



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J.R. "JOEY" HOPKINS
SECRETARY

October 3, 2024

Addendum No. 3

RE: Contract # C204348

WBS # 37944.3.4

FEDERAL-AID NO. STP-0150(036)

Iredell and Catawba Counties (R-2307B)

NC-150 FROM SR-1840 (GREENWOOD ROAD) IN CATAWBA COUNTY TO
US-21 IN IREDELL COUNTY

October 15, 2024 Letting

To Whom It May Concern:

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

The following revision has been made to the Traffic Management plans.

Sheet Nos.	Revision
TMP-8	Note revised to state "Follow Boat Safety Plan shown elsewhere in the contract during construction of the proposed structure".

Please void the above listed Sheet in your plans and staple the revised Sheet thereto.

The following revisions have been made to the Structures plans.

Sheet Nos.	Revision
S1-11	Waterline moved from right overhang to left overhang.
S1-13	Note added that waterline not shown for clarity.
S1-56	Moved waterline block out in backwall from right to left side.
S1-58	Updated block out detail.
S1-64	Moved waterline block out in backwall from right to left side.
S1-66	Updated block out detail.

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

Sheet Nos.	Revision
SU-4	Note F. revised. SECTION A-A updated.

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

The following revisions have been made to the proposal.

Page No.	Revision
Proposal Cover	Note added that reads “Includes Addendum No. 3 Dated 10-08-2024”.
Table of Contents	Updated to reflect changes below.
G-53	Project Special Provision PUBLIC INVOLVEMENT TECHNICIAN/BUSINESS SUPPORT LIAISON added.
G-54 thru G-57 (New)	Project Special Provision PUBLIC INVOLVEMENT TECHNICIAN/BUSINESS SUPPORT LIAISON added.
ST-1	The Structures Unit Project Special Provisions have been revised. TABLE OF CONTENTS were revised.
ST-43 (New)	The Structures Unit Project Special Provisions have been revised. WORK IN, OVER OR ADJACENT TO NAVIGABLE WATERS provision was added.
ST-44 thru ST-51 (New)	The Structures Unit Project Special Provisions have been revised. LAKE FACILITY SAFETY PLAN:NC 150 PARALLEL BRIDGE CONSTRUCTION, LAKE NORMAN provision was added.

Please void the above listed existing Pages in your proposal and staple the revised Pages thereto. Staple New Pages G-54 thru G-57 after revised G-53 in your proposal. Staple New Pages ST-43 thru ST-51 after existing ST-42 in your proposal.

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

<u>Item</u>	<u>Description</u>	<u>Old Quantity</u>	<u>New Quantity</u>
0376-6030000000-E 1630	SILT EXCAVATION	529,080 CY	74,740 CY
0516-8154000000-E 420	REINFORCED CONCRETE DECK SLAB (SAND LIGHTWEIGHT CONCRETE)	66,964 SF	62,008 SF
0541-0000900000-N SP	PUBLIC INVOLVEMENT TECHNICIAN	NEW	LUMP SUM

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,

Signed by:

52C46046381F443...

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

RED/cms
Attachments

cc: Mr. Wiley W. Jones III, PE
Mr. Mark Stafford, 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. 3 DATED 10-08-2024

DATE AND TIME OF BID OPENING: **Oct 15, 2024 AT 02:00 PM**

CONTRACT ID C204348
WBS 37944.3.4

FEDERAL-AID NO. STP-0150(036)
COUNTY IREDELL, CATAWBA
T.I.P NO. R-2307B
MILES 6.943
ROUTE NO. NC-150
LOCATION NC-150 FROM SR-1840 (GREENWOOD ROAD) IN CATAWBA COUNTY TO US-21 IN IREDELL COUNTY.

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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100 grams of soil may indicate a high potential for turbidity and should be avoided when dewatering into surface water is proposed.

No additional compensation for monitoring borrow pit discharge will be paid.

NOTES TO CONTRACTOR:

The existing bridge and culverts greater or equal to 3 feet in manufactured diameter within the action area will be surveyed during the summer of 2024. Additionally, structures will be surveyed within 30 days of letting. The U.S. Fish and Wildlife Service (Service) Asheville Field Office will be contacted immediately if bats are observed.

Temporary lighting for night work shall be aimed at the direction of work to minimize lighting the surrounding landscape and shall be turned off when not needed for project work.

The replacement of permanent lighting shall be downcast and shall not be in excess of what currently exists within the action area.

Should blasting occur, it shall take place after tree clearing within the action area has been completed.

PUBLIC INVOLVEMENT TECHNICIAN / BUSINESS SUPPORT LIAISON
SCOPE OF WORK FOR R-2307B:

Description

The Contractor shall provide a Public Involvement Technician / Business Support Liaison (“PI Technician”) for the R-2307B NC-150 Widening project (hereinafter “the project”). The PI Technician shall be responsible for gathering and providing information and promotional material regarding the project, including construction schedules, traffic impacts, and business impacts, to the public, businesses, local municipalities, counties, planning organizations, and community groups.

The following scope of work outlines tasks to be performed by the PI Technician for the project. The purpose of these tasks is to develop strategies to disseminate information that will inform and educate businesses and the public about this project during construction efforts.

Tasks Include

- The PI Technician will maintain the stakeholder list and public database using NCDOT’s subscription to PublicInput.com.
- The PI Technician will use NCDOT’s subscription to PublicInput.com to distribute e-blasts, track public inquiries via phone and email, and when responding to citizen inquiries.
- The PI Technician shall develop and produce materials for all meetings (as requested).
- NCDOT will maintain and post content to the project website.
- NCDOT Division 12 Communications Officer (Communications Officer) and NCDOT Public Involvement Officer (PIO) will be responsible for review and approval of all materials and content produced by the PI Technician.

- The Communications Officer will be responsible for posting content to social media and responding to media inquiries and notifications.
- NCDOT's Public Involvement, Community Studies and Visualization Group (PICSViz) will review and translate informational print materials for Limited English Proficiency (LEP) outreach.

1. Task Coordination

The PI Technician will participate in all public involvement and information meetings with Department staff and / or the selected contractor for the duration of the project. This sub-task includes weekly calls, as needed, with the Resident Engineer, the Contractor, Communications Officer, and PIO to provide updates about activities and progress.

2. Develop a Public Involvement and Information Plan

The PI Technician will develop a Public Involvement Plan (PIP) to detail the goals for public communications and engagement, as well as tools and techniques to effectively communicate with and inform the public and impacted stakeholders. The PI Technician will host a call to review the PIP with NCDOT Division 12 (Division), the Communications Officer, and PICSViz. The PI Technician will provide revisions based on comments before finalizing the PIP.

3. Business Stakeholder / Public Outreach Methods

Business Stakeholder and public outreach will ensure that impacted businesses and the general public will be informed of project progress and updates. This outreach will include direct communication between business stakeholders, the public and the Department. The PI Technician will document communication between business stakeholders and the public via an Excel spreadsheet and summary reports to be provided to the Division, the Communications Officer, and the PIO monthly, throughout the life of the project. The following methods will be used to support this task.

3.1 Business Stakeholder Distribution List: To ensure impacted businesses are properly informed of project information, NCDOT will provide the PI Technician with a list of businesses and other important stakeholders with whom NCDOT has communicated in previous project phases. The PI Technician will maintain and update this list as new contacts are identified using NCDOT's subscription to PublicInput.com, which can be found at the following link:

<https://publicinput.com/nc150-widening-improvements>

This list will be utilized to assist businesses during construction and in understanding the construction phases and impacts of construction. The PI Technician will coordinate with the Local Chamber of Commerce on updates to the list as well as assistance in distributing information.

3.2 Public Mailing List: There will be two types of mailing lists to ensure interested members of the public are properly informed of project information. The first will be an electronic mailing list using NCDOT's subscription to PublicInput.com to provide a link to sign-up for project updates on the project webpage. This will allow the public to enter their email address or phone number to be included in communications about project updates. The second will be a mail distribution list for mail through the United States Postal Service.

NCDOT PIO will provide a distribution list for USPS mailing. Mailers will be distributed to inform the public about the project, contact information, project website, etc. as needed. This list will be maintained in an Excel spreadsheet using the NCDOT PublicInput platform.

- 3.3 Comment Management:** Business stakeholders and members of the public will be able to make comments and ask questions through the NCDOT subscription to PublicInput.com. The PI Technician shall be responsible for tracking these comments via an Excel spreadsheet (provided through Publicinput.com). The PI Technician shall be responsible for responding to inquiries and questions. The PI Technician shall develop a document of standard responses to inquiries, to be approved by the Division, the Communications Officer, and PICSviz for use in responding to public inquiries.
- 3.4 Toll Free Call-in Number:** The call-in number 984-205-6615 with code 7128 to leave messages, will be used for business stakeholders and the public to receive updated project information, make inquiries, and ask questions by phone using NCDOT's subscription through PublicInput.com. The PI Technician shall develop project information talking points to include general project information, the schedule and construction updates. These talking points shall be approved by the Division and the Communications Officer. The toll-free number will allow users to leave a message and provide a call back number. Those messages will be automatically transcribed in the database. The PI Technician shall respond to the call using the developed talking points or will coordinate with the appropriate person to respond, as needed. The PI Technician shall monitor all phone calls using an Excel spreadsheet provided by the NCDOT PublicInput platform. The Contractor shall be responsible for providing content to inform the public about the project updates. The 984-205-6615 (7128) number shall be listed on the NCDOT project website and shall be on all public project materials.
- 3.5 Project Email:** A project email (NC150-Widening-Improvements@publicinput.com) will be used for business stakeholders and the public to make inquiries and ask questions by email using NCDOT's subscription through PublicInput.com. The PI Technician shall use the approved standard responses to reply to email messages received. The PI Technician shall document emails using an Excel spreadsheet. The email address shall be listed on the project's NCDOT website and shall be on all public project materials.
- 3.6 Project Updates:** The project email will also be used in coordination with the social media posts to update subscribers who signed up on the NCDOT PublicInput.com project webpage. Construction updates will be coordinated with the project manager and PIO.
- 3.7 Social Media Post:** Social media can target specific populations based on location, demographic and/or profile information. The Contractor acknowledges that it is NCDOT's policy to manage all social media outreach. The NCDOT Facebook, Instagram, NextDoor, and X (formerly Twitter) accounts shall be utilized to share project information, progress, and updates. The PI Technician shall provide images and content to be approved by the Division and the Communications Officer as needed or at a minimum monthly. The Communications Officer will work with the Social Media Coordinator to post the content. The PI Technician shall coordinate with the Communications Officer about construction impacts and/or changes, as needed outside of the monthly content updates.

To further increase social media reach, the PI Technician shall develop a list of related organizations to request their participation in sharing NCDOT social media posts. These organizations may include, but are not limited to, local municipalities, counties, planning organizations, community groups and other local stakeholders. The PI Technician, in collaboration with the Communications Officer, shall identify this list of willing related organizations and provide them with a monthly schedule of social media posts to be shared from the NCDOT accounts.

3.8 Media Outreach: The Communications Officer will develop media releases to promote project updates at key milestones and to announce the availability of public materials. Project materials will be available when requested and will be accessible online for media use. The Communications Officer will manage all media inquiries. The PI Technician shall participate in media interviews, as requested.

4. Project Public Information Content

The following deliverables will be used to share project updates and information. These deliverables shall be designed to match NCDOT branding and project standards. NCDOT will provide the PI Technician with branding guidelines and materials.

4.1 Project Branding: The PI Technician shall use the logo provided by NCDOT when developing project materials. Text, colors, and graphics shall be developed using NCDOT standard guidelines and shall be reviewed by the Communications Officer.

4.2 E-blast Messages: The PI Technician shall draft weekly e-blasts once project construction begins, to be sent to the business stakeholders and public lists. The PI Technician shall develop additional e-blasts as-needed to communicate any necessary information outside of the weekly e-blast notification cycle, including announcing updates to the website and public meeting schedules. The Division and the Communications Officer will review any e-blasts prior to distribution. The PI Technician shall be responsible for distributing the weekly e-blast and any additional e-blasts using PublicInput.com.

4.3 Project Webpage: The PI Technician shall develop content for the NCDOT project webpage including information about the project, schedule, public meetings, and frequently asked questions. Content shall be revised as needed and approved by the Division and the Communications Officer. The PI Technician shall update content regularly to inform the public about project milestones and impacts to traffic. The Communications Officer will be responsible for posting content on the webpage. Updates to Publicinput.com pages will be made by the PI Technician or PIO as needed to coordinate with updates to the NCDOT webpage.

4.4 Mailers: The PI Technician shall develop either a newsletter or postcard, as directed by the Division, Communications Office, and PICSviz, which will be prepared as the initial point of contact to business stakeholders and the public along the project area and to inform them of project information, the project website, and contact information. The PIO will provide the mailing list. The PI Technician shall develop mailers as needed, to be approved by the Division, the Communications Officer, and Public Involvement Team. NCDOT will be responsible for printing and distributing mailers.

- 4.5 Project Videos:** The PI Technician shall develop content for a series of short videos as needed to provide project updates. These videos shall be designed to last 1-2 minutes and to be shared via the project website and social media. The Division and the Communications Officer will review video content. The PI Technician and NCDOT will work together to produce the videos. The Communications Officer will be responsible for posting the videos on the webpage and social media.
- 4.6 Collateral Materials:** The PI Technician shall use information provided by the Contractor to develop collateral materials for public consumption. These may include, but are not limited to, project fact sheets, door hangers, PSAs, yard signs, and materials to be distributed at community events. The Division, the Communications Officer, and the Public Involvement Team will review all developed materials. The PI Technician shall revise materials up to two times before finalizing. The PI Technician shall coordinate with the Communications Officer to post materials to the project webpage.

5. Project Public Meetings

The PI Technician shall schedule and participate in in-person and/or virtual public meetings when requested to do so by NCDOT. The PI Technician shall coordinate with the Contractor regarding participation in any meetings. The PIO is responsible for locating and arranging the facilities for the meetings. In the case of a virtual public meeting, the Public Involvement Team will coordinate with the Contractor regarding the set-up and hosting of the online meeting.

6. Business Stakeholder Meetings

The PI Technician shall attend meetings with impacted business owners as requested by NCDOT on an as needed basis with approval from the Division.

These meetings will be used to provide project information and address any concerns that the businesses may have about the project. The PI Technician shall be responsible for arranging the meetings. These meetings may be held virtually. The PI Technician shall be responsible for tracking these meetings via an Excel spreadsheet.

7. Progress Reports

The PI Technician shall be responsible for providing monthly progress reports to NCDOT throughout the life of the project. These reports shall include updates on changes to the Business Stakeholder list, changes to the Public Mailing List, comments received through PublicInput.com, e-blasts sent through PublicInput.com, social media accounts, and phone calls received through the 1-800 call-in number. (984-205-6615 code 7128)

Measurement and Payment:

The work of this provision will be paid for at the contract lump sum price for "Public Involvement Technician." Partial payments will be made on each partial pay estimate based upon the percentage of work completed. The Contractor shall submit a certified statement each month indicating the percentage of work completed. The Resident Engineer will determine if the amount indicated is reasonably correct and the Resident Engineer will pay accordingly on the next partial pay estimate.

Pay Item

Public Involvement Technician

Pay Unit

Lump Sum

**Project Special Provisions
Structures and Culverts**

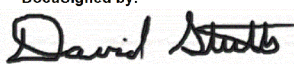
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For Thermal Integrity Profiler, See Geotechnical Special Provisions.

For 16" Water Line Pipe & Suspension System, See Utility Special Provisions.



DocuSigned by:

 A4A2999A8BC64F2...

10/04/2024

WORK IN, OVER OR ADJACENT TO NAVIGABLE WATERS**(SPECIAL)****GENERAL**

All work in, over, or adjacent to navigable waters shall be in accordance with Article 107-10 of the *Standard Specifications*, the Special Provisions and conditions contained in the permits obtained by the Department from the U.S. Coast Guard, U.S. Army Corps of Engineers, or other authority having jurisdiction. The work shall have no adverse effect on navigation of the waterway including traffic flow, navigational depths, and horizontal and vertical clearances without approval from the authorities granting the permits.

The Contractor shall prepare drawings necessary to obtain any permits which may be required for his operations which are not included in the Department's permit including but not limited to excavation and dumping, constructing wharves, piers, ramps, and other structures connecting to bank or shore, and drawings for constructing falsework, cofferdams, sheeting, temporary bridges, and any other construction within the waterway. Submittals shall show locations of such work with respect to the navigational opening. The Contractor shall coordinate the submittal of drawings with the Engineer.

All construction shall progress and be maintained in a safe and timely manner. Temporary construction facilities shall be removed completely and promptly upon discontinuation of their useful purpose. Navigational lights, signals, or facilities shall be provided and maintained by the Contractor on temporary or permanent construction or vessels until such facilities are no longer needed as determined by the Engineer or permitting agency. **See Boater Safety Plan for additional requirements.**

The Contractor shall immediately notify the appropriate authorities and take corrective measures as needed when any situation occurs that imposes a threat to the public. The Contractor shall also immediately correct any acts or occurrences that contradict or violate any requirements in the plans, special provisions, or permits when corrective measures can be performed in a safe manner. The Contractor shall notify the appropriate authorities when such corrective measures cannot be performed in a safe manner.

All costs incurred by the Contractor in complying with the above requirements shall be included in the prices bid for the various pay items and no additional payment will be made.

Lake Facility Safety Plan: NC 150 Parallel Bridge Construction, Lake Norman

Introduction

There is an existing steel bridge built in 1961 located on NC 150 over Lake Norman on the Catawba County / Iredell County line near Mooresville. The bridge has an overall length of about 1,100 feet and consists of 10 spans. A new bridge having an overall length of 1,220 feet and consisting of 9 spans will be built parallel to the existing bridge creating dual bridges with one-way traffic on each.

No Wake Zone – there are at least three ‘No Wake’ buoys located no less than 150 feet from the existing bridge. There is one buoy south of the bridge and two buoys to the north of the bridge. All are located between 150 feet and 250 feet of the edges of the existing bridge. For this reason, the engagement of law enforcement officials during the deployment of the boater safety system or the performance of the work is not anticipated.

Perform all work under this plan in accordance with the standard specifications¹ and all other governing federal, state or local regulations.

Scope of Construction Activities

The scope of Construction Activities on the new bridge that are related to boater safety include:

Stage 1 – West End

- Install floating barrier and lighted buoys on western half of bridge crossing to isolate work area
- Install causeway on west end of the new bridge approach
- Construct bents 1 through 5.
- Install girders for spans A through E.
- Install girder bracing components (diaphragms) for spans A through E.
- Install lightweight concrete deck for spans A through E.

Stage 2 – East End

- Move floating barrier and lighted buoys to eastern half of bridge crossing to isolate work area
- Install causeway on east end of the new bridge approach
- Construct bents 6 through 8.
- Install girders for spans F through I.
- Install girder bracing components (diaphragms) for spans F through I.
- Install lightweight concrete deck for spans F through I.

Access

Access to the bridge for construction workers and equipment will be by barges situated on Lake Norman or from the new bridge. All barge activity will be reviewed by NCDOT and must be approved prior to beginning construction. Access to Lake Norman by construction crews and equipment will be onto a

barge via a public or private boat launch. The barge will be approximately 40 feet by 40 feet in size. Work skiffs will shuttle construction workers as needed.

No impact to shorelines is expected. Additionally, there will be no impacts or access restrictions to the existing skimmer facility on the west side of the lake in the proximity of proposed bridge.

Bridge Construction Items

- All debris generated by construction will be contained and at no time will it be dropped into the lake water. Construction areas will be closed off from boating access for duration of construction activities.
- The Contractor will protect all utility lines or mains which may be supported on, under or adjacent to bridge work sites from damage. There is a water main attached to the north side of the existing NC 150 bridge.

Operational Safety Methods

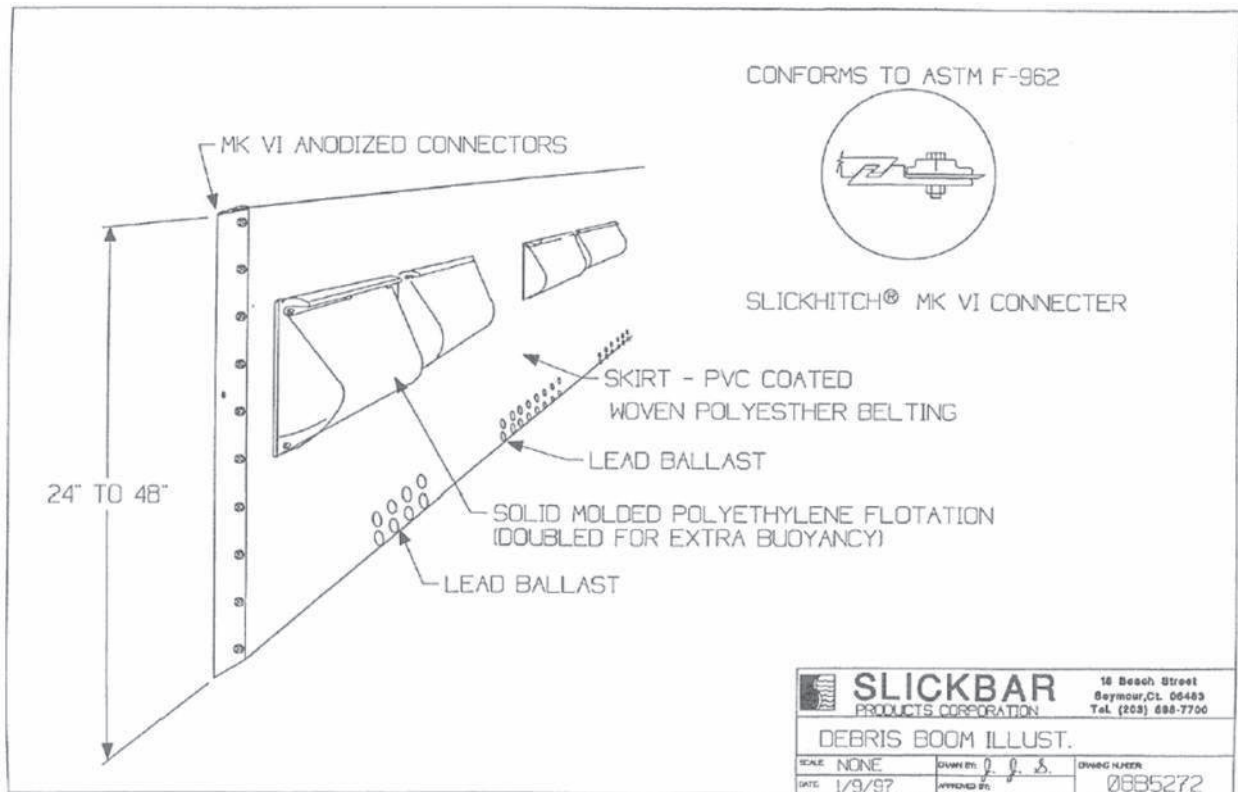
- All parts of the existing bridge, and the traveling public including boaters, will be protected from new bridge construction activities.
- Work Plan – No work will begin until the Contractor furnishes the NCDOT Resident Engineer with a work plan for construction and the Engineer has accepted the plan.
- All activities will follow OSHA requirements².

Boater Safety System

The active construction areas will be restricted, and advisory information provided to the Lake Norman Marine Commission for distribution to all of its members. Each boat launch will also have placards displayed at the loading areas informing boaters of the restrictions to the waterway access under the bridge. The placards will be displayed a minimum of two weeks prior to the installation of the floating barricade system and the associated work to be performed on the structure. The information and placards will provide contact numbers for various entities – the contractor, NCDOT and the US Fish and Wildlife Service so that the public can make inquiries or report damage, vandalism or operational problems with the system.

All work areas proposed for the project will be protected by a floating barrier marked with flashing warning lights as described below.

- Debris Shield Curtain – a bright orange-colored debris shield will be deployed to protect the work areas. The proposed work areas and plans depicting the sequencing are attached. Below is a section of the product to be utilized for the barricade.



