

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

PROPOSAL

DATE AND TIME OF BID OPENING: **Dec 16, 2025 AT 02:00 PM**

CONTRACT ID C205090
WBS 15BPR.143.3

FEDERAL-AID NO. STATE FUNDED
COUNTY WILSON
T.I.P NO.
MILES 0.120
ROUTE NO. NC-42
LOCATION BRIDGE #970068 OVER US-301 ON NC-42.

TYPE OF WORK BRIDGE PRESERVATION.

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

**PROPOSAL FOR THE CONSTRUCTION OF
CONTRACT No. C205090 IN WILSON COUNTY, NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION,
RALEIGH, NORTH CAROLINA**

The Bidder has carefully examined the location of the proposed work to be known as Contract No. **C205090** has carefully examined the plans and specifications, which are acknowledged to be part of the proposal, the special provisions, the proposal, the form of contract, and the forms of contract payment bond and contract performance bond; and thoroughly understands the stipulations, requirements and provisions. The undersigned bidder agrees to bound upon his execution of the bid and subsequent award to him by the Board of Transportation in accordance with this proposal to provide the necessary contract payment bond and contract performance bond within fourteen days after the written notice of award is received by him. The undersigned Bidder further agrees to provide all necessary machinery, tools, labor, and other means of construction; and to do all the work and to furnish all materials, except as otherwise noted, necessary to perform and complete the said contract in accordance with the *2024 Standard Specifications for Roads and Structures* by the dates(s) specified in the Project Special Provisions and in accordance with the requirements of the Engineer, and at the unit or lump sum prices, as the case may be, for the various items given on the sheets contained herein.

The Bidder shall provide and furnish all the materials, machinery, implements, appliances and tools, and perform the work and required labor to construct and complete Contract No. **C205090** in **Wilson County**, for the unit or lump sum prices, as the case may be, bid by the Bidder in his bid and according to the proposal, plans, and specifications prepared by said Department, which proposal, plans, and specifications show the details covering this project, and hereby become a part of this contract.

The published volume entitled *North Carolina Department of Transportation, Raleigh, Standard Specifications for Roads and Structures, January 2024* with all amendments and supplements thereto, is by reference incorporated into and made a part of this contract; that, except as herein modified, all the construction and work included in this contract is to be done in accordance with the specifications contained in said volume, and amendments and supplements thereto, under the direction of the Engineer.

If the proposal is accepted and the award is made, the contract is valid only when signed either by the Contract Officer or such other person as may be designated by the Secretary to sign for the Department of Transportation. The conditions and provisions herein cannot be changed except over the signature of the said Contract Officer.

The quantities shown in the itemized proposal for the project are considered to be approximate only and are given as the basis for comparison of bids. The Department of Transportation may increase or decrease the quantity of any item or portion of the work as may be deemed necessary or expedient.

An increase or decrease in the quantity of an item will not be regarded as sufficient ground for an increase or decrease in the unit prices, nor in the time allowed for the completion of the work, except as provided for the contract.

Accompanying this bid is a bid bond secured by a corporate surety, or certified check payable to the order of the Department of Transportation, for five percent of the total bid price, which deposit is to be forfeited as liquidated damages in case this bid is accepted and the Bidder shall fail to provide the required payment and performance bonds with the Department of Transportation, under the condition of this proposal, within 14 calendar days after the written notice of award is received by him, as provided in the *Standard Specifications*; otherwise said deposit will be returned to the Bidder.



State Contract Officer

Signed by:

Ronald Elton Davenport, Jr.

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11/12/2025

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PROJECT SPECIAL PROVISIONS**GENERAL****HAUL ROADS:**

(7-16-24)

105

SP1 G04

Revise the *Standard Specifications* as follows:

Page 1-45, Article 105-15 RESTRICTION OF LOAD LIMITS, line 31, add the following after second sentence of the second paragraph:

At least 30 days prior to use, the Contractor shall notify the Engineer of any public road proposed for use as a haul road for the project.

CONTRACT TIME AND LIQUIDATED DAMAGES:

(7-1-95) (Rev. 12-18-07)

108

SP1 G10 A

The date of availability for this contract is **January 26, 2026**.

The completion date for this contract is **November 15, 2026**.

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

The liquidated damages for this contract are **One Thousand Dollars (\$ 1,000.00)** per calendar day.

INTERMEDIATE CONTRACT TIME NUMBER 1 AND LIQUIDATED DAMAGES:

(2-20-07)

108

SP1 G14 A

The Contractor shall complete the required work of installing, maintaining and removing the traffic control devices for lane closures and restoring traffic to the existing traffic pattern. The Contractor shall not close or narrow a lane of traffic on **NC 42** during the following time restrictions:

DAY AND TIME RESTRICTIONS**Monday thru Friday, 6:00 A.M. to 8:00 A.M. and 4:00 P.M. to 6:00 P.M.**

In addition, the Contractor shall not close or narrow a lane of traffic on **US 301 or NC 42**, detain and/or alter the traffic flow on or during holidays, holiday weekends, special events, or any other time when traffic is unusually heavy, including the following schedules:

HOLIDAY AND HOLIDAY WEEKEND LANE CLOSURE RESTRICTIONS

1. For **unexpected occurrence** that creates unusually high traffic volumes, as directed by the Engineer.
2. For **New Year's Day**, between the hours of **6:00 A.M.** December 31st and **10:00 P.M.** January 2nd. If New Year's Day is on a Friday, Saturday, Sunday or Monday, then until **10:00 P.M.** the following Tuesday.
3. For **Easter**, between the hours of **6:00 A.M.** Thursday and **10:00 P.M.** Monday.
4. For **Memorial Day**, between the hours of **6:00 A.M.** Friday and **10:00 P.M.** Tuesday.
5. For **Independence Day**, between the hours of **6:00 A.M.** the day before Independence Day and **10:00 P.M.** the day after Independence Day.

If **Independence Day** is on a Friday, Saturday, Sunday or Monday, then between the hours of **6:00 A.M.** the Thursday before Independence Day and **10:00 P.M.** the Tuesday after Independence Day.

6. For **Labor Day**, between the hours of **6:00 A.M.** Friday and **10:00 P.M.** Tuesday.
7. For **Thanksgiving**, between the hours of **6:00 A.M.** Tuesday and **10:00 P.M.** Monday.
8. For **Christmas**, between the hours of **6:00 A.M.** the Friday before the week of Christmas Day and **10:00 P.M.** the following Tuesday after the week of Christmas Day.

Holidays and holiday weekends shall include New Year's, Easter, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas. The Contractor shall schedule his work so that lane closures will not be required during these periods, unless otherwise directed by the Engineer.

The time of availability for this intermediate contract work shall be the time the Contractor begins to install all traffic control devices for lane closures according to the time restrictions listed herein.

The completion time for this intermediate contract work shall be the time the Contractor is required to complete the removal of all traffic control devices for lane closures according to the time restrictions stated above and place traffic in the existing traffic pattern.

The liquidated damages are **Two Hundred Fifty Dollars (\$ 250.00)** per hour.

INTERMEDIATE CONTRACT TIME NUMBER 2 AND LIQUIDATED DAMAGES:

(2-20-07) (Rev. 6-18-13)

108

SP1 G14 F

The Contractor shall complete the work required of **Step #3 thru Step #6** as shown on Sheet **TMP-2** and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is the date the Contractor elects to begin the work.

The completion time for this intermediate contract time is the date which is **one hundred twenty (120)** consecutive calendar days after and including the date the Contractor begins this work.

The liquidated damages are **Four Thousand Dollars (\$ 4,000.00)** per calendar day.

MAJOR CONTRACT ITEMS:

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

104

SP1 G28

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

Line #	Description
25	Placing & Finishing Of Latex Modified Conc Overlay
35	Hydro-Demolition Of Bridge Deck
37	Elastomeric Bearing
38	Stub Column

SPECIALTY ITEMS:

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

108-6

SP1 G37

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

Line #	Description
5-8	Guardrail
19-20	Long-Life Pavement Markings
17	Removable Tape
21	Permanent Pavement Markers
23, 27, 29	Bridge Painting

FUEL PRICE ADJUSTMENT:

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

109-8

SP1 G43

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

The base index price for DIESEL #2 FUEL is \$ **2.382** per gallon. Where any of the following are included as pay items in the contract, they will be eligible for fuel price adjustment.

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

Description	Units	Fuel Usage Factor Diesel
Unclassified Excavation	Gal/CY	0.29
Borrow Excavation	Gal/CY	0.29
Class IV Subgrade Stabilization	Gal/Ton	0.55
Aggregate Base Course	Gal/Ton	0.55
Sub-Ballast	Gal/Ton	0.55
Erosion Control Stone	Gal/Ton	0.55
Rip Rap, Class _____	Gal/Ton	0.55
Asphalt Concrete Base Course, Type _____	Gal/Ton	0.90 or 2.90
Asphalt Concrete Intermediate Course, Type _____	Gal/Ton	0.90 or 2.90
Asphalt Concrete Surface Course, Type _____	Gal/Ton	0.90 or 2.90
Open-Graded Asphalt Friction Course	Gal/Ton	0.90 or 2.90
Permeable Asphalt Drainage Course, Type _____	Gal/Ton	0.90 or 2.90
Sand Asphalt Surface Course, Type _____	Gal/Ton	0.90 or 2.90
Ultra-thin Bonded Wearing Course	Gal/Ton	0.90 or 2.90
Aggregate for Cement Treated Base Course	Gal/Ton	0.55
Portland Cement for Cement Treated Base Course	Gal/Ton	0.55
> 11" Portland Cement Concrete Pavement	Gal/SY	0.327
Concrete Shoulders Adjacent to > 11" Pavement	Gal/SY	0.327
9" to 11" Portland Cement Concrete Pavement	Gal/SY	0.272
Concrete Shoulders Adjacent to 9" to 11" Pavement	Gal/SY	0.272
< 9" Portland Cement Concrete Pavement	Gal/SY	0.245
Concrete Shoulders Adjacent to < 9" Pavement	Gal/SY	0.245

For the asphalt items noted in the chart as eligible for fuel adjustments, the bidder may include the *Fuel Usage Factor Adjustment Form* with their bid submission if they elect to use the fuel usage factor. The *Fuel Usage Factor Adjustment Form* is found at the following link:

<https://connect.ncdot.gov/letting/LetCentral/Fuel%20Usage%20Factor%20Adjustment%20Form%20-%20Starting%20Nov%202022%20Lettings.pdf>

Select either 2.90 Gal/Ton fuel factor or 0.90 Gal/Ton fuel factor for each asphalt line item on the *Fuel Usage Factor Adjustment Form*. The selected fuel factor for each asphalt item will remain in effect for the duration of the contract.

Failure to complete the *Fuel Usage Factor Adjustment Form* will result in using 2.90 gallons per ton as the Fuel Usage Factor for Diesel for the asphalt items noted above. The contractor will not be permitted to change the Fuel Usage Factor after the bids are submitted.

STEEL PRICE ADJUSTMENT:

(4-19-22)(Rev. 12-20-22)

SP1 G47

Description and Purpose

Steel price adjustments will be made to the payments due the Contractor for items as defined herein that are permanently incorporated into the work, when the price of raw steel mill products utilized on the contract have fluctuated. The Department will adjust monthly progress payments up or down as appropriate for cost changes in steel according to this provision.

Eligible Items

The list of eligible bid items for steel price adjustment can be found on the Departments website at the following address:

<https://connect.ncdot.gov/letting/LetCentral/Eligible%20Bid%20Items%20for%20Steel%20Price%20Adjustment.xlsx>

Nuts, bolts, anchor bolts, rebar chairs, connecting bands and other miscellaneous hardware associated with these items shall not be included in the price adjustment.

Adjustments will only be made for fluctuations in the material cost of the steel used in the above products as specified in the Product Relationship Table below. The producing mill is defined as the source of steel product before any fabrication has occurred (e.g., coil, plate, rebar, hot rolled shapes, etc.). No adjustment will be made for changes in the cost of fabrication, coating, shipping, storage, etc.

No steel price adjustments will be made for any products manufactured from steel having an adjustment date, as defined by the Product Relationship Table below, prior to the letting date.

Bid Submittal Requirements

The successful bidder, within 14 calendar days after the notice of award is received by him, shall provide the completed Form SPA-1 to the Department (State Contract Officer or Division Contract Engineer) along with the payment bonds, performance bonds and contract execution signature sheets in a single submittal. If Form SPA-1 is not included in the same submittal as the payment bonds, performance bonds and contract execution signature sheets, the Contractor will not be eligible for any steel price adjustment for any item in the contract for the life of the contract. Form SPA-1 can be found on the Department's website at the following address:

<https://connect.ncdot.gov/letting/LetCentral/Form%20SPA-1.xlsm>

The Contractor shall provide Form SPA-1 listing the Contract Line Number, (with corresponding Item Number, Item Description, and Category) for the steel products they wish to have an adjustment calculated. Only the contract items corresponding to the list of eligible item numbers for steel price adjustment may be entered on Form SPA-1. The Contractor may choose to have steel price adjustment applied to any, all, or none of the eligible items. However, the Contractor's selection of items for steel price adjustment or non-selection (non-participation) may not be changed once Form SPA-1 has been received by the Department. Items the Bidder chooses for steel price adjustment must be designated by writing the word "Yes" in the column titled "Option" by each Pay Item chosen for adjustment. Should the bidder elect an eligible steel price item, the entire quantity of the line item will be subject to the price adjustment for the duration of the Contract. The Bidder's designations on Form SPA-1 must be written in ink or typed and signed by the Bidder (Prime Contractor) to be considered complete. Items not properly designated, designated with "No", or left blank on the Bidder's Form SPA-1 will automatically be removed from consideration for adjustment. No steel items will be eligible for steel price adjustment on this Project if the Bidder fails to return Form SPA-1 in accordance with this provision.

Establishing the Base Price

The Department will use a blend of monthly average prices as reported from the Fastmarkets platform to calculate the monthly adjustment indices (BI and MI). This data is typically available on the first day of the month for the preceding month. The indices will be calculated by the Department for the different categories found on the Product Relationship Table below. For item numbers that include multiple types of steel products, the category listed for that item number will be used for adjusting each steel component.

The bidding index for Category 1 Steel items is **\$ 45.00** per hundredweight.
The bidding index for Category 2 Steel items is **\$ 50.86** per hundredweight.
The bidding index for Category 3 Steel items is **\$ 67.50** per hundredweight.
The bidding index for Category 4 Steel items is **\$ 43.64** per hundredweight.
The bidding index for Category 5 Steel items is **\$ 54.81** per hundredweight.
The bidding index for Category 6 Steel items is **\$ 55.79** per hundredweight.
The bidding index for Category 7 Steel items is **\$ 47.10** per hundredweight.

The bidding index represents a selling price of steel based on Fastmarkets data for the month of **October 2025**.

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

BI = Bidding Index. - in Dollars (\$) per hundredweight (CWT). Use the adjustment indices as listed in the proposal.

<i>Product Relationship Table</i>			
<i>Steel Product (Title)</i>	BI, MI*	Adjustment Date for MI	Category
Reinforcing Steel, Bridge Deck, and SIP Forms	Based on one or more Fastmarkets indices	Delivery Date from Producing Mill	1
Structural Steel and Encasement Pipe	Based on one or more Fastmarkets indices	Delivery Date from Producing Mill	2
Steel H-Piles, Soldier Pile Walls	Based on one or more Fastmarkets indices	Delivery Date from Producing Mill	3
Guardrail Items and Pipe Piles	Based on one or more Fastmarkets indices	Material Received Date**	4
Fence Items	Based on one or more Fastmarkets indices	Material Received Date**	5
Overhead Sign Assembly, Signal Poles, High Mount Standards	Based on one or more Fastmarkets indices	Material Received Date**	6
Prestressed Concrete Members	Based on one or more Fastmarkets indices	Cast Date of Member	7
* BI and MI are in converted units of Dollars per Hundredweight (\$/CWT)			
** Material Received Date is defined as the date the materials are received on the project site. If a material prepayment is made for a Category 4-6 item, the Adjustment Date to be used will be the date of the prepayment request instead of the Materials Received Date.			

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

Submittal Requirements

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

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

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

Submit all documentation to the Engineer prior to incorporation of the steel into the completed work. The Department will withhold progress payments for the affected contract line item if the documentation is not provided and at the discretion of the Engineer the work is allowed to proceed. Progress payments will be made upon receipt of the delinquent documentation.

Step 1 (Form SPA -2)

Utilizing Form SPA-2, submit separate documentation packages for each line item from Form SPA-1 for which the Contractor opted for a steel price adjustment. For line items with multiple components of steel, each component should be listed separately. Label each SPA-2 documentation package with a unique number as described below.

- a. Documentation package number: (Insert the contract line-item) - (Insert sequential package number beginning with "1").
Example: 412 - 1,
 412 - 2,
 424 - 1,
 424 - 2,
 424 - 3, etc.
- b. The steel product quantity in pounds
 - i. The following sources should be used, in declining order of precedence, to determine the weight of steel/iron, based on the Engineers decision:
 1. Department established weights of steel/iron by contract pay item per pay unit;
 2. Approved Shop Drawings;
 3. Verified Shipping Documents;
 4. Contract Plans;
 5. Standard Drawing Sheets;
 6. Industry Standards (i.e., AISC Manual of Steel Construction, AWWA Standards, etc.); and
 7. Manufacture's data.
 - ii. Any item requiring approved shop drawings shall have the weights of steel calculated and shown on the shop drawings or submitted and certified separately by the fabricator.
- c. The date the steel product, subject to adjustment, was shipped from the producing mill (Categories 1-3), received on the project (Categories 4-6), or casting date (Category 7).

Step 2 (Monthly Calculator Spreadsheet)

For each month, upon the incorporation of the steel product into the work, provide the Engineer the following:

- 1) Completed NCDOT Steel Price Adjustment Calculator Spreadsheet, summarizing all the steel submittal packages (Form SPA-2) actually incorporated into the completed work in the given month.
 - a. Contract Number
 - b. Bidding Index Reference Month
 - c. Contract Completion Date or Revised Completion Date
 - d. County, Route, and Project TIP information

- e. Item Number
 - f. Line-Item Description
 - g. Submittal Number from Form SPA-2
 - h. Adjustment date
 - i. Pounds of Steel
- 2) An affidavit signed by the Contractor stating the documentation provided in the NCDOT Steel Price Adjustment Calculator Spreadsheet is true and accurate.

Price Adjustment Conditions

Download the Monthly Steel Adjustment Spreadsheet with the most current reference data from the Department's website each month at the following address:

<https://connect.ncdot.gov/projects/construction/Construction%20Forms/Form%20SPA-3%20NCDOT%20Steel%20Price%20Adjustment%20Calculator.xlsx>

If the monthly Fastmarkets data is not available, the data for the most recent immediately preceding month will be used as the basis for adjustment.

Price Adjustment Calculations

The price adjustment will be determined by comparing the percentage of change in index value listed in the proposal (BI) to the monthly index value (MI). (See included sample examples). Weights and date of shipment must be documented as required herein. The final price adjustment dollar value will be determined by multiplying this percentage increase or decrease in the index by the represented quantity of steel incorporated into the work, and the established bidding index (BI) subject to the limitations herein.

Price increase/decrease will be computed as follows:

$$\text{SPA} = ((\text{MI} / \text{BI}) - 1) * \text{BI} * (\text{Q} / 100)$$

Where;

SPA = Steel price adjustment in dollars

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

BI = Bidding Index. - in Dollars (\$) per hundredweight (CWT). Use the adjustment indices as listed in the proposal.

Q = Quantity of steel, product, pounds actually incorporated into the work as documented by the Contractor, or Design Build Team and verified by the Engineer.

Calculations for price adjustment shall be shown separate from the monthly progress estimate and will not be included in the total cost of work for determination of progress or for extension of Contract time in accordance with Subarticle 108-10(B)(1).

Any apparent attempt to unbalance bids in favor of items subject to price adjustment may result in rejection of the bid proposal.

Adjustments will be paid or charged to the Contractor only. Any Contractor receiving an adjustment under this provision shall distribute the proper proportional part of such adjustments to the subcontractor who performed the applicable work.

Delays to the work caused by steel shortages may be justification for a Contract time extension but will not constitute grounds for claims for standby equipment, extended office overhead, or other costs associated with such delays.

If an increase in the steel material price is anticipated to exceed 50% of the original quoted price, the contractor must notify the Department within 7 days prior to purchasing the material. Upon receipt of such notification, the Department will direct the Contractor to either (1) proceed with the work or (2) suspend the work and explore the use of alternate options.

If the decrease in the steel material exceeds 50% of the original quoted price, the contractor may submit to the Department additional market index information specific to the item in question to dispute the decrease. The Department will review this information and determine if the decrease is warranted.

When the steel product adjustment date, as defined in the Product Relationship Table, is after the approved contract completion date, the steel price adjustments will be based on the lesser value of either the MI for the month of the approved contract completion date or the MI for the actual adjustment date.

If the price adjustment is based on estimated material quantities for that time, and a revision to the total material quantity is made in a subsequent or final estimate, an appropriate adjustment will be made to the price adjustment previously calculated. The adjustment will be based on the same indices used to calculate the price adjustment which is being revised. If the adjustment date of the revised material quantity cannot be determined, the adjustment for the quantity in question, will be based on the indices utilized to calculate the steel price adjustment for the last initial documentation package submission, for the steel product subject to adjustment, that was incorporated into the particular item of work, for which quantities are being finalized.

Example: Structural steel for a particular bridge was provided for in three different shipments with each having a different mill shipping date. The quantity of structural steel actually used for the bridge was calculated and a steel price adjustment was made in a progress payment. At the conclusion of the work an error was found in the plans of the final quantity of structural steel used for the bridge. The quantity to be adjusted cannot be directly related to any one of the three mill shipping dates. The steel price adjustment for the quantity in question would be calculated using the indices that were utilized to calculate the steel price adjustment for the quantity of structural steel represented by the last initial structural steel documentation package submission. The package used will be the one with the greatest sequential number.

Extra Work/Force Account:

When steel products, as specified herein, are added to the contract as extra work, in accordance with the provisions of Article 104-7 or 104-3, the Engineer will determine and specify in the supplemental agreement, the need for application of steel price adjustments on a case-by-case basis. No steel price adjustments will be made for any products manufactured from steel having an adjustment date prior to the supplemental agreement execution date. Price adjustments will be made as provided herein, except the Bidding Index will be based on the month in which the supplemental agreement pricing was executed.

For work performed on force account basis, reimbursement of actual material costs, along with the specified overhead and profit markup, will be considered to include full compensation for the current cost of steel and no steel price adjustments will be made.

Examples Form SPA-2**Steel Price Adjustment Submission Form**Contract Number C203394 Bid Reference Month January 2019Submittal Date 8/31/2019Contract Line Item 237Line Item Description APPROX....LBS Structural SteelSequential Submittal
Number 2

Supplier	Description of material	Location information	Quantity in lbs.	Adjustment Date
XYZ mill	Structural Steel	Structure 3, Spans A-C	1,200,000	May 4, 2020
ABC distributing	Various channel & angle shapes	Structure 3 Spans A-C	35,000	July 14, 2020
		Total Pounds of Steel	1,235,000	

Note: Attach the following supporting documentation to this form.

- Bill of Lading to support the shipping dates
- Supporting information for weight documentation (e.g., Pay item reference, Shop drawings, shipping documents, Standards Sheets, industry standards, or manufacturer's data)

By providing this data under my signature, I attest to the accuracy of and validity of the data on this form and certify that no deliberate misrepresentation in any manner has occurred.

Printed Name

Signature

Examples Form SPA-2**Steel Price Adjustment Submission Form**Contract Number C203394 Bid Reference Month January 2019Submittal Date August 31, 2019Contract Line Item 237Line Item Description SUPPORT, OVRHD SIGN STR -DFEB – STA 36+00Sequential Submittal
Number 2

Supplier	Description of material	Location information	Quantity in lbs.	Adjustment Date
XYZ mill	Tubular Steel (Vertical legs)	<u>-DFEB – STA 36+00</u>	12000	December 11, 2021
PDQ Mill	4" Tubular steel (Horizontal legs)	<u>-DFEB – STA 36+00</u>	5900	December 11, 2021
ABC distributing	Various channel & angle shapes (see quote)	<u>-DFEB – STA 36+00</u>	1300	December 11, 2021
	Catwalk assembly	<u>-DFEB – STA 36+00</u>	2000	December 11, 2021
Nucor	Flat plate	<u>-DFEB – STA 36+00</u>	650	December 11, 2021
		Total Pounds of Steel	21,850	

Note: Attach the following supporting documentation to this form.

- Bill of Lading to support the shipping dates
- Supporting information for weight documentation (e.g., Pay item reference, Shop drawings, shipping documents, Standards Sheets, industry standards, or manufacturer's data)

By providing this data under my signature, I attest to the accuracy of and validity of the data on this form and certify that no deliberate misrepresentation in any manner has occurred.

Printed Name

Signature

Price Adjustment Sample Calculation (increase)

Project bid on September 17, 2019

Line Item 635 “Structural Steel” has a plan quantity of 2,717,000 lbs.

Bidding Index for Structural Steel (Category 2) in the proposal was \$36.12/CWT = BI

450,000 lbs. of Structural Steel for Structure 2 at Station 44+08.60 were shipped to fabricator from the producing mill in same month, May 2021.

Monthly Index for Structural Steel (Category 2) for May 2021 was \$64.89/CWT = MI

The Steel Price Adjustment formula is as follows:

$$\text{SPA} = ((\text{MI} / \text{BI}) - 1) * \text{BI} * (\text{Q} / 100)$$

Where; SPA = Steel price adjustment in dollars

BI = Bidding Index – in dollars (\$) per hundredweight (CWT). Use the adjustment indices as listed in the proposal.

MI = Mill Shipping Index – in dollars (\$) per hundredweight (CWT). Use the adjustment indices from the month the steel was shipped from the producing mill, received on the project, or member cast as defined in the Product Relationship Table.

Q = Quantity of steel product, in pounds (lbs.) actually incorporated into the work as documented by the Contractor, or Design Build Team and verified by the Engineer.

$$\text{BI} = \$36.12 / \text{CWT}$$

$$\text{MI} = \$64.89 / \text{CWT}$$

$$\% \text{ change} = ((\text{MI} / \text{BI}) - 1) = (\$64.89 / \$36.12 - 1) = (1.79651 - 1) = 0.79651162791$$

$$\text{Q} = 450,000 \text{ lbs.}$$

$$\text{SPA} = 0.79651162791 \times \$36.12 \times (450,000 / 100)$$

$$\text{SPA} = 0.79651162791 * \$36.12 * 4,500$$

$$\text{SPA} = \$129,465 \text{ pay adjustment to Contractor for Structural Steel (Structure 2 at Station 44+08.60)}$$

Price Adjustment Sample Calculation (decrease)

Project bid on December 18, 2018

Line Item 635 Structural Steel has a plan quantity of 2,717,000 lbs.

Bidding Index for Structural Steel (Category 2) in the proposal was \$46.72/CWT = BI

600,000 lbs. of Structural Steel for Structure 1 at Station 22+57.68 were shipped to fabricator from the producing mill in same month, August 2020.

Monthly Index for Structural Steel (Category 2) for August 2020 was \$27.03/CWT = MI

The Steel Price Adjustment formula is as follows:

$$\text{SPA} = ((\text{MI} / \text{BI}) - 1) * \text{BI} * (\text{Q} / 100)$$

Where; SPA = Steel price adjustment in dollars

BI = Bidding Index – in dollars (\$) per hundredweight (CWT). Use the adjustment indices as listed in the proposal.

MI = Mill Shipping Index – in dollars (\$) per hundredweight (CWT). Use the adjustment indices from the month the steel was shipped from the producing mill, received on the project, or member cast as defined in the Product Relationship Table.

Q = Quantity of steel product, in pounds (lbs.) actually incorporated into the work as documented by the Contractor, or Design Build Team and verified by the Engineer.

$$\text{BI} = \$46.72 / \text{CWT}$$

$$\text{MI} = \$27.03 / \text{CWT}$$

$$\% \text{ change} = ((\text{MI} / \text{BI}) - 1) = (\$27.03 / \$46.72 - 1) = (0.57855 - 1) = -0.421446917808$$

$$\text{Q} = 600,000 \text{ lbs.}$$

$$\text{SPA} = -0.421446917808 * \$46.72 * (600,000 / 100)$$

$$\text{SPA} = -0.421446917808 * \$46.72 * 6,000$$

$$\text{SPA} = \$ 118,140.00 \text{ Credit to the Department for Structural Steel (Structure 1 at Station 22+57.68)}$$

Price Adjustment Sample Calculation (increase)

Project bid on July 16, 2020

Line Item 614 Reinforced Concrete Deck Slab has a plan quantity of 241974 lbs.

Bidding Index Reference Month was May 2020. Bidding Index for Reinforced Concrete Deck Slab (Category 1) in the proposal was \$29.21/CWT = BI

51,621 lbs. of reinforcing steel and 52,311 lbs. of epoxy coated reinforcing steel for Structure 2 at Station 107+45.55 -L- was shipped to fabricator from the producing mill in same month, May 2021.

Monthly Index for Reinforced Concrete Deck Slab (Category 1) for May 2021 was \$43.13/CWT = MI

The Steel Price Adjustment formula is as follows:

$$\text{SPA} = ((\text{MI} / \text{BI}) - 1) * \text{BI} * (\text{Q} / 100)$$

Where; SPA = Steel price adjustment in dollars

BI = Bidding Index – in dollars (\$) per hundredweight (CWT). Use the adjustment indices as listed in the proposal.

MI = Mill Shipping Index – in dollars (\$) per hundredweight (CWT). Use the adjustment indices from the month the steel was shipped from the producing mill, received on the project, or member cast as defined in the Product Relationship Table.

Q = Quantity of steel product, in pounds (lbs.) actually incorporated into the work as documented by the Contractor, or Design Build Team and verified by the Engineer.

$$\text{BI} = \$29.21 / \text{CWT}$$

$$\text{MI} = \$43.13 / \text{CWT}$$

$$\% \text{ change} = ((\text{MI} / \text{BI}) - 1) = (\$43.13 / \$29.21 - 1) = (1.47655 - 1) = 0.47654912701$$

$$\text{Q} = 103932 \text{ lbs.}$$

$$\text{SPA} = 0.47654912701 * \$29.21 * (103,932 / 100)$$

$$\text{SPA} = 0.47654912701 * \$29.21 * 1,039.32$$

SPA = \$14,467.33 Pay Adjustment to Contractor for Reinforced Concrete Deck Slab (Category 1) at Station 107+45.55 -L-

SCHEDULE OF ESTIMATED COMPLETION PROGRESS:

(7-15-08)(Rev. 6-17-25)

108-2

SP1 G58

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

	<u>Fiscal Year</u>	<u>Progress (% of Dollar Value)</u>
2026	(7/01/25 - 6/30/26)	67% of Total Amount Bid
2027	(7/01/26 - 6/30/27)	33% of Total Amount Bid

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

MINORITY BUSINESS ENTERPRISE AND WOMEN BUSINESS ENTERPRISE:

(10-16-07)(Rev. 10-21-25)

102-15(J)

SP1 G66

Description

The purpose of this Special Provision is to carry out the North Carolina Department of Transportation's policy of ensuring nondiscrimination in the award and administration of contracts financed in whole or in part with State funds.

Definitions

Additional MBE/WBE Subcontractors - Any MBE/WBE submitted at the time of bid that will not be used to meet the Combined MBE /WBE Goal. No submittal of a Letter of Intent is required.

Combined MBE/WBE Goal: A portion of the total contract, expressed as a percentage that is to be performed by committed MBE/WBE subcontractors.

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

Contract Goal Requirement - The approved participation at time of award, but not greater than the advertised Combined MBE/WBE contract goal.

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

Manufacturer - A firm that owns (or leases) and operates or maintains a factory or establishment that produces on the premises, the materials or supplies obtained by the Contractor. A firm that

makes minor modifications to the materials, supplies, articles, or equipment is not a manufacturer.

MBE Participation (Anticipated) - A portion of the total contract, expressed as a percentage that is anticipated to be performed by committed MBE subcontractor(s).

Minority Business Enterprise (MBE) - A firm certified as a Disadvantaged Minority-Owned Business Enterprise through the North Carolina Unified Certification Program.

Regular Dealer - A firm that owns (or leases), and operates a store, warehouse, or other establishment in which the materials or supplies required for the performance of the contract are bought, kept in sufficient quantities, and regularly sold to the public in the usual course of business. A regular dealer engages in, as its principal business and in its own name, the purchase and sale or lease of the products in question. A regular dealer in such bulk items as steel, concrete or concrete products, gravel, stone, asphalt and petroleum products need not keep such products in stock, if it owns and operates distribution equipment for the products. Any supplement of regular dealers' own distribution equipment shall be by a long-term operating lease and not on an ad hoc or contract-by-contract basis.

Distributor - A firm that engages in the regular sale or lease of the items specified by the contract. A distributor assumes responsibility for the items it purchases once they leave the point of origin (e.g., a manufacturer's facility), making it liable for any loss or damage not covered by the carrier's insurance.

Replacement / Substitution - A full or partial reduction in the amount of work subcontracted to a committed (or an approved substitute) MBE/WBE firm.

North Carolina Unified Certification Program (NCUCP) - A program that provides comprehensive services and information to applicants for MBE/WBE certification. The MBE/WBE program follows the same regulations as the federal Disadvantaged Business Enterprise (DBE) program in accordance with 49 CFR Part 26.

United States Department of Transportation (USDOT) - Federal agency responsible for issuing regulations (49 CFR Part 26) and official guidance for the DBE program.

WBE Participation (Anticipated) - A portion of the total contract, expressed as a percentage, that is anticipated to be performed by committed WBE subcontractor(s).

Women Business Enterprise (WBE) - A firm certified as a Disadvantaged Women-Owned Business Enterprise through the North Carolina Unified Certification Program.

Forms and Websites Referenced in this Provision

Payment Tracking System - On-line system in which the Contractor enters the payments made to MBE and WBE subcontractors who have performed work on the project.
<https://apps.dot.state.nc.us/Vendor/PaymentTracking/>

DBE-IS Subcontractor Payment Information - Form for reporting the payments made to all MBE/WBE firms working on the project. This form is for paper bid projects only.
<https://connect.ncdot.gov/business/Turnpike/Documents/Form%20DBE-IS%20Subcontractor%20Payment%20Information.pdf>

RF-1 MBE/WBE Replacement Request Form - Form for replacing a committed MBE or WBE.
<https://connect.ncdot.gov/projects/construction/Construction%20Forms/DBE%20MBE%20WBE%20Replacement%20Form%20and%20Instructions.pdf>

SAF Subcontract Approval Form - Form required for approval to sublet the contract.
<https://connect.ncdot.gov/projects/construction/Construction%20Forms/SAF%20Form%20-%20Subcontract%20Approval%20Form%20Revised%2004-19.xlsm>

JC-1 Joint Check Notification Form - Form and procedures for joint check notification. The form acts as a written joint check agreement among the parties providing full and prompt disclosure of the expected use of joint checks.
<http://connect.ncdot.gov/projects/construction/Construction%20Forms/Joint%20Check%20Notification%20Form.pdf>

Letter of Intent - Form signed by the Contractor and the MBE/WBE subcontractor, manufacturer or regular dealer that affirms that a portion of said contract is going to be performed by the signed MBE/WBE for the estimated amount (based on quantities and unit prices) listed at the time of bid.
<http://connect.ncdot.gov/letting/LetCentral/Letter%20of%20Intent%20to%20Perform%20as%20a%20Subcontractor.pdf>

Listing of MBE and WBE Subcontractors Form - Form for entering MBE/WBE subcontractors on a project that will meet the Combined MBE/WBE goal. This form is for paper bids only.
[http://connect.ncdot.gov/municipalities/Bid%20Proposals%20for%20LGA%20Content/09%20MBE-WBE%20Subcontractors%20\(State\).docx](http://connect.ncdot.gov/municipalities/Bid%20Proposals%20for%20LGA%20Content/09%20MBE-WBE%20Subcontractors%20(State).docx)

Subcontractor Quote Comparison Sheet - Spreadsheet for showing all subcontractor quotes in the work areas where MBEs and WBEs quoted on the project. This sheet is submitted with good faith effort packages.
<http://connect.ncdot.gov/business/SmallBusiness/Documents/DBE%20Subcontractor%20Quote%20Comparison%20Example.xls>

DBE Regular Dealer/Distributor Affirmation Form – Form is used to make a preliminary counting determination for each DBE listed as a regular dealer or distributor to assess its eligibility for 60 or 40 percent credit, respectively of the cost of materials or supplies based on its demonstrated capacity and intent to perform as a regular dealer or distributor, as defined in section 49 CFR 26.55 under the contract at issue. A Contractor will submit the completed form with the Letter of Intent.
<https://connect.ncdot.gov/projects/construction/Construction%20Forms/DBE%20Regular%20Dealer-Distributor%20Affirmation%20Form%20-%20USDOT%202024.pdf>

Combined MBE/WBE Goal

There is NO MBE/WBE Goal for this project.

Directory of Transportation Firms (Directory)

Real-time information is available about firms doing business with the Department and firms that are certified through NCUCP in the Directory of Transportation Firms. Only firms identified in the Directory as MBE and WBE certified shall be used to meet the Combined MBE/WBE Goal. The Directory can be found at the following link.

<https://www.ebs.nc.gov/VendorDirectory/default.html>

The listing of an individual firm in the directory shall not be construed as an endorsement of the firm's capability to perform certain work.

Listing of MBE/WBE Subcontractors

At the time of bid, bidders shall submit all MBE and WBE participation that they anticipate to use during the life of the contract. Only those identified to meet the Combined MBE/WBE Goal will be considered committed, even though the listing shall include both committed MBE/WBE subcontractors and additional MBE/WBE subcontractors. Any additional MBE/WBE subcontractor participation above the goal will follow the banking guidelines found elsewhere in this provision. All other additional MBE/WBE subcontractor participation submitted at the time of bid will be used toward the Department's overall race-neutral goals. Only those firms with current MBE and WBE certification at the time of bid opening will be acceptable for listing in the bidder's submittal of MBE and WBE participation. The Contractor shall indicate the following required information:

(A) Electronic Bids

Bidders shall submit a listing of MBE and WBE participation in the appropriate section of the electronic submittal file.

- (1) Submit the names and addresses of MBE and WBE firms identified to participate in the contract. If the bidder uses the updated listing of MBE and WBE firms shown in the electronic submittal file, the bidder may use the dropdown menu to access the name and address of the firms.
- (2) Submit the contract line numbers of work to be performed by each MBE and WBE firm. When no figures or firms are entered, the bidder will be considered to have no MBE or WBE participation.
- (3) The bidder shall be responsible for ensuring that the MBE and WBE are certified at the time of bid by checking the Directory of Transportation Firms. If the firm is not certified at the time of the bid-letting, that MBE's or WBE's participation will not count towards achieving the Combined MBE/WBE goal.

(B) Paper Bids

- (1) *If the Combined MBE/WBE Goal is more than zero,*
 - (a) Bidders, at the time the bid proposal is submitted, shall submit a listing of MBE/WBE participation, including the names and addresses on *Listing of MBE and WBE Subcontractors* contained elsewhere in the contract documents in order for the bid to be considered responsive. Bidders shall indicate the total dollar value of the MBE and WBE participation for the contract.
 - (b) If bidders have no MBE or WBE participation, they shall indicate this on the *Listing of MBE and WBE Subcontractors* by entering the word “None” or the number “0.” This form shall be completed in its entirety. **Blank forms will not be deemed to represent zero participation.** Bids submitted that do not have MBE and WBE participation indicated on the appropriate form will not be read publicly during the opening of bids. The Department will not consider these bids for award and the proposal will be rejected.
 - (c) The bidder shall be responsible for ensuring that the MBE/WBE is certified at the time of bid by checking the Directory of Transportation Firms. If the firm is not certified at the time of the bid-letting, that MBE’s or WBE’s participation will not count towards achieving the Combined MBE/WBE Goal.
- (2) *If the Combined MBE/WBE Goal is zero,* entries on the *Listing of MBE and WBE Subcontractors* are not required for the zero goal, however any MBE or WBE participation that is achieved during the project shall be reported in accordance with requirements contained elsewhere in the special provision.

MBE or WBE Prime Contractor

When a certified MBE or WBE firm bids on a contract that contains a Combined MBE/WBE goal, the firm is responsible for meeting the goal or making good faith efforts to meet the goal, just like any other bidder. In most cases, a MBE or WBE bidder on a contract will meet the Combined MBE/WBE Goal by virtue of the work it performs on the contract with its own forces. However, all the work that is performed by the MBE or WBE bidder and any other similarly certified subcontractors will count toward the goal. The MBE or WBE bidder shall list itself along with any MBE or WBE subcontractors, if any, in order to receive credit toward the goal.

MBE/WBE prime contractors shall also follow Sections A and B listed under *Listing of MBE/WBE Subcontractor* just as a non-MBE/WBE bidder would.

Written Documentation – Letter of Intent

The bidder shall submit written documentation for each MBE/WBE that will be used to meet the Combined MBE/WBE Goal of the contract, indicating the bidder’s commitment to use the

MBE/WBE in the contract. This documentation shall be submitted on the Department's form titled *Letter of Intent*.

The documentation shall be received in the office of the State Contractor Utilization Engineer or at DBE@ncdot.gov no later than 10:00 a.m. of the sixth calendar day following opening of bids, unless the sixth day falls on an official state holiday. In that situation, it is due in the office of the State Contractor Utilization Engineer no later than 10:00 a.m. on the next official state business day.

If the bidder fails to submit the Letter of Intent from each committed MBE and WBE to be used toward the Combined MBE/WBE Goal, or if the form is incomplete (i.e. both signatures are not present), the MBE/WBE participation will not count toward meeting the Combined MBE/WBE Goal. If the lack of this participation drops the commitment below the Combined MBE/WBE Goal, the Contractor shall submit evidence of good faith efforts for the goal, completed in its entirety, to the State Contractor Utilization Engineer or DBE@ncdot.gov no later than 10:00 a.m. on the eighth calendar day following opening of bids, unless the eighth day falls on an official state holiday. In that situation, it is due in the office of the State Contractor Utilization Engineer no later than 10:00 a.m. on the next official state business day.

Banking MBE/WBE Credit

If the bid of the lowest responsive bidder exceeds \$500,000 and if the committed MBE/WBE participation submitted exceeds the algebraic sum of the Combined MBE /WBE Goal by \$1,000 or more, the excess will be placed on deposit by the Department for future use by the bidder. Separate accounts will be maintained for MBE and WBE participation and these may accumulate for a period not to exceed 24 months.

When the apparent lowest responsive bidder fails to submit sufficient participation by MBE and WBE firms to meet the advertised goal, as part of the good faith effort, the Department will consider allowing the bidder to withdraw funds to meet the Combined MBE/WBE Goal as long as there are adequate funds available from the bidder's MBE and WBE bank accounts.

Submission of Good Faith Effort

If the bidder fails to meet or exceed the Combined MBE/WBE Goal, the apparent lowest responsive bidder shall submit to the Department documentation of adequate good faith efforts made to reach that specific goal.

A hard copy and an electronic copy of this information shall be received in the office of the State Contractor Utilization Engineer or at DBE@ncdot.gov no later than 10:00 a.m. on the sixth calendar day following opening of bids unless the sixth day falls on an official state holiday. In that situation, it would be due in the office of the State Contractor Utilization Engineer no later than 10:00 a.m. on the next official state business day. If the Contractor cannot send the information electronically, then one complete set and 5 copies of this information shall be received under the same time constraints above.

Note: Where the information submitted includes repetitious solicitation letters, it will be acceptable to submit a representative letter along with a distribution list of the firms that were

solicited. Documentation of MBE/WBE quotations shall be a part of the good faith effort submittal. This documentation may include written subcontractor quotations, telephone log notations of verbal quotations, or other types of quotation documentation.

Consideration of Good Faith Effort for Projects with a Combined MBE/WBE Goal More Than Zero

Adequate good faith efforts mean that the bidder took all necessary and reasonable steps to achieve the goal which, by their scope, intensity, and appropriateness, could reasonably be expected to obtain sufficient MBE/WBE participation. Adequate good faith efforts also mean that the bidder actively and aggressively sought MBE/WBE participation. Mere *pro forma* efforts are not considered good faith efforts.

The Department will consider the quality, quantity, and intensity of the different kinds of efforts a bidder has made. Listed below are examples of the types of actions a bidder will take in making a good faith effort to meet the goals and are not intended to be exclusive or exhaustive, nor is it intended to be a mandatory checklist.

- (A) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising, written notices, use of verifiable electronic means through the use of the NCDOT Directory of Transportation Firms) the interest of all certified MBEs/WBEs that are also prequalified subcontractors. The bidder must solicit this interest within at least 10 days prior to bid opening to allow the MBEs/WBEs to respond to the solicitation. Solicitation shall provide the opportunity to MBEs/WBEs within the Division and surrounding Divisions where the project is located. The bidder must determine with certainty if the MBEs/WBEs are interested by taking appropriate steps to follow up initial solicitations.
- (B) Selecting portions of the work to be performed by MBEs/WBEs in order to increase the likelihood that the Combined MBE/WBE Goal will be achieved.
 - (1) Where appropriate, break out contract work items into economically feasible units to facilitate MBE/WBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces.
 - (2) Negotiate with subcontractors to assume part of the responsibility to meet the advertised goal when the work to be sublet includes potential for MBE/WBE participation (2nd and 3rd tier subcontractors).
- (C) Providing interested certified MBEs/WBEs that are also prequalified subcontractors with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- (D) (1) Negotiating in good faith with interested MBEs/WBEs. It is the bidder's responsibility to make a portion of the work available to MBE/WBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available MBE/WBE subcontractors and suppliers, so as to facilitate MBE/WBE participation. Evidence of such negotiation includes the

names, addresses, and telephone numbers of MBEs/WBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for MBEs/WBEs to perform the work.

- (2) A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including MBE/WBE subcontractors, and would take a firm's price and capabilities as well as the advertised goal into consideration. However, the fact that there may be some additional costs involved in finding and using MBEs/WBEs is not in itself sufficient reason for a bidder's failure to meet the contract goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidding contractors are not, however, required to accept higher quotes from MBEs/WBEs if the price difference is excessive or unreasonable.
- (E) Not rejecting MBEs/WBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associates and political or social affiliations (for example, union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.
- (F) Making efforts to assist interested MBEs/WBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or bidder.
- (G) Making efforts to assist interested MBEs/WBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.
- (H) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; Federal, State, and local minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of MBEs/WBEs. Contact within 7 days from the bid opening the Business Opportunity and Work Force Development Unit at BOWD@ncdot.gov to give notification of the bidder's inability to get MBE or WBE quotes.
- (I) Any other evidence that the bidder submits which shows that the bidder has made reasonable good faith efforts to meet the advertised goal.

In addition, the Department may take into account the following:

- (1) Whether the bidder's documentation reflects a clear and realistic plan for achieving the Combined MBE/WBE Goal.
- (2) The bidders' past performance in meeting the contract goal.

- (3) The performance of other bidders in meeting the advertised goal. For example, when the apparent successful bidder fails to meet the goal, but others meet it, you may reasonably raise the question of whether, with additional reasonable efforts the apparent successful bidder could have met the goal. If the apparent successful bidder fails to meet the advertised goal, but meets or exceeds the average MBE and WBE participation obtained by other bidders, the Department may view this, in conjunction with other factors, as evidence of the apparent successful bidder having made a good faith effort.

If the Department does not award the contract to the apparent lowest responsive bidder, the Department reserves the right to award the contract to the next lowest responsive bidder that can satisfy to the Department that the Combined MBE/WBE Goal can be met or that an adequate good faith effort has been made to meet the advertised goal.

Non-Good Faith Appeal

The State Prequalification Engineer will notify the Contractor verbally and in writing of non-good faith. A Contractor may appeal a determination of non-good faith made by the Goal Compliance Committee. If a Contractor wishes to appeal the determination made by the Committee, they shall provide written notification to the State Prequalification Engineer. The appeal shall be made within 2 business days of notification of the determination of non-good faith.

Counting MBE/WBE Participation Toward Meeting the Combined MBE/WBE Goal

(A) Participation

The total dollar value of the participation by a committed MBE/WBE will be counted toward the contract goal requirements. The total dollar value of participation by a committed MBE/WBE will be based upon the value of work performed by the MBE/WBE and the actual payments to MBE/WBE firms by the Contractor.

(B) Joint Checks

Prior notification of joint check use shall be required when counting MBE/WBE participation for services or purchases that involves the use of a joint check. Notification shall be through submission of Form JC-1 (*Joint Check Notification Form*) and the use of joint checks shall be in accordance with the Department's Joint Check Procedures.

(C) Subcontracts (Non-Trucking)

A MBE/WBE may enter into subcontracts. Work that a MBE subcontracts to another MBE firm may be counted toward the anticipated MBE participation. The same holds true for work that a WBE subcontracts to another WBE firm. Work that a MBE/WBE subcontracts to a non-MBE/WBE firm does not count toward the contract goal requirement. It should be noted that every effort shall be made by MBE and WBE contractors to subcontract to the same certification (i.e., MBEs to MBEs and WBEs to

WBEs), in order to fulfill the MBE or WBE participation breakdown. This, however, may not always be possible due to the limitation of firms in the area. If the MBE or WBE firm shows a good faith effort has been made to reach out to similarly certified firms and there is no interest or availability, and they can get assistance from other certified firms, the Engineer will not hold the prime responsible for meeting the individual MBE or WBE breakdown. If a MBE or WBE contractor or subcontractor subcontracts a significantly greater portion of the work of the contract than would be expected on the basis of standard industry practices, it shall be presumed that the MBE or WBE is not performing a commercially useful function.

(D) Joint Venture

When a MBE or WBE performs as a participant in a joint venture, the Contractor may count toward its contract goal requirement a portion of the total value of participation with the MBE or WBE in the joint venture, that portion of the total dollar value being a distinct clearly defined portion of work that the MBE or WBE performs with its forces.

(E) Manufacturer, Regular Dealer, Distributor

A Contractor may count toward its MBE/WBE requirement 40 percent of its expenditures for materials or supplies (including transportation costs) from a MBE/WBE distributor, 60 percent of its expenditures for materials or supplies (including transportation costs) from a MBE/WBE regular dealer and 100 percent of such expenditures obtained from a MBE/WBE manufacturer.

A Contractor may count toward its MBE/WBE requirement the following expenditures to MBE/WBE firms that are not manufacturers, regular dealers or distributors:

- (1) The fees or commissions charged by a MBE/WBE firm for providing a *bona fide* service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, provided the fees or commissions are determined to be reasonable and not excessive as compared with fees and commissions customarily allowed for similar services.
- (2) With respect to materials or supplies purchased from a MBE/WBE, which is neither a manufacturer, regular dealer, nor a distributor count the entire amount of fees or commissions charged that the Department deems to be reasonable, including transportation charges for the delivery of materials or supplies. Do not count any portion of the cost of the materials and supplies themselves.

