

**North Carolina Emergency Management – Private Roads and Bridges**  
Site Information Form

**Site Number:** 061-01-bd480

**Site Address:** 477 Gouge Cove Rd., Bakersville, NC 28705

**GPS Coordinates:** 36.0617, -82.1401

**County:** Mitchell

**Bridge Type:** Steel I-beam with timber decking

**Span Length:** 30 feet

**Bridge Width:** 12'-0" Clear Width

**Substructure Type:** Concrete Cap on Driven Piles

**Geotechnical Information:** See Standard Bridge Plans for Notes

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**Additional Notes:** \_\_\_\_\_

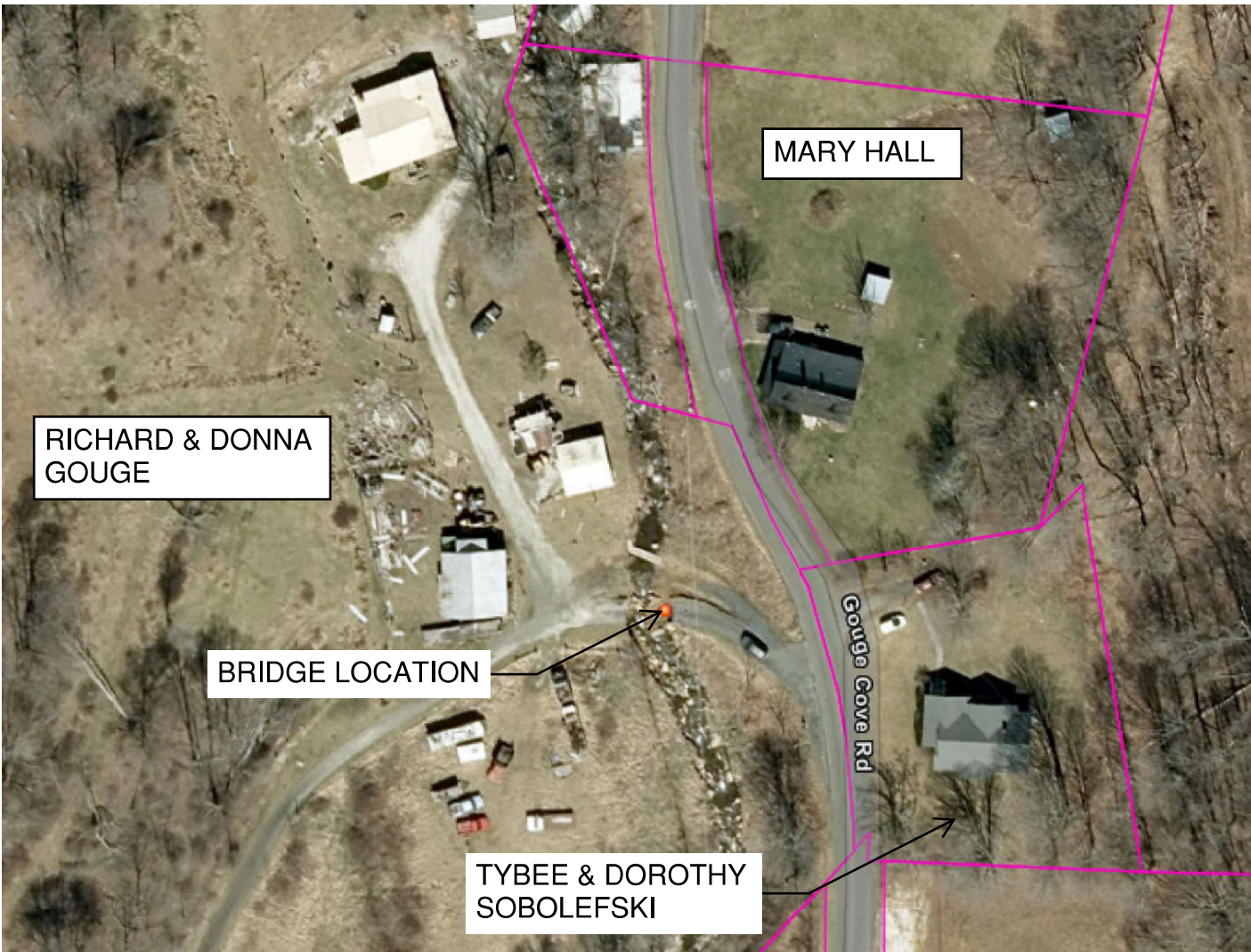
Timber bridge railing not required.

Wing walls not required.

The existing corrugated metal pipe is in place and must be removed prior to the start of construction.

The stream contains no debris or obstructions requiring removal.

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RICHARD & DONNA  
GOUGE

MARY HALL

BRIDGE LOCATION

TYBEE & DOROTHY  
SOBOLEFSKI

Gouge Cove Rd

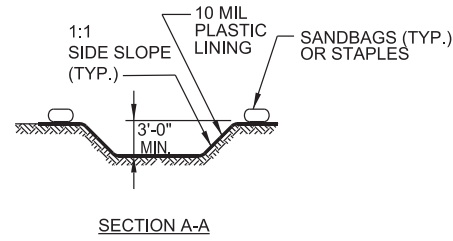
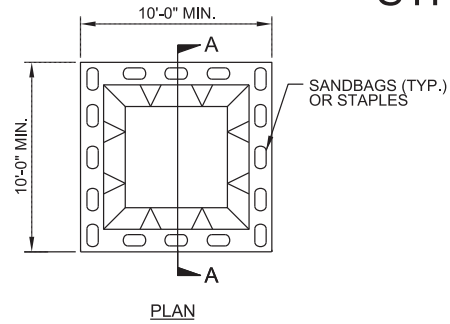
SITE ID: 061-01-bd480

SITE ADDRESS: 477 GOUGE COVE RD.,  
BAKERSVILLE, NC 28705



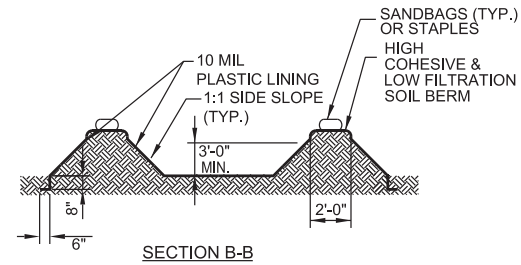
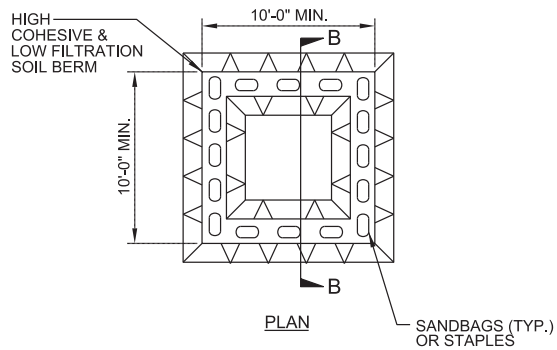
# ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER

|                              |                     |
|------------------------------|---------------------|
| PROJECT REFERENCE NO.<br>PRB | SHEET NO.<br>00B    |
| RW SHEET NO.                 |                     |
| ROADWAY DESIGN ENGINEER      | HYDRAULICS ENGINEER |



**BELOW GRADE WASHOUT STRUCTURE**  
NOT TO SCALE

- NOTES:**
1. ACTUAL LOCATION DETERMINED IN FIELD
  2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
  3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.



**ABOVE GRADE WASHOUT STRUCTURE**  
NOT TO SCALE

- NOTES:**
1. ACTUAL LOCATION DETERMINED IN FIELD
  2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
  3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

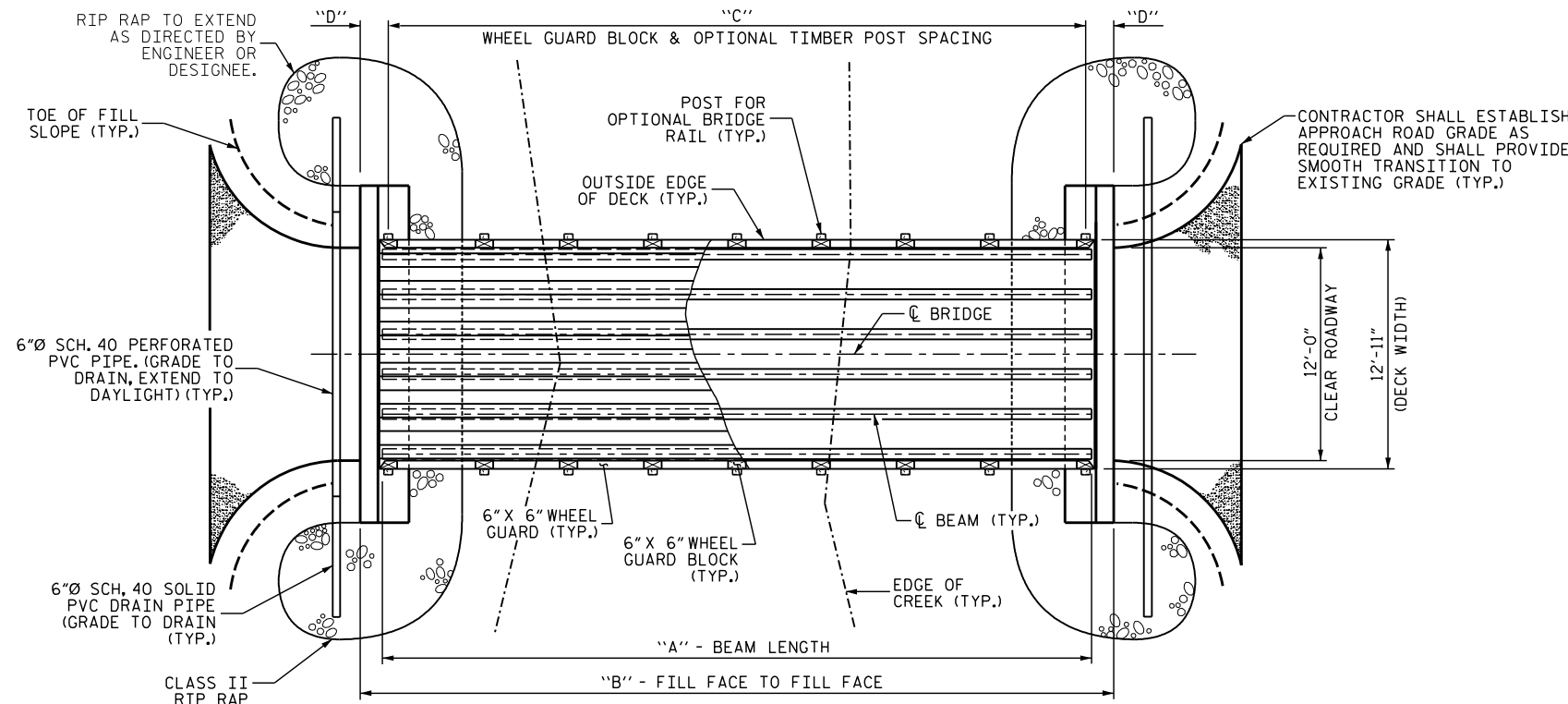
***SOIL STABILIZATION TIMEFRAMES***

|                                     |                          |
|-------------------------------------|--------------------------|
| PROJECT REFERENCE NO.<br><i>PRB</i> | SHEET NO.<br><i>EC-2</i> |
| ROADWAY DESIGN<br>ENGINEER          | HYDRAULICS<br>ENGINEER   |

| <i>SITE DESCRIPTION</i>                      | <i>STABILIZATION TIME</i> | <i>TIMEFRAME EXCEPTIONS</i>   |
|--|---------------------------|---|
| PERIMETER DIKES, SWALES, DITCHES AND SLOPES  | 7 DAYS                    | NONE  |
| HIGH QUALITY WATER (HOW) ZONES               | 7 DAYS                    | NONE  |
| SLOPES STEEPER THAN 3:1                      | 7 DAYS                    | IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.  |
| SLOPES 3:1 TO 4:1                            | 14 DAYS                   | 7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH WITH SLOPES STEEPER THAN 4:1.<br>7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HOW ZONES |
| ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1 | 14 DAYS                   | 7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HOW ZONES   |