- Lighting – solar powered LED marine safety lights will be placed atop the barricade buoys (see image to the right) and will be spaced no more than 50 feet apart along the top of the barricade which will enclose the proposed maintenance activity. The lights will be placed a minimum of 2 feet above the water line to provide a visual barrier both day and night. These solar marine lights help protect boaters during the early morning and late afternoon/early evening hours or when cloud cover reduces visibility for boaters. The marine safety lights provide visibility in flashing mode up to one nautical mile, according to the distributor. They can be set for ‘steady on’ or ‘in flash’ mode at a rate of one flash per second. They can be seen no matter the boaters position or if not mounted perfectly level or if the buoy is bobbing or swaying. All routine maintenance activity for the barricade system is restricted to occur only between 6:00 am and 7:00 pm. Emergency repairs to the boater safety system will be made as needed, anytime 24 hours per day / any day of the week.



- Mooring requirements - When utilizing barges, tugboats or other vessels, the Contractor will take all necessary precautions to ensure that such vessels are securely anchored or moored when not in active operation and to contain the vessels within the encapsulated work area. The contractor will also take all necessary measures to ensure that the vessels are operated in a manner that avoids damage to or unnecessary contact with bridges, boaters and other highway structures and attachments within the containment area. If severe weather conditions are anticipated, or should be anticipated through reasonable monitoring of weather forecasts, the contractor shall take additional measures to adequately moor the vessel within the containment area during the extreme conditions. Vessel will be secured per Section 107 of the NCDOT Standard Specifications¹.

Deployment of the Boater Safety System – the debris shield and lighted buoys will be put into place prior to the commencement of any work on the structure and moved periodically, as needed, to protect boaters from the construction activities. Deployment and redeployment will occur during daylight hours. The operation will occur from a barge and or a work skiff.

All deployment will be staged to prevent boater entrapment. The staging will progress such that work will start on the deployment and will continue each successive day until such time as the work area is protected. All construction activities on the staged work will be halted until such time as the containment barricade is in place and all work activities are adequately contained. All barricade lights will be operational as soon as the barricade is deployed in the water. The lights will be inspected daily and repaired immediately.

Staging Plan

Figure 1 shows the first stage of activity. Stage 1 will occur on the west end of the bridge, entirely within Catawba County. The red line on Figure 1, which is entirely in the water, shows an outline of the debris shield. Boaters will pass under the east end of the existing bridge.

Figure 2 shows the new bridge area of the second stage of activity. Stage 2 will occur on the east end of the bridge in Catawba and Iredell Counties. The red line on Figure 2, which is entirely in the water, shows an outline of the debris shield. Boaters will pass under the west end of the bridge. De-mobilization to remove all equipment and material will occur at the end of this period.

Figure 3 shows the road construction area of the second stage of activity. A new roadway section will be built in Iredell County that leads to the new bridge. The red line on Figure 3, which is entirely in the water, shows an outline of the debris shield. De-mobilization to remove all equipment and material will occur at the end of this period.

Schedule - (tentative)

A phased-approach is described below, dates to be determined:

Stage	Likely Start Date	Anticipated End Date	Activity
0			Procure materials
1			Stage 1(See Figure 1)
2			Stage 2 (See Figure 2 and 3)
Notes: <ul style="list-style-type: none"> • Time restrictions (boaters or construction): <ul style="list-style-type: none"> ○ Under the bridge deck: none (operations can occur 24 hours per day / 7 days per week) ○ Boater Safety System – operational throughout the project ○ Repairs – as needed, anytime 24 hours per day / 7 days per week ○ All routine maintenance of boater safety system to occur between 6:00 AM and 7:00 PM 			

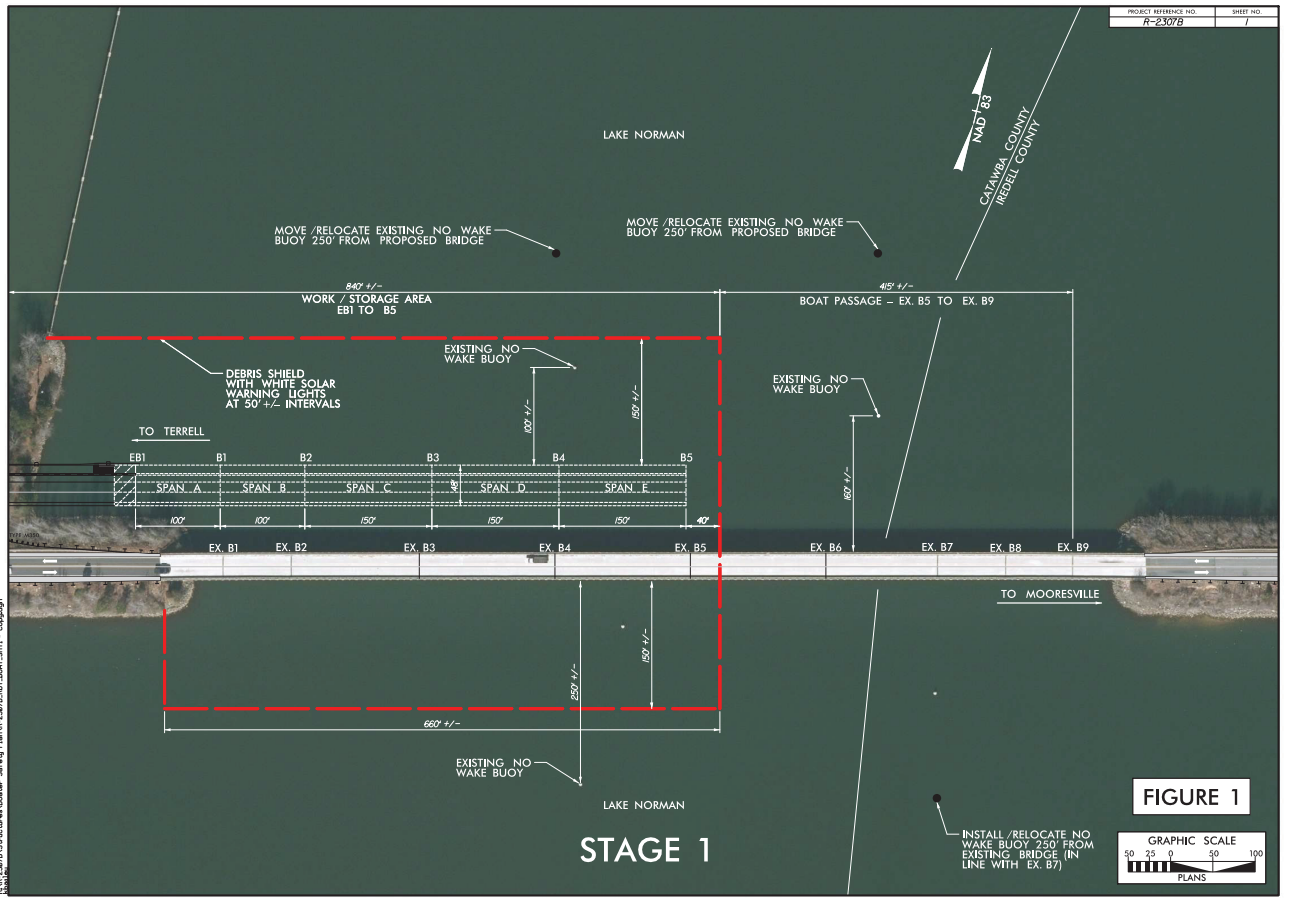
Other Considerations:

- Staging area for contractors' equipment / materials – will be located on Duke Energy property along Harvell Road. Harvell Road is approximately 0.5 miles west along NC 150 from end of bridge.

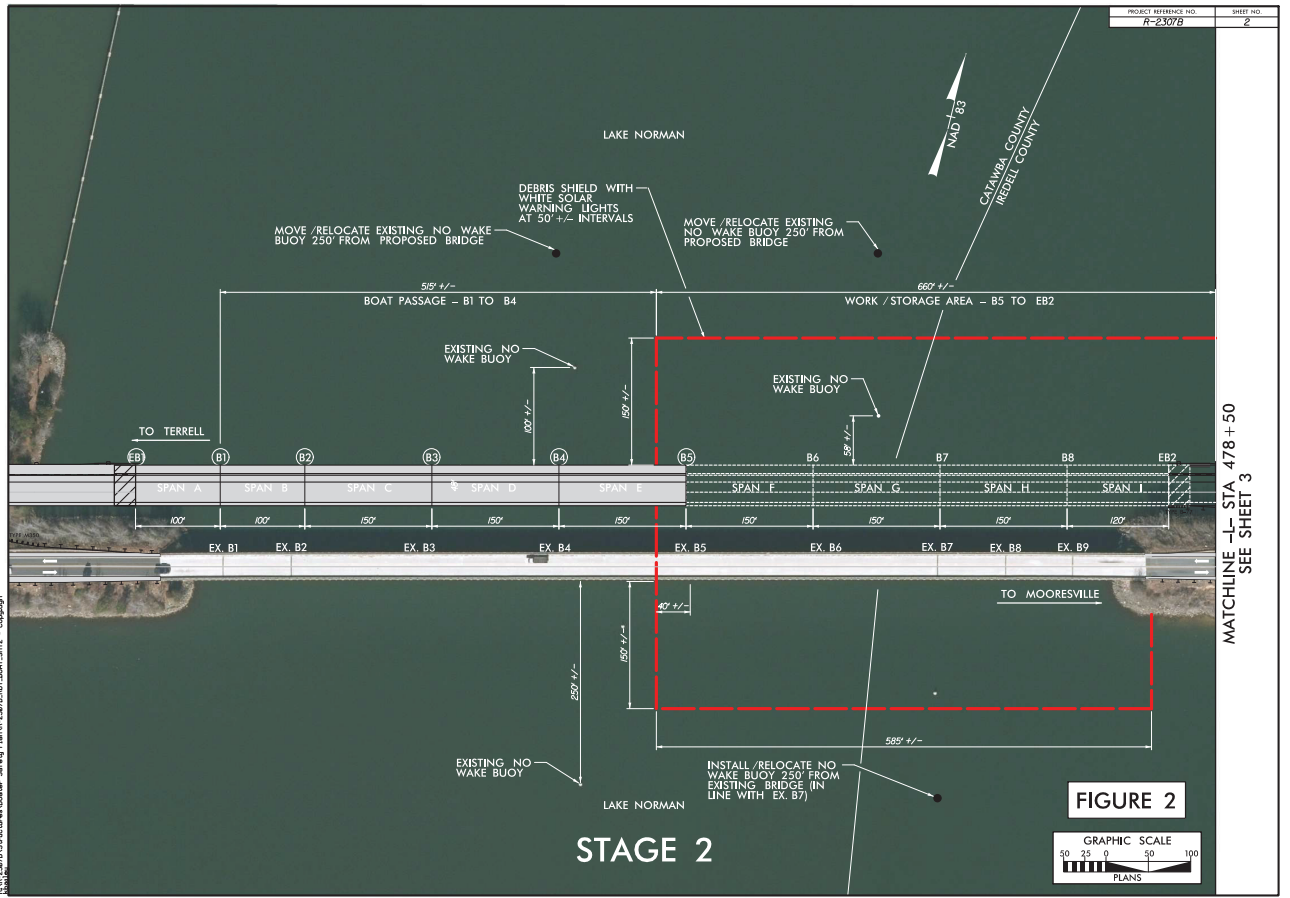
Standards

¹ NCDOT Standard Specifications for Roads and Structures, January 2024.

² Occupational Safety and Health Act (OSHA 29-CFR 1910-1926)



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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	3



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County: IREDELL, CATAWBA

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
ROADWAY ITEMS						
0001	0000100000-N	800	MOBILIZATION	Lump Sum	L.S.	
0002	0000400000-N	801	CONSTRUCTION SURVEYING	Lump Sum	L.S.	
0004	0001000000-E	200	CLEARING & GRUBBING .. ACRE(S)	Lump Sum	L.S.	
0005	0008000000-E	200	SUPPLEMENTARY CLEARING & GRUBBING	3 ACR		
0006	0015000000-N	205	SEALING ABANDONED WELLS	1 EA		
0007	0022000000-E	225	UNCLASSIFIED EXCAVATION	205,000 CY		
0008	0036000000-E	225	UNDERCUT EXCAVATION	31,000 CY		
0009	0106000000-E	230	BORROW EXCAVATION	380,000 CY		
0010	0134000000-E	240	DRAINAGE DITCH EXCAVATION	2,840 CY		
0011	0141000000-E	240	BERM DITCH CONSTRUCTION	140 LF		
0012	0156000000-E	250	REMOVAL OF EXISTING ASPHALT PAVEMENT	62,300 SY		
0013	0177000000-E	250	BREAKING OF EXISTING ASPHALT PAVEMENT	7,450 SY		
0014	0192000000-N	260	PROOF ROLLING	50 HR		
0015	0195000000-E	265	SELECT GRANULAR MATERIAL	18,900 CY		
0016	0196000000-E	270	GEOTEXTILE FOR SOIL STABILIZATION	15,300 SY		
0017	0199000000-E	SP	TEMPORARY SHORING	24,800 SF		
0018	0222000000-E	SP	GEOTEXTILE FOR ROCK EMBANKMENTS	19,800 SY		

County: IREDELL, CATAWBA

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0019	0223000000-E	275	ROCK PLATING	4,300 SY		
0020	0234000000-E	SP	GENERIC GRADING ITEM FILTRATION BASIN MEDIA	857 CY		
0021	0241000000-E	SP	GENERIC GRADING ITEM GEOTEXTILE FOR EMBANKMENT STABILIZATION	3,200 SY		
0022	0248000000-N	SP	GENERIC GRADING ITEM TYPE 1 BRIDGE APPROACH FILL, STA 471+85.00 -L-	Lump Sum	L.S.	
0023	0248000000-N	SP	GENERIC GRADING ITEM TYPE 2 BRIDGE APPROACH FILL, STA 733+32.53 -L-	Lump Sum	L.S.	
0024	0255000000-E	SP	GENERIC GRADING ITEM HAULING AND DISPOSAL OF COAL ASH CONTAMINATED MATERIAL	250 TON		
0025	0255000000-E	SP	GENERIC GRADING ITEM HAULING AND DISPOSAL OF PETROLEUM CONTAMINATED SOIL	150 TON		
0026	0255000000-E	SP	GENERIC GRADING ITEM WASHED #57 STONE	242 TON		
0027	0314000000-E	SP	SELECT MATERIAL, CLASS ***** (VI)	17,750 TON		
0028	0314000000-E	SP	SELECT MATERIAL, CLASS ***** (VII)	207,200 TON		
0029	0318000000-E	300	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES	8,310 TON		
0030	0321000000-E	300	FOUNDATION CONDITIONING GEOTEXTILE	26,110 SY		
0031	0342000000-E	310	*** SIDE DRAIN PIPE (12")	96 LF		
0032	0342000000-E	310	*** SIDE DRAIN PIPE (30")	1,400 LF		
0033	0342000000-E	310	*** SIDE DRAIN PIPE (36")	56 LF		
0034	0342000000-E	310	*** SIDE DRAIN PIPE (42")	76 LF		

County: IREDELL, CATAWBA

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0035	0342000000-E	310	*** SIDE DRAIN PIPE (48")	52 LF		
0036	0343000000-E	310	15" SIDE DRAIN PIPE	3,912 LF		
0037	0344000000-E	310	18" SIDE DRAIN PIPE	1,820 LF		
0038	0345000000-E	310	24" SIDE DRAIN PIPE	1,288 LF		
0039	0366000000-E	310	15" RC PIPE CULVERTS, CLASS III	564 LF		
0040	0378000000-E	310	24" RC PIPE CULVERTS, CLASS III	236 LF		
0041	0384000000-E	310	30" RC PIPE CULVERTS, CLASS III	148 LF		
0042	0390000000-E	310	36" RC PIPE CULVERTS, CLASS III	324 LF		
0043	0402000000-E	310	48" RC PIPE CULVERTS, CLASS III	144 LF		
0044	0448000000-E	310	***** RC PIPE CULVERTS, CLASS IV (60")	292 LF		
0045	0448000000-E	310	***** RC PIPE CULVERTS, CLASS IV (78")	36 LF		
0046	0448200000-E	310	15" RC PIPE CULVERTS, CLASS IV	42,860 LF		
0047	0448300000-E	310	18" RC PIPE CULVERTS, CLASS IV	11,704 LF		
0048	0448400000-E	310	24" RC PIPE CULVERTS, CLASS IV	7,640 LF		
0049	0448500000-E	310	30" RC PIPE CULVERTS, CLASS IV	3,728 LF		
0050	0448600000-E	310	36" RC PIPE CULVERTS, CLASS IV	988 LF		
0051	0536000000-E	310	*** HDPE PIPE CULVERTS (6")	108 LF		

County: IREDELL, CATAWBA

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0052	0576000000-E	310	*** CS PIPE CULVERTS, ***** THICK (36", 0.079")	252 LF		
0053	0576000000-E	310	*** CS PIPE CULVERTS, ***** THICK (42", 0.109")	40 LF		
0054	0582000000-E	310	15" CS PIPE CULVERTS, 0.064" THICK	316 LF		
0055	0588000000-E	310	18" CS PIPE CULVERTS, 0.064" THICK	88 LF		
0056	0594000000-E	310	24" CS PIPE CULVERTS, 0.064" THICK	172 LF		
0057	0600000000-E	310	30" CS PIPE CULVERTS, 0.079" THICK	116 LF		
0058	0636000000-E	310	*** CS PIPE ELBOWS, ***** THICK (15", 0.064")	2 EA		
0059	0636000000-E	310	*** CS PIPE ELBOWS, ***** THICK (18", 0.064")	1 EA		
0060	0636000000-E	310	*** CS PIPE ELBOWS, ***** THICK (24", 0.064")	2 EA		
0061	0636000000-E	310	*** CS PIPE ELBOWS, ***** THICK (30", 0.079")	2 EA		
0062	0636000000-E	310	*** CS PIPE ELBOWS, ***** THICK (36", 0.079")	2 EA		
0063	0986000000-E	SP	GENERIC PIPE ITEM PERFORATED HDPE PIPE	498 LF		
0064	0995000000-E	340	PIPE REMOVAL	23,817 LF		
0065	1011000000-N	500	FINE GRADING	Lump Sum	L.S.	
0066	1044000000-E	501	LIME TREATED SOIL (SLURRY METHOD)	66,570 SY		
0067	1066000000-E	501	LIME FOR LIME TREATED SOIL	800 TON		
0068	1099500000-E	505	SHALLOW UNDERCUT	2,500 CY		

County: IREDELL, CATAWBA

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0069	1099700000-E	505	CLASS IV SUBGRADE STABILIZATION	50,700 TON		
0070	1110000000-E	510	STABILIZER AGGREGATE	500 TON		
0071	1112000000-E	505	GEOTEXTILE FOR SUBGRADE STABILIZATION	128,000 SY		
0072	1121000000-E	520	AGGREGATE BASE COURSE	11,050 TON		
0073	1176000000-E	542	SOIL CEMENT BASE	66,570 SY		
0074	1187000000-E	542	PORTLAND CEMENT FOR SOIL CEMENT BASE	1,865 TON		
0075	1209000000-E	543	ASPHALT CURING SEAL	19,980 GAL		
0076	1220000000-E	545	INCIDENTAL STONE BASE	6,000 TON		
0077	1297000000-E	607	MILLING ASPHALT PAVEMENT, **** DEPTH (2-1/2")	44,570 SY		
0078	1297000000-E	607	MILLING ASPHALT PAVEMENT, **** DEPTH (3")	7,200 SY		
0079	1330000000-E	607	INCIDENTAL MILLING	8,360 SY		
0080	1491000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0C	121,630 TON		
0081	1503000000-E	610	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C	76,940 TON		
0082	1519000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	7,330 TON		
0083	1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	53,830 TON		
0084	1524200000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5D	390 TON		
0085	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	12,820 TON		

County: IREDELL, CATAWBA

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0086	1577000000-E	620	POLYMER MODIFIED ASPHALT BINDER FOR PLANT MIX	25 TON		
0087	1693000000-E	654	ASPHALT PLANT MIX, PAVEMENT REPAIR	12,154 TON		
0088	1840000000-E	665	MILLED RUMBLE STRIPS (ASPHALT CONCRETE)	1,620 LF		
0089	2022000000-E	815	SUBDRAIN EXCAVATION	336 CY		
0090	2026000000-E	815	GEOTEXTILE FOR SUBSURFACE DRAINS	1,000 SY		
0091	2036000000-E	815	SUBDRAIN COARSE AGGREGATE	168 CY		
0092	2044000000-E	815	6" PERFORATED SUBDRAIN PIPE	1,000 LF		
0093	2070000000-N	815	SUBDRAIN PIPE OUTLET	2 EA		
0094	2077000000-E	815	6" OUTLET PIPE	12 LF		
0095	2143000000-E	818	BLOTTING SAND	35 TON		
0096	2209000000-E	838	ENDWALLS	11.3 CY		
0097	2220000000-E	838	REINFORCED ENDWALLS	11.2 CY		
0098	2253000000-E	840	PIPE COLLARS	16.307 CY		
0099	2264000000-E	840	PIPE PLUGS	5.112 CY		
0100	2275000000-E	SP	FLOWABLE FILL	52 CY		
0101	2286000000-N	840	MASONRY DRAINAGE STRUCTURES	899 EA		
0102	2297000000-E	840	MASONRY DRAINAGE STRUCTURES	14.3 CY		

County: IREDELL, CATAWBA

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0103	2308000000-E	840	MASONRY DRAINAGE STRUCTURES	521.1 LF		
0104	2352000000-N	840	FRAME WITH GRATE, STD 840.**** (840.20)	1 EA		
0105	2354200000-N	840	FRAME WITH GRATE, STD 840.24	1 EA		
0106	2364000000-N	840	FRAME WITH TWO GRATES, STD 840.16	173 EA		
0107	2364200000-N	840	FRAME WITH TWO GRATES, STD 840.20	23 EA		
0108	2365000000-N	840	FRAME WITH TWO GRATES, STD 840.22	9 EA		
0109	2366000000-N	840	FRAME WITH TWO GRATES, STD 840.24	83 EA		
0110	2367000000-N	840	FRAME WITH TWO GRATES, STD 840.29	21 EA		
0111	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)	85 EA		
0112	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)	232 EA		
0113	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)	238 EA		
0114	2396000000-N	840	FRAME WITH COVER, STD 840.54	24 EA		
0115	2418000000-E	SP	FRAME WITH GRATES, DRIVEWAY DROP INLET	144 LF		
0116	2440000000-N	852	CONCRETE TRANSITIONAL SECTION FOR CATCH BASIN	6 EA		
0117	2451000000-N	852	CONCRETE TRANSITIONAL SECTION FOR DROP INLET	172 EA		
0118	2462000000-E	836	*** SLUICE GATE (36")	1 EA		
0119	2462000000-E	836	*** SLUICE GATE (42")	1 EA		

County: IREDELL, CATAWBA

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0120	2489000000-E	SP	GENERIC DRAINAGE ITEM POLYPROPYLENE NONWOVEN GEOTEXTILE FABRIC	1,678 SY		
0121	2495000000-E	SP	GENERIC DRAINAGE ITEM CONCRETE FILL IN RISER	5.7 CY		
0122	2535000000-E	846	*** X *** CONCRETE CURB (8" X 18")	2,690 LF		
0123	2538000000-E	846	**_*_*_* CONCRETE CURB & GUTTER (2'-0")	1,240 LF		
0124	2538000000-E	846	**_*_*_* CONCRETE CURB & GUTTER (2'-9")	3,270 LF		
0125	2542000000-E	846	1'-6" CONCRETE CURB & GUTTER	32,730 LF		
0126	2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	74,600 LF		
0127	2556000000-E	846	SHOULDER BERM GUTTER	555 LF		
0128	2577000000-E	846	CONCRETE EXPRESSWAY GUTTER	380 LF		
0129	2591000000-E	848	4" CONCRETE SIDEWALK	21,270 SY		
0130	2605000000-N	848	CONCRETE CURB RAMPS	300 EA		
0131	2612000000-E	848	6" CONCRETE DRIVEWAY	1,050 SY		
0132	2619000000-E	850	4" CONCRETE PAVED DITCH	330 SY		
0133	2627000000-E	852	4" CONCRETE ISLAND COVER	92 SY		
0134	2655000000-E	852	5" MONOLITHIC CONCRETE ISLANDS (KEYED IN)	20,270 SY		
0135	2710000000-N	854	CONCRETE BARRIER TRANSITION SECTION	4 EA		
0136	2717000000-E	854	VARIABLE HEIGHT CONCRETE BARRIER, TYPE ***** (III)	2,200 LF		

