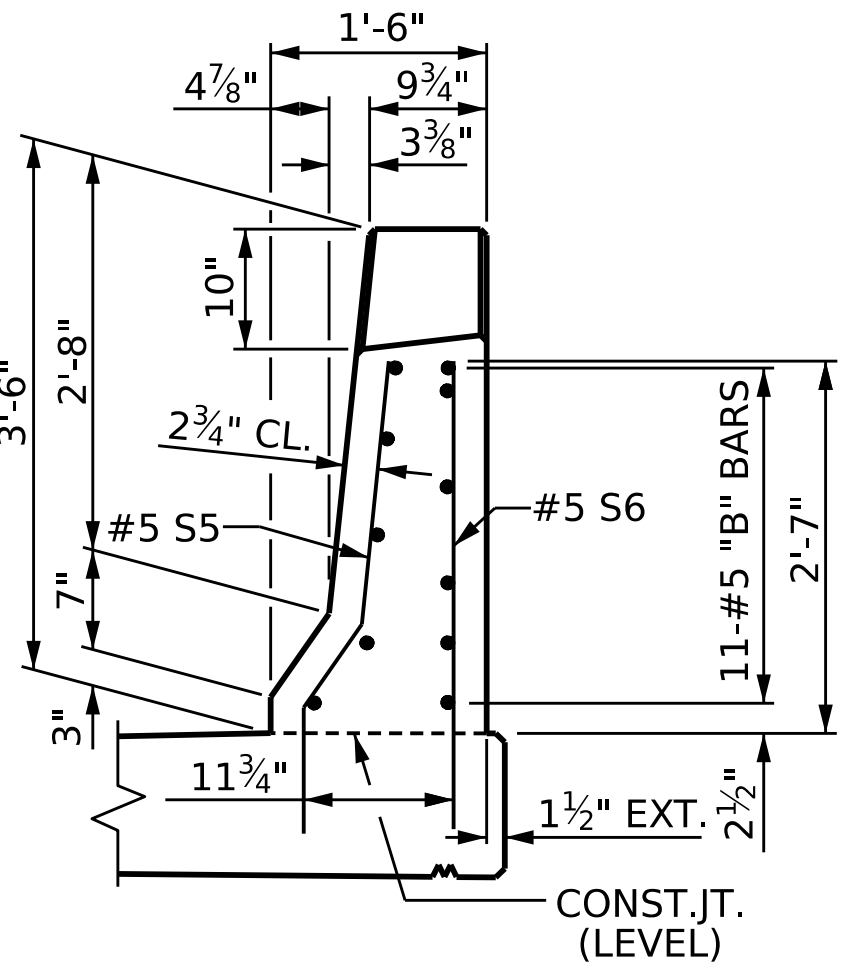




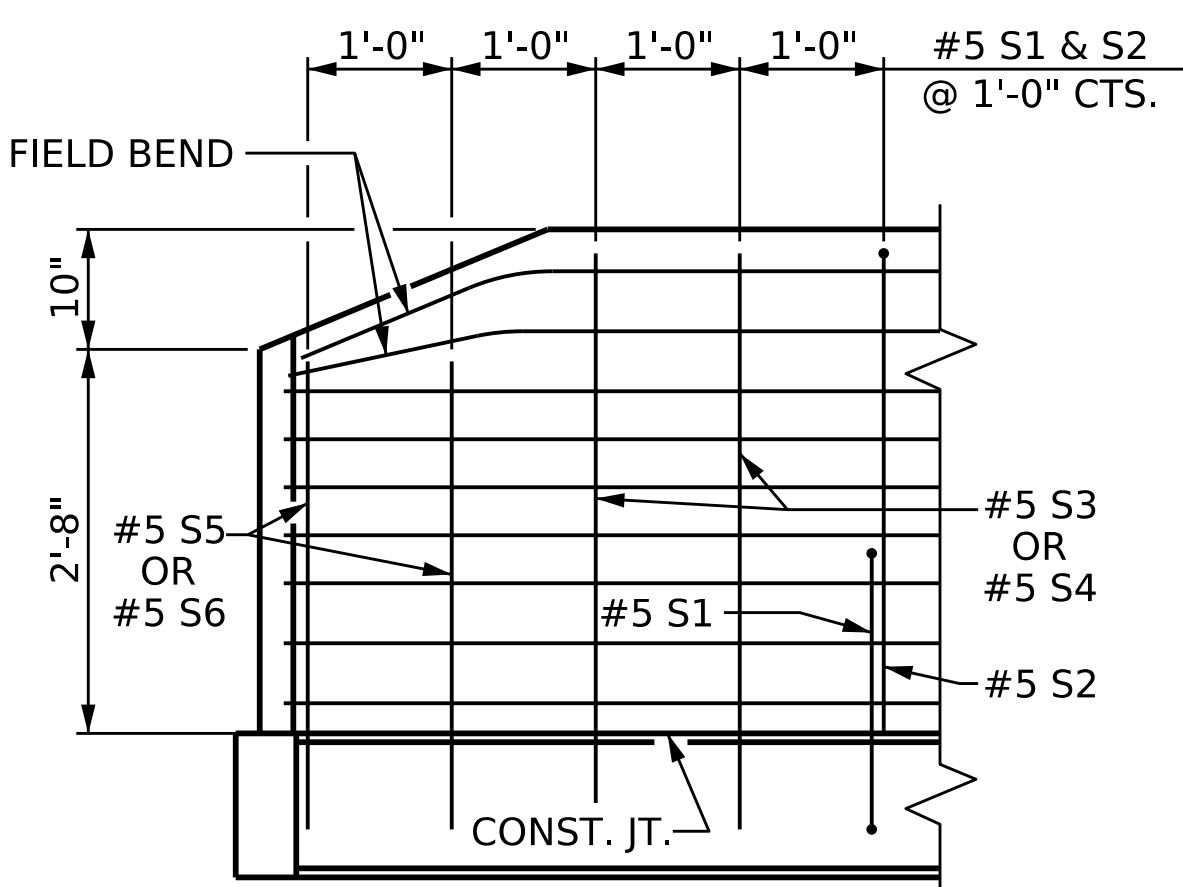
PLAN OF BARRIER RAIL



PLAN



END VIEW



SIDE VIEW

|                              |                |
|------------------------------|----------------|
| ASSEMBLED BY: S.A. HERNANDEZ | DATE : 06/2024 |
| CHECKED BY : A. SORSENGINH   | DATE : 06/2024 |
| DRAWN BY : ARB               | 5/87           |
| CHECKED BY : SJD             | 9/87           |
| REV: 7/12                    | MAA/GM         |
| REV: 6/13                    | MAA/GM         |
| REV: 12/17                   | MAA/THC        |

3/31/2025  
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END OF RAIL DETAILS

FOR ADHESIVE ANCHORING AT SAWED JOINTS

**NOTES**

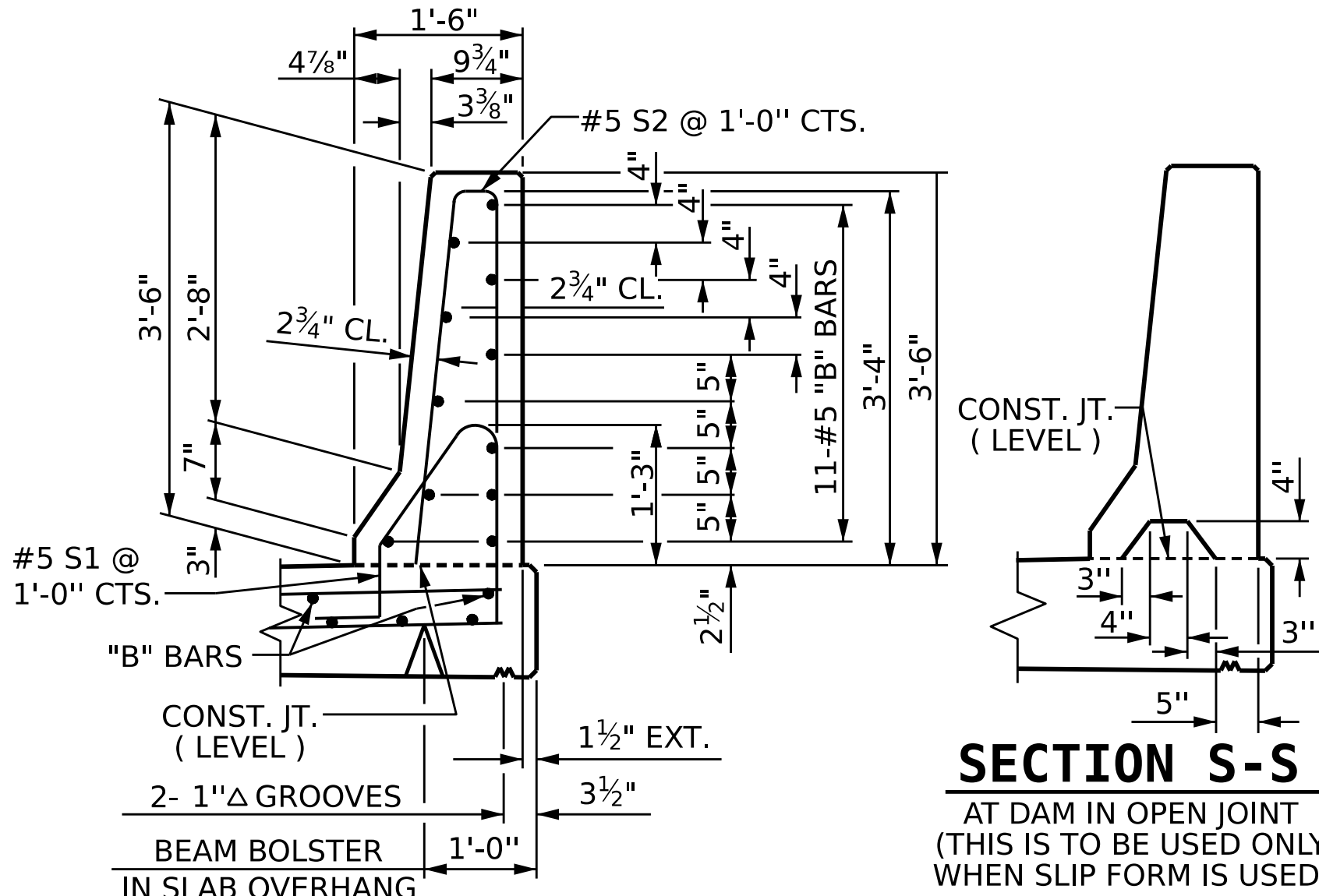
THE BARRIER RAIL SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

WHEN FOAM JOINT SEAL IS REQUIRED, THE JOINT IN THE DECK SHALL BE SAWED PRIOR TO THE CASTING OF BARRIER RAIL.

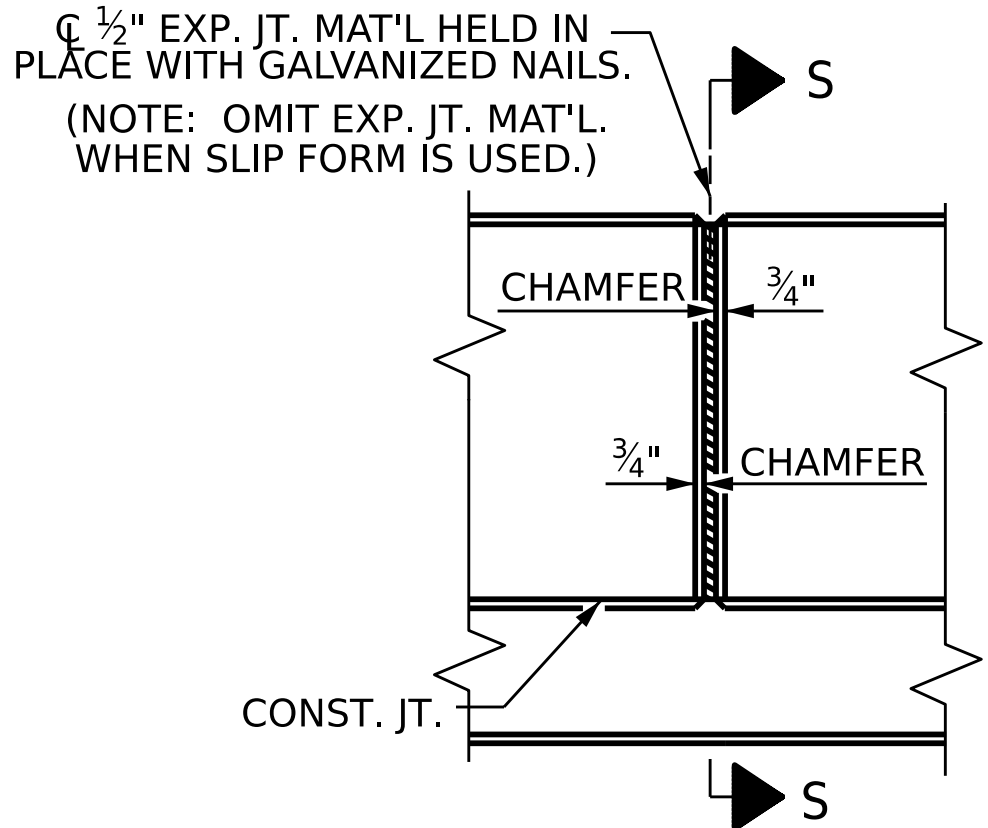
ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

THE #5 S3, S4, S5 AND S6 BARS SHALL BE INSTALLED, USING AN ADHESIVE ANCHORING SYSTEM, AFTER SAWING THE JOINT. THE YIELD LOAD FOR THE #5 S3, S4, S5 AND S6 BARS IS 18.6 KIPS. FIELD TESTING FOR THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

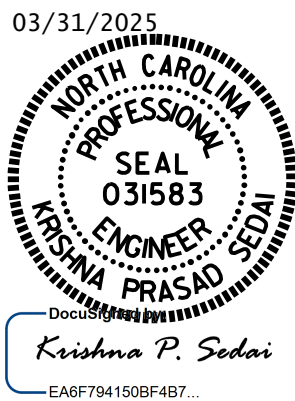


SECTION THRU RAIL



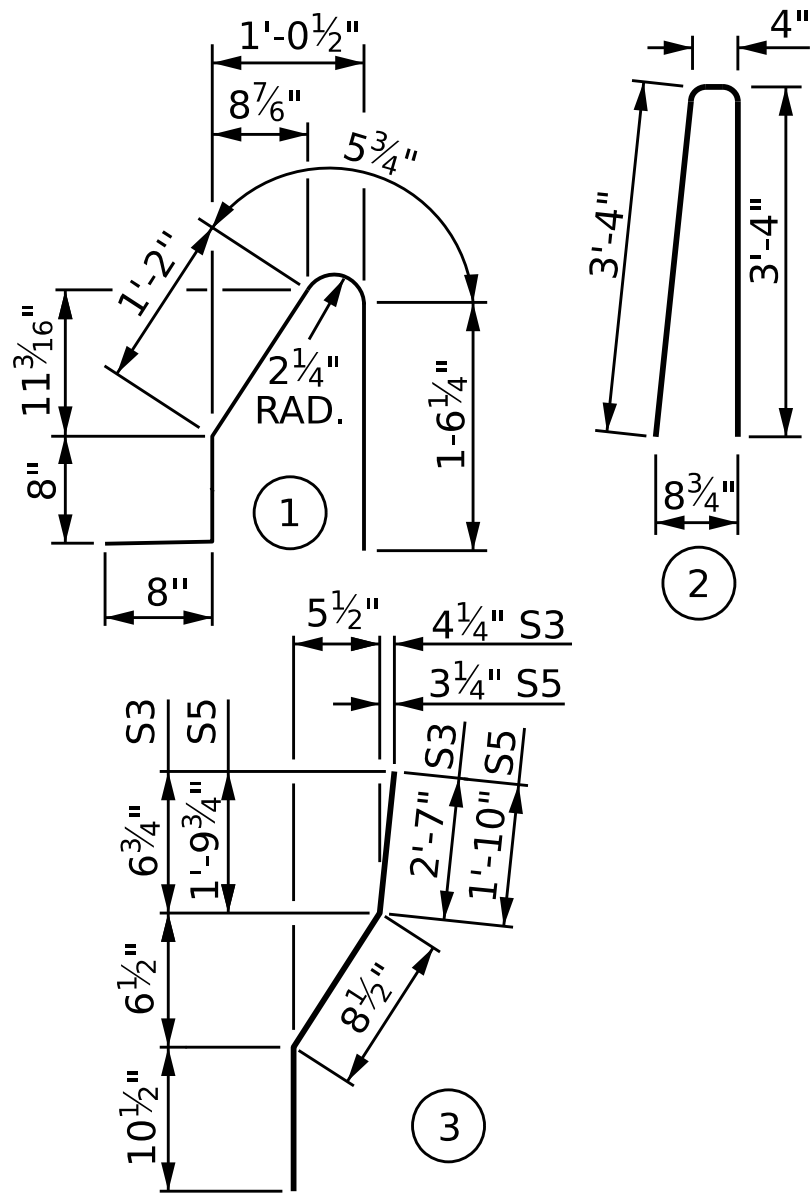
ELEVATION AT EXPANSION JOINTS

BARRIER RAIL DETAILS



DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR CONCRETE BARRIER RAIL ONLY

| BAR  | NO. | SIZE | TYPE | LENGTH | WEIGHT |
|------|-----|------|------|--------|--------|
| * B1 | 12  | #5   | STR  | 26'-3" | 329    |
| * B2 | 10  | #5   | STR  | 26'-0" | 271    |
| * B3 | 44  | #5   | STR  | 26'-7" | 1220   |
| * B4 | 12  | #5   | STR  | 26'-6" | 332    |
| * B5 | 10  | #5   | STR  | 26'-9" | 279    |
| * S1 | 204 | #5   | 1    | 4'-6"  | 957    |
| * S2 | 204 | #5   | 2    | 7'-0"  | 1489   |
| * S3 | 4   | #5   | 3    | 4'-2"  | 17     |
| * S4 | 4   | #5   | STR  | 4'-0"  | 17     |
| * S5 | 8   | #5   | 3    | 3'-5"  | 29     |
| * S6 | 8   | #5   | STR  | 3'-3"  | 27     |

|                                  |                |
|----------------------------------|----------------|
| * EPOXY COATED REINFORCING STEEL | 4,967 LBS.     |
| CLASS AA CONCRETE                | 29.3 CU. YDS.  |
| CONCRETE BARRIER RAIL            | 215.3 LIN. FT. |

PROJECT NO. **BR-0015**

**DAVIDSON** COUNTY

STATION: **29+45.91 -L-**

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

STANDARD

CONCRETE  
BARRIER RAIL

| REVISIONS |     |       |     |     | SHEET NO.       |
|-----------|-----|-------|-----|-----|-----------------|
| NO.       | BY: | DATE: | NO. | BY: |                 |
| 1         |     |       | 3   |     | S-16            |
| 2         |     |       | 4   |     | TOTAL SHEETS 32 |

## NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A ¼" HOLD-DOWN PLATE AND 4 -⅞"Ø BOLTS WITH NUTS AND WASHERS, RUBRAIL, AND ADHESIVELY ANCHORED BOLTS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE ⅞" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