**NOTES**

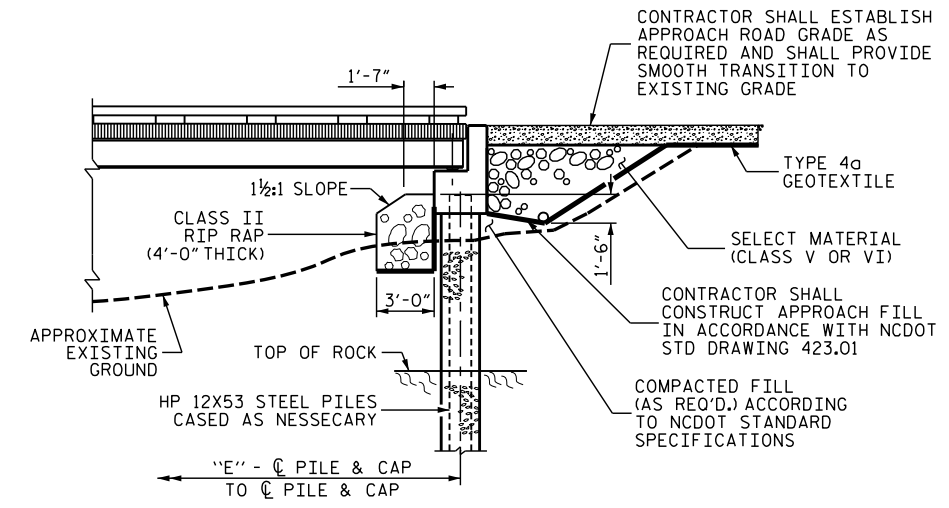
FOR OPTIONAL TIMBER BRIDGE RAIL DETAILS, SEE "OPTIONAL TIMBER BRIDGE RAIL" SHEET.  
 CONTRACTOR SHALL LOCATE THE EXPANSION BEARING ON THE "UPHILL" END OF THE BRIDGE. THERE WILL BE ONLY ONE EXPANSION BEARING PER BRIDGE.  
 CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES, AS REQUIRED ACCORDING TO NCDOT STANDARD SPECIFICATIONS AND THE CONTRACT DOCUMENTS.  
 THE CONTRACTOR SHALL SET THE LOW-CHORD ELEVATION OF THE BRIDGE BASED ON EXISTING SITE CONDITIONS AND IN COORDINATION WITH THE ENGINEER, SUCH THAT THE NEW CROSSING PROVIDES CONVEYANCE GREATER THAN OR EQUAL TO THE ORIGINAL DESTROYED CROSSING. THE CONTRACTOR SHALL REFER TO THE BSR WHEN SETTING THE LOW-CHORD ELEVATION OF THE BRIDGE. NO CONSTRUCTION ACTIVITIES SHALL COMMENCE UNTIL ALL PARTIES HAVE AGREED UPON THE LOW-CHORD ELEVATION AND THE DATED PERMIT APPLICATION IS APPROVED.



**BRIDGE PLAN**

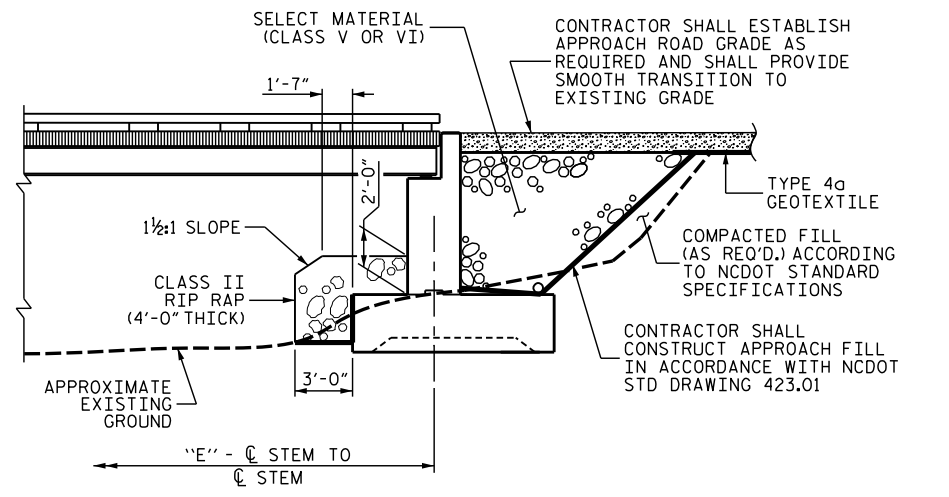
(FOUNDATION TYPE NOT SHOWN FOR CLARITY)

| DIMENSIONS TABLE |        |        |                 |           |        |
|------------------|--------|--------|-----------------|-----------|--------|
| SPAN             | A      | B      | C               | D         | E      |
| 20'-0"           | 20'-0" | 22'-6" | 4 SPA. @ 4'-6"  | 2'-3"     | 19'-9" |
| 30'-0"           | 30'-0" | 32'-6" | 7 SPA. @ 4'-0"  | 2'-3"     | 29'-9" |
| 40'-0"           | 40'-0" | 42'-6" | 9 SPA. @ 4'-3"  | 2'-1 1/2" | 39'-9" |
| 50'-0"           | 50'-0" | 52'-6" | 11 SPA. @ 4'-4" | 2'-5"     | 49'-9" |



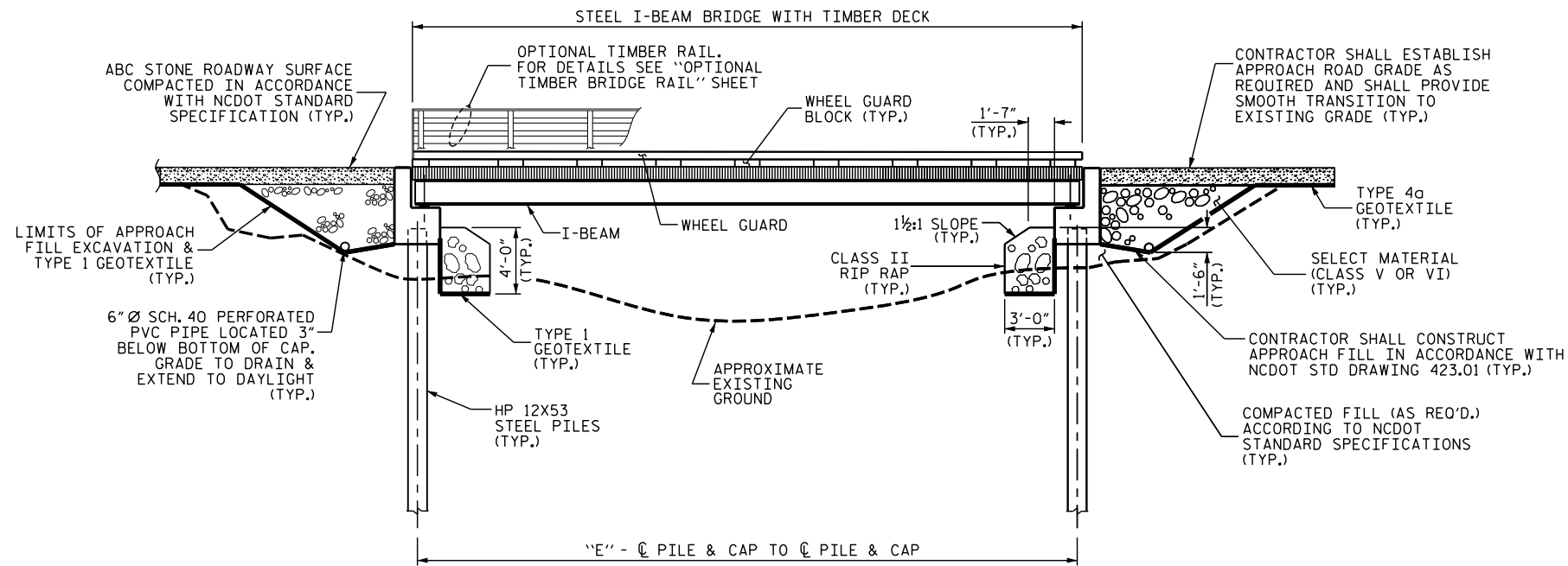
**BRIDGE PARTIAL ELEVATION**

(SHOWING DRILLED-IN 12X53 STEEL PILES FOUNDATION)



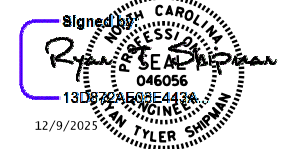
**BRIDGE PARTIAL ELEVATION**

(SHOWING SPREAD FOOTING FOUNDATION)



**BRIDGE ELEVATION**

(SHOWING DRIVEN 12X53 STEEL PILES FOUNDATION)



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA OFFICE OF  
**EMERGENCY MANAGEMENT**  
**PRIVATE DRIVEWAY BRIDGE STANDARDS**  
 SINGLE LANE STEEL BEAM BRIDGE  
 TIMBER DECK  
**GENERAL DRAWING**

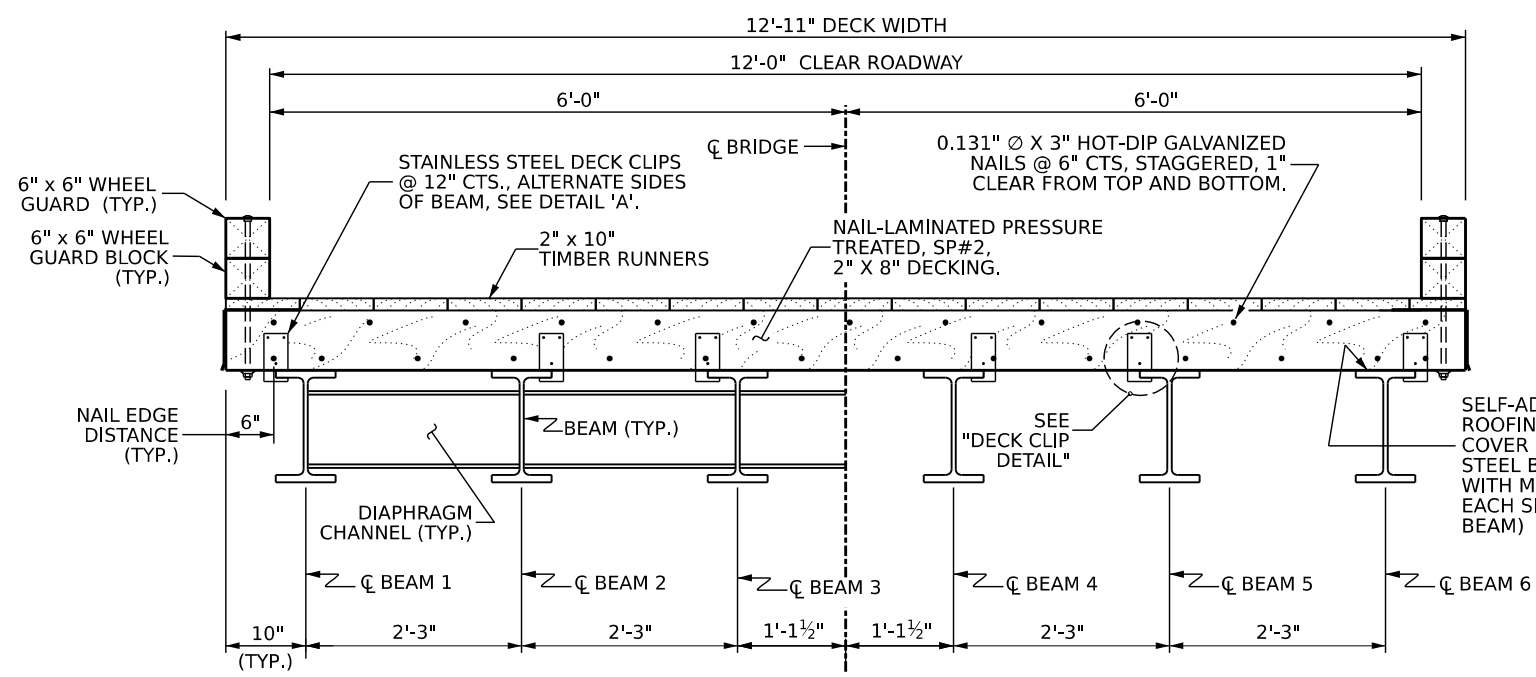
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| 1         |     |       | 3   |     |       | TOTAL SHEETS<br>12 |
| 2         |     |       | 4   |     |       |                    |