A Contractor will submit a completed *DBE Regular Dealer/Distributor Affirmation Form* with the Letter of Intent to the State Contractor Utilization Engineer or DBE@ncdot.gov. The State Contractor Utilization Engineer will make a preliminary assessment as to whether a MBE/WBE supplier has the demonstrated capacity to perform a commercially useful function (CUF) on a contract-by-contract basis *prior* to its participation.

Commercially Useful Function**(A) MBE/WBE Utilization**

The Contractor may count toward its contract goal requirement only expenditures to MBEs and WBEs that perform a commercially useful function in the work of a contract. A MBE/WBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by performing, managing, and supervising the work involved. To perform a commercially useful function, the MBE/WBE shall also be responsible with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material and installing (where applicable) and paying for the material itself. To determine whether a MBE/WBE is performing a commercially useful function, the Department will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is performing and the MBE/WBE credit claimed for its performance of the work, and any other relevant factors. If it is determined that a MBE or WBE is not performing a Commercially Useful Function, the contractor may present evidence to rebut this presumption to the Department.

(B) MBE/WBE Utilization in Trucking

The following factors will be used to determine if a MBE or WBE trucking firm is performing a commercially useful function:

- (1) The MBE/WBE shall be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there shall not be a contrived arrangement for the purpose of meeting the Combined MBE/WBE Goal.
- (2) The MBE/WBE shall itself own and operate at least one fully licensed, insured, and operational truck used on the contract.
- (3) The MBE/WBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs.
- (4) The MBE may subcontract the work to another MBE firm, including an owner-operator who is certified as a MBE. The same holds true that a WBE may subcontract the work to another WBE firm, including an owner-operator who is certified as a WBE. When this occurs, the MBE or WBE who subcontracts work receives credit for the total value of the transportation services the subcontracted MBE or WBE provides on the contract. It should be noted that every effort shall be made by MBE and WBE contractors to subcontract to the same certification (i.e., MBEs to MBEs and WBEs to WBEs), in order to fulfill the participation breakdown. This, however, may not always be possible due to the limitation of firms in the area. If the MBE or WBE firm shows a good faith

effort has been made to reach out to similarly certified transportation service providers and there is no interest or availability, and they can get assistance from other certified providers, the Engineer will not hold the prime responsible for meeting the individual MBE or WBE participation breakdown.

- (5) The MBE/WBE may also subcontract the work to a non-MBE/WBE firm, including from an owner-operator. The MBE/WBE who subcontracts the work to a non-MBE/WBE is entitled to credit for the total value of transportation services provided by the non-MBE/WBE subcontractor not to exceed the value of transportation services provided by MBE/WBE-owned trucks on the contract. Additional participation by non-MBE/WBE subcontractors receives credit only for the fee or commission it receives as a result of the subcontract arrangement. The value of services performed under subcontract agreements between the MBE/WBE and the Contractor will not count towards the MBE/WBE contract requirement.
- (6) A MBE/WBE may lease truck(s) from an established equipment leasing business open to the general public. The lease must indicate that the MBE/WBE has exclusive use of and control over the truck. This requirement does not preclude the leased truck from working for others during the term of the lease with the consent of the MBE/WBE, so long as the lease gives the MBE/WBE absolute priority for use of the leased truck. This type of lease may count toward the MBE/WBE's credit as long as the driver is under the MBE/WBE's payroll.
- (7) Subcontracted/leased trucks shall display clearly on the dashboard the name of the MBE/WBE that they are subcontracted/leased to and their own company name if it is not identified on the truck itself. Magnetic door signs are not permitted.

MBE/WBE Replacement

When a Contractor has relied on a commitment to a MBE or WBE subcontractor (or an approved substitute MBE or WBE subcontractor) to meet all or part of a contract goal requirement, the contractor shall not terminate the MBE/WBE subcontractor or any portion of its work for convenience. This includes, but is not limited to, instances in which the Contractor seeks to perform the work of the terminated subcontractor with another MBE/WBE subcontractor, a non-MBE/WBE subcontractor, or with the Contractor's own forces or those of an affiliate.

The Contractor must give notice in writing both by certified mail and email to the MBE/WBE subcontractor, with a copy to the Engineer of its intent to request to terminate a MBE/WBE subcontractor or any portion of its work, and the reason for the request. The Contractor must give the MBE/WBE subcontractor five (5) business days to respond to the Contractor's Notice of Intent to Request Termination and/or Substitution. If the MBE/WBE subcontractor objects to the intended termination/substitution, the MBE/WBE, within five (5) business days must advise the Contractor and the Department of the reasons why the action should not be approved. The five-day notice period shall begin on the next business day after written notice is provided to the MBE/WBE subcontractor.

A committed MBE/WBE subcontractor may only be terminated or any portion of its work after receiving the Department's written approval based upon a finding of good cause for the proposed termination and/or substitution. Good cause does not exist if the Contractor seeks to terminate a MBE/WBE or any portion of its work that it relied upon to obtain the contract so that the Contractor can self-perform the work for which the MBE/WBE was engaged, or so that the Contractor can substitute another MBE/WBE or non-MBE/WBE contractor after contract award. For purposes of this section, good cause shall include the following circumstances:

- (a) The listed MBE/WBE subcontractor fails or refuses to execute a written contract;
- (b) The listed MBE/WBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the MBE/WBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the prime contractor;
- (c) The listed MBE/WBE subcontractor fails or refuses to meet the prime contractor's reasonable, nondiscriminatory bond requirements;
- (d) The listed MBE/WBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (e) The listed MBE/WBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant to 2 CFR parts 180, 215 and 1200 or applicable State law;
- (f) The listed MBE/WBE subcontractor is not a responsible contractor;
- (g) The listed MBE/WBE voluntarily withdraws from the project and provides written notice of withdrawal;
- (h) The listed MBE/WBE is ineligible to receive MBE/WBE credit for the type of work required;
- (i) A MBE/WBE owner dies or becomes disabled with the result that the listed MBE/WBE contractor is unable to complete its work on the contract; and
- (j) Other documented good cause that compels the termination of the MBE/WBE subcontractor.

The Contractor shall comply with the following for replacement of a committed MBE/WBE:

(A) Performance Related Replacement

When a committed MBE/WBE is terminated for good cause as stated above, an additional MBE/WBE that was submitted at the time of bid may be used to fulfill the MBE/WBE commitment to meet the Combined MBE/WBE Goal. A good faith effort will only be required for removing a committed MBE/WBE if there were no additional MBE/WBEs submitted at the time of bid to cover the same amount of work as the MBE/WBE that was terminated.

If a replacement MBE/WBE is not found that can perform at least the same amount of work as the terminated MBE/WBE, the Contractor shall submit a good faith effort documenting the steps taken. Such documentation shall include, but not be limited to, the following:

- (1) Copies of written notification to MBE/WBEs that their interest is solicited in contracting the work defaulted by the previous MBE/WBE or in subcontracting other items of work in the contract.
- (2) Efforts to negotiate with MBE/WBEs for specific subbids including, at a minimum:
 - (a) The names, addresses, and telephone numbers of MBE/WBEs who were contacted.
 - (b) A description of the information provided to MBE/WBEs regarding the plans and specifications for portions of the work to be performed.
- (3) A list of reasons why MBE/WBE quotes were not accepted.
- (4) Efforts made to assist the MBE/WBEs contacted, if needed, in obtaining bonding or insurance required by the Contractor.

(B) Decertification Replacement

- (1) When a committed MBE/WBE is decertified by the Department after the SAF (*Subcontract Approval Form*) has been received by the Department, the Department will not require the Contractor to solicit replacement MBE/WBE participation equal to the remaining work to be performed by the decertified firm. The participation equal to the remaining work performed by the decertified firm will count toward the contract goal requirement but not the overall goal.
 - (i) If the MBE/WBE's ineligibility is caused solely by its having exceeded the size standard during the performance of the contract. The Department may continue to count participation equal to the remaining work performed by the decertified firm which will count toward the contract goal requirement and overall goal.
 - (ii) If the MBE/WBE's ineligibility is caused solely by its acquisition by or merger with a non- MBE/WBE during the performance of the contract. The Department may not continue to count the portion of the decertified firm's performance on the contract remaining toward either the contract goal or the overall goal, even if the Contractor has executed a subcontract with the firm or the Department has executed a prime contract with the MBE/WBE that was later decertified.
- (2) When a committed MBE/WBE is decertified prior to the Department receiving the SAF (*Subcontract Approval Form*) for the named MBE/WBE firm, the

Contractor shall take all necessary and reasonable steps to replace the MBE/WBE subcontractor with another MBE/WBE subcontractor to perform at least the same amount of work to meet the Combined MBE/WBE goal requirement. If a MBE/WBE firm is not found to do the same amount of work, a good faith effort must be submitted to NCDOT (see A herein for required documentation).

All requests for replacement of a committed MBE/WBE firm shall be submitted to the Engineer for approval on Form RF-1 (*DBE Replacement Request*). If the Contractor fails to follow this procedure, the Contractor may be disqualified from further bidding for a period of up to 6 months.

Changes in the Work

When the Engineer makes changes that result in the reduction or elimination of work to be performed by a committed MBE/WBE, the Contractor will not be required to seek additional participation. When the Engineer makes changes that result in additional work to be performed by a MBE/WBE based upon the Contractor's commitment, the MBE/WBE shall participate in additional work to the same extent as the MBE/WBE participated in the original contract work.

When the Engineer makes changes that result in extra work, which has more than a minimal impact on the contract amount, the Contractor shall seek additional participation by MBEs/WBEs unless otherwise approved by the Engineer.

When the Engineer makes changes that result in an alteration of plans or details of construction, and a portion or all of the work had been expected to be performed by a committed MBE/WBE, the Contractor shall seek participation by MBEs/WBEs unless otherwise approved by the Engineer.

When the Contractor requests changes in the work that result in the reduction or elimination of work that the Contractor committed to be performed by a MBE/WBE, the Contractor shall seek additional participation by MBEs/WBEs equal to the reduced MBE/WBE participation caused by the changes.

Reports and Documentation

A SAF (*Subcontract Approval Form*) shall be submitted for all work which is to be performed by a MBE/WBE subcontractor. The Department reserves the right to require copies of actual subcontract agreements involving MBE/WBE subcontractors.

When using transportation services to meet the contract commitment, the Contractor shall submit a proposed trucking plan in addition to the SAF. The plan shall be submitted prior to beginning construction on the project. The plan shall include the names of all trucking firms proposed for use, their certification type(s), the number of trucks owned by the firm, as well as the individual truck identification numbers, and the line item(s) being performed.

Within 30 calendar days of entering into an agreement with a MBE/WBE for materials, supplies or services, not otherwise documented by the SAF as specified above, the Contractor shall

furnish the Engineer a copy of the agreement. The documentation shall also indicate the percentage (60% or 100%) of expenditures claimed for MBE/WBE credit.

Reporting Minority and Women Business Enterprise Participation

The Contractor shall provide the Engineer with an accounting of payments made to all MBE/WBE firms, including material suppliers and contractors at all levels (prime, subcontractor, or second tier subcontractor). This accounting shall be furnished to the Engineer for any given month by the end of the following month. Failure to submit this information accordingly may result in the following action:

- (A) Withholding of money due in the next partial pay estimate; or
- (B) Removal of an approved contractor from the prequalified bidders' list or the removal of other entities from the approved subcontractors list.

While each contractor (prime, subcontractor, 2nd tier subcontractor) is responsible for accurate accounting of payments to MBEs/WBEs, it shall be the prime contractor's responsibility to report all monthly and final payment information in the correct reporting manner.

Failure on the part of the Contractor to submit the required information in the time frame specified may result in the disqualification of that contractor and any affiliate companies from further bidding until the required information is submitted.

Failure on the part of any subcontractor to submit the required information in the time frame specified may result in the disqualification of that contractor and any affiliate companies from being approved for work on future DOT projects until the required information is submitted.

Contractors reporting transportation services provided by non-MBE/WBE lessees shall evaluate the value of services provided during the month of the reporting period only.

At any time, the Engineer can request written verification of subcontractor payments.

The Contractor shall report the accounting of payments through the Department's Payment Tracking System.

Failure to Meet Contract Requirements

Failure to meet contract requirements in accordance with Subarticle 102-15(J) of the *Standard Specifications* may be cause to disqualify the Contractor.

RESTRICTIONS ON ITS EQUIPMENT AND SERVICES:

(11-17-20)

SP01 G090

All telecommunications, video or other ITS equipment or services installed or utilized on this project must be in conformance with UNIFORM ADMINISTRATIVE REQUIREMENTS, COST PRINCIPLES, AND AUDIT REQUIREMENTS FOR FEDERAL AWARDS **2 CFR, § 200.216 Prohibition on certain telecommunications and video surveillance services or equipment.**

USE OF UNMANNED AIRCRAFT SYSTEM (UAS):

(8-20-19)(Rev. 8-19-25)

SP1 G092

The Contractor shall adhere to all Federal, State and Local regulations and guidelines for the use of Unmanned Aircraft Systems (UAS). This includes but is not limited to US 14 CFR Part 107, NC GS 15A-300, all FAA rules, regulations and policies and all NCDOT UAS Policies. The required operator certifications include possessing a current Federal Aviation Administration (FAA) Remote Pilot Certificate, as well as operating a UAS registered with the FAA.

All UAS operations shall be approved by the Engineer prior to beginning the operations.

All contractors or subcontractors operating UAS shall have UAS specific general liability insurance to cover all operations under this contract.

The use of UAS is at the Contractor's discretion. No measurement or payment will be made for the use of UAS. In the event that the Department directs the Contractor to utilize UAS, payment will be in accordance with Article 104-7 Extra Work.

EQUIPMENT IDLING GUIDELINES:

(1-19-21)

107

SP1 G096

Exercise reduced fuel consumption and reduced equipment emissions during the construction of all work associated with this contract. Employees engaged in the construction of this project should turn off vehicles when stopped for more than thirty (30) minutes and off-highway equipment should idle no longer than fifteen (15) consecutive minutes.

These guidelines for turning off vehicles and equipment when idling do not apply to:

1. Idling when queuing.
2. Idling to verify the vehicle is in safe operating condition.
3. Idling for testing, servicing, repairing or diagnostic purposes.
4. Idling necessary to accomplish work for which the vehicle was designed (such as operating a crane, mixing concrete, etc.).
5. Idling required to bring the machine system to operating temperature.
6. Emergency vehicles, utility company, construction, and maintenance vehicles where the engines must run to perform needed work.
7. Idling to ensure safe operation of the vehicle.
8. Idling when the propulsion engine is providing auxiliary power for other than heating or air conditioning. (such as hydraulic systems for pavers)

9. When specific traffic, safety, or emergency situations arise.
10. If the ambient temperature is less than 32 degrees Fahrenheit. Limited idling to provide for the safety of vehicle occupants (e.g. to run the heater).
11. If the ambient temperature is greater than 90 degrees Fahrenheit. Limited idling to provide for the safety of vehicle occupants of off-highway equipment (e.g. to run the air conditioning) no more than 30 minutes.
12. Diesel powered vehicles may idle for up to 30 minutes to minimize restart problems.

Any vehicle, truck, or equipment in which the primary source of fuel is natural gas or electricity is exempt from the idling limitations set forth in this special provision.

REMOVABLE PAVEMENT MARKINGS - (Partial Payments for Materials):

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

1205-10

SP1 G124

When so authorized by the Engineer, partial materials payments will be made up to 95 percent of the delivered cost of pavement marking tape, provided that these materials have been delivered on or in the vicinity of the project, stored in an acceptable manner, not to exceed the shelf life recommended by the manufacturer, and further provided the documents listed in Subarticle 109-5(C) of the *Standard Specifications* have been furnished to the Engineer.

The Contractor shall be responsible for the material and the satisfactory performance of the material when used in the work.

The provisions of Article 109-6 of the *Standard Specifications* will not apply to removable pavement marking materials.

MAINTENANCE OF THE PROJECT:

(11-20-07)(Rev. 1-16-24)

104-10

SP1 G125

Revise the *Standard Specifications* as follows:

Page 1-35, Article 104-10 Maintenance of the Project, line 3, add the following after the first sentence of the first paragraph:

All guardrail/guiderail within the project limits shall be included in this maintenance.

Page 1-35, Article 104-10 MAINTENANCE OF THE PROJECT, line 8, add the following as the last sentence of the first paragraph:

The Contractor shall perform weekly inspections of guardrail and guiderail and shall report damages to the Engineer on the same day of the weekly inspection. *Where damaged guardrail or guiderail is repaired or replaced as a result of maintaining the project in accordance with this article, such repair or replacement shall be performed within 7 consecutive calendar days of such inspection report.*

Page 1-35, Article 104-10 MAINTENANCE OF THE PROJECT, lines 20-22, replace the last sentence of the last paragraph with the following:

The Contractor will not be directly compensated for any maintenance operations necessary, except for maintenance of guardrail/guiderail, as this work will be considered incidental to the work covered by the various contract items. The provisions of Article 104-7, Extra Work, and Article 104-8, Compensation and Record Keeping will apply to authorized maintenance of guardrail/guiderail. Performance of weekly inspections of guardrail/guiderail, and the damage reports required as described above, will be considered to be an incidental part of the work being paid for by the various contract items.

TWELVE MONTH GUARANTEE:

(7-15-03)

108

SP1 G145

- (A) The Contractor shall guarantee materials and workmanship against latent and patent defects arising from faulty materials, faulty workmanship or negligence for a period of twelve months following the date of final acceptance of the work for maintenance and shall replace such defective materials and workmanship without cost to the Department. The Contractor will not be responsible for damage due to faulty design, normal wear and tear, for negligence on the part of the Department, and/or for use in excess of the design.
- (B) Where items of equipment or material carry a manufacturer's guarantee for any period in excess of twelve months, then the manufacturer's guarantee shall apply for that particular piece of equipment or material. The Department's first remedy shall be through the manufacturer although the Contractor is responsible for invoking the warranted repair work with the manufacturer. The Contractor's responsibility shall be limited to the term of the manufacturer's guarantee. NCDOT would be afforded the same warranty as provided by the Manufacturer.

This guarantee provision shall be invoked only for major components of work in which the Contractor would be wholly responsible for under the terms of the contract. Examples would include pavement structures, bridge components, and sign structures. This provision will not be used as a mechanism to force the Contractor to return to the project to make repairs or perform additional work that the Department would normally compensate the Contractor for. In addition, routine maintenance activities (i.e. mowing grass, debris removal, ruts in earth shoulders,) are not parts of this guarantee.

Appropriate provisions of the payment and/or performance bonds shall cover this guarantee for the project.

To ensure uniform application statewide the Division Engineer will forward details regarding the circumstances surrounding any proposed guarantee repairs to the Chief Engineer for review and approval prior to the work being performed.

OUTSOURCING OUTSIDE THE USA:

(9-21-04) (Rev. 5-16-06)

SP1 G150

All work on consultant contracts, services contracts, and construction contracts shall be performed in the United States of America. No work shall be outsourced outside of the United States of America.

Outsourcing for the purpose of this provision is defined as the practice of subcontracting labor, work, services, staffing, or personnel to entities located outside of the United States.

The North Carolina Secretary of Transportation shall approve exceptions to this provision in writing.

PROJECT SPECIAL PROVISIONS**ROADWAY****PRICE ADJUSTMENT - ASPHALT BINDER FOR PLANT MIX:**

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

620

SP6 R25

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

The base price index for asphalt binder for plant mix is **\$ 566.88** per ton.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on **November 1, 2025**.

FINAL SURFACE TESTING ASPHALT PAVEMENT:

(11-18-25)

610

SP6 R048

Revise the *Standard Specifications* as follows:

Page 6-24, Article 610-13 FINAL SURFACE TESTING AND ACCEPTANCE, line 35, delete the last sentence of the first paragraph of the Article and replace with the following:

Final surface testing is not required on SR-designated routes, on any alignment where the speed limit is less than 45 mph, on roundabouts, ramps, loops and turn lanes, or where the paving limits are less than one mile in length.

ELECTRONIC TICKETING SYSTEM:

(7-16-24)(Rev. 12-17-24)

1020

SP10 R20

Description

At the contractor's option, the use of an electronic ticketing system for reporting individual and cumulative asphalt material deliveries may be utilized on this project. At the preconstruction conference, the contractor shall notify the Engineer if they intend to utilize an electronic ticketing system for reporting individual and cumulative asphalt material deliveries to the project.

Electronic Ticketing Requirements

- a. The electronic ticketing system must be fully integrated with the load read-out system at the plant. The system shall be designed so data inputs from scales cannot be altered by either the Contractor or the Department.
- b. Material supplier must test to confirm that ticketing data can be shared from the originating system no less than 30 days prior to project start.

- c. After each truck is loaded, ticket data must be electronically captured, and ticket information uploaded via Application Programming Interface (API) to the Department.
- d. Obtain security token from NCDOT for access to E-Ticketing portal (to send tickets). To request a Security Key, fill out the below E-Ticketing Security Request Form: <https://forms.office.com/g/XnT7QeRtgt>
- e. Obtain API from NCDOT containing the required e-ticketing data fields and format. Download the API from the NCDOT E-ticketing Webpage: <https://connect.ncdot.gov/projects/construction/E-Ticketing/Pages/default.aspx>
- f. Provide all ticket information in real time and daily summaries to the Department's designated web portal. If the project contains locations with limited cellular service, an alternative course of action must be agreed upon.
- g. Electronic ticketing submissions must be sent between the Material Supplier and the Department.
- h. The electronic ticket shall contain the following information:

Date
Contract Number
Supplier Name
Contractor Name
Material
JMF
Gross Weight
Tare Weight
Net Weight
Load Number
Cumulative Weight
Truck Number
Weighmaster Certification
Weighmaster Expiration
Weighmaster Name
Facility Name
Plant Certification Number
Ticket Number
Hauling Firm (optional)
Voided Ticket Number (if necessary)
Original Ticket Number (if necessary)
Supplier Revision (If necessary)

The Contractor/supplier can use the electronic ticketing system of their choice to meet the requirements of this provision.

Measurement and Payment

No measurement or payment will be made for utilizing an electronic ticketing system as the cost of such shall be included in the contract price bid for the material being provided.

GLASS BEAD GRADATION FOR PAVEMENT MARKINGS:

(9-17-24)

1087

SP10 R87

Revise the *Standard Specifications* as follows:

Page 10-187, Subarticle 1087-4(C), Gradation & Roundness, after line 6, delete and replace Table 1087-2 with the following:

TABLE 1087-2 GLASS BEAD GRADATION REQUIREMENTS		
Sieve Size	Gradation Requirements	
	Minimum	Maximum
Passing #20	100%	--
Retained on #30	5%	15%
Retained on #50	40%	80%
Retained on #80	15%	40%
Passing #80	0%	10%
Retained on #200	0%	5%

SNOWPLOWABLE DELINEATION:

(10-15-24)

1253

SP12 R53

Description

Furnish, install and maintain snowplowable delineation.

There are five snowplowable delineation alternate options approved for use in North Carolina. They include the following markers and markings options:

- (1) Polycarbonate H-shaped Markers
- (2) Inlaid Raised Pavement Markers
- (3) 10' Rumble Skips
- (4) Inlaid Cradle Markers
- (5) 10' Inlaid Pavement Markings

Only one type of snowplowable delineation will be allowed on a single project.

Materials

Refer to Division 10 of the *Standard Specifications*.

Item	Section
Epoxy	1081
Pavement Markings	1087
Snowplowable Pavement Markers	1086-3

Any snowplowable pavement delineation shall conform to the applicable requirements of Sections 1086, 1087, and 1081 of the *Standards and Specifications*. Use snowplowable delineation markers and markings listed on the NCDOT APL. Any treatment that requires pavement cutting or milling shall be installed within 7 calendar days of the pavement cutting or milling operation.

Construction Methods

(A) General

For any snowplowable delineation, prior to installation, by brushing, blow cleaning, vacuuming or other suitable means, ensure that all materials and the pavement surface are free of dirt, grease, dust, oil, moisture, mud, grass, or any other material that would prevent adhesion to the pavement by brushing blow cleaning, or vacuuming. If required, apply a primer per manufactures recommendations to pavement surfaces before applying pavement marking material.

Install snowplowable delineation per manufacturers specifications every 80 feet. Make sure pavement markers are oriented to traffic correctly and pavement markings are applied in a uniform thickness. Do not apply markings over longitudinal joints. Protect the pavement markings until they are tack free. Apply applicable Sections 1205 and 1250 of the *Standards Specifications*.

If damage occurs during installation the effected treatments shall be corrected or replaced. This work shall be considered incidental to the installation of the marking or marker.

(B) Polycarbonate H-shaped Markers and Inlaid Cradle Markers

Bond marker housings to the pavement with epoxy adhesive. Mechanically mix and dispense epoxy adhesives as required by the manufacturer's specifications. Place the markers immediately after the adhesive has been mixed and dispensed.

Install polycarbonate H-shaped markers and inlaid cradle markers castings into slots sawcut into the pavement. Make slots in the pavement to exactly duplicate the shape of the casting of the polycarbonate H-shaped markers and inlaid cradle markers.

If saw cutting, milling, or grooving operations are used, promptly remove all resulting debris from the pavement surface. Install the marker housings within 7 calendar days after saw cutting , milling, or grooving the pavement. Remove and dispose of loose material from the slots by brushing, blow cleaning or vacuuming. Dry the slots before applying the epoxy adhesive. Install polycarbonate H-shaped markers and inlaid cradle markers according to the manufacturer's recommendations.

Protect the polycarbonate H-shaped markers or inlaid cradle markers until the epoxy has initially cured and is track free.

Construct inlaid cradle markers in accordance with the details in the plans and as directed by the Engineer.

(C) Reflector Replacement

The following requirements only apply to polycarbonate H-shaped markers and inlaid cradle markers.

In the event that a reflector is damaged, replace the damaged reflector by using adhesives and methods recommended by the manufacturer of the markers and approved by the Engineer. This work is considered incidental if damage occurs during the initial installation of the marker housings and maintenance of initial polycarbonate H-shaped markers or inlaid cradle markers specified in this section.

If during reflector replacement it is discovered that the housing is missing or broken this will be paid as *Polycarbonate H-shaped Markers* or *Inlaid Cradle Markers*. Missing housings shall be replaced. Broken housings shall be removed and replaced. In both cases the slot for the housings shall be properly prepared prior to installing the new housing; patch the existing marker slots as directed by the Engineer and install the new marker approximately one foot before or after the patch. Removal of broken housings and preparation of slots will be considered incidental to the work of replacing housings.

(D) Inlaid Raised Pavement Markers

Cut groove in accordance with the details in the plans and as directed by the Engineer.

Use adhesive recommended by the manufacturer to install markers into the groove in accordance with Section 1251. The raised pavement markers are incidental to inlaid raised pavement markers.

(E) 10' Rumble Skips

Construct 10' rumble skips on asphalt concrete in accordance with Section 665 for all centerline and shoulder rumble skips, details in the plans and as directed by the Engineer. Construct 10' rumble skips on Portland cement concrete in accordance with Section 730 for all centerline and shoulder rumble skips, details in the plans and as directed by the Engineer. The milled rumble strips are incidental to the rumble skips. Using polyurea or extruded 90 mil thermoplastic construct pavement markings in accordance with Section 1205.

(F) 10' Inlaid Pavement Markings

The groove in which the marking is to be placed shall be one inch wider than the marking to be placed and 10 mils deeper than the thickness of the marking.

When using this method, use enhanced reflective media. The following retroreflectivity values shall be met.

MINIMUM INITIAL REFLECTOMETER READINGS		
Item	Color	Reflectivity
Enhanced Reflectivity Media	White	450 mcd/lux/m ²
	Yellow	350 mcd/lux/m ²

Using polyurea, extruded 90 mil thermoplastic or cold applied plastic construct pavement markings in accordance with Section 1205.

Maintenance

Maintain all installed snowplowable delineation before acceptance by the Engineer.

Measurement and Payment

Polycarbonate H-shaped Markers will be measured and paid as the actual number of polycarbonate H-shaped markers satisfactorily placed and accepted by the Engineer.

Inlaid Raised Pavement Markers will be measured and paid as the actual number of inlaid raised pavement markers satisfactorily placed and accepted by the Engineer.

10' Rumble Skips will be measured and paid as the actual number of rumble skips satisfactorily placed and accepted by the Engineer.

Inlaid Cradle Markers will be measured and paid as the actual number of pavement markers satisfactorily placed and accepted by the Engineer.

10' Inlaid Pavement Markings will be measured and paid as the actual number of 10' inlaid pavement markings satisfactorily placed and accepted by the Engineer.

Replace Snowplowable Pavement Marker Reflector will be measured and paid in accordance with Article 1253-5.

Payment will be made under:

Pay Item	Pay Unit
Polycarbonate H-shaped Markers	Each
Inlaid Raised Pavement Markers	Each
10' Rumble Skips	Each
Inlaid Cradle Markers	Each
10' Inlaid Pavement Markings	Each

STANDARD SPECIAL PROVISION**AVAILABILITY OF FUNDS – TERMINATION OF CONTRACTS**

(5-20-08)(Rev. 1-16-24)

Z-2

General Statute 143C-6-11. (h) Highway Appropriation is hereby incorporated verbatim in this contract as follows:

(h) Amounts Encumbered. – Transportation project appropriations may be encumbered in the amount of allotments made to the Department of Transportation by the Director for the estimated payments for transportation project contract work to be performed in the appropriation fiscal year. The allotments shall be multiyear allotments and shall be based on estimated revenues and shall be subject to the maximum contract authority contained in *General Statute 143C-6-11(c)*. Payment for transportation project work performed pursuant to contract in any fiscal year other than the current fiscal year is subject to appropriations by the General Assembly. Transportation project contracts shall contain a schedule of estimated completion progress, and any acceleration of this progress shall be subject to the approval of the Department of Transportation provided funds are available. The State reserves the right to terminate or suspend any transportation project contract, and any transportation project contract shall be so terminated or suspended if funds will not be available for payment of the work to be performed during that fiscal year pursuant to the contract. In the event of termination of any contract, the contractor shall be given a written notice of termination at least 60 days before completion of scheduled work for which funds are available. In the event of termination, the contractor shall be paid for the work already performed in accordance with the contract specifications.

Payment will be made on any contract terminated pursuant to the special provision in accordance with Subarticle 108-13(D) of the *Standard Specifications*.

STANDARD SPECIAL PROVISION
NCDOT GENERAL SEED SPECIFICATION FOR SEED QUALITY

(5-17-11)

Z-3

Seed shall be sampled and tested by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory. When said samples are collected, the vendor shall supply an independent laboratory report for each lot to be tested. Results from seed so sampled shall be final. Seed not meeting the specifications shall be rejected by the Department of Transportation and shall not be delivered to North Carolina Department of Transportation warehouses. If seed has been delivered it shall be available for pickup and replacement at the supplier's expense.

Any re-labeling required by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory, that would cause the label to reflect as otherwise specified herein shall be rejected by the North Carolina Department of Transportation.

Seed shall be free from seeds of the noxious weeds Johnsongrass, Balloonvine, Jimsonweed, Witchweed, Itchgrass, Serrated Tussock, Showy Crotalaria, Smooth Crotalaria, Sicklepod, Sandbur, Wild Onion, and Wild Garlic. Seed shall not be labeled with the above weed species on the seed analysis label. Tolerances as applied by the Association of Official Seed Analysts will NOT be allowed for the above noxious weeds except for Wild Onion and Wild Garlic.

Tolerances established by the Association of Official Seed Analysts will generally be recognized. However, for the purpose of figuring pure live seed, the found pure seed and found germination percentages as reported by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory will be used. Allowances, as established by the NCDOT, will be recognized for minimum pure live seed as listed on the following pages.

The specifications for restricted noxious weed seed refers to the number per pound as follows:

<u>Restricted Noxious Weed</u>	<u>Limitations per Lb. Of Seed</u>	<u>Restricted Noxious Weed</u>	<u>Limitations per Lb. of Seed</u>
Blessed Thistle	4 seeds	Cornflower (Ragged Robin)	27 seeds
Cocklebur	4 seeds	Texas Panicum	27 seeds
Spurred Anoda	4 seeds	Bracted Plantain	54 seeds
Velvetleaf	4 seeds	Buckhorn Plantain	54 seeds
Morning-glory	8 seeds	Broadleaf Dock	54 seeds
Corn Cockle	10 seeds	Curly Dock	54 seeds
Wild Radish	12 seeds	Dodder	54 seeds
Purple Nutsedge	27 seeds	Giant Foxtail	54 seeds
Yellow Nutsedge	27 seeds	Horsenettle	54 seeds
Canada Thistle	27 seeds	Quackgrass	54 seeds
Field Bindweed	27 seeds	Wild Mustard	54 seeds
Hedge Bindweed	27 seeds		

Seed of Pensacola Bahiagrass shall not contain more than 7% inert matter, Kentucky Bluegrass, Centipede and Fine or Hard Fescue shall not contain more than 5% inert matter whereas a maximum of 2% inert matter will be allowed on all other kinds of seed. In addition, all seed

shall not contain more than 2% other crop seed nor more than 1% total weed seed. The germination rate as tested by the North Carolina Department of Agriculture shall not fall below 70%, which includes both dormant and hard seed. Seed shall be labeled with not more than 7%, 5% or 2% inert matter (according to above specifications), 2% other crop seed and 1% total weed seed.

Exceptions may be made for minimum pure live seed allowances when cases of seed variety shortages are verified. Pure live seed percentages will be applied in a verified shortage situation. Those purchase orders of deficient seed lots will be credited with the percentage that the seed is deficient.

FURTHER SPECIFICATIONS FOR EACH SEED GROUP ARE GIVEN BELOW:

Minimum 85% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 83% pure live seed will not be approved.

Sericea Lespedeza
Oats (seeds)

Minimum 80% pure live seed; maximum 1% total weed seed; maximum 2% total other crop; maximum 144 restricted noxious weed seed per pound. Seed less than 78% pure live seed will not be approved.

Tall Fescue (all approved varieties)	Bermudagrass
Kobe Lespedeza	Browntop Millet
Korean Lespedeza	German Millet – Strain R
Weeping Lovegrass	Clover – Red/White/Crimson
Carpetgrass	

Minimum 78% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 76% pure live seed will not be approved.

Common or Sweet Sundangrass

Minimum 76% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 74% pure live seed will not be approved.

Rye (grain; all varieties)
Kentucky Bluegrass (all approved varieties)
Hard Fescue (all approved varieties)
Shrub (bicolor) Lespedeza

Minimum 70% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 noxious weed seed per pound. Seed less than 70% pure live seed will not be approved.

Centipedegrass	Japanese Millet
Crownvetch	Reed Canary Grass
Pensacola Bahiagrass	Zoysia

Creeping Red Fescue

Minimum 70% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 5% inert matter; maximum 144 restricted noxious weed seed per pound.

Barnyard Grass
Big Bluestem
Little Bluestem
Bristly Locust
Birdsfoot Trefoil
Indiangrass
Orchardgrass
Switchgrass
Yellow Blossom Sweet Clover

STANDARD SPECIAL PROVISION
ERRATA

(1-16-24)(Rev. 12-23-25)

Z-4

Revise the *2024 Standard Specifications* as follows:

Division 1

Page 1-36, Subarticle 104-12(B) Evaluation of Proposals, line 21, replace "Design-Build Unit" with "Alternative Delivery Unit".

Page 1-36, Subarticle 104-12(D) Preliminary Review, line 37, replace "Design-Build Unit" with "Alternative Delivery Unit".

Page 1-37, Subarticle 104-12(E) Final Proposal, line 3, replace "Design-Build Unit" with "Alternative Delivery Unit".

Page 1-37, Subarticle 104-12(F) Design-Build VEPs, line 36, replace "Design-Build Unit" with "Alternative Delivery Unit".

Page 1-38, Subarticle 104-12(G) Modifications, line 1, replace "Design-Build Unit" with "Alternative Delivery Unit".

Division 3

Page 3-5, Article 305-2 MATERIALS, after line 16, replace "1032-3(A)(7)" with "1032-3" and add the item "Galvanized Corrugated Steel Pipe" with Section "1032-3".

Page 3-6, Article 310-2 MATERIALS, after line 9, add the item "Galvanized Corrugated Steel Pipe" with Section "1032-3".

Division 6

Page 6-15, Article 610-1 DESCRIPTION, line 20, replace "The work includes" with "The work includes, but is not limited to,".

Page 6-15, Article 610-1 DESCRIPTION, line 22, replace "applying the tack coat as specified." with "applying the tack coat in accordance with Section 605.".

Page 6-30, Article 610-14 DENSITY ACCEPTANCE, line 39, replace "QC process." with "QC process in accordance with Section 609.".

Page 6-31, Article 610-16 MEASUREMENT AND PAYMENT, line 13, replace "*Hot Mix Asphalt Pavement*" with "*Asphalt Concrete _____ Course, Type _____*".

Page 6-50, Subarticle 661-4(A) Equipment, lines 4-7, replace the first two sentences of the seventh paragraph with the following:

When an erected fixed stringline is utilized for longitudinal profile and cross slope control furnish and erect the necessary guide line for the equipment.

Division 8

Page 8-27, Article 846-1 DESCRIPTION, line 8, delete “4 inch” from the first paragraph.

Division 9

Page 9-17, Article 904-4 MEASUREMENT AND PAYMENT, prior to line 1, replace " Sign Erection, Relocate Type (Ground Mounted)" with “Sign Erection, Relocate Type ____ (Ground Mounted)”.

Division 10

Page 10-51, Article 1024-4 WATER, prior to line 1, delete the “unpopulated blank row” in Table 1024-2 between “Time of set, deviation from control” and “Chloride Ion Content, Max.”.

Page 10-170, Subarticle 1081-1(C) Requirements, line 4, replace "maximum" with “minimum”.

Division 11

Page 11-15, Article 1160-4 MEASUREMENT AND PAYMENT, line 24, replace “Where barrier units are moved more than one” with “Where barrier units are moved more than once”.

Division 15

Page 15-10, Article 1515-4 MEASUREMENT AND PAYMENT, lines 11, replace " All piping” with “All labor, the manhole, other materials, excavation, backfilling, piping”.

Division 16

Page 16-14, Article 1633-5 MEASUREMENT AND PAYMENT, line 20-24 and prior to line 25, delete and replace with the following " *Flocculant* will be measured and paid in accordance with Article 1642-5 applied to the temporary rock silt checks.”

Page 16-3, Article 1609-2 MATERIALS, after line 26, replace "Type 4” with “Type 4a”.

Page 16-25, Article 1644-2 MATERIALS, after line 22, replace "Type 4” with “Type 4a”.

Division 17

Page 17-15, Article 1715-4 MEASUREMENT AND PAYMENT, line 23, delete and replace “1.25” with “1-1/4”.

Page 17-15, Article 1715-4 MEASUREMENT AND PAYMENT, line 24, delete and replace “)(1.25” with “, 1-1/4”.

STANDARD SPECIAL PROVISION**PLANT AND PEST QUARANTINES**

(Imported Fire Ant, Guava Root Knot Nematode, Spongy Moth (formerly known as gypsy moth), Witchweed, Cogon Grass, And Any Other Regulated Noxious Weed or Plant Pest)

(3-18-03)(Rev. 3-18-25)

Z-04a

Within Quarantined Area

This project may be within a county regulated for plant and/or pests. If the project or any part of the Contractor's operations is located within a quarantined area, thoroughly clean all equipment prior to moving out of the quarantined area. Comply with federal/state regulations by obtaining a certificate or limited permit for any regulated article moving from the quarantined area.

Originating in a Quarantined County

Obtain a certificate or limited permit issued by the N.C. Department of Agriculture/United States Department of Agriculture. Have the certificate or limited permit accompany the article when it arrives at the project site.

Contact

Contact the N.C. Department of Agriculture/United States Department of Agriculture at 1-800-206-9333, 919-707-3730, or <https://www.ncagr.gov/divisions/plant-industry/plant-protection/plant-industry-plant-pest-quarantines> to determine those specific project sites located in the quarantined area or for any regulated article used on this project originating in a quarantined county.

Regulated Articles Include

1. Soil, sand, gravel, compost, peat, humus, muck, and decomposed manure, separately or with other articles. This includes movement of articles listed above that may be associated with cut/waste, ditch pulling, and shoulder cutting.
2. Plants with roots including grass sod.
3. Plant crowns and roots.
4. Bulbs, corms, rhizomes, and tubers of ornamental plants.
5. Hay, straw, fodder, and plant litter of any kind.
6. Clearing and grubbing debris.
7. Used agricultural cultivating and harvesting equipment.
8. Used earth-moving equipment.
9. Any other products, articles, or means of conveyance of any character, if determined by an inspector present a hazard of spreading imported fire ant, guava root knot nematode, spongy moth (formerly known as gypsy moth), witchweed, cogon grass, or other regulated noxious weed or plant pest.

STANDARD SPECIAL PROVISION**MINIMUM WAGES**

(7-21-09)

Z-5

FEDERAL: The Fair Labor Standards Act provides that with certain exceptions every employer shall pay wages at the rate of not less than SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

STATE: The North Carolina Minimum Wage Act provides that every employer shall pay to each of his employees, wages at a rate of not less than SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

The minimum wage paid to all skilled labor employed on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

The minimum wage paid to all intermediate labor employed on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

The minimum wage paid to all unskilled labor on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

This determination of the intent of the application of this act to the contract on this project is the responsibility of the Contractor.

The Contractor shall have no claim against the Department of Transportation for any changes in the minimum wage laws, Federal or State. It is the responsibility of the Contractor to keep fully informed of all Federal and State Laws affecting his contract.

STANDARD SPECIAL PROVISION**TITLE VI AND NONDISCRIMINATION:**

(6-28-77)(Rev 1/16/2024)

Z-6

The North Carolina Department of Transportation is committed to carrying out the U.S. Department of Transportation's policy of ensuring nondiscrimination in the award and administration of contracts.

The provisions of this section related to United States Department of Transportation (US DOT) Order 1050.2A, Title 49 Code of Federal Regulations (CFR) part 21, 23 United States Code (U.S.C.) 140 and 23 CFR part 200 (or 49 CFR 303, 49 U.S.C. 5332 or 49 U.S.C. 47123) are applicable to all North Carolina Department of Transportation (NCDOT) contracts and to all related subcontracts, material supply, engineering, architectural and other service contracts, regardless of dollar amount. Any Federal provision that is specifically required not specifically set forth is hereby incorporated by reference.

(1) Title VI Assurances (USDOT Order 1050.2A, Appendix A)

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

(a) Compliance with Regulations

The contractor (hereinafter includes consultants) shall comply with the Acts and the Regulations relative to Nondiscrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration (FHWA), as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

(b) Nondiscrimination

The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

(c) Solicitations for Subcontractors, Including Procurements of Materials and Equipment

In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Nondiscrimination on the grounds of race, color, or national origin.

(d) Information and Reports

The contractor shall provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and shall permit access to its

books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the FHWA to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor shall so certify to the Recipient or the FHWA, as appropriate, and shall set forth what efforts it has made to obtain the information.

(e) Sanctions for Noncompliance:

In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it and/or the FHWA may determine to be appropriate, including, but not limited to:

- (i) Withholding payments to the contractor under the contract until the contractor complies; and/or
- (ii) Cancelling, terminating, or suspending a contract, in whole or in part.

(f) Incorporation of Provisions

The contractor shall include the provisions of paragraphs (a) through (f) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor shall take action with respect to any subcontract or procurement as the Recipient or the FHWA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

(2) Title VI Nondiscrimination Program (23 CFR 200.5(p))

The North Carolina Department of Transportation (NCDOT) has assured the USDOT that, as a condition to receiving federal financial assistance, NCDOT will comply with Title VI of the Civil Rights Act of 1964 and all requirements imposed by Title 49 CFR part 21 and related nondiscrimination authorities to ensure that no person shall, on the ground of race, color, national origin, limited English proficiency, sex, age, or disability (including religion/creed or income-level, where applicable), be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any programs, activities, or services conducted or funded by NCDOT. Contractors and other organizations under contract or agreement with NCDOT must also comply with Title VI and related authorities, therefore:

- (a) During the performance of this contract or agreement, contractors (e.g., subcontractors, consultants, vendors, prime contractors) are responsible for complying with NCDOT's Title VI Program. Contractors are not required to prepare or submit Title VI Programs. To comply with this section, the prime contractor shall:
 - 1. Post NCDOT's Notice of Nondiscrimination and the Contractor's own Equal Employment Opportunity (EEO) Policy in conspicuous locations accessible to all employees, applicants and subcontractors on the jobsite.

2. Physically incorporate the required Title VI clauses into all subcontracts on federally-assisted and state-funded NCDOT projects, and ensure inclusion by subcontractors into all lower-tier subcontracts.
 3. Required Solicitation Language. The Contractor shall include the following notification in all solicitations for bids and requests for work or material, regardless of funding source:

“The North Carolina Department of Transportation, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award. In accordance with other related nondiscrimination authorities, bidders and contractors will also not be discriminated against on the grounds of sex, age, disability, low-income level, creed/religion, or limited English proficiency in consideration for an award.”
 4. Physically incorporate the FHWA-1273, in its entirety, into all subcontracts and subsequent lower tier subcontracts on Federal-aid highway construction contracts only.
 5. Provide language assistance services (i.e., written translation and oral interpretation), free of charge, to LEP employees and applicants. Contact NCDOT OCR for further assistance, if needed.
 6. For assistance with these Title VI requirements, contact the NCDOT Title VI Nondiscrimination Program at 1-800-522-0453.
- (b) Subrecipients (e.g. cities, counties, LGAs, planning organizations) may be required to prepare and submit a Title VI Plan to NCDOT, including Title VI Assurances and/or agreements. Subrecipients must also ensure compliance by their contractors and subrecipients with Title VI. (23 CFR 200.9(b)(7))
- (c) If reviewed or investigated by NCDOT, the contractor or subrecipient agrees to take affirmative action to correct any deficiencies found within a reasonable time period, not to exceed 90 calendar days, unless additional time is granted by NCDOT. (23 CFR 200.9(b)(15))
- (d) The Contractor is responsible for notifying subcontractors of NCDOT’s External Discrimination Complaints Process.
1. Applicability

Title VI and related laws protect participants and beneficiaries (e.g., members of the public and contractors) from discrimination by NCDOT employees, subrecipients and contractors, regardless of funding source.

2. Eligibility

Any person—or class of persons—who believes he/she has been subjected to discrimination based on race, color, national origin, Limited English Proficiency (LEP), sex, age, or disability (and religion in the context of employment, aviation, or transit) may file a written complaint. The law also prohibits intimidation or retaliation of any sort.

3. Time Limits and Filing Options

Complaints may be filed by the affected individual(s) or a representative and must be filed no later than 180 calendar days after the following:

- (i) The date of the alleged act of discrimination; or
- (ii) The date when the person(s) became aware of the alleged discrimination; or
- (iii) Where there has been a continuing course of conduct, the date on which that conduct was discontinued or the latest instance of the conduct.

Title VI and related discrimination complaints may be submitted to the following entities:

- North Carolina Department of Transportation, Office of Civil Rights, Title VI Program, 1511 Mail Service Center, Raleigh, NC 27699-1511; toll free 1-800-522-0453
- Federal Highway Administration, North Carolina Division Office, 310 New Bern Avenue, Suite 410, Raleigh, NC 27601, 919-747-7010
- US Department of Transportation, Departmental Office of Civil Rights, External Civil Rights Programs Division, 1200 New Jersey Avenue, SE, Washington, DC 20590; 202-366-4070

4. Format for Complaints

Complaints must be in writing and signed by the complainant(s) or a representative, and include the complainant's name, address, and telephone number. Complaints received by fax or e-mail will be acknowledged and processed. Allegations received by telephone will be reduced to writing and provided to the complainant for confirmation or revision before processing. Complaints will be accepted in other languages, including Braille.

5. Discrimination Complaint Form

Contact NCDOT Civil Rights to receive a full copy of the Discrimination Complaint Form and procedures.

6. Complaint Basis

Allegations must be based on issues involving race, color, national origin (LEP), sex, age, disability, or religion (in the context of employment, aviation or transit). "Basis" refers to the complainant's membership in a protected group category.

**TABLE 103-1
COMPLAINT BASIS**

Protected Categories	Definition	Examples	Applicable Nondiscrimination Authorities
Race and Ethnicity	An individual belonging to one of the accepted racial groups; or the perception, based usually on physical characteristics that a person is a member of a racial group	Black/African American, Hispanic/Latino, Asian, American Indian/Alaska Native, Native Hawaiian/Pacific Islander, White	Title VI of the Civil Rights Act of 1964; 49 CFR Part 21; 23 CFR 200; 49 U.S.C. 5332(b); 49 U.S.C. 47123. (Executive Order 13166)
Color	Color of skin, including shade of skin within a racial group	Black, White, brown, yellow, etc.	
National Origin (<i>Limited English Proficiency</i>)	Place of birth. Citizenship is not a factor. (<i>Discrimination based on language or a person's accent is also covered</i>)	Mexican, Cuban, Japanese, Vietnamese, Chinese	
Sex	Gender. The sex of an individual. <i>Note:</i> Sex under this program does not include sexual orientation.	Women and Men	1973 Federal-Aid Highway Act; 49 U.S.C. 5332(b); 49 U.S.C. 47123.
Age	Persons of any age	21-year-old person	Age Discrimination Act of 1975 49 U.S.C. 5332(b); 49 U.S.C. 47123.
Disability	Physical or mental impairment, permanent or temporary, or perceived.	Blind, alcoholic, para-amputee, epileptic, diabetic, arthritic	Section 504 of the Rehabilitation Act of 1973; Americans with Disabilities Act of 1990
Religion (in the context of employment) (<i>Religion/ Creed in all aspects of any aviation or transit-related construction</i>)	An individual belonging to a religious group; or the perception, based on distinguishable characteristics that a person is a member of a religious group. In practice, actions taken as a result of the moral and ethical beliefs as to what is right and wrong, which are sincerely held with the strength of traditional religious views. Note: Does not have to be associated with a recognized religious group or church; if an individual sincerely holds to the belief, it is a protected religious practice.	Muslim, Christian, Sikh, Hindu, etc.	Title VII of the Civil Rights Act of 1964; 23 CFR 230; FHWA-1273 Required Contract Provisions. (49 U.S.C. 5332(b); 49 U.S.C. 47123)

(3) Pertinent Nondiscrimination Authorities

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest agrees to comply with the following non-discrimination statutes and authorities, including, but not limited to:

- (a) Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.

- (b) The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- (c) Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex);
- (d) Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability) and 49 CFR Part 27;
- (e) The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);
- (f) Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- (g) The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- (h) Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- (i) The Federal Aviation Administration's Nondiscrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- (j) Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures Nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- (k) Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of Limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- (l) Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).
- (m) Title VII of the Civil Rights Act of 1964 (42 U.S.C. § 2000e et seq., Pub. L. 88-352), (prohibits employment discrimination on the basis of race, color, religion, sex, or national origin).