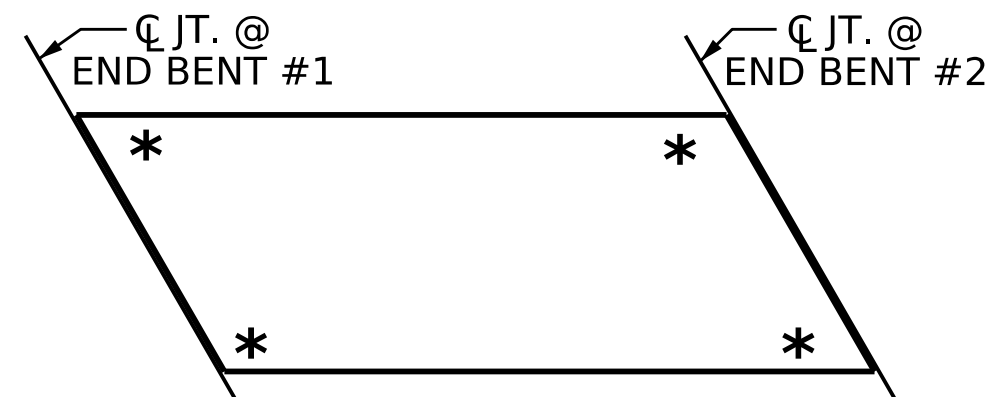
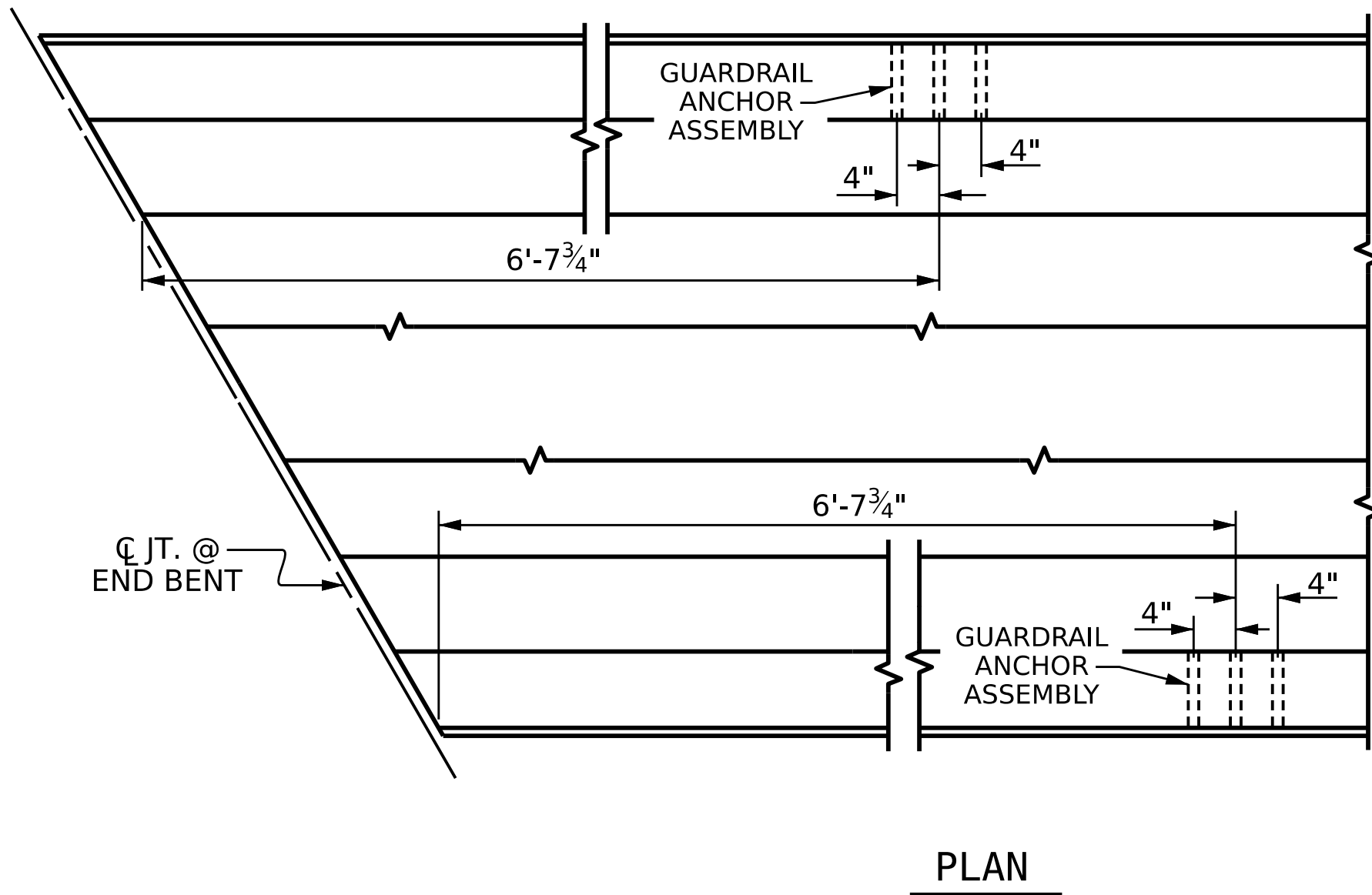
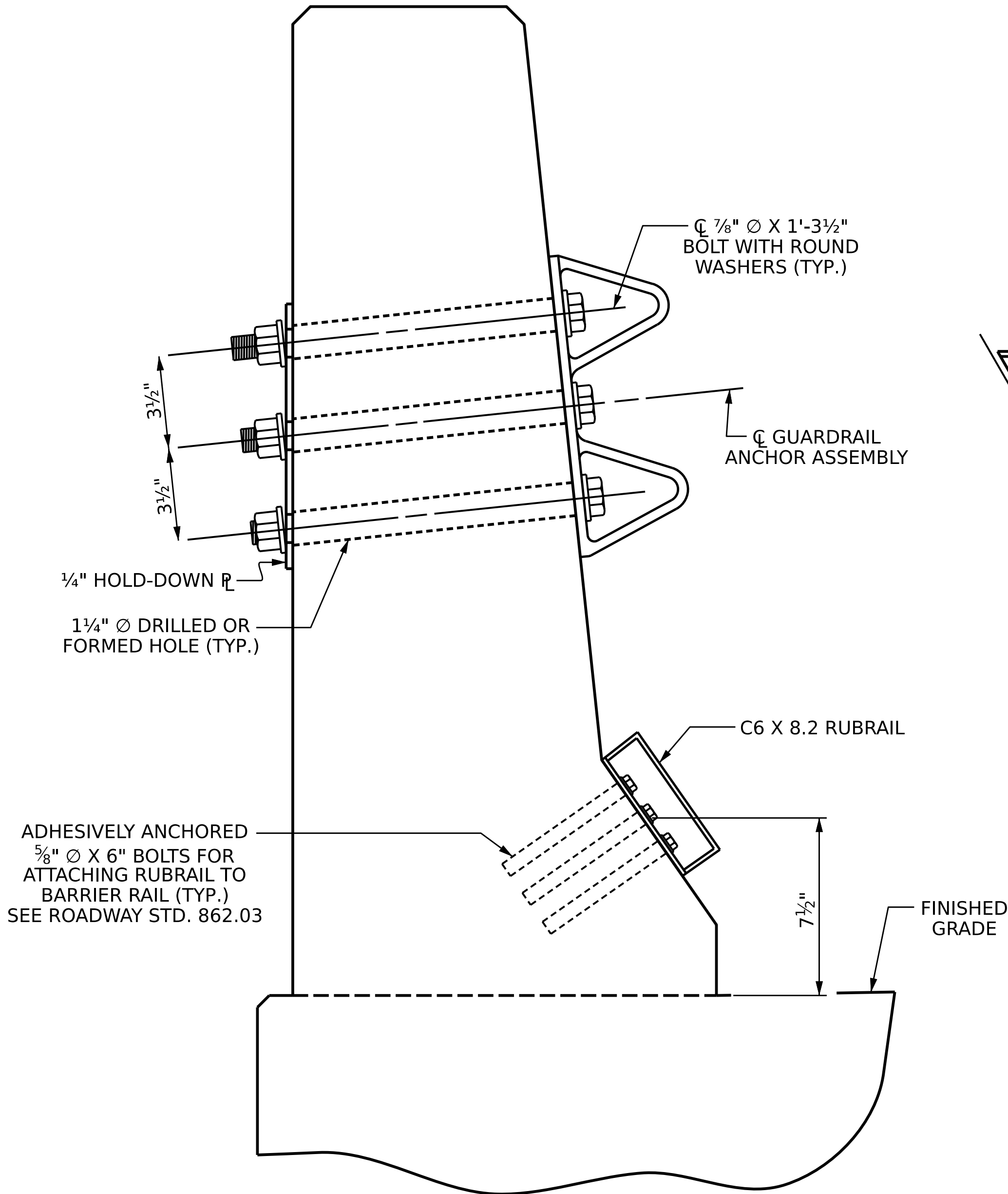
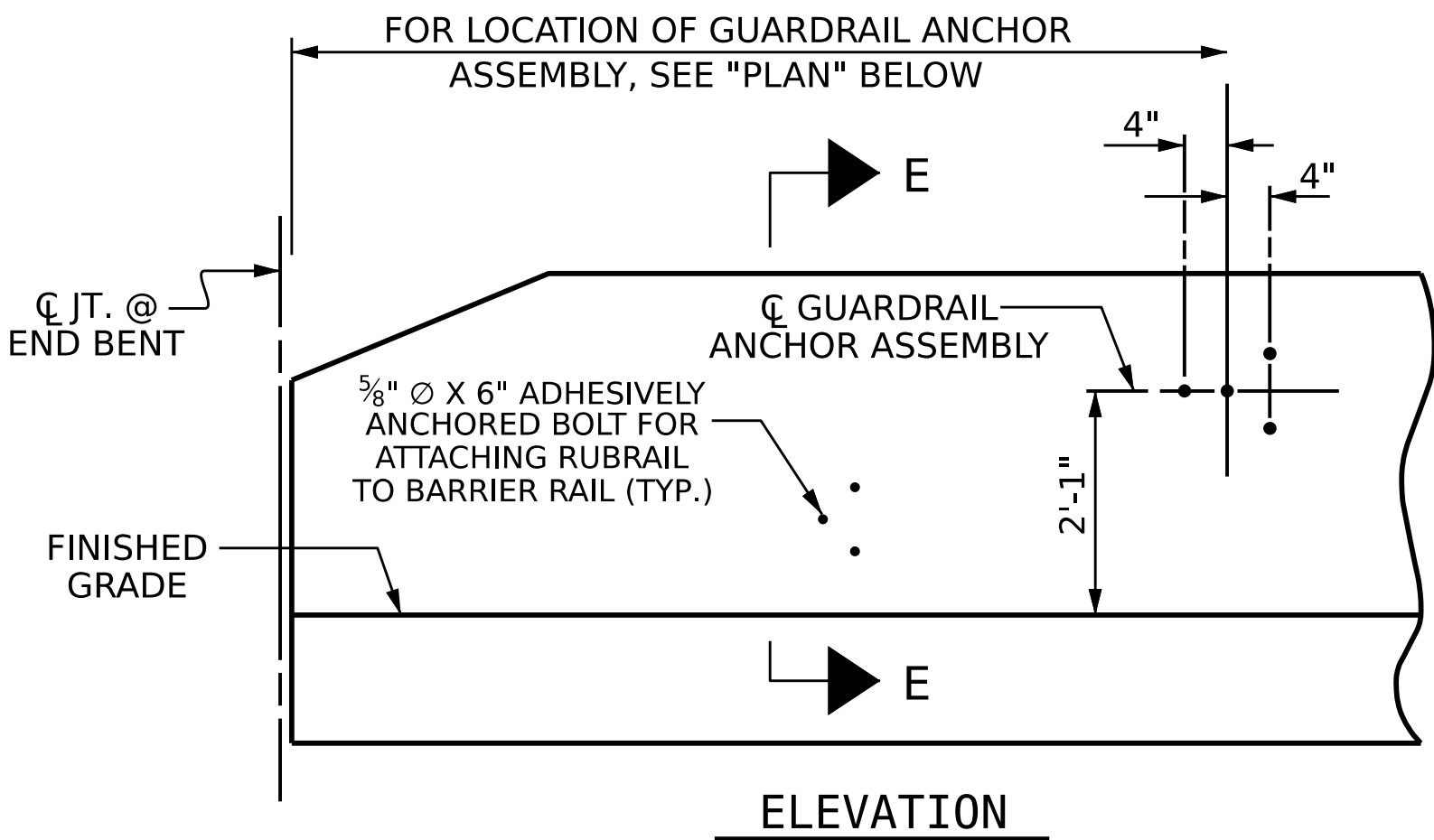
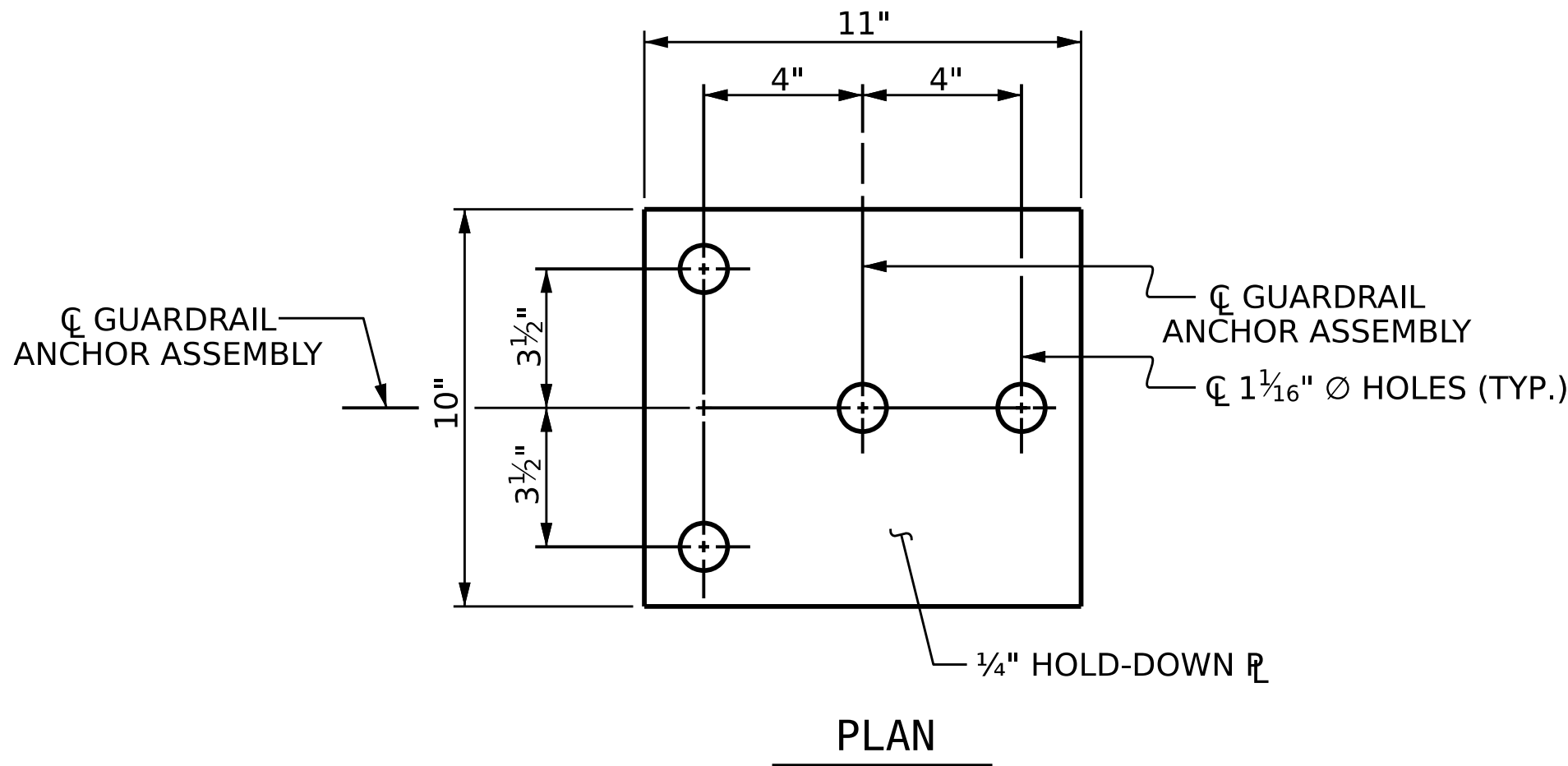
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

THE 1¼" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE ⅝" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE ¾" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



SKETCH SHOWING POINTS OF ATTACHMENTS

\* DENOTES GUARDRAIL ANCHOR ASSEMBLY

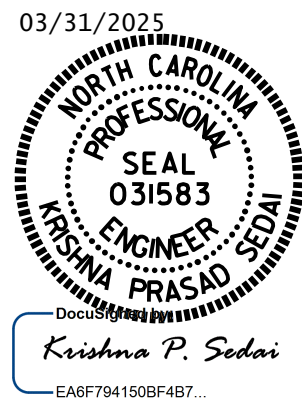
## LOCATION OF ANCHORS FOR GUARDRAIL

END BENT #1 SHOWN, END BENT #2 SIMILAR.

PROJECT NO. **BR-0015**

**DAVIDSON** COUNTY

STATION: **29+45.91 -L-**



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

STANDARD  
**GUARDRAIL ANCHORAGE  
FOR BARRIER RAIL**

|                              |                    |
|------------------------------|--------------------|
| ASSEMBLED BY: S.A. HERNANDEZ | DATE : 06/2024     |
| CHECKED BY : A. SORSENGINH   | DATE : 06/2024     |
| DRAWN BY : TLA 5/06          | REV. 6/13 MAA/GM   |
| CHECKED BY : GM 5/06         | REV. 12/17 MAA/THC |
|                              | REV. 6/22 BNB/AAI  |

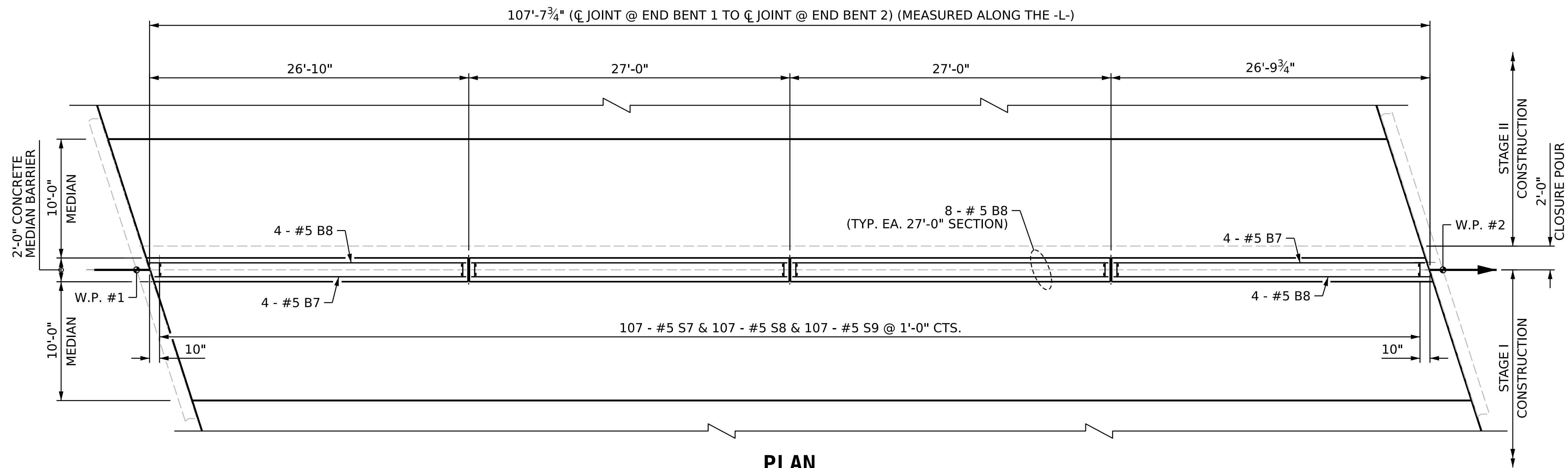
3/31/2025  
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DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

| REVISIONS |     |       |     |     |       | SHEET NO.          |
|-----------|-----|-------|-----|-----|-------|--------------------|
| NO.       | BY: | DATE: | NO. | BY: | DATE: |                    |
| 1         |     |       | 3   |     |       | S-17               |
| 2         |     |       | 4   |     |       | TOTAL SHEETS<br>32 |

STD. NO. GRA2





## PLAN

## NOTES

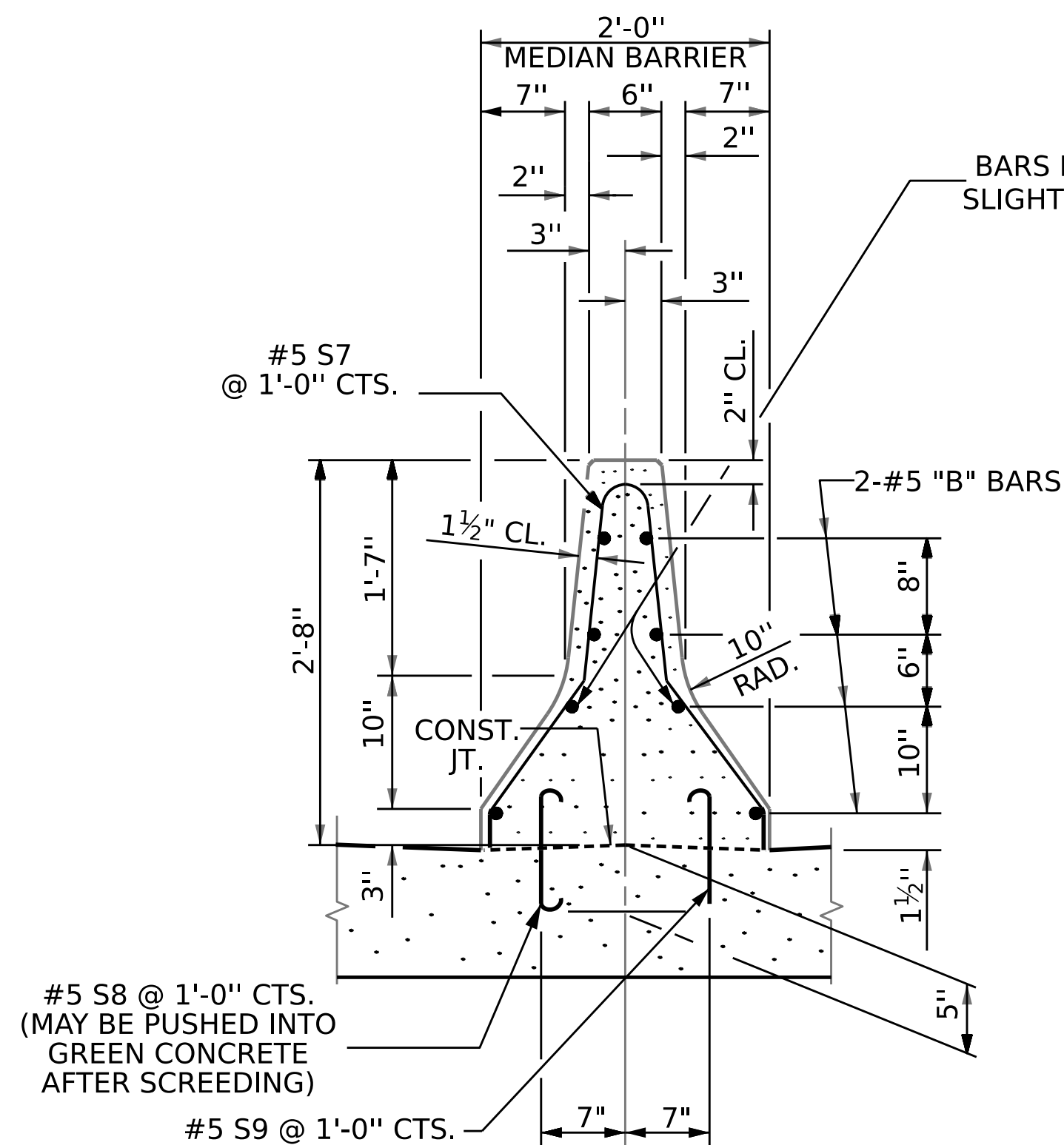
THE MEDIAN BARRIER RAILS SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL REINFORCING STEEL IN MEDIAN BARRIER RAILS SHALL BE EPOXY COATED.

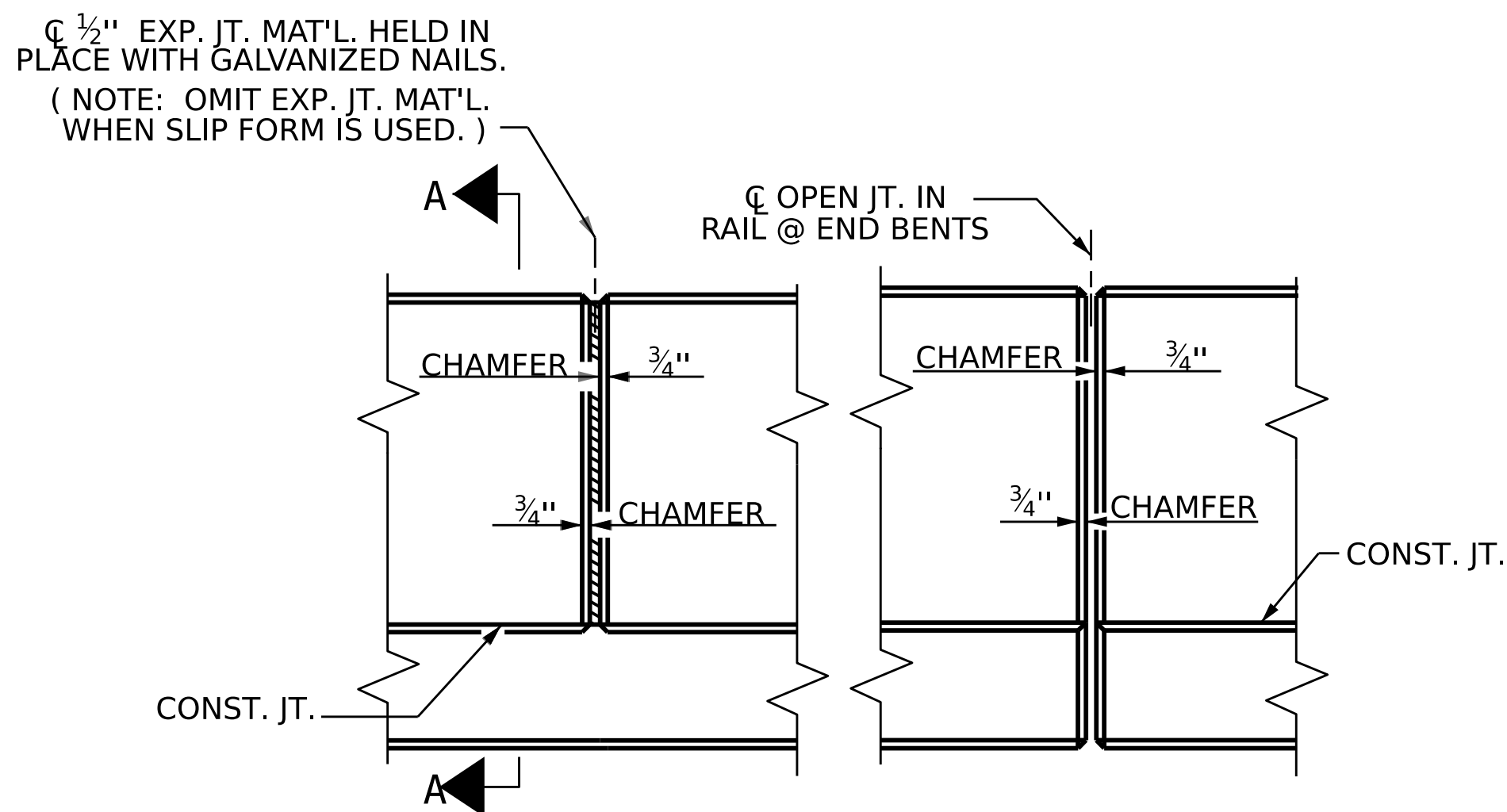
VERTICAL GROOVED CONTRACTION JOINTS, ½" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE MEDIAN BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT EACH THIRD POINT BETWEEN MEDIAN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF MEDIAN BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10 FEET IN LENGTH.

