



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

J.R. "JOEY" HOPKINS  
SECRETARY

April 1, 2024

**Addendum No. 1**

RE: Contract # C204204

WBS # 46932.3.1

STATE FUNDED

**Wake County (P-5720)**

GRADE SEPARATION OF SR-2006 (DURANT ROAD) OVER CSX S LINE  
RAILROAD IN RALEIGH

**April 16, 2024 Letting**

To Whom It May Concern:

Reference is made to the plans and proposal furnished to you on this project.

The following revisions have been made to the Roadway plans.

Sheet No.	Revision
1	Letting date updated.
5	Drainage layers cut on to show missing drainage items. Updated sheet should be reviewed for drainage items and notes.

Please void the above listed Sheets in your Plans and staple the revised Sheets thereto.

The following revisions have been made to the Structure plans.

Sheet No.	Revision
Structures Title Sheet	Letting date updated.
S-1	Updated berm elevations.
S-2	Updated geotechnical notes.
S-2A	Updated foundation table.
S-3	Updated girder pay item, reinforcing steel, and concrete.
S-4	Updated LRFR for revised girder design.
S-5	Updated girder, max. build-up, B3 spacing, and overhang thickness.

Mailing Address:  
NC DEPARTMENT OF TRANSPORTATION  
CONTRACT STANDARDS AND DEVELOPMENT  
1591 MAIL SERVICE CENTER  
RALEIGH, NC 27699-1591

Telephone: (919) 707-6900  
Fax: (919) 250-4127  
Customer Service: 1-877-368-4968

Location:  
1020 BIRCH RIDGE DR.  
RALEIGH, NC 27610

Website: [www.ncdot.gov](http://www.ncdot.gov)

<b>Sheet No.</b>	<b>Revision</b>
S-6	Updated girder, max. build-up, B3 spacing, "K" bar lengths, U1 and "S" bar layout.
S-7	Updated girder top flange and B3 layout.
S-8	Updated girder top flange and reinforcing layout.
S-10	Updated girder sheet for 54" FIB; revised stirrup configuration to meet clearances based on build-up and anchorage zone requirements; revised end condition to accommodate integral on both ends.
S-11	Updated girder details sheet for 54" FIB and integral.
S-12	Updated girder diaphragm sheet for 54" FIBs.
S-13	Revised camber and deflection for updated girder design.
S-14	Updated bearing sheet for 54: FIBs and integral bearings.
S-21	Updated girder in section view.
S-22	Updated girder in section view.
S-23	Updated reinforcing and concrete quantities for revised girder type.
S-24	Updated V1 bar configuration for 54" FIB and beam seat elevations.
S-25	Wing steel corrected.
S-26	Updated quantity of V1 for 54" FIBs.
S-27	Updated V1 bar configuration for 54" FIB and beam seat elevations.
S-28	Wing steel corrected.
S-29	Updated quantity of V1 for 54" FIBs.
S-30	Updated berm elevations.
S-31	Approach Fill type revised.
S-32	Overhang depth corrected.

Please void the above listed Sheets in your Plans and staple the revised Sheets thereto.

The following revisions have been made to the proposal.

<b>Page No.</b>	<b>Revision</b>
Proposal Cover	Note added that reads “Includes Addendum No. 1 Dated 04-01-2024”. <b>Let date updated to April 16, 2024.</b>
G-23	The Project Special Provision entitled <b>CONTRACT TIME AND LIQUIDATED DAMAGES</b> has been revised.
G-23 thru G-24	The Project Special Provision entitled <b>INTERMEDIATE CONTRACT TIME NUMBER 1 AND LIQUIDATED DAMAGES</b> has been revised.
G-27	The Project Special Provision entitled <b>FUEL PRICE ADJUSTMENT</b> has been updated.
G-30	The Project Special Provision entitled <b>STEEL PRICE ADJUSTMENT</b> has been updated.
G-39	The Project Special Provision entitled <b>SCHEDULE OF ESTIMATED COMPLETION PROGRESS</b> has been updated.
R-9	The Project Special Provision entitled <b>PRICE ADJUSTMENT - ASPHALT BINDER FOR PLANT MIX</b> has been updated.
RR-1 thru RR-3	The Project Unit Special Provision entitled <b>SPECIAL PROVISIONS FOR PROTECTION OF RAILROAD INTEREST</b> has been revised. Notes in yellow added.

Please void the above listed existing Pages in your proposal and staple the revised Pages thereto.

On the item sheets the following pay item revisions have been made:

<b><u>Item</u></b>	<b><u>Description</u></b>	<b><u>Old Quantity</u></b>	<b><u>New Quantity</u></b>
0218-8182000000-E 420	CLASS A CONCRETE (BRIDGE)	94.4 CY	97 CY
0220-8217000000-E 425	REINFORCING STEEL (BRIDGE)	11,598 LB	11,588 LB
0221-8265000000-E 430	54" PRESTRESSED CONCRETE GIRDERS	1,346.58 LF	DELETED
0229-8278000000-E 430	FIB 54" PRESTRESSED CONCRETE GIRDERS	NEW ITEM	1,346.58 LF

The Contractor’s bid must include these pay item revisions.

The electronic bidding file has been updated to reflect these revisions. Please download the Addendum File and follow the instructions for applying the addendum. Bid Express will not accept your bid unless the addendum has been applied.

The contract will be prepared accordingly.

Sincerely,

DocuSigned by:  
*Ronald Elton Davenport, Jr.*  
52C46046381F443...

Ronald E. Davenport, Jr., PE  
State Contract Officer

RED/cms  
Attachments

cc: Mr. Boyd Tharrington, PE  
Mr. Brandon H. Jones, PE  
Mr. Ken Kennedy, PE  
Mr. Malcolm Bell

Mr. Forrest Dungan, PE  
Ms. Jaci Kincaid  
Mr. Jon Weathersbee, PE  
Project File (2)

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH, N.C.

PROPOSAL

**INCLUDES ADDENDUM No. 1 DATED 04-01-2024**

DATE AND TIME OF BID OPENING: **Apr 16, 2024 AT 02:00 PM**

CONTRACT ID C204204  
WBS 46932.3.1

FEDERAL-AID NO. STATE FUNDED  
COUNTY WAKE  
T.I.P NO. P-5720  
MILES 0.677  
ROUTE NO. SR-2006  
LOCATION GRADE SEPARATION OF SR-2006 (DURANT ROAD) OVER CSX S LINE  
RAILROAD IN RALEIGH.

TYPE OF WORK GRADING, DRAINAGE, PAVING, SIGNALS, AND STRUCTURES.

**NOTICE:**

ALL BIDDERS SHALL COMPLY WITH ALL APPLICABLE LAWS REGULATING THE PRACTICE OF GENERAL CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA WHICH REQUIRES THE BIDDER TO BE LICENSED BY THE N.C. LICENSING BOARD FOR CONTRACTORS WHEN BIDDING ON ANY NON-FEDERAL AID PROJECT WHERE THE BID IS \$30,000 OR MORE, EXCEPT FOR CERTAIN SPECIALTY WORK AS DETERMINED BY THE LICENSING BOARD. BIDDERS SHALL ALSO COMPLY WITH ALL OTHER APPLICABLE LAWS REGULATING THE PRACTICES OF ELECTRICAL, PLUMBING, HEATING AND AIR CONDITIONING AND REFRIGERATION CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA. NOTWITHSTANDING THESE LIMITATIONS ON BIDDING, THE BIDDER WHO IS AWARDED ANY FEDERAL - AID FUNDED PROJECT SHALL COMPLY WITH CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA FOR LICENSING REQUIREMENTS WITHIN 60 CALENDAR DAYS OF BID OPENING.

**BIDS WILL BE RECEIVED AS SHOWN BELOW:**

**THIS IS A ROADWAY & STRUCTURE PROPOSAL**

**5% BID BOND OR BID DEPOSIT REQUIRED**

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### f. Labor Protective Arrangements

In accordance with 49 U.S.C. § 22905(c)(2)(B), if the Project funded by this Agreement uses rights-of-way owned by a railroad, then Contractor will ensure compliance with the protective arrangements that are equivalent to the protective arrangements established under Section 504 of the Railroad Revitalization and Regulatory Reform Act of 1976, 45 U.S.C. § 836, with respect to employees affected by actions taken in connection with the Project financed in whole or in part by this Agreement.

### g. Davis-Bacon and Related Acts Provisions

In accordance with 49 U.S.C. § 22905(c)(2)(A), if the Project funded by this Agreement uses rights-of-way owned by a railroad, then, the Contractor will ensure compliance with the standards of 49 U.S.C. § 24312 with respect to the Project in the same manner that Amtrak is required to comply with those standards for construction work financed under an agreement made under 49 U.S.C. § 24308(a). For these purposes, wages in collective bargaining agreements negotiated under the Railway Labor Act are deemed to comply with Davis-Bacon Act requirements.

### h. Replacement of Existing Intercity Passenger Rail Service

If an intercity passenger rail transportation provider replaces Amtrak intercity passenger rail service through a Project funded by this Agreement, then such provider must comply with the provisions of 49 U.S.C. § 22905(d).

### CONTRACT TIME AND LIQUIDATED DAMAGES:

(4-17-12)(Rev. 5-16-23)

108

SP1 G08 C

The date of availability for this contract is **May 29, 2024**.

The completion date for this contract is **February 28, 2027**.

Except where otherwise provided by the contract, observation periods required by the contract will not be a part of the work to be completed by the completion date and/or intermediate contract times stated in the contract. The acceptable completion of the observation periods that extend beyond the final completion date shall be a part of the work covered by the performance and payment bonds.

The liquidated damages for this contract are **Two Hundred Dollars (\$200.00)** per calendar day. These liquidated damages will not be cumulative with any liquidated damages which may become chargeable under Intermediate Contract Time Number 1.

### INTERMEDIATE CONTRACT TIME NUMBER 1 AND LIQUIDATED DAMAGES:

(7-1-95) (Rev. 2-21-12)

108

SP1 G13 A

Except for that work required under the Project Special Provisions entitled *Planting, Reforestation* and/or *Permanent Vegetation Establishment*, included elsewhere in this proposal, the Contractor will be required to complete all work included in this contract and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is **May 29, 2024**.

The completion date for this intermediate contract time is **September 1, 2026**.

The liquidated damages for this intermediate contract time are **Two Thousand Dollars (\$ 2,000.00)** per calendar day.

Upon apparent completion of all the work required to be completed by this intermediate date, a final inspection will be held in accordance with Article 105-17 and upon acceptance, the Department will assume responsibility for the maintenance of all work except *Planting, Reforestation* and/or *Permanent Vegetation Establishment*. The Contractor will be responsible for and shall make corrections of all damages to the completed roadway caused by his planting operations, whether occurring prior to or after placing traffic through the project.

**INTERMEDIATE CONTRACT TIME NUMBER 2 AND LIQUIDATED DAMAGES:**

(2-20-07)

108

SP1 G14 A

The Contractor shall complete the required work of installing, maintaining, and removing the traffic control devices for lane closures and restoring traffic to the existing traffic pattern. The Contractor shall not close or narrow a lane of traffic on **SR 2006 (Durant Road)** during the following time restrictions:

DAY AND TIME RESTRICTIONS

**Monday thru Friday, from 6:00 AM to 9:00 AM and from 4:00 PM to 7:00 PM**

In addition, the Contractor shall not close or narrow a lane of traffic on **SR 2006 (Durant Road)**, detain and/or alter the traffic flow on or during holidays, holiday weekends, special events, or any other time when traffic is unusually heavy, including the following schedules:

HOLIDAY AND HOLIDAY WEEKEND LANE CLOSURE RESTRICTIONS

1. For **unexpected occurrence** that creates unusually high traffic volumes, as directed by the Engineer.
2. For **New Year's Day**, between the hours of **6:00 AM** December 31<sup>st</sup> and **7:00 PM** January 2<sup>nd</sup>. If New Year's Day is on a Friday, Saturday, Sunday or Monday, then until **7:00 PM** the following Tuesday.
3. For **Easter**, between the hours of **6:00 AM** Thursday and **7:00 PM** Monday.
4. For **Memorial Day**, between the hours of **6:00 AM** Friday and **7:00 PM** Tuesday.
5. For **Independence Day**, between the hours of **6:00 AM** the day before Independence Day and **7:00 PM** the day after Independence Day.  
  
If **Independence Day** is on a Friday, Saturday, Sunday or Monday, then between the hours of **6:00 AM** the Thursday before Independence Day and **7:00 PM** the Tuesday after Independence Day.
6. For **Labor Day**, between the hours of **6:00 AM** Friday and **7:00 PM** Tuesday.
7. For **Thanksgiving**, between the hours of **6:00 AM** Tuesday and **7:00 PM** Monday.

**MAJOR CONTRACT ITEMS:**

(2-19-02)(Rev. 1-16-24)

104

SP1 G28

The following listed items are the major contract items for this contract (see Article 104-5 of the *Standard Specifications*):

<b>Line #</b>	<b>Description</b>
7	Borrow Excavation
13	Temporary Shoring

**SPECIALTY ITEMS:**

(7-1-95)(Rev. 1-16-24)

108-6

SP1 G37

Items listed below will be the specialty items for this contract (see Article 108-6 of the *Standard Specifications*).

<b>Line #</b>	<b>Description</b>
70-77	Guardrail
78-80	Fencing
84-91	Signing
109-115	Long-Life Pavement Markings
116	Removable Tape
129-130	Permanent Pavement Markers
132-169	Utility Construction
170-197	Erosion Control
198-211	Signals/ITS System

**FUEL PRICE ADJUSTMENT:**

(11-15-05) (Rev. 1-16-24)

109-8

SP1 G43

Revise the *Standard Specifications* as follows:

**Page 1-82, Article 109-8, FUEL PRICE ADJUSTMENTS**, add the following:

The base index price for DIESEL #2 FUEL is \$ **2.7781** per gallon. Where any of the following are included as pay items in the contract, they will be eligible for fuel price adjustment.

The pay items and the fuel factor used in calculating adjustments to be made will be as follows:

<b>Description</b>	<b>Units</b>	<b>Fuel Usage Factor Diesel</b>
Unclassified Excavation	Gal/CY	0.29
Borrow Excavation	Gal/CY	0.29
Class IV Subgrade Stabilization	Gal/Ton	0.55
Aggregate Base Course	Gal/Ton	0.55
Sub-Ballast	Gal/Ton	0.55
Erosion Control Stone	Gal/Ton	0.55
Rip Rap, Class	Gal/Ton	0.55
Asphalt Concrete Base Course, Type _____	Gal/Ton	0.90 or 2.90



The bidding index for Category 1 Steel items is \$ **42.56** per hundredweight.  
 The bidding index for Category 2 Steel items is \$ **63.5** per hundredweight.  
 The bidding index for Category 3 Steel items is \$ **64.78** per hundredweight.  
 The bidding index for Category 4 Steel items is \$ **48.06** per hundredweight.  
 The bidding index for Category 5 Steel items is \$ **56.56** per hundredweight.  
 The bidding index for Category 6 Steel items is \$ **66.8** per hundredweight.  
 The bidding index for Category 7 Steel items is \$ **44.34** per hundredweight.

The bidding index represents a selling price of steel based on Fastmarkets data for the month of **February 2024**.

- MI = Monthly Index. – in Dollars (\$) per hundredweight (CWT). Use the adjustment indices from the month the steel was shipped from the producing mill, received on the project, or member cast as defined in the Product Relationship Table.
- BI = Bidding Index. - in Dollars (\$) per hundredweight (CWT). Use the adjustment indices as listed in the proposal.

<i>Steel Product (Title)</i>	BI, MI*	Adjustment Date for MI	Category
Reinforcing Steel, Bridge Deck, and SIP Forms	Based on one or more Fastmarkets indices	Delivery Date from Producing Mill	1
Structural Steel and Encasement Pipe	Based on one or more Fastmarkets indices	Delivery Date from Producing Mill	2
Steel H-Piles, Soldier Pile Walls	Based on one or more Fastmarkets indices	Delivery Date from Producing Mill	3
Guardrail Items and Pipe Piles	Based on one or more Fastmarkets indices	Material Received Date**	4
Fence Items	Based on one or more Fastmarkets indices	Material Received Date**	5
Overhead Sign Assembly, Signal Poles, High Mount Standards	Based on one or more Fastmarkets indices	Material Received Date**	6
Prestressed Concrete Members	Based on one or more Fastmarkets indices	Cast Date of Member	7

Submit documentation to the Engineer for all items listed in the Contract for which the Contractor is requesting a steel price adjustment.

### Submittal Requirements

The items in categories 1,2, and 3, shall be specifically stored, labeled, or tagged, recognizable by color marking, and identifiable by Project for inspection and audit verification immediately upon arrival at the fabricator.

Furnish the following documentation for all steel products to be incorporated into the work and documented on Form SPA-2, found on the Departments website at the following address:

<https://connect.ncdot.gov/projects/construction/Construction%20Forms/Form%20SPA-2.xlsx>

**SCHEDULE OF ESTIMATED COMPLETION PROGRESS:**

(7-15-08)(Rev. 1-16-24)

108-2

SP1 G58

The Contractor's attention is directed to the Standard Special Provision entitled *Availability of Funds Termination of Contracts* included elsewhere in this proposal. The Department of Transportation's schedule of estimated completion progress for this project as required by that Standard Special Provision is as follows:

	<b><u>Fiscal Year</u></b>	<b><u>Progress (% of Dollar Value)</u></b>
2024	(7/01/23 - 6/30/24)	6% of Total Amount Bid
2025	(7/01/24 - 6/30/25)	52% of Total Amount Bid
2026	(7/01/25 - 6/30/26)	39% of Total Amount Bid
2027	(7/01/26 - 6/30/27)	3% of Total Amount Bid

The Contractor shall also furnish his own progress schedule in accordance with Article 108-2 of the *Standard Specifications*. Any acceleration of the progress as shown by the Contractor's progress schedule over the progress as shown above shall be subject to the approval of the Engineer.

**DISADVANTAGED BUSINESS ENTERPRISE:**

(10-16-07)(Rev. 1-16-24)

102-15(J)

SP1 G61

**Description**

The purpose of this Special Provision is to carry out the U.S. Department of Transportation's policy of ensuring nondiscrimination in the award and administration of contracts financed in whole or in part with Federal funds. This provision is guided by 49 CFR Part 26.

**Definitions**

*Additional DBE Subcontractors* - Any DBE submitted at the time of bid that will not be used to meet the DBE goal. No submittal of a Letter of Intent is required.

*Committed DBE Subcontractor* - Any DBE submitted at the time of bid that is being used to meet the DBE goal by submission of a Letter of Intent. Or any DBE used as a replacement for a previously committed DBE firm.

*Contract Goal Requirement* - The approved DBE participation at time of award, but not greater than the advertised contract goal.

*DBE Goal* - A portion of the total contract, expressed as a percentage, that is to be performed by committed DBE subcontractor(s).

*Disadvantaged Business Enterprise (DBE)* - A firm certified as a Disadvantaged Business Enterprise through the North Carolina Unified Certification Program.

*Goal Confirmation Letter* - Written documentation from the Department to the bidder confirming the Contractor's approved, committed DBE participation along with a listing of the committed DBE firms.

Payment will be made under:

**Pay Item**

Type 1 Bridge Approach Fill, Station \_\_\_\_\_

Type 2 Bridge Approach Fill, Station \_\_\_\_\_

**Pay Unit**

Lump Sum

Lump Sum

**PRICE ADJUSTMENT - ASPHALT BINDER FOR PLANT MIX:**

(11-21-00)(Rev. 1-16-24)

620

SP6 R25

Price adjustments for asphalt binder for plant mix will be made in accordance with Section 620 of the *Standard Specifications*.

The base price index for asphalt binder for plant mix is \$ **591.88** per ton.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on **March 1, 2024**.

**FINAL SURFACE TESTING NOT REQUIRED:**

(5-18-04) (Rev. 2-16-16)

610

SP6 R45

Final surface testing is not required on this project in accordance with Section 610-13, *Final Surface Testing and Acceptance*.

**CONVERT EXISTING CATCH BASIN TO 2G.I.:**

(1-1-02) (Rev. 1-16-23)

840, 859

SP8 R50

At the proper phase of construction, convert the existing **Catch Basin** at locations indicated in the plans or where directed, to **2G.I.** in accordance with the details in the plans and the applicable requirements of Sections 840 and 859 of the *Standard Specifications*.

*Convert Existing Catch Basin to 2G.I.* will be measured and paid as each, completed and accepted. Such price and payment is considered full compensation for all equipment, materials, labor, tools, and incidentals necessary to complete each conversion satisfactorily.

Payment will be made under:

**Pay Item**

Convert Existing **Catch Basin** to **2G.I.**

**Pay Unit**

Each

**TEMPORARY SHORING:**

(2-20-07)(Rev. 1-16-24)

SP11 R02

**Description**

Temporary shoring includes cantilever, braced and anchored shoring and temporary mechanically stabilized earth (MSE) walls. Temporary shoring does not include trench boxes. At the Contractor's option, use any type of temporary shoring unless noted otherwise in the plans or as directed. Design and construct temporary shoring based on actual elevations and shoring dimensions in accordance with the contract and accepted submittals. Construct temporary shoring at locations shown in the plans and as directed. Temporary shoring is required to maintain traffic when a 2:1 (H:V) slope from the top of an embankment or bottom of an excavation will intersect the existing ground line less than 5 feet from the edge of pavement of an open travelway. This

State Project: P-5720  
CSX OP No. NC0887

Wake County

## **SPECIAL PROVISIONS FOR PROTECTION OF RAILROAD INTEREST**

Under the terms of these provisions, the North Carolina Department of Transportation shall hereinafter be called “Department”, and the CSX Transportation, Inc. shall hereinafter be called “Railroad”.

The CSXT Special Provisions, CSXT Criteria for Undergrade Railroad Bridges, CSXT Construction Submission Criteria, CSXT Soil and Water Management Policy, and CSXT Insurance Requirements, as found in the CSX Transportation Public Projects Manual, which can be found at, <https://www.csx.com/index.cfm/library/files/about-us/property/public-project-manual/>, as well as the current version of the CSXT Design and Construction Standard Specifications available at the time of execution of the agreement, which shall be obtained from CSXT or its authorized representative upon request from the Department or its Contractor, all of the aforementioned shall be considered to be included by reference only, and the attached project-specific CSXT Temporary Right of Entry Agreement shall serve as the basis for the railroad provisions of this contract. CSXT further reserves the right to revise, update and enforce any and all safety related Design and Construction Standards and Specifications as may be necessary throughout the course of the project. The following additional statements are to be included as addendums to the referenced provisions:

- Requirements throughout these provisions placed on “Agency or its Contractor” shall be the sole responsibility of the Contractor unless specifically stated otherwise elsewhere within these provisions. All contractor costs for railroad coordination shall be considered incidental to the other pay items.
- Unless noted elsewhere in these provisions, all contact with Railroad should be addressed to the below individual who shall be considered the CSXT Representative.

Mr. G. Douglas Barber  
CE&I Lead  
AECOM  
(704) 295-2431 (Direct)  
(919) 791-9777 (Mobile)  
Doug.barber@aecom.com

- The Engineer shall be considered the Department Representative.
- All required work plan submittals shall be forwarded to and approved in writing by the Railroad prior to proceeding with the work of each applicable phase. Up to thirty (30) days will be required to review each submittal. Up to an additional thirty (30) days will be required to review each subsequent submission returned not marked “Conforms As Noted”. **The Contractor shall be responsible for submitting these to the Railroad and**

providing a copy to the Engineer.

- At project completion, a complete set of “As Built” plans for the proposed construction shall be submitted to CSXT Bridge Maintenance and Design Group via AECOM. CSXT will keep these plans on file in Jacksonville for future reference. Please address these plans to:

Mr. G. Douglas Barber  
CE&I Lead  
AECOM  
(704) 295-2431 (Direct)  
(919) 791-9777 (Mobile)  
Doug.barber@aecom.com

- CSXT Special Provisions Section VI.A - The following paragraph shall be added as the second paragraph

The Department will bear all railroad costs incidental to such crossings including flagging and services performed by Railroad personnel. Written approval from the Engineer is required prior to use of the crossings. The Contractor shall sequence construction to minimize the duration the crossing(s) remain in-place. The Contractor shall reimburse the Department for any costs of the flagging for the crossing outside of the duration approved by the Engineer. Cost of the installation, maintenance and removal of the temporary crossing(s) incurred by the Contractor will be considered incidental to the other pay items.

- CSXT Special Provisions Section XII.C – Flagging requests should be made to [FLAGGING@aecom.com](mailto:FLAGGING@aecom.com). Termination or cancellation of flagger requires ten (10) days’ notice to avoid incurring costs.
- CSXT Special Provisions Section XII.D - The following paragraph shall be added as the second paragraph

Should violations of Railroad policy or unscheduled, unauthorized work by the Contractor result in additional full time flagging being required by the Railroad, the additional cost of such flagging above normal flagging cost shall be deducted from the final payment to the Contractor as provided in Article 109-9 of the Standard Specifications. Neither Department nor Railroad will be liable for damages resulting from unscheduled or unauthorized work.

- CSXT Special Provisions Section XII.E - Include the following sentence at the end of the paragraph

The Contractor shall reimburse the Department for any costs of the flagging which is required for work for the benefit of the Contractor.

- Insurance Requirements Section I.4.d - The Project Description and Designation on the Declarations shall read:

Raleigh, Wake County, North Carolina, Grade Separation Durant Road (SR 2006) over CSXT at Milepost S 147.36, Carolinas Zone, Norlina Subdivision, DOT No. #630601X; CSXT OP# NC0887, State# P-5720

- Insurance Requirements Section II.1 - Insurance documents shall be submitted to the Department at the following address:

NCDOT Rail Division  
Engineering & Safety Branch  
C/O State Railroad Agent  
1556 Mail Service Center  
Raleigh, NC 27699-1556

- The Contractor shall not commence any work on railroad rights-of-way until a fully executed copy of the attached CSX Transportation Inc. Temporary Right of Entry Agreement has been received and all other requirements of these provisions for commencement of work have been completed. It should be noted that the provisions included in the CSXT Temporary Right of Entry Agreement materially duplicate those included in the CSXT Special Provisions and are not intended to be standalone requirements. It shall be noted that obtaining the Temporary Right of Entry Agreement will take between four (4) and six (6) months to obtain barring there are no changes requested to the language shown below.

County: WAKE

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
<b>ROADWAY ITEMS</b>						
0001	0000100000-N	800	MOBILIZATION	Lump Sum	L.S.	
0002	0000400000-N	801	CONSTRUCTION SURVEYING	Lump Sum	L.S.	
0003	0001000000-E	200	CLEARING & GRUBBING .. ACRE(S)	Lump Sum	L.S.	
0004	0008000000-E	200	SUPPLEMENTARY CLEARING & GRUBBING	1 ACR		
0005	0022000000-E	225	UNCLASSIFIED EXCAVATION	1,500 CY		
0006	0036000000-E	225	UNDERCUT EXCAVATION	4,750 CY		
0007	0106000000-E	230	BORROW EXCAVATION	222,000 CY		
0008	0134000000-E	240	DRAINAGE DITCH EXCAVATION	2,260 CY		
0009	0156000000-E	250	REMOVAL OF EXISTING ASPHALT PAVEMENT	7,700 SY		
0010	0177000000-E	250	BREAKING OF EXISTING ASPHALT PAVEMENT	8,500 SY		
0011	0195000000-E	265	SELECT GRANULAR MATERIAL	4,700 CY		
0012	0196000000-E	270	GEOTEXTILE FOR SOIL STABILIZATION	5,200 SY		
0013	0199000000-E	SP	TEMPORARY SHORING	18,820 SF		
0014	0234000000-E	SP	GENERIC GRADING ITEM HAULING OF EXISTING PAVEMENT	200 CY		
0015	0248000000-N	SP	GENERIC GRADING ITEM TYPE 1 BRIDGE APPROACH FILL, STA 32+23.01 -L-	Lump Sum	L.S.	
0016	0318000000-E	300	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES	500 TON		
0017	0321000000-E	300	FOUNDATION CONDITIONING GEOTEXTILE	1,570 SY		

County: WAKE

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0018	0335100000-E	305	12" DRAINAGE PIPE	40 LF		
0019	0360000000-E	310	12" RC PIPE CULVERTS, CLASS III	152 LF		
0020	0448200000-E	310	15" RC PIPE CULVERTS, CLASS IV	2,072 LF		
0021	0448300000-E	310	18" RC PIPE CULVERTS, CLASS IV	1,280 LF		
0022	0448400000-E	310	24" RC PIPE CULVERTS, CLASS IV	160 LF		
0023	0448500000-E	310	30" RC PIPE CULVERTS, CLASS IV	84 LF		
0024	0448600000-E	310	36" RC PIPE CULVERTS, CLASS IV	372 LF		
0025	0448700000-E	310	42" RC PIPE CULVERTS, CLASS IV	88 LF		
0026	0449000000-E	310	*** RC PIPE CULVERTS, CLASS V (30")	128 LF		
0027	0449000000-E	310	*** RC PIPE CULVERTS, CLASS V (42")	228 LF		
0028	0582000000-E	310	15" CS PIPE CULVERTS, 0.064" THICK	40 LF		
0029	0588000000-E	310	18" CS PIPE CULVERTS, 0.064" THICK	64 LF		
0030	0636000000-E	310	*** CS PIPE ELBOWS, ***** THICK (15", 0.064")	2 EA		
0031	0636000000-E	310	*** CS PIPE ELBOWS, ***** THICK (18", 0.064")	2 EA		
0032	0995000000-E	340	PIPE REMOVAL	2,996 LF		
0033	1011000000-N	500	FINE GRADING	Lump Sum	L.S.	
0034	1099500000-E	505	SHALLOW UNDERCUT	250 CY		



County: WAKE

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0035	1099700000-E	505	CLASS IV SUBGRADE STABILIZATION	500 TON		
0036	1112000000-E	505	GEOTEXTILE FOR SUBGRADE STABILIZATION	750 SY		
0037	1121000000-E	520	AGGREGATE BASE COURSE	1,570 TON		
0038	1220000000-E	545	INCIDENTAL STONE BASE	100 TON		
0039	1275000000-E	600	PRIME COAT	133 GAL		
0040	1297000000-E	607	MILLING ASPHALT PAVEMENT, **** DEPTH (3")	7,820 SY		
0041	1330000000-E	607	INCIDENTAL MILLING	830 SY		
0042	1491000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0C	10,740 TON		
0043	1503000000-E	610	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C	7,270 TON		
0044	1519000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	4,910 TON		
0045	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	1,155 TON		
0046	1693000000-E	654	ASPHALT PLANT MIX, PAVEMENT REPAIR	50 TON		
0047	1880000000-E	SP	GENERIC PAVING ITEM ABC(M) SHOULDER CONSTRUCTION	265 TON		
0048	2000000000-N	806	RIGHT-OF-WAY MARKERS	27 EA		
0049	2190000000-N	828	TEMPORARY STEEL PLATE COVERS FOR MASONRY DRAINAGE STRUCTURE	5 EA		
0050	2209000000-E	838	ENDWALLS	9 CY		
0051	2275000000-E	SP	FLOWABLE FILL	34 CY		

County: WAKE

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0052	2286000000-N	840	MASONRY DRAINAGE STRUCTURES	58 EA		
0053	2308000000-E	840	MASONRY DRAINAGE STRUCTURES	40 LF		
0054	2354200000-N	840	FRAME WITH GRATE, STD 840.24	2 EA		
0055	2364000000-N	840	FRAME WITH TWO GRATES, STD 840.16	3 EA		
0056	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)	7 EA		
0057	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)	21 EA		
0058	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)	20 EA		
0059	2396000000-N	840	FRAME WITH COVER, STD 840.54	5 EA		
0060	2542000000-E	846	1'-6" CONCRETE CURB & GUTTER	320 LF		
0061	2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	9,300 LF		
0062	2591000000-E	848	4" CONCRETE SIDEWALK	4,550 SY		
0063	2605000000-N	848	CONCRETE CURB RAMPS	15 EA		
0064	2612000000-E	848	6" CONCRETE DRIVEWAY	50 SY		
0065	2800000000-N	858	ADJUSTMENT OF CATCH BASINS	2 EA		
0066	2830000000-N	858	ADJUSTMENT OF MANHOLES	2 EA		
0067	2845000000-N	858	ADJUSTMENT OF METER BOXES OR VALVE BOXES	10 EA		
0068	2860000000-N	859	CONVERT EXISTING CATCH BASIN TO JUNCTION BOX	3 EA		

County: WAKE

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0069	2995000000-N	SP	GENERIC DRAINAGE ITEM CONVERT EXISTING CATCH BASIN TO 2GI	1 EA		
0070	3030000000-E	862	STEEL BEAM GUARDRAIL	3,475 LF		
0071	3045000000-E	862	STEEL BEAM GUARDRAIL, SHOP CURVED	337.5 LF		
0072	3150000000-N	862	ADDITIONAL GUARDRAIL POSTS	5 EA		
0073	3195000000-N	862	GUARDRAIL END UNITS, TYPE AT-1	1 EA		
0074	3210000000-N	862	GUARDRAIL END UNITS, TYPE CAT-1	5 EA		
0075	3215000000-N	862	GUARDRAIL ANCHOR UNITS, TYPE III	4 EA		
0076	3287000000-N	862	GUARDRAIL END UNITS, TYPE TL-3	3 EA		
0077	3288000000-N	862	GUARDRAIL END UNITS, TYPE TL-2	3 EA		
0078	3536000000-E	866	CHAIN LINK FENCE, 48" FABRIC	560 LF		
0079	3542000000-E	866	METAL LINE POSTS FOR 48" CHAIN LINK FENCE	47 EA		
0080	3548000000-E	866	METAL TERMINAL POSTS FOR 48" CHAIN LINK FENCE	4 EA		
0081	3628000000-E	876	RIP RAP, CLASS I	110 TON		
0082	3649000000-E	876	RIP RAP, CLASS B	320 TON		
0083	3656000000-E	876	GEOTEXTILE FOR DRAINAGE	1,720 SY		
0084	4025000000-E	901	CONTRACTOR FURNISHED, TYPE *** SIGN (E)	100 SF		
0085	4072000000-E	903	SUPPORTS, 3-LB STEEL U-CHANNEL	270 LF		

County: WAKE

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0086	4102000000-N	904	SIGN ERECTION, TYPE E	20 EA		
0087	4116100000-N	904	SIGN ERECTION, RELOCATE TYPE **** (GROUND MOUNTED) (D)	1 EA		
0088	4116100000-N	904	SIGN ERECTION, RELOCATE TYPE **** (GROUND MOUNTED) (E)	1 EA		
0089	4154000000-N	907	STOCKPILE SIGN SYSTEM, U- CHANNEL	2 EA		
0090	4155000000-N	907	DISPOSAL OF SIGN SYSTEM, U- CHANNEL	12 EA		
0091	4192000000-N	907	DISPOSAL OF SUPPORT, U-CHANNEL	2 EA		
0092	4400000000-E	1110	WORK ZONE SIGNS (STATIONARY)	709 SF		
0093	4405000000-E	1110	WORK ZONE SIGNS (PORTABLE)	912 SF		
0094	4410000000-E	1110	WORK ZONE SIGNS (BARRICADE MOUNTED)	135 SF		
0095	4415000000-N	1115	FLASHING ARROW BOARD	3 EA		
0096	4420000000-N	1120	PORTABLE CHANGEABLE MESSAGE SIGN	4 EA		
0097	4430000000-N	1130	DRUMS	285 EA		
0098	4434000000-N	1140	SEQUENTIAL FLASHING WARNING LIGHTS	30 EA		
0099	4435000000-N	1135	CONES	30 EA		
0100	4445000000-E	1145	BARRICADES (TYPE III)	184 LF		
0101	4455000000-N	1150	FLAGGER	310 DAY		
0102	4465000000-N	1160	TEMPORARY CRASH CUSHIONS	4 EA		

County: WAKE

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0103	4480000000-N	1165	TMA	4 EA		
0104	4485000000-E	1170	PORTABLE CONCRETE BARRIER	2,830 LF		
0105	4507000000-E	1170	WATER FILLED BARRIER	1,010 LF		
0106	4510000000-N	1190	LAW ENFORCEMENT	1,196 HR		
0107	4516000000-N	1180	SKINNY DRUM	30 EA		
0108	4650000000-N	1251	TEMPORARY RAISED PAVEMENT MARKERS	538 EA		
0109	4685000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	18,055 LF		
0110	4695000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)	805 LF		
0111	4700000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (12", 90 MILS)	500 LF		
0112	4709000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (24", 90 MILS)	157 LF		
0113	4725000000-E	1205	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	64 EA		
0114	4726110000-E	1205	HEATED-IN-PLACE THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	28 EA		
0115	4770000000-E	1205	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (II)	626 LF		
0116	4770000000-E	1205	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (IV)	626 LF		
0117	4810000000-E	1205	PAINT PAVEMENT MARKING LINES (4")	125,181 LF		
0118	4820000000-E	1205	PAINT PAVEMENT MARKING LINES (8")	2,805 LF		
0119	4825000000-E	1205	PAINT PAVEMENT MARKING LINES (12")	2,100 LF		

County: WAKE

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0120	4830000000-E	1205	PAINT PAVEMENT MARKING LINES (16")	750 LF		
0121	4835000000-E	1205	PAINT PAVEMENT MARKING LINES (24")	1,047 LF		
0122	4840000000-N	1205	PAINT PAVEMENT MARKING CHARACTER	30 EA		
0123	4845000000-N	1205	PAINT PAVEMENT MARKING SYMBOL	282 EA		
0124	4850000000-E	1205	REMOVAL OF PAVEMENT MARKING LINES (4")	18,635 LF		
0125	4865000000-E	1205	REMOVAL OF PAVEMENT MARKING LINES (12")	322 LF		
0126	4870000000-E	1205	REMOVAL OF PAVEMENT MARKING LINES (24")	168 LF		
0127	4875000000-N	1205	REMOVAL OF PAVEMENT MARKING SYMBOLS & CHARACTERS	49 EA		
0128	4880000000-E	1205	CURING COMPOUND REMOVAL, LINES	625 LF		
0129	4900000000-N	1251	PERMANENT RAISED PAVEMENT MARKERS	10 EA		
0130	4905100000-N	1253	NON-CAST IRON SNOWPLOWABLE PAVEMENT MARKER	267 EA		
0131	5265000000-E	SP	GENERIC LIGHTING ITEM STREET LIGHTING CONDUIT INSTALLATION (2" PVC)	3,300 LF		
0132	5325600000-E	1510	6" WATER LINE	157 LF		
0133	5325800000-E	1510	8" WATER LINE	1,049 LF		
0134	5326200000-E	1510	12" WATER LINE	512 LF		
0135	5327400000-E	1510	24" WATER LINE	1,358 LF		
0136	5329000000-E	1510	DUCTILE IRON WATER PIPE FITTINGS	18,815 LB		

County: WAKE

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0137	5540000000-E	1515	6" VALVE	10 EA		
0138	5558000000-E	1515	12" VALVE	4 EA		
0139	5571800000-E	1515	8" TAPPING SLEEVE & VALVE	1 EA		
0140	5572200000-E	1515	12" TAPPING SLEEVE & VALVE	1 EA		
0141	5643000000-E	1515	*** WATER METER (5/8")	1 EA		
0142	5643200000-E	1515	2" WATER METER	1 EA		
0143	5648000000-N	1515	RELOCATE WATER METER	1 EA		
0144	5649000000-N	1515	RECONNECT WATER METER	1 EA		
0145	5656600000-E	1515	6" RPZ BACKFLOW PREVENTION ASSEMBLY	1 EA		
0146	5666000000-N	1515	FIRE HYDRANT	9 EA		
0147	5673000000-E	1515	FIRE HYDRANT LEG	199 LF		
0148	5679000000-E	1515	12" LINE STOP	1 EA		
0149	5679600000-E	1515	24" LINE STOP	2 EA		
0150	5686000000-E	1515	*** WATER SERVICE LINE (2")	57 LF		
0151	5686500000-E	1515	WATER SERVICE LINE	19 LF		
0152	5709100000-E	1520	2" FORCE MAIN SEWER	553 LF		
0153	5768000000-N	1520	SANITARY SEWER CLEAN-OUT	1 EA		

County: WAKE

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0154	5768500000-E	1520	SEWER SERVICE LINE	67 LF		
0155	5781000000-E	1525	UTILITY MANHOLE WALL 4' DIA	18 LF		
0156	5798000000-E	1530	ABANDON *** UTILITY PIPE (4")	66 LF		
0157	5801000000-E	1530	ABANDON 8" UTILITY PIPE	99 LF		
0158	5804000000-E	1530	ABANDON 12" UTILITY PIPE	409 LF		
0159	5813000000-E	1530	ABANDON 24" UTILITY PIPE	1,337 LF		
0160	5815000000-N	1530	REMOVE WATER METER	5 EA		
0161	5815500000-N	1530	REMOVE FIRE HYDRANT	5 EA		
0162	5816000000-N	1530	ABANDON UTILITY MANHOLE	1 EA		
0163	5835000000-E	1540	*** ENCASEMENT PIPE (14")	100 LF		
0164	5835700000-E	1540	16" ENCASEMENT PIPE	275 LF		
0165	5836400000-E	1540	36" ENCASEMENT PIPE	385 LF		
0166	5872500000-E	1550	BORE AND JACK OF *** (36")	85 LF		
0167	5882000000-N	SP	GENERIC UTILITY ITEM 24" BUTTERFLY VALVE	2 EA		
0168	5882000000-N	SP	GENERIC UTILITY ITEM ADJUST 10" METER VAULT	1 EA		
0169	5882000000-N	SP	GENERIC UTILITY ITEM REMOVE BACKFLOW PREVENTION ASSEMBLY.	1 EA		
0170	6000000000-E	1605	TEMPORARY SILT FENCE	16,040 LF		



County: WAKE

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0171	6006000000-E	1610	STONE FOR EROSION CONTROL, CLASS A	255 TON		
0172	6009000000-E	1610	STONE FOR EROSION CONTROL, CLASS B	1,620 TON		
0173	6012000000-E	1610	SEDIMENT CONTROL STONE	1,302 TON		
0174	6015000000-E	1615	TEMPORARY MULCHING	20 ACR		
0175	6018000000-E	1620	SEED FOR TEMPORARY SEEDING	1,100 LB		
0176	6021000000-E	1620	FERTILIZER FOR TEMPORARY SEEDING	5.5 TON		
0177	6024000000-E	1622	TEMPORARY SLOPE DRAINS	1,220 LF		
0178	6029000000-E	SP	SAFETY FENCE	360 LF		
0179	6030000000-E	1630	SILT EXCAVATION	2,400 CY		
0180	6036000000-E	1631	MATTING FOR EROSION CONTROL	22,500 SY		
0181	6038000000-E	SP	PERMANENT SOIL REINFORCEMENT MAT	35 SY		
0182	6042000000-E	1632	1/4" HARDWARE CLOTH	3,705 LF		
0183	6043000000-E	1644	LOW PERMEABILITY GEOTEXTILE	500 SY		
0184	6070000000-N	1639	SPECIAL STILLING BASINS	2 EA		
0185	6071002000-E	1642	FLOCCULANT	100 LB		
0186	6071030000-E	1640	COIR FIBER BAFFLE	440 LF		
0187	6084000000-E	1660	SEEDING & MULCHING	20 ACR		

County: WAKE

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0188	6087000000-E	1660	MOWING	10 ACR		
0189	6090000000-E	1661	SEED FOR REPAIR SEEDING	200 LB		
0190	6093000000-E	1661	FERTILIZER FOR REPAIR SEEDING	1 TON		
0191	6096000000-E	1662	SEED FOR SUPPLEMENTAL SEEDING	650 LB		
0192	6108000000-E	1665	FERTILIZER TOPDRESSING	19.5 TON		
0193	6114500000-N	1667	SPECIALIZED HAND MOWING	10 MHR		
0194	6117000000-N	1675	RESPONSE FOR EROSION CONTROL	18 EA		
0195	6117500000-N	SP	CONCRETE WASHOUT STRUCTURE	3 EA		
0196	6132000000-N	SP	GENERIC EROSION CONTROL ITEM FABRIC INSERT INLET PROTECTION CLEANOUT	54 EA		
0197	6132000000-N	SP	GENERIC EROSION CONTROL ITEM FABRIC INSERT INLET PROTECTION, TYPE 1	18 EA		
0198	7048500000-E	1705	PEDESTRIAN SIGNAL HEAD (16", 1 SECTION W/COUNTDOWN)	2 EA		
0199	7060000000-E	1705	SIGNAL CABLE	1,250 LF		
0200	7120000000-E	1705	VEHICLE SIGNAL HEAD (12", 3 SECTION)	3 EA		
0201	7132000000-E	1705	VEHICLE SIGNAL HEAD (12", 4 SECTION)	3 EA		
0202	7300000000-E	1715	UNPAVED TRENCHING (***** (2, 2"))	325 LF		
0203	7324000000-N	1716	JUNCTION BOX (STANDARD SIZE)	2 EA		
0204	7444000000-E	1725	INDUCTIVE LOOP SAWCUT	500 LF		

County: WAKE

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0205	7456100000-E	1726	LEAD-IN CABLE (14-2)	3,500 LF		
0206	7541000000-N	1731	MODIFY SPLICE ENCLOSURE	1 EA		
0207	7642100000-N	1743	TYPE I POST WITH FOUNDATION	1 EA		
0208	7642200000-N	1743	TYPE II PEDESTAL WITH FOUNDATION	1 EA		
0209	7696000000-N	1751	CONTROLLERS WITH CABINET (***** (2070LX, BASE MTD)	1 EA		
0210	7708000000-N	1751	DETECTOR CARD (***** (2070LX)	7 EA		
0211	7901000000-N	1753	CABINET BASE EXTENDER	1 EA		
<b>WALL ITEMS</b>						
0212	8801000000-E	SP	MSE RETAINING WALL NO **** (1)	7,120 SF		
0213	8801000000-E	SP	MSE RETAINING WALL NO **** (2)	4,520 SF		
0214	8801000000-E	SP	MSE RETAINING WALL NO **** (3)	5,590 SF		
0215	8801000000-E	SP	MSE RETAINING WALL NO **** (4)	5,820 SF		
<b>STRUCTURE ITEMS</b>						
0216	8147000000-E	420	REINFORCED CONCRETE DECK SLAB	9,653 SF		
0217	8161000000-E	420	GROOVING BRIDGE FLOORS	10,716 SF		
0218	8182000000-E	420	CLASS A CONCRETE (BRIDGE)	97 CY		
0219	8210000000-N	422	BRIDGE APPROACH SLABS, STATION ***** (32+23.01 -L-)	Lump Sum	L.S.	