**JMT** Johnson, Mirmiran, & Thompson Inc.  
 108 Asheville Commerce Parkway  
 Candler, NC, 28715  
 License No: C-3097

DWN. BY: WDC DATE: 12/2025  
 CHKD. BY: RTS DATE: 12/2025  
 DES. EGR. OF RECORD: PCW DATE: 12/2025

W:\GIS\user\2561\proj\paw\bridge\plans\2-Standard Drawings\1-Beam Bridge Plans\2-Standard Drawings\Single Lane Steel Beam with Timber Deck Standards\Single Lane Steel Beam with Timber Deck Standards\General Drawing.dwg  
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 DATE: 12/9/2025  
 TIME: 10:51 AM



**TYPICAL SECTION**

| MATERIALS TABLE |         |                   |            |                 |
|-----------------|---------|-------------------|------------|-----------------|
| SPAN            | BEAM    | DIAPHRAGM CHANNEL | DECK PLANK | DECKING SQ. FT. |
| 20'-0"          | W16X36  | C12X20.7          | 2X8        | 263             |
| 30'-0"          | W21X48  | C12X20.7          | 2X8        | 392             |
| 40'-0"          | W24X76  | C12X20.7          | 2X8        | 521             |
| 50'-0"          | W24X104 | C12X20.7          | 2X8        | 650             |

**NOTES**

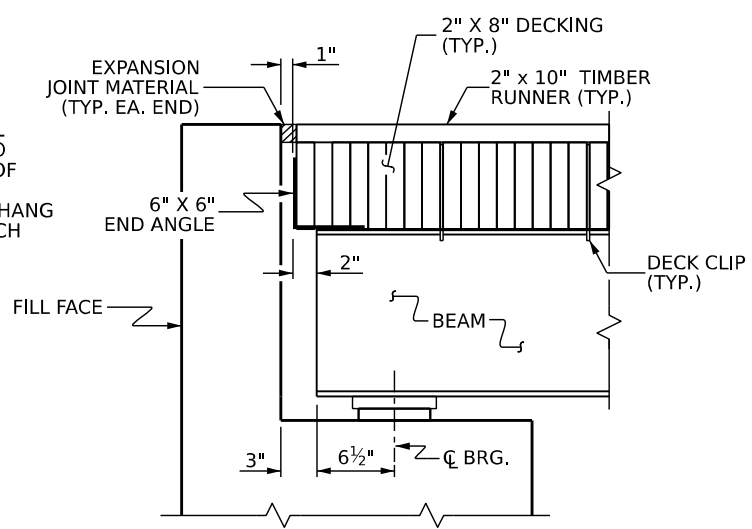
FOR TIMBER BRIDGE DECK SYSTEM DETAILS, SEE "PLAN OF SPAN" SHEET.

FOR OPTIONAL TIMBER RAILS, SEE "OPTIONAL TIMBER BRIDGE RAIL" SHEET.

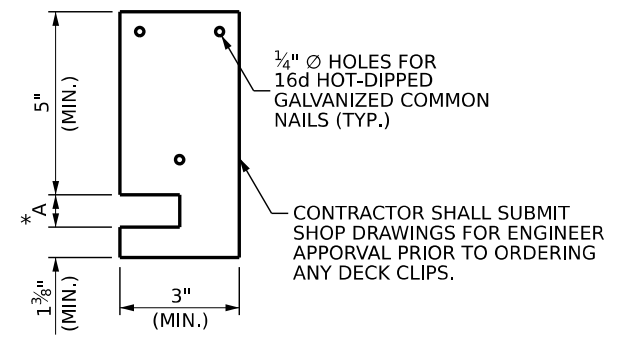
FOR BEAM AND DIAPHRAGM DETAILS, SEE "FRAMING PLAN & BEAM DETAILS" SHEET.

TREAT ALL DRILLED OR NEWLY EXPOSED HOLES IN TIMBER MEMBERS BY PUMPING WITH BITUMINOUS ASPHALT-BASED ROOFING CEMENT, OR APPROVED PRESERVATIVE SYSTEM BEFORE INSTALLING HARDWARE.

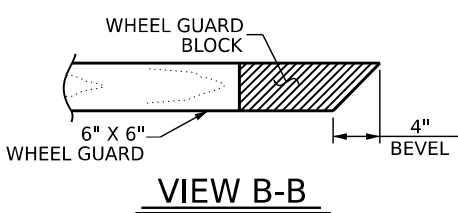
SEE "PLAN OF SPAN" SHEET FOR NUMBER OF WHEEL GUARDS AND WHEEL GUARD SPACING.



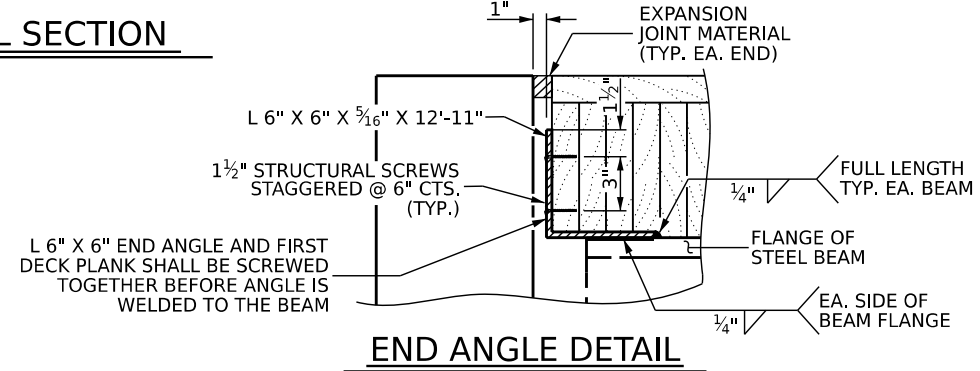
**SECTION AT END BENT**



**DECK CLIP DETAIL**



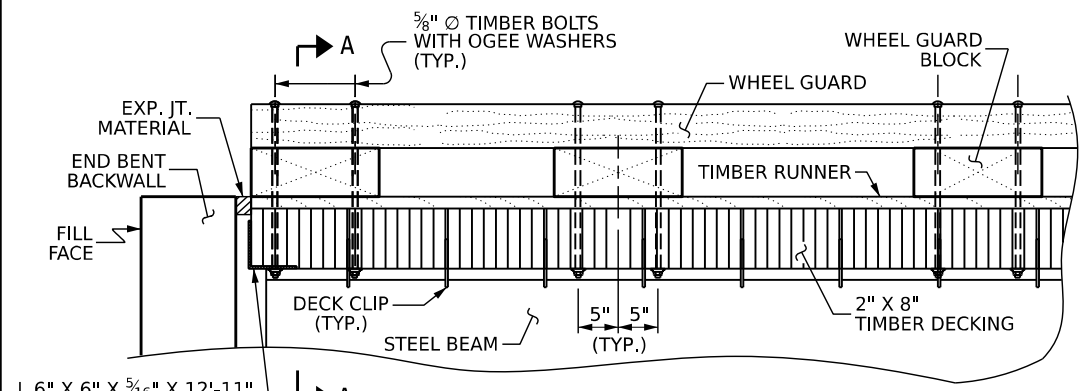
**VIEW B-B**



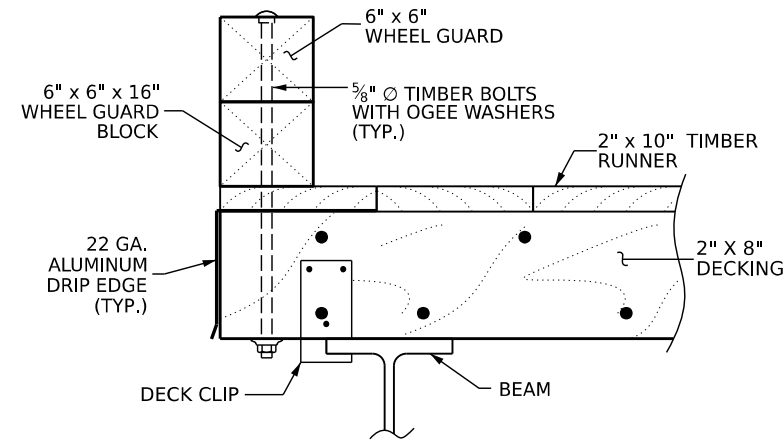
**END ANGLE DETAIL**

| DECK CLIP DIMENSIONS |         |        |
|----------------------|---------|--------|
| SPAN                 | BEAM    | *A     |
| 20'-0"               | W16X36  | 1/2"   |
| 30'-0"               | W21X48  | 1/2"   |
| 40'-0"               | W24X76  | 3/4"   |
| 50'-0"               | W24X104 | 13/16" |

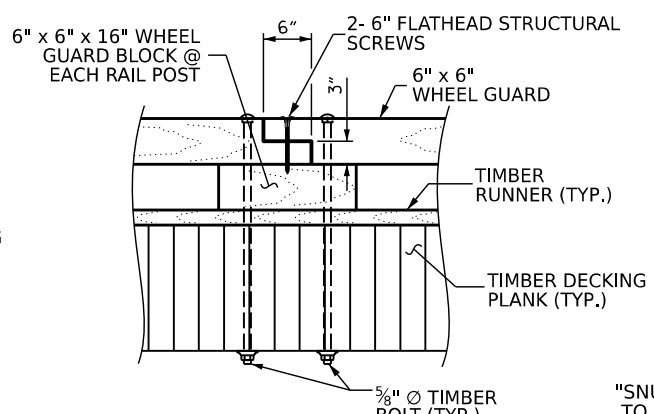
\* DIMENSION A IS FOR INFORMATION ONLY. IT IS BASED ON THE FLANGE THICKNESS PLUS A 1/16" TOLERANCE. THE CONTRACTOR SHALL VERIFY THIS DIMENSION WITH DECK CLIP SUPPLIER. THE DECK CLIP SHALL HAVE A SNUG FIT TO THE BEAM FLANGE.



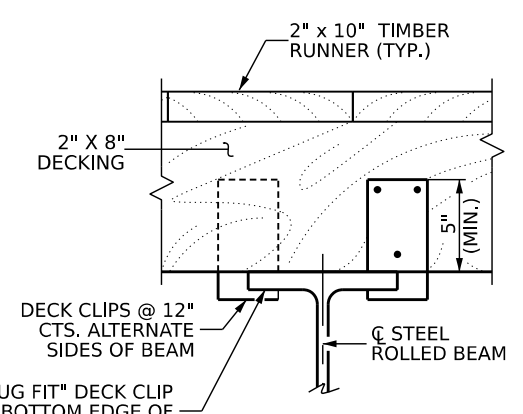
**WHEEL GUARD DETAIL AT END BENTS**



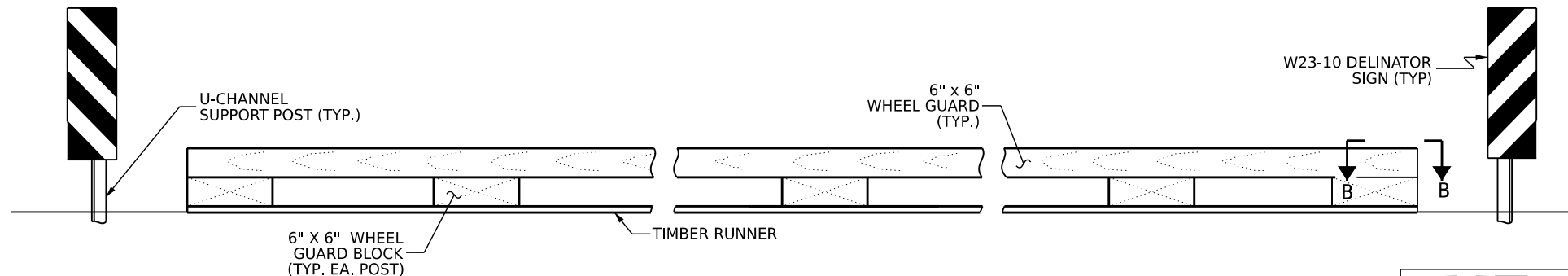
**SECTION A-A**



**WHEEL GUARD SPLICE DETAIL**



**DETAIL 'A'**



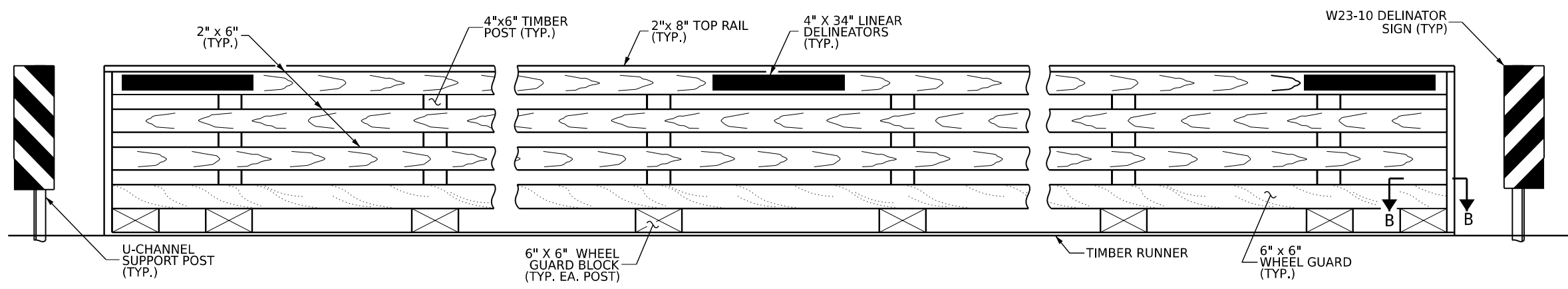
**WHEEL GUARD ELEVATION**

Signature: *Ryan A. Thompson*  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 046056  
 1300 PINEWOOD DRIVE  
 TYLER, NC 27574  
 12/9/2025  
 DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA OFFICE OF  
 EMERGENCY MANAGEMENT  
**PRIVATE DRIVEWAY  
 BRIDGE STANDARDS**  
 SINGLE LANE STEEL BEAM BRIDGE  
 TIMBER DECK  
**TYPICAL SECTION  
 & RAIL DETAILS**