County: IREDELL, CATAWBA

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0137	2717200000-E	854	MEDIAN HAZARD PROTECTION	170 LF		
0138	2724000000-E	857	PRECAST REINFORCED CONCRETE BARRIER, SINGLE FACED	580 LF		
0139	2800000000-N	858	ADJUSTMENT OF CATCH BASINS	10 EA		
0140	2830000000-N	858	ADJUSTMENT OF MANHOLES	3 EA		
0141	2860000000-N	859	CONVERT EXISTING CATCH BASIN TO JUNCTION BOX	3 EA		
0142	2905000000-N	859	CONVERT EXISTING DROP INLET TO JUNCTION BOX	7 EA		
0143	2920000000-N	859	CONVERT EXISTING DROP INLET TO CATCH BASIN	1 EA		
0144	3001000000-N	SP	IMPACT ATTENUATOR UNITS, TYPE TL-3	3 EA		
0145	3030000000-E	862	STEEL BEAM GUARDRAIL	14,225 LF		
0146	3045000000-E	862	STEEL BEAM GUARDRAIL, SHOP CURVED	675 LF		
0147	3105000000-N	862	STEEL BEAM GUARDRAIL TERMINAL SECTIONS	6 EA		
0148	3145000000-E	862	EXTRA LENGTH GUARDRAIL POST (***) (8')	105 EA		
0149	3150000000-N	862	ADDITIONAL GUARDRAIL POSTS	30 EA		
0150	3195000000-N	862	GUARDRAIL END UNITS, TYPE AT-1	5 EA		
0151	3210000000-N	862	GUARDRAIL END UNITS, TYPE CAT-1	41 EA		
0152	3215000000-N	862	GUARDRAIL ANCHOR UNITS, TYPE III	4 EA		
0153	3287000000-N	862	GUARDRAIL END UNITS, TYPE TL-3	44 EA		

County: IREDELL, CATAWBA

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0154	3317000000-N	862	GUARDRAIL ANCHOR UNITS, TYPE B-77	3 EA		
0155	3345000000-E	864	REMOVE & RESET EXISTING GUARDRAIL	400 LF		
0156	3360000000-E	863	REMOVE EXISTING GUARDRAIL	8,900 LF		
0157	3503000000-E	866	WOVEN WIRE FENCE, 47" FABRIC	2,820 LF		
0158	3509000000-E	866	4" TIMBER FENCE POSTS, 7'-6" LONG	165 EA		
0159	3515000000-E	866	5" TIMBER FENCE POSTS, 8'-0" LONG	67 EA		
0160	3533000000-E	866	CHAIN LINK FENCE, *** FABRIC (60")	300 LF		
0161	3533000000-E	866	CHAIN LINK FENCE, *** FABRIC (96")	900 LF		
0162	3536000000-E	866	CHAIN LINK FENCE, 48" FABRIC	6,500 LF		
0163	3539000000-E	866	METAL LINE POSTS FOR *** CHAIN LINK FENCE (60")	30 EA		
0164	3539000000-E	866	METAL LINE POSTS FOR *** CHAIN LINK FENCE (96")	80 EA		
0165	3542000000-E	866	METAL LINE POSTS FOR 48" CHAIN LINK FENCE	560 EA		
0166	3545000000-E	866	METAL TERMINAL POSTS FOR *** CHAIN LINK FENCE (60")	4 EA		
0167	3545000000-E	866	METAL TERMINAL POSTS FOR *** CHAIN LINK FENCE (96")	2 EA		
0168	3548000000-E	866	METAL TERMINAL POSTS FOR 48" CHAIN LINK FENCE	40 EA		
0169	3554000000-E	866	METAL GATE POSTS FOR *** CHAIN LINK FENCE, DOUBLE GATE (48")	14 EA		

County: IREDELL, CATAWBA

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0170	3554000000-E	866	METAL GATE POSTS FOR *** CHAIN LINK FENCE, DOUBLE GATE (60")	2 EA		
0171	3565000000-E	866	DOUBLE GATES, *** HIGH, *** WIDE, *** OPENING (48", 6', 12')	7 EA		
0172	3565000000-E	866	DOUBLE GATES, *** HIGH, *** WIDE, *** OPENING (60", 6', 12')	1 EA		
0173	3575000000-E	SP	GENERIC FENCING ITEM PEDESTRIAN SAFETY RAIL	5,275 LF		
0174	3628000000-E	876	RIP RAP, CLASS I	1,640 TON		
0175	3635000000-E	876	RIP RAP, CLASS II	200 TON		
0176	3642000000-E	876	RIP RAP, CLASS A	6,450 TON		
0177	3649000000-E	876	RIP RAP, CLASS B	13,600 TON		
0178	3656000000-E	876	GEOTEXTILE FOR DRAINAGE	15,370 SY		
0179	4048000000-E	902	REINFORCED CONCRETE SIGN FOUNDATIONS	6 CY		
0180	4057000000-E	SP	OVERHEAD FOOTING	333 CY		
0181	4060000000-E	903	SUPPORTS, BREAKAWAY STEEL BEAM	5,513 LB		
0182	4072000000-E	903	SUPPORTS, 3-LB STEEL U-CHANNEL	11,250 LF		
0183	4096000000-N	904	SIGN ERECTION, TYPE D	8 EA		
0184	4102000000-N	904	SIGN ERECTION, TYPE E	716 EA		
0185	4108000000-N	904	SIGN ERECTION, TYPE F	65 EA		

County: IREDELL, CATAWBA

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0186	4110000000-N	904	SIGN ERECTION, TYPE *** (GROUND MOUNTED) (A)	4 EA		
0187	4114000000-N	904	SIGN ERECTION, MILEMARKERS	2 EA		
0188	4116100000-N	904	SIGN ERECTION, RELOCATE TYPE **** (GROUND MOUNTED) (A)	8 EA		
0189	4116100000-N	904	SIGN ERECTION, RELOCATE TYPE **** (GROUND MOUNTED) (B)	4 EA		
0190	4116100000-N	904	SIGN ERECTION, RELOCATE TYPE **** (GROUND MOUNTED) (D)	3 EA		
0191	4116100000-N	904	SIGN ERECTION, RELOCATE TYPE **** (GROUND MOUNTED) (E)	21 EA		
0192	4116100000-N	904	SIGN ERECTION, RELOCATE TYPE **** (GROUND MOUNTED) (F)	2 EA		
0193	4116100000-N	904	SIGN ERECTION, RELOCATE TYPE **** (GROUND MOUNTED) (LOGO TRAILBLAZER)	7 EA		
0194	4130000000-N	906	SUPPORTS, OVERHEAD SIGN STRUCTURE ***** (13+00 -Y23-)	Lump Sum	L.S.	
0195	4130000000-N	906	SUPPORTS, OVERHEAD SIGN STRUCTURE ***** (14+32 -Y40-)	Lump Sum	L.S.	
0196	4130000000-N	906	SUPPORTS, OVERHEAD SIGN STRUCTURE ***** (14+97 -Y17-)	Lump Sum	L.S.	
0197	4130000000-N	906	SUPPORTS, OVERHEAD SIGN STRUCTURE ***** (16+55 -Y31RPC-)	Lump Sum	L.S.	
0198	4130000000-N	906	SUPPORTS, OVERHEAD SIGN STRUCTURE ***** (17+03 -Y31RPA-)	Lump Sum	L.S.	
0199	4130000000-N	906	SUPPORTS, OVERHEAD SIGN STRUCTURE ***** (22+88 -Y16-)	Lump Sum	L.S.	

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0200	4130000000-N	906	SUPPORTS, OVERHEAD SIGN STRUCTURE ***** (609+50 -L-)	Lump Sum	L.S.	
0201	4130000000-N	906	SUPPORTS, OVERHEAD SIGN STRUCTURE ***** (698+45 -L-)	Lump Sum	L.S.	
0202	4130000000-N	906	SUPPORTS, OVERHEAD SIGN STRUCTURE ***** (712+77 -L-)	Lump Sum	L.S.	
0203	4130000000-N	906	SUPPORTS, OVERHEAD SIGN STRUCTURE ***** (728+23 -L-)	Lump Sum	L.S.	
0204	4130000000-N	906	SUPPORTS, OVERHEAD SIGN STRUCTURE ***** (731+90 -L-)	Lump Sum	L.S.	
0205	4130000000-N	906	SUPPORTS, OVERHEAD SIGN STRUCTURE ***** (734+85 -L-)	Lump Sum	L.S.	
0206	4130000000-N	906	SUPPORTS, OVERHEAD SIGN STRUCTURE ***** (739+32 -L-)	Lump Sum	L.S.	
0207	4130000000-N	906	SUPPORTS, OVERHEAD SIGN STRUCTURE ***** (786+50 -L-)	Lump Sum	L.S.	
0208	4130000000-N	906	SUPPORTS, OVERHEAD SIGN STRUCTURE ***** (796+89 -L-)	Lump Sum	L.S.	
0209	4138000000-N	907	DISPOSAL OF SUPPORT, STEEL BEAM	16 EA		
0210	4155000000-N	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	251 EA		
0211	4192000000-N	907	DISPOSAL OF SUPPORT, U-CHANNEL	30 EA		
0212	4237000000-N	907	STOCKPILE SIGN, D, E OR F	13 EA		
0213	4400000000-E	1110	WORK ZONE SIGNS (STATIONARY)	2,208 SF		
0214	4405000000-E	1110	WORK ZONE SIGNS (PORTABLE)	624 SF		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0215	4410000000-E	1110	WORK ZONE SIGNS (BARRICADE MOUNTED)	300 SF		
0216	4415000000-N	1115	FLASHING ARROW BOARD	4 EA		
0217	4420000000-N	1120	PORTABLE CHANGEABLE MESSAGE SIGN	6 EA		
0218	4430000000-N	1130	DRUMS	1,100 EA		
0219	4434000000-N	1140	SEQUENTIAL FLASHING WARNING LIGHTS	50 EA		
0220	4435000000-N	1135	CONES	150 EA		
0221	4445000000-E	1145	BARRICADES (TYPE III)	720 LF		
0222	4455000000-N	1150	FLAGGER	1,380 DAY		
0223	4465000000-N	1160	TEMPORARY CRASH CUSHIONS	13 EA		
0224	4470000000-N	1160	REMOVE & RESET TEMPORARY CRASH CUSHION	10 EA		
0225	4485000000-E	1170	PORTABLE CONCRETE BARRIER	3,800 LF		
0226	4490000000-E	1170	PORTABLE CONCRETE BARRIER (ANCHORED)	2,500 LF		
0227	4500000000-E	1170	REMOVE AND RESET PORTABLE CONCRETE BARRIER	2,500 LF		
0228	4505000000-E	1170	REMOVE & RESET PORTABLE CONCRETE BARRIER (ANCHORED)	3,800 LF		
0229	4510000000-N	1190	LAW ENFORCEMENT	1,080 HR		
0230	4590000000-E	SP	GENERIC TRAFFIC CONTROL ITEM PEDESTRIAN CHANNELIZING DEVICES	80 LF		
0231	4595000000-E	SP	GENERIC TRAFFIC CONTROL ITEM HIGH VISIBILITY PORTABLE SIGNS	256 SF		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0232	4600000000-N	SP	GENERIC TRAFFIC CONTROL ITEM AUDIBLE WARNING DEVICES	8 EA		
0233	4600000000-N	SP	GENERIC TRAFFIC CONTROL ITEM CONNECTED LANE CLOSURE SYSTEM	2 EA		
0234	4600000000-N	SP	GENERIC TRAFFIC CONTROL ITEM HIGH VISIBILITY DRUMS	150 EA		
0235	4600000000-N	SP	GENERIC TRAFFIC CONTROL ITEM TEMPORARY CURB RAMPS	2 EA		
0236	4650000000-N	1251	TEMPORARY RAISED PAVEMENT MARKERS	4,243 EA		
0237	4685000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	250 LF		
0238	4695000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)	7,500 LF		
0239	4700000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (12", 90 MILS)	4,300 LF		
0240	4709000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (24", 90 MILS)	6,025 LF		
0241	4720000000-E	1205	THERMOPLASTIC PAVEMENT MARKING CHARACTER (90 MILS)	193 EA		
0242	4725000000-E	1205	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	693 EA		
0243	4726100000-E	1205	HEATED-IN-PLACE THERMOPLASTIC PAVEMENT MARKING CHARACTER (120 MILS)	22 EA		
0244	4726110000-E	1205	HEATED-IN-PLACE THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	152 EA		
0245	4770000000-E	1205	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (IV)	6,800 LF		
0246	4780000000-E	1205	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (8") (IV)	400 LF		
0247	4800000000-N	1205	COLD APPLIED PLASTIC PAVEMENT MARKING CHARACTER, TYPE ** (IV)	8 EA		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0248	4805000000-N	1205	COLD APPLIED PLASTIC PAVEMENT MARKING SYMBOL, TYPE ** (IV)	24 EA		
0249	4810000000-E	1205	PAINT PAVEMENT MARKING LINES (4")	374,538 LF		
0250	4815000000-E	1205	PAINT PAVEMENT MARKING LINES (6")	9,600 LF		
0251	4820000000-E	1205	PAINT PAVEMENT MARKING LINES (8")	14,905 LF		
0252	4835000000-E	1205	PAINT PAVEMENT MARKING LINES (24")	9,006 LF		
0253	4840000000-N	1205	PAINT PAVEMENT MARKING CHARACTER	102 EA		
0254	4845000000-N	1205	PAINT PAVEMENT MARKING SYMBOL	592 EA		
0255	4846000000-E	1205	POLYUREA PAVEMENT MARKING LINES (**, ** MILS) (12", 30 MILS)	265 LF		
0256	4846000000-E	1205	POLYUREA PAVEMENT MARKING LINES (**, ** MILS) (4", 30 MILS)	208,000 LF		
0257	4846000000-E	1205	POLYUREA PAVEMENT MARKING LINES (**, ** MILS) (6", 30 MILS)	6,000 LF		
0258	4846000000-E	1205	POLYUREA PAVEMENT MARKING LINES (**, ** MILS) (8", 30 MILS)	28,500 LF		
0259	4847300000-N	1205	IN LANE ROUTE SHIELDS	8 EA		
0260	4850000000-E	1205	REMOVAL OF PAVEMENT MARKING LINES (4")	11,550 LF		
0261	4855000000-E	1205	REMOVAL OF PAVEMENT MARKING LINES (6")	50 LF		
0262	4860000000-E	1205	REMOVAL OF PAVEMENT MARKING LINES (8")	795 LF		
0263	4870000000-E	1205	REMOVAL OF PAVEMENT MARKING LINES (24")	125 LF		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0264	4875000000-N	1205	REMOVAL OF PAVEMENT MARKING SYMBOLS & CHARACTERS	22 EA		
0265	4890000000-E	SP	GENERIC PAVEMENT MARKING ITEM YIELD LINE THERMOPLASTIC PAVEMENT MARKING (24", 90 MILS)	60 LF		
0266	4900000000-N	1251	PERMANENT RAISED PAVEMENT MARKERS	30 EA		
0267	5010000000-E	1401	100' HIGH MOUNT STANDARD	4 EA		
0268	5020000000-N	1401	PORTABLE DRIVE UNIT	1 EA		
0269	5025000000-E	SP	HIGH MOUNT FOUNDATIONS	25 CY		
0270	5030000000-N	SP	HIGH MOUNT LUMINAIRES ***** (560W LED)	24 EA		
0271	5050000000-N	1404	LIGHT STANDARDS, TYPE MTLT ***** (45' SA, 15' ARM)	12 EA		
0272	5070000000-N	SP	STANDARD FOUNDATION ***** (TYPE R1)	10 EA		
0273	5070000000-N	SP	STANDARD FOUNDATION ***** (TYPE R2)	2 EA		
0274	5080000000-N	SP	LIGHT STANDARD LUMINAIRES, TYPE ***** (RDW, 285W LED)	12 EA		
0275	5120000000-N	1407	ELECTRIC SERVICE POLE ***** (30' CLASS 4)	1 EA		
0276	5125000000-E	1407	ELECTRIC SERVICE LATERAL ***** (3 #1/0 USE)	25 LF		
0277	5145000000-N	1408	LIGHT CONTROL EQUIPMENT, TYPE RW ***** (240/480 V)	1 EA		
0278	5150000000-E	1409	ELECTRICAL DUCT, TYPE **, SIZE ***** (TL, 3")	595 LF		
0279	5150000000-E	1409	ELECTRICAL DUCT, TYPE **, SIZE ***** (TL, 4")	160 LF		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0280	5155000000-E	1409	ELECTRICAL DUCT, TYPE BD, SIZE ***** (2")	190 LF		
0281	5170000000-E	1410	** #8 W/G FEEDER CIRCUIT (2)	20 LF		
0282	5180000000-E	1410	** #4 W/G FEEDER CIRCUIT (2)	200 LF		
0283	5205000000-E	1410	** #8 W/G FEEDER CIRCUIT IN ***** CONDUIT (2, 1-1/2")	4,943 LF		
0284	5215000000-E	1410	** #4 W/G FEEDER CIRCUIT IN ***** CONDUIT (2, 1-1/2")	2,025 LF		
0285	5240000000-N	1411	ELECTRICAL JUNCTION BOXES ***** (CS36)	1 EA		
0286	5240000000-N	1411	ELECTRICAL JUNCTION BOXES ***** (HM18)	4 EA		
0287	5240000000-N	1411	ELECTRICAL JUNCTION BOXES ***** (IG18)	9 EA		
0288	5240000000-N	1411	ELECTRICAL JUNCTION BOXES ***** (IG36)	2 EA		
0289	5240000000-N	1411	ELECTRICAL JUNCTION BOXES ***** (LS18)	12 EA		
0290	5255000000-N	1413	PORTABLE LIGHTING	Lump Sum	L.S.	
0291	5270000000-N	SP	GENERIC LIGHTING ITEM REMOVE 100' HIGH MAST STANDARD	4 EA		
0292	5270000000-N	SP	GENERIC LIGHTING ITEM REMOVE 100' HIGH MAST STANDARD FOUNDATION	4 EA		
0293	5270000000-N	SP	GENERIC LIGHTING ITEM REMOVE CONTROL SYSTEM - DISPOSE	1 EA		
0294	5270000000-N	SP	GENERIC LIGHTING ITEM REMOVE LIGHT STANDARD FOUNDATION	12 EA		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0295	5270000000-N	SP	GENERIC LIGHTING ITEM REMOVE SINGLE ARM LIGHT STANDARD - DISPOSE	12 EA		
0296	5325600000-E	1510	6" WATER LINE	1,872 LF		
0297	5325800000-E	1510	8" WATER LINE	7,382 LF		
0298	5326200000-E	1510	12" WATER LINE	4,670 LF		
0299	5326600000-E	1510	16" WATER LINE	10,212 LF		
0300	5329000000-E	1510	DUCTILE IRON WATER PIPE FITTINGS	88,000 LB		
0301	5540000000-E	1515	6" VALVE	20 EA		
0302	5546000000-E	1515	8" VALVE	10 EA		
0303	5558000000-E	1515	12" VALVE	2 EA		
0304	5558600000-E	1515	16" VALVE	5 EA		
0305	5563000000-E	1515	*** PLUG VALVE (3")	5 EA		
0306	5563000000-E	1515	*** PLUG VALVE (4")	4 EA		
0307	5563000000-E	1515	*** PLUG VALVE (6")	4 EA		
0308	5563000000-E	1515	*** PLUG VALVE (8")	4 EA		
0309	5571600000-E	1515	6" TAPPING SLEEVE & VALVE	2 EA		
0310	5571800000-E	1515	8" TAPPING SLEEVE & VALVE	10 EA		
0311	5572200000-E	1515	12" TAPPING SLEEVE & VALVE	23 EA		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0312	5572600000-E	1515	16" TAPPING SLEEVE & VALVE	13 EA		
0313	5589200000-E	1515	2" AIR RELEASE VALVE	6 EA		
0314	5606000000-E	1515	2" BLOW OFF	3 EA		
0315	5643100000-E	1515	3/4" WATER METER	1 EA		
0316	5643800000-E	1515	8" WATER METER	1 EA		
0317	5648000000-N	1515	RELOCATE WATER METER	123 EA		
0318	5653000000-E	1515	*** DCV BACKFLOW PREVENTION ASSEMBLY (1")	1 EA		
0319	5653200000-E	1515	2" DCV BACKFLOW PREVENTION ASSEMBLY	1 EA		
0320	5653400000-E	1515	4" DCV BACKFLOW PREVENTION ASSEMBLY	1 EA		
0321	5656000000-E	1515	*** RPZ BACKFLOW PREVENTION ASSEMBLY (1")	24 EA		
0322	5656000000-E	1515	*** RPZ BACKFLOW PREVENTION ASSEMBLY (1-1/2")	9 EA		
0323	5656000000-E	1515	*** RPZ BACKFLOW PREVENTION ASSEMBLY (3/4")	21 EA		
0324	5656200000-E	1515	2" RPZ BACKFLOW PREVENTION ASSEMBLY	6 EA		
0325	5656800000-E	1515	8" RPZ BACKFLOW PREVENTION ASSEMBLY	2 EA		
0326	5666000000-N	1515	FIRE HYDRANT	13 EA		
0327	5672000000-N	1515	RELOCATE FIRE HYDRANT	40 EA		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0328	5673000000-E	1515	FIRE HYDRANT LEG	205 LF		
0329	5686000000-E	1515	*** WATER SERVICE LINE (2")	139 LF		
0330	5686000000-E	1515	*** WATER SERVICE LINE (8")	30 LF		
0331	5686500000-E	1515	WATER SERVICE LINE	673 LF		
0332	5691300000-E	1520	8" SANITARY GRAVITY SEWER	898 LF		
0333	5709000000-E	1520	*** FORCE MAIN SEWER (3")	5,878 LF		
0334	5709200000-E	1520	4" FORCE MAIN SEWER	5,299 LF		
0335	5709300000-E	1520	6" FORCE MAIN SEWER	3,088 LF		
0336	5709400000-E	1520	8" FORCE MAIN SEWER	165 LF		
0337	5768500000-E	1520	SEWER SERVICE LINE	298 LF		
0338	5769000000-E	1520	DUCTILE IRON SEWER PIPE FITTINGS	6,900 LB		
0339	5773000000-N	SP	UTILITY VAULT	1 EA		
0340	5776000000-E	1525	5' DIA UTILITY MANHOLE	7 EA		
0341	5781000000-E	1525	UTILITY MANHOLE WALL 4' DIA	101.64 LF		
0342	5801000000-E	1530	ABANDON 8" UTILITY PIPE	9,180 LF		
0343	5804000000-E	1530	ABANDON 12" UTILITY PIPE	3,535 LF		
0344	5810000000-E	1530	ABANDON 16" UTILITY PIPE	8,404 LF		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0345	5815000000-N	1530	REMOVE WATER METER	1 EA		
0346	5815500000-N	1530	REMOVE FIRE HYDRANT	12 EA		
0347	5816000000-N	1530	ABANDON UTILITY MANHOLE	2 EA		
0348	5835000000-E	1540	*** ENCASEMENT PIPE (10")	350 LF		
0349	5835600000-E	1540	12" ENCASEMENT PIPE	140 LF		
0350	5835700000-E	1540	16" ENCASEMENT PIPE	650 LF		
0351	5835900000-E	1540	20" ENCASEMENT PIPE	337 LF		
0352	5836000000-E	1540	24" ENCASEMENT PIPE	100 LF		
0353	5836200000-E	1540	30" ENCASEMENT PIPE	100 LF		
0354	5872500000-E	1550	BORE AND JACK OF *** (10")	350 LF		
0355	5872500000-E	1550	BORE AND JACK OF *** (12")	140 LF		
0356	5872500000-E	1550	BORE AND JACK OF *** (16")	650 LF		
0357	5872500000-E	1550	BORE AND JACK OF *** (20")	337 LF		
0358	5872500000-E	1550	BORE AND JACK OF *** (24")	100 LF		
0359	5872500000-E	1550	BORE AND JACK OF *** (30")	100 LF		
0360	5882000000-N	SP	GENERIC UTILITY ITEM 3" CHECK VALVE	1 EA		
0361	5882000000-N	SP	GENERIC UTILITY ITEM 6" FP BACKFLOW PREVENTOR ASSEMBLY	1 EA		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0362	5882000000-N	SP	GENERIC UTILITY ITEM 8" RPDA BACKFLOW PREVENTION ASSEMBLY	1 EA		
0363	5882000000-N	SP	GENERIC UTILITY ITEM ABANDON BACKFLOW PREVENTOR	1 EA		
0364	5882000000-N	SP	GENERIC UTILITY ITEM CIPP LINING EXISTING UTILITY MANHOLE	33 EA		
0365	5882000000-N	SP	GENERIC UTILITY ITEM FLUSH VALVE	1 EA		
0366	5888000000-E	SP	GENERIC UTILITY ITEM CIPP LINING	8,439 LF		
0367	6000000000-E	1605	TEMPORARY SILT FENCE	82,220 LF		
0368	6006000000-E	1610	STONE FOR EROSION CONTROL, CLASS A	8,170 TON		
0369	6009000000-E	1610	STONE FOR EROSION CONTROL, CLASS B	20,680 TON		
0370	6012000000-E	1610	SEDIMENT CONTROL STONE	21,235 TON		
0371	6015000000-E	1615	TEMPORARY MULCHING	130 ACR		
0372	6018000000-E	1620	SEED FOR TEMPORARY SEEDING	7,500 LB		
0373	6021000000-E	1620	FERTILIZER FOR TEMPORARY SEEDING	39.5 TON		
0374	6024000000-E	1622	TEMPORARY SLOPE DRAINS	4,795 LF		
0375	6029000000-E	SP	SAFETY FENCE	12,900 LF		
0376	6030000000-E	1630	SILT EXCAVATION	74,740 CY		
0377	6036000000-E	1631	MATTING FOR EROSION CONTROL	376,345 SY		
0378	6037000000-E	1629	COIR FIBER MAT	345 SY		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0379	6042000000-E	1632	1/4" HARDWARE CLOTH	48,585 LF		
0380	6043000000-E	1644	LOW PERMEABILITY GEOTEXTILE	2,300 SY		
0381	6046000000-E	1636	TEMPORARY PIPE FOR STREAM CROSSING	50 LF		
0382	6048000000-E	SP	FLOATING TURBIDITY CURTAIN	5,685 SY		
0383	6070000000-N	1639	SPECIAL STILLING BASINS	42 EA		
0384	6071002000-E	1642	FLOCCULANT	5,210 LB		
0385	6071012000-E	1642	COIR FIBER WATTLE	600 LF		
0386	6071014000-E	1642	COIR FIBER WATTLE BARRIER	320 LF		
0387	6071030000-E	1640	COIR FIBER BAFFLE	6,445 LF		
0388	6071050000-E	1644	*** SKIMMER (1-1/2")	18 EA		
0389	6071050000-E	1644	*** SKIMMER (2")	5 EA		
0390	6071050000-E	1644	*** SKIMMER (2-1/2")	4 EA		
0391	6071050000-E	1644	*** SKIMMER (3")	2 EA		
0392	6071050000-E	1644	*** SKIMMER (4")	2 EA		
0393	6084000000-E	1660	SEEDING & MULCHING	130 ACR		
0394	6087000000-E	1660	MOWING	65 ACR		
0395	6090000000-E	1661	SEED FOR REPAIR SEEDING	1,600 LB		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0396	6093000000-E	1661	FERTILIZER FOR REPAIR SEEDING	4.75 TON		
0397	6096000000-E	1662	SEED FOR SUPPLEMENTAL SEEDING	2,950 LB		
0398	6102000000-E	1664	SODDING	840 SY		
0399	6105000000-E	1664	WATER	30 M/G		
0400	6108000000-E	1665	FERTILIZER TOPDRESSING	88.25 TON		
0401	6111000000-E	SP	IMPERVIOUS DIKE	87 LF		
0402	6114500000-N	1667	SPECIALIZED HAND MOWING	60 MHR		
0403	6114800000-N	SP	MANUAL LITTER REMOVAL	62 MHR		
0404	6114900000-E	SP	LITTER DISPOSAL	10 TON		
0405	6117000000-N	1675	RESPONSE FOR EROSION CONTROL	100 EA		
0406	6117500000-N	SP	CONCRETE WASHOUT STRUCTURE	55 EA		
0407	6123000000-E	1670	REFORESTATION	1.5 ACR		
0408	6132000000-N	SP	GENERIC EROSION CONTROL ITEM FABRIC INSERT INLET PROTECTION CLEANOUT	1,584 EA		
0410	6141000000-E	SP	GENERIC EROSION CONTROL ITEM PERMANENT SOIL REINFORCEMENT MAT, TYPE 2	475 SY		
0411	7048500000-E	1705	PEDESTRIAN SIGNAL HEAD (16", 1 SECTION W/COUNTDOWN)	96 EA		
0412	7060000000-E	1705	SIGNAL CABLE	90,430 LF		
0413	7120000000-E	1705	VEHICLE SIGNAL HEAD (12", 3 SECTION)	509 EA		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0414	7132000000-E	1705	VEHICLE SIGNAL HEAD (12", 4 SECTION)	52 EA		
0415	7144000000-E	1705	VEHICLE SIGNAL HEAD (12", 5 SECTION)	18 EA		
0416	7204000000-N	1705	LOUVER	24 EA		
0417	7252000000-E	1710	MESSENGER CABLE (1/4")	24,180 LF		
0418	7264000000-E	1710	MESSENGER CABLE (3/8")	16,030 LF		
0419	7279000000-E	1715	TRACER WIRE	4,780 LF		
0420	7288000000-E	1715	PAVED TRENCHING (***** (2, 2")	200 LF		
0421	7300000000-E	1715	UNPAVED TRENCHING (***** (1, 2")	17,140 LF		
0422	7300000000-E	1715	UNPAVED TRENCHING (***** (2, 2")	4,170 LF		
0423	7300100000-E	1715	UNPAVED TRENCHING FOR TEMPORARY LEAD-IN	350 LF		
0424	7301000000-E	1715	DIRECTIONAL DRILL (***** (2, 2")	8,450 LF		
0425	7301000000-E	1715	DIRECTIONAL DRILL (***** (3, 2")	1,950 LF		
0426	7301000000-E	1715	DIRECTIONAL DRILL (***** (4, 2")	100 LF		
0427	7324000000-N	1716	JUNCTION BOX (STANDARD SIZE)	287 EA		
0428	7348000000-N	1716	JUNCTION BOX (OVER-SIZED, HEAVY DUTY)	110 EA		
0429	7360000000-N	1720	WOOD POLE	81 EA		
0430	7372000000-N	1721	GUY ASSEMBLY	190 EA		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0431	7408000000-E	1722	1" RISER WITH WEATHERHEAD	35 EA		
0432	7420000000-E	1722	2" RISER WITH WEATHERHEAD	35 EA		
0433	7432000000-E	1722	2" RISER WITH HEAT SHRINK TUBING	34 EA		
0434	7444000000-E	1725	INDUCTIVE LOOP SAWCUT	24,330 LF		
0435	7456100000-E	1726	LEAD-IN CABLE (14-2)	89,980 LF		
0436	7481000000-N	SP	SITE SURVEY	39 EA		
0437	7481240000-N	SP	CAMERA WITHOUT INTERNAL LOOP EMULATOR PROCESSING UNIT	97 EA		
0438	7481260000-N	SP	EXTERNAL LOOP EMULATOR PROCESSING UNIT	37 EA		
0439	7516000000-E	1730	COMMUNICATIONS CABLE (** FIBER) (48)	27,420 LF		
0440	7528000000-E	1730	DROP CABLE	13,950 LF		
0441	7540000000-N	1731	SPLICE ENCLOSURE	22 EA		
0442	7552000000-N	1731	INTERCONNECT CENTER	35 EA		
0443	7566000000-N	1733	DELINEATOR MARKER	59 EA		
0444	7576000000-N	SP	METAL STRAIN SIGNAL POLE	16 EA		
0445	7588000000-N	SP	METAL POLE WITH SINGLE MAST ARM	36 EA		
0446	7590000000-N	SP	METAL POLE WITH DUAL MAST ARM	7 EA		
0447	7613000000-N	SP	SOIL TEST	59 EA		