County: WAKE

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0220	8217000000-E	425	REINFORCING STEEL (BRIDGE)	11,588 LB		
0222	8328200000-E	450	PILE DRIVING EQUIPMENT SETUP FOR *** STEEL PILES (HP 14 X 73)	22 EA		
0223	8384000000-E	450	HP 14 X 73 STEEL PILES	1,320 LF		
0224	8475000000-E	460	TWO BAR METAL RAIL	230.67 LF		
0225	8517000000-E	460	1'-*** X ***** CONCRETE PARAPET (1'-2" X 3"-3")	245.67 LF		
0226	8531000000-E	462	4" SLOPE PROTECTION	44 SY		
0227	8657000000-N	430	ELASTOMERIC BEARINGS	Lump Sum	L.S.	
0228	8867000000-E	SP	GENERIC STRUCTURE ITEM 72" CHAIN LINK FENCE (BLACK VINYL COATED)	230.67 LF		
0229	8278000000-E	430	FIB *** PRESTRESSED CONCRETE GIRDERS (54")	1,346.58 LF		

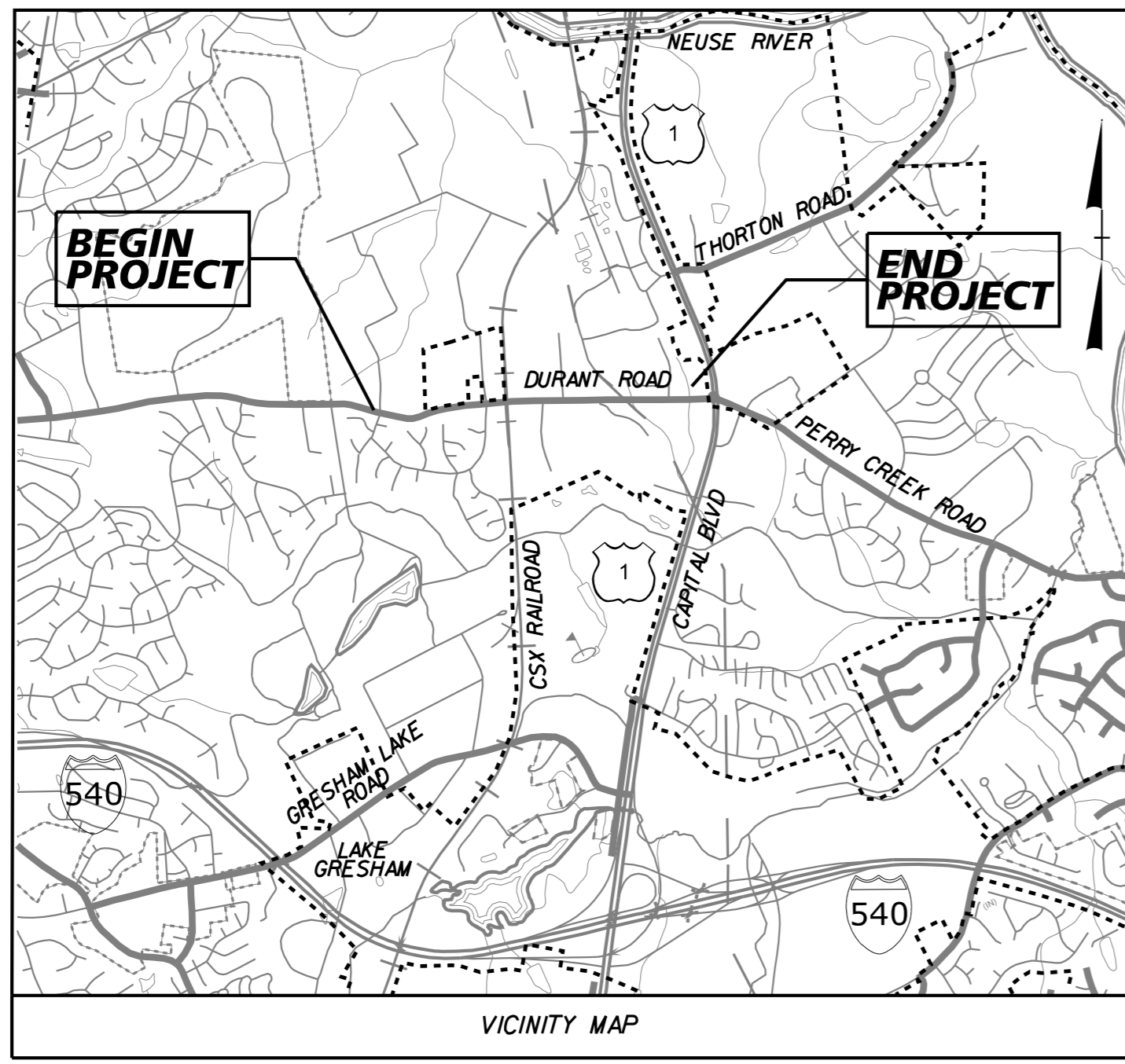
0919/Mar28/Q670253.09/D985579842000/E228

Total Amount Of Bid For Entire Project :

09/28/2019

**CONTRACT: C204204** **TIP PROJECT: P-5720**

SEE SHEET 1A FOR INDEX OF SHEETS  
SEE SHEET 1B FOR CONVENTIONAL PLAN SHEET SYMBOLS



STATE OF NORTH CAROLINA  
RAIL DIVISION

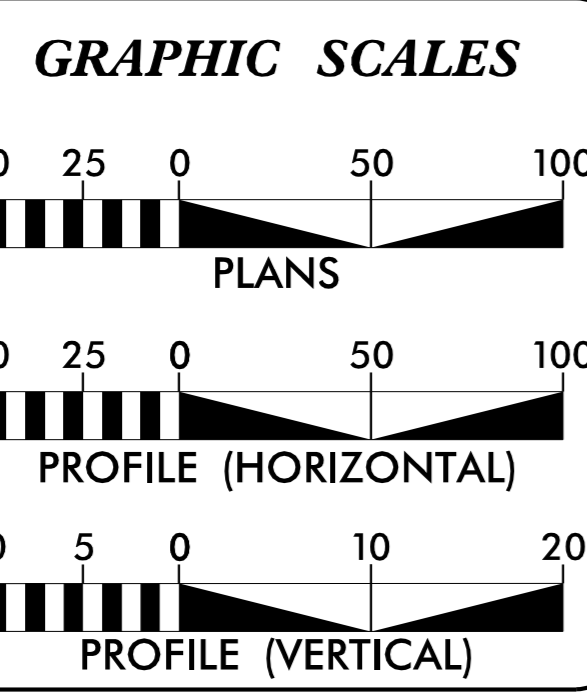
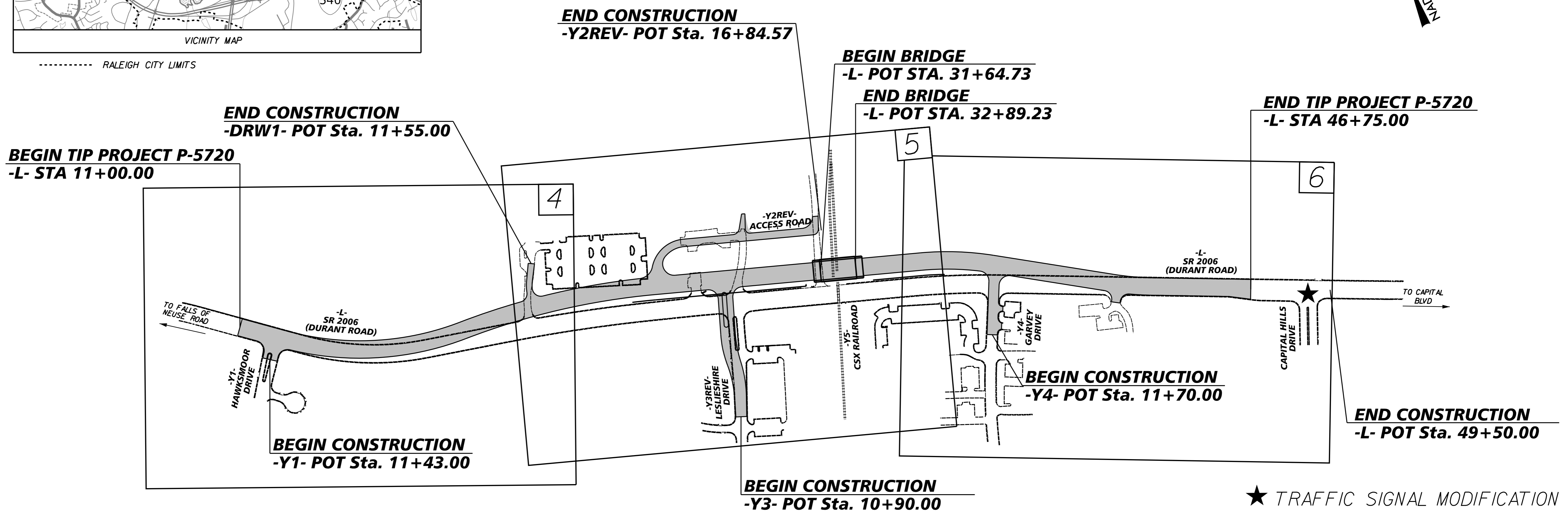
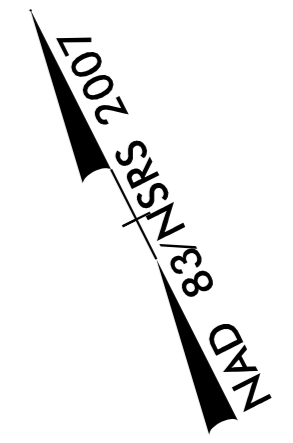
# WAKE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	P-5720	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
46932.1.1		PE	
46932.2.1		RW & UTIL	
46932.3.1		CONST.	

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

**LOCATION: PROPOSED GRADE SEPARATION OF SR 2006 (DURANT ROAD)  
OVER CSX S LINE IN RALEIGH**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING, RETAINING WALLS, STRUCTURE  
AND SIGNALS**



**DESIGN DATA**

ADT 2021	=	22,000
ADT 2040	=	31,100
K	=	8%
D	=	55%
T	=	3%*
V	=	50 MPH

CLASSIFICATION:  
URBAN COLLECTOR

\* 1% TTST 2% DUAL  
SUBREGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT P-5720	=	0.653 MILES
LENGTH STRUCTURE TIP PROJECT P-5720	=	0.024 MILES
TOTAL LENGTH TIP PROJECT P-5720	=	0.677 MILES

Prepared in the Office of:

**Kimley > Horn**

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
JUNE 7, 2018

LETTING DATE:  
APRIL 16, 2024

**GREGORY BREW, PE**  
PROJECT ENGINEER

**EVERETT LOVING, PE**  
PROJECT DESIGN ENGINEER

**BRIAN GACKSTETTER**  
ENGINEERING COORDINATION MANAGER  
NCDOT RAIL DIVISION

**HYDRAULICS ENGINEER**

3/28/2024

DocuSigned by:  
*Gregory Brew*  
SIGNATURE:

**ROADWAY DESIGN ENGINEER**

3/28/2024

DocuSigned by:  
*Gregory Brew*  
SIGNATURE:

NC DEPARTMENT OF  
TRANSPORTATION  
**RAIL DIVISION**  
ENGINEERING COORDINATION  
AND SAFETY

3/28/2024



5/14/1999

<b>-L-</b> PI Sta 22+40.96 Δ = 15° 47' 19.4" (RT) D = 2' 17' 30.6" L = 688.91' T = 346.65' R = 2,500.00' SE = 0.03	<b>-Y2REV-</b> PI Sta 11+40.00 Δ = 90° 00' 00.0" (RT) D = 53' 03" 05.9" L = 169.65' T = 108.00' R = 108.00' SE = 0.04	<b>-Y2-</b> PI Sta 11+47.00 Δ = 90° 00' 00.0" (RT) D = 49' 49" 20.7" L = 180.64' T = 115.00' R = 115.00'
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<b>-Y3-</b> PI Sta 12+21.27 Δ = 16° 38' 57.7" (LT) D = 14' 19" 26.2" L = 116.23' T = 58.53' R = 400.00' SE = RC	<b>-Y2-</b> PI Sta 13+31.52 Δ = 14° 58' 04.0" (RT) D = 14' 19" 26.2" L = 104.49' T = 52.55' R = 400.00' SE = RC
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LIFEPOINTE CHRISTIAN CHURCH INC.  
DB 14386 - PG 2347  
BM 2013 - PG 104  
BM 2000 - PG 2013

ALL RIGHT OF WAY & EASEMENT STATION OFFSETS ARE DEFINED OFF OF -Y2-

STANDARD 4' BASE DITCH  
W/CLASS B RIP RAP  
SEE DETAIL 10SHEET 2D-1  
EST 50 TONS  
DDE=70 CY  
NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DB 17349 - 2390

SPECGX LLC  
DB 16993 - PG 748  
BM 2018 - PG 1086

WASTE INDUSTRIES LLC  
DB 14701 - PG 1893  
BM 1986 - PG 1435  
BM 2000 - PG 2014

K & ASSOCIATES OF RALEIGH INC.  
DB 1709 - PG 432  
BM 1986 - PG 1435  
BM 2000 - PG 2014

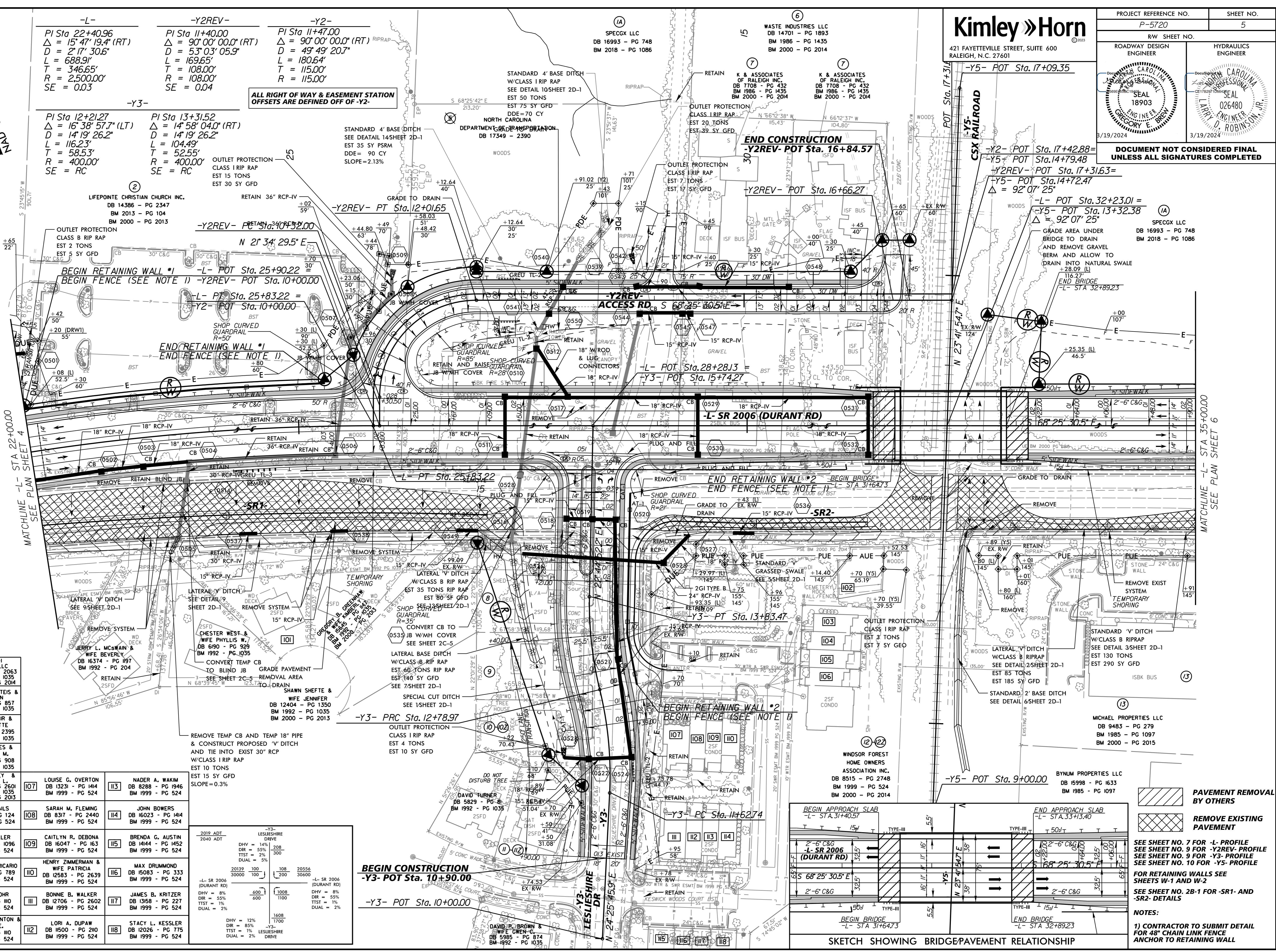
# Kimley Horn

421 FAYETTEVILLE STREET, SUITE 600  
RALEIGH, N.C. 27601

PROJECT REFERENCE NO. P-5720	SHEET NO. 5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

SPECGX LLC  
DB 16993 - PG 748  
BM 2018 - PG 1086



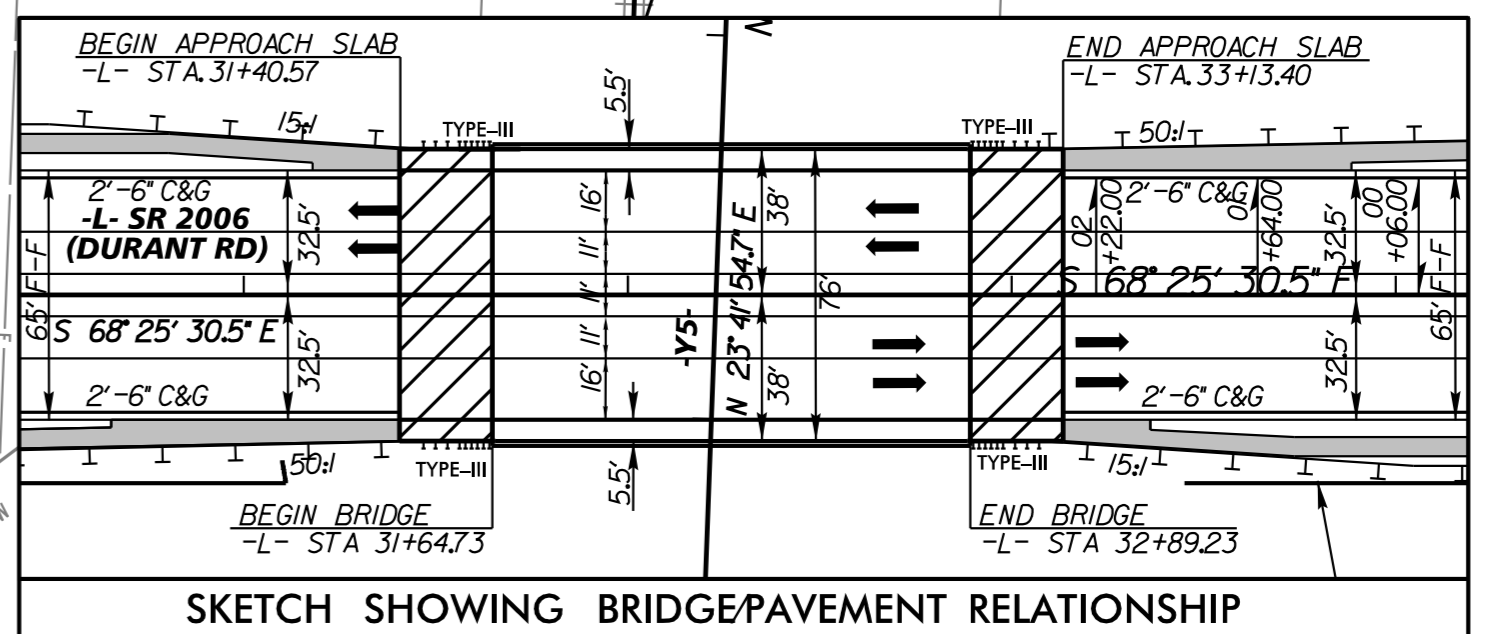
REVISIONS

CAH 2016-1 BORROWER LLC DB 16053 - PG 2063 BM 1992 - PG 1035 BM 2000 - PG 2014	JOSEPH A. MATTEIS & WIFE ELLEN DB 6683 - PG 857 BM 1992 - PG 1035	SCOTT STCLAIR & WIFE JEANETTE DB 1617 - PG 2395 BM 1992 - PG 1035	RUDOLPH JONES & WIFE SUSAM M. DB 6288 - PG 908 BM 1992 - PG 1035	THOMAS DUDLEY & WIFE SARAH L. DB 16568 - PG 2601 BM 1992 - PG 1035 BM 2000 - PG 2013	LOUISE G. OVERTON DB 13231 - PG 1414 BM 1999 - PG 524	NADER A. WAKIM DB 8288 - PG 1946 BM 1999 - PG 524
DURANT TRAILS DB 6231 - PG 124 BM 1999 - PG 524	DAVID W. MILLER DB 8477 - PG 1096 BM 1999 - PG 524	DANIELLE R. TRICARIO DB 16635 - PG 789 BM 1999 - PG 524	GARY S. FLOHR DB 8477 - PG 110 BM 1999 - PG 524	GLORIA H. TARKENTON & REBEKAH E. DB 8477 - PG 110 BM 1999 - PG 524	SARAH M. FLEMING DB 8317 - PG 2440 BM 1999 - PG 524	CAITLYN R. DEBONA DB 16047 - PG 163 BM 1999 - PG 524
DAVID W. MILLER DB 8477 - PG 1096 BM 1999 - PG 524	DANIELLE R. TRICARIO DB 16635 - PG 789 BM 1999 - PG 524	GARY S. FLOHR DB 8477 - PG 110 BM 1999 - PG 524	GLORIA H. TARKENTON & REBEKAH E. DB 8477 - PG 110 BM 1999 - PG 524	LORI A. DUPAW DB 1500 - PG 210 BM 1999 - PG 524	SARAH M. FLEMING DB 8317 - PG 2440 BM 1999 - PG 524	CAITLYN R. DEBONA DB 16047 - PG 163 BM 1999 - PG 524
DAVID W. MILLER DB 8477 - PG 1096 BM 1999 - PG 524	DANIELLE R. TRICARIO DB 16635 - PG 789 BM 1999 - PG 524	GARY S. FLOHR DB 8477 - PG 110 BM 1999 - PG 524	GLORIA H. TARKENTON & REBEKAH E. DB 8477 - PG 110 BM 1999 - PG 524	LORI A. DUPAW DB 1500 - PG 210 BM 1999 - PG 524	SARAH M. FLEMING DB 8317 - PG 2440 BM 1999 - PG 524	CAITLYN R. DEBONA DB 16047 - PG 163 BM 1999 - PG 524

2019 ADT 20400 ADT	-Y3- LESLIESHIRE DRIVE DHW = 14% DIR = 55% TSTT = 23% DUAL = 3%	108 20554 30660	-L- SR 2006 (DURANT RD) DHW = 8% DIR = 55% TSTT = 1% DUAL = 2%	1008 1700 30660	-L- SR 2006 (DURANT RD) DHW = 8% DIR = 55% TSTT = 1% DUAL = 2%
-----------------------	---	-----------------------	--	-----------------------	--

BEGIN CONSTRUCTION  
-Y3- POT Sta. 10+90.00

-Y3- POT Sta. 10+00.00



PAVEMENT REMOVAL BY OTHERS  
REMOVE EXISTING PAVEMENT

SEE SHEET NO. 7 FOR -L- PROFILE  
SEE SHEET NO. 9 FOR -Y2REV- PROFILE  
SEE SHEET NO. 9 FOR -Y3- PROFILE  
SEE SHEET NO. 10 FOR -Y5- PROFILE

FOR RETAINING WALLS SEE SHEETS W-1 AND W-2  
SEE SHEET NO. 28-1 FOR -SR1- AND -SR2- DETAILS  
NOTES:  
1) CONTRACTOR TO SUBMIT DETAIL FOR 48" CHAIN LINK FENCE ANCHOR TO RETAINING WALL

3/11/2024

MATCHLINE -L- STA 35+00.00  
SEE PLAN SHEET 6

MATCHLINE -L- STA 22+00.00  
SEE PLAN SHEET 4



09/08/19

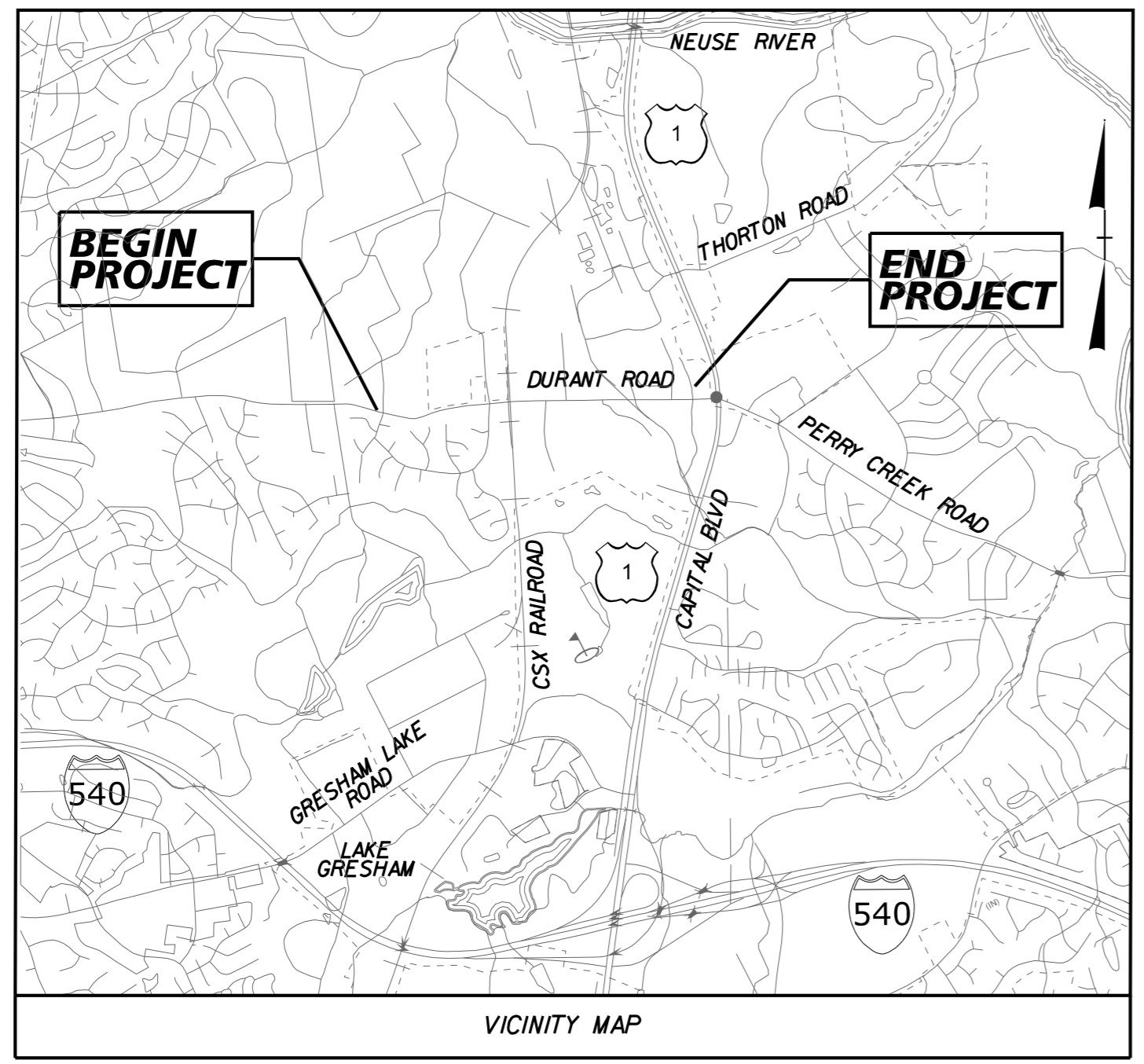
3/22/2024

**CONTRACT: C204204**      **TIP PROJECT: P-5720**

STATE OF NORTH CAROLINA  
RAIL DIVISIONS

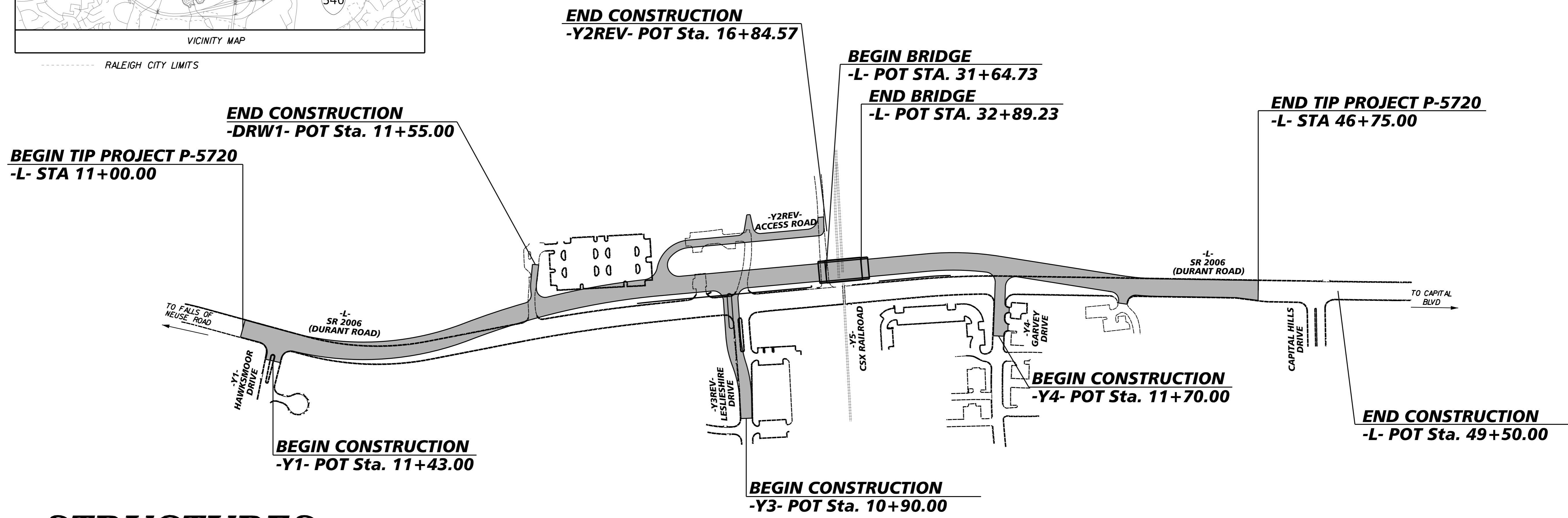
# WAKE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	P-5720		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
46932.1.1		PE	
46932.2.1		RW & UTIL	
46932.3.1		CONST.	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>			



**LOCATION: PROPOSED GRADE-SEPARATION OF SR 2006 (DURANT ROAD) OVER CSX S LINE RAILROAD IN RALEIGH**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING, RETAINING WALLS, STRUCTURE AND SIGNALS**



## STRUCTURES

**DESIGN DATA**

ADT 2019	=	21,000
ADT 2040	=	31,100
K	=	8%
D	=	55%
T	=	3%*
V	=	50 MPH

CLASSIFICATION:  
URBAN COLLECTOR

\* 1% TTST 2% DUAL  
SUBREGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT P-5720	=	0.653 MILES
LENGTH STRUCTURE TIP PROJECT P-5720	=	0.024 MILES
TOTAL LENGTH TIP PROJECT P-5720	=	0.677 MILES

Prepared in the Office of:

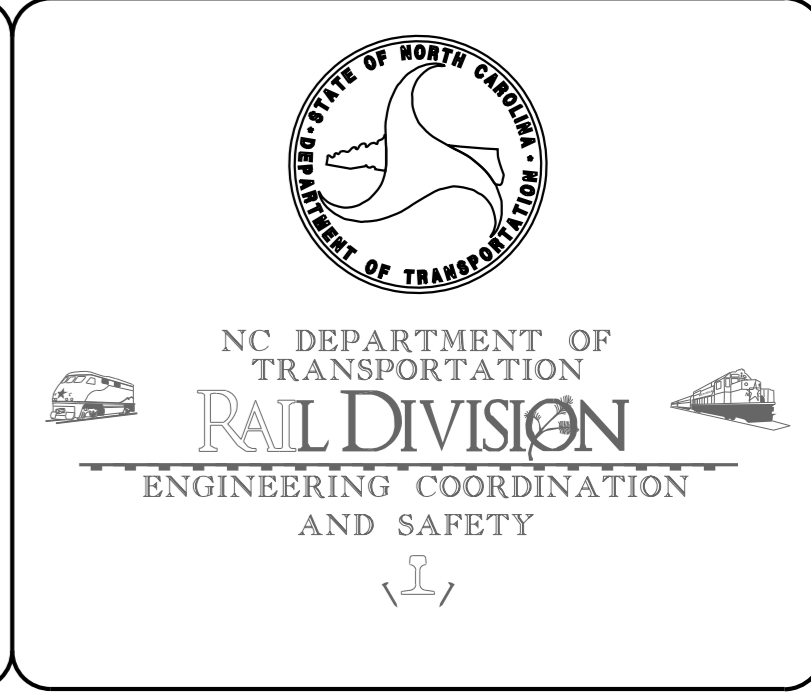
**Kimley»Horn**

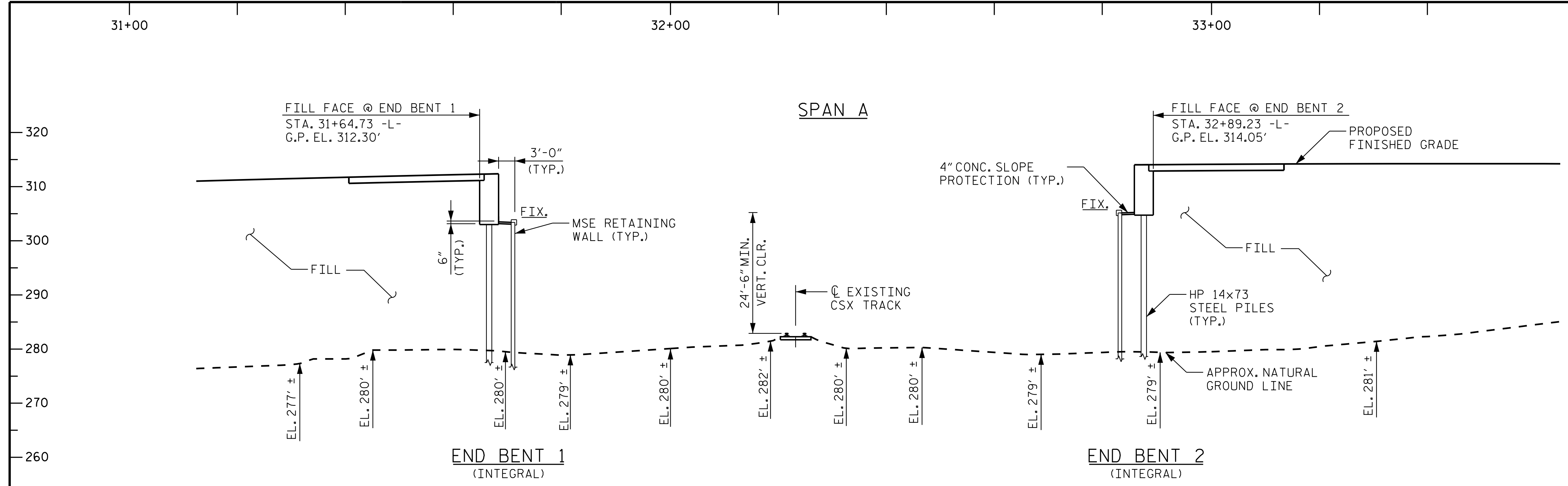
2024 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
JUNE 7, 2018

**LETTING DATE:**  
APRIL 16, 2024

<b>ANDREW L. PHILLIPS, P.E.</b> PROJECT ENGINEER
<b>MITCHELL D. MAGEE, P.E.</b> PROJECT DESIGN ENGINEER
<b>KUMAR TRIVEDI, P.E.</b> PROJECT MANAGER NCDOT RAIL DIVISION

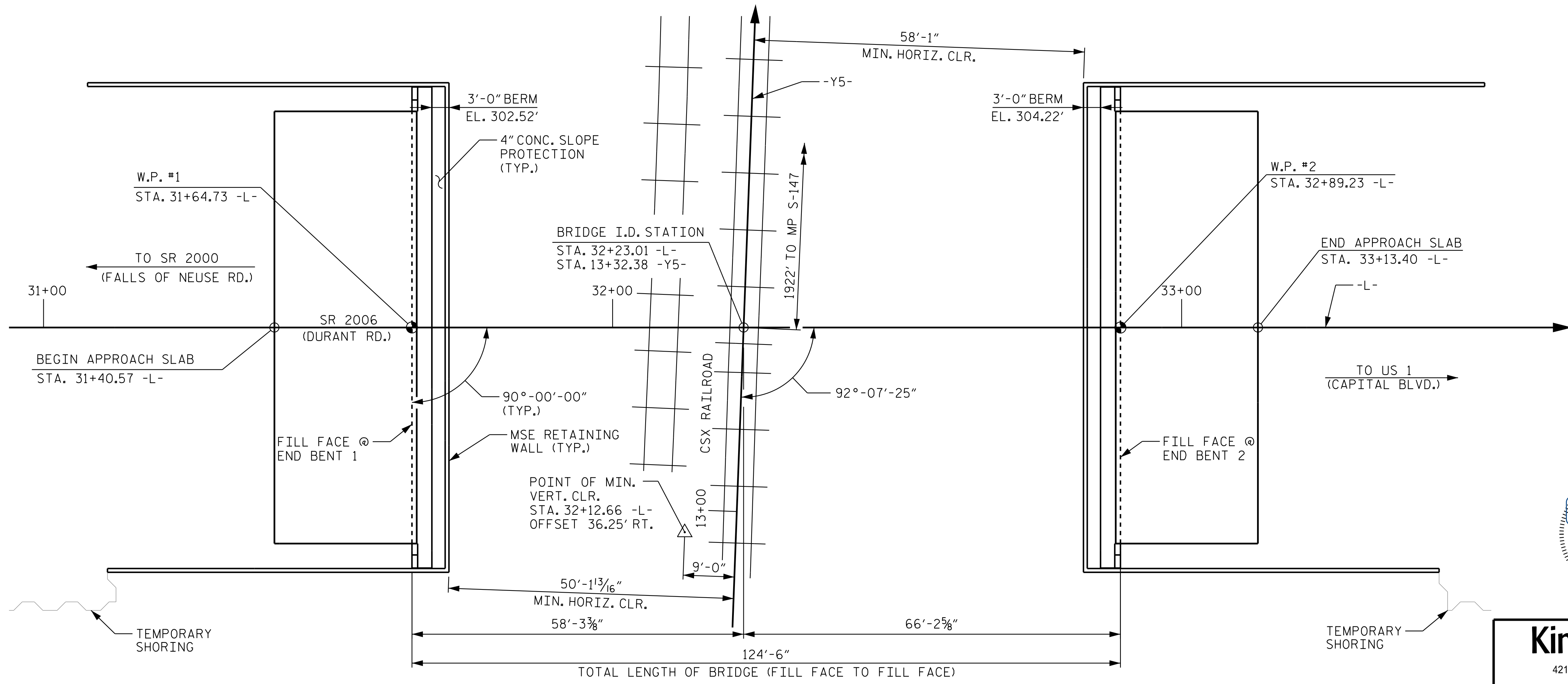




**-L- VERTICAL CURVE DATA**  
 P.I. STA. = 33+80.00  
 EL. = 326.97'  
 V.C. = 930'

TOP OF RAIL ELEVATIONS		
STATION -Y5-	LEFT RAIL	RIGHT RAIL
12+90.00	282.41	282.44
13+10.00	282.36	282.40
13+30.00	282.26	282.33
13+50.00	282.12	282.21
13+70.00	282.06	282.10

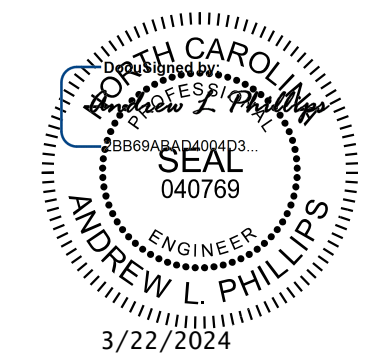
**SECTION ALONG -L-**



**PLAN**  
 (PILES NOT SHOWN IN PLAN VIEW)

PROJECT NO. P-5720  
WAKE COUNTY  
 STATION: 32+23.01 -L-  
13+32.38 -Y5-  
 MILE POST S-147.36  
 BRIDGE #911494

SHEET 1 OF 4  
 STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 FOR BRIDGE ON DURANT ROAD (SR2006)  
 OVER CSX RAILROAD BETWEEN  
 US 1 AND SR 2000



**Kimley»Horn**  
 421 Fayetteville Street, Suite 600  
 Raleigh, NC 27601-1772  
 Phone (919) 677-2000  
 NC LICENSE # F-0102

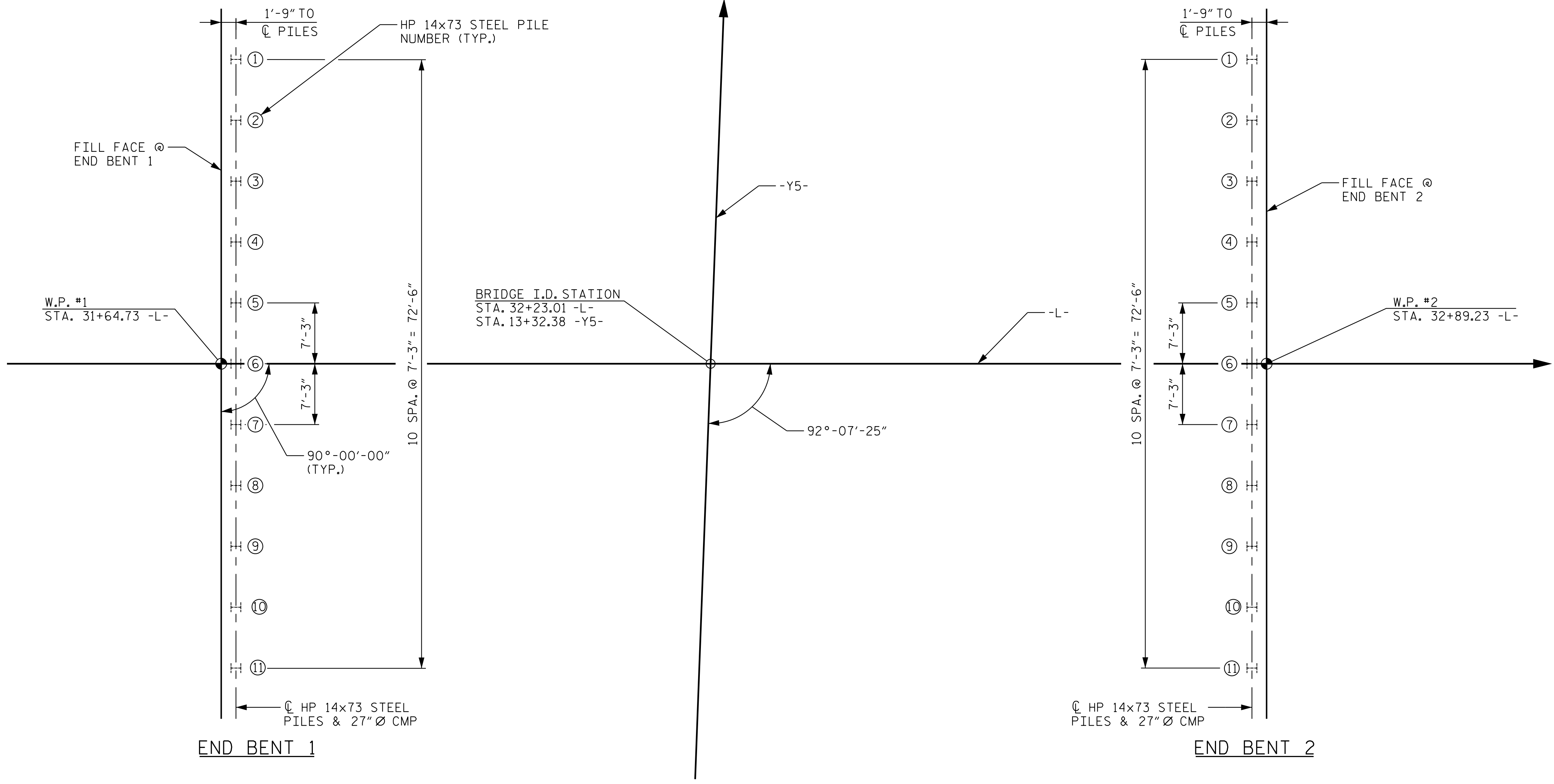
**DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED**

DRAWN BY: J. I. KIMBLE DATE: 1/19  
 CHECKED BY: M. D. MAGEE DATE: 1/19  
 DESIGN ENGINEER OF RECORD: S. A. DENNEY DATE: 1/19

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 33





FOUNDATION LAYOUT  
 DIMENSIONS LOCATING PILES ARE SHOWN TO  
 THE CENTERLINE OF PILES AT BOTTOM OF CAP

NOTES

OBSERVE A 1 MONTH WAITING PERIOD AFTER CONSTRUCTING THE MECHANICALLY STABILIZED EARTH (MSE) ABUTMENT WALL TO WITHIN 1 FT. OF THE BOTTOM OF CAP ELEVATION BEFORE BEGINNING END BENT CONSTRUCTION AT END BENTS 1 AND 2. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.