(4) Additional Title VI Assurances

***The following Title VI Assurances (Appendices B, C and D) shall apply, as applicable*

- (a) Clauses for Deeds Transferring United States Property (1050.2A, Appendix B)

The following clauses will be included in deeds effecting or recording the transfer of real property, structures, or improvements thereon, or granting interest therein from the United States pursuant to the provisions of Assurance 4.

NOW, THEREFORE, the U.S. Department of Transportation as authorized by law and upon the condition that the North Carolina Department of Transportation (NCDOT) will accept title to the lands and maintain the project constructed thereon in accordance with the North Carolina General Assembly, the Regulations for the Administration of the Federal-Aid Highway Program, and the policies and procedures prescribed by the Federal Highway Administration of the U.S. Department of Transportation in accordance and in compliance with all requirements imposed by Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the U.S. Department of Transportation pertaining to and effectuating the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252; 42 U.S.C. § 2000d to 2000d-4), does hereby remise, release, quitclaim and convey unto the NCDOT all the right, title and interest of the U.S. Department of Transportation in and to said lands described in Exhibit A attached hereto and made a part hereof.

(HABENDUM CLAUSE)

TO HAVE AND TO HOLD said lands and interests therein unto the North Carolina Department of Transportation (NCDOT) and its successors forever, subject, however, to the covenants, conditions, restrictions and reservations herein contained as follows, which will remain in effect for the period during which the real property or structures are used for a purpose for which Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits and will be binding on the NCDOT, its successors and assigns.

The NCDOT, in consideration of the conveyance of said lands and interests in lands, does hereby covenant and agree as a covenant running with the land for itself, its successors and assigns, that (1) no person will on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination with regard to any facility located wholly or in part on, over, or under such lands hereby conveyed [,] [and]* (2) that the NCDOT will use the lands and interests in lands and interests in lands so conveyed, in compliance with all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations and Acts may be amended [, and (3) that in the event of breach of any of the above-mentioned nondiscrimination conditions, the Department will have a right to enter or re-enter said lands and facilities on said land, and that above described land and facilities will thereon revert to and vest in and become the absolute property of the U.S. Department of Transportation and its assigns as such interest existed prior to this instruction].*

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary in order to make clear the purpose of Title VI.)

(b) Clauses for Transfer of Real Property Acquired or Improved Under the Activity, Facility, or Program (1050.2A, Appendix C)

The following clauses will be included in deeds, licenses, leases, permits, or similar instruments entered into by the North Carolina Department of Transportation (NCDOT) pursuant to the provisions of Assurance 7(a):

1. The (grantee, lessee, permittee, etc. as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree [in the case of deeds and leases add "as a covenant running with the land"] that:
 - (i.) In the event facilities are constructed, maintained, or otherwise operated on the property described in this (deed, license, lease, permit, etc.) for a purpose for which a U.S. Department of Transportation activity, facility, or program is extended or for another purpose involving the provision of similar services or benefits, the (grantee, licensee, lessee, permittee, etc.) will maintain and operate such facilities and services in compliance with all requirements imposed by the Acts and Regulations (as may be amended) such that no person on the grounds of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities.
2. With respect to licenses, leases, permits, etc., in the event of breach of any of the above Nondiscrimination covenants, the NCDOT will have the right to terminate the (lease, license, permit, etc.) and to enter, re-enter, and repossess said lands and facilities thereon, and hold the same as if the (lease, license, permit, etc.) had never been made or issued. *
3. With respect to a deed, in the event of breach of any of the above Nondiscrimination covenants, the NCDOT will have the right to enter or re-enter the lands and facilities thereon, and the above described lands and facilities will there upon revert to and vest in and become the absolute property of the NCDOT and its assigns. *

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

(c) Clauses for Construction/Use/Access to Real Property Acquired Under the Activity, Facility or Program (1050.2A, Appendix D)

The following clauses will be included in deeds, licenses, permits, or similar instruments/ agreements entered into by the North Carolina Department of Transportation (NCDOT) pursuant to the provisions of Assurance 7(b):

1. The (grantee, licensee, permittee, etc., as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree (in the case of deeds and leases add, "as a covenant running with the land") that (1) no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land, and the furnishing of services thereon, no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination, (3) that the (grantee, licensee, lessee, permittee, etc.) will use the premises in compliance with all other requirements imposed by or pursuant to the Acts and Regulations, as amended, set forth in this Assurance.
2. With respect to (licenses, leases, permits, etc.), in the event of breach of any of the above Non- discrimination covenants, the NCDOT will have the right to terminate the (license, permit, etc., as appropriate) and to enter or re-enter and repossess said land and the facilities thereon, and hold the same as if said (license, permit, etc., as appropriate) had never been made or issued. *
3. With respect to deeds, in the event of breach of any of the above Nondiscrimination covenants, the NCDOT will there upon revert to and vest in and become the absolute property of the NCDOT and its assigns. *

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

STANDARD SPECIAL PROVISION**ON-THE-JOB TRAINING**

(10-16-07) (Rev. 4-21-15)

Z-10

Description

The North Carolina Department of Transportation will administer a custom version of the Federal On-the-Job Training (OJT) Program, commonly referred to as the Alternate OJT Program. All contractors (existing and newcomers) will be automatically placed in the Alternate Program. Standard OJT requirements typically associated with individual projects will no longer be applied at the project level. Instead, these requirements will be applicable on an annual basis for each contractor administered by the OJT Program Manager.

On the Job Training shall meet the requirements of 23 CFR 230.107 (b), 23 USC – Section 140, this provision and the On-the-Job Training Program Manual.

The Alternate OJT Program will allow a contractor to train employees on Federal, State and privately funded projects located in North Carolina. However, priority shall be given to training employees on NCDOT Federal-Aid funded projects.

Minorities and Women

Developing, training and upgrading of minorities and women toward journeyman level status is a primary objective of this special training provision. Accordingly, the Contractor shall make every effort to enroll minority and women as trainees to the extent that such persons are available within a reasonable area of recruitment. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

Assigning Training Goals

The Department, through the OJT Program Manager, will assign training goals for a calendar year based on the contractors' past three years' activity and the contractors' anticipated upcoming year's activity with the Department. At the beginning of each year, all contractors eligible will be contacted by the Department to determine the number of trainees that will be assigned for the upcoming calendar year. At that time the Contractor shall enter into an agreement with the Department to provide a self-imposed on-the-job training program for the calendar year. This agreement will include a specific number of annual training goals agreed to by both parties. The number of training assignments may range from 1 to 15 per contractor per calendar year. The Contractor shall sign an agreement to fulfill their annual goal for the year.\

Training Classifications

The Contractor shall provide on-the-job training aimed at developing full journeyman level workers in the construction craft/operator positions. Preference shall be given to providing training in the following skilled work classifications:

Equipment Operators	Office Engineers
Truck Drivers	Estimators
Carpenters	Iron / Reinforcing Steel Workers
Concrete Finishers	Mechanics
Pipe Layers	Welders

The Department has established common training classifications and their respective training requirements that may be used by the contractors. However, the classifications established are not all-inclusive. Where the training is oriented toward construction applications, training will be allowed in lower-level management positions such as office engineers and estimators. Contractors shall submit new classifications for specific job functions that their employees are performing. The Department will review and recommend for acceptance to FHWA the new classifications proposed by contractors, if applicable. New classifications shall meet the following requirements:

Proposed training classifications are reasonable and realistic based on the job skill classification needs, and

The number of training hours specified in the training classification is consistent with common practices and provides enough time for the trainee to obtain journeyman level status.

The Contractor may allow trainees to be trained by a subcontractor provided that the Contractor retains primary responsibility for meeting the training and this provision is made applicable to the subcontract. However, only the Contractor will receive credit towards the annual goal for the trainee.

Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment.

No employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journeyman level status or in which they have been employed as a journeyman.

Records and Reports

The Contractor shall maintain enrollment, monthly and completion reports documenting company compliance under these contract documents. These documents and any other information as requested shall be submitted to the OJT Program Manager.

Upon completion and graduation of the program, the Contractor shall provide each trainee with a certification Certificate showing the type and length of training satisfactorily completed.

Trainee Interviews

All trainees enrolled in the program will receive an initial and Trainee/Post graduate interview conducted by the OJT program staff.

Trainee Wages

Contractors shall compensate trainees on a graduating pay scale based upon a percentage of the prevailing minimum journeyman wages (Davis-Bacon Act). Minimum pay shall be as follows:

60 percent	of the journeyman wage for the first half of the training period
75 percent	of the journeyman wage for the third quarter of the training period
90 percent	of the journeyman wage for the last quarter of the training period

In no instance shall a trainee be paid less than the local minimum wage. The Contractor shall adhere to the minimum hourly wage rate that will satisfy both the NC Department of Labor (NCDOL) and the Department.

Achieving or Failing to Meet Training Goals

The Contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and who receives training for at least 50 percent of the specific program requirement. Trainees will be allowed to be transferred between projects if required by the Contractor's scheduled workload to meet training goals.

If a contractor fails to attain their training assignments for the calendar year, they may be taken off the NCDOT's Bidders List.

Measurement and Payment

No compensation will be made for providing required training in accordance with these contract documents.



Signed by:

Matthew V. Springer

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07/12/2023

INTEGRATED MULTIPOLYMER (IMP) PAVEMENT MARKING:

(7-12-23)

Description

This work consists of applying Integrated Multipolymer (IMP) pavement marking to all road surfaces using standard thermoplastic application equipment. A primer shall be used for concrete and any aged asphalt surfaces as required by the Engineer. Retroreflectivity shall be obtained through intermix and drop-on reflective media. Both intermix and drop-on reflective media are required.

Materials

IMP pavement marking material shall conform to the applicable requirements of Section 1087 of the *Standard Specifications*. The installer shall use an integrated multipolymer listed in the NCDOT APL.

Construction Methods

(A) Surface Preparation

Remove any existing pavement markings and remove any material that would prevent the IMP pavement markings from bonding correctly. Use a removal method approved by the Engineer. On concrete surfaces and any aged asphalt surfaces required by the Engineer, apply a primer in accordance with manufacturer's recommendation. Protect primer from traffic until dry to a slightly tacky state before application of IMP. Premarking will be incidental to other items in the contract. Unless directed by the Engineer, there will be no direct payment for interim paint.

(B) Application

Material preparation and application temperatures should be in accordance with manufacturer's specification. Do not apply when the temperatures are at or near the dew point. Apply a test strip to determine if the surface is dry enough if there has been rain in the last 24

hours. Only apply markings to dry clean surfaces. Apply pavement markings using the specifications found in Section 1205-3 of the *Standard Specifications*. Equipment, weather and seasonal limitations, application, and observation period shall be in accordance with Article 1205-4 of the *Standard Specifications*. For minimum initial retroreflectivity requirements, see the chart below.

MINIMUM RETROREFLECTIVITY REQUIRMENTS FOR INTEGRATED MULTIPOLYMER	
Color	Reflectivity
White	425 mcd/lux/m ²
Yellow	325 mcd/lux/m ²

(C) Dry Time

Ensure installed material is track free in accordance with the manufacturer's recommendations before exposing to traffic.

Measurement and Payment

Integrated Multipolymer Pavement Marking Line, __ " Width, __mils Thick will be measured and paid as the actual number of linear feet of pavement marking lines satisfactorily placed and accepted by the Engineer. The quantity of solid lines will be the summation of the linear feet of solid line measured end-to-end of the line. The quantity of skip or broken lines will be the summation of the linear feet derived by multiplying the nominal length of a line by the number of marking lines satisfactorily placed.

Integrated Multipolymer Pavement Marking Characters and *Integrated Multipolymer Pavement Marking Symbols* will be paid as the actual number of symbols and characters satisfactorily placed and accepted by the Engineer.

Such prices and payment will be full compensation for all work covered by this section including, but not limited to, furnishing, surface preparation, primer, reapplication of molten pavement marking crossed by a vehicle, and removal of all pavement marking materials spilled on the roadway surface.

Payment will be made under:

Pay Item	Pay Unit
Integrated Multipolymer Pavement Marking Lines, __, __"	Linear Foot
Integrated Multipolymer Pavement Marking Symbols, __ mils	Each
Integrated Multipolymer Pavement Marking Characters, __ mils	Each

STABILIZATION REQUIREMENTS:

(3-11-16) (Rev. 1-21-25)

S-2

Stabilization for this project shall comply with the time frame guidelines as specified by the NCG-010000 general construction permit issued by the North Carolina Department of Environmental Quality Division of Energy, Mineral, and Land Resources. Temporary or permanent ground cover stabilization shall occur within the following time frames from the last land-disturbing activity:

- Stabilize perimeter dikes, swales, ditches, and perimeter slopes within 7 calendar days.
- Stabilize high quality water (HQW) zones within 7 calendar days.
- Stabilize slopes steeper than 3:1 within 7 calendar days.
 - If slopes are 10 feet or less in length and are not steeper than 2:1, 14 calendar days are allowed.
- Stabilize slopes 3:1 to 4:1 within 14 calendar days.
 - 7 calendar days for slopes greater than 50 feet in length and with slopes steeper than 4:1.
 - 7 calendar days for perimeter dikes, swales, ditches, perimeter slopes, and HQW Zones.
- Stabilize areas with slopes flatter than 4:1 within 14 calendar days.
 - 7 calendar days for perimeter dikes, swales, ditches, perimeter slopes, and HQW Zones.

The stabilization timeframe for High Quality Water (HQW) Zones shall be 7 calendar days with no exceptions for slope grades or lengths. High Quality Water Zones (HQW) Zones are defined by North Carolina Administrative Code 15A NCAC 04A.0105 (25). Temporary and permanent ground cover stabilization shall be achieved in accordance with the provisions in this contract and as directed.

SEEDING AND MULCHING:**(East Crimp)**

The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone, shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined. All rates are in pounds per acre.

All Roadway Areas**March 1 - August 31**

50# Tall Fescue
 10# Centipede
 25# Bermudagrass (hulled)
 500# Fertilizer
 4000# Limestone

September 1 - February 28

50# Tall Fescue
 10# Centipede
 35# Bermudagrass (unhulled)
 500# Fertilizer
 4000# Limestone

Waste and Borrow Locations**March 1 – August 31**

75# Tall Fescue

September 1 - February 28

75# Tall Fescue

25#	Bermudagrass (hulled)	35#	Bermudagrass (unhulled)
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Note: 50# of Bahiagrass may be substituted for either Centipede or Bermudagrass only upon Engineer's request.

Approved Tall Fescue Cultivars

06 Dust	Escalade	Kalahari	Serengeti
2 nd Millennium	Essential	Kitty Hawk 2000	Shelby
3 rd Millennium	Evergreen 2	Legitimate	Shenandoah III
Avenger	Faith	Lexington	Shenandoah Elite
Bar Fa	Falcon IV	LifeGuard	Sheridan
Barlexas	Falson NG	LSD	Sidewinder
Barlexas II	Falcon V	Magellan	Signia
Barrera	Fat Cat	Masterpiece	Silver Hawk
Barrington	Fesnova	Millennium SRP	Skyline
Barrobusto	Fidelity	Monet	Solara
Barvado	Finelawn Elite	Mustang 4	Southern Choice II
Biltmore	Finelawn Xpress	Naturally Green	Speedway
Bingo	Finesse II	Ninja 2	Spyder LS
Bizem	Firebird	Ol' Glory	Sunset Gold
Black Tail	Firecracker LS	Padre	Taccoa
Blackwatch	Firenza	Patagonia	Tahoe II
Blade Runner II	Five Point	Pedigree	Talladega
Bonsai	Focus	Picasso	Tanzania
Braveheart	Forte	Piedmont	Temple
Bravo	Garrison	Plantation	Terrano
Bullseye	Gazelle II	Proseeds 5301	Thor
Cannavaro	GLX Aced	Prospect	Thunderstruck
Catalyst	Gold Medallion	Quest	Titanium LS
Cayenne	Grande 3	RainDance	Titan LTD
Cezanne RZ	Greenbrooks	Raptor II	Tracer
Chipper	Greenkeeper	Rebel IV	Traverse SRP
Cochise IV	Gremlin	Rebel Exeda	Trio
Constitution	Greystone	Rebel Sentry	Tulsa Time
Corgi	Guardian 21	Regenerate	Turbo
Corona	Guardian 41	Regiment II	Turbo RZ
Coyote	Hemi	Rembrandt	Tuxedo
Cumberland	Honky Tonk	Rendition	Ultimate
Darlington	Hot Rod	Reunion	Umbrella
DaVinci	Hunter	Rhambler 2 SRP	Van Gogh
Desire	Inferno	Riverside	Venture
Diablo	Integrity	RNP	Watchdog
Dominion	Jaguar 3	Rocket	Wolfpack II

Dynamic
Dynasty

Jamboree
Justice

Saltillo
Scorpion

Xtremegreen

On cut and fill slopes 2:1 or steeper Centipede shall be applied at the rate of 5 pounds per acre and add 20# of Sericea Lespedeza from January 1 - December 31.

Fertilizer shall be 10-20-20 analysis. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis and as directed.

All areas seeded and mulched shall be tacked with asphalt. Crimping of straw in lieu of asphalt tack shall not be allowed on this project.

CRIMPING STRAW MULCH:

Crimping shall be required on this project adjacent to any section of roadway where traffic is to be maintained or allowed during construction. In areas within six feet of the edge of pavement, straw is to be applied and then crimped. After the crimping operation is complete, an additional application of straw shall be applied and immediately tacked with a sufficient amount of undiluted emulsified asphalt.

Straw mulch shall be of sufficient length and quality to withstand the crimping operation.

Crimping equipment including power source shall be subject to the approval of the Engineer providing that maximum spacing of crimper blades shall not exceed 8".

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STRUCTURE PROJECT SPECIAL PROVISIONS**SCOPE OF WORK**

This work shall consist of furnishing all labor, equipment, and materials to overlay the existing bridge deck with Latex modified Concrete, repair substructure, jack bridge and clean and paint structural steel as directed in the plans. Work includes: existing bridge deck surface preparation; overlaying the prepared bridge decks with Latex Modified Concrete (LMC); existing joint removal and reconstruction; substructure repair and modification with concrete and shotcrete, epoxy resin injection and epoxy coating; install stub columns and bearings at bents and end bents; removal, containment, and disposal of the existing structural steel paint system; preparation of the surface to be painted and application of the new structural steel paint system; disposal of demolition and waste material; asphalt wearing surface milling and resurfacing; curtain wall and end bent backfill rehabilitation; replace approach pavement; seeding and mulching all grassed areas disturbed; and all incidental items necessary to complete the project as specified and shown on the plans. No separate measurements or payment will be made for seeding, mulching or any measures required to control erosion or prevent off-site sedimentation. The cost of this work shall be included in the lump sum price bid for Mobilization.

Work will be performed on the existing bridge at the following locations in Wilson County:

1. Bridge #970068 – NC 42 over US 301

The contractor shall provide all necessary access; underdeck platforms, scaffolding, ladders, etc.; provide all traffic control; provide all staging areas, material storage, waste disposal; provide environmental controls to limit loss of materials from sawing equipment, and chipping equipment; and all else necessary to complete the work.

The contractor shall be responsible for fulfilling all requirements of the NCDOT Standard Specifications for Roads and Structures dated January 2024, except as otherwise specified herein.

SUBMITTAL OF WORKING DRAWINGS**(1-31-25)****GENERAL**

Submit working drawings in accordance with Article 105-2 of the *Standard Specifications* and this Special Provision. For this Special Provision, “submittals” refers to only those listed in this Special Provision. The list of submittals contained herein does not represent a list of required submittals for the project. Submittals are only necessary for those items as required by the contract. Make submittals that are not specifically noted in this provision directly to the Engineer. Either the

Structures Management Unit or the Geotechnical Engineering Unit or both units will jointly review submittals.

If a submittal contains variations from plan details or specifications or significantly affects project cost, field construction or operations, discuss the submittal with and submit all copies to the Engineer. State the reason for the proposed variation in the submittal. To minimize review time, make sure all submittals are complete when initially submitted. Provide a contact name and information with each submittal. Direct any questions regarding submittal requirements to the Engineer, Structures Management Unit contacts or the Geotechnical Engineering Unit contacts noted below.

To facilitate in-plant inspection by NCDOT and approval of working drawings, provide the name, address and telephone number of the facility where fabrication will actually be done if different than shown on the title block of the submitted working drawings. This includes, but is not limited to, precast concrete items, prestressed concrete items and fabricated steel or aluminum items.

ADDRESSES AND CONTACTS

For submittals to the Structures Management Unit, use the following addresses:

Via Email: SMU-wdr@ncdot.gov (do not cc SMU Working Drawings staff)

Via US mail:

Mr. D. N. Snoke, P. E.
State Structures Engineer
North Carolina Department
of Transportation
Structures Management Unit
1581 Mail Service Center
Raleigh, NC 27699-1581

Attention: Mr. J. L. Bolden, P. E.

Via other delivery service:

Mr. D. N. Snoke, P. E.
State Structures Engineer
North Carolina Department
of Transportation
Structures Management Unit
1000 Birch Ridge Drive
Raleigh, NC 27610

Attention: Mr. J. L. Bolden, P. E.

For submittals to the Geotechnical Engineering Unit, use the following addresses:

For projects in Divisions 1-7 (Eastern Regional Office):

Via Email: EastGeotechnicalSubmittal@ncdot.gov

Via US mail:

Mr. Thomas Santee, P. E.
Assistant State Geotechnical
Engineer – Eastern Region
North Carolina Department

Via other delivery service:

Mr. Thomas Santee, P. E.
Assistant State Geotechnical
Engineer – Eastern Region
North Carolina Department

of Transportation
Geotechnical Engineering Unit
Eastern Regional Office
1570 Mail Service Center
Raleigh, NC 27699-1570

of Transportation
Geotechnical Engineering Unit
Eastern Regional Office
3301 Jones Sausage Road, Suite 100
Garner, NC 27529

For projects in Divisions 8-14 (Western Regional Office):

Via Email: WestGeotechnicalSubmittal@ncdot.gov

Via US mail or other delivery service:

Mr. Eric Williams, P. E.
Assistant State Geotechnical
Engineer – Western Region
North Carolina Department
of Transportation
Geotechnical Engineering Unit
Western Regional Office
5253 Z Max Boulevard
Harrisburg, NC 28075

The status of the review of structure-related submittals sent to the Structures Management Unit can be viewed from the Unit's website, via the "[Drawing Submittal Status](#)" link.

The status of the review of geotechnical-related submittals sent to the Geotechnical Engineering Unit can be viewed from the Unit's website, via the "[Geotechnical Construction Submittals](#)" link.

Direct any questions concerning submittal review status, review comments or drawing markups to the following contacts:

Primary Structures Contact: James Bolden (919) 707 – 6408
jlbolden@ncdot.gov

Secondary Structures Contacts: Madonna Rorie (919) 707 – 6508
mlrorie@ncdot.gov

Eastern Regional Geotechnical Contact (Divisions 1-7):
Thomas Santee (984) 920-8901
EastGeotechnicalSubmittal@ncdot.gov

Western Regional Geotechnical Contact (Divisions 8-14):
Eric Williams (980) 258-6400
WestGeotechnicalSubmittal@ncdot.gov

SUBMITTAL COPIES

Furnish one complete copy of each submittal, including all attachments, to the Engineer. At the same time, submit a copy of the same complete submittal directly to the Structures Management Unit and/or the Geotechnical Engineering Unit as specified in the tables below.

The first table below covers “Structure Submittals.” The Engineer will receive review comments and drawing markups for these submittals from the Structures Management Unit. The second table in this section covers “Geotechnical Submittals.” The Engineer will receive review comments and drawing markups for these submittals from the Geotechnical Engineering Unit.

Unless otherwise required, submit one set of supporting calculations to either the Structures Management Unit or the Geotechnical Engineering Unit unless both units require submittal copies in which case submit a set of supporting calculations to each unit. Provide additional copies of any submittal as directed.

STRUCTURE SUBMITTALS

Submittal	Submittal Required by Structures Management Unit?	Submittal Required by Geotechnical Engineering Unit?	Contract Reference Requiring Submittal ¹
Arch Culvert Falsework	Y	N	Plan Note, SN Sheet & “Falsework and Formwork”
Box Culvert Falsework ⁷	Y	N	Plan Note, SN Sheet & “Falsework and Formwork”
Cofferdams	Y	Y	Article 410-4
Foam Joint Seals ⁶	Y	N	“Foam Joint Seals”
Expansion Joint Seals (hold down plate type with base angle)	Y	N	“Expansion Joint Seals”
Expansion Joint Seals (modular)	Y	N	“Modular Expansion Joint Seals”
Expansion Joint Seals (strip seals)	Y	N	“Strip Seal Expansion Joints”
Falsework & Forms ² (substructure)	Y	N	Article 420-3 & “Falsework and Formwork”

Falsework & Forms (superstructure)	Y	N	Article 420-3 & “Falsework and Formwork”
Girder Erection over Railroad	Y	N	Railroad Provisions
Maintenance and Protection of Traffic Beneath Proposed Structure	Y	N	“Maintenance and Protection of Traffic Beneath Proposed Structure at Station ____”
Metal Bridge Railing	Y	N	Plan Note
Metal Stay-in-Place Forms	Y	N	Article 420-3
Metalwork for Elastomeric Bearings ^{4,5}	Y	N	Article 1072-8
Miscellaneous Metalwork ^{4,5}	Y	N	Article 1072-8
Disc Bearings ⁴	Y	N	“Disc Bearings”
Overhead and Digital Message Signs (DMS) (metalwork and foundations)	Y	N	Applicable Provisions
Placement of Equipment on Structures (cranes, etc.)	Y	N	Article 420-20
Prestressed Concrete Box Beam (detensioning sequences) ³	Y	N	Article 1078-11
Precast Concrete Box Culverts	Y	N	“Optional Precast Reinforced Concrete Box Culvert at Station ____”
Prestressed Concrete Cored Slab (detensioning sequences) ³	Y	N	Article 1078-11
Prestressed Concrete Deck Panels	Y	N	Article 420-3
Prestressed Concrete Girder (strand elongation and detensioning sequences)	Y	N	Articles 1078-8 and 1078- 11
Removal of Existing Structure over Railroad	Y	N	Railroad Provisions
Revised Bridge Deck Plans (adaptation to prestressed deck panels)	Y	N	Article 420-3

Revised Bridge Deck Plans (adaptation to modular expansion joint seals)	Y	N	“Modular Expansion Joint Seals”
Sound Barrier Wall (precast items)	Y	N	Article 1077-2 & “Sound Barrier Wall”
Sound Barrier Wall Steel Fabrication Plans ⁵	Y	N	Article 1072-8 & “Sound Barrier Wall”
Structural Steel ⁴	Y	N	Article 1072-8
Temporary Detour Structures	Y	Y	Article 400-3 & “Construction, Maintenance and Removal of Temporary Structure at Station ____”
TFE Expansion Bearings ⁴	Y	N	Article 1072-8

FOOTNOTES

1. References are provided to help locate the part of the contract where the submittals are required. References in quotes refer to the provision by that name. Articles refer to the *Standard Specifications*.
2. Submittals for these items are necessary only when required by a note on plans.
3. Submittals for these items may not be required. A list of pre-approved sequences is available from the producer or the Materials & Tests Unit.
4. The fabricator may submit these items directly to the Structures Management Unit.
5. The two sets of preliminary submittals required by Article 1072-8 of the *Standard Specifications* are not required for these items.
6. Submittals for Fabrication Drawings are not required. Submittals for Catalogue Cuts of Proposed Material are required. See Section 5.A of the referenced provision.
7. Submittals are necessary only when the top slab thickness is 18” or greater.

GEOTECHNICAL SUBMITTALS

Submittal	Submittals Required by Geotechnical Engineering Unit	Submittals Required by Structures Management Unit	Contract Reference Requiring Submittal ¹
Drilled Pier Construction Plans ²	Y	N	Subarticle 411-3(A)
Crosshole Sonic Logging (CSL) Reports ²	Y	N	Subarticle 411-5(A)(2)
Pile Driving Equipment Data Forms ^{2,3}	Y	N	Subarticle 450-3(D)(2)
Pile Driving Analyzer (PDA) Reports ²	Y	N	Subarticle 450-3(F)(3)
Retaining Walls ⁴	Y; drawings and calculations	Y; drawings	Applicable Provisions
Temporary Shoring ⁴	Y; drawings and calculations	Y; drawings	“Temporary Shoring” & “Temporary Soil Nail Walls”

FOOTNOTES

- References are provided to help locate the part of the contract where the submittals are required. References in quotes refer to the provision by that name. Subarticles refer to the *Standard Specifications*.
- Submit one hard copy of submittal to the Engineer. Submit a second copy of submittal electronically (PDF via email), US mail or other delivery service to the appropriate Geotechnical Engineering Unit regional office. Electronic submission is preferred.
- The Pile Driving Equipment Data Form is available from:
<https://connect.ncdot.gov/projects/construction/ConstManRefDocs/PILE%20DRIVING%20EQUIPMENT%20DATA%20FORM.pdf>
 See second page of form for submittal instructions.
- Electronic copy of submittal is required. See referenced provision.

FALSEWORK AND FORMWORK**(11-30-23)****GENERAL**

Use this Special Provision as a guide to develop temporary works submittals required by the *Standard Specifications* or other provisions; no additional submittals are required herein. Such temporary works include, but are not limited to, falsework and formwork.

Falsework is any temporary construction used to support the permanent structure until it becomes self-supporting. Formwork is the temporary structure or mold used to retain plastic or fluid concrete in its designated shape until it hardens. Access scaffolding is a temporary structure that functions as a work platform that supports construction personnel, materials, and tools, but is not intended to support the structure. Scaffolding systems that are used to temporarily support permanent structures (as opposed to functioning as work platforms) are considered to be falsework under the definitions given. Shoring is a component of falsework such as horizontal, vertical, or inclined support members. Where the term “temporary works” is used, it includes all of the temporary facilities used in bridge construction that do not become part of the permanent structure.

Design and construct safe and adequate temporary works that will support all loads imposed and provide the necessary rigidity to achieve the lines and grades shown on the plans in the final structure.

MATERIALS

Select materials suitable for temporary works; however, select materials that also ensure the safety and quality required by the design assumptions. The Engineer has authority to reject material on the basis of its condition, inappropriate use, safety, or nonconformance with the plans. Clearly identify allowable loads or stresses for all materials or manufactured devices on the plans. Revise the plan and notify the Engineer if any change to materials or material strengths is required.

DESIGN REQUIREMENTS**(A) Working Drawings**

Provide working drawings for items as specified in the contract, or as required by the Engineer, with design calculations and supporting data in sufficient detail to permit a structural and safety review of the proposed design of the temporary work.

On the drawings, show all information necessary to allow the design of any component to be checked independently as determined by the Engineer.

When concrete placement is involved, include data such as the drawings of proposed sequence, rate of placement, direction of placement, and location of all construction joints.

When required, have the drawings and calculations prepared under the guidance of, and sealed by, a North Carolina Registered Professional Engineer who is knowledgeable in temporary works design.

If requested by the Engineer, submit with the working drawings manufacturer's catalog data listing the weight of all construction equipment that will be supported on the temporary work. Show anticipated total settlements and/or deflections of falsework and forms on the working drawings. Include falsework footing settlements, joint take-up, and deflection of beams or girders.

As an option for the Contractor, overhang falsework hangers may be uniformly spaced, at a maximum of 36 inches, provided the following conditions are met:

Member Type (PCG)	Member Depth, (inches)	Max. Overhang Width, (inches)	Max. Slab Edge Thickness, (inches)	Max. Screenshot Wheel Weight, (lbs.)	Bracket Min. Vertical Leg Extension, (inches)
II	36	39	14	2000	26
III	45	42	14	2000	35
IV	54	45	14	2000	44
MBT	63	51	12	2000	50
MBT	72	55	12	1700	48

Overhang width is measured from the centerline of the girder to the edge of the deck slab. For Type II, III & IV prestressed concrete girders (PCG), 45-degree cast-in-place half hangers and rods must have a minimum safe working load of 6,000 lbs.

For MBT prestressed concrete girders, 45-degree angle holes for falsework hanger rods shall be cast through the girder top flange and located, measuring along the top of the member, 1'-2 1/2" from the edge of the top flange. Hanger hardware and rods must have a minimum safe working load of 6,000 lbs.

For link slabs, the top of girders directly beneath the link slab shall be free of overhang falsework attachments or other hardware. Submit calculations and working drawings for overhang falsework in the link slab region.

The overhang bracket provided for the diagonal leg shall have a minimum safe working load of 3,750 lbs. The vertical leg of the bracket shall extend to the point that the heel bears on the girder bottom flange, no closer than 4 inches from the bottom of the member. However, for 72-inch members, the heel of the bracket shall bear on the web, near the bottom flange transition.

Provide adequate overhang falsework and determine the appropriate adjustments for deck geometry, equipment, casting procedures and casting conditions.

If the optional overhang falsework spacing is used, indicate this on the falsework submittal and advise the girder producer of the proposed details. Failure to notify the Engineer of hanger type and hanger spacing on prestressed concrete girder casting drawings may delay the approval of those drawings.

Falsework hangers that support concentrated loads and are installed at the edge of thin top flange concrete girders (such as bulb tee girders) shall be spaced so as not to exceed 75% of the manufacturer's stated safe working load. Use of dual leg hangers (such as Meadow Burke HF-42 and HF-43) are not allowed on concrete girders with thin top flanges. Design the falsework and forms supporting deck slabs and overhangs on girder bridges so that there will be no differential settlement between the girders and the deck forms during placement of deck concrete.

When staged construction of the bridge deck is required, detail falsework and forms for screed and fluid concrete loads to be independent of any previous deck pour components when the mid-span girder deflection due to deck weight is greater than $\frac{3}{4}$ ".

Note on the working drawings any anchorages, connectors, inserts, steel sleeves or other such devices used as part of the falsework or formwork that remains in the permanent structure. If the plan notes indicate that the structure contains the necessary corrosion protection required for a Corrosive Site, epoxy coat, galvanize or metalize these devices. Electroplating will not be allowed. Any coating required by the Engineer will be considered incidental to the various pay items requiring temporary works.

Design falsework and formwork requiring submittals in accordance with the current edition of *AASHTO Guide Design Specifications for Bridge Temporary Works* except as noted herein.

(1) Wind Loads

Table 2.2 of Article 2.2.5.1 is modified to include wind velocities up to 110 mph. In addition, Table 2.2A is included to provide the maximum wind speeds by county in North Carolina.

Table 2.2 - Wind Pressure Values

Height Zone feet above ground	Pressure, lb/ft ² for Indicated Wind Velocity, mph				
	70	80	90	100	110
0 to 30	15	20	25	30	35
30 to 50	20	25	30	35	40
50 to 100	25	30	35	40	45
over 100	30	35	40	45	50

(2) Time of Removal

The following requirements replace those of Article 3.4.8.2.

Do not remove forms until the concrete has attained strengths required in Article 420-16 of the *Standard Specifications* and these Special Provisions.

Do not remove forms until the concrete has sufficient strength to prevent surface damage.

Table 2.2A - Steady State Maximum Wind Speeds by Counties in North Carolina

COUNTY	25 YR (mph)	COUNTY	25 YR (mph)	COUNTY	25 YR (mph)
Alamance	70	Franklin	70	Pamlico	100
Alexander	70	Gaston	70	Pasquotank	100
Alleghany	70	Gates	90	Pender	100
Anson	70	Graham	80	Perquimans	100
Ashe	70	Granville	70	Person	70
Avery	70	Greene	80	Pitt	90
Beaufort	100	Guilford	70	Polk	80
Bertie	90	Halifax	80	Randolph	70
Bladen	90	Harnett	70	Richmond	70
Brunswick	100	Haywood	80	Robeson	80
Buncombe	80	Henderson	80	Rockingham	70
Burke	70	Hertford	90	Rowan	70
Cabarrus	70	Hoke	70	Rutherford	70
Caldwell	70	Hyde	110	Sampson	90
Camden	100	Iredell	70	Scotland	70
Carteret	110	Jackson	80	Stanley	70
Caswell	70	Johnston	80	Stokes	70
Catawba	70	Jones	100	Surry	70
Cherokee	80	Lee	70	Swain	80
Chatham	70	Lenoir	90	Transylvania	80
Chowan	90	Lincoln	70	Tyrell	100
Clay	80	Macon	80	Union	70
Cleveland	70	Madison	80	Vance	70
Columbus	90	Martin	90	Wake	70
Craven	100	McDowell	70	Warren	70
Cumberland	80	Mecklenburg	70	Washington	100
Currituck	100	Mitchell	70	Watauga	70
Dare	110	Montgomery	70	Wayne	80
Davidson	70	Moore	70	Wilkes	70
Davie	70	Nash	80	Wilson	80
Duplin	90	New Hanover	100	Yadkin	70
Durham	70	Northampton	80	Yancey	70
Edgecombe	80	Onslow	100		
Forsyth	70	Orange	70		

(B) Review and Approval

The Engineer is responsible for the review and approval of temporary works' drawings.

Submit the working drawings sufficiently in advance of proposed use to allow for their review, revision (if needed), and approval without delay to the work.

The time period for review of the working drawings does not begin until complete drawings and design calculations, when required, are received by the Engineer.

Do not start construction of any temporary work for which working drawings are required until the drawings have been approved. Such approval does not relieve the Contractor of the responsibility for the accuracy and adequacy of the working drawings.

CONSTRUCTION REQUIREMENTS

All requirements of Section 420 of the *Standard Specifications* apply.

Construct temporary works in conformance with the approved working drawings. Ensure that the quality of materials and workmanship employed is consistent with that assumed in the design of the temporary works. Do not weld falsework members to any portion of the permanent structure unless approved. Show any welding to the permanent structure on the approved construction drawings.

Provide tell-tales attached to the forms and extending to the ground, or other means, for accurate measurement of falsework settlement. Make sure that the anticipated compressive settlement and/or deflection of falsework does not exceed 1 inch. For cast-in-place concrete structures, make sure that the calculated deflection of falsework flexural members does not exceed 1/240 of their span regardless of whether or not the deflection is compensated by camber strips.

(A) Maintenance and Inspection

Inspect and maintain the temporary work in an acceptable condition throughout the period of its use. Certify that the manufactured devices have been maintained in a condition to allow them to safely carry their rated loads. Clearly mark each piece so that its capacity can be readily determined at the job site.

Perform an in-depth inspection of an applicable portion(s) of the temporary works, in the presence of the Engineer, not more than 24 hours prior to the beginning of each concrete placement. Inspect other temporary works at least once a month to ensure that they are functioning properly. Have a North Carolina Registered Professional Engineer inspect the cofferdams, shoring, sheathing, support of excavation structures, and support systems for load tests prior to loading.

(B) Foundations

Determine the safe bearing capacity of the foundation material on which the supports for temporary works rest. If required by the Engineer, conduct load tests to verify proposed bearing capacity values that are marginal or in other high-risk situations.

The use of the foundation support values shown on the contract plans of the permanent structure is permitted if the foundations are on the same level and on the same soil as those of the permanent structure.

Allow for adequate site drainage or soil protection to prevent soil saturation and washout of the soil supporting the temporary works supports.

If piles are used, the estimation of capacities and later confirmation during construction using standard procedures based on the driving characteristics of the pile is permitted. If preferred, use load tests to confirm the estimated capacities; or, if required by the Engineer conduct load tests to verify bearing capacity values that are marginal or in other high risk situations.

The Engineer reviews and approves the proposed pile and soil bearing capacities.

REMOVAL

Unless otherwise permitted, remove and keep all temporary works upon completion of the work. Do not disturb or otherwise damage the finished work.

Remove temporary works in conformance with the contract documents. Remove them in such a manner as to permit the structure to uniformly and gradually take the stresses due to its own weight.

MEASUREMENT AND PAYMENT

Unless otherwise specified, *Falsework and Formwork* will not be directly measured.

Payment at the contract unit prices for the various pay items requiring temporary works will be full compensation for the above falsework and formwork.

CRANE SAFETY**(11-30-23)****GENERAL**

Comply with the manufacturer specifications and limitations applicable to the operation of any and all cranes and derricks. Prime contractors, sub-contractors, and fully operated rental companies shall comply with the current Occupational Safety and Health Administration (OSHA) regulations.

Submit all items listed below to the Engineer prior to beginning crane operations. Changes in personnel or equipment must be reported to the Engineer and all applicable items listed below must be updated and submitted prior to continuing with crane operations.

CRANE SAFETY SUBMITTAL LIST

- (A) Competent Person:** Provide the name and qualifications of the “Competent Person” responsible for crane safety and lifting operations. The named competent person will have the responsibility and authority to stop any work activity due to safety concerns.
- (B) Riggers:** Provide the qualifications and experience of the persons responsible for rigging operations. Qualifications and experience should include, but not be limited to, weight calculations, center of gravity determinations, selection and inspection of sling and rigging equipment, and safe rigging practices.
- (C) Crane Inspections:** Inspection records for all cranes shall be current and readily accessible for review upon request.
- (D) Certifications:** Crane operators shall be certified by the National Commission for the Certification of Crane Operators (NCCCO) or the National Center for Construction Education and Research (NCCER). Other approved nationally accredited programs will be considered upon request. In addition, crane operators shall have a current CDL medical card. Submit a list of crane operator(s) and include current certification for each type of crane operated (small hydraulic, large hydraulic, small lattice, large lattice) and medical evaluations for each operator.

MEASUREMENT AND PAYMENT

No direct payment will be made for *Crane Safety*. All costs shall be considered incidental to items for which direct payment is made.

GROUT FOR STRUCTURES

(12-1-17)

DESCRIPTION

This special provision addresses grout for use in pile blockouts, grout pockets, shear keys, dowel holes and recesses for structures. This provision does not apply to grout placed in post-tensioning ducts for bridge beams, girders, decks, end bent caps, or bent caps. Mix and place grout in accordance with the manufacturer’s recommendations, the applicable sections of the Standard Specifications and this provision.

MATERIAL REQUIREMENTS

Unless otherwise noted on the plans, use a Type 3 Grout in accordance with Section 1003 of the Standard Specifications.

Initial setting time shall not be less than 10 minutes when tested in accordance with ASTM C266.

Construction loading and traffic loading shall not be allowed until the 3 day compressive strength is achieved.

SAMPLING AND PLACEMENT

Place and maintain components in final position until grout placement is complete and accepted. Concrete surfaces to receive grout shall be free of defective concrete, laitance, oil, grease and other foreign matter. Saturate concrete surfaces with clean water and remove excess water prior to placing grout.

BASIS OF PAYMENT

No separate payment will be made for "Grout for Structures". The cost of the material, equipment, labor, placement, and any incidentals necessary to complete the work shall be considered incidental to the structure item requiring grout.

LMC OVERLAY SURFACE PREPARATION

(11-30-23)

GENERAL

This Special Provision addresses the surface preparation activities required prior to the placement of latex modified concrete. Unless specifically mentioned below, all requirements specified for the bridge deck are also required for the approach slabs.

DEFINITIONS

Scarification shall consist of the removal of any asphalt wearing surface and concrete surface to a uniform depth within ½" of the plan overlay thickness or to the limits shown on the plans.

Hydro-demolition shall consist of the removal of the deck surface by means of high pressure water blasting which will remove concrete, oil, dirt, concrete laitance and rust from the exposed reinforcing bars by direct impact, pressurization of micro and macro cracks and cavitation produced by jet instability.

EQUIPMENT

Use the following surface preparation equipment:

- (A) Scarifying equipment that is a power-operated, mechanical grinder capable of removing a minimum depth of ¼" for each pass.
- (B) Hydro-demolition machine, self-propelled with a minimum orifice pressure of 17,000 psi.

- (C) All water used for hydro-demolition shall be potable.
- (D) Equipment capable of sawing concrete to the specified plan depth.
- (E) Hand-held high velocity (7,500 psi minimum) water-jet equipment capable of removing rust scale from reinforcing steel, removing small chips of concrete partially loosened by the scarifying or chipping operation, and for removing rehydrated dust left from scarification.
- (F) Power driven hand tools for removal of unsound concrete are required that meet the following requirements:
 - (1) Pneumatic hammers weighing a nominal 35 lb or less.
 - (2) Pneumatic hammer chisel-type bits that do not exceed the diameter of the shaft in width.
- (G) Hand tools such as hammers and chisels for removal of final particles of unsound concrete.
- (H) Self-propelled vacuum capable of picking up water, dust, and other loose material from prepared deck surface.
- (I) Vibratory screed for overlays, except as noted herein.

The hydro-demolition machine shall be self-propelled and capable of producing a water-jet through an orifice at a pressure of at least 17,000 psi. The machine shall move the jet transversely across the area and forward and backward so that the entire deck is covered with the water-jet and operated at a pressure sufficient to remove the unsound concrete.

The machine shall have sufficient means to control and vary the following functions:

- (A) Water pressure.
- (B) Angle and distance of the orifice in relation to the surface to be blasted.
- (C) Limits of transverse and longitudinal movement of the orifice.
- (D) Speed of the orifice in the transverse and longitudinal direction.

High pressure pump(s) shall be equipped with over-pressurization relief valves and rupture disc systems. All high pressure components shall be rated at full working pressure of the hydro-demolition system. The complete hydro-demolition system must be capable of depressurization from a single point.

The equipment must operate at a noise level less than 90 decibels at a distance of 50 feet.

MANAGEMENT AND DISPOSAL OF CONCRETE GRINDING RESIDUALS

The contractor must collect and properly dispose of water, Hydro-demolition Operation Slurry (HOS), Diamond Grinding Slurry (DGS), and solids from bridge deck preparation, otherwise referred to as Concrete Grinding Residuals (CGR). Prior to beginning work, submit for approval by the Engineer an HOS/DGS Management Plan. Prepare the plan in accordance with the NCDOT Guidelines on the Management and Disposal of CGR available at:

[https://connect.ncdot.gov/resources/Environmental/Environmental Permits and Guidelines/Forms/AllItems.aspx](https://connect.ncdot.gov/resources/Environmental/Environmental%20Permits%20and%20Guidelines/Forms/AllItems.aspx)

The contractor shall comply with applicable regulation concerning such water disposal.

Prior to final payment, the contractor must submit a paper copy of all completed records pertaining to disposal of CGR. All costs associated with Management and Disposal of CGR shall be included in the payment of other items.

OSP PLAN SUBMITTAL

Prior to beginning surface preparation activities, the Contractor shall submit for review and approval the Overlay Surface Preparation (OSP) Plan. The OSP Plan shall detail the type of equipment that is intended to be used and the means by which the Contractor will achieve the following requirements:

- (A) Estimate depth of reinforcing steel.
- (B) Scarification of deck to required depth.
- (C) Field verification that required scarification depth was achieved within limits.
- (D) Hydro-demolition of deck with appropriate profile and to required depth.
- (E) Field verification that the required hydro-demolition depth was achieved within limits.

SURFACE PREPARATION

Remove all existing asphalt overlays and all loose, disintegrated, unsound or contaminated concrete to the limits shown on the plans with the following requirements:

- (A) Sealing of Bridge Deck: Seal all expansion joints subject to run-off water from the hydro-demolition process with material approved by the Engineer, prior to beginning any demolition. The expansion joints shall remain sealed until water from the hydro-demolition process no longer passes over them. Take all steps necessary to eliminate the flow of water through the expansion joints, and any other locations water could leak from the deck.

All deck drains in the immediate work area and other sections of the bridge affected by the work being performed shall be sealed prior to beginning scarification. Drains shall remain sealed until it has been determined that materials from the hydro-demolition and concrete overlay operations cannot be discharged through them any longer.

- (B) Scarifying Bridge Deck: Removal of any asphalt wearing surface from the bridge deck and scarification of the entire surface of the concrete deck to remove concrete to a uniform depth within ½" of the plan overlay thickness, but not less than ½" inch above the top mat of reinforcing steel.

It will be the Contractor's responsibility to determine amount of cover for the reinforcing steel. Use a pachometer or other approved device, as directed by Engineer, prior to beginning hydro-demolition. Readings shall be taken in the presence of the Engineer. Readings should

be taken for each span at 1/5 points longitudinally and 1/3 points transversely. This cost for this work will be considered incidental to the cost of hydro-demolition of the bridge deck.

Estimated average cover to top mat:

Bridge # 970068: 1 3/4" +/- 3/8"

The above top mat cover dimensions are an estimate based on the best available information. Calibrate scarifying equipment in order to avoid damaging the reinforcing steel in the bridge floor or the approach slab. If reinforcing bars or bridge drainage devices are pulled up or snagged during operations, then cease work and consult with the Engineer to determine any necessary adjustments to the scarifying operation.

Remove and dispose of all concrete and asphalt, and thoroughly clean the scarified surface. In areas where reinforcing steel is located in the depth to be scarified, use another method with the Engineer's approval.

- (C) Calibration of Hydro-Demolition Equipment: Two (2) trial areas shall be designated by the Engineer to demonstrate that the equipment, personnel, and methods of operation are capable of producing results to the satisfaction of the Engineer. The first trial area shall consist of approximately 50 square feet of sound concrete as determined by the Engineer. The equipment shall be calibrated to remove sound concrete from the scarified surface to the depth required to achieve the plan overlay thickness. After completion of this test area, the equipment shall be moved to the second area consisting of deteriorated or defective concrete, to determine whether unsound concrete will be completely removed with the previous calibration and to establish a baseline for requiring the contractor to place under-deck containment in areas subject to full depth removal, before beginning the hydro-demolition process in a span. Should it be determined that not all defective concrete has been removed, the hydro-demolition system shall be recalibrated to remove an additional 1/4" of sound concrete, then re-test on deteriorated concrete.

If additional defective concrete is found, the depth of cut will increase in 1/4" increments until only sound concrete is found remaining.

When satisfactory results are obtained, the machine parameters shall be used for production removal. The contractor shall make adjustments to the operating parameters, as required, to perform concrete removal as indicated on the plans and to adjust to the variance in the compressive strength of the concrete.

Hand held water blasting equipment, pneumatic hammers, and hand tools may be substituted for the hydro-demolition unit in inaccessible or inconvenient areas.

- (D) Hydro-demolition (Overlay Depth): Remove by hydro-demolition or chipping with hand tools all loose, unsound and contaminated deck concrete and, if necessary, sound concrete in order to allow for the placement of an overlay with the minimum depth shown on the plans. In areas where reinforcing steel is exposed and debonded for a length greater than two (2) feet, remove

deck to an average depth of $\frac{1}{2}$ " below the exposed and debonded reinforcing steel. Reinforcing steel that is exposed and loose shall be tied to the crossing bar(s) as needed to secure the steel. Reinforcing steel shall be considered loose if when struck, movement or vibration can be observed. Concrete below crossing bar shall be removed as necessary to tie reinforcing steel to crossing bar with a wire tie. Dispose of the unsound concrete, clean, repair or replace damaged reinforcing steel and thoroughly clean the newly exposed surface.

Care shall be taken not to cut, stretch, or damage any exposed reinforcing steel.

The Engineer will re-inspect after each removal and require additional removals until compliance with plans and specifications are met.