|  |   |   |                               |                               |                               |                               |   |
|--|---|---|-------------------------------|-------------------------------|-------------------------------|-------------------------------|---|
| Johnson, Mirmiran, & Thompson Inc.<br>108 Asheville Commerce Parkway<br>Candler, NC, 28715<br>License No: C-3097 | DWN. BY: WDC<br>CHKD. BY: RTS<br>DES. EGR. OF RECORD: PCW | DATE: 12/2025<br>DATE: 12/2025<br>DATE: 12/2025 | NO. 1<br>BY: [ ]<br>DATE: [ ] | NO. 2<br>BY: [ ]<br>DATE: [ ] | NO. 3<br>BY: [ ]<br>DATE: [ ] | NO. 4<br>BY: [ ]<br>DATE: [ ] | SHEET NO.<br>S-02<br>TOTAL SHEETS<br>12 |
|--|---|---|-------------------------------|-------------------------------|-------------------------------|-------------------------------|---|

W:\GIS\user\25616\proj\11-21-20\Documents\Projects\2025\25-00629\25-00629-001\Design\Structures\NC PRB-Steel Beam with Timber Deck Standards\Single Lane Steel Beam with Timber Deck Plans\2 Standard Drawings\1-Beam Bridge Plans\20-50\003-S3 Optional Bridge Rail.dwg  
 DATE: 12/9/2025 TIME:



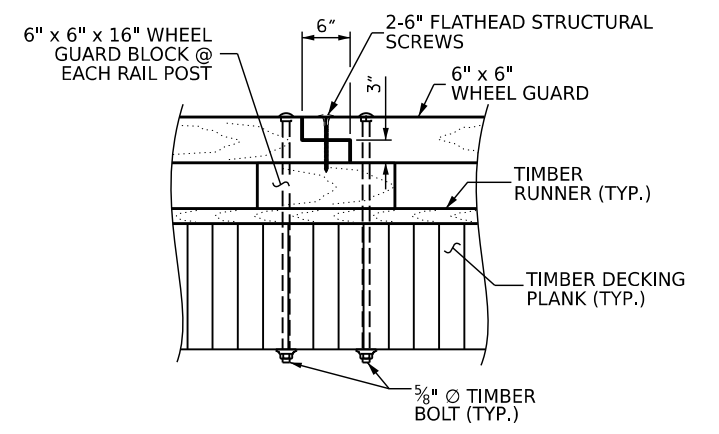
**ELEVATION OF OPTIONAL BRIDGE RAIL**

**OPTIONAL BRIDGE RAIL NOTES**

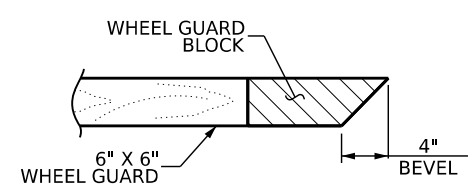
BRIDGE RAILS SHALL BE CONTINUOUS FROM END POST TO END POST WITH NO GAPS. RAIL LUMBER LENGTHS SHALL BE ATTACHED TO A MINIMUM OF THREE POSTS.

TREAT ALL DRILLED OR NEWLY EXPOSED HOLES IN TIMBER MEMBERS BY PUMPING WITH BITUMINOUS ASPHALT-BASED ROOFING CEMENT, OR APPROVED PRESERVATIVE SYSTEM BEFORE INSTALLING HARDWARE.

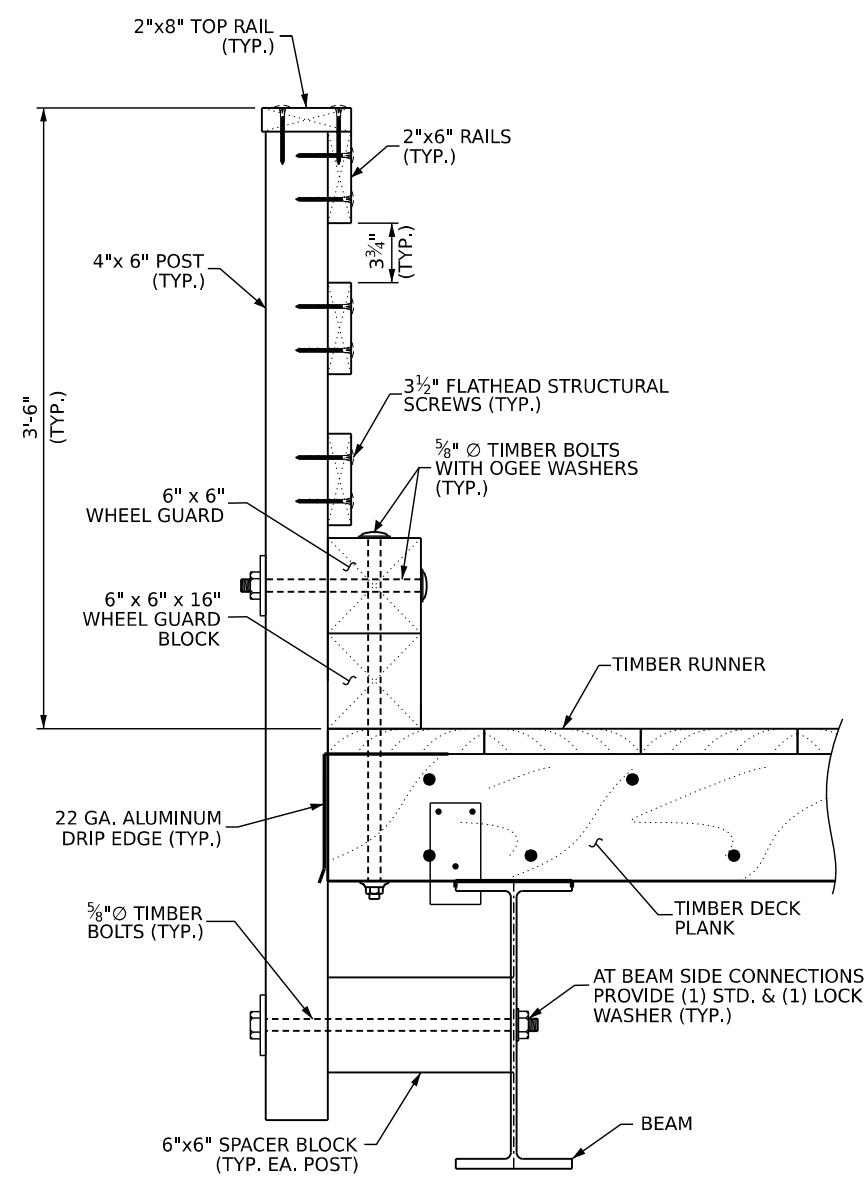
SEE "PLAN OF SPAN" SHEET FOR NUMBER OF POSTS AND POST SPACING.



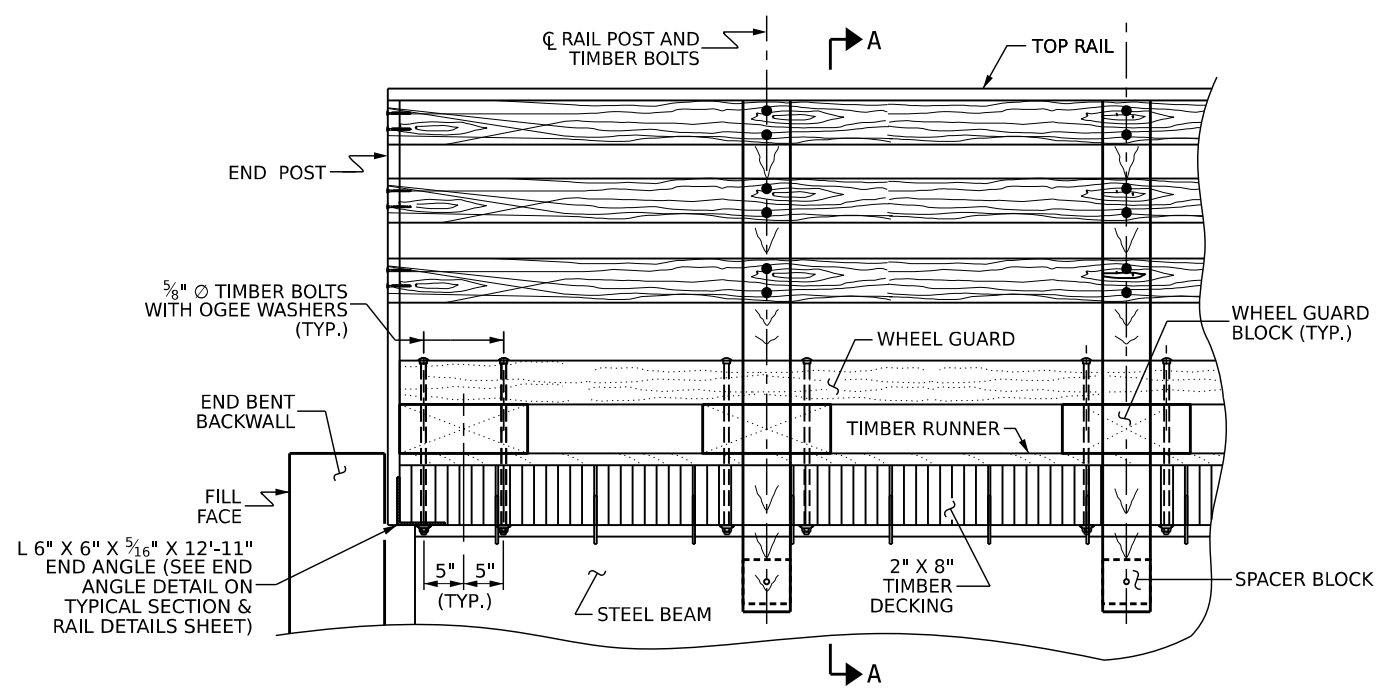
**WHEEL GUARD SPLICE DETAIL**



**VIEW B-B**



**SECTION A-A**



**OPTIONAL RAIL DETAIL AT END BENTS**



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA OFFICE OF  
**EMERGENCY MANAGEMENT**  
**PRIVATE DRIVEWAY**  
**BRIDGE STANDARDS**  
 SINGLE LANE STEEL BEAM BRIDGE  
 TIMBER DECK  
**OPTIONAL TIMBER**  
**BRIDGE RAIL**