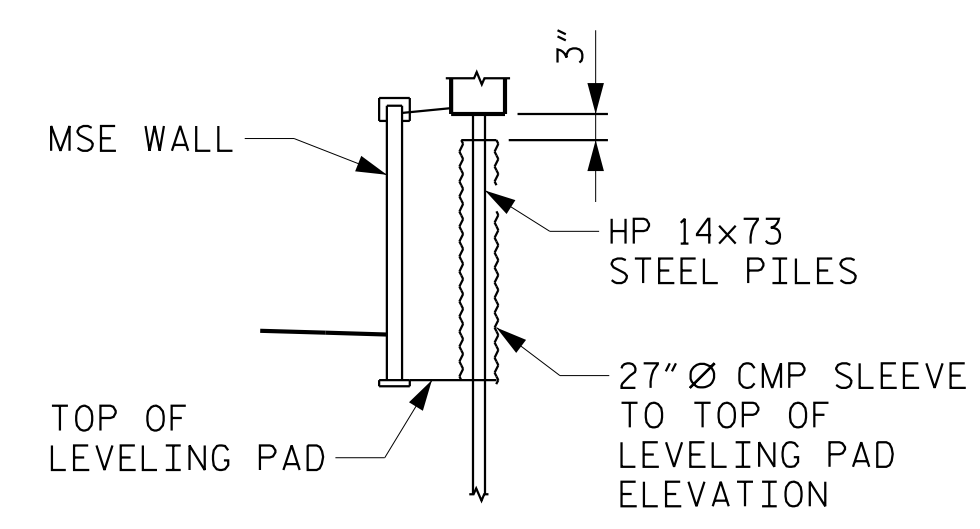
FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 50-85 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT 1 AND END BENT 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3 (D)(2) OF THE STANDARD SPECIFICATIONS.

INSTALL 27" DIAMETER CORRUGATED METAL PIPE (CMP) SLEEVES AT EACH PILE LOCATION BEFORE PLACING FILL OR CONSTRUCTING MSE ABUTMENT WALLS AT END BENTS 1 AND 2.

FILL CMP SLEEVES WITH SELECT MATERIAL CLASS VI OR OTHER GRANULAR MATERIALS APPROVED BY THE ENGINEER AFTER COMPLETION OF PILE DRIVING AT END BENTS 1 AND 2.

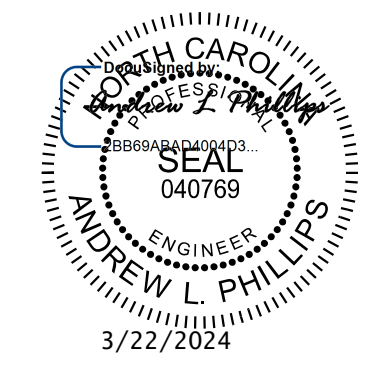
FOR ADDITIONAL FOUNDATION INFORMATION, NOTES, AND QUANTITIES, SEE SHEET S-2A FOR FOUNDATION TABLES.



27" Ø CMP SLEEVE DETAIL  
 (END BENT 2 SHOWN, END BENT 1 SIMILAR)

PROJECT NO. P-5720  
WAKE COUNTY  
 STATION: 32+23.01 -L-

SHEET 2 OF 4



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

GENERAL DRAWING  
 FOR BRIDGE ON DURANT ROAD (SR2006)  
 OVER CSX RAILROAD BETWEEN  
 US 1 AND SR 2000

**Kimley»Horn**  
 421 Fayetteville Street, Suite 600  
 Raleigh, NC 27601-1772  
 Phone (919) 677-2000  
 NC LICENSE # F-0102

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

REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	

TOTAL SHEETS: 33

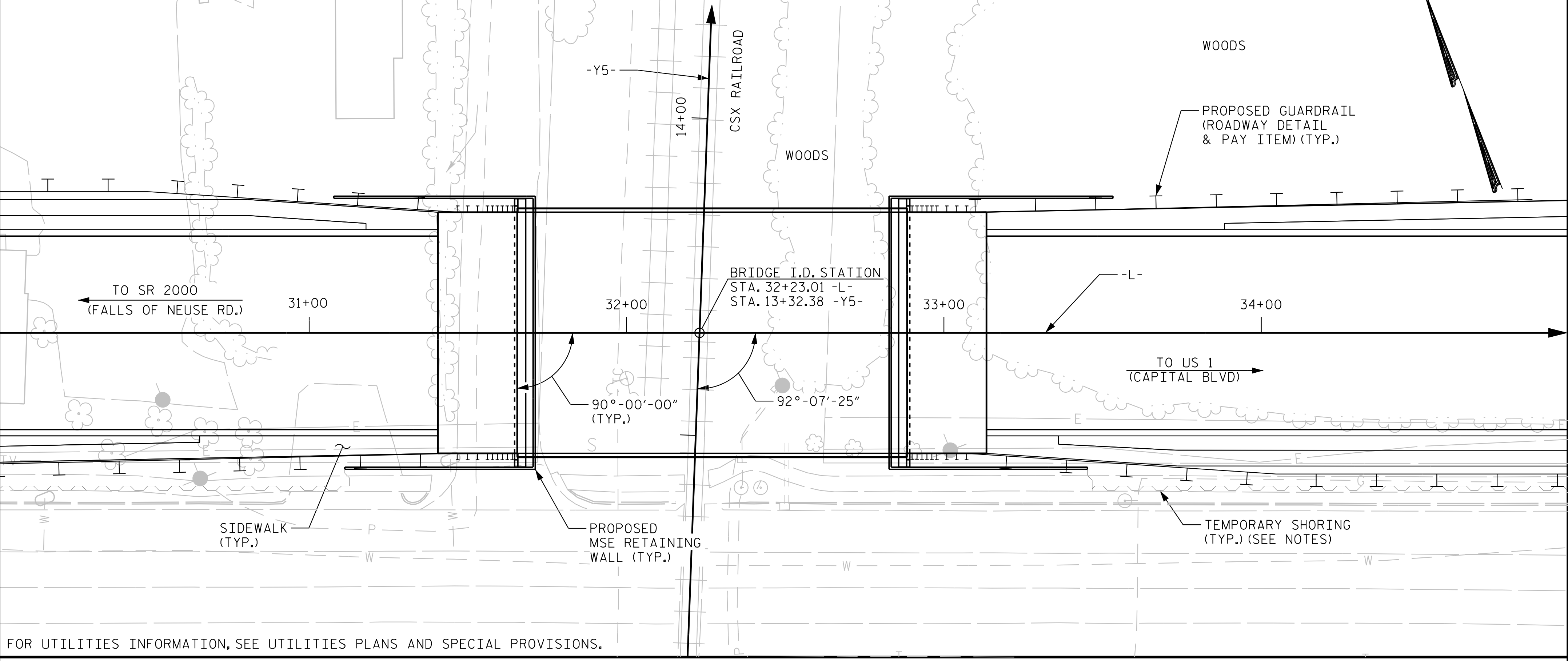
7/22/2024  
 DRAWN BY: J. I. KIMBLE DATE: 1/19  
 CHECKED BY: M. D. MAGEE DATE: 1/19  
 DESIGN ENGINEER OF RECORD: S. A. DENNEY DATE: 1/19

K:\RD1\Structur es\B ridge\NC\01036002 - P-5720\Code\09\5720\_SML\_FL1\_911494.dgn





BM #2: BENCH TIE NAIL IN 10" PINE, EL. 250.05 (N 780573 E 2129763)



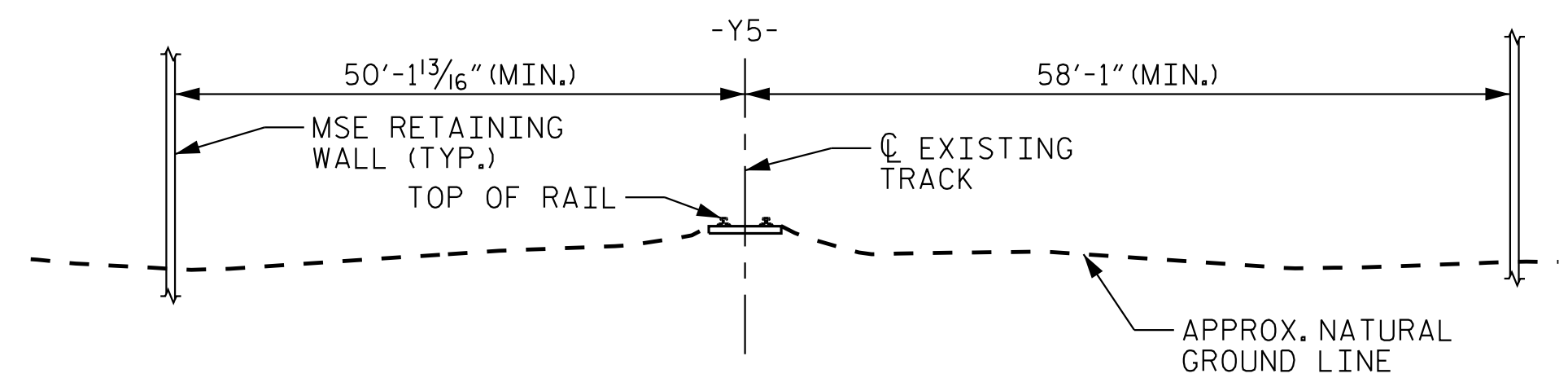
LOCATION SKETCH

NOTES

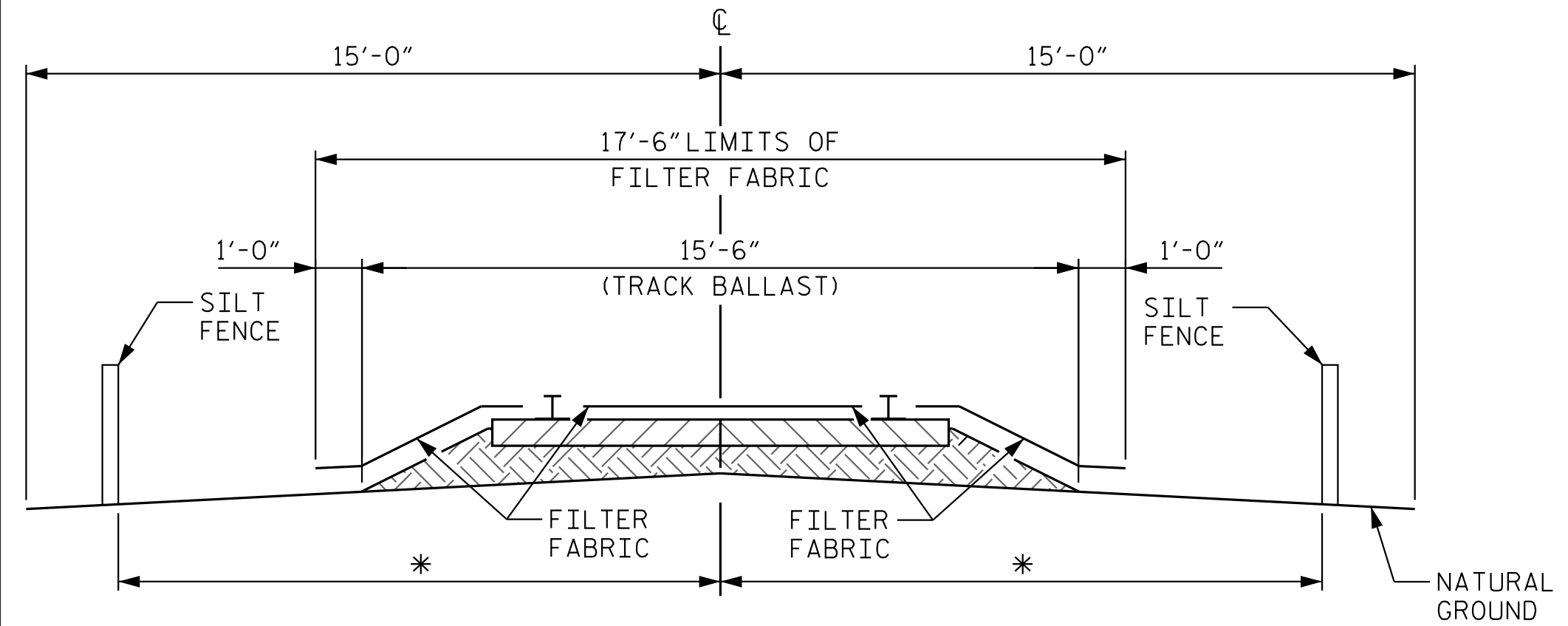
- ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
- THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
- THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.
- FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- PRESTRESSED CONCRETE DECK PANELS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.
- REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.
- THE RAILROAD TRACK TOP OF RAIL ELEVATIONS SHOWN ON THE PLANS ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE TOP OF RAIL ELEVATIONS AND REPORT ANY VARIATIONS TO THE ENGINEER. ANY PLAN REVISIONS NECESSARY TO ACHIEVE THE REQUIRED MINIMUM VERTICAL CLEARANCE WILL BE PROVIDED BY THE DEPARTMENT.
- NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.
- FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.
- FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

TOTAL BILL OF MATERIAL

	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	FIB 54" PRESTRESSED CONCRETE GIRDERS	PILE DRIVING EQUIPMENT SET UP FOR HP 14x73 STEEL PILES	HP 14x73 STEEL PILES	TWO BAR METAL RAIL	1'-2" x 3'-3" CONCRETE PARAPET	4" SLOPE PROTECTION	ELASTOMERIC BEARINGS	72" CHAIN LINK FENCE (BLACK VINYL COATED)		
	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.	EA.	NO.	LIN. FT.	LIN. FT.	LIN. FT.	SQ. YDS.	LUMP SUM	LIN. FT.
SUPERSTRUCTURE	9,653	10,716		LUMP SUM		11	1,346.58							LUMP SUM	230.67
END BENT 1			48.5		5,794			11	11	687.5			22		
END BENT 2			48.5		5,794			11	11	632.5			22		
TOTAL	9,653	10,716	97.0	LUMP SUM	11,588	11	1,346.58	22	22	1,320	230.67	245.67	44	LUMP SUM	230.67



SECTION NORMAL TO TRACK (LOOKING STATION AHEAD ALONG RAILROAD)



RAILROAD EROSION CONTROL DETAIL

\* TO BE DETERMINED BY THE RESIDENT ENGINEER IN CONSULTATION WITH THE RAILROAD ENGINEER.

- NOTES:
- RAILROAD EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO PERFORMING ANY WORK IN THE RAILROAD RIGHT-OF-WAY.
  - ADDITIONAL EROSION CONTROL MEASURES FOR PROTECTION OF RAILROAD DITCHES MAY BE REQUIRED AS DIRECTED BY THE ENGINEER.
  - NO SEPARATE PAYMENT WILL BE MADE FOR RAILROAD EROSION CONTROL MEASURES.

LIMITS OF SILT FENCE AND FILTER FABRIC PARALLEL TO RAILROAD SHALL EXTEND A MINIMUM OF 25'-0" OUTSIDE EDGE OF SUPERSTRUCTURE OR TOE OF SLOPE ON CONSTRUCTION. A GREATER LENGTH OF SILT FENCE OR FILTER FABRIC MAY BE REQUIRED IF SO DIRECTED BY THE ENGINEER.

FILTER FABRIC TO BE NAILED TO TIMBER RAIL TIES WITH PRIME SOURCE "GRIP CAP" OR EQUIVALENT. FILTER FABRIC ON SHOULDER TO BE SECURED AS DIRECTED BY THE ENGINEER AND RAILROAD.

PROJECT NO. P-5720  
 WAKE COUNTY  
 STATION: 32+23.01 -L-

SHEET 4 OF 4



Kimley-Horn

421 Fayetteville Street, Suite 600  
 Raleigh, NC 27601-1772  
 Phone (919) 677-2000  
 NC LICENSE # F-0102

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 GENERAL DRAWING  
 FOR BRIDGE ON DURANT ROAD (SR2006)  
 OVER CSX RAILROAD BETWEEN  
 US 1 AND SR 2000

DRAWN BY: J. I. KIMBLE DATE: 1/19  
 CHECKED BY: M. D. MAGEE DATE: 1/19  
 DESIGN ENGINEER OF RECORD: S. A. DENNEY DATE: 1/19

DOCUMENT NOT CONSIDERED FINAL  
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REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	

TOTAL SHEETS: 33

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 3/22/2024

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	$\gamma_{DC}$	$\gamma_{DW}$
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

### LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING #	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						MOMENT					SHEAR					MOMENT								
						LIVE-LOAD FACTORS ( $\gamma_{LL}$ )	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)	LIVE-LOAD FACTORS ( $\gamma_{LL}$ )	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)	
DESIGN LOAD	HL-93 (INVENTORY)	N/A	①	1.14	--	1.75	0.662	1.39	A	EL	60.500	0.771	1.39	A	I	11.500	0.80	0.662	1.14	A	EL	60.500		
	HL-93 (OPERATING)	N/A		1.80	--	1.35	0.662	2.03	A	EL	60.500	0.771	1.84	A	I	11.500	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	②	1.67	60.12	1.75	0.662	1.80	A	EL	60.500	0.771	1.99	A	I	11.500	0.80	0.662	1.67	A	EL	60.500		
	HS-20 (OPERATING)	36.000		2.62	94.32	1.35	0.662	2.63	A	EL	60.500	0.771	2.62	A	I	11.500	N/A	--	--	--	--	--		
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500		4.05	54.68	1.40	0.662	6.15	A	EL	60.500	0.771	6.51	A	I	11.500	0.80	0.662	4.05	A	EL	60.500	
		SNGARBS2	20.000		2.90	58.00	1.40	0.662	4.40	A	EL	60.500	0.771	4.49	A	I	11.500	0.80	0.662	2.90	A	EL	60.500	
		SNAGRIS2	22.000		2.69	59.18	1.40	0.662	4.09	A	EL	60.500	0.771	4.12	A	I	11.500	0.80	0.662	2.69	A	EL	60.500	
		SNCOTTS3	27.250		2.01	54.77	1.40	0.662	3.06	A	EL	60.500	0.771	3.17	A	I	11.500	0.80	0.662	2.01	A	EL	60.500	
		SNAGGRS4	34.925		1.63	56.93	1.40	0.662	2.48	A	EL	60.500	0.771	2.54	A	I	11.500	0.80	0.662	1.63	A	EL	60.500	
		SNS5A	35.550		1.60	56.88	1.40	0.662	2.43	A	EL	60.500	0.771	2.54	A	I	11.500	0.80	0.662	1.60	A	EL	60.500	
		SNS6A	39.950		1.45	57.93	1.40	0.662	2.20	A	EL	60.500	0.771	2.28	A	I	11.500	0.80	0.662	1.45	A	EL	60.500	
	TRUCK TRACTOR SEMI-TRAILER (TTS1)	TNAGRIT3	33.000		1.76	58.08	1.40	0.662	2.68	A	EL	60.500	0.771	2.76	A	I	11.500	0.80	0.662	1.76	A	EL	60.500	
		TNT4A	33.075		1.77	58.54	1.40	0.662	2.68	A	EL	60.500	0.771	2.71	A	I	11.500	0.80	0.662	1.77	A	EL	60.500	
		TNT6A	41.600		1.43	59.49	1.40	0.662	2.16	A	EL	60.500	0.771	2.29	A	I	11.500	0.80	0.662	1.43	A	EL	60.500	
		TNT7A	42.000		1.42	59.64	1.40	0.662	2.16	A	EL	60.500	0.771	2.25	A	I	11.500	0.80	0.662	1.42	A	EL	60.500	
		TNT7B	42.000		1.45	60.90	1.40	0.662	2.20	A	EL	60.500	0.771	2.17	A	I	11.500	0.80	0.662	1.45	A	EL	60.500	
		TNAGRIT4	43.000		1.40	60.20	1.40	0.662	2.12	A	EL	60.500	0.771	2.10	A	I	11.500	0.80	0.662	1.40	A	EL	60.500	
		TNAGT5A	45.000		1.32	59.40	1.40	0.662	2.01	A	EL	60.500	0.771	2.05	A	I	11.500	0.80	0.662	1.32	A	EL	60.500	
TNAGT5B	45.000	③	1.32	59.40	1.40	0.662	2.00	A	EL	60.500	0.771	2.00	A	I	11.500	0.80	0.662	1.32	A	EL	60.500			
EMERGENCY VEHICLE (EV)	EV2	28.750		2.03	58.36	1.30	0.662	3.32	A	EL	60.500	0.771	3.34	A	I	11.500	0.80	0.662	2.03	A	EL	60.500		
	EV3	43.000	④	1.34	57.62	1.30	0.662	2.20	A	EL	60.500	0.771	2.20	A	I	11.500	0.80	0.662	1.34	A	EL	60.500		

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)

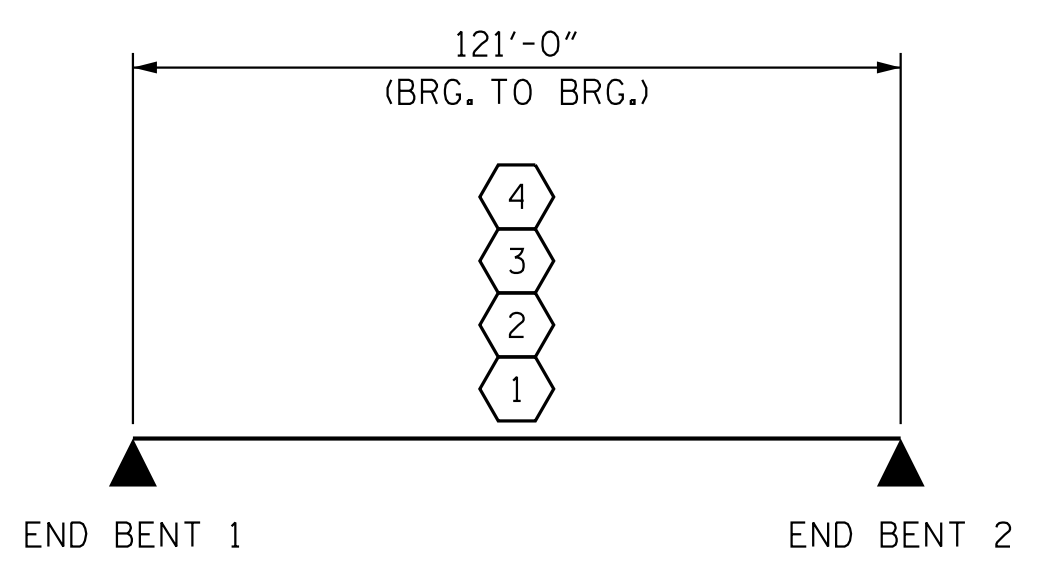
③ LEGAL LOAD RATING \*\*

④ EMERGENCY VEHICLE LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE

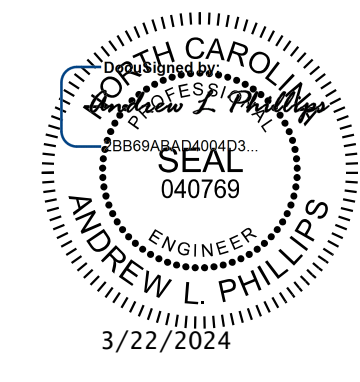
GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. P-5720  
WAKE COUNTY  
 STATION: 32+23.01 -L-



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

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2			4	

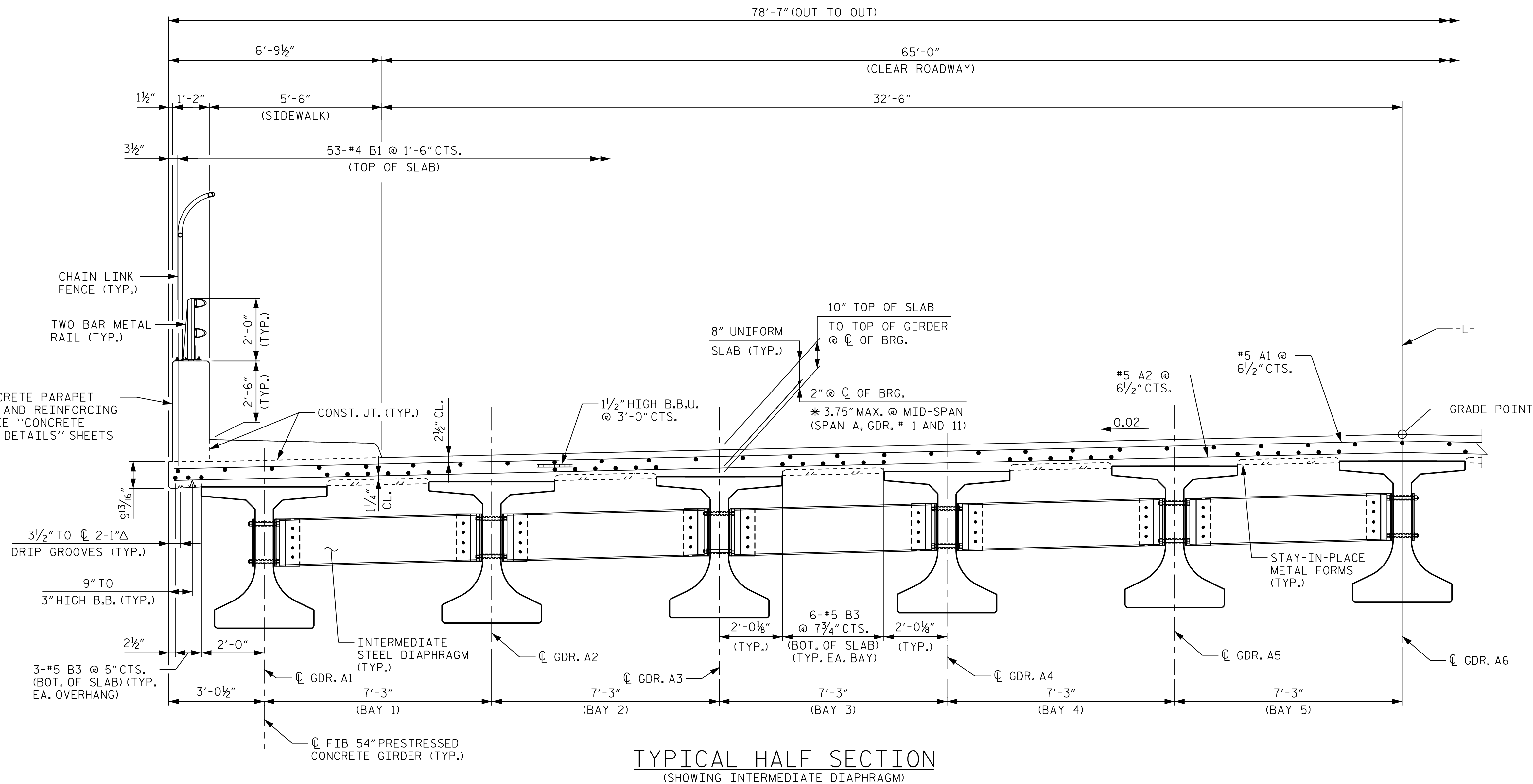
TOTAL SHEETS: 33

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CHECKED BY : S.A. DENNEY	DATE : 1/19
DRAWN BY : MAA 1/08	REV. 11/2/08RR MAA/GM
CHECKED BY : GM/DI 2/08	REV. 10/1/11 MAA/GM
	REV. 04/23 BNB/AAI

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TYPICAL HALF SECTION  
(SHOWING INTERMEDIATE DIAPHRAGM)

NOTES

PROVIDE 1/4" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF "A" BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) @ 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF "A" BARS A CLEAR DISTANCE OF 2 1/2" ABOVE THE TOP OF THE REMOVABLE FORM.

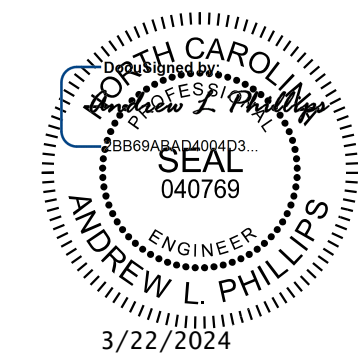
LONGITUDINAL STEEL MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO AVOID INTERFERENCE WITH STIRRUPS IN PRESTRESSED CONCRETE GIRDERS.

PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

\* BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATIONS.

PROJECT NO. P-5720  
WAKE COUNTY  
 STATION: 32+23.01 -L-

SHEET 1 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
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 SUPERSTRUCTURE  
 TYPICAL SECTION

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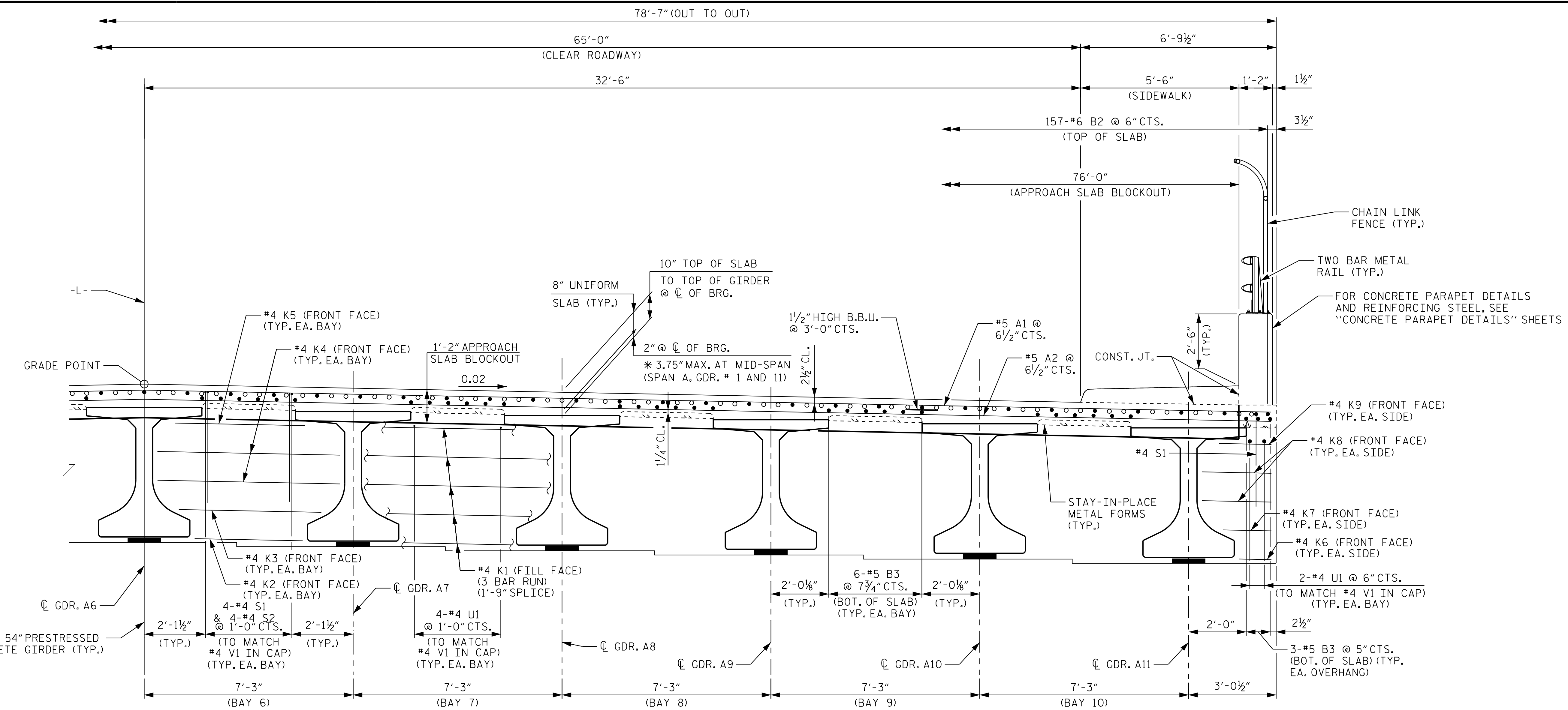
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CHECKED BY: <u>M. D. MAGEE</u>	DATE: <u>1/19</u>
DESIGN ENGINEER OF RECORD: <u>S. A. DENNEY</u>	DATE: <u>1/19</u>

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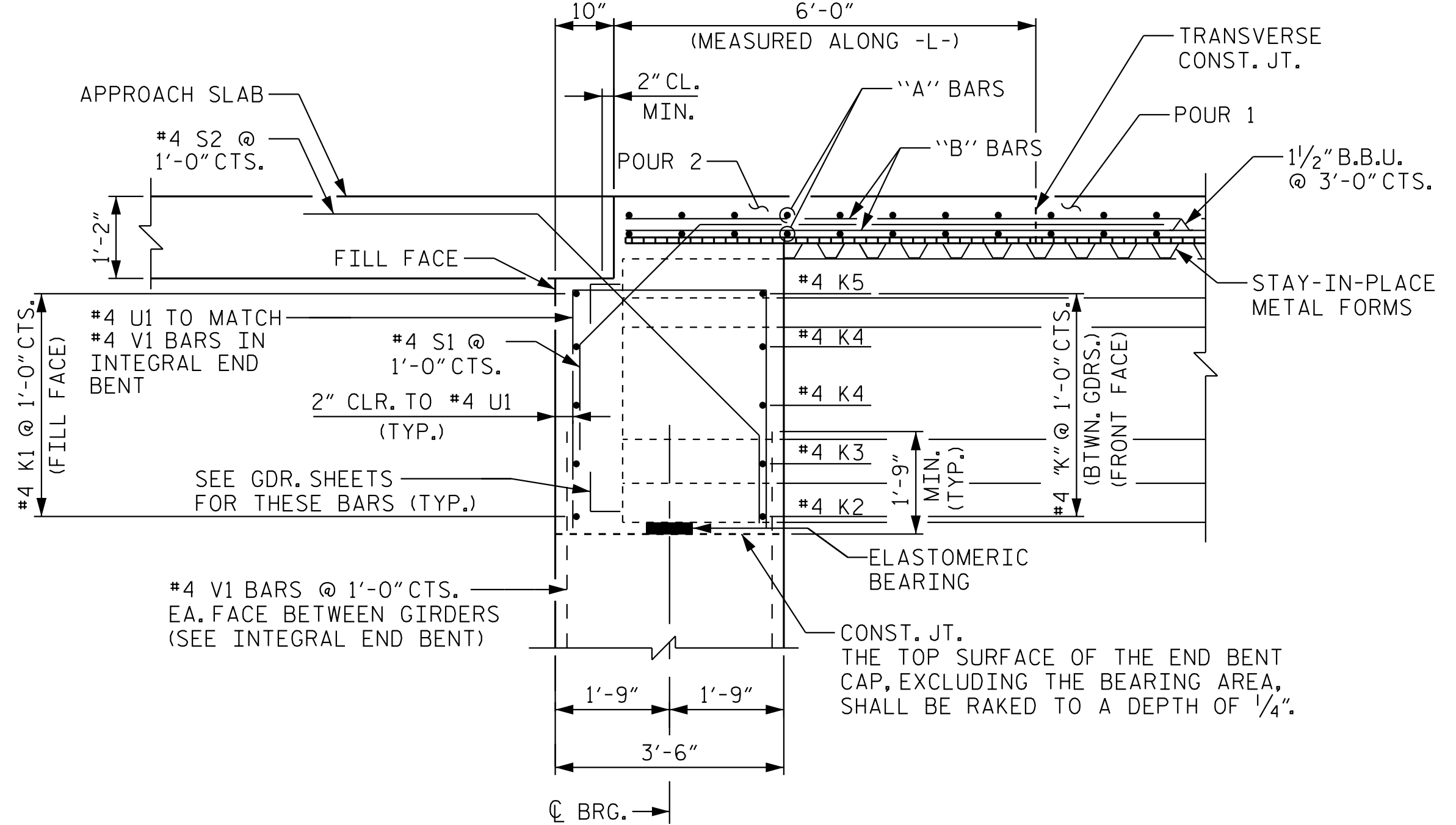
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TYPICAL HALF SECTION  
(SHOWING INTEGRAL END BENT DIAPHRAGM)

NOTES

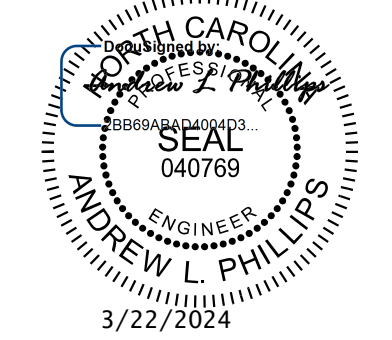
\* BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATIONS.



SECTION THRU INTEGRAL END BENT  
(END BENT 1 SHOWN, END BENT 2 SIMILAR)

PROJECT NO. P-5720  
WAKE COUNTY  
STATION: 32+23.01 -L-

SHEET 2 OF 2



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NOTES

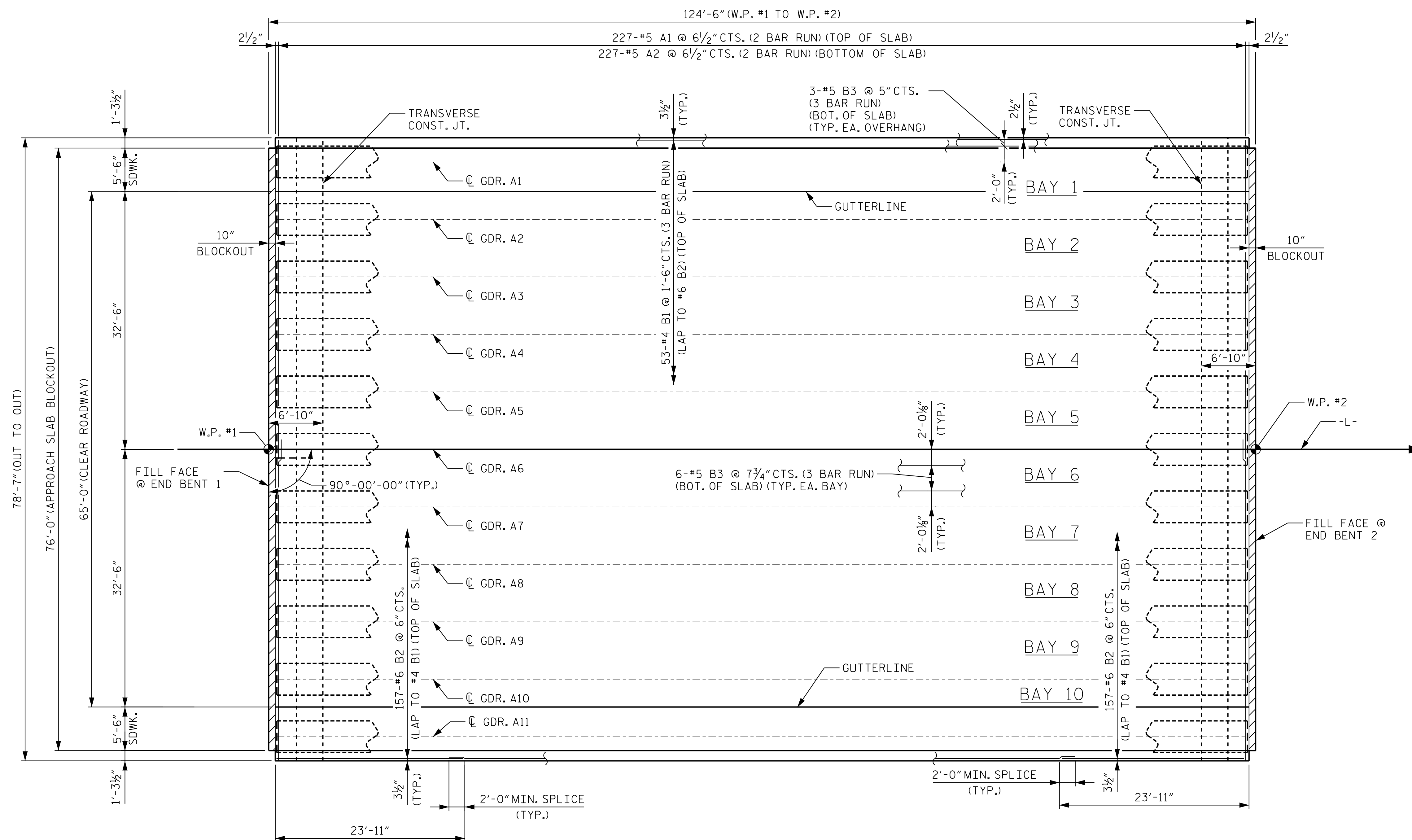
FOR POUR SEQUENCE AND LOCATION OF CONSTRUCTION JOINT, SEE SUPERSTRUCTURE "BILL OF MATERIAL" SHEET.

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

FOR CONCRETE PARAPET REINFORCING STEEL, SEE "CONCRETE PARAPET DETAILS" SHEET.

INTERMEDIATE DIAPHRAGM NOT SHOWN FOR CLARITY, SEE "FRAMING PLAN" SHEET.

FOR SIDEWALK REINFORCING STEEL, SEE "SIDEWALK DETAILS" SHEET.



