

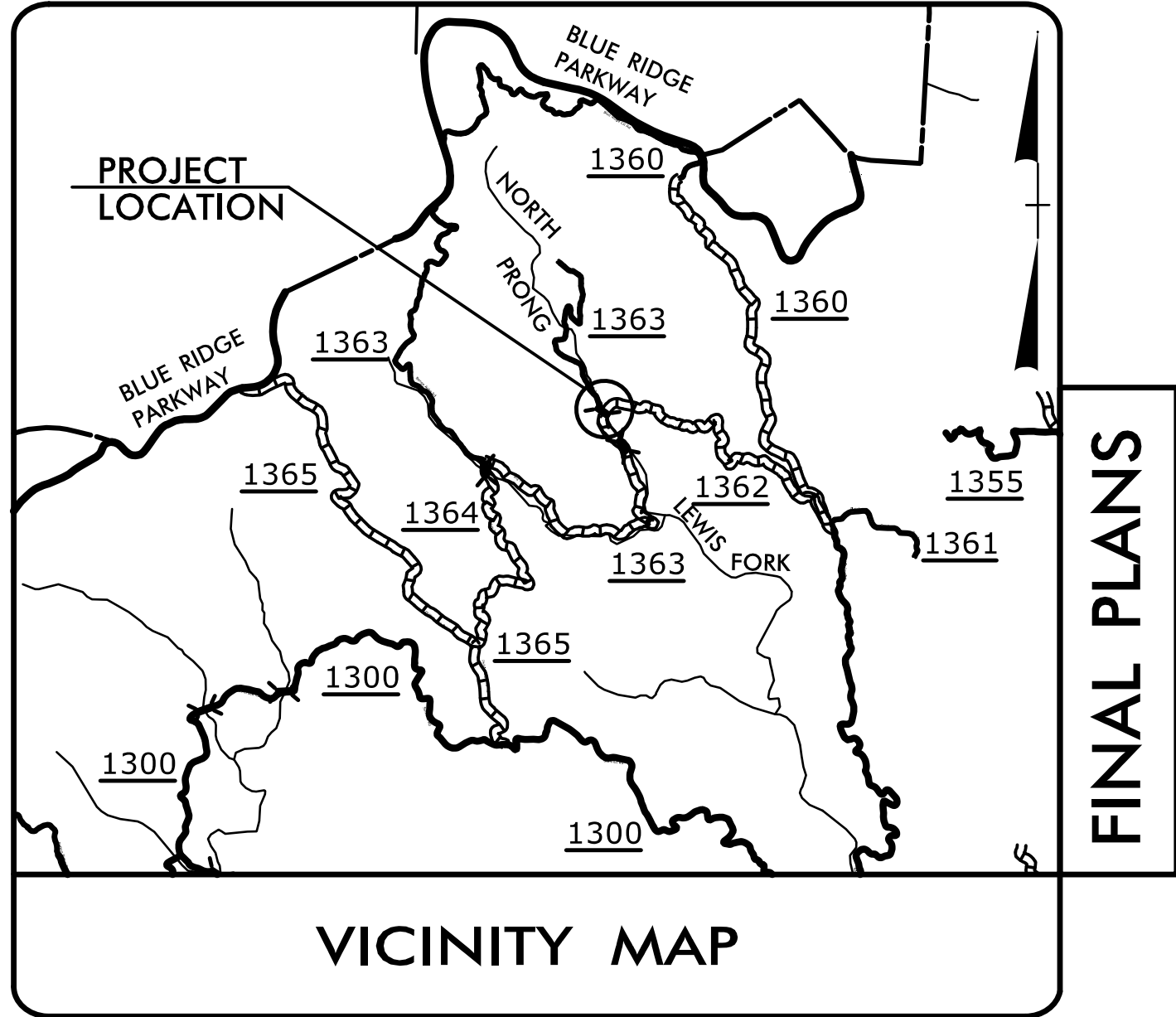
09/08/25

5/9/2025  
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User:smelvin

PROJECT: BP11-R030

CONTRACT: DK00428

See Sheet 1A For Index of Sheets  
See Sheet 1B For Conventional Plan Sheet Symbols



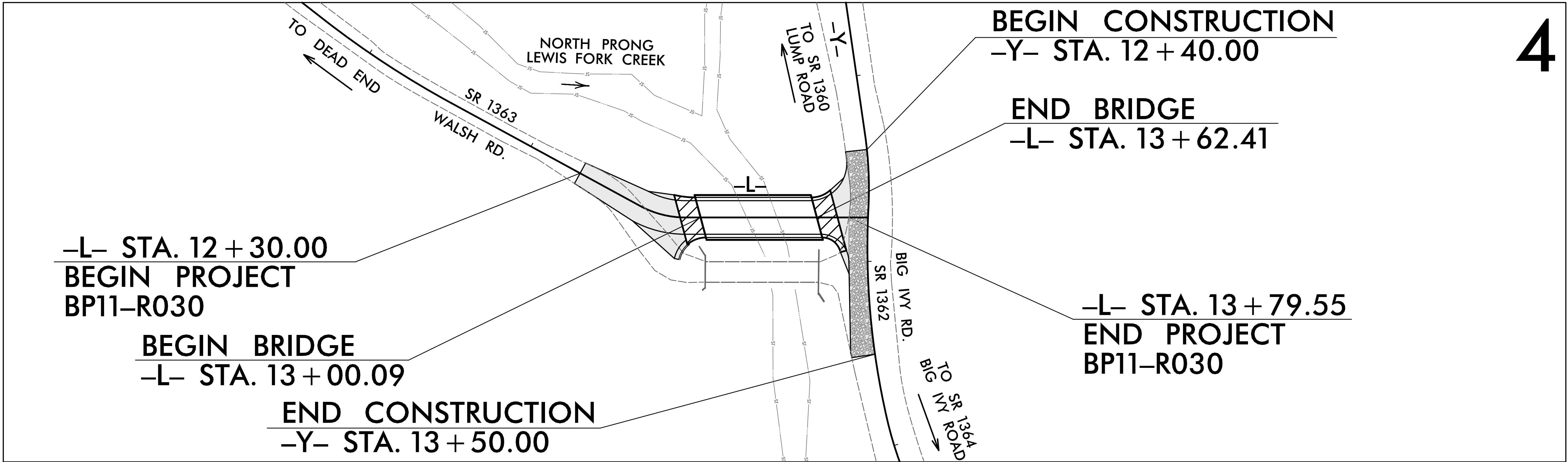
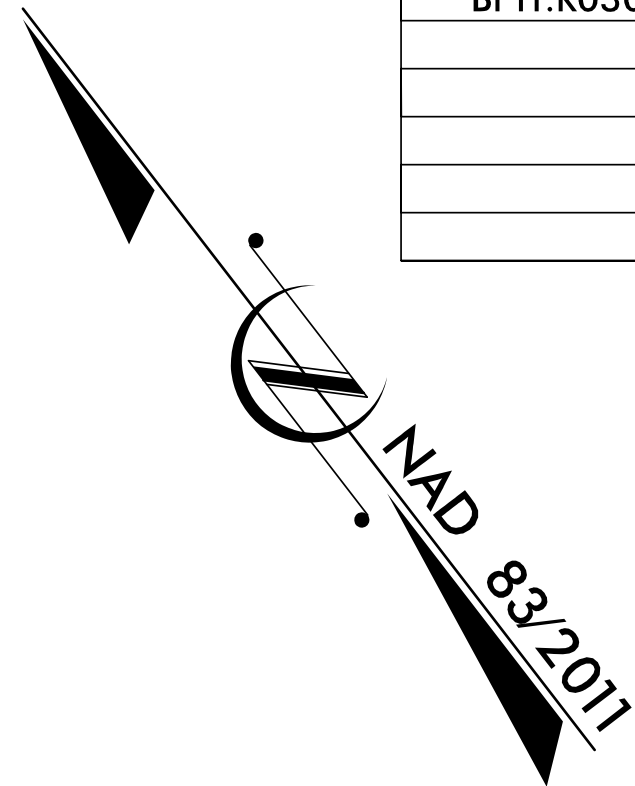
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

WILKES COUNTY

LOCATION: BRIDGE #960110 OVER NORTH PRONG  
LEWIS FORK CREEK ON SR 1363 (WALSH RD)

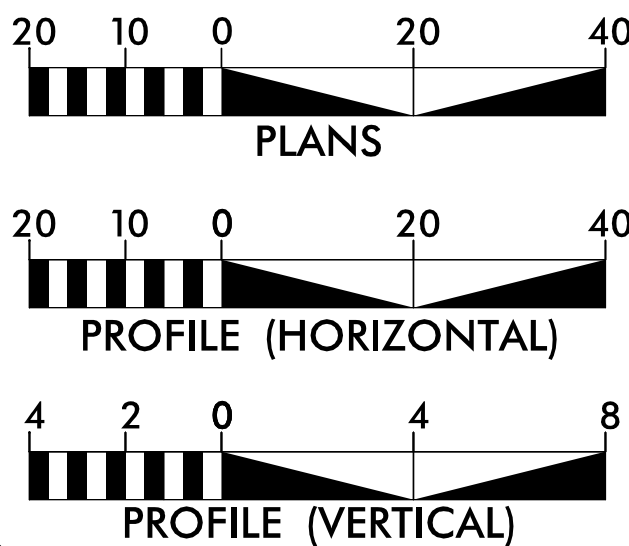
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

| STATE           | STATE PROJECT REFERENCE NO. | SHEET NO.   | TOTAL SHEETS |
|-----------------|-----------------------------|-------------|--------------|
| N.C.            | BP11-R030                   | 1           |              |
| STATE PROJ. NO. | F.A. PROJ. NO.              | DESCRIPTION |              |
| BP11.R030.1     | N/A                         | PE          |              |
| BP11.R030.2     | N/A                         | R/W & UTIL. |              |
| BP11.R030.3     | N/A                         | CONST.      |              |
|                 |                             |             |              |
|                 |                             |             |              |
|                 |                             |             |              |



DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2025 = 100  
ADT 2045 = 100  
V = 30 MPH  
FUNC CLASS =  
LOCAL, RURAL  
SUB-REGIONAL TIER

PROJECT LENGTH

TOTAL LENGTH ROADWAY PROJECT #BP11-R030 = 0.016 MILES  
TOTAL LENGTH STRUCTURE PROJECT #BP11-R030 = 0.012 MILES  
TOTAL LENGTH PROJECT #BP11-R030 = 0.028 MILES

NCDOT CONTACT: ROB WEISZ, PE

PLANS PREPARED BY:  
TGS ENGINEERS  
201 W. MARION ST.  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-0275

PLANS PREPARED FOR:  
NORTH CAROLINA DEPARTMENT  
OF TRANSPORTATION  
DIVISION 11  
801 STATESVILLE RD.  
NORTH WILKESBORO, NC 28659

RIGHT OF WAY DATE:  
OCTOBER 31, 2024

JIMMY L. TERRY, PE  
PROJECT ENGINEER

LETTING DATE:  
JULY 17, 2025

AUSTIN R. TURNER, PE  
PROJECT DESIGN ENGINEER

2024 STANDARD SPECIFICATIONS

HYDRAULICS ENGINEER

5/12/2025

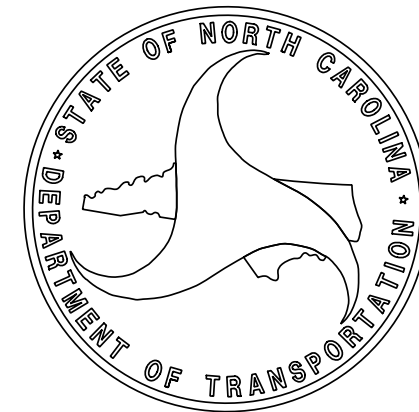
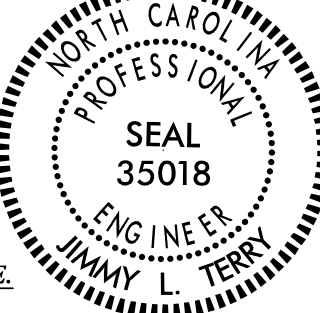
Signed by:  
John W. Twissdale, Jr.  
P.E.



ROADWAY DESIGN  
ENGINEER

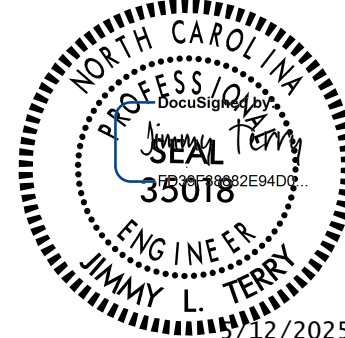
5/12/2025

Signed by:  
Jimmy L. Terry  
P.E.



8/17/99

4/15/2025  
X:\CADD\Div 11 Wilkes 110\Roadway\Design\Wilkes 110\_Rdy.tsh.dgn  
User:smelvin

| PROJECT REFERENCE NO.                                            |  | SHEET NO.                                                                           |  |
|------------------------------------------------------------------|--|-------------------------------------------------------------------------------------|--|
| BP11-R030                                                        |  | 1A                                                                                  |  |
|                                                                  |  | ROADWAY DESIGN<br>ENGINEER                                                          |  |
|                                                                  |  |  |  |
| DOCUMENT NOT CONSIDERED FINAL<br>UNLESS ALL SIGNATURES COMPLETED |  |                                                                                     |  |
|                                                                  |  | EFF. 01-16-2024<br>REV.                                                             |  |

|                          |                                                       |                                       |  |                                                                                                                                                                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
|--------------------------|-------------------------------------------------------|---------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| INDEX OF SHEETS          |                                                       | GENERAL NOTES:                        |  | 2024 SPECIFICATIONS<br>EFFECTIVE: 01-16-2024<br>REVISED:                                                                                                                                                                                                                 |  | 2024 ROADWAY ENGLISH STANDARD DRAWINGS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| SHEET NUMBER             | SHEET                                                 | GRADE LINE:<br>GRADING AND SURFACING: |  | THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN. |  | The following Roadway Standards as appear in "Roadway Standard Drawings" Contracts Standards and Development Unit - N. C. Department of Transportation - Raleigh, N. C., Dated January 16, 2024 are applicable to this project and by reference hereby are considered a part of these plans:                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| 1                        | TITLE SHEET                                           | CLEARING:                             |  | CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.                                                                                                                                                                                     |  | STD.NO. TITLE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |
| 1A                       | INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS | SUPERELEVATION:                       |  | ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.                              |  | DIVISION 2 - EARTHWORK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| 1B                       | CONVENTIONAL SYMBOLS                                  | SHOULDER CONSTRUCTION:                |  | ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01                                                                                                                                  |  | 200.03 Method of Clearing - Method III<br>225.02 Guide for Grading Subgrade - Secondary and Local<br>225.04 Method of Obtaining Superelevation - Two Lane Pavement<br>275.01 Rock Plating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |
| 2A-1                     | PAVEMENT SCHEDULE AND TYPICAL SECTIONS                | SIDE ROADS:                           |  | THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.                             |  | DIVISION 3 - PIPE CULVERTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| 2C-1 THRU 2C-2           | SPECIAL DETAILS - METHOD OF PIPE INSTALLATION         | SUBSURFACE DRAINS:                    |  | SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.                                                                                                                                                         |  | 300.01 Method of Pipe Installation<br>(Use Details in Lieu of Standards for Sheets 1 and 2 of 2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |
| 2C-3 THRU 2C-4           | SPECIAL DETAILS - GUARDRAIL PLACEMENT                 | GUARDRAIL:                            |  | THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.                                                                        |  | DIVISION 4 - MAJOR STRUCTURES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |
| 2C-5 THRU 2C-6           | SPECIAL DETAILS - GUARDRAIL ANCHOR UNITS              | TEMPORARY SHORING:                    |  | SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING".                                                                                                                                   |  | 423.01 Bridge Approach Fills - Type 1 Approach Fill for Bridge Abutment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |
| 2G-1                     | GEOTECHNICAL DETAIL - ROCK PLATING                    | END BENTS:                            |  | THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.                                                                                            |  | DIVISION 5 - SUBGRADE, BASES AND SHOULDERS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| 3B-1                     | ROADWAY AND DRAINAGE SUMMARIES                        | UTILITIES:                            |  | UTILITY OWNERS ON THIS PROJECT ARE WILKES COMMUNICATION.<br><br>ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.                                                                                                                                     |  | 560.01 Method of Shoulder Construction<br>- High Side of Superelevated Curve - Method I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |
| 3G-1                     | GEOTECHNICAL SUMMARIES                                | RIGHT-OF-WAY MARKERS:                 |  | ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.                                                                                                                                                                                                      |  | DIVISION 8 - INCIDENTALS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 4                        | PLAN SHEET                                            |                                       |  |                                                                                                                                                                                                                                                                          |  | 815.02 Subsurface Drain<br>840.00 Concrete Base Pad for Drainage Structures<br>840.18 Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe<br>840.27 Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe<br>840.29 Frames and Narrow Slot Flat Grates<br>840.45 Precast Drainage Structure<br>840.66 Drainage Structure Steps<br>846.01 Concrete Curb, Gutter and Curb & Gutter<br>846.04 Drop Inlet Installation in Shoulder Berm Gutter<br>862.01 Guardrail Placement<br>(Use Details in Lieu of Standards for Sheets 4, 6, 12, and 14 of 15)<br>862.02 Guardrail Installation<br>862.03 Structure Anchor Units<br>862.04 Anchoring End of Guardrail - for B-77 and B-83 Anchor Units<br>876.02 Guide for Rip Rap at Pipe Outlets |  |
| 5                        | PROFILE SHEET                                         |                                       |  |                                                                                                                                                                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
| RW-1 THRU RW-4           | SURVEY CONTROL SHEETS                                 |                                       |  |                                                                                                                                                                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
| TMP-1 THRU TMP-6         | TRAFFIC MANAGEMENT PLANS                              |                                       |  |                                                                                                                                                                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
| EC-1 THRU EC-5           | EROSION CONTROL PLANS                                 |                                       |  |                                                                                                                                                                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
| RF-1                     | REFORESTATION DETAIL SHEET                            |                                       |  |                                                                                                                                                                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
| X-1                      | CROSS-SECTION INDEX                                   |                                       |  |                                                                                                                                                                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
| X-1A                     | CROSS-SECTION SUMMARY SHEET                           |                                       |  |                                                                                                                                                                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
| X-2 THRU X-6             | CROSS-SECTIONS                                        |                                       |  |                                                                                                                                                                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
| S-1 THRU S-23            | STRUCTURE PLANS                                       |                                       |  |                                                                                                                                                                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
| STRUCTURE STANDARD NOTES |                                                       |                                       |  |                                                                                                                                                                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |

Note: Not to Scale

BOUNDARIES AND PROPERTY:

|                                       |  |
|---------------------------------------|--|
| State Line                            |  |
| County Line                           |  |
| Township Line                         |  |
| City Line                             |  |
| Reservation Line                      |  |
| Property Line                         |  |
| Existing Iron Pin (EIP)               |  |
| Computed Property Corner              |  |
| Existing Concrete Monument (ECM)      |  |
| Parcel / Sequence Number              |  |
| Existing Fence Line                   |  |
| Proposed Woven Wire Fence             |  |
| Proposed Chain Link Fence             |  |
| Proposed Barbed Wire Fence            |  |
| Existing Wetland Boundary             |  |
| Proposed Wetland Boundary             |  |
| Existing Endangered Animal Boundary   |  |
| Existing Endangered Plant Boundary    |  |
| Existing Historic Property Boundary   |  |
| Known Contamination Area: Soil        |  |
| Potential Contamination Area: Soil    |  |
| Known Contamination Area: Water       |  |
| Potential Contamination Area: Water   |  |
| Contaminated Site: Known or Potential |  |
| BUILDINGS AND OTHER CULTURE:          |  |
| Gas Pump Vent or U/G Tank Cap         |  |
| Sign                                  |  |
| Well                                  |  |
| Small Mine                            |  |
| Foundation                            |  |
| Area Outline                          |  |
| Cemetery                              |  |
| Building                              |  |
| School                                |  |
| Church                                |  |
| Dam                                   |  |

HYDROLOGY:

|                                    |  |
|------------------------------------|--|
| Stream or Body of Water            |  |
| Hydro, Pool or Reservoir           |  |
| Jurisdictional Stream              |  |
| Buffer Zone 1                      |  |
| Buffer Zone 2                      |  |
| Flow Arrow                         |  |
| Disappearing Stream                |  |
| Spring                             |  |
| Wetland                            |  |
| Proposed Lateral, Tail, Head Ditch |  |
| False Sump                         |  |

RAILROADS:

|                    |  |
|--------------------|--|
| Standard Gauge     |  |
| RR Signal Milepost |  |
| Switch             |  |
| RR Abandoned       |  |
| RR Dismantled      |  |

RIGHT OF WAY & PROJECT CONTROL:

|                                                      |  |
|------------------------------------------------------|--|
| Primary Horiz Control Point                          |  |
| Primary Horiz and Vert Control Point                 |  |
| Secondary Horiz and Vert Control Point               |  |
| Vertical Benchmark                                   |  |
| Existing Right of Way Monument                       |  |
| Proposed Right of Way Monument (Rebar and Cap)       |  |
| Proposed Right of Way Monument (Concrete)            |  |
| Existing Permanent Easement Monument                 |  |
| Proposed Permanent Easement Monument (Rebar and Cap) |  |
| Existing C/A Monument                                |  |
| Proposed C/A Monument (Rebar and Cap)                |  |
| Proposed C/A Monument (Concrete)                     |  |
| Existing Right of Way Line                           |  |
| Proposed Right of Way Line                           |  |
| Existing Control of Access Line                      |  |
| Proposed Control of Access Line                      |  |
| Proposed ROW and CA Line                             |  |
| Existing Easement Line                               |  |
| Proposed Temporary Construction Easement             |  |
| Proposed Temporary Drainage Easement                 |  |
| Proposed Permanent Drainage Easement                 |  |
| Proposed Permanent Drainage/Utility Easement         |  |
| Proposed Permanent Utility Easement                  |  |
| Proposed Temporary Utility Easement                  |  |
| Proposed Aerial Utility Easement                     |  |

ROADS AND RELATED FEATURES:

|                            |  |
|----------------------------|--|
| Existing Edge of Pavement  |  |
| Existing Curb              |  |
| Proposed Slope Stakes Cut  |  |
| Proposed Slope Stakes Fill |  |
| Proposed Curb Ramp         |  |
| Existing Metal Guardrail   |  |
| Proposed Guardrail         |  |
| Existing Cable Guiderail   |  |
| Proposed Cable Guiderail   |  |
| Equality Symbol            |  |
| Pavement Removal           |  |
| VEGETATION:                |  |
| Single Tree                |  |
| Single Shrub               |  |
| Hedge                      |  |

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS  
CONVENTIONAL PLAN SHEET SYMBOLS

|            |  |
|------------|--|
| Woods Line |  |
| Orchard    |  |
| Vineyard   |  |

EXISTING STRUCTURES:

|                                          |  |
|------------------------------------------|--|
| MAJOR:                                   |  |
| Bridge, Tunnel or Box Culvert            |  |
| Bridge Wing Wall, Head Wall and End Wall |  |
| MINOR:                                   |  |
| Head and End Wall                        |  |
| Pipe Culvert                             |  |
| Footbridge                               |  |
| Drainage Box: Catch Basin, DI or JB      |  |
| Paved Ditch Gutter                       |  |
| Storm Sewer Manhole                      |  |
| Storm Sewer                              |  |

UTILITIES:

\* SUE - Subsurface Utility Engineering  
LOS - Level of Service - A,B,C or D (Accuracy)

POWER:

|                                         |  |
|-----------------------------------------|--|
| Existing Power Pole                     |  |
| Proposed Power Pole                     |  |
| Existing Joint Use Pole                 |  |
| Proposed Joint Use Pole                 |  |
| Power Manhole                           |  |
| Power Line Tower                        |  |
| Power Transformer                       |  |
| U/G Power Cable Hand Hole               |  |
| H-Frame Pole                            |  |
| U/G Power Line Test Hole (SUE - LOS A)* |  |
| U/G Power Line (SUE - LOS B)*           |  |
| U/G Power Line (SUE - LOS C)*           |  |
| U/G Power Line (SUE - LOS D)*           |  |

TELEPHONE:

|                                        |  |
|----------------------------------------|--|
| Existing Telephone Pole                |  |
| Proposed Telephone Pole                |  |
| Telephone Manhole                      |  |
| Telephone Pedestal                     |  |
| Telephone Cell Tower                   |  |
| U/G Telephone Cable Hand Hole          |  |
| U/G Telephone Test Hole (SUE - LOS A)* |  |
| U/G Telephone Cable (SUE - LOS B)*     |  |
| U/G Telephone Cable (SUE - LOS C)*     |  |
| U/G Telephone Cable (SUE - LOS D)*     |  |
| U/G Telephone Conduit (SUE - LOS B)*   |  |
| U/G Telephone Conduit (SUE - LOS C)*   |  |
| U/G Telephone Conduit (SUE - LOS D)*   |  |
| U/G Fiber Optics Cable (SUE - LOS B)*  |  |
| U/G Fiber Optics Cable (SUE - LOS C)*  |  |
| U/G Fiber Optics Cable (SUE - LOS D)*  |  |

WATER:

|                                         |  |
|-----------------------------------------|--|
| Water Manhole                           |  |
| Water Meter                             |  |
| Water Valve                             |  |
| Water Hydrant                           |  |
| U/G Water Line Test Hole (SUE - LOS A)* |  |
| U/G Water Line (SUE - LOS B)*           |  |
| U/G Water Line (SUE - LOS C)*           |  |
| U/G Water Line (SUE - LOS D)*           |  |
| Above Ground Water Line                 |  |

TV:

|                                      |  |
|--------------------------------------|--|
| TV Pedestal                          |  |
| TV Tower                             |  |
| U/G TV Cable Hand Hole               |  |
| U/G TV Test Hole (SUE - LOS A)*      |  |
| U/G TV Cable (SUE - LOS B)*          |  |
| U/G TV Cable (SUE - LOS C)*          |  |
| U/G TV Cable (SUE - LOS D)*          |  |
| U/G Fiber Optic Cable (SUE - LOS B)* |  |
| U/G Fiber Optic Cable (SUE - LOS C)* |  |
| U/G Fiber Optic Cable (SUE - LOS D)* |  |

GAS:

|                                       |  |
|---------------------------------------|--|
| Gas Valve                             |  |
| Gas Meter                             |  |
| U/G Gas Line Test Hole (SUE - LOS A)* |  |
| U/G Gas Line (SUE - LOS B)*           |  |
| U/G Gas Line (SUE - LOS C)*           |  |
| U/G Gas Line (SUE - LOS D)*           |  |
| Above Ground Gas Line                 |  |

SANITARY SEWER:

|                                             |  |
|---------------------------------------------|--|
| Sanitary Sewer Manhole                      |  |
| Sanitary Sewer Cleanout                     |  |
| U/G Sanitary Sewer Line                     |  |
| Above Ground Sanitary Sewer                 |  |
| SS Force Main Line Test Hole (SUE - LOS A)* |  |
| SS Force Main Line (SUE - LOS B)*           |  |
| SS Force Main Line (SUE - LOS C)*           |  |
| SS Force Main Line (SUE - LOS D)*           |  |

MISCELLANEOUS:

|                                         |  |
|-----------------------------------------|--|
| Utility Pole                            |  |
| Utility Pole with Base                  |  |
| Utility Located Object                  |  |
| Utility Traffic Signal Box              |  |
| Utility Unknown U/G Line (SUE - LOS B)* |  |
| U/G Tank; Water, Gas, Oil               |  |
| Underground Storage Tank, Approx. Loc.  |  |
| A/G Tank; Water, Gas, Oil               |  |
| Geoenvironmental Boring                 |  |
| Abandoned According to Utility Records  |  |
| End of Information                      |  |

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE SHOWN.



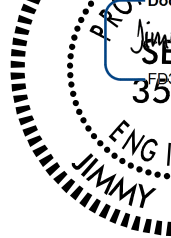
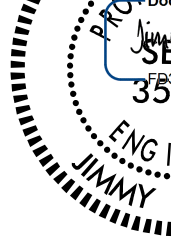
-L- STA. 12+66.80 TO -L- STA. 13+00.09 (BEGIN BRIDGE)  
-L- STA. 13+62.41 (END BRIDGE) TO -L- STA. 13+79.55

-L- STA. 12+30.00 TO -L- STA. 12+66.80



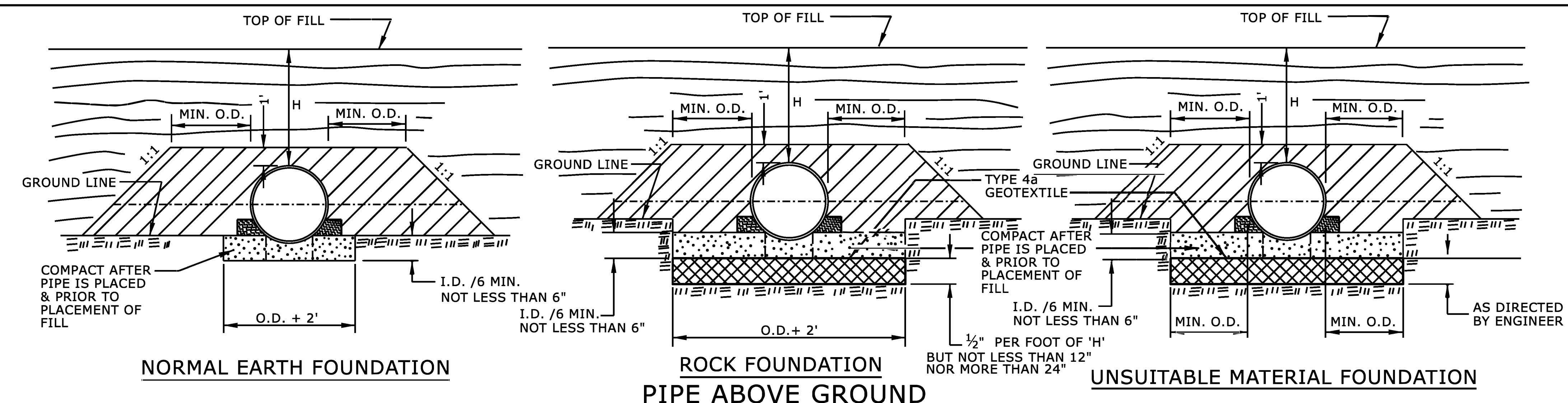
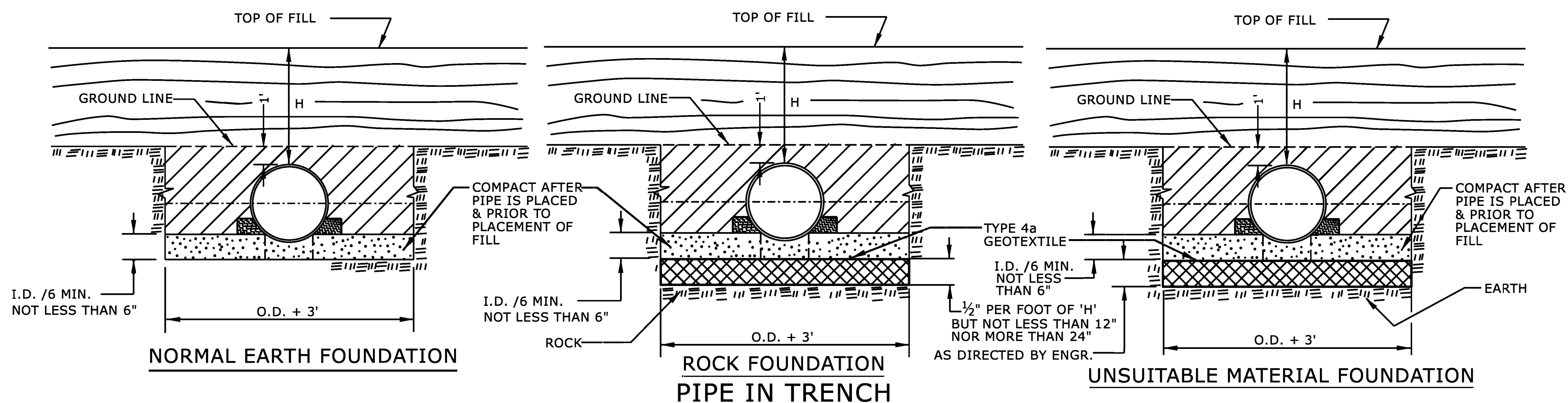
# TYPICAL SECTION NO. 2

-L- STA. 13+00.09 TO -L- STA. 13+62.41

|                                                                                                                     |  |                                                                                     |  |
|---------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------|--|
| PROJECT REFERENCE NO.                                                                                               |  | SHEET NO.                                                                           |  |
| BP11-R030                                                                                                           |  | 2A-1                                                                                |  |
| ROADWAY DESIGN<br>ENGINEER                                                                                          |  | PAVEMENT DESIGN<br>ENGINEER                                                         |  |
|                                  |  |  |  |
| <p>12/2025</p>                                                                                                      |  | <p>12/2025</p>                                                                      |  |
| <p><b>DOCUMENT NOT CONSIDERED FINAL<br/>UNLESS ALL SIGNATURES COMPLETED</b></p>                                     |  |                                                                                     |  |
| <p>TGS ENGINEERS<br/>201 W. MARION ST.<br/>SHELBY, NC 28184<br/>PH (704) 476-0003<br/>CORP. LICENSE NO.: C-0275</p> |  |                                                                                     |  |



-L- STA. 12+89.39 RT TO -L- 12+93.01 (BEGIN APPROACH SLAB) RT



GENERAL NOTES:  
I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.  
O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.  
H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT  
ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP  
OF THE EMBANKMENT AT THAT POINT.

|                                                                                     |                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | APPROVED SUITABLE LOCAL MATERIAL.                                                                                                                                                       |
|  | TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.                                                                                                                                |
|  | LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION. |

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

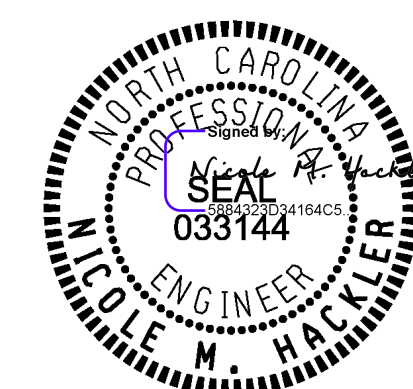
REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS  
FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

|                                                                                       |                                                                                                                                |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
|  | SPRINGLINE OF PIPE                                                                                                             |
|  | SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE 1<br>ABOVE AND BELOW SPRINGLINE.                                          |
|  | UNDISTURBED EARTH MATERIAL                                                                                                     |
|  | SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE<br>WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER. |

STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

# ROADWAY DETAIL DRAWING FOR METHOD OF PIPE INSTALLATION FLEXIBLE PIPE

SHEET 1 OF 2  
**300.01**



5/12/2025

**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

**CONTRACTS STANDARDS  
AND DEVELOPMENT UNIT**

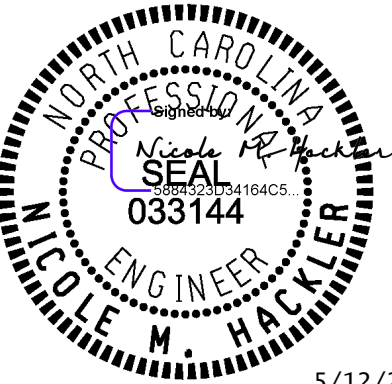
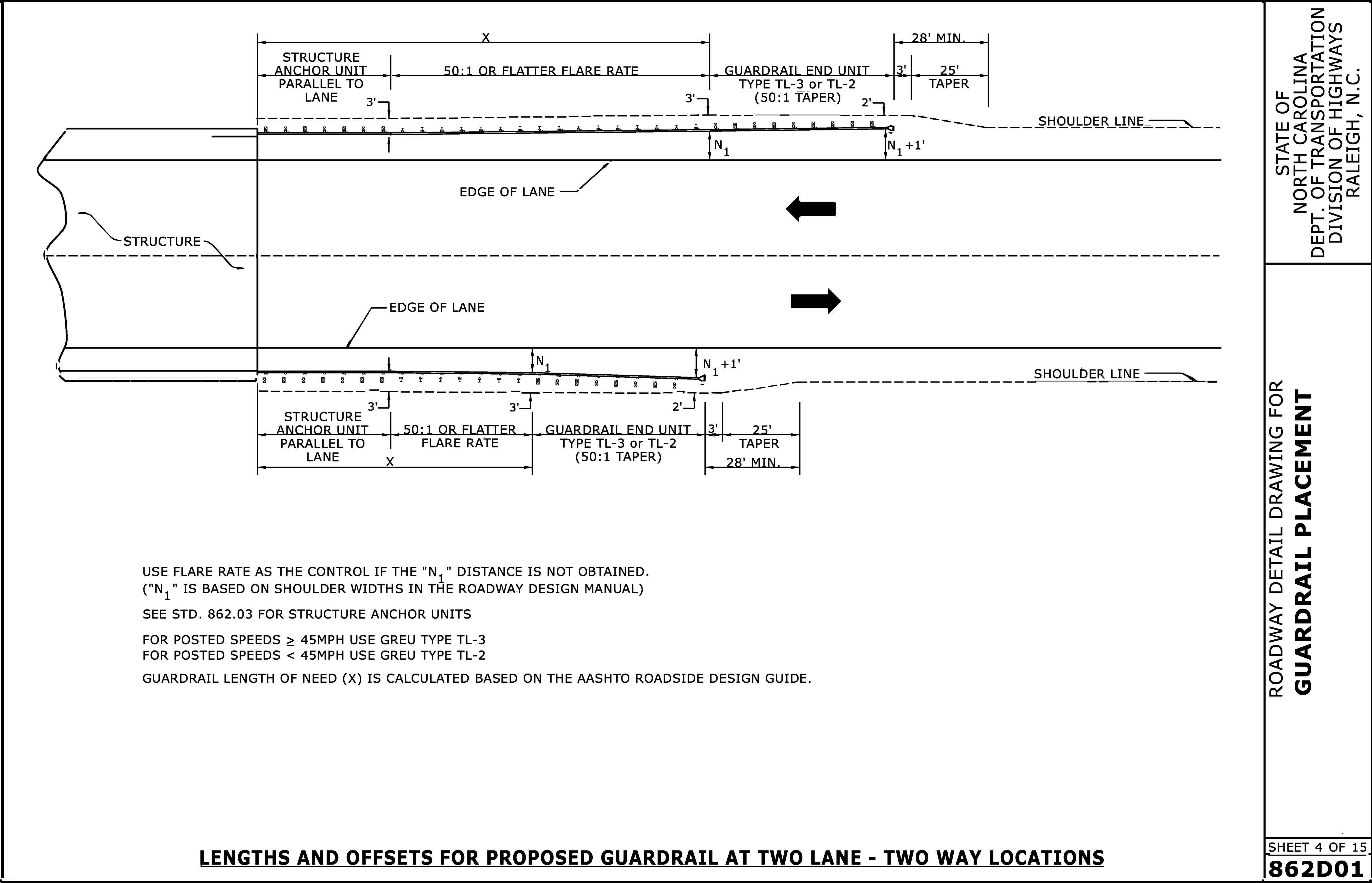
Office 919-707-6950 FAX 919-250-4119

**SEE TITLE BLOCK**

ORIGINAL BY: S.CALHOUN DATE: 7-25-2024  
MODIFIED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
FILE SPEC.: \_\_\_\_\_

ORIGINAL BY: S.CALHOUN DATE: 7-25-2024  
MODIFIED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
FILE SPEC.: \_\_\_\_\_

| PROJECT REFERENCE NO. | SHEET NO. |
|-----------------------|-----------|
| BP11 -R030            | 2C-3      |

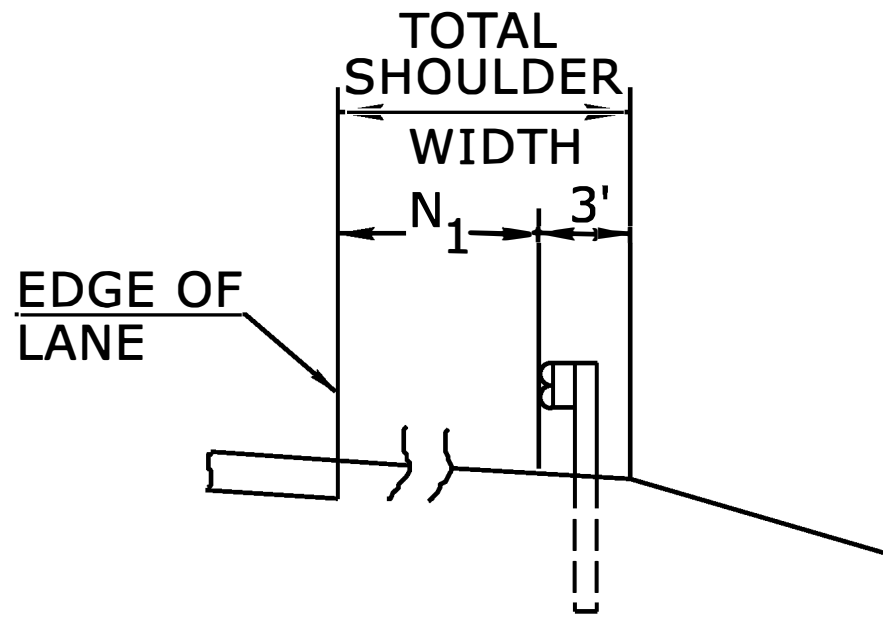


5/12/2025

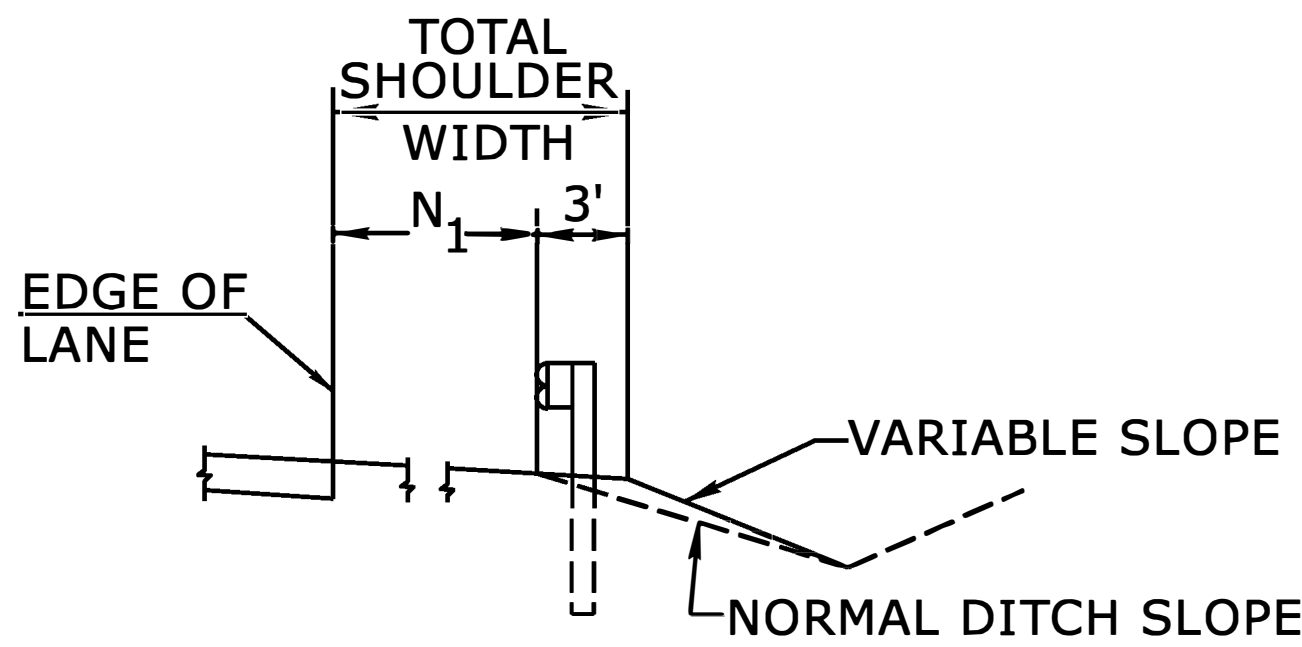
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

|                                                     |                  |
|-----------------------------------------------------|------------------|
| <b>CONTRACTS STANDARDS<br/>AND DEVELOPMENT UNIT</b> |                  |
| Office 919-707-6950                                 | FAX 919-250-4119 |
| <b>SEE TITLE BLOCK</b>                              |                  |
| ORIGINAL BY: S.CALHOUN                              | DATE: 7-25-2024  |
| MODIFIED BY:                                        | DATE:            |
| CHECKED BY:                                         | DATE:            |
| FILE SPEC.:                                         |                  |

| PROJECT REFERENCE NO. | SHEET NO. |
|-----------------------|-----------|
| BP11-R030             | 2C-4      |

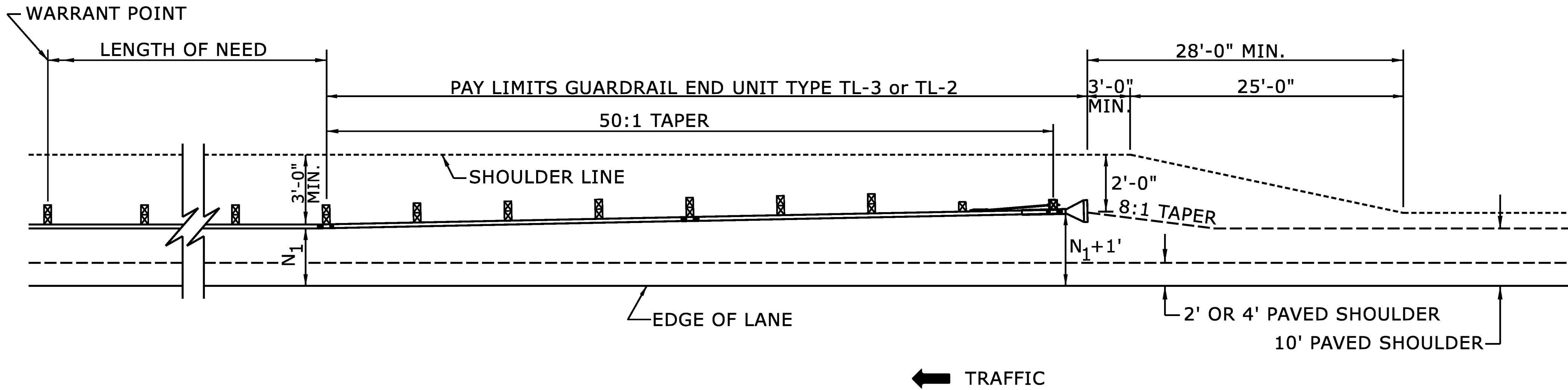


FILL SECTION



CUT SECTION

"N<sub>1</sub>"= DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL WHERE GUARDRAIL IS PARALLEL TO LANE.

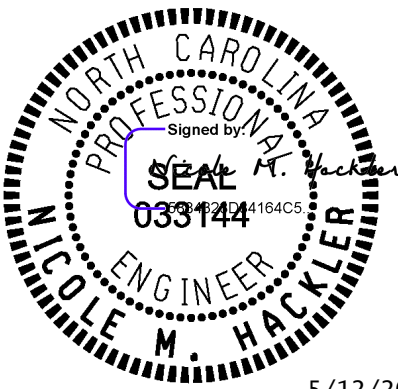


FOR POSTED SPEEDS ≥ 45mph USE GREU TYPE TL-3  
FOR POSTED SPEEDS < 45mph USE GREU TYPE TL-2

DETAIL OF BEGINNING OF GUARDRAIL IN CUT OR FILL SECTION

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DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL PLACEMENT**



5/12/2025

SHEET 6 OF 15  
**862D01**

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

**CONTRACTS STANDARDS  
AND DEVELOPMENT UNIT**

Office 919-707-6950 FAX 919-250-4119

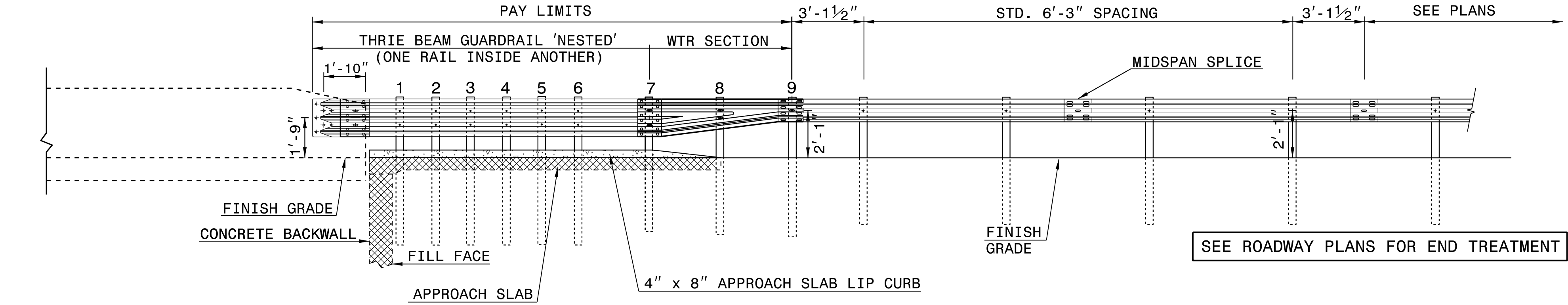
**SEE TITLE BLOCK**

ORIGINAL BY: S.CALHOUN DATE: 7-25-2024  
MODIFIED BY: DATE:  
CHECKED BY: DATE:  
FILE SPEC.: DATE:

STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

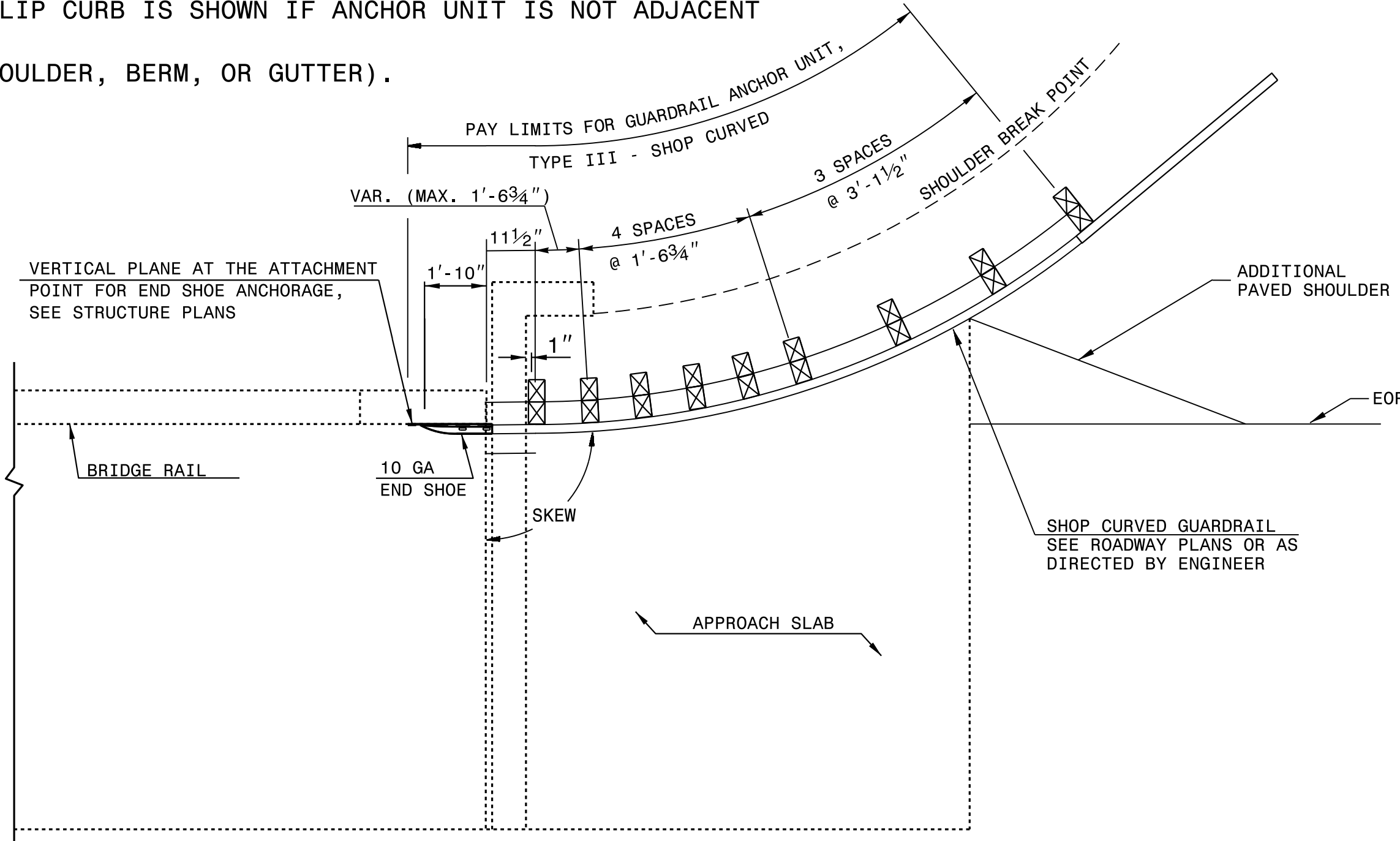
ENGLISH DETAIL DRAWING FOR  
**TYPE III - SHOP CURVED  
STRUCTURE ANCHOR UNIT**

SHEET 1 OF 1  
**TYPE III SC**



**ELEVATION**

- NOTE:
- \*\*POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
  - \*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11 1/2" IF CONCRETE BACKWALL IS NOT PRESENT.
  - SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
  - MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
  - USE NO STEEL POSTS WITHIN THE GUARDRAIL ANCHOR UNIT LIMITS.
  - LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
  - SEE STANDARD 862.03 SHEET 4 FOR POST SECTIONS 1 THRU 9.



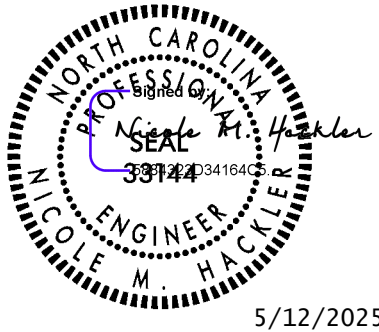
**PLAN VIEW**

**GUARDRAIL ANCHOR UNIT, TYPE III - SHOP CURVED  
FOR ATTACHMENT TO RAIL ON BRIDGE**

STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR  
**TYPE III - SHOP CURVED  
STRUCTURE ANCHOR UNIT**

SHEET 1 OF 1  
**TYPE III SC**



5/12/2025

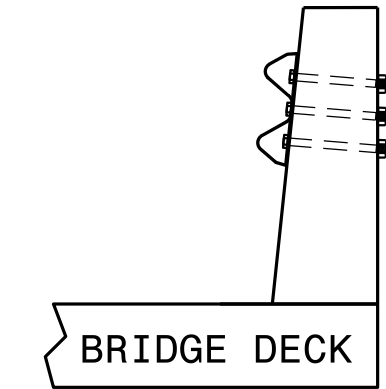
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS  
AND DEVELOPMENT UNIT  
Office 919-707-6950 FAX 919-250-4119

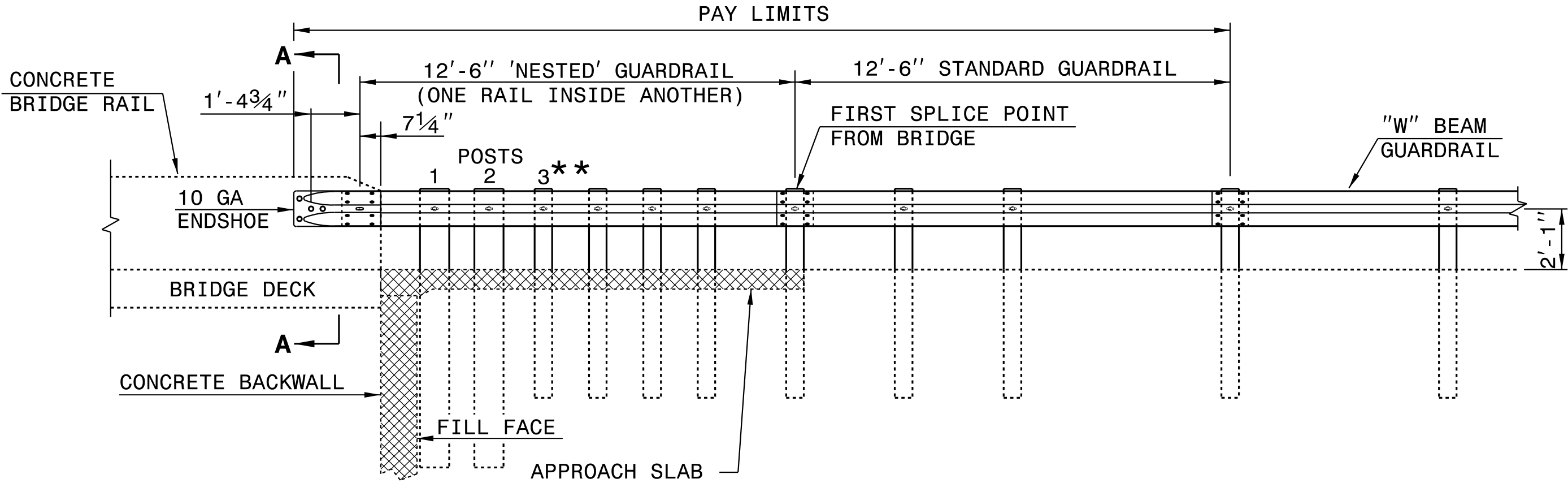
**SEE PLATE FOR TITLE**

ORIGINAL BY: E.E.Ward DATE: 4-4-02  
MODIFIED BY: T.S.Spell DATE: 2-01-18  
CHECKED BY: DATE:  
FILE SPEC.: \\howerton\guardrail\31inguardrail\typeiiisc.dgn

| PROJECT REFERENCE NO. | SHEET NO. |
|-----------------------|-----------|
| BP11-R030             | 2C-6      |



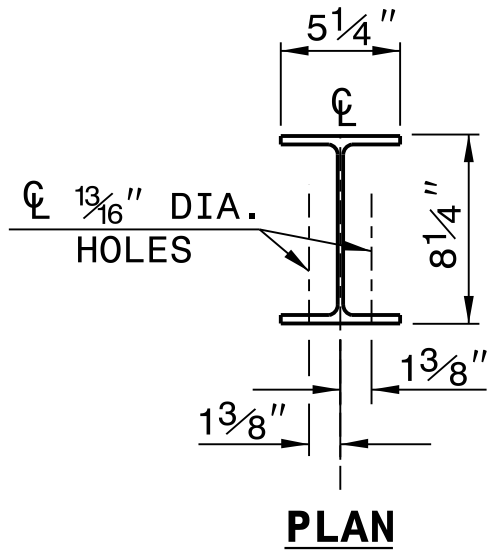
**SECTION A-A**



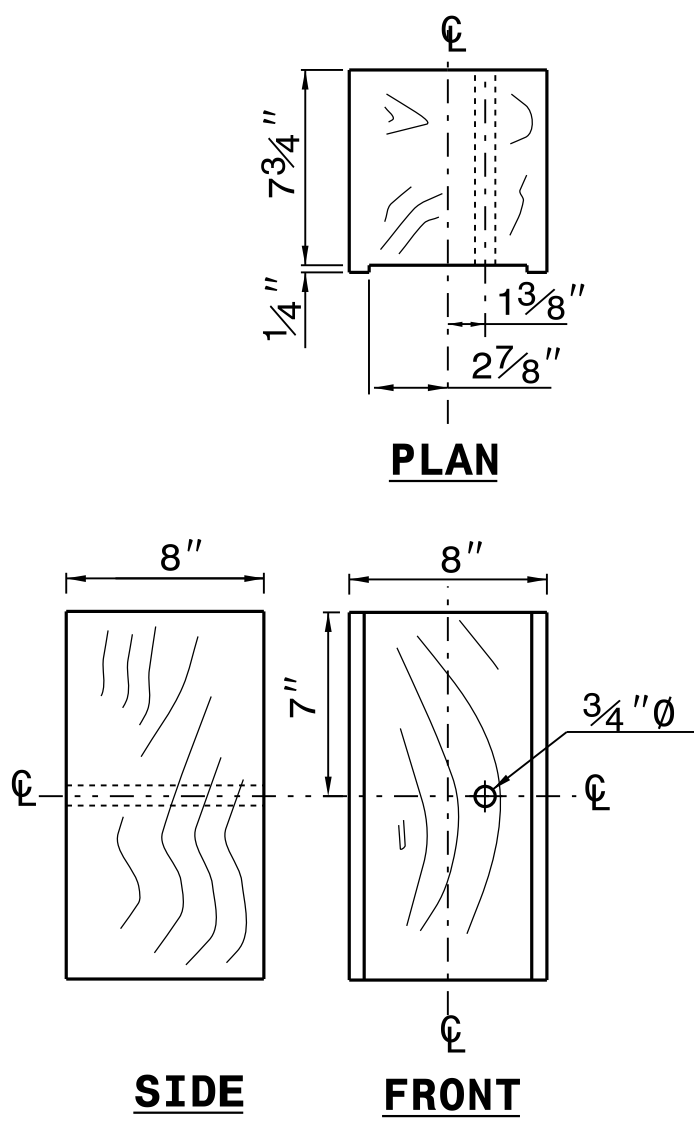
**ELEVATION VIEW**

NOTE:

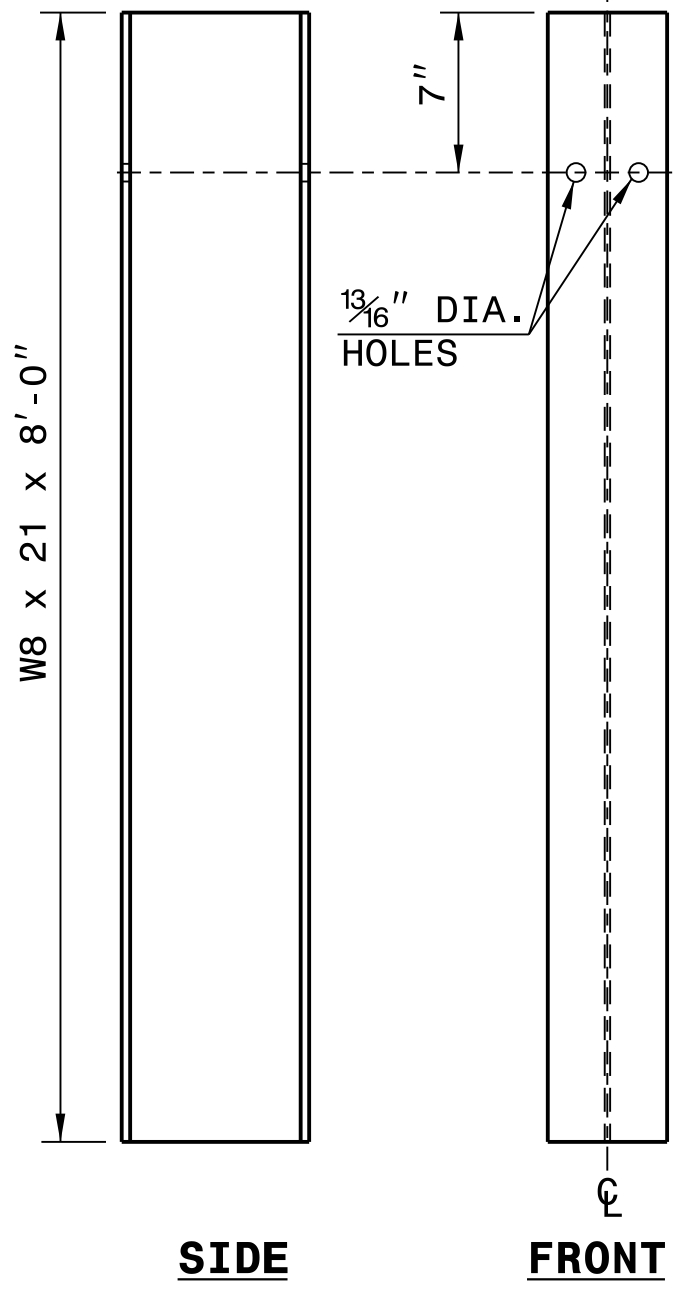
- \*\*ELIMINATE POST 3 AND SHIFT POSTS 1 & 2 ON SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- \*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11 1/2" IF CONCRETE BACKWALL IS NOT PRESENT.
- MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
- USE NO WOOD POSTS WITHIN THE GUARDRAIL ANCHOR UNIT LIMITS.
- LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
- POSTS 1 AND 2 TO BE W8 x 21 x 8'-0" LONG STEEL POST AND 8" x 8" x 14" WOOD ROUTED OFFSET BLOCK.