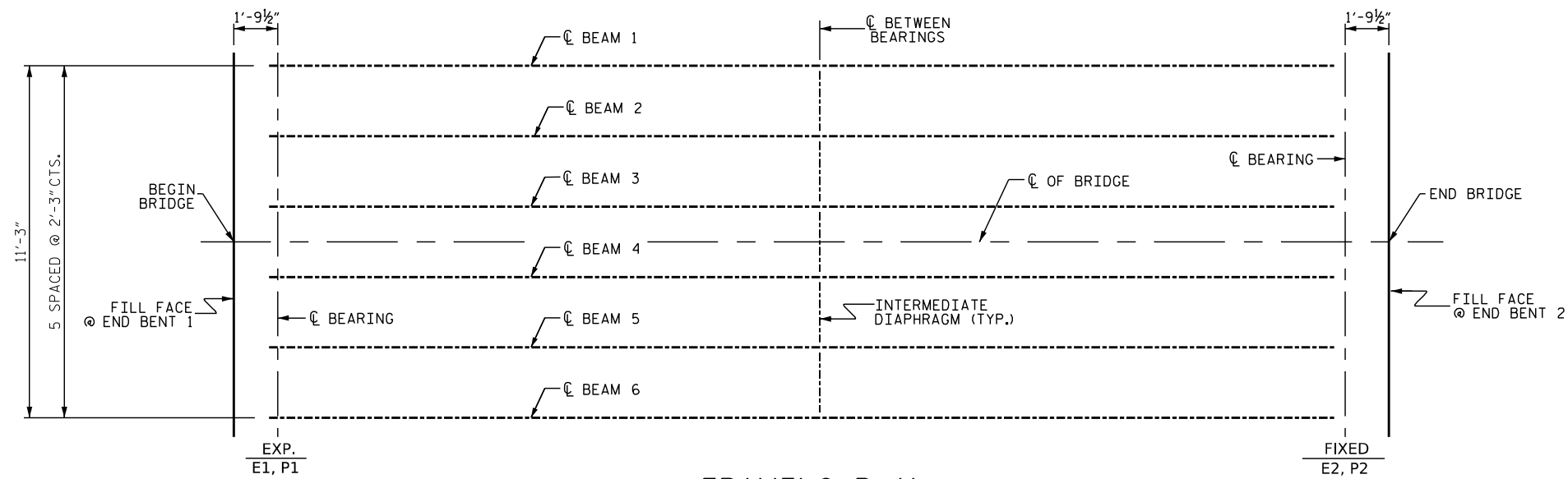
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| 1         |     |       | 3   |     |       | TOTAL SHEETS |
| 2         |     |       | 4   |     |       | 12           |

**JMT** Johnson, Mirmiran, & Thompson Inc.  
 108 Asheville Commerce Parkway  
 Candler, NC, 28715  
 License No: C-3097

DWN. BY: WDC DATE: 12/2025  
 CHKD. BY: RTS DATE: 12/2025  
 DES. EGR. OF RECORD: PCW DATE: 12/2025

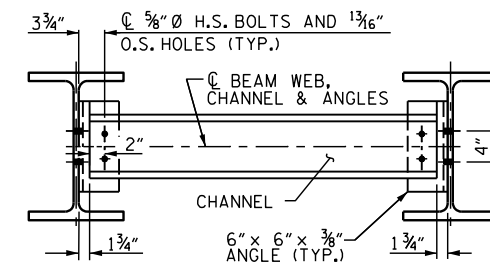


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 TIME: 11:30 AM

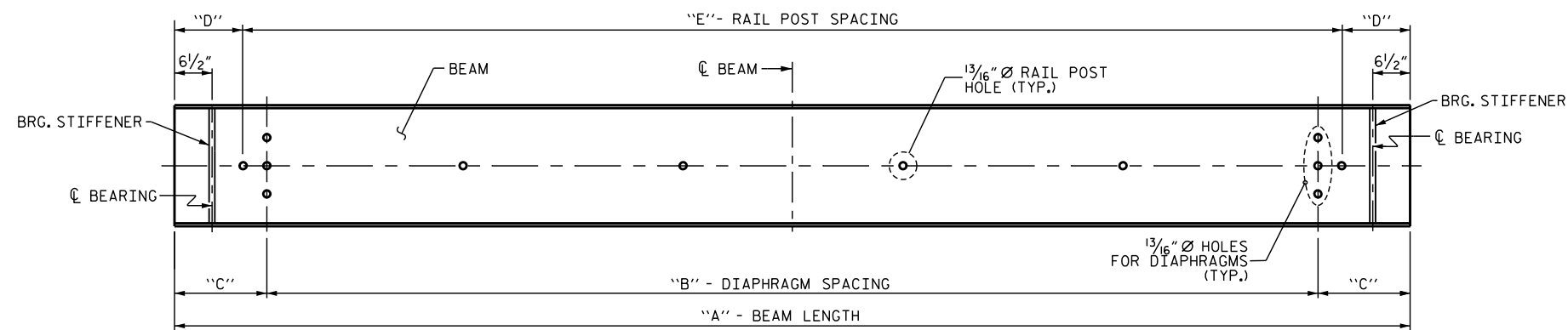


### FRAMING PLAN

EXPANSION BEARING SHALL BE PLACED ON THE "UPHILL" END OF THE BRIDGE.



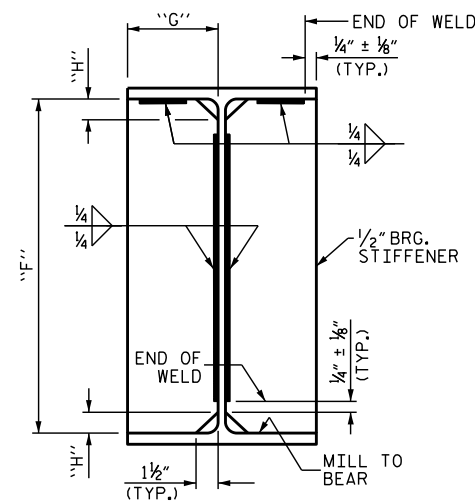
### DIAPHRAGM DETAILS



### BEAM FLANGE ELEVATION

SHOWING DIAPHRAGM HOLES FOR ALL BEAMS, AND RAIL POST HOLES FOR EXTERIOR BEAMS.

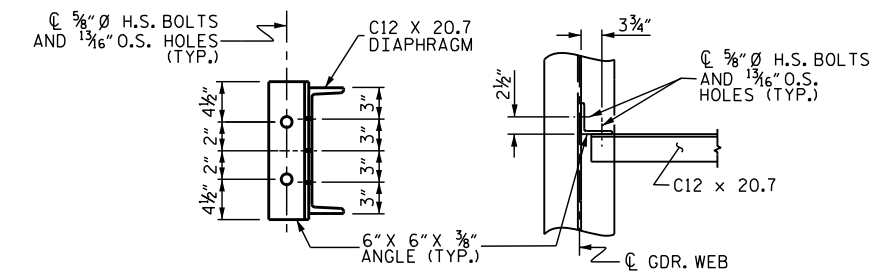
| BEAM DIMENSION TABLE |         |          |        |                 |       |         |                 |
|----------------------|---------|----------|--------|-----------------|-------|---------|-----------------|
| SPAN                 | BEAM    | CHANNEL  | A      | B               | C     | D       | E               |
| 20'-0"               | W16X36  | C12X20.7 | 20'-0" | 2 SPA. @ 7'-0"  | 3'-0" | 1'-0"   | 4 SPA. @ 4'-6"  |
| 30'-0"               | W21X48  | C12X20.7 | 30'-0" | 2 SPA @ 12'-0"  | 3'-0" | 1'-0"   | 7 SPA. @ 4'-0"  |
| 40'-0"               | W24X76  | C12X20.7 | 40'-0" | 2 SPA. @ 17'-0" | 3'-0" | 10 1/2" | 9 SPA. @ 4'-3"  |
| 50'-0"               | W24X104 | C12X20.7 | 50'-0" | 2 SPA. @ 22'-0" | 3'-0" | 1'-2"   | 11 SPA. @ 4'-4" |



### SECTION VIEW - BRG. STIFFENER

### STIFFENER DIMENSION

| BEAM    | F           | G      | H       |
|---------|-------------|--------|---------|
| W16X36  | 1'-3"       | 3 3/8" | 2"      |
| W21X48  | 1'-7 3/4"   | 3 7/8" | 2 1/8"  |
| W24X76  | 1'-10 9/16" | 4 1/4" | 2 7/16" |
| W24X104 | 1'-10 9/16" | 6 3/8" | 2 3/4"  |



### ANGLE DETAILS

### NOTES

- NO SALVAGED BEAMS SHALL BE USED, UNLESS OTHERWISE NOTED ON THE PLANS.
- NO SHOP CAMBER REQUIRED, TURN NATURAL MILL CAMBER UP.
- ALL STRUCTURAL STEEL FIELD CONNECTIONS SHALL BE 5/8" DIA. GALVANIZED HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED.
- BEAMS SHALL BE PLACED PARALLEL TO THE CHORD.
- CONTRACTORS OPTION TO WELD CONNECTOR TO BEAM PRIOR TO SHOP COATING.
- SEE "GENERAL NOTES" SHEET FOR COATING.

NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 RYAN E. SHIRMAN  
 046056  
 13088 ZION CHURCH RD  
 WYOMING, NC 28448  
 12/9/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA OFFICE OF  
 EMERGENCY MANAGEMENT  
**PRIVATE DRIVEWAY  
 BRIDGE STANDARDS**  
 SINGLE LANE STEEL BEAM BRIDGE  
 TIMBER DECK  
**FRAMING PLAN &  
 BEAM DETAILS**

| REVISIONS |     |       |     |     |       | SHEET NO.       |
|-----------|-----|-------|-----|-----|-------|-----------------|
| NO.       | BY: | DATE: | NO. | BY: | DATE: | S-05            |
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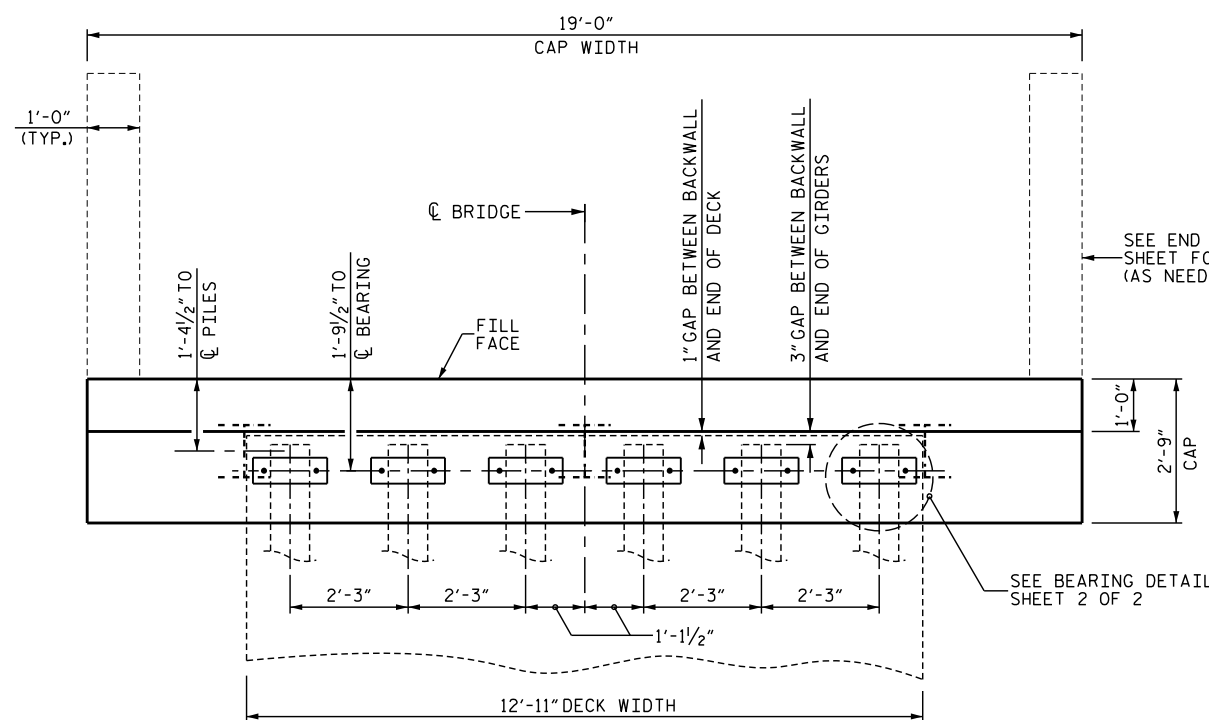
**JMT** Johnson, Mirmiran, & Thompson Inc.  
 108 Asheville Commerce Parkway  
 Candler, NC, 28715  
 License No: C-3097