PLAN OF SPAN

PROJECT NO. P-5720  
WAKE COUNTY  
 STATION: 32+23.01 -L-

SHEET 1 OF 2



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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SUPERSTRUCTURE  
 PLAN OF SPAN

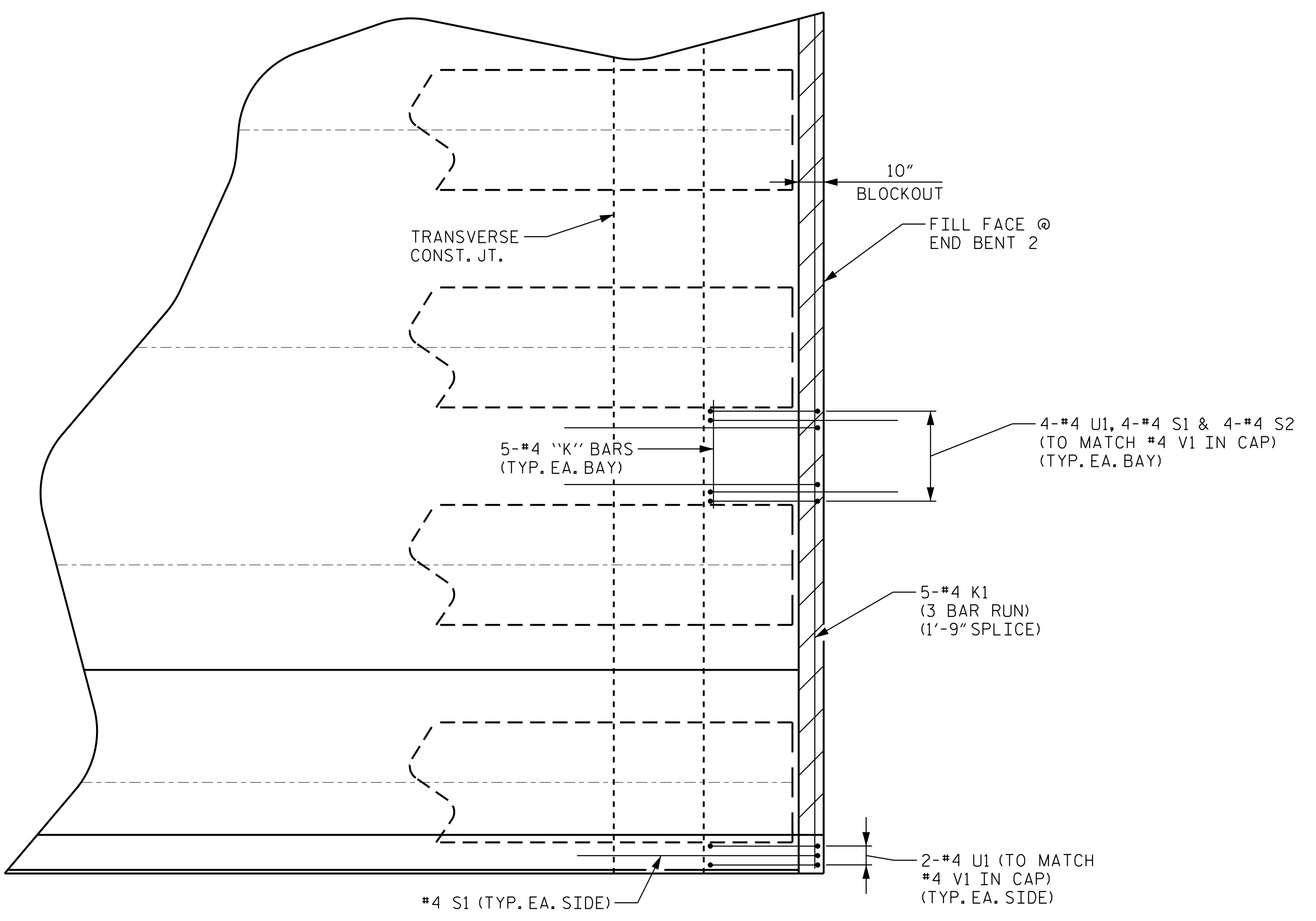
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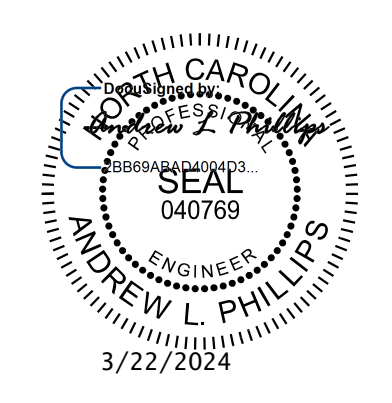
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**END BENT DIAPHRAGM ENLARGEMENT**  
 (END BENT 2 SHOWN, END BENT 1 SIMILAR)

PROJECT NO. P-5720  
WAKE COUNTY  
 STATION: 32+23.01 -L-

SHEET 2 OF 2



STATE OF NORTH CAROLINA  
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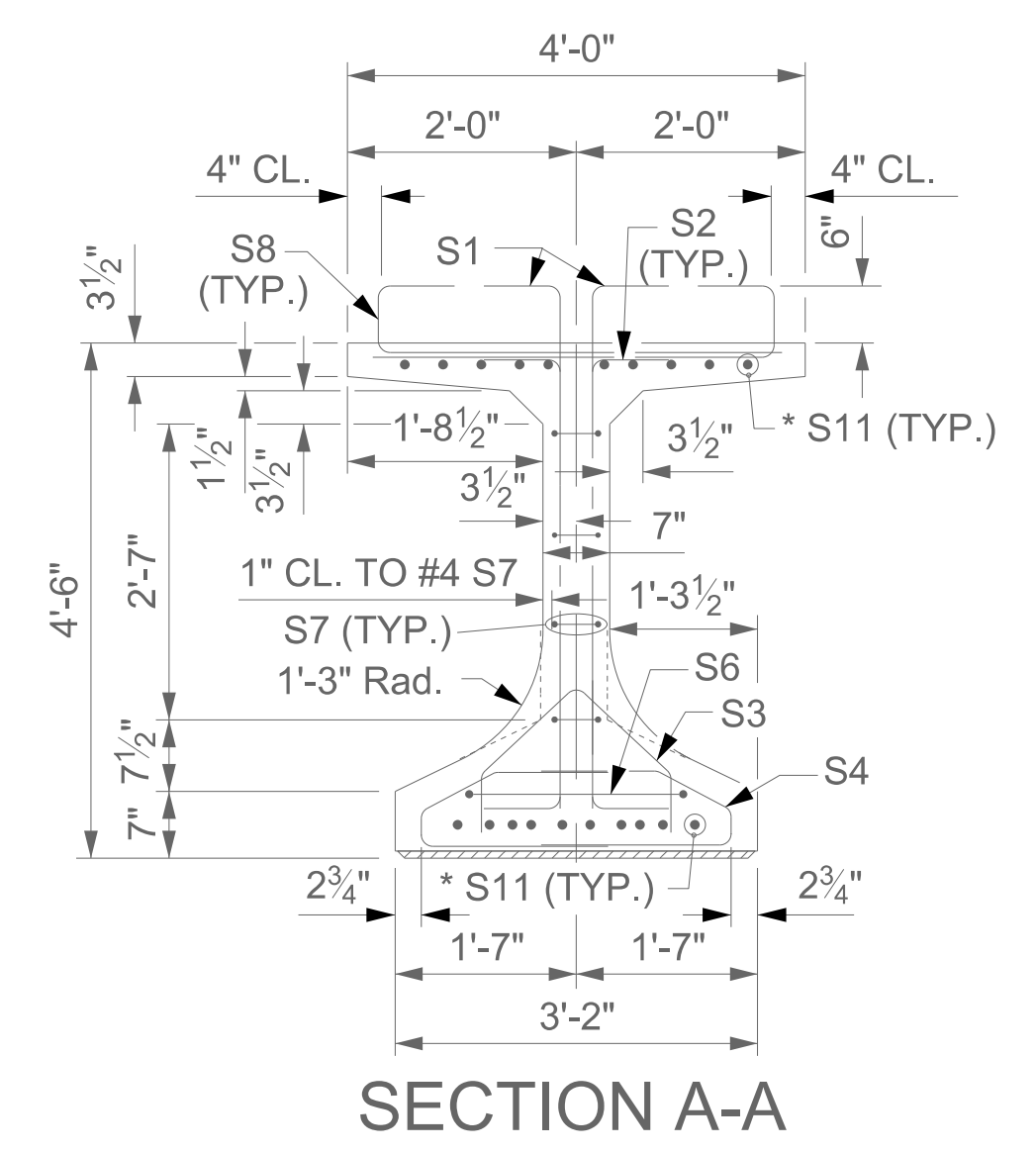
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DESIGN ENGINEER OF RECORD: <u>S. A. DENNEY</u>	DATE: <u>1/19</u>

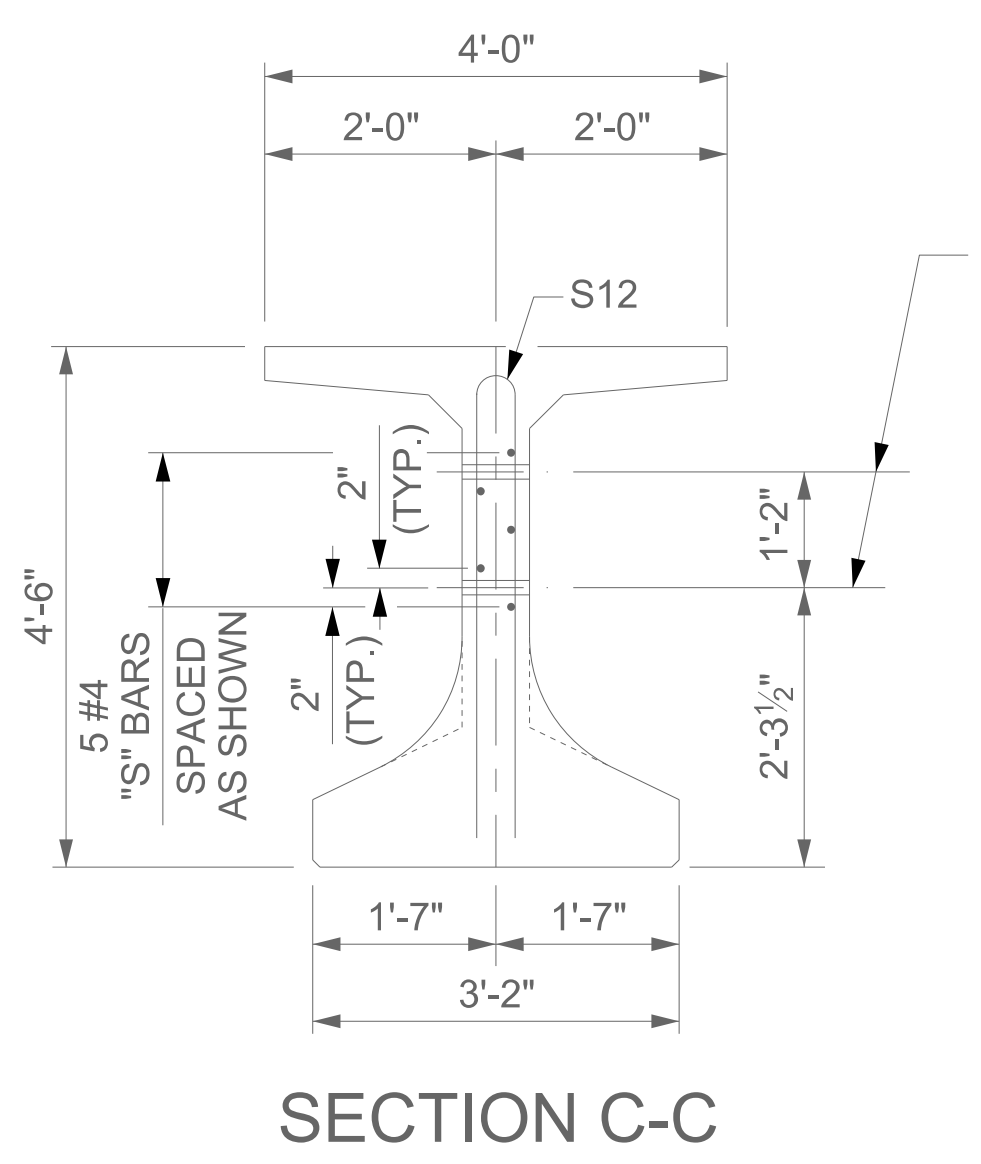
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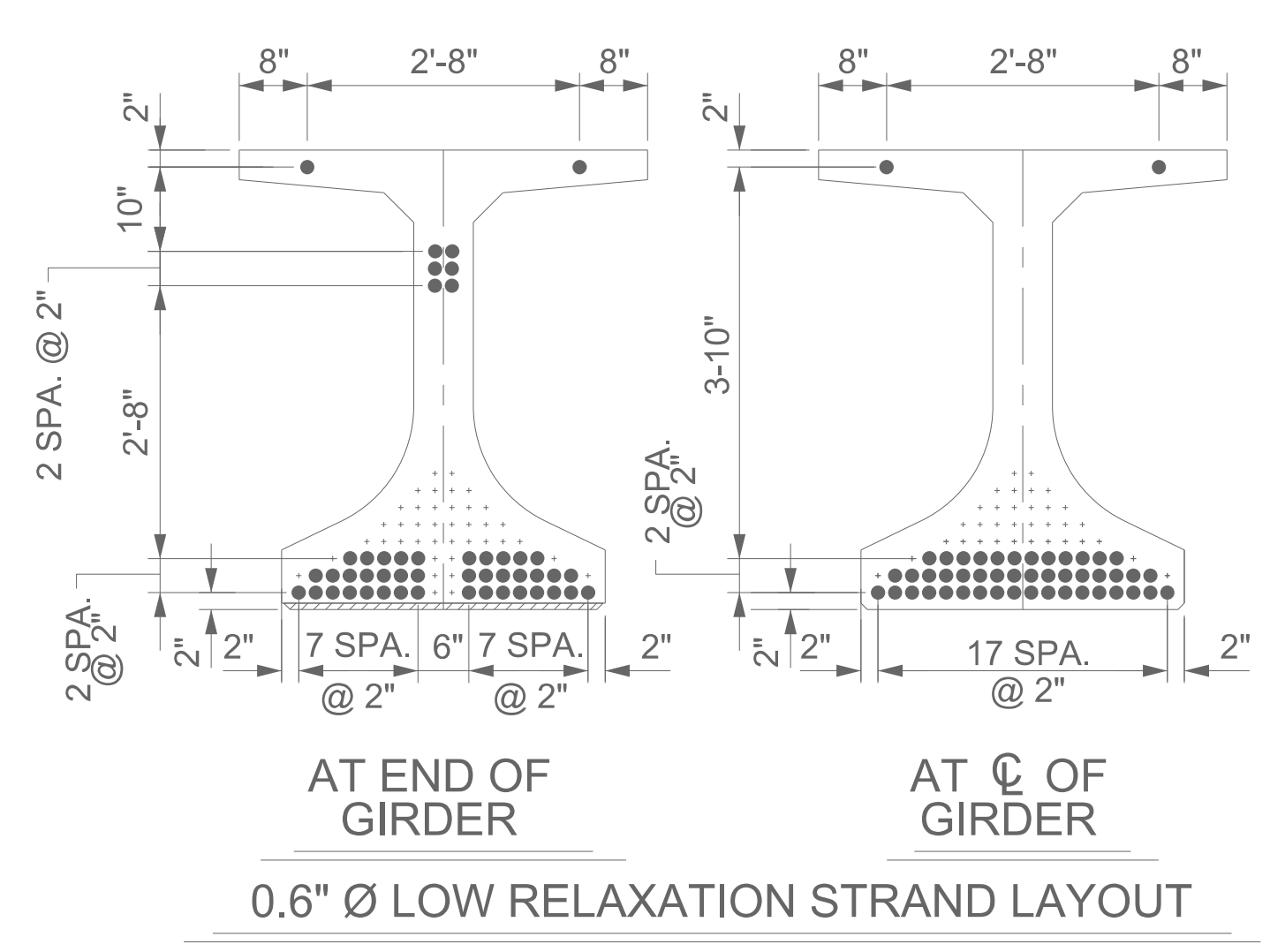
SECTION A-A

\* FOR S11 BARS, SEE DETAIL "C" OF PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD DETAILS SHEET



SECTION C-C

(S8, S9 AND S10 BARS NOT SHOWN)



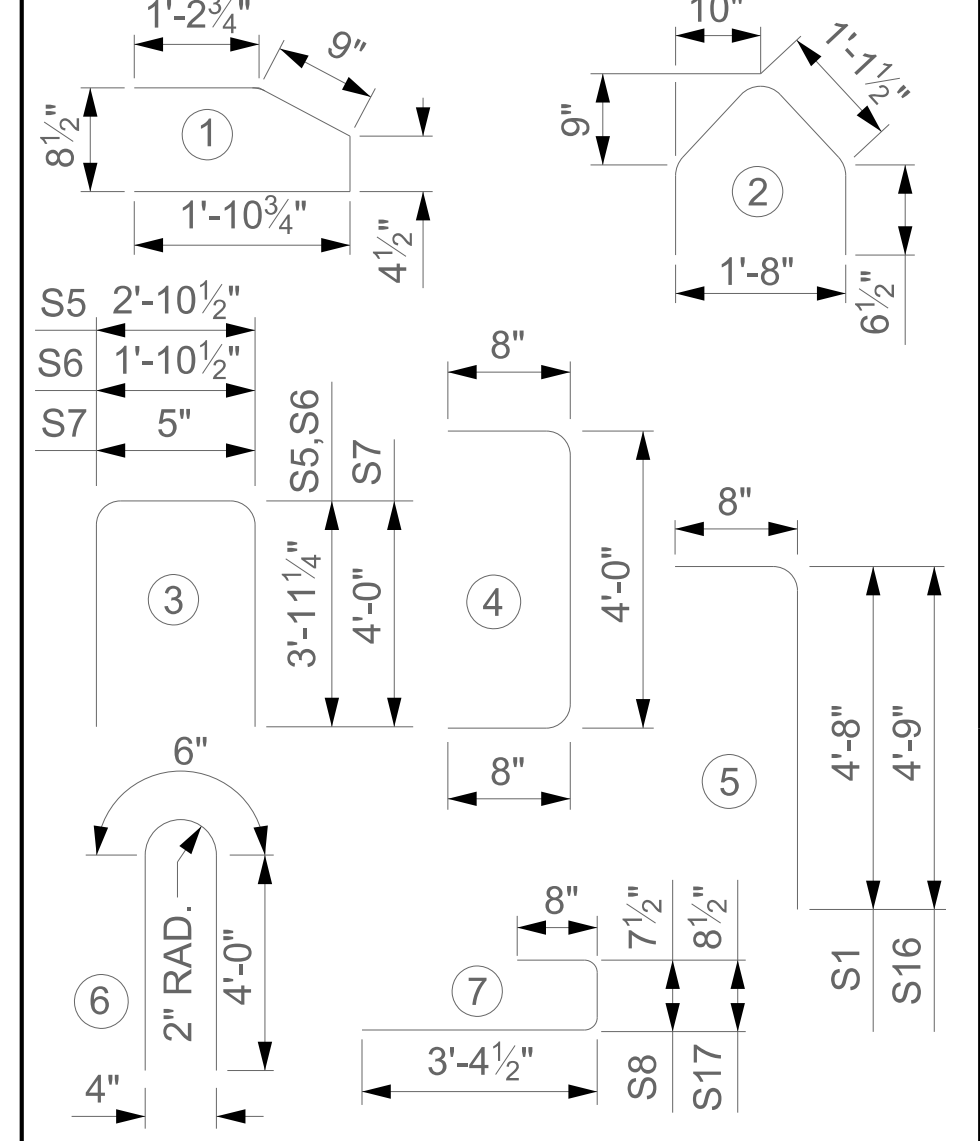
0.6" Ø LOW RELAXATION STRAND LAYOUT

DEBONDING LEGEND

● FULLY BONDED STRANDS

0.6"Ø L. R. GRADE 270 STRANDS					
AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)			
0.217	58,600	43,950			
REINFORCING STEEL FOR ONE GDR					
BAR NUMBER	SIZE	TYPE	LENGTH	WEIGHT	
S1	#5	5	5'-4"	645	
S2	#6	4	5'-4"	224	
S3	#3	2	3'-4"	43	
S4	#3	1	4'-3"	109	
S6	#5	3	9'-9"	20	
S7	#4	3	8'-5"	45	
S8	#5	7	4'-8"	565	
S10	#5	STR	3'-8"	203	
* S11	#6	STR	2'-10"	170	
S12	#5	6	8'-6"	35	
S13	#3	STR	2'-10"	2	
S14	#4	STR	8'-0"	27	
S16	#5	5	5'-5"	542	
S17	#5	7	4'-9"	476	

BAR TYPES



ALL BAR DIMENSIONS ARE OUT-TO-OUT

QUANTITIES FOR ONE GIRDER

REINFORCING STEEL	9000 PSI CONCRETE	0.6" Ø L.R. STRANDS
LB.	C.Y.	No.
3,106	29.4	48

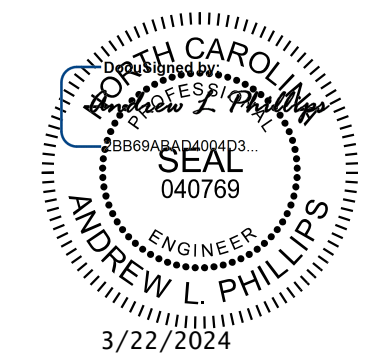
GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
11	122'-5"	1,346'-7"

PROJECT NO. P-5720  
 WAKE COUNTY  
 STATION: 32+23.01 -L-

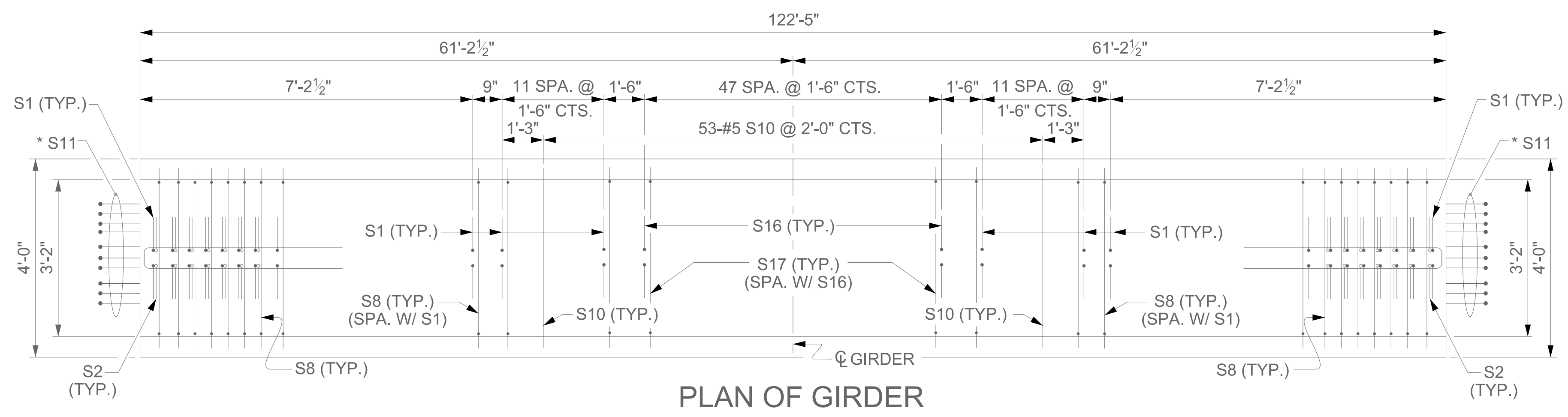
SHEET 1 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
 54" FIB PRESTRESSED  
 CONCRETE GIRDER  
 CONTINUOUS FOR  
 LIVE LOAD

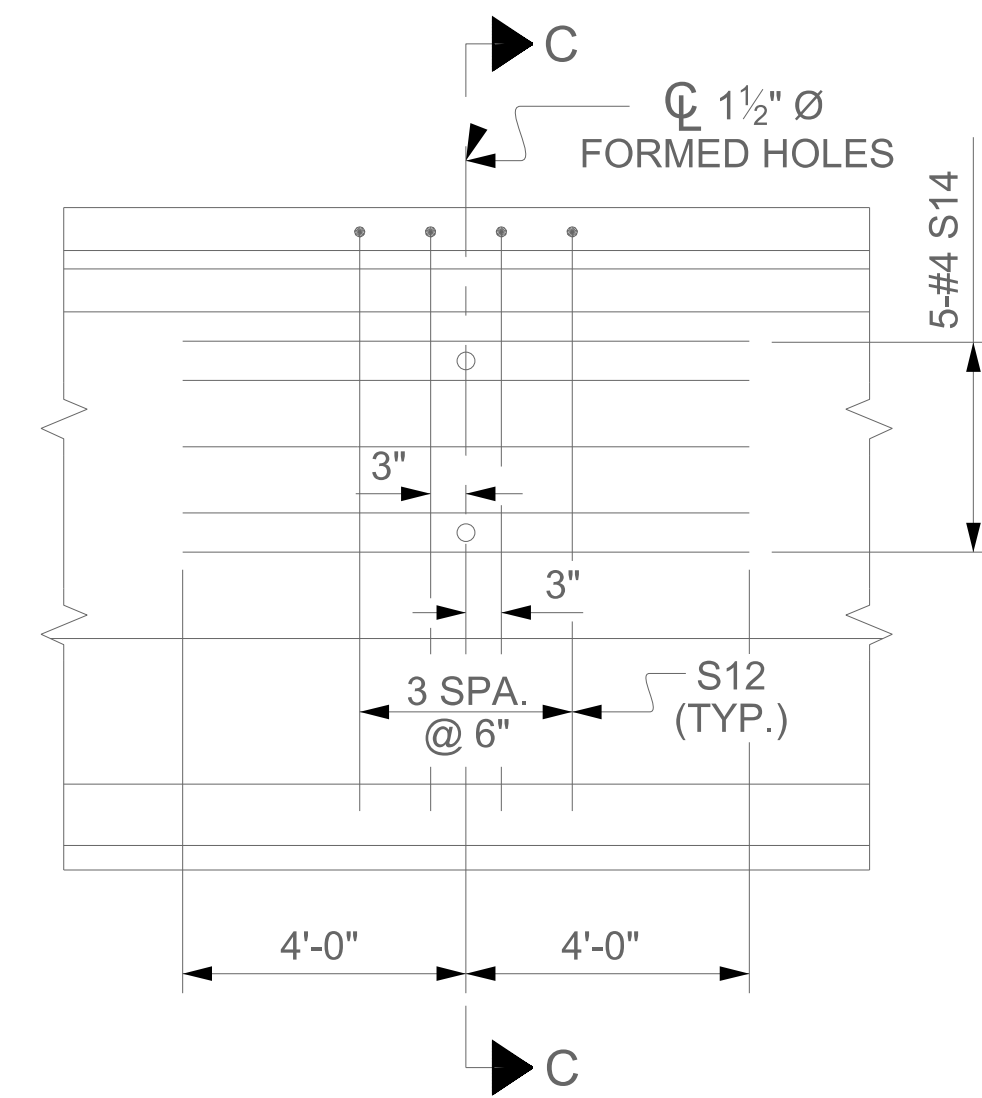


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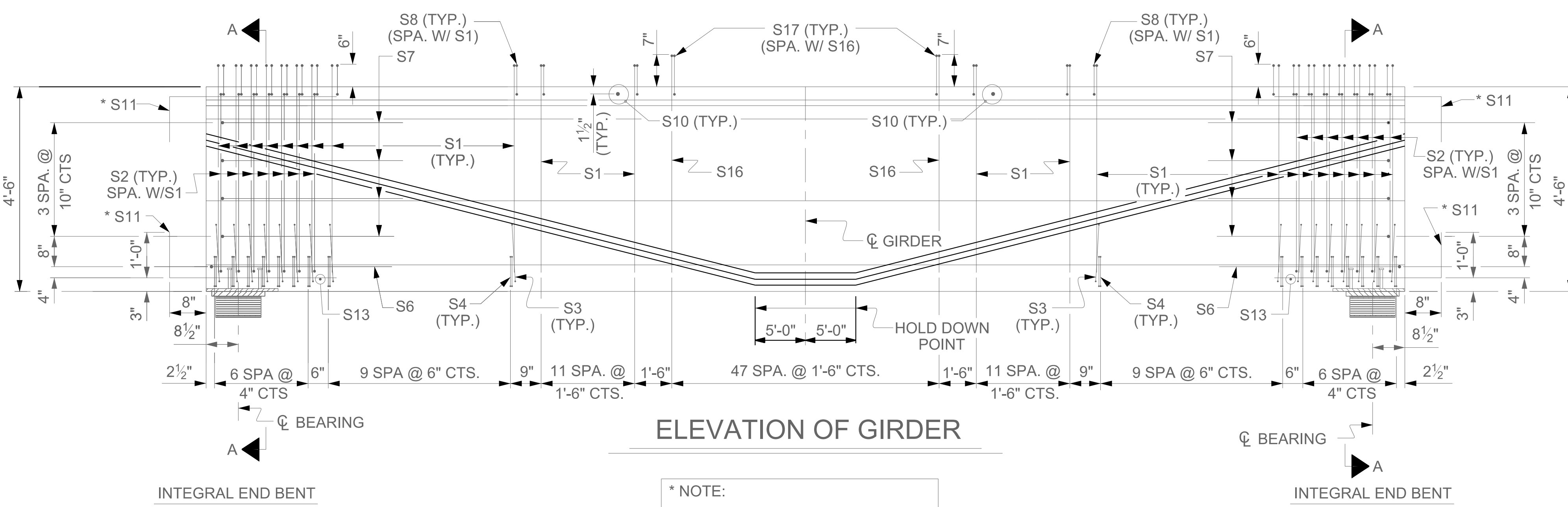


PLAN OF GIRDER



PARTIAL ELEVATION

SHOWING INTERMEDIATE STEEL DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. 1-11



ELEVATION OF GIRDER

\* NOTE:  
 S11 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

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ASSEMBLED BY : D.D. LOWERY	DATE : 1/19
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DRAWN BY : BNB 09/21	
CHECKED BY : AAI 09/22	

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2			4	

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 SHALL BE GRADE 60.

EMBEDDED PLATE "B-1" SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ANCHOR STUDS SHALL CONFORM TO AASHTO M169 GRADES 1010 THROUGH 1020 OR APPROVED EQUAL, AND SHALL MEET THE TYPE "B" REQUIREMENTS OF SUB SECTION 7.3 OF THE ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.

AT ENDS OF GIRDERS TO BE EMBEDDED IN CONCRETE DIAPHRAGMS OR END WALLS, PRESTRESSING STRANDS MAY EXTEND A MAXIMUM OF 2" BEYOND THE GIRDER ENDS. OTHERWISE, PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

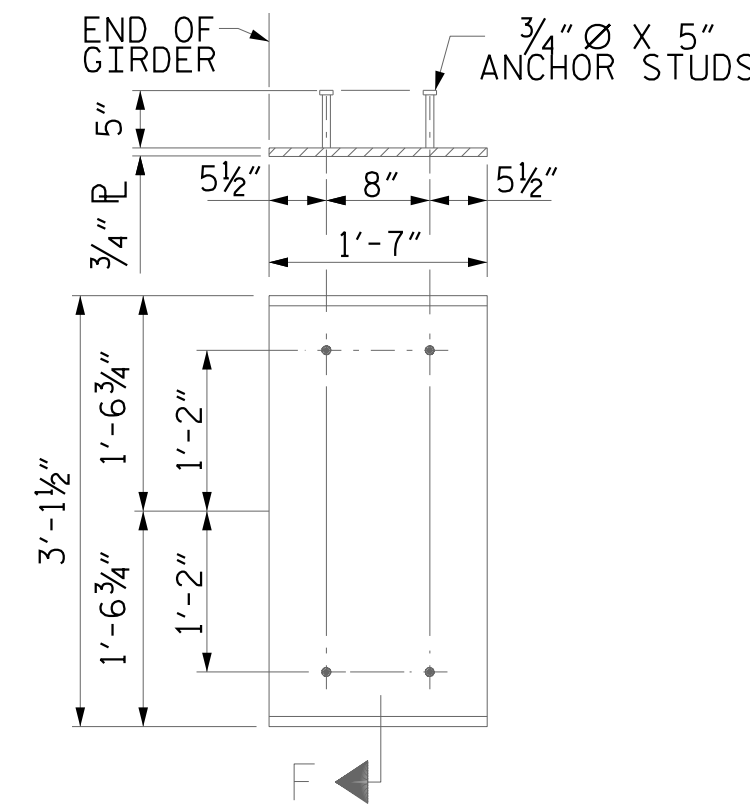
THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 7,000 PSI.

DEPENDING ON THE TYPE OF SYSTEM USED TO SUPPORT THE DECK SLAB FORMS, PRESET ANCHORS MAY BE NECESSARY IN THE PRESTRESSED CONCRETE GIRDER.

THE TOP SURFACE OF THE GIRDER, EXCLUDING THE OUTSIDE 4", SHALL BE RAKED TO A DEPTH OF 1/4".

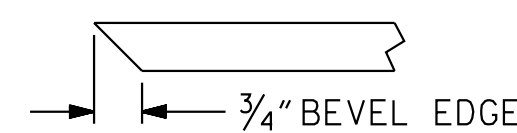
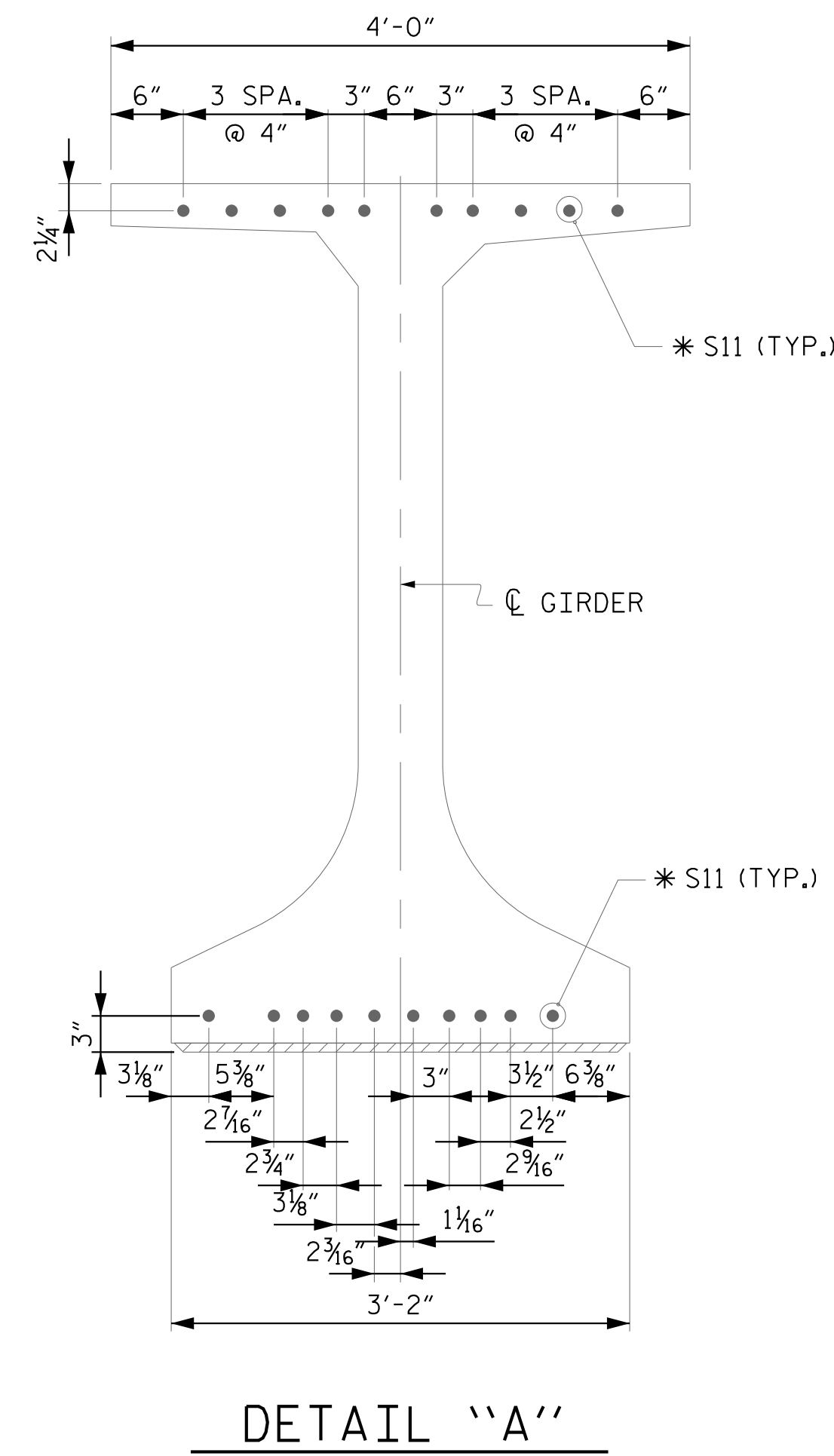
WHEN DRAPED STRANDS ARE DETAILED, THE LONGITUDINAL LOCATION OF THE HOLD DOWN DEVICES SHALL BE WITHIN 6" OF THE LOCATION SHOWN AND THE CENTER OF GRAVITY OF THE GROUP OF DRAPED STRANDS SHALL BE LOCATED WITHIN 1/2" OF THE THEORETICAL LOCATION SHOWN.

THE CONTRACTOR HAS THE OPTION TO PROVIDE, AT NO ADDITIONAL COST TO THE DEPARTMENT, 2 ADDITIONAL STRANDS AT THE TOP OF THE GIRDER TO FACILITATE TYING OF THE REINFORCING STEEL. THESE STRANDS SHALL BE PULLED TO A LOAD OF 4500 lbs.



EMBEDDED PLATE "B-1" DETAILS FOR FIB GIRDER

(2 REQ'D PER GIRDER)

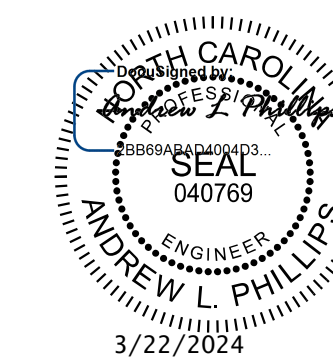


SECTION "F"

(SEE NOTES)

PROJECT NO. P-5720  
WAKE COUNTY  
 STATION: 32+23.01 -L-

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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
 PRESTRESSED CONCRETE GIRDER  
 CONTINUOUS FOR LIVE LOAD  
 DETAILS

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CHECKED BY : S.A. DENNEY	DATE : 1/19
DRAWN BY : BMB 05/21	
CHECKED BY : AAI 10/21	



### STRUCTURAL STEEL NOTES

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

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

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

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

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

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

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

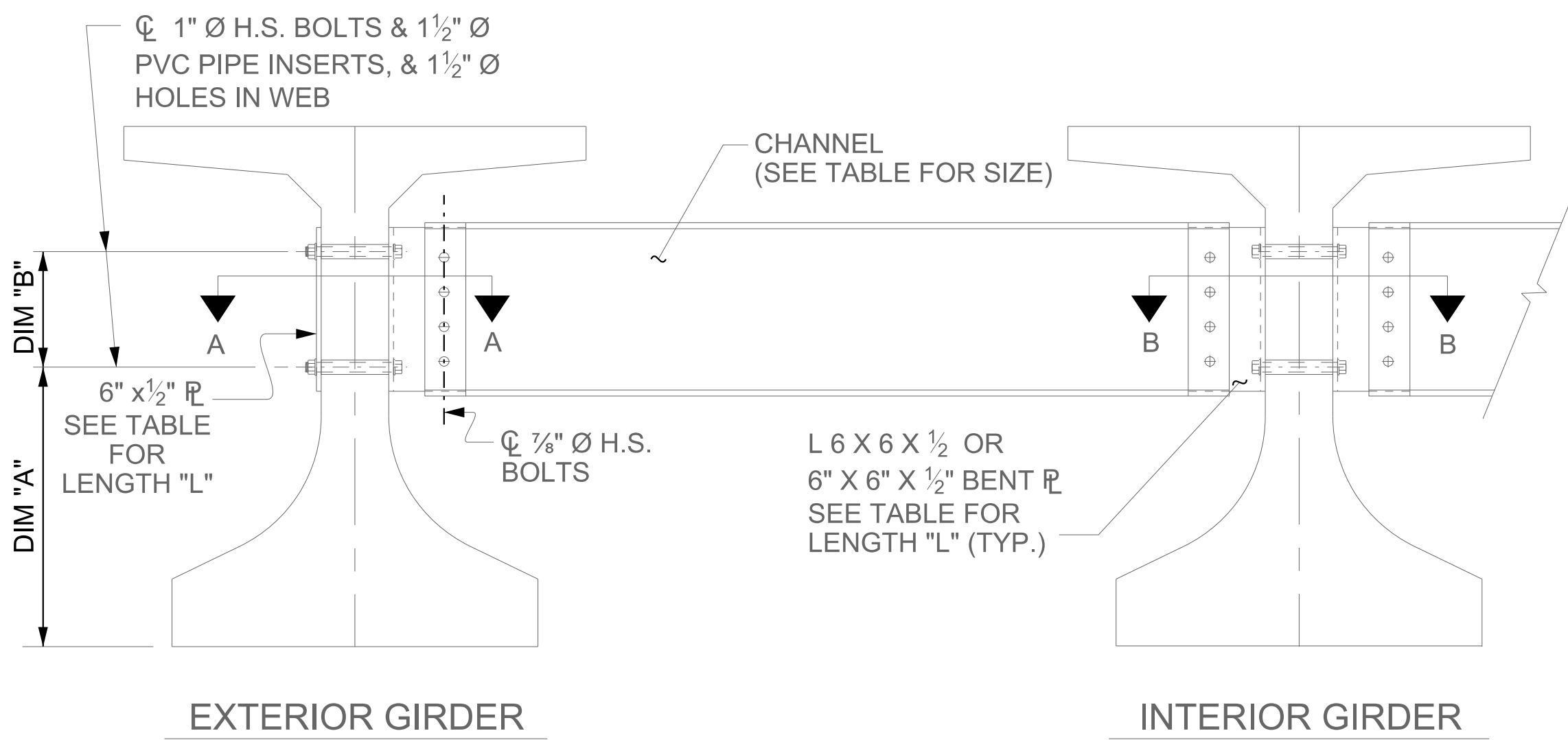
FOR BOLTS THROUGH THE GIRDER WEB, PROVIDE SUFFICIENT LENGTH OF THREADS ON ALL BOLTS TO ACCOMMODATE WASHERS AND THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST 1/4" PROJECTION BEYOND THE NUT.

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

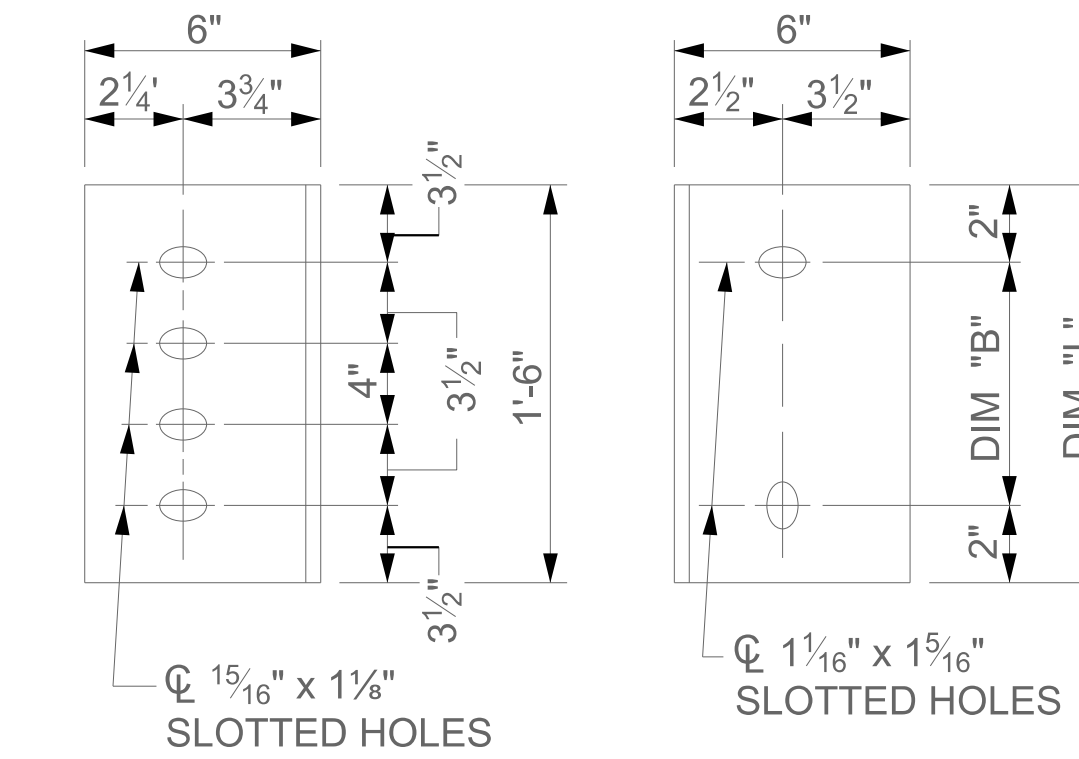
SUBMIT TWO SETS OF WORKING DRAWINGS FOR THE INTERMEDIATE DIAPHRAGM ASSEMBLY FOR REVIEW, COMMENTS AND ACCEPTANCE. AFTER REVIEW, COMMENTS, AND ACCEPTANCE, SUBMIT SEVEN SETS FOR DISTRIBUTION.

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

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

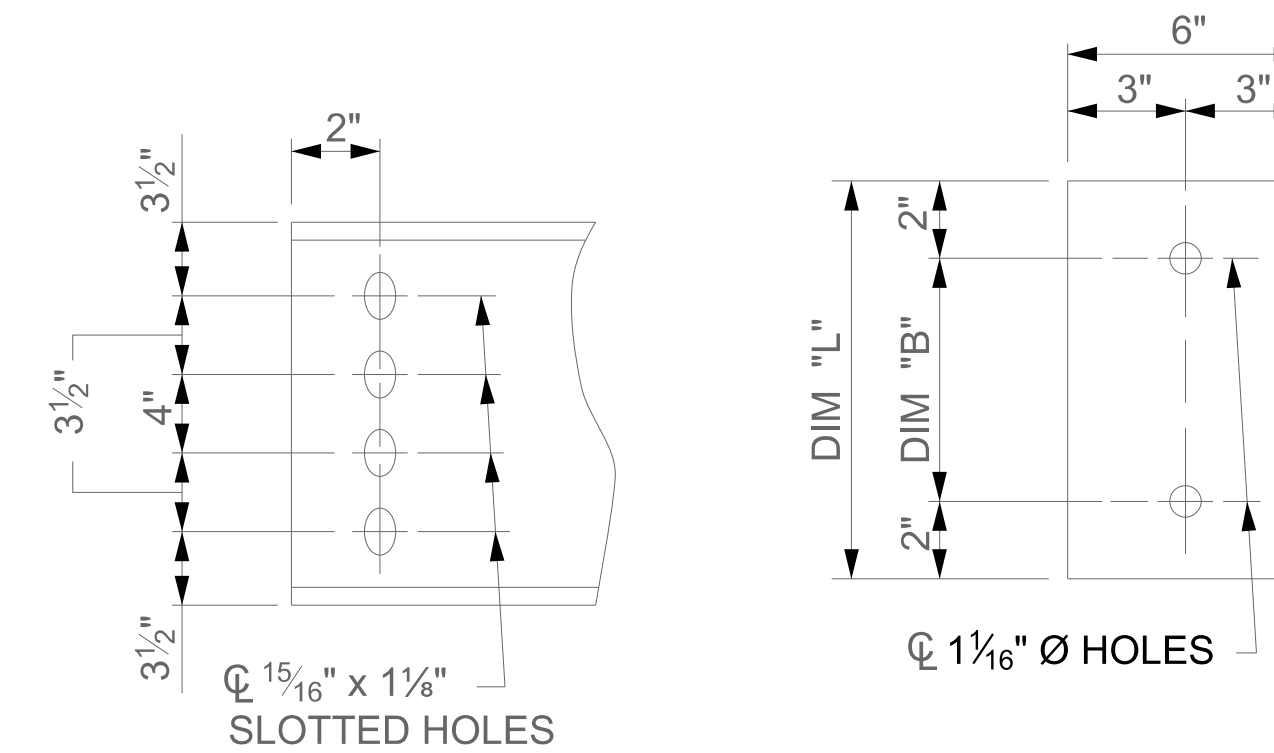


PART SECTION AT INTERMEDIATE DIAPHRAGM

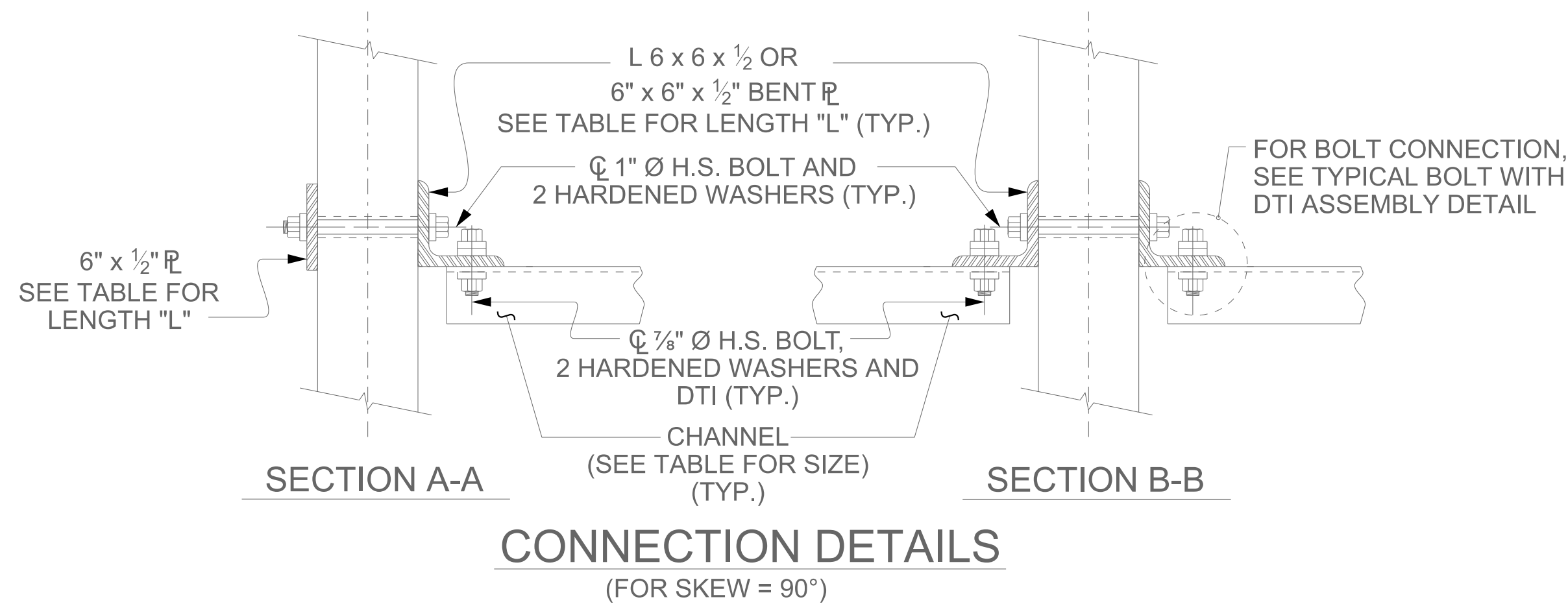


DIAPHRAGM FACE WEB FACE

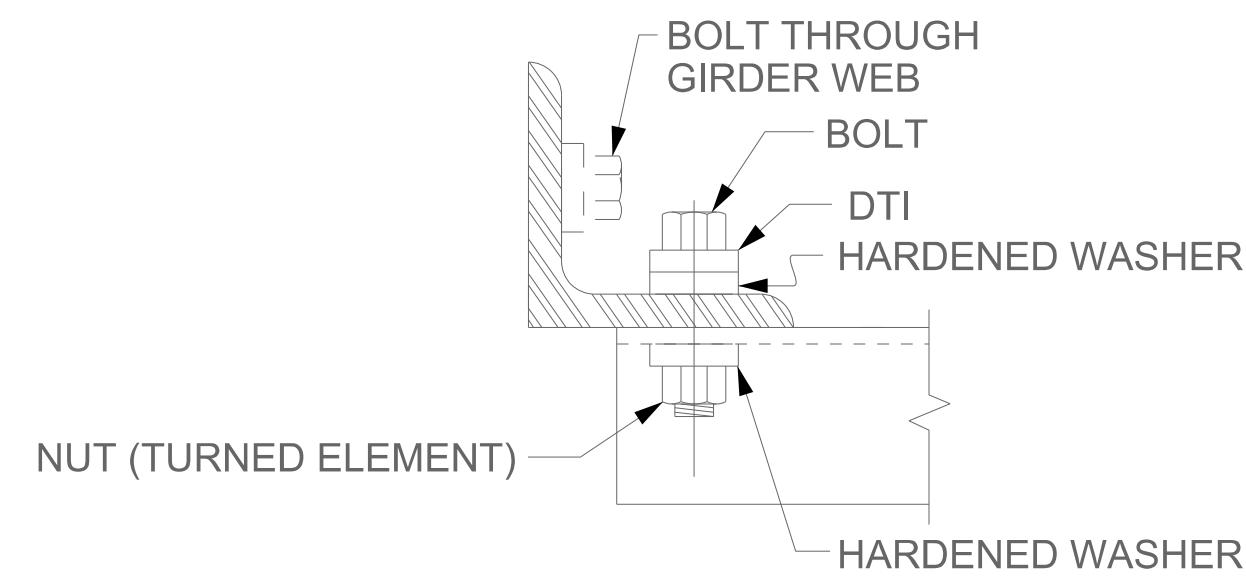
### CONNECTOR PLATE DETAILS



CHANNEL END PLATE DETAILS



CONNECTION DETAILS (FOR SKEW = 90°)



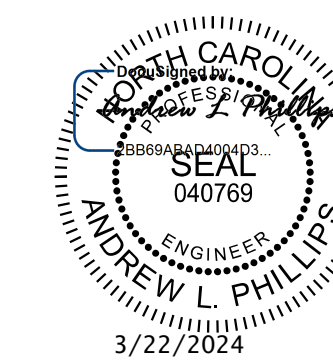
BOLT WITH DTI ASSEMBLY DETAIL

### TABLE

GIRDER TYPE	CHANNEL SIZE	DIM "A"	DIM "B"	DIM "L"
54" FIB	MC 18 x 42.7	2'-3 1/2"	1'-2"	1'-6"

PROJECT NO. P-5720  
WAKE COUNTY  
 STATION: 32+23.01 -L-

SHEET 3 OF 3



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STATE OF NORTH CAROLINA  
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 RALEIGH  
 STANDARD  
 INTERMEDIATE  
 STEEL DIAPHRAGMS  
 FOR 54" FIB

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ASSEMBLED BY : D.D. LOWERY	DATE : 1/19
CHECKED BY : S.A. DENNEY	DATE : 1/19
DRAWN BY : BNB 01/21	
CHECKED BY : AAI 01/21	

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

Table with 4 rows and 33 columns. Headers: 0.6" Ø LOW RELAXATION STRANDS, SPAN A, GIRDERS AG1 & AG11. Rows: FORTIETH POINTS, CAMBER (GIRDER ALONE IN PLACE), \* DEFLECTION DUE TO SUPERIMPOSED D.L., FINAL CAMBER.

\* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS & FUTURE WEARING SURFACE. ALL VALUES ARE SHOWN IN FEET ( DECIMAL FORM ), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES ( FRACTION FORM ).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

Table with 4 rows and 33 columns. Headers: 0.6" Ø LOW RELAXATION STRANDS, SPAN A, GIRDERS AG2 & AG10. Rows: FORTIETH POINTS, CAMBER (GIRDER ALONE IN PLACE), \* DEFLECTION DUE TO SUPERIMPOSED D.L., FINAL CAMBER.

\* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS & FUTURE WEARING SURFACE. ALL VALUES ARE SHOWN IN FEET ( DECIMAL FORM ), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES ( FRACTION FORM ).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

Table with 4 rows and 33 columns. Headers: 0.6" Ø LOW RELAXATION STRANDS, SPAN A, GIRDERS AG3 & AG9. Rows: FORTIETH POINTS, CAMBER (GIRDER ALONE IN PLACE), \* DEFLECTION DUE TO SUPERIMPOSED D.L., FINAL CAMBER.

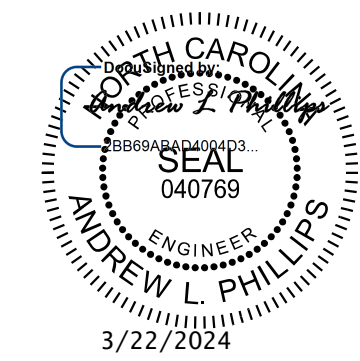
\* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS & FUTURE WEARING SURFACE. ALL VALUES ARE SHOWN IN FEET ( DECIMAL FORM ), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES ( FRACTION FORM ).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

Table with 4 rows and 33 columns. Headers: 0.6" Ø LOW RELAXATION STRANDS, SPAN A, GIRDERS AG4, AG5, AG6, AG7 & AG8. Rows: FORTIETH POINTS, CAMBER (GIRDER ALONE IN PLACE), \* DEFLECTION DUE TO SUPERIMPOSED D.L., FINAL CAMBER.

\* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS & FUTURE WEARING SURFACE. ALL VALUES ARE SHOWN IN FEET ( DECIMAL FORM ), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES ( FRACTION FORM ).

PROJECT NO. P-5720  
WAKE COUNTY  
STATION: 32+23.01 -L-



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RALEIGH  
SUPERSTRUCTURE  
GIRDER DEFLECTIONS  
AND CAMBER

Table with 2 columns: REVISIONS, SHEET NO. Includes a table with columns NO., BY:, DATE:, NO., BY:, DATE: and sheet numbers S-13, TOTAL SHEETS 33.

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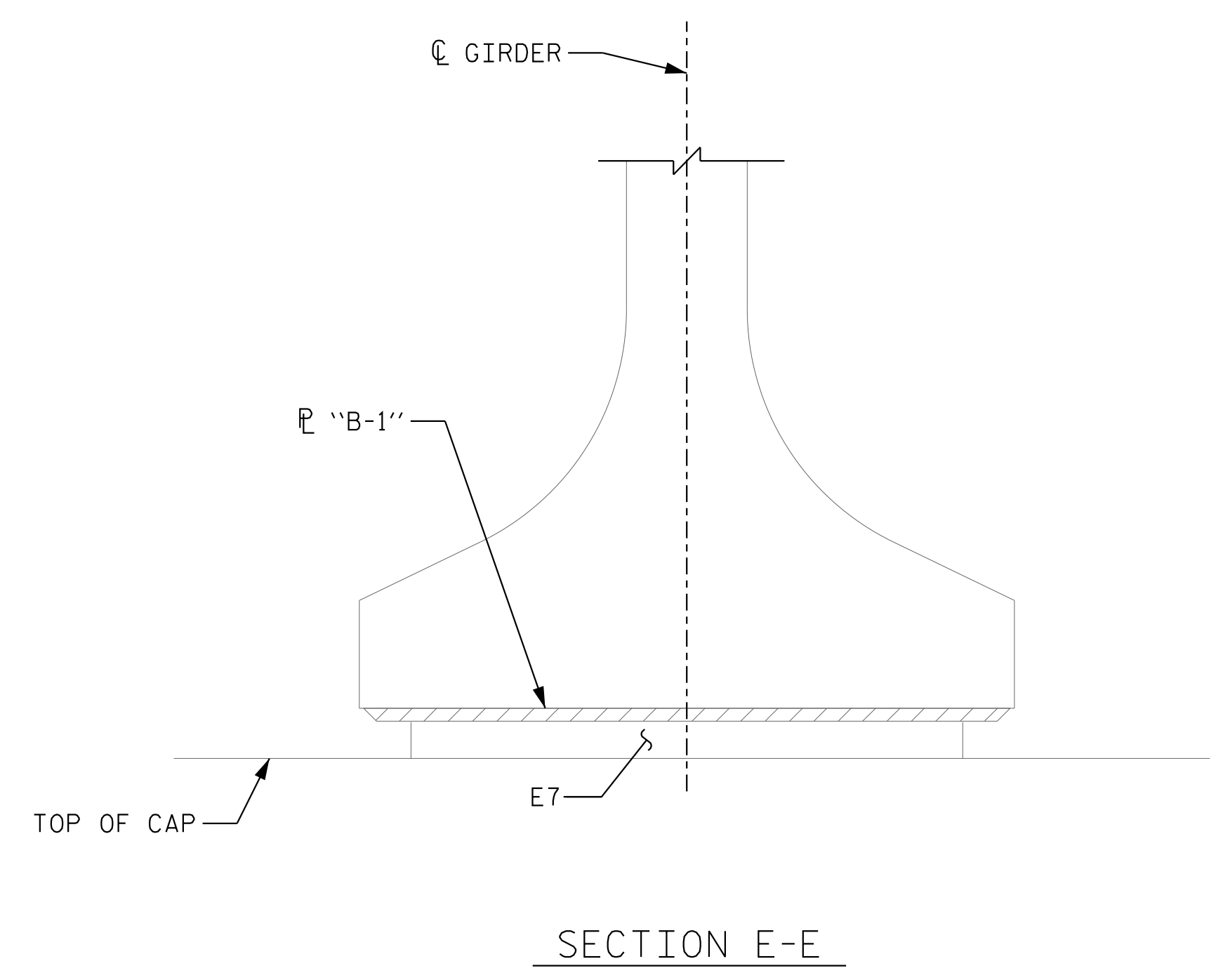
DRAWN BY: J. I. KIMBLE DATE: 1/19  
CHECKED BY: M. D. MAGEE DATE: 1/19  
DESIGN ENGINEER OF RECORD: S. A. DENNEY DATE: 1/19

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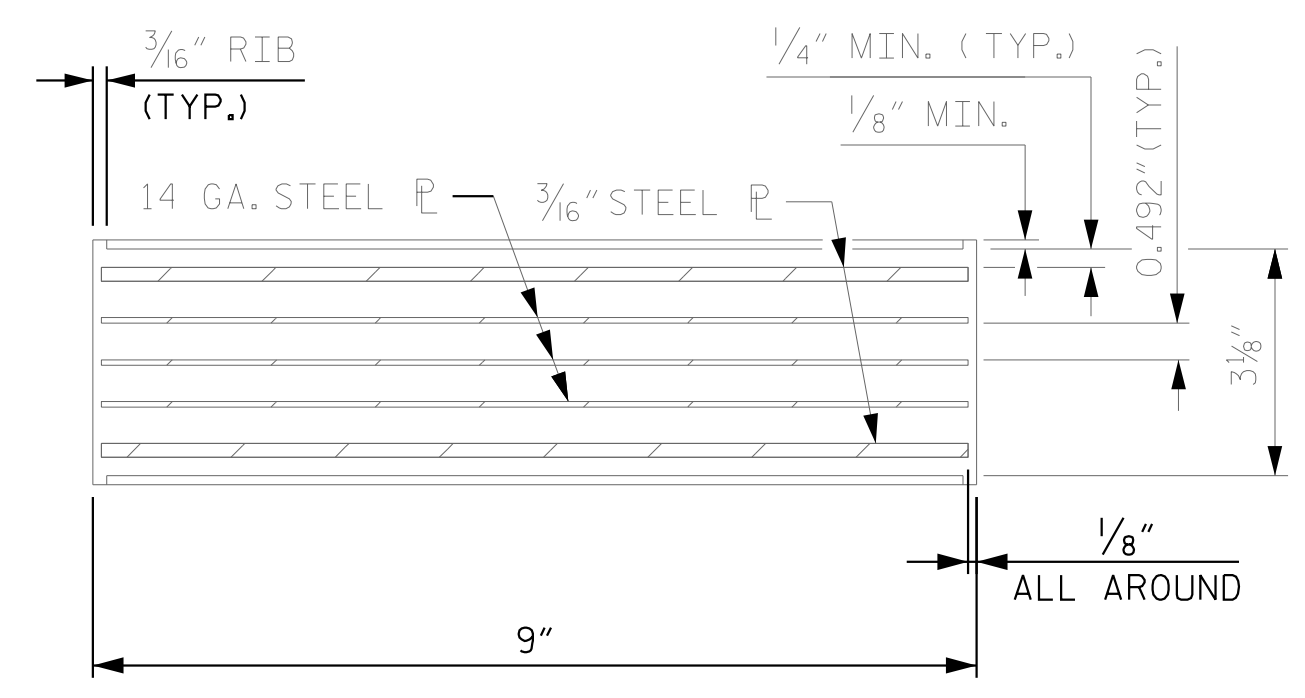


### NOTES

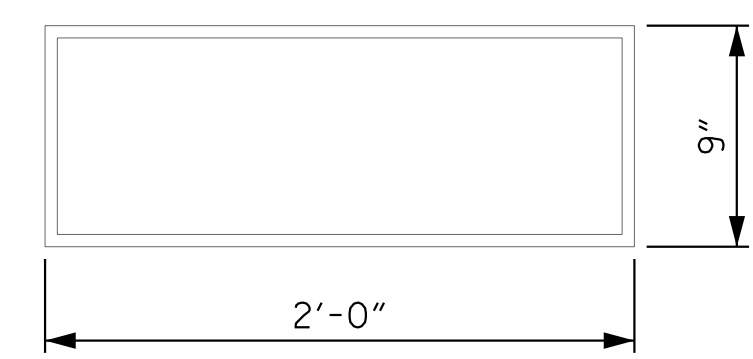
ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.  
 THE ELASTOMER IN THE STEEL REINFORCED BEARINGS SHALL HAVE A SHEAR MODULUS OF 0.160 KSI, IN ACCORDANCE WITH AASHTO M251.



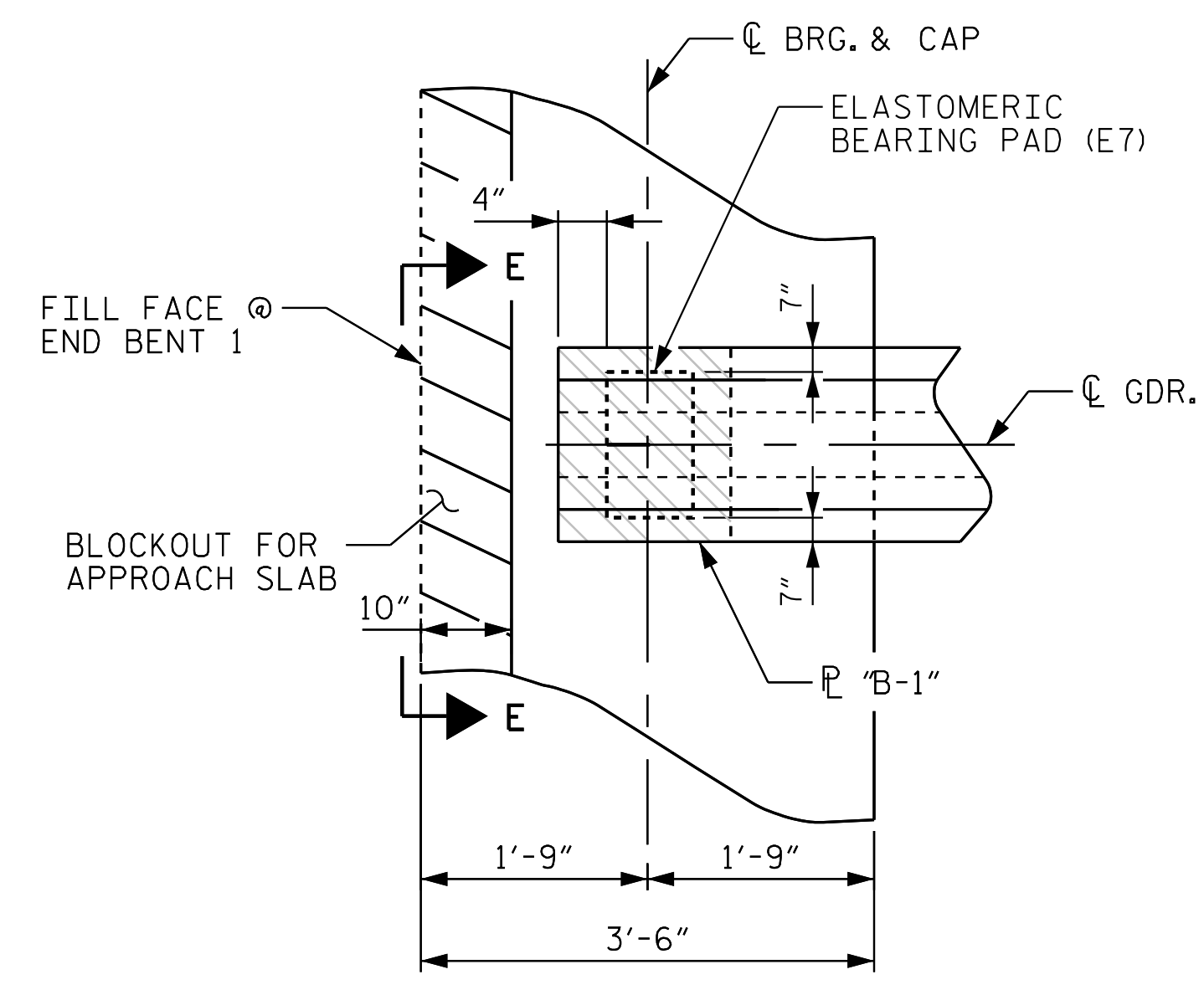
MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L. (NO IMPACT)	
TYPE VIII	390 K
MAXIMUM ALLOWABLE EXPANSION LENGTH	
TYPE VIII	225 FT.



TYPICAL SECTION OF ELASTOMERIC BEARINGS

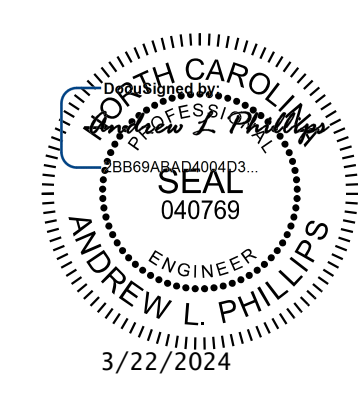


E7 (22 REQ'D)  
 PLAN VIEW OF ELASTOMERIC BEARING  
 TYPE VIII



PLAN VIEW AT INTEGRAL END BENT  
 (END BENT 1 SHOWN, END BENT 2 SIMILAR)

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 RALEIGH  
 STANDARD  
**ELASTOMERIC BEARING**  
 DETAILS  
 FIB SUPERSTRUCTURE

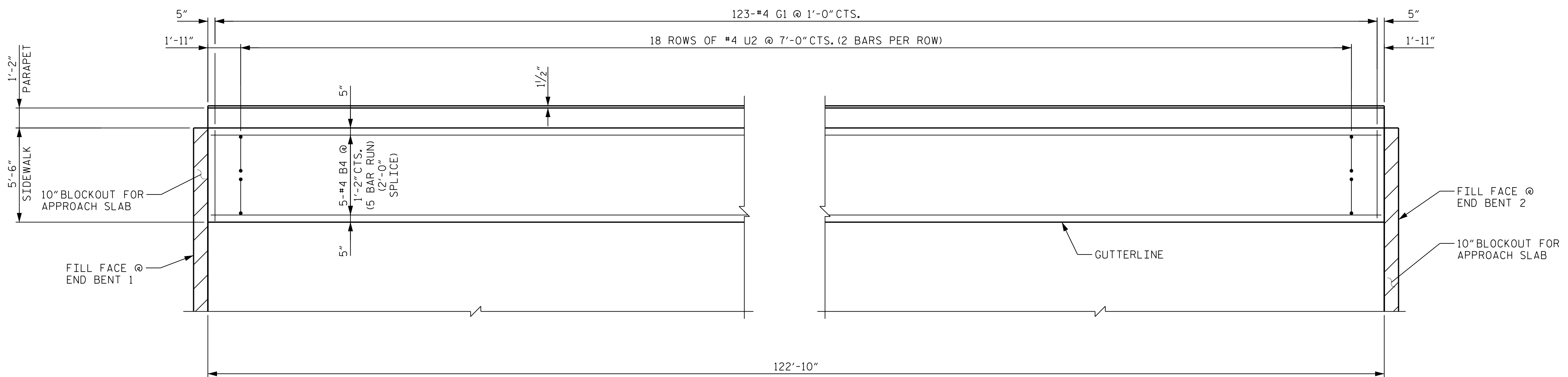
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	DATE:	S-14
1			3		TOTAL SHEETS
2			4		33

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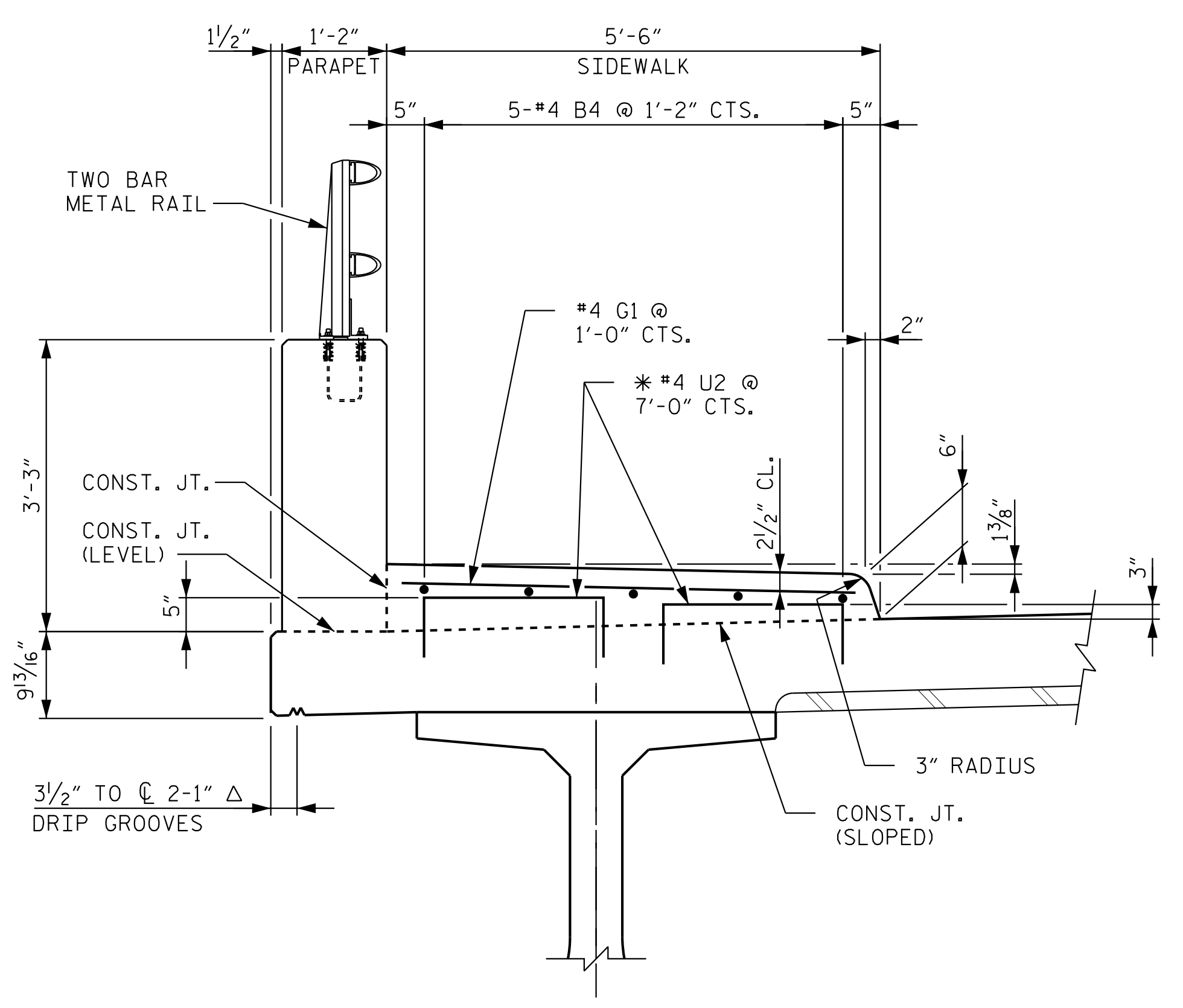
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DRAWN BY : WJH 8/89	REV. 1/15 MAA/TMG
CHECKED BY : CRK 8/89	REV. 12/17 MAA/THC
	REV. 10/21 BNB/AAI



PLAN OF SIDEWALK  
(LEFT SIDE SHOWN, RIGHT SIDE SIMILAR)

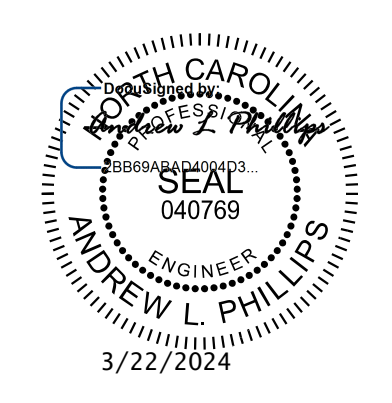


SECTION THRU SIDEWALK

NOTES

- ALL REINFORCING STEEL IN THE SIDEWALK SHALL BE EPOXY COATED.
- GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE SIDEWALK IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8 FEET TO 10 FEET BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINT WILL BE REQUIRED IN SEGMENTS LESS THAN 10 FEET IN LENGTH.
- \* #4 U2 MAY BE PUSHED INTO GREEN CONCRETE AFTER THE DECK HAS BEEN SCREEDED OFF.
- SIDEWALK SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THE SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSION STRENGTH OF 3,000 PSI.
- SEE APPROACH SLAB SHEETS, FOR SIDEWALK ON APPROACH SLAB.
- CONCRETE AND REINFORCING STEEL FOR THE SIDEWALK IS INCLUDED IN THE SUPERSTRUCTURE BILL OF MATERIAL. PAYMENT FOR THE SIDEWALK SHALL BE INCLUDED IN THE PAY ITEM "REINFORCED CONCRETE DECK SLAB".

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 SUPERSTRUCTURE  
 SIDEWALK DETAILS

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DESIGN ENGINEER OF RECORD: S. A. DENNEY	DATE: 1/19

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2			4	

TOTAL SHEETS: 33

**NOTES**

ALL FENCE MATERIAL SHALL MEET THE REQUIREMENTS OF SECTION 1050 OF THE STANDARD SPECIFICATIONS. GALVANIZE ALL STEEL PARTS AND HARDWARE IN ACCORDANCE WITH ARTICLE 1079 OF THE STANDARD SPECIFICATIONS.

ALL CHAIN LINK FENCE FABRIC, POST, RAILS, FITTING HARDWARE AND ACCESSORIES SHALL BE BLACK VINYL COATED IN ACCORDANCE WITH ARTICLE 1050 OF THE STANDARD SPECIFICATIONS.

WELDING SHALL BE DONE IN ACCORDANCE WITH ARTICLE 1072-20 OF THE STANDARD SPECIFICATIONS.

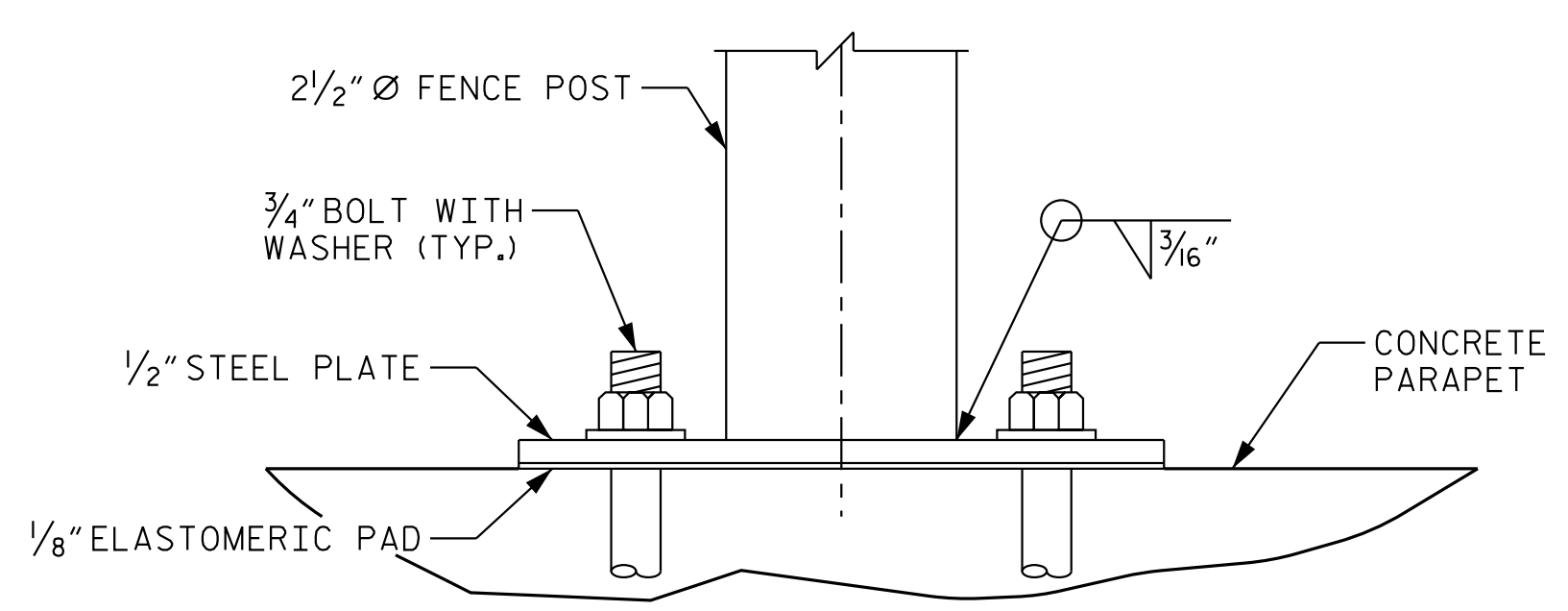
THE CONTRACTOR MAY USE ADHESIVELY ANCHORED ANCHOR BOLTS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 10 KIPS.

ADHESIVELY ANCHORED ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM F593 ALLOY 304 STAINLESS STEEL WITH MINIMUM 75,000 PSI ULTIMATE STRENGTHS. 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.

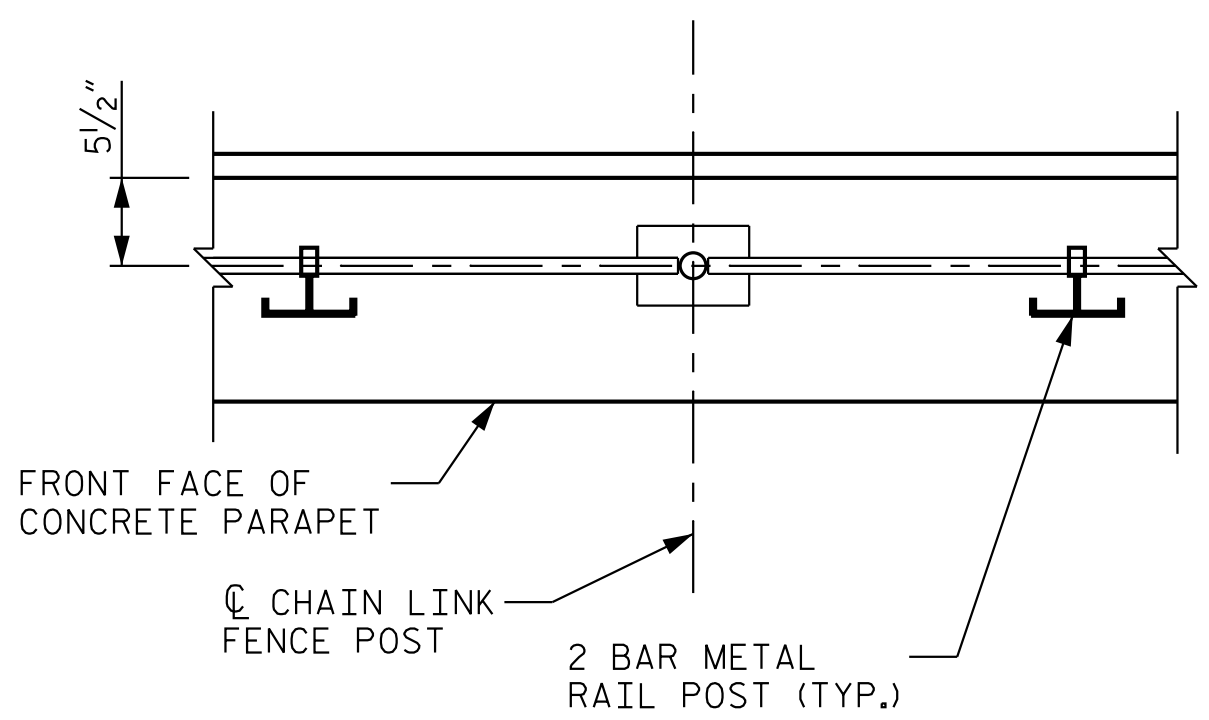
ANCHOR BOLTS SHALL BE EMBEDDED AS PER ADHESIVE BONDING SYSTEM MANUFACTURER SPECIFICATIONS. NUTS SHALL BE AMERICAN STANDARD FINISHED HEXAGON THICK NUTS, CLASS 2B THREADS.

BOLTS TO BE TIGHTENED ONE-HALF TURN WITH A WRENCH FROM FINGER TIGHT POSITION.

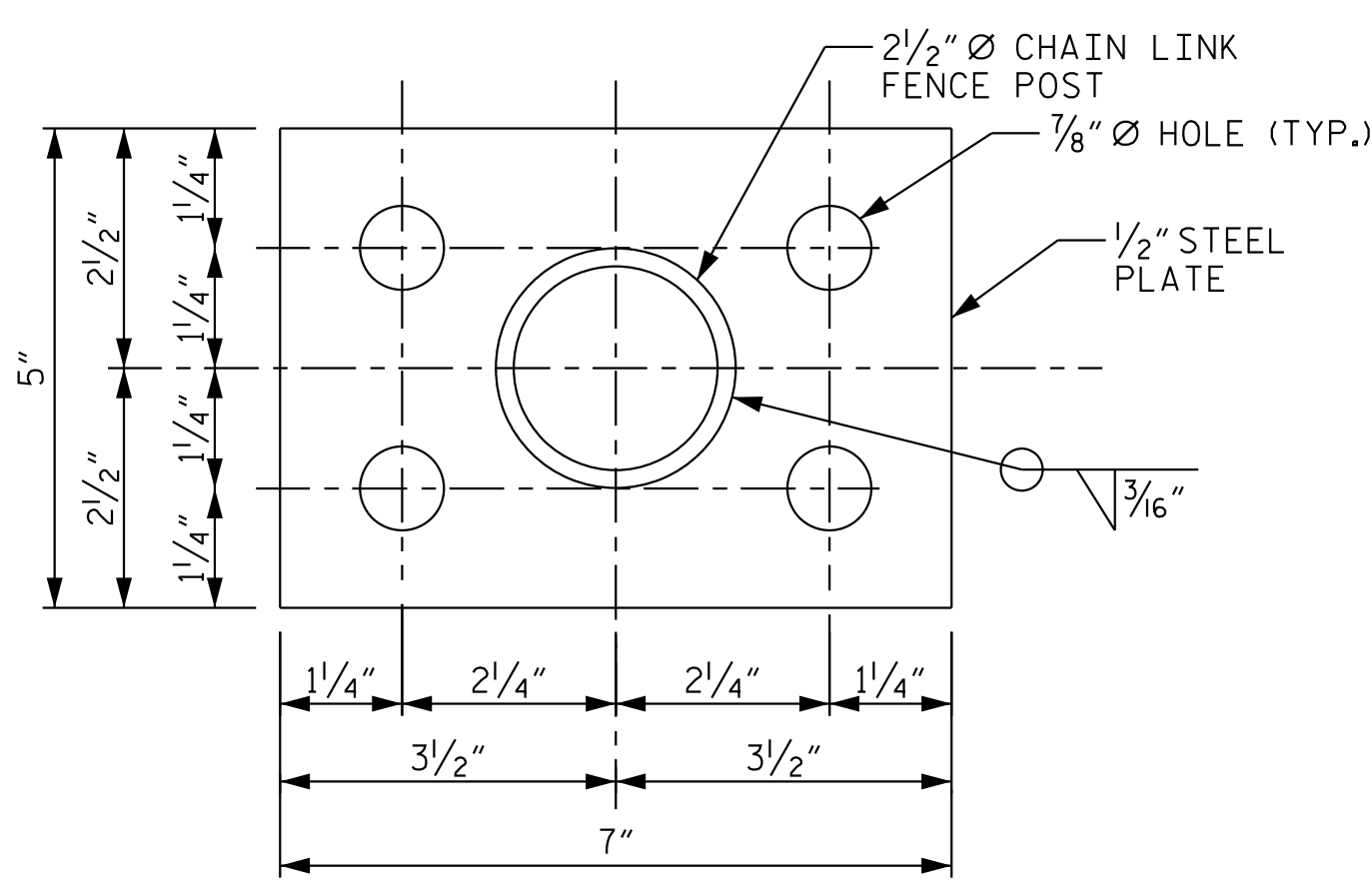
FOR 72" CHAIN LINK FENCE (BLACK VINYL COATED), SEE SPECIAL PROVISIONS.



**ELEVATION**

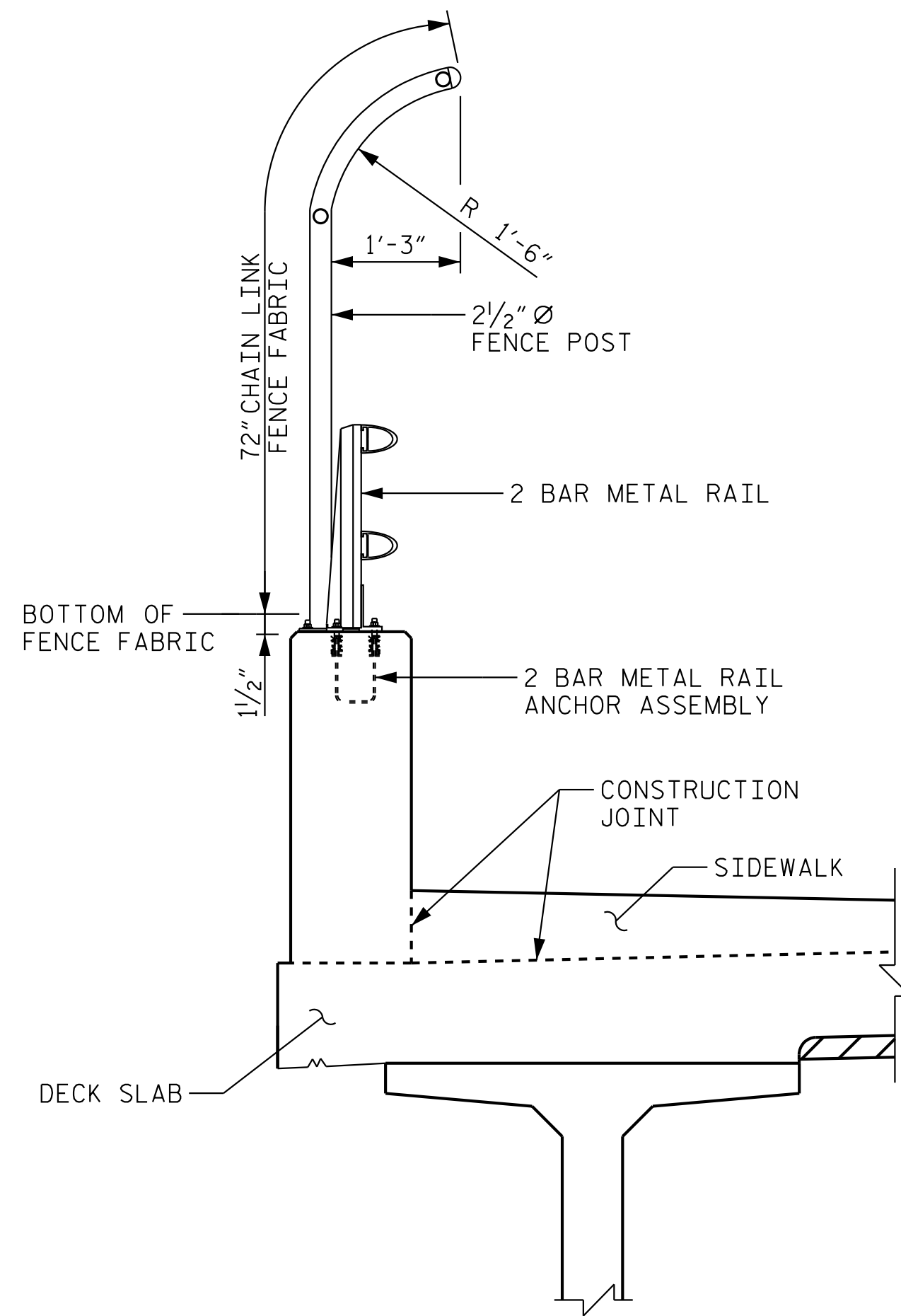


**PARTIAL PLAN**

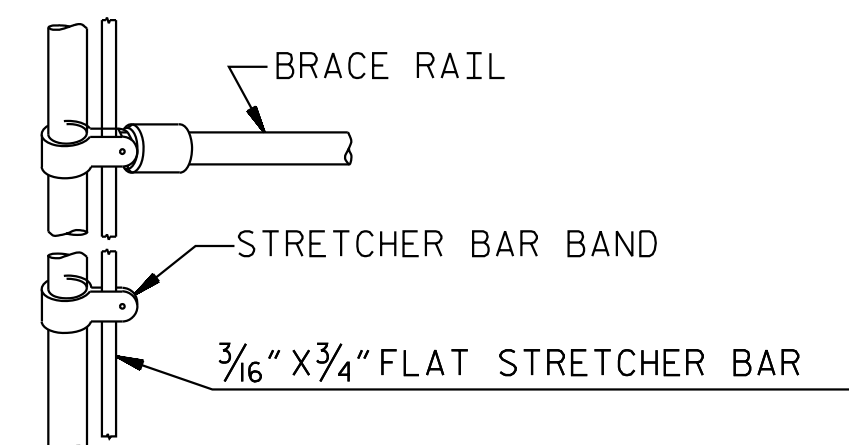


**PLAN**

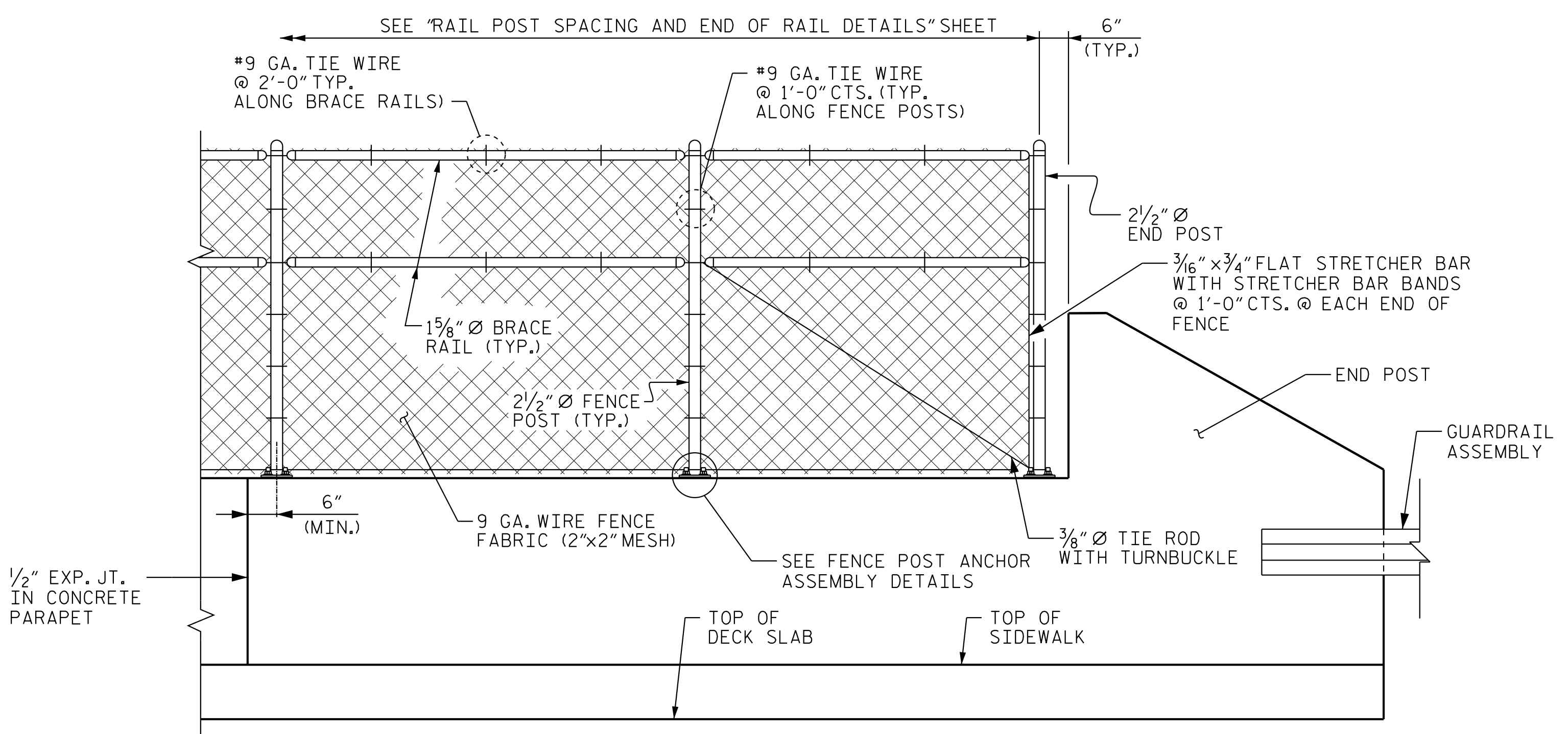
**CHAIN LINK FENCE POST DETAIL**



**SECTION THRU FENCE**  
(FENCE POST ANCHOR ASSEMBLY NOT SHOWN FOR CLARITY)



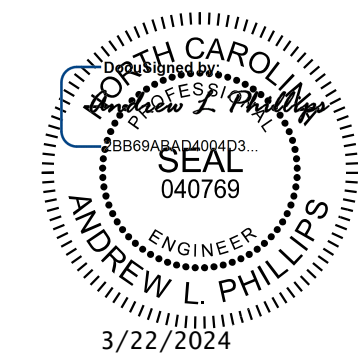
**TERMINAL FENCE POST WITH STRETCHER BAR ATTACHMENT**