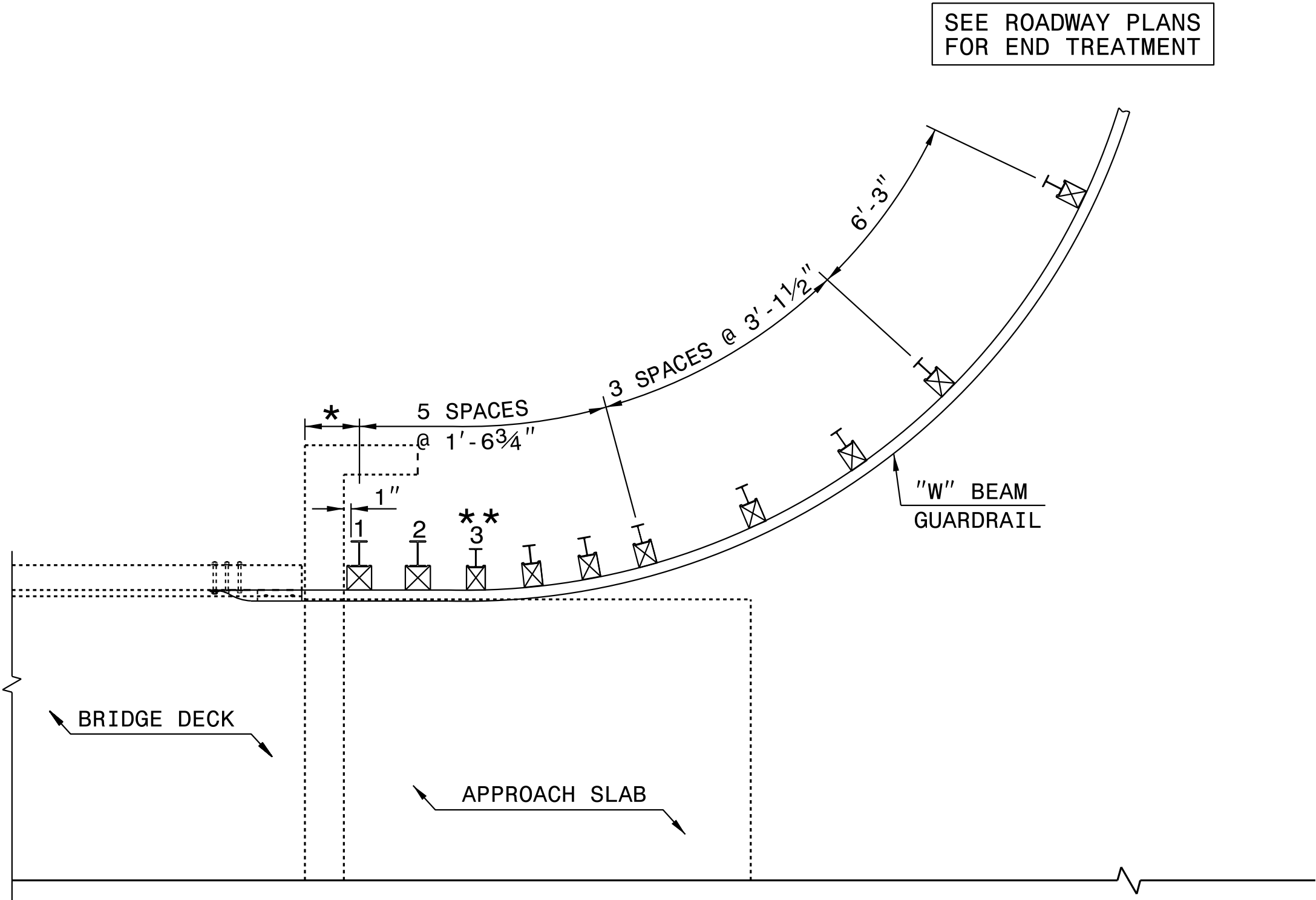
**PLAN**



**8" X 8" X 14" ROUTED  
WOOD OFFSET BLOCK**



**"W8 X 21 X 8'-0"  
STEEL POST**



**PLAN VIEW**



5/12/2025

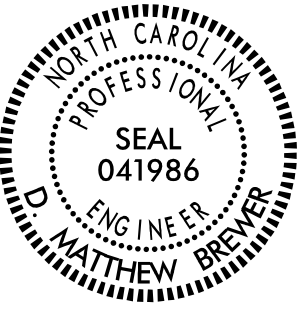
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

| CONTRACT STANDARDS<br>AND DEVELOPMENT UNIT     |                  |
|------------------------------------------------|------------------|
| Office 919-707-6950                            | FAX 919-250-4119 |
| GUARDRAIL ANCHOR UNIT<br>TYPE B-83 SHOP CURVED |                  |
| ORIGINAL BY: E.E. WARD                         | DATE: 6-10-02    |
| MODIFIED BY: E.E. WARD                         | DATE: 7-14-04    |
| CHECKED BY:                                    | DATE:            |
| FILE SPEC.:                                    |                  |

PROJECT REFERENCE NO.  
BP11-R030

SHEET NO.  
2G-1

GEOTECHNICAL ENGINEER

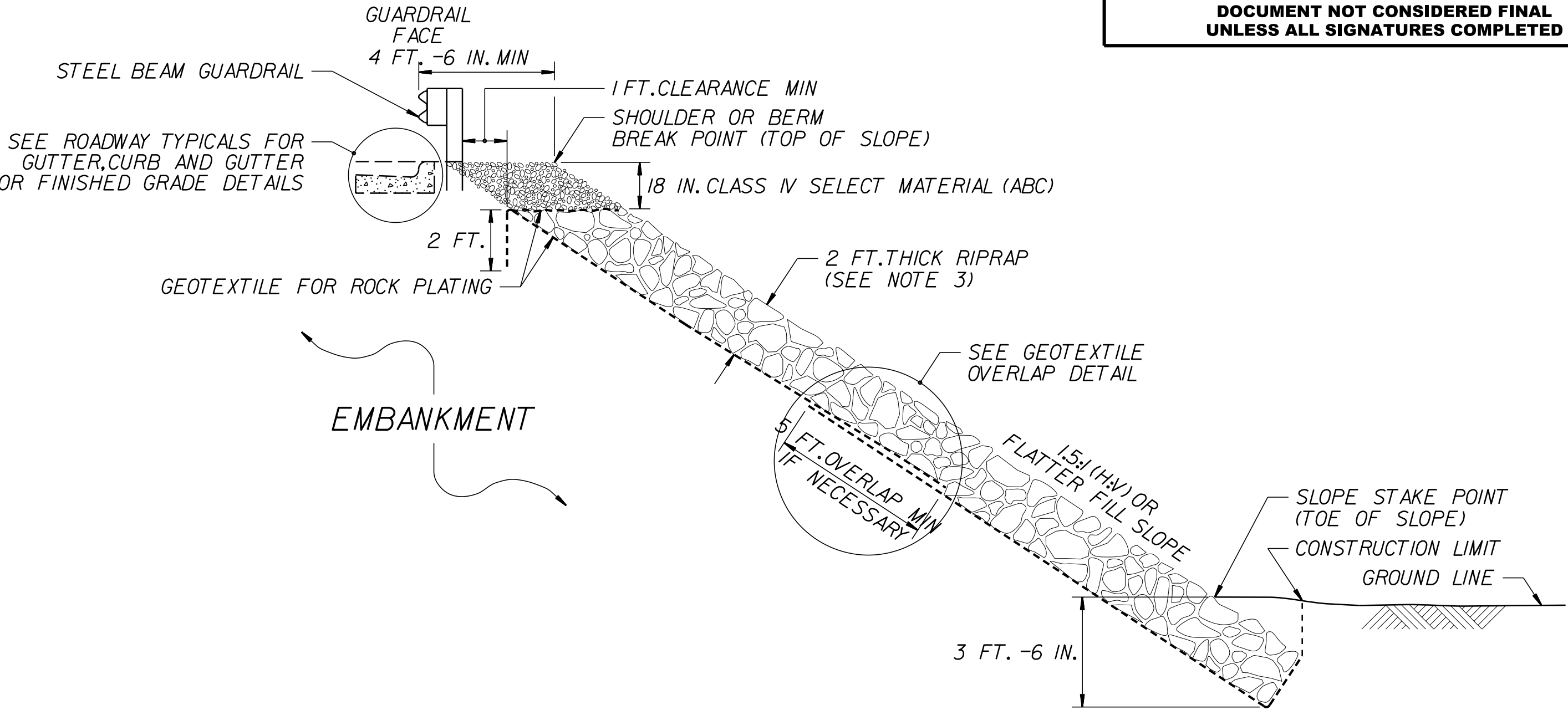
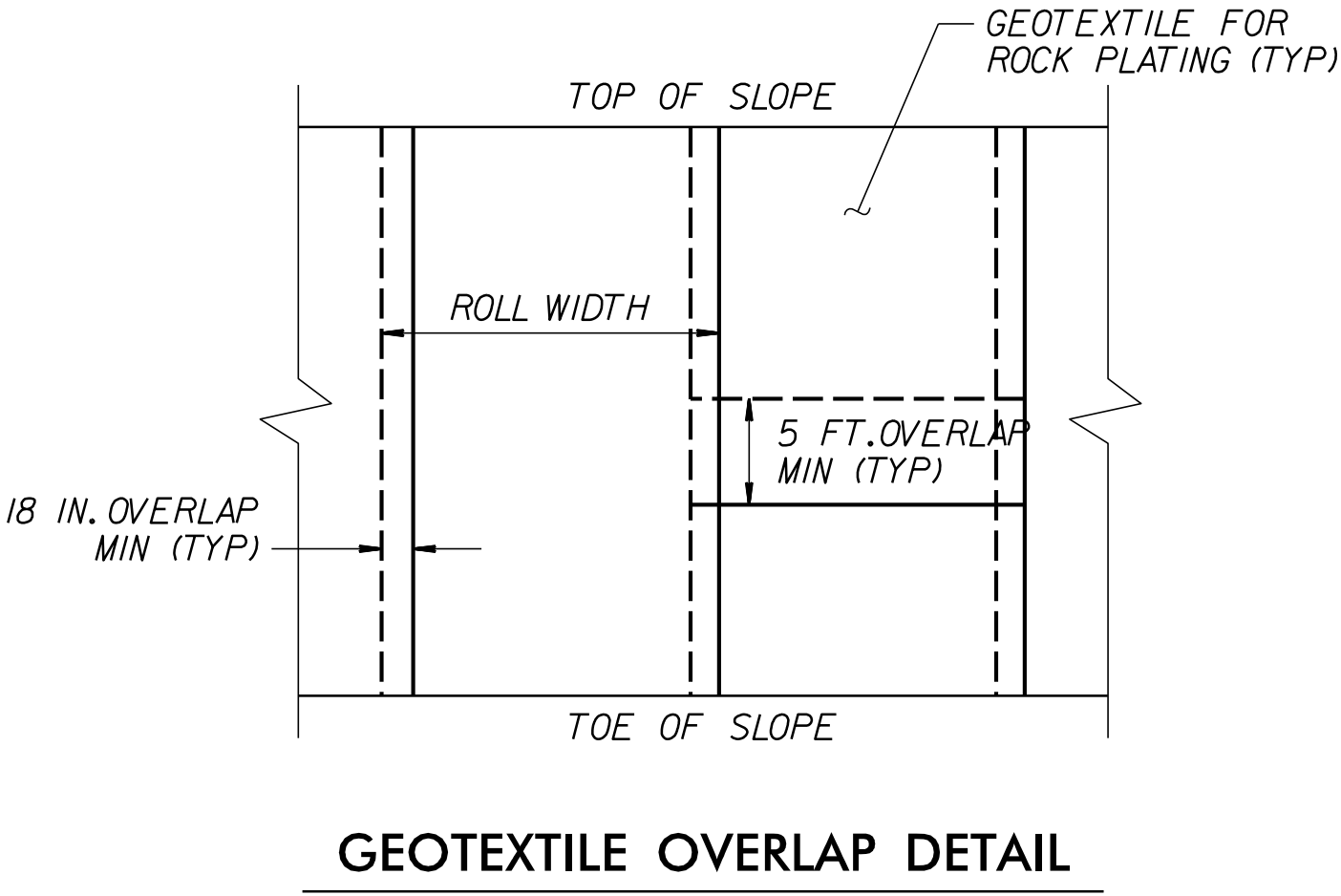


DocuSigned by:  
*D. Matthew Brewer*  
3681206581463

ENGINEER

01/06/2025

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



ROCK PLATING

FOR ROCK PLATING, SEE SECTION 275 OF THE STANDARD SPECIFICATIONS  
USE ROCK PLATING AT THE FOLLOWING LOCATIONS:

| LINE | BEGINNING SLOPE | APPROX. STATION | ENDING SLOPE | APPROX. STATION | LOCATION LT/RT | ROCK PLATING DETAIL NO. 1/2/3 | RIPRAP CLASS* 1/2/B | SY  |
|------|-----------------|-----------------|--------------|-----------------|----------------|-------------------------------|---------------------|-----|
| -L-  | 1.5:1           | 12 + 30         | 1.5:1        | 13 + 00         | RT             | 2                             | *                   | 250 |

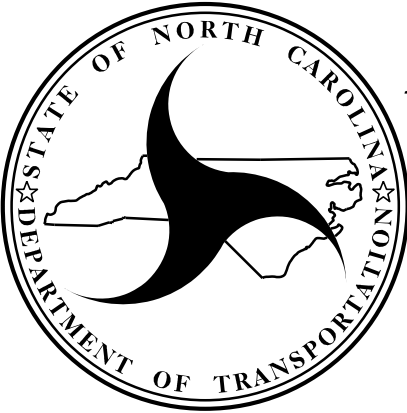
\*USE CLASS 1, 2 OR B RIPRAP UNLESS REQUIRED OTHERWISE IN THE ROADWAY SUMMARY SHEETS.

ESTIMATED TOTAL QUANTITY OF ROCK PLATING = 250 SY

|                                      |                |
|--------------------------------------|----------------|
| PREPARED BY: D. MATTHEW BREWER, P.E. | DATE: 01/06/25 |
| REVIEWED BY: D. MATTHEW BREWER, P.E. | DATE: 01/06/25 |



Prepared in the Office of:  
**CAROLINAS  
GEOTECHNICAL  
GROUP**  
2400 CROWNPOINT EXECUTIVE DRIVE  
SUITE 800  
CHARLOTTE, NC 28227  
(980) 339-8684



**NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS**  
  
**GEOTECHNICAL  
ENGINEERING UNIT**

GEOTECHNICAL  
CONSTRUCTION DETAILS -  
ROCK PLATING  
NOTES & DETAILS

REVISIONS

| NO. | BY | DATE | NO. | BY | DATE |
|-----|----|------|-----|----|------|
| 1   |    |      | 3   |    |      |
| 2   |    |      | 4   |    |      |

## SUMMARY OF EARTHWORK

**IN CUBIC YARDS**

| Station                                   | Station      | Uncl. Excav. | Embank. +% | Borrow     | Waste |
|-------------------------------------------|--------------|--------------|------------|------------|-------|
| -L- 12+30.00<br>BRIDGE                    | -L- 13+00.09 | 18           | 76         | 58         |       |
| -L- 13+62.41                              | -L- 13+79.55 | 4            | 1          |            | 3     |
| -Y- 12+40.00                              | -Y- 13+50.00 |              | 40         | 40         |       |
| <b>SUBTOTAL</b>                           |              | 22           | 117        | 98         | 3     |
| <b>TOTALS:</b>                            |              | 22           | 117        | 98         | 3     |
| WASTE IN LIEU OF BORROW                   |              |              |            | -3         | -3    |
| <b>PROJECT TOTALS:</b>                    |              | 22           | 117        | 95         | 0     |
| EST. 5% TO REPLACE TOP SOIL ON BORROW PIT |              |              |            | 5          |       |
| <b>GRAND TOTALS:</b>                      |              | 22           | 117        | 100        | 0     |
| <b>SAY</b>                                |              | <b>30</b>    |            | <b>110</b> |       |

Note: Earthwork quantities are calculated by TGS Engineers. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

## GUARDRAIL SUMMARY

**IN FEET**

## SHOULDER BERM GUTTER SUMMARY

**IN LINEAR FEET**

| LINE    | STATION | STATION | LENGTH |
|---------|---------|---------|--------|
| -L-, RT | 12+89   | 12+93   | 12.0   |
|         |         |         |        |
|         |         |         | TOTAL: |
|         |         |         | 12.00  |
|         |         |         | SAY    |
|         |         |         | 12     |

## GUARDRAIL SUMMARY

**IN FEET**

| LINE                   | BEG. STA.            | END STA.     | LOC.  | LENGTH   |             |              | WARRANT POINT |               | N° DIST.<br>FROM<br>E.O.L. | TOTAL<br>SHLDR<br>WIDTH | FLAIR LENGTH |               | W            |               | ANCHORS  |         |      |             | IMP. ATTEN. TYPE<br>350 |   |    | USE EXTRA DEPTH<br>POST | REMOVE EXISTING<br>GUARDRAIL | REMARKS                                        |  |
|------------------------|----------------------|--------------|-------|----------|-------------|--------------|---------------|---------------|----------------------------|-------------------------|--------------|---------------|--------------|---------------|----------|---------|------|-------------|-------------------------|---|----|-------------------------|------------------------------|------------------------------------------------|--|
|                        |                      |              |       | STRAIGHT | SHOP CURVED | DOUBLE FACED | APPR.<br>END  | TRAIL.<br>END |                            |                         | APPR.<br>END | TRAIL.<br>END | APPR.<br>END | TRAIL.<br>END | TYPE III | B-83 SC | AT-1 | TYPE III SC | EA                      | G | NG |                         |                              |                                                |  |
| -L-                    | 12+54.95             | 12+97.21     | LT    |          | 37.5        |              |               | 12+97.21      | 1.75'                      | 4.75'                   |              |               |              |               |          |         | 1    | 1           |                         |   |    | 8                       |                              | R= 50'; 37.5 @ 6.25 Spacing = 6 EA, SAY = 8 EA |  |
| -L-                    | 12+89.80             | 13+02.97     | RT    |          | 31.25       |              |               | 13+02.97      | 1.75'                      | 4.75'                   |              |               |              |               |          |         | 1    | 1           |                         |   |    |                         |                              | R= 15'                                         |  |
| -L-                    | 13+59.53             | -Y- 12+45+/- | LT/RT |          | 31.25       |              |               | 13+59.53      | 1.75'                      | 4.75'                   |              |               |              |               |          |         | 1    | 1           |                         |   |    |                         |                              | R= 15'                                         |  |
| -L-                    | 13+65.29             | -Y- 13+08+/- | RT/RT |          | 31.25       |              |               | 13+65.29      | 1.75'                      | 4.75'                   |              |               |              |               |          |         | 1    | 1           |                         |   |    |                         |                              | R= 10'                                         |  |
| SUB-TOTALS             |                      |              |       |          | 131.25      |              |               |               |                            |                         |              |               |              |               |          |         | 1    | 4           | 3                       |   |    | 8                       |                              |                                                |  |
| LESS ANCHOR DEDUCTIONS |                      |              |       |          |             |              |               |               |                            |                         |              |               |              |               |          |         |      |             |                         |   |    |                         |                              |                                                |  |
|                        | B-83 Shop Curved     | 1 @ 25.00 ft |       |          | 25          |              |               |               |                            |                         |              |               |              |               |          |         |      |             |                         |   |    |                         |                              |                                                |  |
|                        | AT-1                 | 4 @ 6.25 ft  |       |          | 25          |              |               |               |                            |                         |              |               |              |               |          |         |      |             |                         |   |    |                         |                              |                                                |  |
|                        | TYPE III Shop Curved | 3 @ 18.75 ft |       |          | 56.25       |              |               |               |                            |                         |              |               |              |               |          |         |      |             |                         |   |    |                         |                              |                                                |  |
| ANCHOR TOTALS          |                      |              |       |          | 106.25      |              |               |               |                            |                         |              |               |              |               |          |         |      |             |                         |   |    |                         |                              |                                                |  |
| GRAND-TOTALS           |                      |              |       |          | 25.00       |              |               |               |                            |                         |              |               |              |               |          |         |      | 1           | 4                       | 3 |    |                         | 8                            |                                                |  |
| SAY                    |                      |              |       |          | 31.25       |              |               |               |                            |                         |              |               |              |               |          |         |      | 1           | 4                       | 3 |    |                         | 8                            |                                                |  |

**ADDITIONAL GUARDRAIL POSTS = 5 EA**

COMPUTED BY: REL      DATE: 4/7/2025  
CHECKED BY: JWT      DATE: 4/7/2025

**LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)**

[illegible]

STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

| LINE        | Station | Station | Location<br>LT/RT/CL | Drain Type*<br>UD/BD/SD | LF  |
|-------------|---------|---------|----------------------|-------------------------|-----|
|             |         |         |                      |                         |     |
|             |         |         |                      |                         |     |
| CONTINGENCY |         |         |                      | SD                      | 200 |
|             |         |         |                      | TOTAL LF:               | 200 |
|             |         |         |                      |                         |     |

\*UD = Underdrain  
\*BD = Blind Drain  
\*SD = Subsurface Drain

SUMMARY OF ROCK PLATING

| LINE | Beginning<br>Slope<br>(H:V) | Approx.<br>Station | Ending<br>Slope<br>(H:V) | Approx.<br>Station | Location<br>LT/RT | Rock<br>Plating<br>Detail No.<br>1/2/3/4 | Riprap<br>Class*<br>1/2/B | Rock<br>Plating<br>SY |
|------|-----------------------------|--------------------|--------------------------|--------------------|-------------------|------------------------------------------|---------------------------|-----------------------|
| -L-  | 1.5:1                       | 12+30              | 1.5:1                    | 13+00              | LT                | 2                                        | -                         | 250                   |
|      |                             |                    |                          |                    |                   |                                          |                           |                       |
|      |                             |                    |                          |                    |                   |                                          |                           |                       |
|      |                             |                    |                          |                    |                   |                                          |                           |                       |
|      |                             |                    |                          |                    |                   |                                          | TOTAL SY:                 | 250                   |
|      |                             |                    |                          |                    |                   |                                          |                           |                       |

\*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

| LINE        | Station | Station | Aggregate<br>Type*<br>ASU(1/2)/<br>AST | Aggregate<br>Thickness<br>INCHES<br>[8" for<br>ASU(2)] | Shallow<br>Undercut<br>CY | Class IV<br>Subgrade<br>Stabilization<br>TONS | Geotextile<br>for Subgrade<br>Stabilization<br>SY | Stabilizer<br>Aggregate<br>TONS | Class IV<br>Aggregate<br>Stabilization<br>TONS |
|-------------|---------|---------|----------------------------------------|--------------------------------------------------------|---------------------------|-----------------------------------------------|---------------------------------------------------|---------------------------------|------------------------------------------------|
|             |         |         |                                        |                                                        |                           |                                               |                                                   |                                 |                                                |
|             |         |         |                                        |                                                        |                           |                                               |                                                   |                                 |                                                |
|             |         |         |                                        |                                                        |                           |                                               |                                                   |                                 |                                                |
| CONTINGENCY |         |         | ASU(1)                                 | 12                                                     | 100                       | 200                                           | 300                                               |                                 |                                                |
|             |         |         |                                        |                                                        |                           |                                               |                                                   |                                 |                                                |
|             |         |         | TOTAL CY/TONS/SY:                      |                                                        | 100                       | 200**                                         | 300**                                             | 0                               | 0                                              |
|             |         |         |                                        |                                                        |                           |                                               |                                                   |                                 |                                                |

\*ASU(1/2) = Aggregate Subgrade (Type 1 or 2)  
\*AST = Aggregate Stabilization  
\*\*Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Subgrade Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.



**TGS ENGINEERS**  
201 W. MARION ST  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-0275

MINIMIZE CLEARING TO THE GREATEST EXTENT POSSIBLE IN AREA  
NEEDED FOR BRIDGE ACCESS WEST OF BIG IVY RD, ADJACENT TO EAST  
BANK OF NORTH PRONG LEWIS FORK AND EAST BANK OF TRIBUTARY.

-Y- PRC 12+71.01

-Y- PCC 14+14.32

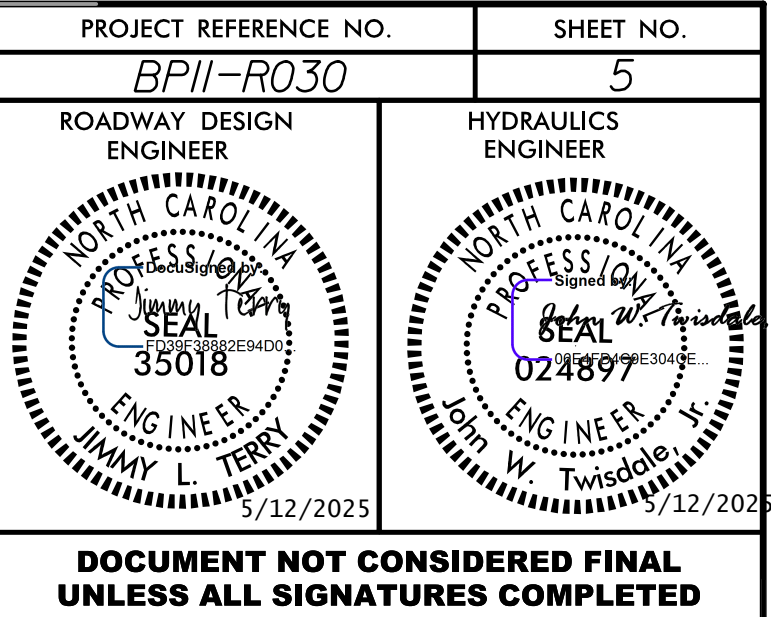
FOR -Y- PROFILE, SEE SHEET NO. 5

| <i>PI Sta 11+06.23</i>              | <i>PI Sta 12+51.48</i>              | <i>PI Sta 13+28.52</i>              | <i>PI Sta 13+99.83</i>             | <i>PI Sta 14+90.86</i>              |
|-------------------------------------|-------------------------------------|-------------------------------------|------------------------------------|-------------------------------------|
| $\Delta = 19^\circ 58' 42.3''$ (LT) | $\Delta = 11^\circ 13' 29.1''$ (RT) | $\Delta = 15^\circ 58' 10.2''$ (LT) | $\Delta = 8^\circ 19' 10.9''$ (LT) | $\Delta = 44^\circ 57' 00.2''$ (LT) |
| $D = 23^\circ 23' 09.7''$           | $D = 28^\circ 38' 52.4''$           | $D = 13^\circ 58' 28.5''$           | $D = 28^\circ 38' 52.4''$          | $D = 30^\circ 58' 14.5''$           |
| $L = 85.43'$                        | $L = 39.18'$                        | $L = 114.28'$                       | $L = 29.04'$                       | $L = 145.14'$                       |
| $T = 43.15'$                        | $T = 19.65'$                        | $T = 57.5'$                         | $T = 14.55'$                       | $T = 76.54'$                        |
| $R = 245.00'$                       | $R = 200.00'$                       | $R = 410.00'$                       | $R = 200.00'$                      | $R = 185.00'$                       |

EXCAVATION TO REMOVE BRIDGE  
EST. +/-30 CU.YDS  
BANK STABILIZATION (CLASS II RIP RAP)  
EST. +/-20 TONS

SALLIE H. WALTERS  
DB 743 PG 102

02



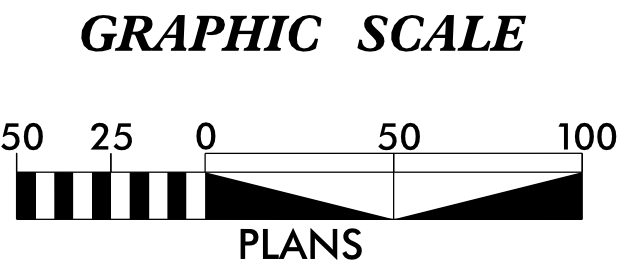
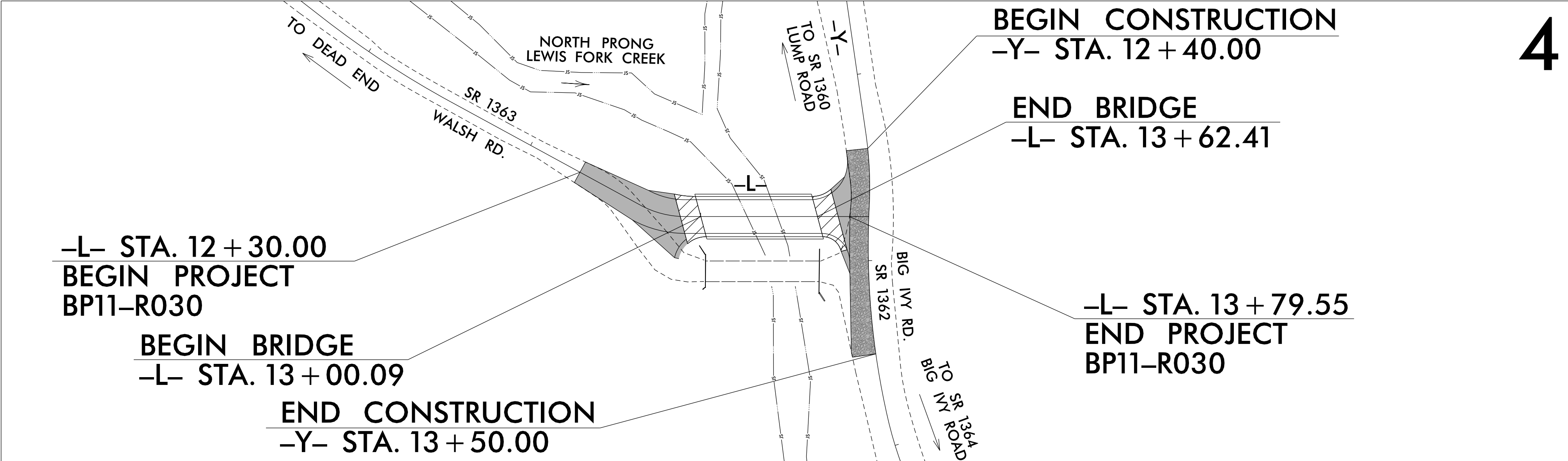
TIP PROJECT: BP11-R030

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-------|-----------------------------|-----------|--------------|
| N.C.  | BP11-R030                   | RW01      | 04           |

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

SURVEY CONTROL, EXISTING CENTERLINES,  
RIGHT OF WAY, EASEMENTS AND PROPERTY TIES

**WILKES COUNTY**



**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B5842-1" WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF NORTHING: 923367.242(ft) EASTING: 1293219.324(ft) ELEVATION: 2114.53(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99993203 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B5842-1" TO -L- STATION 10+00 IS S 13°26'56.8" E 484.20'(ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

**Stantec**

ONE WEST FOURTH ST., SUITE 820  
WINSTON SALEM, N.C. 27101  
LICENSE NO.: F-0672  
www.stantec.com

2024 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:** 10/31/2024

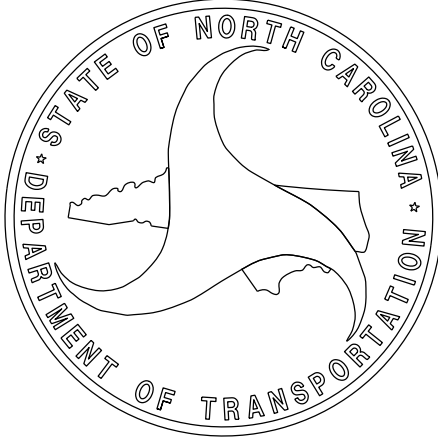
**LETTING DATE:** 07/17/2025

PROFESSIONAL LAND SURVEYOR

DocuSigned by:  
Clinton B. Osborne  
0A6F6B085F6449B...

11/27/2024

SIGNATURE: Date:



PROPOSED ALIGNMENT CONTROL SHEET

| L    |          |             |              |
|------|----------|-------------|--------------|
| TYPE | STATION  | NORTH       | EAST         |
| POT  | 10+00.00 | 923838.1659 | 1293106.7075 |
| PC   | 10+70.25 | 923770.9087 | 1293127.0014 |
| PT   | 11+51.32 | 923695.5329 | 1293156.5942 |
| PC   | 12+66.80 | 923591.8043 | 1293207.3650 |
| PT   | 12+91.74 | 923573.0030 | 1293223.3468 |
| POT  | 13+89.83 | 923516.2497 | 1293303.3590 |

| Y    |          |             |              |
|------|----------|-------------|--------------|
| TYPE | STATION  | NORTH       | EAST         |
| POT  | 10+00.00 | 923738.4245 | 1293463.1878 |
| PC   | 10+63.08 | 923695.4563 | 1293417.0085 |
| PT   | 11+48.51 | 923627.6408 | 1293365.7690 |
| PC   | 12+31.82 | 923553.4605 | 1293327.8344 |
| PRC  | 12+71.01 | 923520.5401 | 1293306.7025 |
| PCC  | 13+85.28 | 923422.2188 | 1293249.1918 |
| PCC  | 14+14.32 | 923394.6516 | 1293240.1389 |
| PT   | 15+59.46 | 923254.7450 | 1293260.9358 |
| POT  | 16+45.16 | 923181.2299 | 1293304.9860 |

PROJECT REFERENCE NO.  
BP11-R030

SHEET NO.  
RW02D-1

Location and Surveys

 **Stantec**  
ONE WEST FOURTH ST., SUITE 820  
WINSTON SALEM, N.C. 27101  
LICENSE NO.: F-0672  
www.stantec.com

PROJECT SURVEYOR



DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

I, Clinton B. Osborne, PLS, certify that the data compiled came from available surveys/mapping performed by others and provided to me by NCDOT and do not certify to the accuracy or quality of the individual data sources.

This 27th day of November, 2024.

DocuSigned by:  
*Clinton B. Osborne*  
0A6F8B085F6449B

Professional Land Surveyor L-3834

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

6/2/99

23-DEC-2024 07:47  
U:\23\300247\survey\drawing\dgn\BP11-R030\BP11-R030\_1s.rw03e.dgn  
pat.jones AT JONESPAI-LLP

# RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO.  
BP11-R030

SHEET NO.  
RW03E-1

Location and Surveys

**Stantec**  
ONE WEST FOURTH ST., SUITE 820  
WINSTON SALEM, N.C. 27101  
LICENSE NO.: F-0672  
www.stantec.com

PROJECT SURVEYOR



DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

I, Clinton B. Osborne, certify that the right of way and permanent easement monumentation or this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed from 11-19-2024 to 11-19-2024, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 27th day of November, 2024.

DocuSigned by:  
*Clinton B. Osborne*  
0A6FE808F9449B

Professional Land Surveyor L-3834

| ROW MARKER IRON PIN AND CAP-E |          |        |             |              |
|-------------------------------|----------|--------|-------------|--------------|
| ALIGN                         | STATION  | OFFSET | NORTH       | EAST         |
| L                             | 12+30.00 | -8.00  | 923628.3789 | 1293198.3701 |
| ***L                          | 12+30.00 | -30.00 | 923638.0506 | 1293218.1302 |
| L                             | 12+32.36 | 8.00   | 923619.2210 | 1293185.0388 |
| *L                            | 12+75.26 | 22.61  | 923571.3367 | 1293193.3615 |
| ***L                          | 12+92.00 | -40.00 | 923605.4777 | 1293246.7019 |
| **L                           | 12+99.74 | 37.26  | 923537.9801 | 1293208.3199 |

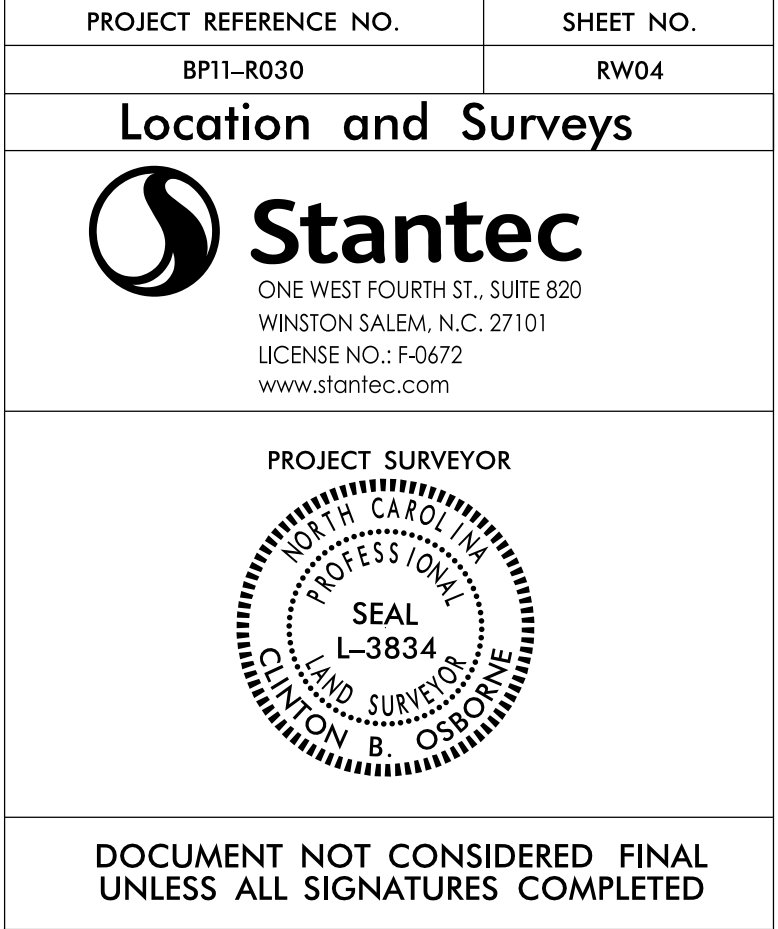
| ROW MARKER IRON PIN AND CAP-E |          |        |             |              |
|-------------------------------|----------|--------|-------------|--------------|
| ALIGN                         | STATION  | OFFSET | NORTH       | EAST         |
| Y                             | 12+35.00 | 14.00  | 923557.2154 | 1293314.0039 |
| Y                             | 13+12.79 | 18.00  | 923496.1501 | 1293267.3254 |

## MARKER EXCEPTIONS:

- \* = RR SPIKE IN ROCK
- \*\* = MAG NAIL
- \*\*\* = MASONRY NAIL
- \*\*\*\* = NO POINT SET

## NOTES:

- IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
- RIGHT OF WAY MONUMENTATION ESTABLISHED 11-19-2024 TO 11-19-2024.



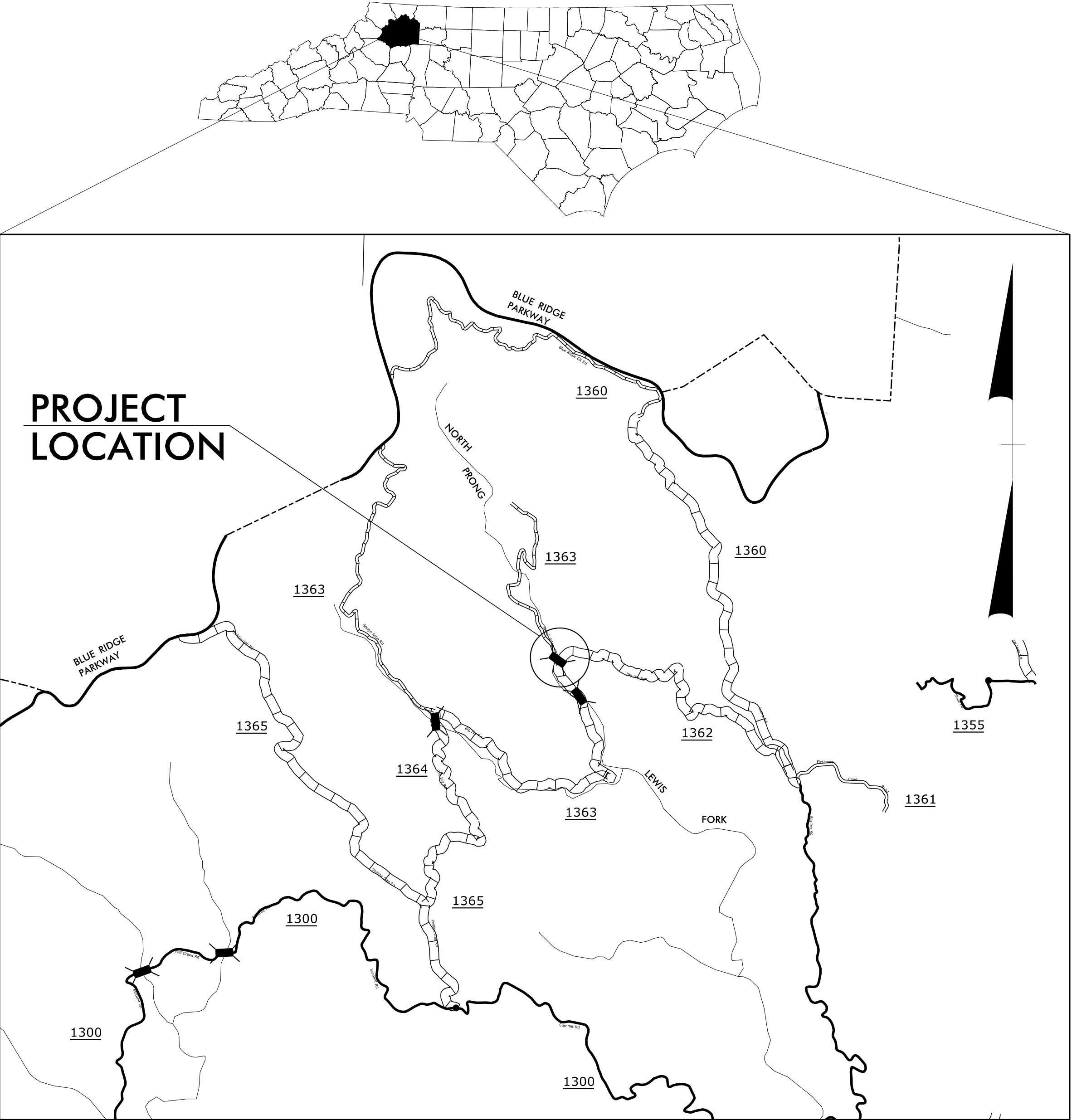
This 27th day of NOVEMBER, 2024  
 Documented by:  
*Clinton B. Osborne*  
 CBO  
 Professional Land Surveyor L-3834

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

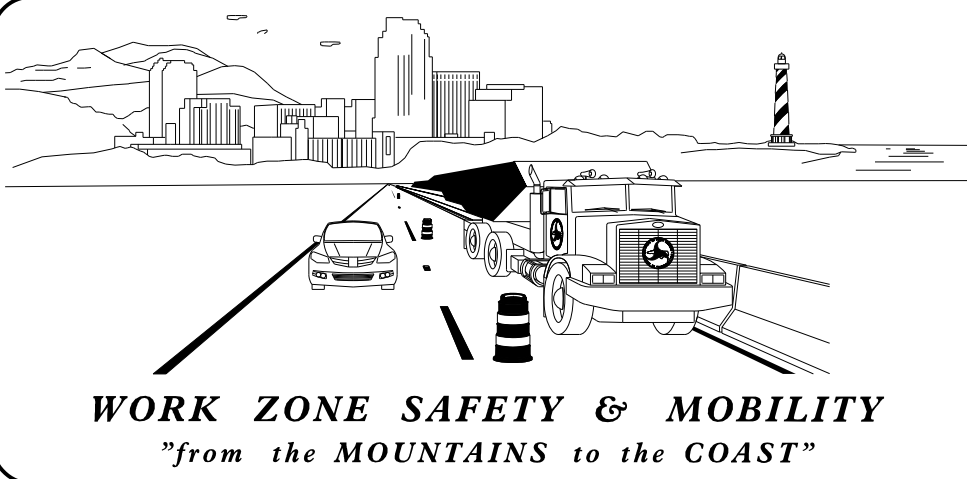
TRANSPORTATION MANAGEMENT PLAN

WILKES COUNTY

LOCATION: BRIDGE #960110 OVER NORTH PRONG  
LEWIS FORK CREEK ON SR 1363 (WALSH RD)



VICINITY MAP



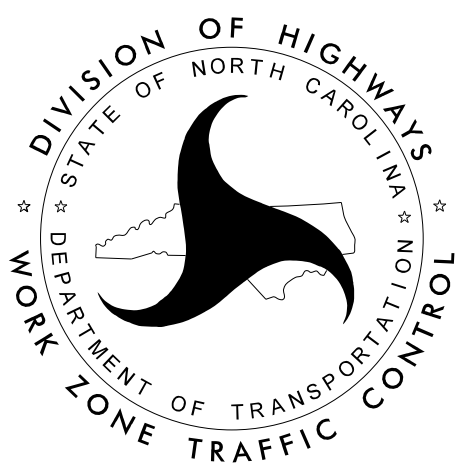
PLANS PREPARED FOR N.C.D.O.T. BY:



TGS ENGINEERS  
706 HILLSBOROUGH ST. SUITE 200  
RALEIGH, NC 27603  
PH (919) 773-8887  
CORP. LICENSE NO.: C-0275

DON A. PARKER, P.E.  
PROJECT ENGINEER

CODA BRANNAN, E.I.  
DESIGN ENGINEER



INDEX OF SHEETS

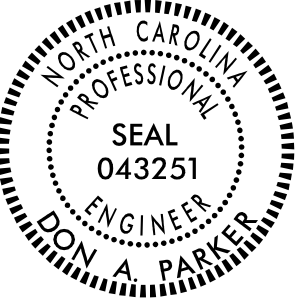
| SHEET NO.        | TITLE                                                                                   |
|------------------|-----------------------------------------------------------------------------------------|
| TMP-1            | TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS                                          |
| TMP-1A           | LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND                                |
| TMP-1B           | TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES, AND LOCAL NOTES) |
| TMP-2            | PCB AT SHORING DETAIL                                                                   |
| TMP-2A           | SHORING NOTES                                                                           |
| TMP-3            | TEMPORARY TRAFFIC CONTROL PHASING                                                       |
| TMP-4 THRU TMP-5 | TEMPORARY TRAFFIC CONTROL PHASE I                                                       |
| TMP-6            | TEMPORARY TRAFFIC CONTROL PHASE II                                                      |

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

NCDOT CONTACT:

ROB N. WEISZ, P.E.  
DIVISION II BRIDGE  
PROGRAM MANAGER

APPROVED: Don A. Parker  
DATE: 5/12/2025



TIP PROJECT: BP11-R030

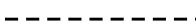
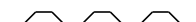
ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

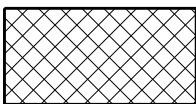
| STD. NO. | TITLE                                                    |
|----------|----------------------------------------------------------|
| 1101.01  | WORK ZONE WARNING SIGNS                                  |
| 1101.02  | TEMPORARY LANE CLOSURES                                  |
| 1101.04  | TEMPORARY SHOULDER CLOSURES                              |
| 1101.11  | TRAFFIC CONTROL DESIGN TABLES                            |
| 1110.01  | STATIONARY WORK ZONE SIGNS                               |
| 1110.02  | PORTABLE WORK ZONE SIGNS                                 |
| 1130.01  | DRUMS                                                    |
| 1135.01  | CONES                                                    |
| 1150.01  | FLAGGING DEVICES                                         |
| 1261.01  | GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING |
| 1261.02  | GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING   |
| 1262.01  | GUARDRAIL END DELINEATION                                |

LEGEND

GENERAL

-  DIRECTION OF TRAFFIC FLOW
-  DIRECTION OF PEDESTRIAN TRAFFIC FLOW
-  EXIST. PVMT.
-  NORTH ARROW
-  PROPOSED PVMT.
-  TEMP. SHORING (LOCATION PURPOSES ONLY)

 WORK AREA

 REMOVAL

 WEDGING

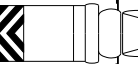
SIGNALS

-  EXISTING
-  PROPOSED
-  TEMPORARY

PAVEMENT MARKINGS

-  EXISTING LINES
-  TEMPORARY LINES

TRAFFIC CONTROL DEVICES

-  BARRICADE (TYPE III)
-  CONE
-  DRUM
-  SKINNY DRUM
-  TUBULAR MARKER
-  TEMPORARY CRASH CUSHION
-  FLASHING ARROW BOARD
-  FLAGGER
-  LAW ENFORCEMENT
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

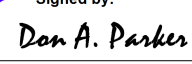
-  PORTABLE SIGN
-  STATIONARY SIGN
-  STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

-  CRYSTAL/CRYSTAL
-  CRYSTAL/RED
-  YELLOW/YELLOW

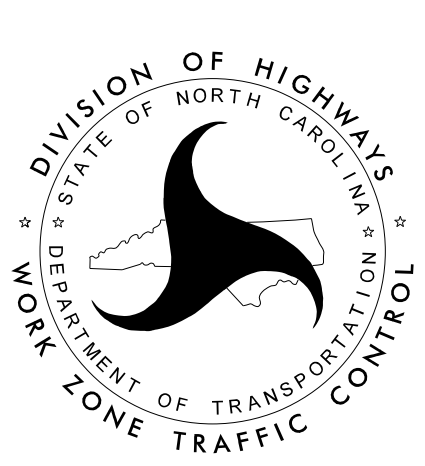
PAVEMENT MARKING SYMBOLS

-  PAVEMENT MARKING SYMBOLS

APPROVED: 

DATE: 5/12/2025





ROADWAY STANDARD  
DRAWINGS & LEGEND

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESired OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- A) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- B) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 5 FT OF AN OPEN TRAVEL LANE ON AN UNDIVIDED FACILITY, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 10 FT OF AN OPEN TRAVEL LANE ON A DIVIDED FACILITY, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

- D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- E) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

PAVEMENT EDGE DROP OFF REQUIREMENTS

- F) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:
- BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.
- BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.
- BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.
- G) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 500' IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

- H) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

- I) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- J) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- K) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 500' IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC BARRIER

- L) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS OR AS DIRECTED BY THE ENGINEER.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE / RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

TRAFFIC CONTROL DEVICES

- M) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

| PROJ. REFERENCE NO.                                                                                                                                                                                                              | SHEET NO. |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| BP11 - R030                                                                                                                                                                                                                      | TMP - 1B  |
| <div><div><div>TGS</div><div>ENGINEERS</div></div><div><div>TGS ENGINEERS</div><div>706 HILLSBOROUGH ST, SUITE 200</div><div>RALEIGH, NC 27603</div><div>PH (919) 773-9887</div><div>CORP. LICENSE NO.: C-0275</div></div></div> |           |

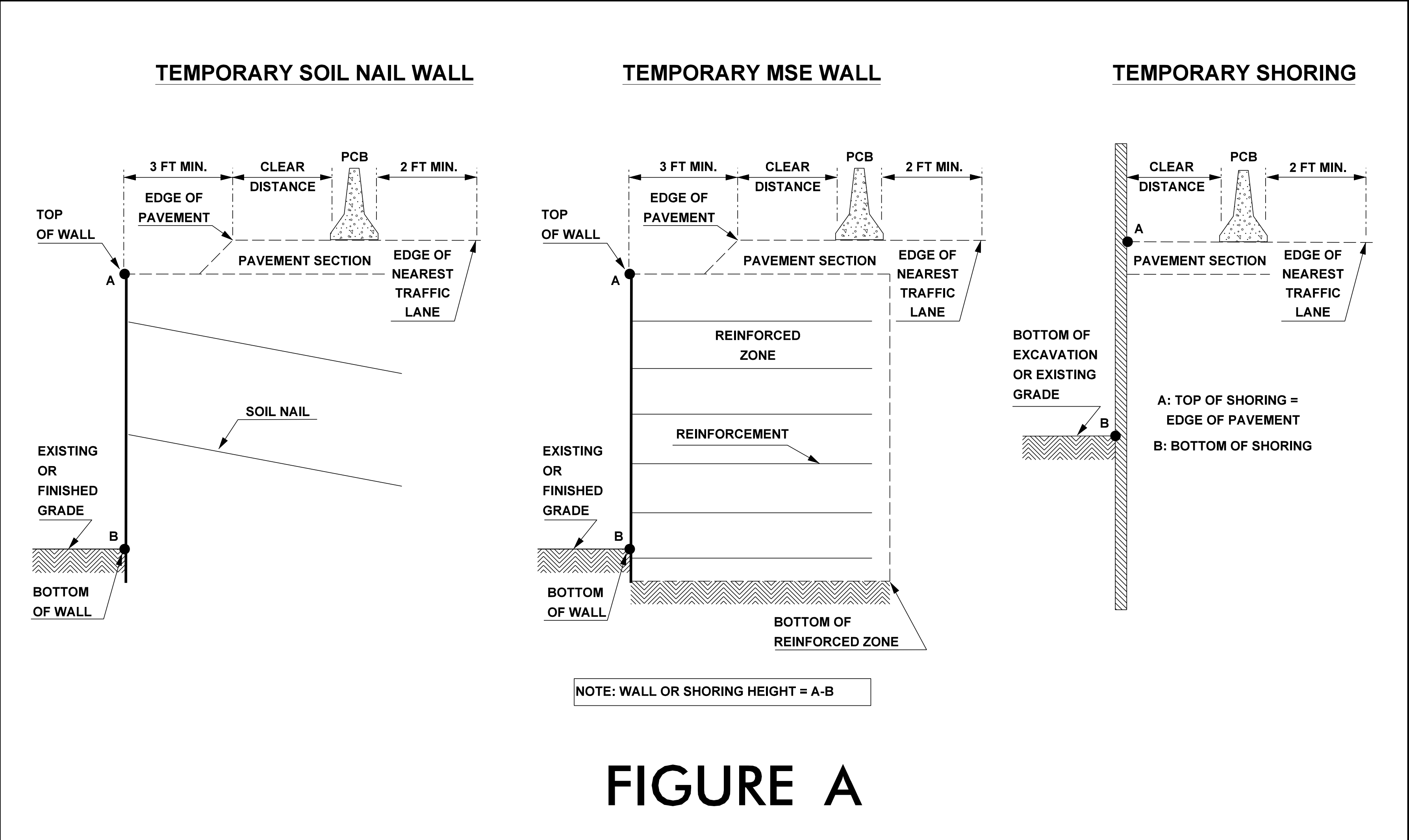
LOCAL NOTES

PLACEMENT OF THE WATERFILLED BARRIER IS NOT REQUIRED TO BE ON AN ASPHALT OR CONCRETE SURFACE. IT MAY BE PLACED ON THE UNPAVED ROADWAY AS SHOWN IN THE TMP.

THE WATERFILLED BARRIER IS NOT INTENDED TO PROVIDE POSITIVE PROTECTION FOR WORKERS OR EQUIPMENT AND CONTRACTOR SHALL BE MINDFUL OF THAT WHEN WORKERS ARE PRESENT AND BEHIND THE WATERFILLED BARRIER. IT IS INTENDED TO SERVE AS A DELINEATOR OF NEW CONSTRUCTION WITHIN THE CLEAR ZONE WITH PROTECTIVE PROPERTIES THAT ARE SUPERIOR TO DRUMS, SKINNY DRUMS, AND TRAFFIC CONES.

CONTRACTOR SHALL HAVE A WATER TRUCK ON-SITE PRIOR TO WATER REMOVAL FOR THE PURPOSE OF TEMPORARILY RELOCATING THE WATERFILLED BARRIER. DRAINING OF WATER SHALL BE CONDUCTED IN A MANNER THAT DOES NOT DAMAGE THEUNPAVED ROADWAY.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>APPROVED: <div><div>Signed by:</div><div>Don A. Parker</div><div>750B0690ADEF440...</div></div></div> <div>DATE: 5/12/2025</div> <div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div><div></div><div></div></div><div><div></div><div></div></div></div></div><div>DOCUMENT NOT CONSIDERED FINAL<br/>UNLESS ALL SIGNATURES COMPLETED</div></div> | <div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div><div></div><div></div></div><div><div></div><div></div></div></div></div><div>TRANSPORTATION<br/>OPERATIONS<br/>PLAN</div></div> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



- NOTES

1- REFER TO THE TRAFFIC CONTROL PLANS FOR TEMPORARY SHORING LOCATIONS AND NOTES.

2- REFER TO THE "TEMPORARY SHORING" STANDARD PROVISION FOR INFORMATION ABOUT TEMPORARY SHORING AND PORTABLE CONCRETE BARRIER (PCB).

3- PCB IS REQUIRED IF TEMPORARY SHORING/WALL IS LOCATED WITHIN THE CLEAR ZONE IN ACCORDANCE WITH THE AASHTO ROADSIDE DESIGN GUIDE. DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE. (CONTACT NCDOT PAVEMENT MANAGEMENT FOR APPLICABLE PAVEMENT DESIGN).

4- BASED ON THE CLEAR DISTANCE, OFFSET, DESIGN SPEED AND PAVEMENT TYPE, CHOOSE AN UNANCHORED OR ANCHORED PCB FROM THE TABLE SHOWN IN FIGURE B. CLEAR DISTANCE IS DEFINED AS SHOWN IN FIGURE A AND OFFSET IS DEFINED AS SHOWN IN FIGURE B.

5- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET PCB NEXT TO AND UP AGAINST THE TRAFFIC SIDE OF THE TEMPORARY SHORING/WALLS EXCEPT FOR BARRIER ABOVE TEMPORARY WALLS. PCB WITH THE MINIMUM REQUIRED CLEAR DISTANCE IS REQUIRED ABOVE TEMPORARY WALLS.

6- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.

7- SET PCB WITH A MINIMUM HORIZONTAL DISTANCE OF 2 FT BETWEEN THE FRONT FACE OF THE BARRIER AND THE EDGE OF THE NEAREST TRAFFIC LANE AS SHOWN IN FIGURE A UNLESS OTHERWISE SHOWN IN THE PLANS OR APPROVED BY THE ENGINEER.

8- FOR PCB ABOVE AND BEHIND TEMPORARY WALLS, PROVIDE A MINIMUM DISTANCE OF 3 FT BETWEEN THE EDGE OF PAVEMENT AND THE WALL FACE AS SHOWN IN FIGURE A. IF THIS MINIMUM REQUIRED DISTANCE IS NOT AVAILABLE, CONTACT THE ENGINEER.