DWN. BY: WDC  
 CHKD. BY: RTS  
 DES. EGR. OF RECORD: PCW  
 DATE: 12/2025  
 DATE: 12/2025  
 DATE: 12/2025



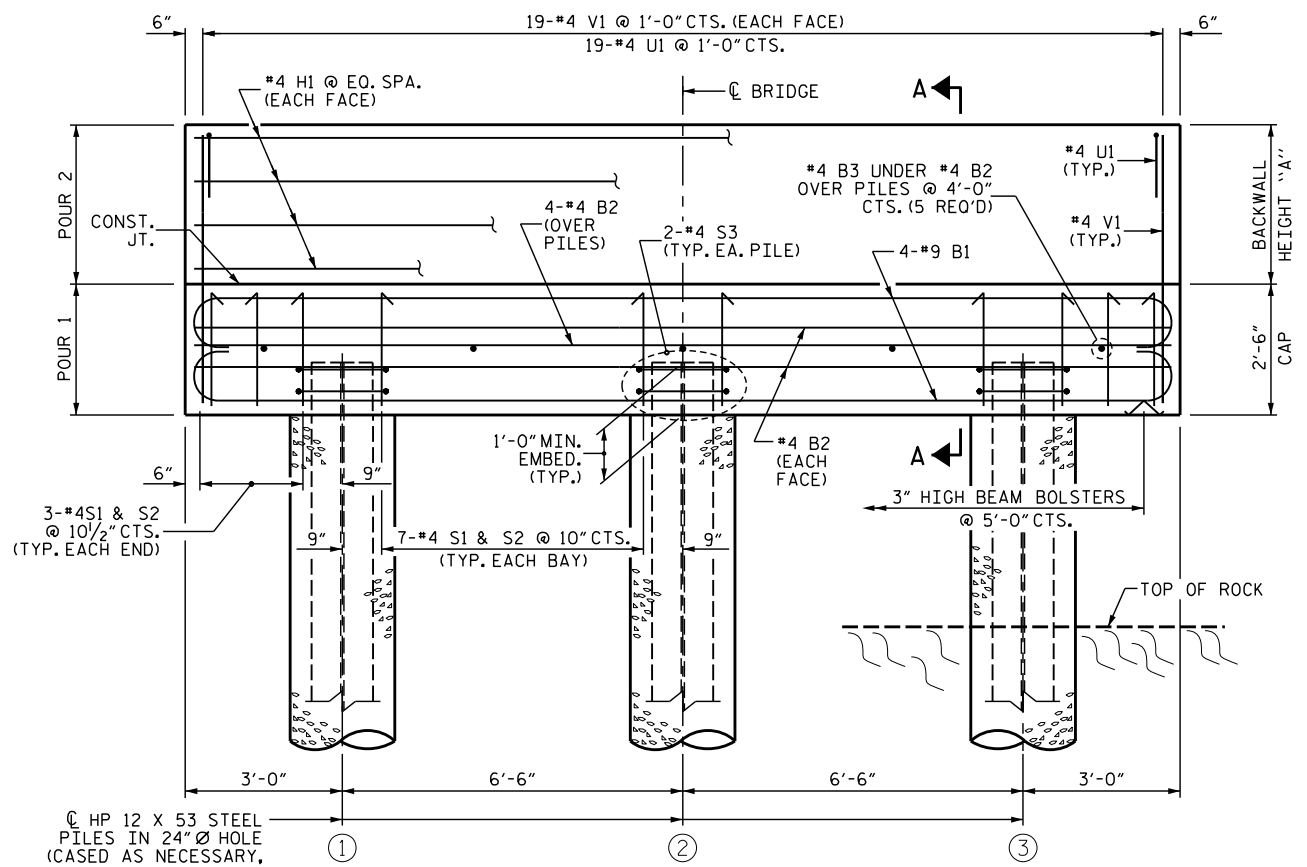


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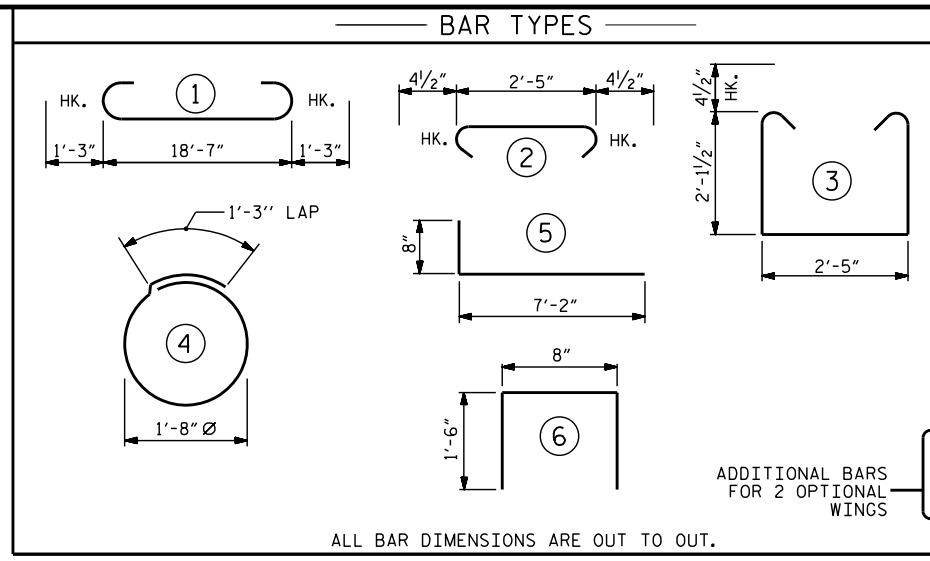
**PLAN**

| BACKWALL DIM. |         |            |
|---------------|---------|------------|
| SPAN          | BEAM    | A          |
| 20'-0"        | W16X36  | 2'-2 5/8"  |
| 30'-0"        | W21X48  | 2'-7 3/8"  |
| 40'-0"        | W24X76  | 2'-10 3/8" |
| 50'-0"        | W24X104 | 2'-10 3/4" |



**ELEVATION**

(OPTIONAL WINGS NOT SHOWN FOR CLARITY)



ALL BAR DIMENSIONS ARE OUT TO OUT.

| BILL OF MATERIAL FOR ONE END BENT           |      |        |            |        |       |
|---|------|--------|------------|--------|-------|
| BAR NO.                                     | SIZE | TYPE   | LENGTH     | WEIGHT |       |
| B1  | #8   | #9     | 21'-1"     | 573    |       |
| B2  | #8   | #4 STR | 18'-8"     | 100    |       |
| B3  | #5   | #4 STR | 2'-5"      | 8      |       |
| H1  | #8   | #4 STR | 18'-8"     | 100    |       |
| U1  | #19  | #4     | 3'-8"      | 47     |       |
| S1  | #20  | #4     | 7'-5"      | 99     |       |
| S2  | #20  | #4     | 3'-2"      | 42     |       |
| S3  | #6   | #4     | 6'-6"      | 26     |       |
| V1  | #38  | #4 STR | 4'-5"      | 112    |       |
| H2  | #28  | #4     | 7'-10"     | 147    |       |
| V2  | #56  | #4 STR | 3'-6"      | 131    |       |
|   |      |        | W/O WINGS  | 1,107  | 1,385 |
|   |      |        | WITH WINGS |        |       |
| REINFORCING STEEL (FOR ONE END BENT) (LBS.) |      |        |            | 1,107  | 1,385 |
| CLASS A CONCRETE (FOR ONE END BENT) (C.Y.)  |      |        |            |        |       |
| POUR 1                                      |      |        |            | 4.8    | 6.0   |
| POUR 2 *                                    |      |        |            | 1.7    | 2.8   |
| TOTAL                                       |      |        |            | 6.5    | 8.8   |

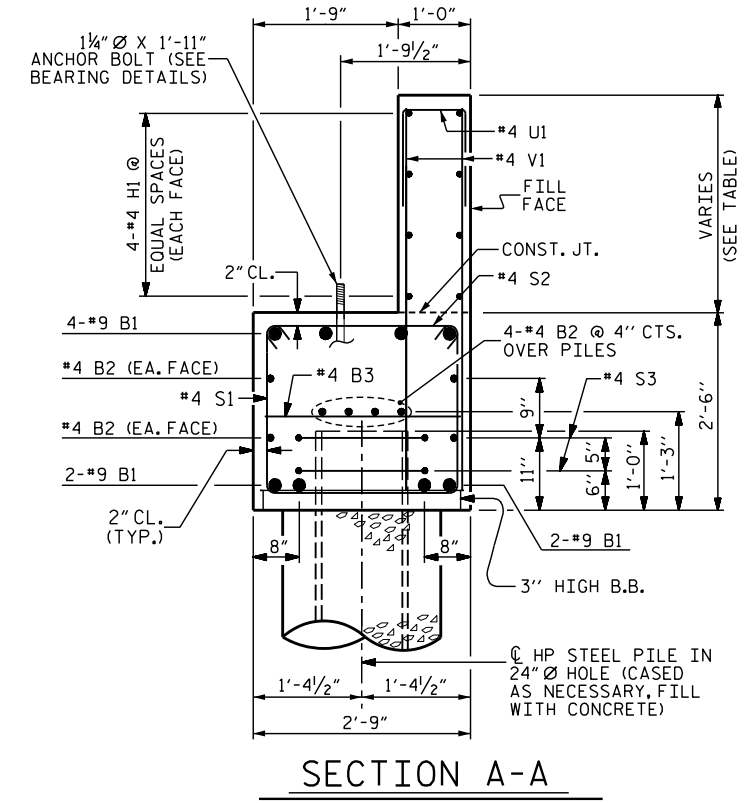
\* BASED ON SHORTEST BACKWALL HEIGHT. UP TO 0.5 C.Y. EXTRA REQ'D FOR THE TALLER BACKWALLS

**GENERAL NOTES**

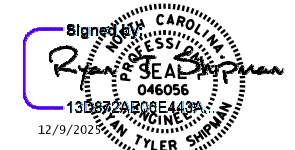
- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- CONTRACTOR SHALL SLOPE TOP OF CAP TO MATCH LONGITUDINAL GRADE OF THE BRIDGE. SLOPES SHALL MATCH ON BOTH END BENT 1 AND END BENT 2 CAPS.
- WINGS MAY BE REQUIRED AT THE DIRECTION OF THE ENGINEER OR DESIGNEE.
- FOR OPTIONAL WINGS FOR END BENT, SEE SHEET 2 OF 2.
- FOR BEARING DETAILS, SEE SHEET 2 OF 2.
- FOR PILE SPLICE DETAILS, SEE SHEET 2 OF 2.
- THE LENGTH OF THE "V" BARS ARE BASED ON THE SHORTEST BACKWALL CONFIGURATION. THESE BARS WILL HAVE EXTRA CLEARANCE AT THE BOTTOM OF THE CAP WHEN USING TALLER BACKWALLS.

**FOUNDATION NOTES  
DRILLED-IN PILES**

- ROCK QUALITY DESIGNATION (ROD) GEOLOGICAL STRENGTH INDEX (GSI)
- INSTALL DRILLED-IN PILES IN ACCORDANCE WITH SECTION 450 OF THE STANDARD SPECIFICATIONS.
- MINIMUM PILE PENETRATION OF 10-FT INTO NATURAL GROUND OR CHANNEL BOTTOM IS REQUIRED.
- MINIMUM ROCK SOCKET DEPTHS, UNLESS OTHERWISE INDICATED ON PROJECT SPECIFIC DATA SHEET:
  - 4' MINIMUM (ROD >70, GSI >50)
  - 6' MINIMUM (ROD 30-70, GSI 30-50)
  - 8' MINIMUM (ROD <30, GSI <30)
- REFER TO BORING LOGS FOR ROD AND GSI DATA.
- PILES SHALL BE SEATED IN THE BOTTOM OF THE EXCAVATION. PILE DRIVING IS NOT REQUIRED.
- BACKFILL WITH CONCRETE ONLY. DO NOT PROCEED WITH CONSTRUCTION ACTIVITIES UNTIL THE 28 DAY STRENGTH IS ACHIEVED.