Any areas of the prepared surface contaminated by oil or other materials detrimental to good bond as a result of the contractor's operations shall be cleaned at the contractor's expense.

Regardless of the method of removal, the removal operation shall be stopped if it is determined that sound concrete is being removed to a depth greater than required by the plans including any $\frac{1}{4}$ " increments added per the above calibration process.

Appropriate recalibration, or change in equipment and methods shall be performed prior to resuming the removal operation.

- (E) Class II Surface Preparation (Partial Depth): At locations specified on the plans for Class II Surface Preparation, verify the depth of removal achieved by the hydro-demolition. The average depth of removal shall be approximately one-half the deck thickness but not less than $\frac{3}{4}$ " below the top mat of steel. When hydro-demolition did not achieve the Class II Surface Preparation depth requirements, remove by hydro-demolition or chipping with hand tools all existing patches and contaminated concrete to the required depth. No additional payment will be made for Class II Surface Preparation depths achieved by the initial hydro-demolition.

All patches shall be removed under Class II Surface Preparation. If any patch cannot be removed by means of hydro-demolition, the Contractor shall use hand tools to remove the patch. Areas indicated on the plans that require Class II Surface Preparation, including the locations of existing patches, are from the best information available. The Contractor shall verify prior to surface preparation the location of all existing patches.

Dispose of the removed concrete, clean, repair or replace rusted or loose reinforcing steel and thoroughly clean the newly exposed surface. Care shall be taken not to cut, stretch, or damage any exposed reinforcing steel.

In overhangs, removing concrete areas of less than $0.60 \text{ ft}^2/\text{ft.}$ length of bridge without overhang support is permitted unless the Engineer directs otherwise. Overhang support is required for areas removed greater than $0.60 \text{ ft}^2/\text{ft.}$ length of bridge. Submit details of overhang support to the Engineer for approval prior to beginning the work.

- (F) Class III Surface Preparation (Full Depth): Remove by hydro-demolition or chipping with hand tools the full depth of slab. Dispose of the removed concrete, clean, repair or replace damaged reinforcing steel and thoroughly clean the newly exposed surface. Care shall be taken not to cut, stretch, or damage any exposed reinforcing steel.

For areas of less than 3 ft² suspending forms from existing reinforcing steel using wire ties is permitted. For larger areas, support forms by blocking from the beam flanges, or other approved method.

Overhang support is required for full depth removal adjacent to bridge rails. Submit details of overhang support to the Engineer for approval prior to beginning the work.

- (G) Under Deck Containment: Under deck containment shall be installed where Class III surface preparation occurs. The containment shall be installed prior to hydro-demolition in the areas where full depth removal is required or blow through may occur during the hydro-demolition process.

Submit for approval detailed plans for the under deck containment system. Detail how waste, debris, and wastewater are contained.

- (H) Concrete for Full Depth Repair: Fill the Class III surface preparation areas with Class AA, high early strength structural concrete or latex modified concrete in accordance with one of the methods described below:

- (1) Refill full depth areas with Class AA concrete to the bottom of the proposed concrete overlay in accordance with Section 420 of the *Standard Specifications*. Any of the methods for curing Class AA concrete as stated in the *Standard Specifications* are permitted except the membrane curing compound method.

Provide a raked finish to the surface of the Class AA concrete which provides a minimum relief of $\frac{1}{16}$ " and a maximum relief of $\frac{1}{4}$ ".

Verify the Class AA concrete has attained a minimum compressive strength of 3,000 psi using an approved, non-destructive test method. Brush a lean mix of the latex modified concrete to the surface and immediately place the overlay course.

- (2) Refill full depth areas with high early strength concrete as described in the *Concrete for Deck Repair* and *Volumetric Mixer* Special Provisions.
- (3) Refilling full depth areas with latex modified concrete during the Class III repair is permitted if any of the following conditions are met:
- (a) The reinforcing steel cover is 1½ inches or less for the top mat of steel.
 - (b) The area being repaired is less than 1 yd².

(c) The Engineer directs the fill.

- (I) Preparation of Reinforcing Steel: Remove concrete without cutting or damaging existing steel unless otherwise noted in the plans. Damaged reinforcing steel, such as bars with nicks deeper than 20% of the bar diameter, shall be repaired or replaced. Reinforcing steel which has a cross section reduced to 75% or less shall be replaced with new reinforcing steel of similar cross section area. Replacement bars shall be Grade 60 and meet the material requirements of Section 1070 of the *Standard Specifications*. Replacement bars shall be spliced to existing bars using either minimum 30 bar diameter lap splices to existing steel with 100% cross sectional area or approved mechanical connectors.

Support and protect the exposed reinforcing steel left unsupported by the hydro-demolition process against displacement and damage from loads such as those caused by removal equipment and delivery buggies. All reinforcing steel damaged or dislodged by these operations shall be replaced with bars of the same size at the contractor's expense.

Reinforcing steel exposed and cleaned by hydro-demolition will not require additional cleaning if encased in concrete within seven (7) days. Rebar exposed for more than seven (7) days shall be cleaned by high velocity water jets, with a minimum pressure 4,000 psi, prior to placement of the new concrete.

When large areas of the deck on composite bridges are removed resulting in the debonding of the primary reinforcing bars, the removal shall be performed in stages to comply with the construction sequence shown on the plans or as directed by the Engineer.

- (J) Safety: Provide a containment system for handling expected and unexpected blow through of the deck. The containment system shall retain runoff water and debris and protect the area under the bridge deck. The Contractor shall be responsible for any injury or damage caused by these operations. The containment system shall remain in place until the concrete has been cast and reach minimum strength.

Provide adequate lighting when performing hydro-demolition activities at night. Submit a lighting plan to the Engineer for approval prior to beginning work.

- (K) Surface Cleaning: Removal of concrete debris shall be accomplished either by hand or mechanical means capable of removing wet debris and water in the same pass and after the hydro-demolition process to prevent debris from setting or adhering to the surface of the sound concrete. All concrete debris shall become the property of the Contractor and shall be legally disposed of at the contractor's expense. The contractor shall be responsible for disposing of all debris generated by the scarification operations. Any debris which is allowed to set or adhere to the surface of the sound concrete shall be carefully removed at no additional cost. Exercise care to avoid any damage to the remaining sound concrete or exposed reinforcement. Prior to the placement of the overlay, the entire surface shall be cleaned with high pressure water to remove any bond-breaking residue, loose material from the concrete surface, and/or rust from the reinforcing steel. This residue shall be collected and disposed of by the contractor.

Any areas modified by chipping or hammering shall be cleaned with high pressure water at 7,500 psi minimum to remove any bond-breaking residue, loose concrete, and any deleterious material. This material shall be collected and disposed of by the contractor.

Any areas of the prepared surface contaminated by oil or other materials detrimental to good bond as a result of the contractor's operations shall be cleaned at the contractor's expense.

MEASUREMENT AND PAYMENT

Scarifying Bridge Deck will be measured and paid for at the contract unit price per square yard for the milling of existing asphalt wearing surface from the bridge deck or approaches, milling of the entire concrete bridge deck, repairing or replacing any damaged reinforcing steel, and the cleaning and disposal of the milled material.

Hydro-Demolition of Bridge Deck will be measured and paid for at the contract unit price per square yard for hydro-demolition, removal and disposal of unsound and contaminated concrete, cleaning, repairing or replacing of reinforcing steel, and furnishing all materials, labor, tools, equipment and incidentals necessary to complete the work.

Class II Surface Preparation will be measured and paid for at the contract unit price per square yard and will be full compensation for Class II (partial depth) deck preparation where required by the plans and not attained by the initial hydro-demolition of the deck. The cost will also include removal and disposal of unsound and contaminated concrete, removal of all existing patches, cleaning, repairing or replacing of reinforcing steel, and all materials, labor, tools, equipment and incidentals necessary to complete the work.

Class III Surface Preparation will be measured and paid for at the contract unit price per square yard and will be full compensation for Class III (full depth) deck preparation and repair where required by the plans. The cost will also include removal and disposal of unsound and contaminated concrete, cleaning, repairing or replacing of reinforcing steel, under deck containment, placing and finishing concrete for full depth repair, and for furnishing all materials, labor, tools, equipment and incidentals necessary to complete the work.

Reinforcing Steel that is required for the repairs will be in accordance with Section 425 of the *Standard Specifications*.

Payment will be made under:

Pay Item	Pay Unit
Scarifying Bridge Deck	Square Yard
Hydro-Demolition of Bridge Deck	Square Yard
Class II Surface Preparation	Square Yard
Class III Surface Preparation	Square Yard

LATEX MODIFIED CONCRETE OVERLAY**(11-30-23)****GENERAL**

This Special Provision addresses the requirements for furnishing and placing an overlay of latex modified concrete (LMC) over existing concrete or repair concrete on bridge decks and approach pavement. Perform this work in accordance with this Special Provision and the applicable parts of the *Standard Specifications*.

QUALITY CONTROL

The Contractor is responsible for scheduling a pre-construction meeting with the Resident Engineer.

Submit a Quality Control Plan to the Engineer for approval which, at a minimum, describes the methods of: storing materials, calibrating mixers, controlling moisture content in the aggregate, maintaining proper mix temperature, retarder usage, curing and curing time, controlling evaporation rate, cleaning and removing excess water.

Before beginning any work, obtain approval for all equipment to be used for deck preparation, mixing, placing, finishing and curing the LMC.

MATERIALS

For materials, equipment, and proportioning and mixing of modified compositions, see Article 1000-8 of the *Standard Specifications*.

Provide aggregates for use in the LMC that are free from ice, frost, frozen particles or other contaminants when introduced into the mixer.

Revise the *Standard Specifications* as follows:

1000-8(A)– Add the following paragraph to the end of the section:

Submit the LMC mix design, including laboratory compressive strength data for a minimum of six (6) 4-inch by 8-inch cylinders at three (7) days for normal setting concrete for the Engineer for review. Include test results for the slump and the air content of the laboratory mix. Perform laboratory tests in accordance with AASHTO T 22, T 119, and T 152.

PREPARATION OF SURFACE

Completely clean all surfaces within 48 hours prior to placing the overlay unless otherwise approved by the Engineer.

Thoroughly soak the clean surface and maintain a wet surface for at least 12 hours immediately prior to placing the LMC. After soaking the surface for at least 12 hours, cover it with a layer of

white opaque polyethylene film that is at least 4 mils thick. Immediately prior to placing the LMC, remove standing water from the surface using an approved vacuum system.

CONCRETE FIELD SAMPLING

An initial concrete sample of LMC will be taken in the inspection area prior to placing any concrete on the bridge. For each truck, discharge a minimum of three (3) cubic feet of material in the inspection area such that a homogeneous mix is produced prior to taking the initial concrete sample. Measure the temperature and slump of initial concrete sample prior to the truck leaving the inspection area. The initial concrete sample shall not include any citric acid.

A composite concrete sample of LMC will be taken in random areas of the bridge deck after a minimum of 2 cubic yards has been placed. The composite sample will be used to measure air content, and to produce four (4) 4-inch by 8-inch cylinders for compressive strength tests. The composite sample shall be taken before the concrete is vibrated, screeded, or finished in any way.

PLACING AND FINISHING

Prior to placing LMC, install a bulkhead of easily compressible material at expansion joints to the required grade and profile.

Construction joints other than those shown on the plans will not be permitted unless approved by the Engineer. At construction joints, remove 4" of previously placed LMC prior to placing the adjacent latex concrete. Also, for staged construction, 4" of previously poured LMC shall be scarified, hydro-demolitioned and recast with the next stage.

Place and fasten screed rails in position to ensure finishing the new surface to the required profile. Do not treat screed rails with parting compound to facilitate their removal. Prior to placing the overlay attach a filler block to the bottom of the screed and pass it over the area to be repaired to check the thickness. The filler block thickness shall be equal to the design overlay thickness as shown in the plans. Remove all concrete that the block does not clear. Individual aggregates left after hydro-demolition may be allowed to project above the base of the filler block. Remove aggregate that does not provide a 1" clear cover to the top of the overlay.

Brush a latex cement mixture onto all vertical surfaces and do not let the brushed material dry before it is covered with the additional material required for the final grade. Remove all loose aggregate from the latex cement brushed surface prior to latex concrete placement (NOTE: For surfaces not prepared with hydro-demolition brush the lean latex mixture over horizontal and vertical surfaces).

Do not place the LMC until the burlap is fully saturated and approved by the Engineer. Drain excess water from the wet burlap before placement.

Place the LMC in one operation. Provide a minimum overlay thickness as shown in the plans.

Once LMC placement begins a single layer of wet burlap shall be placed five (5) feet behind the screed's burlap drag. In the event of a delay of ten (10) minutes or more, temporarily cover all exposed latex concrete with wet burlap and white opaque polyethylene.

When a tight, uniform surface is achieved and before the concrete becomes non-plastic, further finish the surface of the floor by burlap dragging or another acceptable method that produces an acceptable uniform surface texture.

Within 1 hour of covering with wet burlap, place a layer of 4 mil white opaque polyethylene film on the wet burlap and cure the surface for 48 hours. Then remove the curing material for an additional 48 hours air cure.

Screed rails or construction dams shall be separated from the newly placed concrete by passing a pointing trowel along the face of the formwork and the newly placed concrete. Carefully make this trowel cut for the entire depth and length of rails or dams after the LMC has sufficiently stiffened and cannot flow back.

As soon as practical, after the concrete has hardened sufficiently, test the finished surface with an approved rolling straightedge that is designed, constructed, and adjusted so that it will accurately indicate or mark all deck areas which deviate from a plane surface by more than $\frac{1}{8}$ " in 10'. Remove all high areas in the hardened surface in excess of $\frac{1}{8}$ " in 10' with an approved grinding or cutting machine. Additionally, the final LMC deck surface shall not deviate from the line and elevation indicated on the plans by more than 0.3" over any 50' length. Where variations are such that the corrections extend below the limits of the top layer of grout, seal the corrected surface with an approved sealing agent as required by the Engineer. If approved by the Engineer, correct low areas in an acceptable manner.

Unless otherwise indicated on the plans, groove the bridge floor in accordance with Subarticle 420-14(B) of the *Standard Specifications*.

LIMITATIONS OF OPERATIONS

The mixer is not permitted on the bridge deck unless otherwise approved.

No traffic is permitted on the finished LMC surface until the total specified curing time is completed and until the concrete reaches the minimum specified compressive strength.

Do not place LMC if the temperature of the concrete surface on which the overlay is to be placed is below 50°F or above 85°F. Measure the surface temperature by placing a thermometer under the insulation against the surface.

Prior to placing LMC, the air temperature, wind speed and evaporation rate shall be determined by Contractor and verified by the Engineer. Do not place LMC if the ambient air temperature is below 50°F or above 85°F, or if the wind velocity is greater than 10 mph.

Do not place LMC when the temperature of the LMC is below 45°F or above 85°F.

Do not place LMC if the rate of evaporation of surface moisture from the LMC determined by the Engineer or Contractor exceeds 0.05 pounds per square foot per hour during placement. The evaporation rate is calculated using the following formula:

$$E = (T_c^{2.5} - r \cdot T_a^{2.5}) \cdot (1 + 0.4V) \cdot (10^{-6})$$

where,

E = Evaporation Rate,

T_c = Concrete Temp (°F),

r = Relative Humidity (%/100)

T_a = Air Temp (°F),

V = Wind Velocity (mph)

Do not place LMC if the National Weather Service predicts the air temperature at the site to be below 35°F during the next 72 hours. If the predicted air temperature is above 35°F but below 50°F, then use insulation to protect the LMC for a period of at least 48 hours. Use insulation that meets the requirements of Subarticle 420-7(C) of the *Standard Specifications* and, if required, place it on the LMC as soon as initial set permits. When using insulation to protect LMC during the wet curing period, do not remove the insulation until the ambient air temperature is at least 50°F and rising. Leave the LMC uncovered for the 48 hour air curing period.

Stop all placement operations during periods of precipitation. Take adequate precautions to protect freshly placed LMC from sudden or unexpected precipitation. Keep an adequate quantity of protective coverings at the worksite to protect the freshly placed pavement from precipitation.

If working at night, provide approved lighting.

MEASUREMENT AND PAYMENT

Latex Modified Concrete Overlay will be measured and paid for in cubic yards of LMC satisfactorily placed on the completed deck.

Placing & Finishing Latex Modified Concrete Overlay will be paid for at the contract unit price bid per square yard which includes compensation for furnishing all labor, tools, equipment and incidentals necessary to complete the work in accordance with the contract documents.

Grooving Bridge Floors will be measured and paid in accordance with Article 420-21 of the *Standard Specifications*.

Payment will be made under:

Pay Item

Pay Unit

Latex Modified Conc Overlay
Placing & Finishing of Latex Modified Conc Overlay
Grooving Bridge Floors

Cubic Yard
Square Yard
Square Feet

BRIDGE JOINT DEMOLITION**(11-30-23)****GENERAL**

This special provision addresses the removal of existing joint material and adjacent concrete headers to facilitate the installation of new elastomeric concrete headers and bridge joint seals at the locations noted in the contract plans.

EQUIPMENT

Use the following surface preparation equipment:

- (A) Sawing equipment capable of sawing concrete to a specified depth.
- (B) Power driven hand tools for removal of concrete are required that meet the following requirements:
- (C) Pneumatic hammers weighing a nominal 15 lbs. (7 kg) or less
- (D) Pneumatic hammer chisel-type bits that do not exceed the diameter of the shaft in width.
- (E) Hand tools such as hammers and chisels for removal of final particles of concrete.

REMOVAL AND PREPARATION

Prior to any construction, take the necessary precautions to ensure debris from joint construction is not allowed to fall below the bridge deck.

Remove existing joint material by methods approved by the Engineer. Provide a 1" deep saw cut around the perimeter of areas noted for bridge deck removal.

Remove by chipping with hand tools concrete headers adjacent to the joint to the limits shown on the contract plans. Use a small chipping hammer (15 lb. class) to prepare the edges of the repair area to limit micro fractures. In addition, all loose and unsound concrete shall be removed.

In overhangs, removing concrete areas greater than 0.60 ft²/ft length of bridge will require overhang support. Submit the overhang support method to the Engineer for approval.

Care shall be taken not to cut, stretch, or damage any exposed reinforcing steel. Dispose of the removed concrete.

If the condition of the concrete is such that deep spalls or sheer faces result, notify the Engineer for the proper course of action.

Clean, repair or replace rusted or loose reinforcing steel. Thoroughly clean the newly exposed surface to be free of all grease, oil, curing compounds, acids, dirt, or loose debris.

MEASUREMENT AND PAYMENT

Bridge Joint Demolition will be measured and paid for at the contract unit price bid per square foot and will be full compensation for removal, containment and disposal of existing joint material and concrete and shall include the cost of labor, tools, equipment and incidentals necessary to complete the work.

Pay Item

Bridge Joint Demolition

Pay Unit

Square Feet

ELASTOMERIC CONCRETE FOR PRESERVATION

(02-11-19)

GENERAL

Elastomeric concrete is a mixture of a two-part polymer consisting of polyurethane and/or epoxy and kiln-dried aggregate. Provide an elastomeric concrete and binder system that is preapproved. Use the concrete in the blocked-out areas on both sides of the bridge deck joints as indicated on the plans.

MATERIALS

Provide materials that comply with the following minimum requirements at 14 days (or at the end of the specified curing time).

ELASTOMERIC CONCRETE PROPERTIES	TEST METHOD	MINIMUM REQUIREMENT
Compressive Strength, psi	ASTM D695	2000
5% Deflection Resilience	ASTM D695	95
Splitting Tensile Strength, psi	ASTM D3967	625
Bond Strength to Concrete, psi	ASTM C882 (C882M)	450
Durometer Hardness	ASTM D2240	50

BINDER PROPERTIES (without aggregate)	TEST METHOD	MINIMUM REQUIREMENT
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Tensile Strength, psi	ASTM D638	1000
Ultimate Elongation	ASTM D638	150%
Tear Resistance, lb/in	ASTM D624	200

In addition to the requirements above, the elastomeric concrete must be resistant to water, chemical, UV and ozone exposure and withstand temperature extremes. Elastomeric concrete systems requiring preheated aggregates are not allowed.

PREQUALIFICATION

Manufacturers of elastomeric concrete materials shall submit samples (including aggregate, primer and binder materials) and a Type 3 certification in accordance with Article 106-3 of the *Standard Specifications* for prequalification to:

North Carolina Department of Transportation
Materials and Tests Unit
1801 Blue Ridge Road
Raleigh, NC 27607

Prequalification will be determined for the system. Individual components will not be evaluated, nor will individual components of previously evaluated systems be deemed prequalified for use.

The submitted binder (a minimum volume of 1 gallon) and corresponding aggregate samples will be evaluated for compliance with the Materials requirements specified above. Systems satisfying all of the Materials requirements will be prequalified for a one (1) year period. Before the end of this period new product samples shall be resubmitted for prequalification evaluation.

If, at any time, any formulation or component modifications are made to a prequalified system that system will no longer be approved for use.

INSTALLATION

The elastomeric concrete shall not be placed until the reinforced concrete deck slab or overlay has cured for seven (7) full days and reached a minimum strength of 3,000 psi.

Provide a manufacturer's representative at the bridge site during the installation of the elastomeric concrete to ensure that all steps being performed comply with all manufacturer installation requirements including, but not limited to: weather conditions (ambient temperature, relative humidity, precipitation, wind, etc.), concrete deck surface preparation, binder and aggregate mixing, primer application, elastomeric concrete placement, curing conditions and minimum curing time before joint exposure to traffic. Do not place elastomeric concrete if the ambient air or surface temperature is below 45°F.

Prepare the concrete surface within 48 hours prior to placing the elastomeric concrete. Before placing the elastomeric concrete, all concrete surfaces shall be thoroughly cleaned and dry. Sandblast the concrete surface in the block-out and clear the surface of all loose debris. Do not place the elastomeric concrete until the surface preparation is completed and approved.

Prepare and apply a primer, as per manufacturer's recommendations, to all concrete faces to be in contact with elastomeric concrete, and to areas specified by the manufacturer.

Prepare, batch, and place the elastomeric concrete in accordance with the manufacturer's instructions. Place the elastomeric concrete in the areas specified on the plans while the primer is still tacky and within two (2) hours after applying the primer. Trowel the elastomeric concrete to a smooth finish.

The joint opening in the elastomeric concrete shall match the formed opening in the concrete deck prior to sawing the joint.

FIELD SAMPLING

Provide additional production material to allow freshly mixed elastomeric concrete to be sampled for acceptance. A minimum of six (6) 2-inch cube molds and three (3) 3-inch diameter x 6-inch cylinders will be taken by the Department for each day's production. Compression, splitting tensile, and durometer hardness testing will be performed by the Department to determine acceptance. Materials failing to meet the requirements listed above are subject to removal and replacement at no cost to the Department.

MEASUREMENT AND PAYMENT

Elastomeric Concrete for Preservation will be measured and paid for at the contract unit price bid per cubic foot and will be full compensation for material, labor, tools, and equipment necessary for satisfactorily installing the elastomeric concrete in place.

Payment will be made under:

Pay Item	Pay Unit
Elastomeric Concrete for Preservation	Cubic Feet

POURABLE SILICONE JOINT SEALANT**(SPECIAL)****SEALS**

Provide and install a low modulus silicone sealant (non-sag or self-leveling) and backer rod which conforms to the *Standard Specifications* (Subsections 1028-3 and 1028-4, respectively) and this special provision. Use silicone approved for use on joint openings as indicated on project plans and provide a seal with a working range of minimum 50% compression and extension. Silicone joint seal product shall be designated as approved for use on the NCDOT Approved Products List. If non-sag and self-leveling sealants are to be in contact with each other, they shall be from the same manufacturer and shall be compatible for such use.

SAWING THE JOINT

Joint concrete material or joint concrete header material shall have sufficient time to cure such that no damage can occur to the concrete prior to sawing to the final width and depth as specified in the plans.

When sawing the joint to receive the seal, always use a rigid guide to control the saw in the desired direction. To control the saw and to produce a straight line as indicated on the plans, anchor and positively connect a template or a track to the bridge deck. Do not saw the joint by visual means such as a chalk line. Fill the holes used for holding the template or track to the deck with an approved flowable, non-shrink, non-metallic grout.

Saw cut to the desired width and depth in one or two (2) passes of the saw by placing and spacing two (2) metal blades on the saw shaft to the desired width for the joint opening.

The desired depth is the depth of the seal plus $\frac{1}{4}$ " above the top of the seal plus approximately 1" below the bottom of the seal. An irregular bottom of sawed joint is permitted as indicated on the plans. Grind exposed corners on saw cut edges to a $\frac{1}{4}$ " chamfer.

Saw cut a straight joint, centered over the formed opening and to the desired width specified in the plans. Prevent any chipping or damage to the sawed edges of the joint.

Remove any staining or deposited material resulting from sawing with a wet blade to the satisfaction of the Engineer.

PREPARATION OF FORMED OR SAWED JOINT FOR SEAL INSTALLATION

Joint concrete material or joint concrete header material shall cure a minimum of 24 hours prior to seal installation.

After forming or sawing the joint, the Engineer will thoroughly inspect the joint opening for spalls, popouts, cracks, etc. All necessary repairs will be made by the Contractor prior to blast cleaning and installing the seal, at no cost to the Department.

Clean the joints by sandblasting the joint opening to provide a firm, clean joint surface free of curing compound, loose material, and any foreign matter. Sandblast the joint opening without causing pitting or uneven surfaces. The aggregate in the polyester polymer concrete may be exposed after sandblasting.

After blasting, either brush the surface with clean brushes made of hair, bristle, or fiber, blow the surface with compressed air, or vacuum the surface until all traces of blast products and abrasives are removed from the surface, pockets, and corners. If nozzle blasting is used to clean the joint opening, use compressed air that does not contain detrimental amounts of water or oil.

Examine the blast-cleaned surface and remove any traces of oil, grease, or smudge deposited in the cleaning operations.

Apply recommended primer in accordance with the manufacturer's recommendations. Uniformly coat the entire surface. Over application may affect adhesion. Allow to thoroughly dry before installing backer rod and sealant.

Install a circular backer rod that is a minimum 25 percent oversized into the joint approximately 1 in. below the surface. The backer rod shall be sized according to the manufacturer's recommendation for the size of the joint to be sealed as measured by the Contractor. If two (2) pieces must be joined, abut the two (2) ends and tape them together to prevent sealant run down. The backer rod may be installed by hand, but roller device shall be used to insure a consistent, uniform placement at the proper depth below the top surface.

Install the backer rod and silicone sealant in the blast-cleaned opening on the same day the surface is blast cleaned.

SEAL INSTALLATION

Install the silicone joint sealant(s) as indicated on the plans, in accordance with the manufacturer's procedures and recommendations, and as recommended below. Do not install the joint seal if the ambient air or surface temperature is below 45°F. Have a manufacturer's certified trained factory representative present during the installation of the first seal of the project, to provide guidance for the proper installation of the silicone joint sealant(s).

The sealant must be recessed a minimum ½ in. below the pavement surface to prevent traffic abrasion or snow plow damage.

After a joint has been sealed, remove excess joint sealer on the pavement or bridge deck concrete as soon as possible.

The installed system shall be watertight and will be monitored until final inspection and approval.

Do not place pavement markings on top of pourable joint seals.

BASIS OF PAYMENT

Pourable Silicone Joint Sealant will be measured and paid for at the contract unit price bid per linear foot and will be full compensation for furnishing all material, including backer rod, labor, tools, and equipment necessary for installing these seals in place and accepted.

Pay Item**Pay Unit**

Pourable Silicone Joint Sealant

Linear Feet

PAINTING EXISTING STRUCTURE**(07-16-24)****GENERAL**

This work shall consist of furnishing all labor, equipment, and materials necessary to clean and paint the structural steel of the existing bridge, including girders or beams, diaphragms, all bearing plates, anchor bolts, nuts, and washers of the existing structure. Work includes: removal, containment and disposal of the existing paint system; preparation of the surface to be painted and applying the new paint system; a containment enclosure; and any incidentals necessary to complete the project as specified and shown on the plans.

SCOPE OF WORK

Bridge #970068: This bridge was built in 1955 and carries NC 42 over US 301. The superstructure consists of 4 simple spans with 4 lines of steel W33x130 steel beams spaced @ 8'-0" spacing with steel diaphragms. The bridge has an overall length of 195'-0" with a concrete deck and a 33'-4" total deck width. The minimum vertical clearance is 14'-8". The existing paint system is Foliage green over red lead with beam ends (or parts beams) painted with coal tar epoxy, and the estimated area to be cleaned and painted is 6,924 sq. ft.

TWELVE-MONTH OBSERVATION PERIOD

The Contractor maintains responsibility for the coating system for a 12-month observation period beginning upon the satisfactory completion of all the work required in the plans or as directed by the Engineer. The Contractor shall guarantee the coating system under the payment and performance bond (refer to Article 103-7 of the *Standard Specifications*). To successfully complete the observation period, the coating system shall meet the following requirements after 12 months service:

- (A) No visible rust, contamination or application defect is observed in any coated area.
- (B) Painted surfaces have a uniform color and gloss.
- (C) Painted surfaces have an adhesion that meets an ASTM D3359, 3A rating.

Final acceptance is made only after the paint system meets the above requirements.

SUBMITTALS

Submit all of the following to the Engineer for review and approval before scheduling the pre-construction meeting. Allow at least two (2) weeks for the review process.

- (A) The existing paint systems include toxic substances such as red lead oxide, which are considered hazardous if improperly removed. The contractor shall be currently certified for Society for Protective Coatings (SSPC) Quality Program (QP) 2, Category A, and have successfully completed lead paint removal and field painting on similar structures within 18 months prior to this bid. Lead abatement work completed within the 18 month period shall have been completed in accordance with contract specifications, free of citation from safety or environmental agencies. Lead abatement work shall include, but not be limited to: abrasive blasting; waste handling, storage and disposal; worker safety during lead abatement activities (fall protection, personal protective equipment (PPE), etc.); and containment. This requirement is in addition to the contractor pre-qualification requirements covered by Article 102-2 of the *Standard Specifications*.

The apparent low bidder shall submit a list of projects for which QP 2 work was performed within the last 18 months including owner contact information and submit to the Engineer a "Lead Abatement Affidavit". See link for form:

<https://www.ncdot.gov/initiatives-policies/Transportation/bridges/Documents/leadabatementaffidavit.pdf>.

- (B) Work schedule which shall be kept up to date, with a copy of the revised schedule being provided to the Engineer in a timely manner.
- (C) Containment system plans and design calculations in accordance with SSPC Guide 6, Class 2A and other project requirements, signed and sealed by a Professional Engineer licensed by the State of North Carolina.
- (D) Bridge wash water sampling and disposal plan.
- (E) Subcontractor identification.
- (F) Lighting plan for night work in accordance with Section 1413 of the *Standard Specifications*.
- (G) Traffic control plan with NCDOT certified supervisors, flaggers and traffic control devices.
- (H) Health and safety plan addressing at least the required topics as specified by the SSPC QP 1 and QP 2 program and including hazard communication, respiratory health, emergency procedures, and local hospital and treatment facilities with directions and phone numbers, disciplinary criteria for workers who violate the plan and accident investigation. The plan shall address the following: hazardous materials, personal protective equipment, general health and safety, occupational health and environmental controls, fire protection and prevention, signs signals, and barricades, materials handling, storage, use, and disposal, hand and power tools, welding and cutting, electrical, scaffolds, fall protection, cranes, derricks, hoists, elevators, and conveyors, ladders, toxic and hazardous substances, airless injection and high pressure water jet (HPWJ).

- (I) Provide the Engineer a letter of certification that all employees performing work on the project have blood lead levels that are below the Occupational Safety and Health Administration (OSHA) action level.
- (J) Provide the Engineer with Competent Person qualifications and summary of work experience.
- (K) Environmental Compliance Plan.
- (L) Quality Control Plan (Project Specific) with quality control qualifications and summary of work experience.
- (M) Bridge and Public Protection Plan (Overspray, Utilities, etc. - Project/Task Specific).
- (N) Abrasive Blast Media:
 - (1) Product Data Sheet.
 - (2) Blast Media Test Reports in accordance with Article 442-4 of the *Standard Specification*.
- (O) Coating Material:
 - (1) NCDOT HICAMS Test Reports (testing performed by NCDOT Materials and Tests Unit).
 - (2) Product Data Sheets.
 - (3) Material Safety Data Sheets.
 - (4) Product Specific Repair Procedures.
 - (5) Acceptance letters from paint manufacturers for work practices that conflict with Special Provisions and/or paint manufactures product data sheets.

PRE-CONSTRUCTION MEETING

Submittals shall be reviewed and approved by the Engineer prior to scheduling the pre-construction meeting. Allow no less than two (2) weeks for a review process. When requesting a pre-construction meeting, contact the Engineer at least seven (7) working days in advance of the desired pre-construction date. The contractor's project supervisor, Competent Person, quality control personnel and certified traffic control supervisor shall attend the pre-construction meeting in order for the Contractor and NCDOT team to establish responsibilities for various personnel during project duration and to establish realistic timeframes for problem escalation.

CONTAINMENT SYSTEM

Prior to performing any construction or painting operations on the structure, the Contractor shall furnish the Engineer with plans and design calculations for a sufficiently designed containment system, which will provide access for any repairs on structural steel members, cleaning and surface preparations for structural steel members, and coating operations for structural steel members of the bridge. The containment system shall not be installed, and no work shall begin, until the Engineer has reviewed and approved, in writing, the submitted containment system plans and design calculations. Containment system plans and design calculations shall be prepared, sealed, and signed by a Professional Engineer licensed by the State of North Carolina. Allow a minimum of two (2) weeks for review of the containment plans and calculations.

The containment system shall meet or exceed the requirements of Class 2A containment in accordance with SSPC Guide 6. The Contractor shall determine the required capacity of the containment system, which, at a minimum, shall include loads due to wind, repair materials and repair operations, equipment, and tools; however, the capacity shall not be less than that required by Federal or State regulations. Design steel members to meet the requirements of the *American Institute of Steel Construction Manual*. Design timber members in accordance with the *National Design Specification for Stress-Grade Lumber and Its Fastenings* of the National Forest Products Association. The containment system shall be constructed of materials capable of withstanding damage from any of the work required on this project and shall provide a two (2) hour resistance to fire.

In the containment system plans, describe how debris is contained and collected. Describe the type of tarpaulin, bracing materials, and the maximum designed wind load. Design wind loads shall be in accordance with the Falsework and Formwork Special Provision. Describe the dust collection system and how a negative pressure of 0.03 inches of water column is maintained inside the enclosure, while blasting operations are being conducted. Describe how the airflow inside the containment structure is designed to meet all applicable OSHA Standards. Describe how water run-off from rain will be routed by or through the enclosure. Describe how wash water will be contained and paint chips separated. Describe what physical containment will be provided during painting application to protect the public and areas not to be painted.

Drilling holes in the superstructure for the purpose of attaching the containment system is prohibited.

The Contractor will be responsible for certifying the containment system has been constructed in accordance with the approved plans.

The containment system shall be cleaned after each workday.

Upon completion of work, remove all anchorages in the substructure and repair the substructure at no additional cost to the Department.

Protect non-metallic parts of bearings from blasting and painting (i.e.: Pot Bearings, Elastomeric Pads, and Disc Bearings).

WASH WATER SAMPLING AND DISPOSAL PLAN

All wash water shall be collected and sampled prior to disposal. Representative sampling and testing methodology shall conform to North Carolina Administrative Code 15A NCAC 02B.0103, "Analytical Procedures". Wash water shall be tested for pollutants listed in 15A NCAC 02B.0211(3), 15A NCAC 02T.0505(b)(1) and 15A NCAC 2T.0905(h). Depending on the test results, wash water disposal methods shall be described in the disposal plan. Wash water shall be disposed of in accordance with all current Federal and State regulations. See link for NCDOT Guidelines for Managing Bridge Wash Water:

<https://www.ncdot.gov/initiatives-policies/Transportation/bridges/Documents/WashWater.pdf>

WASTE HANDLING OF PAINT AND ABRASIVES

Comply with all Federal, State, and local regulations. Failure to comply with the regulations could result in fines and loss of qualified status with NCDOT.

Comply with the Resource Conservation and Recovery Act (RCRA - 40 CFR 261 - 265) and the Occupational Safety and Health Act (OSHA - 29 CFR 1910 - 1926) regulations for employee training, and for the handling, storage, labeling, recordkeeping, reporting, inspections and disposal of all hazardous waste generated during paint removal.

A summary of Generator Requirements is available at the following NCDOT web link, which cites the specific regulations for each Generator category:

<https://www.deq.nc.gov/waste-management/dwm/hw/guidance-document-table-documents/summary-generator-requirements-0/download?attachment>

No work shall begin until the Contractor furnishes the Engineer with a written waste disposal plan. Any alternative method for handling waste shall be pre-approved by the Engineer. Example guidance on Contractor's waste disposal plan content can be found in the information below:

<https://www.deq.nc.gov/waste-management/dwm/hw/guidance-document-table-documents/generator-category-guidance/download?attachment>

(A) Guidance for Small Quantity Generator (SQG) can be found at the following weblink:

<https://www.deq.nc.gov/waste-management/dwm/hw/guidance-document-table-documents/small-quantity-generator-checklist-0/download?attachment>

(B) Guidance for Large Quantity Generator (LQG) can be found at the following weblink:

<https://www.deq.nc.gov/environmental-management-commission/water-quality-committee-meetings/2018/large-quantity-generator-checklist/download>

The North Carolina Department of Environmental Quality (NCDEQ) adopted the federal provisions of RCRA in the North Carolina Hazardous Waste Management Rules (15A NCAC 13A) and is responsible for the administration and enforcement of these rules. The *Hazardous Waste Generator Compliance Manual* created by the NCDEQ, Division of Waste Management, Hazardous Waste Section, Compliance Branch can be found at:

<https://www.deq.nc.gov/waste-management/dwm/hw/guidance-document-table-documents/hazardous-waste-generator-compliance-manual/download?attachment>

Immediately after awarding the contract, arrange for waste containers, sampling, testing, transportation, and disposal of all waste. Use an approved hazardous waste management company from the following link:

<https://www.ebs.nc.gov/VendorDirectory/results.html?sap-params=cD0xJTlWJmN1cnJlbnRfc2VhcmNoX3BhZ2U9d2Mmc2VsZWNoaW9uX2Zpcm1fbmFtZT0mc2VsZWNoaW9uX2NlcnQ9JnNlbGVjdGlvdj9maXJtdHlwZT0meXNjX2Zpcm10eXBIPSzZzZWxlY3Rpb25fd29ya2xvY2F0aW9uPSZ5c2Nfd29ya2xvY2F0aW9uPSZzZWxlY3Rpb25fYWwkcN0YXRIPSz5c2NfYWRkcN0YXRIPSzZzZWxlY3Rpb25fYWRkcNvZW50eT0meXNjX2FkZlJlbnRfc2VudHk9JnNlbGVjdGlvdj93a2NvZGU9MDAzMDQwJnlzY19>

[3a2NvZGU9MDAzMDQwJTIwQ09OVEFNSU5BVEVEJTIwTUFURVJJQUxTJTIwUkVN
T1ZBTCZzZWxlY3Rpb25fZGZlYz0meXNjX2Rpc2M9JnNlbGVjdGlvlb9uYWljcz0meXNj
X25haWNzPSZzZWxlY3Rpb25fY3R5cGU9MA%3d%3d](https://www.deq.nc.gov/water-quality/planning/tmdl/303d/2020/lead-based-paint-waste-guidance/download)

All removed paint and spent abrasive media shall be tested for lead following the SW-846 Toxicity Characteristic Leaching Procedure (TCLP) Method 1311 Extraction, as incorporated by reference in 40 CFR 260.11, to determine whether it shall be disposed of as hazardous waste. Furnish the Engineer with certified test reports showing TCLP results of the paint waste accumulated on site, in accordance with “Lead-Based Paint Waste Guidance” at:

<https://www.deq.nc.gov/water-quality/planning/tmdl/303d/2020/lead-based-paint-waste-guidance/download>

(C) Toxicity characteristic 40 CFR 261.24

<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-261/subpart-C/section-261.24>

(D) Analytical Methods for Characteristic Hazardous Waste Determination

<https://www.deq.nc.gov/waste-determination-test-method/download?attachment>

All sampling shall be performed in the presence of the Engineer’s representative.

The Competent Person shall obtain composite samples from each barrel of the wash water and waste generated by collecting two or more portions taken at regularly spaced intervals during accumulation. Composite the portions into one sample for testing purposes. Acquire samples after 10% or before 90% of the barrel has accumulated. The intent is to provide samples that are representative of widely separated portions, but not the beginning and end of wash water or waste accumulation.

Perform sampling by passing a receptacle completely through the discharge stream or by completely diverting the discharge into a sample container. If discharge of the wash water or waste is too rapid to divert the complete discharge stream, discharge into a container or transportation unit sufficiently large to accommodate the flow and then accomplish the sampling in the same manner as described above.

Comply with the NCDEQ Hazardous Waste Compliance Manual. Record quantities of waste by weight and dates of waste generation. Waste accumulated at the project site shall be properly labeled. Until test results are received, accumulate all waste, and label as “NCDOT Bridge Paint Removal Waste – Hazardous Waste Pending Analysis” and include the date generated and contact information for the Engineer. Accumulate waste containers in an enclosed, sealed, and secured storage container protected from traffic from all directions. Obtain approval for the protection plan for these containers from the Engineer. If adequate protection cannot be obtained by use of existing guardrail, provide the necessary supplies and equipment to maintain adequate protection. The NCDEQ Hazardous Waste Compliance Manual can be found at:

<https://www.deq.nc.gov/waste-management/dwm/hw/guidance-document-table-documents/hazardous-waste-generator-compliance-manual/download?attachment>

Once test results are received and waste is characterized, label waste as either “Hazardous Waste - Pending Disposal” (for hazardous waste) or “Paint Waste - Pending Disposal” (for non-hazardous waste). All waste, hazardous or non-hazardous, requires numbered shipping manifests and/or equivalent material accountability.

Once the waste has been collected, and the quantities determined, prepare the appropriate shipping documents and manifests, and present them to the Engineer.

As of October 1, 2019, "Provisional ID Numbers" (starting with the prefix "NCP") are no longer issued by the North Carolina Hazardous Waste Section. EPA Identification (ID) Numbers are now issued for sites operating as "Short Term Generators."

(E) Short Term Generator Guidance:

<https://www.deq.nc.gov/environmental-assistance-and-customer-service/esi/short-term-generators-20200527/download>

For questions about Short Term Generator Notification:

Andrew Minter: Administration Specialist
Hazardous Waste Section
Phone: 919-707-8265
Email: Andrew.Minter@deq.nc.gov

Laura Alexander: Business Officer
Hazardous Waste Section
Phone: 919-707-8214
Email: Laura.Alexander@deq.nc.gov

The Engineer will verify the type and quantity of hazardous waste and obtain an EPA ID number (for new sites) or update an existing EPA ID number electronically using the EPA's RCRAInfo database:

<https://rcrainfo.epa.gov/rcrainfoprod/action/secured/login>

(F) Link to Quick Reference Guide for RCRAInfo Registration and Notification Submittal

<https://www.deq.nc.gov/waste-management/dwm/hw/hw-8700-guidelines/guide-rcrainfo-registration-and-notification/download?attachment>

(G) Link to the more comprehensive RCRAInfo Registration and Notification Tutorial

<https://www.deq.nc.gov/waste-management/dwm/hw/hw-guidelines/rcrainfo-registration-and-electronic-notification-tutorial/download?attachment>

The hazardous waste fee will be assessed at the time the short-term EPA ID number is requested and must be paid prior to the EPA ID number being issued. When completing the RCRAInfo notification, the Hazardous Waste Section requires a valid email address for the site contact since this is the person who will be contacted to pay the fee. NOTE: The cost for waste disposal (including lab and Short-Term Generator EPA ID number) shall be included in the bid price for this contract. At the time of shipping, the Engineer will ensure the proper EPA ID number has been entered in Box 1 of the manifest as well as sign and date the manifest. The maximum on-site accumulation time shall be **90 calendar days**. All waste, whether hazardous or non-hazardous will

require numbered shipping manifests. The cost for waste disposal (including lab and Short-Term Generator EPA ID number) shall be included in the bid price for this contract.

If you have site specific questions, please contact your local Hazardous Waste Section Inspector. Inspector contact information and regions are on the map at this link:

<https://www.deq.nc.gov/compliance-map-inspector/download?attachment?attachment>

Testing labs shall be certified in accordance with the National Lead Laboratory Accreditation Program (NLLAP) and/or the National Environmental Laboratory Accreditation Program (NELAP).

(H) A list of NLLAP certified laboratories may be obtained at:

<https://www.epa.gov/system/files/documents/2023-12/nllap.pdf>

(I) A list of NELAP certified laboratories may be obtained at:

<https://lams.nelac-institute.org/Search>

All test results shall be documented on the lab analysis as follows:

(J) For leachable lead:

(1) Soils/Solid/Liquid- EPA 1311/200.7/6010

Area sampling will be performed for the first two (2) days at each bridge location. The area sample will be located within five (5) feet of the containment and where the highest probability of leakage will occur (access door, etc.). Results from the area sampling will be given to the Engineer within 72 hours of sampling (excluding weekends). If the results of the samples exceed $20 \mu\text{g}/\text{m}^3$ corrective measures shall be taken and monitoring shall be continued until two (2) consecutive sample results are less than $20 \mu\text{g}/\text{m}^3$.

Time Weighted Average (TWA) may suspend the work if there are visible emissions outside the containment enclosure or pump monitoring results exceeding the level of $30 \mu\text{g}/\text{m}^3$.

Where schools, housing and/or buildings are within 500 feet of the containment, the Contractor shall perform initial Total Suspended Monitoring (TSP) Lead monitoring for the first ten (10) days of the project during abrasive blasting, vacuuming and containment removal. Additional monitoring will be required during abrasive blasting two (2) days per month thereafter. Results of the TSP monitoring at any location shall not exceed $1.5 \mu\text{g}/\text{m}^3$.

EQUIPMENT MOBILIZATION

The equipment used in any travel lanes and paved shoulder shall be mobile equipment on wheels that has the ability to move on/off the roadway in less than 30 minutes. All work conducted in travel lanes shall be from truck or trailer supported platforms and all equipment shall be self-propelled or attached to a tow vehicle at all times.

QUALITY CONTROL INSPECTOR

Provide a quality control (QC) inspector in accordance with the SSPC QP guidelines to ensure that all processes, preparation, blasting and coating application are in accordance with the requirements of the contract. The inspector shall have written authority to perform QC duties to include continuous improvement of all QC internal procedures. The presence of the engineer or inspector at the work site shall in no way lessen the contractor's responsibility for conformity with the contract.

QUALITY ASSURANCE INSPECTOR

The quality assurance inspector which may be a Department employee or a designated representative of the Department shall observe, document, assess, and report that the Contractor is complying with all of the requirements of the contract. Inspectors employed by the Department are authorized to inspect all work performed and materials furnished. Such inspection may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. The inspector is not authorized to alter or waive the requirements of the contract. Each stage in preparing the structure to be coated which includes but not limited to washing, blasting, coating testing and inspection shall be inspected and approved by the Engineer or an authorized representative.

SUBLETTING OF CONTRACT

Only contractors certified to meet SSPC QP 2, Category A, and have successfully completed lead paint removal and field painting on all similar structures within 18 months prior to this bid are qualified for this work. Work is only sublet by approval of the Engineer.

PREPARATION OF SURFACES

Before any other surface preparation is conducted, all surfaces shall be power washed to remove dust, salts, dirt, and other contaminants. All wash water shall be contained, collected, and tested in accordance with the requirements of NCDOT Guidelines for Managing Bridge Wash Water. Obtain approval of the Engineer and allow all cleaned surfaces to dry to the touch and without standing water before beginning surface preparation or painting activities.

Surface preparation is done with materials meeting Article 1080-12 of the *2 Standard Specifications*. No silica sand or other silica materials are permitted for use. The profile shall be between 1.0 and 3.0 mils when measured on a smooth steel surface. Conduct and document at least two (2) tests per beam/girder and two (2) tests per span of diaphragms/cross bracing.

Spread tarpaulins over all pavements and surfaces underneath equipment used for abrasive blasting as well as equipment and containers used to collect abrasive media. This requirement will be enforced during activity and inactivity of equipment.

Before the Contractor departs from the work site at the end of the workday, collect all debris generated during surface preparation and all dust collector hoses, tarps or other appurtenances containing blasting residue in approved containers.

Clean a 3" x 3" area at each structure to demonstrate the specified finish, and the inspector will preserve this area by covering it with tape, plastic or some other suitable means so that it can be retained as the Dry Film Thickness (DFT) gauge adjustment standard. An acceptable alternative is for the Contractor to provide a steel plate with similar properties and geometry as the substrate to be measured.

The contractor and/or quality assurance representative shall notify the Engineer of any area of corroded steel that has lost more than 50% of its original thickness.

All parts of the bridges not to be painted and the travelling public shall be protected from overspray. Submit a plan to protect all parts of bridge that are not required to be painted and a plan to protect the traveling public and surrounding environment while applying all coats of paint to a structure.

Ensure that chloride levels on the surfaces are $7 \mu\text{g}/\text{cm}^2$ or lower using an acceptable sample method in accordance with SSPC Guide 15. The frequency of testing shall be two (2) tests per span after all surface preparation has been completed and immediately prior to painting. Select test areas representing the greatest amount of corrosion in the span as determined by the Engineers' representative. Additional testing may be required if significant amounts of chloride are detected.

All weld splatter, slag or other surface defects resulting in a raised surface above the final paint layer shall be removed prior to application of primer coat.

PAINTING OF STEEL

Paint System 1, as specified in these Special Provisions and Article 442-8 of the *Standard Specifications*, is to be used for this work. System 1 is an inorganic zinc primer, two coats acrylic paint, and one stripe coat of acrylic paint over blast-cleaned surfaces in accordance with SSPC-SP-10 (Near White Blast). Perform all mixing operations over an impervious surface with provisions to prevent runoff to grade of any spilled material. The contractor is responsible for reporting quantities of thinner purchased as well the amounts used. No container with thinner shall be left uncovered, when not in use.

Apply 2" stripe coat, by brush or roller only, to all exposed edges of steel including fasteners before applying the finish coat. Locate the edge or corner in the approximate center of the paint stripe.

Any area where newly applied paint fails to meet the specifications shall be repaired or replaced by the Contractor, at no additional cost to the Department. All repair processes must be approved by the Engineer before the repair may be made. Repaired areas shall meet the *Standard Specifications*. The Contractor shall apply an additional finish coat of paint to areas where the tape adhesion test is conducted.

MATERIALS

Only paint suppliers that have a NCDOT qualified inorganic zinc primer may furnish paints for this project. All paints applied to a structure shall be from the same supplier. Before any paints are applied the Contractor shall provide the Engineer a manufacturer's certification that each batch of paint meets the requirements of the applicable Section 1080 of the *Standard Specifications*.