9- TABLE SHOWN IN FIGURE B IS BASED ON NCDOT RESEARCH PROJECT NO. 2005-010 WITH VEHICLE TYPE USED FOR NCHRP 350 CRASH TESTS.
- | PROJ. REFERENCE NO. |  | SHEET NO. |  |
|---------------------|--|-----------|--|
| BP111-R030          |  | TMP-2     |  |

| MINIMUM REQUIRED CLEAR DISTANCE, inches |                                            |                |                          |       |       |       |       |       |
|-----------------------------------------|--------------------------------------------|----------------|--------------------------|-------|-------|-------|-------|-------|
| Barrier Type                            | Pavement Type                              | Offset *<br>ft | Design Speed, mph        |       |       |       |       |       |
|                                         |                                            |                | <30                      | 31-40 | 41-50 | 51-60 | 61-70 | 71-80 |
| Unanchored PCB                          | Asphalt                                    | <8             | 24                       | 26    | 29    | 32    | 36    | 40    |
|                                         |                                            | 8-14           | 26                       | 28    | 31    | 35    | 38    | 42    |
|                                         |                                            | 14-20          | 27                       | 29    | 34    | 36    | 39    | 43    |
|                                         |                                            | 20-26          | 28                       | 31    | 35    | 38    | 40    | 44    |
|                                         |                                            | 26-32          | 29                       | 32    | 36    | 39    | 42    | 45    |
|                                         |                                            | 32-38          | 30                       | 34    | 38    | 41    | 43    | 46    |
|                                         |                                            | 38-44          | 31                       | 34    | 41    | 43    | 45    | 48    |
|                                         |                                            | 44-50          | 31                       | 35    | 41    | 43    | 46    | 49    |
|                                         |                                            | 50-56          | 32                       | 36    | 42    | 44    | 47    | 50    |
|                                         | Concrete                                   | >56            | 32                       | 36    | 42    | 45    | 47    | 51    |
|                                         |                                            | <8             | 17                       | 18    | 21    | 22    | 25    | 26    |
|                                         |                                            | 8-14           | 19                       | 20    | 23    | 25    | 26    | 29    |
|                                         |                                            | 14-20          | 22                       | 22    | 24    | 26    | 28    | 31    |
|                                         |                                            | 20-26          | 23                       | 24    | 26    | 27    | 30    | 34    |
|                                         |                                            | 26-32          | 24                       | 25    | 27    | 28    | 32    | 35    |
|                                         |                                            | 32-38          | 24                       | 26    | 27    | 30    | 33    | 36    |
|                                         |                                            | 38-44          | 25                       | 26    | 28    | 30    | 34    | 37    |
|                                         |                                            | 44-50          | 26                       | 26    | 28    | 32    | 35    | 37    |
|                                         |                                            | 50-56          | 26                       | 26    | 28    | 32    | 35    | 38    |
|                                         |                                            | >56            | 26                       | 27    | 29    | 32    | 36    | 38    |
| Anchored PCB                            | Asphalt                                    | All Offsets    | 24 for All Design Speeds |       |       |       |       |       |
| Anchored PCB                            | Concrete (including bridge approach slabs) | All Offsets    | 12 for All Design Speeds |       |       |       |       |       |

\* See Figure Below

FIGURE B

|                                                                                                                                                                      |                                                                                                                                                         |                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <div><div>APPROVED: <i>Don A. Parker</i></div><div>DATE: 5/12/2025</div><div><div>SEAL</div><div>043251</div><div>ENGINEER</div><div>DON A. PARKER</div></div></div> | <div><div>DIVISION OF HIGHWAYS</div><div>STATE OF NORTH CAROLINA</div><div>DEPARTMENT OF TRANSPORTATION</div><div>WORK ZONE TRAFFIC CONTROL</div></div> | <div><div>PORTABLE CONCRETE BARRIER</div><div>AT</div><div>TEMPORARY SHORING LOCATIONS</div></div> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
- 4/15/2025  
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User:smelvin

SHORING NOTES

| PROJ. REFERENCE NO.                                                                                                                                                                                      | SHEET NO. |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| BP11 - R030                                                                                                                                                                                              | TMP - 2A  |
| <div><div><div>TGS</div><div>ENGINEERS</div></div><div><div>706 HILLSBOROUGH ST, SUITE 200</div><div>RALEIGH, NC 27603</div><div>PH (919) 773-9887</div><div>CORP. LICENSE NO.: C-0275</div></div></div> |           |

Shoring Location No. 1 (CUT SHORING):

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

TEMPORARY SHORING IS REQUIRED FOR THE STRUCTURE CONSTRUCTION FROM -L- STATION 12+84, 15.6 FT LT TO -L- STATION 12+94, 16.9 FT RT TO -L- STATION 13+03, 21.4 FT RT.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM -L- STATION 12+84, 15.6 FT LT TO -L- STATION 12+94, 16.9 FT RT TO -L- STATION 13+03, 21.4 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS:

ABOVE ELEVATION 2,112.4 FT  
UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
FRICTION ANGLE ( $\phi$ ) = 28 DEGREES  
COHESION (c) = 0 LB/SF

ELEVATION 2,112.4 FT TO ELEVATION 2,110.7 FT  
UNIT WEIGHT ( $\gamma$ ) = 135 LB/CF  
FRICTION ANGLE ( $\phi$ ) = 38 DEGREES  
COHESION (c) = 500 LB/SF  
GROUNDWATER ELEVATION = 2,111.8 FT

BELOW ELEVATION 2,110.7 FT (ROCK)  
UNIT WEIGHT ( $\gamma$ ) = 165 LB/CF  
FRICTION ANGLE ( $\phi$ ) = 40 DEGREES  
COHESION (c) = 1000 LB/SF

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM -L- STATION 12+84, 15.6 FT LT TO -L- STATION 12+94, 16.9 FT RT TO -L- STATION 13+03, 21.4 FT RT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM -L- STATION 12+84, 15.6 FT LT TO -L- STATION 12+94, 6.9 FT RT TO -L- STATION 13+03, 21.4 FT RT MAY NOT PENETRATE BELOW ELEVATION 2,112 FT DUE TO OBSTRUCTION, VERY DENSE OR HARD SOIL, BOULDERS, OR WEATHERED OR HARD ROCK.

DO NOT USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM -L- STATION 12+84, 15.6 FT LT TO -L- STATION 12+94, 16.9 FT RT TO -L- STATION 13+03, 21.4 FT RT. CONTRACTOR DESIGNED SHORING IS REQUIRED. SEE TEMPORARY SHORING SPECIAL PROVISION.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM -L- STATION 12+84, 15.6 FT LT TO -L- STATION 12+94, 16.9 FT RT TO -L- STATION 13+03, 21.4 FT RT.

Shoring Location No. 2 (CUT SHORING):

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

TEMPORARY SHORING IS REQUIRED FOR THE STRUCTURE CONSTRUCTION FROM -Y- STATION 12+58, 22.7 FT RT TO -Y- STATION 12+98, 11.2 FT RT TO -L- STATION 13+64, 21.7 FT RT.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM -Y- STATION 12+58, 22.7 FT RT TO -Y- STATION 12+98, 11.2 FT RT TO -L- STATION 13+64, 21.7 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS:

ABOVE ELEVATION 2,111.5 FT  
UNIT WEIGHT ( $\gamma$ ) = 115 LB/CF  
FRICTION ANGLE ( $\phi$ ) = 26 DEGREES  
COHESION (c) = 0 LB/SF

BELOW ELEVATION 2,111.5 FT (ROCK)  
UNIT WEIGHT ( $\gamma$ ) = 165 LB/CF  
FRICTION ANGLE ( $\phi$ ) = 40 DEGREES  
COHESION (c) = 1000 LB/SF

Shoring Location No. 2 (CUT SHORING) Continued:

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM -Y- STATION 12+58, 22.7 FT RT TO -Y- STATION 12+98, 11.2 FT RT TO -L- STATION 13+64, 21.7 FT RT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM -Y- STATION 12+58, 22.7 FT RT TO -Y- STATION 12+98, 11.2 FT RT TO -L- STATION 13+64, 21.7 FT RT MAY NOT PENETRATE BELOW ELEVATION 2,111 FT DUE TO OBSTRUCTION, VERY DENSE OR HARD SOIL, BOULDERS, OR WEATHERED OR HARD ROCK.

DO NOT USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM -Y- STATION 12+58, 22.7 FT RT TO -Y- STATION 12+98, 11.2 FT RT TO -L- STATION 13+64, 21.7 FT RT. CONTRACTOR DESIGNED SHORING IS REQUIRED. SEE TEMPORARY SHORING SPECIAL PROVISION.

IF GROUNDWATER OR THE FLOOD ELEVATION IS ABOVE THE BOTTOM OF THE REINFORCED ZONE, DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM -Y- STATION 12+58, 22.7 FT RT TO -Y- STATION 12+98, 11.2 FT RT TO -L- STATION 13+64, 21.7 FT RT.

Shoring Location No. 3 (FILL SHORING):

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

TEMPORARY SHORING IS REQUIRED FOR THE STRUCTURE CONSTRUCTION FROM -L- STATION 12+93, 16.0 FT RT TO -L- STATION 13+03, 11.7 FT RT.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM -L- STATION 12+93, 16.0 FT RT TO -L- STATION 13+03, 11.7 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS:

ABOVE ELEVATION 2,112.4 FT  
UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
FRICTION ANGLE ( $\phi$ ) = 28 DEGREES  
COHESION (c) = 0 LB/SF

ELEVATION 2,112.4 FT TO ELEVATION 2,110.7 FT  
UNIT WEIGHT ( $\gamma$ ) = 135 LB/CF  
FRICTION ANGLE ( $\phi$ ) = 38 DEGREES  
COHESION (c) = 500 LB/SF  
GROUNDWATER ELEVATION = 2,111.8 FT

BELOW ELEVATION 2,110.7 FT (ROCK)  
UNIT WEIGHT ( $\gamma$ ) = 165 LB/CF  
FRICTION ANGLE ( $\phi$ ) = 40 DEGREES  
COHESION (c) = 1000 LB/SF

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM -L- STATION 12+93, 16.0 FT RT TO -L- STATION 13+03, 11.7 FT RT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM -L- STATION 12+93, 16.0 FT RT TO -L- STATION 13+03, 11.7 FT RT MAY NOT PENETRATE BELOW ELEVATION 2,111 FT DUE TO OBSTRUCTION, VERY DENSE OR HARD SOIL, BOULDERS, OR WEATHERED OR HARD ROCK.

DO NOT USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM -L- STATION 12+93, 16.0 FT RT TO -L- STATION 13+03, 11.7 FT RT. CONTRACTOR DESIGNED SHORING IS REQUIRED. SEE TEMPORARY SHORING SPECIAL PROVISION.

IF GROUNDWATER OR THE FLOOD ELEVATION IS ABOVE THE BOTTOM OF THE REINFORCED ZONE, DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM -L- STATION 12+93, 16.0 FT RT TO -L- STATION 13+03, 11.7 FT RT.

Shoring Location No. 4 (FILL SHORING):

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

TEMPORARY SHORING IS REQUIRED FOR THE STRUCTURE CONSTRUCTION FROM -L- STATION 13+65, 11.7 FT RT TO -Y- STATION 12+95, 14.8 FT RT.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM -L- STATION 13+65, 11.7 FT RT TO -Y- STATION 12+95, 14.8 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS:

ABOVE ELEVATION 2,111.5 FT  
UNIT WEIGHT ( $\gamma$ ) = 115 LB/CF  
FRICTION ANGLE ( $\phi$ ) = 26 DEGREES  
COHESION (c) = 0 LB/SF

BELOW ELEVATION 2,111.5 FT (ROCK)  
UNIT WEIGHT ( $\gamma$ ) = 165 LB/CF  
FRICTION ANGLE ( $\phi$ ) = 40 DEGREES  
COHESION (c) = 1000 LB/SF

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM -L- STATION 13+65, 11.7 FT RT TO -Y- STATION 12+95, 14.8 FT RT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM -L- STATION 13+65, 11.7 FT RT TO -Y- STATION 12+95, 14.8 FT RT MAY NOT PENETRATE BELOW ELEVATION 2,111 FT DUE TO OBSTRUCTION, VERY DENSE OR HARD SOIL, BOULDERS, OR WEATHERED OR HARD ROCK.

DO NOT USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM -L- STATION 13+65, 11.7 FT RT TO -Y- STATION 12+95, 14.8 FT RT. CONTRACTOR DESIGNED SHORING IS REQUIRED. SEE TEMPORARY SHORING SPECIAL PROVISION.

IF GROUNDWATER OR THE FLOOD ELEVATION IS ABOVE THE BOTTOM OF THE REINFORCED ZONE, DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM -L- STATION 13+65, 11.7 FT RT TO -Y- STATION 12+95, 14.8 FT RT.

|                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                |               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <div>APPROVED: <div><div>Signed by:</div><div>Kelly de Montbrun</div><div>BAB66070ED747C...</div></div></div> <div>DATE: 5/12/2025</div> <div><div><div><div><div></div><div>SEAL</div><div>045542</div><div>ENGINEER</div><div>KELLY DE MONTEBRUN</div></div><div></div></div><div></div></div></div> <div>DOCUMENT NOT CONSIDERED FINAL<br/>UNLESS ALL SIGNATURES COMPLETED</div> | <div><div><div><div><div></div><div>DIVISION OF HIGHWAYS</div><div>STATE OF NORTH CAROLINA</div><div>DEPARTMENT OF TRANSPORTATION</div><div>WORK ZONE TRAFFIC CONTROL</div></div><div></div></div></div></div> | SHORING NOTES |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|

| PROJ. REFERENCE NO.                                                                                                                                                                                                               | SHEET NO. |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| BP11 - R030                                                                                                                                                                                                                       | TMP - 3   |
| <div><div><div>TGS</div><div>ENGINEERS</div></div><div><div>TGS ENGINEERS</div><div>706 HILLSBOROUGH ST., SUITE 200</div><div>RALEIGH, NC 27603</div><div>PH (919) 773-8887</div><div>CORP. LICENSE NO.: C-0275</div></div></div> |           |

PHASING

NOTE: FOR FLAGGING OPERATIONS, REFER TO RSD 1101.02, SHEET 1

PHASE I

(SEE TMP-4 AND TMP-4A)

STEP 1 -- INSTALL ADVANCE WARNING SIGNS (RSD 1101.01).

STEP 2 -- USING FLAGGERS, INSTALL WATERFILLED BARRIER FROM -L- STA. 12+50 +/- TO THE BEGINNING OF THE EXISTING BRIDGE, AND FROM -Y- STA. 12+20 +/- TO THE END OF THE EXISTING BRIDGE (SEE LOCAL NOTE).

STEP 3 -- BEHIND BARRIER AND WITH TRAFFIC IN THE EXISTING PATTERN, CONSTRUCT PROPOSED STRUCTURE INCLUDING TEMPORARY SHORING LOCATION NO.1 AND NO. 2

(SEE TMP-5)

STEP 4 -- USING FLAGGERS, REMOVE AND STOCKPILE BARRIER AND REPLACE WITH DRUMS.

STEP 5 -- USING FLAGGERS AS NEEDED, CONSTRUCT APPROACHES, INCLUDING TEMPORARY SHORING NO.3 AND NO.4 FROM -L- STA. 12+30 +/- TO -L- STA. 13+00 +/- (BEGINNING OF PROPOSED BRIDGE) AND FROM -L- STA. 13+62 +/- TO THE EDGE OF -Y- UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE.

-- CONSTRUCT -Y- FROM STA. 12+40 +/- TO -Y- STA. 13+50 +/- WHILE MAINTAINING TRAFFIC IN THE EXISTING PATTERN.

PHASE II

STEP 1 -- INSTALL ADVANCE WARNING SIGNS AS SHOWN ON TMP-6.

STEP 2 -- USING FLAGGERS, SHIFT TRAFFIC INTO THE PHASE II PATTERN AND RESET WATERFILLED BARRIER FROM -L- STA. 12+71 +/- TO -Y- STA. 13+07 +/- (SEE LOCAL NOTE).

STEP 3 -- BEHIND BARRIER, REMOVE THE ORIGINAL STRUCTURE AND COMPLETE THE CONSTRUCTION OF WING WALL #2 AT END BENT 1 AND WING WALL #2 AT END BENT 2.

STEP 4 -- USING FLAGGERS REMOVE BARRIER.

STEP 5 -- USING FLAGGERS COMPLETE SHOULDER BERM GUTTER, SHOULDER CONSTRUCTION, AND GUARDRAIL INSTALLATION.

PHASE III

STEP 1 -- REMOVE PHASE II "ONE LANE BRIDGE" WARNING SIGNS AND OPEN PROJECT TO FINAL PATTERN.

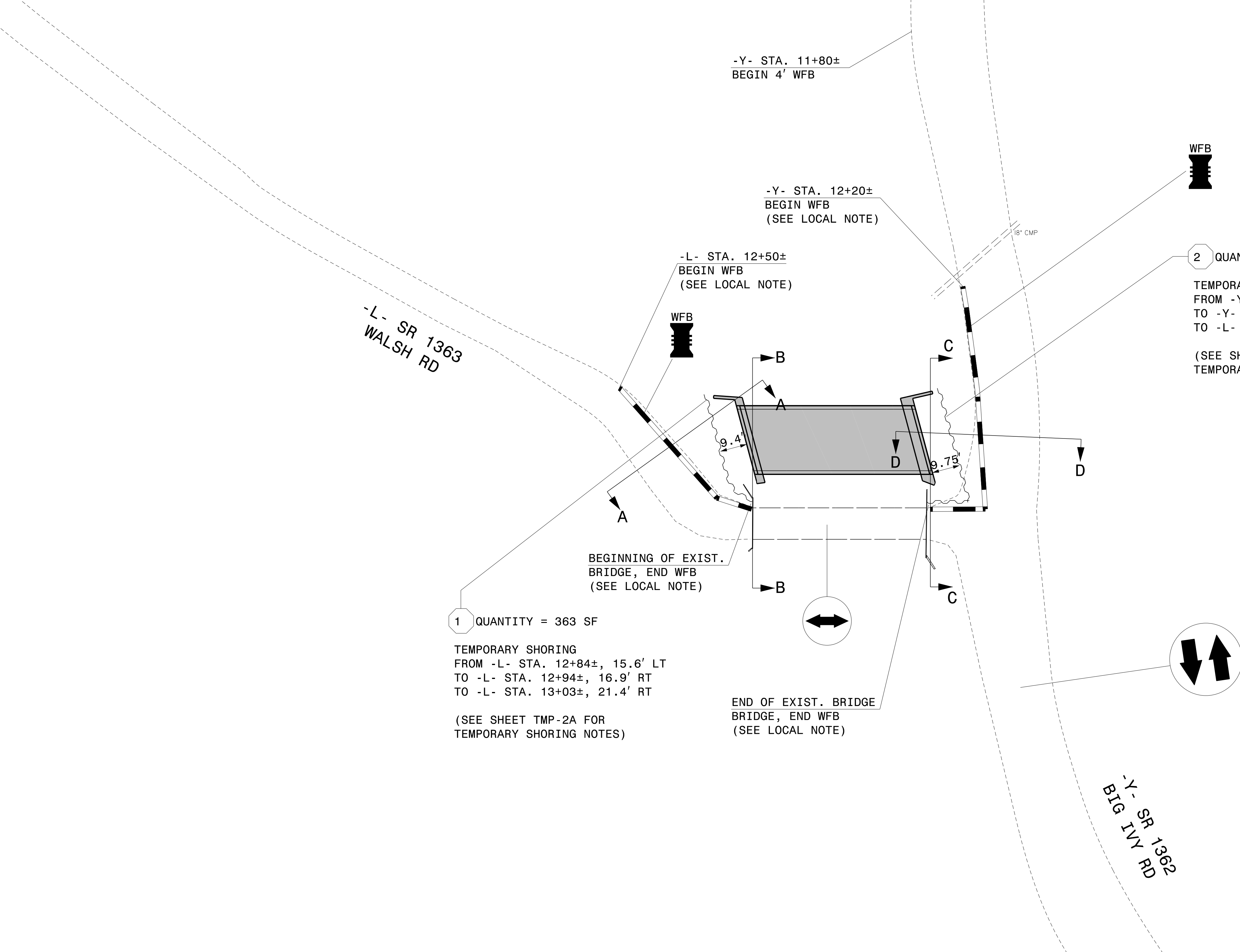
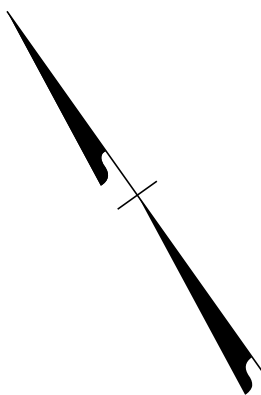
STEP 2 -- USING FLAGGERS, PLACE THE FINAL LAYER OF SURFACE COURSE THROUGHOUT THE PROJECT LIMITS.

STEP 3 -- REMOVE ALL TRAFFIC CONTROL DEVICES.

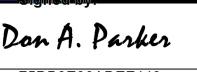
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User:smelvin

|                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                          |                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <div>APPROVED: <div><div>Don A. Parker</div><div>750B9E90ADEF440...</div></div></div> <div>DATE: 5/12/2025</div> <div><div><div><div></div><div>NORTH CAROLINA</div><div>PROFESSIONAL</div><div>SEAL</div><div>043251</div><div>ENGINEER</div><div>DON A. PARKER</div></div></div></div> <div>DOCUMENT NOT CONSIDERED FINAL<br/>UNLESS ALL SIGNATURES COMPLETED</div> | <div><div><div><div></div><div>DIVISION OF HIGHWAYS</div><div>STATE OF NORTH CAROLINA</div><div>DEPARTMENT OF TRANSPORTATION</div><div>WORK ZONE TRAFFIC CONTROL</div></div></div></div> | <div>SHORING NOTES</div> |
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| PROJ. REFERENCE NO.                                                                                                                                                                                                              | SHEET NO. |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| BP11-R030                                                                                                                                                                                                                        | TMP-4     |
| <div><div><div>TGS</div><div>ENGINEERS</div></div><div><div>TGS ENGINEERS</div><div>706 HILLSBOROUGH ST. SUITE 200</div><div>RALEIGH, NC 27603</div><div>PH (919) 773-8887</div><div>CORP. LICENSE NO.: C-0275</div></div></div> |           |



4/5/2025  
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User:smelvin

APPROVED:   
75DBBE90ADEF440

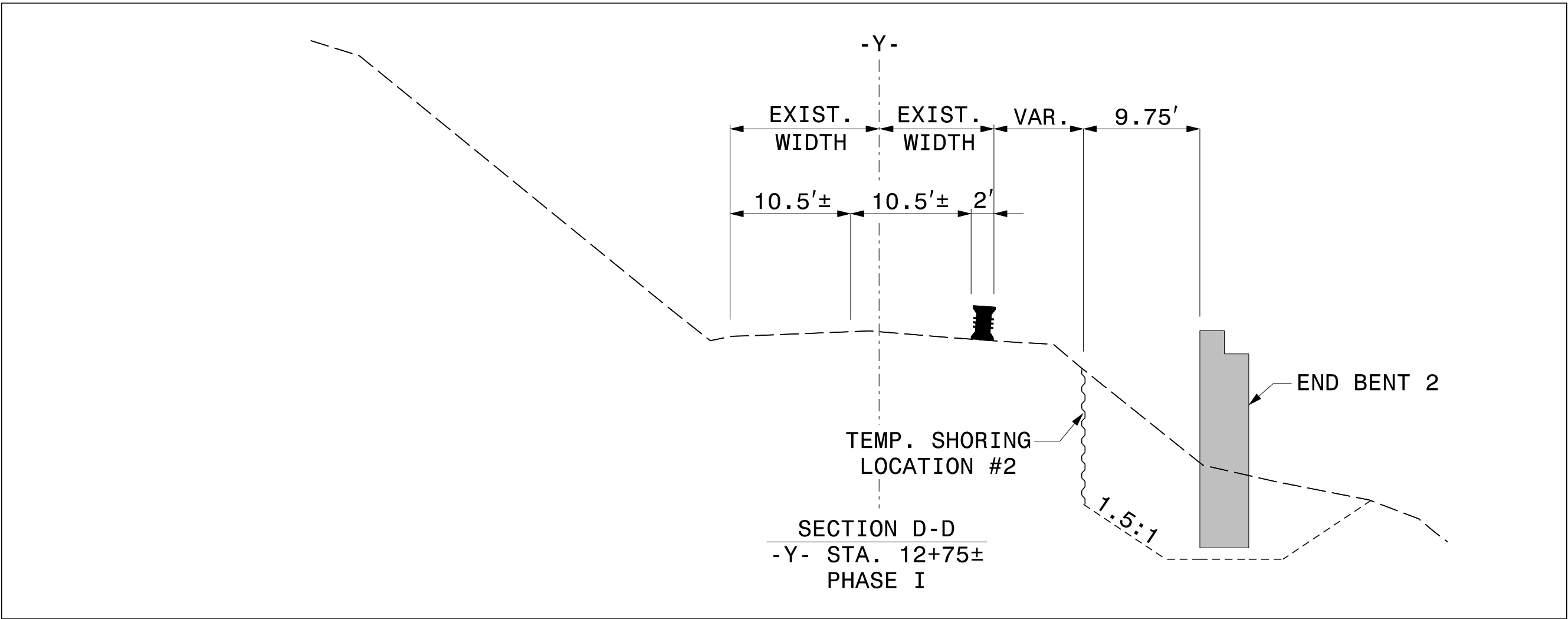
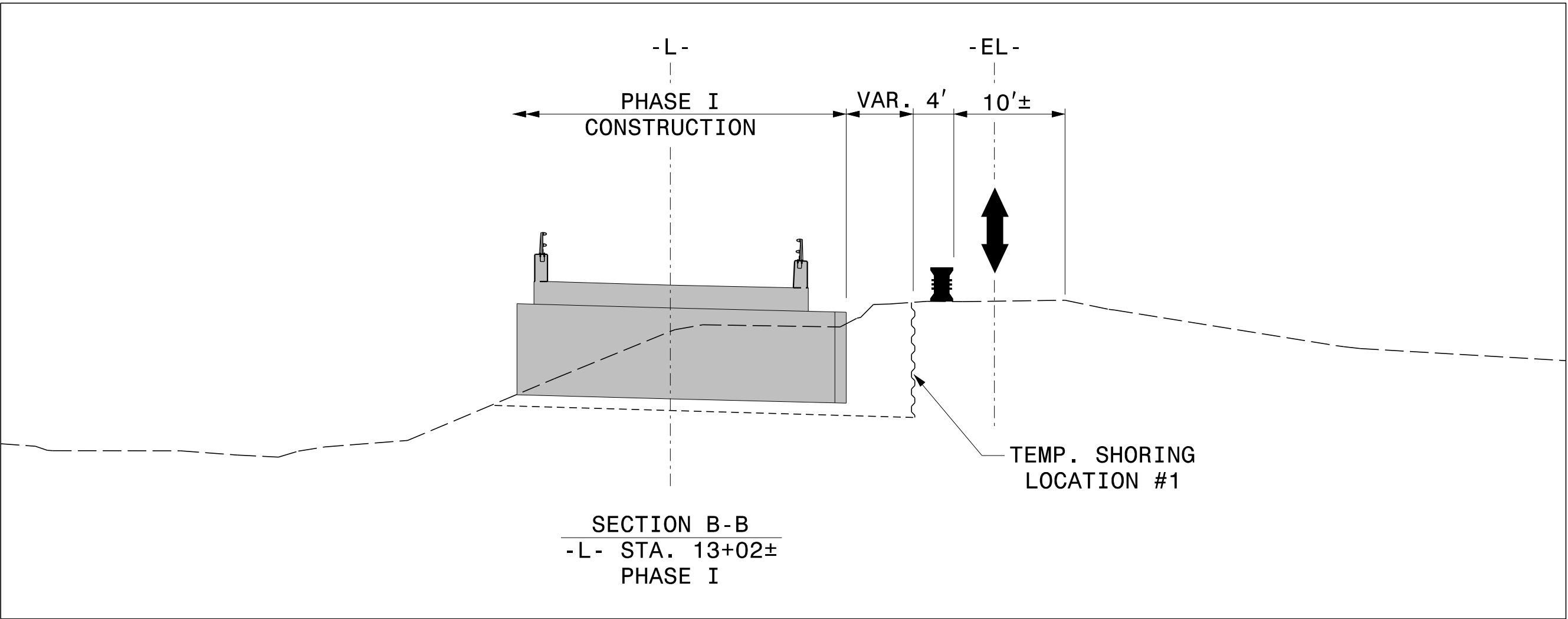
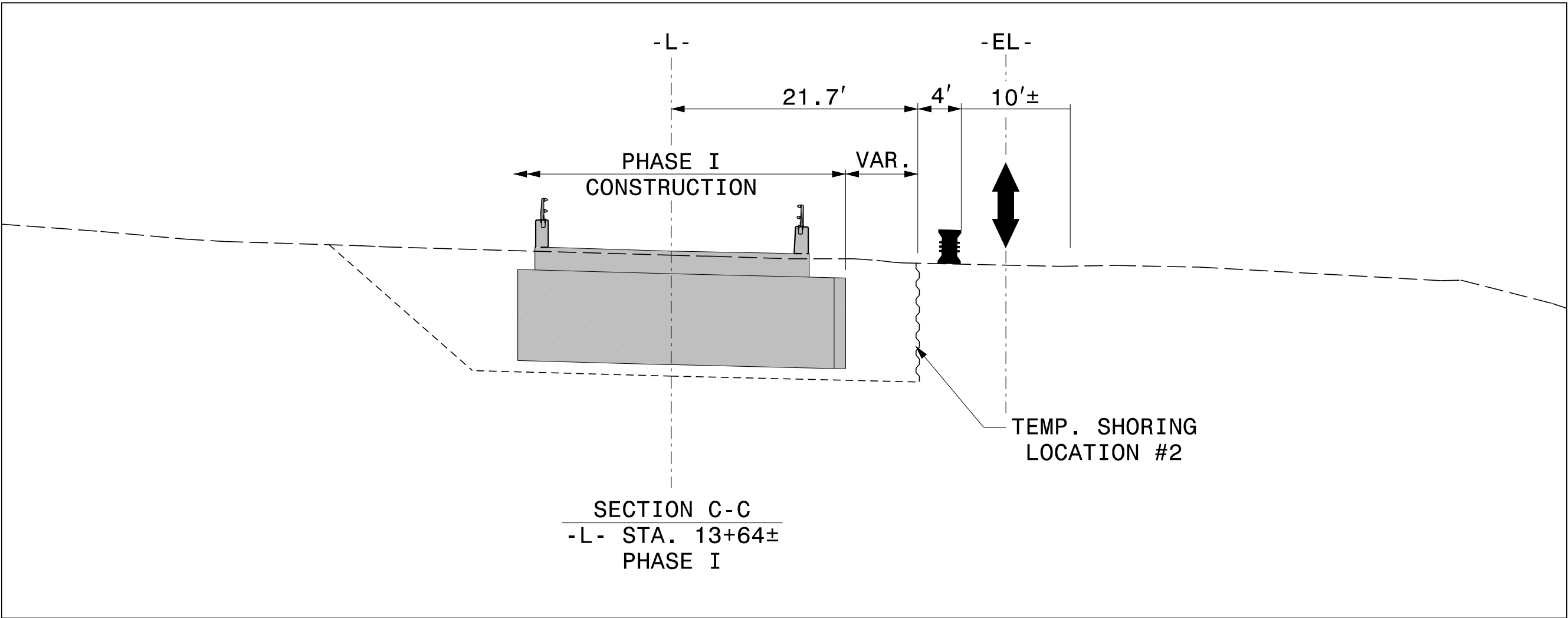
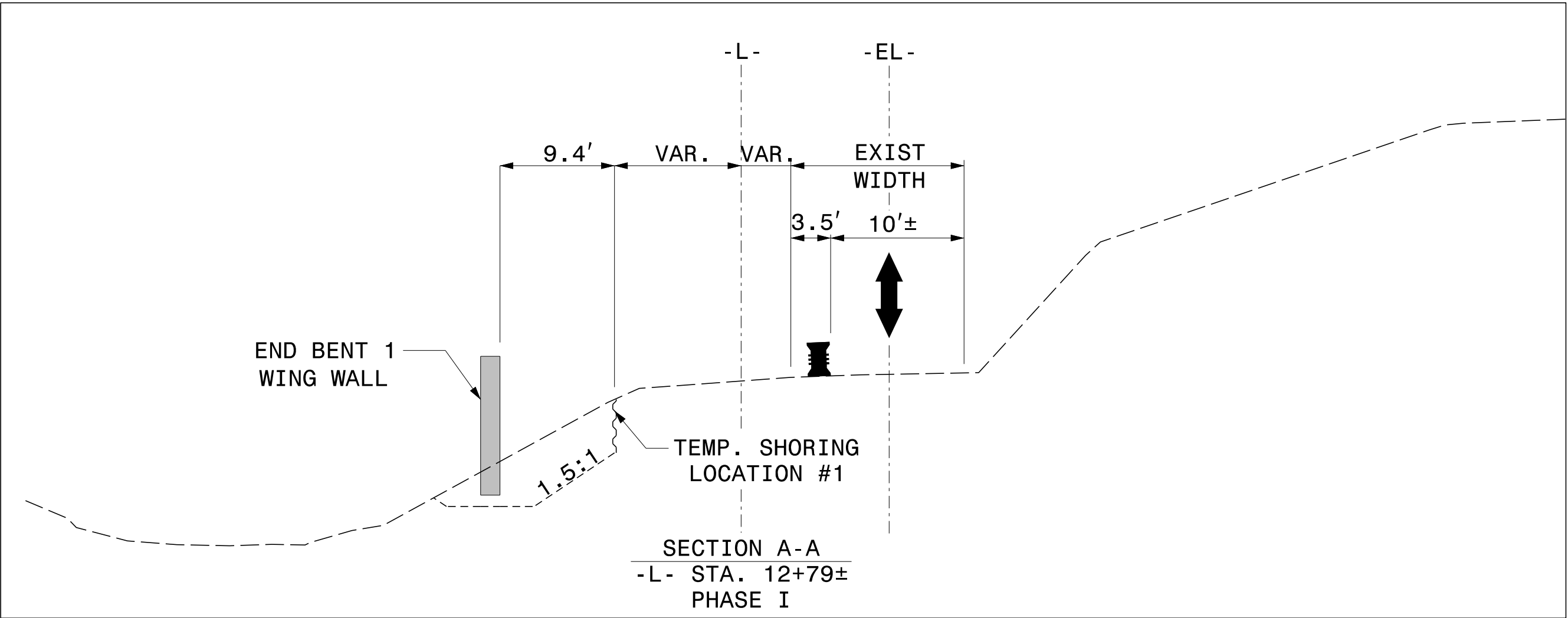
DATE: 5/12/2025



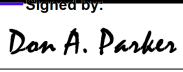
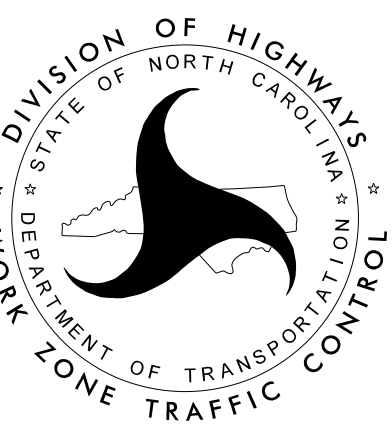
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



PHASE I  
STEPS 1-3

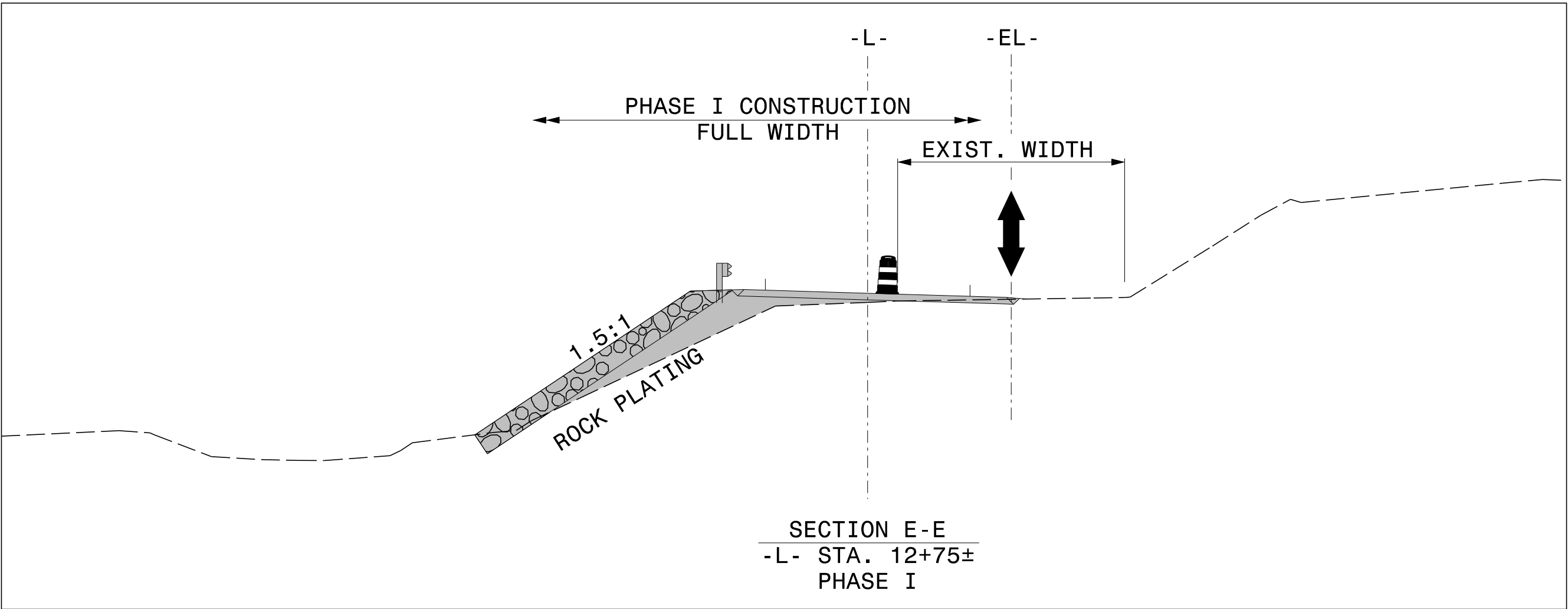
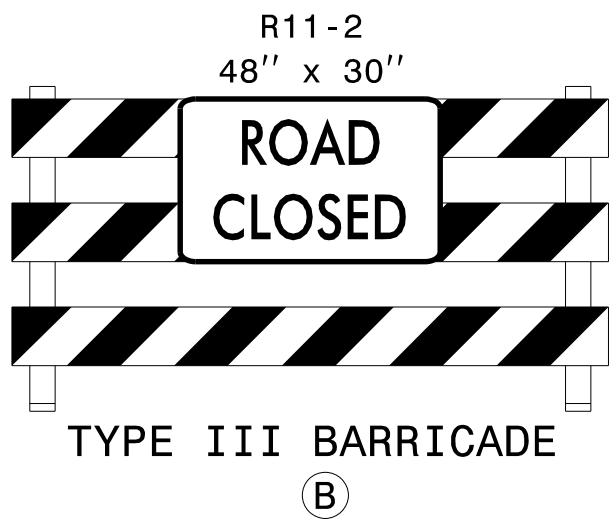
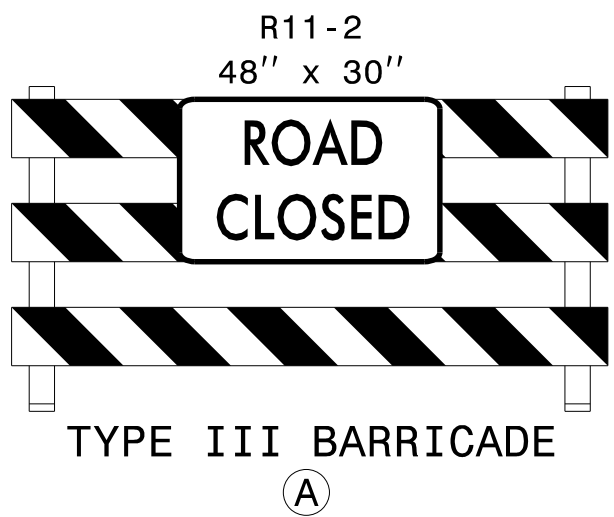
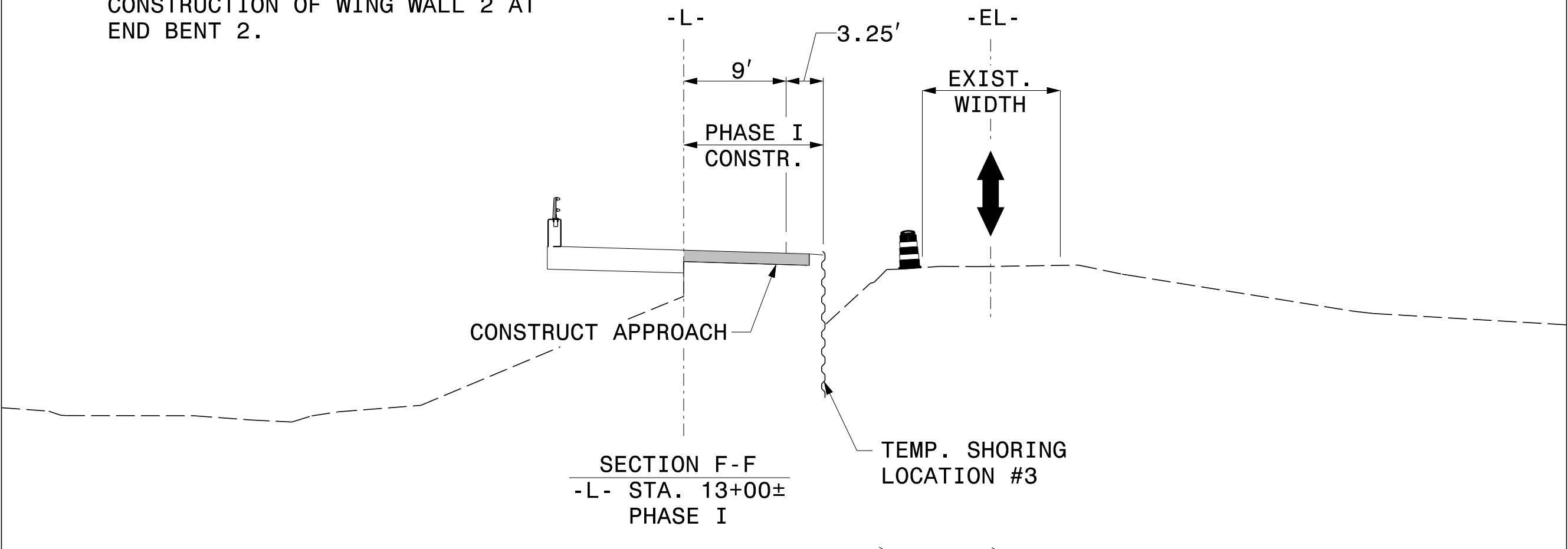


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User:smelvin

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| <div>APPROVED: <br/>DATE: 5/12/2025</div> <div></div> <div>DOCUMENT NOT CONSIDERED FINAL<br/>UNLESS ALL SIGNATURES COMPLETED</div> | <div></div> | <div>PHASE I<br/>STEPS 1-3</div> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|----------------------------------|

| PROJ. REFERENCE NO.                                                                                                                                                                                                               | SHEET NO. |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| BP11-R030                                                                                                                                                                                                                         | TMP-5     |
| <div><div><div>TGS</div><div>ENGINEERS</div></div><div><div>TGS ENGINEERS</div><div>706 HILLSBOROUGH ST., SUITE 200</div><div>RALEIGH, NC 27603</div><div>PH (919) 773-8887</div><div>CORP. LICENSE NO.: C-0275</div></div></div> |           |

NOTE: SECTION VIEW SIMILAR AT TEMP. SHORING LOCATION #4 FOR CONSTRUCTION OF WING WALL 2 AT END BENT 2.



-L- SR 1363  
WALSH RD

-L- STA. 12+30±  
BEGIN CONSTRUCTION

-L- STA. 13+00±  
END CONSTRUCTION AT  
BEGINNING OF BRIDGE

-L- STA. 13+62±  
BEGIN CONSTRUCTION  
AT END OF BRIDGE

-Y- STA. 12+40±  
BEGIN CONSTRUCTION

-L- STA. 13+50±  
END CONSTRUCTION

-Y- SR 1362  
BIG IVY RD

3 QUANTITY = 145 SF

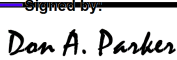
TEMPORARY SHORING  
FROM -L- STA. 12+93±, 16.0' RT  
TO -L- STA. 13+03±, 11.7' RT

(SEE SHEET TMP-2A FOR  
TEMPORARY SHORING NOTES)

4 QUANTITY = 221 SF

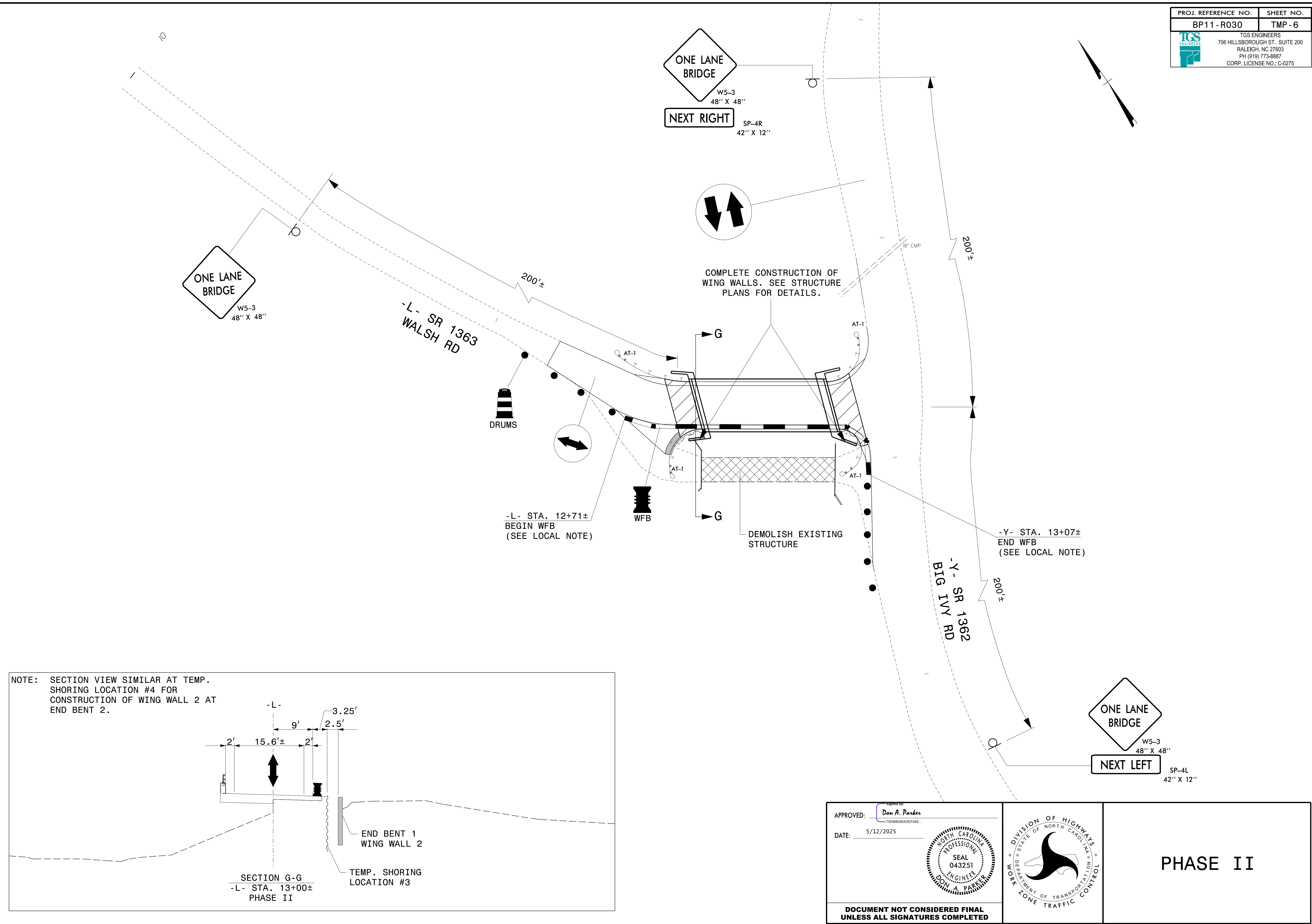
TEMPORARY SHORING  
FROM -L- STA. 13+65±, 11.7' RT  
TO -Y- STA. 12+95±, 14.8' RT

(SEE SHEET TMP-2A FOR  
TEMPORARY SHORING NOTES)

|                                                                                                 |
|-------------------------------------------------------------------------------------------------|
| APPROVED:  |
| DATE: 5/12/2025                                                                                 |
|            |
| DOCUMENT NOT CONSIDERED FINAL<br>UNLESS ALL SIGNATURES COMPLETED                                |



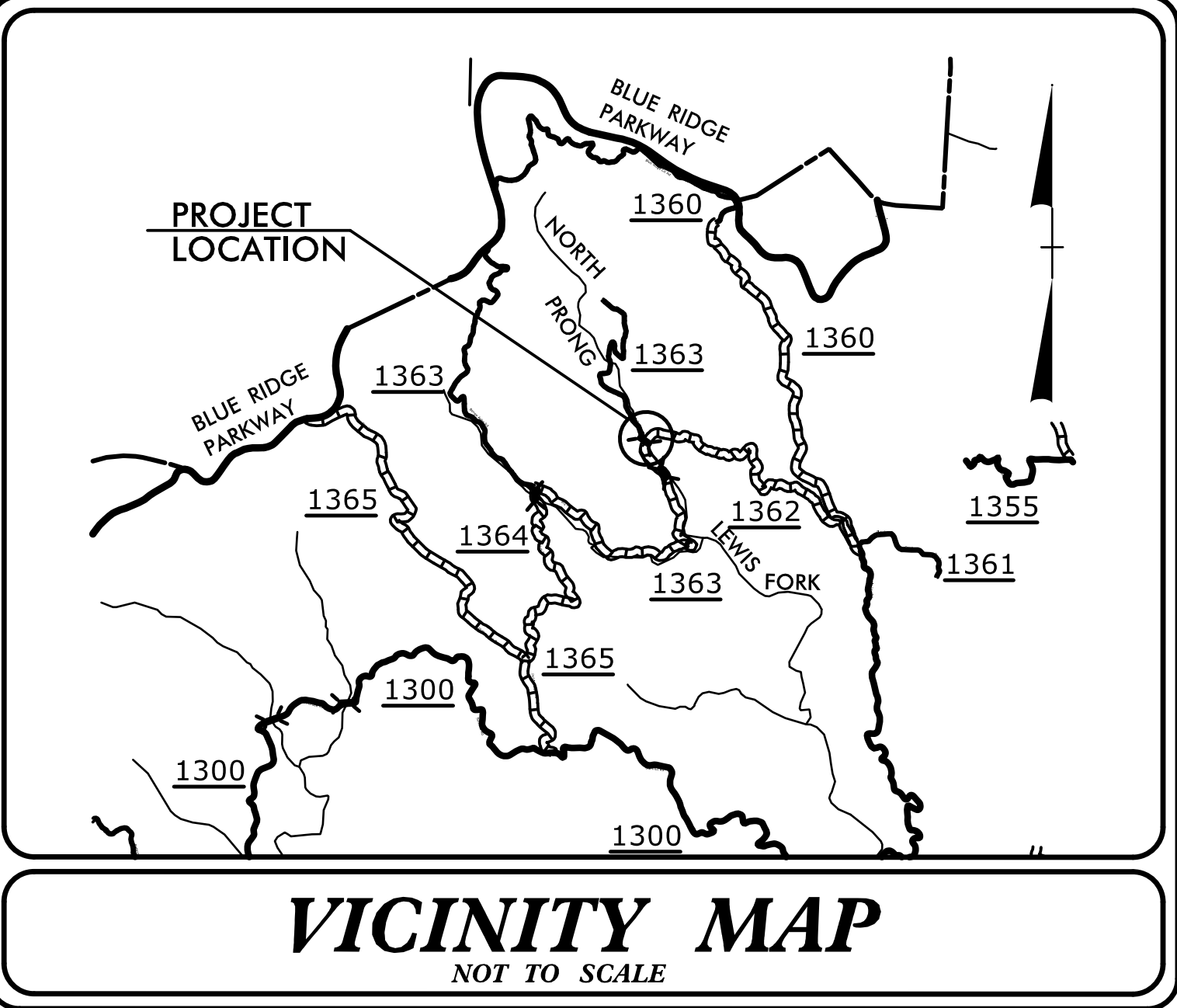
PHASE I  
STEPS 4-5



I:\Wilkes 11\2/15/2025\A-Erosion Control\Wilkes 110\_EC.dsn\_TSI.dgn  
User:tsi

PROJECT: BP11-R030

CONTRACT: DK00428

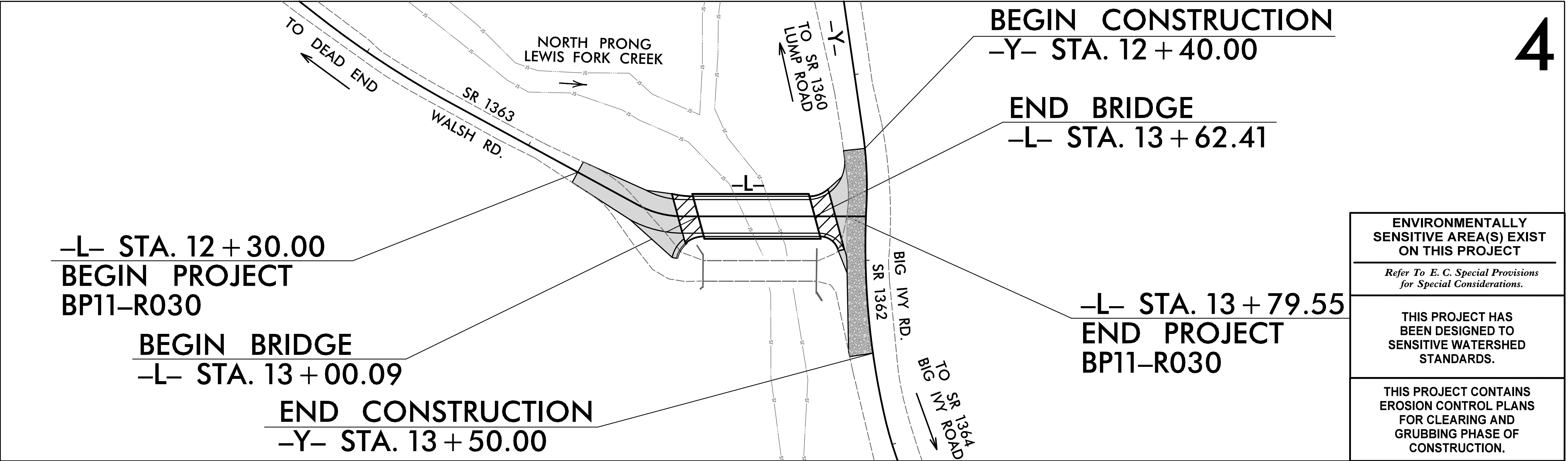
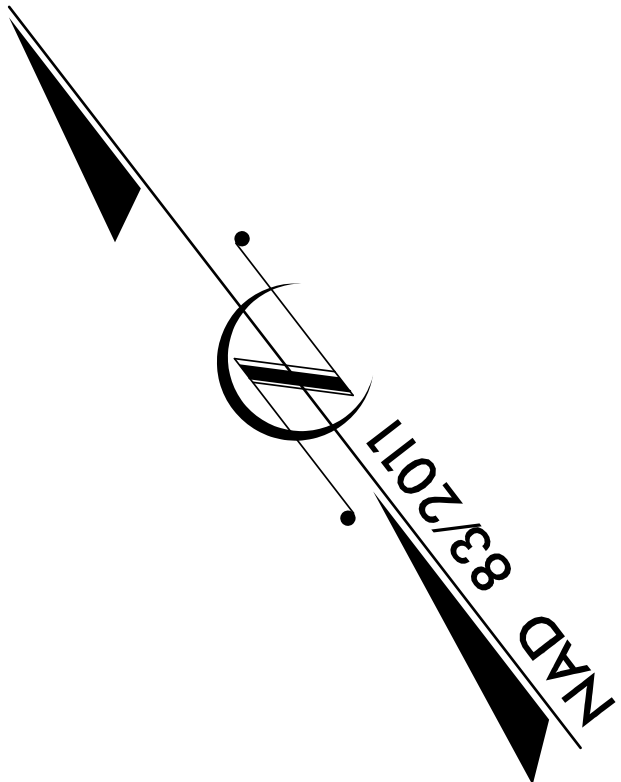


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
PLAN FOR PROPOSED  
HIGHWAY EROSION CONTROL  
WILKES COUNTY

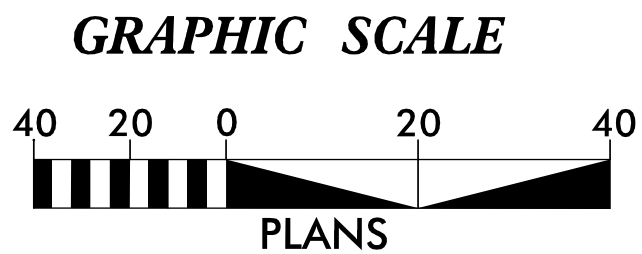
LOCATION: BRIDGE NO. 960110 OVER NORTH PRONG  
LEWIS FORK CREEK ON SR 1363 (WALSH ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

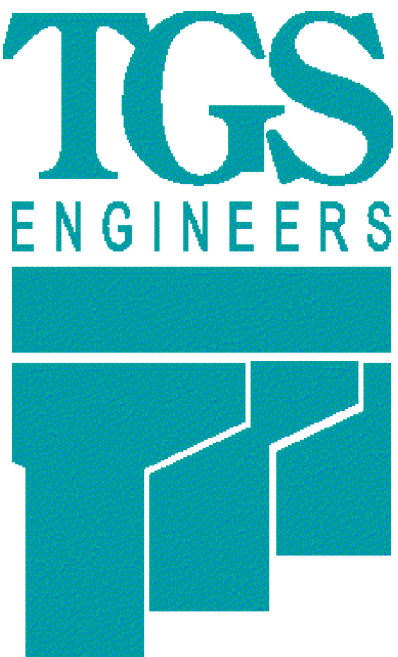
| STATE           | STATE PROJECT REFERENCE NO. | SHEET NO.   | TOTAL SHEETS |
|-----------------|-----------------------------|-------------|--------------|
| N.C.            | BP11-R030                   | EC-1        |              |
| STATE PROJ. NO. | F.A. PROJ. NO.              | DESCRIPTION |              |
| BP11.R030.1     | N/A                         | PE          |              |
| BP11.R030.2     | N/A                         | RW & UTIL.  |              |
| BP11.R030.3     | N/A                         | CONST.      |              |
|                 |                             |             |              |
|                 |                             |             |              |



|                                                                                              |
|----------------------------------------------------------------------------------------------|
| ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT                                      |
| Refer To E. C. Special Provisions for Special Considerations.                                |
| THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.                             |
| THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION. |



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG 010000 GENERAL STORMWATER CONSTRUCTION PERMIT ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES.