**SECTION A-A**



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SHEET 1 OF 2

NORTH CAROLINA OFFICE OF  
**EMERGENCY MANAGEMENT**

**PRIVATE DRIVEWAY  
BRIDGE STANDARDS**

SINGLE LANE STEEL BEAM BRIDGE  
TIMBER DECK

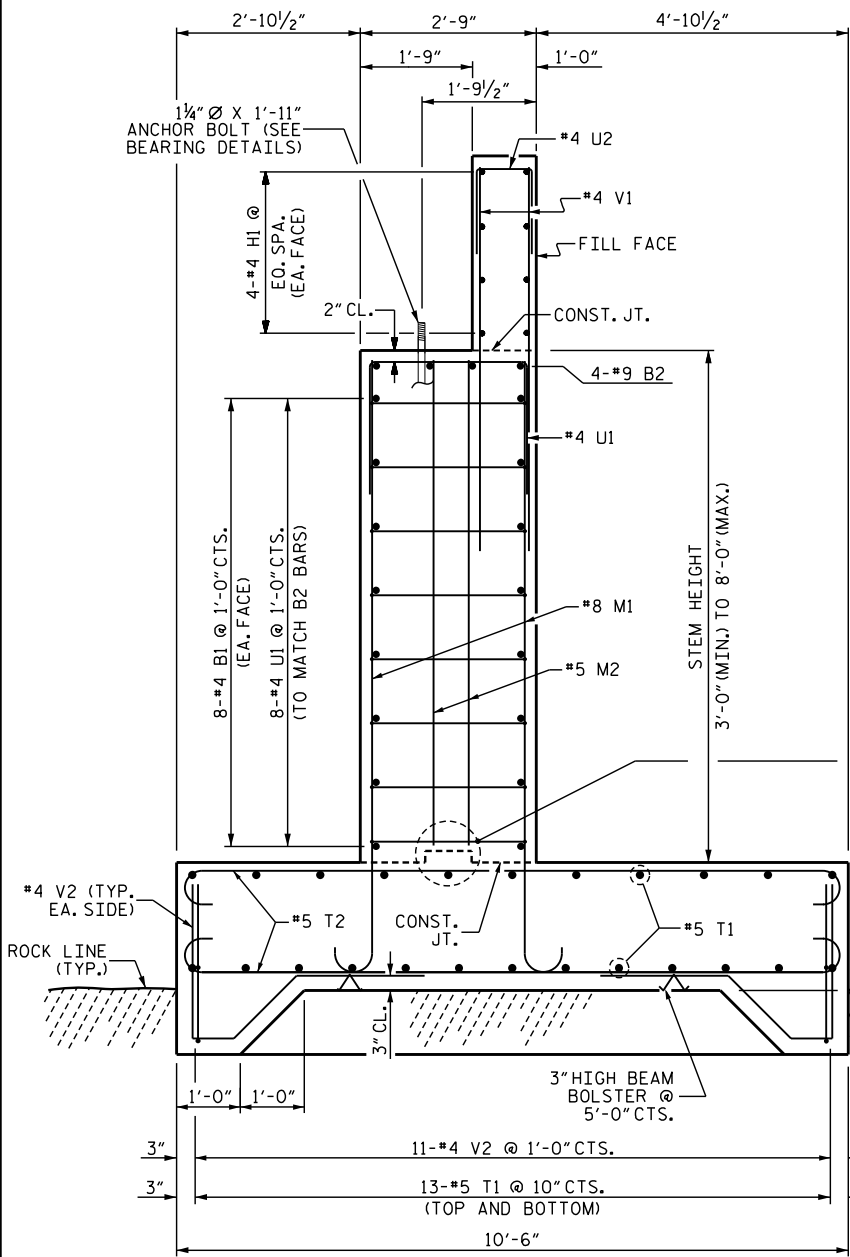
**END BENT  
DRILLED-IN PILES**

|   |  |   |   |            |                                |                        |            |                                |                        |                                   |
|---|--|---|---|------------|--------------------------------|------------------------|------------|--------------------------------|------------------------|-----------------------------------|
| <b>JMT</b> Johnson, Mirmiran, & Thompson Inc.<br>108 Asheville Commerce Parkway<br>Candler, NC, 28715<br>License No: C-3097 |  | DWN. BY: WDC<br>CHKD. BY: RTS<br>DES. EGR. OF RECORD: PCW | DATE: 12/2025<br>DATE: 12/2025<br>DATE: 12/2025 | NO. 1<br>2 | BY: [Signature]<br>[Signature] | DATE: [Date]<br>[Date] | NO. 3<br>4 | BY: [Signature]<br>[Signature] | DATE: [Date]<br>[Date] | SHEET NO. S-08<br>TOTAL SHEETS 12 |
|---|--|---|---|------------|--------------------------------|------------------------|------------|--------------------------------|------------------------|-----------------------------------|

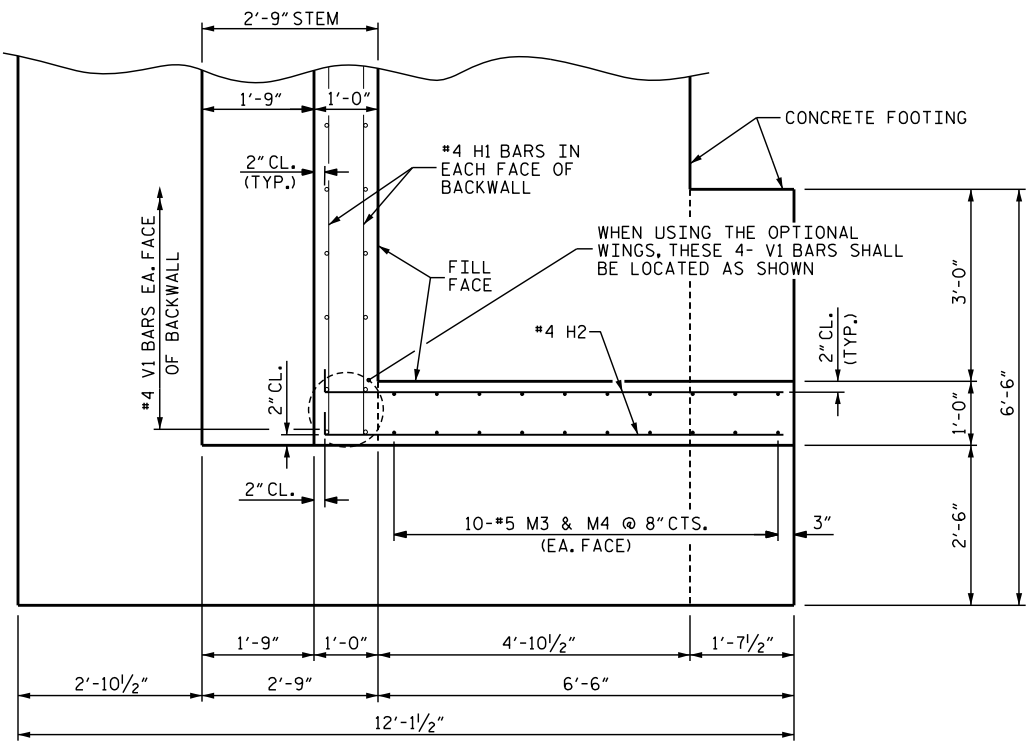




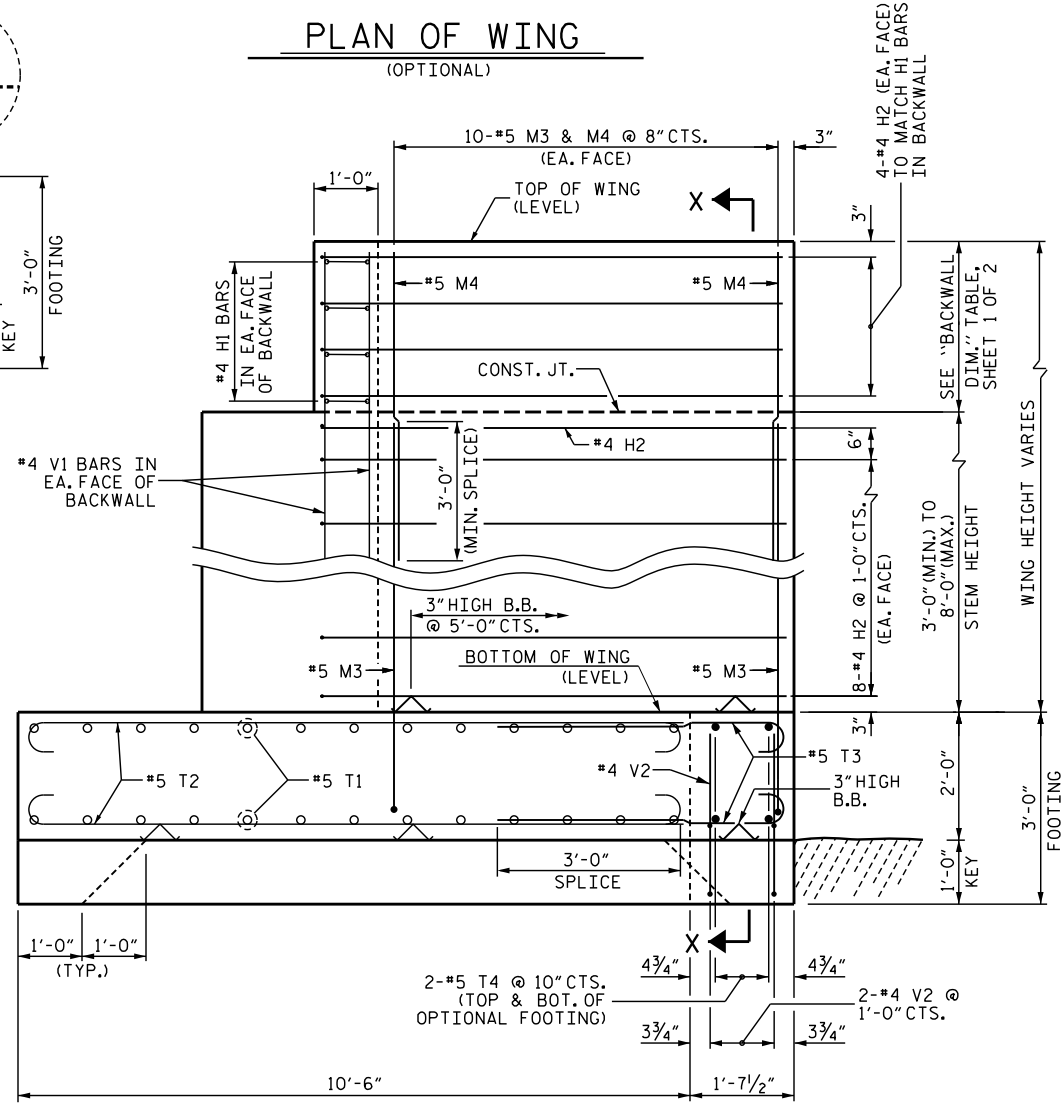
J:\Projects\2025\25-00529\25-00529-001\Design\Structures\NC PRB-Steel Beam with Timber Deck Standards\Single Lane Steel Beam with Timber Deck Standards\Wings\2-Standard Drawings\1-Beam Bridge Plans\20-50\01-SI-Optional Wings Footings.dwg  
 DATE: 12/9/2025 TIME: 11:29:40 AM