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Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0448	7614100000-E	SP	DRILLED PIER FOUNDATION	354 CY		
0449	7630000000-N	SP	METAL STRAIN POLE DESIGN	3 EA		
0450	7631000000-N	SP	MAST ARM WITH METAL POLE DESIGN	43 EA		
0451	7636000000-N	1745	SIGN FOR SIGNALS	220 EA		
0452	7642100000-N	1743	TYPE I POST WITH FOUNDATION	13 EA		
0453	7642200000-N	1743	TYPE II PEDESTAL WITH FOUNDATION	107 EA		
0454	7684000000-N	1750	SIGNAL CABINET FOUNDATION	35 EA		
0455	7696000000-N	1751	CONTROLLERS WITH CABINET (***** (2070LX, BASE MOUNTED)	35 EA		
0456	7744000000-N	1751	DETECTOR CARD (TYPE 170)	181 EA		
0457	7901000000-N	1753	CABINET BASE EXTENDER	35 EA		
0458	7980000000-N	SP	GENERIC SIGNAL ITEM DIGITAL CCTV CAMERA ASSEMBLY	11 EA		
0459	7980000000-N	SP	GENERIC SIGNAL ITEM ETHERNET EDGE SWITCH	35 EA		
0460	7980000000-N	SP	GENERIC SIGNAL ITEM LUMINAIRE ARM FOR TEMPORARY VIDEO SYSTEM	100 EA		
0461	7980000000-N	SP	GENERIC SIGNAL ITEM MICROWAVE VEHICLE DETECTION SYSTEM - MULTIPLE ZONES	2 EA		
0462	7980000000-N	SP	GENERIC SIGNAL ITEM RELOCATE TEMPORARY CAMERA SENSOR UNIT	67 EA		
0539	0000720000-N	SP	FIELD OFFICE	60 MO		

County: IREDELL, CATAWBA

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0540	6132000000-N	SP	GENERIC EROSION CONTROL ITEM FABRIC INSERT INLET PROTECTION, TYPE 1	528 EA		
0541	0000900000-N	SP	GENERIC MISCELLANEOUS ITEM PUBLIC INVOLVEMENT TECHNICIAN	Lump Sum	L.S.	
***** BEGIN SCHEDULE AA ***** ***** (5 ALTERNATES) *****						
0463 AA1	4894900000-E	SP	GENERIC PAVEMENT MARKING ITEM 10' INLAID PAVEMENT MARKINGS	4,350 EA		
*** OR ***						
0464 AA2	4894900000-E	SP	GENERIC PAVEMENT MARKING ITEM 10' RUMBLE SKIPS	4,350 EA		
*** OR ***						
0465 AA3	4895000000-N	SP	GENERIC PAVEMENT MARKING ITEM INLAID CRADLE MARKERS	4,350 EA		
*** OR ***						
0466 AA4	4895000000-N	SP	GENERIC PAVEMENT MARKING ITEM INLAID RAISED PAVEMENT MARKERS	4,350 EA		
*** OR ***						
0467 AA5	4895000000-N	SP	GENERIC PAVEMENT MARKING ITEM POLYCARBONATE H-SHAPED MARKERS	4,350 EA		
***** END SCHEDULE AA *****						
CULVERT ITEMS						
0468	8130000000-N	414	BOX CULVERT EXCAVATION, STA ***** (783+89.30 -L-)	Lump Sum	L.S.	
0469	8133000000-E	414	FOUNDATION CONDITIONING MATERIAL, BOX CULVERT	48 TON		
0470	8196000000-E	420	CLASS A CONCRETE (CULVERT)	53.9 CY		
0471	8245000000-E	425	REINFORCING STEEL (CULVERT)	5,945 LB		
WALL ITEMS						
0472	8801000000-E	SP	MSE RETAINING WALL NO **** (24)	2,103 SF		
0473	8801000000-E	SP	MSE RETAINING WALL NO **** (25)	1,358 SF		

County: IREDELL, CATAWBA

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0474	8801000000-E	SP	MSE RETAINING WALL NO **** (W1)	2,165 SF		
0475	8801000000-E	SP	MSE RETAINING WALL NO **** (W13)	905 SF		
0476	8801000000-E	SP	MSE RETAINING WALL NO **** (W14)	1,269 SF		
0477	8801000000-E	SP	MSE RETAINING WALL NO **** (W15)	716 SF		
0478	8801000000-E	SP	MSE RETAINING WALL NO **** (W17)	1,197 SF		
0479	8801000000-E	SP	MSE RETAINING WALL NO **** (W19)	950 SF		
0480	8801000000-E	SP	MSE RETAINING WALL NO **** (W2)	3,298 SF		
0481	8801000000-E	SP	MSE RETAINING WALL NO **** (W20)	678 SF		
0482	8801000000-E	SP	MSE RETAINING WALL NO **** (W21)	873 SF		
0483	8801000000-E	SP	MSE RETAINING WALL NO **** (W22)	214 SF		
0484	8801000000-E	SP	MSE RETAINING WALL NO **** (W26)	2,286 SF		
0485	8801000000-E	SP	MSE RETAINING WALL NO **** (W27)	132 SF		
0486	8801000000-E	SP	MSE RETAINING WALL NO **** (W29)	687 SF		
0487	8801000000-E	SP	MSE RETAINING WALL NO **** (W3)	2,599 SF		
0488	8801000000-E	SP	MSE RETAINING WALL NO **** (W30)	487 SF		
0489	8801000000-E	SP	MSE RETAINING WALL NO **** (W31)	1,095 SF		
0490	8801000000-E	SP	MSE RETAINING WALL NO **** (W32)	206 SF		

County: IREDELL, CATAWBA

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0491	8801000000-E	SP	MSE RETAINING WALL NO **** (W33)	1,452 SF		
0492	8801000000-E	SP	MSE RETAINING WALL NO **** (W35)	4,805 SF		
0493	8801000000-E	SP	MSE RETAINING WALL NO **** (W36)	5,850 SF		
0494	8801000000-E	SP	MSE RETAINING WALL NO **** (W37)	366 SF		
0495	8801000000-E	SP	MSE RETAINING WALL NO **** (W39)	564 SF		
0496	8801000000-E	SP	MSE RETAINING WALL NO **** (W4)	759 SF		
0497	8801000000-E	SP	MSE RETAINING WALL NO **** (W40)	988 SF		
0498	8801000000-E	SP	MSE RETAINING WALL NO **** (W41)	1,078 SF		
0499	8801000000-E	SP	MSE RETAINING WALL NO **** (W42)	2,863 SF		
0500	8801000000-E	SP	MSE RETAINING WALL NO **** (W45)	419 SF		
0501	8801000000-E	SP	MSE RETAINING WALL NO **** (W46)	667 SF		
0502	8801000000-E	SP	MSE RETAINING WALL NO **** (W5)	2,937 SF		
0503	8802014000-E	SP	SOLDIER PILE RETAINING WALLS	6,631 SF		
0504	8802031000-E	455	PRECAST GRAVITY RETAINING WALLS	3,402 SF		
STRUCTURE ITEMS						
0505	8017000000-N	SP	CONSTRUCTION, MAINTENANCE, & REMOVAL OF TEMP ACCESS AT STA ***** (471+85.00 -L-)	Lump Sum	L.S.	
0506	8035000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ***** (733+32.53 -L-)	Lump Sum	L.S.	

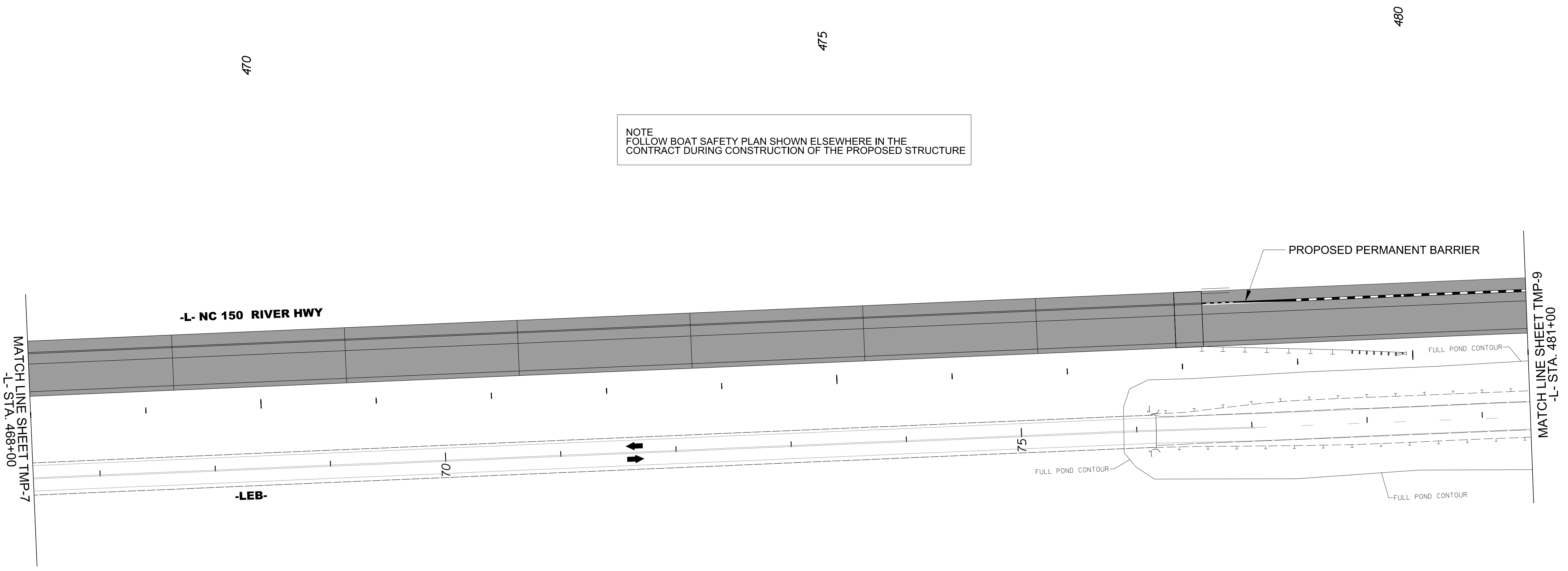
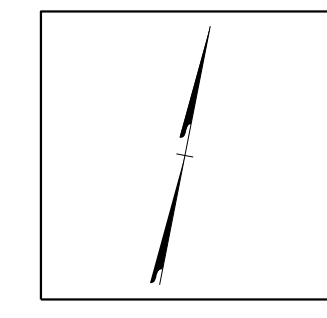
County: IREDELL, CATAWBA

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0507	8065000000-N	SP	ASBESTOS ASSESSMENT	Lump Sum	L.S.	
0508	8091000000-N	410	FOUNDATION EXCAVATION FOR BENT NO ** AT STATION ***** (1, 733+32.53 -L-)	Lump Sum	L.S.	
0509	8108000000-E	411	***-*** DIA DRILLED PIERS (3'-6")	800 LF		
0510	8108000000-E	411	***-*** DIA DRILLED PIERS (8'-0")	1,743.6 LF		
0511	8111000000-E	411	PERMANENT STEEL CASING FOR ***- *** DIA DRILLED PIER (8'-0")	1,417.5 LF		
0512	8111400000-E	411	PERMANENT STEEL CASING FOR 3'-6" DIA DRILLED PIER	465.6 LF		
0513	8113000000-N	411	SID INSPECTIONS	24 EA		
0514	8115000000-N	411	CSL TESTING	24 EA		
0515	8147000000-E	420	REINFORCED CONCRETE DECK SLAB	27,886 SF		
0516	8154000000-E	420	REINFORCED CONCRETE DECK SLAB (SAND LIGHTWEIGHT CONCRETE)	62,008 SF		
0517	8161000000-E	420	GROOVING BRIDGE FLOORS	74,297 SF		
0518	8182000000-E	420	CLASS A CONCRETE (BRIDGE)	1,502.6 CY		
0519	8210000000-N	422	BRIDGE APPROACH SLABS, STATION ***** (471+85.00 -L-)	Lump Sum	L.S.	
0520	8210000000-N	422	BRIDGE APPROACH SLABS, STATION ***** (733+32.53 -L-)	Lump Sum	L.S.	
0521	8217000000-E	425	REINFORCING STEEL (BRIDGE)	904,717 LB		
0522	8238000000-E	425	SPIRAL COLUMN REINFORCING STEEL (BRIDGE)	121,502 LB		

County: IREDELL, CATAWBA

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0523	8265000000-E	430	54" PRESTRESSED CONCRETE GIRDERS	3,106.5 LF		
0524	8328200000-E	450	PILE DRIVING EQUIPMENT SETUP FOR *** STEEL PILES (HP 12 X 53)	94 EA		
0525	8364000000-E	450	HP 12 X 53 STEEL PILES	8,040 LF		
0526	8475000000-E	460	TWO BAR METAL RAIL	1,592.78 LF		
0527	8503000000-E	460	CONCRETE BARRIER RAIL	1,237.75 LF		
0528	8505000000-E	460	VERTICAL CONCRETE BARRIER RAIL	1,268.75 LF		
0529	8517000000-E	460	1'*** X ***** CONCRETE PARAPET (1'-2" X 2'-6")	1,267.75 LF		
0530	8517000000-E	460	1'*** X ***** CONCRETE PARAPET (1'-2" X 3'-3")	347.96 LF		
0531	8531000000-E	462	4" SLOPE PROTECTION	140.6 SY		
0532	8608000000-E	876	RIP RAP CLASS II (2'-0" THICK)	1,171 TON		
0533	8622000000-E	876	GEOTEXTILE FOR DRAINAGE	1,300 SY		
0534	8657000000-N	430	ELASTOMERIC BEARINGS	Lump Sum	L.S.	
0535	8706000000-N	SP	EXPANSION JOINT SEALS	Lump Sum	L.S.	
0536	8860000000-N	SP	GENERIC STRUCTURE ITEM 16" WATER LINE PIPE & SUSPENSION SYSTEM	Lump Sum	L.S.	
0537	8867000000-E	SP	GENERIC STRUCTURE ITEM MODIFIED 74" PRESTRESSED CONCRETE GIRDERS	8,502.08 LF		
0538	8897000000-N	SP	GENERIC STRUCTURE ITEM THERMAL INTEGRITY PROFILER	24 EA		

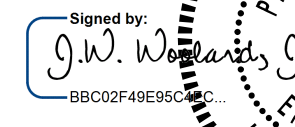
PROJ. REFERENCE NO.	SHEET NO.
R-2307B	TMP-8

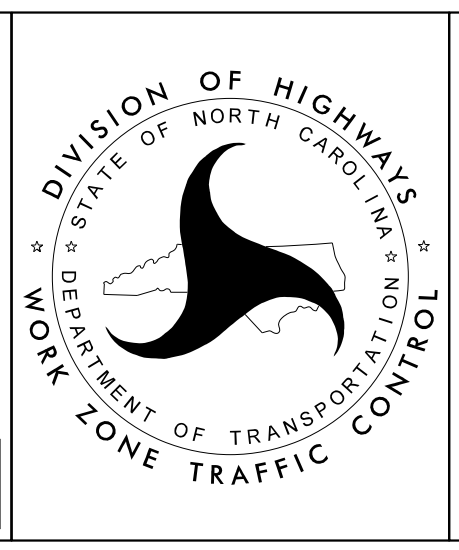
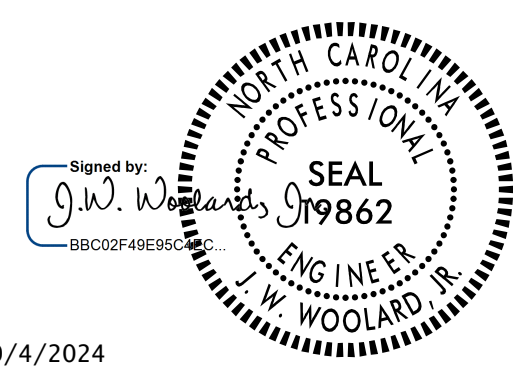