LINEAR FOOT QUANTITIES FOR MEDIAN BARRIER RAILS INCLUDE RAILS ON APPROACH SLABS. REINFORCING STEEL AND CONCRETE QUANTITIES FOR APPROACH SLAB BARRIER RAILS ARE INCLUDED IN BILL OF MATERIAL FOR THE APPROACH SLABS.

FOR MEDIAN BARRIER ON APPROACH SLABS, SEE APPROACH SLAB SHEETS.



SECTION A-A THRU 2'-0" MEDIAN BARRIER



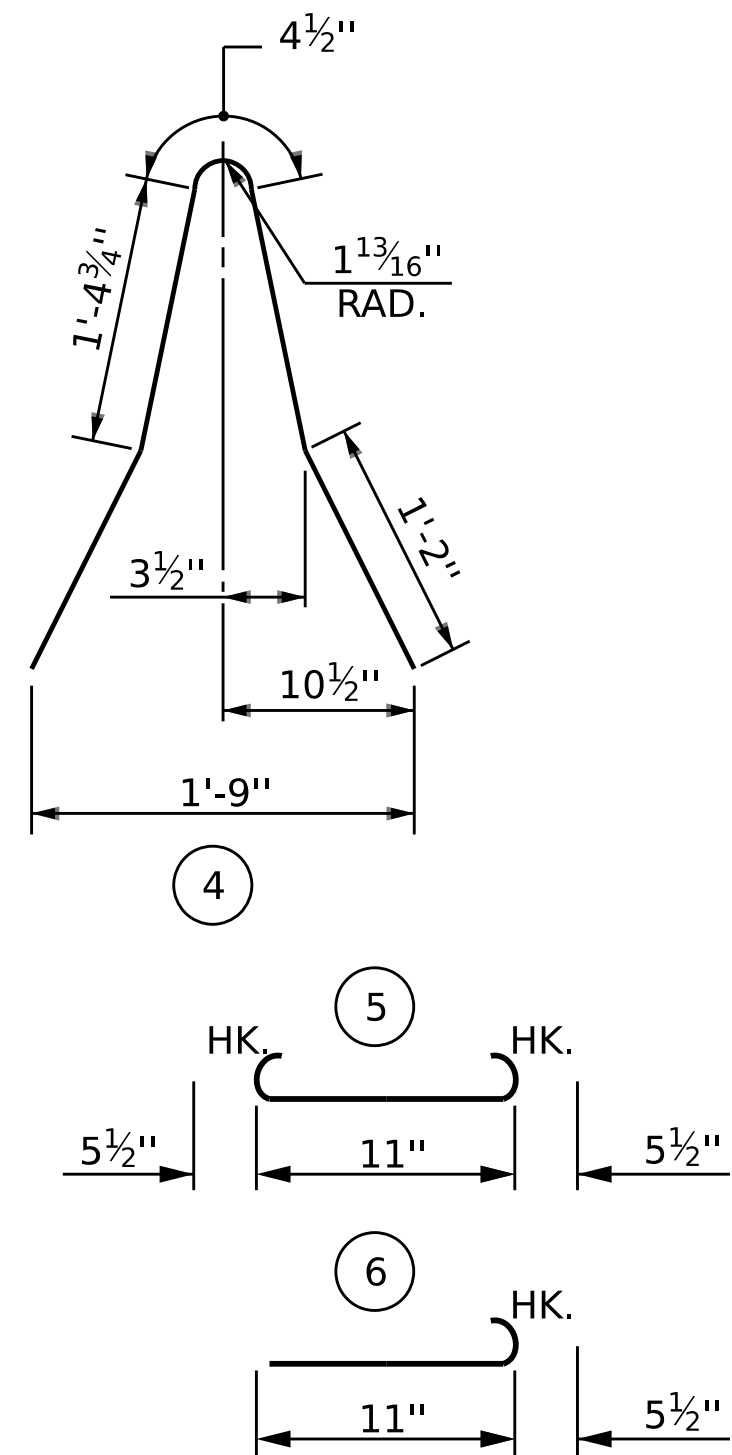
ELEVATION AT EXPANSION JOINTS  
(TYP. MEDIAN BARRIERS)

## CONCRETE MEDIAN BARRIER RAIL DETAILS

DRAWN BY : S.A. HERNANDEZ DATE : 06/2024  
 CHECKED BY : A. SORSENGINH DATE : 06/2024  
 DESIGN ENGINEER OF RECORD: E. BAYISSA DATE : 06/2024

3/31/2025  
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## BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

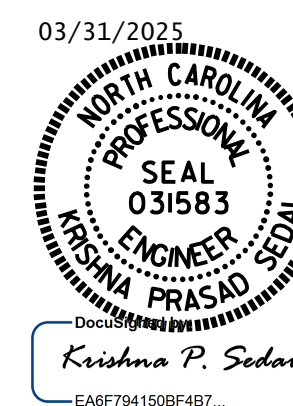
## BILL OF MATERIAL

2'-0" CONCRETE MEDIAN BARRIER

[illegible]

|                                     |                |
|-------------------------------------|----------------|
| * EPOXY COATED<br>REINFORCING STEEL | 1,869 LBS.     |
| CLASS AA CONCRETE                   | 14.9 CU. YDS.  |
| CONCRETE MEDIAN BARRIER             |                |
| BRIDGE DECK                         | 107.6 LIN. FT. |
| APPROACH SLABS                      | 50.0 LIN. FT.  |
| TOTAL                               | 157.6 LIN. FT. |

PROJECT NO. **BR-0015**  
**DAVIDSON** COUNTY  
STATION: **29+45.91 -L-**



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

## CONCRETE MEDIAN BARRIER RAIL

| REVISIONS |     |       |     |     |       | SHEET NO.<br>S-18     |
|-----------|-----|-------|-----|-----|-------|-----------------------|
| NO.       | BY: | DATE: | NO. | BY: | DATE: |                       |
| 1         |     |       | 3   |     |       | TOTAL<br>SHEETS<br>32 |
| 2         |     |       | 4   |     |       |                       |

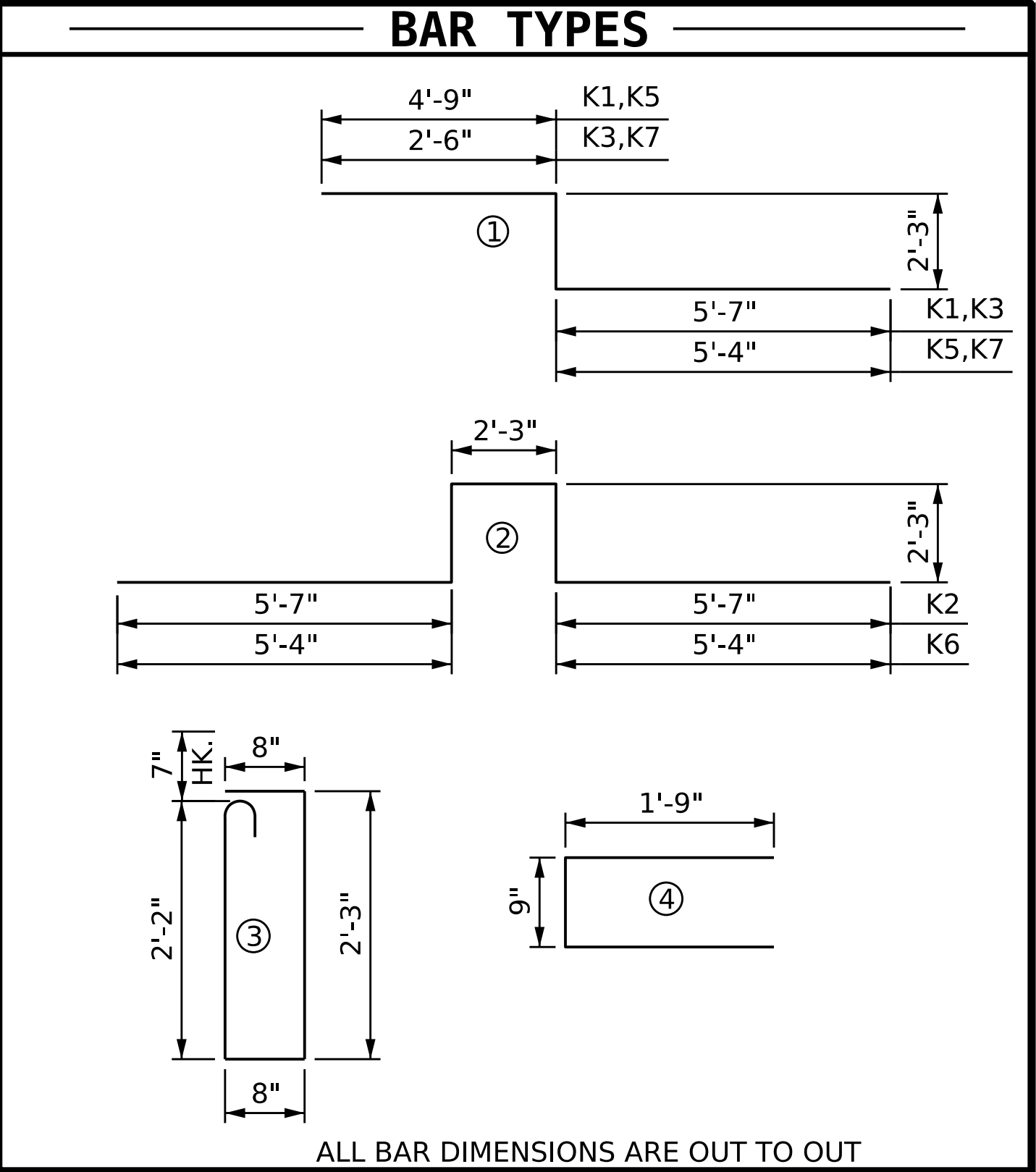
DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

| BILL OF MATERIAL                  |                   |       |      |         |        |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
|-----------------------------------|-------------------|-------|------|---------|--------|---------------------------------|-----|------|------|---------|--------|---|-----|------|------|--------|--------|--------------------|--|--|--|-------------------|--|---------|--|-----------------|--|--|--|--|-------|------------------|--|--|--|--|-------|----------------------|--|--|--|--|-----|----------|--|-------|-----------------------------------|--|--|
| STAGE I                           |                   |       |      |         |        | STAGE II                        |     |      |      |         |        | CLOSURE POUR  |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| BAR                               | No.               | SIZE  | TYPE | LENGTH  | WEIGHT | BAR                             | No. | SIZE | TYPE | LENGTH  | WEIGHT | BAR   | No. | SIZE | TYPE | LENGTH | WEIGHT |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *A1                               | 166               | # 5   | STR  | 54'-3"  | 9393   | *A3                             | 167 | # 5  | STR  | 52'-3"  | 9101   | *B1   | 6   | # 4  | STR  | 37'-1" | 149    |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| A2                                | 166               | # 5   | STR  | 54'-3"  | 9393   | A4                              | 167 | # 5  | STR  | 52'-3"  | 9101   | B2  | 6   | # 5  | STR  | 54'-9" | 343    |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
|                                   |                   |       |      |         |        |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *A101                             | 4                 | # 5   | STR  | 51'-5"  | 215    | *A301                           | 4   | # 5  | STR  | 49'-7"  | 207    | *G3   | 2   | # 5  | STR  | 4'-0"  | 8      |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *A102                             | 4                 | # 5   | STR  | 48'-1"  | 201    | *A302                           | 4   | # 5  | STR  | 46'-3"  | 193    |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *A103                             | 4                 | # 5   | STR  | 44'-8"  | 186    | *A303                           | 4   | # 5  | STR  | 42'-10" | 179    | *K9   | 4   | # 8  | STR  | 3'-5"  | 36     |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *A104                             | 4                 | # 5   | STR  | 41'-4"  | 172    | *A304                           | 4   | # 5  | STR  | 39'-6"  | 165    | *K10  | 6   | # 6  | STR  | 2'-4"  | 21     |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *A105                             | 4                 | # 5   | STR  | 38'-0"  | 159    | *A305                           | 4   | # 5  | STR  | 36'-2"  | 151    |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *A106                             | 4                 | # 5   | STR  | 34'-7"  | 144    | *A306                           | 4   | # 5  | STR  | 32'-9"  | 137    | *S1   | 4   | # 5  | 3    | 6'-4"  | 26     |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *A107                             | 4                 | # 5   | STR  | 31'-3"  | 130    | *A307                           | 4   | # 5  | STR  | 29'-5"  | 123    | *S2   | 4   | # 4  | 4    | 4'-3"  | 11     |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *A108                             | 4                 | # 5   | STR  | 27'-11" | 116    | *A308                           | 4   | # 5  | STR  | 26'-0"  | 108    |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *A109                             | 4                 | # 5   | STR  | 24'-6"  | 102    | *A309                           | 4   | # 5  | STR  | 22'-8"  | 95     | REINFORCING STEEL   |     |      |      |        |        | 343 LBS.           |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *A110                             | 4                 | # 5   | STR  | 20'-9"  | 87     | *A310                           | 4   | # 5  | STR  | 19'-4"  | 81     | *EPOXY COATED REINFORCING STEEL   |     |      |      |        |        | 251 LBS.           |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *A111                             | 4                 | # 5   | STR  | 17'-9"  | 74     | *A311                           | 4   | # 5  | STR  | 15'-11" | 66     |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *A112                             | 4                 | # 5   | STR  | 14'-5"  | 60     | *A312                           | 4   | # 5  | STR  | 12'-7"  | 52     |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *A113                             | 4                 | # 5   | STR  | 11'-1"  | 46     | *A313                           | 4   | # 5  | STR  | 9'-3"   | 39     |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *A114                             | 4                 | # 5   | STR  | 7'-8"   | 32     | *A314                           | 4   | # 5  | STR  | 5'-10"  | 24     |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *A115                             | 4                 | # 5   | STR  | 4'-4"   | 18     | *A315                           | 4   | # 5  | STR  | 2'-6"   | 10     |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *A116                             | 2                 | # 5   | STR  | 2'-7"   | 5      |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
|                                   |                   |       |      |         |        | A401                            | 4   | # 5  | STR  | 49'-7"  | 207    | <table><tr><th colspan="3">SUPERSTRUCTURE BIL</th></tr><tr><td rowspan="2"></td><td colspan="2">CLASS AA CONCRETE</td></tr><tr><td colspan="2">CU. YDS</td></tr><tr><td colspan="2">STAGE I POUR #1</td><td></td></tr><tr><td colspan="2"></td><td>154.3</td></tr><tr><td colspan="2">STAGE II POUR #1</td><td></td></tr><tr><td colspan="2"></td><td>148.6</td></tr><tr><td colspan="2">CLOSURE POUR POUR #2</td><td></td></tr><tr><td colspan="2"></td><td>5.7</td></tr><tr><td colspan="2">TOTAL **</td><td>308.6</td></tr><tr><td colspan="3">** QUANTITIES FOR BARRIER RAIL AR</td></tr></table> |     |      |      |        |        | SUPERSTRUCTURE BIL |  |  |  | CLASS AA CONCRETE |  | CU. YDS |  | STAGE I POUR #1 |  |  |  |  | 154.3 | STAGE II POUR #1 |  |  |  |  | 148.6 | CLOSURE POUR POUR #2 |  |  |  |  | 5.7 | TOTAL ** |  | 308.6 | ** QUANTITIES FOR BARRIER RAIL AR |  |  |
| SUPERSTRUCTURE BIL                |                   |       |      |         |        |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
|                                   | CLASS AA CONCRETE |       |      |         |        |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
|                                   | CU. YDS           |       |      |         |        |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| STAGE I POUR #1                   |                   |       |      |         |        |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
|                                   |                   | 154.3 |      |         |        |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| STAGE II POUR #1                  |                   |       |      |         |        |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
|                                   |                   | 148.6 |      |         |        |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| CLOSURE POUR POUR #2              |                   |       |      |         |        |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
|                                   |                   | 5.7   |      |         |        |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| TOTAL **                          |                   | 308.6 |      |         |        |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| ** QUANTITIES FOR BARRIER RAIL AR |                   |       |      |         |        |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| A201                              | 4                 | # 5   | STR  | 51'-5"  | 215    | A402                            | 4   | # 5  | STR  | 46'-3"  | 193    |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| A202                              | 4                 | # 5   | STR  | 48'-1"  | 201    | A403                            | 4   | # 5  | STR  | 42'-10" | 179    |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| A203                              | 4                 | # 5   | STR  | 44'-8"  | 186    | A404                            | 4   | # 5  | STR  | 39'-6"  | 165    |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| A204                              | 4                 | # 5   | STR  | 41'-4"  | 172    | A405                            | 4   | # 5  | STR  | 36'-2"  | 151    |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| A205                              | 4                 | # 5   | STR  | 38'-0"  | 159    | A406                            | 4   | # 5  | STR  | 32'-9"  | 137    |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| A206                              | 4                 | # 5   | STR  | 34'-7"  | 144    | A407                            | 4   | # 5  | STR  | 29'-5"  | 123    |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| A207                              | 4                 | # 5   | STR  | 31'-3"  | 130    | A408                            | 4   | # 5  | STR  | 26'-0"  | 108    |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| A208                              | 4                 | # 5   | STR  | 27'-11" | 116    | A409                            | 4   | # 5  | STR  | 22'-8"  | 95     |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| A209                              | 4                 | # 5   | STR  | 24'-6"  | 102    | A410                            | 4   | # 5  | STR  | 19'-4"  | 81     |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| A210                              | 4                 | # 5   | STR  | 20'-9"  | 87     | A411                            | 4   | # 5  | STR  | 15'-11" | 66     |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| A211                              | 4                 | # 5   | STR  | 17'-9"  | 74     | A412                            | 4   | # 5  | STR  | 12'-7"  | 52     |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| A212                              | 4                 | # 5   | STR  | 14'-5"  | 60     | A413                            | 4   | # 5  | STR  | 9'-3"   | 39     |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| A213                              | 4                 | # 5   | STR  | 11'-1"  | 46     | A414                            | 4   | # 5  | STR  | 5'-10"  | 24     |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| A214                              | 4                 | # 5   | STR  | 7'-8"   | 32     | A415                            | 4   | # 5  | STR  | 2'-6"   | 10     |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| A215                              | 4                 | # 5   | STR  | 4'-4"   | 18     |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| A216                              | 2                 | # 5   | STR  | 2'-7"   | 5      | *B1                             | 105 | # 4  | STR  | 37'-1"  | 2601   |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
|                                   |                   |       |      |         |        | B2                              | 118 | # 5  | STR  | 54'-9"  | 6738   |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
|                                   |                   |       |      |         |        |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *B1                               | 111               | # 4   | STR  | 37'-1"  | 2750   |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| B2                                | 118               | # 5   | STR  | 54'-9"  | 6738   | *D1                             | 196 | # 5  | STR  | 4'-3"   | 869    |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
|                                   |                   |       |      |         |        |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *D1                               | 196               | # 5   | STR  | 4'-3"   | 869    | *G2                             | 2   | # 5  | STR  | 54'-11" | 115    |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
|                                   |                   |       |      |         |        |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *G1                               | 2                 | # 5   | STR  | 57'-0"  | 119    | *K5                             | 4   | # 8  | 1    | 12'-4"  | 132    |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
|                                   |                   |       |      |         |        | *K6                             | 20  | # 8  | 2    | 17'-5"  | 930    |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *K1                               | 4                 | # 8   | 1    | 12'-7"  | 134    | *K7                             | 4   | # 8  | 1    | 10'-1"  | 108    |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *K2                               | 20                | # 8   | 2    | 17'-11" | 957    | *K8                             | 36  | # 6  | STR  | 6'-3"   | 338    |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *K3                               | 4                 | # 8   | 1    | 10'-4"  | 110    |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *K4                               | 36                | # 6   | STR  | 6'-6"   | 351    | *S1                             | 84  | # 5  | 3    | 6'-4"   | 555    |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
|                                   |                   |       |      |         |        | *S2                             | 84  | # 4  | 4    | 4'-3"   | 238    |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *S1                               | 84                | # 5   | 3    | 6'-4"   | 555    |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *S2                               | 84                | # 4   | 4    | 4'-3"   | 238    |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
|                                   |                   |       |      |         |        |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
|                                   |                   |       |      |         |        |                                 |     |      |      |         |        |   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| REINFORCING STEEL                 |                   |       |      |         |        | REINFORCING STEEL               |     |      |      |         |        | 17,469 LBS.   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| REINFORCING STEEL                 |                   |       |      |         |        | REINFORCING STEEL               |     |      |      |         |        | 16,617 LBS.   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |
| *EPOXY COATED REINFORCING STEEL   |                   |       |      |         |        | *EPOXY COATED REINFORCING STEEL |     |      |      |         |        | 16,617 LBS.   |     |      |      |        |        |                    |  |  |  |                   |  |         |  |                 |  |  |  |  |       |                  |  |  |  |  |       |                      |  |  |  |  |     |          |  |       |                                   |  |  |

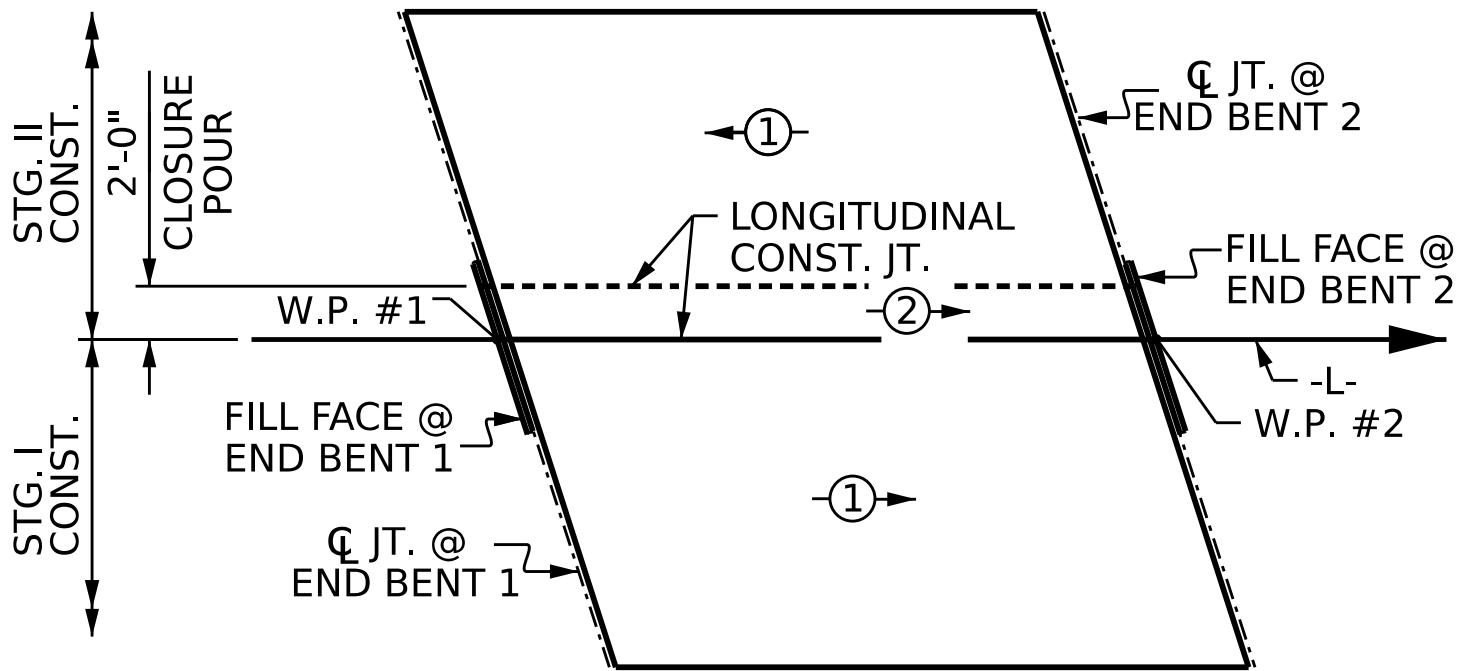
| GROOVING BRIDGE FLOORS |                   |             |
|------------------------|-------------------|-------------|
|                        | APPROACH<br>SLABS | BRIDGE DECK |
|                        | SQ. FT.           | SQ. FT.     |
| STAGE I                | 2,326             | 5,215       |
| STAGE II               | 2,326             | 5,215       |
| TOTAL                  | 4,652             | 10,430      |

| SUPERSTRUCTURE BILL OF MATERIAL |                      |                      |                                      |
|---------------------------------|----------------------|----------------------|--------------------------------------|
|                                 | CLASS AA<br>CONCRETE | REINFORCING<br>STEEL | EPOXY COATED<br>REINFORCING<br>STEEL |
|                                 | CU. YDS              | LBS.                 | LBS.                                 |
| STAGE I                         |                      | 17,878               | 17,223                               |
| POUR #1                         | 154.3                |                      |                                      |
| STAGE II                        |                      | 17,469               | 16,617                               |
| POUR #1                         | 148.6                |                      |                                      |
| CLOSURE POUR                    |                      | 343                  | 251                                  |
| POUR #2                         | 5.7                  |                      |                                      |
| TOTAL **                        | 308.6                | 35,690               | 34,091                               |