Prepared In the Office of:  
**TGS ENGINEERS**  
201 W. MARION ST-STE 200  
SHELBY, NC 28150

Designed by:  
Andrew H. Cochrane, PE 3015  
NAME LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

The "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2024 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

|                         |                     |
|-------------------------|---------------------|
| PROJECT REFERENCE NO.   | SHEET NO.           |
| BP11-R030               | EC-02               |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

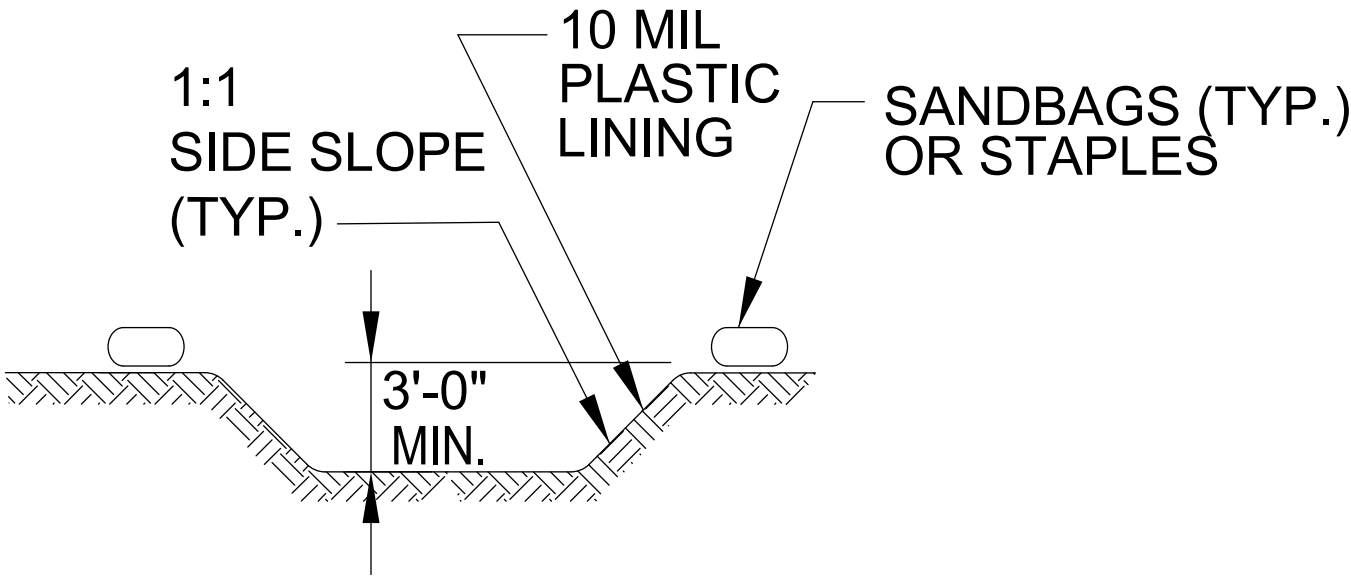
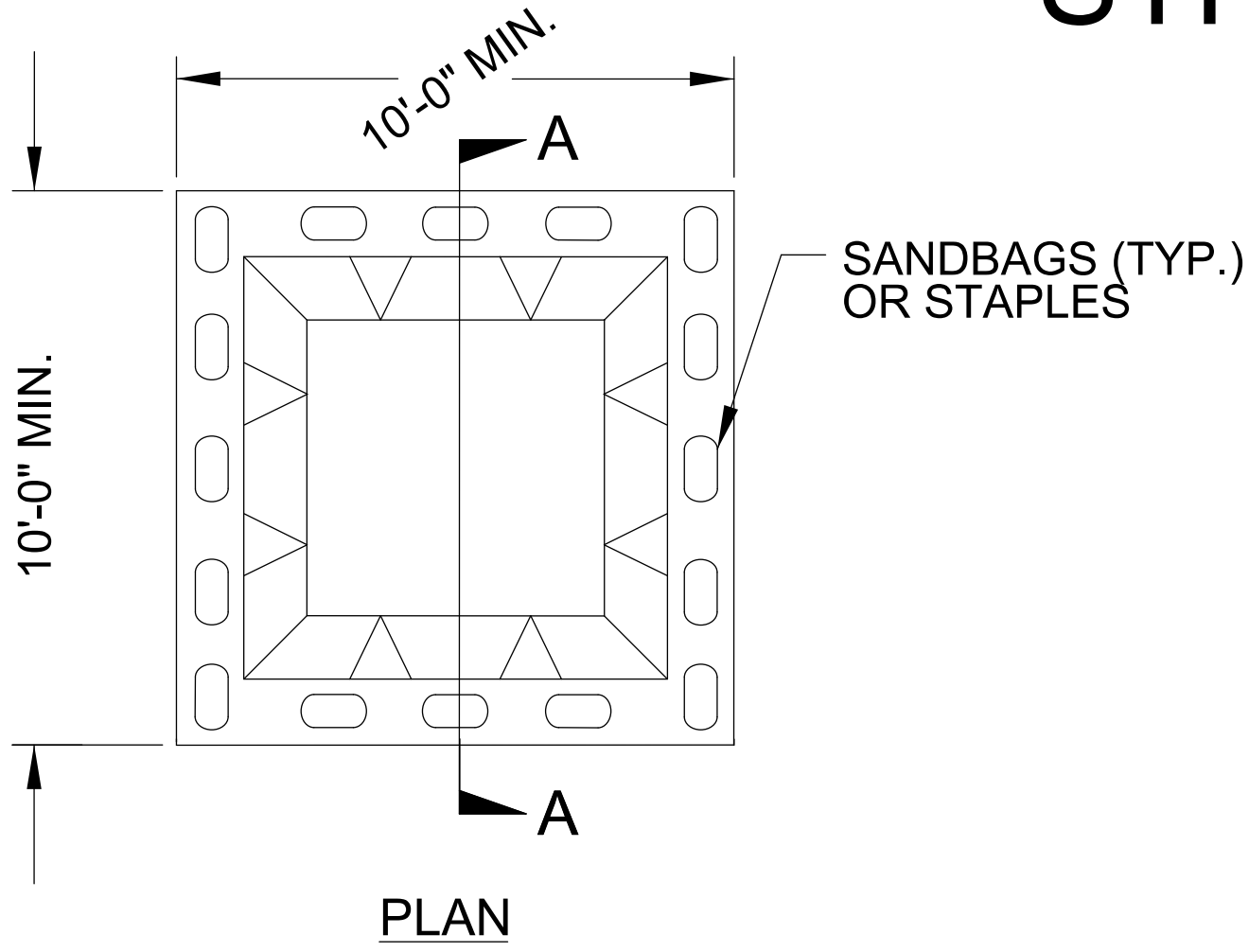
EROSION & SEDIMENT CONTROL LEGEND

| Std. #  | Description                      | Symbol |
|---------|----------------------------------|--------|
| 1605.01 | Temporary Silt Fence             |        |
| 1606.01 | Special Sediment Control Fence   |        |
| 1622.01 | Temporary Berms and Slope Drains |        |
| 1630.02 | Silt Basin Type B                |        |
| 1630.03 | Temporary Silt Ditch             |        |
| 1630.04 | Stilling Basin                   |        |
| 1630.05 | Temporary Diversion              |        |
| 1630.06 | Special Stilling Basin           |        |
| 1630.07 | Skimmer Basin                    |        |
| 1630.08 | Tiered Skimmer Basin             |        |
| 1630.09 | Earthen Dam with Skimmer         |        |
|         | Infiltration Basin               |        |
|         | Rock Inlet Sediment Trap:        |        |
| 1632.01 | Type A                           |        |
| 1632.02 | Type B                           |        |
| 1632.03 | Type C                           |        |

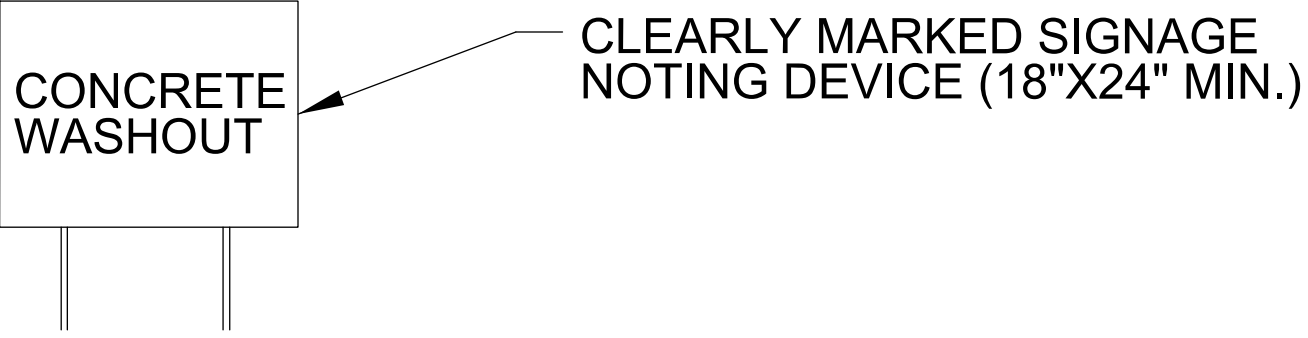
| Std. #  | Description                                                            | Symbol |
|---------|------------------------------------------------------------------------|--------|
| 1633.01 | Temporary Rock Silt Check Type A                                       |        |
| 1633.02 | Temporary Rock Silt Check Type B                                       |        |
| 1633.03 | Temporary Rock Silt Check Type A with Excelsior Matting and Flocculant |        |
| 1634.01 | Temporary Rock Sediment Dam Type A                                     |        |
| 1634.02 | Temporary Rock Sediment Dam Type B                                     |        |
| 1635.01 | Rock Pipe Inlet Sediment Trap Type A                                   |        |
| 1635.02 | Rock Pipe Inlet Sediment Trap Type B                                   |        |
| 1636.01 | Excelsior Wattle Check                                                 |        |
| 1636.01 | Excelsior Wattle Check with Flocculant                                 |        |
| 1636.01 | Coir Fiber Wattle Check                                                |        |
| 1636.01 | Coir Fiber Wattle Check with Flocculant                                |        |
| 1636.02 | Silt Fence Excelsior Wattle Break                                      |        |
|         | Silt Fence Coir Fiber Wattle Break                                     |        |
| 1636.03 | Excelsior Wattle Barrier                                               |        |
| 1636.03 | Coir Fiber Wattle Barrier                                              |        |

# ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER

| PROJECT REFERENCE NO.      | SHEET NO.              |
|----------------------------|------------------------|
| <i>BP11-R030</i>           | <i>EC-2A</i>           |
| R/W SHEET NO.              |                        |
| ROADWAY DESIGN<br>ENGINEER | HYDRAULICS<br>ENGINEER |

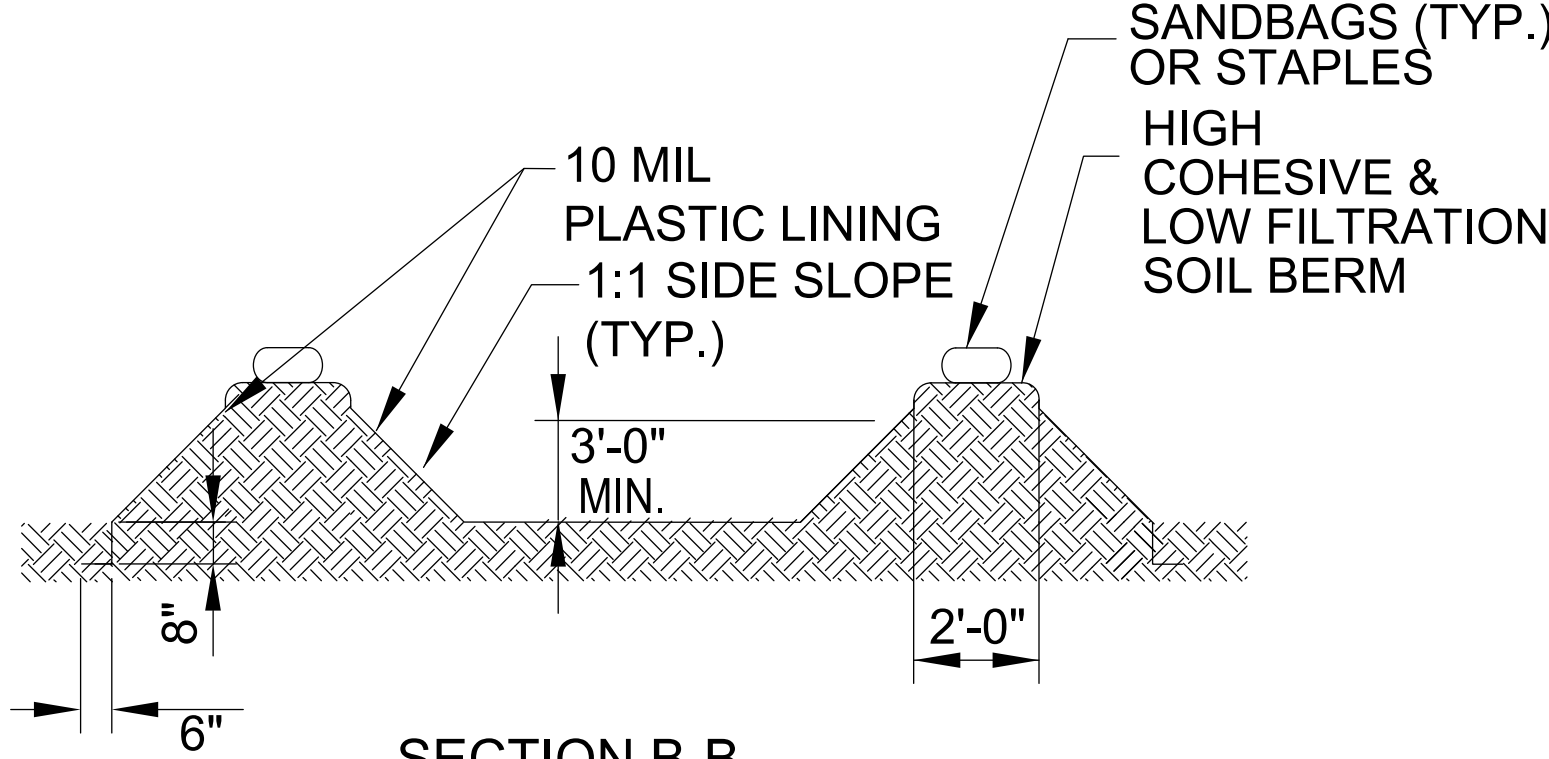
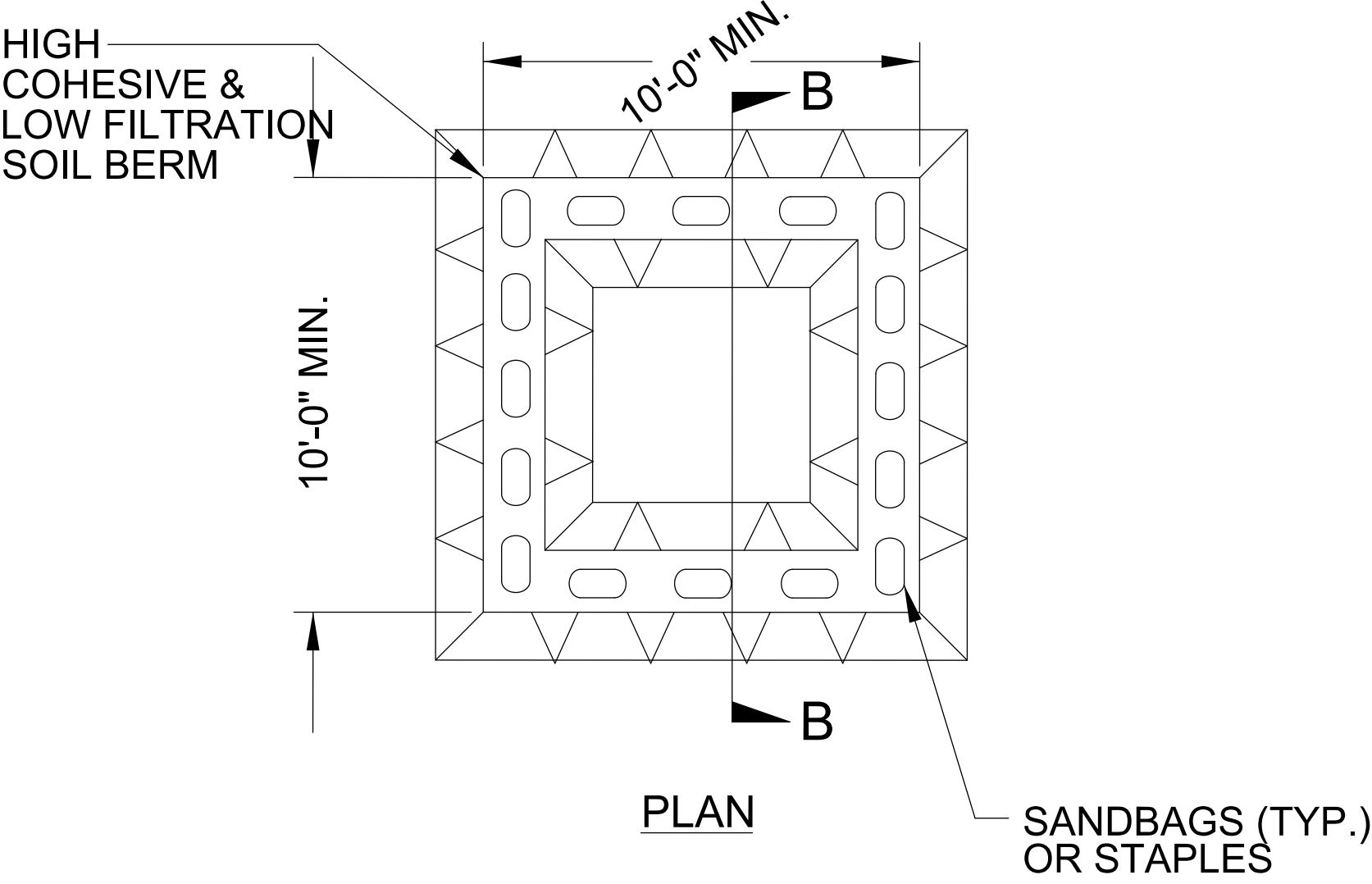


SECTION A-A

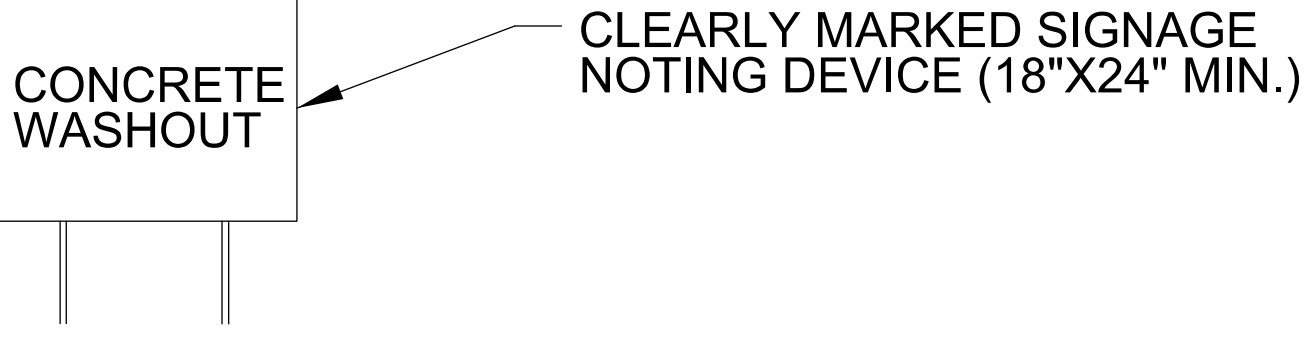


BELOW GRADE WASHOUT STRUCTURE  
NOT TO SCALE

- 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 CLEARY MARKED WITH SIGNAGE NOTING DEVICE.



SECTION B-B



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 CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

|                         |                     |
|-------------------------|---------------------|
| PROJECT REFERENCE NO.   | SHEET NO.           |
| BP11-R030               | EC-3                |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

SOIL STABILIZATION TIMEFRAMES

| SITE DESCRIPTION                             | STABILIZATION TIME | TIMEFRAME EXCEPTIONS                                                                                                                                      |
|----------------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| PERIMETER DIKES, SWALES, DITCHES AND SLOPES  | 7 DAYS             | NONE                                                                                                                                                      |
| HIGH QUALITY WATER (HQW) 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 HQW ZONES |
| ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1 | 14 DAYS            | 7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES                                                                               |

MINIMIZE CLEARING TO THE GREATEST EXTENT POSSIBLE IN AREA  
NEEDED FOR BRIDGE ACCESS WEST OF BIG IVY RD, ADJACENT TO EAST  
BANK OF NORTH PRONG LEWIS FORK AND EAST BANK OF TRIBUTARY.

TEMPORARY SILT FENCE, CURRENTLY SHOWN AT LIMITS OF TEMPORARY  
CONSTRUCTION EASEMENT, SHOULD BE ADJUSTED ACCORDINGLY TO  
ACTUAL CLEARING LIMITS AS DETERMINED FOR ADEQUATE SITE ACCESS.

**BEGIN CONSTRUCTION**  
-Y- STA 12 + 40.00

CONTRACTOR SHALL PLACE AGGREGATE BASE ON -Y- TO ACHIEVE  
APPROPRIATE ROLLOVER AT TIE IN PER PROFILE (SEE SHEET 5)

END BRIDGE  
-L- STA 13+62.41

END PROJECT  
-L- STA 13+79.55

EXCAVATION TO REMOVE BRIDGE  
EST. +/-50 CU.YDS  
BANK STABILIZATION (CLASS II RIP RAP)  
EST. +/-20 TONS

END CONSTRUCTION  
+ STA 13+50.00

-Y- PCC 13+85.28

5Y- PCC 147432

JOHN C. MADDOCKS  
JANE R. MADDOCKS

## CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAMS  
TYPE - B AND TEMPORARY ROCK SILT  
CHECKS TYPE - A AT DRAINAGE OUTLETS.

ENVIRONMENTALLY  
SENSITIVE AREA  
SEE PROJECT  
SPECIAL PROVISIONS



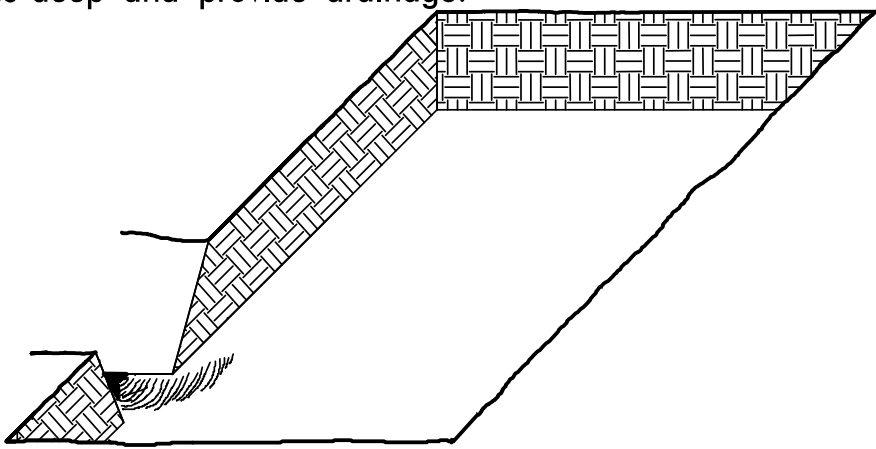
|                 |                             |             |              |
|-----------------|-----------------------------|-------------|--------------|
| STATE           | STATE PROJECT REFERENCE NO. | SHEET NO.   | TOTAL SHEETS |
| N.C.            | BP11-RO30                   | RF-1        |              |
| STATE PROJ. NO. | F. A. PROJ. NO.             | DESCRIPTION |              |
|                 |                             |             |              |

PLANTING DETAILS

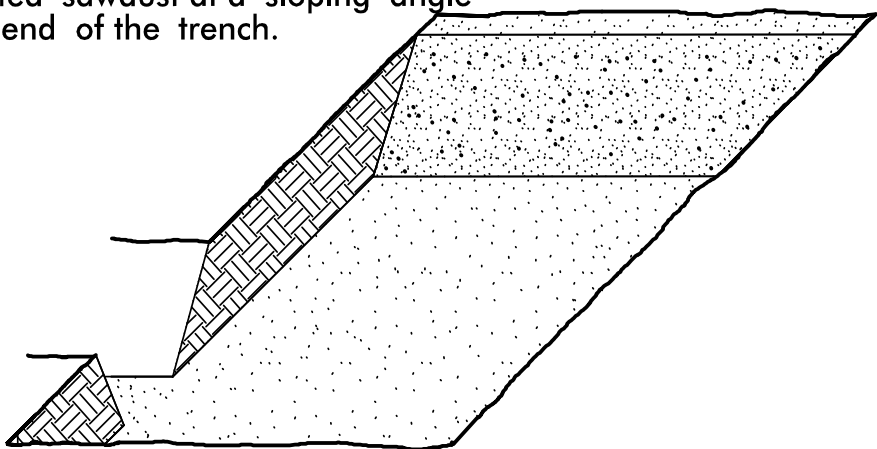
SEEDLING / LINER BARERoot PLANTING DETAIL

HEALING IN

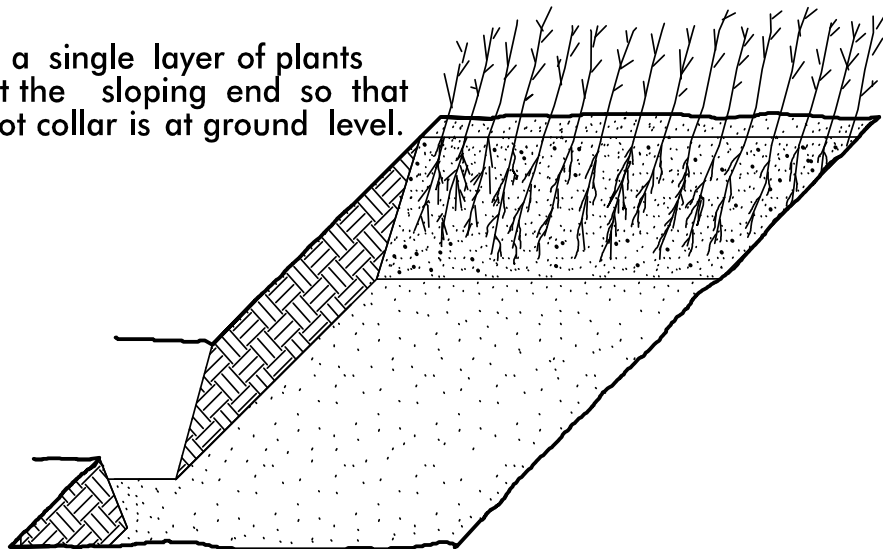
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



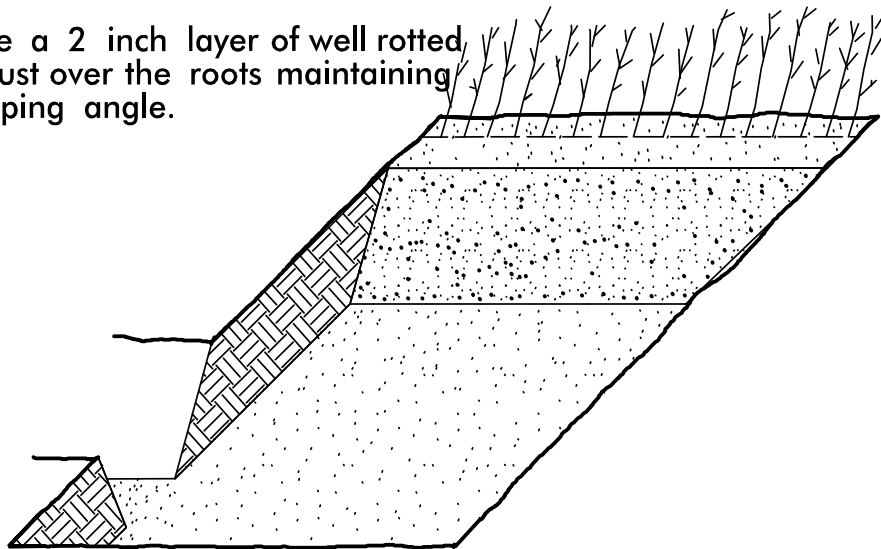
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

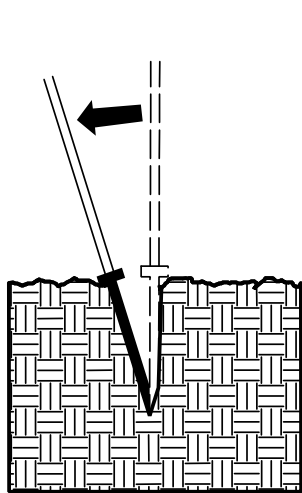


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

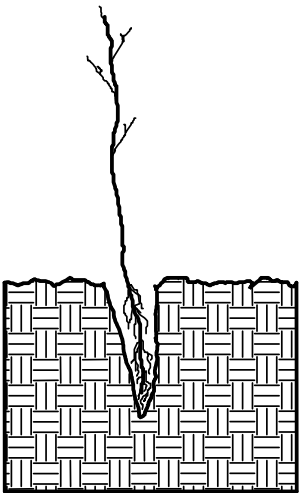


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

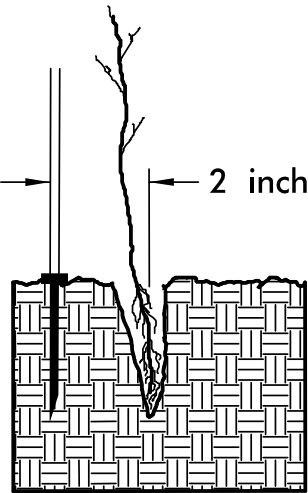
DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



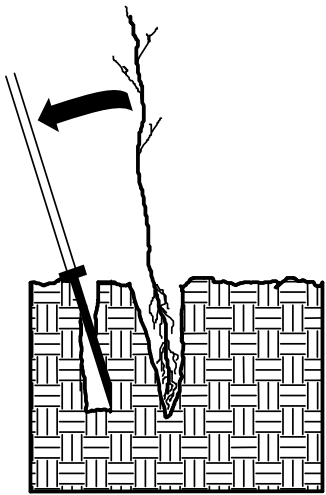
1. Insert planting bar as shown and pull handle toward planter.



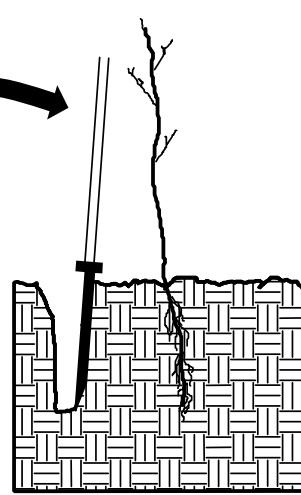
2. Remove planting bar and place seedling at correct depth.



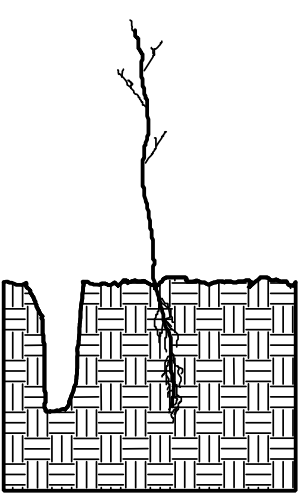
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.



5. Push handle forward firming soil at top.



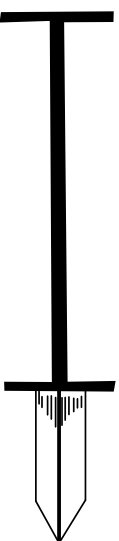
6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG  
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.



KBC PLANTING BAR  
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.



ROOT PRUNING  
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

REFORESTATION

- ☐ TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

|                             |              |                  |
|-----------------------------|--------------|------------------|
| 25% LIRIODENDRON TULIPIFERA | TULIP POPLAR | 12 in – 18 in BR |
| 25% PLATANUS OCCIDENTALIS   | SYCAMORE     | 12 in – 18 in BR |
| 25% BETULA NIGRA            | RIVER BIRCH  | 12 in – 18 in BR |
| 25% NYSSA SYLVATICA         | BLACK GUM    | 12 in – 18 in BR |

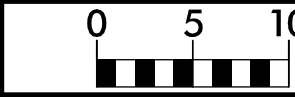
REFORESTATION DETAIL SHEET

N.C.D.O.T. – ROADSIDE ENVIRONMENTAL UNIT

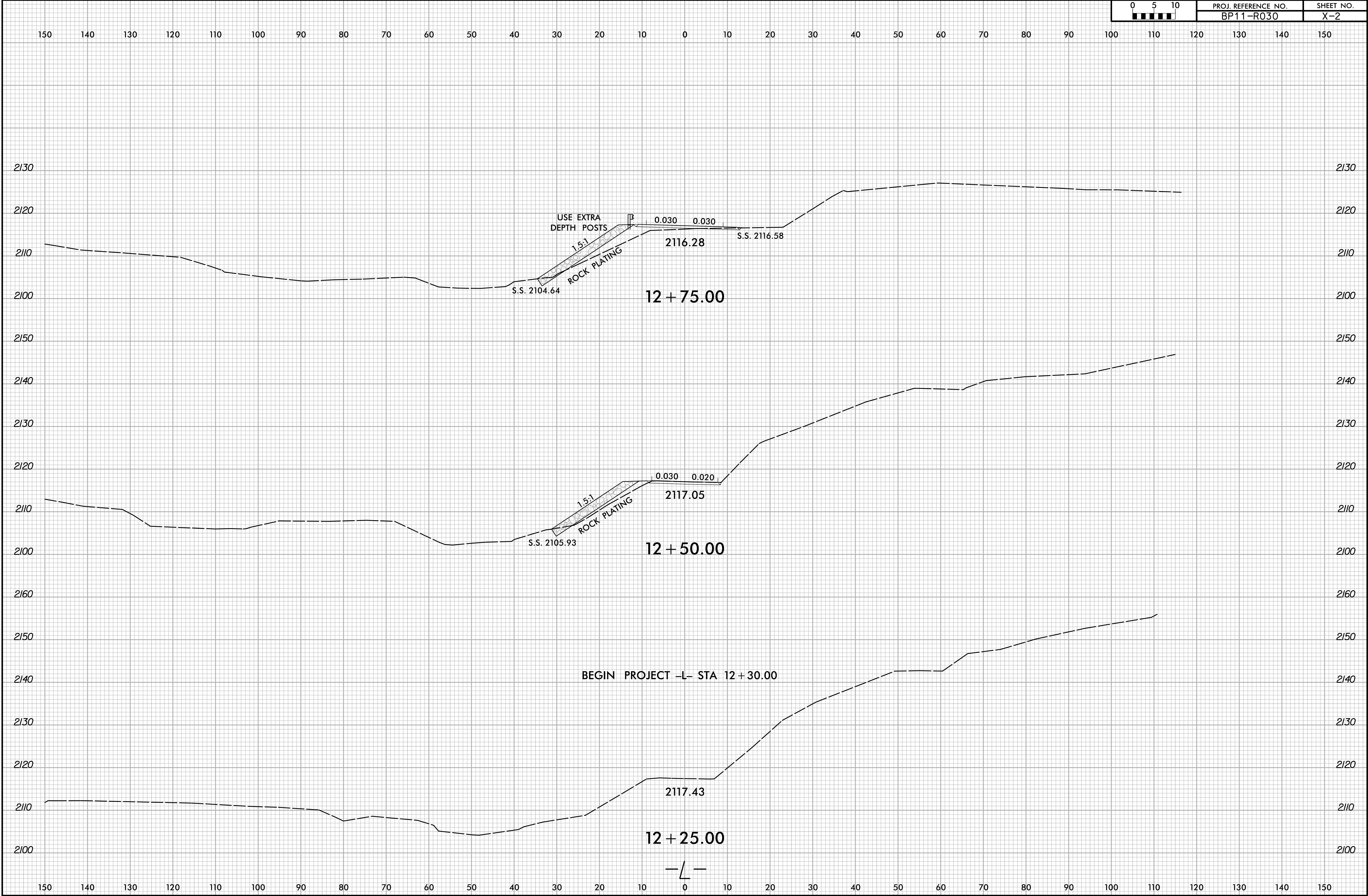




6/23/16

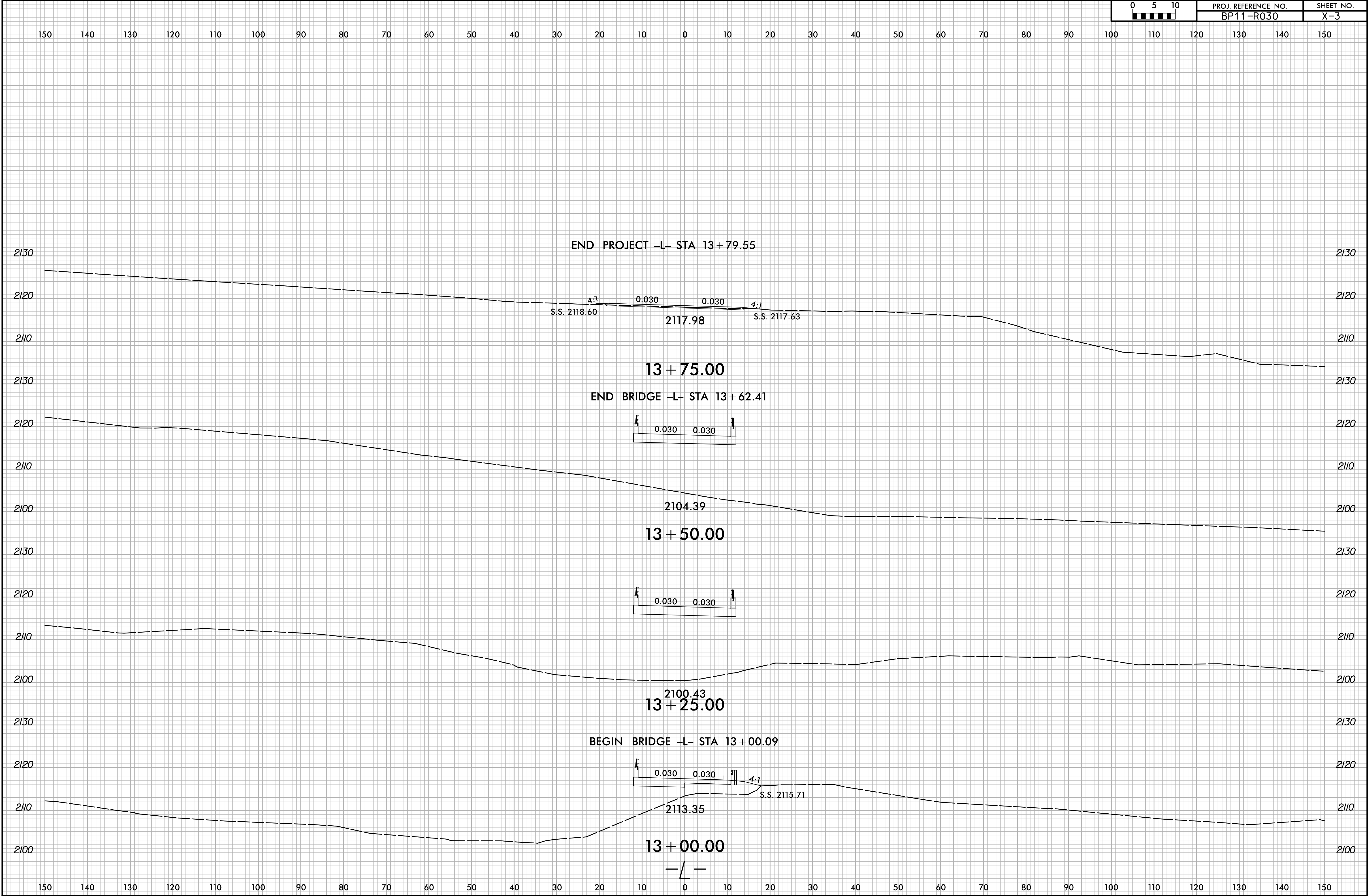


| PROJ. REFERENCE NO. | SHEET NO. |
|---------------------|-----------|
| BP11-R030           | X-2       |



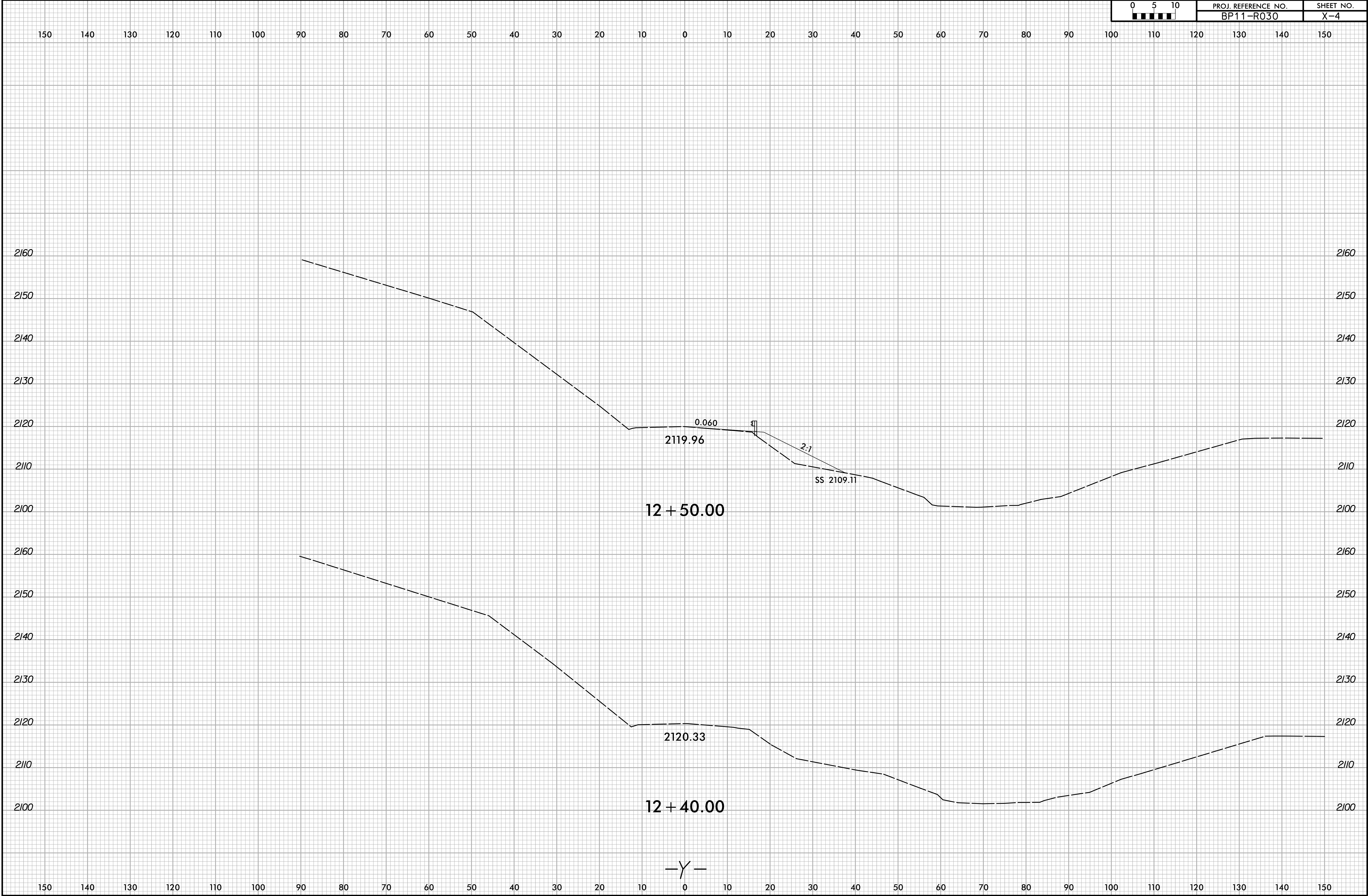
6/23/16

|                             |                     |           |
|-----------------------------|---------------------|-----------|
| <div>0510</div> <div></div> | PROJ. REFERENCE NO. | SHEET NO. |
|                             | BP11-R030           | X-3       |



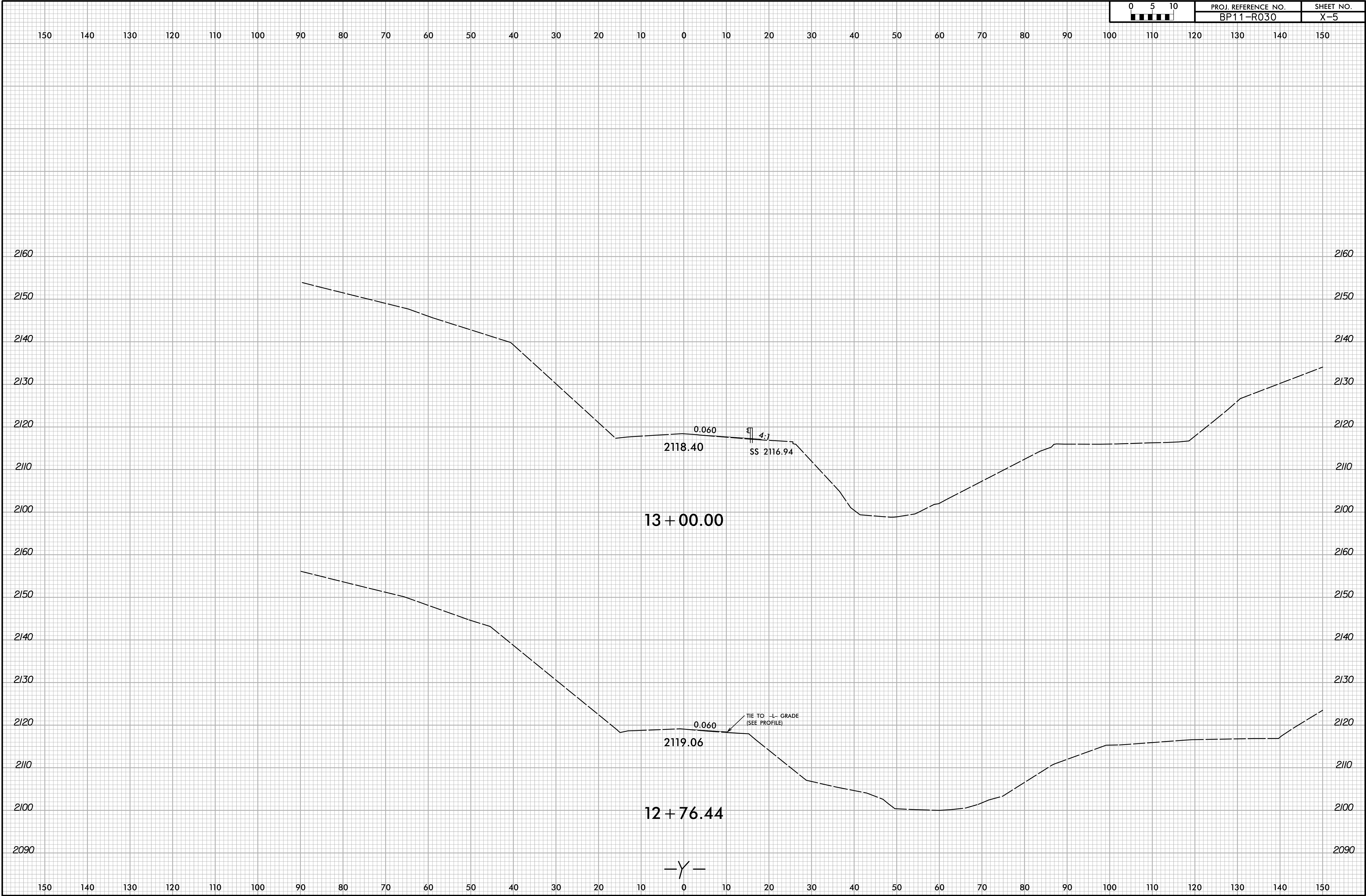
6/23/16

|                 |                     |           |
|-----------------|---------------------|-----------|
| <div>0510</div> | PROJ. REFERENCE NO. | SHEET NO. |
|                 | BP11-R030           | X-4       |



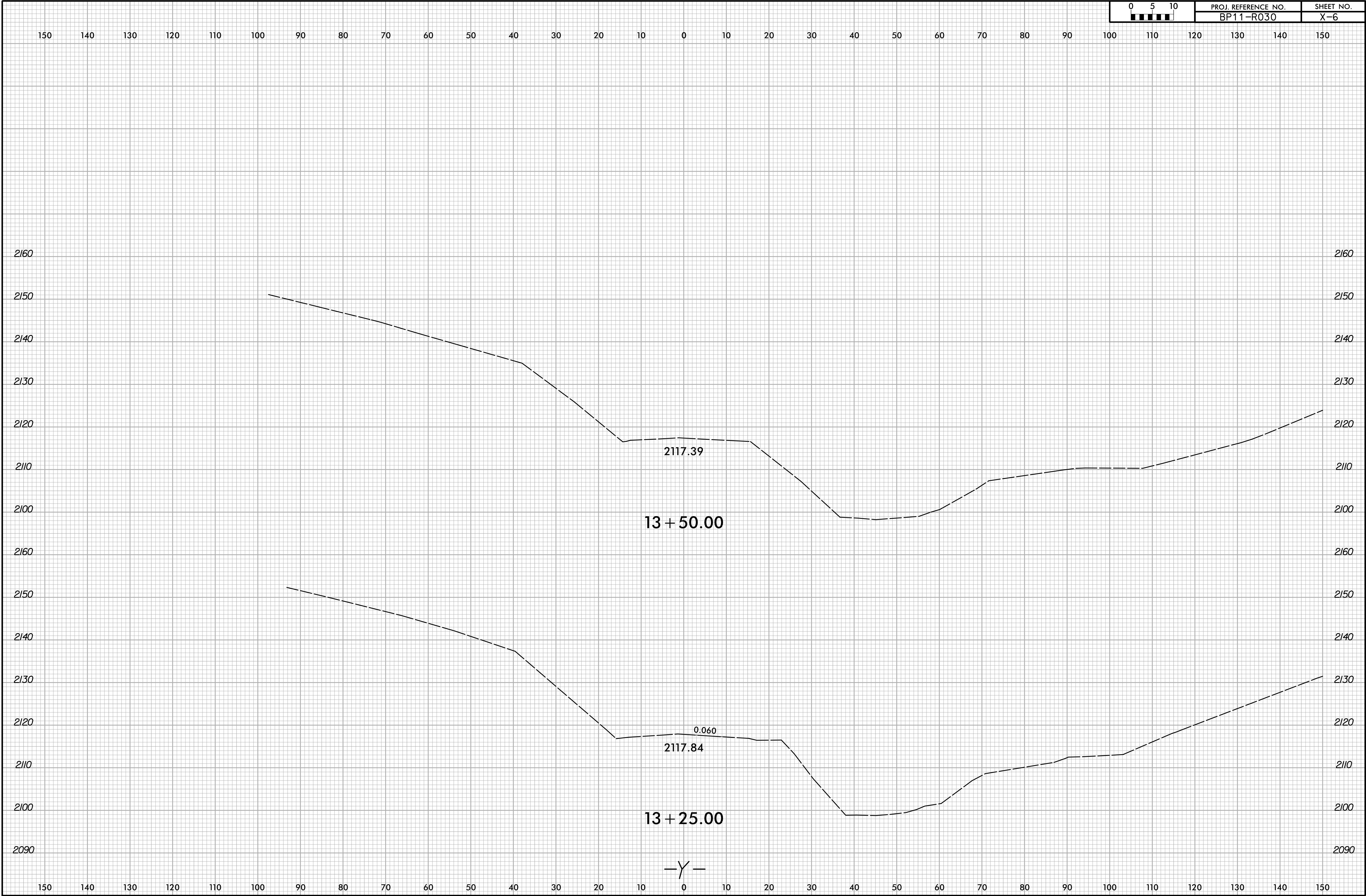
6/23/16

|                 |                     |           |
|-----------------|---------------------|-----------|
| <div>0510</div> | PROJ. REFERENCE NO. | SHEET NO. |
|                 | BP11-R030           | X-5       |

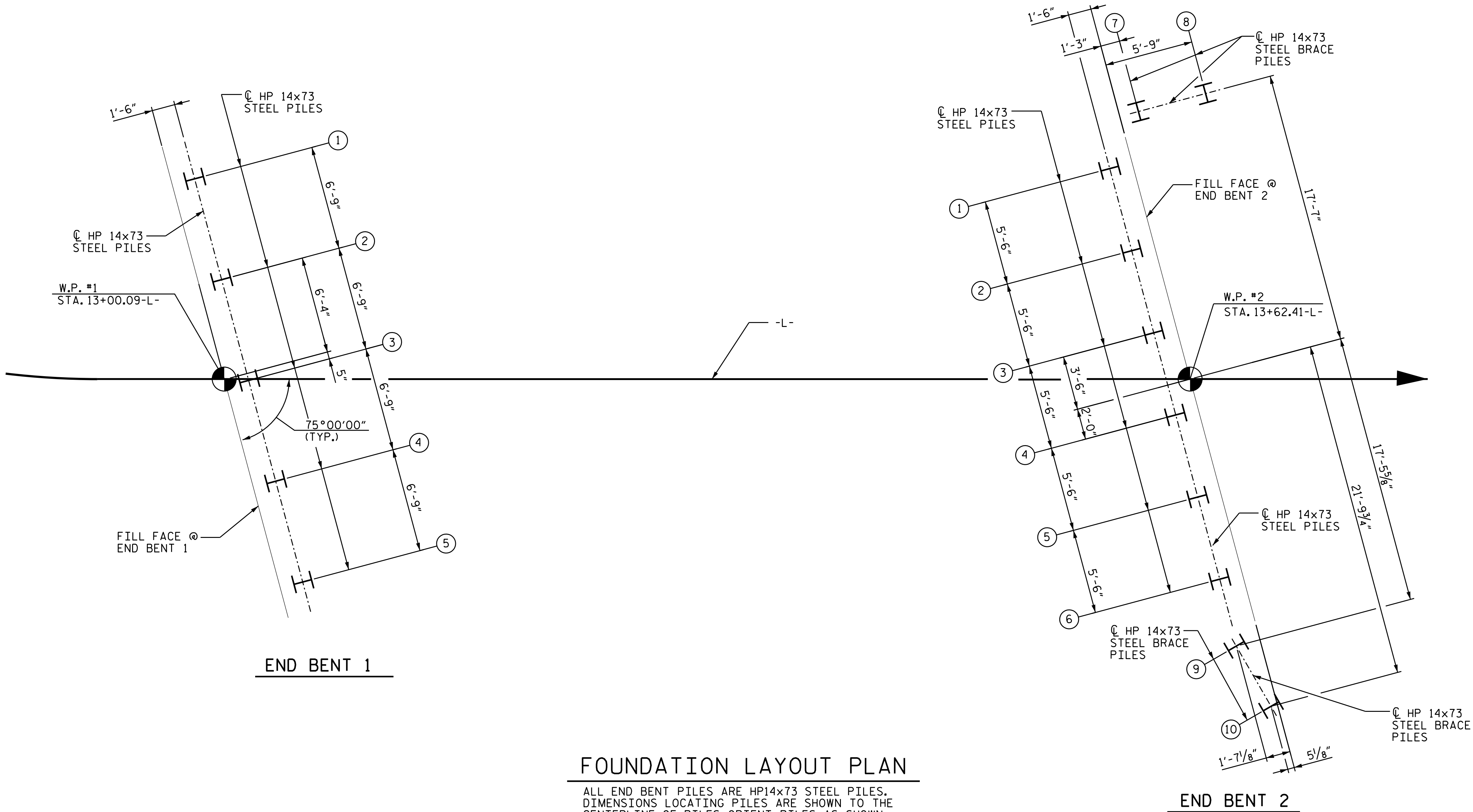


6/23/16

|                 |                     |           |
|-----------------|---------------------|-----------|
| <div>0510</div> | PROJ. REFERENCE NO. | SHEET NO. |
|                 | BP11-R030           | X-6       |







FOUNDATION LAYOUT PLAN

ALL END BENT PILES ARE HP14x73 STEEL PILES. DIMENSIONS LOCATING PILES ARE SHOWN TO THE CENTERLINE OF PILES. ORIENT PILES AS SHOWN.

NOTES

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

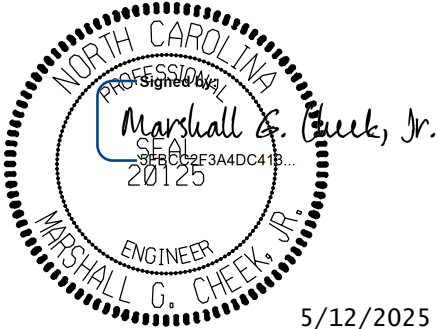
FILL HOLES FOR PILE EXCAVATION AT END BENT 1 AND END BENT 2 WITH CONCRETE.

PROJECT NO. BP11-R030

WILKES COUNTY

STATION: 13+31.25-L

SHEET 2 OF 5



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

GENERAL DRAWING  
FOR BRIDGE OVER NORTH PRONG  
LEWIS FORK CREEK  
ON SR 1363 BETWEEN  
DEAD END AND SR 1362

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS  
201 W. MARION ST STE 200  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-0275

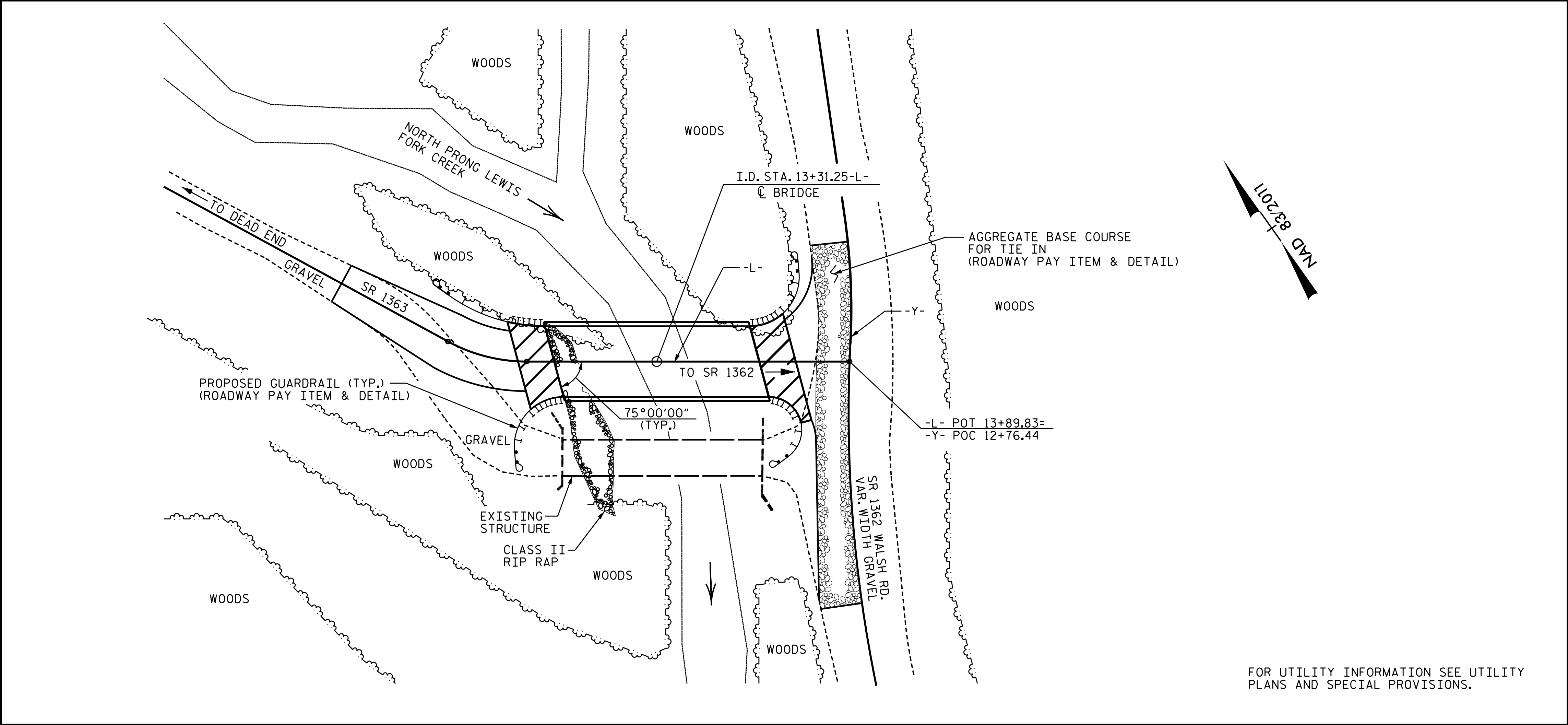
| REVISIONS |     |       |     |     |       |
|-----------|-----|-------|-----|-----|-------|
| NO.       | BY: | DATE: | NO. | BY: | DATE: |
| 1         |     |       | 3   |     |       |
| 2         |     |       | 4   |     |       |

SHEET NO.  
S-2  
TOTAL SHEETS  
23

DRAWN BY : NMW DATE : 6/24  
CHECKED BY : MGC DATE : 3/25



BENCH MARK \*2: PAINT SPOT ON WHEELGUARD; 35.1 FT. RIGHT OF STA. 13+03.1-L-; ELEV.= 2116.72'



FOR UTILITY INFORMATION SEE UTILITY  
PLANS AND SPECIAL PROVISIONS.

# LOCATION SKETCH

---

NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

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

THE EXISTING 1-SPAN STRUCTURE (1 @ 61'-6") CONSISTING OF LOW STEEL TRUSS WITH A TIMBER FLOOR AND A 1/2" ASPHALT WEARING SURFACE AND A CLEAR ROADWAY WIDTH OF 11'-0" AND SUBSTRUCTURE CONSISTING TIMBER CAPS AND TIMBER POST & SILL ABUTMENTS AND LOCATED DOWNSTREAM OF THE PROPOSED BRIDGE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE INTEGRITY OF THE BRIDGE DETERIORATE THIS LOAD LIMIT MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA (SHEET 1 OF 5) SHALL BE EXCAVATED FOR THE DISTANCE OF 30' (LT.) & 90' (RT.) AT END BENT 1. EACH SIDE OF -L- AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION, SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

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 COSTS 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 13+31.25-L-."

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. 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.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES".

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.

ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITIES ON ROADWAY PLANS.

TEMPORARY SHORING WILL BE REQUIRED AS-SHOWN ON THE PLAN VIEW, SHEET 1 OF 5.

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.

THE CONTRACTOR MAY ELECT TO CONSTRUCT A TEMPORARY ACCESS FOR USE IN CONSTRUCTION OF THE PROPOSED BRIDGE. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF OPTIONAL TEMPORARY ACCESS, SEE SPECIAL PROVISIONS.

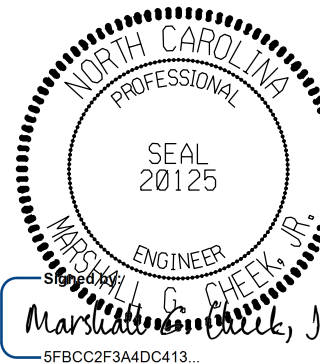
IF THE CONTRACTOR ELECTS TO USE A TEMPORARY ACCESS, UPON REMOVAL OF THE OPTIONAL TEMPORARY ACCESS, THE CLASS II RIP RAP MAY BE PLACED AS CLASS II RIP RAP SLOPE PROTECTION.

PROJECT NO. BP11-R030

WILKES COUNTY

STATION: 13+31.25-L-

SHEET 4 OF 5



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

# GENERAL DRAWING

FOR BRIDGE OVER NORTH PRONG  
LEWIS FORK CREEK  
ON SR 1363 BETWEEN  
DEAD END AND SR 1362

**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

REVISIONS

SHEET NO.