NOTE
 FOLLOW BOAT SAFETY PLAN SHOWN ELSEWHERE IN THE
 CONTRACT DURING CONSTRUCTION OF THE PROPOSED STRUCTURE

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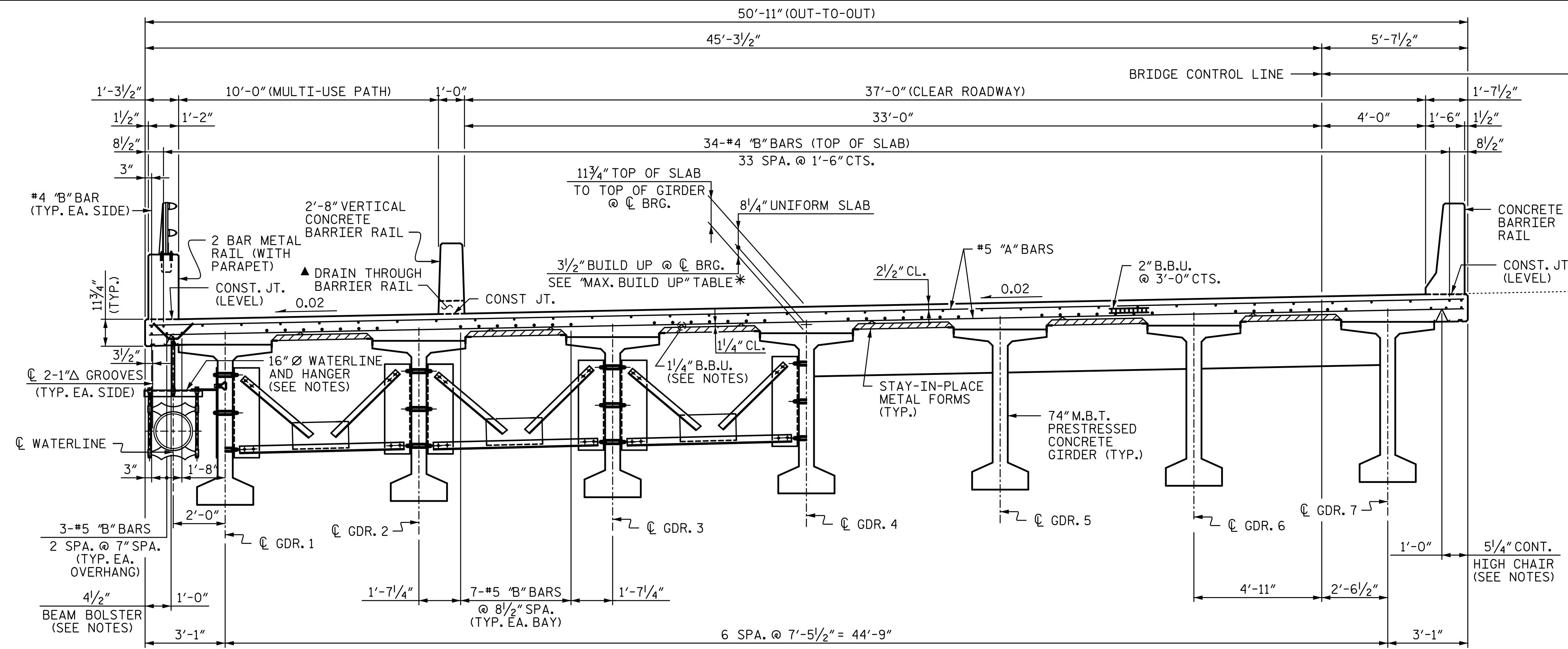

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Signed by:

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**-L- NC 150
 PHASE I
 STEP 1**

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INTERMEDIATE DIAPHRAGMS

TYPICAL SECTION

END DIAPHRAGMS

(FOR END DIAPHRAGM REINFORCEMENT, SEE "TYPICAL SECTION DETAILS" SHEET 2 OF 2)

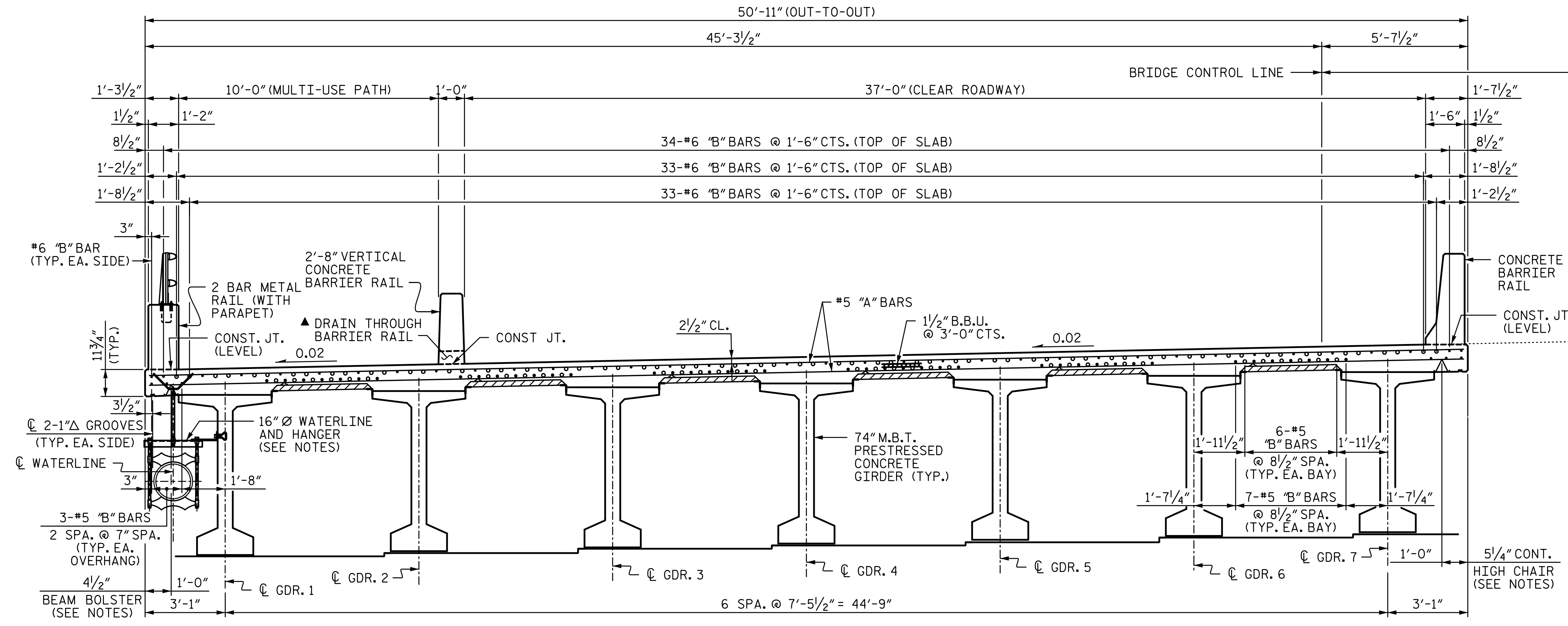
▲ 8"x6" BLOCKOUT FOR DRAINAGE (SEE "BARRIER RAIL" SHEETS FOR DETAILS)

NOTES:

- PROVIDE A 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 FORMS.
- LONGITUDINAL STEEL MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO AVOID INTERFERENCE WITH STIRRUPS IN PRESTRESSED CONCRETE GIRDERS.
- HEIGHT OF BEAM BOLSTER AND CONTINUOUS HIGH CHAIR IS CALCULATED AT CENTERLINE OF BEARING. CONTRACTOR SHALL ADJUST HEIGHTS, AS NECESSARY, TO MAINTAIN PROPER CLEARANCE, DUE TO GIRDER CAMBER.
- PREVIOUSLY CAST CONCRETE IN UNITS 1, 2 & 3 SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.
- PREVIOUSLY CAST CONCRETE IN SPAN I SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.
- FOR INTERMEDIATE STEEL DIAPHRAGMS, SEE "SUPERSTRUCTURE INTERMEDIATE STEEL DIAPHRAGMS" SHEET FOR DETAILS.
- FOR DETAILS OF 16" Ø WATERLINE AND HANGER SYSTEM, SEE STRUCTURE UTILITY PLANS.

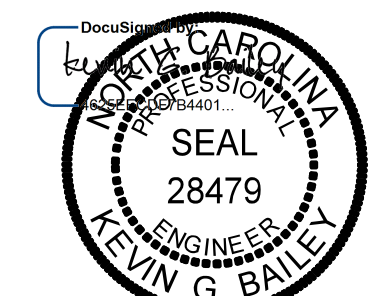
MAX. BUILD UP AT MID-SPAN			
UNIT	SPAN	GDR.	BUILD UP
1	B	2	2 3/4"
2	E	2	3 1/2"
3	F	2	3 1/2"
4	I	2	2 1/2"

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



TYPICAL SECTION (AT LINK SLAB AT BENT)

PROJECT NO. R-2307B
 CATAWBA & IREDELL COUNTY
 STATION: 471+85.00 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 TYPICAL SECTION

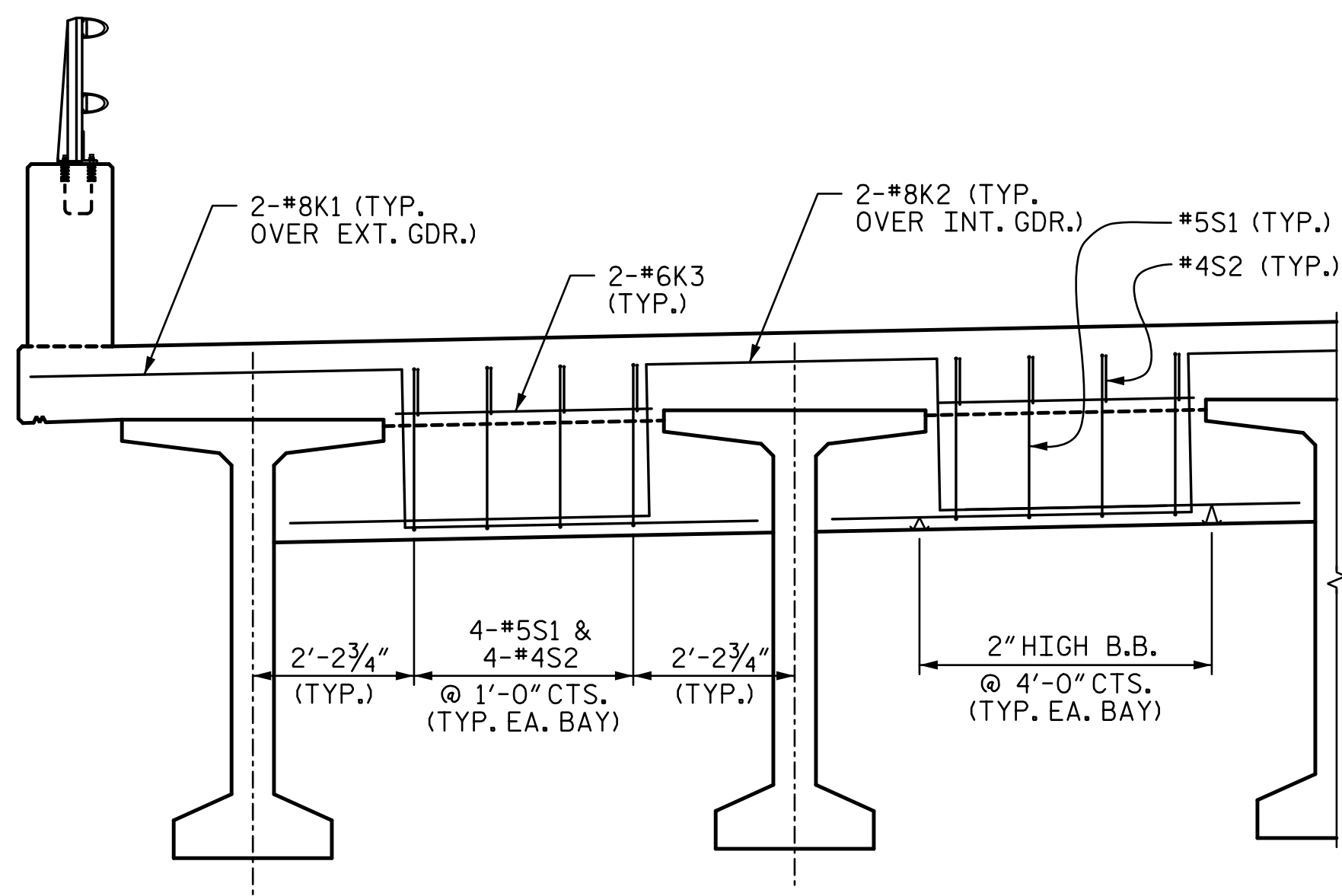
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 CHECKED BY: MBC DATE: 7-23
 DESIGN ENGINEER OF RECORD: K. BAILEY DATE: 7-24



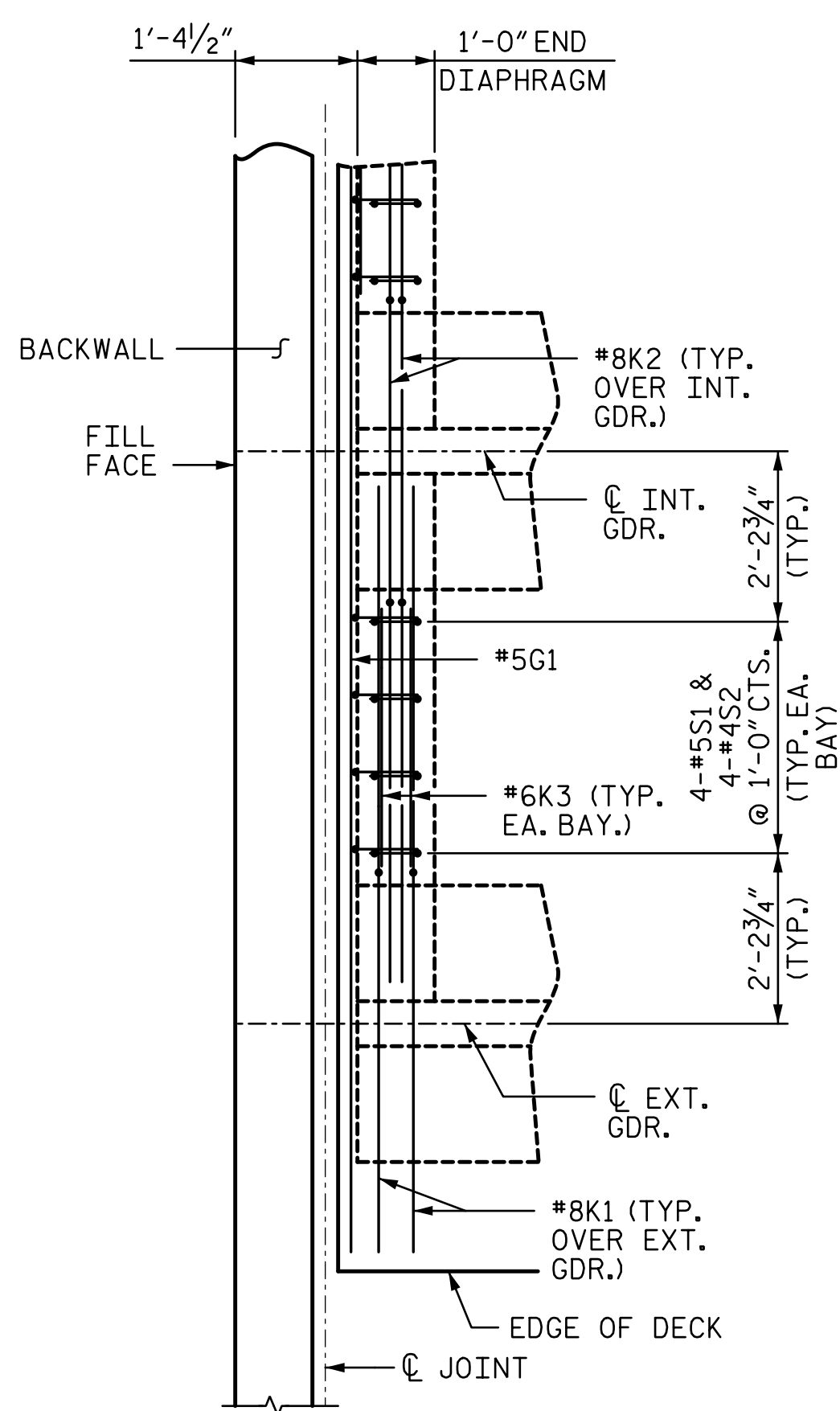
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NO.	BY:	DATE:	NO.	DATE:
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TOTAL SHEETS: 73

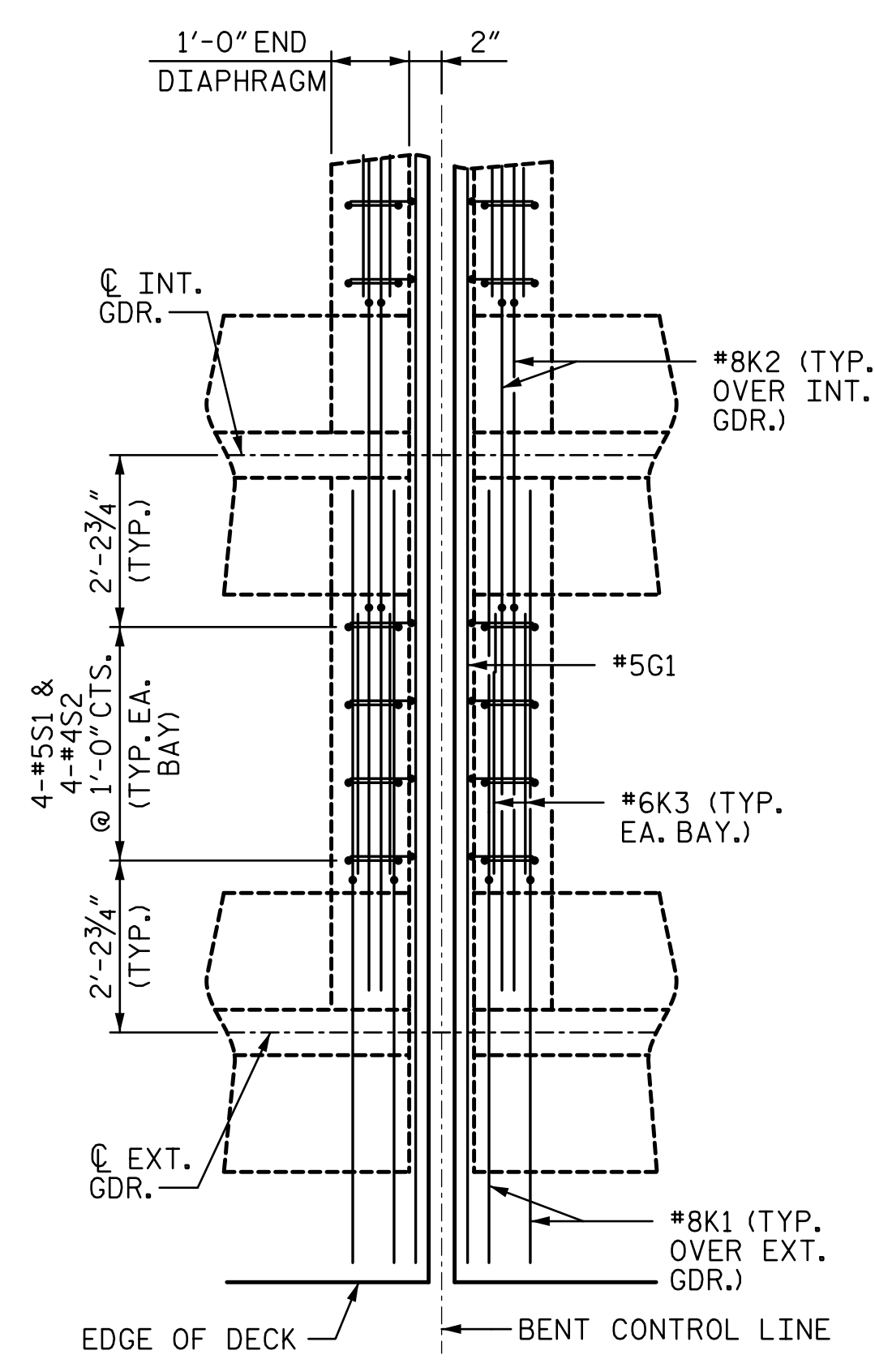
NOTES:
 1. FOR DETAIL "A" AND "B" LOCATIONS, SEE PLAN OF SPANS SHEETS.