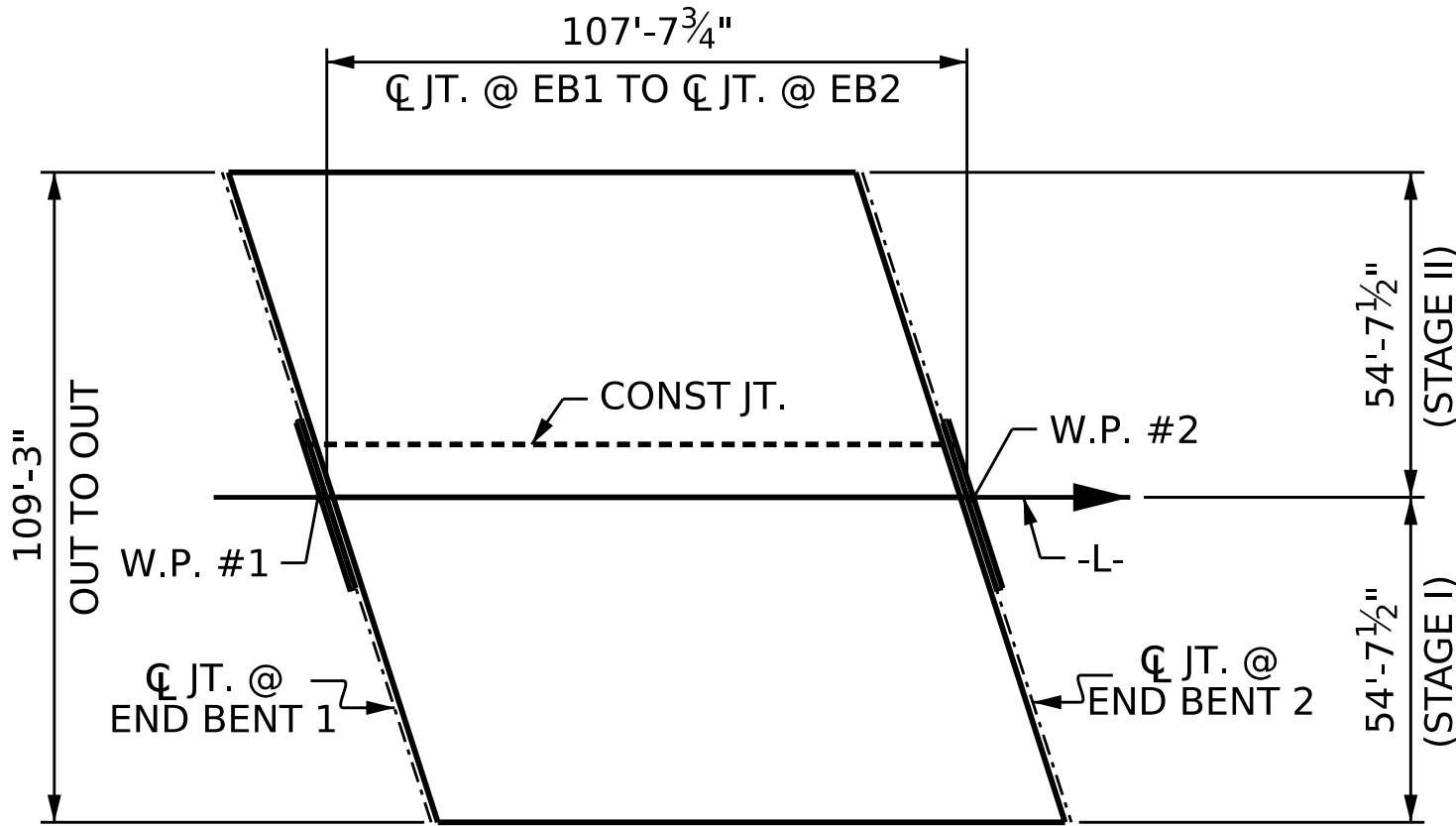
\*\* QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED.



| SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS |   |          |                |          |                            |
|--|---|----------|----------------|----------|----------------------------|
| BAR SIZE   | SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPETS, AND BARRIER RAILS |          | APPROACH SLABS |          | PARAPETS AND BARRIER RAILS |
|  | EPOXY COATED  | UNCOATED | EPOXY COATED   | UNCOATED |                            |
| #4   | 1'-11"  | 1'-7"    | 1'-11"         | 1'-7"    | 2'-6"                      |
| #5   | 2'-5"   | 2'-0"    | 2'-5"          | 2'-0"    | 3'-1"                      |
| #6   | 2'-10"  | 2'-5"    | 3'-7"          | 2'-5"    | 3'-8"                      |
| #7   | 4'-2"   | 2'-9"    |                |          |                            |
| #8   | 4'-9"   | 3'-2"    |                |          |                            |



**POUR SEQUENCE**  
POUR 2 CAN NOT BE STARTED UNTIL BOTH  
ADJACENT 1 POURS REACH A INIMUM OF 3,000 PSI.  
④ ← INDICATES POUR NUMBER  
AND DIRECTION OF POUR



## LAYOUT FOR COMPUTING AREA OF REINFORCED CONCRETE DECK SLAB

|                          |
|--------------------------|
| STAGE I = 5,880 SQ. FT.  |
| STAGE II = 5,880 SQ. FT. |
| TOTAL = 11,760 SQ. FT.   |

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

|                            |            |
|----------------------------|------------|
| PROJECT NO. <b>BR-0015</b> |            |
| <b>DAVIDSON</b>            | COUNTY     |
| STATION: <b>29+45.91</b>   | <b>-L-</b> |

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

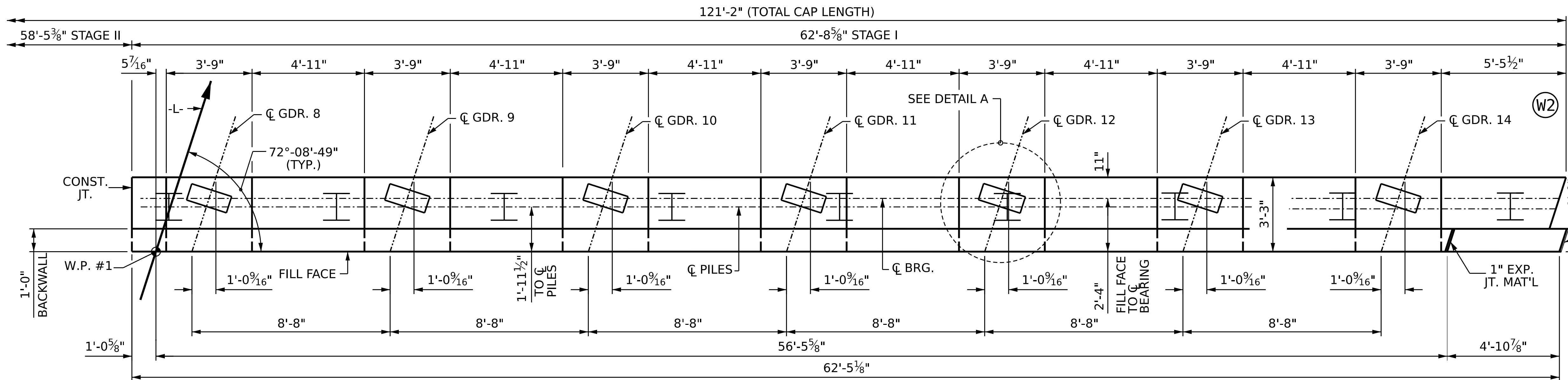
RALEIGH

SUPERSTRUCTURE

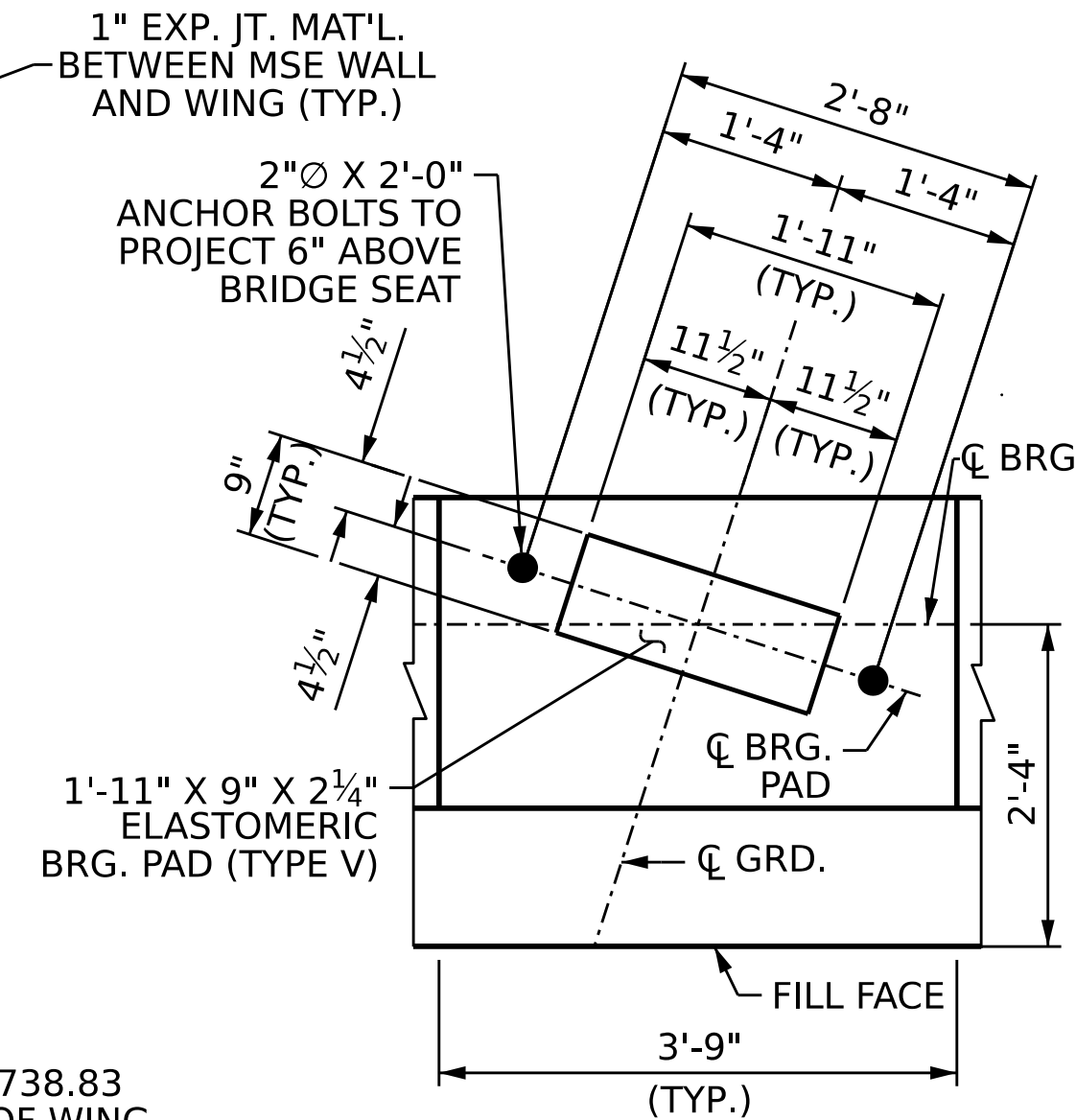
**BILL OF MATERIAL**

| REVISIONS |     |       |     |     |       | SHEET NO.             |
|-----------|-----|-------|-----|-----|-------|-----------------------|
| NO.       | BY: | DATE: | NO. | BY: | DATE: | 5-19                  |
| 1         |     |       | 3   |     |       | TOTAL<br>SHEETS<br>32 |
| 2         |     |       | 4   |     |       |                       |
|           |     |       |     |     |       |                       |

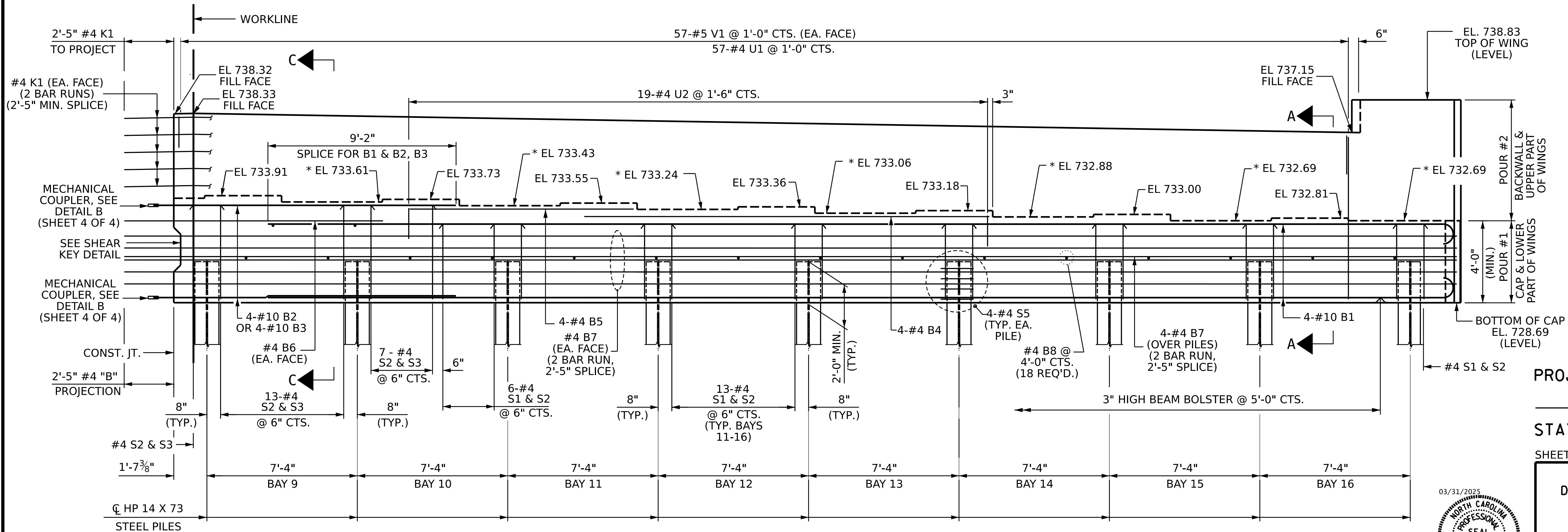




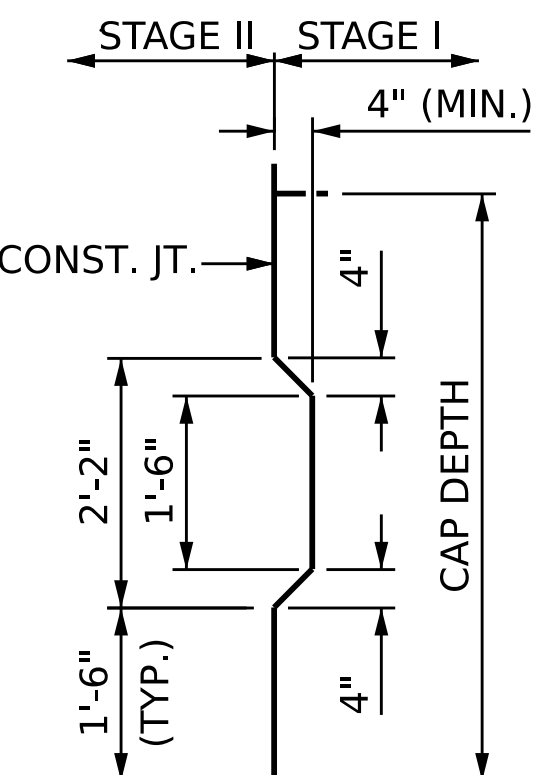
PLAN OF STAGE I



DETAIL A  
(TYP. EA. GDR.)



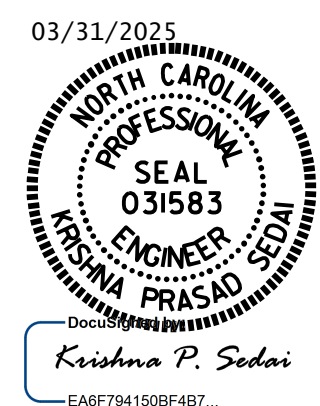
ELEVATION OF STAGE I



SHEAR KEY DETAIL

PROJECT NO. **BR-0015**  
**DAVIDSON** COUNTY  
STATION: **29+45.91 -L-**

SHEET 1 OF 4



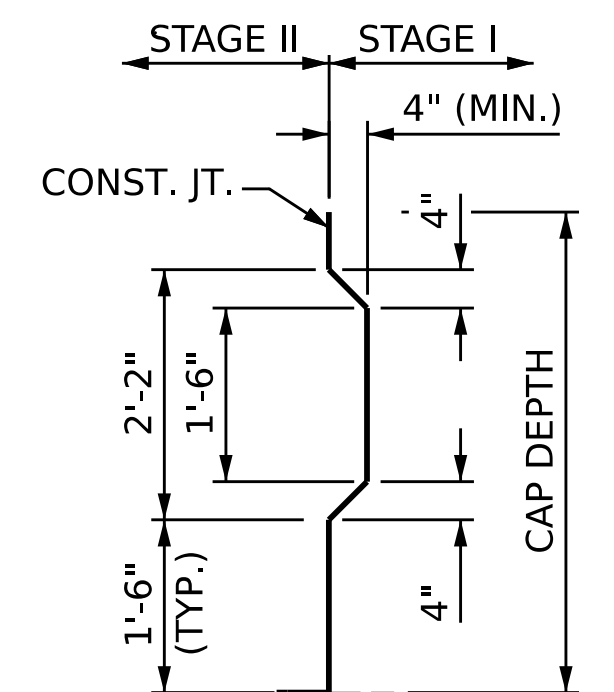
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**SUBSTRUCTURE  
END BENT #1  
STAGE I**

DRAWN BY: **S.A. HERNANDEZ** DATE: **6/2024**  
CHECKED BY: **A. SORSENGINH** DATE: **7/2024**  
DESIGN ENGINEER OF RECORD: **A. SORSENGINH** DATE: **7/2024**

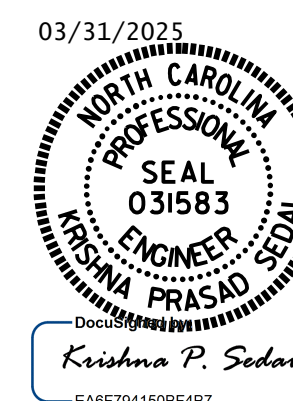
DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

| REVISIONS |     |       |     |     |       | SHEET NO. |
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| NO.       | BY: | DATE: | NO. | BY: | DATE: |           |
| 1         |     |       | 3   |     |       | S-20      |
| 2         |     |       | 4   |     |       |           |

TOTAL SHEETS: 32



SHEAR KEY DETAIL



PROJECT NO. BR-0015  
DAVIDSON COUNTY  
STATION: 29+45.91 -L-  
SHEET 2 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

|           |     |       |     |     |       |                       |
|-----------|-----|-------|-----|-----|-------|-----------------------|
| REVISIONS |     |       |     |     |       | SHEET NO.<br>S-21     |
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| 2         |     |       | 4   |     |       |                       |

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED



## PLAN OF WING (W1)

## PLAN OF EARWALL (W2)

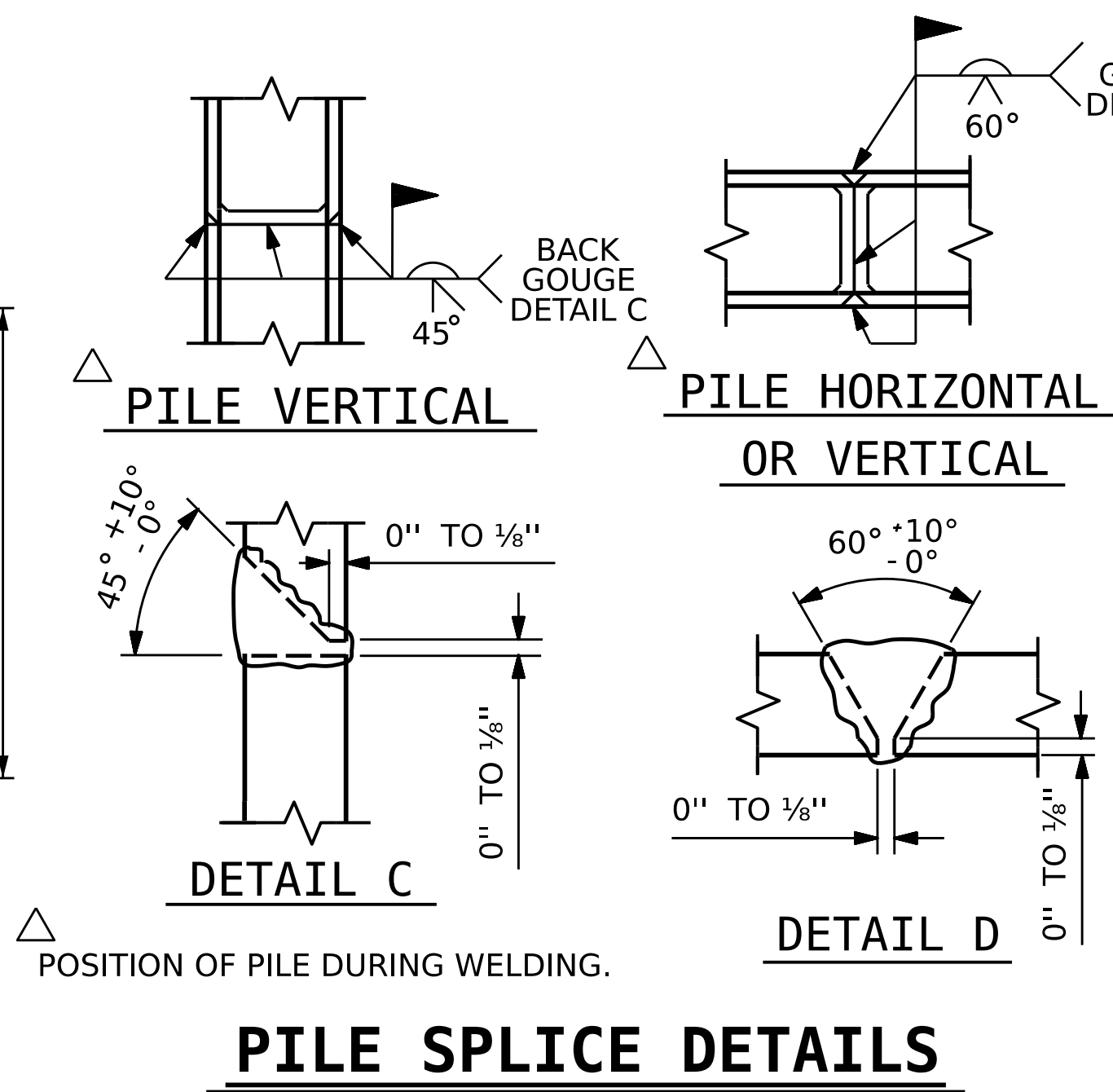
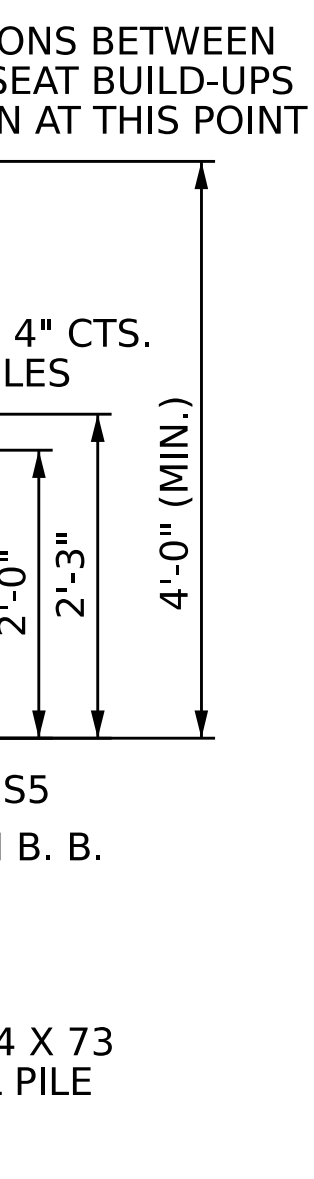
## SECTION X-X