**PARTIAL ELEVATION**

(TWO BAR METAL RAIL NOT SHOWN FOR CLARITY)  
TOTAL PAY LENGTH = 230.67 LF

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**CHAIN LINK FENCE DETAILS**

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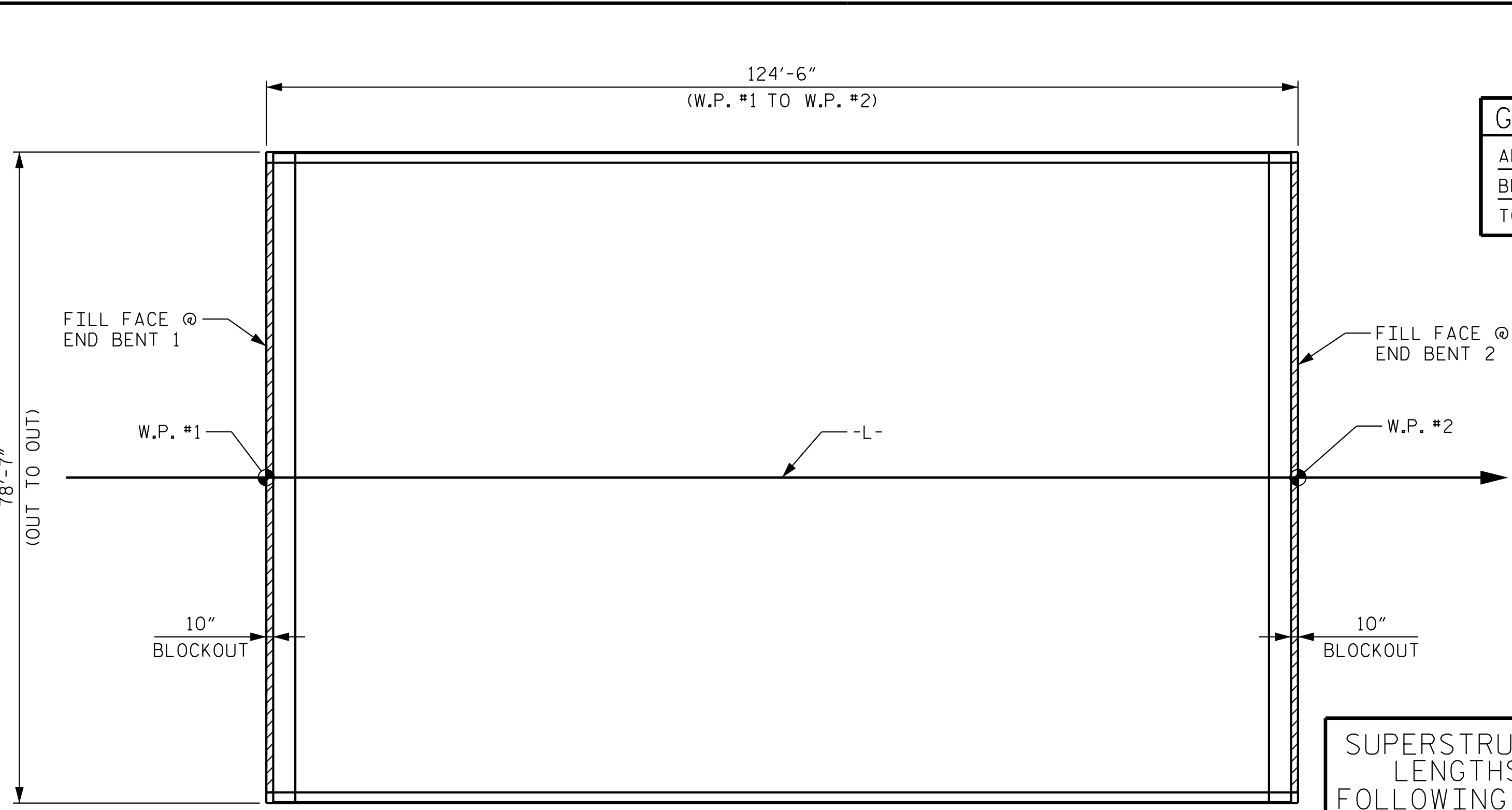
TOTAL SHEETS: 33

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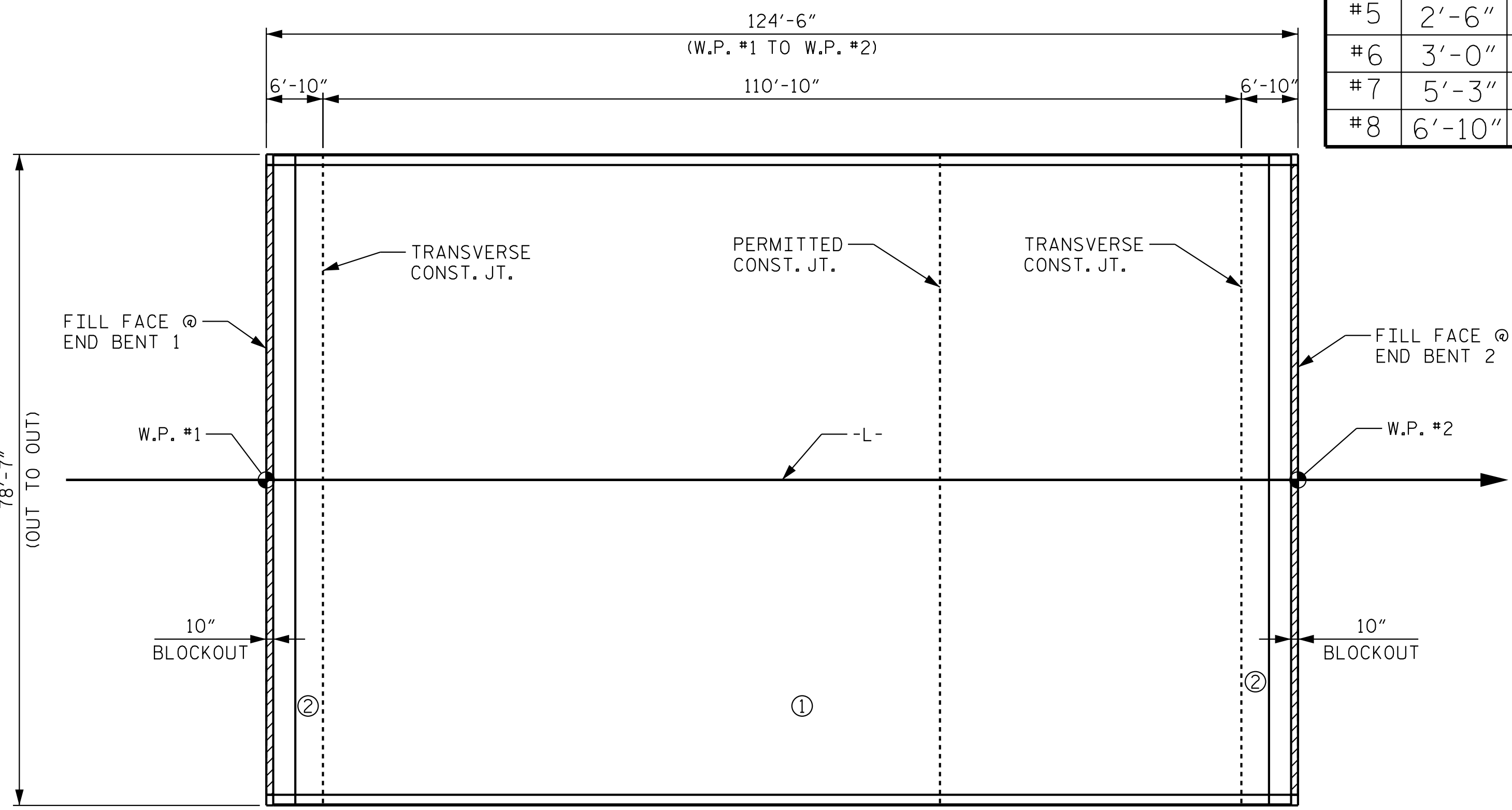
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CHECKED BY: M. D. MAGEE DATE: 1/19  
DESIGN ENGINEER OF RECORD: S. A. DENNEY DATE: 1/19





LAYOUT FOR COMPUTING AREA OF REINFORCED CONCRETE DECK SLAB  
(SQ. FT. = 9,653)



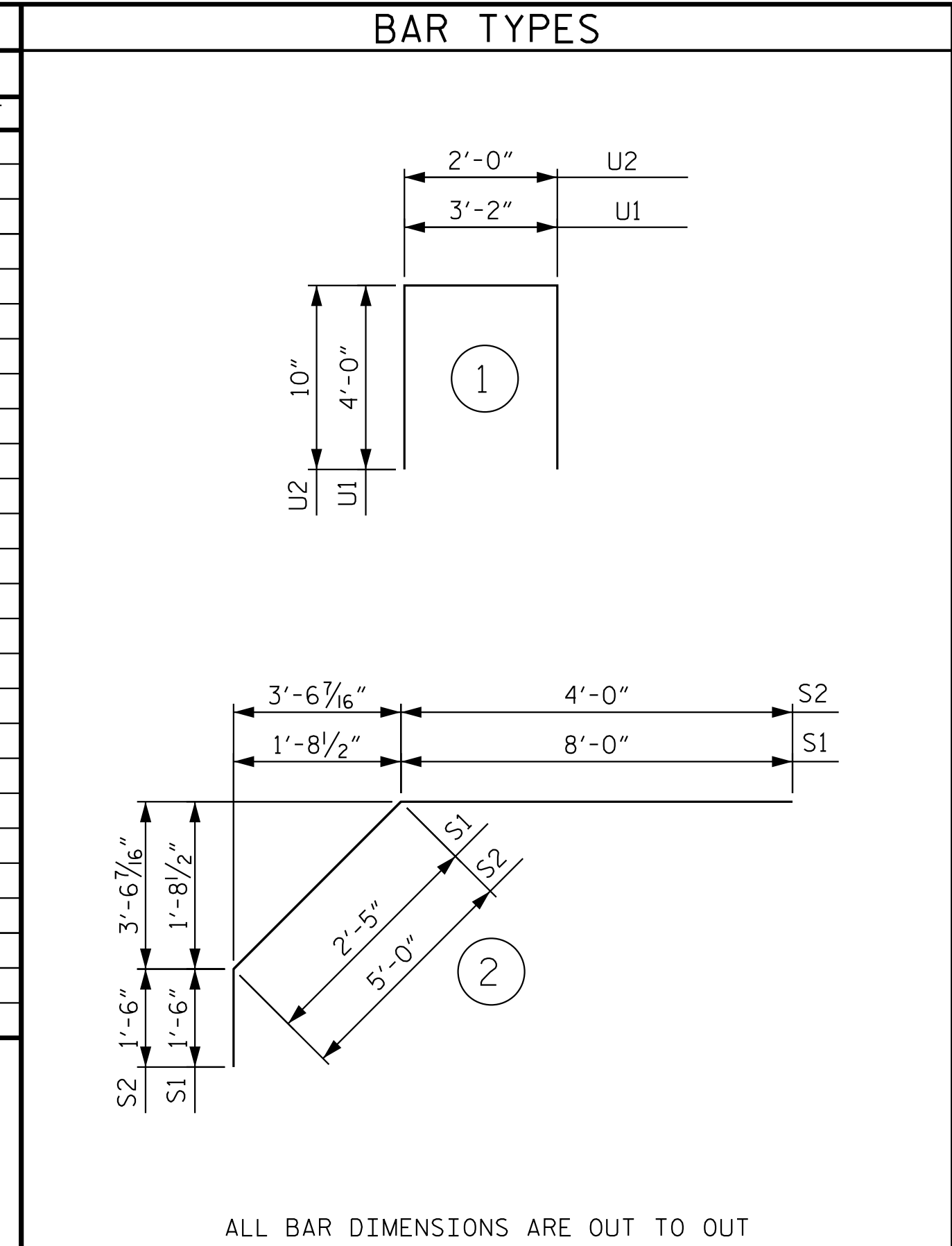
POUR SEQUENCE

GROOVING BRIDGE FLOORS		
APPROACH SLABS	3,100	SQ.FT.
BRIDGE DECK	7,616	SQ.FT.
TOTAL	10,716	SQ.FT.

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	2'-0"	1'-9"	2'-0"	1'-9"	2'-9"
#5	2'-6"	2'-2"	2'-6"	2'-2"	3'-5"
#6	3'-0"	2'-7"	3'-10"	2'-7"	4'-4"
#7	5'-3"	3'-6"			
#8	6'-10"	4'-7"			

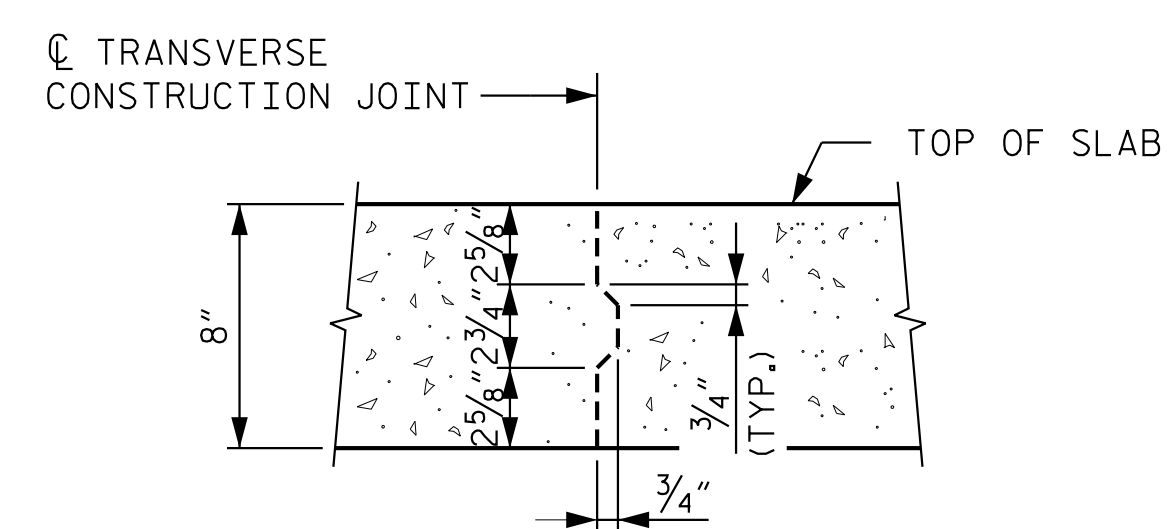
SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

BILL OF MATERIAL SUPERSTRUCTURE					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	454	5	STR	40'-5"	19,138
A2	454	5	STR	40'-3"	19,059
*B1	159	4	STR	27'-8"	2,939
*B2	314	6	STR	23'-9"	11,201
B3	198	5	STR	42'-4"	8,742
*B4	50	4	STR	26'-2"	874
*G1	246	4	STR	5'-2"	849
K1	30	4	STR	27'-4"	548
K2	20	4	STR	3'-9"	50
K3	20	4	STR	4'-11"	66
K4	40	4	STR	6'-4"	169
K5	20	4	STR	4'-6"	60
K6	4	4	STR	1'-1"	3
K7	4	4	STR	1'-8"	4
K8	8	4	STR	2'-5"	13
K9	4	4	STR	1'-9"	5
*S1	84	4	2	11'-11"	669
*S2	82	4	2	10'-6"	575
U1	88	4	1	11'-2"	656
*U2	72	4	1	3'-8"	176

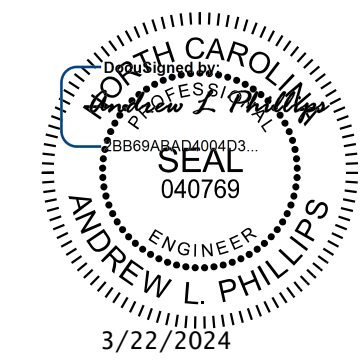


SUPERSTRUCTURE BILL OF MATERIAL			
	CLASS AA CONCRETE (CU. YDS.)	REINFORCING STEEL (LBS.)	* EPOXY COATED REINFORCING STEEL (LBS.)
SPAN A		29,375	36,421
POUR #1	258.2		
POUR #2	108.3		
SIDEWALK	30.6		
TOTALS **	397.1	29,375	36,421

\*\*QUANTITIES FOR CONCRETE PARAPETS ARE NOT INCLUDED



TRANSVERSE CONSTRUCTION JOINT IN DECK SLAB  
REINFORCING STEEL IN SLAB NOT SHOWN, LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THRU JOINT.



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RAI FTGH  
SUPERSTRUCTURE  
BILL OF MATERIAL

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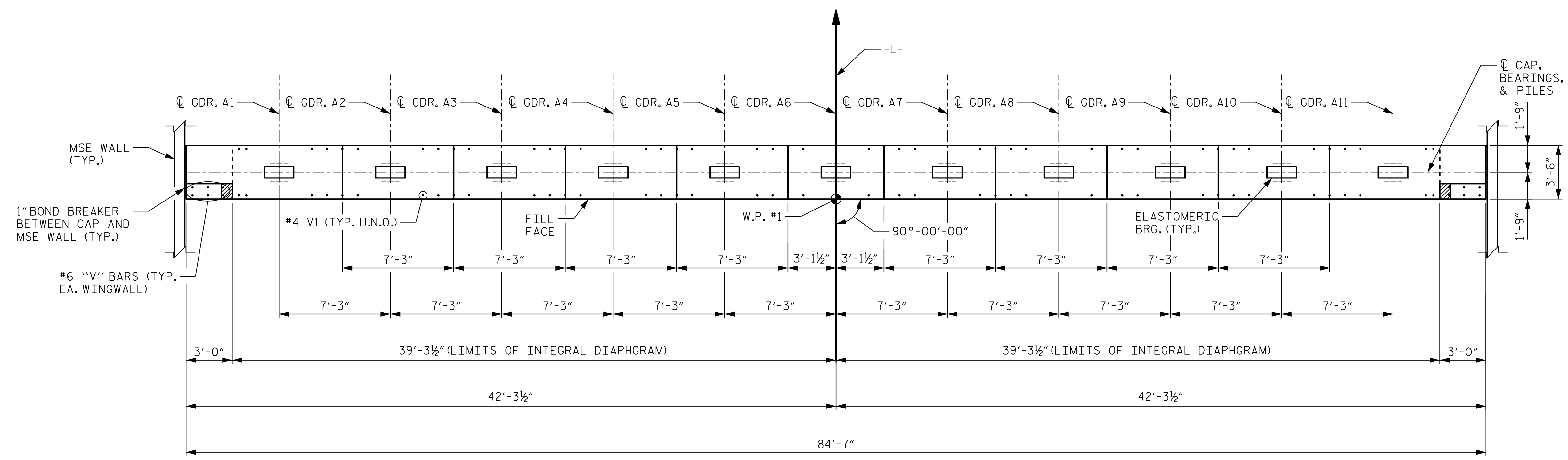
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ASSEMBLED BY : D.D. LOWERY	DATE : 1/19
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CHECKED BY : SJD 9/87	REV. 10/1/11 MAA/GM
	REV. 12/17 MAA/THC

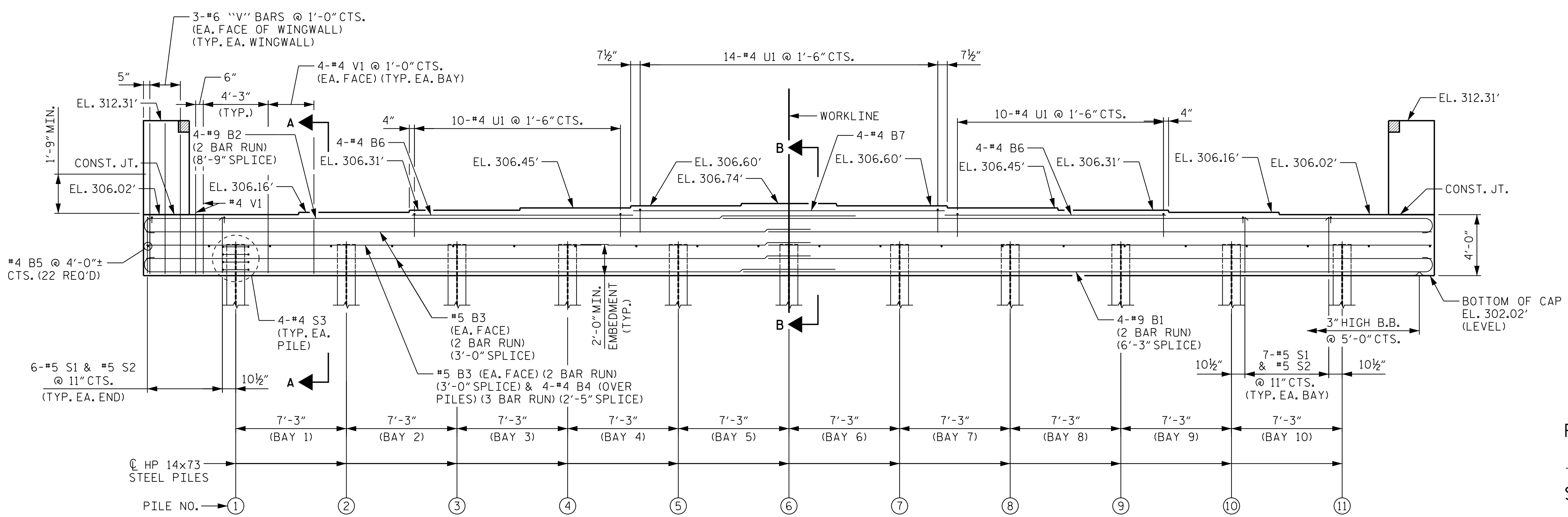


### NOTES

FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.  
 FOR SECTION A-A AND B-B, SEE SHEET 3 OF 3.  
 THE PORTIONS OF THE WINGWALLS ABOVE THE CONSTRUCTION JOINT ARE TO BE POURED WITH THE END BENTS. AT THE CONTRACTOR'S OPTION, THESE PORTIONS MAY BE POURED AS A PART OF THE SUPERSTRUCTURE, IN WHICH CASE CLASS 'AA' CONCRETE MAY BE USED.



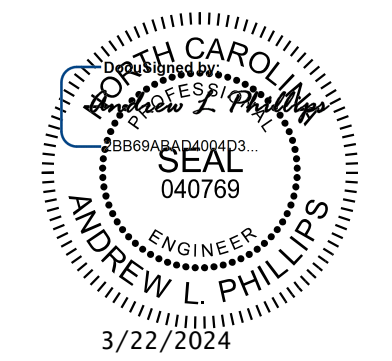
### PLAN



### ELEVATION

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WAKE COUNTY  
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SHEET 1 OF 3



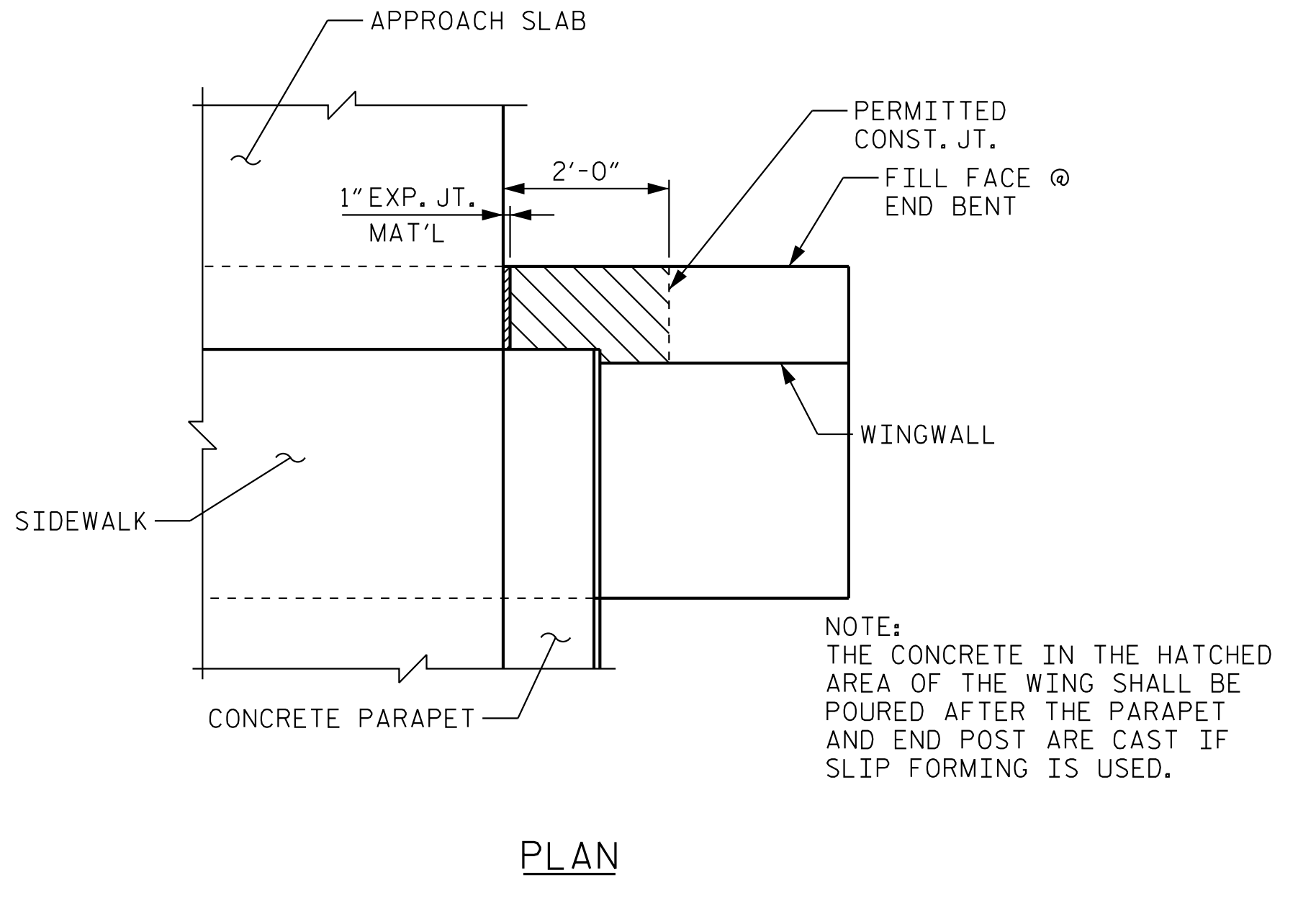
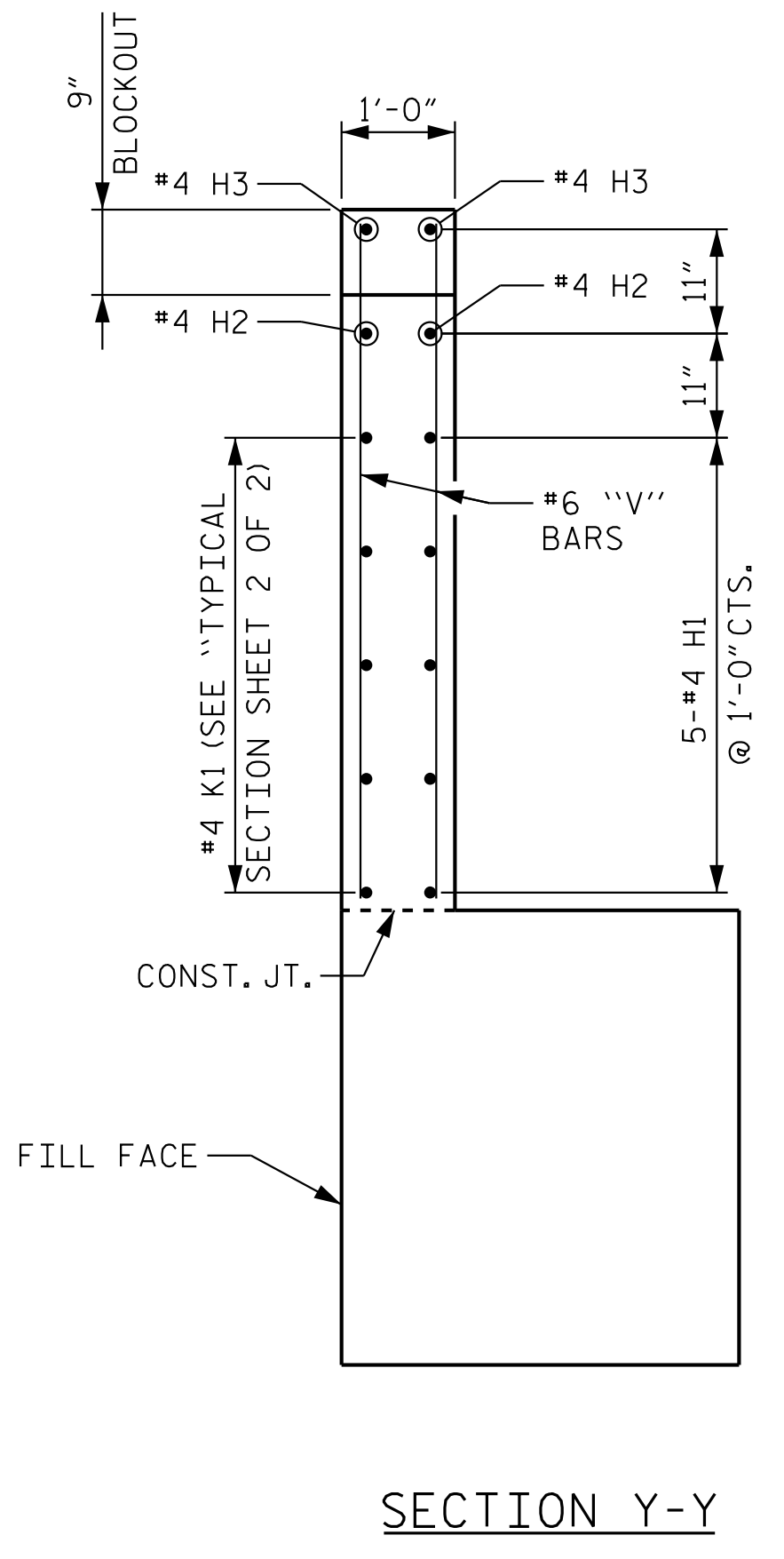
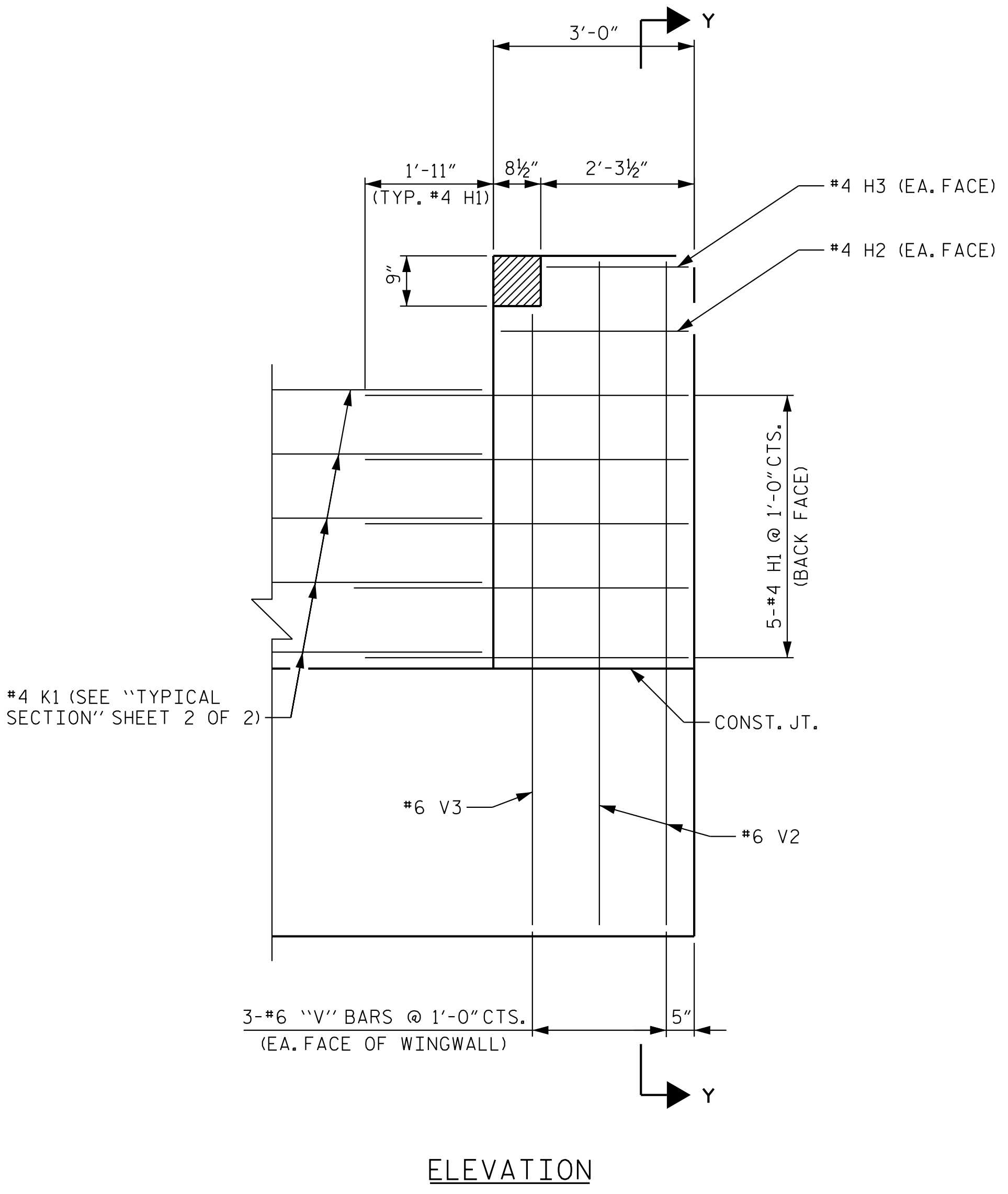
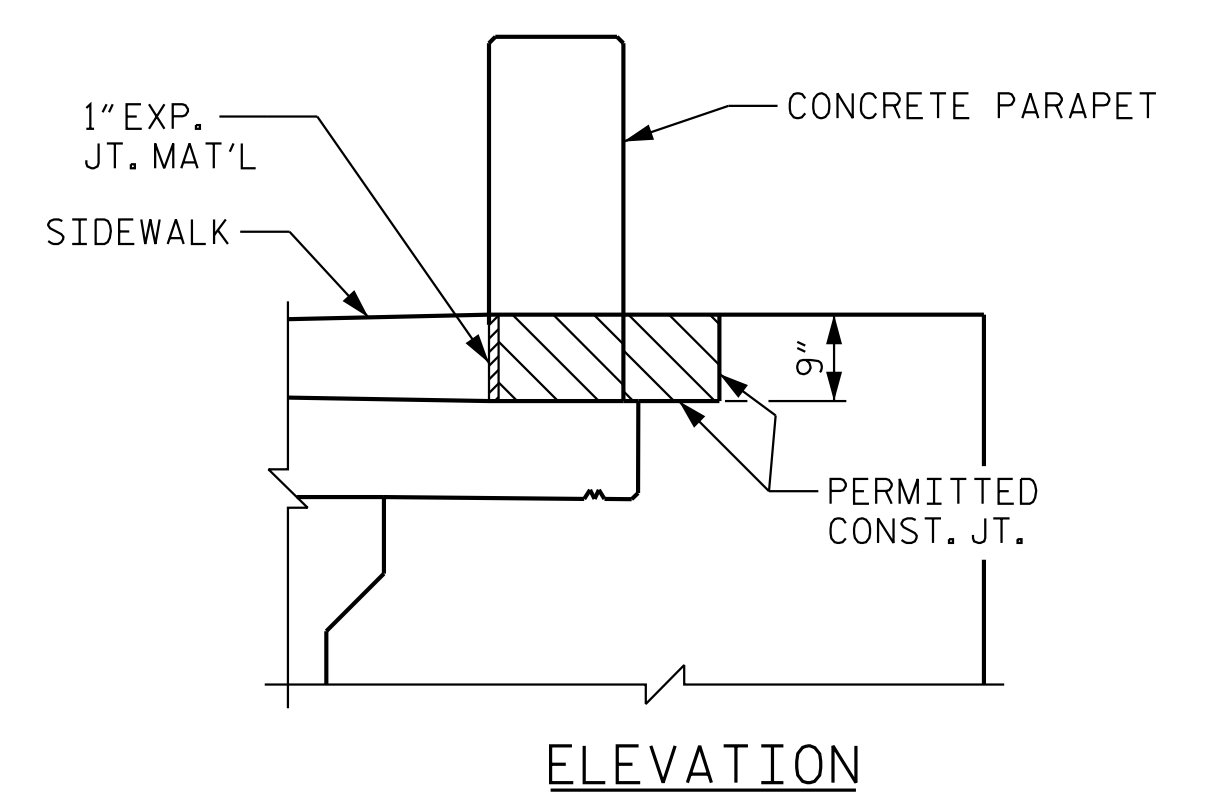
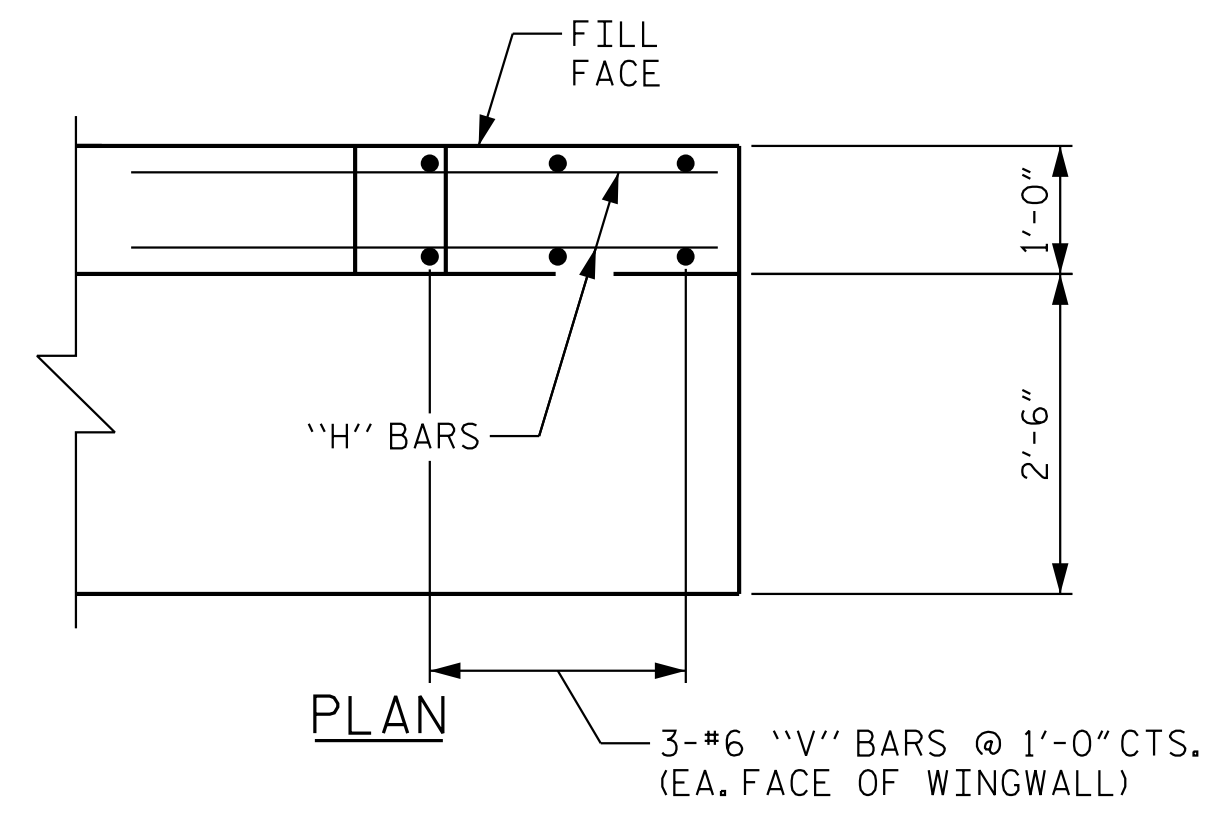
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STATE OF NORTH CAROLINA				SHEET NO. S-24
DEPARTMENT OF TRANSPORTATION				
RALEIGH				TOTAL SHEETS 33
SUBSTRUCTURE				
END BENT 1				
PLAN AND ELEVATION				
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 DESIGN ENGINEER OF RECORD: S. A. DENNEY DATE: 1/19

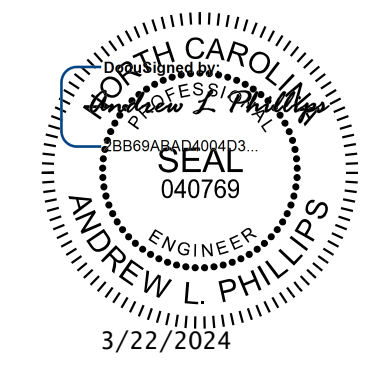


BLOCKOUT IN WINGWALL

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SHEET 2 OF 3



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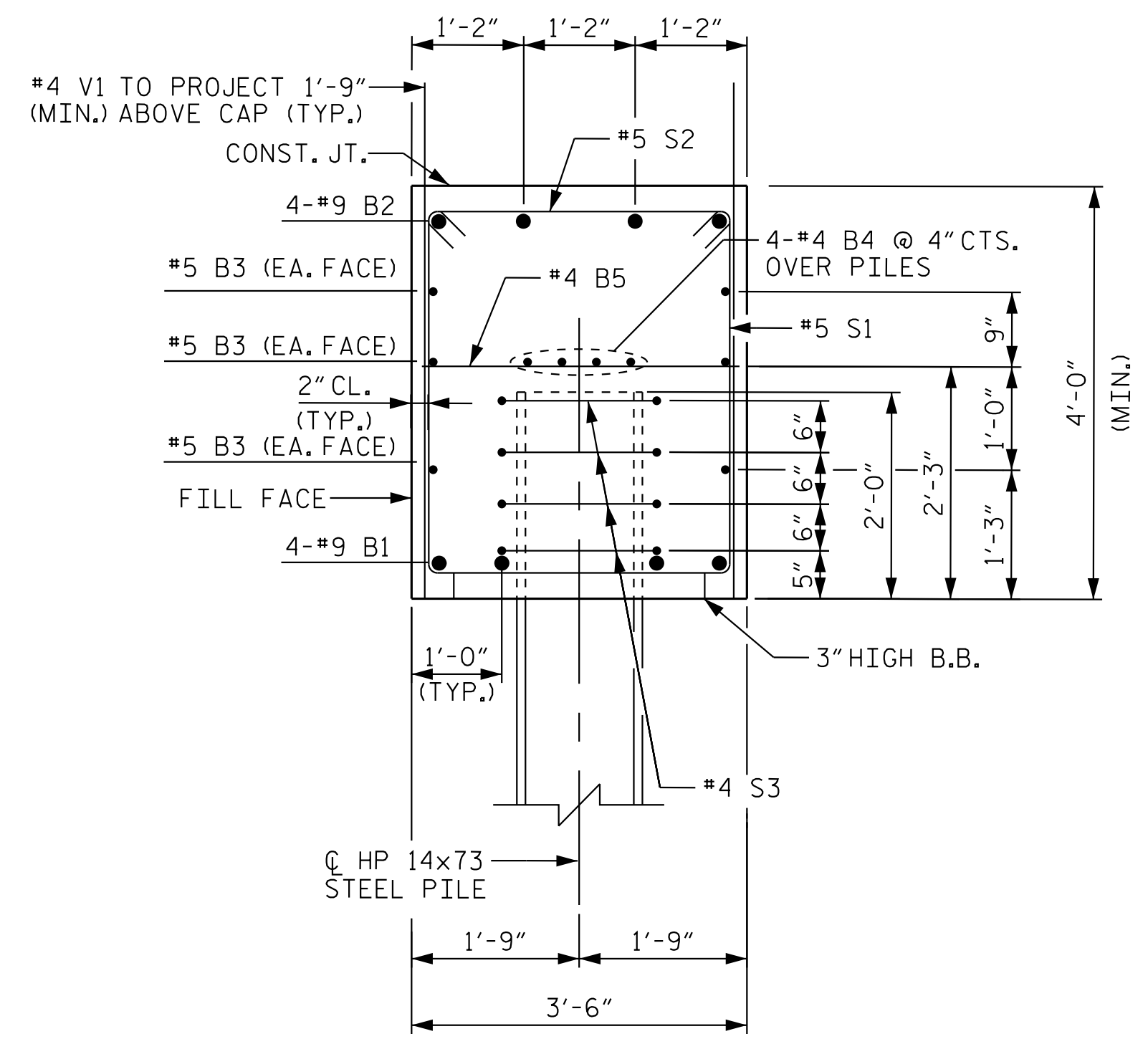
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 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SUBSTRUCTURE  
 END BENT 1  
 SECTION AND DETAILS