**TGS ENGINEERS**  
201 W. MARION ST STE 200  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-0275

| NO. | BY: | DATE: | NO. | BY: | DATE: |
|-----|-----|-------|-----|-----|-------|
| 1   |     |       | 3   |     |       |
| 2   |     |       | 4   |     |       |

|                       |
|-----------------------|
| S-4                   |
| TOTAL<br>SHEETS<br>23 |

|              |     |        |      |
|--------------|-----|--------|------|
| DRAWN BY :   | NMW | DATE : | 5/24 |
| CHECKED BY : | MGC | DATE : | 3/25 |

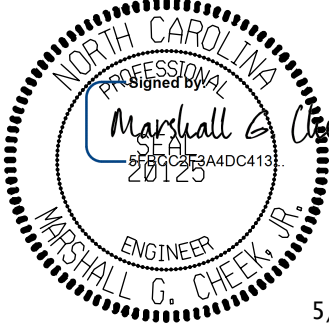
| TOTAL BILL OF MATERIAL |                               |                     |                         |                             |                                   |                  |                       |                   |                      |          |                    |                                 |                  |                         |                      |                                                |          |                                                                    |
|------------------------|-------------------------------|---------------------|-------------------------|-----------------------------|-----------------------------------|------------------|-----------------------|-------------------|----------------------|----------|--------------------|---------------------------------|------------------|-------------------------|----------------------|------------------------------------------------|----------|--------------------------------------------------------------------|
| ITEM                   | REMOVAL OF EXISTING STRUCTURE | ASBESTOS ASSESSMENT | PILE EXCAVATION IN SOIL | PILE EXCAVATION NOT IN SOIL | UNCLASSIFIED STRUCTURE EXCAVATION | CLASS A CONCRETE | BRIDGE APPROACH SLABS | REINFORCING STEEL | HP 14x73 STEEL PILES |          | TWO BAR METAL RAIL | 1'-2" x 2'-9½" CONCRETE PARAPET | RIP RAP CLASS II | GEOTEXTILE FOR DRAINAGE | ELASTOMERIC BEARINGS | 3'-0" x 2'-0" PRESTRESSED CONCRETE CORED SLABS |          | CONSTRUCTION, MAINTENANCE AND REMOVAL OF OPTIONAL TEMPORARY ACCESS |
|                        | LUMP SUM                      | LUMP SUM            | LIN. FT.                | LIN. FT.                    | LUMP SUM                          | C.Y.             | LUMP SUM              | LBS.              | NO.                  | LIN. FT. | LIN. FT.           | LIN. FT.                        | TONS             | S.Y.                    | LUMP SUM             | NO.                                            | LIN. FT. | LUMP SUM                                                           |
| SUPERSTRUCTURE         |                               |                     |                         |                             |                                   |                  |                       |                   |                      |          | 104.37             | 120.00                          |                  |                         |                      | 8                                              | 480.00   |                                                                    |
| END BENT 1             |                               |                     | 27.5                    | 28.0                        | LUMP SUM                          | 36.4             |                       | 3,874             | 5                    | 75       |                    |                                 | 120              | 90                      |                      |                                                |          |                                                                    |
| END BENT 2             |                               |                     | 90.0                    | 49.0                        |                                   | 56.7             |                       | 5,535             | 10                   | 200      |                    |                                 |                  |                         |                      |                                                |          |                                                                    |
| TOTALS                 | LUMP SUM                      | LUMP SUM            | 117.5                   | 77.0                        | LUMP SUM                          | 93.1             | LUMP SUM              | 9,409             | 15                   | 275      | 104.37             | 120.00                          | 120              | 90                      | LUMP SUM             | 8                                              | 480.00   | LUMP SUM                                                           |

PROJECT NO. BP11-R030

WILKES                      COUNTY

STATION: 13+31.25-L-

SHEET 5 OF 5



5/12/2025

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



TGS ENGINEERS  
201 W. MARION ST STE 200  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-0275

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

GENERAL DRAWING  
FOR BRIDGE OVER NORTH PRONG  
LEWIS FORK CREEK  
ON SR 1363 BETWEEN  
DEAD END AND SR 1362

| REVISIONS |     |       |     |     |       | SHEET NO.          |
|-----------|-----|-------|-----|-----|-------|--------------------|
| NO.       | BY: | DATE: | NO. | BY: | DATE: | S-5                |
| 1         |     |       | 3   |     |       | TOTAL SHEETS<br>23 |
| 2         |     |       | 4   |     |       |                    |

| LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS |                                         |                      |                                  |                                   |               |                             |                              |               |      |                    |                                           |                              |               |      |                             |                         |                                           |                              |               |      |                    |                |                                           |  |
|-----------------------------------------------------------------------------------|-----------------------------------------|----------------------|----------------------------------|-----------------------------------|---------------|-----------------------------|------------------------------|---------------|------|--------------------|-------------------------------------------|------------------------------|---------------|------|-----------------------------|-------------------------|-------------------------------------------|------------------------------|---------------|------|--------------------|----------------|-------------------------------------------|--|
| LOAD TYPE                                                                         | 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 |                                           |  |
|                                                                                   |                                         |                      |                                  |                                   |               | LIVE-LOAD<br>FACTORS (γ LL) | MOMENT                       |               |      |                    | SHEAR                                     |                              |               |      | LIVE-LOAD<br>FACTORS (γ LL) | MOMENT                  |                                           |                              |               |      |                    |                |                                           |  |
|                                                                                   |                                         |                      |                                  |                                   |               |                             | DISTRIBUTION<br>FACTORS (DF) | RATING FACTOR | SPAN | GIRDER<br>LOCATION | DISTANCE FROM<br>LEFT END OF<br>SPAN (ft) | DISTRIBUTION<br>FACTORS (DF) | RATING FACTOR | SPAN |                             | GIRDER<br>LOCATION      | DISTANCE FROM<br>LEFT END OF<br>SPAN (ft) | DISTRIBUTION<br>FACTORS (DF) | RATING FACTOR | SPAN | GIRDER<br>LOCATION |                | DISTANCE FROM<br>LEFT END OF<br>SPAN (ft) |  |
| DESIGN<br>LOAD                                                                    | HL-93 (INVENTORY)                       | N/A                  | ⬢1                               | 1.25                              | --            | 1.75                        | 0.280                        | 1.25          | 60'  | EL                 | 29.5                                      | 0.610                        | 1.30          | 60'  | EL                          | 1.6                     | 0.80                                      | 0.280                        | 1.76          | 60'  | EL                 | 29.5           |                                           |  |
|                                                                                   | HL-93 (OPERATING)                       | N/A                  |                                  | 1.62                              | --            | 1.35                        | 0.280                        | 1.62          | 60'  | EL                 | 29.5                                      | 0.610                        | 1.71          | 60'  | EL                          | 1.6                     | N/A                                       | --                           | --            | --   | --                 | --             |                                           |  |
|                                                                                   | HS-20 (INVENTORY)                       | 36.000               | ⬢2                               | 1.58                              | 56.88         | 1.75                        | 0.280                        | 1.58          | 60'  | EL                 | 29.5                                      | 0.610                        | 1.62          | 60'  | EL                          | 1.6                     | 0.80                                      | 0.280                        | 2.23          | 60'  | EL                 | 29.5           |                                           |  |
|                                                                                   | HS-20 (OPERATING)                       | 36.000               |                                  | 2.05                              | 73.80         | 1.35                        | 0.280                        | 2.05          | 60'  | EL                 | 29.5                                      | 0.610                        | 2.13          | 60'  | EL                          | 1.6                     | N/A                                       | --                           | --            | --   | --                 | --             |                                           |  |
| LEGAL<br>LOAD                                                                     | SINGLE VEHICLE<br>(SV)                  | SNSH                 | 13.500                           |                                   | 4.26          | 57.51                       | 1.4                          | 0.280         | 4.26 | 60'                | EL                                        | 29.5                         | 0.610         | 4.94 | 60'                         | EL                      | 1.6                                       | 0.80                         | 0.280         | 4.81 | 60'                | EL             | 29.5                                      |  |
|                                                                                   |                                         | SNGARBS2             | 20.000                           |                                   | 3.26          | 65.20                       | 1.4                          | 0.280         | 3.26 | 60'                | EL                                        | 29.5                         | 0.610         | 3.51 | 60'                         | EL                      | 1.6                                       | 0.80                         | 0.280         | 3.68 | 60'                | EL             | 29.5                                      |  |
|                                                                                   |                                         | SNAGRIS2             | 22.000                           |                                   | 3.13          | 68.86                       | 1.4                          | 0.280         | 3.13 | 60'                | EL                                        | 29.5                         | 0.610         | 3.26 | 60'                         | EL                      | 1.6                                       | 0.80                         | 0.280         | 3.53 | 60'                | EL             | 29.5                                      |  |
|                                                                                   |                                         | SNCOTTS3             | 27.250                           |                                   | 2.12          | 57.77                       | 1.4                          | 0.280         | 2.12 | 60'                | EL                                        | 29.5                         | 0.610         | 2.41 | 60'                         | EL                      | 1.6                                       | 0.80                         | 0.280         | 2.39 | 60'                | EL             | 29.5                                      |  |
|                                                                                   |                                         | SNAGGRS4             | 34.925                           |                                   | 1.81          | 63.21                       | 1.4                          | 0.280         | 1.81 | 60'                | EL                                        | 29.5                         | 0.610         | 2.00 | 60'                         | EL                      | 1.6                                       | 0.80                         | 0.280         | 2.04 | 60'                | EL             | 29.5                                      |  |
|                                                                                   |                                         | SNS5A                | 35.550                           |                                   | 1.77          | 62.92                       | 1.4                          | 0.280         | 1.77 | 60'                | EL                                        | 29.5                         | 0.610         | 2.04 | 60'                         | EL                      | 1.6                                       | 0.80                         | 0.280         | 1.99 | 60'                | EL             | 29.5                                      |  |
|                                                                                   |                                         | SNS6A                | 39.950                           |                                   | 1.63          | 65.12                       | 1.4                          | 0.280         | 1.63 | 60'                | EL                                        | 29.5                         | 0.610         | 1.86 | 60'                         | EL                      | 1.6                                       | 0.80                         | 0.280         | 1.84 | 60'                | EL             | 29.5                                      |  |
|                                                                                   |                                         | SNS7B                | 42.000                           |                                   | 1.56          | 65.52                       | 1.4                          | 0.280         | 1.56 | 60'                | EL                                        | 29.5                         | 0.610         | 1.83 | 60'                         | EL                      | 1.6                                       | 0.80                         | 0.280         | 1.75 | 60'                | EL             | 29.5                                      |  |
|                                                                                   | TRUCK TRACTOR<br>SEMI-TRAILER<br>(TTST) | TNAGRIT3             | 33.000                           |                                   | 2.00          | 66.00                       | 1.4                          | 0.280         | 2.00 | 60'                | EL                                        | 29.5                         | 0.610         | 2.22 | 60'                         | EL                      | 1.6                                       | 0.80                         | 0.280         | 2.25 | 60'                | EL             | 29.5                                      |  |
|                                                                                   |                                         | TNT4A                | 33.075                           |                                   | 2.01          | 66.48                       | 1.4                          | 0.280         | 2.01 | 60'                | EL                                        | 29.5                         | 0.610         | 2.16 | 60'                         | EL                      | 1.6                                       | 0.80                         | 0.280         | 2.27 | 60'                | EL             | 29.5                                      |  |
|                                                                                   |                                         | TNT6A                | 41.600                           |                                   | 1.66          | 69.06                       | 1.4                          | 0.280         | 1.66 | 60'                | EL                                        | 29.5                         | 0.610         | 1.98 | 60'                         | EL                      | 1.6                                       | 0.80                         | 0.280         | 1.87 | 60'                | EL             | 29.5                                      |  |
|                                                                                   |                                         | TNT7A                | 42.000                           |                                   | 1.67          | 70.14                       | 1.4                          | 0.280         | 1.67 | 60'                | EL                                        | 29.5                         | 0.610         | 1.91 | 60'                         | EL                      | 1.6                                       | 0.80                         | 0.280         | 1.89 | 60'                | EL             | 29.5                                      |  |
|                                                                                   |                                         | TNT7B                | 42.000                           |                                   | 1.75          | 73.50                       | 1.4                          | 0.280         | 1.75 | 60'                | EL                                        | 29.5                         | 0.610         | 1.78 | 60'                         | EL                      | 1.6                                       | 0.80                         | 0.280         | 1.97 | 60'                | EL             | 29.5                                      |  |
|                                                                                   |                                         | TNAGRIT4             | 43.000                           |                                   | 1.65          | 70.95                       | 1.4                          | 0.280         | 1.65 | 60'                | EL                                        | 29.5                         | 0.610         | 1.72 | 60'                         | EL                      | 1.6                                       | 0.80                         | 0.280         | 1.86 | 60'                | EL             | 29.5                                      |  |
|                                                                                   |                                         | TNAGT5A              | 45.000                           |                                   | 1.55          | 69.75                       | 1.4                          | 0.280         | 1.55 | 60'                | EL                                        | 29.5                         | 0.610         | 1.72 | 60'                         | EL                      | 1.6                                       | 0.80                         | 0.280         | 1.75 | 60'                | EL             | 29.5                                      |  |
|                                                                                   |                                         | TNAGT5B              | 45.000                           | ⬢3                                | 1.53          | 68.85                       | 1.4                          | 0.280         | 1.53 | 60'                | EL                                        | 29.5                         | 0.610         | 1.63 | 60'                         | EL                      | 1.6                                       | 0.80                         | 0.280         | 1.72 | 60'                | EL             | 29.5                                      |  |
| EMERGENCY<br>VEHICLE (EV)                                                         | EV2                                     | 28.750               |                                  | 2.32                              | 66.70         | 1.3                         | 0.280                        | 2.32          | 60'  | EL                 | 29.5                                      | 0.610                        | 2.43          | 60'  | EL                          | 1.6                     | 0.80                                      | 0.280                        | 2.61          | 60'  | EL                 | 29.5           |                                           |  |
|                                                                                   | EV3                                     | 43.000               | ⬢4                               | 1.51                              | 64.93         | 1.3                         | 0.280                        | 1.51          | 60'  | EL                 | 29.5                                      | 0.610                        | 1.60          | 60'  | EL                          | 1.6                     | 0.80                                      | 0.280                        | 1.70          | 60'  | EL                 | 29.5           |                                           |  |

LOAD FACTORS:

| DESIGN<br>LOAD<br>RATING<br>FACTORS | LIMIT STATE | γDC  | γDW  |
|-------------------------------------|-------------|------|------|
|                                     | STRENGTH I  | 1.25 | 1.50 |
|                                     | SERVICE III | 1.00 | 1.00 |

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.

COMMENTS:

1.
2.
3.
4.

⬡#

CONTROLLING LOAD RATING

⬡1

DESIGN LOAD RATING (HL-93)

⬡2

DESIGN LOAD RATING (HS-20)

⬡3

LEGAL LOAD RATING \*\*

⬡4

EMERGENCY VEHICLE LOAD RATING \*\*

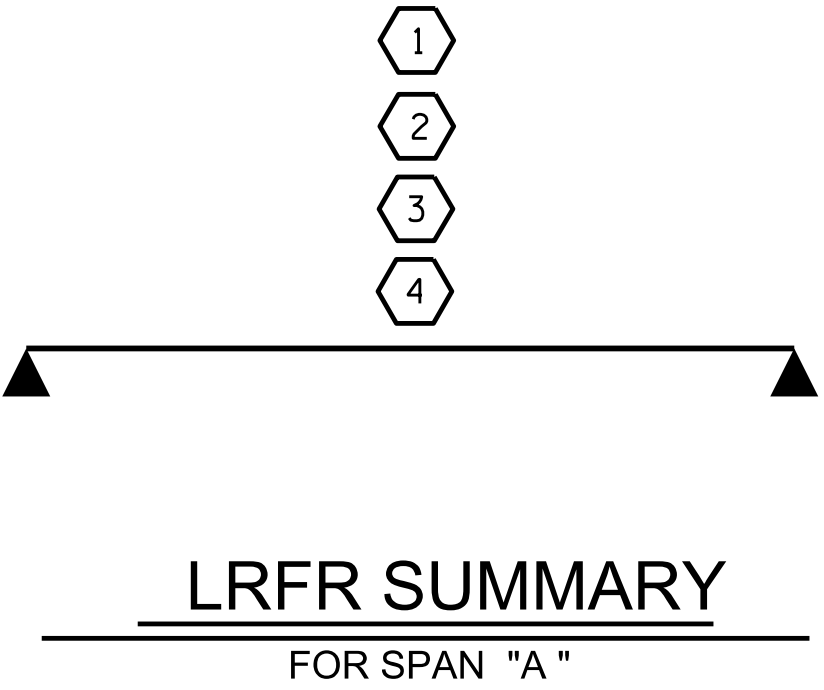
\*\* SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER

EL - EXTERIOR LEFT GIRDER

ER- EXTERIOR RIGHT GIRDER



PROJECT NO. BP11-R030

WILKES COUNTY

STATION: 13+31.25-L -

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

STANDARD

LRFR SUMMARY FOR

60' CORED SLAB UNIT

75° SKEW

(NON-INTERSTATE TRAFFIC)

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS

201 W. MARION ST STE 200

SHELBY, NC 28150

PH (704) 476-0003

CORP. LICENSE NO.: C-0275

NO. BY: DATE: NO. BY: DATE:

1

3

2

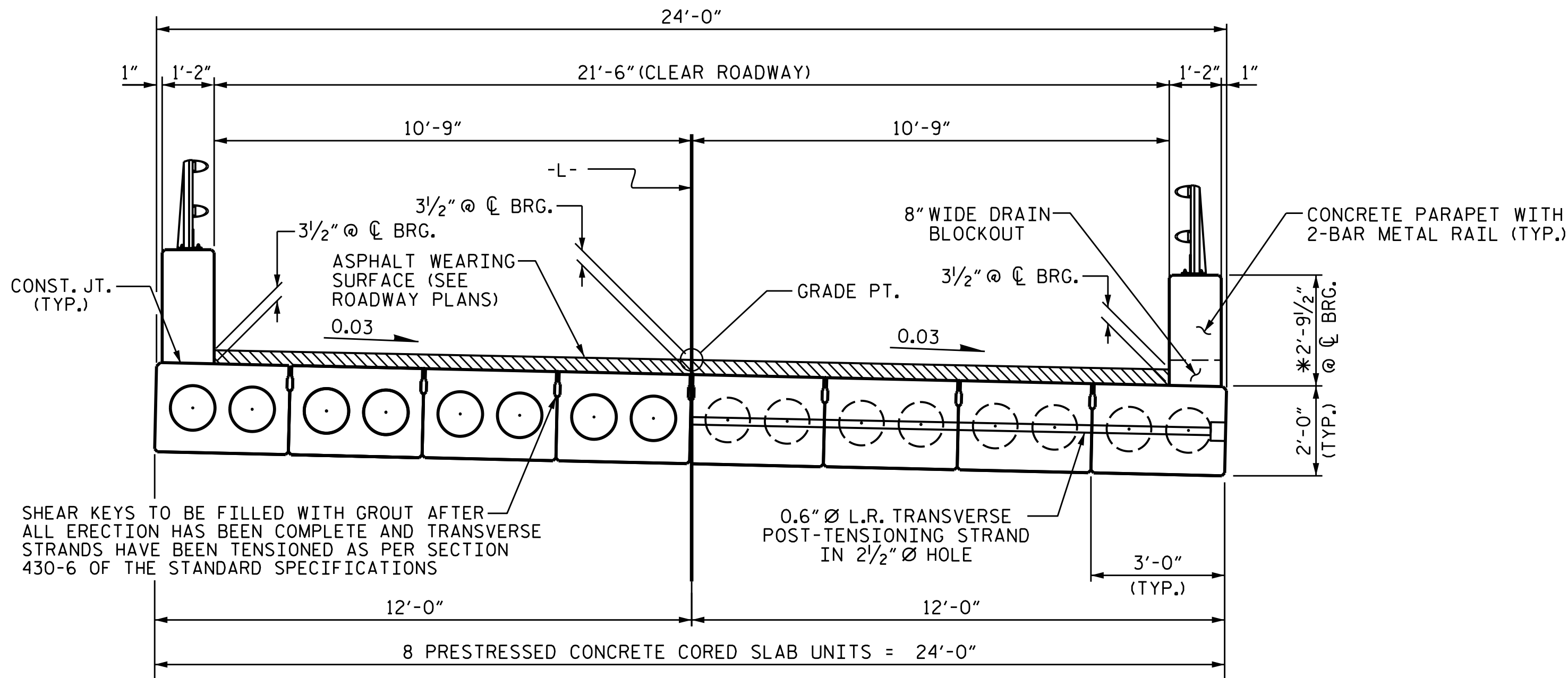
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SHEET NO.

S-6

TOTAL SHEETS

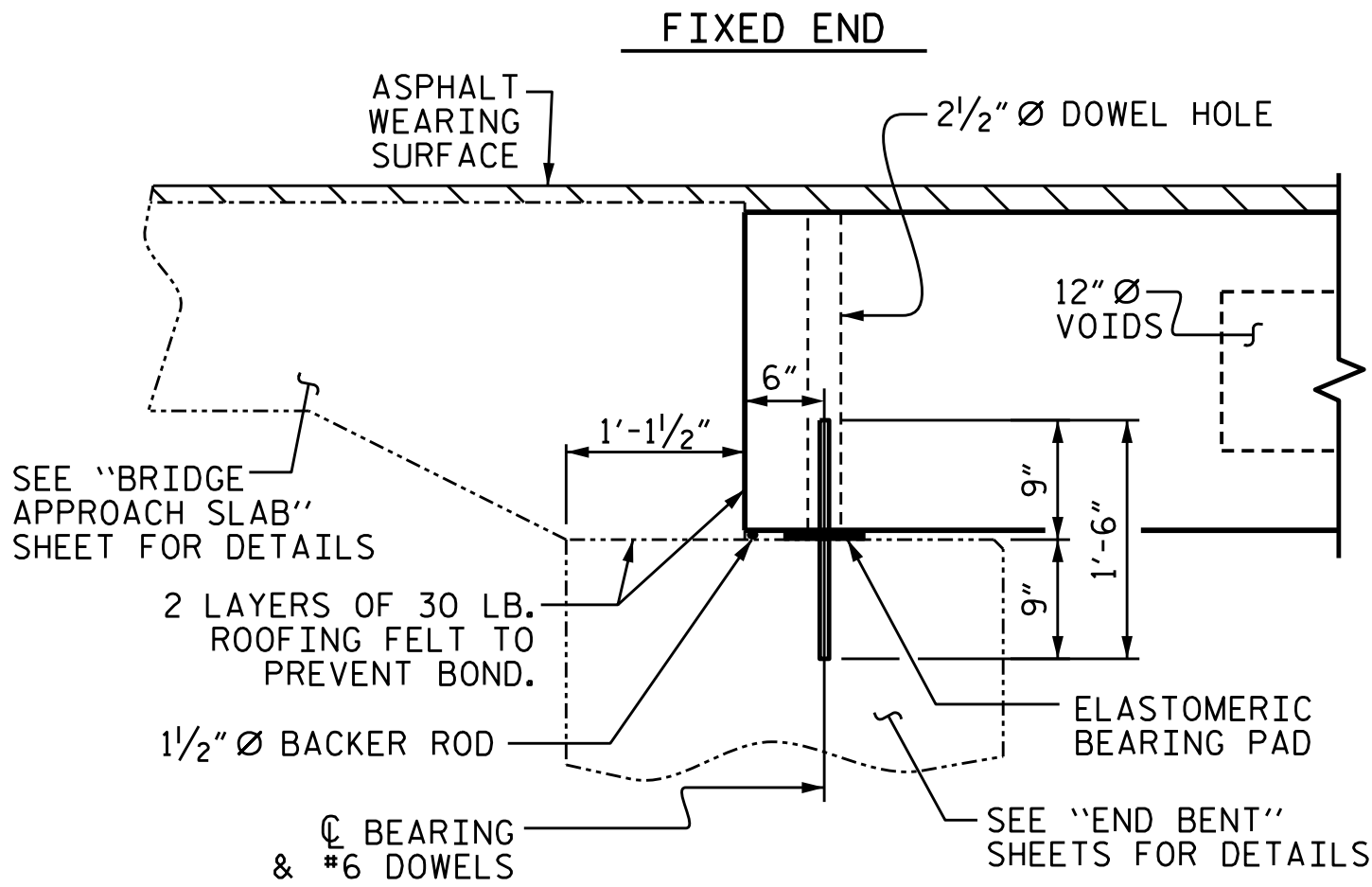
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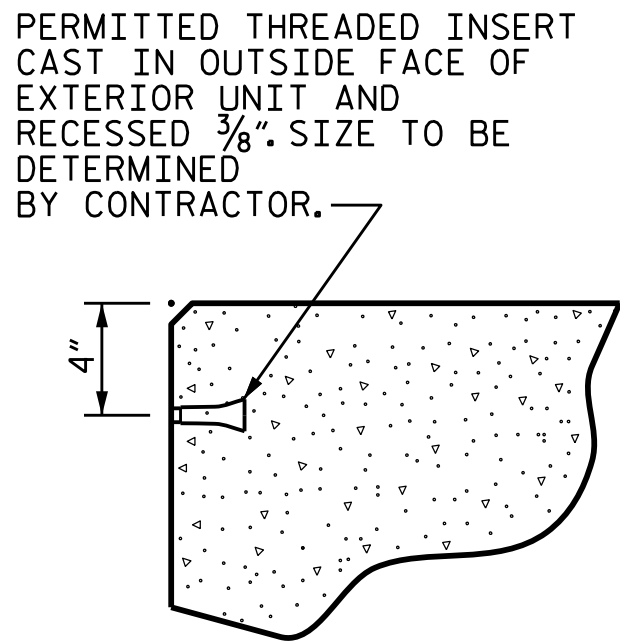
HALF SECTION THROUGH VOIDS  
HALF SECTION AT INTERMEDIATE DIAPHRAGMS

TYPICAL SECTION

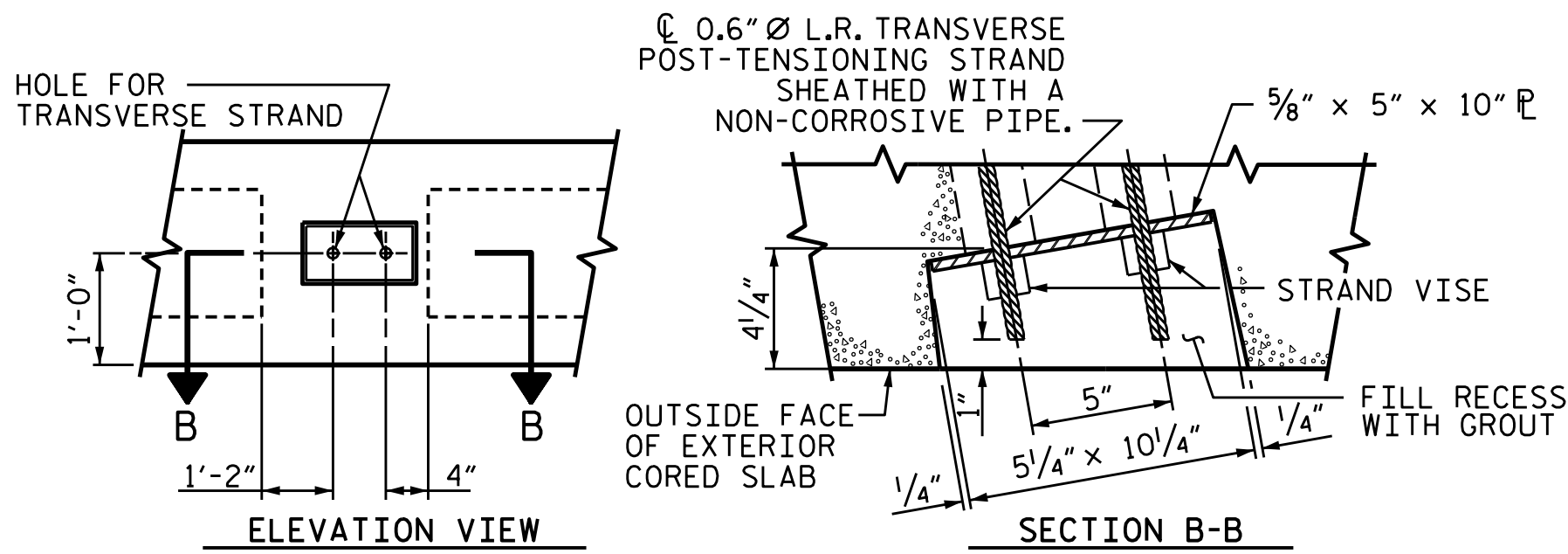
\* - THE MAXIMUM PARAPET HEIGHT AND ASPHALT THICKNESS IS SHOWN. THE HEIGHT OF THE PARAPET AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE PARAPET FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND ASPHALT THICKNESS, SEE THE "PARAPET SECTION FOR THE TWO BAR METAL RAIL" DETAIL.



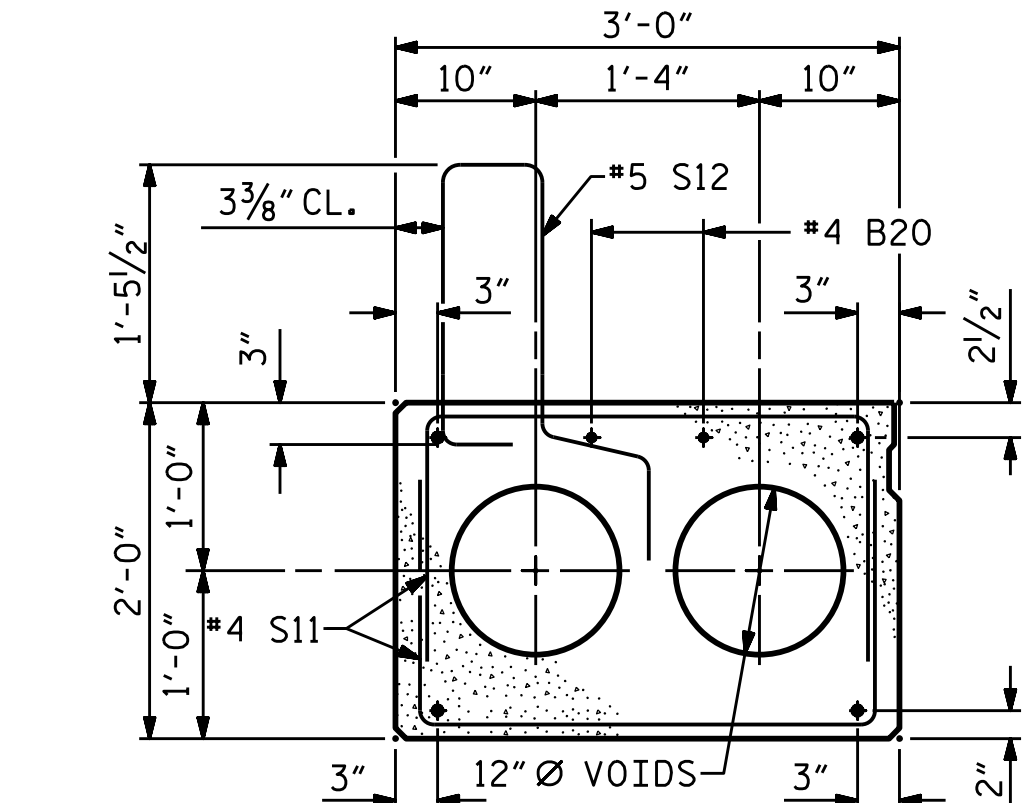
SECTION AT END BENT



THREADED INSERT DETAIL

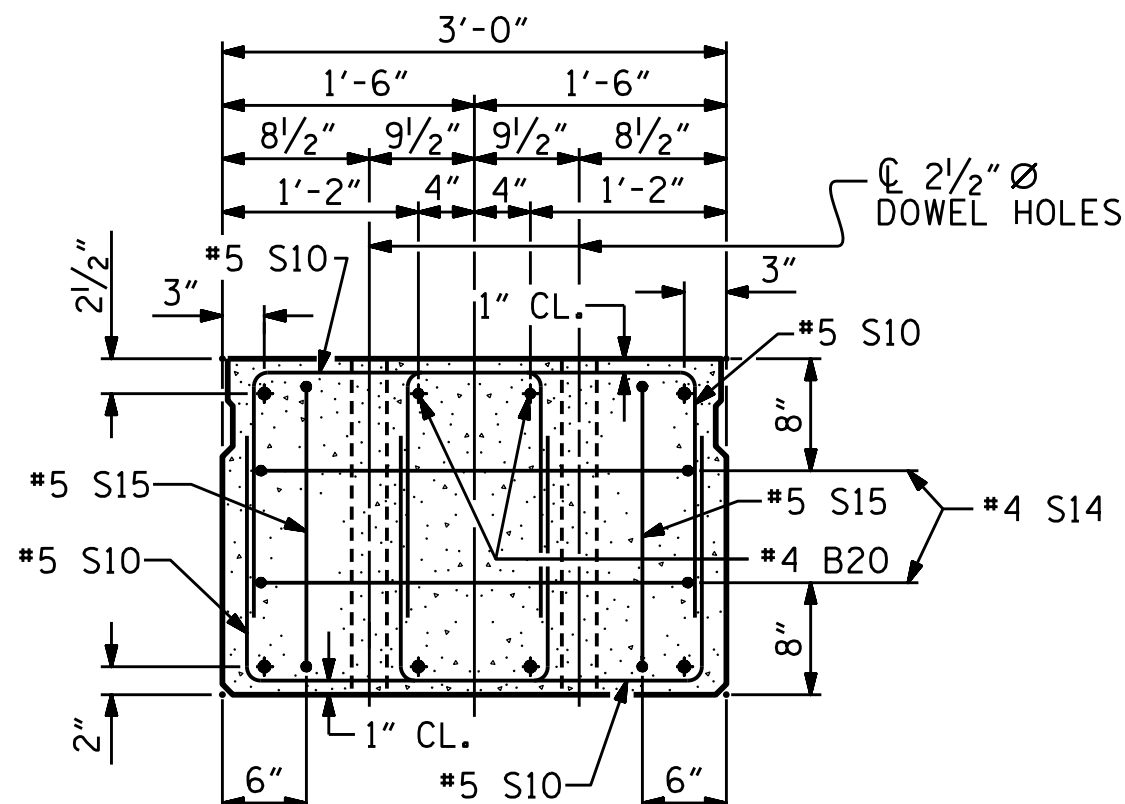


GRAUTED RECESS AT END OF POST-TENSIONED STRAND-CORED SLABS



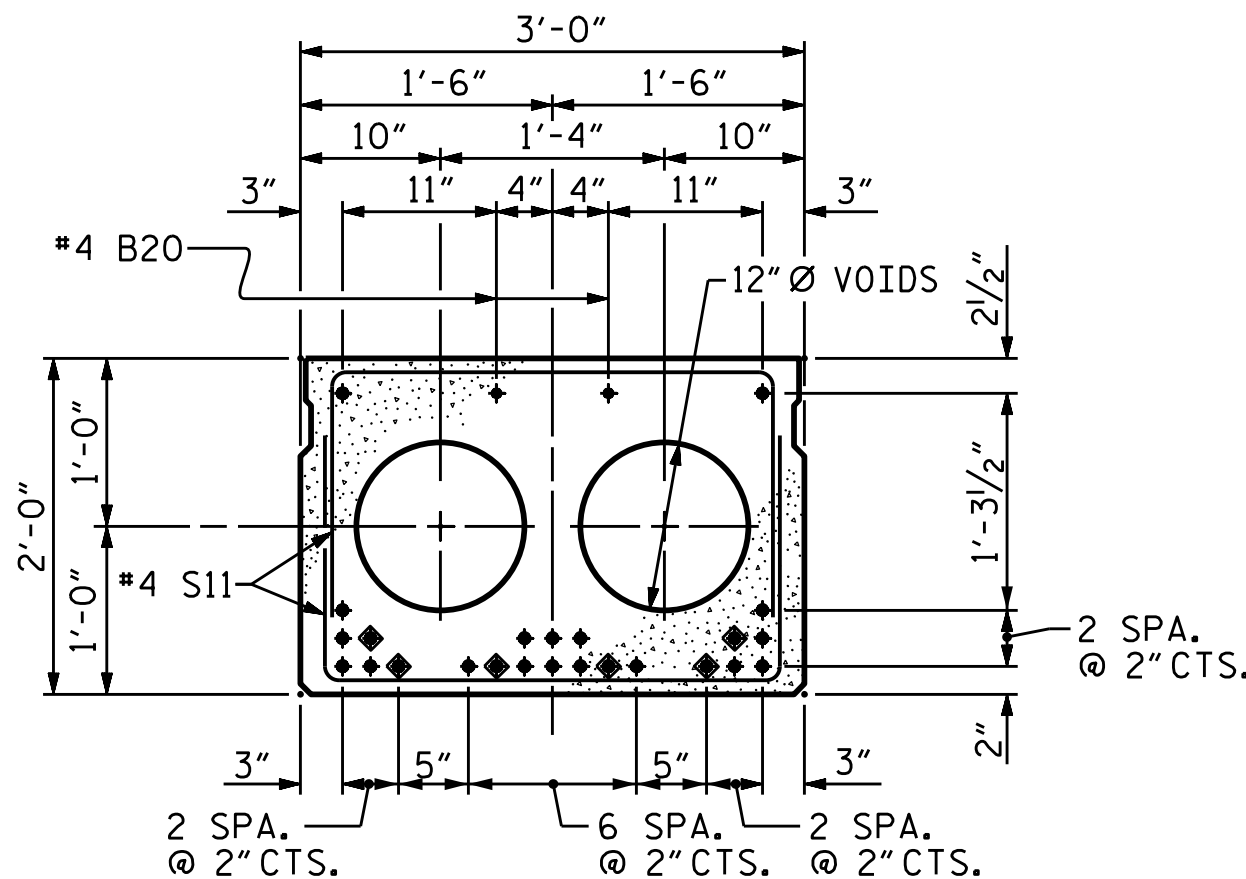
EXTERIOR SLAB SECTION

(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



END ELEVATION

SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.

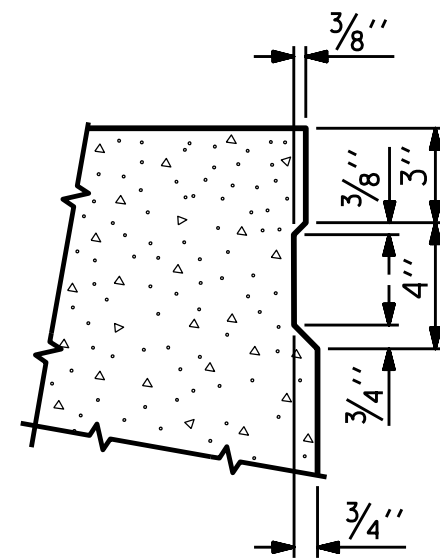


INTERIOR SLAB SECTION (60' UNIT)  
(24 STRANDS REQUIRED)

0.6" Ø LOW RELAXATION STRAND LAYOUT

◆ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 12'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND



SHEAR KEY DETAIL

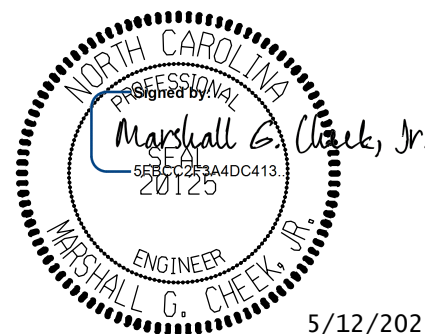
NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.

PROJECT NO. BP11-R030

WILKES COUNTY

STATION: 13+31.25-L-

SHEET 1 OF 3



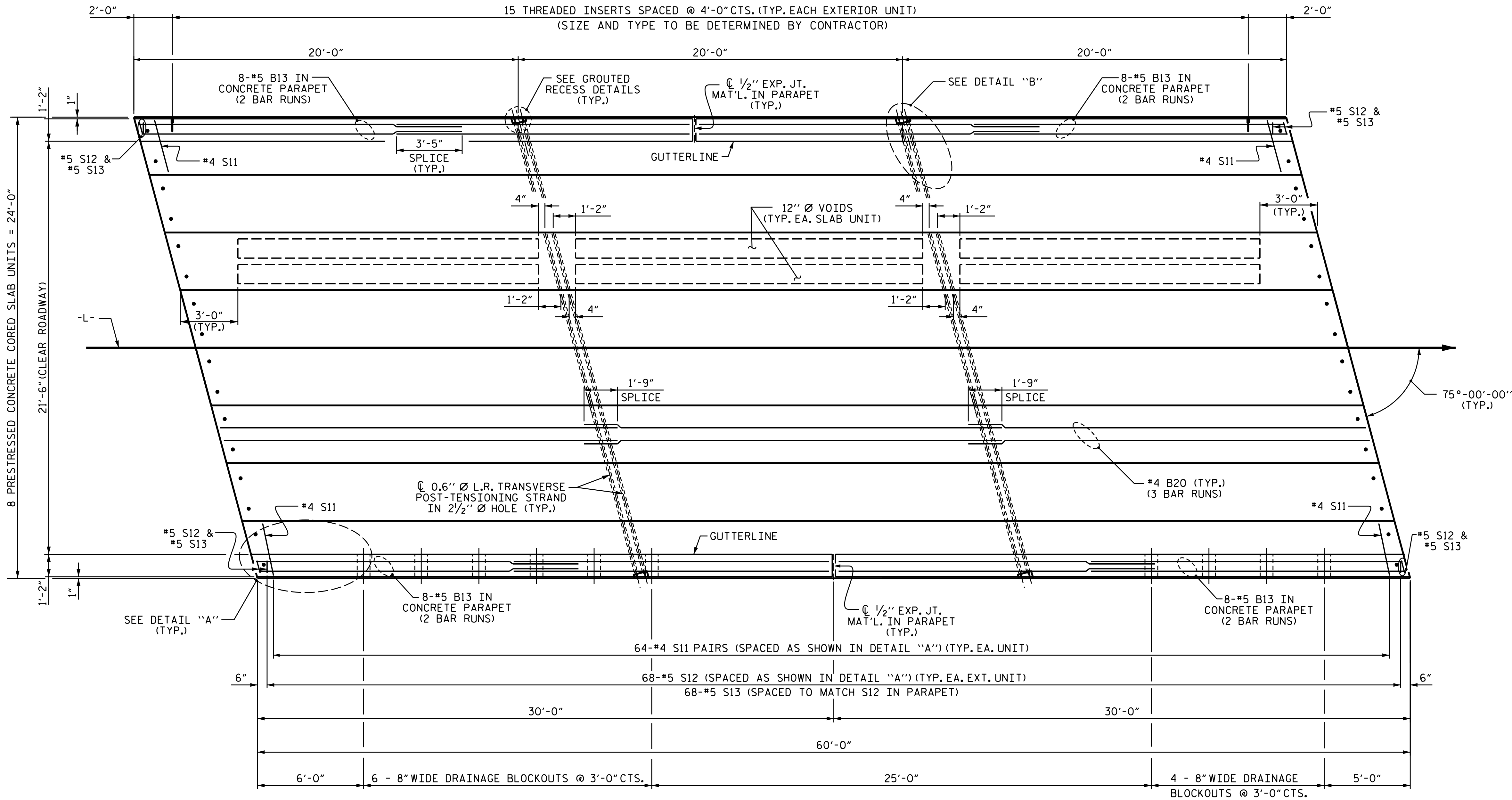
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

3'-0" X 2'-0"  
PRESTRESSED CONCRETE  
CORED SLAB UNIT

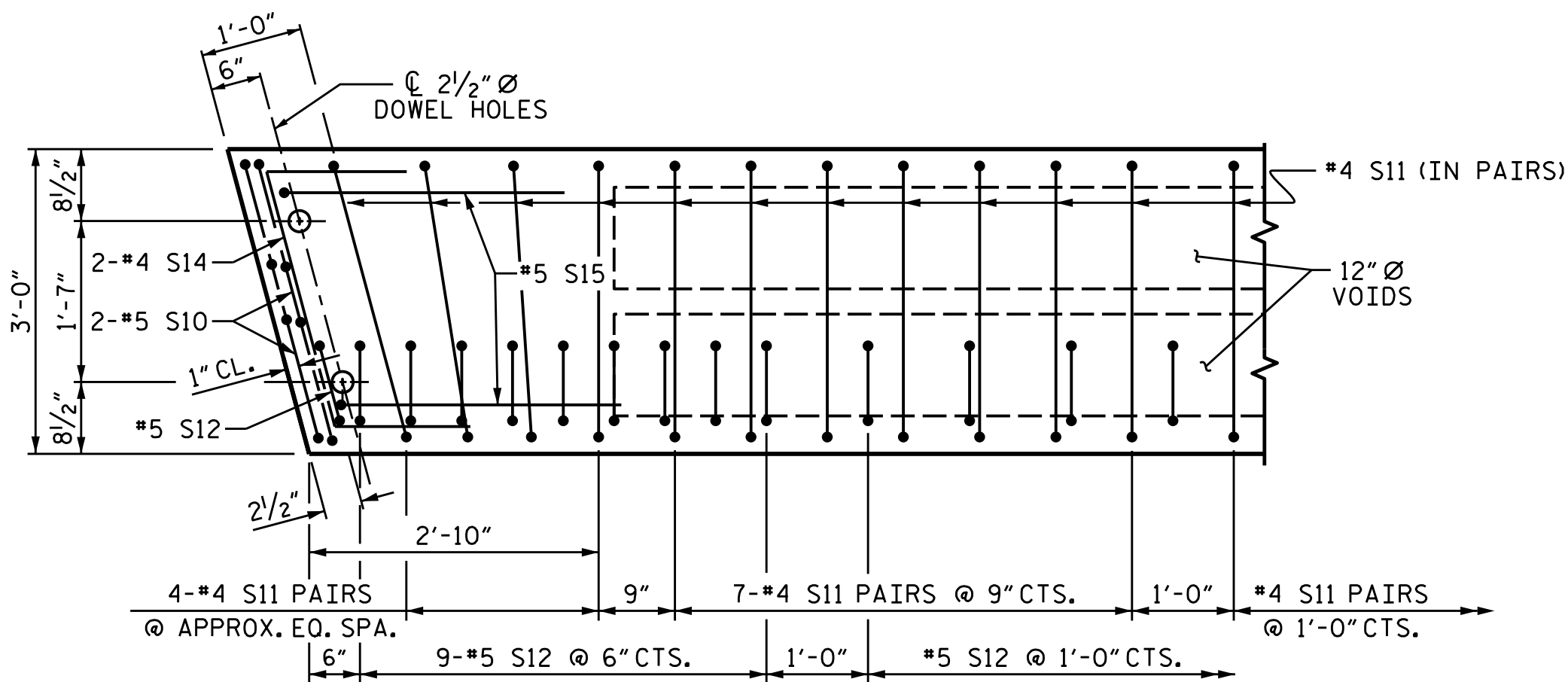
DRAWN BY : NMW DATE : 6/24  
CHECKED BY : MGC DATE : 8/24  
DESIGN ENGINEER OF RECORD : STM DATE : 4/25

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED  
TGS ENGINEERS  
201 W. MARION ST STE 200  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-0275

| REVISIONS |    |      |     |    |      | SHEET NO.       |
|-----------|----|------|-----|----|------|-----------------|
| NO.       | BY | DATE | NO. | BY | DATE |                 |
| 1         |    |      | 3   |    |      | S-7             |
| 2         |    |      | 4   |    |      | TOTAL SHEETS 23 |

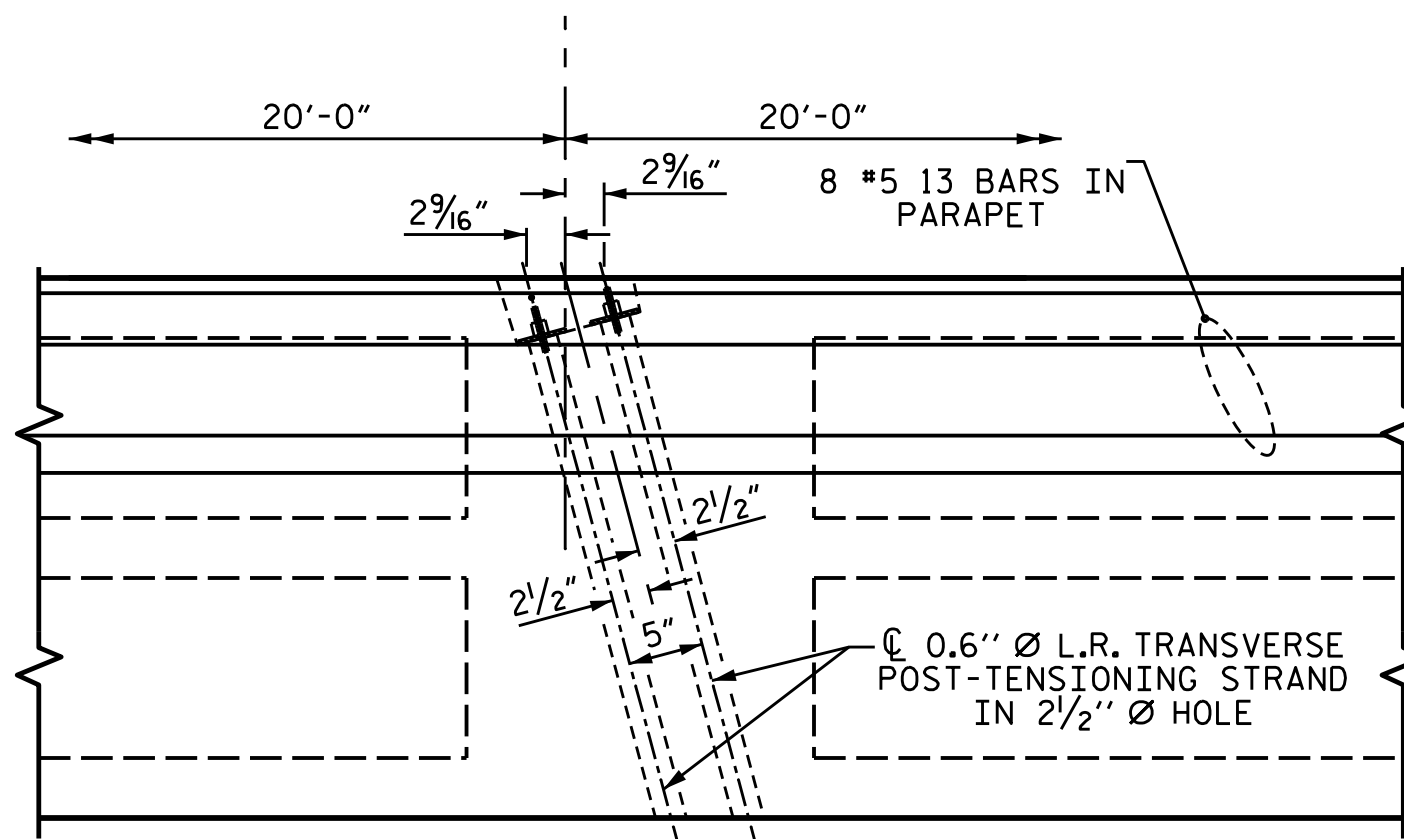


PLAN OF UNIT



DETAIL "A"

(SIMILAR EACH END OF UNIT)  
NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S12 BARS.



DETAIL "B"

#4 S11 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO GROUDED RECESS AND 2 1/2" Ø TRANSVERSE POST-TENSIONING STRAND HOLES

PROJECT NO. BP11-R030

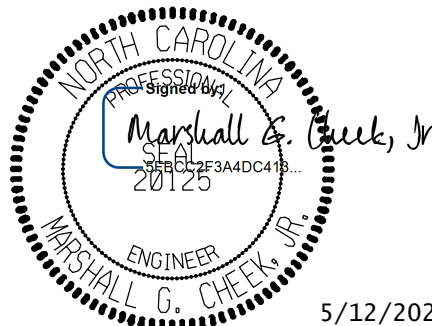
WILKES COUNTY

STATION: 13+31.25-L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

PLAN OF 60' UNIT  
21'-6" CLEAR ROADWAY  
75° SKEW

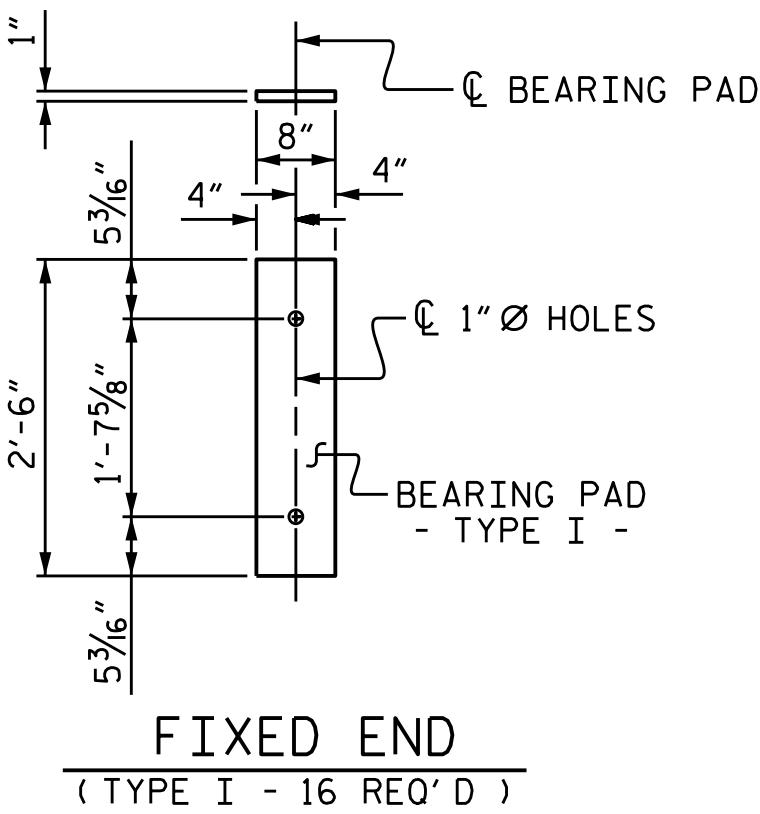


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UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS  
201 W. MARION ST STE 200  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-0275

| REVISIONS |     |       |     |     |       | SHEET NO.       |
|-----------|-----|-------|-----|-----|-------|-----------------|
| NO.       | BY: | DATE: | NO. | BY: | DATE: |                 |
| 1         |     |       | 3   |     |       | S-8             |
| 2         |     |       | 4   |     |       | TOTAL SHEETS 23 |

DRAWN BY : NMW DATE : 6/24  
CHECKED BY : MGC DATE : 8/24  
DESIGN ENGINEER OF RECORD : STM DATE : 4/25



## ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

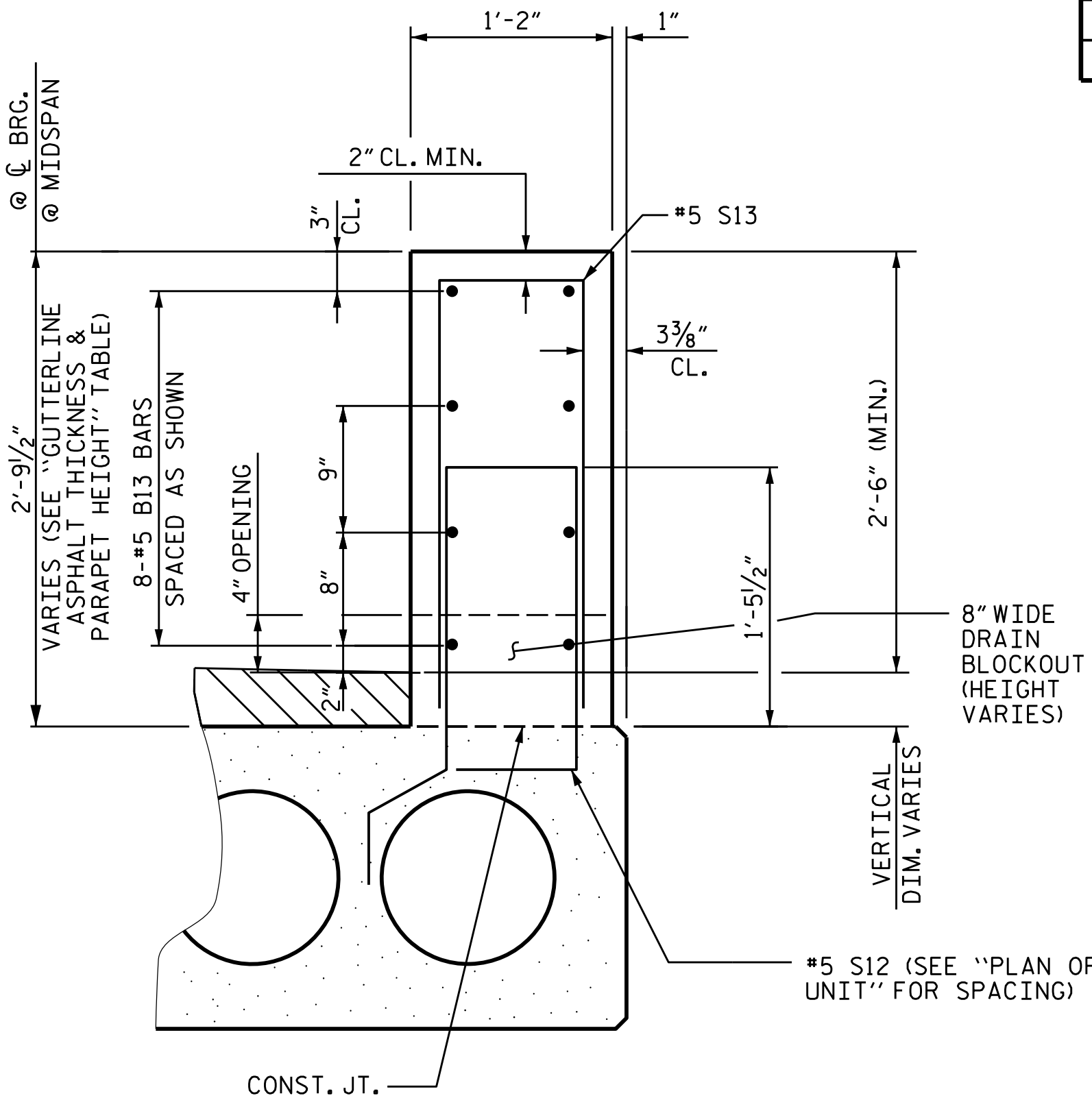
| BILL OF MATERIAL FOR ONE 60' CORED SLAB UNIT |        |      |      |               |        |               |        |
|----------------------------------------------|--------|------|------|---------------|--------|---------------|--------|
|                                              |        |      |      | EXTERIOR UNIT |        | INTERIOR UNIT |        |
| BAR                                          | NUMBER | SIZE | TYPE | LENGTH        | WEIGHT | LENGTH        | WEIGHT |
| B20                                          | 6      | #4   | STR  | 21'-2"        | 85     | 21'-2"        | 85     |
| S10                                          | 8      | #5   | 3    | 4'-10"        | 40     | 4'-10"        | 40     |
| S11                                          | 128    | #4   | 3    | 5'-10"        | 499    | 5'-10"        | 499    |
| *S12                                         | 70     | #5   | 1    | 5'-10"        | 426    |               |        |
| S14                                          | 4      | #4   | 4    | 5'-8"         | 15     | 5'-8"         | 15     |
| S15                                          | 4      | #5   | 3    | 7'-1"         | 30     | 7'-1"         | 30     |
|                                              |        |      |      |               |        |               |        |
| REINFORCING STEEL                            |        |      |      | LBS.          | 669    |               | 669    |
| * EPOXY COATED REINFORCING STEEL             |        |      |      | LBS.          | 426    |               |        |
| 6000 P.S.I. CONCRETE                         |        |      |      | CU. YDS.      | 10.4   |               | 10.3   |
|                                              |        |      |      |               |        |               |        |
| 0.6" Ø L.R. STRANDS                          |        |      |      | No.           | 24     |               | 24     |

## CORED SLABS REQUIRED

|               | NUMBER | LENGTH | TOTAL LENGTH |
|---------------|--------|--------|--------------|
| 60' UNIT      |        |        |              |
| EXTERIOR C.S. | 2      | 60'-0" | 120'-0"      |
| INTERIOR C.S. | 6      | 60'-0" | 360'-0"      |
| TOTAL         | 8      |        | 480'-0"      |

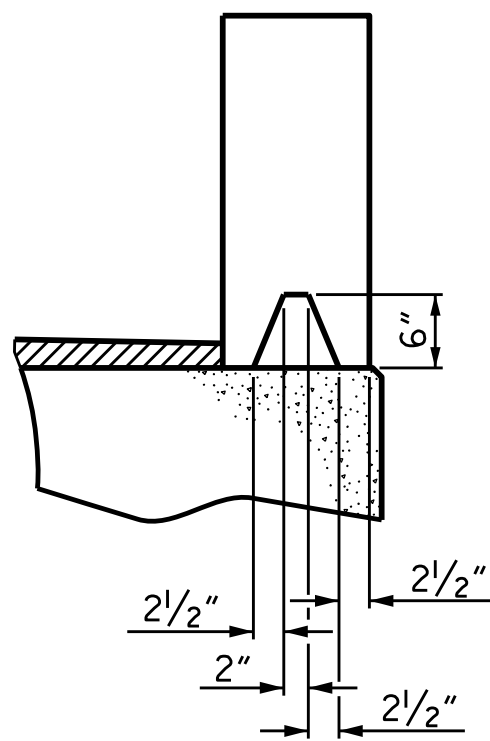
## GUTTERLINE ASPHALT THICKNESS & PARAPET HEIGHT

|           | ASPHALT OVERLAY THICKNESS @ MID-SPAN | PARAPET HEIGHT @ MID-SPAN |
|-----------|--------------------------------------|---------------------------|
| 60' UNITS | 2 1/8"                               | 2'-8 1/8"                 |



## PARAPET SECTION FOR TWO BAR METAL RAIL

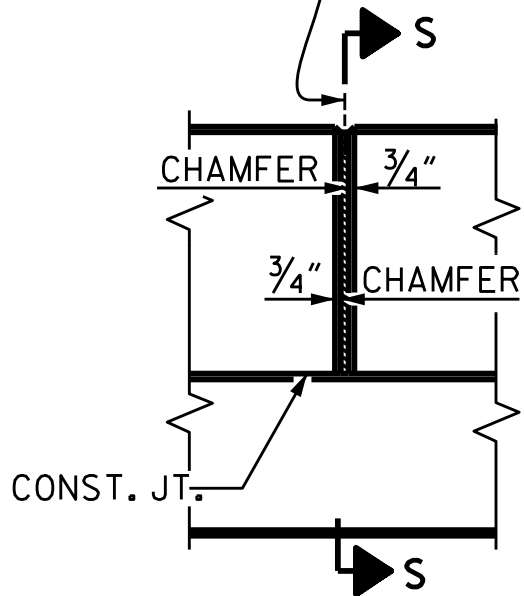
QUANTITIES FOR THE #5 S13 AND #5 B13 BARS ARE SHOWN IN THE END POST BILL OF MATERIAL.