**ELEVATION OF WING (W1)**

### ELEVATION OF EARWALL (W2)

## SECTION Y-Y

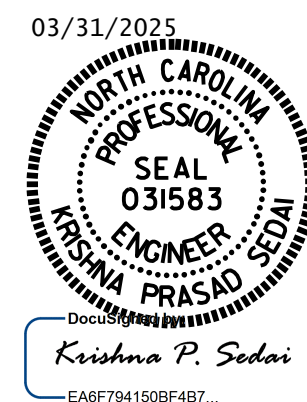
3/31/2025  
R:\NSProj\Special\BR0015\Structures\Final Plans\401\_043\_BR-0015\_SMU\_EB1\_S22\_280905.dgn  
ksedaj



\* STAGE I TOP AND BOTTOM "B" BARS  
ARE DETAILED WITH STAGGERED  
1'-0" AND 3'-0" EXTENSIONS BEYOND  
CONSTRUCTION JOINT



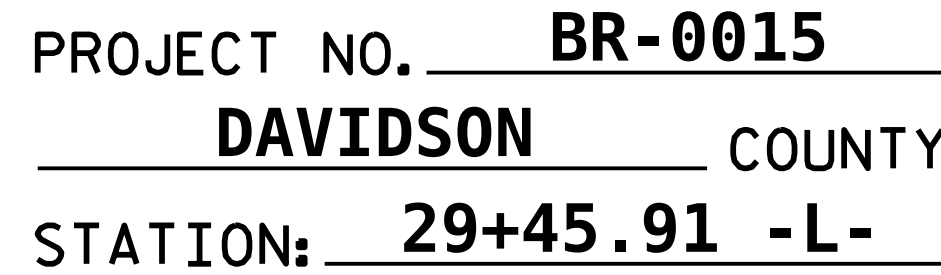
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| 2         |     |       | 4   |     |       |                       |





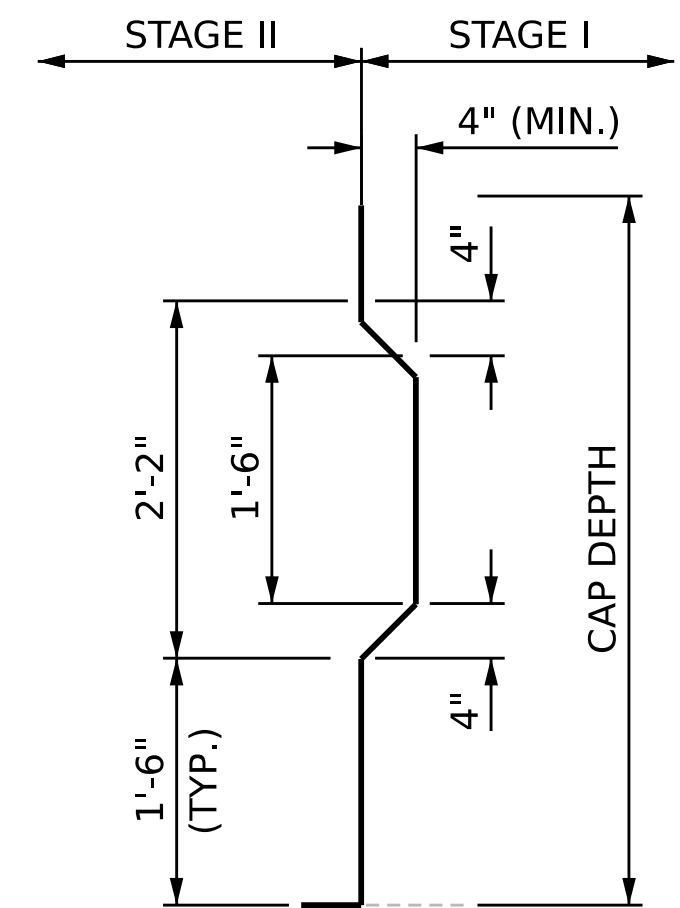


**DETAIL A**  
(TYP. EA. GDR.)

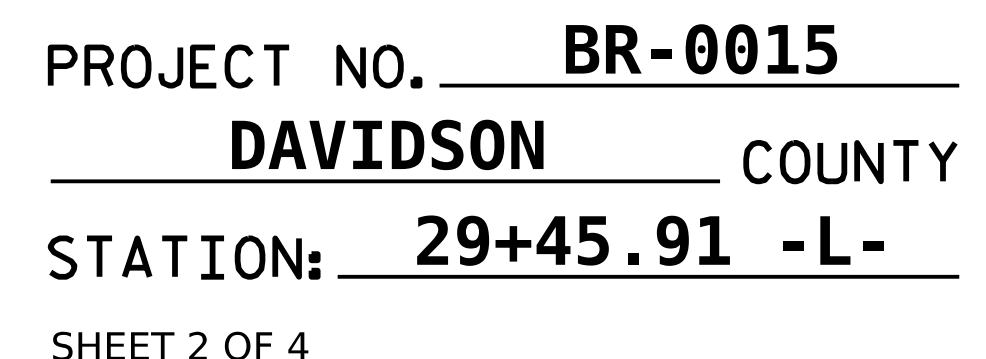


SUBSTRUCTURE  
END BENT #2  
STAGE I

| REVISIONS |     |       |     |     |       | SHEET NO.<br>S-24     |
|-----------|-----|-------|-----|-----|-------|-----------------------|
| NO.       | BY: | DATE: | NO. | BY: | DATE: |                       |
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| 2         |     |       | 4   |     |       |                       |



## PLAN OF STAGE II

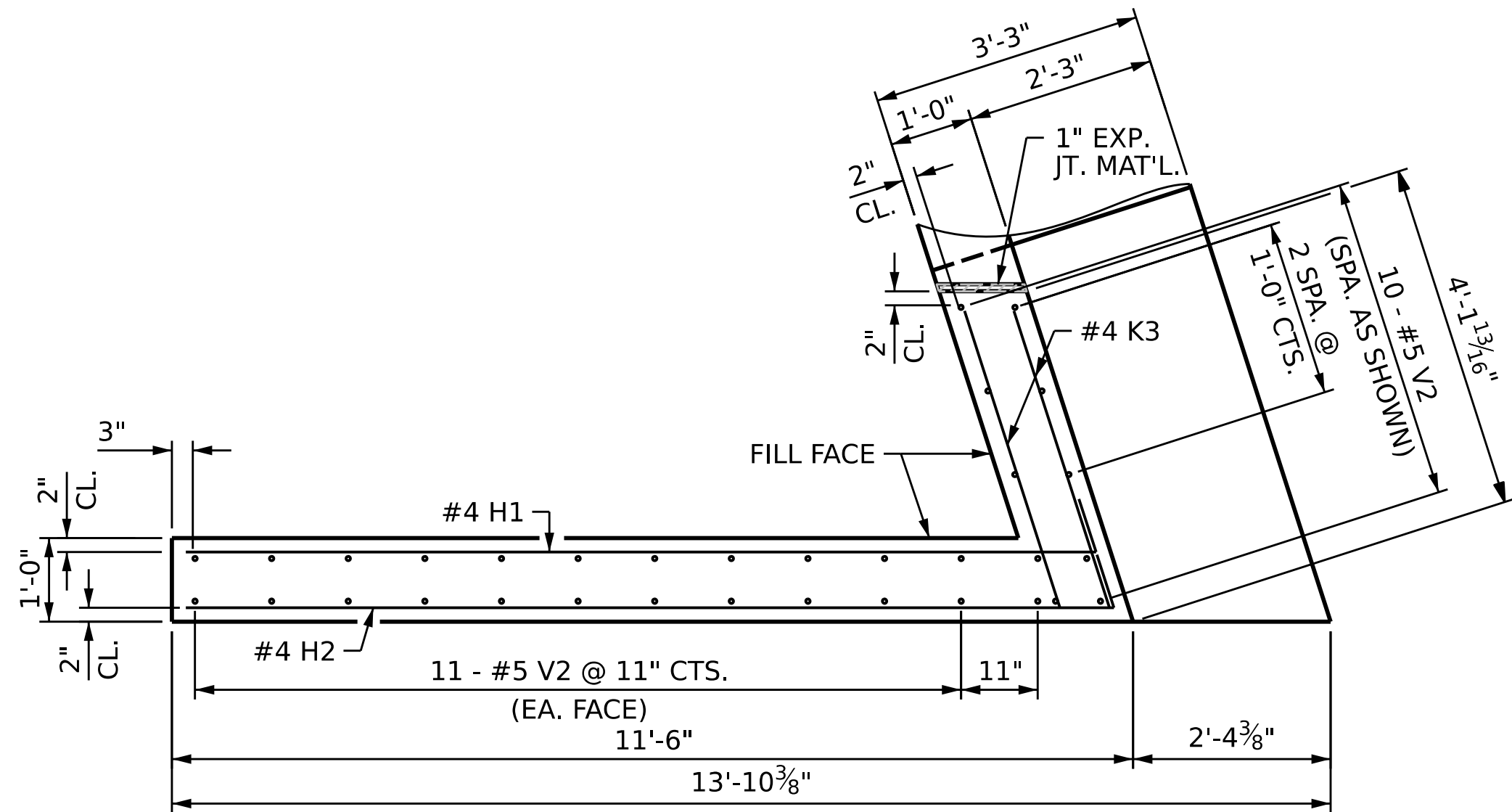


## ELEVATION OF STAGE II

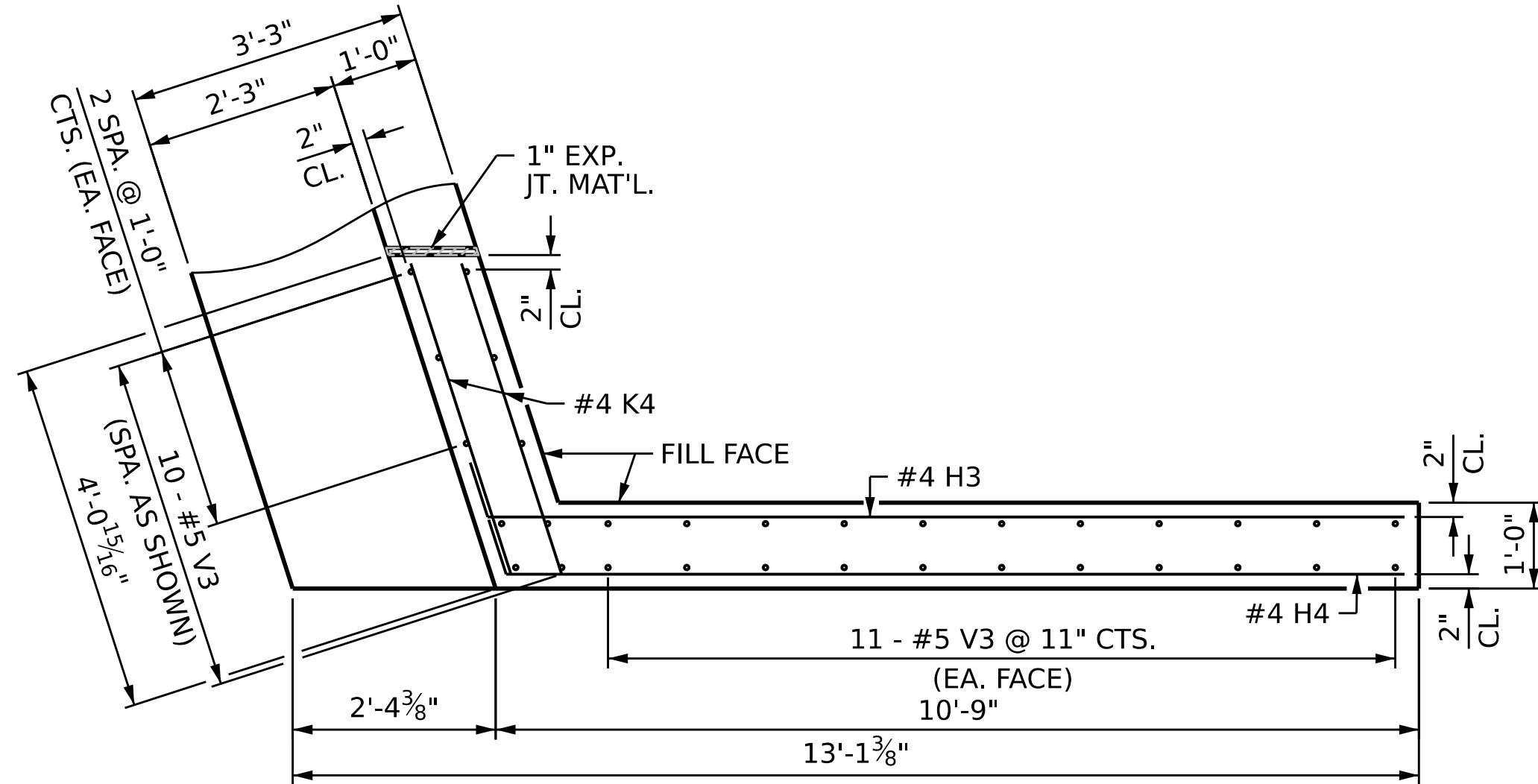
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| 2         |     |       | 4   |     |       |                    |

3/31/2025  
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ksedai

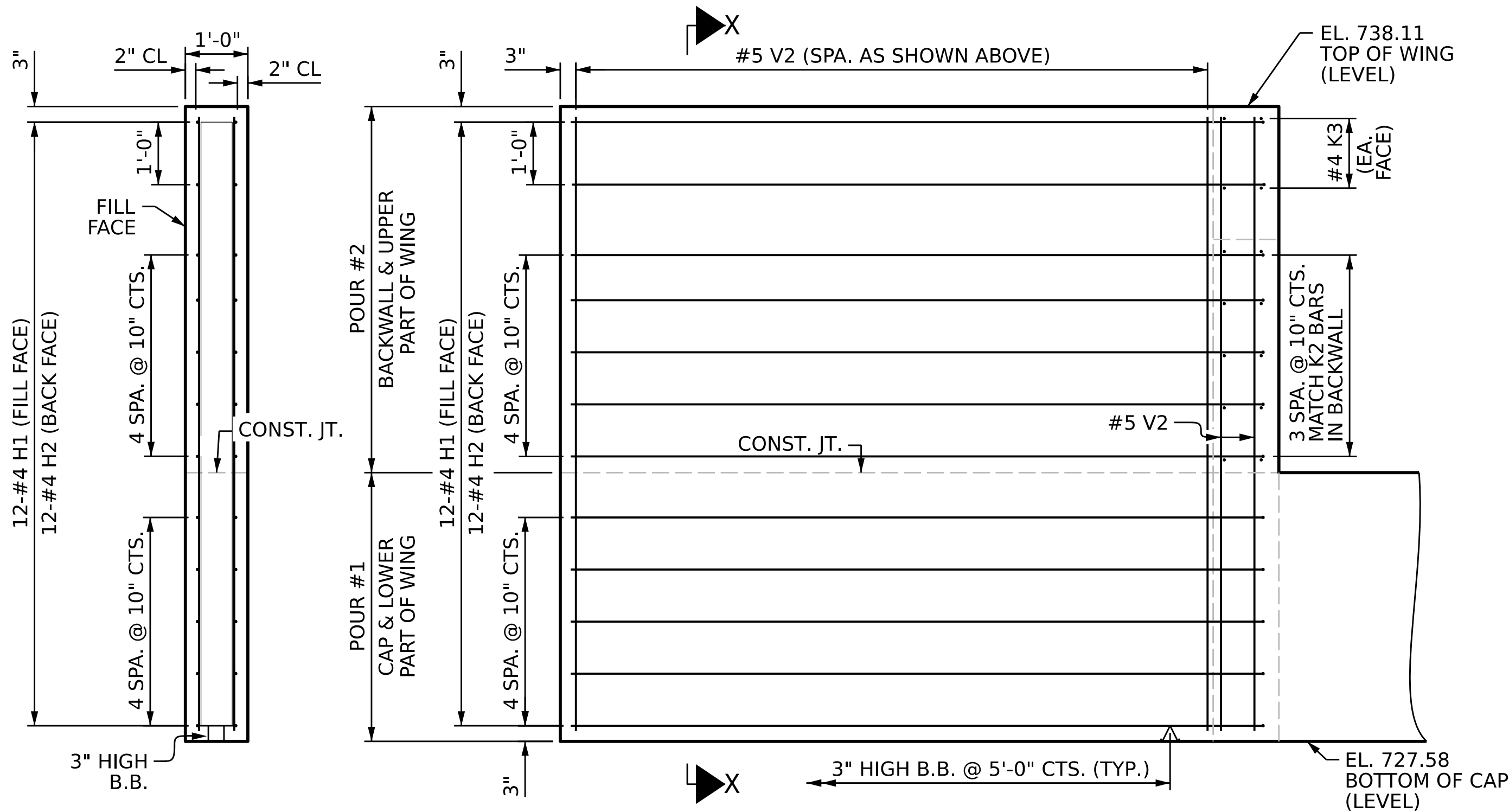




PLAN OF WING (W1)

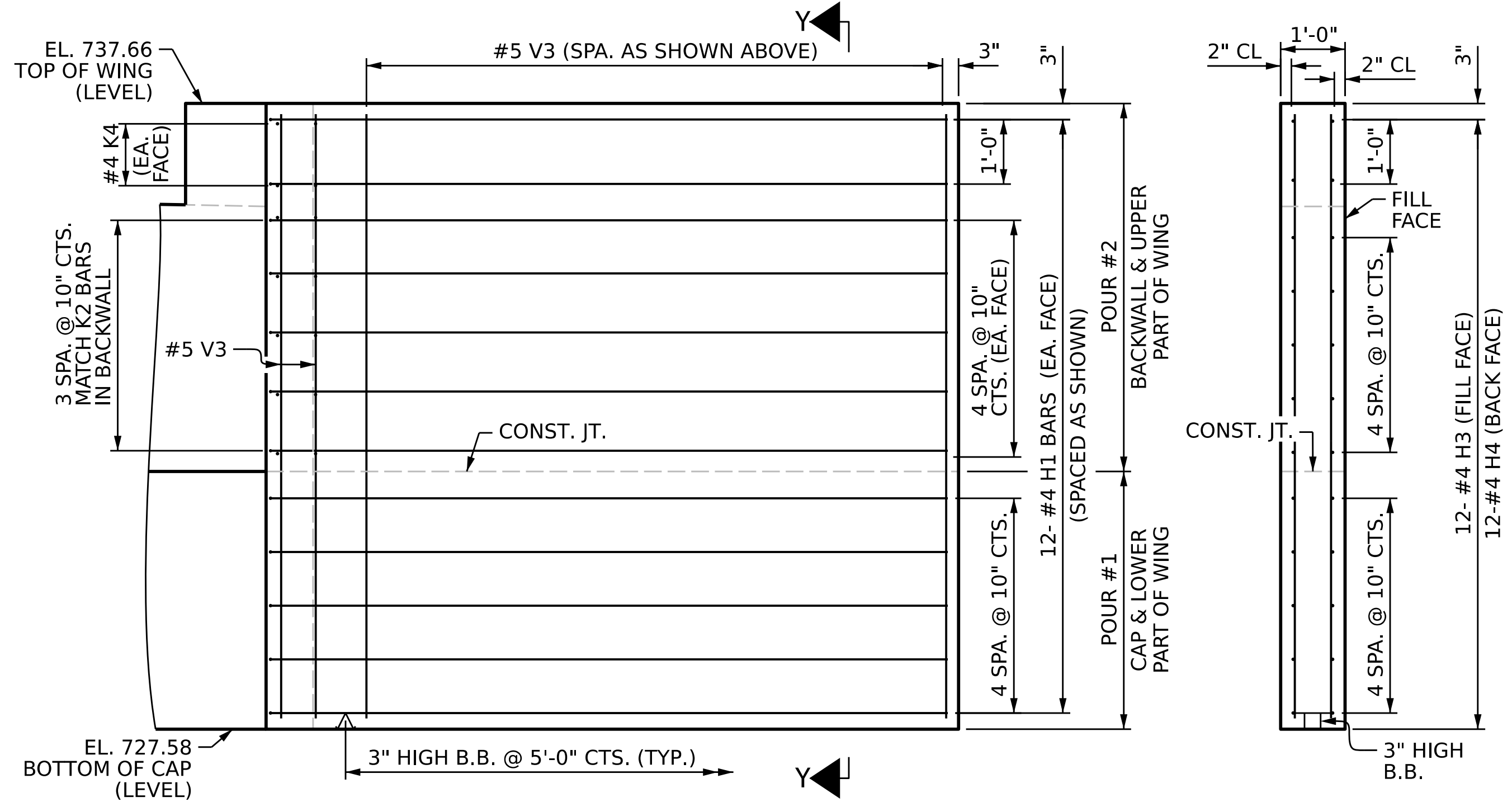


PLAN OF WING (W2)



SECTION X-X

ELEVATION OF WING (W1)

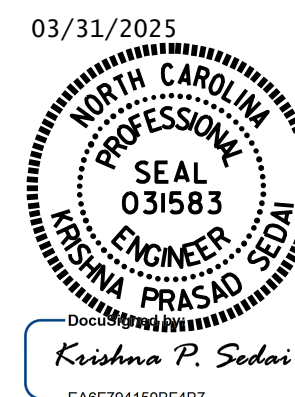


ELEVATION OF WING (W2)

SECTION Y-Y

PROJECT NO. **BR-0015**  
**DAVIDSON** COUNTY  
STATION: **29+45.91 -L-**

SHEET 3 of 4



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE  
**END BENT #2**


DRAWN BY : **S.A. HERNANDEZ** DATE : **06/2024**  
CHECKED BY : **A. SORSENGINH** DATE : **07/2024**  
DESIGN ENGINEER OF RECORD: **A. SORSENGINH** DATE : **07/2024**