DRAWN BY: J. I. KIMBLE	DATE: 1/19
CHECKED BY: M. D. MAGEE	DATE: 1/19
DESIGN ENGINEER OF RECORD: S. A. DENNEY	DATE: 1/19

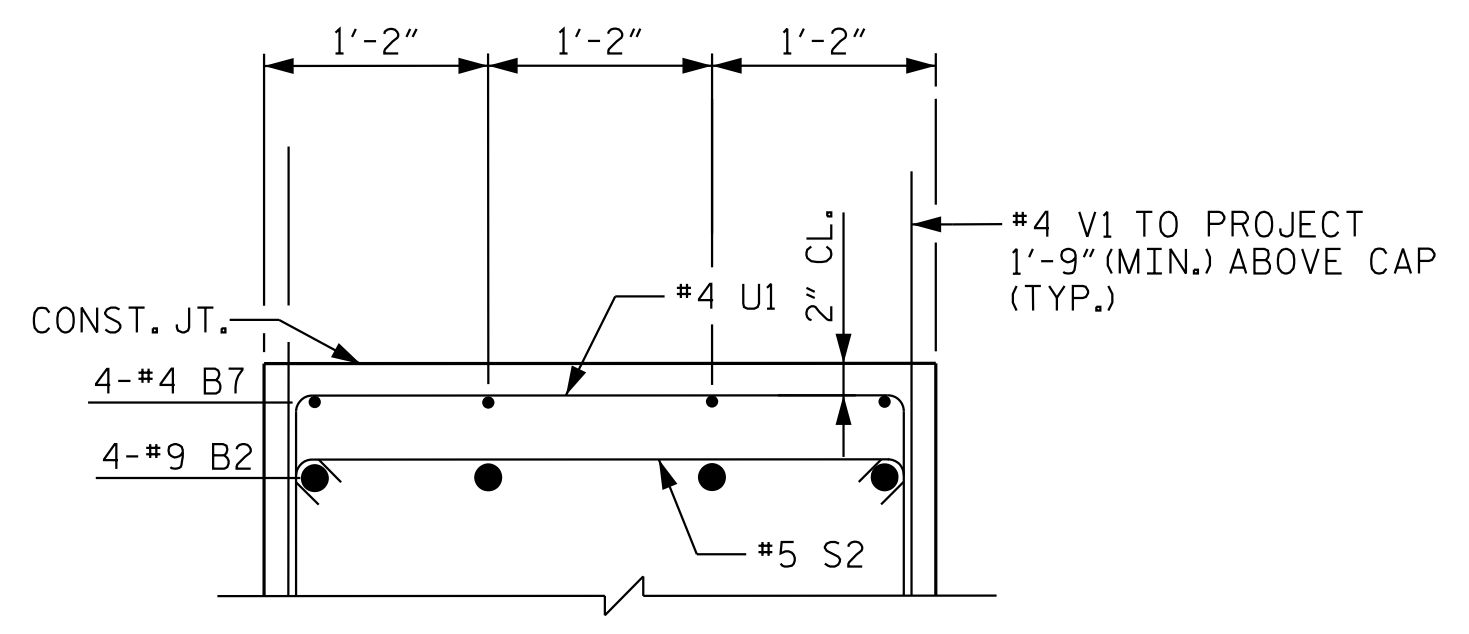
**DOCUMENT NOT CONSIDERED FINAL  
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NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	

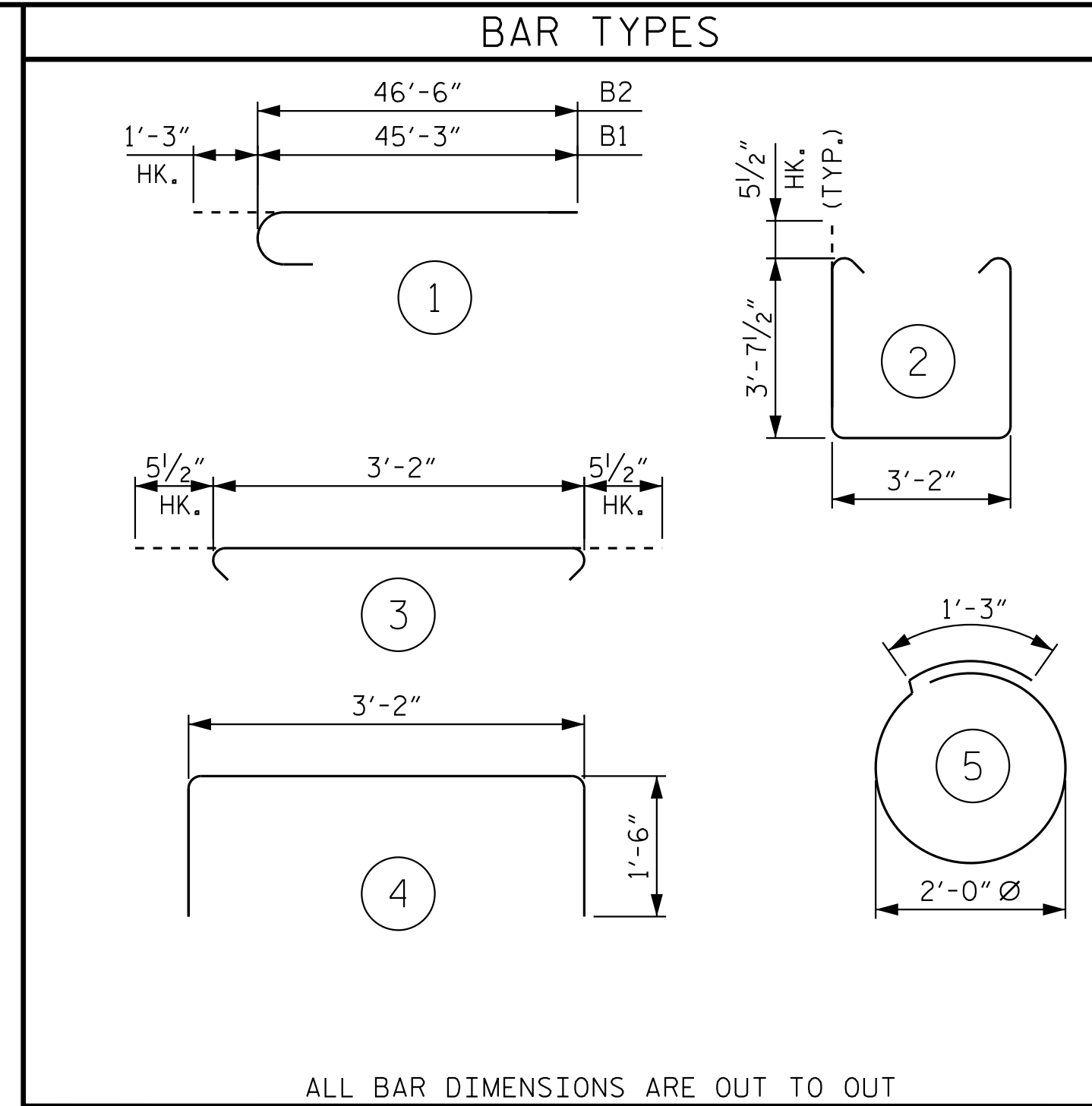
TOTAL SHEETS: 33



SECTION A-A

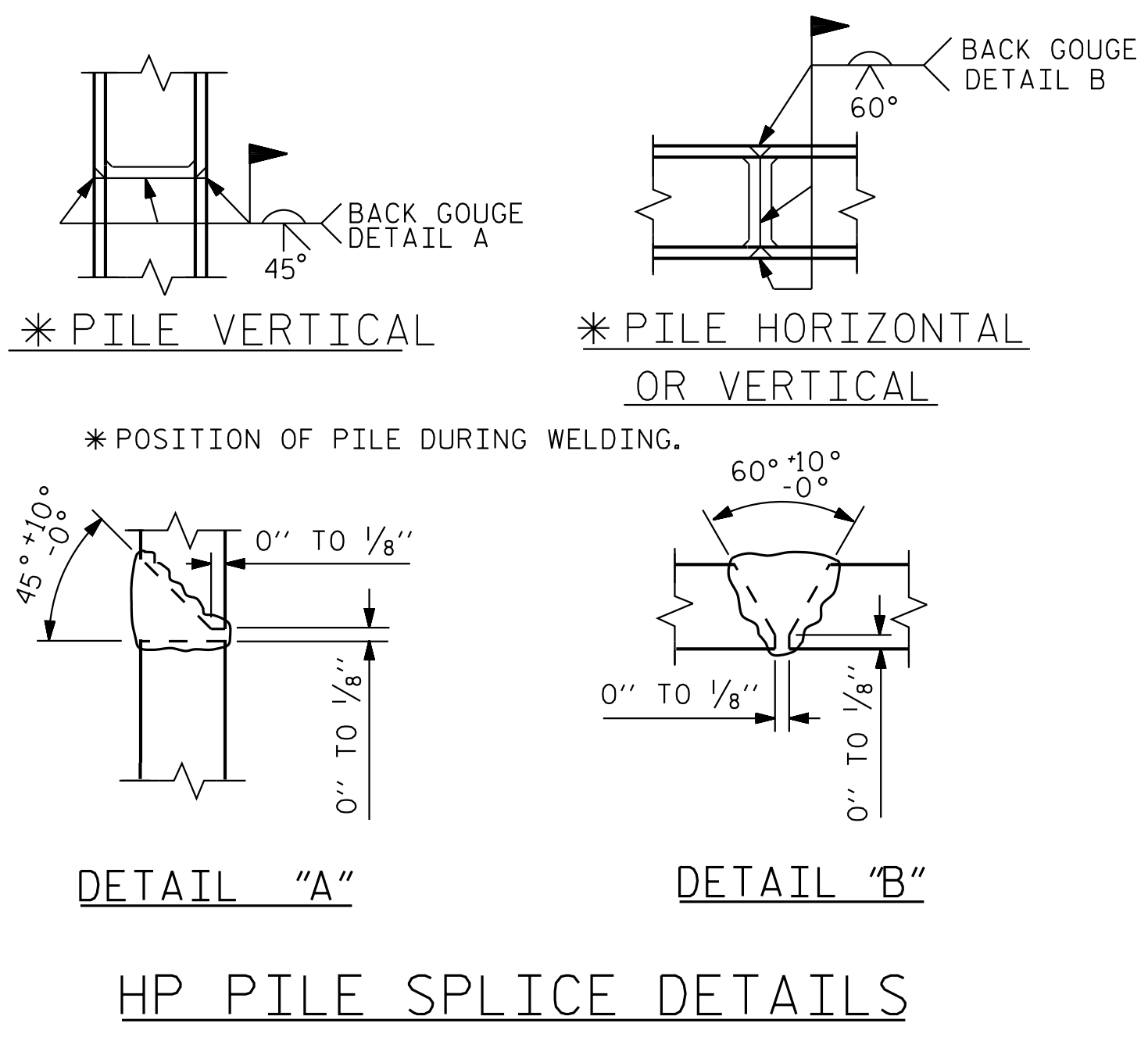


PARTIAL SECTION B-B

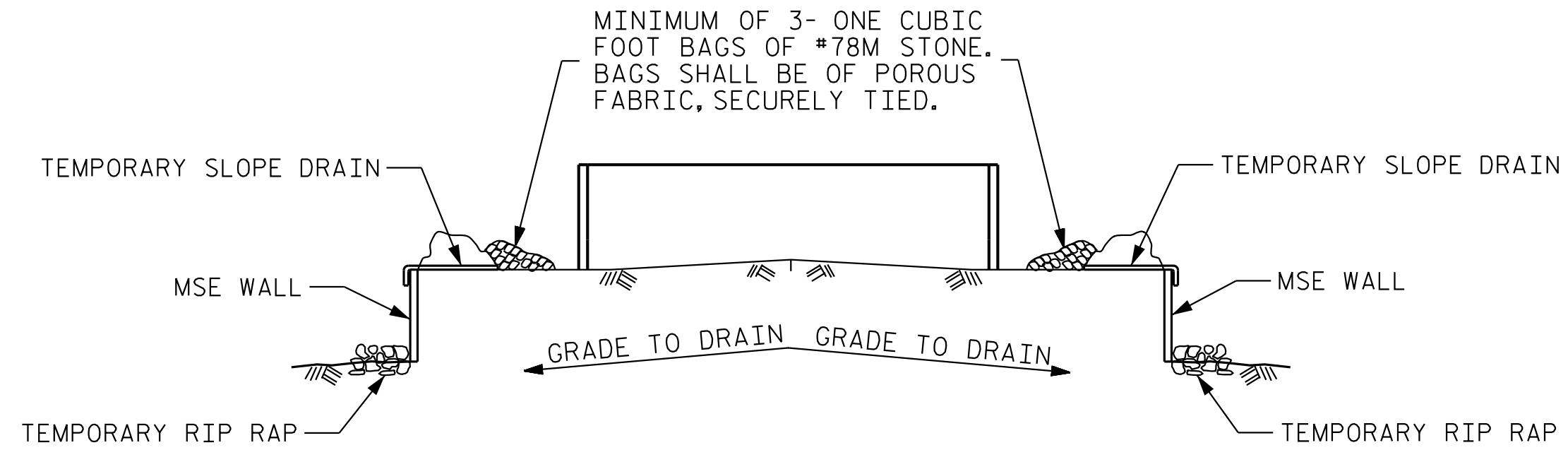


ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL					
END BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	9	1	46'-6"	1,265
B2	8	9	1	47'-9"	1,299
B3	12	5	STR	43'-8"	547
B4	12	4	STR	29'-9"	238
B5	22	4	STR	3'-2"	47
B6	8	4	STR	14'-6"	77
B7	4	4	STR	20'-5"	55
H1	10	4	STR	4'-9"	32
H2	4	4	STR	2'-8"	7
H3	4	4	STR	1'-11"	5
S1	82	5	2	11'-4"	969
S2	82	5	3	4'-1"	349
S3	44	4	5	7'-7"	223
U1	34	4	4	6'-2"	140
V1	88	4	STR	6'-3"	367
V2	8	6	STR	9'-11"	119
V3	4	6	STR	9'-2"	55
REINFORCING STEEL				5,794 LBS.	
CLASS A CONCRETE				48.5 C.Y.	



HP PILE SPLICE DETAILS



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.

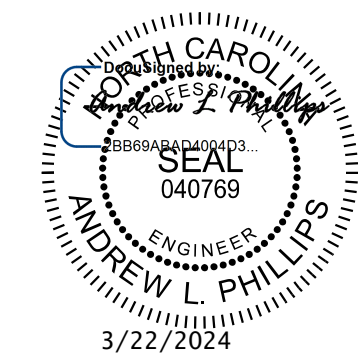
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

PROJECT NO. P-5720  
WAKE COUNTY  
 STATION: 32+23.01 -L-

SHEET 3 OF 3



**Kimley»Horn**  
 421 Fayetteville Street, Suite 600  
 Raleigh, NC 27601-1772  
 Phone (919) 677-2000  
 NC LICENSE # F-0102

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SUBSTRUCTURE  
 END BENT 1  
 SECTION AND DETAILS

DRAWN BY: J. I. KIMBLE	DATE: 1/19
CHECKED BY: M. D. MAGEE	DATE: 1/19
DESIGN ENGINEER OF RECORD: S. A. DENNEY	DATE: 1/19

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2			4	

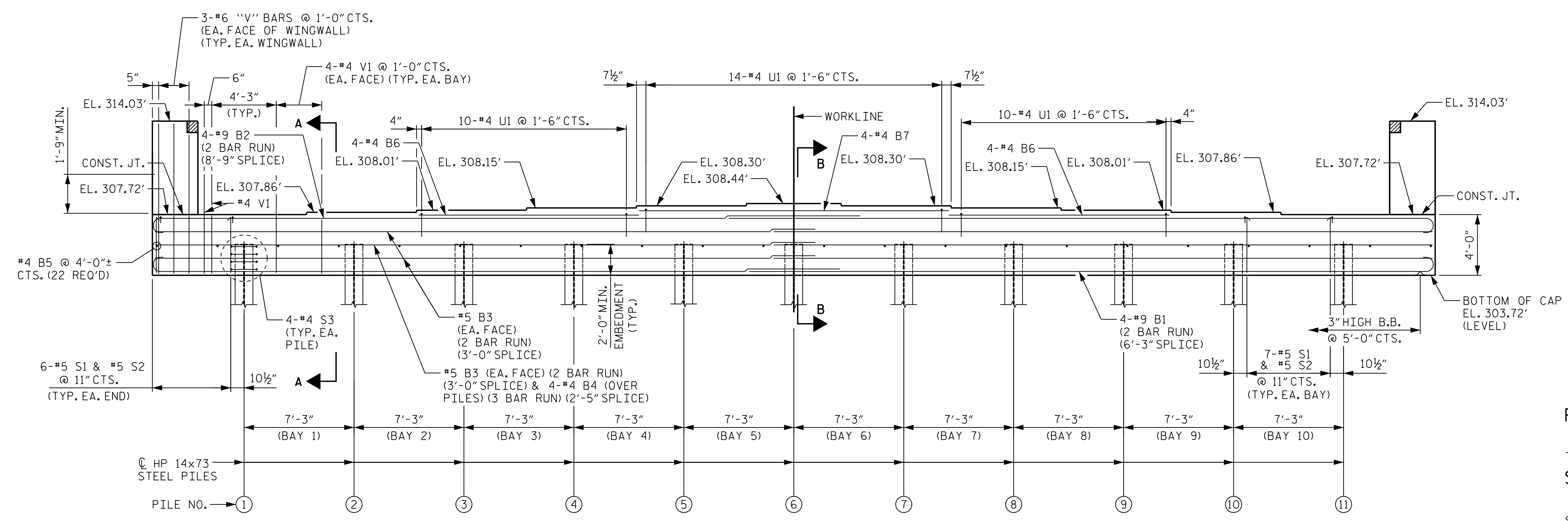
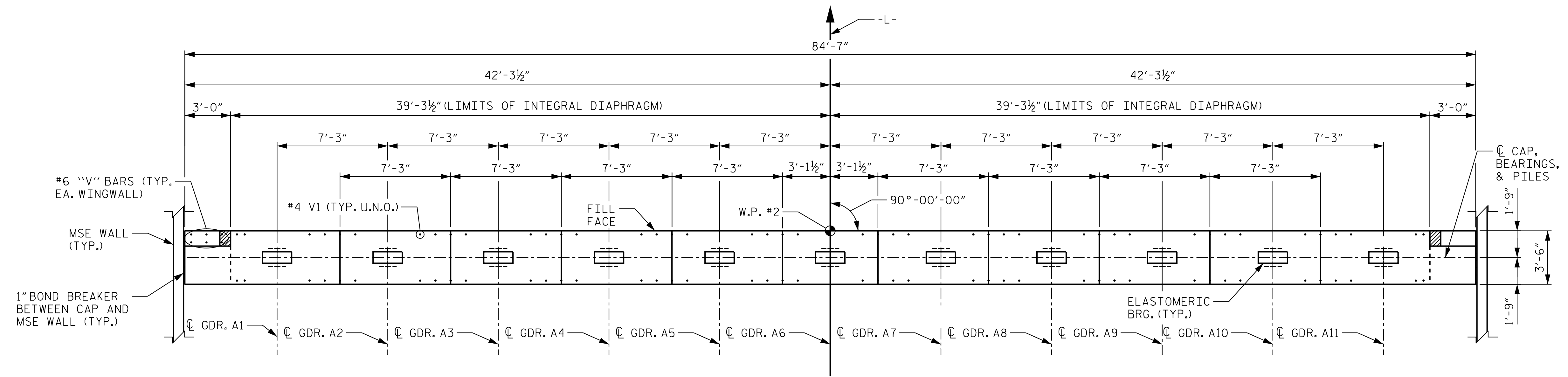
TOTAL SHEETS: 33

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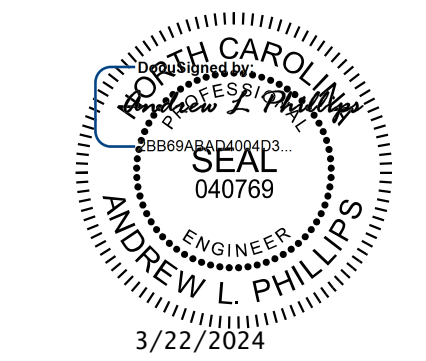
### NOTES

FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.  
 FOR SECTION A-A AND B-B, SEE SHEET 3 OF 3.  
 THE PORTIONS OF THE WINGWALLS ABOVE THE CONSTRUCTION JOINT ARE TO BE POURED WITH THE END BENTS. AT THE CONTRACTOR'S OPTION, THESE PORTIONS MAY BE POURED AS A PART OF THE SUPERSTRUCTURE, IN WHICH CASE CLASS 'AA' CONCRETE MAY BE USED.



PROJECT NO. P-5720  
WAKE COUNTY  
 STATION: 32+23.01 -L-

SHEET 1 OF 3



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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SUBSTRUCTURE  
 END BENT 2  
 PLAN AND ELEVATION

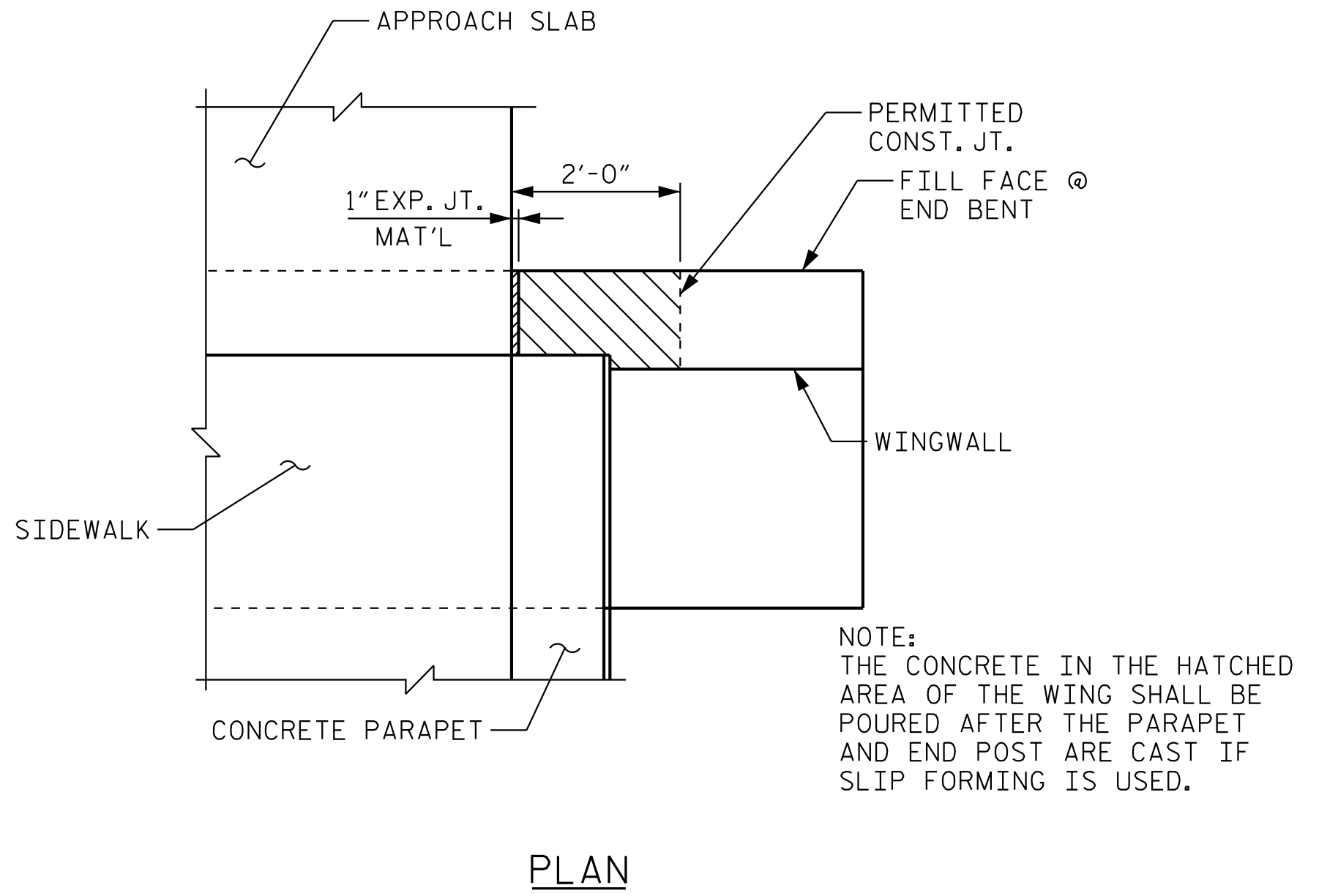
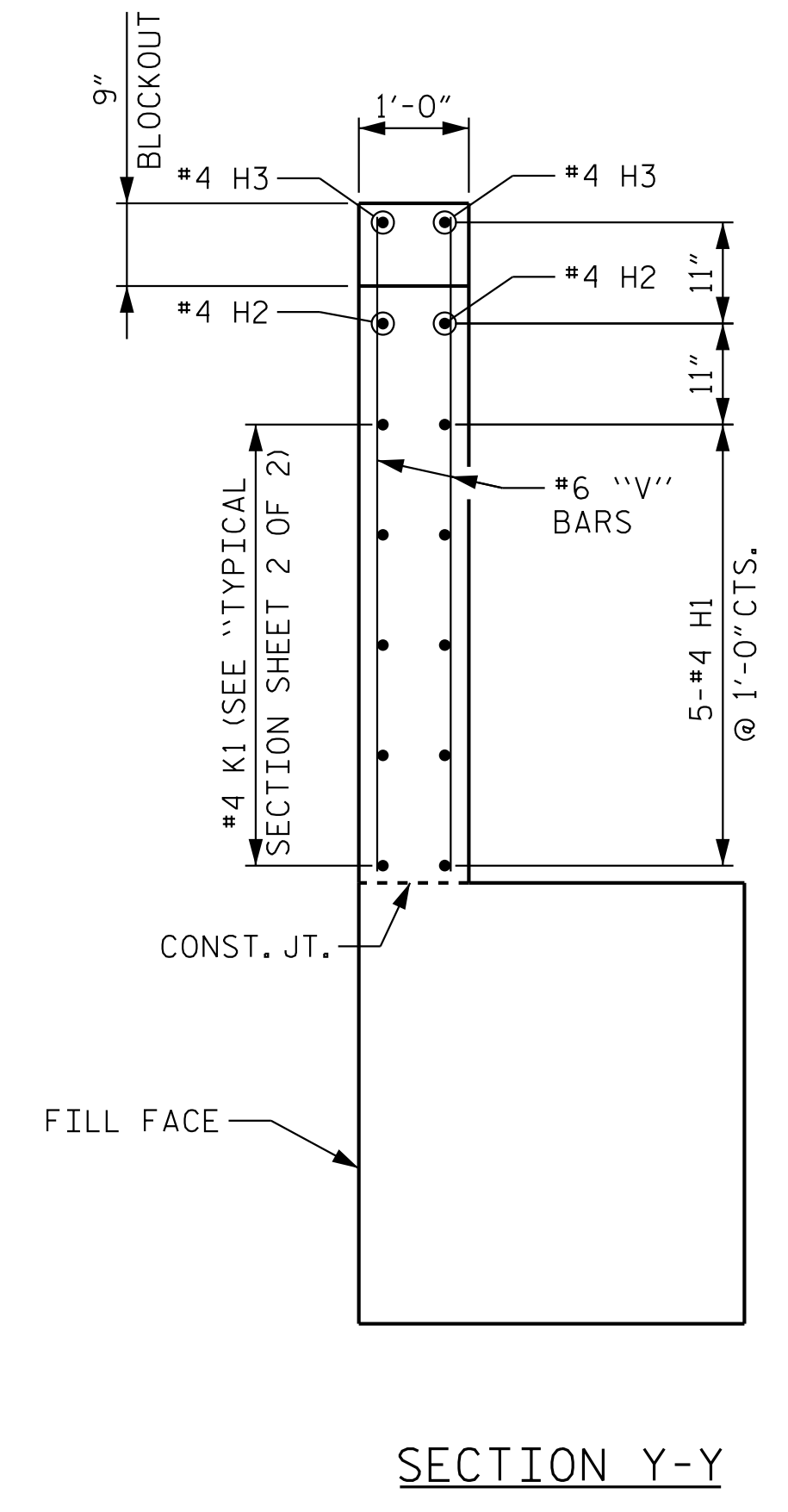
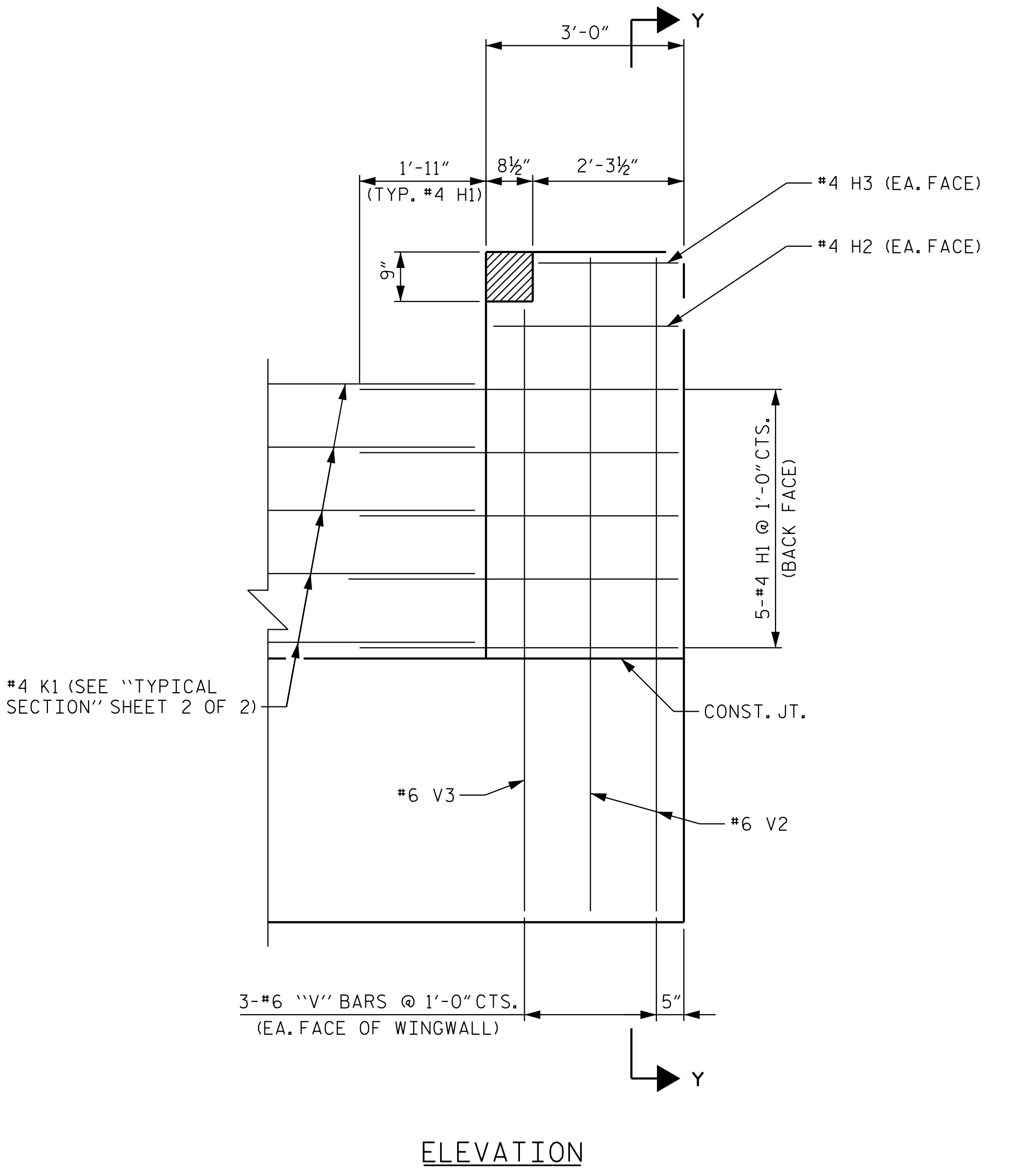
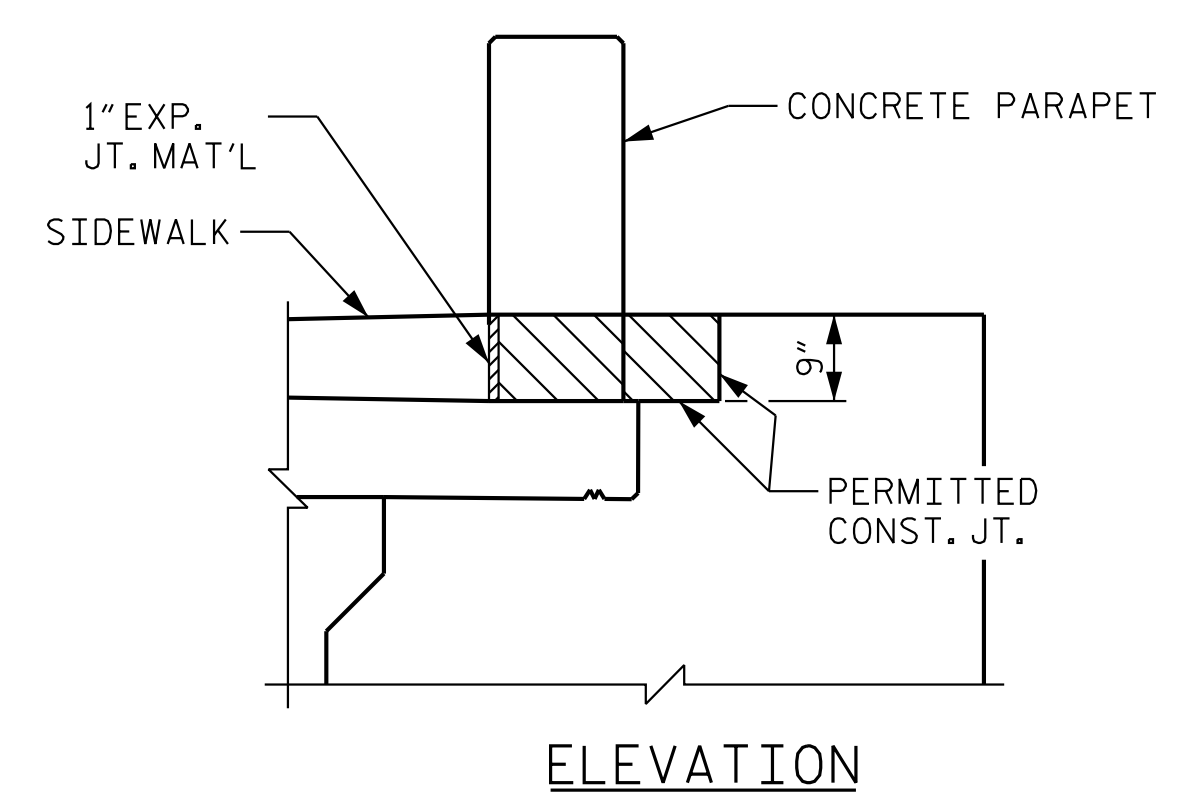
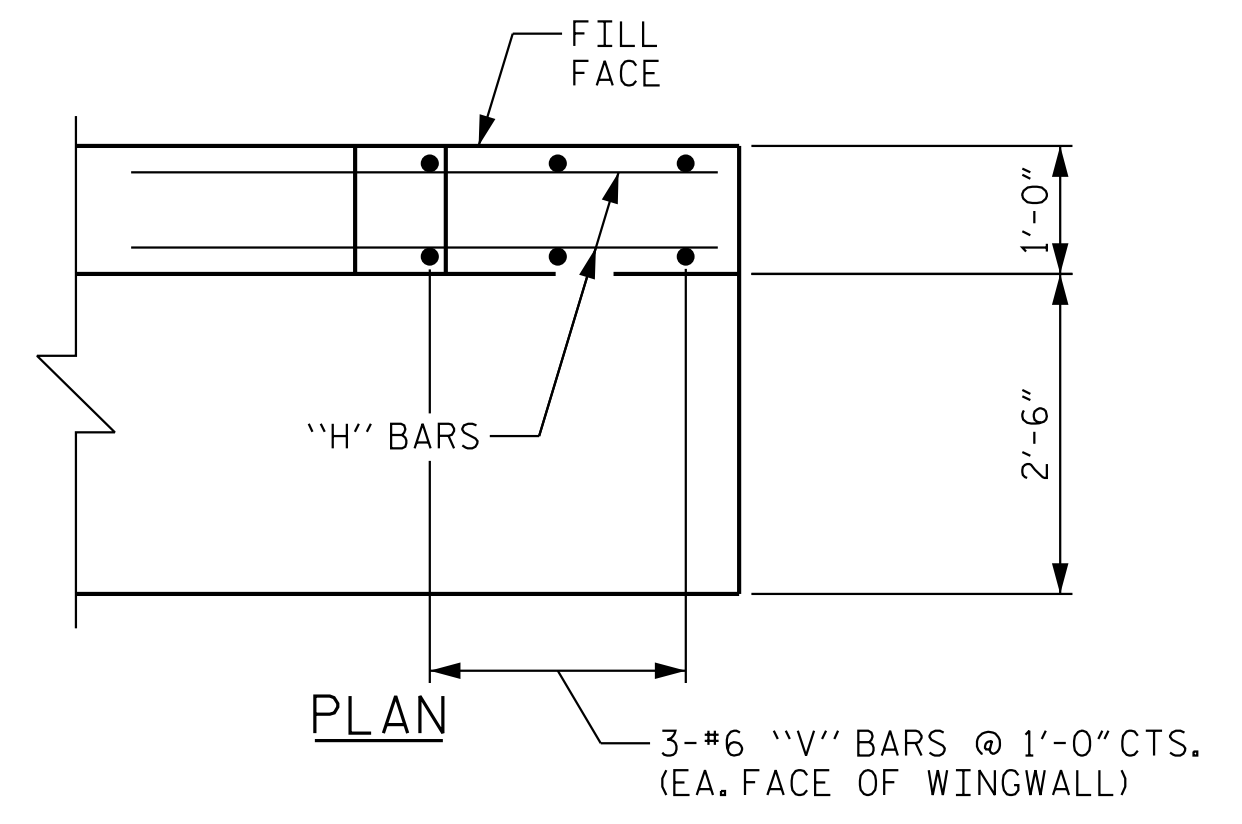
DRAWN BY: J. I. KIMBLE DATE: 1/19  
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REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	

TOTAL SHEETS: 33

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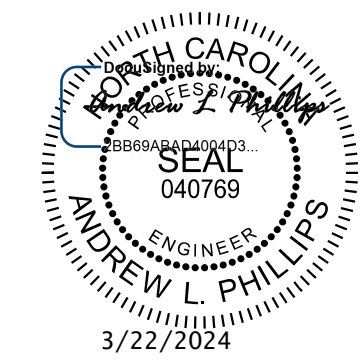
NOTE:  
THE CONCRETE IN THE HATCHED AREA OF THE WING SHALL BE POURED AFTER THE PARAPET AND END POST ARE CAST IF SLIP FORMING IS USED.