## SECTION S-S

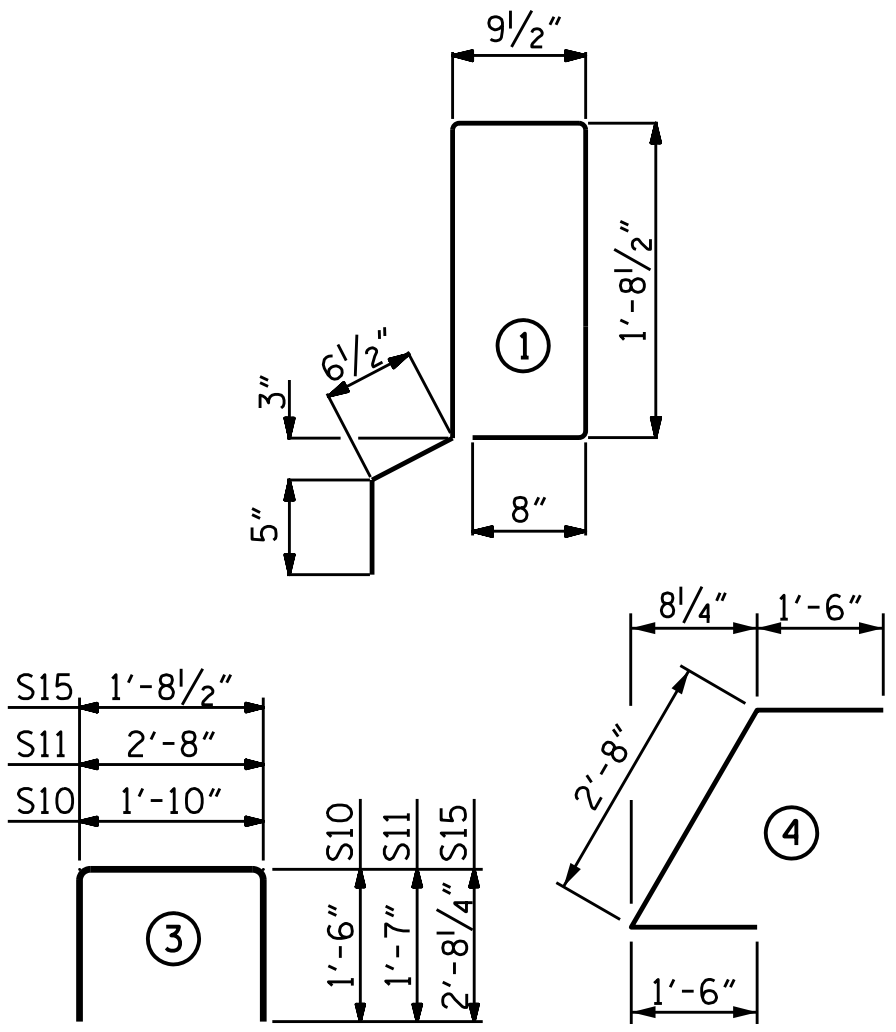
AT DAM IN OPEN JOINT  
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)

CL 1/2" EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS.  
(NOTE: OMIT EXP. JT. MAT'L WHEN SLIP FORM IS USED)



## ELEVATION AT EXPANSION JOINTS

## BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

## DEAD LOAD DEFLECTION AND CAMBER

|                                            | 3'-0" x 2'-0"      |
|--------------------------------------------|--------------------|
| 60' CORED SLAB UNIT                        | 0.6" Ø L.R. STRAND |
| CAMBER (SLAB ALONE IN PLACE)               | 1 3/4" ↑           |
| DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD** | 3/8" ↓             |
| FINAL CAMBER                               | 1 3/8" ↑           |

\*\* INCLUDES FUTURE WEARING SURFACE

## NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE BACKER RODS SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, AN INTERNAL HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. AT LEAST SIX WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN THE REQUIRED STRENGTH SHOWN IN THE "CONCRETE RELEASE STRENGTH" TABLE.

ALL REINFORCING STEEL IN THE CONCRETE PARAPET SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

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

FLAME CUTTING OF THE TRANSVERSE POST-TENSIONING STRAND IS NOT ALLOWED.

MAINTAIN A SYMMETRIC TENSION FORCE BETWEEN EACH PAIR OF TRANSVERSE POST TENSIONING STRANDS IN THE DIAPHRAGM.

THE #4 S11 STIRRUPS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO THE GROUTED RECESS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE PERMITTED THREADED INSERTS ARE DETAILED AS AN OPTION FOR THE CONTRACTOR TO ATTACH FALSEWORK AND FORMWORK DURING CONSTRUCTION.

THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4'-0" CENTERS AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

THE PERMITTED THREADED INSERTS SHALL BE GROUTED BY THE CONTRACTOR IMMEDIATELY FOLLOWING REMOVAL OF THE FALSEWORK.

THE COST OF THE PERMITTED THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.

THE DRAIN OPENING AT THE GUTTERLINE SHALL BE 4" x 8". THE HEIGHT OF THE BLOCKOUT IN THE PARAPET SHALL EXTEND FROM THE TOP OF THE CORED SLAB UNIT TO THE TOP OF THE DRAIN OPENING.

APPLY EPOXY PROTECTIVE COATING TO EXTERIOR FACE OF THE EXTERIOR CORED SLAB UNITS THAT REQUIRE DRAINS IN THE PARAPET.

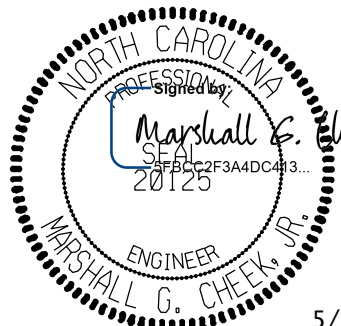
THE BOTTOM TWO #5 B13 BARS IN THE PARAPET MAY BE FIELD CUT TO AVOID DRAINS.

PROJECT NO. BP11-R030

WILKES COUNTY

STATION: 13+31.25-L-

SHEET 3 OF 3



5/12/2025

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

3'-0" X 2'-0"  
PRESTRESSED CONCRETE  
CORED SLAB UNIT

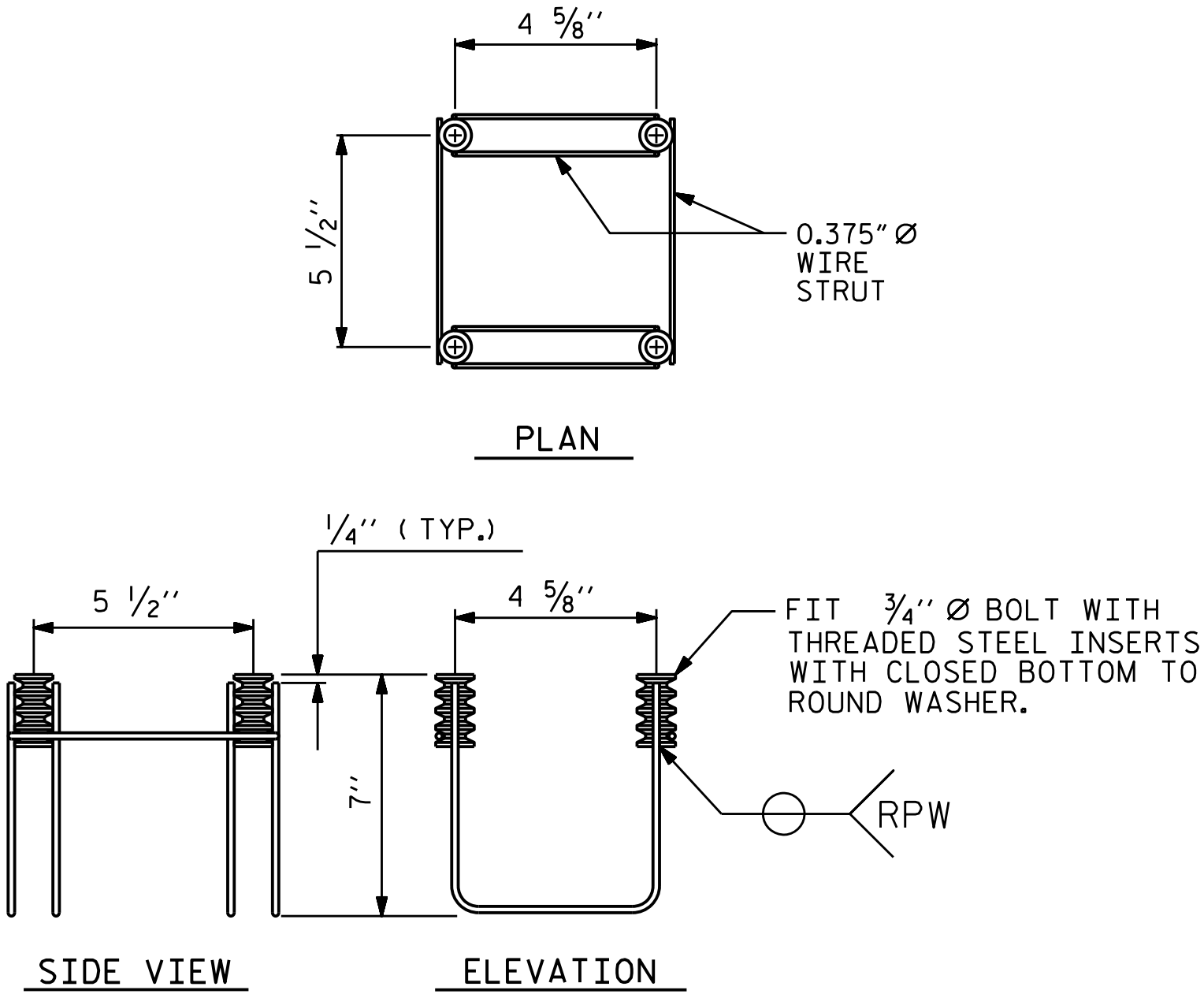
DOCUMENT NOT CONSIDERED FINAL  
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TGS ENGINEERS  
201 W. MARION ST STE 200  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-0275

| REVISIONS |     |       |     |     |       | SHEET NO.       |
|-----------|-----|-------|-----|-----|-------|-----------------|
| NO.       | BY: | DATE: | NO. | BY: | DATE: |                 |
| 1         |     |       | 3   |     |       | S-9             |
| 2         |     |       | 4   |     |       | TOTAL SHEETS 23 |

DRAWN BY : NMW DATE : 6/24  
CHECKED BY : MGC DATE : 8/24  
DESIGN ENGINEER OF RECORD : STM DATE : 4/25





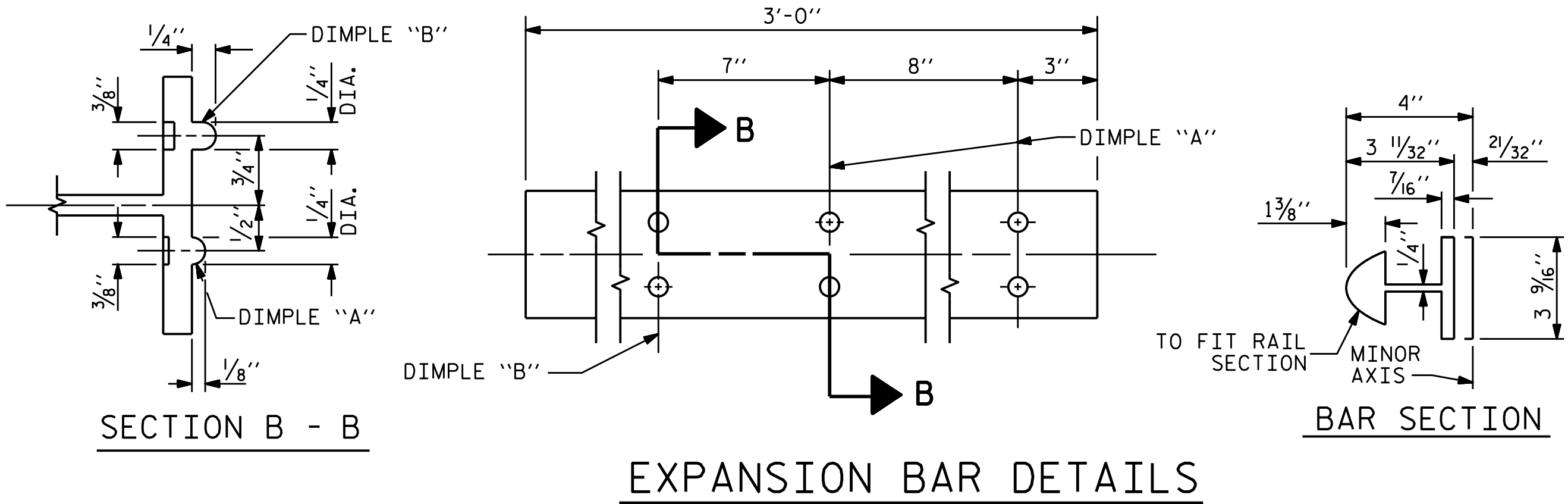
## 4-BOLT METAL RAIL ANCHOR ASSEMBLY

( 24 ASSEMBLIES REQUIRED )

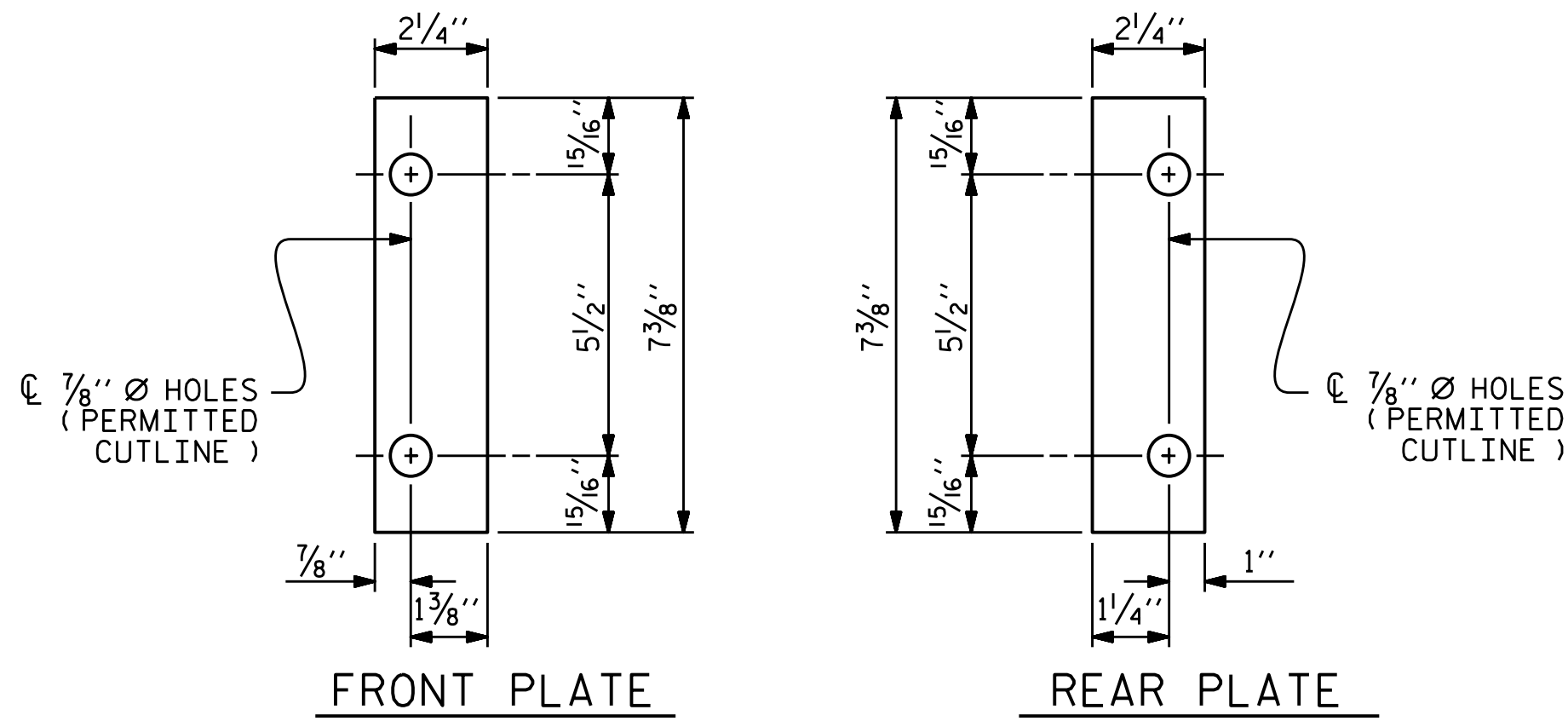
- NOTES
- STRUCTURAL CONCRETE ANCHOR ASSEMBLY
- THE STRUCTURAL CONCRETE ANCHOR ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS :
- FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2" FOR 3/4" FERRULES.
  - 4 - 3/4" Ø X 2 1/2" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 3/4" Ø X 2 1/2" GALVANIZED BOLTS 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.
  - WIRE STRUT SHOWN IN THE CONCRETE ANCHOR ASSEMBLY DETAIL IS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI. AS AN OPTION, A 1/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.
  - THE METAL RAIL ANCHOR ASSEMBLIES TO BE HOT DIPPED GALVANIZED TO CONFORM TO REQUIREMENTS OF ASTM A123.
  - THE COST OF THE METAL RAIL ANCHOR ASSEMBLY WITH BOLTS AND WASHERS COMPLETE IN PLACE SHALL BE INCLUDED IN THE PRICE BID FOR LINEAR FEET OF METAL RAIL.
  - BOLTS TO BE TIGHTENED ONE-HALF TURN WITH A WRENCH FROM A FINGER-TIGHT POSITION.

THE CONTRACTOR MAY USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF THE METAL RAIL ANCHOR ASSEMBLY. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 10 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE THE STANDARD SPECIFICATIONS.

WHEN ADHESIVELY ANCHORED ANCHOR BOLTS ARE USED, BOLTS SHALL MEET THE REQUIREMENTS OF ASTM F593 ALLOY 304 STAINLESS STEEL WITH MINIMUM 75,000 PSI ULTIMATE STRENGTH. NUTS SHALL MEET THE REQUIREMENTS OF ASTM F594 ALLOY 304 STAINLESS STEEL AND WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.

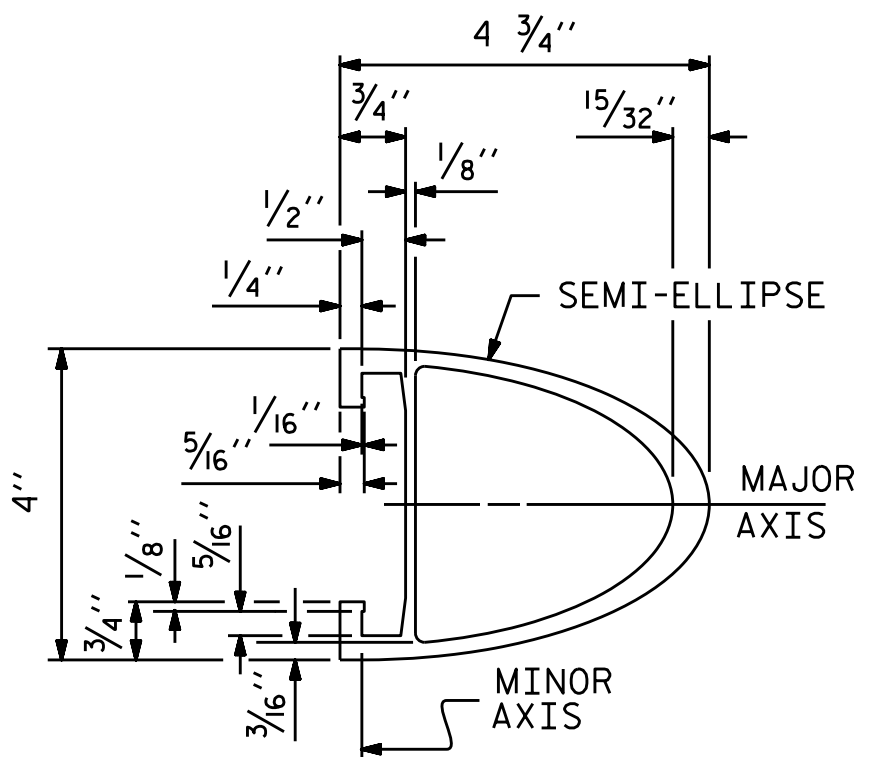


## EXPANSION BAR DETAILS

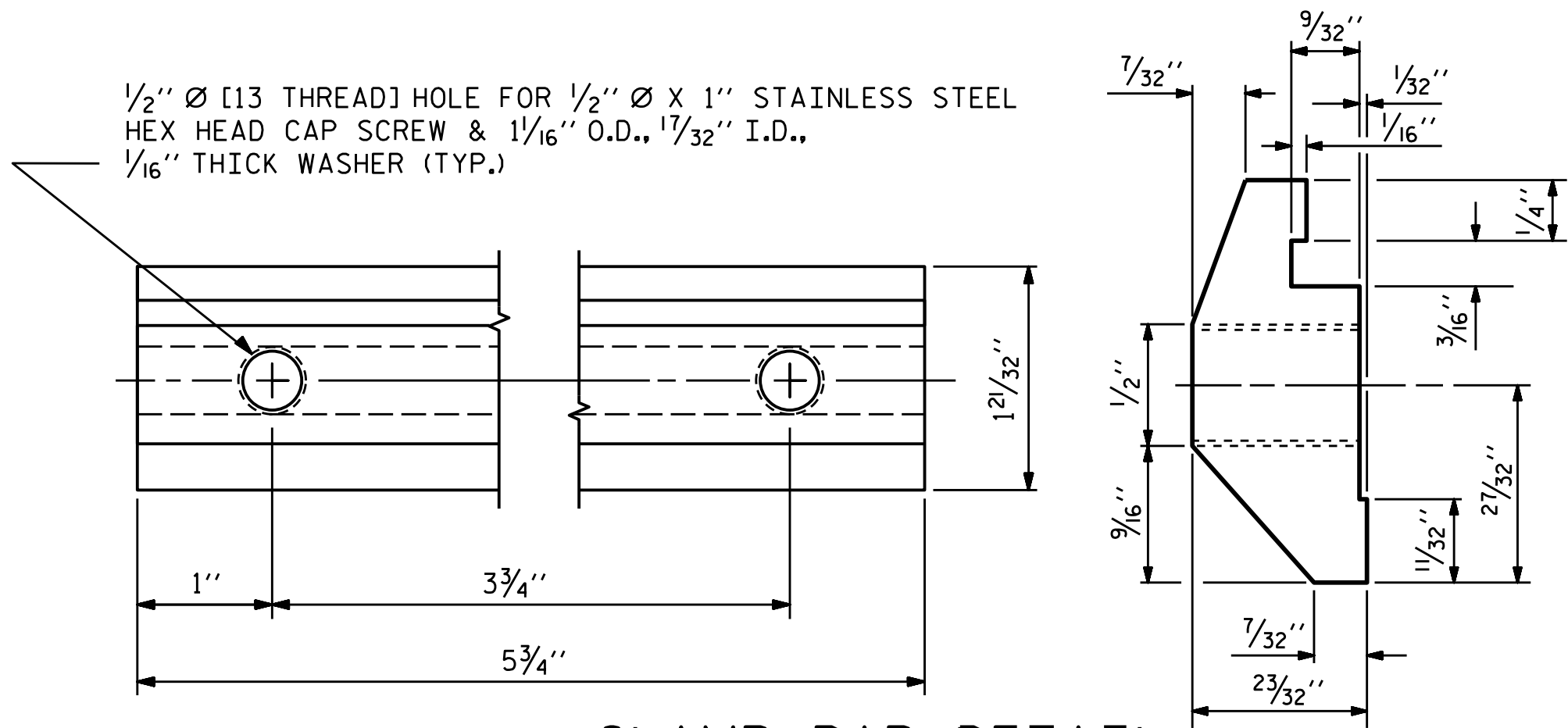


## SHIM DETAILS

NOTE :  
SHIMS MAY BE CUT ALONG PERMITTED CUTLINE OR  
SLOTTED TO EDGE OF PLATE TO FACILITATE PLACEMENT.

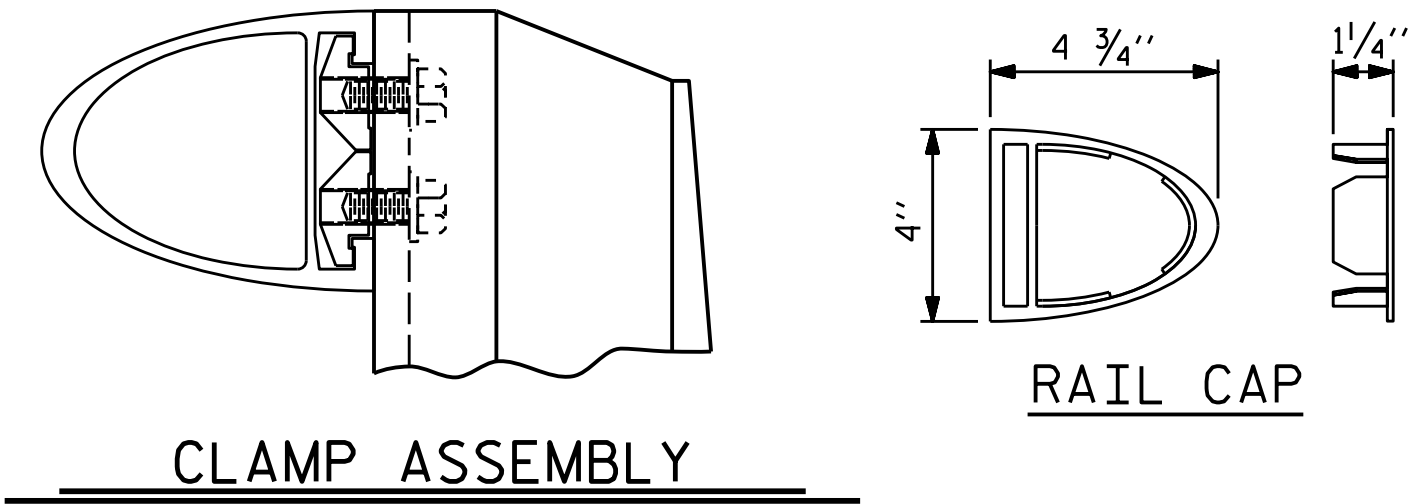


## RAIL SECTION



## CLAMP BAR DETAIL

( 4 REQUIRED PER POST )



## CLAMP ASSEMBLY

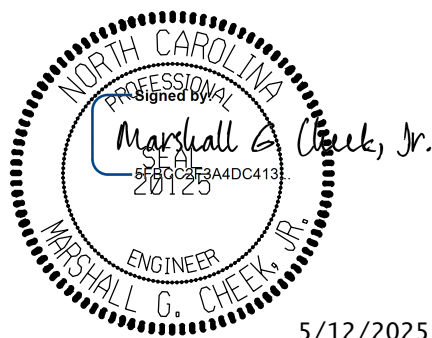
## RAIL CAP

PROJECT NO. BP11-R030

WILKES COUNTY

STATION: 13+31.25-L-

SHEET 2 OF 2



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD

## 2 BAR METAL RAIL

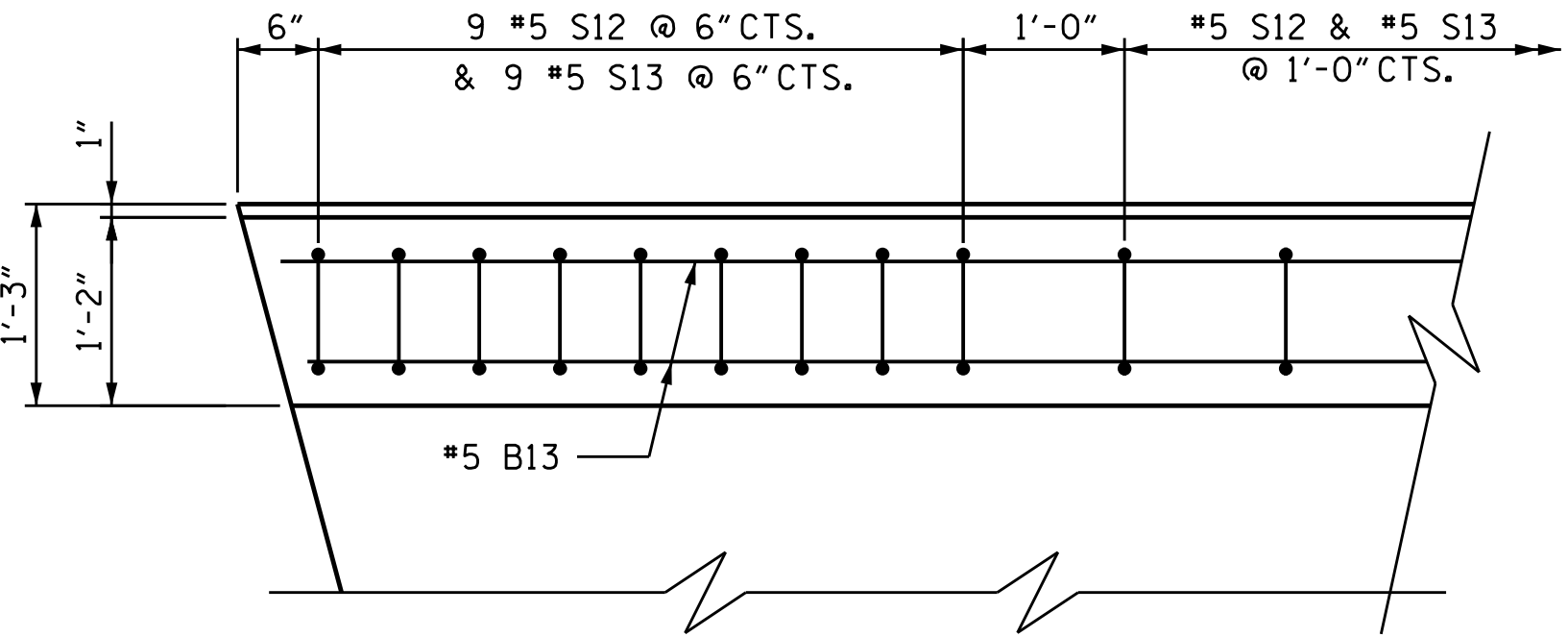
|                       |             |
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| ASSEMBLED BY : NMW    | DATE : 6/24 |
| CHECKED BY : MGC      | DATE : 8/24 |
| DRAWN BY : EEM 6/94   | REV. 10/11  |
| CHECKED BY : RGW 6/94 | REV. 12/17  |
|                       | REV. 10/23  |
|                       | MAA/THC     |
|                       | BNB/SNM     |

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|------------------------------------------------------------------|--|--|--|--|--|
| TGS ENGINEERS                                                    |  |  |  |  |  |
| 201 W. MARION ST STE 200                                         |  |  |  |  |  |
| SHELBY, NC 28150                                                 |  |  |  |  |  |
| PH (704) 476-0003                                                |  |  |  |  |  |
| CORP. LICENSE NO.: C-0275                                        |  |  |  |  |  |

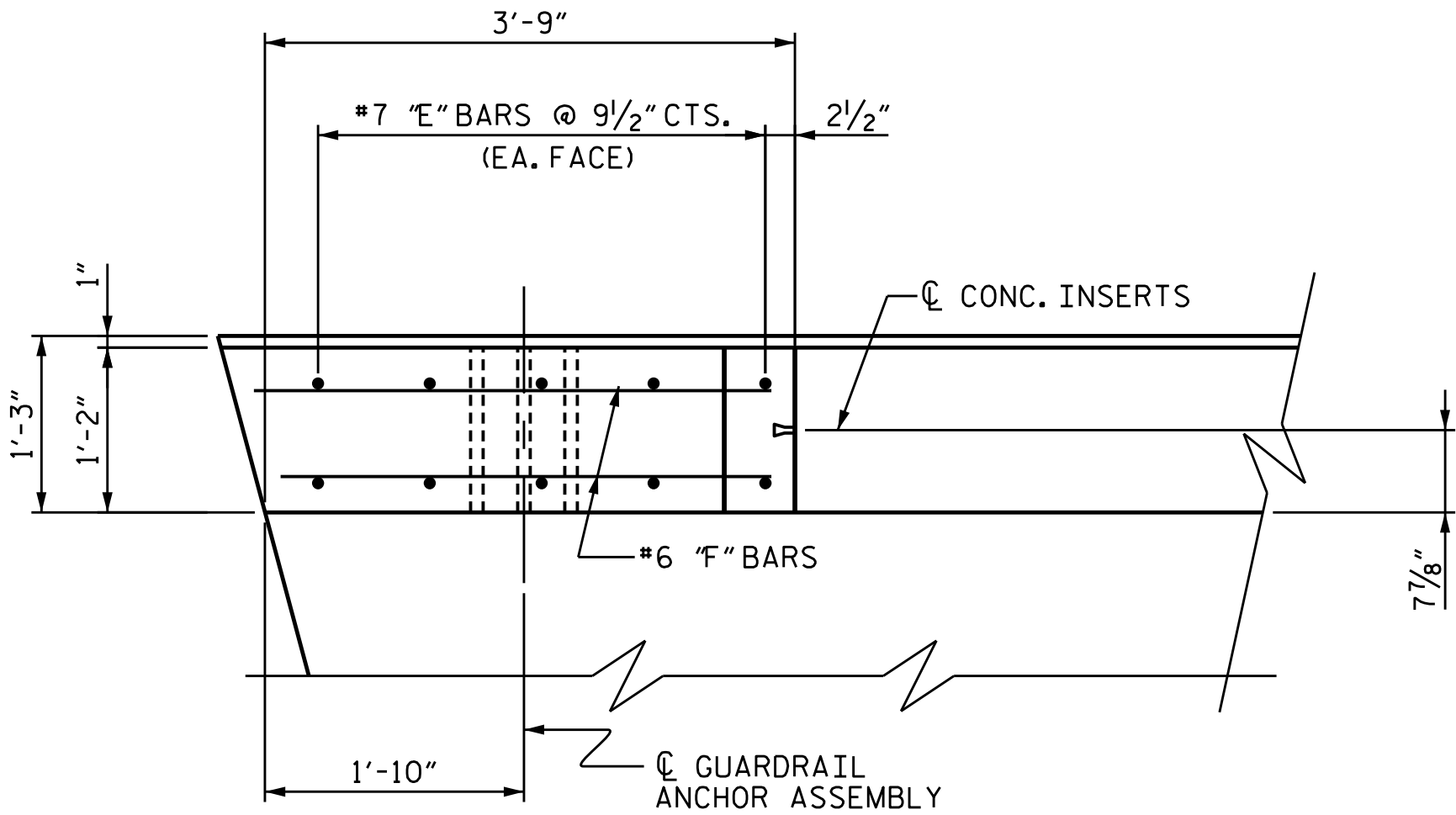
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|----------------|-----|-------|-----|-----|-----------------|
| NO.            | BY: | DATE: | NO. | BY: | DATE:           |
| 1              |     |       | 3   |     |                 |
| 2              |     |       | 4   |     |                 |
| SHEET NO. S-11 |     |       |     |     | TOTAL SHEETS 23 |

STD. NO. BMR4



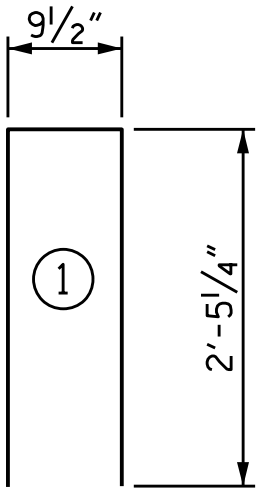


PLAN OF PARAPET @ END BENT 1  
(LEFT SIDE SHOWN - RIGHT SIDE SIMILAR)



PLAN OF END POST @ END BENT 1  
(LEFT SIDE SHOWN - RIGHT SIDE SIMILAR)

BAR TYPES

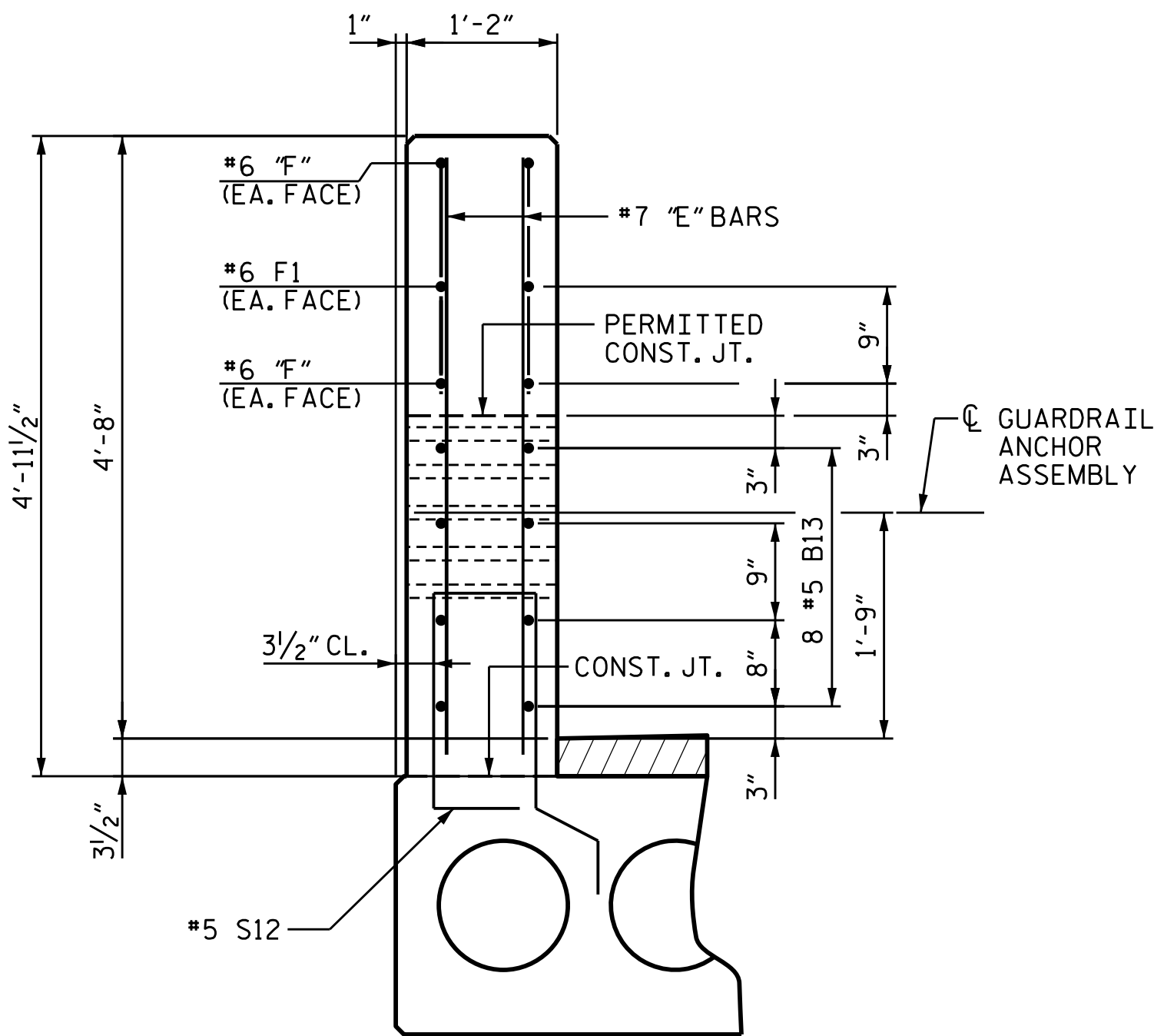


BAR DIMENSIONS ARE OUT TO OUT.

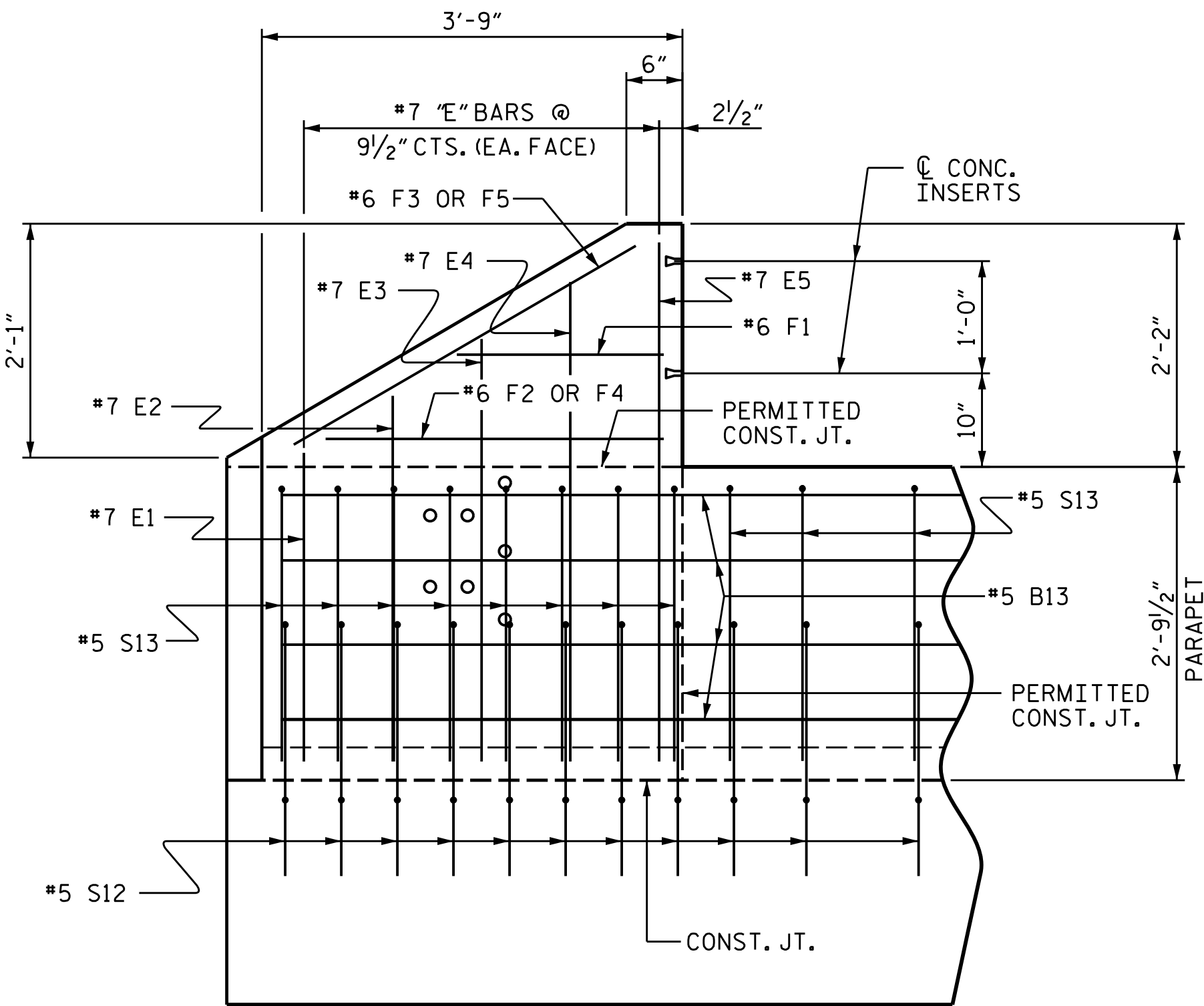
BILL OF MATERIAL FOR  
PARAPETS &  
FOUR END POSTS

| BAR                                | NO. | SIZE | TYPE | LENGTH | WEIGHT      |
|------------------------------------|-----|------|------|--------|-------------|
| * B13                              | 64  | #5   | STR. | 16'-8" | 1,113       |
| * E1                               | 8   | #7   | STR. | 2'-11" | 48          |
| * E2                               | 8   | #7   | STR. | 3'-5"  | 56          |
| * E3                               | 8   | #7   | STR. | 3'-10" | 63          |
| * E4                               | 8   | #7   | STR. | 4'-4"  | 71          |
| * E5                               | 8   | #7   | STR. | 4'-8"  | 76          |
| * F1                               | 8   | #6   | STR. | 1'-11" | 23          |
| * F2                               | 4   | #6   | STR. | 3'-1"  | 19          |
| * F3                               | 4   | #6   | STR. | 3'-8"  | 22          |
| * F4                               | 4   | #6   | STR. | 3'-3"  | 20          |
| * F5                               | 4   | #6   | STR. | 4'-0"  | 24          |
| * S13                              | 140 | #5   | 1    | 5'-8"  | 827         |
| * EPOXY COATED REINFORCING STEEL   |     |      |      |        | 2,362 LBS.  |
| CLASS "AA" CONCRETE                |     |      |      |        | 15.4 C.Y.   |
| 1'-2" x 2'-9 1/2" CONCRETE PARAPET |     |      |      |        | 120.00 L.F. |

NOTES:  
QUANTITIES FOR THE #5 S12 ARE SHOWN IN  
THE CORED SLAB BILL OF MATERIAL.



END VIEW

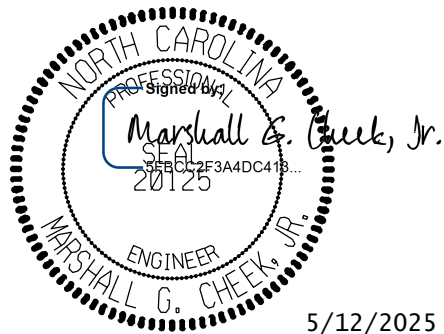


ELEVATION

PARAPET AND END POST FOR TWO BAR METAL RAIL

END BENT 1 SHOWN; END BENT 2 SIMILAR

PROJECT NO. BP11-R030  
WILKES COUNTY  
STATION: 13+31.25-L-



5/12/2025

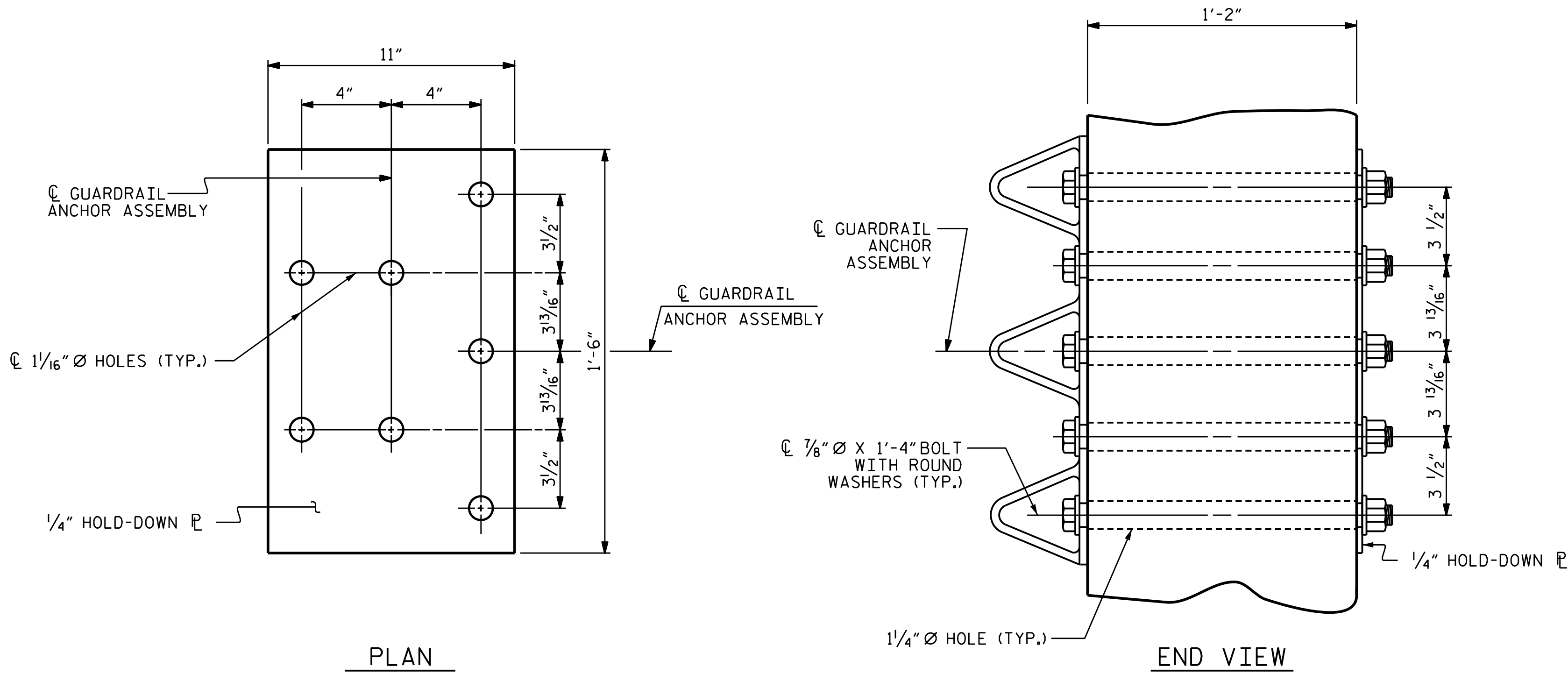
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

END POST DETAILS

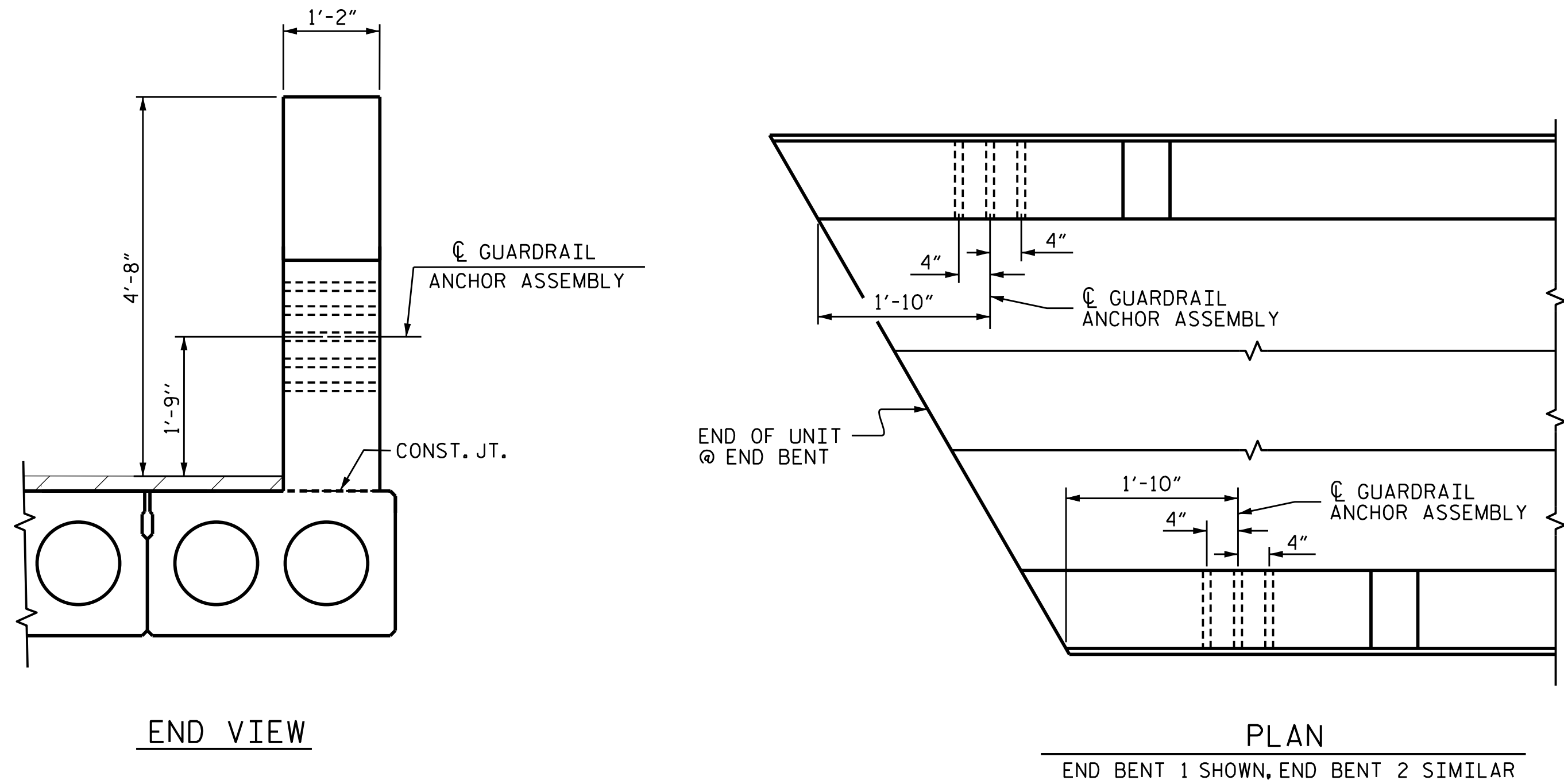
DRAWN BY : NMW  
CHECKED BY : MGC  
DATE : 6/24  
DATE : 8/24

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TGS ENGINEERS  
201 W. MARION ST STE 200  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-0275

| REVISIONS |     |       |     |     |       | SHEET NO.<br>S-13     |
|-----------|-----|-------|-----|-----|-------|-----------------------|
| NO.       | BY: | DATE: | NO. | BY: | DATE: |                       |
| 1         |     |       | 3   |     |       | TOTAL<br>SHEETS<br>23 |
| 2         |     |       | 4   |     |       |                       |



GUARDRAIL ANCHOR ASSEMBLY DETAILS



LOCATION OF GUARDRAIL ANCHOR AT END POST

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 7 - 7/8" Ø BOLTS WITH NUTS AND WASHERS.

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 7/8" 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 THE PARAPET. 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 ASSEMBLIES WITH BOLTS, NUTS AND WASHERS COMPLETE IN PLACE, SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE END POST TO CLEAR ASSEMBLY BOLTS.

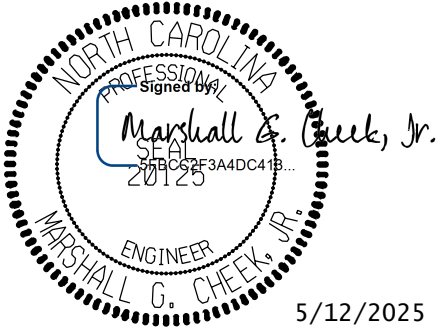
THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.



SKETCH SHOWING POINTS OF ATTACHMENT

\* LOCATION OF GUARDRAIL ATTACHMENT

PROJECT NO. BP11-R030  
WILKES COUNTY  
STATION: 13+31.25-L-



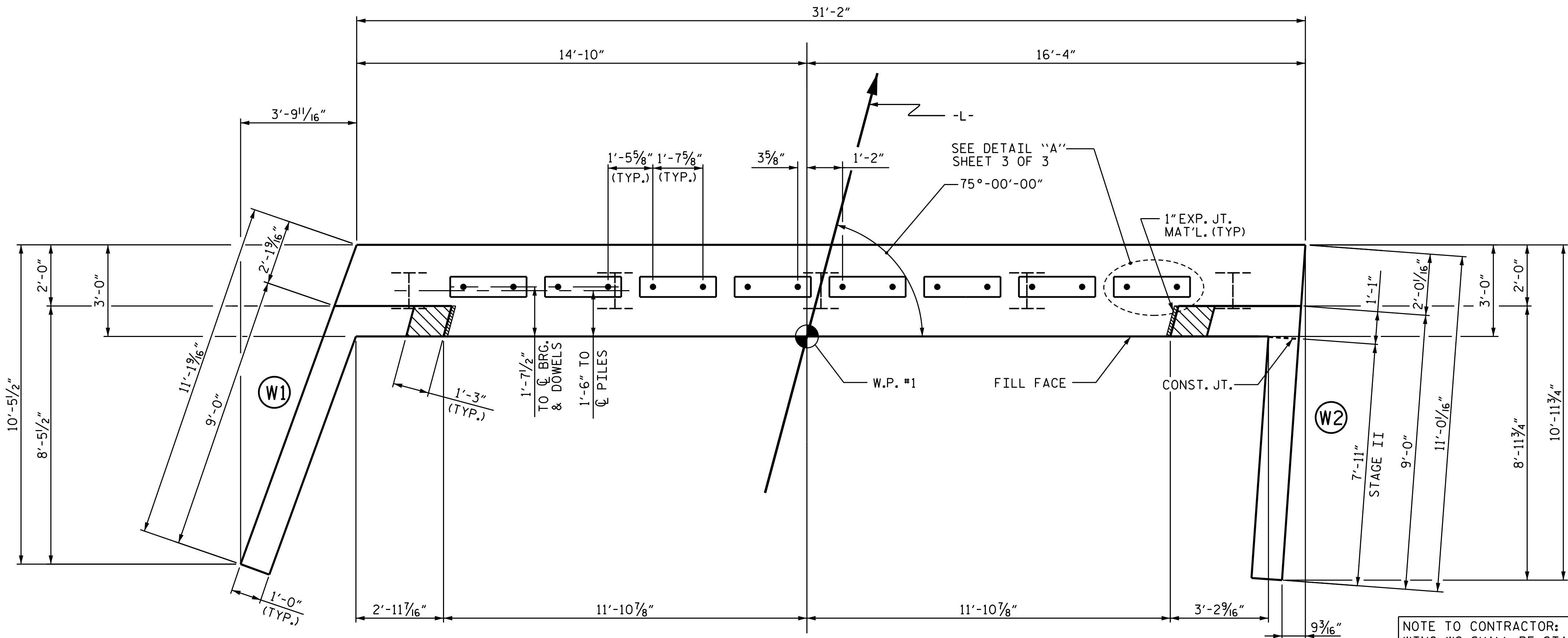
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
GUARDRAIL ANCHORAGE  
DETAILS  
FOR METAL RAILS

|                |     |            |         |
|----------------|-----|------------|---------|
| ASSEMBLED BY : | NMW | DATE :     | 6/24    |
| CHECKED BY :   | MGC | DATE :     | 8/24    |
| DRAWN BY :     | MAA | REV. 1/15  | MAA/TMG |
| CHECKED BY :   | GM  | REV. 12/17 | MAA/THC |
|                |     | REV. 5/18  | MAA/THC |

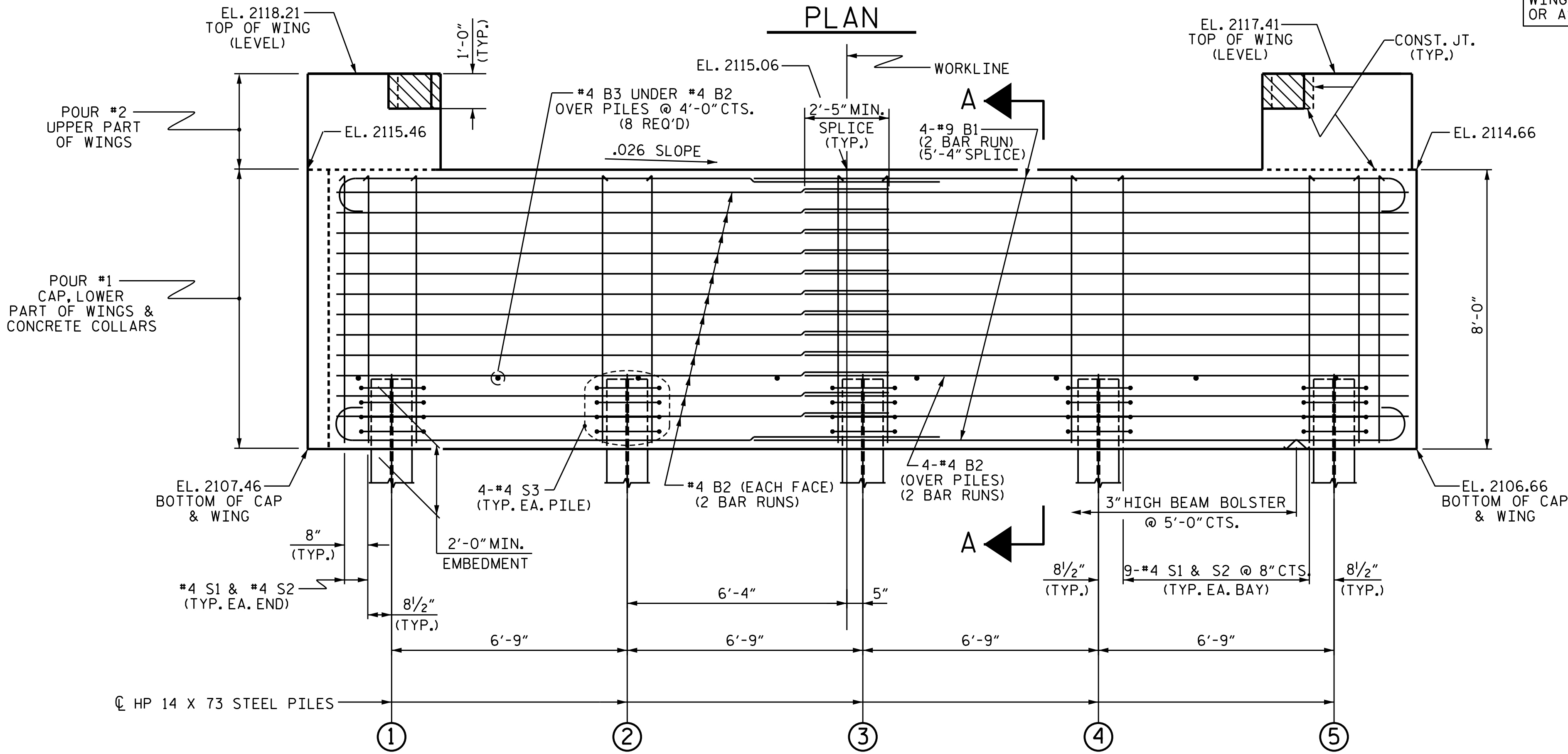
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| DOCUMENT NOT CONSIDERED FINAL<br>UNLESS ALL SIGNATURES COMPLETED                                                |  |  |  |  |  |
| TGS ENGINEERS<br>201 W. MARION ST STE 200<br>SHELBY, NC 28150<br>PH (704) 476-0003<br>CORP. LICENSE NO.: C-0275 |  |  |  |  |  |

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|-----------|-----|-------|-----|-----|-------|
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| 1         |     |       | 3   |     |       |
| 2         |     |       | 4   |     |       |

|              |
|--------------|
| SHEET NO.    |
| S-14         |
| TOTAL SHEETS |
| 23           |



PLAN



ELEVATION

WINGS NOT SHOWN FOR CLARITY.  
FOR SECTION A-A, SEE SHEET 3 OF 3.  
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.  
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 3 OF 3.