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

| REVISIONS    |     |       |     |     |       | SHEET NO. |
|--------------|-----|-------|-----|-----|-------|-----------|
| NO.          | BY: | DATE: | NO. | BY: | DATE: |           |
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| TOTAL SHEETS |     |       |     |     |       | 32        |



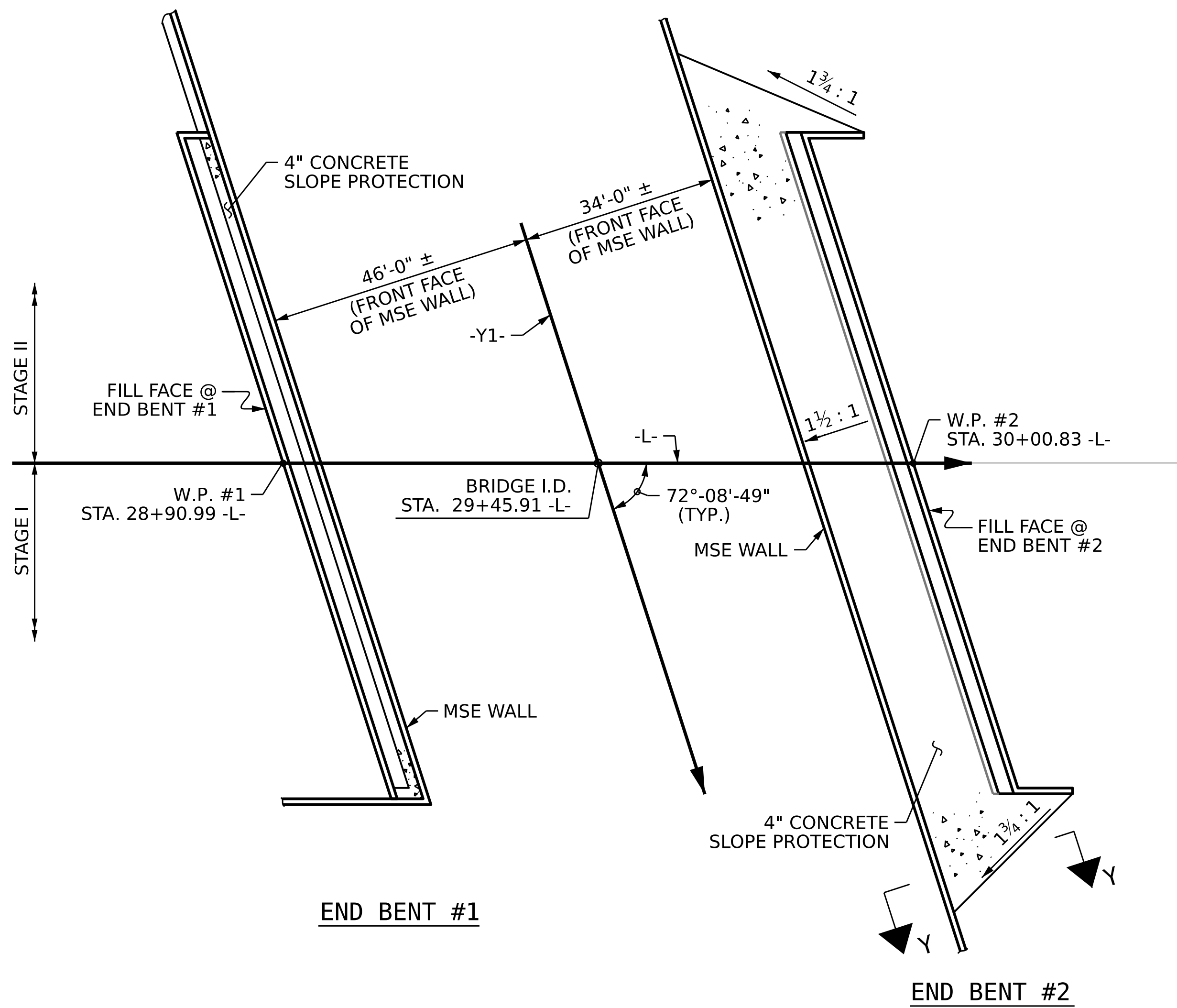
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FINAL UNLESS ALL  
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DocuSign Envelope ID: FAEF794150BF4B7

*Krishna P. Sedai*

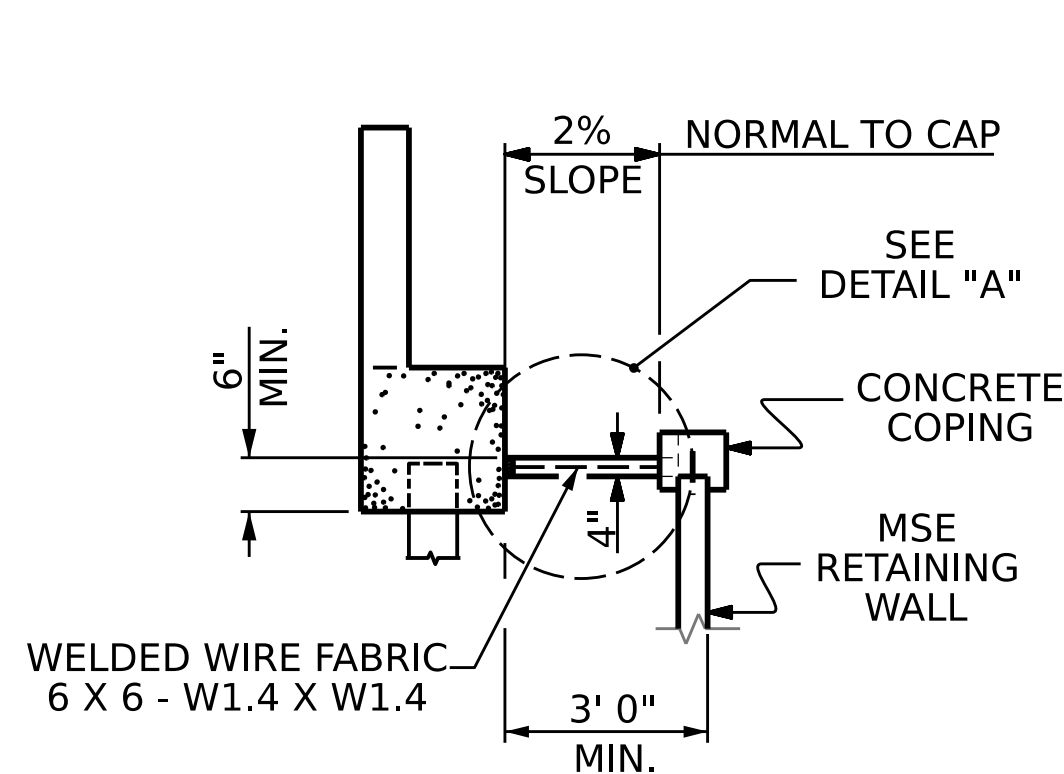




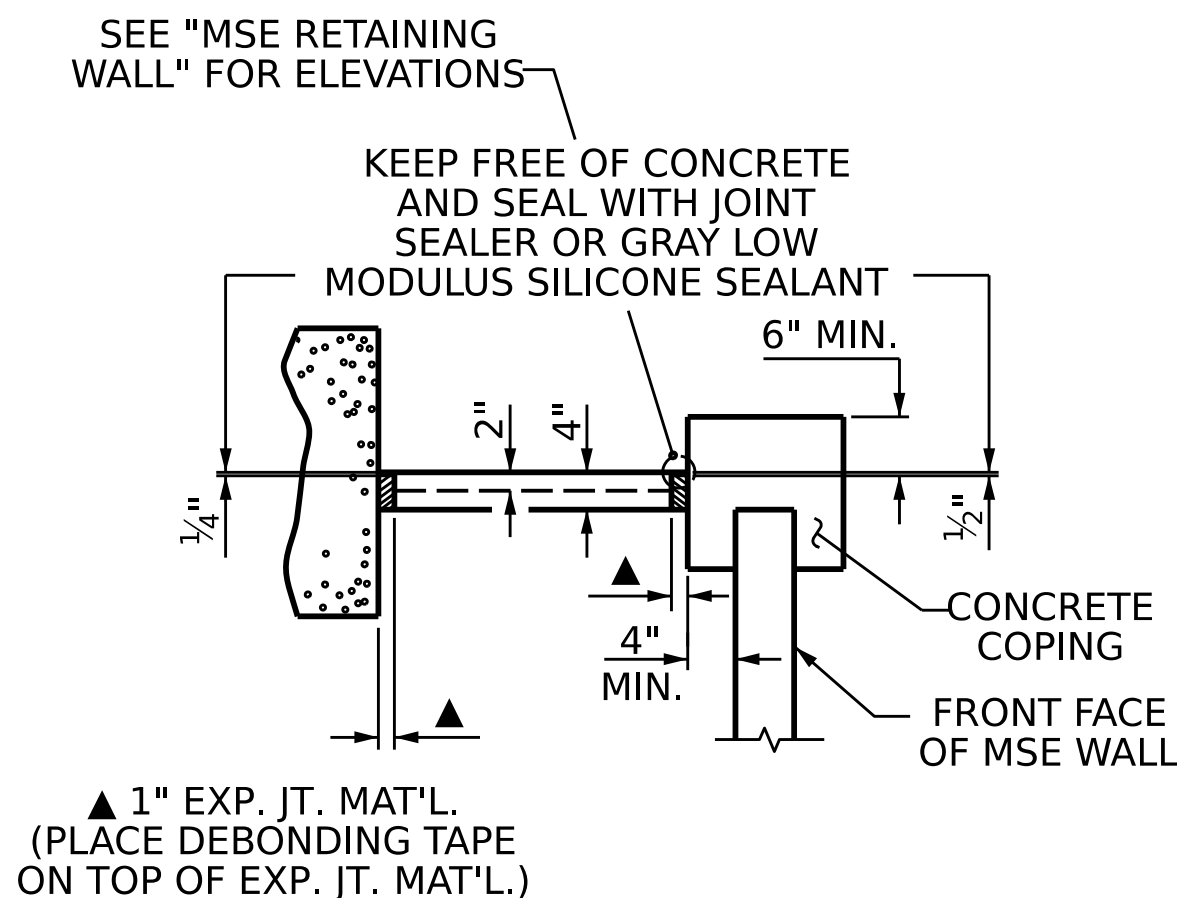
**PLAN**

| BRIDGE @<br>STA. 29+45.91 -L- | 4 INCH<br>SLOPE PROTECTION | *<br>WELDED WIRE FABRIC<br>60 INCHES WIDE |
|-------------------------------|----------------------------|---|
|                               | SQUARE YARDS               | APPROX. L.F.                              |
| END BENT 1                    | 40                         | 80  |
| END BENT 2                    | 270                        | 540                                       |

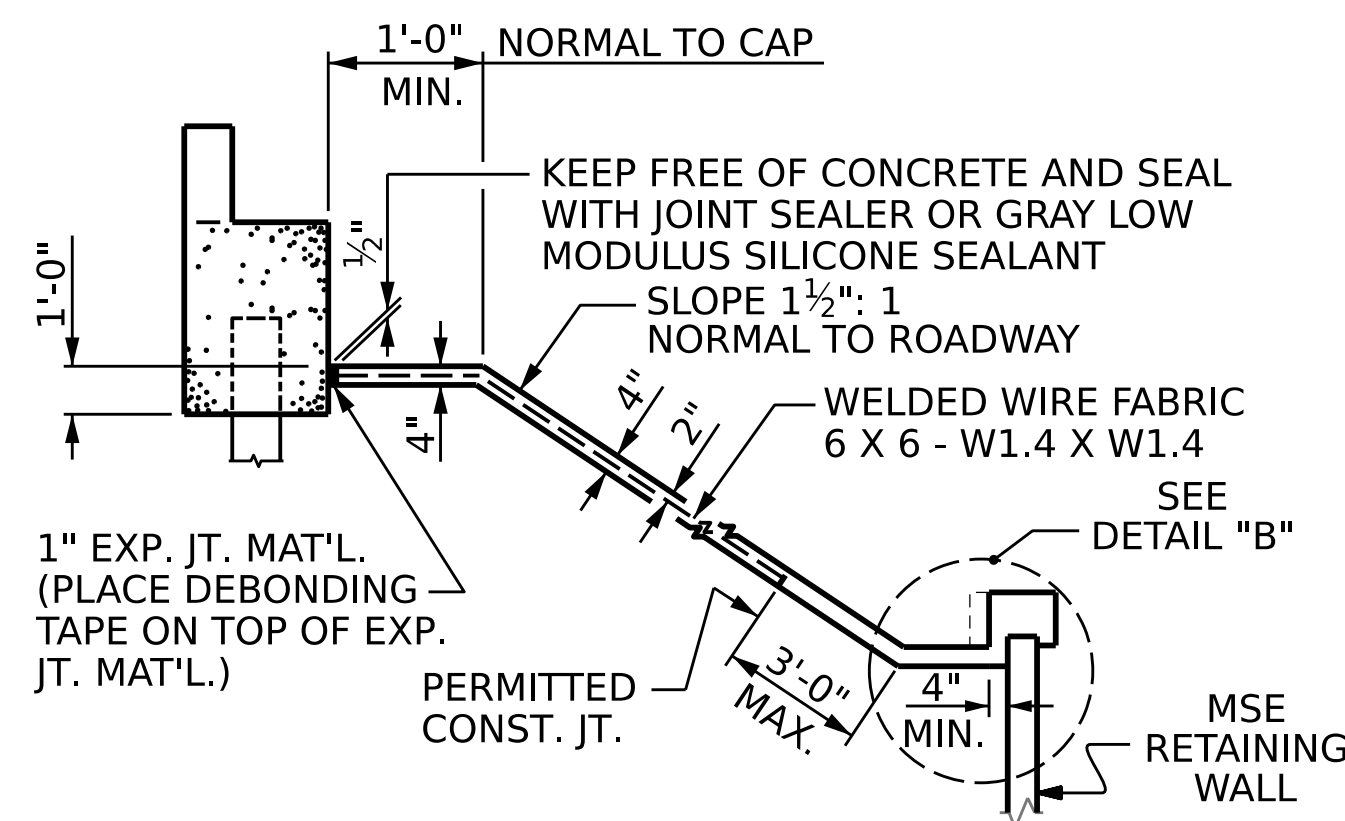
\* QUANTITY SHOWN IS BASED ON 5' POURS.



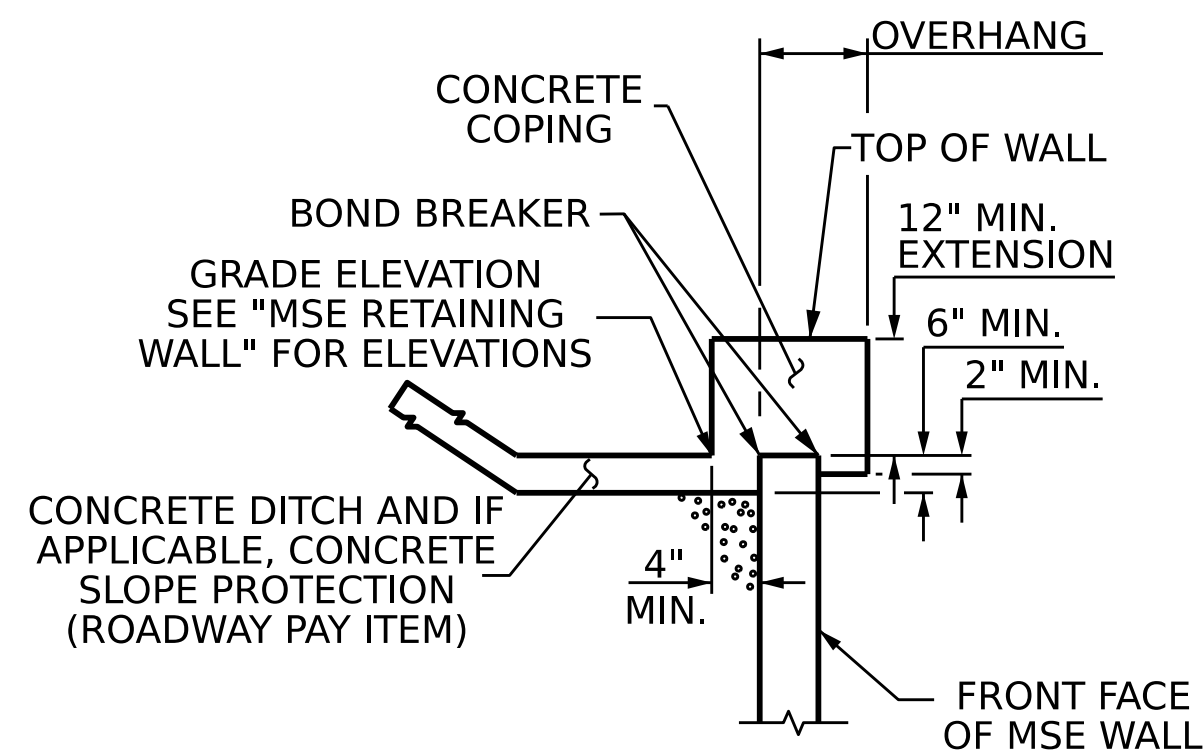
**SECTION ALONG C -L-  
END BENT 1**



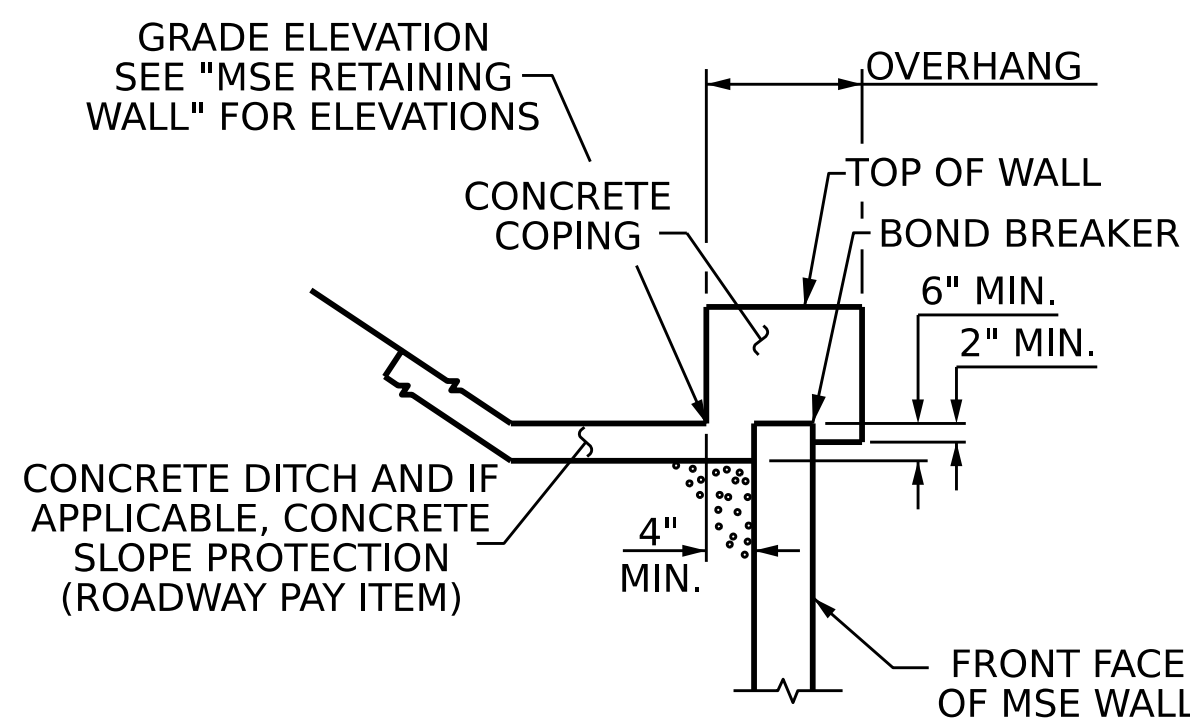
**DETAIL A**



**SECTION ALONG C -L-  
END BENT 2**

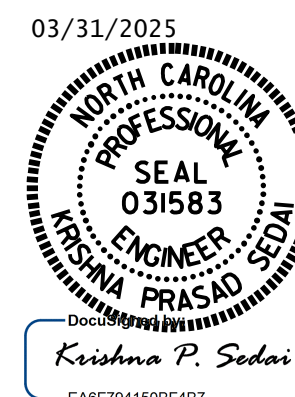


**DETAIL B**



**SECTION Y-Y**

PROJECT NO. **BR-0015**  
**DAVIDSON** COUNTY  
 STATION: **29+45.91 -L-**



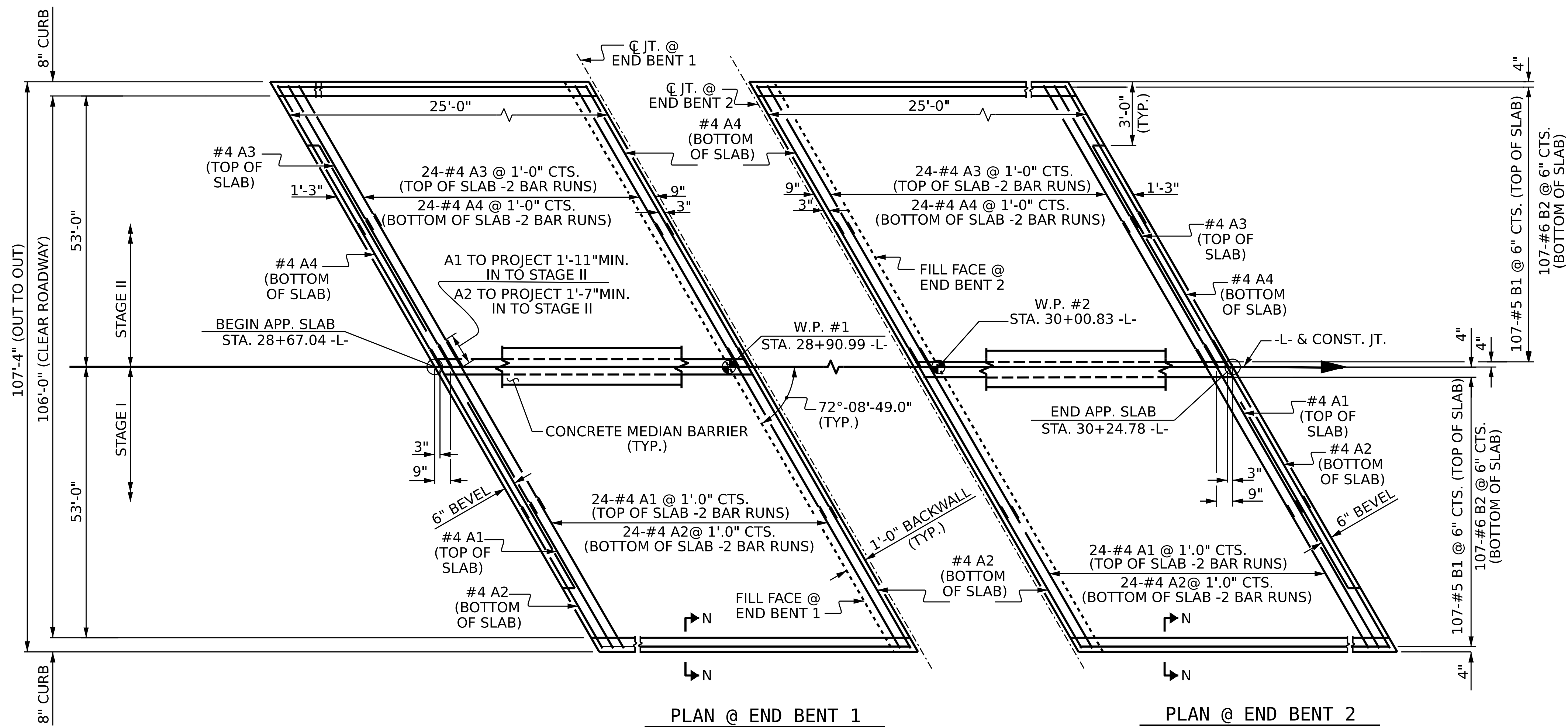
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
**SLOPE PROTECTION  
 DETAILS**