END DIAPHRAGMS
 ("C" BAR NOT SHOWN FOR CLARITY)
 (AT END BENTS & EXPANSION BENTS)
 (16" Ø WATERLINE NOT SHOWN FOR CLARITY)

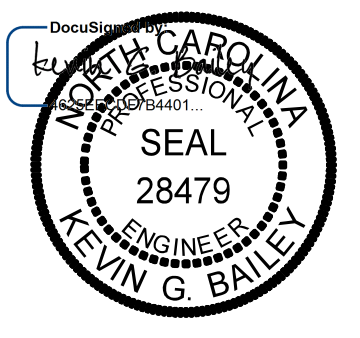


DETAIL "A"
 (END DIAPHRAGM AT END BENT 1 SHOWN, END DIAPHRAGM AT END BENT 2 SIMILAR)



DETAIL "B"
 END DIAPHRAGM AT BENT 2, 5, & 8
 (DIMENSIONS AND BARS TYPICAL EACH SPAN)

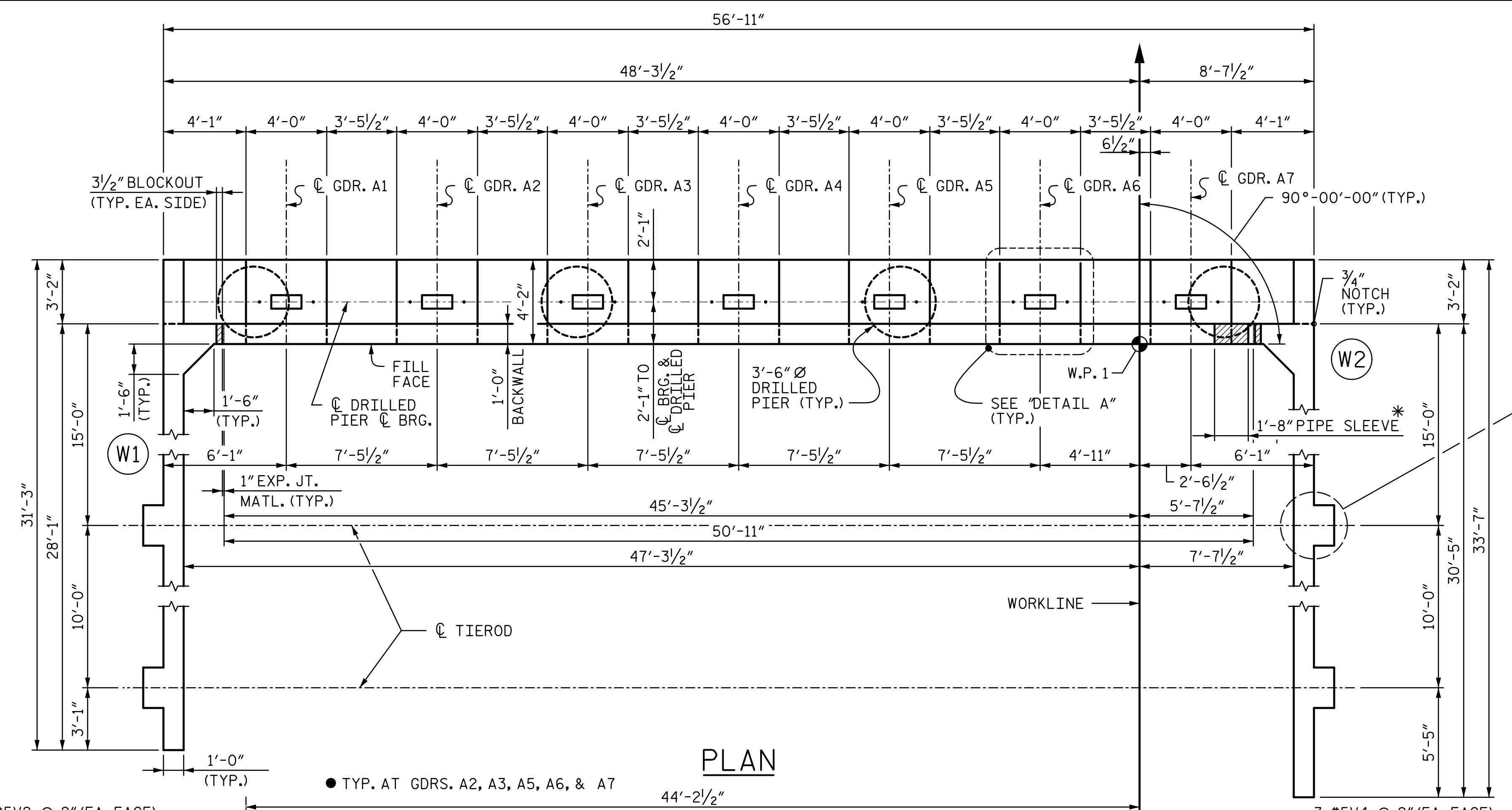
PROJECT NO. R-2307B
CATAWBA & IREDELL COUNTY
 STATION: 471+85.00 -L-
 SHEET 2 OF 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	 10/4/2024		STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH SUPERSTRUCTURE TYPICAL SECTION DETAILS		SHEET NO. S1-13
	REVISIONS				TOTAL SHEETS 73
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2			4		

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 CHECKED BY: MBC DATE: 8-23

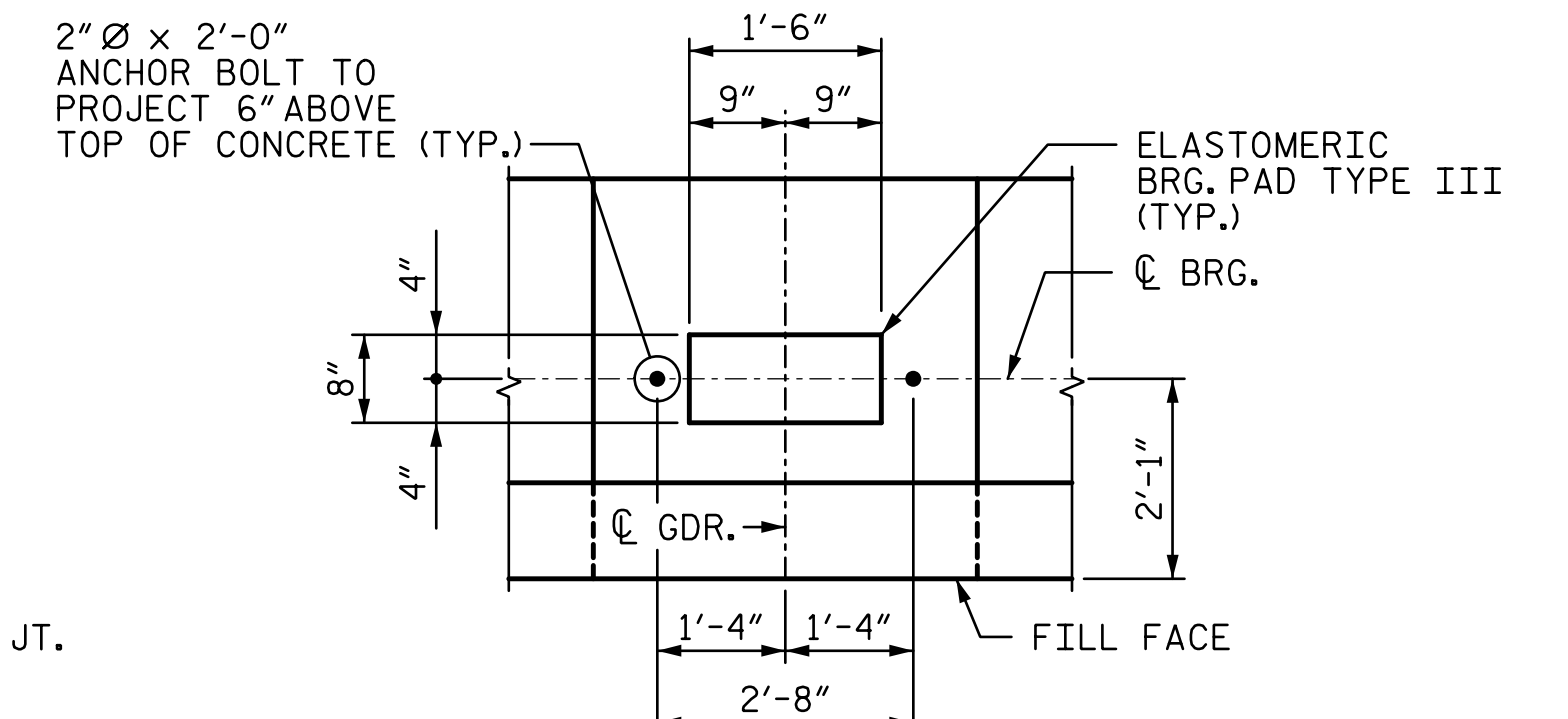
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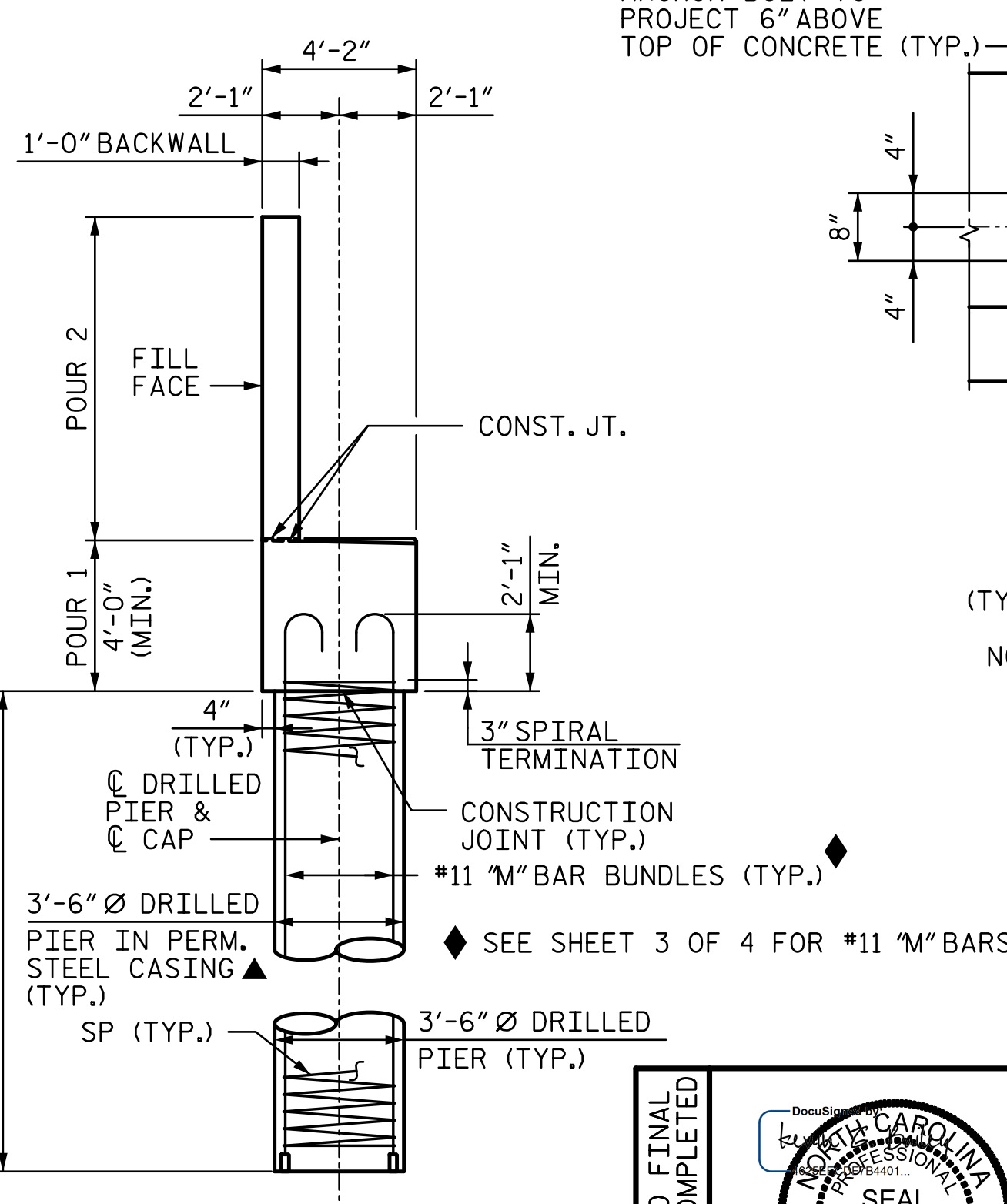
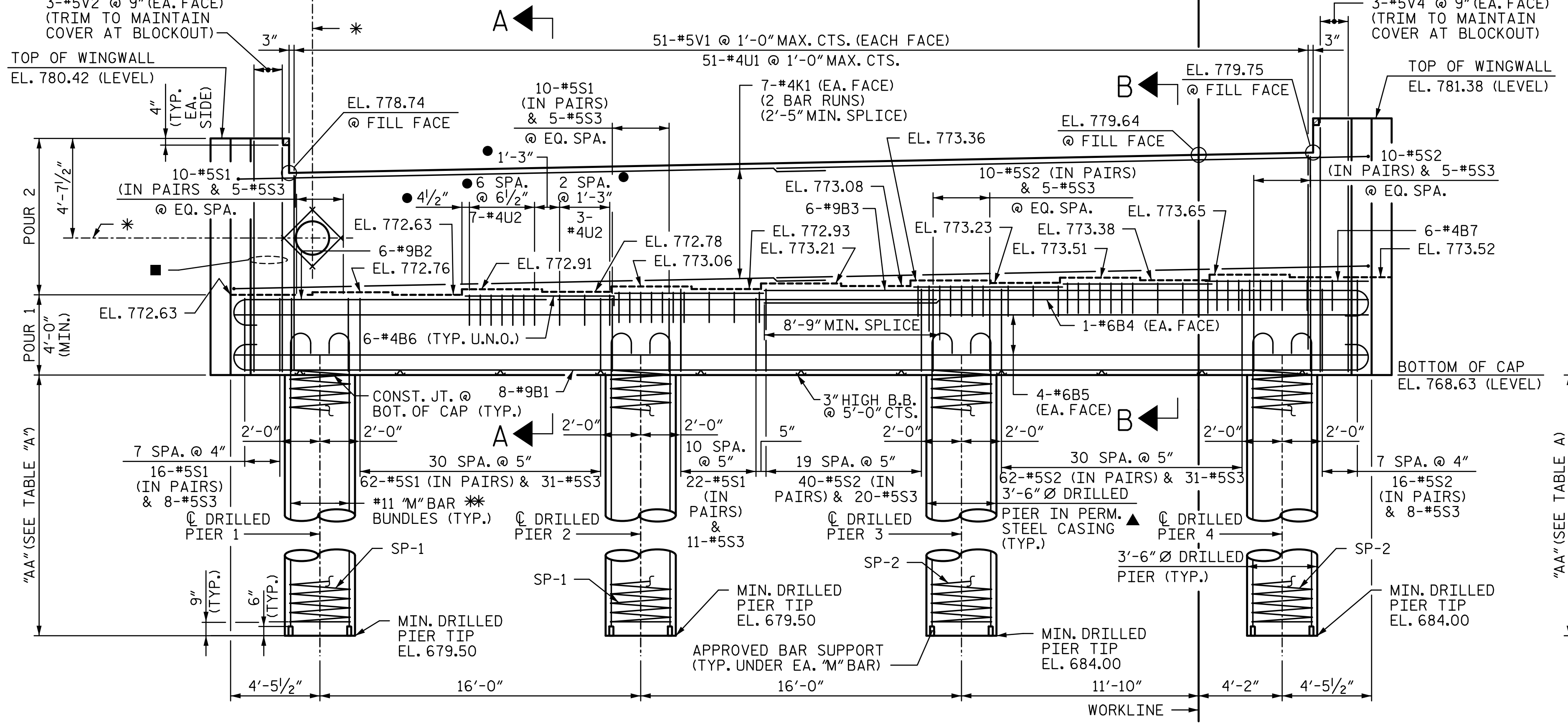
PIER	"AA"
1 & 2	89'-2"
3 & 4	84'-8"

NOTES:
 STIRRUPS AND "U BARS" IN CAP MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR ANCHOR BOLTS.
 HOOKS ON BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.
 SEE "GENERAL DRAWING GENERAL NOTES" SHEET FOR ADDITIONAL NOTES.
 SEE SHEET 3 OF 4 FOR SECTIONS CALLED OUT ON ELEVATION VIEW.
 BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING ON THE SUBSTRUCTURE UNIT.
 THE TOP SURFACE OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THAT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.
 CONCRETE IN THE HATCHED AREA OF THE BACKWALL (AT BLOCKOUTS) SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.
 TIEROD SHALL BE MINIMUM 1 3/8" Ø (NOM.) ASTM A615 GRADE 75 ALL-THREAD REBAR (1.56 IN MIN. NET AREA THRU THREADS) WITH A MINIMUM ULTIMATE TENSILE CAPACITY OF 156 KIPS AND MINIMUM YIELD CAPACITY OF 117 KIPS.
 USE COMPATIBLE COMPONENTS INCLUDING: HARDENED WASHERS CONFORMING TO ASTM F436 TYPE 1 (3" O.D., 1 5/8" I.D.); HEX NUTS CONFORMING TO ASTM A108; STOP-TYPE COUPLINGS CONFORMING TO ASTM A29 GRADE C1045.
 ANCHORAGE SHALL BE CAPABLE OF RESISTING THE MAXIMUM TENSILE CAPACITY OF THE TIEROD. ANCHORAGE ASSEMBLY SHALL CONSIST OF ROD, PLATE, NUT, COVER (TUBE), GROUT TUBE AND ANY OTHER COMPONENTS NECESSARY TO ACHIEVE A COMPLETED SEALED AND GROUTED ASSEMBLY.
 TIEROD SHALL BE INSTALLED IN A 2" Ø SCHEDULE 40 PVC PIPE OR POLYPROPYLENE TUBING AND SHALL BE FULLY GROUTED WITH A NONSHRINK, NONMETALLIC GROUT.
 FOR BACKFILL AND ANCHOR ROD INSTALLATION, SEE THE APPROACH FILL AND ANCHOR ROD CONSTRUCTION SEQUENCE ON SHEET 4 OF 4.
 SEE DRILLED PIER MAIN BAR (VERT.) SPLICE DETAIL ON END BENT 1 SECTIONS AND DETAIL SHEET (S1-57) FOR SPLICE CONFIGURATION.
 NO PAY ITEM FOR TIEROD ASSEMBLY. TIEROD ASSEMBLY IS CONSIDERED INCIDENTAL TO THE VARIOUS PAY ITEMS.

* 22" Ø PIPE SLEEVE BLOCKOUT FOR 16" Ø DUCTILE IRON PIPE WATERLINE (BY OTHERS) (SEE DETAILS SHEET 3 OF 4)



FOR BEARING DETAILS NOT SHOWN HERE, SEE ELASTOMERIC BEARING DETAILS SHEET.



TYPICAL SECTION
 (CAP REINFORCEMENT AND CHEEK WALL NOT SHOWN FOR CLARITY)

PROJECT NO. R-2307B
 CATAWBA & IREDELL COUNTY
 STATION: 471+85.00 -L-
 SHEET 1 OF 4

10/4/2024

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10/4/2024

stv
 STV ENGINEERS, INC.
 900 West Trade St., Suite 715
 Charlotte, NC 28202
 NC License Number F-5991

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH SUBSTRUCTURE					
END BENT 1 PLAN & ELEVATION					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.	
SHEET NO.	TOTAL SHEETS
S1-56	73

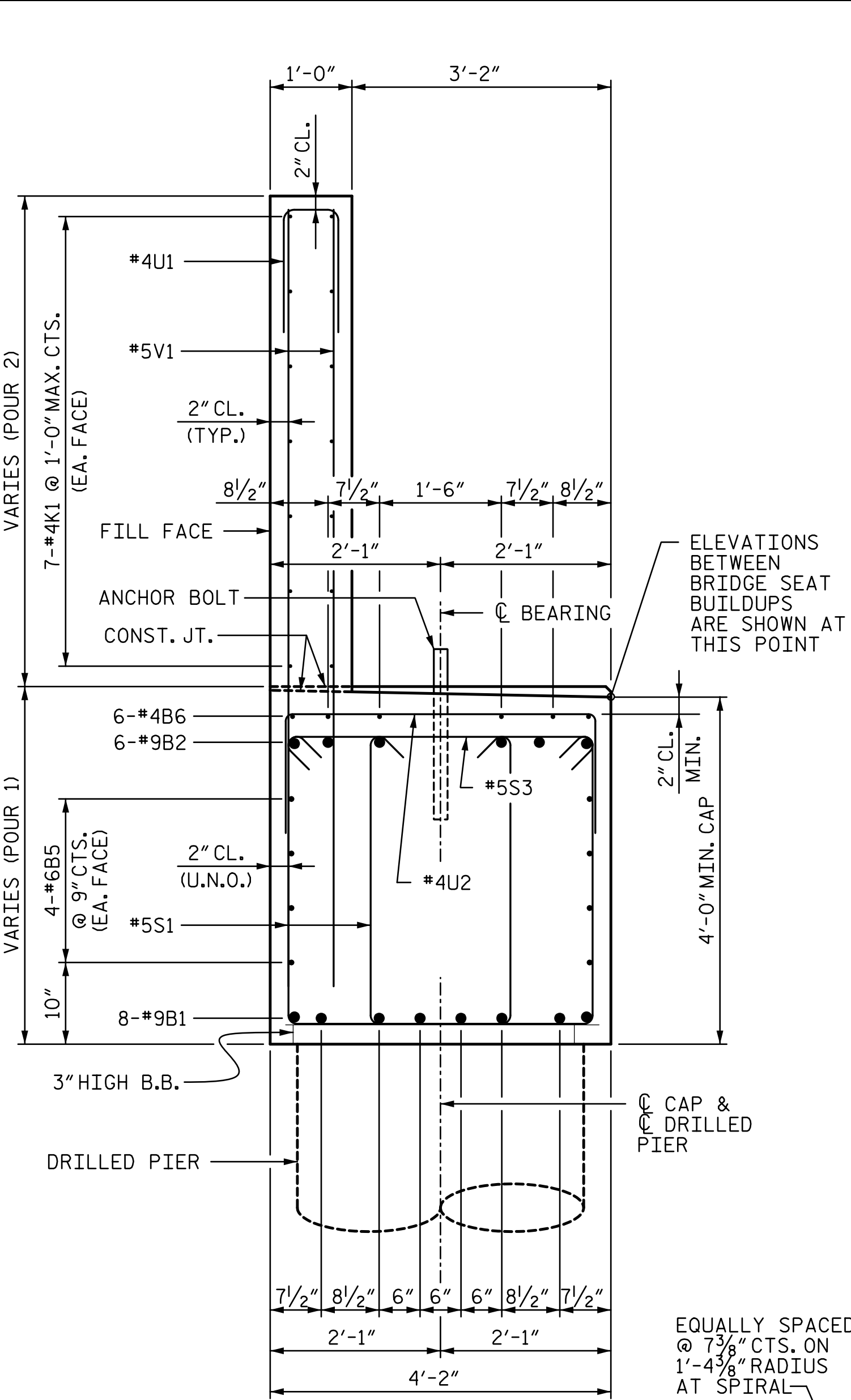
ELEVATION
 (LOOKING IN THE DIRECTION OF INCREASING STATIONING)

* FOR #11 "M" BAR SPLICE CONFIGURATION, SEE "DRILLED PIER MAIN BAR (VERT.) SPLICE DETAIL" ON SECTION AND DETAILS, SHEET 3 OF 4

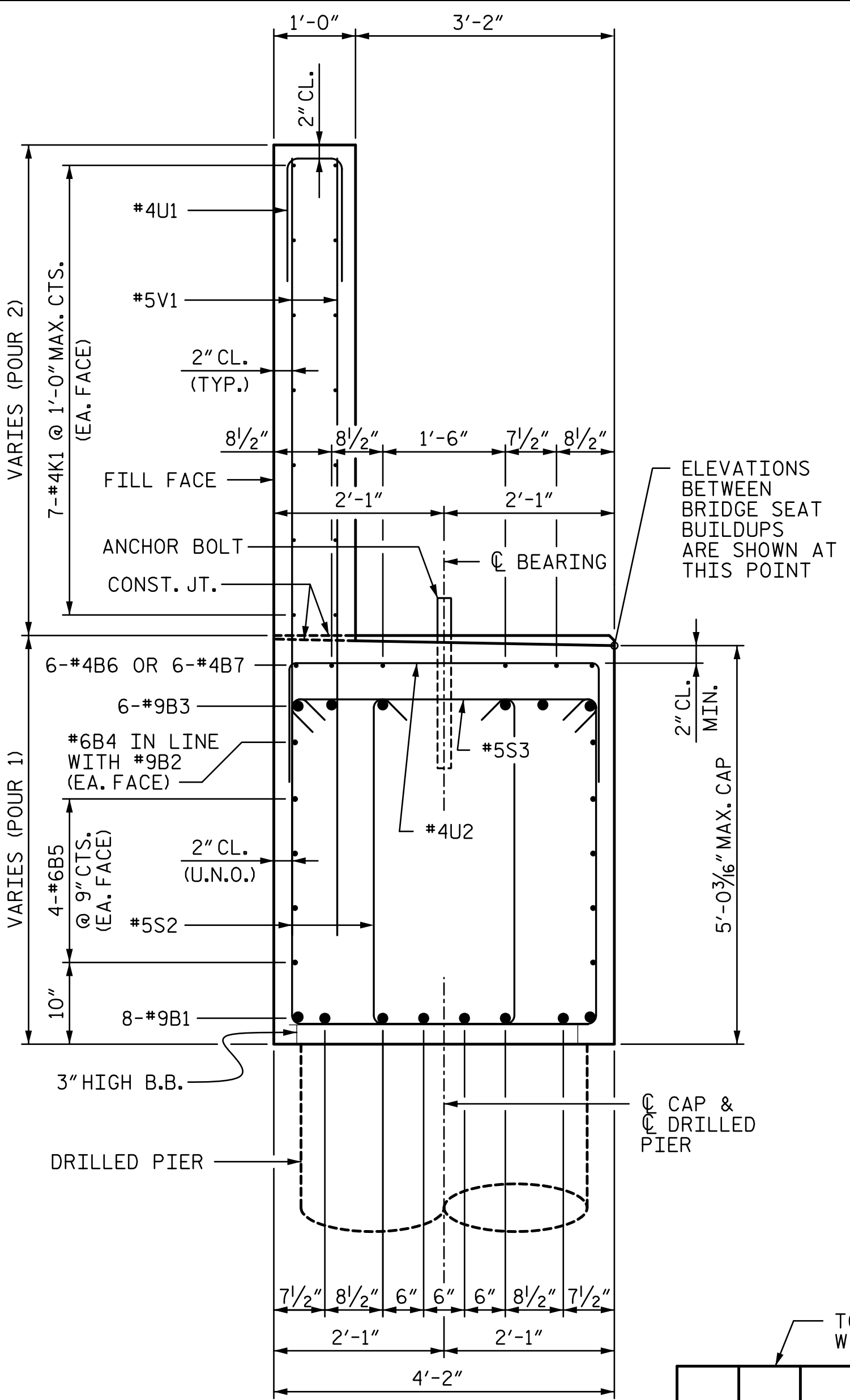
▲ FOR EXTENTS OF THE PERMANENT CASING, SEE "DRILLED PIER FOUNDATION TABLES" SHEET.
 ■ SEE WINGWALL SHEET FOR REIN. AT WING-BACKWALL INTERFACE (TYP.)