The inspector randomly collects a one-pint sample of each paint product used on the project. Additional samples may be collected as needed to verify compliance to the specifications.

Do not expose paint materials to rain, excessive condensation, long periods of direct sunlight, or temperatures above 110°F or below 40°F. In addition, the Contractor shall place a device that records the high, low, and current temperatures inside the storage location. Follow the manufacturer's storage requirements if more restrictive than the above requirements.

INSPECTION

Surface Preparation for System 1 shall be in accordance with SSPC SP-10. Any area(s) not meeting the requirements of SSPC SP-10 shall be remediated prior to application of coating. Surface inspection is considered ready for inspection when all blast abrasive, residue and dust is removed from surfaces to be coated.

(A) Quality Assurance Inspection

The Contractor furnishes all necessary OSHA approved apparatus such as ladders, scaffolds and platforms as required for the inspector to have reasonable and safe access to all parts of the work. The contractor illuminates the surfaces to be inspected to a minimum of 50-foot candles of light. All access points shall be illuminated to a minimum of 20-foot candles of light.

NCDOT reserves the right for ongoing Quality Assurance (QA) inspection to include but not limited to surface contamination testing, adhesion pull testing, and DFT readings as necessary to assure quality.

Inform the Engineer and the Division Safety Engineer of all scheduled and unannounced inspections from SSPC, OSHA, EPA and/or others that come on site. Furnish the Engineer a copy of all inspection reports except for reports performed by a third party and or consultant on behalf of the Contractor.

(B) Inspection Instruments

At a minimum, furnish the following calibrated instruments and conduct the following quality control tests:

- (1) Sling Psychrometer - ASTM E337 - bulb type
- (2) Surface Temperature Thermometer
- (3) Wind Speed Indicator

- (4) Tape Profile Tester - ASTM D4417 Method C
- (5) Surface Condition Standards - SSPC VIS-1 and VIS-3
- (6) Wet Film Thickness Gage - ASTM D4414
- (7) Dry Film Thickness Gage - SSPC-PA2 Modified
- (8) Solvent Rub Test Kit - ASTM D4752
- (9) Adhesion Test Kit - ASTM D3359 Method A (Tape Test)
- (10) Adhesion Pull test - ASTM D4541
- (11) Surface Contamination Analysis Kit or (Chloride Level Test Kit) SSPC Technology Guide 15

(C) Quality Control

Maintain a daily quality control record in accordance with Subarticle 442-12(D) of the *Standard Specifications* and make such records available at the job site for review by the inspector and submit to the Engineer as directed. In addition to the information required on [Form M&T-610](#), submit all Dry Film Thickness (DFT) readings on a form equivalent to [Form M&T-611](#). These forms can be found at:

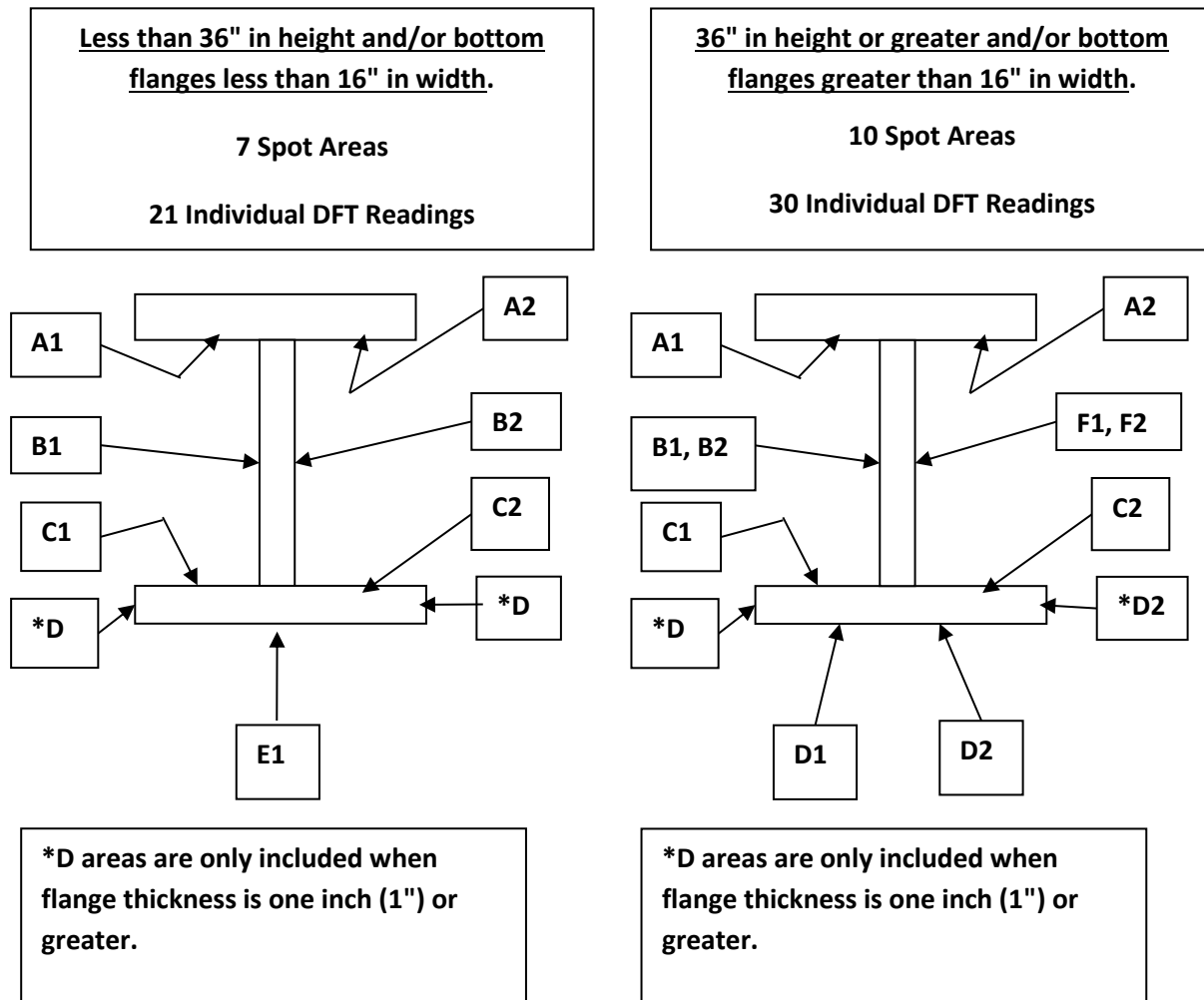
<https://connect.ncdot.gov/resources/Materials/Pages/Materials-Manual-by-Material.aspx?Method=MM-05-02>

- (1) Measure DFT at each spot on the attached diagram and at the required number of locations as specified below:
 - (a) For span members less than 45 feet; three (3) random locations along each girder in each span.
 - (b) For span members greater than 45 feet; add one additional location for each additional ten (10) feet in span length.

DFT measurements for the prime coat shall not be taken for record until the zinc primer has cured in accordance with ASTM D4752 (MEK Rub Test) with no less than a four (4) resistance rating.

Stiffeners and other attachments to beams and or plate girders shall be measured at no less than five (5) random spots per span. Also, dry film thickness is measured at no less than six (6) random spots per span on diaphragms/cross frames.

Each spot is an average of three (3) to five (5) individual gage readings as defined in SSPC PA-2. No spot average shall be less than 80% of minimum DFT for each layer applied; this does not apply to stripe coat application. Spot readings that are non-conforming shall be re-assessed by performing additional spot measurements not to exceed one-foot intervals on both sides of the low areas until acceptable spot averages are obtained. These non-conforming areas shall be corrected by the Contractor prior to applying successive coats.



- (2) Two (2) random adhesion tests (1 test = 3 dollies) per span are conducted on interior surfaces in accordance with ASTM D4541 (Adhesion Pull Test) after the prime coat has been properly cured in accordance with ASTM D4752 (MEK Rub Test) with no less than a four (4) resistance rating and will be touched up by the Contractor. The required minimum average adhesion is 400 psi.
- (3) Cure of the intermediate and stripe coats shall be accessed by using the thumb test in accordance with ASTM D1640 (Curing Formation Test) prior to the application of any successive layers of paint.
- (4) One random Cut Tape adhesion test per span is conducted in accordance with ASTM D3359 (X-Cut Tape Test) on interior surface after the finish coat is cured. Repair areas shall be properly tapered and touched up by the Contractor.

SAFETY AND ENVIRONMENTAL COMPLIANCE PLANS

Personnel access boundaries are delineated for each work site using signs, tape, cones, or other approved means. Submit copies of safety and environmental compliance plans that comply with SSPC QP 2 Certification requirements.

HEALTH AND SAFETY RESPONSIBILITIES

This project may involve toxic metals such as arsenic, lead, cadmium and hexavalent chromium. It is the contractor's responsibility to test for toxic metals and if found, comply with the OSHA regulations, which may include medical testing.

Ensure a "Competent Person" as defined in OSHA 29 CFR 1926.62; one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them; is on site during all surface preparation activities and monitors the effectiveness of containment, dust collection systems and waste sampling. Before any work begins, provide a written summary of the Competent Person's safety training.

Comply with Subarticle 442-14(B) of the *Standard Specifications*.

Comply with Subarticle 442-14(D) of the *Standard Specifications*. Ensure employee blood sampling test results are less than 50 micrograms per deciliter. Remove employees with a blood sampling test of 50 or more micrograms per deciliter from work activities involving any lead exposure.

An employee who has been removed with a blood level of 50 micrograms per deciliter or more shall have two (2) consecutive blood sampling tests spaced one week apart indicating that the employee's blood lead level is at or below 40 micrograms per deciliter before returning to work activities involving any lead exposure.

All OSHA recordable accidents that occur during the project duration are to be reported to the Engineer within twenty-four (24) hours of occurrence. In addition, for accidents that involve civilians or property damage that occurs within the work zone the Division Safety Engineer shall be notified immediately.

Prior to blasting operations, the Contractor shall have an operational OSHA approved hand wash station at each bridge location and a decontamination trailer at each bridge or between bridges unless the work is on the roadway, or the Contractor shall show reason why it is not feasible to do so and provide an alternative site as approved by the Engineer. The Contractor shall assure that all employees whose airborne exposure to lead is above the Permissible Exposure Limit (PEL) shall shower at the end of their work shift.

STORAGE OF PAINT AND EQUIPMENT

Provide a location for materials, equipment, and waste storage. Spread tarpaulins over all pavements and surfaces underneath equipment used for abrasive recycling and other waste handling equipment or containers. All land and or lease agreements that involve private property shall disclose to the property owner that heavy metals may be present on the Contractor's equipment. Prior to storing the Contractor's equipment on private property, provide a notarized written consent signed by the landowner received by the Engineer at least forty-eight (48) hours before using property. All storage of paint, solvents, and other materials applied to structures shall be stored in accordance with Subarticle 442-9(C) of the *Standard Specifications* or the manufacturers' requirements. The more restrictive requirements will apply.

UTILITIES

Protect all utility lines or mains that may be supported on, under, or adjacent to bridge work sites from damage and paint overspray.

MEASUREMENT AND PAYMENT

The cost of inspection, surface preparation, and repainting the existing structure is included in the lump sum price bid for *Cleaning and Repainting of Bridge #*____. This price is full compensation for furnishing all inspection equipment, all paint, cleaning abrasives, cleaning solvents and all other materials; preparing and cleaning surfaces to be painted; applying paint in the field; protecting work area, traffic and property; and furnishing blast cleaning equipment, paint spraying equipment, brushes, rollers, any other hand or power tools and any other equipment.

Pollution Control will be paid at the contract lump sum price which will be full compensation for all collection, handling, storage, air monitoring, and disposal of debris and wash water, all personal protective equipment, and all personal hygiene requirements, and all equipment, material and labor necessary for the daily collection of the blast debris into specified containers; and any measures necessary to ensure conformance to all safety and environmental regulations as directed by the Engineer.

*Painting Containment for Bridge #*____ will be paid at the lump sum contract price and will be full compensation for the design, materials, installation, maintenance, and removal of the containment system. Payment will be made under:

Pay Item**Pay Unit**

Cleaning and Repainting of Bridge # ____

Lump Sum

Pollution Control

Lump Sum

Painting Containment for Bridge # ____

Lump Sum

EPOXY RESIN INJECTION**(08-08-22)****GENERAL**

For repairing cracks, an applicator certified by the manufacturer of epoxy injection system to be used is required to perform the epoxy resin injection. The Contractor shall submit documentation that indicates the firm, supervisor and the workmen have completed an instruction program in the methods of restoring concrete structures utilizing the epoxy injection process and have five (5) years of relative experience with a record of satisfactory performance on similar projects.

The Contractor furnishes all materials, tools, equipment, appliances, labor and supervision required when repairing cracks with the injection of an epoxy resin adhesive.

SCOPE OF WORK

Using Epoxy Resin Injection, repair cracks 0.030 mils (0.75 μm) wide or greater in the interior bent columns and caps, and in the cantilevered portion of the superstructure deck.

SUBMITTALS

Prior to construction, the Contractor shall submit the following to the Engineer for review and approval:

- (A) Materials – Information detailing the materials and their properties, storage and handling requirements, and Material Safety Data Sheets. Material certifications and sampling shall be as required as per the NCDOT *Standard Specifications* Section 106.
- (B) Injection Procedures – Preparation and epoxy injection installation procedures, including written instructions from the manufacturer of the proportioning dispenser and the procedures recommended to monitor and assure its proportioning accuracy of the unit.
- (C) Contingencies – Proposed injection repair procedures in the event that during testing it is found that the injection installation procedure did not completely fill the cracks with epoxy.
- (D) Qualifications – The resumes of the Contractor's staff and/or the epoxy resin manufacturer's Technical Representative that will be on site performing the epoxy injection. The resumes shall detail the installer's applicable certifications and epoxy injection installation experience.
- (E) References – The names and telephone numbers of contact persons for recent (< 2years?) epoxy injection projects.

COOPERATION

Cooperate and coordinate with the Technical Representative of the epoxy resin manufacturer for satisfactory performance of the work.

Have the material manufacturer's Technical Representative present when the epoxy resin injection process begins and until the Engineer is assured that their service is no longer needed.

The expense of having this representative on the job is the Contractor's responsibility at no additional cost to the Department.

MATERIAL PROPERTIES

Provide a two-component structural epoxy adhesive for injection into cracks or other voids. Provide modified epoxy resin (Component "A") that conforms to the following requirements:

	Test Method	Specification Requirements
Viscosity @ 40 ± 3°F, cps	Brookfield RVT Spindle No. 4 @ 20 rpm	6,000 – 8,000
Viscosity @ 77 ± 3°F, cps	Brookfield RVT Spindle No. 2 @ 20 rpm	400 - 700
Epoxide Equivalent Weight	ASTM D1652	152 - 168
Ash Content, %	ASTM D482	1 max.

Provide the amine curing agent (Component "B") used with the epoxy resin that meets the following requirements:

	Test Method	Specification Requirements
Viscosity @ 40 ± 3°F, cps	Brookfield RVT Spindle No. 2 @ 20 rpm	700 - 1400
Viscosity @ 77 ± 3°F, cps	Brookfield RVT Spindle No. 2 @ 20 rpm	105 - 240
Amine Value, mg KOH/g	ASTM D664*	490 - 560
Ash Content, %	ASTM D482	1 max.
* Method modified to use perchloric		

acid in acetic acid.

Certify that the Uncured Adhesive, when mixed in the mix ratio that the material supplier specifies, has the following properties:

Pot Life (60 gram mass)

@ 77 ± 3°F - 15 minutes minimum

@ 100 ± 3°F - 5 minutes minimum

Certify that the Adhesive, when cured for seven (7) days at 77 ± 3°F unless otherwise specified, has the following properties:

	Test Method	Specification Requirements
Ultimate Tensile Strength	ASTM D638	7,000 psi (min.)
Tensile Elongation at Break	ASTM D638	4% max.
Flexural Strength	ASTM D790	10,000 psi (min.)
Flexural Modulus	ASTM D790	3.5 x 10 ⁵ psi
Compressive Yield Strength	ASTM D695	11,000 psi (min.)
Compressive Modulus	ASTM D695	2.0 - 3.5 x 10 ⁵ psi
Heat Deflection Temperature Cured 28 days @ 77 ± 3°F	ASTM D648*	125°F min. 135°F min.
Slant Shear Strength, 5,000 psi (34.5 MPa) compressive strength concrete Cured 3 days @ 40°F wet concrete Cured 7 days @ 40°F wet concrete Cured 1 day @ 77°F dry concrete	AASHTO T237	 3,500 psi (min.) 4,000 psi (min.) 5,000 psi (min.)
* Cure test specimens so the peak exothermic temperature does not exceed 77°F.		

Use an epoxy bonding agent, as specified for epoxy mortar, as the surface seal (used to confine the epoxy resin during injection).

EQUIPMENT FOR INJECTION

Use portable positive displacement type pumps with interlock to provide positive ratio control of exact proportions of the two (2) components at the nozzle to meter and mix the two (2) injection adhesive components and inject the mixed adhesive into the crack. Use electric or air powered pumps that provide in-line metering and mixing.

Use injection equipment with automatic pressure control capable of discharging the mixed adhesive at any pre-set pressure up to 200 ± 5 psi and equipped with a manual pressure control override.

Use equipment capable of maintaining the volume ratio for the injection adhesive as prescribed by the manufacturer. A tolerance of $\pm 5\%$ by volume at any discharge pressure up to 200 psi is permitted.

Provide injection equipment with sensors on both the Component A and B reservoirs that automatically stop the machine when only one component is being pumped to the mixing head.

PREPARATION

Follow these steps prior to injecting the epoxy resin:

- (A) Remove all dirt, dust, grease, oil, efflorescence and other foreign matter detrimental to the bond of the epoxy injection surface seal system from the surfaces adjacent to the cracks or other areas of application. Acids and corrosives are not permitted.
- (B) Provide entry ports along the crack at intervals determined by the Contractor to ensure full penetration of the crack.
- (C) Apply surface seal material to the face of the crack between the entry ports. For through cracks, apply surface seal to both faces.
- (D) Allow enough time for the surface seal material to gain adequate strength before proceeding with the injection.
- (E) Perform an air pressure check of the surface seal to ensure the system is airtight prior to proceeding with the injection.

EPOXY INJECTION

Before epoxy adhesive injection occurs, the Contractor shall test discharge one pint of epoxy to calibrate the equipment and to demonstrate that the workmen and equipment are working properly.

Follow approved preparation and installation procedures submitted by the Contractor. It is the Contractor's responsibility to achieve full penetration of cracks being injected.

Perform epoxy adhesive injection continuously until cracks are completely filled. Pressure shall be maintained until complete refusal of material is achieved. Any stoppage of injection for more than 15 minutes shall result in the injection equipment being cleaned, at no additional cost to the Department, before resuming injection.

If port to port travel of epoxy adhesive is not indicated, or the surface seal and/or ports become dislodged, immediately stop the work and notify the Engineer.

TESTING

The Contractor shall core 3" diameter by 6" deep samples of the cured epoxy to verify the cracks have been completely filled with epoxy. When coring, care shall be taken to avoid existing steel reinforcement, where possible. Injection will not proceed beyond the initial 50 feet until three (3) cores have been submitted to, and approved by, the Engineer. If the epoxy does not penetrate a minimum of 6" or the full depth of the crack, whichever is less, the repair will be rejected, and the contractor shall follow their proposed repair procedure that has been approved by the Engineer. The presence of the technical representative will be required when repairs begin.

The Engineer will take possession of the cores from the repaired concrete for compressive strength testing. If the failure plane is located at the repaired crack, a minimum compressive strength of 3,000 psi is required of these cores. The cost of coring is incidental to the pay item for epoxy injection. If the core fails, the contractor will be required to take corrective action before proceeding and another 50' test section will be required.

After the contractor demonstrates acceptable repairs, cores will be taken at a rate of one per 100 linear feet of repair until completion of the work or unacceptable cores are encountered.

FINISHING

When cracks are completely filled, allow the epoxy adhesive to cure for sufficient time to allow the removal of the surface seal without any draining or runback of epoxy material from the cracks.

Fill all cored holes with Type 3 grout in accordance with Section 1003 of the *Standard Specifications*.

Remove the surface seal material and injection adhesive runs or spills from concrete surfaces.

Finish the face of the crack and all core holes flush to the adjacent concrete, removing any indentations or protrusions caused by the placement of entry ports or grout placement.

BASIS OF PAYMENT

Epoxy Resin Injection will be paid at the contract unit price per linear foot. For full depth cracks, payment will be made for one side only. Such payment will be full compensation for all materials, tools, equipment, labor, coring and for all incidentals necessary to complete the work.

Pay Item

Epoxy Resin Injection

Pay Unit

Linear Foot

SHOTCRETE REPAIRS**(11-30-23)****GENERAL**

The work covered by this Special Provision consists of removing deteriorated concrete from the structure in accordance with the limits, depth and details shown on the plans, described herein and as established by the Engineer. This work also includes removing and disposing all loose debris, cleaning and repairing reinforcing steel and applying structural shotcrete.

The location and extent of repairs shown on the plans are general in nature. The Engineer shall determine the extent of removal in the field based on an evaluation of the condition of the exposed surfaces.

Any portion of the structure that is damaged from construction operations shall be repaired to the Engineer's satisfaction, at no extra cost to the Department.

MATERIAL REQUIREMENTS

Use prepackaged dry mix shotcrete conforming to the requirements of ASTM C1480, the applicable sections of the *Standard Specifications* and the following:

Test Description	Test Method	Age (Days)	Specified Requirements
Silica Fume (%)	ASTM C1240	-	10 (Max.)
Air Content - As Shot (%)	ASTM C231 or ASTM C457	-	5 ± 2
Minimum Compressive Strength (psi)	ASTM C109	7 28	3,000 5,000
Minimum Bond Pull-off Strength (psi)	ASTM C1583 or ASTM C882	28	250
Rapid Chloride Permeability Tests (range in coulombs)	ASTM C1202	-	100 – 1,000

Admixtures are not allowed unless approved by the Engineer. Store shotcrete in an environment where temperatures remain above 40°F and less than 95°F

All equipment must operate in accordance with the manufacturer's specifications and material must be placed within the recommended time.

QUALITY CONTROL**(A) Qualification of Shotcrete Contractor**

The shotcrete Contractor shall provide proof of experience by submitting a description of jobs similar in size and character that have been completed within the last five (5) years. The name, address and telephone number of references for the submitted projects shall also be furnished. Failure to provide appropriate documentation will result in the rejection of the proposed shotcrete contractor.

(B) Qualification of Nozzleman

The shotcrete Contractor's nozzleman shall be certified by the American Concrete Institute (ACI). Submit proof of certification to the Engineer prior to beginning repair work. The nozzleman shall maintain certification at all times while work is being performed for the Department. Failure to provide and maintain certification will result in the rejection of the proposed nozzleman.

TEMPORARY WORK PLATFORM

Prior to beginning any repair work, provide details for a sufficiently sized temporary work platform at each repair location. Design steel members to meet the requirements of the American Institute of Steel Construction Manual. Design timber members in accordance with the *National Design Specification for Stress-Grade Lumber and Its Fastenings* of the National Forest Products Association. Submit the platform design and plans for review and approval. The design and plans shall be sealed and signed by a North Carolina registered Professional Engineer. Do not install the platform until the design and plans are approved. Drilling holes in the superstructure for the purpose of attaching the platform is prohibited. Upon completion of work, remove all anchorages in the substructure and repair the substructure at no additional cost to the Department.

SURFACE PREPARATION

Prior to starting the repair operation, delineate all surfaces and areas assumed to be deteriorated by visually examining and sounding the concrete surface with a hammer or other approved method. The Engineer is the sole judge in determining the limits of deterioration.

Prior to removal, introduce a shallow saw cut approximately ½" in depth around the repair area at right angles to the concrete surface. Remove all deteriorated concrete 1 inch below the reinforcing steel with a 17 lb (maximum) pneumatic hammer with points that do not exceed the width of the shank or with hand picks or chisels as directed by the Engineer. Do not cut or remove the existing reinforcing steel. Unless specifically directed by the Engineer, do not remove concrete deeper than 1 inch below the reinforcing steel.

Abrasive blast all exposed concrete surfaces and existing reinforcing steel in repair areas to remove all debris, loose concrete, loose mortar, rust, scale, etc. After sandblasting examine the reinforcing steel to ensure at least 90% of the original diameter remains. If there is more than 10% reduction

in the rebar diameter, splice in and securely tie supplemental reinforcing bars as directed by the Engineer.

Provide stainless welded wire fabric at each repair area larger than one square foot if the depth of the repair exceeds 2 inches from the existing, intact exterior face of the concrete member. Provide a minimum 4" x 4" - 12 gage stainless welded wire fabric unless otherwise shown on the plans. Rigidly secure the welded wire fabric to existing steel or to $\frac{3}{16}$ " diameter stainless hook fasteners adequately spaced to prevent sagging. Encase the welded wire fabric in shotcrete a minimum depth of 1½ inches.

With the exception of overhead applications, the contractor has the option to use synthetic fiber reinforcement as an alternate to welded wire fabric if attaching welded wire fabric is impractical or if approved by the Engineer. Welded wire fabric and synthetic fiber reinforcement shall not be used in the same repair area.

Thoroughly clean the repair area of all dirt, grease, oil or foreign matter, and remove all loose or weakened material before applying shotcrete. Saturate the repair area with clean water the day before applying shotcrete. Bring the wetted surface to a saturated surface dry (SSD) condition prior to applying shotcrete and maintain this condition until the application begins. Use a blowpipe to facilitate removal of free surface water. Only oil-free compressed air is to be used in the blowpipe.

The time between removal of deteriorated concrete and applying shotcrete shall not exceed five (5) calendar days. If the time allowance exceeds (5) calendar days, prepare the surface at the direction of the Engineer before applying shotcrete.

APPLICATION AND SURFACE FINISH

Apply shotcrete only when the surface temperature of the repair area is greater than 40°F and less than 95°F. Do not apply shotcrete to frosted surfaces. Maintain shotcrete at a minimum temperature of 40°F for three (3) calendar days after placement.

Apply shotcrete in layers. The properties of the applied shotcrete determine the proper thickness of each layer or lift.

The nozzleman should hold the nozzle three (3) to four (4) feet from the surface being covered in a position that ensures the shotcrete strikes at right angles to the surface being covered without excessive impact. The nozzleman shall maintain the water amount at a practicable minimum, so the mix properly adheres to the repair area. Water content should not become high enough to cause the mix to sag or fall from vertical or inclined surfaces, or to separate in horizontal layers.

Use shooting wires or guide strips that do not entrap rebound sand. Use guide wires to provide a positive means of checking the total thickness of the shotcrete applied. Remove the guide wires prior to the final finish coat.

To avoid leaving sand pockets in the shotcrete, blow or rake off sand that rebounds and does not fall clear of the work, or which collects in pockets in the work. Do not reuse rebound material in the work.

If a work stoppage longer than two (2) hours takes place on any shotcrete layer prior to the time it has been built up to required thickness, saturate the area with clean water and use a blowpipe as outlined previously, prior to continuing with the remaining shotcrete course. Do not apply shotcrete to a dry surface.

Finish all repaired areas, including chamfered edges, as close as practicable to their original dimensions and configuration, unless otherwise required to provide a minimum 2" of cover for reinforcing steel exposed during repair. If necessary to extend shotcrete repair material beyond the original member dimensions and geometry, coordinate with the Engineer to determine methods, geometry, and dimensions of the final finished surface to provide a minimum 2" of cover on reinforcing steel. Slightly build up and trim shotcrete to the final surface by cutting with the leading edge of a sharp trowel. Use a rubber float to correct any imperfections. Limit work on the finished surface to correcting imperfections caused by trowel cutting.

Immediately after bringing shotcrete surfaces to final thickness, thoroughly check for sags, bridging, and other deficiencies. Repair any imperfections at the direction of the Engineer.

Cure the completed shotcrete surface in accordance with Article 420-15(B) Water Method of the *Standard Specifications* for seven (7) calendar days. If the water method is impracticable and if approved by the Engineer, a membrane curing compound may be used in accordance with Subarticle 420-15(C) of the *Standard Specifications* at double the manufacturer's recommended coverage rate.

MATERIAL TESTING & ACCEPTANCE

Each day shotcreting takes place, the nozzleman shall shoot one 18" x 18" x 3.5" test panel in the same position as the repair work that is being done to demonstrate the shotcrete is being applied properly. Store, handle and cure the test panel in the same manner as the repaired substructure and do not disturb for the first 24 hours after shotcreting.

Approximately 72 hours after completing the final shotcrete placement, thoroughly test the surface with a hammer. At this time, the repair area should have sufficient strength for all sound sections to ring sharply. Remove and replace any unsound portions prior to the final inspection of the work. No additional compensation will be provided for removal and replacement of unsound shotcrete.

In accordance with Subarticle 1002-3(H) of the *Standard Specifications*, core three (3) 3" diameter samples from each test panel. Compressive strength values on test panels shall equal or exceed the required 28-day strength requirements. Should failures occur on the test panel cores, acceptance of the material will be determined by tests on cores from the installed work on the structure. A minimum of (3) three cores shall be taken from the area in question of the structure. The average compressive strength of the cores taken from the structure shall equal or exceed the specified strength of the shotcrete applied, and no single core shall have strength less than 85% of the

specified value. Any cores taken from the structure shall penetrate into the existing concrete at least two (2) inches. Cores shall also be inspected for delamination, sand pockets, segregation, and voids.

The adequacy of the bond between the existing concrete and the shotcrete shall be determined by direct tension bond testing, in accordance with ASTM C1583 or ASTM C882, as directed by the Engineer. A minimum bond strength of 250 psi will be accepted as satisfactory. Bond failure less than 250 psi attributable to the failure of existing concrete will not be cause for rejection. The cost of up to three passing direct tension bond tests shall be the responsibility of the Contractor; additional passing pull-off tests will be the responsibility of the Department.

Any repair work failing to meet the requirements of this Special Provision will be rejected and the Contractor shall implement a remediation plan to correct the deficiency at no additional cost to the Department. No extra payment will be provided for drilling extra cores. Patch all core holes in the repaired structure to the satisfaction of the Engineer.

MEASUREMENT AND PAYMENT

Shotcrete Repairs will be measured and paid for at the contract unit price bid per cubic foot and will be full compensation for removal, containment and disposal off-site of unsound concrete including the cost of materials, labor, tools, equipment and incidentals necessary to complete the repair work. Depth will be measured from the original outside concrete face. If modifications to the dimensions and geometry are approved by the Engineer to achieve proper clearance over reinforcing steel, depth measurements will be made from the modified final outside face. The Contractor and Engineer will measure quantities after removal of unsound concrete and before application of repair material. Payment will also include the cost of sandblasting, surface cleaning and preparation, cleaning of reinforcing steel, placement of new steel, cost of temporary work platform, testing for soundness and bond strength, curing of shotcrete and taking core samples from the test panels and the structure.

Payment will be made under:

Pay Item	Pay Unit
Shotcrete Repairs	Cubic Feet

CONCRETE REPAIRS

(11-30-23)

GENERAL

Work includes removal of concrete in spalled, delaminated and/or cracked areas of the existing bent caps, bent columns, underside of bridge decks, deck slabs, girders, and bridge rails in reasonably close conformity with the lines, depth, and details shown on the plans, described herein and as established by the Engineer. This work also includes straightening, cleaning, and replacement of reinforcing steel, doweling new reinforcing steel, removing all loose materials,

removing and disposing of debris, formwork, applying repair material, and protecting adjacent areas of the bridge and environment from material leakage. The repair material shall be one of the materials described in this Special Provision, unless otherwise noted in the plans or Special Provisions.

The location and extent of repairs shown on the plans described herein are general in nature. The Engineer shall determine the extent of removal in the field based on an evaluation of the condition of the exposed surfaces. The Contractor shall coordinate removal operations with the Engineer. No more than 30% of a round or square column or 30% of the bearing area under a beam shall be removed without a temporary support system and approval from the Engineer.

Repair, to the Engineer's satisfaction, any portion of the structure that is damaged from construction operations. No extra payment is provided for these repairs.

SURFACE PREPARATION

Adhere to the following surface preparation requirements or the repair material manufacturer's requirements, whichever is more stringent.

Prior to starting the repair operation, delineate all surfaces and areas assumed to be deteriorated by visually examining and sounding the concrete surface with a hammer or other approved method. The Engineer is the sole judge in determining the limits of deterioration.

Prior to concrete removal, introduce a shallow saw cut, ½" in depth, around the repair area at right angles to the concrete surface. Sawcut should be located a minimum 2" beyond the perimeter of the deteriorated concrete area to be repaired. Remove all concrete within the sawcut to a minimum depth of ½". If concrete removal exposes reinforcing steel, remove all deteriorated concrete 1" below the reinforcing steel with a 17 lb (maximum) pneumatic hammer, with points that do not exceed the width of the shank, or with hand picks or chisels, as directed by the Engineer. Do not cut or remove the existing reinforcing steel. Unless specifically directed by the Engineer, do not remove concrete deeper than 1" below the reinforcing steel.

Abrasive blast all exposed concrete surfaces and existing reinforcing steel in repair areas to remove all debris, loose concrete, loose mortar, rust, scale, etc. After blasting, examine the reinforcing steel to ensure at least 90% of the original diameter remains. If there is more than 10% reduction in the rebar diameter, splice in and securely tie supplemental reinforcing bars as directed by the Engineer. This might require additional removal of concrete, in order to achieve an appropriate splice length of the reinforcing steel.

Thoroughly clean the repair area of all dirt, grease, oil, or foreign matter, and remove all loose or weakened material by abrasive blasting before applying concrete repair material. Acid etch with 15% hydrochloric acid, only if approved by the Engineer. Follow acid etching by scrubbing and flushing with copious amounts of clean water. Check the cleaning using moist pH paper. Water cleaning is complete when the paper reads ten (10) or higher.

Follow all abrasive blasting with vacuum cleaning.

The time between removal of deteriorated concrete and applying concrete repair material shall not exceed 72 hours. If the time allowance exceeds 72 hours, prepare the surface at the direction of the Engineer before applying concrete repair material.

APPLICATION AND SURFACE FINISH

Apply repair material to damp surfaces only when allowed by repair material recommendations and approved by the Engineer. Prepare damp surfaces in accordance with the *Standard Specifications* and/ or repair material manufacturer's recommendations. Use a blowpipe to facilitate removal of free surface water. Only oil-free compressed air is to be used in the blowpipe.

When surface preparation is completed, mix and apply repair material in accordance with the *Standard Specifications* and/ or repair material manufacturer's recommendations.

Use aggregate that is washed, kiln-dried, and bagged. Maximum size of aggregate shall not exceed 2/3 of the minimum depth of the repair area, or 3/4 of the depth of excavation behind the reinforcing steel, whichever is smaller.

Unless otherwise required by the repair material manufacturer, apply bonding agent to all repair areas immediately prior to placing repair material.

Repair areas shall be formed unless otherwise approved by the Engineer. Form and finish all repaired areas, including chamfered edges, as close as practicable to their original "As Built" dimensions and configuration. After applying the repair material, remove excessive material and provide a smooth, flush surface, unless directed otherwise.

Cure finished Class A concrete repair material by maintaining 95% relative humidity at the repair and surrounding areas by fogging, moist curing, or other approved means for seven (7) days. Cure polymer modified concrete repair material in accordance with manufacturer's recommendations.

REPAIR MATERIAL OPTIONS

(A) Polymer Modified Concrete Repair Material

Repair material shall be polymer modified cement mortar for vertical or overhead applications and shall be suitable for applications in marine environments. Material shall be approved for use by NCDOT. Submit repair material to the Engineer for review and approval prior to beginning the work. Color of repair material shall be concrete gray.

(B) Class A Concrete Repair Material

Repair material shall be Class A Portland Cement Concrete as described in Article 1000-3 of the *Standard Specifications*.

TEMPORARY WORK PLATFORM

Prior to beginning any repair work, provide details for a sufficiently sized temporary work platform at each repair location. Design steel members to meet the requirements of the *American Institute*

of Steel Construction Manual. Design timber members in accordance with the *National Design Specification for Stress-Grade Lumber and Its Fastenings* of the National Forest Products Association. Submit the platform design and plans for review and approval. The design and plans shall be sealed and signed by a North Carolina registered Professional Engineer. Do not install the platform until the design and plans are approved. Drilling holes in the superstructure for the purpose of attaching the platform is prohibited. Upon completion of work, remove all anchorages in the substructure and repair the substructure at no additional cost to the Department.

MEASUREMENT AND PAYMENT

Concrete Repairs will be measured and paid for at the contract unit price bid per cubic foot and will be full compensation for removal, containment and disposal off-site of unsound concrete including the cost of materials, reinforcing steel, labor, tools, equipment and incidentals necessary to complete the repair work. Depth will be measured from the original outside concrete face. The Contractor and Engineer will measure quantities after removal of unsound concrete and before application of repair material. Payment will also include the cost of abrasive blasting, surface cleaning and preparation, blast cleaning of reinforcing steel, placement of new reinforcing steel, cost of temporary work platform, testing of the soundness of the exposed concrete surface, furnishing and installation of repair mortar material, curing and sampling of concrete, and protection/cleaning of adjacent areas from splatter or leakage.

Reinforcing Steel that is required for the repairs will be in accordance with Section 425 of the *Standard Specifications*.

Payment will be made under:

Pay Item	Pay Unit
Concrete Repairs	Cubic Feet

EPOXY COATING AND DEBRIS REMOVAL

(SPECIAL)

GENERAL

This work applies to all bents and end bents of all bridges throughout the project as noted in the plans. Pressure wash, clean and epoxy coat top of all bent and end bent caps under open joints and at the expansion joints of steel girder spans after painting of all girders is concluded.

Debris removal from the top of bent caps shall be incidental to epoxy coating the top of bent caps.

Use a waterproofing epoxy coating in accordance with Article 1080-10 of the *Standard Specifications*. Provide a Type 3 material certification in accordance with Article 106-3 showing the proposed epoxy meets Type 4A requirements.

SURFACES

Apply the epoxy protective coating to the top surface area, including chamfer area of bent caps under open joints and expansion joints of the steel girder spans, excluding areas under elastomeric bearings.

Thoroughly clean all dust, dirt, grease, oil, laitance and other objectionable material from the concrete surfaces to be coated. Air blast all surfaces immediately before applying the protective coating.

Use only cleaning agents preapproved by the Engineer.

APPLICATION

Apply epoxy protective coating only when the air temperature is at least 40°F and rising, but less than 95°F and the surface temperature of the area to be coated is at least 40°F. Remove any excess or free-standing water from the surfaces before applying the coating. Apply one coat of epoxy protective coating at a rate such that it covers between 100 and 200 sf/gal.

Under certain combinations of circumstances, the cured epoxy protective coating may develop an oily condition on the surface due to amine blush. This condition is not detrimental to the applied system.

Apply the coating so the entire designated surface of the concrete is covered and all pores are filled. To provide a uniform appearance, use the exact same material on all visible surfaces.

BASIS OF PAYMENT

Epoxy Coating will be measured and paid for by the contract unit price per square foot and shall be full compensation for furnishing all material, labor, tools and equipment necessary for cleaning and coating the tops of bent caps. Debris removal from the top of bent caps shall be incidental to epoxy coating the top of bent caps.

Pay Item**Pay Unit**

Epoxy Coating

Square Feet

BRIDGE JACKING**(SPECIAL)****DESCRIPTION**

Bridge jacking at end bents and interior bents is to facilitate beam or bent cap repairs and to replace and/ or reset bearings, as necessary. This work shall consist of furnishing all engineering, labor, equipment, and materials necessary for construction and subsequent removal of jacking support

system, including jacks, jack supports, shims and all necessary blocking. Included under this item shall be all work to raise and support the existing structure as specified on the plans and as noted herein.

UTILITY COORDINATION

Utility owners with active utilities on the bridge shall be notified by the contractor of the jacking operation 30 days before the operation begins.

SCOPE OF WORK

Work for bridge jacking includes calculating existing and applied bridge loads, designing proper strength jacking scheme, evaluating stresses imposed on the bridge members, setting blocking and jacks, jacking bridge girders, mechanically locking jacks, and lowering bridge spans onto bearing assemblies.

Submit calculations, working drawings, and jacking procedure to the Engineer for review and approval prior to the start of work. Calculations and jacking procedure shall account for all loads expected while bridge is jacked or temporarily supported. Working drawings and all calculations (for determination of all applied loads, for design of the jacking scheme, to evaluate stresses imposed on the bridge members, and any other necessary calculations) for the required jacking scheme shall be sealed by an engineer licensed in the State of North Carolina.

Thoroughly clean areas under the proposed jacks to provide a flat, clean jacking surface. When jacking surfaces are not level or have slightly deteriorated concrete areas, use non-shrink grout to repair them to a flat level surface. The minimum thickness of the grout shall be as recommended by the manufacturer.

If the Engineer determines that any jacking surface contains highly deteriorated concrete, delay all work at that location and initiate provisions for pneumatically applied mortar or cast in place concrete repairs to restore the surface to full capacity for the jacking operations.

Do not remove any steel that has been welded to the existing bridge; it shall remain in place. The Contractor may opt to leave the jacking beam in place unless otherwise specified.

Make test cubes or cylinders of the nonshrink grout or concrete used for bearing pedestal repairs. The beams shall not be lowered in place until the test specimens achieve 3,500 psi minimum compressive strength.

The jack system shall be equipped with a direct reading gauge to directly read the jack force in pounds or kips. However, a gauge accompanied by a chart with which the dial reading can be converted into pounds may be used if approved by the Engineer.

Prior to bridge jacking, complete all diaphragm modifications necessary at the location where jacking is to occur. If a span connected to an end bent is to be jacked, ensure the curtain wall is either clear of the girders, or fully free to move with the jacked span prior to jacking. Lock jacks and install blocking while the bridge is in the raised condition. While in the raised condition, follow

bridge plans for any work that may be required. Complete repair work, as needed. After all repairs requiring bridge jacking are completed, lower the bridge onto the bearing assemblies.

Unless otherwise allowed by the Engineer, all bridge jacking operations shall be complete before new deck overlay or deck joints and seals are placed on the existing structure.

Bridge jacking will be designated as one of two jacking arrangements, as follows:

Type I

Type I Bridge Jacking shall be applicable for jacking at individual beam or bearing locations. On a particular bridge bent or end bent, there might be more than one Type I Bridge Jacking. When jacking individual beam or bearing locations, all adjacent bearings of beams not being jacked may be loosened to decrease the resistance of the deck slab during jacking. The maximum differential between adjacent beams that are being jacked is $\frac{1}{8}$ ". Should the jacking of an individual beam require the jacking of adjacent beams to reduce stresses or damage in the bridge, the jacking of the individual beam and adjacent beams shall be considered one Type I Bridge Jacking. All bearings loosened shall be tightened back after repair operations are completed and the jacks and blocking have been removed.

Type II

Type II Bridge Jacking shall be applicable for jacking an entire span end (i.e., all beams at one time) on a bent or end bent.

BASIS OF PAYMENT

Type I Bridge Jacking Bridge No. ____ payment will be made at the price bid for each set-up to complete bridge jacking as shown in the contract plans. The price per each jacking set-up required will be full compensation for designing proper strength jacking scheme (calculations, working drawings, and jacking procedure), all materials, equipment, tools, labor, and incidentals necessary to complete the work of this scope, including any jacking frames, jacking plates, and concrete repair required due to jacking operations.

Type II Bridge Jacking Bridge No. ____ payment will be made at the price bid for each set-up to complete bridge jacking as shown in the contract plans. The price per each jacking set-up required will be full compensation for designing proper strength jacking scheme (calculations, working drawings, and jacking procedure), all materials, equipment, tools, labor, and incidentals necessary to complete the work of this scope, including any jacking frames, jacking plates, and concrete repair required due to jacking operations.

Pay Item

Type I Bridge Jacking Bridge No. ____

Type II Bridge Jacking Bridge No. ____

Pay Unit

Each

Each

CURTAIN WALL REHABILITATION**(SPECIAL)****1.0 GENERAL**

Work for Curtain Wall Rehabilitation includes excavating existing approach fill and backfilling with new approach fill at end bents, partial demolition of the curtain wall, building curtain wall fill block as shown in plans, and finishing the curtain wall at end bent 1 & 2.

2.0 SCOPE OF WORK

Prior to Bridge Jacking Bridge, chip bearings at End bent 1 & 2 free from the curtain wall to allow removal of existing bearings. Excavation of the existing approach fill may be done prior to jacking or after the bridge is lowered onto new bearings and the construction of the curtain fill block is complete. The curtain wall will be separated from the end bent cap at the cold joint and raised with the span during jacking. Build the curtain wall fill block as shown in plans, including rebar and epoxy anchored dowels. After Bridge Jacking and span A & D is lowered on the new bearing assemblies, place the curtain wall fill block concrete and repair chipped and damaged areas as needed. After completion of construction of the curtain wall fill block, place and complete the bridge approach fill as indicated in the project plans.

3.0 BASIS OF PAYMENT

Payment will be made at the lump sum price bid for *Curtain Wall Rehabilitation*. Such lump sum price will be full compensation for all materials (including drain materials, backfill material, geotextile fabric, steel reinforcing bars, epoxy anchored dowels, joint material, and class A concrete), equipment, tools, labor, and incidentals necessary to complete the work of this scope, including all diaphragm work and materials.

Payment will be made under:

Pay Item	Pay Unit
Curtain Wall Rehabilitation	Lump Sum

VOLUMETRIC MIXER**(11-30-23)****GENERAL**

This Special Provision addresses the requirements for batching deck repair concrete at the point of delivery using a Mobile High Performance Volume Mixer (MHPVM). Work shall be in accordance with the general requirements of Section 1000-13 of the *Standard Specifications* and as amended by this Special Provision.

MATERIALS

Produce high early strength concrete with MHPVM equipment. Furnish project site storage facilities that will provide protection of materials in accordance with the *Standard Specifications* and all material suppliers' recommendations.

EQUIPMENT

MHPVM devices shall have prominently displayed stamped metal plate(s) from the Volumetric Mixers Manufacturers Bureau stating that the equipment conforms to the requirements of ASTM C685.

Hydraulic cement concrete shall be mixed at the point of delivery by a combination of materials and mixer unit conforming to the following:

- (A) The unit shall be equipped with calibrated proportioning devices for each ingredient added to the concrete mix. The unit shall be equipped with a working recording meter that is visible at all times and furnishes a ticket printout with the calibrated measurement of the mix being produced. If at any time the mixer fails to discharge a uniform mix, production of concrete shall be suspended until such time that problems are corrected.
- (B) Each unit shall have prominently displayed stamped metal plate(s) attached by the manufacturer on which the following are plainly marked: the gross volume of the transportation unit in terms of mixed concrete, the discharge speed and the mass calibrated constant of the machine in terms of volume.
- (C) MHPVMs shall be calibrated by a Department approved testing agency in accordance with the manufacturer's recommendations at an interval of every 6 months or a maximum production of 2,500 cubic yards, whichever comes first prior to use on the project. The yield shall be maintained within a tolerance of +/- 1% and verified using a minimum 2 cubic feet container every 500 cubic yards or a minimum of once per week.
- (D) The three (3) cubic feet initially discharged from the truck shall be discarded and not used for concrete placement. Acceptance of the concrete shall comply with the Standard Specifications except that the sample secured for acceptance testing will be taken after four (4) cubic feet is discharged from the delivery vehicle. During discharge, the consistency as determined by ASTM C143 on representative samples taken from the mixer discharge at random intervals shall not vary by more than 1 inch. Acceptance tests shall be performed on each load. If test data demonstrates that acceptable consistency of concrete properties is being achieved, the Engineer may reduce testing requirements.
- (E) MHPVM equipment shall be operated by a person who is a certified operator by the equipment manufacturer. Any equipment adjustments made during the on-site production of concrete shall be done under the direct on-site supervision of the producer's NCDOT Certified Concrete Batch Technician.

UNIFORMITY AND ACCEPTANCE

The contractor is responsible for providing a Certified Concrete Plant Technician during batching operations, and a Certified Concrete Field Technician during placing operations.

MEASUREMENT AND PAYMENT

Volumetric Mixer will be paid for as lump sum and will be full compensation for furnishing the certified MHPVM devices and calibration of the equipment.

Payment will be made under:

Pay Item	Pay Unit
Volumetric Mixer	Lump Sum

ELASTOMERIC BEARINGS**(SPECIAL)****DESCRIPTION**

Fabricate and install new elastomeric bearings at locations shown and as detailed on the plans. Elastomeric Bearings shall meet the requirements of subsection 1079-2 of the NCDOT Standard Specifications. Sole plate, bolts, nuts, and washers shall be included in the pay item for elastomeric bearings.

Install new elastomeric bearings after:

- completion of beam end repairs
- needed repairs to deteriorated areas of the cap under and adjacent to the proposed setting location
- installation of stub columns

Install new elastomeric bearings prior to:

- final field blasting and painting of the I-beam superstructure
- epoxy coating the top of the bent cap
- bridge deck foam joint replacement

New elastomeric bearings and their components shall be thoroughly wrapped with a physical barrier that will protect the bearing from damage or paint overspray during all phases of blast cleaning and painting of steel. If at any time during blast cleaning or painting, where bearing protection fails or becomes dislodged the Contractor will cease such work immediately and restore bearing protection to the satisfaction of the Engineer prior to resuming.

BASIS OF PAYMENT

Elastomeric Bearing will be measured and paid for at the contract unit price bid for each bearing, including sole plate, bolts, nuts, and washers. The price per each will be full compensation for all materials, equipment, tools, labor, and incidentals necessary to furnish and install in accordance with the plans, this Special Provision, and as directed by the Engineer. Concrete repairs to deteriorated cap areas will be measured and paid for as "Concrete Repairs". Bridge jacking will be paid for as part of the contract unit price bid for "Type I Bridge Jacking".

Payment will be made under:

Pay Item

Pay Unit

Elastomeric Bearing

Each

STUB COLUMN

(SPECIAL)

DESCRIPTION

Fabricate and install stub columns at locations shown and as detailed on the plans. All structural steel plates shall conform to AASHTO M270 Grade 50 steel or approved equal.

All materials and fabrication of the stub columns shall be in accordance with section 1072 of the Standard Specifications.

After fabrication, stub columns shall be galvanized as per section 1076 of the Standard Specifications.

Provide anchor bolts, nuts, and washers for the stub columns in accordance with subsection 1072-4 of the Standards Specifications. No separate payment will be made for anchor bolts, nuts, and washers; drilling or coring operations; anchor bolt adhesive; or other materials and work necessary to install the required anchor bolts. Such costs shall be considered incidental to the stub column.

Install stub columns after:

- completion of beam end repairs
- needed repairs to deteriorated areas of the cap under and adjacent to the proposed setting location

Install stub columns prior to:

- installation of elastomeric bearings
- final field blasting and painting of the I-beam superstructure
- epoxy coating the top of the bent cap
- bridge deck foam joint replacement

Stub columns and their components shall be thoroughly wrapped with a physical barrier that will protect the stub columns from damage or paint overspray during all phases of blast cleaning and painting of steel. Any damage to the galvanizing of the stub columns shall be repaired as per subsection 1076-7 of the Standard Specifications.