ASSEMBLED BY : S. A. HERNANDEZ DATE : 07/2024  
 CHECKED BY : A. SORSENGINH DATE : 09/2024  
 DRAWN BY : ELR 5/92  
 CHECKED BY : GRP 6/92

REV. 12/21/11 MAA/GM  
 REV. 1/16 MAA/TMG  
 REV. 12/17 MAA/THC

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

| REVISIONS       |     |       |     |     |       | SHEET NO. |
|-----------------|-----|-------|-----|-----|-------|-----------|
| NO.             | BY: | DATE: | NO. | BY: | DATE: |           |
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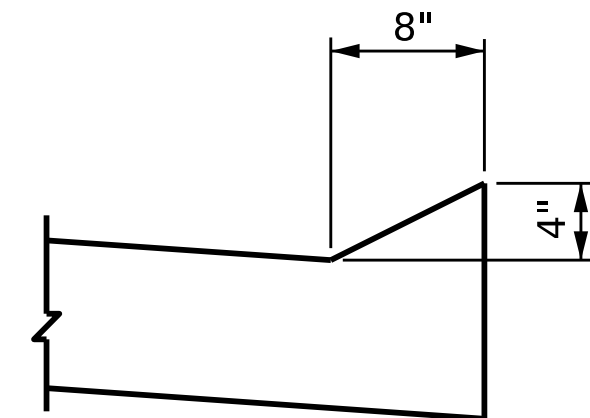


PLAN @ END BENT 1

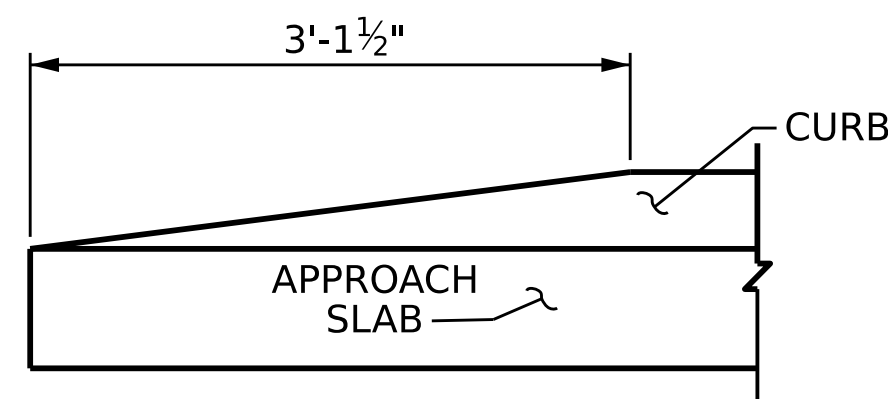
PLAN @ END BENT 2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS

| SPLICE LENGTHS |              |          |
|----------------|--------------|----------|
| BAR SIZE       | EPOXY COATED | UNCOATED |
| #4             | 1'-11"       | 1'-7"    |
| #5             | 2'-5"        | 2'-0"    |
| #6             | 3'-7"        | 2'-5"    |



SECTION N-N

END OF CURB WITHOUT  
SHOULDER BERM GUTTER

CURB DETAILS

BILL OF MATERIAL FOR ONE APPROACH SLAB  
(2 REQ'D)

| STAGE I (2 REQ'D)                |     |      |      |        |            | STAGE II (REQ'D)                 |     |      |      |         |            |
|----------------------------------|-----|------|------|--------|------------|----------------------------------|-----|------|------|---------|------------|
| BAR                              | NO. | SIZE | TYPE | LENGTH | WEIGHT     | BAR                              | NO. | SIZE | TYPE | LENGTH  | WEIGHT     |
| *A1                              | 52  | #4   | STR  | 30'-1" | 1045       | *A3                              | 52  | #4   | STR  | 29'-1"  | 1010       |
| A2                               | 52  | #4   | STR  | 29'-9" | 1033       | A4                               | 52  | #4   | STR  | 28'-11" | 1004       |
|                                  |     |      |      |        |            |                                  |     |      |      |         |            |
| *B1                              | 107 | #5   | STR  | 24'-2" | 2697       | *B1                              | 107 | #5   | STR  | 24'-2"  | 2697       |
| B2                               | 107 | #6   | STR  | 24'-8" | 3964       | B2                               | 107 | #6   | STR  | 24'-8"  | 3964       |
|                                  |     |      |      |        |            |                                  |     |      |      |         |            |
| REINFORCING STEEL                |     |      |      |        | LBS. 4997  | REINFORCING STEEL                |     |      |      |         | LBS. 4968  |
| * EPOXY COATED REINFORCING STEEL |     |      |      |        | LBS. 3742  | * EPOXY COATED REINFORCING STEEL |     |      |      |         | LBS. 3707  |
|                                  |     |      |      |        |            |                                  |     |      |      |         |            |
| CLASS AA CONCRETE                |     |      |      |        | C. Y. 58.3 | CLASS AA CONCRETE                |     |      |      |         | C. Y. 58.3 |

## NOTES

FOR BRIDGE APPROACH FILL, SEE ROADWAY PLANS.

APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.

THE JOINT SHALL BE SAWED PRIOR TO THE CASTING OF THE BARRIER RAIL OR PARAPET AND END POST.

AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

## WITH FOAM JOINT SEAL

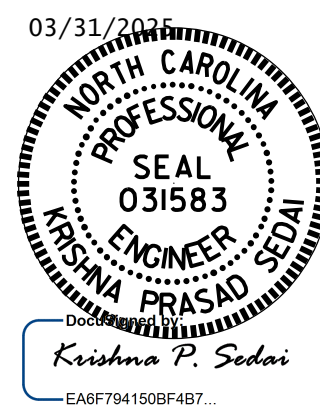
FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2".

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

PROJECT NO. **BR-0015**  
**DAVIDSON** COUNTY  
STATION: **29+45.91 -L-**

SHEET 1 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

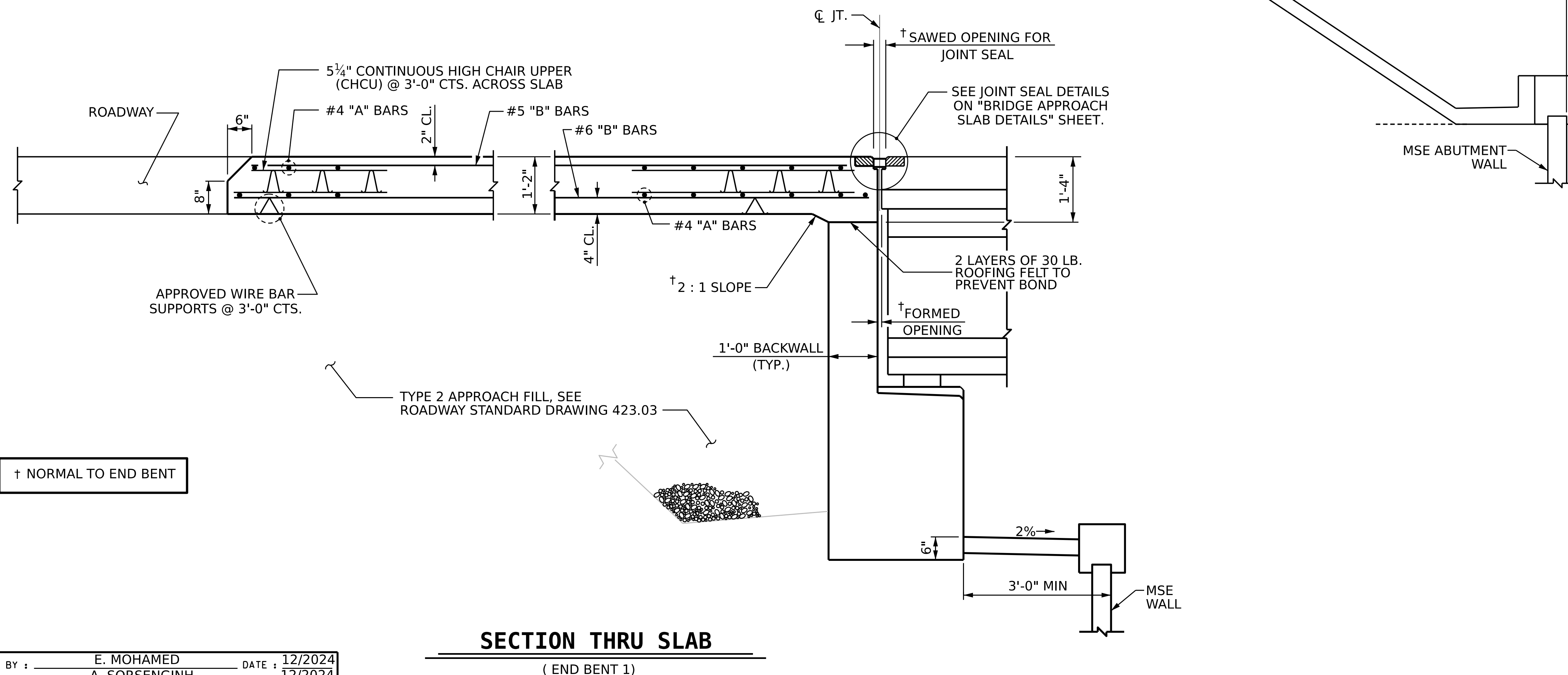
STANDARD

BRIDGE APPROACH SLAB  
FOR FLEXIBLE PAVEMENT

| REVISIONS |     |       |     |     |       | SHEET NO.       |
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| NO.       | BY: | DATE: | NO. | BY: | DATE: |                 |
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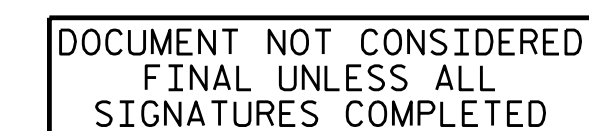
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SIGNATURES COMPLETEDDRAWN BY : **E. MOHAMED** DATE : **09/2024**  
CHECKED BY : **A. SORSENGINH** DATE : **10/2024**  
DESIGN ENGINEER OF RECORD: **E. BAYISSA** DATE : **10/2024**



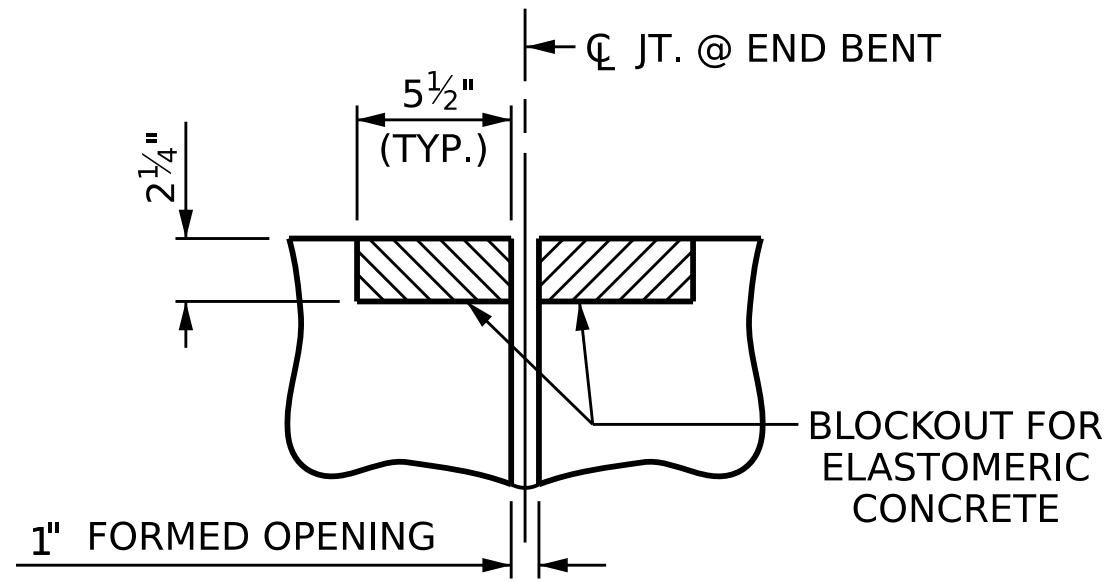


SHEET 2 OF 4

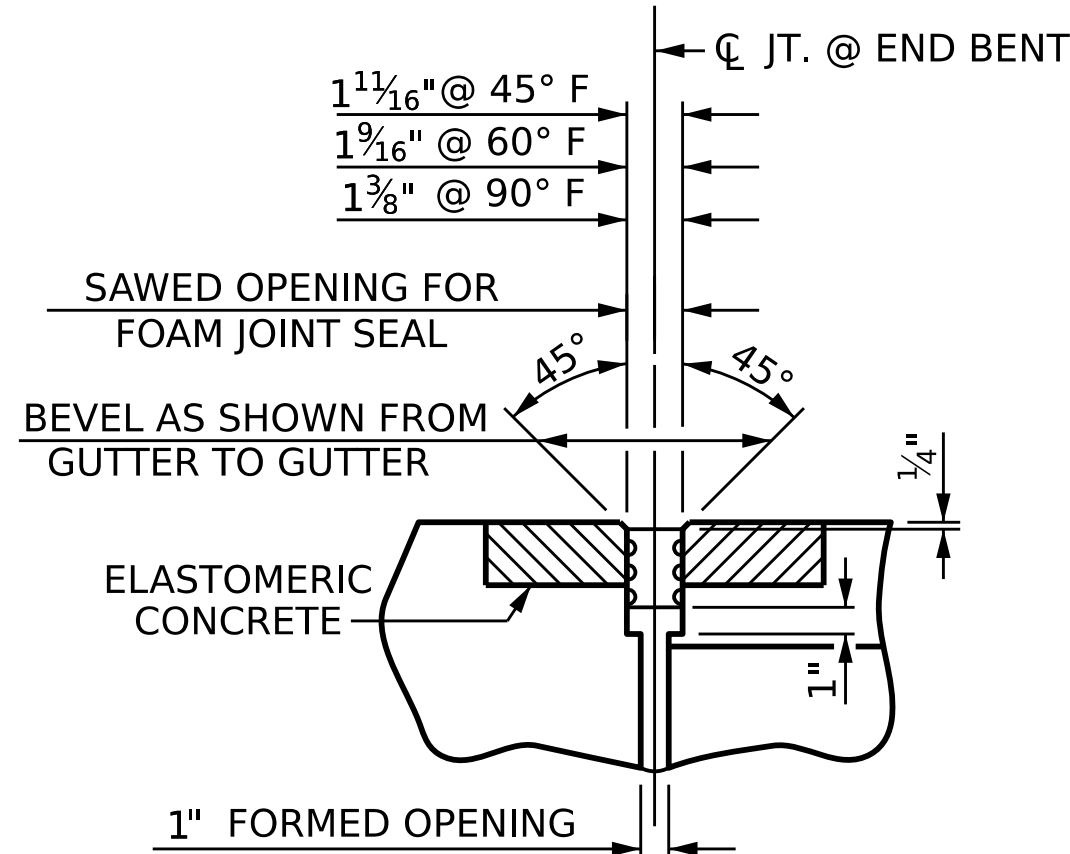
## BRIDGE APPROACH SLAB FOR FLEXIBLE PAVEMENT



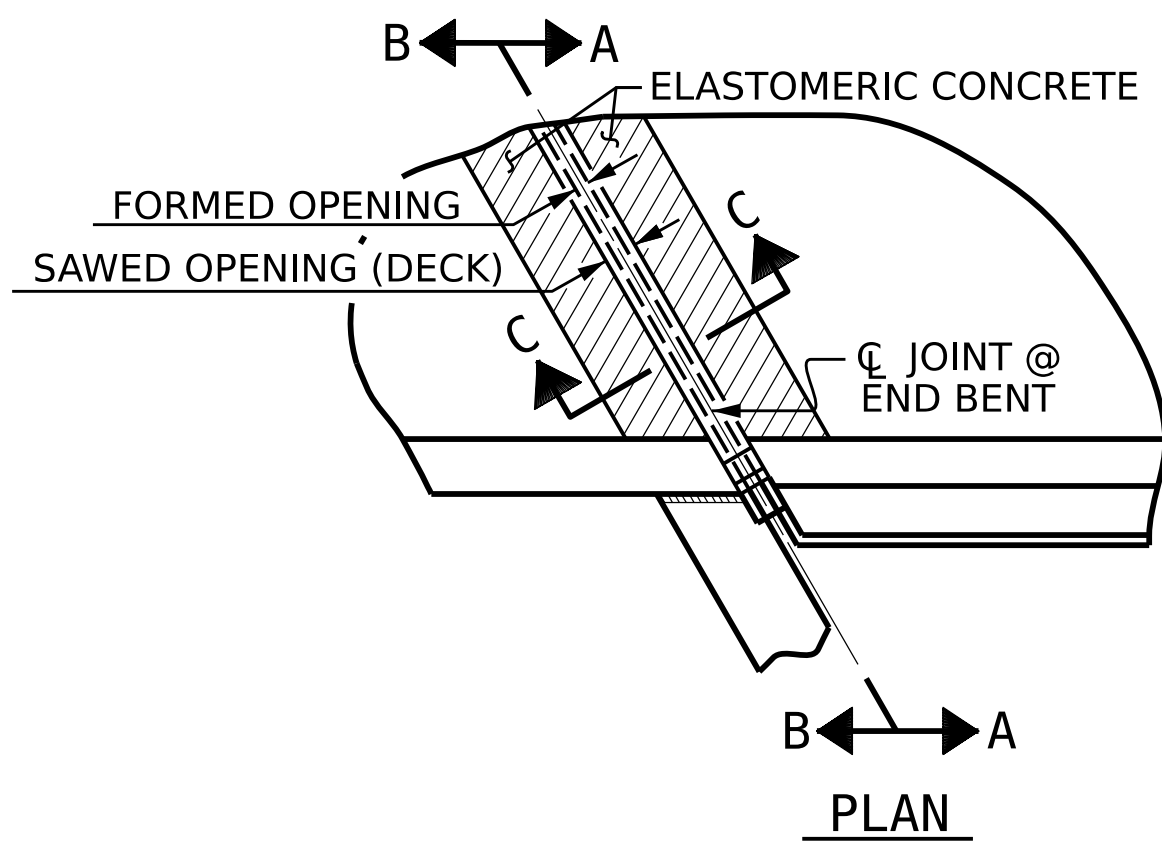
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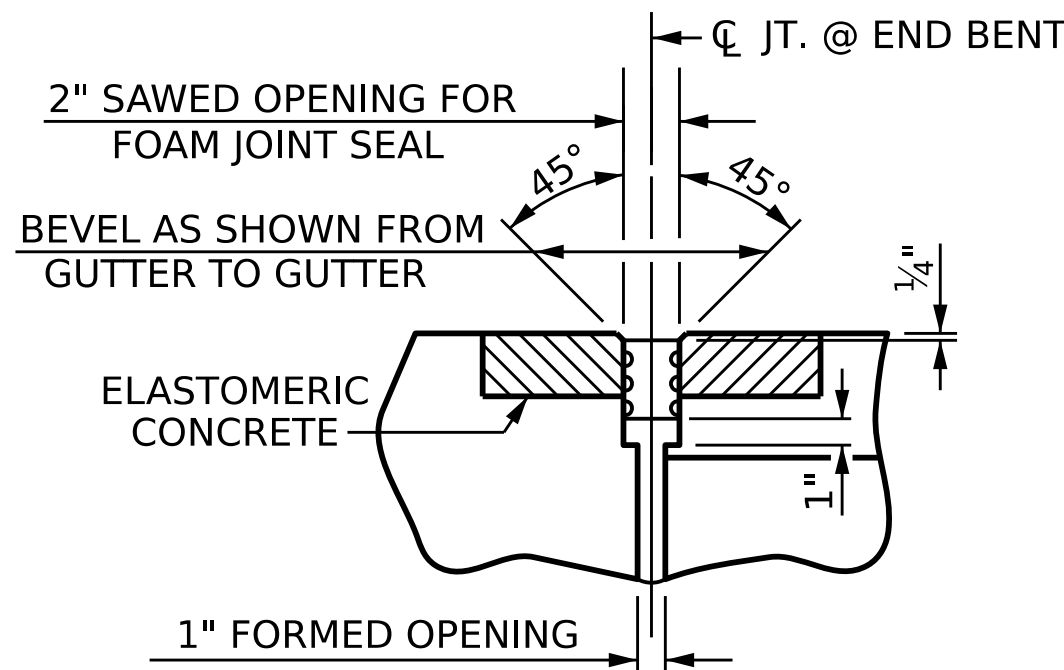
SECTION C-C  
FOAM JOINT SEAL  
(PRE-SAWED ELASTOMERIC  
CONCRETE DIMENSIONS)



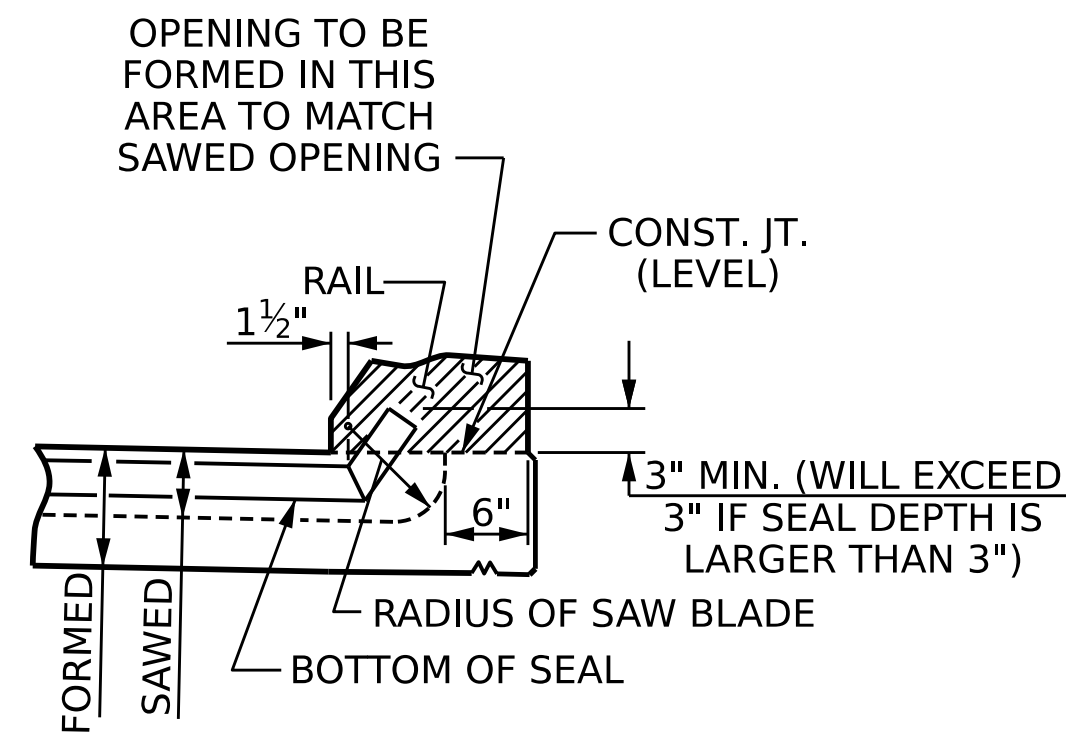
SECTION C-C  
FOAM JOINT SEAL  
( EXPANSION )