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CHECKED BY: SAB	DATE: 8-23		

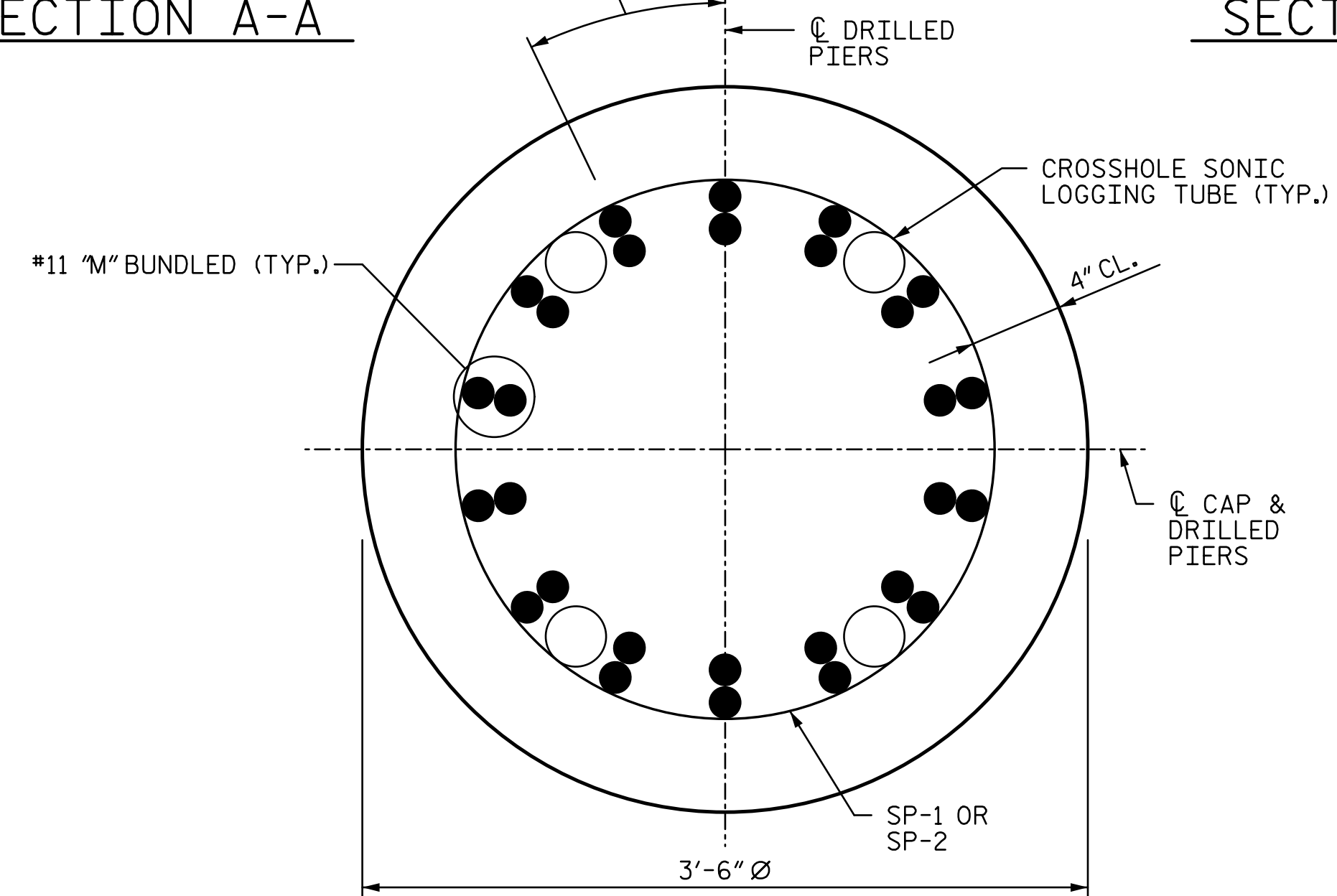
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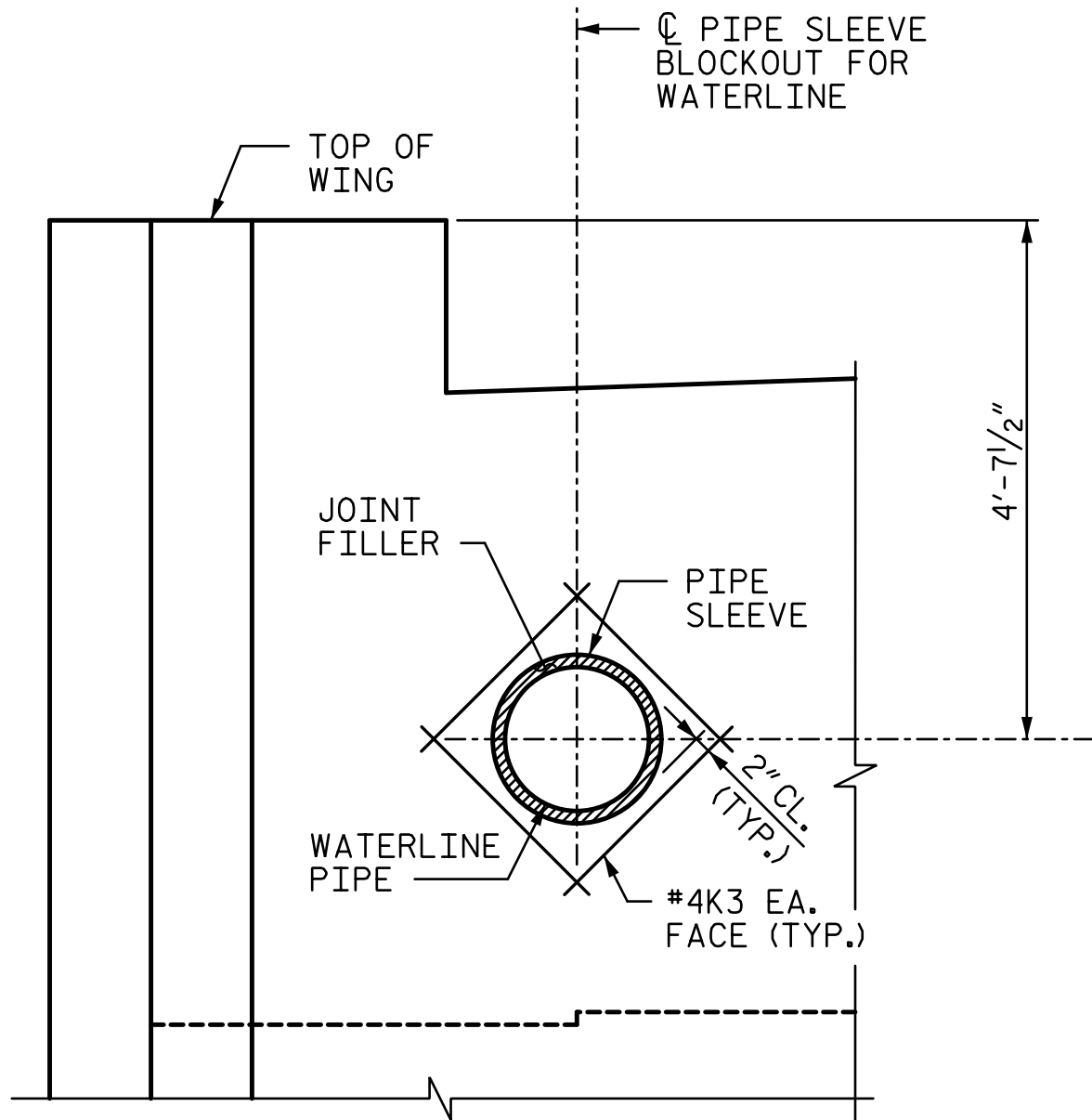
SECTION A-A



SECTION B-B

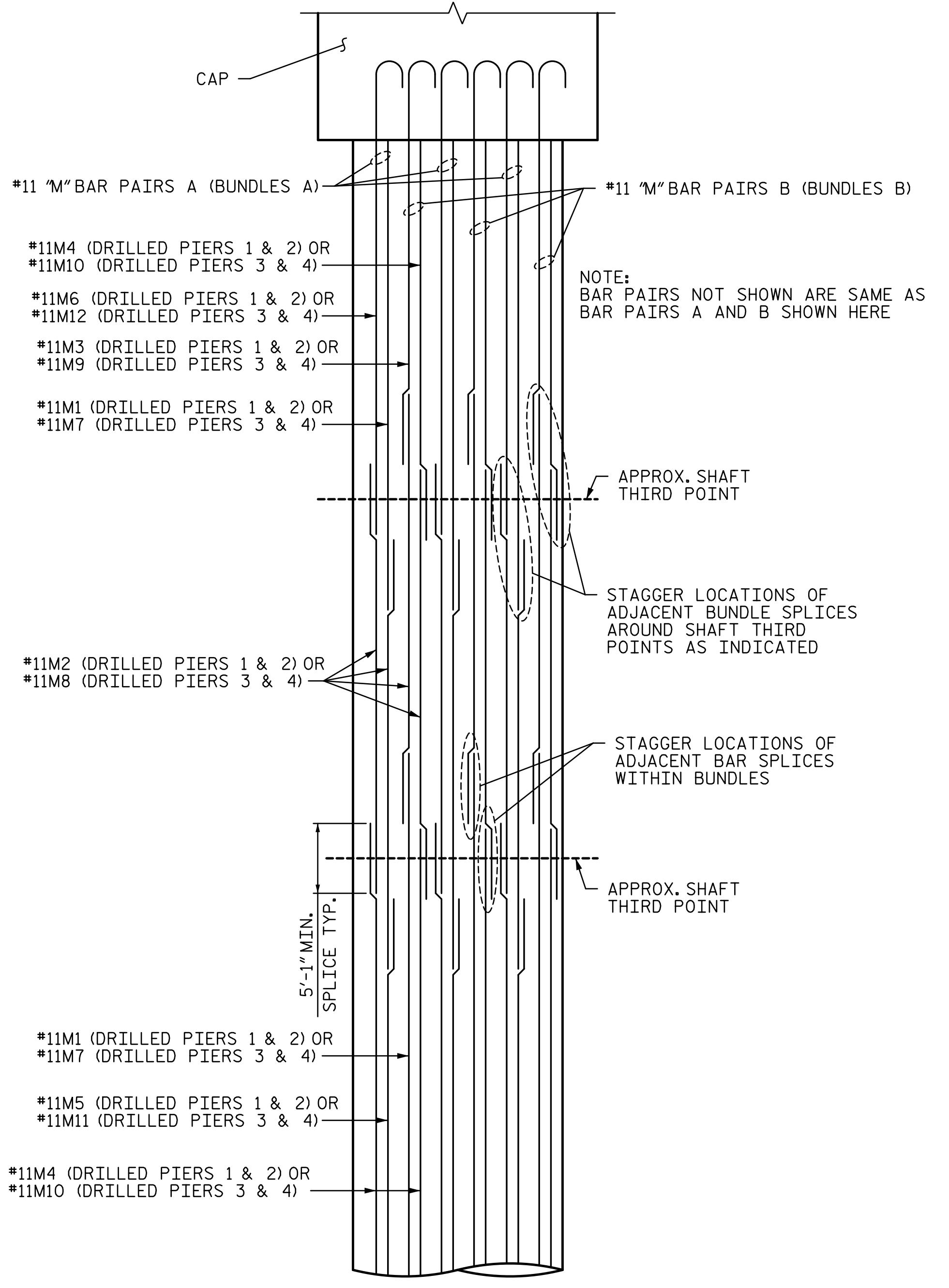


TYPICAL SECTION THROUGH DRILLED PIER



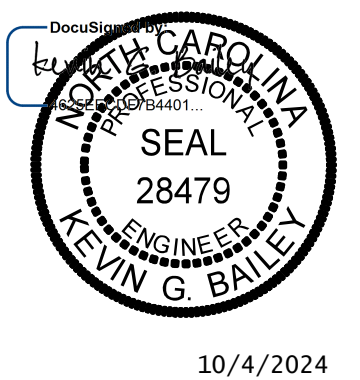
BLOCKOUT DETAIL FOR 16" Ø WATERLINE

BLOCKOUT NOTES:
 CENTER 16" Ø WATERLINE IN BLOCKOUT AND FILL ANNULAR SPACE AROUND PIPE WITH JOINT FILLER IN ACCORDANCE WITH STANDARD SPECIFICATION ARTICLE 1028-1.
 REINFORCING STEEL IN BACKWALL SHALL BE CUT AS REQUIRED TO WITHIN 2" OF BLOCKOUT.
 FOR DETAILS OF 16" Ø WATERLINE SEE PLANS BY OTHERS.



DRILLED PIER MAIN BAR (VERT.) SPLICE DETAIL (NO SCALE)

PROJECT NO. R-2307B
CATAWBA & IREDELL COUNTY
 STATION: 471+85.00 -L-
 SHEET 3 OF 4



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
END BENT 1
SECTIONS & DETAILS

DRAWN BY: <u>VKS</u>	DATE: <u>8-23</u>	DESIGN ENGINEER OF RECORD: <u>K. BAILEY</u>	DATE: <u>7-24</u>
CHECKED BY: <u>SAB</u>	DATE: <u>8-23</u>		

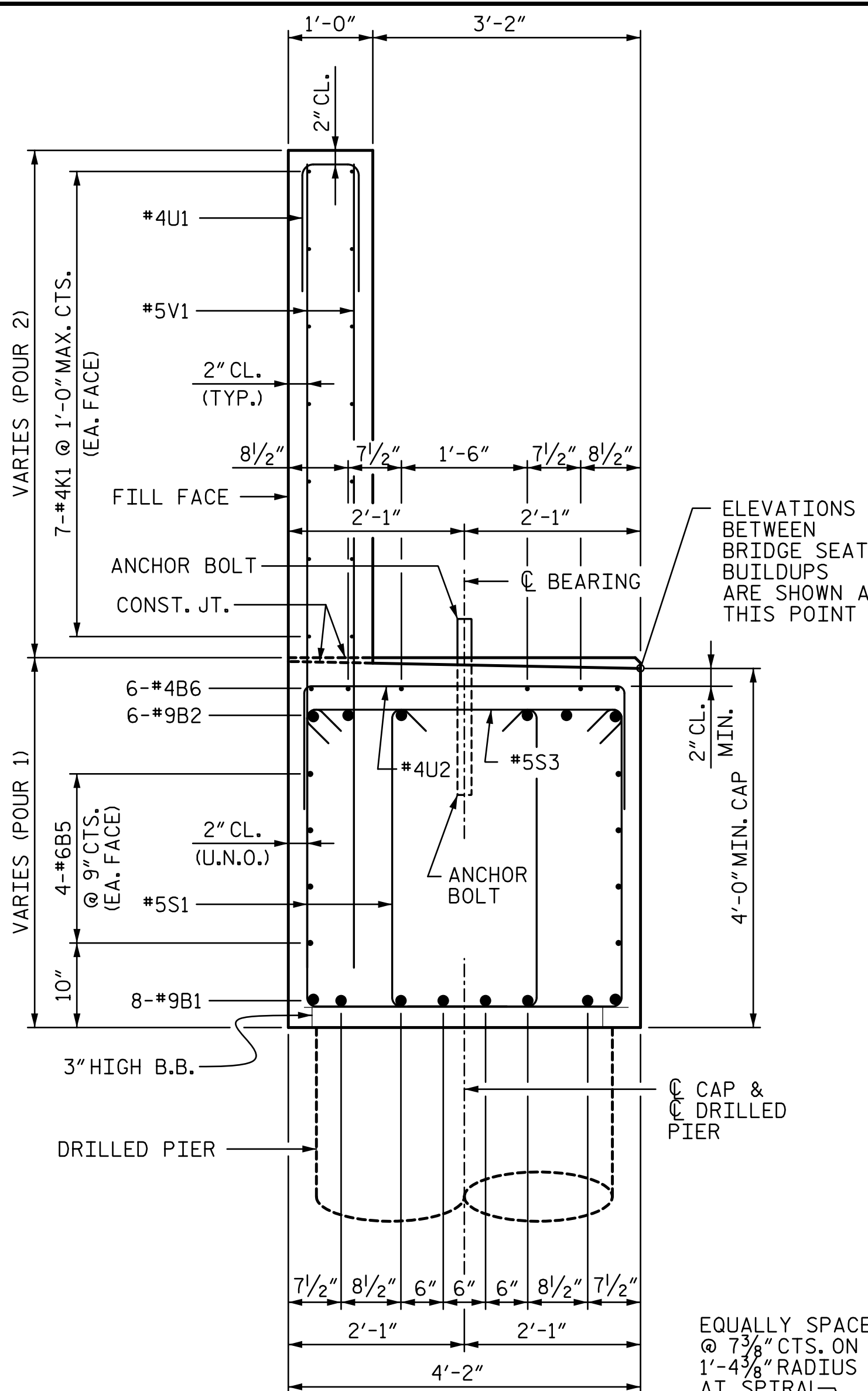
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



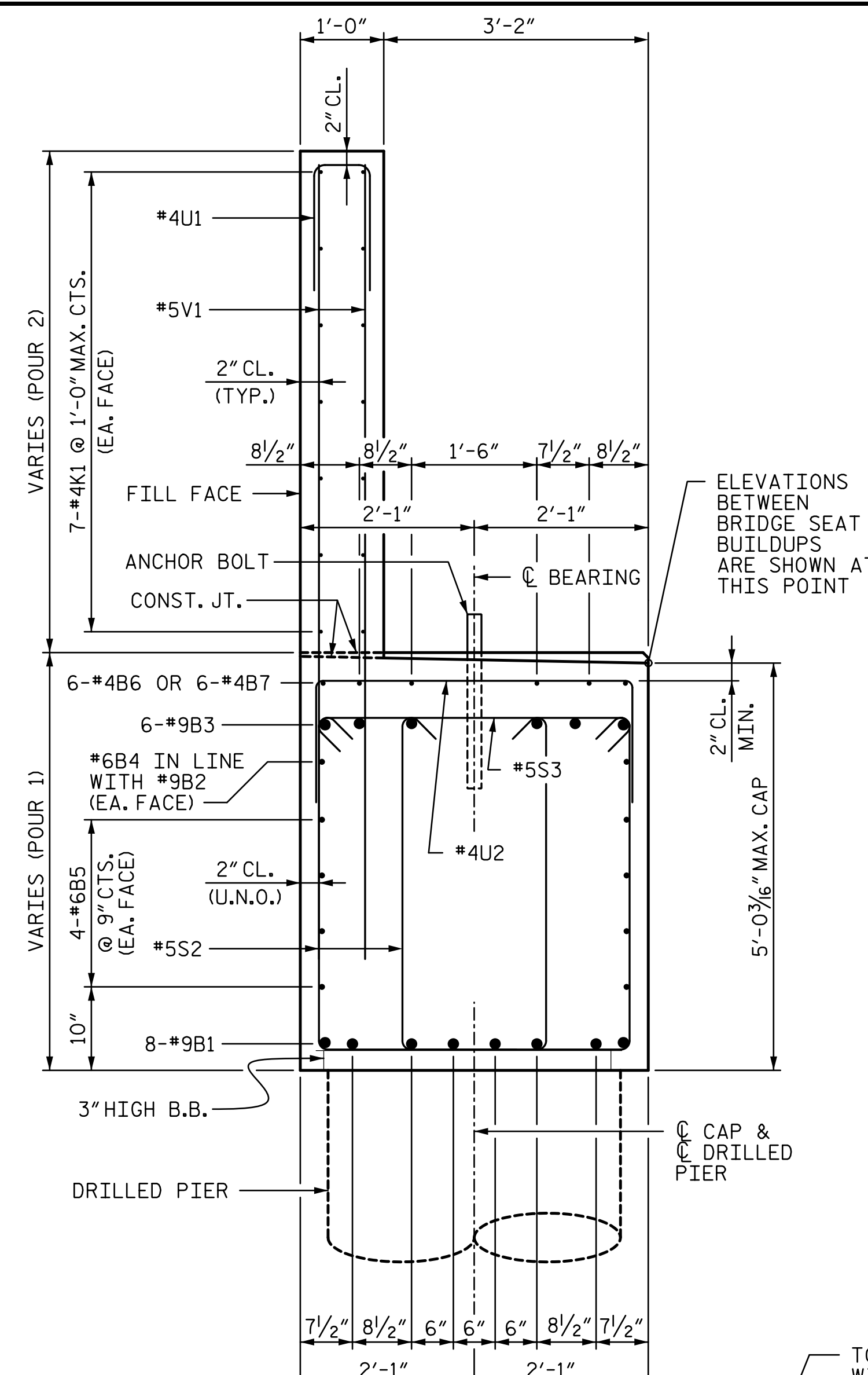
REVISIONS				SHEET NO.
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1			3	
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TOTAL SHEETS: 73