DRAWN BY : NMW/ZCS DATE : 3/25  
CHECKED BY : MGC DATE : 3/25  
DESIGN ENGINEER OF RECORD : MGC DATE : 3/25

## NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE PARAPET IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.

FOR WING DETAILS, SEE SHEET 2 OF 3.

INSTALL THE 6"Ø DRAIN PIPE THROUGH THE WINGWALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WINGWALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

NOTE TO CONTRACTOR:  
WING W2 SHALL BE STAGED AS SHOWN OR AS DIRECTED BY THE ENGINEER.

## TOP OF PILE ELEVATIONS

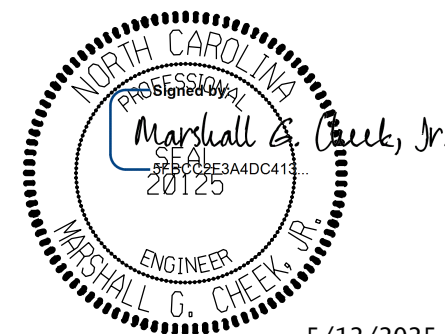
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|---|---------|
| ① | 2109.43 |
| ② | 2109.25 |
| ③ | 2109.08 |
| ④ | 2108.90 |
| ⑤ | 2108.72 |

PROJECT NO. BP11-R030

WILKES COUNTY

STATION: 13+31.25-L-

SHEET 1 OF 3



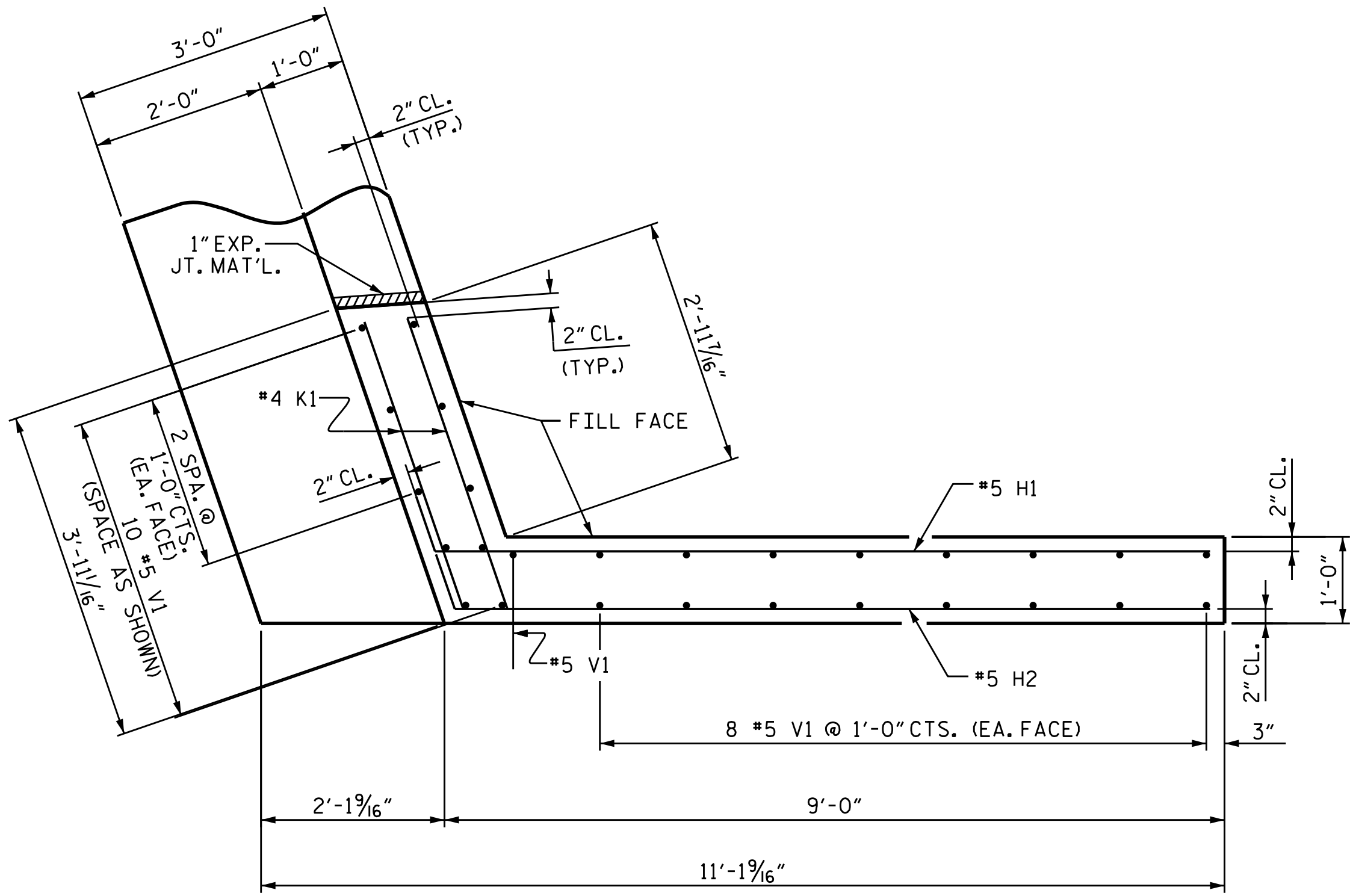
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE  
END BENT 1

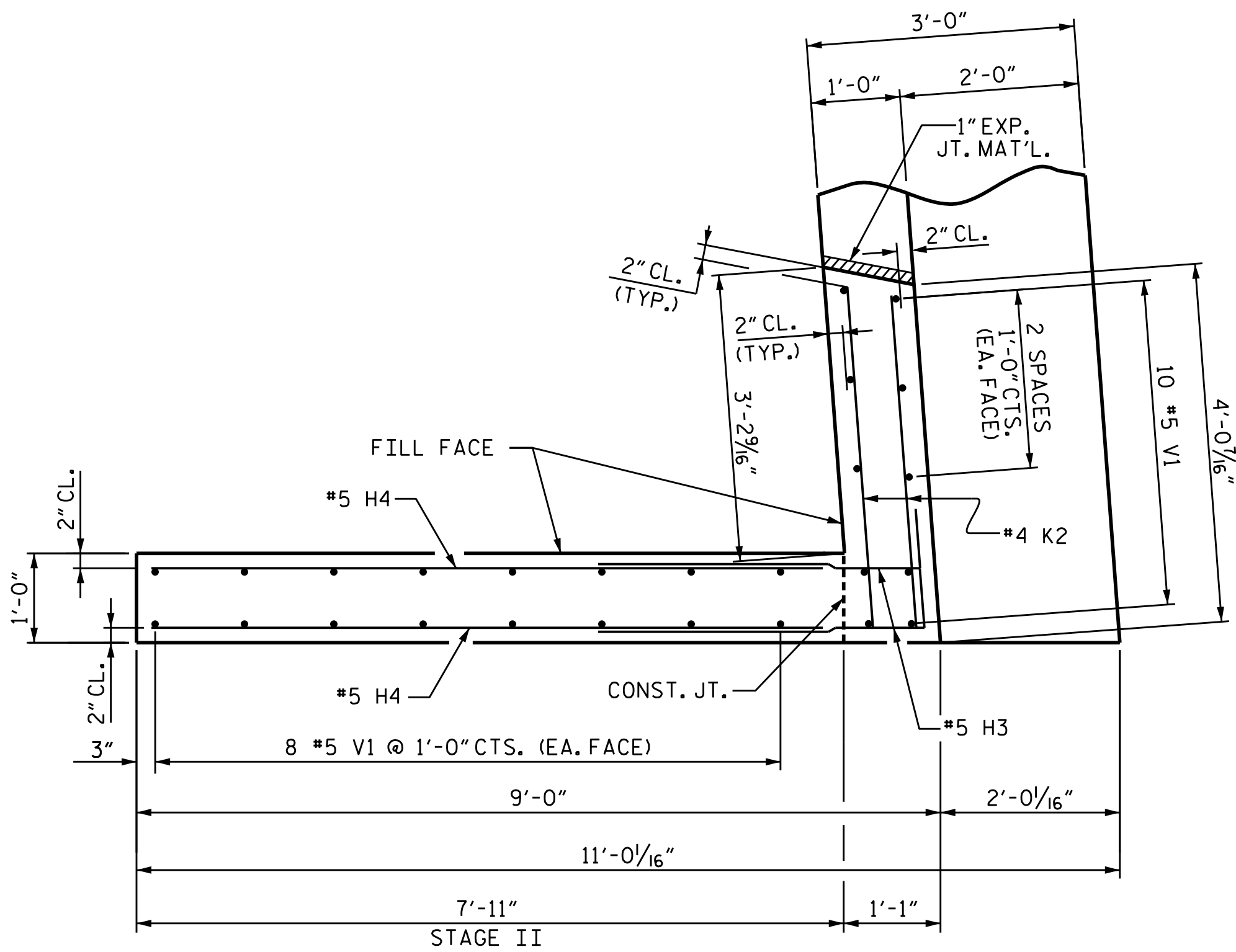
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS  
201 W. MARION ST STE 200  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-0275

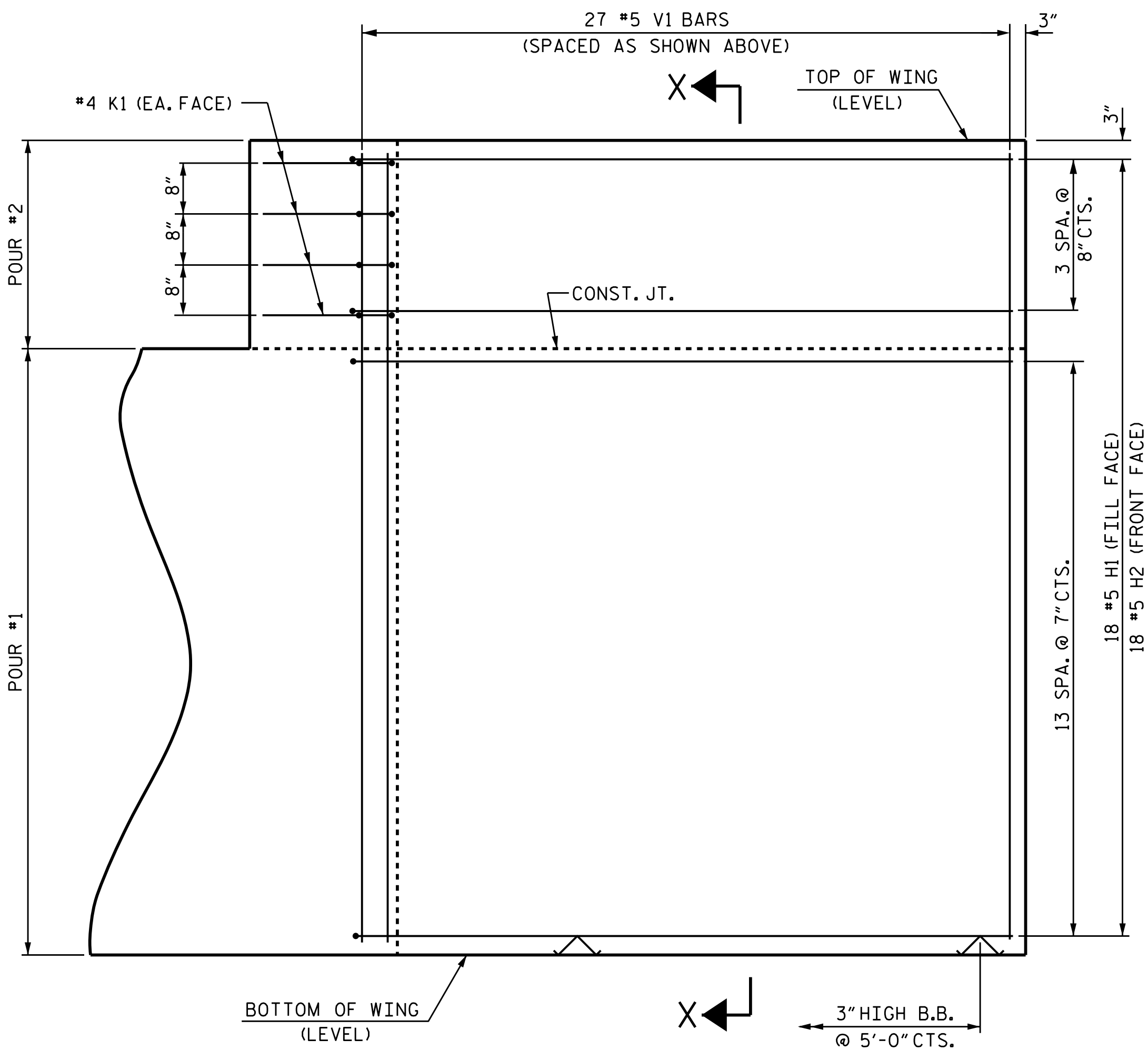
| REVISIONS |     |       |     |     |       | SHEET NO.       |
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| 1         |     |       | 3   |     |       | S-15            |
| 2         |     |       | 4   |     |       | TOTAL SHEETS 23 |



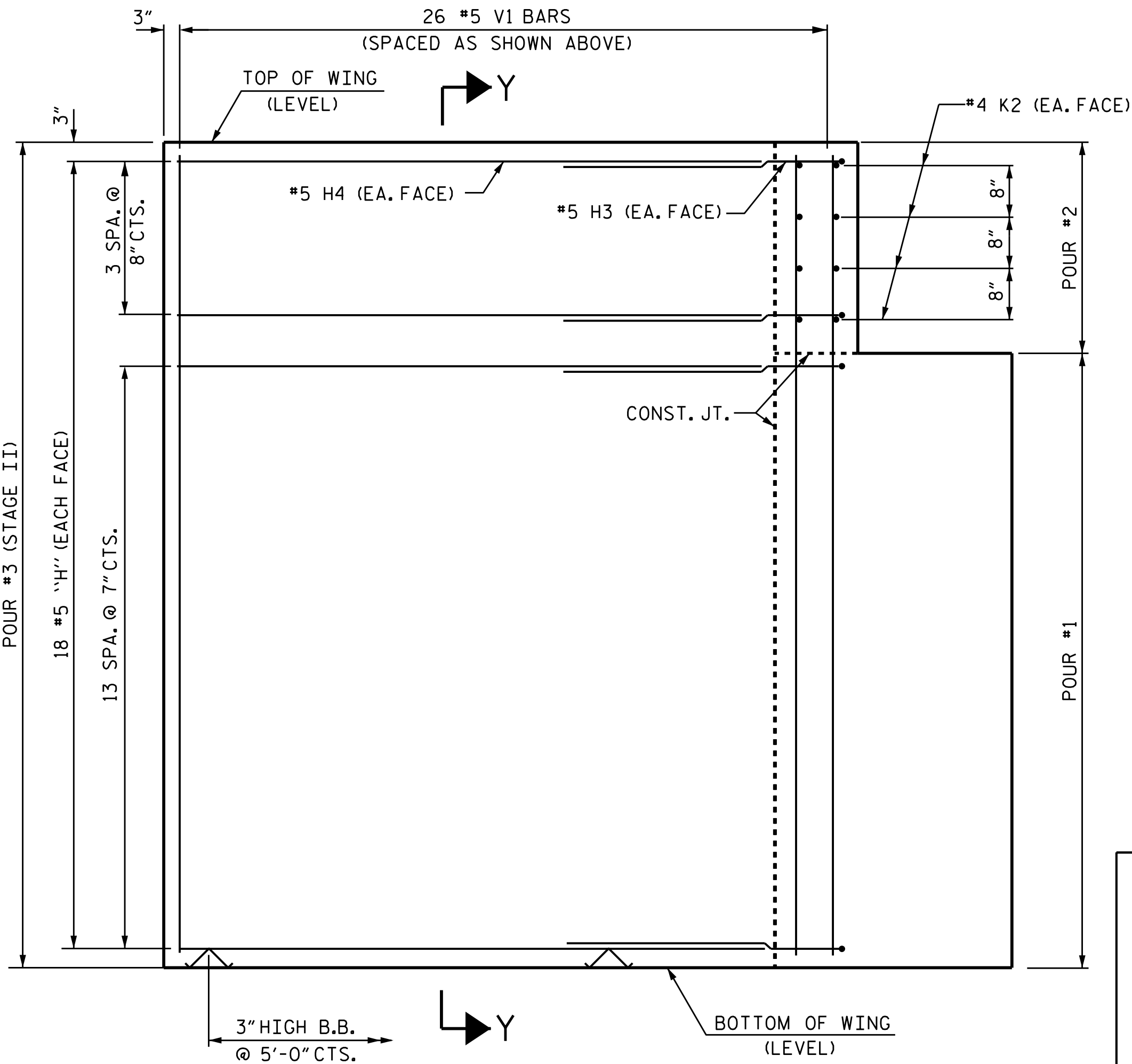
PLAN OF WING (W1)



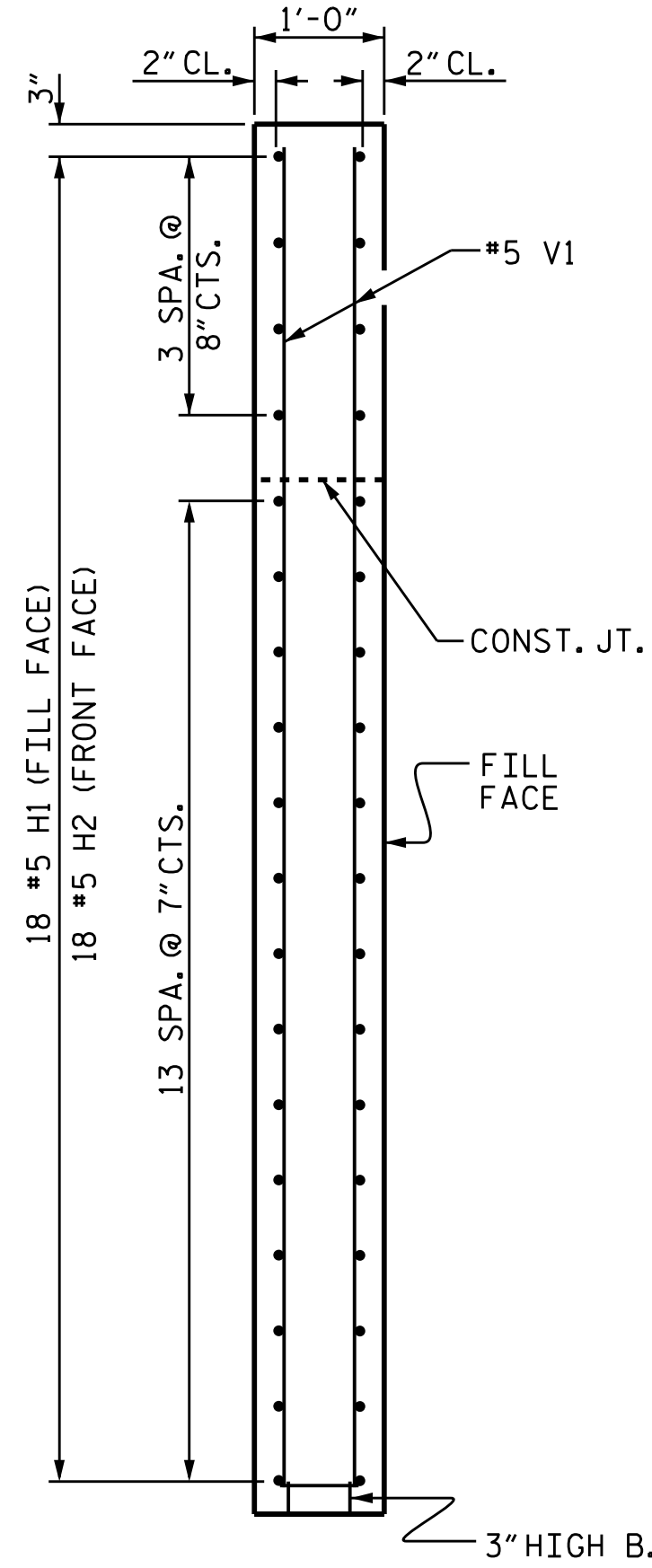
PLAN OF WING (W2)



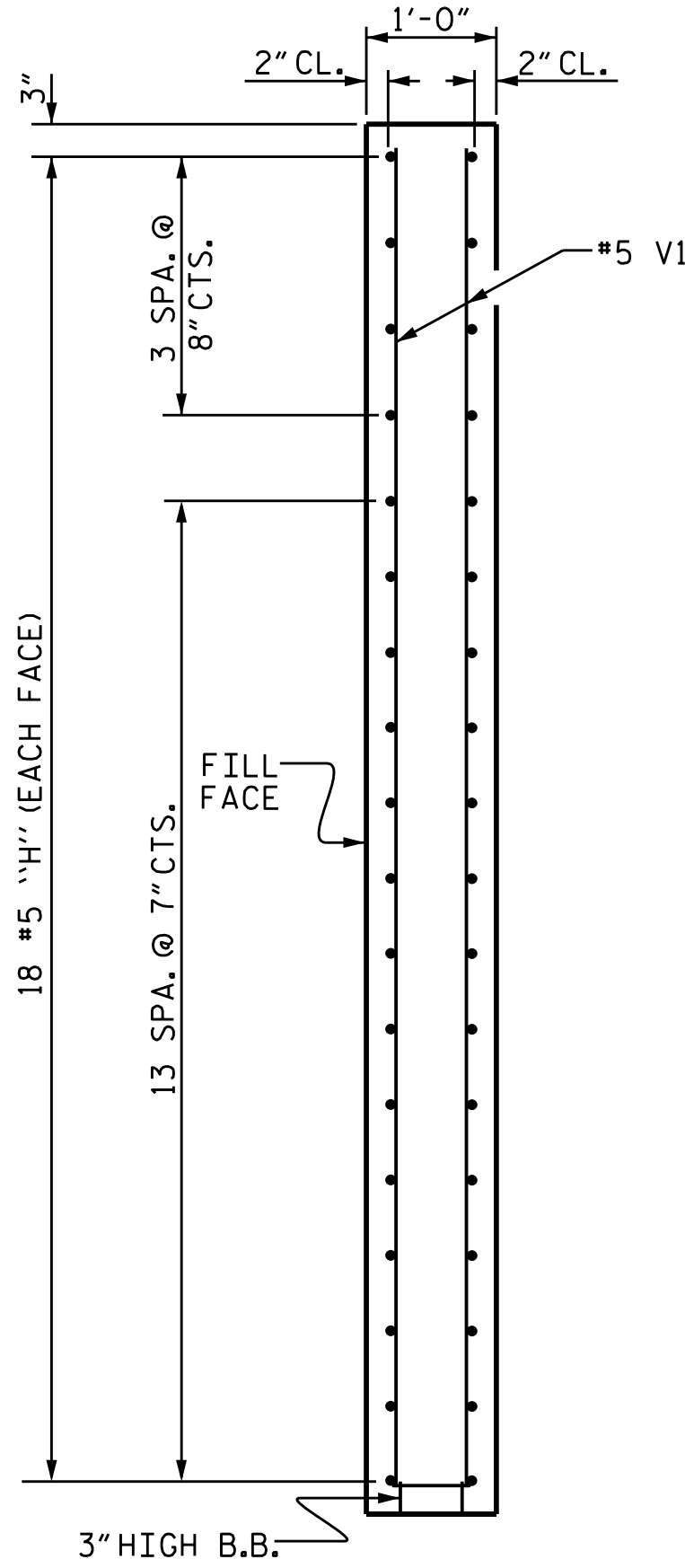
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



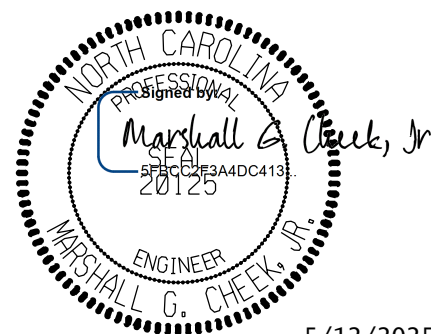
SECTION X-X



SECTION Y-Y

PROJECT NO. BP11-R030  
WILKES COUNTY  
STATION: 13+31.25-L-

SHEET 2 OF 3



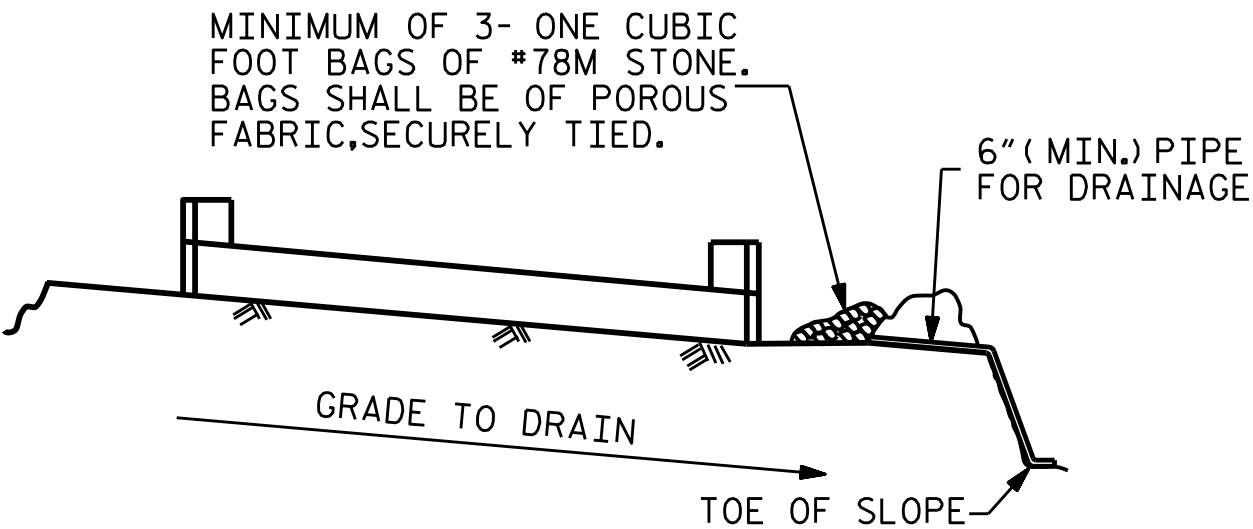
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE  
END BENT 1  
WING DETAILS

DRAWN BY : NMW/ZCS DATE : 3/25  
CHECKED BY : MGC DATE : 3/25  
DESIGN ENGINEER OF RECORD : MGC DATE : 3/25

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201 W. MARION ST STE 200  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-0275

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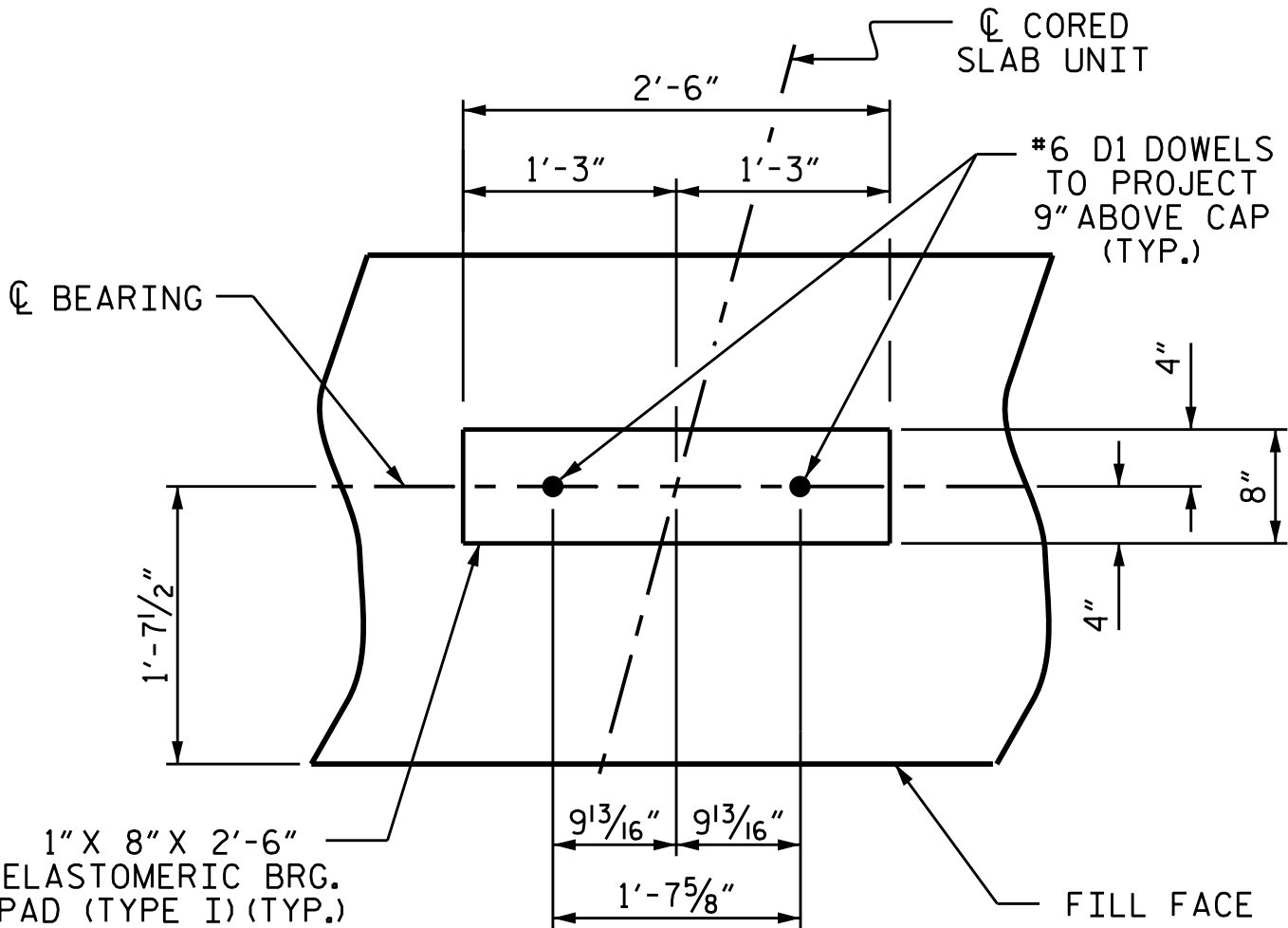


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

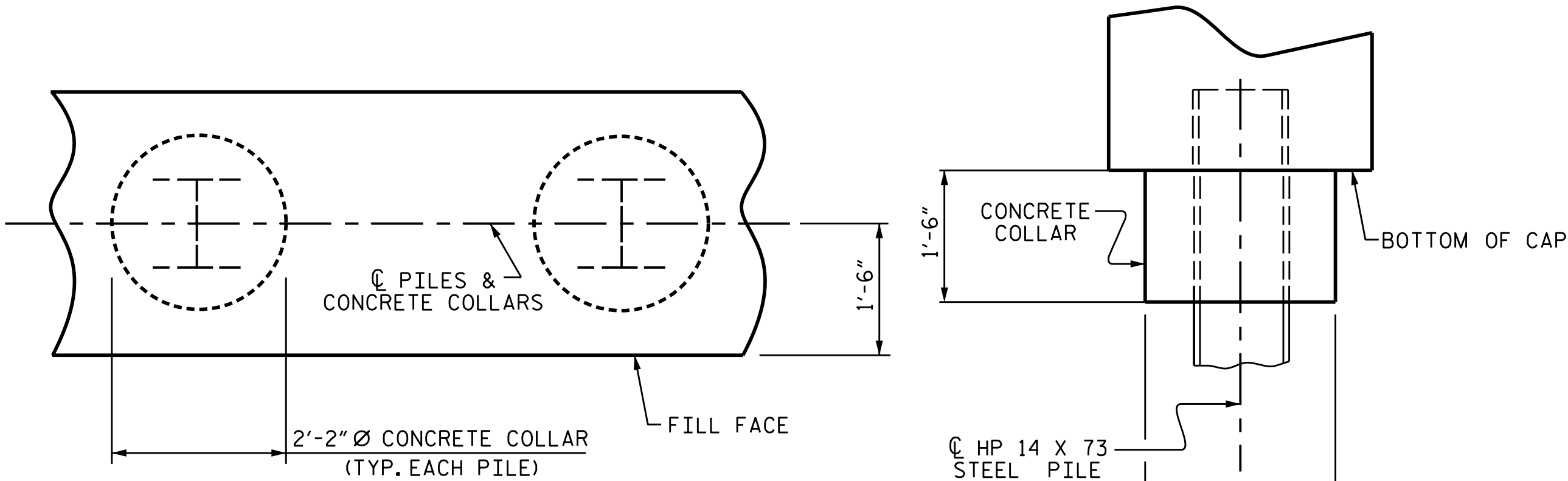
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

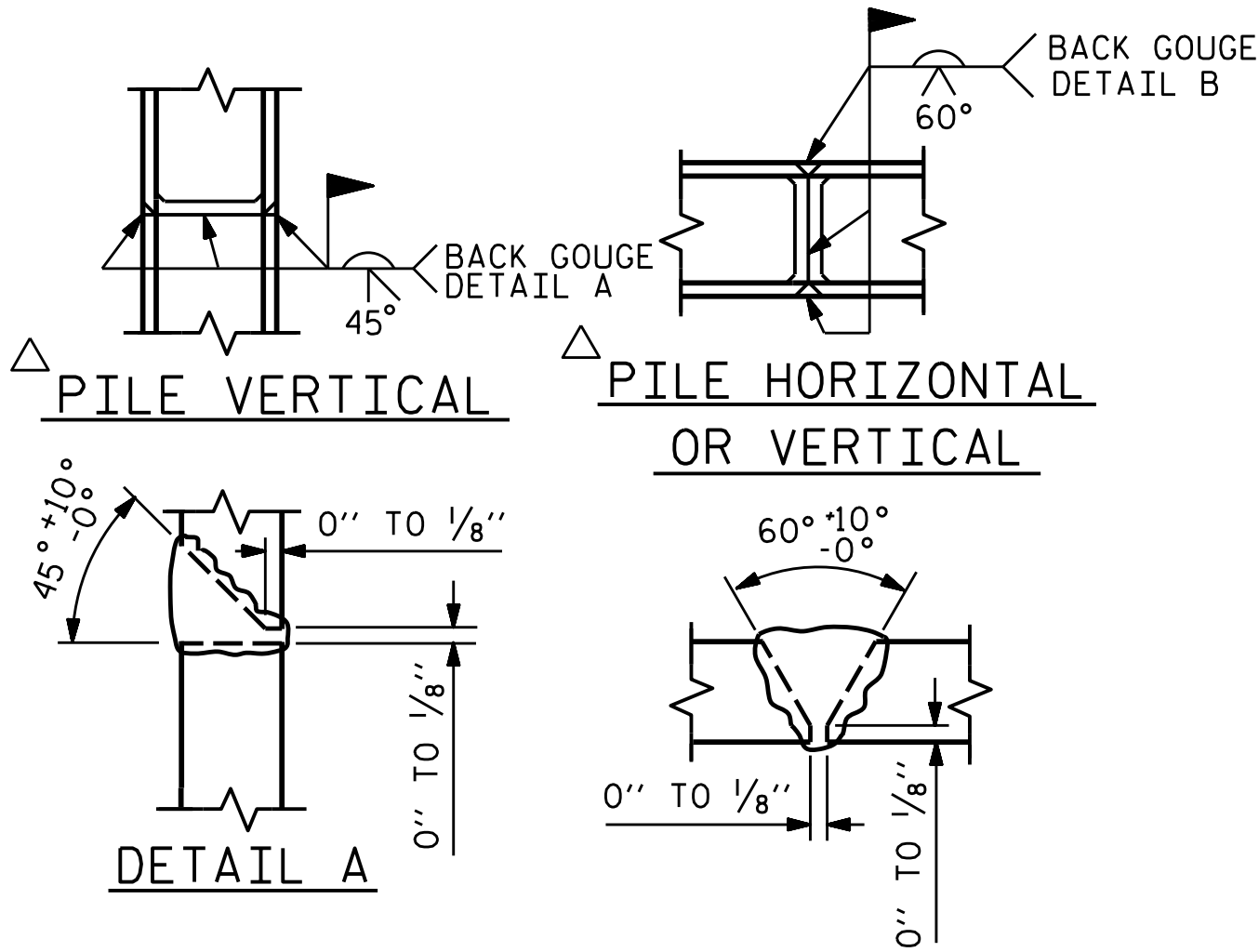
### TEMPORARY DRAINAGE AT END BENT



DETAIL "A"

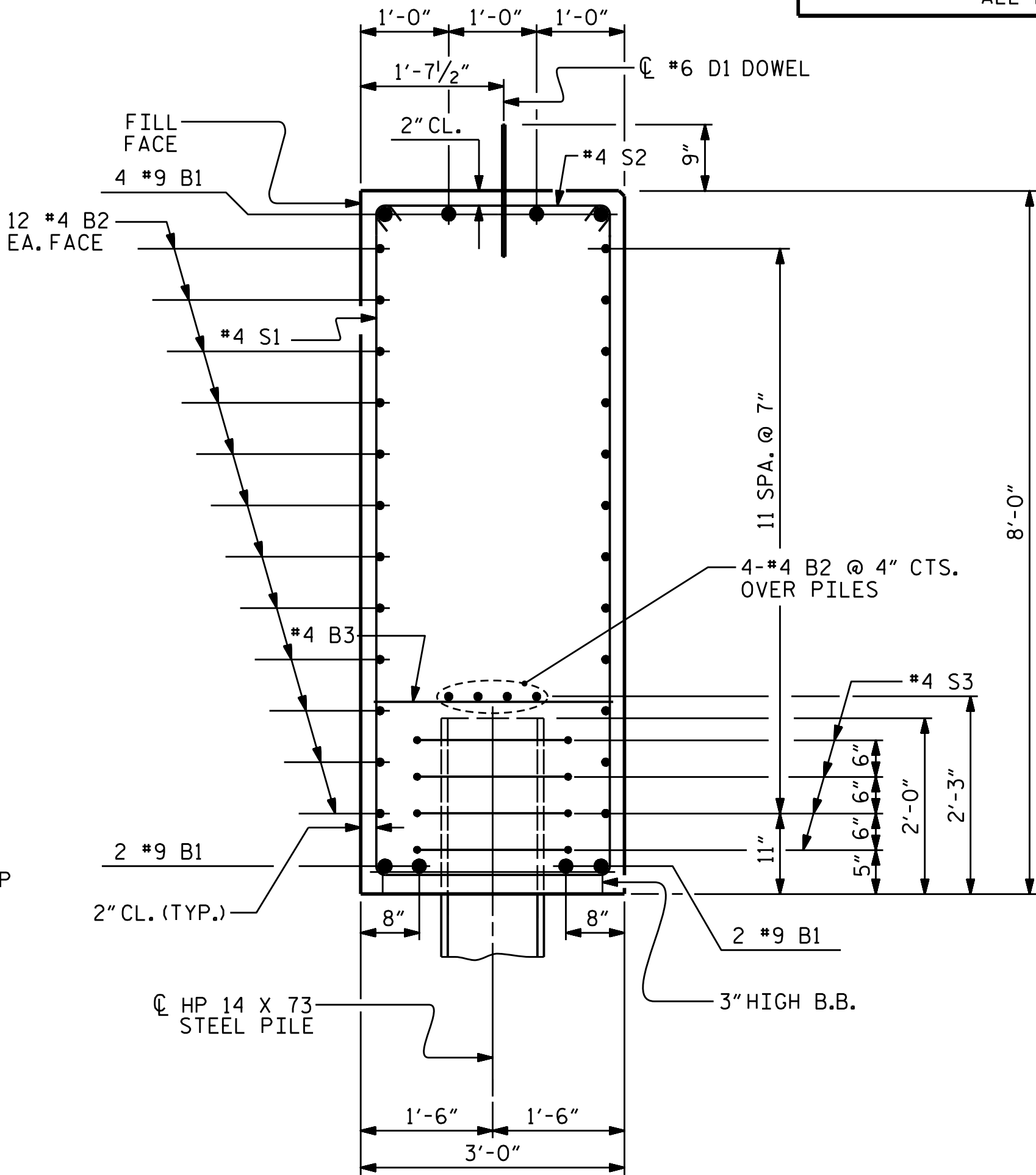


### CORROSION PROTECTION FOR STEEL PILES DETAIL



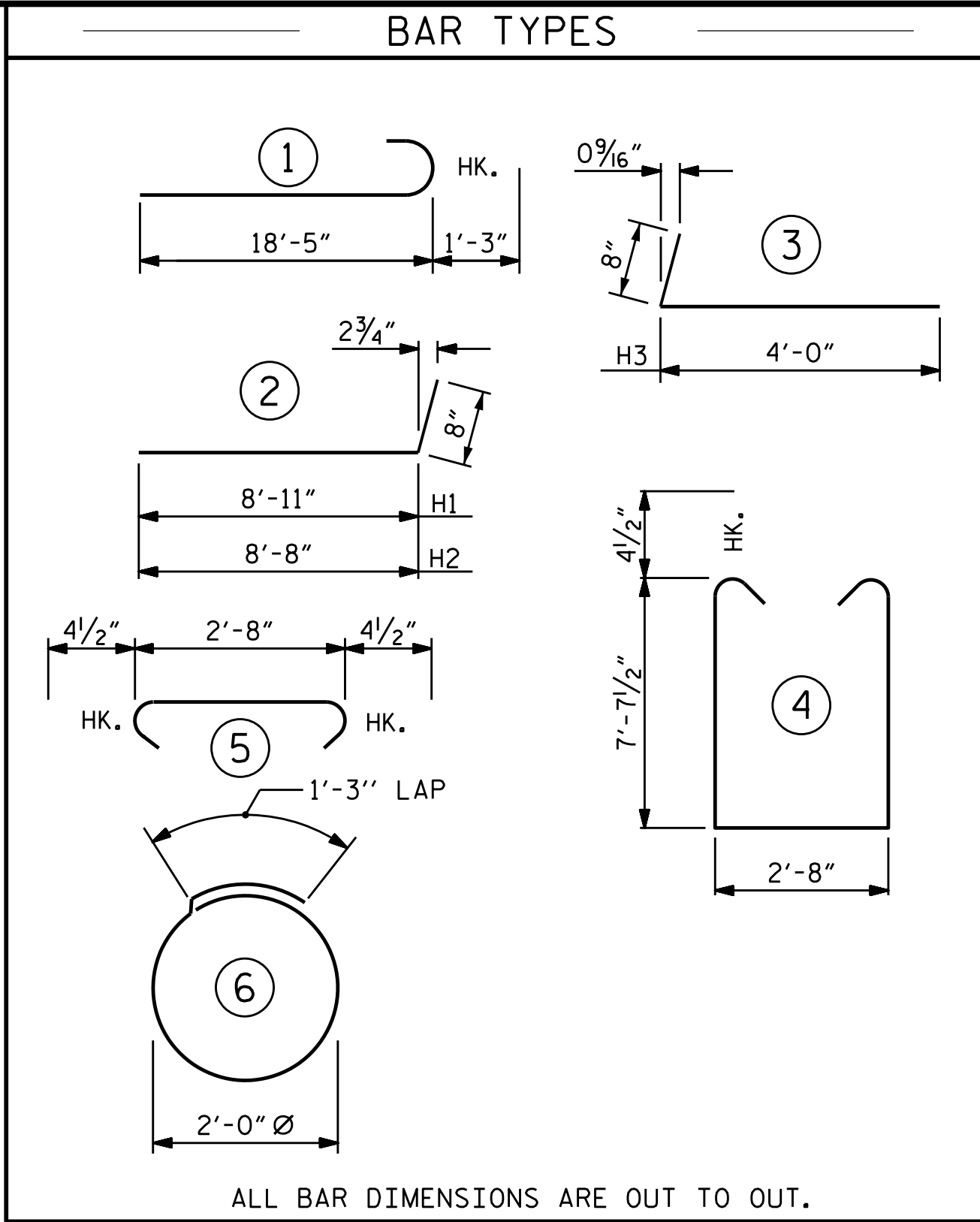
△ POSITION OF PILE DURING WELDING.

### PILE SPLICE DETAILS



### SECTION A-A

(CONCRETE COLLAR NOT SHOWN FOR CLARITY. SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL.")



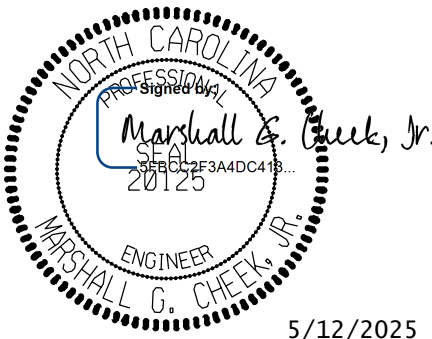
| BILL OF MATERIAL           |     |                                    |      |        |           |
|----------------------------|-----|------------------------------------|------|--------|-----------|
| END BENT 1                 |     |                                    |      |        |           |
| BAR                        | NO. | SIZE                               | TYPE | LENGTH | WEIGHT    |
| B1                         | 16  | #9                                 | 1    | 19'-8" | 1070      |
| B2                         | 56  | #4                                 | STR  | 17'-1" | 639       |
| B3                         | 8   | #4                                 | STR  | 2'-8"  | 14        |
|                            |     |                                    |      |        |           |
| D1                         | 16  | #6                                 | STR  | 1'-6"  | 36        |
|                            |     |                                    |      |        |           |
| H1                         | 18  | #5                                 | 2    | 9'-7"  | 180       |
| H2                         | 18  | #5                                 | 2    | 9'-4"  | 175       |
| H3                         | 36  | #5                                 | 3    | 4'-8"  | 175       |
| H4                         | 36  | #5                                 | STR  | 7'-7"  | 285       |
|                            |     |                                    |      |        |           |
| K1                         | 8   | #4                                 | STR  | 3'-5"  | 18        |
| K2                         | 8   | #4                                 | STR  | 3'-8"  | 20        |
|                            |     |                                    |      |        |           |
| S1                         | 40  | #4                                 | 4    | 18'-8" | 499       |
| S2                         | 40  | #4                                 | 5    | 3'-5"  | 91        |
| S3                         | 20  | #4                                 | 6    | 7'-7"  | 101       |
|                            |     |                                    |      |        |           |
| V1                         | 53  | #5                                 | STR  | 10'-4" | 571       |
|                            |     |                                    |      |        |           |
| REINFORCING STEEL          |     |                                    |      |        | 3874 LBS. |
| CLASS A CONCRETE BREAKDOWN |     |                                    |      |        |           |
| POUR #1                    |     | CAP, LOWER PART OF WINGS & COLLARS |      |        | 31.5 C.Y. |
| POUR #2                    |     | UPPER PART OF WING W2, W1          |      |        | 1.7 C.Y.  |
| POUR #3                    |     | WING W2                            |      |        | 3.2 C.Y.  |
| TOTAL CLASS A CONCRETE     |     |                                    |      |        | 36.4 C.Y. |

PROJECT NO. BP11-R030

WILKES COUNTY

STATION: 13+31.25-L-

SHEET 3 OF 3



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE

END BENT 1  
DETAILS

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

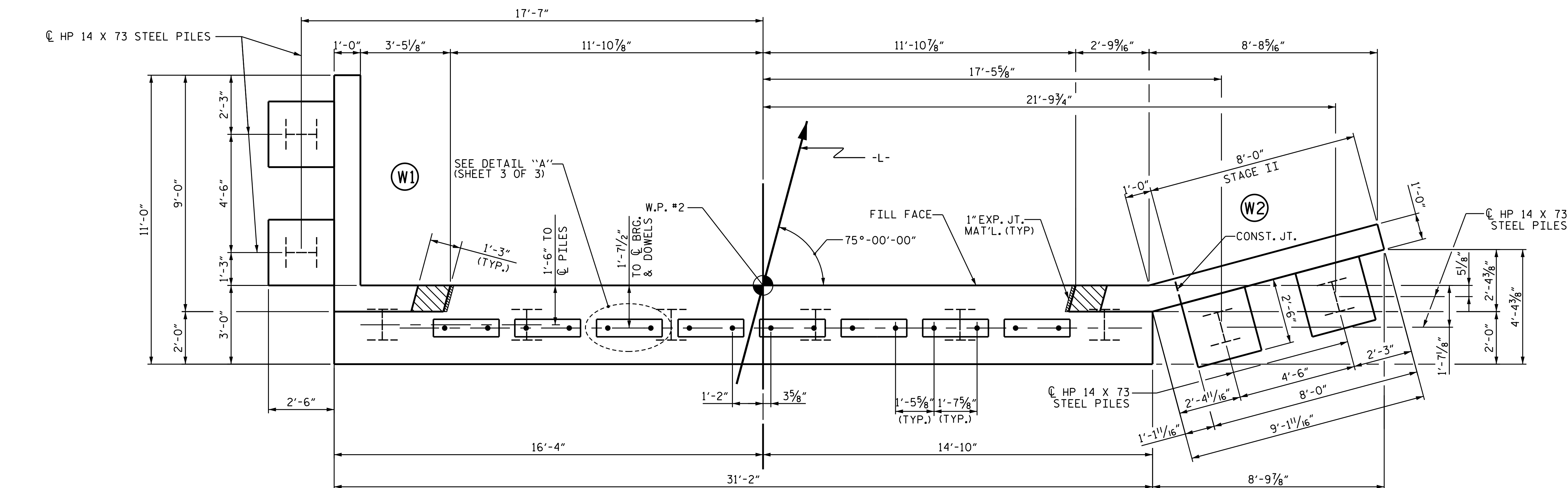
TGS ENGINEERS  
201 W. MARION ST STE 200  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-0275

| REVISIONS |     |       |     |     |       | SHEET NO.<br>S-17  |
|-----------|-----|-------|-----|-----|-------|--------------------|
| NO.       | BY: | DATE: | NO. | BY: | DATE: |                    |
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| 2         |     |       | 4   |     |       |                    |

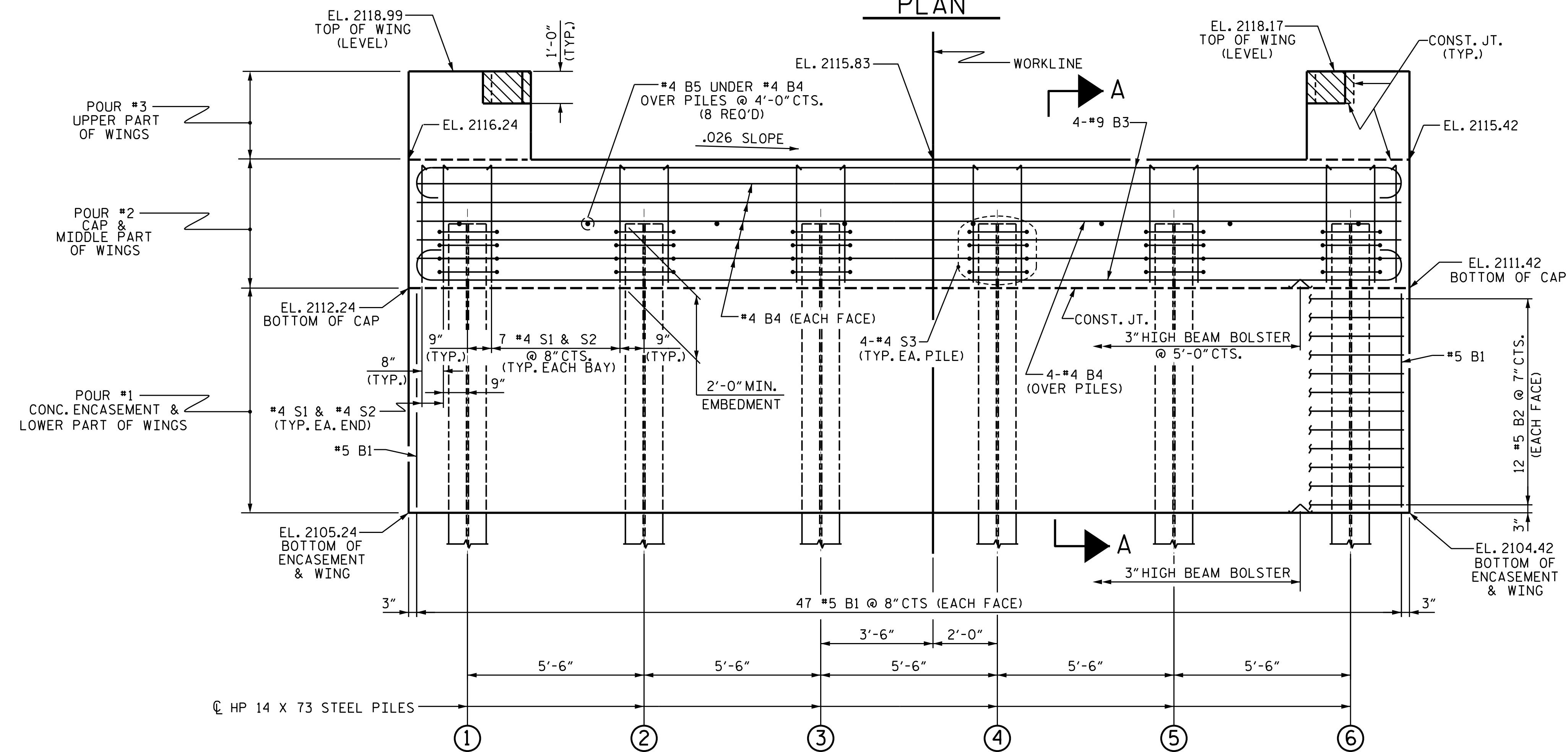
DRAWN BY : NMW/ZCS DATE : 3/25  
CHECKED BY : MGC DATE : 3/25  
DESIGN ENGINEER OF RECORD : MGC DATE : 3/25

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## PLAN



## ELEVATION

WINGS NOT SHOWN FOR CLARITY.  
FOR SECTION A-A, SEE SHEET 3 OF 3.

|                             |     |        |      |
|-----------------------------|-----|--------|------|
| DRAWN BY :                  | NMW | DATE : | 3/25 |
| CHECKED BY :                | MGC | DATE : | 3/25 |
| DESIGN ENGINEER OF RECORD : | RDE | DATE : | 3/25 |

## NOTES

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FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.

FOR WING DETAILS, SEE SHEET 2 OF 3.

INSTALL THE 6"Ø DRAIN PIPE THROUGH THE WINGWALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WINGWALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

NOTE TO CONTRACTOR:  
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OR AS DIRECTED BY THE ENGINEER.