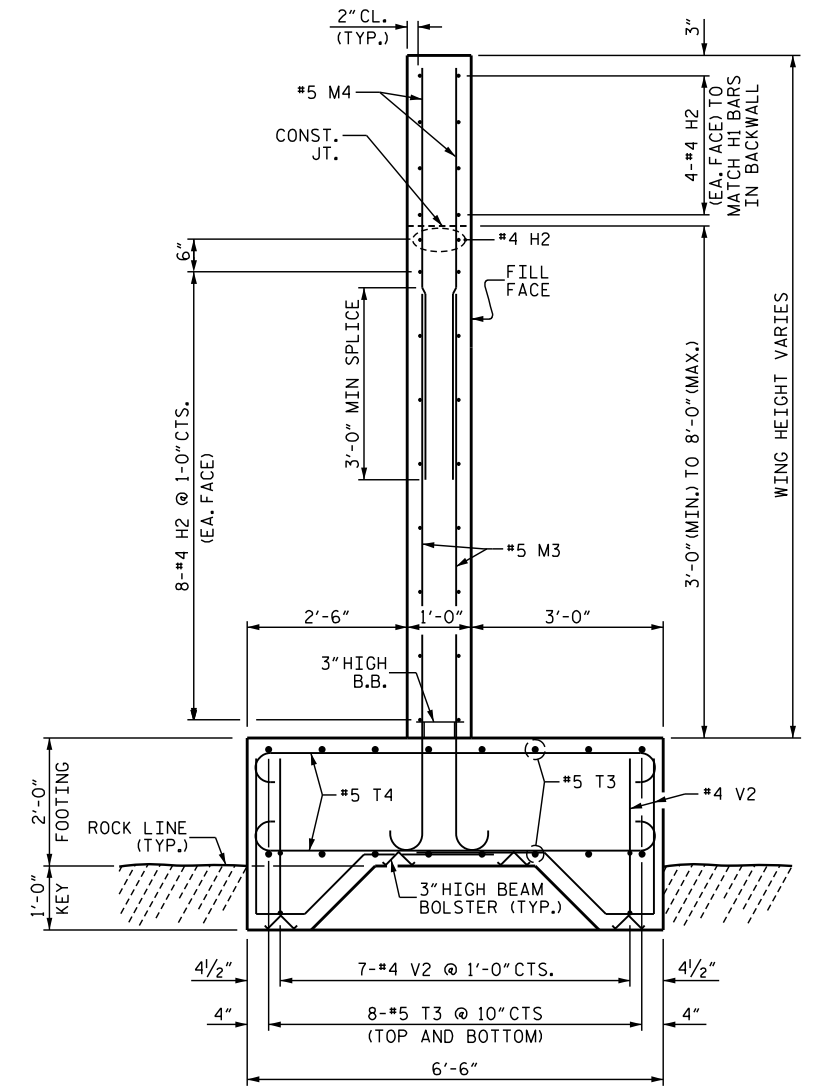
**SECTION A-A**



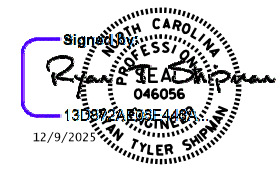
**PLAN OF WING (OPTIONAL)**



**ELEVATION OF WING (OPTIONAL)**



**SECTION X-X (OPTIONAL)**



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SHEET 2 OF 2

NORTH CAROLINA OFFICE OF  
EMERGENCY MANAGEMENT

**PRIVATE DRIVEWAY  
BRIDGE STANDARDS**

SINGLE LANE STEEL BEAM BRIDGE  
TIMBER DECK

**END BENT  
OPTIONAL WINGS & FOOTINGS**

**JMT** Johnson, Mirmiran, & Thompson Inc.  
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Candler, NC, 28715  
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CHKD. BY: RTS  
DES. EGR. OF RECORD: PCW

DATE: 12/2025  
DATE: 12/2025  
DATE: 12/2025

| REVISIONS |     |       |     |     |       | SHEET NO.       |
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| NO.       | BY: | DATE: | NO. | BY: | DATE: | S-11            |
| 1         |     |       | 3   |     |       | TOTAL SHEETS 12 |
| 2         |     |       | 4   |     |       |                 |

B:\cadd\pww\pww\benl@jmt.com\jmt-zw-01\Documents\Projects\2025\25-00629\25-00629-001\Design\Structures\AC FRB-Steel Beam with Timber Deck Standards\Single Lane Steel Beam with Timber Deck Plans\2 Standard Drawings/I-Beam Bridge Plans\_20-50/02-512\_General Notes.dgn  
 TIME: 1/30/2026

**STRUCTURAL STEEL / HARDWARE NOTES:**

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50 AND PAINTED IN ACCORDANCE WITH SYSTEM 1 OF THE STRUCTURAL STEEL SHOP COATING PROGRAM AND ARTICLE 442-8 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

COATING APPLICATION FOR ALL STRUCTURAL STEEL SHALL NOT BE PERFORMED UNTIL SHOP FABRICATION INCLUDING CUTTING, DRILLING AND WELDING HAS BEEN COMPLETED.

ALL HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATION, UNLESS OTHERWISE NOTED ON THE PLANS.

DO NOT DRIVE LAG/STRUCTURAL SCREWS WITH A HAMMER, SCREW OR TORQUE LAG/STRUCTURAL SCREWS.

SCREWS SHALL PROVIDE SUFFICIENT LENGTH SO THAT SCREW SHANK WILL PENETRATE RECEIVING MEMBERS.

REPAIR ANY DAMAGED GALVANIZED SURFACES IN ACCORDANCE WITH STANDARD SPECIFICATION ARTICLE 1076-7.

REPAIR ANY DAMAGED PAINTED SURFACES IN ACCORDANCE WITH SECTION 422 OF THE STANDARD SPECIFICATIONS

**TIMBER / LUMBER NOTES:**

ALL TIMBER AND LUMBER MEMBERS SHALL BE TREATED SOUTHERN PINE AND CONFORM TO SECTION 1082 OF THE STANDARD SPECIFICATIONS.

ALL TIMBER DIMENSIONS SHOWN ON THE PLANS ARE NOMINAL DIMENSIONS.

PRE-DRILL HOLES IN TIMBER AND LUMBER MEMBERS ACCEPTING BOLTS TO ELIMINATE SPLITTING.

**DESIGN LOADS:**

**LIVE LOAD:**

**TRUCK LOAD:**

THIS BRIDGE WAS DESIGNED FOR:

HS20  
 GVWR = 72,000 LBS  
 NUMBER OF AXLES: 3  
 AXLE WEIGHTS:  
 GAWR FRONT = 8,000 LBS  
 GAWR INTERMEDIATE = 32,000 LBS  
 GAWR REAR = 32,000 LBS

**EV2**

GVWR = 57,500 LBS

NUMBER OF AXLES: 2

AXLE WEIGHTS:

GAWR FRONT = 24,000 LBS  
 GAWR REAR = 33,500 LBS

**EV3**

GVWR = 86,000 LBS

NUMBER OF AXLES: 3

AXLE WEIGHTS:

GAWR FRONT = 24,000 LBS  
 GAWR INTERMEDIATE = 31,000 LBS  
 GAWR REAR = 31,000 LBS

**LIVE LOAD FACTORS:**

HS-20 = 1.75

EV2 = 1.3

EV3 = 1.3

**LIVE LOAD FACTORS LOAD RATING:**

HS-20 = 1.35

EV2 = 1.0

EV3 = 1.0

**MULTIPLE PRESENCE FACTOR:**

MPF = 1.0

**LANE LOAD:**

NO LANE LOAD WAS APPLIED.

**IMPACT:**

DYNAMIC IMPACT FOR WOOD/TIMBER COMPONENTS IS ZERO. DYNAMIC IMPACT FACTOR FOR ALL OTHER COMPONENTS IS 33%.

**DEAD LOADS:**

WEARING SURFACES SHALL NOT BE ALLOWED.

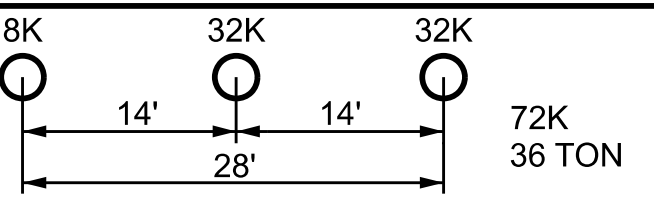

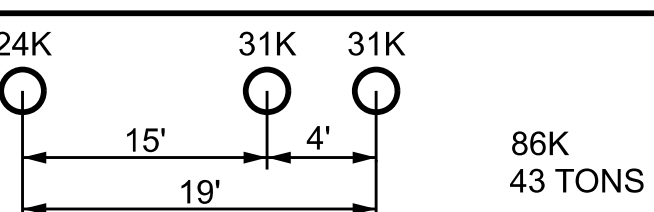
WEIGHT OF TIMBER = 40 PCF.

**DESIGN ASSUMPTIONS/PARAMETERS:**

SUPERSTRUCTURE WILL BE SIX LINES OF I-BEAMS.

BRIDGE IS SINGLE SPAN.

BRIDGE WIDTH = 12'-11" OUT TO OUT.

| REF.# | DESIGN VEHICLES   |                    |
|-------|---|--------------------|
|       | SCHEMATIC   |                    |
| HS-20 |  | 72K<br>36 TON      |
| EV2   |  | 57.5K<br>28.75 TON |
| EV3   |  | 86K<br>43 TONS     |

**GENERAL NOTES:**

THIS BRIDGE IS DESIGNED IN ACCORDANCE WITH THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) "STRUCTURES MANAGEMENT UNIT MANUAL", DATED 6/15/23, AND THE AASHTO "LRFD BRIDGE DESIGN SPECIFICATIONS", 9th EDITION.

THESE DRAWINGS ARE INTENDED ONLY FOR USAGE IN THE INSTALLATION OF SINGLE SPAN I-BEAM BRIDGES FOR PRIVATE DRIVEWAYS IN COUNTIES AS LISTED IN THE CONTRACT DOCUMENTS BY NORTH CAROLINA OFFICE OF EMERGENCY MANAGEMENT IN RESPONSE TO THE DAMAGE CAUSED BY HURRICANE HELENE.

BRIDGE CONSTRUCTION, WORKMANSHIP, AND MATERIALS SHALL BE IN ACCORDANCE WITH THE NCDOT "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES", 2024 EDITION.

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

IT IS ASSUMED THAT THERE ARE NO UTILITY CONFLICTS. THE CONTRACTOR SHALL INVESTIGATE THE PRESENCE OF UTILITIES BEFORE COMMENCING WORK.

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.

FOR ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.

ALL DIMENSIONS SHOWN ARE HORIZONTAL OR VERTICAL, UNLESS OTHERWISE NOTED.

CONTRACTOR SHALL SET BRIDGE ELEVATIONS SUCH THAT WATER WILL DRAIN AND NOT POND ON THE BRIDGE DECK AND MINIMUM LONGITUDINAL GRADE SHALL BE 0.5% AND MAXIMUM GRADE SHALL BE 6%.

WORK ON END BENTS SHALL NOT BE STARTED UNTIL APPROACH ROCK EMBANKMENT AND CORE MATERIAL IN THE AREA OF END BENT PILES HAVE BEEN PLACED.

THIS BRIDGE HAS BEEN DESIGNED FOR ADTT < 100.

**MATERIAL PROPERTIES:**

CONCRETE: MINIMUM COMPRESSIVE STRENGTH,  $f_c = 3,000$  psi (CLASS A)

STRUCTURAL STEEL: AASHTO M270, GRADE 50.

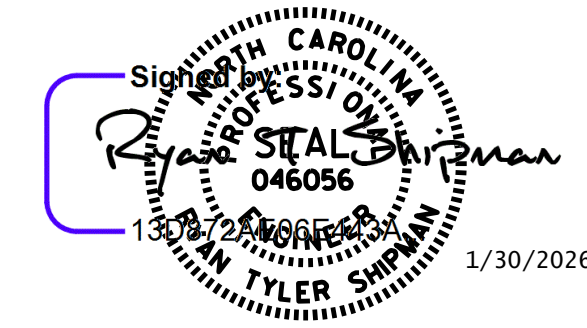
WELDS: SMAW, 70 KSI ELECTRODES PER NCDOT STANDARD SPECIFICATIONS.

ANCHOR BOLTS: ASTM F1554, GRADE 55.

BOLTS/NUTS/WASHER: ALL BOLTS/NUTS/WASHER SHALL BE ASTM F3125, GRADE A325 AND SHALL BE GALVANIZED.

TIMBER: ALL TIMBER & DIMENSIONAL LUMBER SHALL BE NO. 2 VISUALLY GRADED, MIXED SOUTHERN PINE WITH REFERENCE DESIGN VALUES OF:  $F_{bo} = .925$  ksi AND  $F_{vo} = 0.175$  ksi OR GREATER.

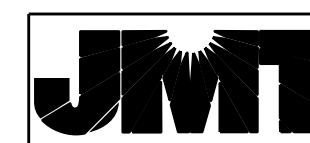
ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS WITH A SHEAR MODULUS OF 0.110 KSI.



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NORTH CAROLINA OFFICE OF  
**EMERGENCY MANAGEMENT**  
**PRIVATE DRIVEWAY**  
**BRIDGE STANDARDS**  
 SINGLE LANE STEEL BEAM BRIDGE  
 TIMBER DECK  
**GENERAL NOTES**

| REVISIONS |     |       |     |     |       | SHEET NO.    |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO.       | BY: | DATE: | NO. | BY: | DATE: | S-12         |
| 1         |     |       | 3   |     |       | TOTAL SHEETS |
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 DES. EGR. OF RECORD: PCW DATE: 12/2025