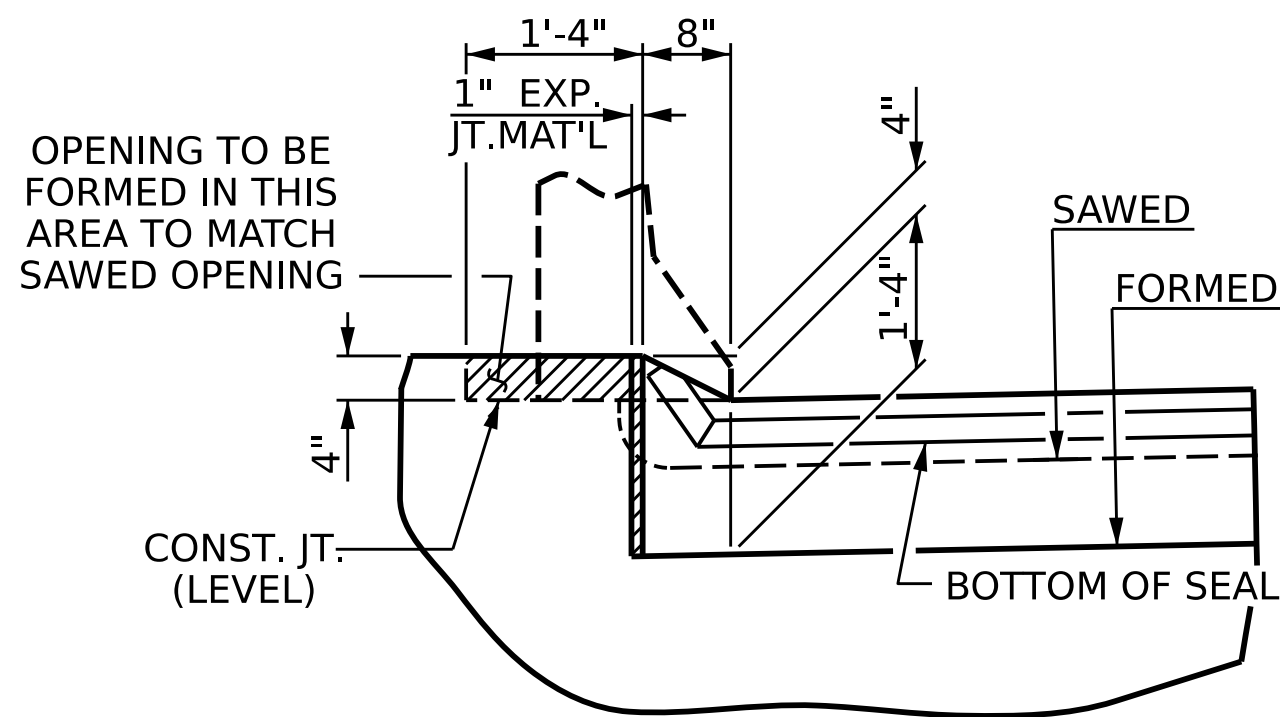
PLAN



SECTION C-C  
FOAM JOINT SEAL  
( FIXED )



SECTION A-A

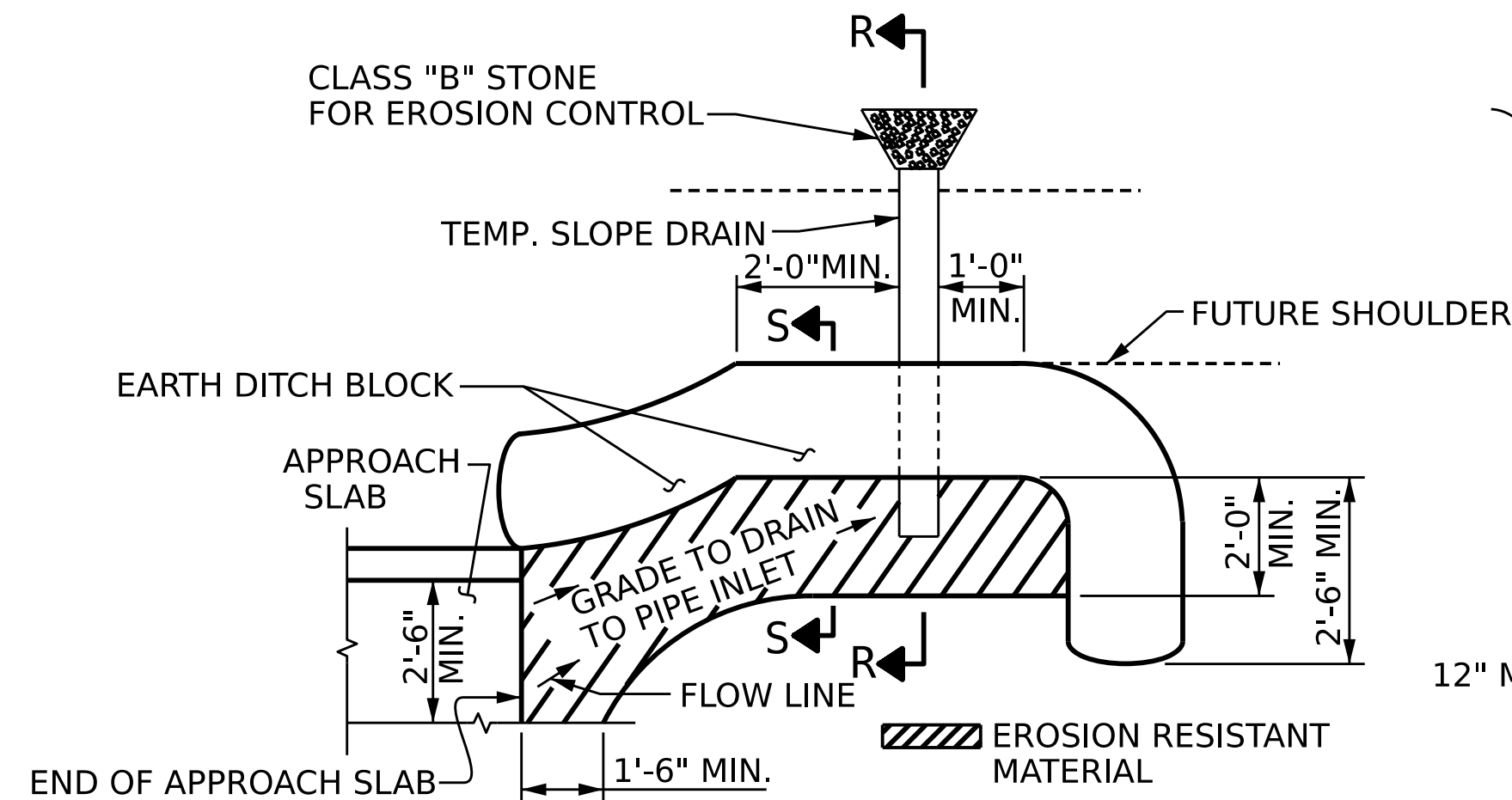


SECTION B-B

### JOINT SEAL DETAILS @ END BENT

FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

THE JOINT SHALL BE SAWED PRIOR TO THE CASTING OF THE BARRIER RAIL.

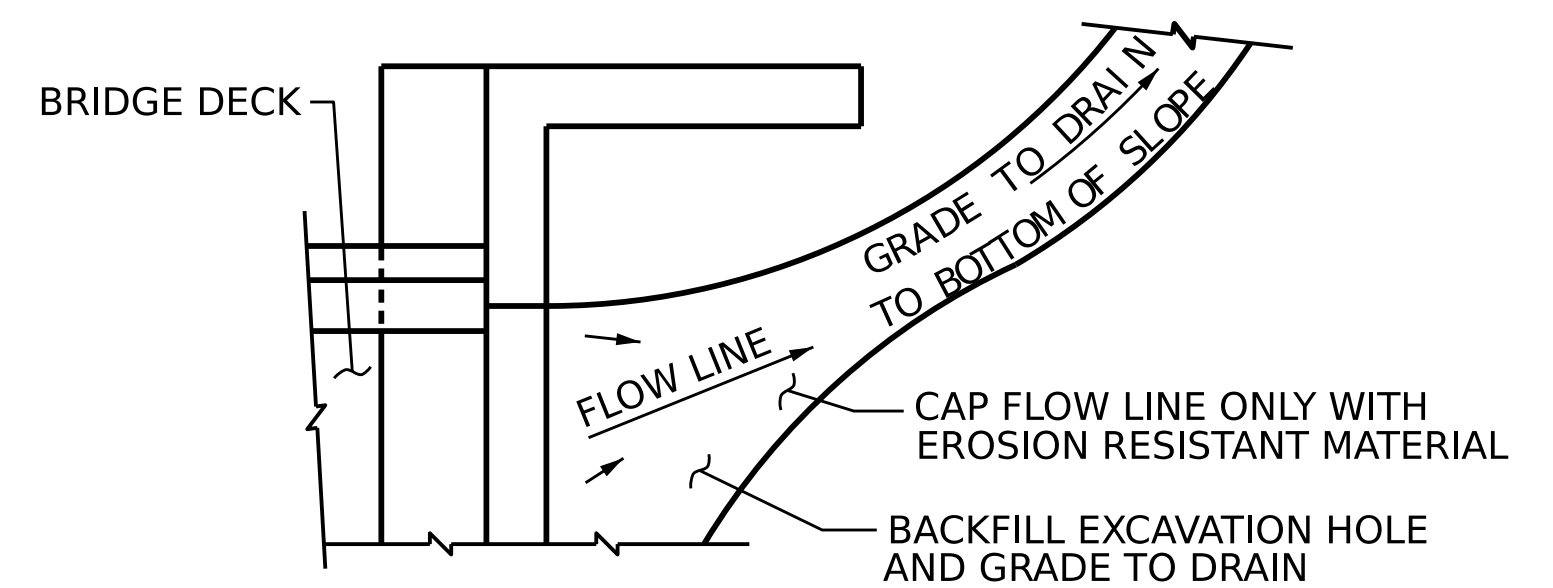


NOTE:  
IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.

PLAN VIEW

### TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

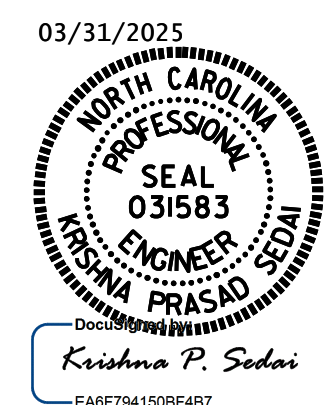
### TEMPORARY DRAINAGE DETAIL

| ELASTOMERIC CONCRETE |                                  |          |
|----------------------|----------------------------------|----------|
| END BENT NO.         | ELASTOMERIC CONCRETE * (CU. FT.) |          |
|                      | STAGE I                          | STAGE II |
| 1                    | 9.56                             | 9.56     |
| 2                    | 9.56                             | 9.56     |
| TOTAL                | 19.12                            | 19.12    |

\* BASED ON THE MINIMUM BLOCKOUT SHOWN.

PROJECT NO. **BR-0015**  
**DAVIDSON** COUNTY  
STATION: **29+45.91 -L-**

SHEET 3 OF 4



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD

### BRIDGE APPROACH SLAB DETAILS

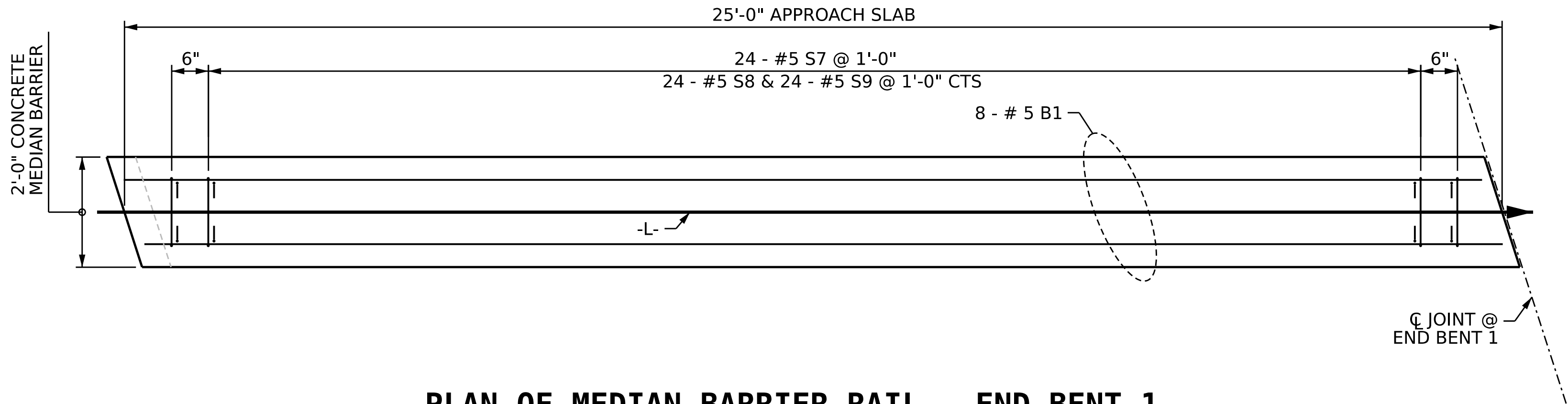
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FINAL UNLESS ALL  
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| REVISIONS |     |       |     |     | SHEET NO.       |
|-----------|-----|-------|-----|-----|-----------------|
| NO.       | BY: | DATE: | NO. | BY: |                 |
| 1         |     |       | 3   |     | S-31            |
| 2         |     |       | 4   |     | TOTAL SHEETS 32 |

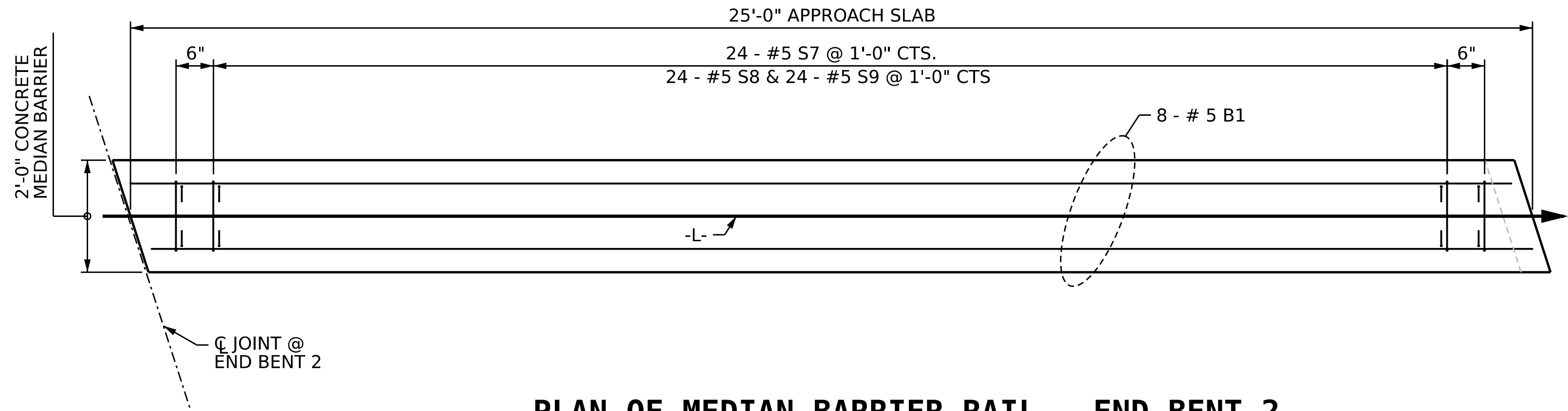
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| ASSEMBLED BY: E. MOHAMED  | DATE: 10/2024      |
| CHECKED BY: A. SORSENGINH | DATE: 10/2024      |
| DRAWN BY: FCJ 11/88       | REV. 6/13 MAA/GM   |
| CHECKED BY: ARB 11/88     | REV. 12/17 MAA/THC |
|                           | REV. 5/18 MAA/THC  |



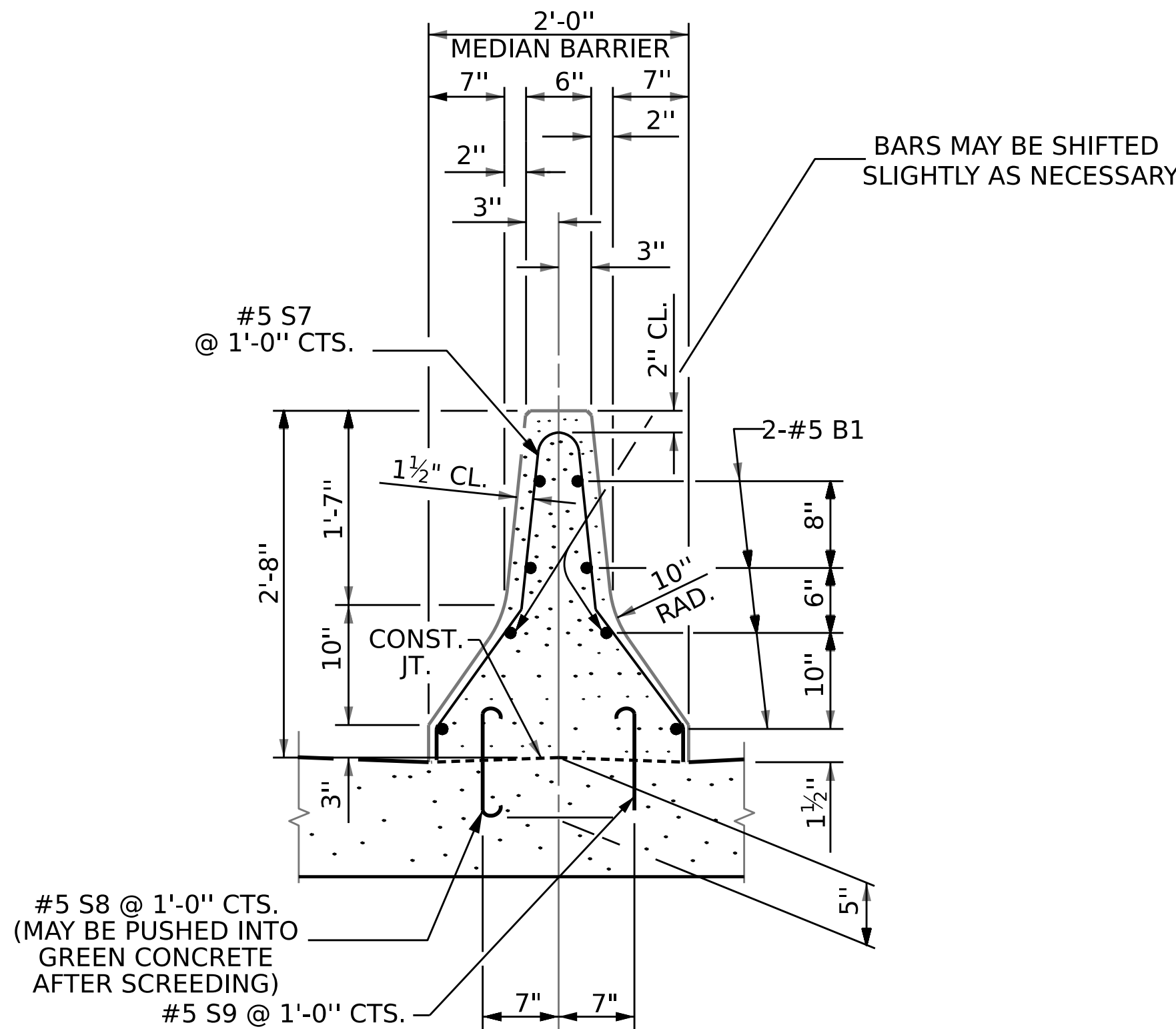
8/26/21



PLAN OF MEDIAN BARRIER RAIL - END BENT 1



PLAN OF MEDIAN BARRIER RAIL - END BENT 2



SECTION THRU 2'-0'' MEDIAN BARRIER

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT

| BILL OF MATERIAL                          |     |      |      |        |        |
|---|-----|------|------|--------|--------|
| 2'-0" CONCRETE MEDIAN BARRIER             |     |      |      |        |        |
| BAR                                       | NO. | SIZE | TYPE | LENGTH | WEIGHT |
| * S7                                      | 48  | #5   | 4    | 5'-6"  | 275    |
| * S8                                      | 48  | #5   | 5    | 1'-10" | 92     |
| * S9                                      | 48  | #5   | 6    | 1'-6"  | 75     |
| * B1                                      | 16  | #5   | STR  | 24'-7" | 410    |
| * EPOXY COATED REINFORCING STEEL 852 LBS. |     |      |      |        |        |
| CLASS AA CONCRETE 4.7 CU. YDS.            |     |      |      |        |        |
| CONCRETE MEDIAN RAIL 50.0 LIN. FT.        |     |      |      |        |        |

NOTES

THE MEDIAN BARRIER SHALL NOT BE CAST UNTIL APPROACH SLAB CONCRETE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL REINFORCING STEEL IN MEDIAN BARRIER RAILS SHALL BE EPOXY COATED.

VERTICAL GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

LINEAR FOOT QUANTITIES FOR BARRIER RAILS INCLUDE RAILS ON APPROACH SLABS. REINFORCING STEEL AND CONCRETE QUANTITIES FOR APPROACH SLAB BARRIER RAILS ARE INCLUDED IN BILL OF MATERIAL FOR THE APPROACH SLABS.



PROJECT NO. **BR-0015**  
**DAVIDSON** COUNTY  
STATION: **29+45.91 -L-**

SHEET 4 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

APPROACH SLAB  
CONCRETE MEDIAN  
BARRIER RAIL

| REVISIONS |     |       |     |     | SHEET NO. |                 |
|-----------|-----|-------|-----|-----|-----------|-----------------|
| NO.       | BY: | DATE: | NO. | BY: | DATE:     |                 |
| 1         |     |       | 3   |     |           | S-32            |
| 2         |     |       | 4   |     |           | TOTAL SHEETS 32 |

DRAWN BY : S.A. HERNANDEZ DATE : 09/2024  
CHECKED BY : A. SORSENGINH DATE : 09/2024  
DESIGN ENGINEER OF RECORD: E. BAYISSA DATE : 09/2024

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

STANDARD NOTES

DESIGN DATA:

|   |                                  |
|---|----------------------------------|
| SPECIFICATIONS  | AASHTO (CURRENT)                 |
| LIVE LOAD   | SEE PLANS                        |
| IMPACT ALLOWANCE  | SEE AASHTO                       |
| STRESS IN EXTREME FIBER OF<br>STRUCTURAL STEEL - AASHTO M270 GRADE 36 | 20,000 LBS. PER SQ. IN.          |
| - AASHTO M270 GRADE 50W   | 27,000 LBS. PER SQ. IN.          |
| - AASHTO M270 GRADE 50  | 27,000 LBS. PER SQ. IN.          |
| REINFORCING STEEL IN TENSION - GRADE 60                               | 24,000 LBS. PER SQ. IN.          |
| CONCRETE IN COMPRESSION   | 1,200 LBS. PER SQ. IN.           |
| CONCRETE IN SHEAR   | SEE AASHTO                       |
| STRUCTURAL TIMBER - TREATED OR UNTREATED<br>EXTREME FIBER STRESS      | 1,800 LBS. PER SQ. IN.           |
| COMPRESSION PERPENDICULAR TO GRAIN<br>OF TIMBER                       | 375 LBS. PER SQ. IN.             |
| EQUIVALENT FLUID PRESSURE OF EARTH                                    | 30 LBS. PER CU. FT.<br>(MINIMUM) |

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2024 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED ¾" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1½" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A ¼" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A ¼" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE ⅞" Ø SHEAR STUDS FOR THE ¾" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - ⅞" Ø STUDS FOR 4 - ¾" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF ⅞" Ø STUDS ALONG THE BEAM AS SHOWN FOR ¾" Ø STUDS BASED ON THE RATIO OF 3 - ⅞"Ø STUDS FOR 4 - ¾" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST ⅝" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY ⅛" OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.