TOP OF PILE  
ELEVATIONS

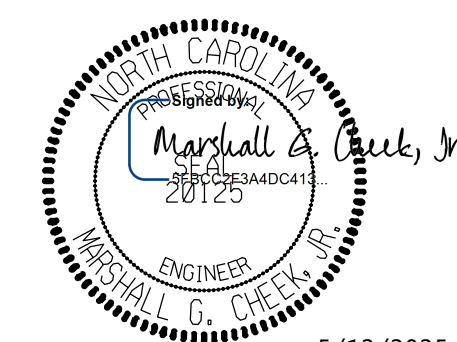
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| ② | 2114.08 |
| ③ | 2113.94 |
| ④ | 2113.79 |
| ⑤ | 2113.65 |
| ⑥ | 2113.51 |

PROJECT NO. BP11-R030

WILKES COUNTY

STATION: 13+31.25-L-

SHEET 1 OF 3



5/12/2025

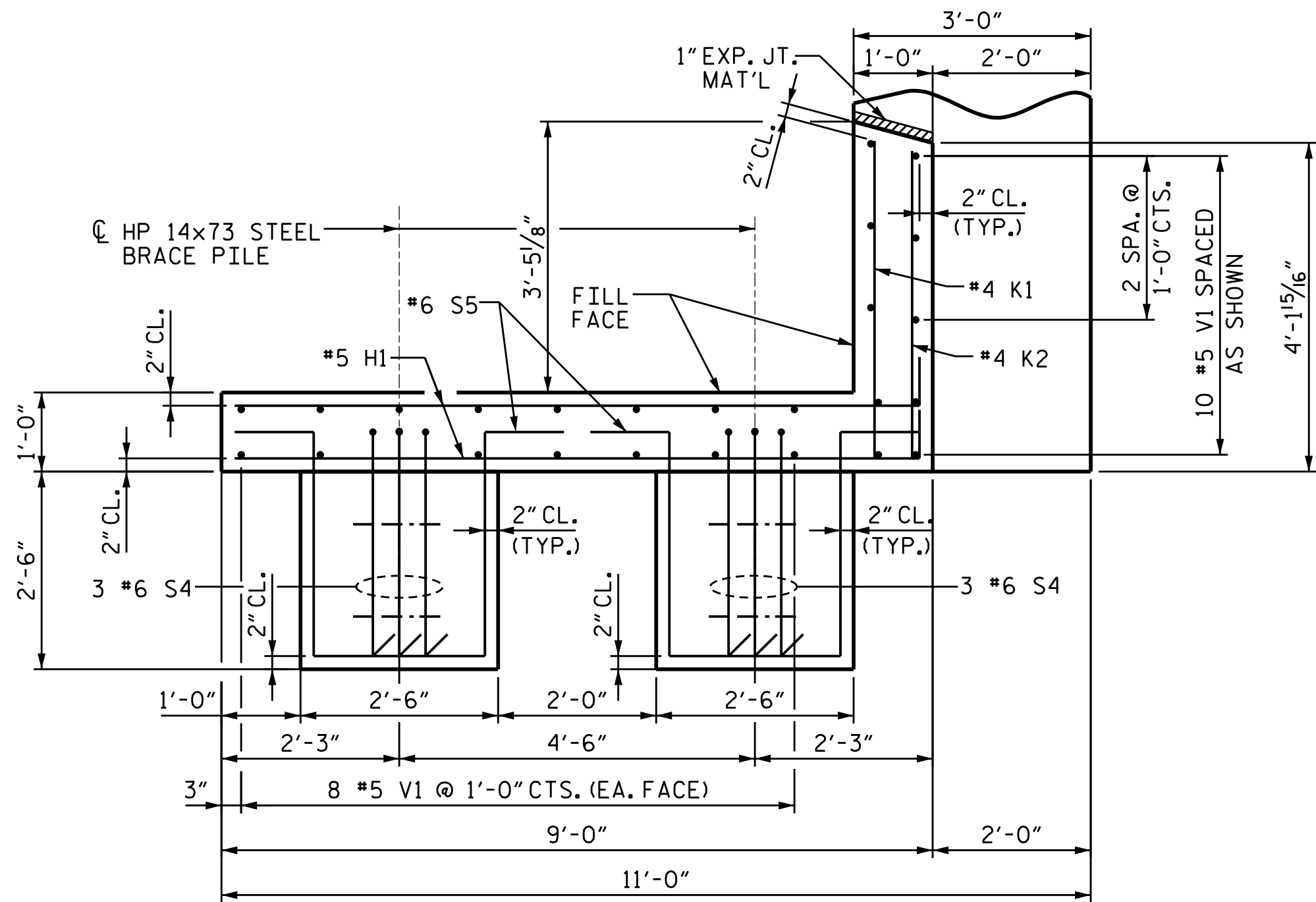
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE  
END BENT 2

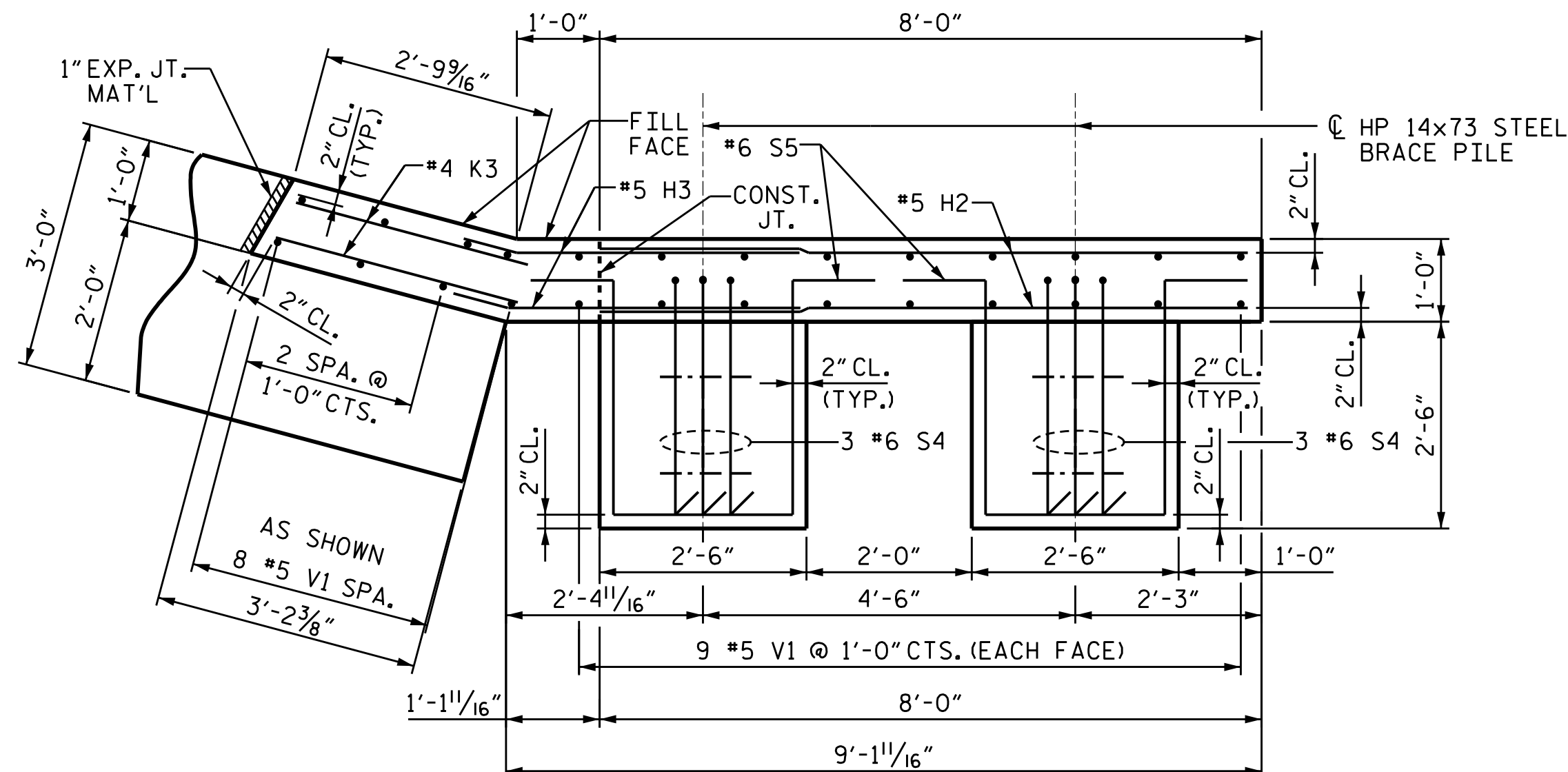
**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

**TGS ENGINEERS**  
201 W. MARION ST STE 200  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-027

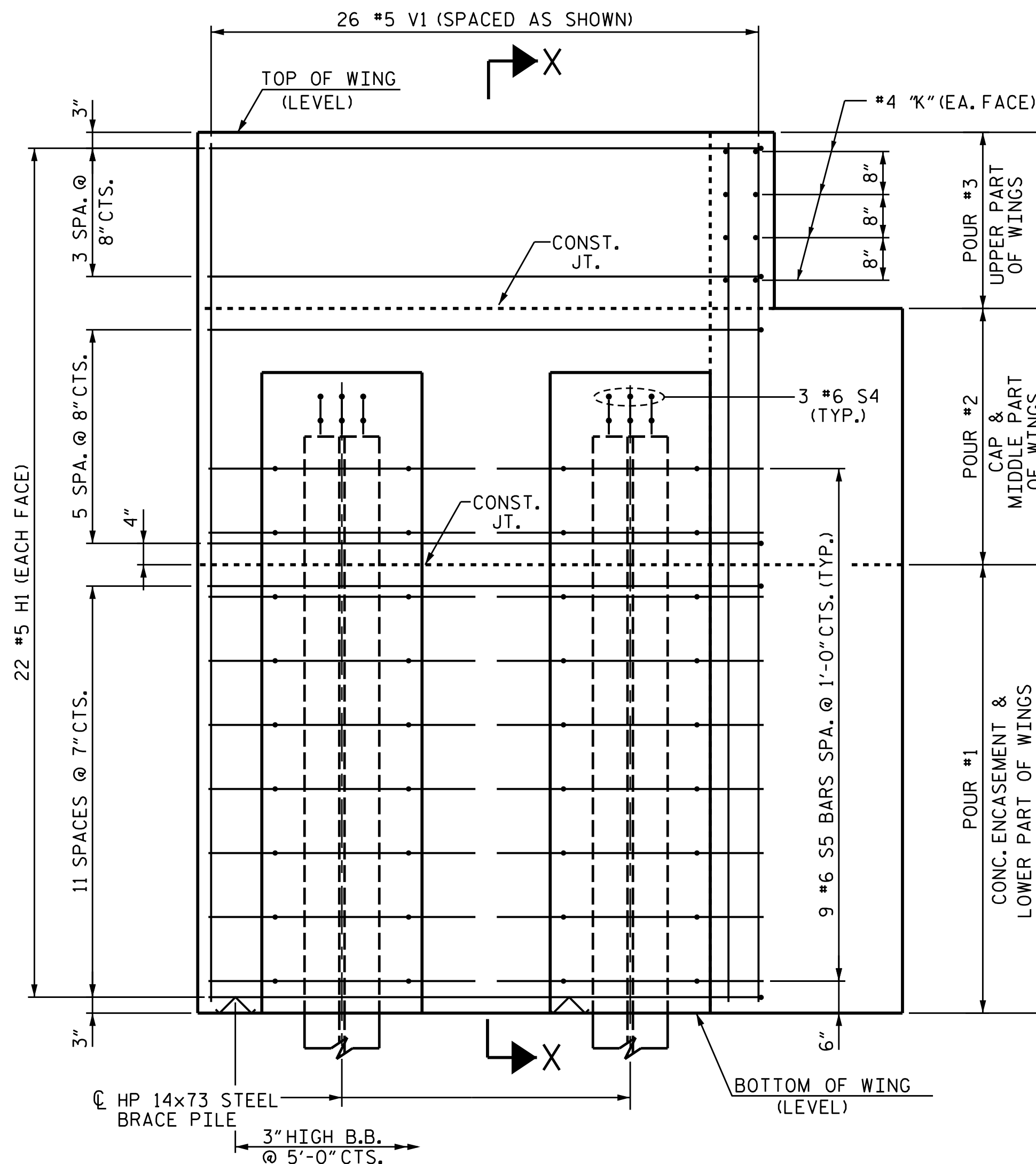
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| NO.       | BY: | DATE: | NO. | BY: | DATE: |                       |
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| 2         |     |       | 4   |     |       |                       |



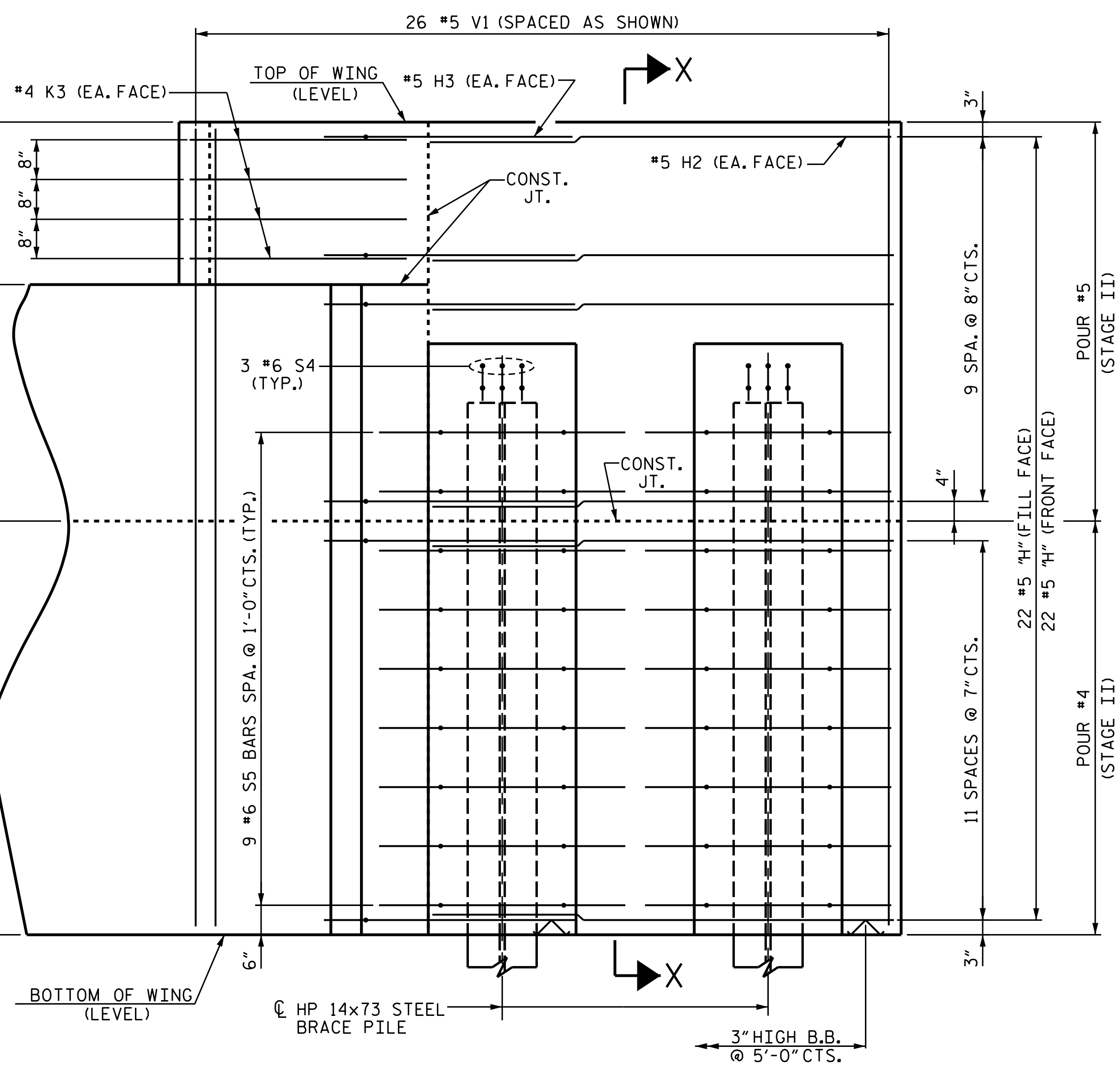
PLAN OF WING (W1)



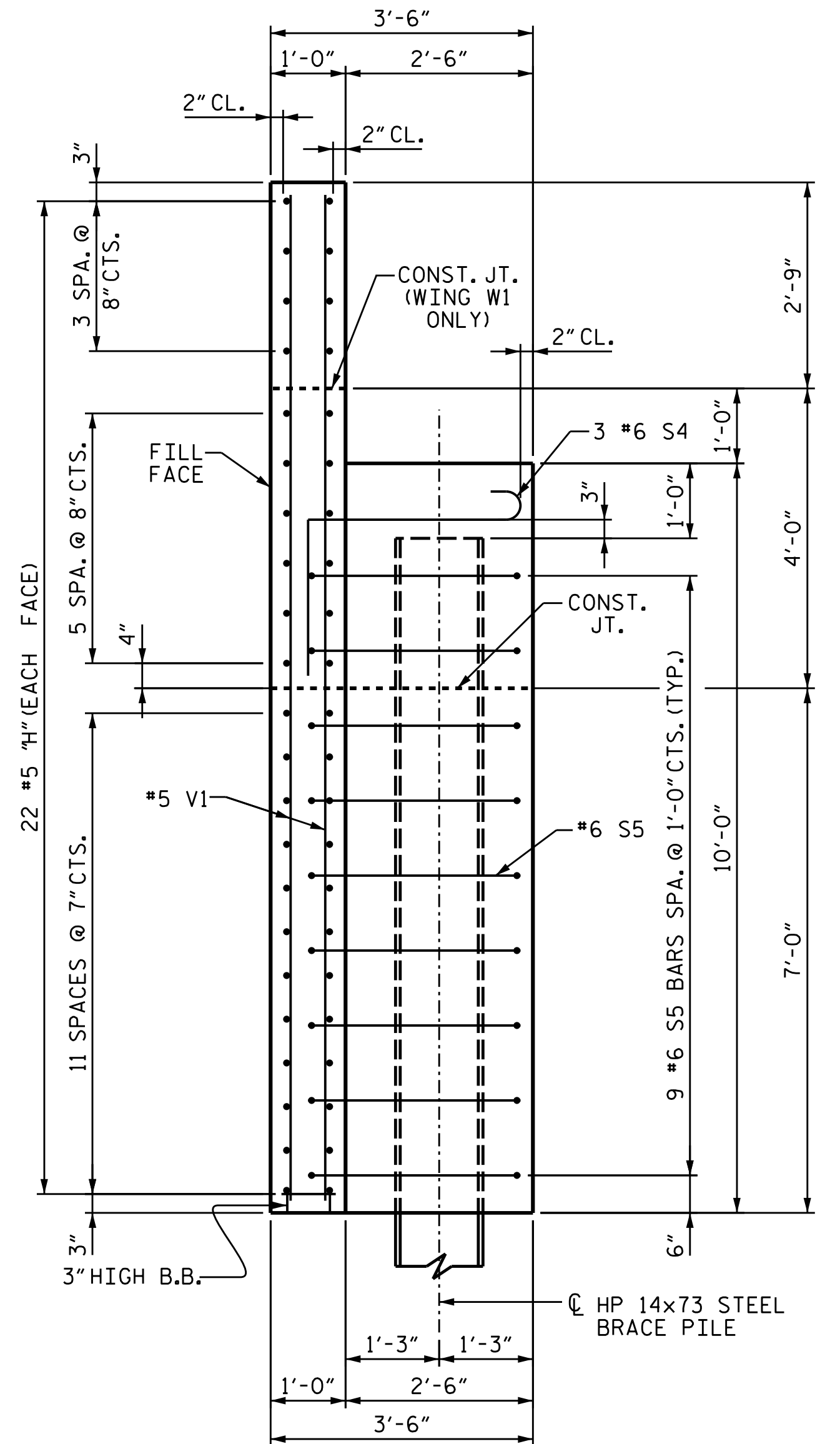
PLAN OF WING (W2)



ELEVATION OF WING (W1)



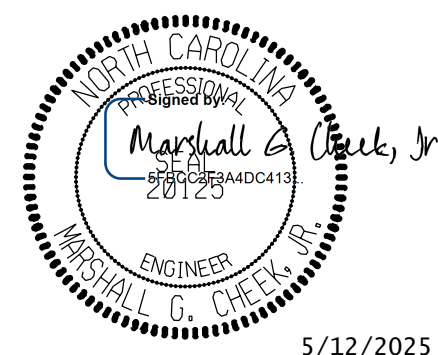
ELEVATION OF WING (W2)



SECTION X-X

PROJECT NO. BP11-R030  
WILKES COUNTY  
STATION: 13+31.25-L-

SHEET 2 OF 3



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE  
END BENT 2

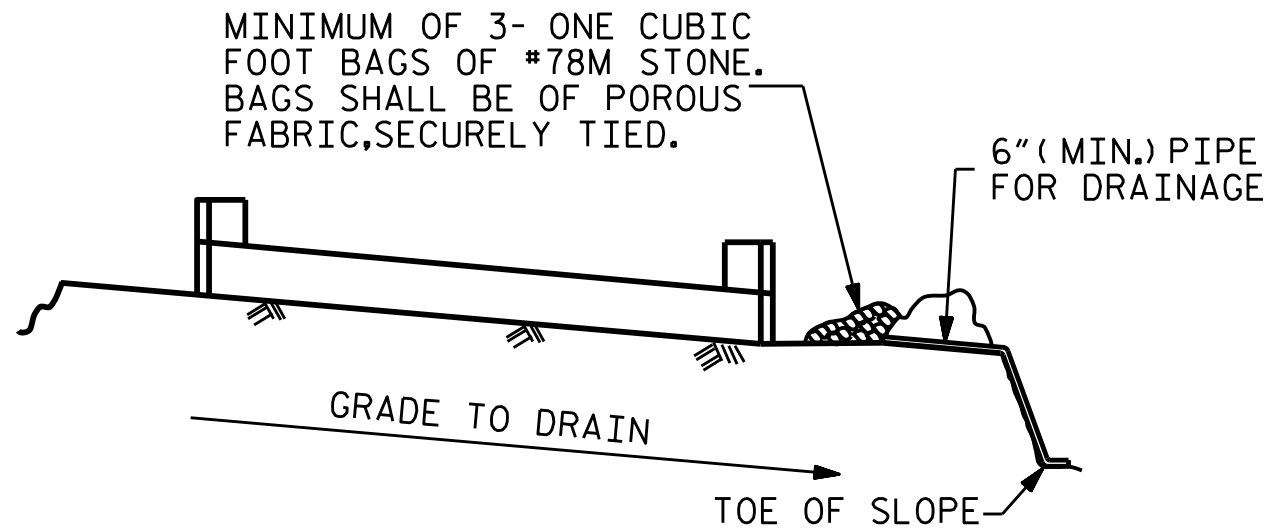
DRAWN BY : NMW  
CHECKED BY : MGC  
DESIGN ENGINEER OF RECORD : RDE

DATE : 3/25  
DATE : 3/25  
DATE : 3/25

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS  
201 W. MARION ST STE 200  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-0275

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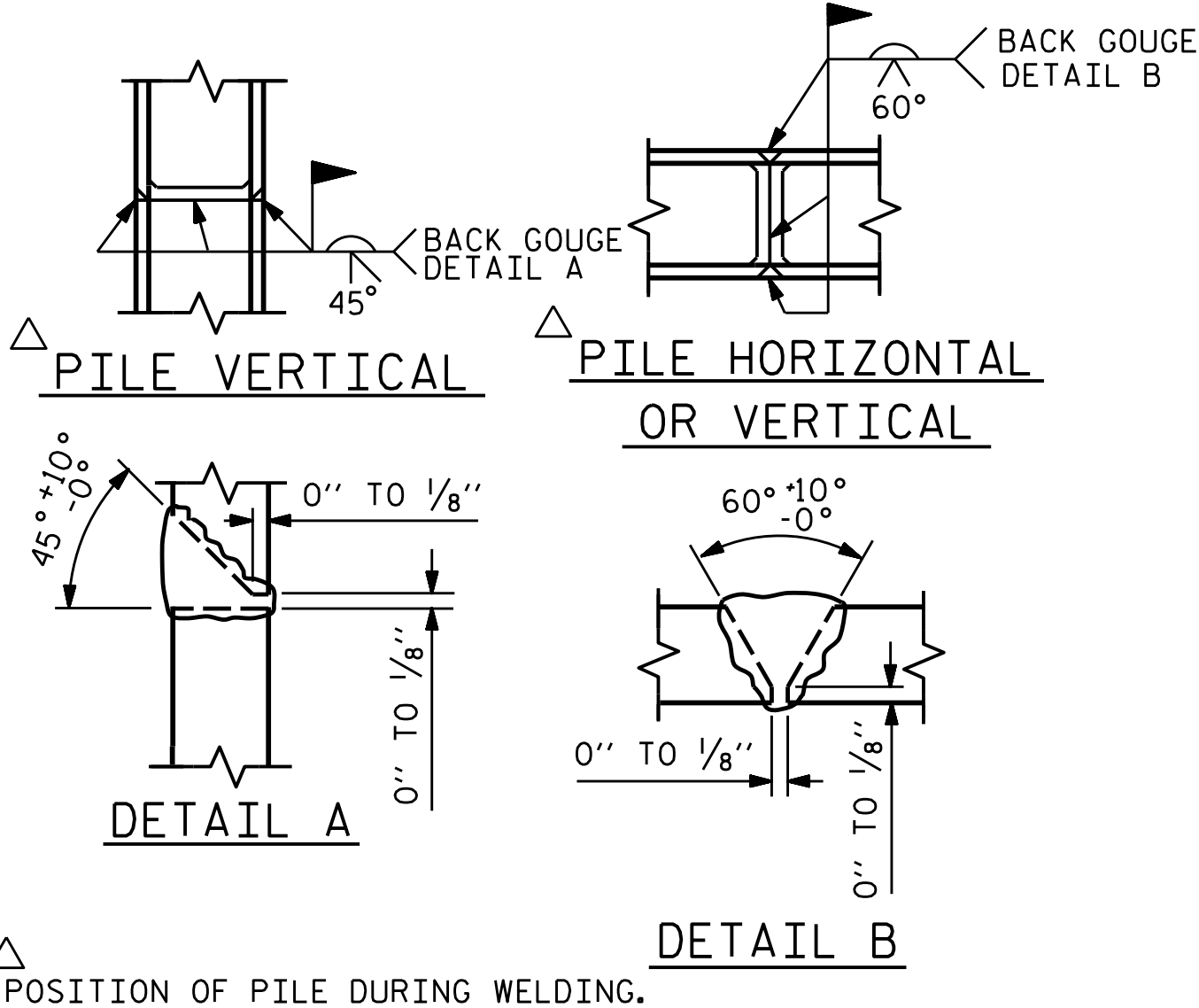
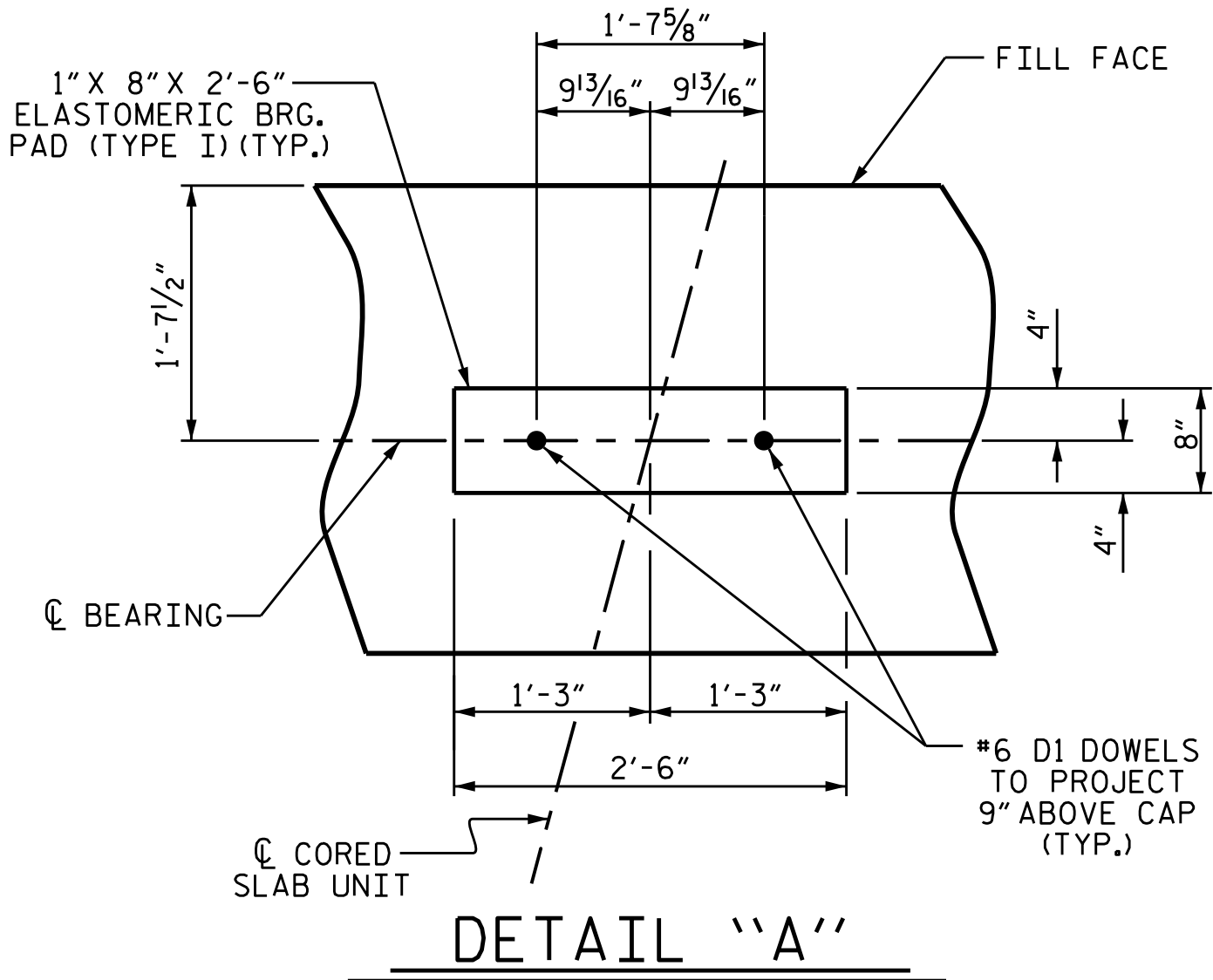


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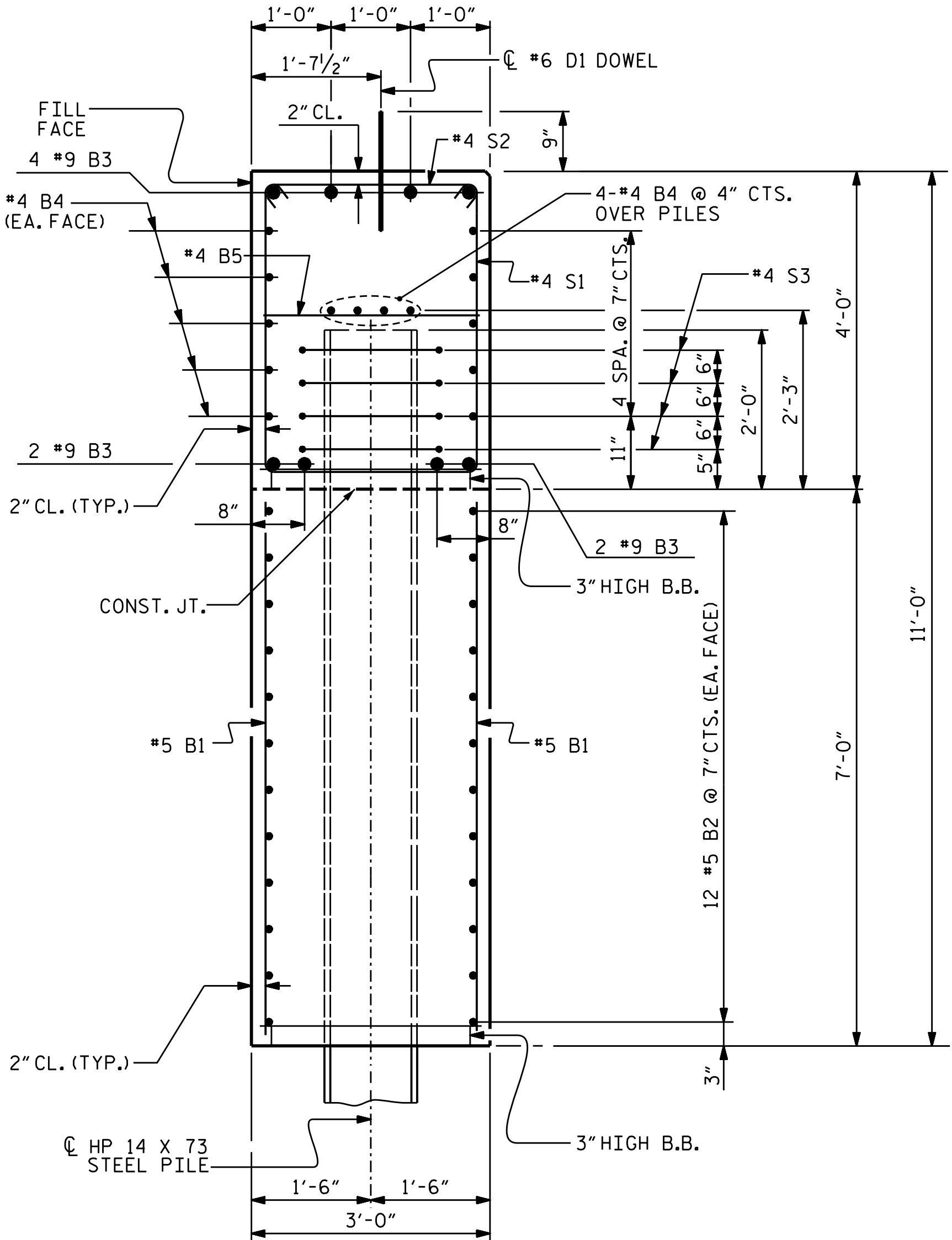
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### TEMPORARY DRAINAGE AT END BENT

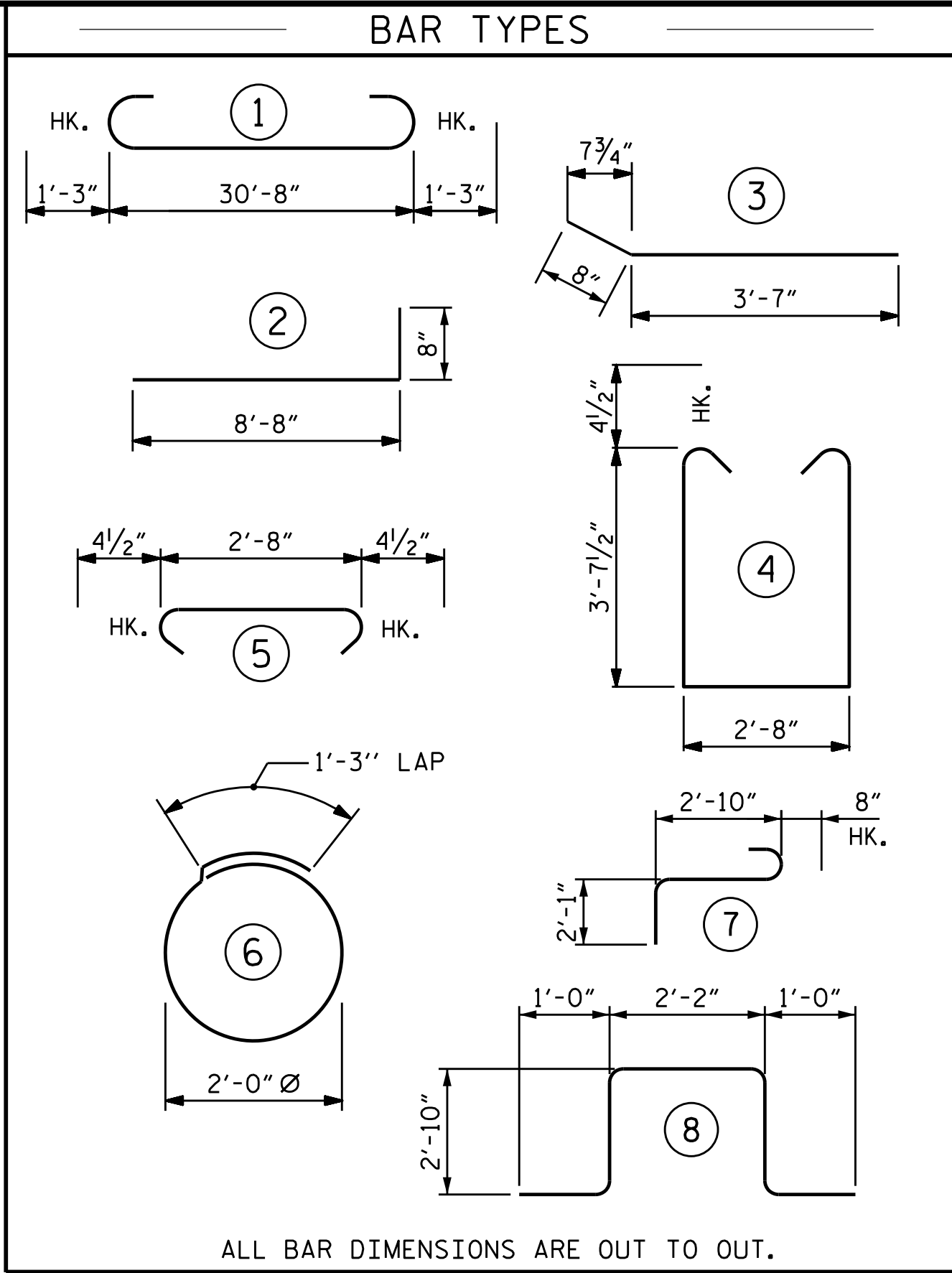


### PILE SPLICE DETAILS



### SECTION A-A

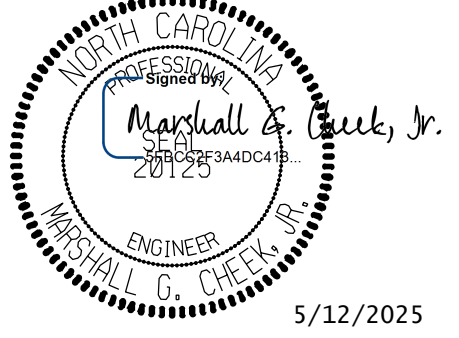
DRAWN BY : NMW      DATE : 3/25  
CHECKED BY : MGC      DATE : 3/25  
DESIGN ENGINEER OF RECORD : RDE      DATE : 3/25

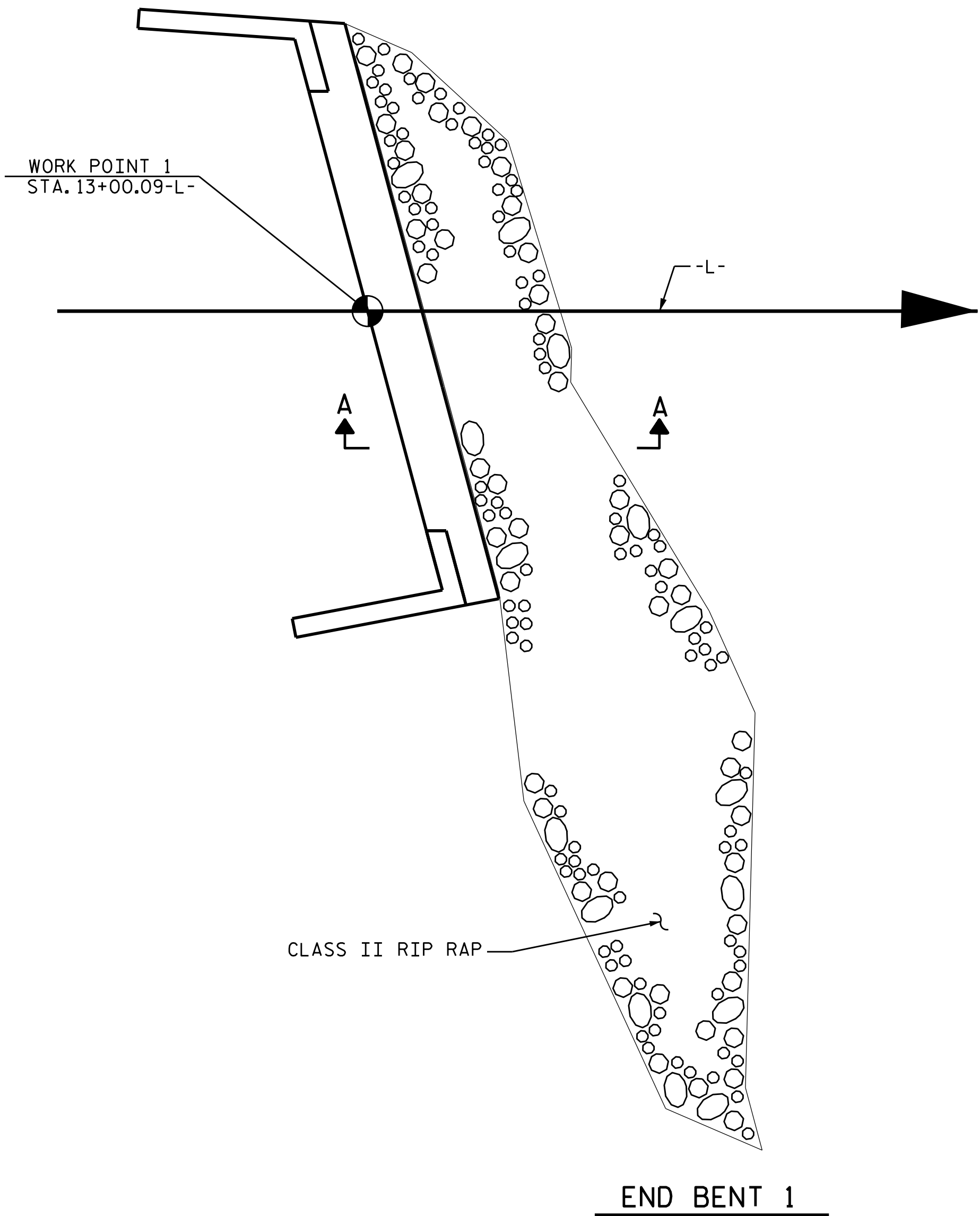


| BILL OF MATERIAL           |                                        |      |      |         |           |
|----------------------------|----------------------------------------|------|------|---------|-----------|
| END BENT 2                 |                                        |      |      |         |           |
| BAR                        | NO.                                    | SIZE | TYPE | LENGTH  | WEIGHT    |
| B1                         | 94                                     | #5   | STR. | 6'-8"   | 654       |
| B2                         | 24                                     | #5   | STR. | 30'-10" | 772       |
| B3                         | 8                                      | #9   | 1    | 33'-2"  | 902       |
| B4                         | 14                                     | #4   | STR. | 30'-10" | 288       |
| B5                         | 8                                      | #4   | STR. | 2'-8"   | 14        |
|                            |                                        |      |      |         |           |
| D1                         | 16                                     | #6   | STR  | 1'-6"   | 36        |
|                            |                                        |      |      |         |           |
| H1                         | 44                                     | #5   | 2    | 9'-4"   | 428       |
| H2                         | 44                                     | #5   | STR. | 7'-10"  | 359       |
| H3                         | 44                                     | #5   | 3    | 4'-3"   | 195       |
|                            |                                        |      |      |         |           |
| K1                         | 4                                      | #4   | STR  | 4'-0"   | 11        |
| K2                         | 4                                      | #4   | STR  | 3'-10"  | 10        |
| K3                         | 8                                      | #4   | STR  | 3'-0"   | 16        |
|                            |                                        |      |      |         |           |
| S1                         | 39                                     | #4   | 4    | 10'-8"  | 278       |
| S2                         | 39                                     | #4   | 5    | 3'-5"   | 89        |
| S3                         | 24                                     | #4   | 6    | 7'-7"   | 122       |
| S4                         | 12                                     | #6   | 7    | 5'-7"   | 101       |
| S5                         | 36                                     | #6   | 8    | 9'-10"  | 532       |
|                            |                                        |      |      |         |           |
| V1                         | 52                                     | #5   | STR  | 13'-5"  | 728       |
|                            |                                        |      |      |         |           |
| REINFORCING STEEL          |                                        |      |      |         | 5535 LBS. |
| CLASS A CONCRETE BREAKDOWN |                                        |      |      |         |           |
| POUR #1                    | CONC. ENCASEMENT & LOWER PART OF WINGS |      |      |         | 29.8 C.Y. |
| POUR #2                    | CAP & MIDDLE PART OF WINGS             |      |      |         | 16.6 C.Y. |
| POUR #3                    | UPPER PART OF WINGS                    |      |      |         | 1.6 C.Y.  |
| POUR #4                    | LOWER PART OF WING W2                  |      |      |         | 5.3 C.Y.  |
| POUR #5                    | UPPER PART OF WING W2                  |      |      |         | 3.4 C.Y.  |
| TOTAL CLASS A CONCRETE     |                                        |      |      |         | 56.7 C.Y. |

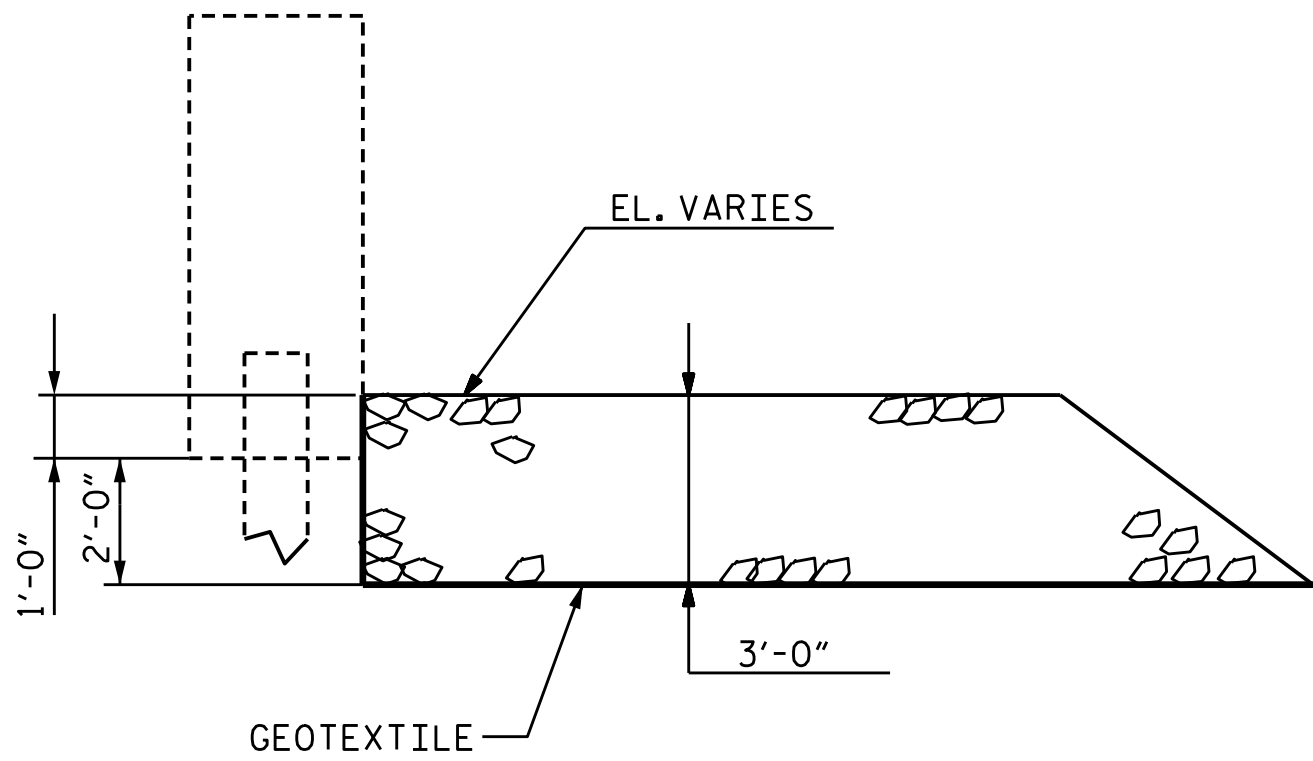
PROJECT NO. BP11-R030  
WILKES COUNTY  
STATION: 13+31.25-L-

SHEET 3 OF 3

|                                                                                                                                                                                                                                                                                                                                                                                                                    |     |                                                                    |     |                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--------------------------------------------------------------------|-----|--------------------|
| <div><p>5/12/2025</p></div> <div>DOCUMENT NOT CONSIDERED FINAL<br/>UNLESS ALL SIGNATURES COMPLETED</div> <div> TGS ENGINEERS<br/>201 W. MARION ST STE 200<br/>SHELBY, NC 28150<br/>PH (704) 476-0003<br/>CORP. LICENSE NO.: C-0275</div> |     | STATE OF NORTH CAROLINA<br>DEPARTMENT OF TRANSPORTATION<br>RALEIGH |     |                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                    |     | SUBSTRUCTURE<br><br>END BENT 2<br>DETAILS                          |     |                    |
| REVISIONS                                                                                                                                                                                                                                                                                                                                                                                                          |     |                                                                    |     | SHEET NO.<br>S-20  |
| NO.                                                                                                                                                                                                                                                                                                                                                                                                                | BY: | DATE:                                                              | NO. |                    |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                  |     |                                                                    | 3   | TOTAL SHEETS<br>23 |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                  |     |                                                                    | 4   |                    |



PLAN

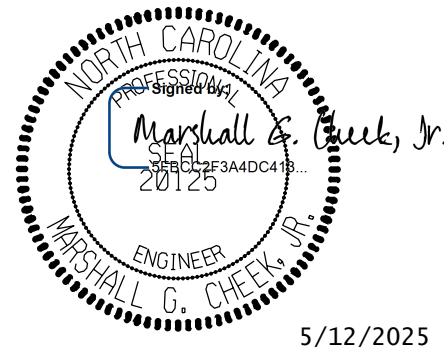


SECTION A-A

ESTIMATED QUANTITIES

| BRIDGE @<br>STA. 13+31.25-L- | RIP RAP<br>CLASS II | GEOTEXTILE<br>FOR DRAINAGE |
|------------------------------|---------------------|----------------------------|
|                              | TONS                | SQUARE YARDS               |
| END BENT 1                   | 120                 | 90                         |
|                              |                     |                            |

PROJECT NO. BP11-R030  
WILKES COUNTY  
STATION: 13+31.25-L-



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

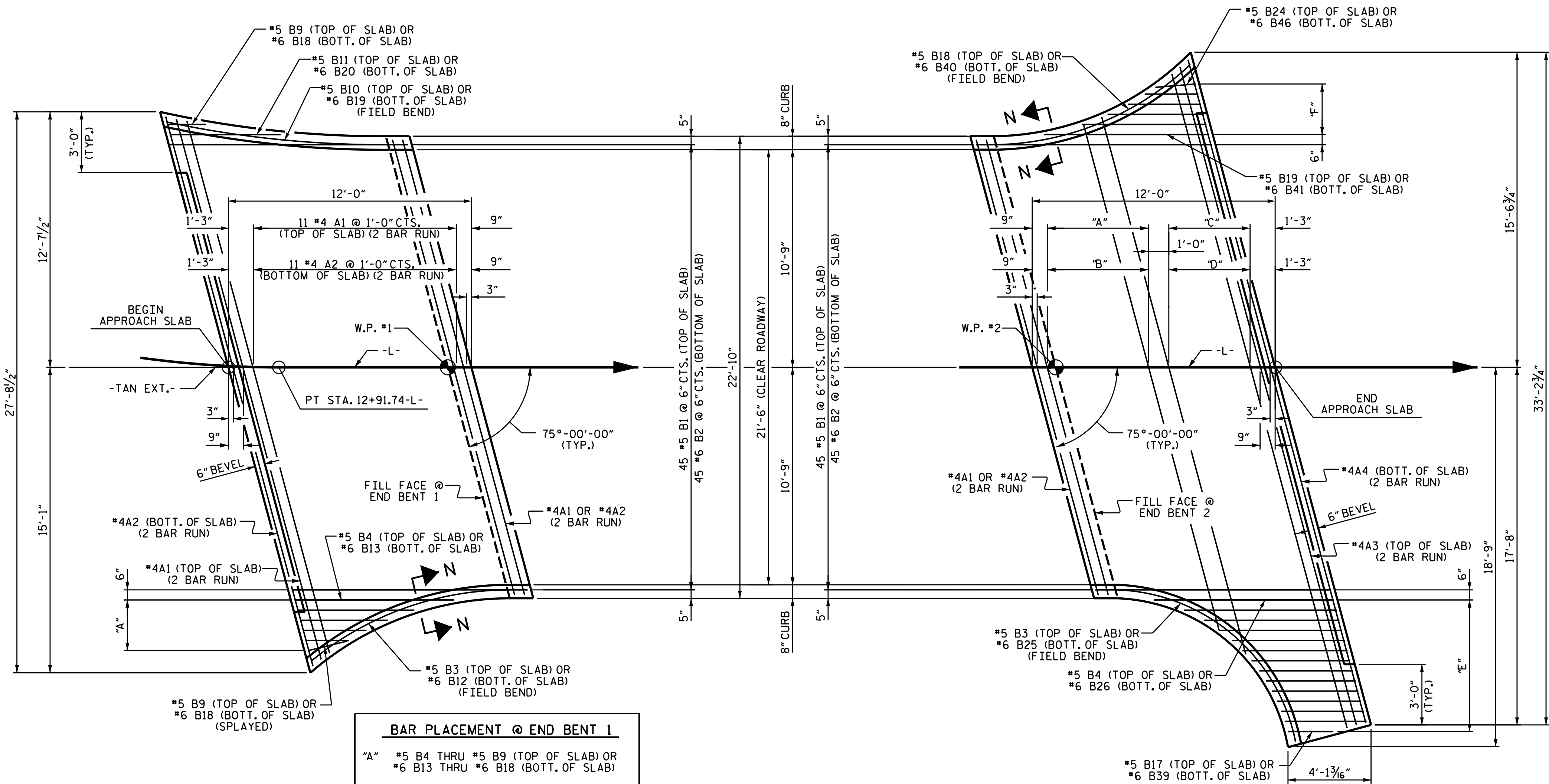
—RIP RAP DETAILS—

DRAWN BY : NMW DATE : 7/24  
CHECKED BY : MGC DATE : 3/25

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS  
201 W. MARION ST STE 200  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-0275

| REVISIONS |     |       |     |     |       | SHEET NO.       |
|-----------|-----|-------|-----|-----|-------|-----------------|
| NO.       | BY: | DATE: | NO. | BY: | DATE: |                 |
| 1         |     |       | 3   |     |       | S-21            |
| 2         |     |       | 4   |     |       | TOTAL SHEETS 23 |



BAR PLACEMENT @ END BENT 1

PLAN @ END BENT 2

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

| BAR PLACEMENT @ END BENT 2 |                                                                        |
|----------------------------|------------------------------------------------------------------------|
| "A"                        | 6 #4 A1 @ 1'-0" CTS. (TOP OF SLAB) (2 BAR RUN)                         |
| "B"                        | 6 #4 A2 @ 1'-0" CTS. (BOTT. OF SLAB) (2 BAR RUN)                       |
| "C"                        | 5 #4 A3 @ 1'-0" CTS. (TOP OF SLAB) (2 BAR RUN)                         |
| "D"                        | 5 #4 A4 @ 1'-0" CTS. (BOTT. OF SLAB) (2 BAR RUN)                       |
| "E"                        | #5 B4 THRU #5 B17 (TOP OF SLAB) OR #6 B26 THRU #6 B39 (BOTT. OF SLAB)  |
| "F"                        | #5 B19 THRU #5 B24 (TOP OF SLAB) OR #6 B41 THRU #6 B46 (BOTT. OF SLAB) |

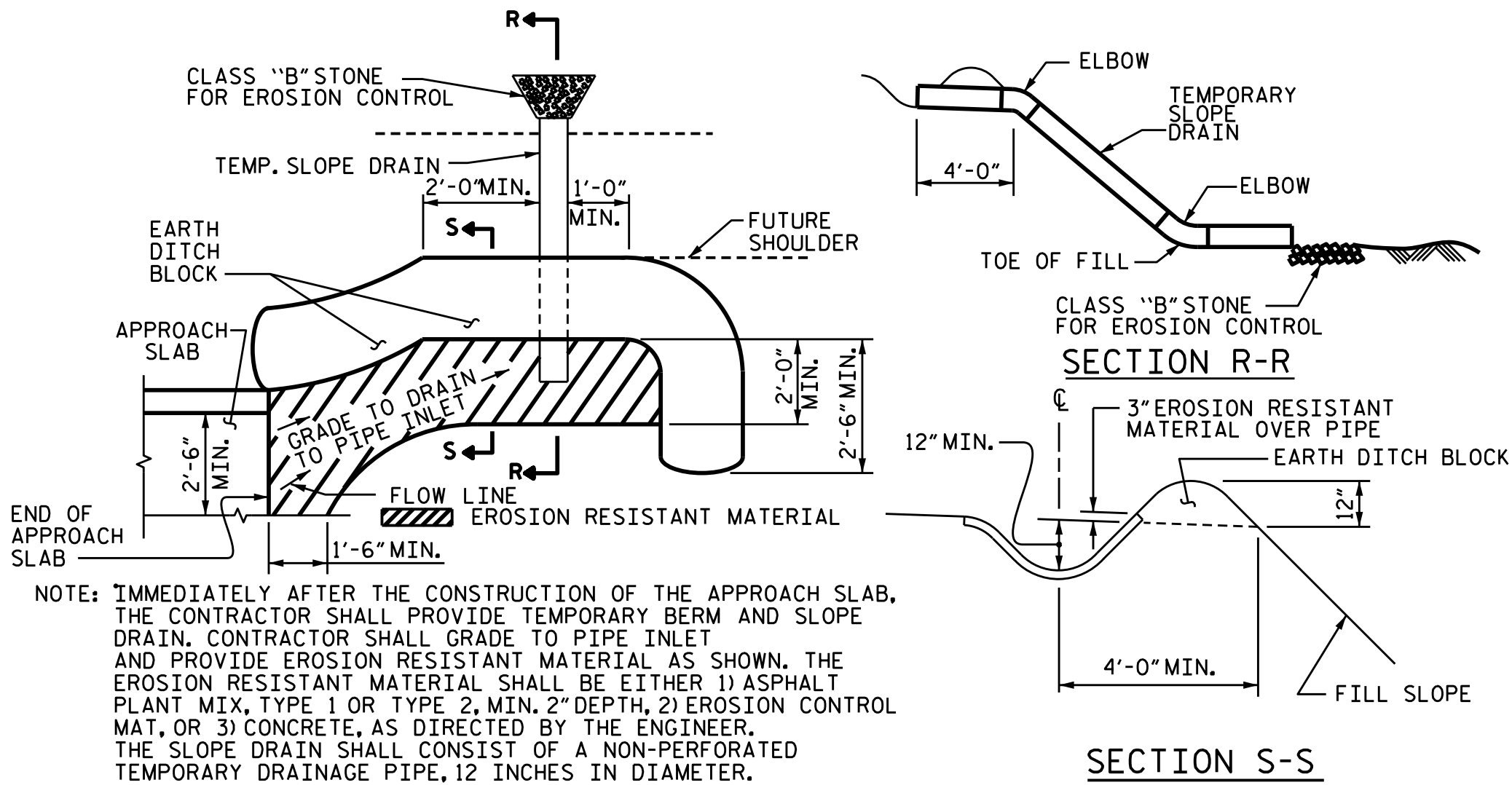
| APPROACH SLAB AT EB 2            |     |      |      |         |        |
|----------------------------------|-----|------|------|---------|--------|
| BAR                              | NO. | SIZE | TYPE | LENGTH  | WEIGHT |
| * A1                             | 14  | #4   | STR  | 13'-11" | 130    |
| A2                               | 14  | #4   | STR  | 13'-9"  | 129    |
| * A3                             | 12  | #4   | STR  | 18'-3"  | 146    |
| A4                               | 12  | #4   | STR  | 18'-1"  | 145    |
|                                  |     |      |      |         |        |
| * B1                             | 45  | #5   | STR  | 11'-1"  | 520    |
| B2                               | 45  | #6   | STR  | 11'-7"  | 783    |
| * B3                             | 1   | #5   | STR  | 12'-6"  | 13     |
| * B4                             | 1   | #5   | STR  | 8'-4"   | 9      |
| * B5                             | 1   | #5   | STR  | 7'-0"   | 7      |
| * B6                             | 1   | #5   | STR  | 6'-2"   | 6      |
| * B7                             | 1   | #5   | STR  | 5'-7"   | 6      |
| * B8                             | 1   | #5   | STR  | 5'-1"   | 5      |
| * B9                             | 1   | #5   | STR  | 4'-8"   | 5      |
| * B10                            | 1   | #5   | STR  | 4'-4"   | 5      |
| * B11                            | 1   | #5   | STR  | 4'-7"   | 5      |
| * B12                            | 1   | #5   | STR  | 4'-5"   | 5      |
| * B13                            | 1   | #5   | STR  | 4'-3"   | 4      |
| * B14                            | 1   | #5   | STR  | 4'-1"   | 4      |
| * B15                            | 1   | #5   | STR  | 4'-0"   | 4      |
| * B16                            | 1   | #5   | STR  | 3'-11"  | 4      |
| * B17                            | 1   | #5   | STR  | 2'-2"   | 2      |
| * B18                            | 1   | #5   | STR  | 10'-9"  | 11     |
| * B19                            | 1   | #5   | STR  | 7'-8"   | 8      |
| * B20                            | 1   | #5   | STR  | 5'-7"   | 6      |
| * B21                            | 1   | #5   | STR  | 4'-3"   | 4      |
| * B22                            | 1   | #5   | STR  | 3'-7"   | 4      |
| * B23                            | 1   | #5   | STR  | 2'-7"   | 3      |
| * B24                            | 1   | #5   | STR  | 2'-0"   | 2      |
| B25                              | 1   | #6   | STR  | 12'-6"  | 19     |
| B26                              | 1   | #6   | STR  | 8'-10"  | 13     |
| B27                              | 1   | #6   | STR  | 7'-6"   | 11     |
| B28                              | 1   | #6   | STR  | 6'-8"   | 10     |
| B29                              | 1   | #6   | STR  | 6'-1"   | 9      |
| B30                              | 1   | #6   | STR  | 5'-7"   | 8      |
| B31                              | 1   | #6   | STR  | 5'-2"   | 8      |
| B32                              | 1   | #6   | STR  | 4'-10"  | 7      |
| B33                              | 1   | #6   | STR  | 4'-7"   | 7      |
| B34                              | 1   | #6   | STR  | 4'-5"   | 7      |
| B35                              | 1   | #6   | STR  | 4'-3"   | 6      |
| B36                              | 1   | #6   | STR  | 4'-1"   | 6      |
| B37                              | 1   | #6   | STR  | 4'-0"   | 6      |
| B38                              | 1   | #6   | STR  | 3'-11"  | 6      |
| B39                              | 1   | #6   | STR  | 2'-2"   | 3      |
| B40                              | 1   | #6   | STR  | 10'-9"  | 16     |
| B41                              | 1   | #6   | STR  | 8'-2"   | 12     |
| B42                              | 1   | #6   | STR  | 6'-1"   | 9      |
| B43                              | 1   | #6   | STR  | 4'-9"   | 7      |
| B44                              | 1   | #6   | STR  | 3'-7"   | 5      |
| B45                              | 1   | #6   | STR  | 2'-7"   | 4      |
| B46                              | 1   | #6   | STR  | 2'-0"   | 3      |
|                                  |     |      |      |         |        |
| REINFORCING STEEL                |     |      |      | LBS.    | 1239   |
| * EPOXY COATED REINFORCING STEEL |     |      |      | LBS.    | 918    |
| CLASS AA CONCRETE                |     |      |      | C. Y.   | 16.6   |

NOTES

FOR BRIDGE APPROACH FILL, SEE ROADWAY PLANS.

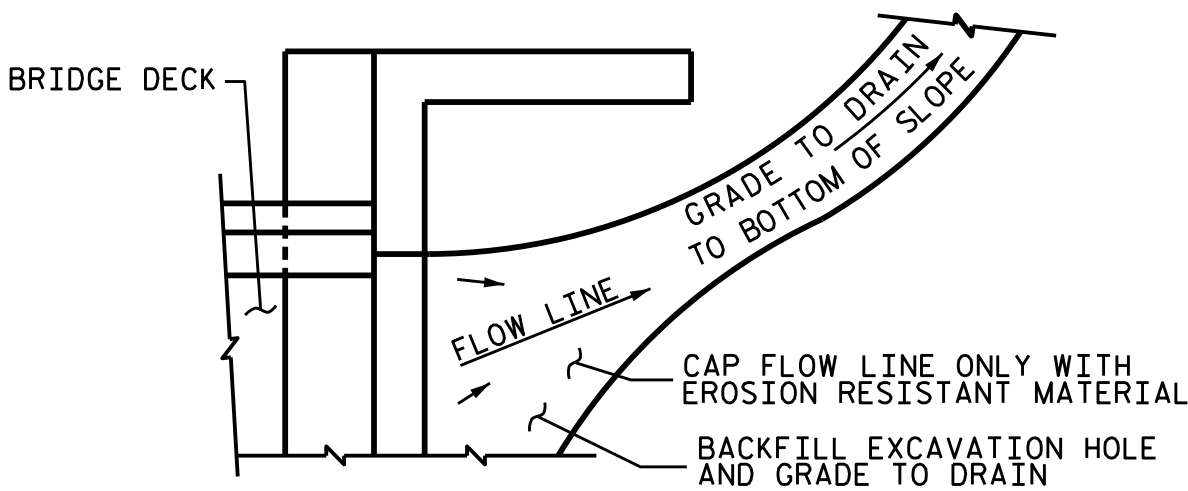
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.



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.

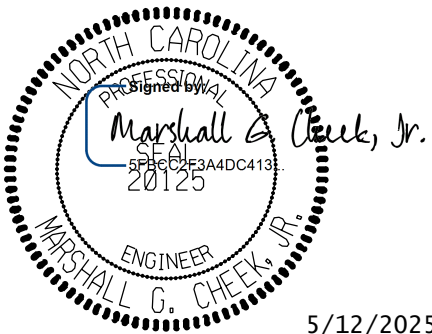
TEMPORARY DRAINAGE DETAIL

PROJECT NO. BP11-R030

WILKES COUNTY

STATION: 13+31.25-L-

SHEET 2 OF 2



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

BRIDGE APPROACH SLAB  
DETAILS

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS  
201 W. MARION ST STE 200  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-0275

REVISIONS

| NO. | BY: | DATE: | NO. | BY: | DATE: |
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| 1   |     |       | 3   |     |       |
| 2   |     |       | 4   |     |       |

SHEET NO.

S-23

TOTAL

SHEETS

23

DRAWN BY : NMW DATE : 8/24  
CHECKED BY : MGC DATE : 3/25

8/26/21

+

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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 CHAMFERED¾" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO ½" 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. FINS 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.