BLOCKOUT IN WINGWALL

WING DETAIL

PROJECT NO. P-5720  
WAKE COUNTY  
 STATION: 32+23.01 -L-

SHEET 2 OF 3



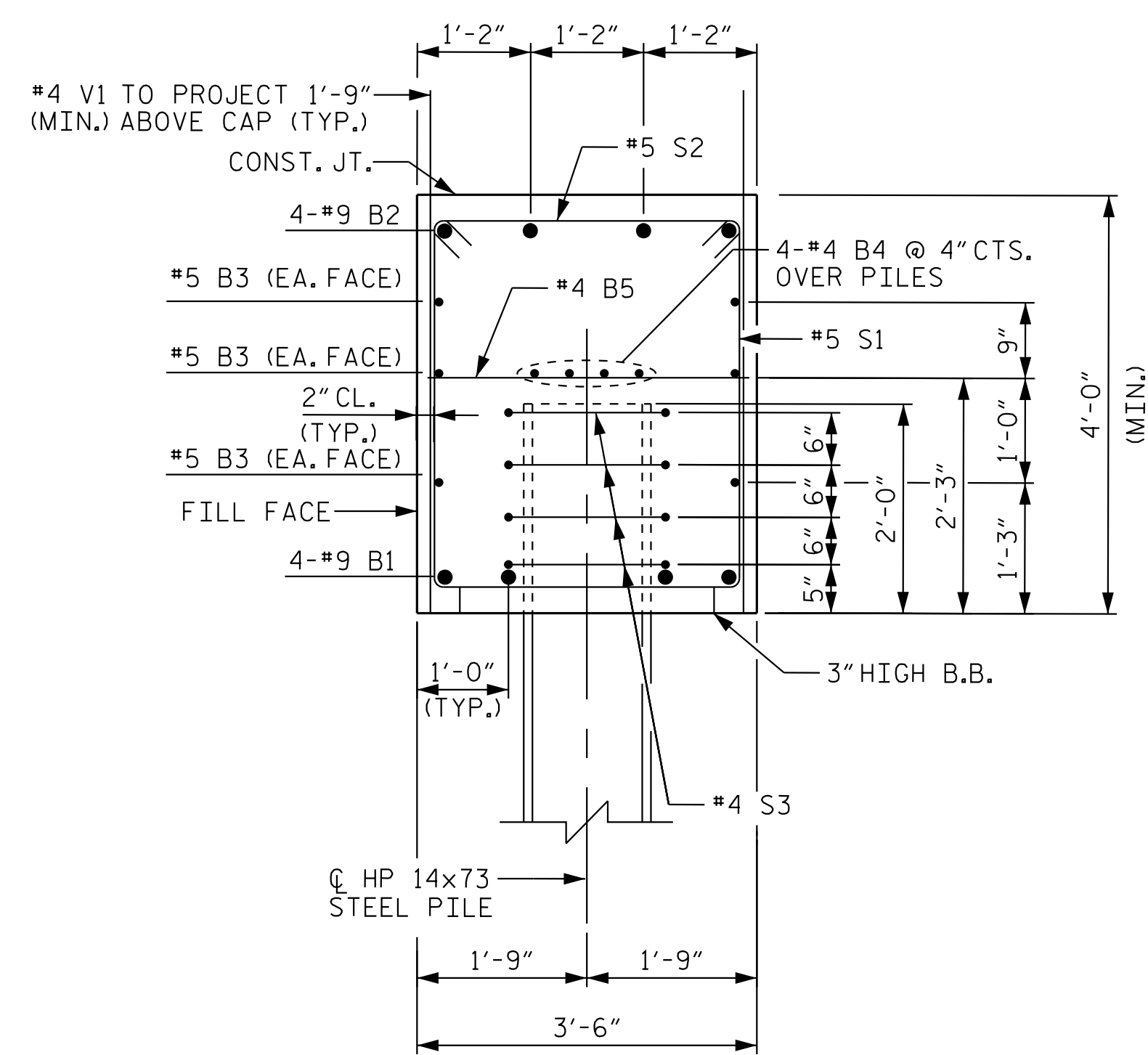
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 Phone (919) 677-2000  
 NC LICENSE # F-0102

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					SHEET NO. S-28
SUBSTRUCTURE					TOTAL SHEETS 33
END BENT 2 SECTION AND DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	DATE:	
1			3		
2			4		

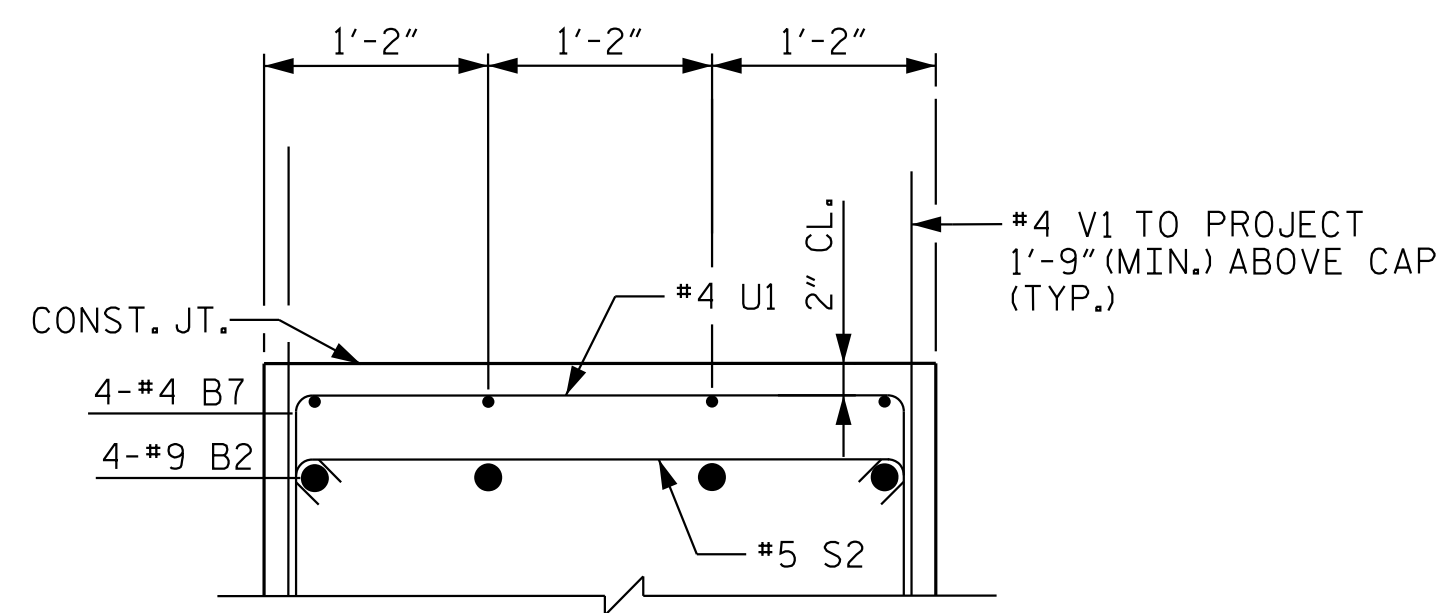
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DRAWN BY: J. I. KIMBLE DATE: 1/19  
 CHECKED BY: M. D. MAGEE DATE: 1/19  
 DESIGN ENGINEER OF RECORD: S. A. DENNEY DATE: 1/19



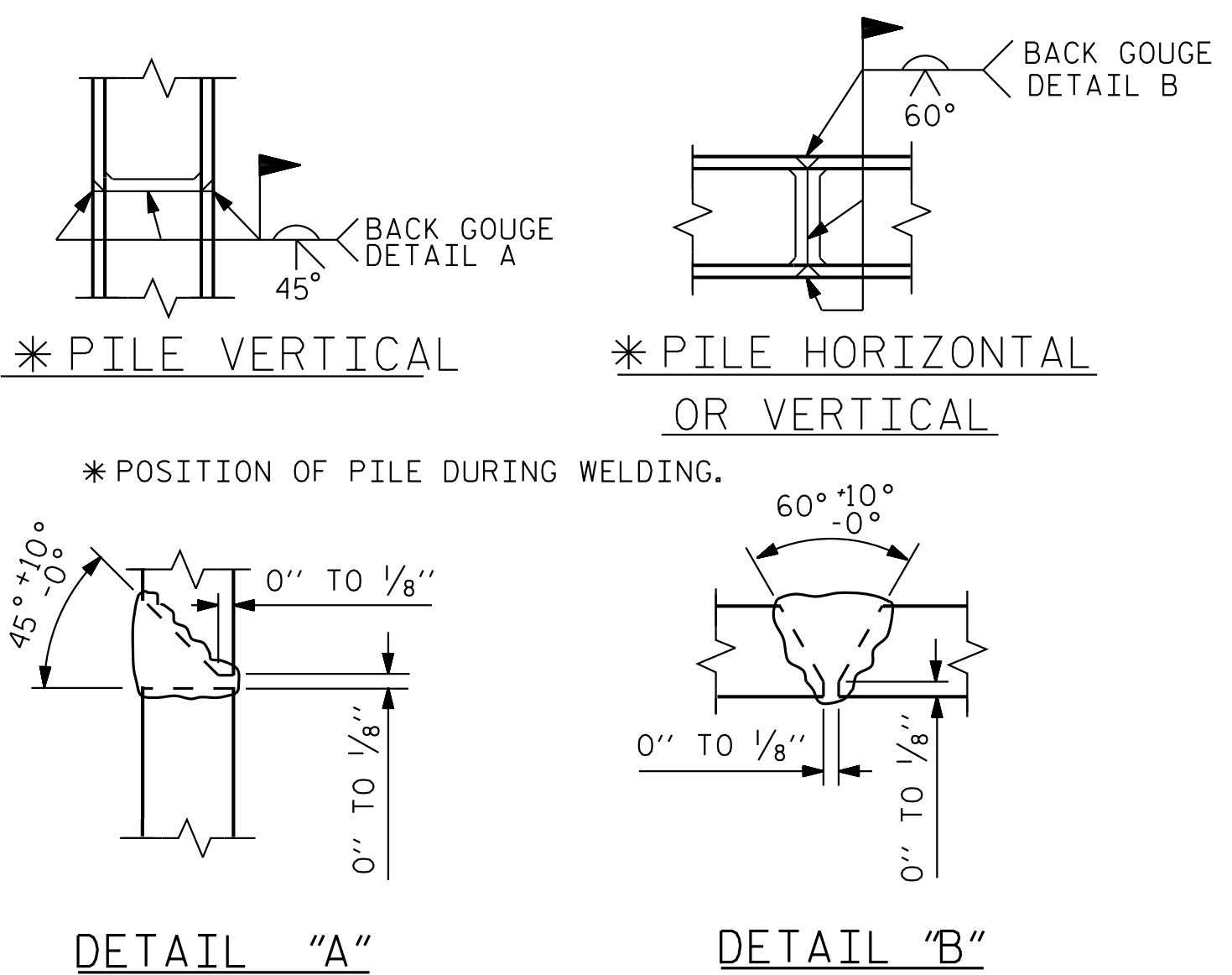
SECTION A-A



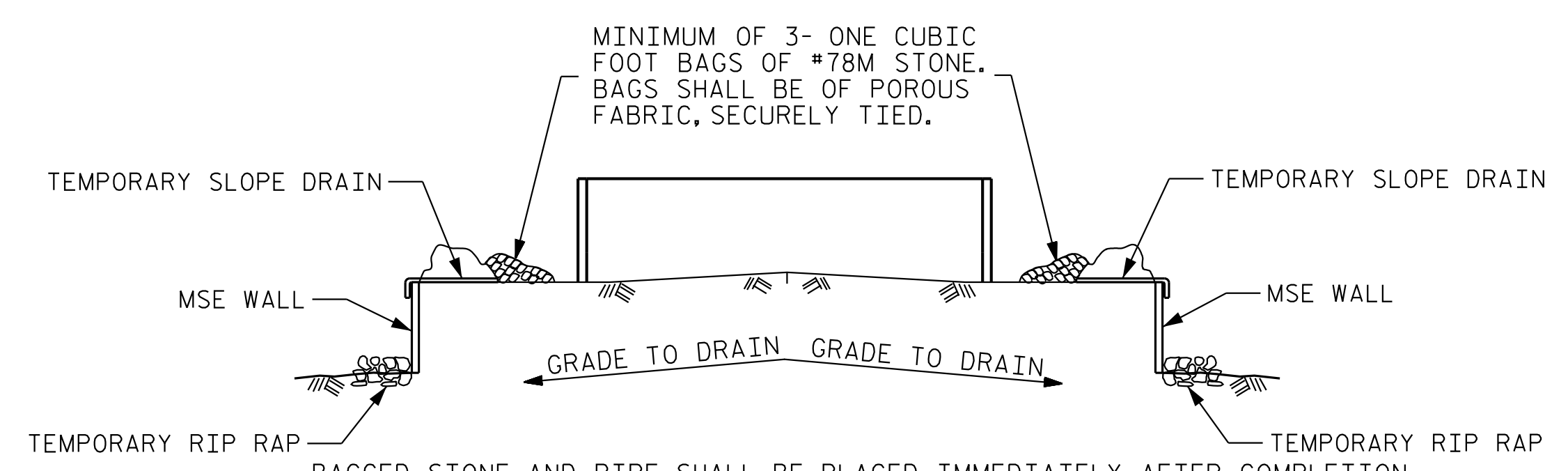
PARTIAL SECTION B-B

BAR TYPES					BILL OF MATERIAL						
					END BENT 1						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	9	1	46'-6"	1,265	H1	10	4	STR	4'-9"	32
B2	8	9	1	47'-9"	1,299	H2	4	4	STR	2'-8"	7
B3	12	5	STR	43'-8"	547	H3	4	4	STR	1'-11"	5
B4	12	4	STR	29'-9"	238	S1	82	5	2	11'-4"	969
B5	22	4	STR	3'-2"	47	S2	82	5	3	4'-1"	349
B6	8	4	STR	14'-6"	77	S3	44	4	5	7'-7"	223
B7	4	4	STR	20'-5"	55	U1	34	4	4	6'-2"	140
						V1	88	4	STR	6'-3"	367
						V2	8	6	STR	9'-11"	119
						V3	4	6	STR	9'-2"	55
					REINFORCING STEEL	5,794 LBS.					
					CLASS A CONCRETE	48.5 C.Y.					

ALL BAR DIMENSIONS ARE OUT TO OUT



HP PILE SPLICE DETAILS



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.

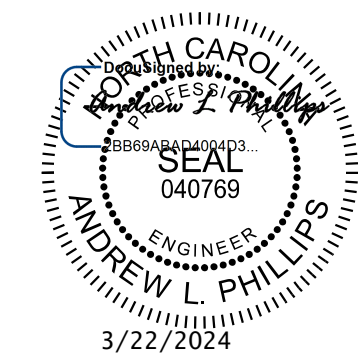
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TEMPORARY DRAINAGE AT END BENT

PROJECT NO. P-5720  
WAKE COUNTY  
 STATION: 32+23.01 -L-

SHEET 3 OF 3



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SUBSTRUCTURE  
 END BENT 2  
 SECTION AND DETAILS

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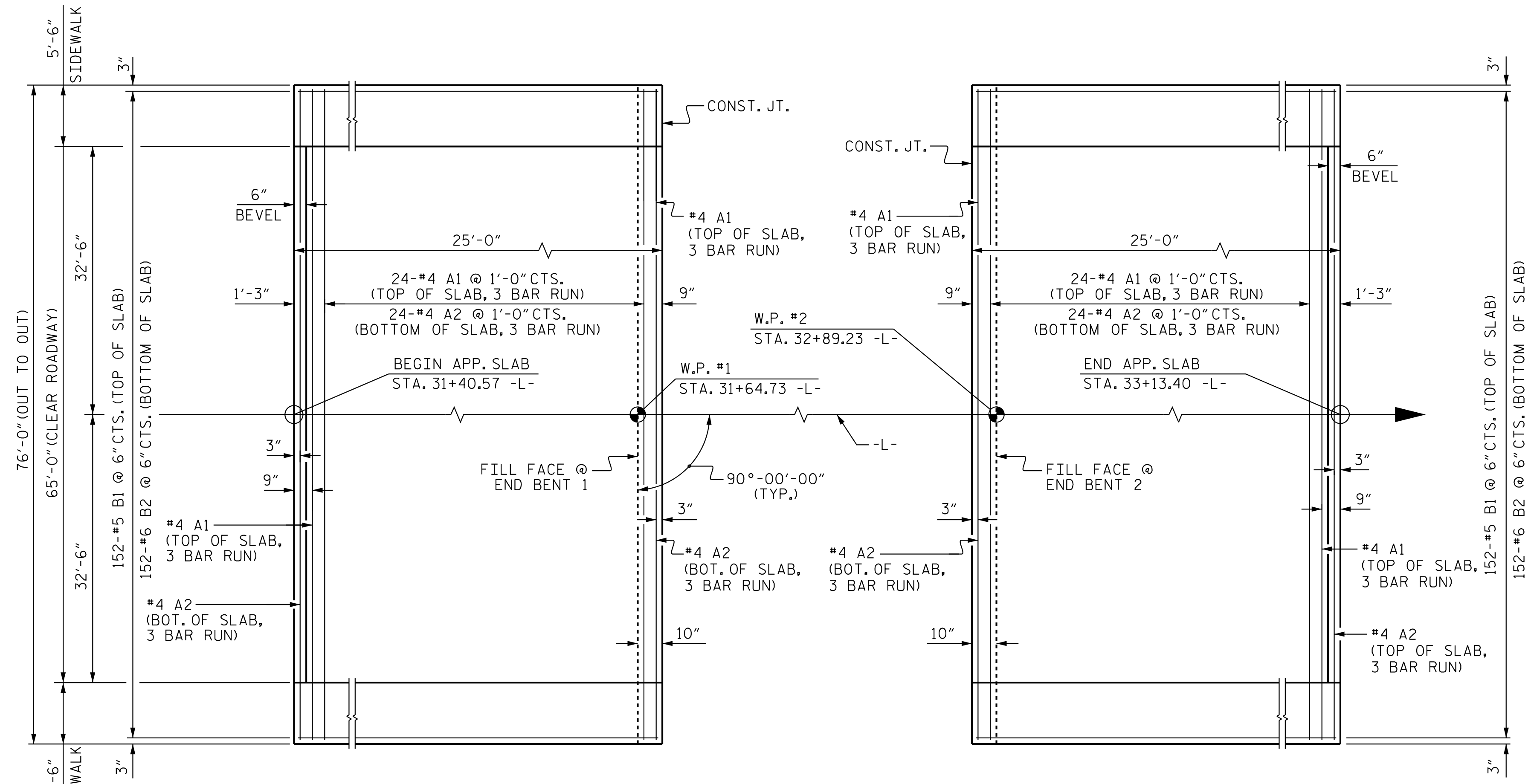
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NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 33

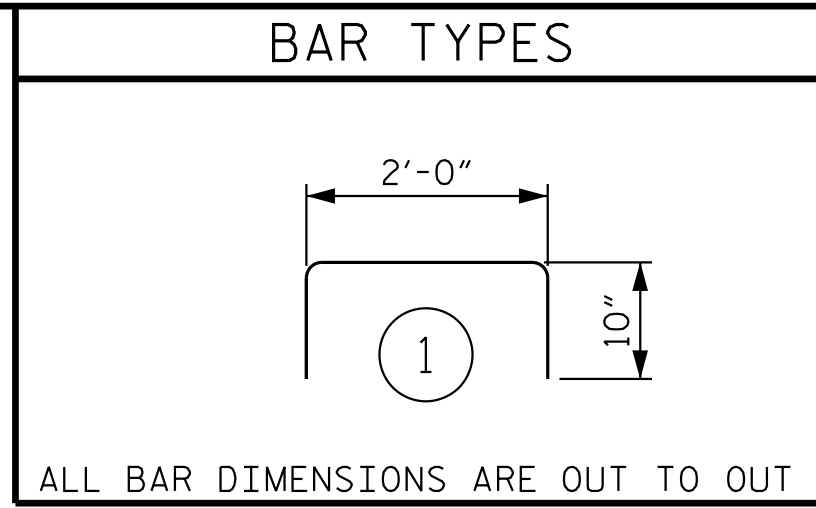
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DRAWN BY: J. I. KIMBLE DATE: 1/19  
 CHECKED BY: M. D. MAGEE DATE: 1/19  
 DESIGN ENGINEER OF RECORD: S. A. DENNEY DATE: 1/19





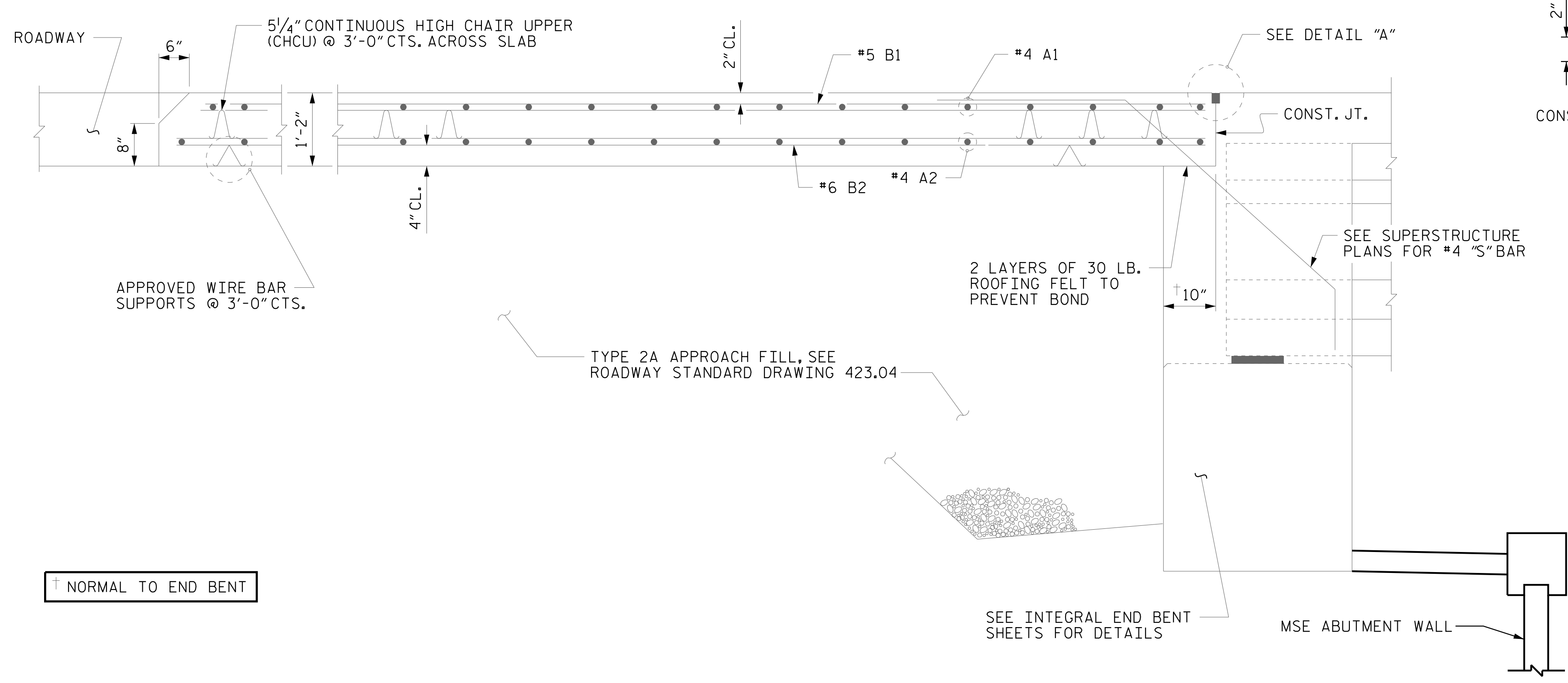
PLAN @ END BENT 1 PLAN @ END BENT 2  
DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



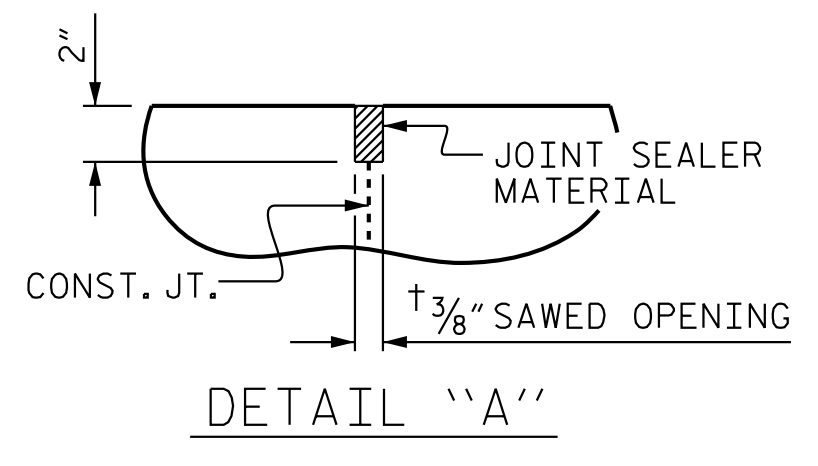
BAR TYPES						BILL OF MATERIAL					
FOR ONE APPROACH SLAB (2 REQ'D)											
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	78	#4	STR	26'-7"	1,385	* B1	152	#5	STR	24'-2"	3,831
A2	78	#4	STR	26'-5"	1,376	B2	152	#6	STR	24'-8"	5,631
						* B3	10	#4	STR	24'-8"	165
						* G1	50	#4	STR	5'-2"	173
						* U1	16	#4	1	3'-8"	39
REINFORCING STEEL										7,007 LBS.	
* EPOXY COATED REINFORCING STEEL										5,593 LBS.	
CLASS AA CONCRETE BREAKDOWN											
POUR #1 (SLAB)										82.1 C.Y.	
POUR #2 (SIDEWALK)										6.1 C.Y.	
TOTAL										88.2 C.Y.	

NOTES

- FOR BRIDGE APPROACH FILL, SEE ROADWAY PLANS.
- APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.
- 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.
- THE JOINT OPENING AT THE APPROACH SLAB/DECK INTERFACE SHALL BE SAWED NO MORE THAN 12 HOURS AFTER THE APPROACH SLAB IS CAST. THE JOINT SHALL BE CLEANED OF ALL DEBRIS BEFORE THE SEALANT IS APPLIED. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF SECTION 1028-3 OF THE STANDARD SPECIFICATIONS.



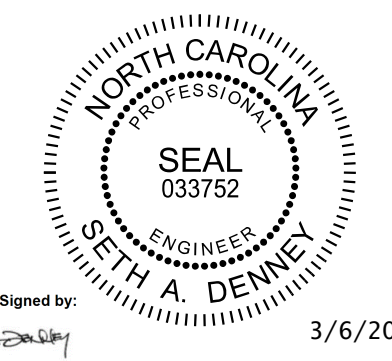
SECTION THRU SLAB



SPLICE LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"
#5	2'-6"	2'-2"
#6	3'-10"	2'-7"

PROJECT NO. P-5720  
WAKE COUNTY  
STATION: 32+23.01 -L-

SHEET 1 OF 2



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
BRIDGE APPROACH SLAB  
FOR INTEGRAL ABUTMENT  
WITH FLEXIBLE PAVEMENT

**Kimley-Horn**  
421 Fayetteville Street, Suite 600  
Raleigh, NC 27601-1772  
Phone (919) 677-2000  
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1			3		TOTAL SHEETS 33
2			4		

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ASSEMBLED BY: D.D. LOWERY	DATE: 1/19
CHECKED BY: S.A. DENNEY	DATE: 1/19
DRAWN BY: TLA 10/05	REV. 12/17 MAA/THC
CHECKED BY: GM 5/06	REV. 06/19 BNB/THC
	REV. 07/23 BNB/SNM

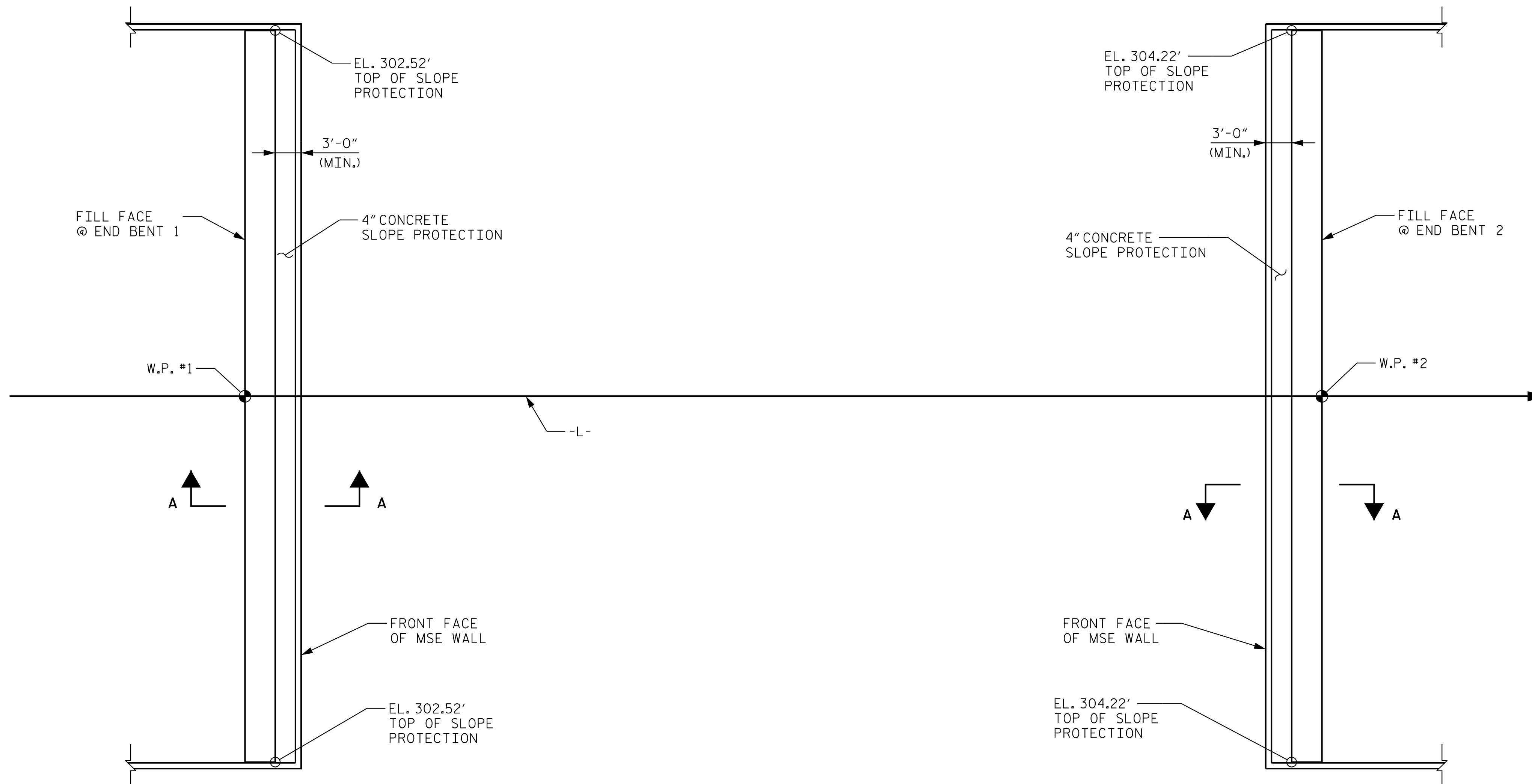
NOTES

SLOPE PROTECTION SHALL BE PLACED UNDER THE ENDS OF THE BRIDGE AS SHOWN IN THE DETAILS. STRAIGHT EDGING WILL NOT BE REQUIRED UNLESS, IN THE OPINION OF THE ENGINEER, VISUAL INSPECTION INDICATES A NEED FOR IT. MEASUREMENT AND PAYMENT SHALL BE AS PRESCRIBED IN SECTION 462 OF THE STANDARD SPECIFICATIONS. FOR BERM WIDTH, SEE GENERAL DRAWING.

SLOPE PROTECTION SHALL CONSIST OF 4" POURED-IN-PLACE CONCRETE PAVING AS SHOWN IN THE DETAILS ON THIS SHEET. CONCRETE SHALL BE CLASS "B". THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. WELDED WIRE FABRIC REINFORCING SHALL BE 6 X 6 - W1.4 X W1.4, 60" WIDE. SLOPE PROTECTION SHALL BE POURED IN 5' STRIPS AS SHOWN IN THE "POURING DETAIL" WITH 2'-0" LONG #4 BARS PLACED ALONG THE SLOPE BETWEEN STRIPS AT 1'-6" MAXIMUM SPACING. SLOPE PROTECTION MAY BE POURED IN ALTERNATE 4' AND 5' STRIPS AS SHOWN IN THE "OPTIONAL POURING DETAIL" WITH ADJACENT RUNS OF WELDED WIRE FABRIC LAPPING AT LEAST 6". THE COST OF THE WELDED WIRE FABRIC AND #4 BARS, IF USED, SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR SLOPE PROTECTION.

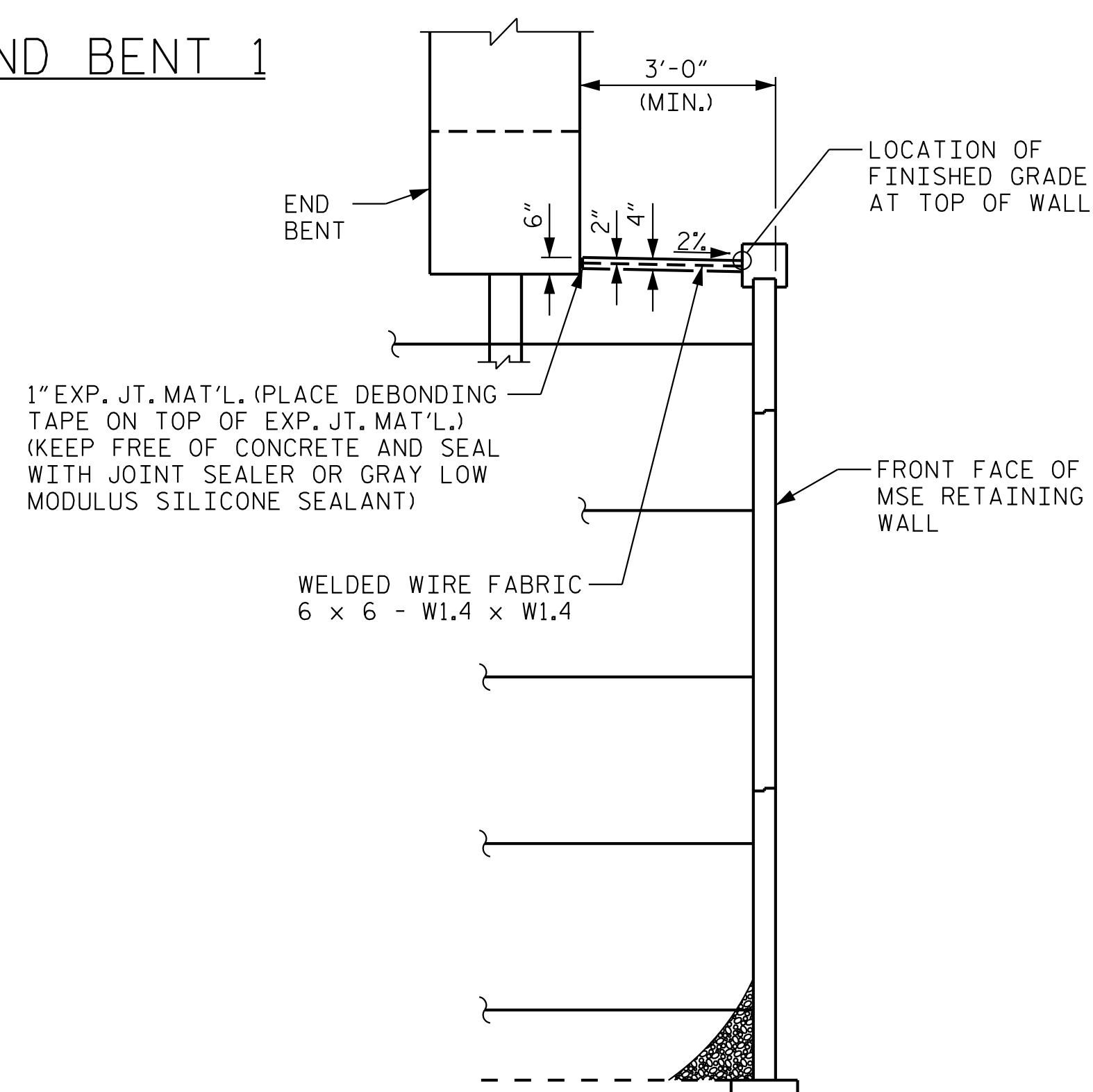
BRIDGE @ STA. 32+23.01 -L-	4 INCH SLOPE PROTECTION	* WELDED WIRE FABRIC 60 INCHES WIDE
	SQUARE YARDS	APPROX. L.F.
END BENT 1	22	40
END BENT 2	22	40

\* QUANTITY SHOWN IS BASED ON 5' POURS.

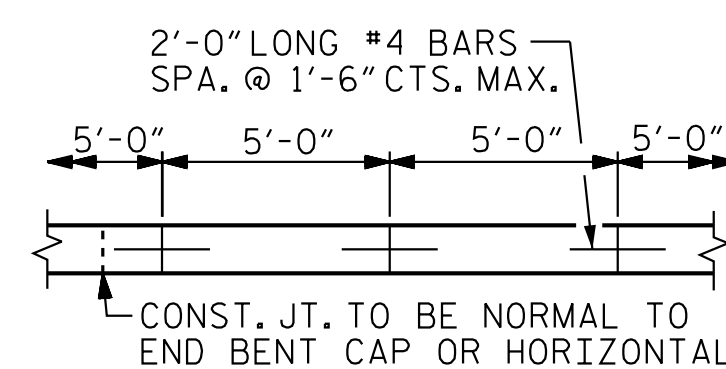


PLAN @ END BENT 1

PLAN @ END BENT 2

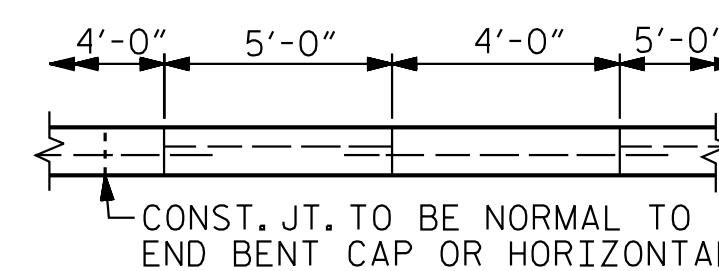


SECTION A-A



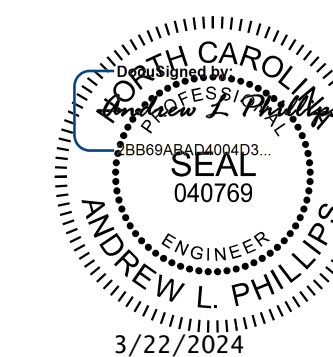
STRIP WIDTHS MAY VARY IN CURVED PORTION.

POURING DETAIL



POUR A 4'-0" STRIP FIRST. STRIP WIDTHS MAY VARY IN CURVED PORTION.

OPTIONAL POURING DETAIL



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PROJECT NO. P-5720  
WAKE COUNTY  
STATION: 32+23.01 -L-

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD

SLOPE PROTECTION  
DETAILS

REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	

TOTAL SHEETS: 33

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DESIGN ENGINEER OF RECORD: S. A. DENNEY DATE: 1/19



### NOTES

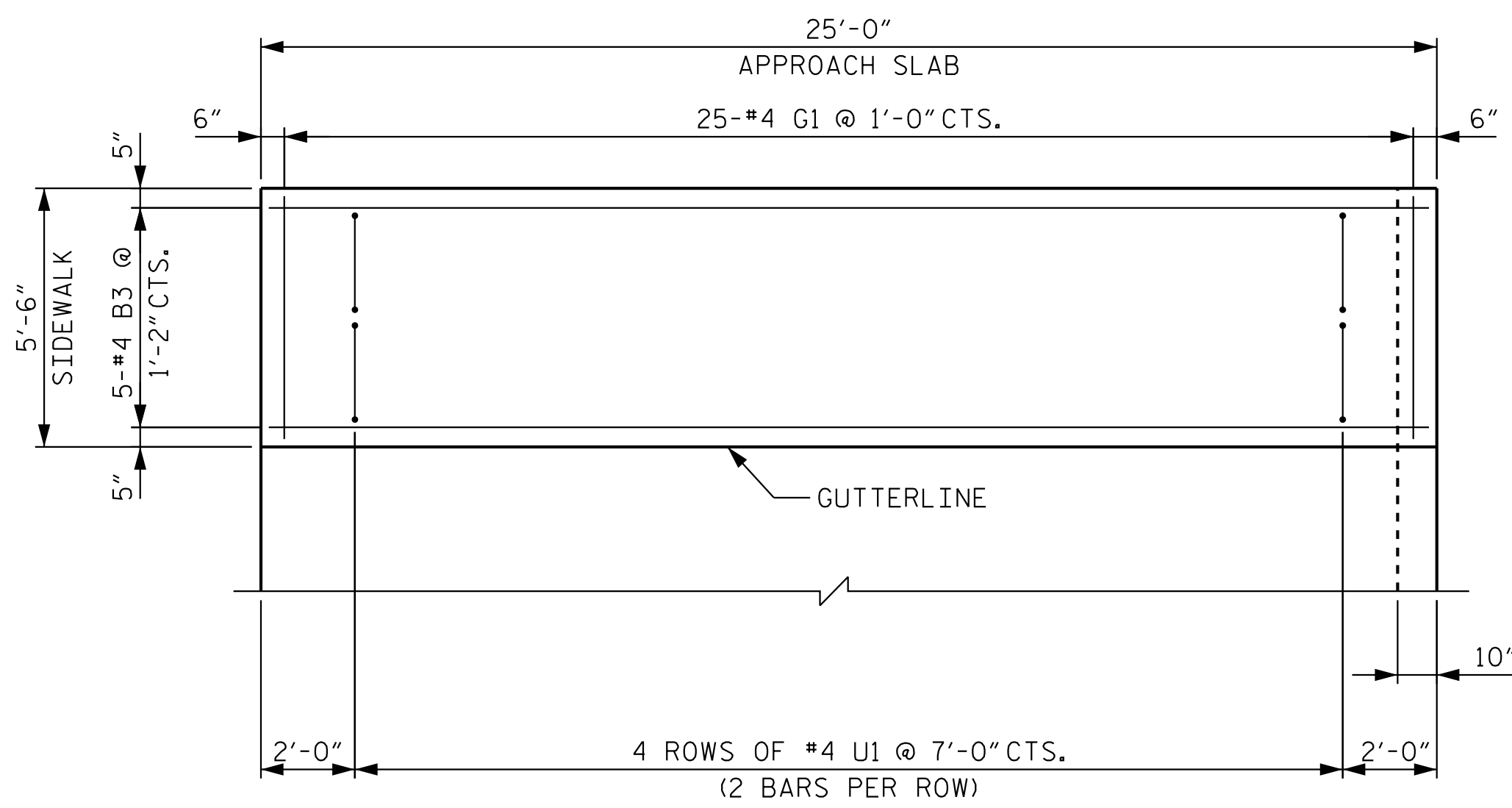
ALL REINFORCING STEEL IN THE SIDEWALK SHALL BE EPOXY COATED.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE SIDEWALK IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8 FEET TO 10 FEET BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINT WILL BE REQUIRED IN SEGMENTS LESS THAN 10 FEET IN LENGTH.

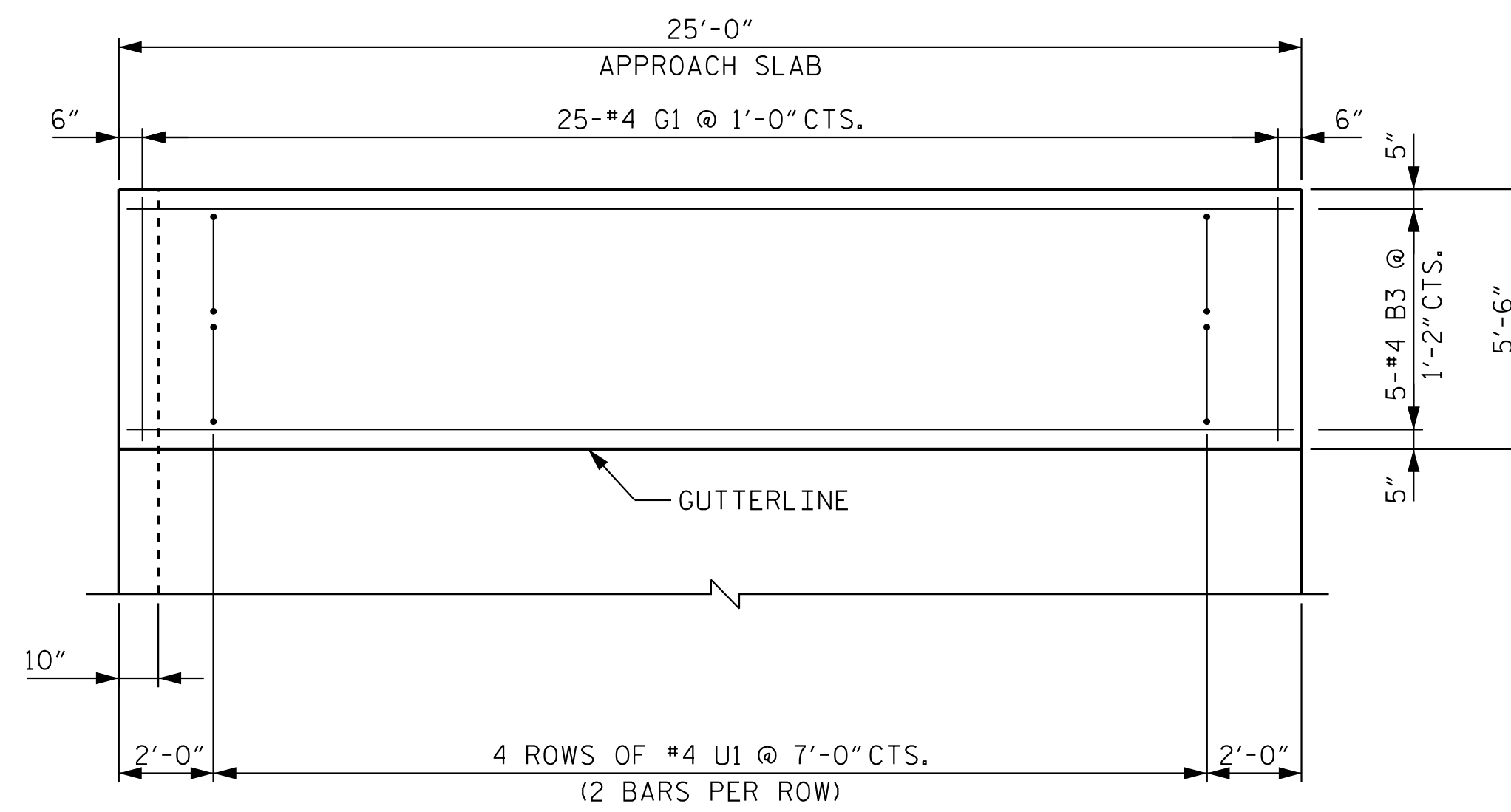
\* #4 U1 MAY BE PUSHED INTO GREEN CONCRETE AFTER THE APPROACH SLAB HAS BEEN SCREEDDED OFF.

THE SIDEWALK ON EACH APPROACH SLAB SHALL NOT BE CAST UNTIL ALL APPROACH SLAB CONCRETE HAS BEEN CAST AND REACHED A MINIMUM OF 3,000 PSI.

NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE FOR MATERIALS OR LABOR REQUIRED TO CONSTRUCT THE SIDEWALK. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR BRIDGE APPROACH SLABS.

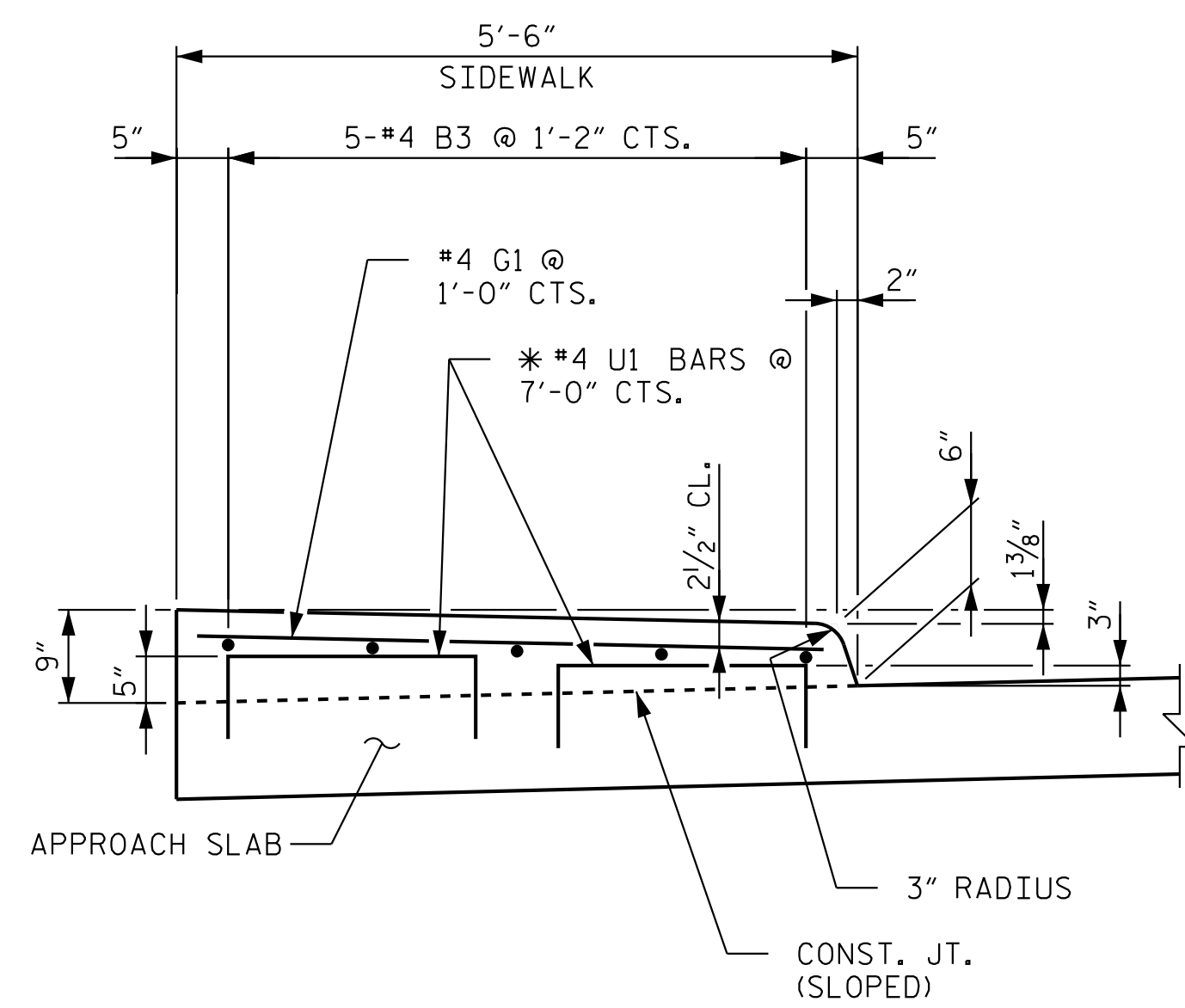


PLAN @ END BENT 1



PLAN @ END BENT 2

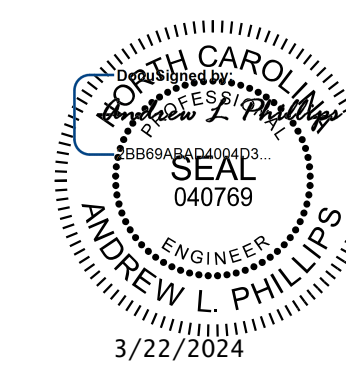
### SIDEWALK DETAILS (LEFT SIDE SHOWN, RIGHT SIDE SIMILAR)



SECTION THRU SIDEWALK

PROJECT NO. P-5720  
WAKE COUNTY  
STATION: 32+23.01 -L-

SHEET 2 OF 2



**Kimley»Horn**

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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
BRIDGE APPROACH SLAB  
DETAILS

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					33

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