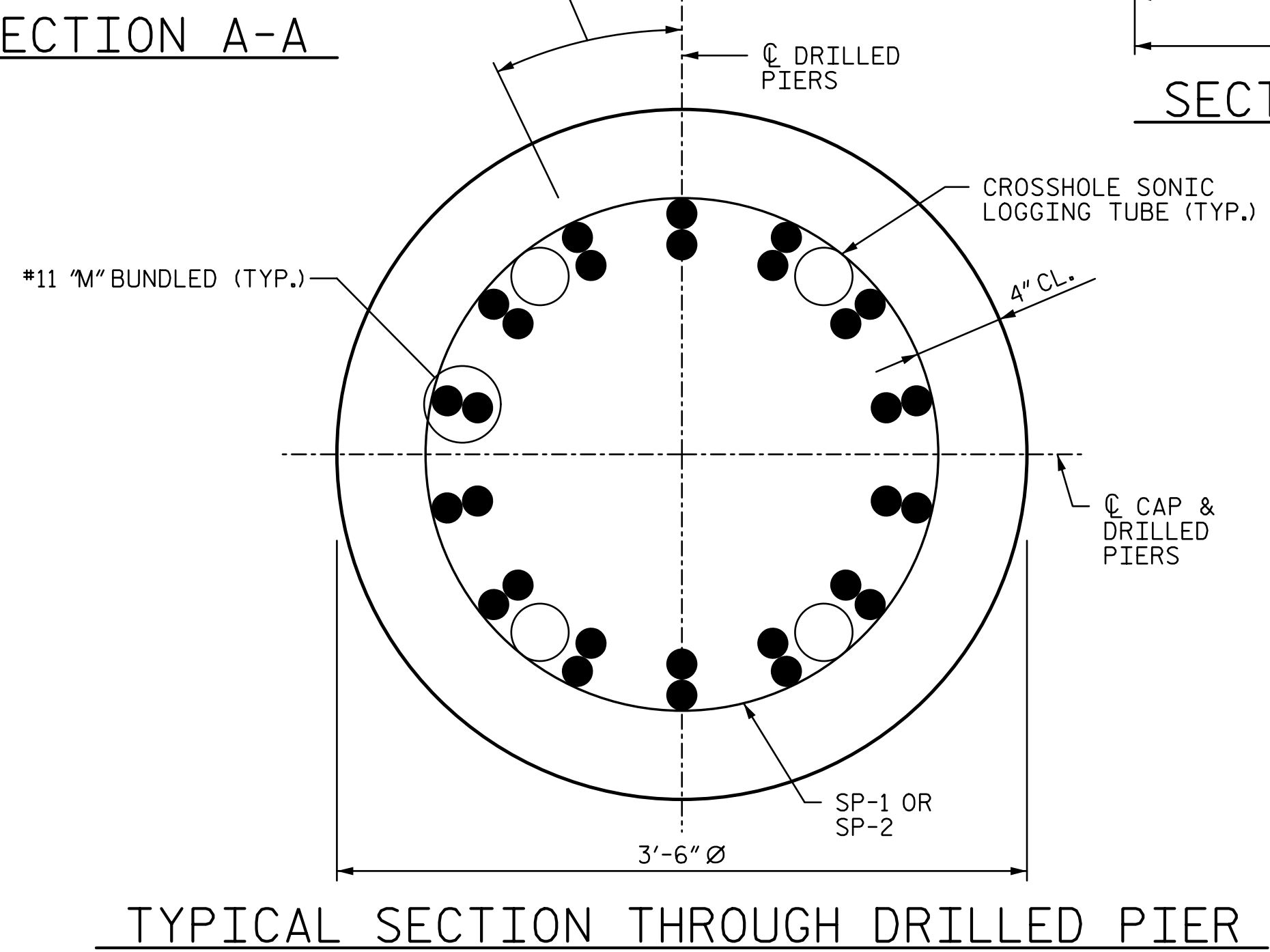
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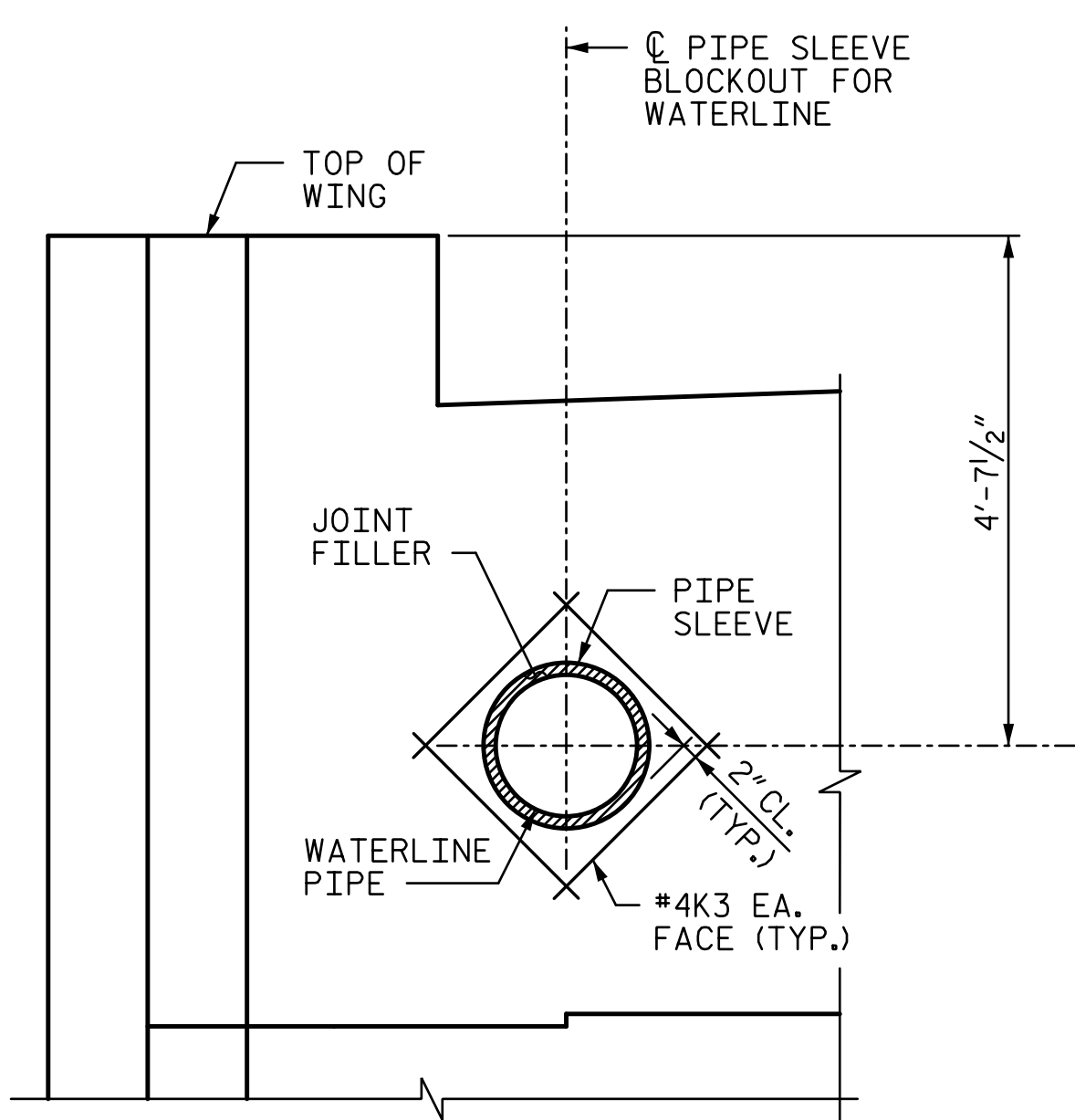
SECTION A-A



SECTION B-B

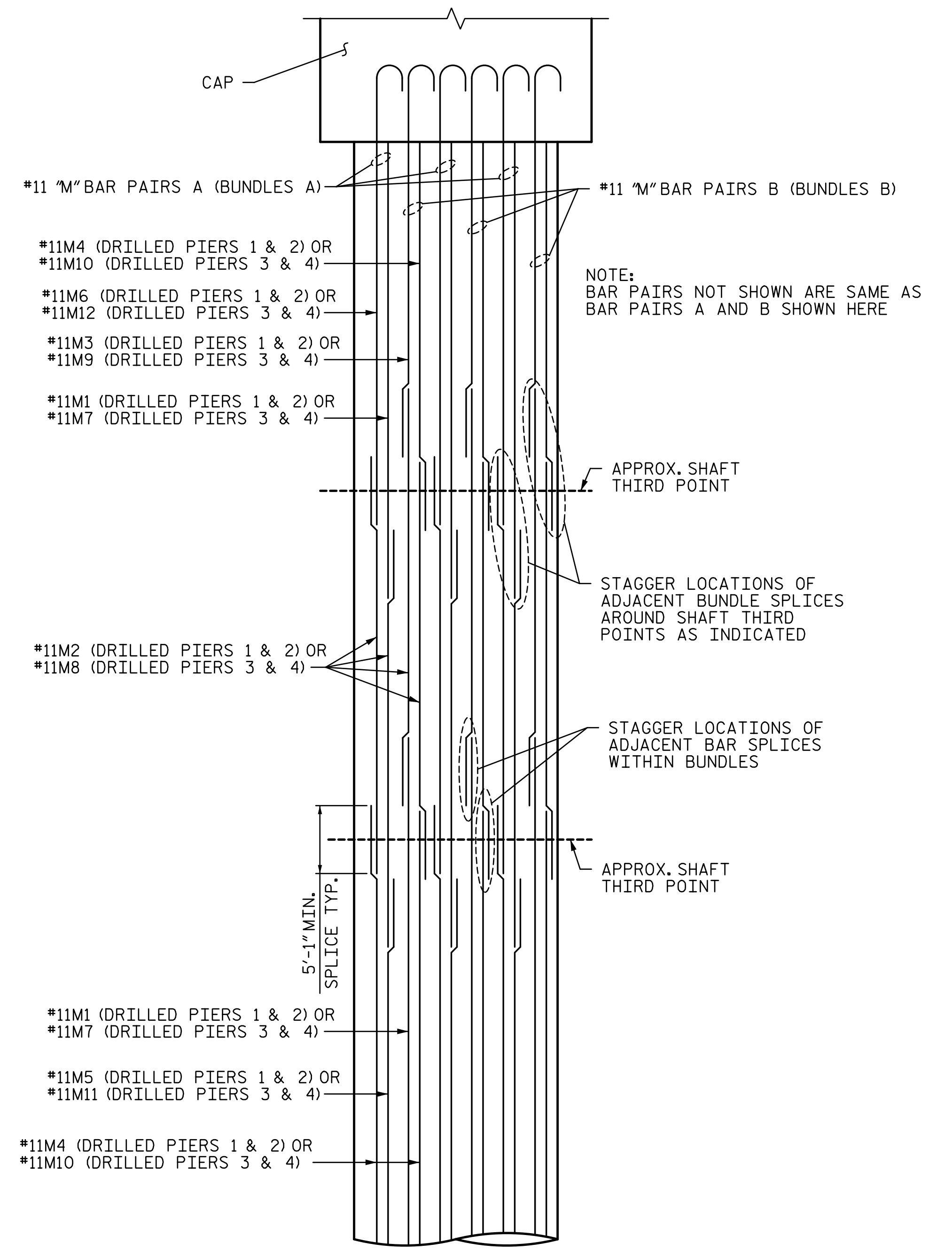


TYPICAL SECTION THROUGH DRILLED PIER



BLOCKOUT DETAIL FOR 16" Ø WATERLINE

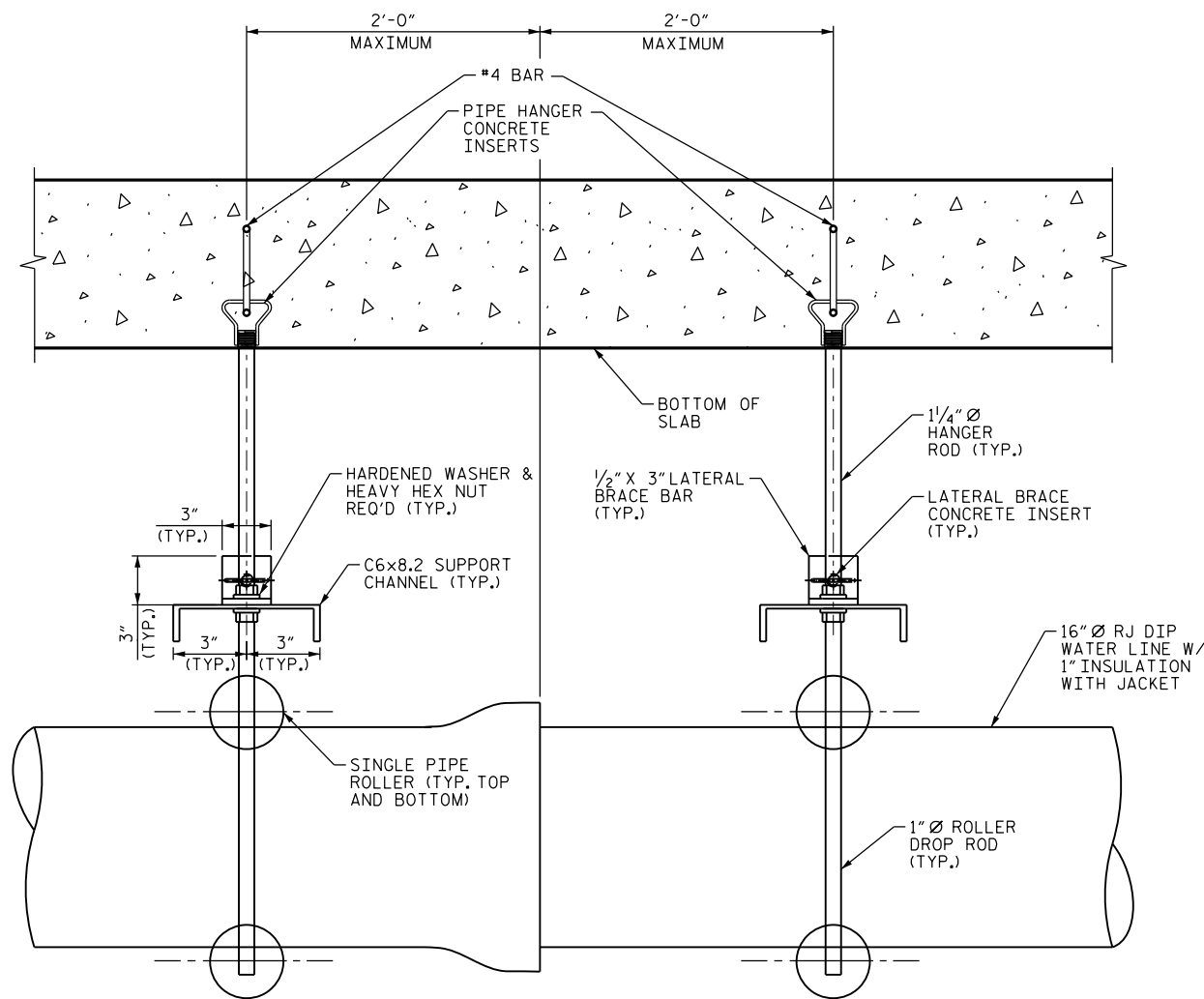
BLOCKOUT NOTES:
 CENTER 16" Ø WATERLINE IN BLOCKOUT AND FILL ANNULAR SPACE AROUND PIPE WITH JOINT FILLER IN ACCORDANCE WITH STANDARD SPECIFICATION ARTICLE 1028-1.
 REINFORCING STEEL IN BACKWALL SHALL BE CUT AS REQUIRED TO WITHIN 2" OF BLOCKOUT.
 FOR DETAILS OF 16" Ø WATERLINE SEE PLANS BY OTHERS.



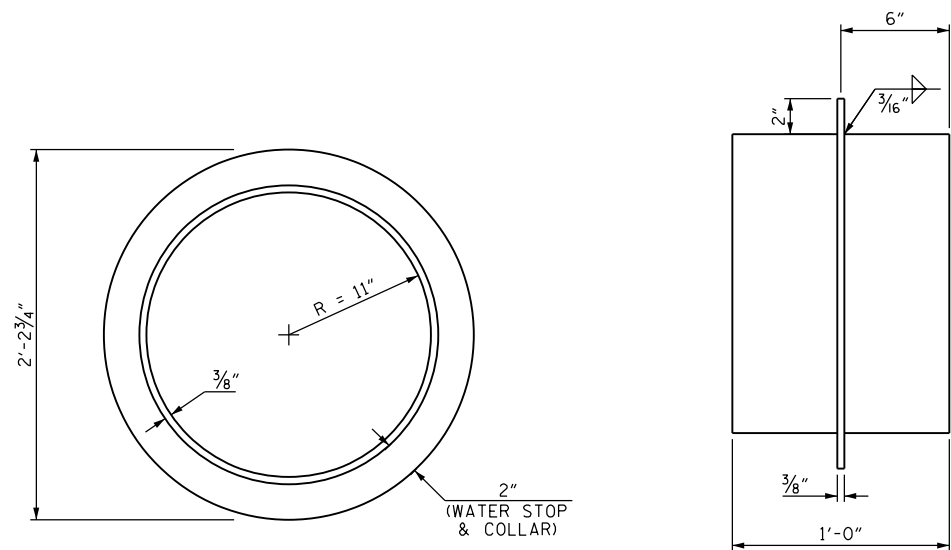
DRILLED PIER MAIN BAR (VERT.) SPLICE DETAIL (NO SCALE)

PROJECT NO. R-2307B
CATAWBA & IREDELL COUNTY
 STATION: 471+85.00 -L-
 SHEET 3 OF 4

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	 10/4/2024	STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH SUBSTRUCTURE END BENT 2 SECTIONS & DETAILS																		
	 STV ENGINEERS, INC. 900 West Trade St., Suite 715 Charlotte, NC 28202 NC License Number F-5991	REVISIONS <table border="1"> <tr> <th>NO.</th> <th>BY:</th> <th>DATE:</th> <th>NO.</th> <th>BY:</th> <th>DATE:</th> </tr> <tr> <td>1</td> <td></td> <td></td> <td>3</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td>4</td> <td></td> <td></td> </tr> </table>	NO.	BY:	DATE:	NO.	BY:	DATE:	1			3			2			4		
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SHEET NO. S1-66 TOTAL SHEETS 73																				

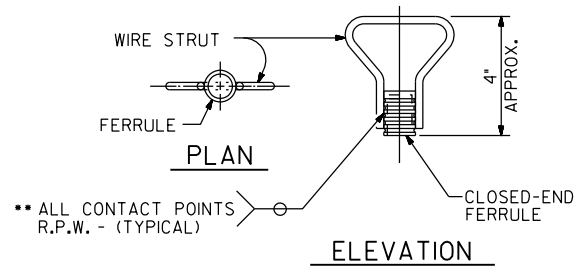


DETAIL 'A'



PIPE SEAL WALL SLEEVE DETAILS

(2 WALL SLEEVES REQUIRED)



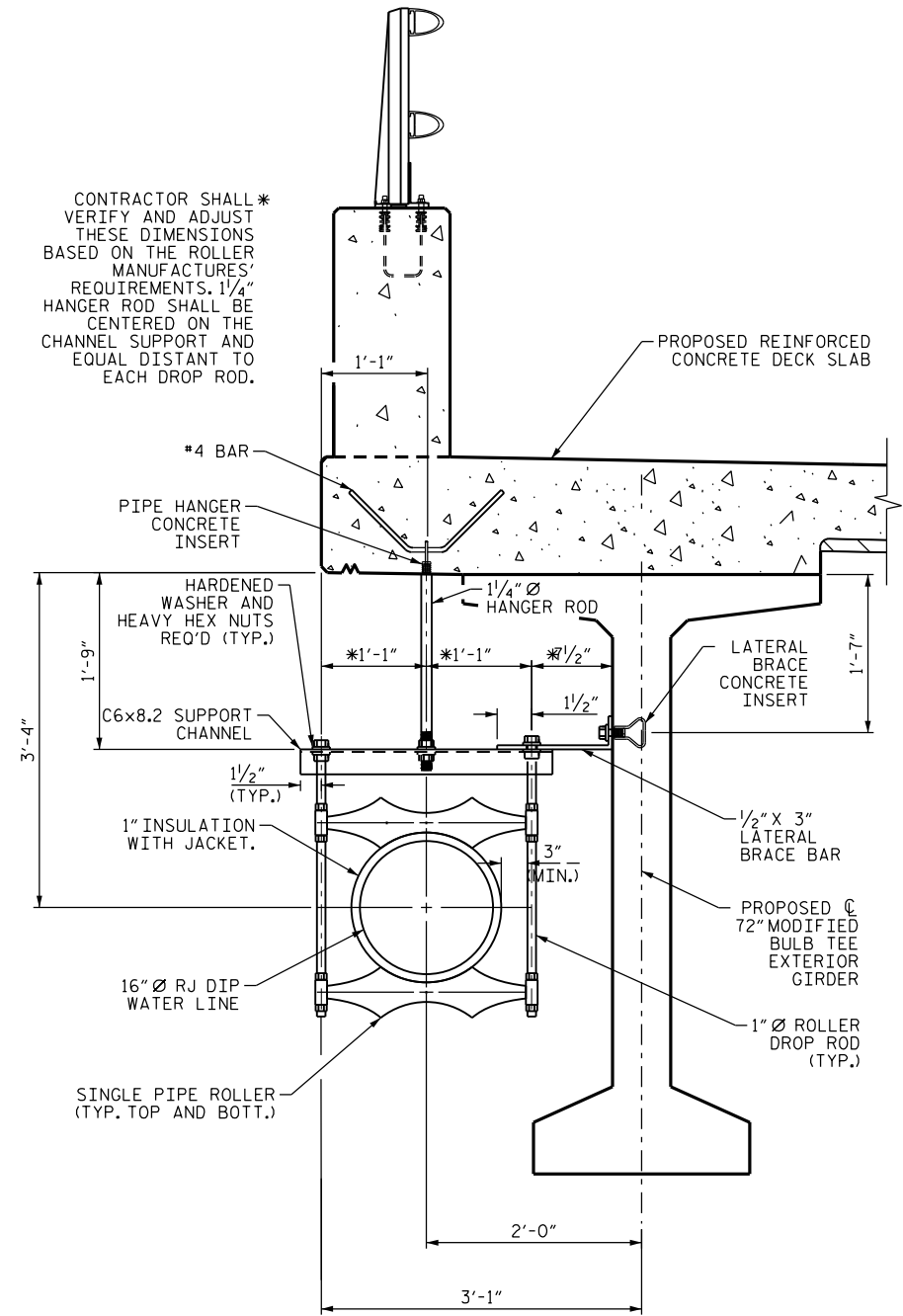
CONCRETE INSERT

WIRE STRUT
FERRULE
PLAN
ELEVATION
APPROX. 4"
CLOSED-END FERRULE
** ALL CONTACT POINTS R.P.W. - (TYPICAL)

** EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.
(186 - CONCRETE INSERTS FOR 1/4" THREADED ROD)
(186 - CONCRETE INSERTS FOR 3/4" BOLTS W/HARDENED WASHERS)

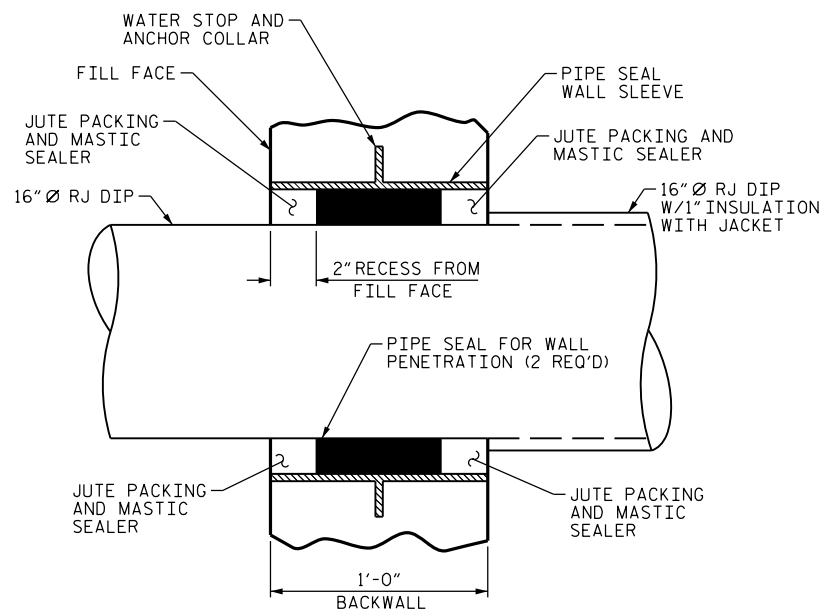
THE STRUCTURAL CONCRETE INSERT SHALL CONSIST OF THE FOLLOWING COMPONENTS:

- A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF ASTM A108, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 1/2".
- B. FOR PIPE HANGER ASSEMBLY: 1-1/4" Ø X 1 3/4" BOLT W/HARDENED WASHER, BOLT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. WASHERS SHALL CONFORM TO ASTM F436. BOLT AND WASHER SHALL BE GALVANIZED. BOLT WILL BE FURNISHED WITH THREADING TO MATCH A 1/4" Ø THREADED ROD AS A TEMPORARY PLUG FOR THE INSERT.
- C. FOR LATERAL BRACE ASSEMBLY: 1-3/4" Ø X 1 3/4" BOLT W/HARDENED WASHER, BOLT SHALL CONFORM TO THE REQUIREMENTS OF ASTM F3125 GRADE A325. WASHERS SHALL CONFORM TO ASTM F436.
- D. WIRE STRUT SHOWN IN THE CONCRETE INSERT ASSEMBLY DETAIL IS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100 KSI.
- E. CONCRETE INSERTS SHALL BE OF AN APPROVED GALVANIZED TYPE HAVING A MINIMUM WORKING LOAD TENSION CAPACITY OF 2500 LBS PER HANGER AND 1500 LBS PER LATERAL BRACE.
- F. FOR LOCATION OF HANGERS WITH LATERAL BRACES, SEE SHEET 1 OF 1. LOCATION OF INSERTS SHALL BE COORDINATED WITH GIRDER FABRICATION ALONG GIRDER LINE 1.



SECTION A-A

CONTRACTOR SHALL * VERIFY AND ADJUST THESE DIMENSIONS BASED ON THE ROLLER MANUFACTURER'S REQUIREMENTS. 1/4" HANGER ROD SHALL BE CENTERED ON THE CHANNEL SUPPORT AND EQUAL DISTANT TO EACH DROP ROD.



DETAIL OF PIPE SEAL FOR THRU WALL PENETRATION AT END BENT

(END BENT 1 SHOWN, END BENT 2 SIMILAR)

PROJECT NO. R-2307B
CATAWBA/IREDELL COUNTY
STATION: 471+85.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PIPE HANGER
BRIDGE CROSSING
CONCRETE INSERT
DETAILS

Professional Engineer stamps for John F. Akers and Caryary Brown, dated 10/4/2024.

DRAWN BY : A.M.TYSINGER DATE : 10/24
CHECKED BY : Z.H.BROWN DATE : 10/24
DESIGN ENGINEER OF RECORD: Z.H.BROWN DATE : 10/24

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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