BASIS OF PAYMENT

Stub Column will be measured and paid for at the contract unit price bid for each stub column, including adhesively anchored anchor bolts, nuts, and washers. The price per each will be full compensation for all materials, equipment, tools, labor, and incidentals necessary to fabricate, furnish, and install in accordance with the plans, this Special Provision, and as directed by the Engineer.

Payment will be made under:

Pay Item**Pay Unit**

Stub Column

Each

REPAIR OF DAMAGED BRIDGE STEEL

All repairs shall be made in accordance with the FHWA “Manual for Heat Straightening, Heat Curving and Cold Bending of Bridge Components:”

<https://www.fhwa.dot.gov/bridge/pubs/hif23003.pdf>

The work shall consist of, but not be limited to, furnishing all labor, materials, equipment and incidentals required to perform all operations in connection with the removal of all paint (including paint containing lead), as needed, and repair by heat straightening and welding. Replacement of damaged diaphragm and connection plates may also be required. The intent of the work is to bring damaged beams back to the tolerances specified in the “Dimensional Tolerances” section of this special provision. After repairs, perform cleaning and painting of structural steel as indicated in the contract documents.

It is the desire of the Department that the repairs be made using “heat straightening” as defined in Chapters 2 and 3 of the “Manual for Heat Straightening, Heat Curving and Cold Bending of Bridge Components.” “Hot mechanical straightening” should be considered only for non-load carrying elements when replacement or other methods are not viable. “Hot working” should not be used to repair damaged structural steel. Written authorization must be given by the Engineer before any “hot mechanical straightening” or “hot working” repairs are made, regardless of the size of the repair.

Cold Mechanical Straightening shall not be permitted on these girders.

Appropriate auxiliary force, through the use of jacks, come-alongs, or other similar devices, may be used in conjunction with heat straightening.

The Department is not aware of previous heat straightening repairs performed in the areas of damage included in this proposal. If the Contractor, upon closer investigation, determines multiple

repairs have occurred in the area and that these repairs prevent the use of heat straightening, the method and cost of repair work will be by supplemental agreement.

Qualifying To Perform Work

Only contractors or subcontractors who have successfully completed (work completed in accordance with contract specifications, free of citation from safety or environmental agencies) at least three similar projects within the 18 months prior to this bid may perform this work.

Bidders need not submit evidence of the above qualifications until the apparent low bidder is announced. The contract will not be awarded until the qualifications of the apparent low bidder are verified by the Engineer.

The Engineer shall require evidence of qualifications for the technicians involved in the conduct of the heat applications. These qualifications may include evidence of similar, prior work on equivalent structures, documented training in heat straightening, and the ability to explain performance of their duties.

Phasing

The Department is requiring that the Contractor heat straighten Beam 1 of Span 2 and Beams 1 through 4 of Span 3, as outlined in this provision, prior to performing cleaning and painting of steel and other steel repairs or modifications.

Heat Straightening Requirements

The Contractor shall inspect, identify, and document all yield zones, yield lines, and associated damage and provide this information to the Engineer prior to initiation of heat straightening by either visual inspection or measurements. NCDOT shall have staff on-site during the heat straightening operations to provide inspection and technical support.

The heating patterns and torch paths shall be laid out prior to application of heat. The heating steel temperature shall not exceed 1100° F (590° C). Monitoring of heating will be by heat sticks. Torch operator must be skilled and experienced to produce the results that are free of wrinkles, cracks, bulges, and poor alignment.

Vee heats should be confined to ½ the width of the flange. The opening width of Vee heats should be between 3" and 10" wide, and simultaneous Vee heats shall have a minimum spacing of 12 inches.

Dimensional Tolerances

The bottom flange tilt shall not exceed 3/8 inch. The bottom flange sweep shall not exceed ½ inch in 20 feet, nor ½" to either side over the length of the beam. Web shall not be out of plumb by

more than $\frac{1}{4}$ inch. Localized web distortion shall not exceed $\frac{1}{4}$ inch. The tolerances shall be measured without forces or additional constraint.

Nicks, Cracks, and Gouges Repair

The defects on the bottom flanges and webs must be repaired by grinding or welding the dents to an acceptable contour or shape. Gouges less than $\frac{3}{16}$ inch deep in the bottom flange surface shall be ground to a $\frac{1}{10}$ slope with smooth finish. Gouges deeper than $\frac{3}{16}$ inch shall be welded and ground flush. Cracks shall be removed by hand grinding, arc, or flame gouging. Prior to arc or flame gouging, the work area must be heated to 150° F minimum. Also, any nicks or gouges on surfaces to be welded (such as from grinding or gouging) should be ground out prior to welding.

Effect of Heating

Where appropriate, Contractor must adequately support both sides of the damaged area of the flange(s) while heating or welding the area to prevent any sagging, deck cracking or possible girder failure.

Crack Injection

Any separation of top flange from the deck above, as a result of the repair process, must be injected (by the contractor) with an NCDOT pre-approved epoxy grout to obtain full bearing of the slab on the top flange of the beam.

Partial Replacement

The Engineer shall assist the Contractor in field locating the area to be removed and replaced. New replacement pieces shall match the thickness and other appropriate original dimensions of the existing members. Diaphragm and diaphragm connection plates may not be able to be repaired and may need to be replaced as part of this project. Replacement of those items should be included in the lump sum bid price for the specific bridge locations if anticipated by the Contractor.

To obtain straight, smooth, and good fit for partial replacement sections, the Contractor shall preferably use mechanized cutting torch when cutting and removing the damaged portion of the flange in order to minimize the grinding or re-cutting of the same. The repaired girder section shall be inspected by NCDOT during fit-up and approved before welding the new section may begin. After approval of the fit-up section, weld fit-up section into place. Welding shall be performed by certified welders, as specified in the Standard Specifications.

Since this repair involves working with an existing structure where the dimensions may vary throughout the structure, the Contractor should expect and shall be prepared to make alterations in the field. This includes, but not limited to, having qualified personnel on hand to perform necessary alterations and having extra material on hand (or the ability to procure extra material in a timely manner). All such alterations shall be brought to the attention of the Engineer and agreed upon prior to alteration.

If the Contractor properly performs the heat straightening repairs on the structural beams and it is determined that damage was more extensive or that the tolerance cannot be met, partial replacement might be considered and would be included as a supplemental agreement. If partial replacement is required because of error or poor quality work on the part of the Contractor, NCDOT will not consider this work supplemental and no additional compensation will be provided for this work.

Welding

Preheating and interpass temperatures shall be in accordance with Table 6.3 of AWS D1.5, 2020 edition.

Prior to welding, the joint surface shall be cleaned by wire brush or light grinding to remove any rust that may have formed.

Welders must be qualified in all welding types and positions per Part B of Section 7 of the latest edition of AWS D1.5.

The shielded metal arc (covered electrode) shall be used. The Gas Metal Arc, or Metal Inert Gas (GMA or MIG), is not acceptable.

E7018 Low Hydrogen covered electrodes shall be used on AASHTO M270 Grades 36 & 50 and ASTM A-36 & A-572 steels.

E8018 Low Hydrogen covered electrodes shall be used on ASTM A-588 Grade 50W (Weathering) steel.

The maximum electrode size shall be 5/32" diameter, and special care must be taken to prevent moisture pickup when the container is opened. The electrode should be kept in the oven at 250° F as soon as the can is opened and kept in the oven until ready to weld. The electrode should be warm to touch when used.

Bolts

Contractor shall replace missing and/ or damaged bolts, washers, and nuts for connection of beams to diaphragms, channels, plates, or other members as designated by the Engineer. Bolts, washers, and nuts shall be high strength and shall meet the requirements of NCDOT Standard Specification Section 1072-5.

Testing

Contact NCDOT M&T Unit (919-329-4202) at least five days prior to beginning work, so they may provide oversight and inspection.

Liquid Penetrant, Magnetic-Particle, Ultrasonic, or Radiographic testing on welded cracks, nicks, gouges will be done by NCDOT personnel.

Safety and Accident Protection - Section 107-21, NCDOT Standard Specifications 2024

The contractor shall comply with all applicable Federal, State and local laws, ordinance, and regulation governing safety, health, and sanitation, and shall provide all safeguards, safety devices, and protective equipment, and shall take any other needed actions, on his own responsibility that are reasonably necessary to protect the life and health of employees on the job and the safety of the public, and protect property in connection with the performance of the work covered by the contract.

All Contractor's personnel, subcontractors and their personnel, and any material suppliers and their personnel shall wear a reflective vest or outer garment conforming to the requirements of MUTCD at all times while on the project.

Lead Containment and Disposal

The repair work shall be done in such a manner as not to introduce hazardous materials into the air, water, or workers bodies, and that complies with all applicable laws and regulations, including those of OSHA and NCDEQ.

No work shall begin until the Contractor furnishes the Engineer with a lead containment and disposal plan for all work on the bridge, and the Engineer reviews and accepts the proposed plan. The plan shall describe how lead is contained and collected. Also, the plan shall indicate how the system would allow for such possibilities as receiving rainwater.

Disposal of lead shall be in accordance with the North Carolina Hazardous Waste Rules 15A NCAC 13A (see Section 442-14 of the NCDOT Standard Specifications).

The Contractor shall have a competent person on site whenever any lead removal process is occurring. A competent person is able to both recognize a hazard and take the proper action to

contain it. A supervisor (who is not working) is allowed to be the competent person, but a worker is not.

Field Painting

After completion of heat straightening and other repairs, structural steel shall be cleaned and painted as indicated in the project plans and special provisions.

Required Submittals

It is the intent of the Department that they have a clear understanding of the Contractor's work plan prior to the start of any heat straightening repairs. The following steps should be performed, documented, and submitted to the Engineer for review and approval. No work shall begin before the work plan has been approved. Allow 5 days for review and approval of work plan.

- Analyze the degree of damage and maximum strains induced.
- Demarcate the regions for heat straightening repair.
- Select heating patterns and parameters.
- Develop a constraint plan and design the jacking restraint configuration.
- Estimate heating cycles required to straighten members.
- Prepare a step by step work plan and submit to the Engineer for review and approval (allow 5 days).

Basis of Inspection and Acceptance

It is the intent of the Department that they have inspection staff on hand during the majority of the repair operations. The following items are some of the areas that will be observed and checked during repairs. The NCDOT will:

- Check for adherence to accepted heating patterns.
- Periodically check the jack gauges to ensure that excessive force is not being applied before heating.
- Observe the color of the steel at the torch tip. Looking for a satiny silver halo at the tip in normal daylight lighting and for a slight dull red glow in low light.
- Verify reference points to measure movements by a taut line or straightedge.
- Testing by Liquid Penetrant, Magnetic-Particle, Ultrasonic or Radiographic examination shall be performed the Department's staff. If NCDOT forces are not available to perform

testing, the Contractor may be asked to provide independent testing through supplemental agreement.

Final acceptance will be based on meeting the specified dimensional tolerances, as agreed upon by the Engineer, without exceeding temperature or restraint limitations.

Basis of Payment

Payment will be made at the lump sum price bid for “Repairs to Damaged Steel of Bridge No. ____”. Such lump sum price shall be full compensation for all work, including but not limited to supervision, labor, materials, transportation, fuels, lubricants, repair parts, equipment, machinery, tools, and incidentals necessary for the prosecution and completion of the work. Payments will be made to the Contractor for work accomplished and accepted.

Repair Locations, Pictures, and Details

The information shown herein is to acquaint the Contractor with the work to be performed and illustrate the overall condition of the structure to be repaired. The dimensional tolerances as stated above in Dimensional Tolerances, as well as Nicks, Cracks, and Gouges Repair shall be adhered to throughout. 1 thru 4 of Span 2.

Routine Inspection Report:



NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STRUCTURE MANAGEMENT UNIT

ATTENTION:

PARS ISSUED, SIGN NOTICE ISSUED, SPECIAL
INSPECTION REQUESTED FOR BEAM DAMAGE IN
SPANS 2 AND 3

Structure Safety Report

Routine Element Inspection - Contract

STRUCTURE NUMBER: 970068 SAP STRUCTURE NO: 0980068 FHWA STRUCTURE NO: 000000001950068

DIVISION: 4 COUNTY: WILSON INSPECTION DATE: 07/30/2024 FREQUENCY: 24 MONTHS

FACILITY CARRIED: NC42 MILE POST: _____

LOCATION: 0.3 MI. E. OF JCT. SR1328

FEATURE INTERSECTED: US301

LATITUDE: 35° 44' 7.18" LONGITUDE: 77° 52' 44.35"

SUPERSTRUCTURE: RC DECK ON I-BEAMS

SUBSTRUCTURE: END BENTS:RC CAPS ON PPC PILES; INTERIOR BENTS: RC CAPS ON RC PILES

SPANS: 4 SPANS. SEE SPAN PROFILE SHEET FOR SPAN DETAILS

☐ FRACTURE CRITICAL ☐ TEMPORARY SHORING ☐ SCOUR CRITICAL ☐ SCOUR PLAN OF ACTION

GRADES: (Inspector/NBI Coding) DECK 6 / 6 SUPERSTRUCTURE 5 / 5 SUBSTRUCTURE 6 / 6 CULVERT N / N

POSTED SV: Not Posted POSTED TTST: Not Posted

OTHER SIGNS PRESENT: (4) DELINEATORS



Sign noticed issued for	Number Required
<u>NO</u> WEIGHT LIMIT	<u>0</u>
<u>NO</u> DELINEATORS	<u>0</u>
<u>NO</u> NARROW BRIDGE	<u>0</u>
<u>NO</u> ONE LANE BRIDGE	<u>0</u>
<u>YES</u> LOW CLEARANCE	<u>2</u>

DIRECTION OF
INSPECTION W-E

DIRECTION
MATCHES PLANS _____

WEST APPROACH LOOKING EAST

INSPECTED BY
JOE KOENIG

SIGNATURE

ASSISTED BY DON HODGE

IDENTIFICATION							
(1) STATE NAME	NORTH CAROLINA	BRIDGE	970068	SUFFICIENCY RATING			62.16
(8) STRUCTURE NUMBER (FEDERAL)			1950068	STATUS =			
(5) INVENTORY ROUTE (ON/UNDER)	ON		131000420	CLASSIFICATION			CODE
(2) STATE HIGHWAY DEPARTMENT DISTRICT			4	(112) NBIS BRIDGE SYSTEM			YES
(3) COUNTY CODE (FEDERAL)	195	(4) PLACE CODE	74540	(104) HIGHWAY SYSTEM			Inventory Route not on NHS
(6) FEATURE INTERSECTED	US301			(26) FUNCTIONAL CLASS			Urban Other Principal Arterial
(7) FACILITY CARRIED	NC42			(100) STRAHNET HIGHWAY			Not a STRAHNET Route
(9) LOCATION	0.3 MI. E. OF JCT. SR1328			(101) PARALLEL STRUCTURE			No parallel structure exists
(11) MILEPOINT			0.0	(102) DIRECTION OF TRAFFIC			2-way traffic
(12) BASE HIGHWAY NETWORK			0	(103) TEMPORARY STRUCTURE			
(13) LRS INVENTORY ROUTE & SUBROUTE				(110) DESIGNATED NATIONAL NETWORK - on national network for trucks			0
(16) LATITUDE	35° 44' 7.18"	(17) LONGITUDE	77° 52' 44.35"	(20) TOLL			On Free Road
(98) BORDER BRIDGE STATE CODE	PERCENT SHARED			(21) MAINT -			01
(99) BORDER BRIDGE STRUCTURE NUMBER				(22) OWNER -			01
STRUCTURE TYPE AND MATERIAL				(37) HISTORICAL SIGNIFICANCE -			
(43) STRUCTURE TYPE MAIN			Steel				
TYPE	Stringer/Multi-beam or girder	CODE	302				
(44) STRUCTURE TYPE APPROACH				CONDITION			CODE
TYPE		CODE		(58) DECK			6
(45) NUMBER OF SPANS IN MAIN UNIT			4	(59) SUPERSTRUCTURE			5
(46) NUMBER OF SPANS IN APPROACH			0	(60) SUBSTRUCTURE			6
(107) DECK STRUCTURE TYPE		CODE	1	(61) CHANNEL & CHANNEL PROTECTION			N
(108)WEARING SURFACE/PROTECTIVE SYSTEM				(62) CULVERTS			N
(A) TYPE OF WEARING SURFACE		CODE	6	LOAD RATING AND POSTING			CODE
(B) TYPE OF MEMBRANE		CODE	0	(31) DESIGN LOAD			HS 15
(C) TYPE OF DECK PROTECTION		CODE	0	(63) OPERATING RATING METHOD -			Load Factor
				(64) OPERATING RATING -			HS-29
				(65) INVENTORY RATING METHOD -			1
(27) YEAR BUILT			1955	(66) INVENTORY RATING			HS-18
(106) YEAR RECONSTRUCTED			0	(70) BRIDGE POSTING			No Posting Required
(42) TYPE OF SERVICE ON -	Overpass Structure			(41) STRUCTURE OPEN, POSTED, OR CLOSED			A
OFF -		Highway	CODE 61	DESCRIPTION			Open, no restriction
(28) LANES ON STRUCTURE	2	LANES UNDER STRUCTURE	4				
(29) AVERAGE DAILY TRAFFIC			9600	APPRAISAL			CODE
(30) YEAR OF ADT	2022	(109) TRUCK ADT PCT	12	(67) STRUCTURAL EVALUATION			5
(19) BYPASS OR DETOUR LENGTH			3.0	(68) DECK GEOMETRY			2
GEOMETRIC DATA				(69) UNDERCLEARANCES, VERT & HORIZ			
(48) LENGTH OF MAXIMUM SPAN			54.0	(71) WATERWAY ADEQUACY			
(49) STRUCTURE LENGTH			195.0	(72) APPROACH ROADWAY ALIGNMENT			
(50) CURB OR SIDEWALK: LEFT	1.5	RIGHT	1.5	(36) TRAFFIC SAFETY FEATURES			
(51) BRIDGE ROADWAY WIDTH, CURB TO CURB			28.3	(113) SCOUR CRITICAL BRIDGES			
(52) DECK WIDTH OUT TO OUT			33.5				
(32) APPROACH ROADWAY WIDTH (W/ SHOULDERS)			28.0	PROPOSED IMPROVEMENTS			
(33) BRIDGE MEDIAN	No median		CODE 0	(75) TYPE OF WORK			
(34) SKEW	22	(35) STRUCTURE FLARED	0	(76) LENGTH OF STRUCTURE IMPROVEMENT			
(10) INVENTORY ROUTE MIN VERT CLEAR			999.9	(94) BRIDGE IMPROVEMENT COST			
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR			28.3	(95) ROADWAY IMPROVEMENT COST			
(53) MIN VERT CLEAR OVER BRIDGE RDWY			999.9	(96) TOTAL PROJECT COST			
(54) MIN VERT UNDERCLEAR: REFERENCE		H	14.7	(97) YEAR OF IMPROVEMENT COST ESTIMATE			
(55) MIN LAT UNDERCLEARANCE RT: REFERENCE		H	7.3	(114) FUTURE ADT			
(56) MIN LAT UNDERCLEARANCE LT:			15.7	19,200		YEAR OF FUTURE ADT	2040
NAVIGATION DATA				INSPECTION			
(38) NAVIGATION CONTROL -		CODE	N	(90) INSPECTION DATE		07/24	(91) FREQUENCY
(111) PIER PROTECTION		CODE		(92) CRITICAL FEATURE INSPECTION		(93) CFI DATE	
(39) NAVIGATION VERTICAL CLEARANCE			0.0	A) FRACTURE CRIT DETAIL		A)	
(116) VERT - LIFT BRIDGE NAV MIN VERT CLEAR			0.0	B) UNDERWATER INSP		B)	
(40) NAVIGATION HORIZONTAL CLEARANCE			0.0	C) OTHER SPECIAL INSP		C)	
SCOUR							

Structure Number 970068

County WILSON

Run Date 10/17/2024

Span Number	Facility Carried	Inventory Route	Maximum Minimum Vertical Clearance	Milepoint	Base Highway	LRS Inventory Route	Functional Classification	Number of Lanes	Average Daily Traffic	Year of Average Daily Traffic	Total Horizontal Clearance	See Note Below					STRAHNET Highway	Direction of Traffic	National Highway System	National Truck Network
												Reference Feature	Minimum Vertical Underclearance	Righth Lateral Underclearance	Left Lateral Underclearance	Underclearance Appraisal Grade				
	7	5	10	11	12	13	26	28	29	30	47	54A	54	55	56	69	100	102	104	110
2	US301S	21003010	15.1	0.0	1	20301	14	2	5250	2019	41.0	H	15.0	8.2	15.0	4		1	☐	☐
3	US301N	21003010	15.0	0.0	1	20301	14	2	5250	2019	40.9	H	14.7	7.3	15.7	4		1	☐	☐

Note: Items 54, 55, and 56 are not reported FHWA under route data points but are collected for each under route to determine the minimum value for Underclearance Appraisal Item 69.

Superstructure Build Details

Span Number 1Span Length 42.500

Skew 112.000

Number of Items	Type of Component	Element Name	Quantity	Protective System Applied	Quantity (Sq Ft)
3	Fixed Bearing	Fixed Bearing	3 Each	Legacy Red Lead Primer Systems with Various Topcoats	3
1	Reinforced Concrete Deck	Reinforced Concrete Deck	1336 Square Feet		
4	Movable Bearing	Movable Bearing	4 Each	Legacy Red Lead Primer Systems with Various Topcoats	4
1	Fixed Bearing	Fixed Bearing	1 Each	Legacy Non Lead Primer System with various Topcoats	1
4	Plate Girder	Steel Open Girder/Beam	168 Feet	Legacy Red Lead Primer Systems with Various Topcoats	1392
1	Asphalt Wearing Surface	Wearing Surface	1193 Square Feet		
2	Concrete Railing	Reinforced Concrete Bridge Railing	84 Feet		
2	Delineator	Warning Signs	2 Each		

Span Number 2Span Length 55.000

Skew 112.000

Number of Items	Type of Component	Element Name	Quantity	Protective System Applied	Quantity (Sq Ft)
2	Concrete Railing	Reinforced Concrete Bridge Railing	110 Feet		
1	Asphalt Wearing Surface	Wearing Surface	1544 Square Feet		
4	Movable Bearing	Movable Bearing	4 Each	Legacy Red Lead Primer Systems with Various Topcoats	4
1	Standard Joint	Pourable Joint Seal	34 Feet		
4	Fixed Bearing	Fixed Bearing	4 Each	Legacy Red Lead Primer Systems with Various Topcoats	4
4	Plate Girder	Steel Open Girder/Beam	220 Feet	Legacy Red Lead Primer Systems with Various Topcoats	1844
1	Reinforced Concrete Deck	Reinforced Concrete Deck	1729 Square Feet		

Span Number 3Span Length 55.000

Skew 112.000

Number of Items	Type of Component	Element Name	Quantity	Protective System Applied	Quantity (Sq Ft)
1	Asphalt Wearing Surface	Wearing Surface	1544 Square Feet		
1	Standard Joint	Pourable Joint Seal	34 Feet		

Superstructure Build Details

4	Movable Bearing	Movable Bearing	4 Each	Legacy Red Lead Primer Systems with Various Topcoats	4
2	Concrete Railing	Reinforced Concrete Bridge Railing	110 Feet		
4	Plate Girder	Steel Open Girder/Beam	220 Feet	Legacy Red Lead Primer Systems with Various Topcoats	1844
4	Fixed Bearing	Fixed Bearing	4 Each	Legacy Red Lead Primer Systems with Various Topcoats	4
1	Reinforced Concrete Deck	Reinforced Concrete Deck	1729 Square Feet		

Span Number 4Span Length 42.500Skew 112.000

Number of Items	Type of Component	Element Name	Quantity	Protective System Applied	Quantity (Sq Ft)
1	Asphalt Wearing Surface	Wearing Surface	1193 Square Feet		
1	Standard Joint	Pourable Joint Seal	34 Feet		
4	Plate Girder	Steel Open Girder/Beam	168 Feet	Legacy Red Lead Primer Systems with Various Topcoats	1392
1	Reinforced Concrete Deck	Reinforced Concrete Deck	1336 Square Feet		
2	Concrete Railing	Reinforced Concrete Bridge Railing	86 Feet		
2	Delineator	Warning Signs	2 Each		
4	Fixed Bearing	Fixed Bearing	4 Each	Legacy Red Lead Primer Systems with Various Topcoats	4
4	Movable Bearing	Movable Bearing	4 Each	Legacy Red Lead Primer Systems with Various Topcoats	4

Structure Element Scoring

Structure Number: 970068Inspection Date 7/30/2024

Element Number	Parent Number	Element Name	Location	Total Quantity	Level 1 Quantity	Level 2 Quantity	Level 3 Quantity	Level 4 Quantity
12		Reinforced Concrete Deck	Deck	6,130	6,123	5	2	0
107		Steel Open Girder/Beam	Beam	776	21	706	46	3
515	107	Steel Protective Coating	Beam	6,472	3,849	0	2,620	3
215		Reinforced Concrete Abutment	Abutments	74	61	11	2	0
226		Prestressed Concrete Pile	Piles and Columns	8	8	0	0	0
227		Reinforced Concrete Pile	Piles and Columns	13	12	0	1	0
234		Reinforced Concrete Pier Cap	Caps	164	156	8	0	0
301		Pourable Joint Seal	Expansion Joints	102	102	0	0	0
311		Movable Bearing	Bearing Device	16	0	1	13	2
515	311	Steel Protective Coating	Bearing Device	16	0	0	1	15
313		Fixed Bearing	Bearing Device	16	0	7	9	0
515	313	Steel Protective Coating	Bearing Device	16	0	2	5	9
321		Reinforced Concrete Approach Slabs	Approaches			0	0	0
331		Reinforced Concrete Bridge Railing	Bridge Rail	390	380	6	4	0
510		Wearing Surface	Wearing Surfaces	5,474	5,474	0	0	0
602		Warning Signs	Ground Mounted Signs	4	4	0	0	0

Summary of Maintenance Needs

Maintenance By Defect

Structure Number: 970068Inspection Date: 07/30/2024

MMS Code	Element Name	Defect Name	Recommended Quantity
3326	Reinforced Concrete Deck	Delamination/Spall	1 Square Feet
3326	Reinforced Concrete Deck	Exposed Rebar	2 Square Feet
3314	Steel Open Girder/Beam	Connection	1 Feet
3314	Steel Open Girder/Beam	Cracking	2 Feet
3314	Steel Open Girder/Beam	Corrosion	9 Feet
3350	Reinforced Concrete Abutment	Delamination/Spall	12 Feet
3350	Reinforced Concrete Abutment	Cracking (RC and Other)	1 Feet
3348	Prestressed Concrete Pile	Exposed Rebar	3 Feet
3348	Reinforced Concrete Pile	Patched Area	2 Feet
3348	Reinforced Concrete Pier Cap	Exposed Rebar	5 Feet
3334	Movable Bearing	Corrosion	14 Each
3334	Movable Bearing	Connection	2 Each
3334	Movable Bearing	Loss of Bearing Area	1 Each
3334	Fixed Bearing	Corrosion	9 Each
3318	Reinforced Concrete Bridge Railing	Delamination/Spall	7 Feet
3342	Steel Protective Coating	Effectiveness (Steel Protective Coatings)	2655 Square Feet

Element Structure Maintenance Quantities

Structure Number: 970068Inspection Date 07/30/2024

Location	MMS Code	Description	Maint Quantity	Total Quantity	Severe Quantity	Poor Quantity	Fair Quantity	Good Quantity
Beam	3314	Maintenance Steel Superstructure Components	12	776	3.000	46.000	706.000	21.000
Beam	3342	Clean and Paint Steel	2623	6472	3.000	2620.000	0.000	3849.000
Bearing Device	3334	Bridge Bearing	17	16	2.000	13.000	1.000	0.000
Bearing Device	3334	Bridge Bearing	9	16	0.000	9.000	7.000	0.000
Bearing Device	3342	Clean and Paint Steel	16	16	15.000	1.000	0.000	0.000
Bearing Device	3342	Clean and Paint Steel	15	15	8.000	5.000	2.000	0.000
Bearing Device	3342	Clean and Paint Steel	1	1	1.000	0.000	0.000	0.000
Bridge Rail	3318	Maintenance of Concrete Bridge Rail	7	390	0.000	4.000	6.000	380.000
Deck	3326	Maintenance of Concrete Deck	3	6130	0.000	2.000	5.000	6123.000
Expansion Joints	3310	Maintenance of Standard Bridge Expansion Joints	0	102	0.000	0.000	0.000	102.000
Ground Mounted Signs	3250	Install or Replace Ground Mounted Signs	0	4	0.000	0.000	0.000	4.000
Wearing Surfaces	2816	Asphalt Surface Repair	0	5474	0.000	0.000	0.000	5474.000
Abutments	3350	Maintenance of Concrete Wings and Wall	13	74	0.000	2.000	11.000	61.000
Caps	3348	Maintenance of Concrete Substructure	5	164	0.000	0.000	8.000	156.000
Piles and Columns	3348	Maintenance of Concrete Substructure	0	8	0.000	0.000	0.000	8.000
Piles and Columns	3348	Maintenance of Concrete Substructure	2	13	0.000	1.000	0.000	12.000
Approaches	3353	Maintenance of Concrete Bridge Approach Slabs	0		0.000	0.000	0.000	

Priority Actions Request

Structure Number 970068

Span 1

3334 Beam 4 Plate Girder

Priority Level	Defect Type	Quantity	Defect Description
3	Connection	1	Span 1 Beam 4 - Far Bearing: LEFT ANCHOR BOLT IS BROKEN (PAR)

Span2

3314 Beam 1 Plate Girder

Priority Level	Defect Type	Quantity	Defect Description
2	Damage	0	Span 2 Beam 1: APPROXIMATELY 5 FOOT LONG AREA OF IMPACT DAMAGE WITH MINOR SCRAPES, 4 INCH LONG X 1/2 INCH DEEP GOUGE IN LEFT BOTTOM FLANGE, BOTTOM FLANGE IS BOWED UPWARD APPROXIMATELY 3/16 INCH, AND WEB IS BOWED AWAY APPROXIMATELY 1/2 INCH FROM DIAPHRAGM FOR A LENGTH OF 10 INCHES. LOCATED AT FIRST DIAPHRAGM FROM BENT 1 (PAR)
3	Damage	3	Span 2 Beam 1: BEAM 1 IN SPAN 2 IS BOWED UPWARDS 3/16 INCH FOR A LENGTH OF 3 FEET (PAR)
3	Damage	1	Span 2 Beam 1: BEAM 1 IN SPAN 2 WEB IS BOWED AWAY FROM INTERMEDIATE DIAPHRAGM 1 IN BAY 1 FOR 1/2 INCH FOR A LENGTH OF 10 INCH (PAR)

Span3

3326 Deck Reinforced Concrete Deck

Priority Level	Defect Type	Quantity	Defect Description
2	Exposed Rebar	2	Span 3 Deck: TWO SPALLS WITH EXPOSED REBAR APPROXIMATELY 1 FOOT LONG X 5 INCH WIDE X 1/2 INCH DEEP WITH ADJACENT AREA OF DELAMINATION IN UNDERSIDE OF RIGHT OVERHANG, LOCATED AT DRAIN OVER RIGHT SHOULDER OF NORTHBOUND LANES (PAR)
3	Delamination/Spall	1	Span 3 Deck: APPROXIMATELY 1 FOOT LONG X 3 INCH WIDE AREA OF DELAMINATION IN RIGHT OVERHANG OVER CENTERLINE OF NORTHBOUND LANES - NCDOT NOTIFIED 8/13/2022 (PAR)

3334 Beam 1 Plate Girder

Priority Level	Defect Type	Quantity	Defect Description
3	Corrosion	1	Span 3 Beam 1 - Far Bearing: PACK RUST WITH HEAVY CORROSION, CORROSION WITH 100% SECTION LOSS ON ANCHOR BOLT NUTS. SECTION LOSS HAS INITIATED ON ANCHOR BOLTS (PAR)
2	Damage	0	Span 3 Beam 1: 1 3/4 INCH DEEP GOUGE TO BOTTOM FLANGE OF BEAM 1 IN SPAN 3, LOCATED 18 FEET 5 INCHES FROM EAST END OF BEAM (PAR)
2	Damage	0	Span 3 Beam 1: BOTTOM FLANGE OF BEAM 1 IN SPAN 3 IS BOWED UPWARDS 1/2 INCH FOR A LENGTH OF 4 FEET OVER RIGHT LANE (PAR)

3314 Beam 2 Plate Girder

? PAR Submitted
 1 Routine Maintenance
 2 Priority 24 Month
 3 Priority 12 Month
 4 Assigned Critical Find

Priority Actions Request

Structure Number 970068

Priority Level	Defect Type	Quantity	Defect Description
3	Damage	0	Span 3 Beam 2: 3 FOOT LONG AREA OF MODERATE IMPACT DAMAGE LOCATED 18 FEET FROM EAST END, BOTTOM FLANGE IS BOWED UPWARDS 1 1/4 INCH FOR A LENGTH OF 3 FEET, 1 3/4 INCH LONG X 1/4 INCH DEEP GOUGE IN BOTTOM FLANGE COVER PLATE, AND BEAM IS BOWED TOWARDS THE NORTH 1 3/4INCH (PAR)

3314 Beam 3 Plate Girder

Priority Level	Defect Type	Quantity	Defect Description
3	Damage	0	Span 3 Beam 3: 1 1/2 INCH LONG X 3/16 INCH DEEP GOUGE IN BOTTOM FLANGE COVER PLATE TO BEAM, BEAM IS BOWED UPWARDS 1/2 INCH FOR A LENGTH OF 2 FOOT 6 INCH LONG LOCATED 19 FEET FROM EAST END OF BEAM (PAR)

3314 Beam 4 Plate Girder

Priority Level	Defect Type	Quantity	Defect Description
3	Corrosion	1	Span 3 Beam 4: ACTIVE CORROSION IN RIGHT SIDE OF WEB AT NEAR END DIAPHRAGM, 8 INCH HIGH X 2 INCH WIDE WITH 1/8 INCH SECTION LOSS (1/2 INCH REMAINING) (PAR)
3	Damage	4	Span 3 Beam 4: 5/8 INCH WIDE X 3/16 INCH DEEP GOUGE IN BOTTOM FLANGE COVER PLATE, BEAM IS BOWED UPWARDS 1/2 INCH FOR A LENGTH OF 4 FEET LOCATED 19 FEET FROM EAST END OF BEAM. 4 1/2INCH LONG X 3/16 INCH DEEP INDENTION TO BOTTOM FLANGE COVER PLATE TO LOCATED 15 FEET FROM EAST END OF BEAM (PAR)
3	Connection	1	Span 3 Beam 4: BEAM 4 FAR BEARING EAST ANCHOR BOLT NUT NOT FULLY ENGAGED AND BOLT CORRODED WITH APPROXIMATELY 50% SECTION LOSS (PAR)

3318 Right Bridge Rail Concrete Railing

Priority Level	Defect Type	Quantity	Defect Description
2	Delamination/Spall	1	Span 3 Right Bridge Rail: SPALL 11 INCH HIGH X 8 INCH WIDE X 4 INCH DEEP, NO EXPOSED REBAR BOTTOM OF RAIL POST, FAR END (PAR)

Span4

3314 Beam 1 Plate Girder

Priority Level	Defect Type	Quantity	Defect Description
2	Corrosion	1	Span 4 Beam 1: 4 INCH LONG X FULL WIDTH CORROSION WITH SECTION LOSS ON LEFT BOTTOM FLANGE AT FAR END, 5/16 INCH THICKNESS REMAINING (PAR)

3334 Beam 2 Plate Girder

Priority Level	Defect Type	Quantity	Defect Description
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? PAR Submitted **1** Routine Maintenance **2** Priority 24 Month **3** Priority 12 Month **4** Assigned Critical Find

Priority Actions Request

Structure Number 970068

4

Loss of Bearing Area

1 Span 4 Beam 2 - Near Bearing: PAR: 7 INCH LONG X 4 INCH WIDE LOSS OF BEARING AREA UNDER RIGHT BOTTOM FLANGE DUE TO SEVERE CORROSION WITH SECTION LOSS OF BEARING PLATE. RIGHT ANCHOR BOLT IS CORRODED WITH 100 PERCENT SECTION LOSS - NCDOT NOTIFIED 8/13/2022 (PAR)

2

Corrosion

1 Span 4 Beam 2: 7 INCH LONG X 4 INCH WIDE OF CORROSION WITH SECTION LOSS DOWN TO 1/8 INCH THICKNESS REMAINING ON RIGHT BOTTOM FLANGE AT BENT 3, AVERAGE 7/16 INCH THICKNESS REMAINING (PAR)

3

Connection

1 Span 4 Beam 2 - Near Bearing: MINOR CORROSION TO BEARING. RIGHT ANCHOR BOLT FULLY CORRODED (PAR)

3314

Beam 4

Plate Girder

Priority
Level

Defect Type

Quantity

Defect Description

3

Corrosion

1 Span 4 Beam 4: 4 INCH LONG X FULL WIDTH CORROSION WITH SECTION LOSS ON LEFT BOTTOM FLANGE AT FAR END, 7/16 INCH THICKNESS REMAINING (PAR)

Bent 1

3348

Pile 1

Reinforced Concrete Pile

Priority
Level

Defect Type

Quantity

Defect Description

2

Delamination/Spall

0 Bent 1 Pile 1: EAST FACE AT 1 FOOT BELOW CAP UNSOUND PATCH 2 FEET HIGH UP TO 14 WIDE (PAR)

2

Patched Area

2 Bent 1 Pile 1: 12 INCH X 8 INCH X 5 INCH DEEP SPALL WITH EXPOSED REBAR ON WEST FACE AT TOP - DEFECT IS AN UNSOUND PATCH WITH A 13 INCHES WIDE X 3 FOOT HIGH AREA OF DELAMINATION ON WEST FACE, 1 FOOT BELOW CAP AS 8/18/2022 (PAR)

Slope Protection

3352

Slope
Protection

Slope Protection

Priority
Level

Defect Type

Quantity

Defect Description

2

48

AREA OF EROSION 11 FOOT LONG X 4 FOOT WIDE X UP TO 2 FOOT DEEP AT END BENT 2 UNDER BAY 3 (PAR)

3

12

AREA OF EROSION 22 INCH WIDE X 6 FEET LONG X UP TO 9 INCHES DEEEP UNDER LEFT BRACE PILE AT END BENT 1, BRACE PILE CAP IS UNDERMINED AND PILE IS EXPOSED UP TO 9 INCHES (PAR)

 PAR Submitted

 Routine Maintenance

 Priority 24 Month

 Priority 12 Month

 Assigned Critical Find

Inspection Date: 07/30/2024

Span 1			Beam 2				
Plate Girder							
Element Number	Element Name		Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
107	Steel Open Girder/Beam		42	0	42	0	0 Feet
515	Steel Protective Coating		348	168	0	180	0 Square Feet
Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty		
☒ 107	Corrosion	MINOR SURFACE CORROSION THROUGHOUT TOP AND BOTTOM FLANGE, INTERMITTENT TO FULL LENGTH SPOTS ON WEB	2	42		Feet	
☒ 515	Effectiveness (Steel Protective Coatings)	LIMITED EFFECTIVENESS	3	180	180	Square Feet	
General Comments							

Structure Number: 970068Inspection Date: 07/30/2024

Span 1

Beam 3

Plate Girder

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
107	Steel Open Girder/Beam	42	0	42	0	0	Feet
515	Steel Protective Coating	348	168	0	180	0	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 107	Corrosion	MINOR SURFACE CORROSION THROUGHOUT TOP AND BOTTOM FLANGE, INTERMITTENT TO FULL LENGTH SPOTS ON WEB	2	42		Feet
☒ 515	Effectiveness (Steel Protective Coatings)	LIMITED EFFECTIVENESS	3	180	180	Square Feet
General Comments						

Span 1

Beam 4

Plate Girder

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
107	Steel Open Girder/Beam	42	0	41	1	0	Feet
515	Steel Protective Coating	348	168	0	180	0	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 107	Corrosion	2 INCH LONG X FULL WIDTH AREA OF CORROSION WITH 1/8 INCH SECTION LOSS ON LEFT BOTTOM FLANGE AT FAR BEARING (1/2 INCH THICKNESS REMAINING) AND 1/16 INCH SECTION LOSS IN WEB AT DIAPHRAGM 2 INCH WIDE X 6 INCH HIGH (9/16 INCH REMAINING)	3	1	1	Feet
☒ 107	Corrosion	MINOR SURFACE CORROSION THROUGHOUT TOP AND BOTTOM FLANGE, INTERMITTENT TO FULL LENGTH SPOTS ON WEB	2	41		Feet
☒ 515	Effectiveness (Steel Protective Coatings)	LIMITED EFFECTIVENESS	3	180	180	Square Feet
General Comments						

Span 1

Wearing Surface

Asphalt Wearing Surface

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
510	Wearing Surface	1,193	1,193	0	0	0	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 510	Crack (Wearing Surface)	1/2INCH TO 1INCH WIDE OPEN MAP CRACKING (3 FOOTX FULL LENGTH), LEFT LANE LEFT WHEEL PATH - NOT OBSERVED AS OF 8/18/2022, DECK HAS BEEN RESURFACED	1	400		Square Feet
☒ 510	Delamination/Spall (Wearing Surfaces)	MODERATE ABRASION WITH MATERIAL LOSS (2 FOOTX FULL LENGTH X UP TO 1INCH), RIGHT WHEEL PATH - NOT OBSERVED AS OF 8/18/2022, DECK HAS BEEN RESURFACED	1	100		Square Feet

Inspection Date: 07/30/2024

General Comments

Concrete Railing

General Comments

Concrete Railing

General Comments

Fixed Bearing

General Comments

Structure Number: 970068

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Span 1			Far Bearing				
Movable Bearing							
Element Number	Element Name		Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
311	Movable Bearing		1	0	1	0	0 Each
515	Steel Protective Coating		1	0	0	1	0 Square Feet
Element Number	Defect Type	Defect Description	CS		CS Qty	Maint Qty	
☒ 311	Corrosion	MINOR CORROSION TO BEARING	2		1		Each
☒ 515	Effectiveness (Steel Protective Coatings)	LIMITED EFFECTIVENESS	3		1	1	Square Feet
General Comments							

Span 1			Near Bearing				
Fixed Bearing							
Element Number	Element Name		Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
313	Fixed Bearing		1	0	1	0	0 Each
515	Steel Protective Coating		1	0	1	0	0 Square Feet
Element Number	Defect Type	Defect Description			CS	CS Qty	Maint Qty
☒ 313	Corrosion	MINOR CORROSION AT EDGES OF BEARING			2	1	Each
☒ 515	Effectiveness (Steel Protective Coatings)	SUBSTANTIALLY EFFECTIVE			2	1	1 Square Feet
General Comments							

Span 1			Far Bearing				
Movable Bearing							
Element Number	Element Name		Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
311	Movable Bearing		1	0	0	1	0 Each
515	Steel Protective Coating		1	0	0	0	1 Square Feet
Element Number	Defect Type	Defect Description	CS		CS Qty	Maint Qty	
☒ 311	Corrosion	PACK RUST AND HEAVY CORROSION	3		1	1	Each
☒ 515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING	4		1	1	Square Feet
General Comments							

Span 1			Near Bearing				
Fixed Bearing							
Element Number	Element Name		Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
313	Fixed Bearing		1	0	1	0	0 Each
515	Steel Protective Coating		1	0	1	0	0 Square Feet
Element Number	Defect Type	Defect Description			CS	CS Qty	Maint Qty
☒ 313	Corrosion	MINOR CORROSION AT EDGES OF BEARING			2	1	Each

Inspection Date: 07/30/2024

☒	515	Effectiveness (Steel Protective Coatings)	SUBSTANTIALLY EFFECTIVE	2	1	1	Square Feet
General Comments							

Span 1 Far Bearing

Movable Bearing

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
311	Movable Bearing	1	0	0	1	0	Each
515	Steel Protective Coating	1	0	0	0	1	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 311	Corrosion	PACK RUST	3	1	1	Each
☒ 515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING	4	1	1	Square Feet
General Comments						

Span 1 Near Bearing

Fixed Bearing

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
313	Fixed Bearing	1	0	1	0	0	Each
515	Steel Protective Coating	1	0	0	1	0	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty
☒ 313	Corrosion	MINOR SCALE, NO MEASURABLE SECTION LOSS	2	1	Each
☒ 515	Effectiveness (Steel Protective Coatings)	LIMITED EFFECTIVENESS	3	1	1 Square Feet
General Comments					

Span 1 Far Bearing

Movable Bearing

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
311	Movable Bearing	1	0	0	1	0	Each
515	Steel Protective Coating	1	0	0	0	1	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 311	Connection	SPAN 1 BEAM 4 FAR BEARING: LEFT ANCHOR BOLT IS BROKEN (PAR)	3	1	1	Each
☒ 311	Corrosion	MINOR SCALE AND PACK RUST, NO MEASURABLE SECTION LOSS	3		1	Each
☒ 515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING	4	1	1	Square Feet
General Comments						

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Span 2

Deck

Reinforced Concrete Deck

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
12	Reinforced Concrete Deck	1,729	1,726	3	0	0	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 12	Patched Areas	UNDERSIDE OF DECK, SOUND PATCH, BAY 1 RIGHT OF BEAM 1, MID SPAN	2	3		Square Feet
☒ 12	Cracking (RC and Other)	HAIRLINE TRANSVERSE CRACKING ALONG UNDERSIDE IN ALL BAYS	1	850		Square Feet
General Comments						

Span 2

Beam 1

Plate Girder

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
107	Steel Open Girder/Beam	55	0	48	7	0	Feet
515	Steel Protective Coating	461	361	0	100	0	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 107	Damage	APPROXIMATELY 5 FOOT LONG AREA OF IMPACT DAMAGE WITH MINOR SCRAPES, 4 INCH LONG X 1/2 INCH DEEP GOUGE IN LEFT BOTTOM FLANGE, BOTTOM FLANGE IS BOWED UPWARD APPROXIMATELY 3/16 INCH, AND WEB IS BOWED AWAY APPROXIMATELY 1/2 INCH FROM DIAPHRAGM FOR A LENGTH OF 10 INCHES. LOCATED AT FIRST DIAPHRAGM FROM BENT 1 (PAR)	3	5		Feet
☒ 107	Damage	BEAM 1 IN SPAN 2 IS BOWED UPWARDS 3/16 INCH FOR A LENGTH OF 3 FEET (PAR)	3	1		Feet
☒ 107	Damage	BEAM 1 IN SPAN 2 WEB IS BOWED AWAY FROM INTERMEDIATE DIAPHRAGM 1 IN BAY 1 FOR 1/2 INCH FOR A LENGTH OF 10 INCH (PAR)	3	1		Feet
☒ 107	Corrosion	MINOR SURFACE CORROSION THROUGH OUT TOP AND BOTTOM FLANGE, INTERMITTENT TO FULL LENGTH SPOTS ON WEB	2	47		Feet
☒ 107	Damage	MINOR IMPACT DAMAGE ON LEFT BOTTOM FLANGE OVER LEFT LANE	2	1		Feet
☒ 515	Effectiveness (Steel Protective Coatings)	SCATTERED AREAS OF OF LIMITED EFFECTIVENESS, MIDSPAN TO FAR END	3	100	100	Square Feet
General Comments						

Span 2

Beam 2

Plate Girder

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
107	Steel Open Girder/Beam	55	0	55	0	0	Feet
515	Steel Protective Coating	461	271	0	190	0	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 107	Corrosion	MINOR SURFACE CORROSION THROUGHOUT TOP AND BOTTOM FLANGE, INTERMITTENT TO FULL LENGTH SPOTS ON WEB	2	53		Feet

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☒	107	Damage	BOTTOM FLANGE, MINOR SCRAPES TO BOTTOM FACE OVER RIGHT TRAVEL LANE	2	2	Feet	
☒	515	Effectiveness (Steel Protective Coatings)	LIMITED EFFECTIVENESS SCATTERED THROUGHOUT	3	190	190	Square Feet
General Comments							

Span 2		Beam 3					
Plate Girder							
Element Number	Element Name		Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
107	Steel Open Girder/Beam		55	0	55	0	0 Feet
515	Steel Protective Coating		461	271	0	190	0 Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 107	Corrosion	MINOR SURFACE CORROSION THROUGHOUT TOP AND BOTTOM FLANGE, INTERMITTENT TO FULL LENGTH SPOTS ON WEB	2	54		Feet
☒ 107	Damage	BOTTOM FLANGE, MINOR SCRAPES TO BOTTOM FACE (1 FOOT), 1/3 POINT OF SPAN, OVER RIGHT TRAVEL LANE	2	1		Feet
☒ 515	Effectiveness (Steel Protective Coatings)	LIMITED EFFECTIVENESS SCATTERED THROUGHOUT	3	190	190	Square Feet
General Comments						

Span 2			Beam 4				
Plate Girder							
Element Number	Element Name		Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
107	Steel Open Girder/Beam		55	0	54	1	0 Feet
515	Steel Protective Coating		461	271	0	190	0 Square Feet
Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty		
☒ 107	Corrosion	ACTIVE CORROSION IN WEB AT NEAR END DIAPHRAGM WITH 1/16 INCH SECTION LOSS, 2 INCHES WIDE X 8 INCHES HIGH (9/16 INCH REMAINING)	3	1	1	Feet	
☒ 107	Corrosion	MINOR SURFACE CORROSION THROUGHOUT TOP AND BOTTOM FLANGE, INTERMITTENT TO FULL LENGTH SPOTS ON WEB	2	54		Feet	
☒ 515	Effectiveness (Steel Protective Coatings)	LIMITED EFFECTIVENESS SCATTERED THROUGHOUT	3	190	190	Square Feet	
General Comments							

Span 2		Wearing Surface					
Asphalt Wearing Surface							
Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
510	Wearing Surface	1,544	1,544	0	0	0	Square Feet
Element Number	Defect Type	Defect Description		CS	CS Qty	Maint Qty	

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☒	510	Crack (Wearing Surface)	1/4INCH WIDE OPEN MAP CRACKING LEFT LANE LEFT WHEEL PATH - NOT OBSERVED AS OF 8/18/2022, DECK HAS BEEN RESURFACED	1	400	Square Feet
☒	510	Delamination/Spall (Wearing Surfaces)	MODERATE ABRASION WITH MATERIAL LOSS (2FOOTX FULL LENGTH X UP TO 1INCH), RIGHT WHEEL PATH - NOT OBSERVED AS OF 8/18/2022, DECK HAS BEEN RESURFACED	1	130	Square Feet
☒	510	Patched Area/Pothole (Wearing Surface)	PATCHED AREA OVER BENT 1 - NOT OBSERVED AS OF 8/18/2022, DECK HAS BEEN RESURFACED	1	50	Square Feet

General Comments

Span 2 Left Bridge Rail

Concrete Railing

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
331	Reinforced Concrete Bridge Railing	55	54	0	1	0 Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty
☒ 331	Delamination/Spall	3 INCH LONG X 4 INCH WIDE X 2 INCH DEEP SPALL AND DELAMINATION ON TOP EXTERIOR CORNER OF THIRD RAIL POST FROM BENT 1	3	1	1 Feet
☒ 331	Cracking (RC and Other)	HAIRLINE WRAP AROUND CRACKS IN CURB	1	10	Feet

General Comments

Span 2 Right Bridge Rail

Concrete Railing

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
331	Reinforced Concrete Bridge Railing	55	52	1	2	0 Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty
☒ 331	Delamination/Spall	7 INCH LONG X 3 INCH HIGH X 1/2 INCH DEEP SPALL WITH EXPOSED REBAR ON SOUTHWEST CORNER OF RAIL POST AT FAR END	3	1	1 Feet
☒ 331	Delamination/Spall	SPALL 8 INCH LONG X 4 INCH WIDE X 2 INCH DEEP, TOP OF RAIL POST AT FAR END	3	1	1 Feet
☒ 331	Delamination/Spall	RAIL POST AT FAR END, SPALL WITH EXPOSED REBAR 4 INCH HIGH X 4 INCH WIDE X 1/2 INCH DEEP AT BASE ON SOUTH FACE	2	1	1 Feet
☒ 331	Cracking (RC and Other)	HAIRLINE WRAP AROUND CRACKS IN CURB	1	10	Feet

General Comments

Span 2 Near Bearing

Fixed Bearing

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
313	Fixed Bearing	1	0	0	1	0 Each
515	Steel Protective Coating	1	0	0	0	1 Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty
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✓ 313	Corrosion	PACK RUST AND HEAVY CORROSION	3	1	1 Each
✓ 515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING	4	1	1 Square Feet
General Comments					

Span 2	Far Bearing
Movable Bearing	

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
311	Movable Bearing	1	0	0	1	0	Each
515	Steel Protective Coating	1	0	0	0	1	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 311	Corrosion	PACK RUST AND HEAVY CORROSION WITH SECTION LOSS ON RIGHT AND LEFT SIDES, UP TO 5 INCH LONG X 1/4 INCH WIDE X 1/4 INCH HIGH WITH AVERAGE 3/4 INCH THICKNESS REMAINING ON MASONRY PLATE	3	1	1	Each
☒ 515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING	4	1	1	Square Feet
General Comments						

Span 2	Near Bearing
Fixed Bearing	

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
313	Fixed Bearing	1	0	0	1	0	Each
515	Steel Protective Coating	1	0	0	0	1	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 313	Corrosion	PACK RUST AND HEAVY CORROSION	3	1	1	Each
☒ 515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING	4	1	1	Square Feet
General Comments						

Span 2	Far Bearing
Movable Bearing	

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
311	Movable Bearing	1	0	0	1	0	Each
515	Steel Protective Coating	1	0	0	0	1	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 311	Corrosion	PACK RUST AND HEAVY CORROSION, , SECTION LOSS HAS INITIATED	3	1	1	Each
☒ 515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING	4	1	1	Square Feet
General Comments						

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Span 2

Near Bearing

Fixed Bearing

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
313	Fixed Bearing	1	0	0	1	0	Each
515	Steel Protective Coating	1	0	0	0	1	Square Feet
Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty		
☒ 313	Corrosion	PACK RUST AND HEAVY CORROSION	3	1	1	Each	
☒ 515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING	4	1	1	Square Feet	
General Comments							

Span 2

Far Bearing

Movable Bearing

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
311	Movable Bearing	1	0	0	1	0	Each
515	Steel Protective Coating	1	0	0	0	1	Square Feet
Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty		
☒ 311	Corrosion	PACK RUST AND HEAVY CORROSION, , SECTION LOSS HAS INITIATED	3	1	1	Each	
☒ 515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING	4	1	1	Square Feet	
General Comments							

Span 2

Near Bearing

Fixed Bearing

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
313	Fixed Bearing	1	0	0	1	0	Each
515	Steel Protective Coating	1	0	0	0	1	Square Feet
Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty		
☒ 313	Corrosion	PACK RUST AND HEAVY CORROSION	3	1	1	Each	
☒ 515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING	4	1	1	Square Feet	
General Comments							

Span 2

Far Bearing

Movable Bearing

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
311	Movable Bearing	1	0	0	1	0	Each
515	Steel Protective Coating	1	0	0	0	1	Square Feet
Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty		
☒ 311	Corrosion	HEAVY CORROSION AND PACK RUST BETWEEN PLATES, SECTION LOSS HAS INITIATED	3	1	1	Each	

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☒	515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING	4	1	1 Square Feet
General Comments						

Span 3

Deck

Reinforced Concrete Deck

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
12	Reinforced Concrete Deck	1,729	1,725	2	2	0	Square Feet
Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty		
☒ 12	Exposed Rebar	TWO SPALLS WITH EXPOSED REBAR APPROXIMATELY 1 FOOT LONG X 5 INCH WIDE X 1/2 INCH DEEP WITH ADJACENT AREA OF DELAMINATION IN UNDERSIDE OF RIGHT OVERHANG, LOCATED AT DRAIN OVER RIGHT SHOULDER OF NORTHBOUND LANES (PAR)	3	2	2		Square Feet
☒ 12	Damage	MINOR IMPACT DAMAGE ON UNDERSIDE AT 2ND DIAPHRAGM, LEFT OF BEAM 4 AND BOTH SIDES OF BEAM 1	2	1			Square Feet
☒ 12	Delamination/Spall	APPROXIMATELY 1 FOOT LONG X 3 INCH WIDE AREA OF DELAMINATION IN RIGHT OVERHANG OVER CENTERLINE OF NORTHBOUND LANES - NCDOT NOTIFIED 8/13/2022 (PAR)	2	1	1		Square Feet
☒ 12	Cracking (RC and Other)	HAIRLINE MAP CRACKING ALONG UNDERSIDE IN ALL BAYS	1	850			Square Feet
General Comments							

Span 3

Beam 1

Plate Girder

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
107	Steel Open Girder/Beam	55	15	35	5	0	Feet
515	Steel Protective Coating	461	281	0	180	0	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 107	Damage	1 3/4 INCH DEEP GOUGE TO BOTTOM FLANGE OF BEAM 1 IN SPAN 3, LOCATED 18 FEET 5 INCHES FROM EAST END OF BEAM (PAR)	3	1		Feet
☒ 107	Damage	BOTTOM FLANGE OF BEAM 1 IN SPAN 3 IS BOWED UPWARDS 1/2 INCH FOR A LENGTH OF 4 FEET OVER RIGHT LANE (PAR)	3	4		Feet
☒ 107	Corrosion	MINOR SURFACE CORROSION THROUGHOUT TOP AND BOTTOM FLANGE, INTERMITTENT TO FULL LENGTH SPOTS ON WEB ALONG SECTION OF REPAIRED AREAS OF PREVIOUS DAMAGE	2	35		Feet
☒ 515	Effectiveness (Steel Protective Coatings)	LIMITED EFFECTIVENESS SCATTERED THROUGHOUT	3	180	180	Square Feet
General Comments						

BAY 1 DIAPHRAGM GUSSET PLATE AT BEAM 2 IS DEFORMED FROM IMPACT DAMAGE (SEE PHOTO)

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Span 3			Beam 3				
Plate Girder							
Element Number	Element Name		Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
107	Steel Open Girder/Beam		55	5	45	5	0 Feet
515	Steel Protective Coating		461	271	0	190	0 Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty
☒ 107	Cracking	7 INCH LONG X 3 INCH WIDE X 1 DEEP SPALL WITH EXPOSED REBAR ON UNDERSIDE OF DIAPHRAGM IN BAY 3 AT BENT 3, 1 FOOT 6 INCHES FROM BEAM 3	3		1 Feet
☒ 107	Damage	1 1/2 INCH LONG X 3/16 INCH DEEP GOUGE IN BOTTOM FLANGE COVER PLATE TO BEAM, BEAM IS BOWED UPWARDS 1/2 INCH FOR A LENGTH OF 2 FOOT 6 INCH LONG LOCATED 19 FEET FROM EAST END OF BEAM (PAR)	3	3	Feet
☒ 107	Damage	BEAM 3 IN SPAN 3 IS BOWED UPWARDS 1/2INCH FOR A LENGTH OF 2 1/2 FEET LONG. (PAR)	3	2	Feet
☒ 107	Corrosion	MINOR SURFACE CORROSION THROUGH OUT TOP AND BOTTOM FLANGE, INTERMITTENT TO FULL LENGTH SPOTS ON WEB	2	45	Feet
☒ 515	Effectiveness (Steel Protective Coatings)	LIMITED EFFECTIVENESS THROUGHOUT	3	190	190 Square Feet
General Comments					

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Span 3

Beam 4

Plate Girder

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
107	Steel Open Girder/Beam	55	0	44	11	0	Feet
515	Steel Protective Coating	461	271	0	190	0	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 107	Corrosion	ACTIVE CORROSION IN RIGHT SIDE OF WEB AT NEAR END DIAPHRAGM, 8 INCH HIGH X 2 INCH WIDE WITH 1/8 INCH SECTION LOSS (1/2 INCH REMAINING) (PAR)	3	1	1	Feet
☒ 107	Corrosion	ACTIVE CORROSION IN WEB AT FAR END DIAPHRAGM, 8 INCHES HIGH X 1.5 INCHES WIDE WITH 1/16 INCH SECTION LOSS (9/16 INCH REMAINING)	3	1	1	Feet
☒ 107	Damage	4 1/2 INCH LONG X 3/16 INCH DEEP INDENTION TO BOTTOM FLANGE COVER PLATE TO BEAM 3 IN SPAN 3. LOCATED 15FT FROM EAST END OF BEAM. (PAR)	3	1		Feet
☒ 107	Damage	5/8 INCH WIDE X 3/16 INCH DEEP GOUGE IN BOTTOM FLANGE COVER PLATE, BEAM IS BOWED UPWARDS 1/2 INCH FOR A LENGTH OF 4 FEET LOCATED 19 FEET FROM EAST END OF BEAM. 4 1/2 INCH LONG X 3/16 INCH DEEP INDENTION TO BOTTOM FLANGE COVER PLATE TO LOCATED 15 FEET FROM EAST END OF BEAM (PAR)	3	4		Feet
☒ 107	Damage	BEAM 4 IN SPAN 3 IS BOWED UPWARDS 1/2 INCH FOR A LENGTH OF 4 FT. CONSOLIDATE	3	4		Feet
☒ 107	Connection	BEAM 4 FAR BEARING EAST ANCHOR BOLT NUT NOT FULLY ENGAGED AND BOLT CORRODED WITH APPROXIMATELY 50% SECTION LOSS (PAR)	2	1	1	Feet
☒ 107	Corrosion	MINOR SURFACE CORROSION THROUGH OUT TOP AND BOTTOM FLANGE, INTERMITTENT TO FULL LENGTH SPOTS ON WEB	2	43		Feet
☒ 515	Effectiveness (Steel Protective Coatings)	LIMITED EFFECTIVENESS SCATTERED THROUGHOUT	3	190	190	Square Feet
General Comments						

Span 3

Wearing Surface

Asphalt Wearing Surface

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
510	Wearing Surface	1,544	1,544	0	0	0	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 510	Crack (Wearing Surface)	1/4 INCH WIDE OPEN MAP CRACKING LEFT LANE LEFT WHEEL PATH - NOT OBSERVED AS OF 8/18/2022, DECK HAS BEEN RESURFACED	1	400		Square Feet
☒ 510	Delamination/Spall (Wearing Surfaces)	MINOR SPALLING (10 INCH X 6 INCH X 1/2 INCH), CENTER OF RIGHT LANE - NOT OBSERVED AS OF 8/18/2022, DECK HAS BEEN RESURFACED	1	1		Square Feet
☒ 510	Delamination/Spall (Wearing Surfaces)	OVER BENT 2, MINOR SHOVING OF PATCH MATERIAL IN OUTSIDE WHEEL PATHS (8 SQUARE FEET) - NOT OBSERVED AS OF 8/18/2022, DECK HAS BEEN RESURFACED	1	8		Square Feet

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☒	510	Delamination/Spall (Wearing Surfaces)	SPALL (4 INCH DIAMETER X 1 INCH), RIGHT LANE, RIGHT WHEEL PATH AT MID SPAN - NOT OBSERVED AS OF 8/18/2022, DECK HAS BEEN RESURFACED	1	1	Square Feet
☒	510	Patched Area/Pothole (Wearing Surface)	3 INCH WIDE X 7 FOOT LONG VOID AT BENT 2 LEFT LANE - NOT OBSERVED AS OF 8/18/2022, DECK HAS BEEN RESURFACED	1	7	Square Feet
☒	510	Patched Area/Pothole (Wearing Surface)	POTHOLE IN RIGHT LANE AT BENT 3 4 INCH WIDE - NOT OBSERVED AS OF 8/18/2022, DECK HAS BEEN RESURFACED	1	8	Square Feet

General Comments

Span 3 Left Bridge Rail

Concrete Railing

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
331	Reinforced Concrete Bridge Railing	55	53	2	0	0	Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒	331	Cracking (RC and Other)	(4) VERTICAL CRACKS UP TO 11 INCH LONG X 1/32 INCH WIDE, SOME WITH EFFLORESCENCE, IN 5TH SUPPORT BLOCK FROM NEAR END	2	2	Feet
☒	331	Cracking (RC and Other)	HAIRLINE WRAP AROUND CRACKS IN CURB	1	10	Feet

General Comments

Span 3 Right Bridge Rail

Concrete Railing

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
331	Reinforced Concrete Bridge Railing	55	53	1	1	0	Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒	331	Delamination/Spall	SPALL 11 INCH HIGH X 8 INCH WIDE X 4 INCH DEEP, NO EXPOSED REBAR BOTTOM OF RAIL POST, FAR END (PAR)	3	1	1 Feet
☒	331	Cracking (RC and Other)	0.03 INCH WIDE DIAGONAL CRACK WITH EFFLORESCENCE ON EAST AND WEST FACE OF SUPPORT BLOCK AT POST 8	2	1	Feet
☒	331	Cracking (RC and Other)	HAIRLINE WRAP AROUND CRACKS IN CURB	1	10	Feet

General Comments

Span 3 Near Bearing

Fixed Bearing

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
313	Fixed Bearing	1	0	0	1	0	Each
515	Steel Protective Coating	1	0	0	0	1	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒	313	Corrosion	PACK RUST WITH HEAVY CORROSION	3	1	1 Each

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515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING	4	1	1 Square Feet
General Comments					

Span 3	Far Bearing
Movable Bearing	

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
311	Movable Bearing	1	0	0	0	1	Each
515	Steel Protective Coating	1	0	0	0	1	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 311	Corrosion	PACK RUST WITH HEAVY CORROSION, CORROSION WITH 100% SECTION LOSS ON ANCHOR BOLT NUTS. SECTION LOSS HAS INITIATED ON ANCHOR BOLTS (PAR)	4	1	1	Each
☒ 515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING	4	1	1	Square Feet
General Comments						

Span 3	Near Bearing
Fixed Bearing	

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
313	Fixed Bearing	1	0	0	1	0	Each
515	Steel Protective Coating	1	0	0	0	1	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 313	Corrosion	PACK RUST AND HEAVY CORROSION	3	1	1	Each
☒ 515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING	4	1	1	Square Feet
General Comments						

Span 3	Far Bearing
Movable Bearing	

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
311	Movable Bearing	1	0	0	1	0	Each
515	Steel Protective Coating	1	0	0	0	1	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 311	Corrosion	PACK RUST AND HEAVY CORROSION, SECTION LOSS HAS INITIATED	3	1	1	Each
☒ 515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING	4	1	1	Square Feet
General Comments						

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Span 3			Near Bearing				
Fixed Bearing							
Element Number	Element Name		Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
313	Fixed Bearing		1	0	0	1	0 Each
515	Steel Protective Coating		1	0	0	0	1 Square Feet
Element Number	Defect Type	Defect Description			CS	CS Qty	Maint Qty
☒ 313	Corrosion	PACK RUST AND HEAVY CORROSION			3	1	1 Each
☒ 515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING			4	1	1 Square Feet
General Comments							

Span 3			Far Bearing				
Movable Bearing							
Element Number	Element Name		Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
311	Movable Bearing		1	0	0	1	0 Each
515	Steel Protective Coating		1	0	0	0	1 Square Feet
Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty		
☒ 311	Corrosion	PACK RUST AND HEAVY CORROSION, SECTION LOSS HAS INITIATED	3	1	1	Each	
☒ 515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING	4	1	1	Square Feet	
General Comments							

Span 3			Near Bearing				
Fixed Bearing							
Element Number	Element Name		Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
313	Fixed Bearing		1	0	0	1	0 Each
515	Steel Protective Coating		1	0	0	0	1 Square Feet
Element Number	Defect Type	Defect Description			CS	CS Qty	Maint Qty
☒ 313	Corrosion	PACK RUST AND HEAVY CORROSION			3	1	1 Each
☒ 515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING			4	1	1 Square Feet
General Comments							

Span 3		Far Bearing					
Movable Bearing							
Element Number	Element Name		Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
311	Movable Bearing		1	0	0	1	0 Each
515	Steel Protective Coating		1	0	0	0	1 Square Feet
Element Number	Defect Type	Defect Description			CS	CS Qty	Maint Qty

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☒	311	Corrosion	PACK RUST AND HEAVY CORROSION, CRACKED WELD ON RIGHT SIDE OF BEARING AND MASONRY PLATE	3	1	1	Each
☒	515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING	4	1	1	Square Feet
General Comments							

Span 4 Deck

Reinforced Concrete Deck

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
12	Reinforced Concrete Deck	1,336	1,336	0	0	0	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 12	Cracking (RC and Other)	HAIRLINE MAP CRACKING ALONG UNDERSIDE IN ALL BAYS	1	650		Square Feet
General Comments						

Span 4 Beam 1

Plate Girder

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
107	Steel Open Girder/Beam	42	0	41	0	1	Feet
515	Steel Protective Coating	348	227	0	120	1	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 107	Corrosion	4 INCH LONG X FULL WIDTH CORROSION WITH SECTION LOSS ON LEFT BOTTOM FLANGE AT FAR END, 5/16 INCH THICKNESS REMAINING (PAR)	4	1	1	Feet
☒ 107	Corrosion	SURFACE RUST ALONG BOTH TOP AND BOTTOM FLANGES AND WEB THROUGHOUT	2	41		Feet
☒ 515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING AT AREA OF SECTION LOSS	4	1	1	Square Feet
☒ 515	Effectiveness (Steel Protective Coatings)	LIMITED EFFECTIVENESS THROUGHOUT	3	120	120	Square Feet
General Comments						

Span 4 Beam 2

Plate Girder

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
107	Steel Open Girder/Beam	42	0	41	0	1	Feet
515	Steel Protective Coating	348	227	0	120	1	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 107	Corrosion	7 INCH LONG X 4 INCH WIDE OF CORROSION WITH SECTION LOSS DOWN TO 1/8 INCH THICKNESS REMAINING ON RIGHT BOTTOM FLANGE AT BENT 3, AVERAGE 7/16 INCH THICKNESS REMAINING (PAR)	4	1	1	Feet
☒ 107	Corrosion	ACTIVE CORROSION IN WEB RIGHT SIDE AT NEAR END DIAPHRAGM, 8 INCHES HIGH X 1.25 INCH WIDE WITH 1/16 INCH SECTION LOSS (9/16 INCH REMAINING)	2	1		Feet

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Span 4

Wearing Surface

Asphalt Wearing Surface

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
510	Wearing Surface	1,193	1,193	0	0	0	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 510	Crack (Wearing Surface)	1/4 INCH WIDE OPEN MAP CRACKING LEFT LANE LEFT WHEEL PATH - NOT OBSERVED AS OF 8/18/2022, DECK HAS BEEN RESURFACED	1	400		Square Feet
☒ 510	Crack (Wearing Surface)	UP TO 1/2 INCH WIDE X FULL ROADWAY WIDTH TRANSVERSE CRACK OVER BENT 3 [REPAIRED 2024 INSPECTION]	1			Square Feet
☒ 510	Patched Area/Pothole (Wearing Surface)	9 INCH DIAMETER X 2 INCH DEEP POTHOLE AND 5 FOOT X 3 FOOT PATCHED AREA IN RIGHT LANE - NOT OBSERVED AS OF 8/18/2022, DECK HAS BEEN RESURFACED	1	16		Square Feet
☒ 510	Patched Area/Pothole (Wearing Surface)	SOUND FULL WIDTH x 2 FOOT PATCH OVER BENT 3 - NOT OBSERVED AS OF 8/18/2022, DECK HAS BEEN RESURFACED	1	100		Square Feet
☒ 510	Patched Area/Pothole (Wearing Surface)	SOUND PATCH, (FULL WIDTH x 2 FOOT) OVER END BENT 2 - NOT OBSERVED AS OF 8/18/2022, DECK HAS BEEN RESURFACED	1	100		Square Feet

General Comments

Span 4

Left Bridge Rail

Concrete Railing

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
331	Reinforced Concrete Bridge Railing	43	41	2	0	0	Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 331	Delamination/Spall	5 INCH LONG X 5 INCH WIDE X 1 INCH DEEP SPALL ON TOP OF POST 5 (SAME ON POST 8)	2	2	2	Feet
☒ 331	Cracking (RC and Other)	HAIRLINE WRAP AROUND CRACKS IN CURB	1	11		Feet

General Comments

Span 4

Right Bridge Rail

Concrete Railing

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
331	Reinforced Concrete Bridge Railing	43	43	0	0	0	Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 331	Cracking (RC and Other)	HAIRLINE WRAP AROUND CRACKS IN CURB	1	11		Feet

General Comments

Inspection Date: 07/30/2024

Span 4		Near Bearing				
Movable Bearing						
Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
311	Movable Bearing	1	0	0	0	1 Each
515	Steel Protective Coating	1	0	0	0	1 Square Feet
Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 311	Loss of Bearing Area	7 INCH LONG X 4 INCH WIDE LOSS OF BEARING AREA UNDER RIGHT BOTTOM FLANGE DUE TO SEVERE CORROSION WITH SECTION LOSS OF BEARING PLATE. RIGHT ANCHOR BOLT IS CORRODED WITH 100 PERCENT SECTION LOSS - NCDOT NOTIFIED 8/13/2022 (PAR)	4	1	1	Each
☒ 311	Connection	MINOR CORROSION TO BEARING. RIGHT ANCHOR BOLT FULLY CORRODED (PAR)	3		1	Each
☒ 515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING	4	1	1	Square Feet
General Comments						

Structure Number: 970068

Inspection Date: 07/30/2024

Span 4		Far Bearing					
Fixed Bearing							
Element Number	Element Name		Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
313	Fixed Bearing		1	0	1	0	0 Each
515	Steel Protective Coating		1	0	0	1	0 Square Feet
Element Number	Defect Type	Defect Description			CS	CS Qty	Maint Qty
☒ 313	Corrosion	MINOR CORROSION AT EDGES OF BEARING			2	1	Each
☒ 515	Effectiveness (Steel Protective Coatings)	LIMITED EFFECTIVENESS			3	1	1 Square Feet
General Comments							

Span 4			Near Bearing				
Movable Bearing							
Element Number	Element Name		Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
311	Movable Bearing		1	0	0	1	0 Each
515	Steel Protective Coating		1	0	0	0	1 Square Feet
Element Number	Defect Type	Defect Description			CS	CS Qty	Maint Qty
☒ 311	Corrosion	PACK RUST AND HEAVY CORROSION			3	1	1 Each
☒ 515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING			4	1	1 Square Feet
General Comments							

Span 4			Far Bearing				
Fixed Bearing							
Element Number	Element Name		Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
313	Fixed Bearing		1	0	1	0	0 Each
515	Steel Protective Coating		1	0	0	1	0 Square Feet
Element Number	Defect Type	Defect Description			CS	CS Qty	Maint Qty
☒ 313	Corrosion	MINOR CORROSION AT EDGES OF BEARING			2	1	Each
☒ 515	Effectiveness (Steel Protective Coatings)	LIMITED EFFECTIVENESS			3	1	1 Square Feet
General Comments							

Span 4			Near Bearing				
Movable Bearing							
Element Number	Element Name		Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
311	Movable Bearing		1	0	0	1	0 Each
515	Steel Protective Coating		1	0	0	0	1 Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty
☒ 311	Corrosion	PACK RUST AND HEAVY CORROSION	3	1	1 Each

Structure Number: 970068Inspection Date: 07/30/2024

☒	515	Effectiveness (Steel Protective Coatings)	FAILED PROTECTIVE COATING	4	1	1	Square Feet
General Comments							

Span 4 Far Bearing

Fixed Bearing

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
313	Fixed Bearing	1	0	1	0	0	Each
515	Steel Protective Coating	1	0	0	1	0	Square Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 313	Corrosion	MINOR SCALE, NO MEASURABLE SECTION LOSS	2	1		Each
☒ 515	Effectiveness (Steel Protective Coatings)	LIMITED EFFECTIVENESS	3	1	1	Square Feet
General Comments						

Bent 1 Cap 1

Reinforced Concrete Pier Cap

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
234	Reinforced Concrete Pier Cap	30	30	0	0	0	Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 234	Cracking (RC and Other)	1/32 INCH VERTICAL CRACKING ON BOTH FACES	1	5		Feet
General Comments						

Bent 1 Pile 1

Prestressed Concrete Pile

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☐ 226	Exposed Rebar	PAR: 12" X 8" X 5" DEEP SPALL WITH EXPOSED REBAR ON WEST FACE AT TOP	3		1	Each
☐ 226	Exposed Rebar	PAR: 22" X 8" X 1" DEEP SPALL WITH EXPOSED REBAR ON EAST FACE AT BARRIER RAIL	3	1	2	Each
General Comments						

Bent 1 Pile 1

Reinforced Concrete Pile

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
227	Reinforced Concrete Pile	1	0	0	1	0	Each

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 227	Delamination/Spall	EAST FACE AT 1 FOOT BELOW CAP UNSOUND PATCH 2 FEET HIGH UP TO 14 WIDE (PAR)	3			Each

Inspection Date: 07/30/2024

General Comments

Pile 3

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
227	Reinforced Concrete Pile	1	1	0	0	0	Each

General Comments

Pile 4

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
227	Reinforced Concrete Pile	1	1	0	0	0	Each

General Comments

Abutment

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
215	Reinforced Concrete Abutment	37	31	6	0	0	Feet

General Comments

Inspection Date: 07/30/2024

Cap 1

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
234	Reinforced Concrete Pier Cap	30	25	5	0	0	Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 234	Exposed Rebar	SCATTERED SPALLS WITH EXPOSED REBAR UP TO 1 INCH DIAMETER X 1/2 INCH DEEP IN UNDERSIDE OF CAP	2	5	5	Feet
☒ 234	Cracking (RC and Other)	1/32 INCH VERTICAL CRACKING ON BOTH FACES - NOT OBSERVED AS OF 8/18/2022	1	5		Feet
General Comments						

Pile 1

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
227	Reinforced Concrete Pile	1	1	0	0	0	Each

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 227	Cracking (RC and Other)	FULL PERIMETER HAIRLINE MAP CRACKING UP TO 3 FOOT HIGH AT BASE OF PILE	1	1		Each
General Comments						

Pile 2

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
227	Reinforced Concrete Pile	1	1	0	0	0	Each

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 227	Cracking (RC and Other)	FULL PERIMETER HAIRLINE MAP CRACKING UP TO 3 FOOT HIGH AT BASE OF PILE	1	1		Each
General Comments						

Pile 3

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
227	Reinforced Concrete Pile	1	1	0	0	0	Each

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 227	Cracking (RC and Other)	FULL PERIMETER HAIRLINE MAP CRACKING UP TO 3 FOOT HIGH AT BASE OF PILE	1	1		Each
General Comments						

Inspection Date: 07/30/2024

Pile 4

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
227	Reinforced Concrete Pile	1	1	0	0	0	Each

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 227	Cracking (RC and Other)	FULL PERIMETER HAIRLINE MAP CRACKING UP TO 3 FOOT HIGH AT BASE OF PILE	1	1		Each
General Comments						

Pile 5

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
227	Reinforced Concrete Pile	1	1	0	0	0	Each

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 227	Cracking (RC and Other)	VERTICAL CRACK 8 FEET LONG X UP TO 1/32 INCH WIDE AT SOUTHWEST CORNER EXTENDING UP FROM GROUNDLINE	2	1		Each
☒ 227	Cracking (RC and Other)	FULL PERIMETER HAIRLINE MAP CRACKING UP TO 3 FOOT HIGH AT BASE OF PILE	1	1		Each
General Comments						

Abutment

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
215	Reinforced Concrete Abutment	37	30	5	2	0	Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 215	Cracking (RC and Other)	1 FOOT LONG X 4 INCH HIGH AREA OF DELAMINATION WITH 1/4 INCH WIDE CRACKING, ADJACENT TO LEFT BOTTOM FLANGE OF BEAM 2	3	1	1	Feet
☒ 215	Delamination/Spall	SPALL WITH EXPOSED REBAR (1 FOOT HIGH X 6 INCH WIDE X 3 INCH DEEP) TOP CORNER LEFT OF BEAM 2	3	1	1	Feet
☒ 215	Delamination/Spall	1 FOOT 3 INCH HIGH X 7 INCH WIDE AREA OF DELAMINATION ADJACENT TO LEFT BOTTOM FLANGE OF BEAM 4	2	1	1	Feet
☒ 215	Delamination/Spall	1 FOOT 6 INCH HIGH X 9 INCH WIDE AREA OF DELAMINATION ADJACENT TO LEFT TOP FLANGE OF BEAM 3, 2 FOOT 9 INCH HIGH X 9 INCH WIDE AREA OF DELAMINATION ADJACENT TO RIGHT TOP FLANGE OF BEAM 3	2	3	3	Feet
☒ 215	Delamination/Spall	1 FOOT LONG X 11 INCH HIGH AREA OF DELAMINATION ADJACENT RIGHT TOP FLANGE OF BEAM 2	2	1	1	Feet
General Comments						

Inspection Date: 07/30/2024

Cap 1

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
234	Reinforced Concrete Pier Cap	30	27	3	0	0	Feet

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 234	Cracking (RC and Other)	0.007 INCH WIDE X FULL-WIDTH TRANSVERSE CRACK IN UNDERSIDE OF CAP LEFT OF PILE 3	2	1		Feet
☒ 234	Cracking (RC and Other)	0.03 INCH WIDE X 18 INCH LONG IN EAST FACE OF CAP ABOVE PILE 3 VERIFIED AT AREA OF DELAMINATION 20 INCHES LONG X 2 INCHES HIGH X 4 INCHES WIDE ON LOWER EDGE	2	2		Feet
☒ 234	Cracking (RC and Other)	HAIRLINE VERTICAL CRACKING ON BOTH FACES	1	4		Feet
General Comments						

Pile 1

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
227	Reinforced Concrete Pile	1	1	0	0	0	Each

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 227	Cracking (RC and Other)	HAIRLINE MAP CRACKING ON NORTHEAST CORNER (2 FOOT HEIGHT), BASE OF PILE	1	1		Each
General Comments						

Pile 2

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
227	Reinforced Concrete Pile	1	1	0	0	0	Each

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 227	Cracking (RC and Other)	0.010 INCH WIDE HORIZONTAL CRACK IN EAST FACE, 3 FEET 6 INCHES UP FROM GROUND	1	1		Each
General Comments						

Pile 3

Element Number	Element Name	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty	
227	Reinforced Concrete Pile	1	1	0	0	0	Each

Element Number	Defect Type	Defect Description	CS	CS Qty	Maint Qty	
☒ 227	Cracking (RC and Other)	FULL PERIMETER 1/64 INCH MAP CRACKING (2 FOOT HEIGHT), BASE OF PILE - NOT OBSERVED AS OF 8/18/2022 [DID NOT OBSERVE 2024 INSPECTION]	1			Each
General Comments						

Elements Verified

Location	Name	Component	Element Name	Amount
Span 1	Deck	Reinforced Concrete Deck	Reinforced Concrete Deck	1336
Span 1	Beam 1	Plate Girder	Steel Open Girder/Beam	42
Span 1	Beam 2	Plate Girder	Steel Open Girder/Beam	42
Span 1	Beam 3	Plate Girder	Steel Open Girder/Beam	42
Span 1	Beam 4	Plate Girder	Steel Open Girder/Beam	42
Span 1	Left Bridge Rail	Concrete Railing	Reinforced Concrete Bridge Railing	42
Span 1	Right Bridge Rail	Concrete Railing	Reinforced Concrete Bridge Railing	42
Span 1	Wearing Surface	Asphalt Wearing Surface	Wearing Surface	1193
Span 1	Near Bearing	Fixed Bearing	Fixed Bearing	1
Span 1	Far Bearing	Movable Bearing	Movable Bearing	1
Span 1	Far Bearing	Movable Bearing	Movable Bearing	1
Span 1	Near Bearing	Fixed Bearing	Fixed Bearing	1
Span 1	Near Bearing	Fixed Bearing	Fixed Bearing	1
Span 1	Far Bearing	Movable Bearing	Movable Bearing	1
Span 1	Far Bearing	Movable Bearing	Movable Bearing	1
Span 1	Near Bearing	Fixed Bearing	Fixed Bearing	1
Span 1	Delineator 1	Delineator	Warning Signs	1
Span 1	Delineator 2	Delineator	Warning Signs	1
Span 2	Deck	Reinforced Concrete Deck	Reinforced Concrete Deck	1729
Span 2	Beam 1	Plate Girder	Steel Open Girder/Beam	55
Span 2	Beam 2	Plate Girder	Steel Open Girder/Beam	55
Span 2	Beam 3	Plate Girder	Steel Open Girder/Beam	55
Span 2	Beam 4	Plate Girder	Steel Open Girder/Beam	55
Span 2	Left Bridge Rail	Concrete Railing	Reinforced Concrete Bridge Railing	55
Span 2	Right Bridge Rail	Concrete Railing	Reinforced Concrete Bridge Railing	55
Span 2	Wearing Surface	Asphalt Wearing Surface	Wearing Surface	1544
Span 2	Near Bearing	Fixed Bearing	Fixed Bearing	1
Span 2	Far Bearing	Movable Bearing	Movable Bearing	1
Span 2	Far Bearing	Movable Bearing	Movable Bearing	1
Span 2	Near Bearing	Fixed Bearing	Fixed Bearing	1
Span 2	Near Bearing	Fixed Bearing	Fixed Bearing	1
Span 2	Far Bearing	Movable Bearing	Movable Bearing	1
Span 2	Far Bearing	Movable Bearing	Movable Bearing	1
Span 2	Near Bearing	Fixed Bearing	Fixed Bearing	1
Span 3	Deck	Reinforced Concrete Deck	Reinforced Concrete Deck	1729
Span 3	Beam 1	Plate Girder	Steel Open Girder/Beam	55
Span 3	Beam 2	Plate Girder	Steel Open Girder/Beam	55
Span 3	Beam 3	Plate Girder	Steel Open Girder/Beam	55
Span 3	Beam 4	Plate Girder	Steel Open Girder/Beam	55
Span 3	Left Bridge Rail	Concrete Railing	Reinforced Concrete Bridge Railing	55
Span 3	Right Bridge Rail	Concrete Railing	Reinforced Concrete Bridge Railing	55
Span 3	Wearing Surface	Asphalt Wearing Surface	Wearing Surface	1544
Span 3	Near Bearing	Fixed Bearing	Fixed Bearing	1
Span 3	Far Bearing	Movable Bearing	Movable Bearing	1
Span 3	Far Bearing	Movable Bearing	Movable Bearing	1

Elements Verified

Location	Name	Component	Element Name	Amount
Span 3	Near Bearing	Fixed Bearing	Fixed Bearing	1
Span 3	Near Bearing	Fixed Bearing	Fixed Bearing	1
Span 3	Far Bearing	Movable Bearing	Movable Bearing	1
Span 3	Far Bearing	Movable Bearing	Movable Bearing	1
Span 3	Near Bearing	Fixed Bearing	Fixed Bearing	1
Span 4	Deck	Reinforced Concrete Deck	Reinforced Concrete Deck	1336
Span 4	Beam 1	Plate Girder	Steel Open Girder/Beam	42
Span 4	Beam 2	Plate Girder	Steel Open Girder/Beam	42
Span 4	Beam 3	Plate Girder	Steel Open Girder/Beam	42
Span 4	Beam 4	Plate Girder	Steel Open Girder/Beam	42
Span 4	Left Bridge Rail	Concrete Railing	Reinforced Concrete Bridge Railing	43
Span 4	Right Bridge Rail	Concrete Railing	Reinforced Concrete Bridge Railing	43
Span 4	Wearing Surface	Asphalt Wearing Surface	Wearing Surface	1193
Span 4	Near Bearing	Movable Bearing	Movable Bearing	1
Span 4	Far Bearing	Fixed Bearing	Fixed Bearing	1
Span 4	Far Bearing	Fixed Bearing	Fixed Bearing	1
Span 4	Near Bearing	Movable Bearing	Movable Bearing	1
Span 4	Near Bearing	Movable Bearing	Movable Bearing	1
Span 4	Far Bearing	Fixed Bearing	Fixed Bearing	1
Span 4	Far Bearing	Fixed Bearing	Fixed Bearing	1
Span 4	Near Bearing	Movable Bearing	Movable Bearing	1
Span 4	Delineator 2	Delineator	Warning Signs	1
Span 4	Delineator 1	Delineator	Warning Signs	1
Bent 1	Cap 1	Reinforced Concrete Pier Cap	Reinforced Concrete Pier Cap	30
Bent 1	Pile 1	Reinforced Concrete Pile	Reinforced Concrete Pile	1
Bent 1	Pile 2	Reinforced Concrete Pile	Reinforced Concrete Pile	1
Bent 1	Pile 3	Reinforced Concrete Pile	Reinforced Concrete Pile	1
Bent 1	Pile 4	Reinforced Concrete Pile	Reinforced Concrete Pile	1
End Bent 1	Cap 1	Reinforced Concrete Pier Cap	Reinforced Concrete Pier Cap	37
End Bent 1	Abutment	Reinforced Concrete Abutment	Reinforced Concrete Abutment	37
Bent 2	Cap 1	Reinforced Concrete Pier Cap	Reinforced Concrete Pier Cap	30
Bent 2	Pile 1	Reinforced Concrete Pile	Reinforced Concrete Pile	1
Bent 2	Pile 2	Reinforced Concrete Pile	Reinforced Concrete Pile	1
Bent 2	Pile 3	Reinforced Concrete Pile	Reinforced Concrete Pile	1
Bent 2	Pile 4	Reinforced Concrete Pile	Reinforced Concrete Pile	1
Bent 2	Pile 5	Reinforced Concrete Pile	Reinforced Concrete Pile	1
End Bent 2	Cap 1	Reinforced Concrete Pier Cap	Reinforced Concrete Pier Cap	37
End Bent 2	Abutment	Reinforced Concrete Abutment	Reinforced Concrete Abutment	37
Bent 3	Cap 1	Reinforced Concrete Pier Cap	Reinforced Concrete Pier Cap	30
Bent 3	Pile 1	Reinforced Concrete Pile	Reinforced Concrete Pile	1
Bent 3	Pile 2	Reinforced Concrete Pile	Reinforced Concrete Pile	1
Bent 3	Pile 3	Reinforced Concrete Pile	Reinforced Concrete Pile	1
Bent 3	Pile 4	Reinforced Concrete Pile	Reinforced Concrete Pile	1

General Inspection Notes

National Bridge and NC Inspection Items

Structure Number: 970068

Inspection Date: 07/30/2024

National Bridge Inventory Items

Item	Grade Scale	Grade	Note: Items 58,59,60,62 reflect this inspection only. For overall NBI coding grade, see cover sheet.
Item 58: Deck	0 - 9 , N	6	
Item 59: Superstructure	0 - 9 , N	5	
Item 60: Substructure	0 - 9 , N	6	
Item 61: Channel and Channel Protection	0 - 9 , N	N	
Item 62: Culvert	0 - 9 , N	N	
Item 71: Waterway Adequacy	0 - 9 , N	N	
Item 72: Approach Roadway Alignment	0 - 9 , N	8	

Note: If NBI Inspection Item is not present, code NBI item with "N"

NC SMU Inspection Items

Item	Grade Scale	Grade	Maint. Qty.	Maint. Code
Deck Debris	G, F, P, or C	P	6130	3376
Drainage System	G, F, P, or C	P	0	3332
Utilities	G, F, P, or C			
Slope Protection	G, F, P, or C	P	75	3352
Scour	G, F, P, or C			
Wingwall	G, F, P, or C	G	0	3350
Field Scour Evaluation				
Drift	G, F, P, or C		0	3366
Fender System	G, F, P, or C			
Movable Span Machinery	G, F, P, or C			
Response to Live Load	G, F, P, or C	G		
Superstructure Paint Code		A		

Note: If NC SMU Inspection Item is not present, leave NC SMU item blank

Inspection Information

Item	Grade Scale	Grade
Sign Noticed Issued	YES/NO	Y
Priority Maintenance Request Submitted	YES/NO	Y
Inspection Time	Hours	8
Traffic Control Time	Hours	0
Snooper Time	Hours	0
Ladder, Drone, or Camera Pole Used	YES/NO	Y
Bucket Truck Used	YES/NO	N
Boat Used	YES/NO	N
Other Equipment Used	YES/NO	N
Portion of Structure in > 3' of water	YES/NO	N

National Bridge and NC SMU Inspection Item Details

Structure Number: 970068

Inspection Date: 07/30/2024

Item	NCDOT Deck - Item 58	Grade	6	Maint Code	Qty.	0
Details	DECK UNDERSIDE EXHIBITS WIDESPREAD TRANSVERSE AND MAP CRACKING DECK UNDERSIDE IN SPAN 3, SPALLS WITH EXPOSED REBAR AND AREA OF DELAMINATION					
Item	NCDOT Superstructure - Item 59	Grade	5	Maint Code	Qty.	0
Details	ALL BEAMS HAVE LAMINAR RUST AT WELDED DIAPHRAGM CLIP CONNECTIONS IMPACT DAMAGE DEFECTS IN SPAN 2 AND SPAN 3 CONSOLIDATED					
Item	NCDOT Substructure - Item 60	Grade	6	Maint Code	Qty.	0
Details	AREAS OF CRACKING AND UNSOUND PATCHES AT BENTS AREAS OF DELAMINATION ADJACENT TO BEAMS AT END BENTS					
Item	Sign Notice Issued	Grade	Y	Maint Code	Qty.	0
Details	MISSING VERTICAL CLEARANCE SIGN ON BEAM 1 OVER SPAN 2. MISSING VERTICAL CLEARANCE SIGN ON BEAM 4 OVER SPAN 3.					
Item	Priority Maintenance Issued	Grade	Y	Maint Code	Qty.	0
Details	PARS SUBMITTED FOR CORROSION WITH SECTION LOSS ON BEAMS, DELAMINATIONS OVER TRAFFIC IN DECK, SPALLS WITH EXPOSED REBAR IN UNDERSIDE OF DECK, DECK DEBRIS, UNSOUND REPAIRS TO PREVIOUS PAR'S ON BENT 2 PILE 1, LOSS OF BEARING ON BEAMS, SLOPE PROTECTION EROSION					
Item	Deck Debris	Grade	P	Maint Code	3376	Qty. 6130
Details	UP TO 6 INCH WIDE AREAS OF DIRT AND DEBRIS ACCUMULATION WITH VEGETATION GROWTH ALONG BRIDGE RAILS.					
Item	Drainage System	Grade	P	Maint Code	3332	Qty. 0
Details	DECK DRAINS CLOGGED WITH DEBRIS					
Item	Slope Protection	Grade	P	Maint Code	3352	Qty. 75
Details	AREA OF EROSION 22 INCH WIDE X 6 FEET LONG X UP TO 9 INCHES DEEP UNDER LEFT BRACE PILE AT END BENT 1, BRACE PILE CAP IS UNDERMINED AND PILE IS EXPOSED UP TO 9 INCHES (PAR) AREA OF EROSION 11 FOOT 6 INCH LONG X 4 FOOT WIDE X UP TO 2 FOOT DEEP AREA OF EROSION AT END BENT 2, UNDER BAY 3 (PAR)					
Item	Wingwalls	Grade	G	Maint Code	3350	Qty. 0
Details	VEGETATION GROWTH ENCROACHING WINGWALLS AT ALL CORNERS					
Item	General Comments and Misc Items	Grade		Maint Code	Qty.	0
Details	MULTIPLE END DIAPHRAGMS OVER BENTS WITH SPALLS, SOME WITH EXPOSED REBAR, ADJACENT TO BEAMS [TYPICAL 8 INCHES LONG X 7 INCHES WIDE X 1 INCH DEEP] END DIAPHRAGM STEEL SUPPORT ANGLES OVER BENT 1 WITH PACK RUST UP TO 1 INCH 16 FEET OF SCRAPES ON GUARDRAIL AT SOUTHWEST TRANSITION VEGETATION GROWING BETWEEN END BENT 1 CAP AND BACKWALL AT SOUTH END					

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



MISSING VERTICAL CLEARANCE SIGN ON BEAM 1 OVER SPAN 2.



MISSING VERTICAL CLEARANCE SIGN ON BEAM 4 OVER SPAN 3.

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



16 FEET OF SCRAPES ON GUARDRAIL AT SOUTHWEST TRANSITION



UP TO 6 INCH WIDE AREAS OF DIRT AND DEBRIS ACCUMULATION WITH VEGETATION GROWTH ALONG BRIDGE RAILS.

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



VEGETATION GROWTH ENCROACHING WINGWALLS AT ALL CORNERS



Span 1 Right Bridge Rail: HAIRLINE WRAP AROUND CRACKS IN CURB

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 1 Left Bridge Rail: HAIRLINE WRAP AROUND CRACKS IN CURB



Span 2 Left Bridge Rail: 3 INCH LONG X 4 INCH WIDE X 2 INCH DEEP SPALL AND DELAMINATION ON TOP EXTERIOR CORNER OF THIRD RAIL POST FROM BENT 1

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 2 Right Bridge Rail: SPALL 8 INCH LONG X 4 INCH WIDE X 2 INCH DEEP, TOP OF RAIL POST AT FAR END



Span 2 Right Bridge Rail: 7 INCH LONG X 3 INCH HIGH X 1/2 INCH DEEP SPALL WITH EXPOSED REBAR ON SOUTHWEST CORNER OF RAIL POST AT FAR END

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 2 Right Bridge Rail: RAIL POST AT FAR END, SPALL WITH EXPOSED REBAR 4 INCH HIGH X 4 INCH WIDE X 1/2 INCH DEEP AT BASE ON SOUTH FACE



Span 3 Right Bridge Rail: 0.03 INCH WIDE DIAGONAL CRACK WITH EFFLORESCENCE ON EAST AND WEST FACE OF SUPPORT BLOCK AT POST 8

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 3 Right Bridge Rail: SPALL 11 INCH HIGH X 8 INCH WIDE X 4 INCH DEEP, NO EXPOSED REBAR BOTTOM OF RAIL POST, FAR END (PAR)



Span 4 Left Bridge Rail: 5 INCH LONG X 5 INCH WIDE X 1 INCH DEEP SPALL ON TOP OF POST 5 (SAME ON POST 8)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 3 Left Bridge Rail: (4) VERTICAL CRACKS UP TO 11 INCH LONG X 1/32 INCH WIDE, SOME WITH EFFLORESCENCE, IN 5TH SUPPORT BLOCK FROM NEAR END



AREA OF EROSION 22 INCH WIDE X 6 FEET LONG X UP TO 9 INCHES DEEP UNDER LEFT BRACE PILE AT END BENT 1, BRACE PILE CAP IS UNDERMINED AND PILE IS EXPOSED UP TO 9 INCHES (PAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



End Bent 1 Abutment: UP TO 20 INCH HIGH X 6 INCH WIDE AREA OF DELAMINATION, TOP RIGHT CORNER AT ALL BEAMS, SIMILAR AREAS OF DELAMINATION LEFT SIDE OF BEAMS 2 AND 3



Span 1 Beam 1: MINOR SURFACE CORROSION THROUGHOUT TOP AND BOTTOM FLANGE, INTERMITTENT TO FULL LENGTH SPOTS ON WEB

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 1 Beam 1: 7 INCH LONG X 4 INCH WIDE AREA OF CORROSION WITH 1/8 INCH SECTION LOSS ON RIGHT BOTTOM FLANGE AT NEAR END, 1/2 INCH THICKNESS REMAINING



Span 1 Deck: HAIRLINE MAP CRACKING ALONG UNDERSIDE IN ALL BAYS AND OVERHANGS

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



VEGETATION GROWING BETWEEN END BENT 1 CAP AND BACKWALL AT SOUTH END



Bent 1 Pile 1: 22 INCH X 8 INCH X 1 INCH DEEP SPALL WITH EXPOSED REBAR ON EAST FACE AT BARRIER RAIL -DEFECT HAS BEEN REPAIRED WITH A SOUND PATCH AS OF 8/18/2022 (SEE PHOTO)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Bent 1 Pile 3: HAIRLINE MAP CRACKING AT BASE



Bent 1 Pile 4: HAIRLINE VERTICAL CRACKING AT BASE

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Bent 1 Pile 1: 12 INCH X 8 INCH X 5 INCH DEEP SPALL WITH EXPOSED REBAR ON WEST FACE AT TOP - DEFECT IS AN UNSOUND PATCH WITH A 13 INCHES WIDE X 3 FOOT HIGH AREA OF DELAMINATION ON WEST FACE, 1 FOOT BELOW CAP AS 8/18/2022 (PAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Bent 1 Pile 1: 0.007 INCH WIDE HORIZONTAL CRACK 6 INCH BELOW CAP IN WEST FACE, VERTICAL CRACKS ON NORTHWEST AND NORTHEAST FACES UP TO 0.016 INCH WIDE X 10 FOOT HIGH (SEE PHOTO)



Bent 1 Pile 1: EAST FACE AT 1 FOOT BELOW CAP UNSOUND PATCH 2 FEET HIGH UP TO 14 WIDE

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 1 Beam 1: 2 INCH LONG X 5 INCH HIGH AREA OF CORROSION WITH SECTION LOSS ON LEFT FACE OF WEB ADJACENT TO DIAPHRAGM AT BENT 1, 1/2 INCH THICKNESS REMAINING [NO SECTION LOSS OBSERVED 2024 INSPECTION]

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Bent 1 Cap 1: 1/32 INCH VERTICAL CRACKING ON BOTH FACES



MULTIPLE END DIAPHRAGMS OVER BENTS WITH SPALLS, SOME WITH EXPOSED REBAR, ADJACENT TO BEAMS [TYPICAL 8 INCHES LONG X 7 INCHES WIDE X 1 INCH DEEP] (SPAN 1 BAY 2 SHOWN)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



END DIAPHRAGM STEEL SUPPORT ANGLES OVER BENT 1 WITH PACK RUST UP TO 1 INCH (SPAN 2 BAY 3 AT BEAM 3 SHOWN)



Span 1 Beam 4 - Far Bearing: LEFT ANCHOR BOLT IS BROKEN (PAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 1 Beam 4: 2 INCH LONG X FULL WIDTH AREA OF CORROSION WITH 1/8 INCH SECTION LOSS ON LEFT BOTTOM FLANGE AT FAR BEARING (1/2 INCH THICKNESS REMAINING) AND 1/16 INCH SECTION LOSS IN WEB AT DIAPHRAGM 2 INCH WIDE X 6 INCH HIGH (9/16 INCH REMAINING)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 1 Beam 4 - Far Bearing: MINOR SCALE AND PACK RUST, NO MEASURABLE SECTION LOSS



Span 2 Deck: UNDERSIDE OF DECK, SOUND PATCH, BAY 1 RIGHT OF BEAM 1, MID SPAN

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 2 Beam 4: ACTIVE CORROSION IN WEB AT NEAR END DIAPHRAGM WITH 1/16 INCH SECTION LOSS, 2 INCHES WIDE X 8 INCHES HIGH (9/16 INCH REMAINING)



Span 2 Beam 2: BOTTOM FLANGE, MINOR SCRAPES TO BOTTOM FACE OVER RIGHT TRAVEL LANE

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 2 Beam 1: APPROXIMATELY 5 FOOT LONG AREA OF IMPACT DAMAGE WITH MINOR SCRAPES, 4 INCH LONG X 1/2 INCH DEEP GOUGE IN LEFT BOTTOM FLANGE, BOTTOM FLANGE IS BOWED UPWARD APPROXIMATELY 3/16 INCH, AND WEB IS BOWED AWAY APPROXIMATELY 1/2 INCH FROM DIAPHRAGM FOR A LENGTH OF 10 INCHES. LOCATED AT FIRST DIAPHRAGM FROM BENT 1 (PAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 2 Beam 1: APPROXIMATELY 5 FOOT LONG AREA OF IMPACT DAMAGE WITH MINOR SCRAPES, 4 INCH LONG X 1/2 INCH DEEP GOUGE IN LEFT BOTTOM FLANGE, BOTTOM FLANGE IS BOWED UPWARD APPROXIMATELY 3/16 INCH, AND WEB IS BOWED AWAY APPROXIMATELY 1/2 INCH FROM DIAPHRAGM FOR A LENGTH OF 10 INCHES. LOCATED AT FIRST DIAPHRAGM FROM BENT 1 (PAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 2 Beam 1: MINOR IMPACT DAMAGE ON LEFT BOTTOM FLANGE OVER LEFT LANE



Span 2 Beam 1: BEAM 1 IN SPAN 2 IS BOWED UPWARDS 3/16 INCH FOR A LENGTH OF 3 FEET (PAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 2 Beam 1: BEAM 1 IN SPAN 2 WEB IS BOWED AWAY FROM INTERMEDIATE DIAPHRAGM 1 IN BAY 1 FOR 1/2 INCH FOR A LENGTH OF 10 INCH (PAR ISSUED)



Bent 2 Pile 2: FULL PERIMETER HAIRLINE MAP CRACKING UP TO 3 FOOT HIGH AT BASE OF PILE

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Bent 2 Pile 5: VERTICAL CRACK 8 FEET LONG X UP TO 1/32 INCH WIDE AT SOUTHWEST CORNER EXTENDING UP FROM GROUNDLINE



Bent 2 Cap 1: SCATTERED SPALLS WITH EXPOSED REBAR UP TO 1 INCH DIAMETER X 1/2 INCH DEEP IN UNDERSIDE OF CAP

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 2 Beam 4 - Far Bearing: HEAVY CORROSION AND PACK RUST BETWEEN PLATES, SECTION LOSS HAS INITIATED



Span 2 Beam 2 - Far Bearing: PACK RUST AND HEAVY CORROSION, , SECTION LOSS HAS INITIATED

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 2 Beam 1 - Far Bearing: PACK RUST AND HEAVY CORROSION WITH SECTION LOSS ON RIGHT AND LEFT SIDES, UP TO 5 INCH LONG X 1/4 INCH WIDE X 1/4 INCH HIGH WITH AVERAGE 3/4 INCH THICKNESS REMAINING ON MASONRY PLATE

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 3 Deck: TWO SPALLS WITH EXPOSED REBAR APPROXIMATELY 1 FOOT LONG X 5 INCH WIDE X 1/2 INCH DEEP WITH ADJACENT AREA OF DELAMINATION IN UNDERSIDE OF RIGHT OVERHANG, LOCATED AT DRAIN OVER RIGHT SHOULDER OF NORTHBOUND LANES (PAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 3 Deck: APPROXIMATELY 1 FOOT LONG X 3 INCH WIDE AREA OF DELAMINATION IN RIGHT OVERHANG OVER CENTERLINE OF NORTHBOUND LANES - NCDOT NOTIFIED 8/13/2022 (PAR)



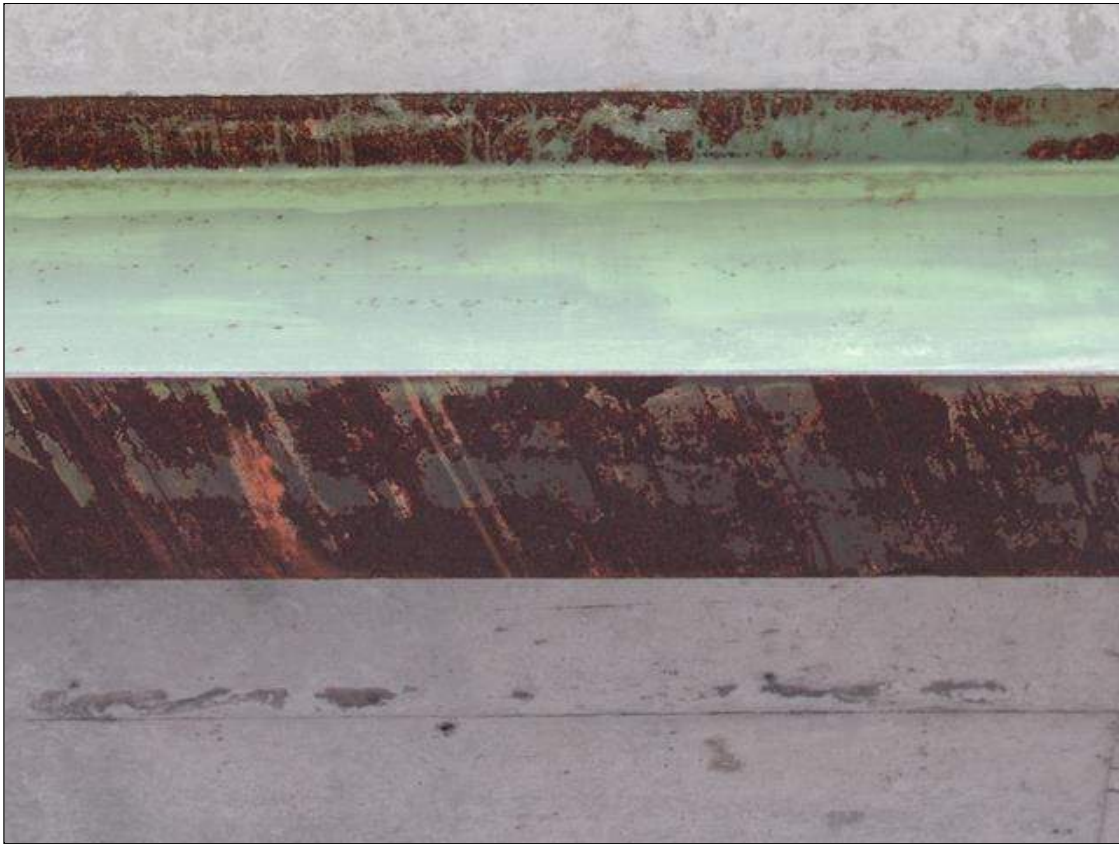
Span 3 Deck: MINOR IMPACT DAMAGE ON UNDERSIDE AT 2ND DIAPHRAGM, LEFT OF BEAM 4 AND BOTH SIDES OF BEAM 1

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 3 Beam 1: PAR: 1 3/4 INCH DEEP GOUGE TO BOTTOM FLANGE OF BEAM 1 IN SPAN 3, LOCATED 18 FEET 5 INCHES FROM EAST END OF BEAM



Span 3 Beam 2 - 7 INCH LONG X 3 INCH WIDE X 1 DEEP SPALL WITH EXPOSED REBAR ON UNDERSIDE OF DIAPHRAGM IN BAY 2 AT BENT 2, 2 FEET 6 INCHES FROM BEAM 2

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 3 Beam 4: ACTIVE CORROSION IN RIGHT SIDE OF WEB AT NEAR END DIAPHRAGM, 8 INCH HIGH X 2 INCH WIDE WITH 1/8 INCH SECTION LOSS (1/2 INCH REMAINING) (PAR)



Span 3 Beam 4 - Far Bearing: PACK RUST AND HEAVY CORROSION, CRACKED WELD ON RIGHT SIDE OF BEARING AND MASONRY PLATE

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 3 Beam 4: 5/8 INCH WIDE X 3/16 INCH DEEP GOUGE IN BOTTOM FLANGE COVER PLATE, BEAM IS BOWED UPWARDS 1/2 INCH FOR A LENGTH OF 4 FEET LOCATED 19 FEET FROM EAST END OF BEAM. 4 1/2 INCH LONG X 3/16 INCH DEEP INDENTION TO BOTTOM FLANGE COVER PLATE TO LOCATED 15 FEET FROM EAST END OF BEAM (PAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 3 Beam 4: 5/8 INCH WIDE X 3/16 INCH DEEP GOUGE IN BOTTOM FLANGE COVER PLATE, BEAM IS BOWED UPWARDS 1/2 INCH FOR A LENGTH OF 4 FEET LOCATED 19 FEET FROM EAST END OF BEAM. 4 1/2 INCH LONG X 3/16 INCH DEEP INDENTION TO BOTTOM FLANGE COVER PLATE TO LOCATED 15 FEET FROM EAST END OF BEAM (PAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 3 Beam 4: ACTIVE CORROSION IN WEB AT FAR END DIAPHRAGM, 8 INCHES HIGH X 1.5 INCHES WIDE WITH 1/16 INCH SECTION LOSS (9/16 INCH REMAINING)



Span 3 Beam 4: BEAM 4 FAR BEARING EAST ANCHOR BOLT NUT NOT FULLY ENGAGED AND BOLT CORRODED WITH APPROXIMATELY 50% SECTION LOSS (PAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 3 Beam 3: 1 1/2 INCH LONG X 3/16 INCH DEEP GOUGE IN BOTTOM FLANGE COVER PLATE TO BEAM, BEAM IS BOWED UPWARDS 1/2 INCH FOR A LENGTH OF 2 FOOT 6 INCH LONG LOCATED 19 FEET FROM EAST END OF BEAM (PAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 3 Beam 3: 1 1/2 INCH LONG X 3/16 INCH DEEP GOUGE IN BOTTOM FLANGE COVER PLATE TO BEAM, BEAM IS BOWED UPWARDS 1/2 INCH FOR A LENGTH OF 2 FOOT 6 INCH LONG LOCATED 19 FEET FROM EAST END OF BEAM (PAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 3 Beam 3 - Far Bearing: PACK RUST AND HEAVY CORROSION, SECTION LOSS HAS INITIATED

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 3 Beam 2: 3 FOOT LONG AREA OF MODERATE IMPACT DAMAGE LOCATED 18 FEET FROM EAST END, BOTTOM FLANGE IS BOWED UPWARDS 1 1/4 INCH FOR A LENGTH OF 3 FEET, 1 3/4 INCH LONG X 1/4 INCH DEEP GOUGE IN BOTTOM FLANGE COVER PLATE, AND BEAM IS BOWED TOWARDS THE NORTH 1 3/4 INCH (PAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 3 Beam 2: 3 FOOT LONG AREA OF MODERATE IMPACT DAMAGE LOCATED 18 FEET FROM EAST END, BOTTOM FLANGE IS BOWED UPWARDS 1 1/4 INCH FOR A LENGTH OF 3 FEET, 1 3/4 INCH LONG X 1/4 INCH DEEP GOUGE IN BOTTOM FLANGE COVER PLATE, AND BEAM IS BOWED TOWARDS THE NORTH 1 3/4 INCH (PAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 3 Beam 2: 3 FOOT LONG AREA OF MODERATE IMPACT DAMAGE LOCATED 18 FEET FROM EAST END, BOTTOM FLANGE IS BOWED UPWARDS 1 1/4 INCH FOR A LENGTH OF 3 FEET, 1 3/4 INCH LONG X 1/4 INCH DEEP GOUGE IN BOTTOM FLANGE COVER PLATE, AND BEAM IS BOWED TOWARDS THE NORTH 1 3/4 INCH (PAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 3 Beam 1: BOTTOM FLANGE OF BEAM 1 IN SPAN 3 IS BOWED UPWARDS 1/2 INCH FOR A LENGTH OF 4 FEET OVER RIGHT LANE (PAR)



Span 3 Beam 1 - Far Bearing: PACK RUST WITH HEAVY CORROSION, CORROSION WITH 100% SECTION LOSS ON ANCHOR BOLT NUTS. SECTION LOSS HAS INITIATED ON ANCHOR BOLTS (PAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 3 Beam 1 - Far Bearing: PACK RUST WITH HEAVY CORROSION, CORROSION WITH 100% SECTION LOSS ON ANCHOR BOLT NUTS. SECTION LOSS HAS INITIATED ON ANCHOR BOLTS (PAR)



Bent 3 Pile 1: HAIRLINE MAP CRACKING ON NORTHEAST CORNER (2 FOOT HEIGHT), BASE OF PILE

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Bent 3 Pile 2: 0.010 INCH WIDE HORIZONTAL CRACK IN EAST FACE, 3 FEET 6 INCHES UP FROM GROUND



Bent 3 Pile 4: FULL PERIMETER HAIRLINE MAP CRACKING (16 INCH HIGH), BASE OF PILE

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Bent 3 Cap 1: 0.007 INCH WIDE X FULL-WIDTH TRANSVERSE CRACK IN UNDERSIDE OF CAP LEFT OF PILE 3



Bent 3 Pile 3: FULL PERIMETER 1/64 INCH MAP CRACKING (2 FOOT HEIGHT), BASE OF PILE - NOT OBSERVED AS OF 8/18/2022 [DID NOT OBSERVE 2024 INSPECTION]

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 4 Beam 1: 4 INCH LONG X FULL WIDTH CORROSION WITH SECTION LOSS ON LEFT BOTTOM FLANGE AT FAR END, 5/16 INCH THICKNESS REMAINING (PAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 4 Beam 2: 7 INCH LONG X 4 INCH WIDE OF CORROSION WITH SECTION LOSS DOWN TO 1/8 INCH THICKNESS REMAINING ON RIGHT BOTTOM FLANGE AT BENT 3, AVERAGE 7/16 INCH THICKNESS REMAINING (PAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 4 Beam 2 - Near Bearing: MINOR CORROSION TO BEARING. RIGHT ANCHOR BOLT FULLY CORRODED (PAR)



Span 4 Beam 2: ACTIVE CORROSION IN WEB RIGHT SIDE AT NEAR END DIAPHRAGM, 8 INCHES HIGH X 1.25 INCH WIDE WITH 1/16 INCH SECTION LOSS (9/16 INCH REMAINING)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 4 Beam 2 - Near Bearing: PAR: 7 INCH LONG X 4 INCH WIDE LOSS OF BEARING AREA UNDER RIGHT BOTTOM FLANGE DUE TO SEVERE CORROSION WITH SECTION LOSS OF BEARING PLATE. RIGHT ANCHOR BOLT IS CORRODED WITH 100 PERCENT SECTION LOSS - NCDOT NOTIFIED 8/13/2022 (PAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Bent 3 Cap 1: 0.03 INCH WIDE X 18 INCH LONG IN EAST FACE OF CAP ABOVE PILE 3 VERIFIED AT AREA OF DELAMINATION 20 INCHES LONG X 2 INCHES HIGH X 4 INCHES WIDE ON LOWER EDGE



Bent 3 Cap 1: HAIRLINE VERTICAL CRACKING ON BOTH FACES

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



BAY 1 DIAPHRAGM GUSSET PLATE AT BEAM 2 IS DEFORMED FROM IMPACT DAMAGE



Span 3 beam 3 - 7 INCH LONG X 3 INCH WIDE X 1 DEEP SPALL WITH EXPOSED REBAR ON UNDERSIDE OF DIAPHRAGM IN BAY 3 AT BENT 3, 1 FOOT 6 INCHES FROM BEAM 3

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 4 Beam 4: 2 INCH LONG X FULL WIDTH AREA OF CORROSION WITH SECTION LOSS ON UNDERSIDE OF BOTTOM RIGHT FLANGE AT NEAR BEARING, 1/2 INCH THICKNESS REMAINING



Span 4 Beam 4 - Near Bearing: PACK RUST AND HEAVY CORROSION

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



Span 4 Beam 4: 4 INCH LONG X FULL WIDTH CORROSION WITH SECTION LOSS ON LEFT BOTTOM FLANGE AT FAR END, 7/16 INCH THICKNESS REMAINING (PAR)



Span 4 Beam 4: MINOR SURFACE CORROSION THROUGHOUT TOP AND BOTTOM FLANGE, INTERMITTENT TO FULL LENGTH SPOTS ON WEB

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



End Bent 2 Abutment: 1 FOOT LONG X 11 INCH HIGH AREA OF DELAMINATION ADJACENT RIGHT TOP FLANGE
OF BEAM 2

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



End Bent 2 Abutment: 1 FOOT 6 INCH HIGH X 9 INCH WIDE AREA OF DELAMINATION ADJACENT TO LEFT TOP FLANGE OF BEAM 3, 2 FOOT 9 INCH HIGH X 9 INCH WIDE AREA OF DELAMINATION ADJACENT TO RIGHT TOP FLANGE OF BEAM 3

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



End Bent 2 Abutment: SPALL WITH EXPOSED REBAR (1 FOOT HIGH X 6 INCH WIDE X 3 INCH DEEP) TOP CORNER LEFT OF BEAM 2



End Bent 2 Abutment: 1 FOOT LONG X 4 INCH HIGH AREA OF DELAMINATION WITH 1/4 INCH WIDE CRACKING, ADJACENT TO LEFT BOTTOM FLANGE OF BEAM 2

Structure: 970068

County: WILSON

Date: 07/30/2024

Condition Photos



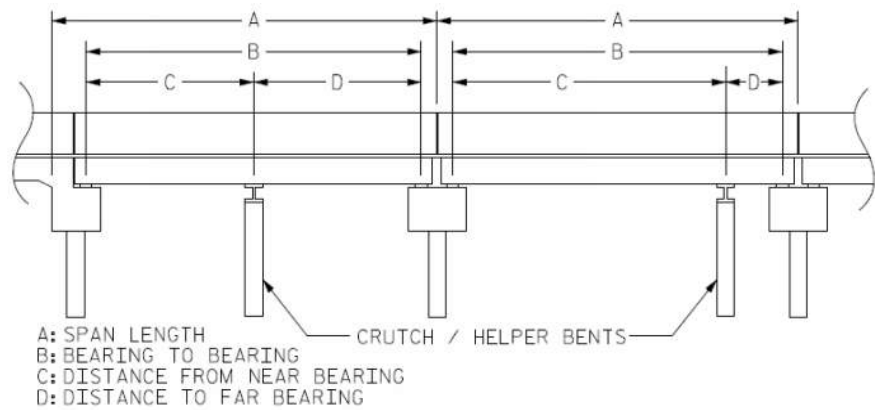
AREA OF EROSION 11 FOOT LONG X 4 FOOT WIDE X UP TO 2 FOOT DEEP AT END BENT 2 UNDER BAY 3
(PAR)

Structure Data Worksheet

Span Profile

County: WILSON

Structure Number: 970068



Span Number	Span Length	Bearing to Bearing	Crutch/ Helper Bent	Distance to Near Bearing	Distance to Far Bearing
1	42.500	41.500			
2	55.000	54.000			
3	55.000	54.000			
4	42.500	41.500			

Structure Number: 970068

Span: 2

Route Name: US301S



SPAN 2 CLEARANCE OPENING LOOKING SOUTH

Route Number: 21003010		Route Name: US301S			Reference Feature: H	
Minimum Vertical Clearance 15.010 feet		Maximum Minimum Vertical Clearance 15.130 feet				
Total Horizontal Clearance 41.000 feet		Lateral Clearances: Left: 15.000 feet Right 8.167 feet				
☒ Base Highway Network		LRS Inventory Route, Sub Route Number 20301				
Milepost: 0.000	Number of Lanes: 2		ADT: 5250	Year of ADT: 2019	Percentage of Trucks: 12	
☒ National Highway System			☐ STRAHNET Highway Designator			
Functional Classification 14		Local Other Principal Arterial		Direction of Traffic: 1 1 - way traffic		

Structure Number: 970068

Span: 3

Route Name: US301N

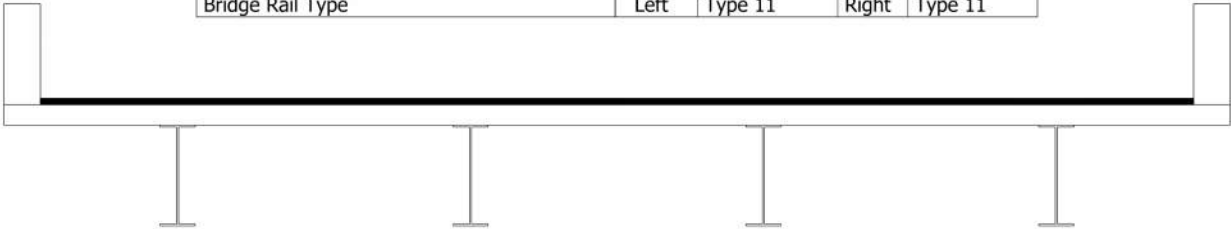


SPAN 3 CLEARANCE OPENING LOOKING NORTH

Route Number: 21003010		Route Name: US301N			Reference Feature: H	
Minimum Vertical Clearance 14.667 feet		Maximum Minimum Vertical Clearance 14.980 feet				
Total Horizontal Clearance 40.917 feet		Lateral Clearances: Left: 15.667 feet Right 7.250 feet				
☒ Base Highway Network		LRS Inventory Route, Sub Route Number 20301				
Milepost: 0.000	Number of Lanes: 2		ADT: 5250	Year of ADT: 2019	Percentage of Trucks: 12	
☒ National Highway System			☐ STRAHNET Highway Designator			
Functional Classification 14		Local Other Principal Arterial		Direction of Traffic: 1 1 - way traffic		

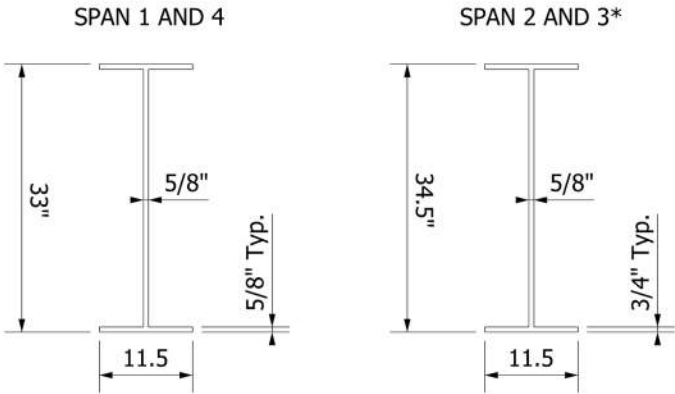
Bridge Inspection Field Sketch

Deck Width/Out to Out	33.5ft	Between Rails				31.333ft
Clear Roadway	28.333ft	Wearing Surface				4in
Median Width		Median Height				
Curb Height		Left	6in	Right	6in	
Sidewalk Width		Left		Right		
Clear Roadway (Rail to Median)		Left		Right		
Guardrail Width		Left	1.083ft	Right	1.083ft	
Top of Rail to Deck/Wearing Surface		Left	2.5ft	Right	2.5ft	
Bridge Rail Type		Left	Type 11	Right	Type 11	



Measurements for Span #	1		
Deck Thickness	6.75in	Left Overhang	4.75ft
Top of Rail to Bottom of Beam (Avg)	6.063ft	Right Overhang	4.75ft

Beam #	Beam Type	Width	Height	Spacing	From
1	Plate Girder	11.5in	33in	4.75ft	Left Edge of Deck
2	Plate Girder	11.5in	33in	8ft	Beam 1
3	Plate Girder	11.5in	33in	8ft	Beam 2
4	Plate Girder	11.5in	33in	8ft	Beam 3



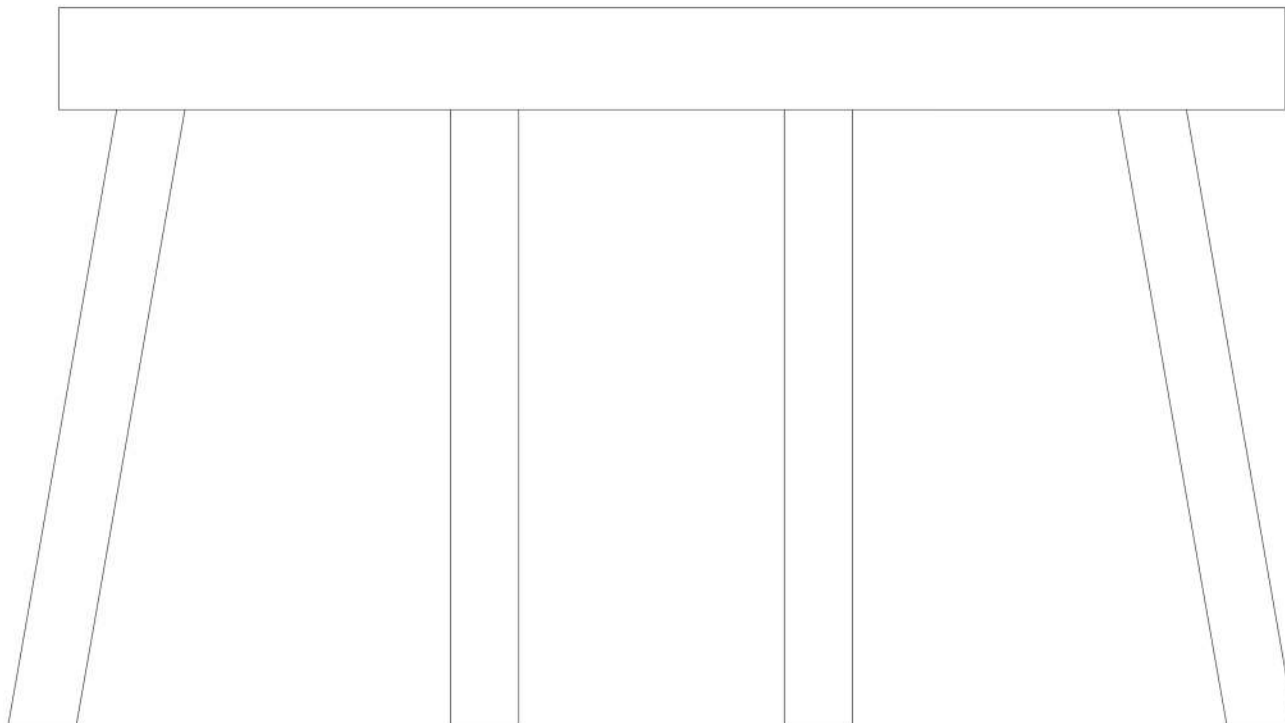
BEAMS HAVE SLIGHTLY TAPERED FLANGES

*12" WIDE X 7/16" THICK COVER PLATES ON BOTTOM FLANGE STARTING 12' FROM EACH END OF BEAM

REVISED BY JOE KOENIG 7/30/2024

Title Superstructure		Description RC Deck on Steel Plate Girders	
Structure No: 970068	Drawn By: RC	Date: 8/5/2022	Filename: S001698000032.wes

Bridge Inspection Field Sketch



Caps

#	Name	Type	Length	Width	Height	Left Beam to End of Cap	Right Beam to End of Cap
1	Cap 1	Reinforced Concrete Pier Cap	30ft	36in	30in	2.083ft	2.083ft

Piles

#	Name	Type	Spacing	From	Height/Diam.	Width	Length
1	Pile 1	Reinforced Concrete Pile	2.25ft	Left End of Bent	20in		14ft
2	Pile 2	Reinforced Concrete Pile	8.167ft	Pile 1	20in		14ft
3	Pile 3	Reinforced Concrete Pile	8.167ft	Pile 2	20in		14ft
4	Pile 4	Reinforced Concrete Pile	8.167ft	Pile 3	20in		14ft

VERIFIED BY JOE KOENIG 7/30/2024

Title
Substructure (1/2)

Description
Bent 1, Bent 3 Similar - RC Post and Beam

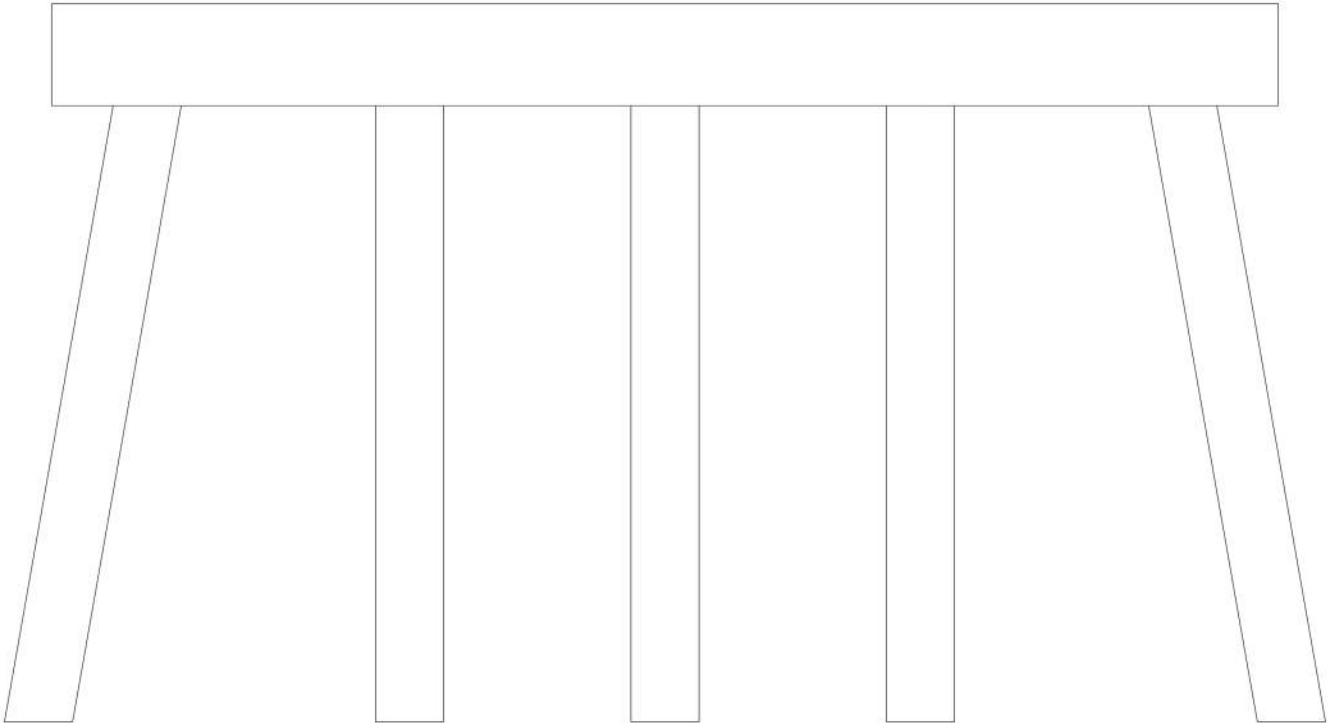
Structure No: 970068

Drawn By: RC

Date: 8/5/2022

Filename: S001698000033.wes

Bridge Inspection Field Sketch



Caps

#	Name	Type	Length	Width	Height	Left Beam to End of Cap	Right Beam to End of Cap
1	Cap 1	Reinforced Concrete Pier Cap	30ft	36in	30in	2.083ft	2.083ft

Piles

#	Name	Type	Spacing	From	Height/Diam.	Width	Length
1	Pile 1	Reinforced Concrete Pile	2.333ft	Left End of Bent	20in		14ft
2	Pile 2	Reinforced Concrete Pile	6.417ft	Pile 1	20in		14ft
3	Pile 3	Reinforced Concrete Pile	6.25ft	Pile 2	20in		14ft
4	Pile 4	Reinforced Concrete Pile	6.25ft	Pile 3	20in		14ft
5	Pile 5	Reinforced Concrete Pile	6.417ft	Pile 4	20in		14ft

VERIFIED BY JOE KOENIG 7/30/2024

Title
Substructure (2/2)

Description
Bent 2 - RC Post and Beam

Structure No: 970068

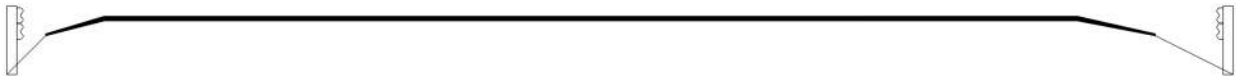
Drawn By: RC

Date: 8/5/2022

Filename: S001698000034.wes

Bridge Inspection Field Sketch

NC42



MEASUREMENTS TAKEN AT END BENT 1

Roadway	25ft Wide	2 Paved Lanes	Looking East
Left Shoulder	2.5ft Wide	1.5ft Paved	1ft Unpaved
Right Shoulder	3ft Wide	1.5ft Paved	1.5ft Unpaved
Left Guardrail	2.5ft from road		
Right Guardrail	3ft from road		

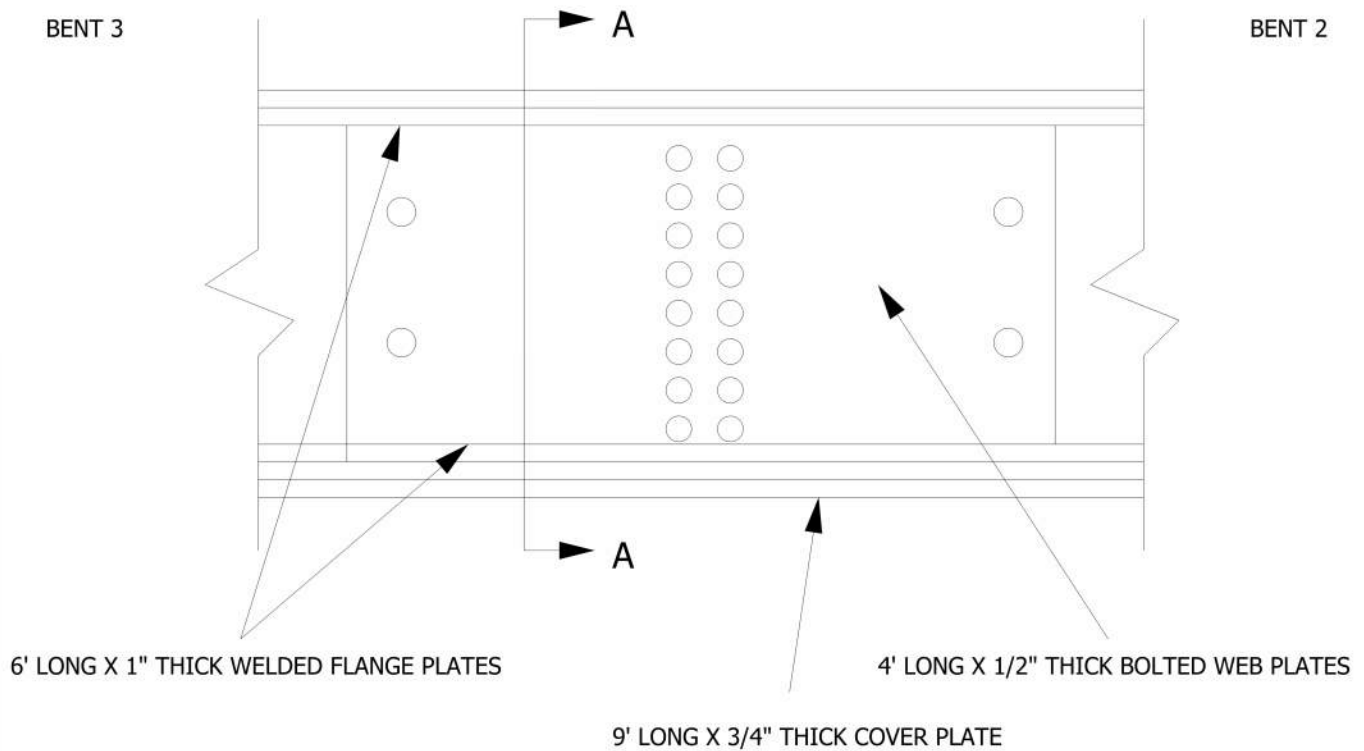
REVISED BY JOE KOENIG 7/30/2024

Title Approach Roadway		Description West Approach, Looking East	
Structure No: 970068	Drawn By: RC	Date: 8/15/2022	Filename: S001698000050.wes

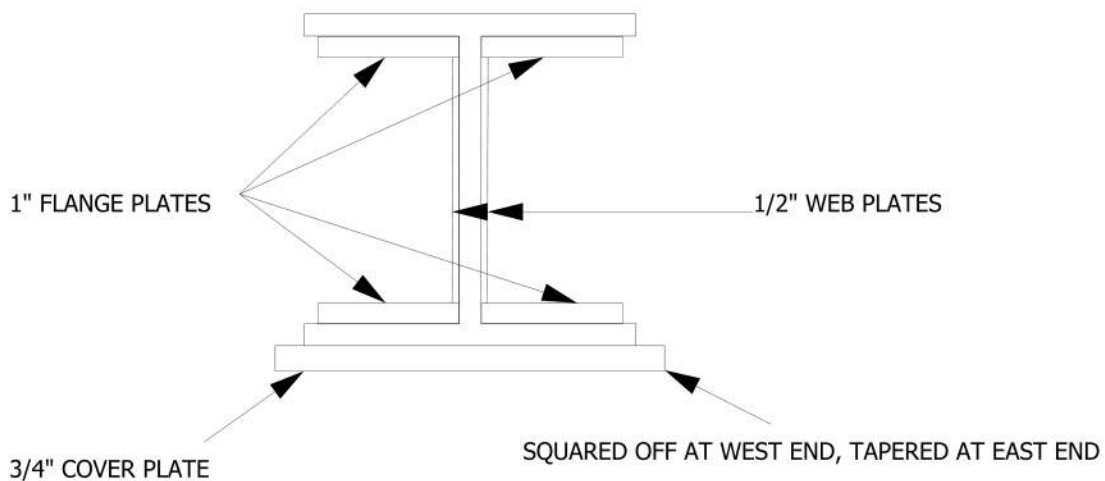
Bridge Inspection Field Sketch

MEASUREMENTS VERIFIED BY RC 8/18/2022

NOT TO SCALE



Section A-A



Title Beam Repair Info		Description Beam 1 Span 3	
Structure No: 970068	Drawn By: RC	Date: 8/25/2022	Filename: S001698000053.wes

Structure: 970068

County: WILSON

Date: 07/30/2024

Structure Photos



WEST APPROACH LOOKING EAST



WEST APPROACH LOOKING WEST

Structure: 970068

County: WILSON

Date: 07/30/2024

Structure Photos



RIGHT BRIDGE RAIL (LEFT RAIL SIMILAR)



WEARING SURFACE OVER END BENT 1

Structure: 970068

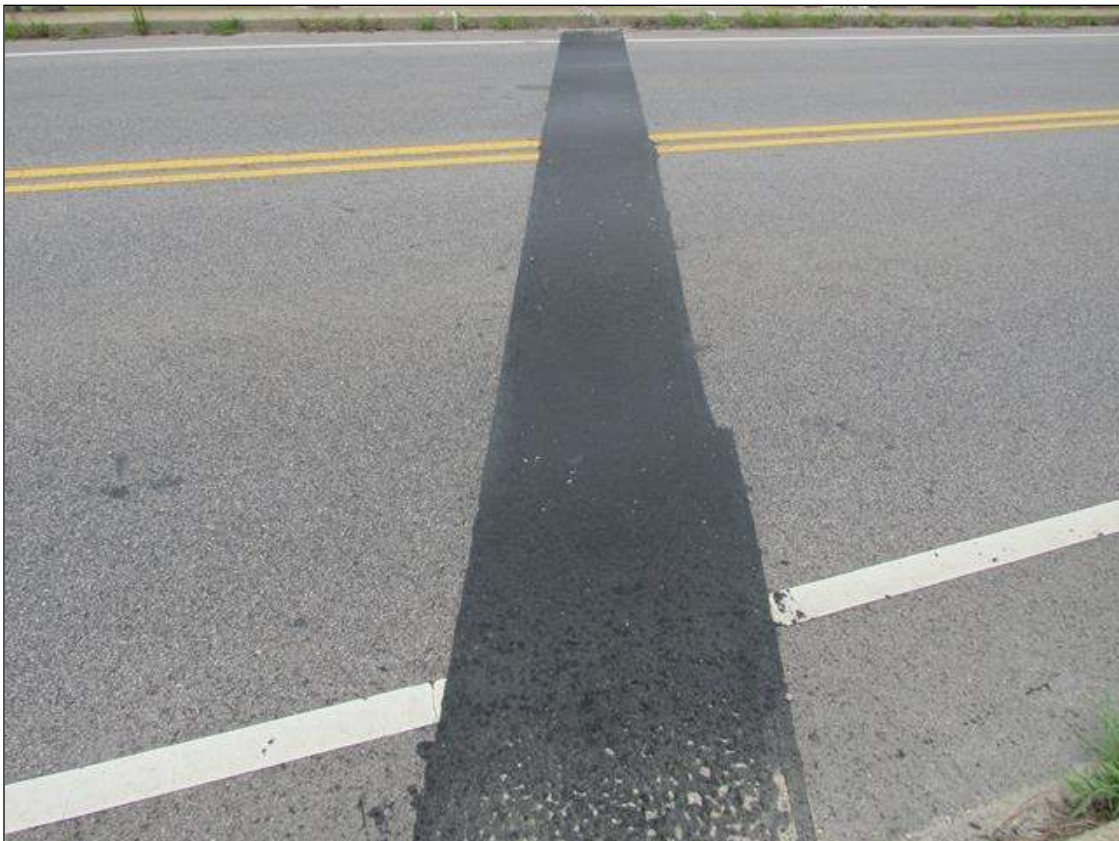
County: WILSON

Date: 07/30/2024

Structure Photos



WEARING SURFACE OVER BENT 1



WEARING SURFACE OVER BENT 2

Structure: 970068

County: WILSON

Date: 07/30/2024

Structure Photos



WEARING SURFACE OVER BENT 3



WEARING SURFACE OVER END BENT 2

Structure: 970068

County: WILSON

Date: 07/30/2024

Structure Photos



EAST APPROACH LOOKING EAST



EAST APPROACH LOOKING WEST

Structure: 970068

County: WILSON

Date: 07/30/2024

Structure Photos



END BENT 1



SPAN 1 SUPERSTRUCTURE

Structure: 970068

County: WILSON

Date: 07/30/2024

Structure Photos



BENT 1 LOOKING WEST



BENT 2 LOOKING WEST

Structure: 970068

County: WILSON

Date: 07/30/2024

Structure Photos



SPAN 2 SUPERSTRUCTURE



SPAN 3 SUPERSTRUCTURE

Structure: 970068

County: WILSON

Date: 07/30/2024

Structure Photos



BENT 3 LOOKING WEST



END BENT 2

Structure: 970068

County: WILSON

Date: 07/30/2024

Structure Photos



SPAN 4 SUPERSTRUCTURE



SIMILAR BEARING AT END BENTS (END BENT 2 AT BEAM 2 SHOWN)

Structure: 970068

County: WILSON

Date: 07/30/2024

Structure Photos



LOOKING NORTH



LOOKING SOUTH

Structure: 970068

County: WILSON

Date: 07/30/2024

Structure Photos



SUPERSTRUCTURE OVER BENT ENDS (BENT 2 SHOWN, ALL OTHERS SIMILAR)



SPAN 2 CLEARANCE OPENING LOOKING SOUTH

Structure: 970068

County: WILSON

Date: 07/30/2024

Structure Photos



SPAN 3 CLEARANCE OPENING LOOKING NORTH



NORTHWEST WINGWALL (ALL OTHERS SIMILAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Structure Photos



LOOKING NORTH FROM TOP OF BRIDGE



LOOKING SOUTH FROM TOP OF BRIDGE

Structure: 970068

County: WILSON

Date: 07/30/2024

Structure Photos



SPAN 3 BEAM 1 REPAIR



SPAN 4 WEARING SURFACE (ALL OTHERS SIMILAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Structure Photos



TYPICAL DELINEATOR (SOUTHEAST SHOWN)



BRIDGE PLAQUE

Structure: 970068

County: WILSON

Date: 07/30/2024

Structure Photos



TYPICAL GUARDRAIL POST SPACING 6.25 FEET (SOUTHEAST SHOWN, ALL OTHERS SIMILAR)



TYPICAL GUARDRAIL POST SPACING AT BRIDGE 1.55 FEET (SOUTHEAST SHOWN, ALL OTHERS SIMILAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Structure Photos



TYPICAL GUARDRAIL TRANSITION (NORTHEAST SHOWN, ALL OTHERS SIMILAR)



TYPICAL GUARDRAIL END TERMINAL (SOUTHEAST SHOWN, ALL OTHERS SIMILAR)

Structure: 970068

County: WILSON

Date: 07/30/2024

Structure Photos



TYPICAL GUARDRAIL ATTACHMENT TO BRIDGE RAIL (SOUTHEAST SHOWN, ALL OTHERS SIMILAR)



BENT 1 LOOKING EAST

Structure: 970068

County: WILSON

Date: 07/30/2024

Structure Photos



SIMILAR BEARING AT BENTS (BENT 1 AT BEAM 3 SHOWN)



BENT 2 LOOKING EAST

Structure: 970068

County: WILSON

Date: 07/30/2024

Structure Photos



SIMILAR BEARING AT BENT 2 (BEAM 4 SHOWN)



BENT 3 LOOKING EAST

County: WILSON

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
ROADWAY ITEMS						
0001	0000100000-N	800	MOBILIZATION	Lump Sum	L.S.	
0002	1330000000-E	607	INCIDENTAL MILLING	610.8 SY		
0003	1519000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	60 TON		
0004	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	5 TON		
0005	3030000000-E	862	STEEL BEAM GUARDRAIL	875 LF		
0006	3180000000-N	862	GUARDRAIL ANCHOR UNITS, TYPE ***** (III, MODIFIED)	4 EA		
0007	3287000000-N	862	GUARDRAIL END UNITS, TYPE TL-3	4 EA		
0008	3360000000-E	863	REMOVE EXISTING GUARDRAIL	875 LF		
0009	4400000000-E	1110	WORK ZONE SIGNS (STATIONARY)	661 SF		
0010	4405000000-E	1110	WORK ZONE SIGNS (PORTABLE)	192 SF		
0011	4410000000-E	1110	WORK ZONE SIGNS (BARRICADE MOUNTED)	194 SF		
0012	4415000000-N	1115	FLASHING ARROW BOARD	2 EA		
0013	4420000000-N	1120	PORTABLE CHANGEABLE MESSAGE SIGN	5 EA		
0014	4430000000-N	1130	DRUMS	180 EA		
0015	4445000000-E	1145	BARRICADES (TYPE III)	160 LF		
0016	4480000000-N	1165	TMA	2 EA		

County: WILSON

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0017	4775000000-E	1205	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (6") (IV)	7,081 LF		
0018	4855000000-E	1205	REMOVAL OF PAVEMENT MARKING LINES (6")	7,081 LF		
0019	4890000000-E	SP	GENERIC PAVEMENT MARKING ITEM INTEGRATED MULTIPOLYMER PAVEMENT MARKING LINES, (6", 90 MILS)	7,360 LF		
0020	4895000000-N	SP	GENERIC PAVEMENT MARKING ITEM INTEGRATED MULTIPOLYMER PAVEMENT MARKING SYMBOLS, (90 MILS)	1 EA		
0021	4895000000-N	SP	GENERIC PAVEMENT MARKING ITEM POLYCARBONATE H-SHAPED MARKERS	25 EA		
STRUCTURE ITEMS						
0022	8161000000-E	420	GROOVING BRIDGE FLOORS	4,792.2 SF		
0023	8296000000-N	442	POLLUTION CONTROL	Lump Sum	L.S.	
0024	8573000000-E	SP	LATEX MODIFIED CONC OVERLAY	36.4 CY		
0025	8580000000-E	SP	PLACING & FINISHING OF LATEX MODIFIED CONC OVERLAY	597.6 SY		
0026	8664000000-E	SP	SHOTCRETE REPAIRS	7.1 CF		
0027	8860000000-N	SP	GENERIC STRUCTURE ITEM CLEANING AND REPAINTING OF BRIDGE #970068	Lump Sum	L.S.	
0028	8860000000-N	SP	GENERIC STRUCTURE ITEM CURTAIN WALL REHABILITATION	Lump Sum	L.S.	
0029	8860000000-N	SP	GENERIC STRUCTURE ITEM PAINTING CONTAINMENT FOR BRIDGE #970068	Lump Sum	L.S.	
0030	8860000000-N	SP	GENERIC STRUCTURE ITEM REPAIRS TO DAMAGED STEEL OF BRIDGE #970068	Lump Sum	L.S.	
0031	8867000000-E	SP	GENERIC STRUCTURE ITEM POURABLE SILICONE JOINT SEALANT	100 LF		

County: WILSON

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0032	8882000000-E	SP	GENERIC STRUCTURE ITEM ELASTOMERIC CONCRETE FOR PRESERVATION	21 CF		
0033	8892000000-E	SP	GENERIC STRUCTURE ITEM BRIDGE JOINT DEMOLITION	82.8 SF		
0034	8892000000-E	SP	GENERIC STRUCTURE ITEM EPOXY COATING	352 SF		
0035	8893000000-E	SP	GENERIC STRUCTURE ITEM HYDRO-DEMOLITION OF BRIDGE DECK	597.6 SY		
0036	8893000000-E	SP	GENERIC STRUCTURE ITEM SCARIFYING BRIDGE DECK	597.6 SY		
0037	8897000000-N	SP	GENERIC STRUCTURE ITEM ELASTOMERIC BEARING	32 EA		
0038	8897000000-N	SP	GENERIC STRUCTURE ITEM STUB COLUMN	32 EA		
0039	8897000000-N	SP	GENERIC STRUCTURE ITEM TYPE II BRIDGE JACKING BRIDGE #970068	4 EA		

1036/Nov07/Q32636.1/D234720100000/E39

Total Amount Of Bid For Entire Project :