



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

May 24, 2023

Addendum No. 2

Contract No.: C204860
TIP No.: R-4045 / BR-0012
County: Cleveland
Project Description: Upgrade the US 74 / SR 1168 (Lattimore Road) intersection to an Interchange, and replace Bridge Nos. 220048 and 220049 on US 74 Over Sandy Run Creek

RE: Addendum No. 2 to Final RFP

July 18, 2023 Letting

To Whom It May Concern:

Reference is made to the Final Request for Proposals with Addendum No. 1 and dated April 26, 2023 recently furnished to you on the above project. We have since incorporated changes and have attached a copy of Addendum No. 2 for your information. Please note that all revisions have been highlighted in gray and are as follows:

On the COVER SHEET, add WBS Element No. 67012.3.1. This correction must be done in ink and initialed and dated by your Team's primary contractor (reference the attached example). The corrected Final RFP with Addendum No. 1 must be used to submit the Price Proposal for return to this office.

The first, second and third pages of the *Table of Contents* have been revised. Please void the first, second and third pages in your proposal and staple the revised first, second and third pages thereto.

Page No. 6 of the *Submittal of Quantities, Fuel Base Index Price and Opt-Out Option* Project Special Provision has been revised. Please void Page No. 6 in your proposal and staple the revised Page No. 6 thereto.

Page No. 9 of the *Steel Price Adjustment* Project Special Provision has been revised. Please void Page No. 9 in your proposal and staple the revised Page No. 9 thereto.

Page No. 63 of the *Price Adjustments for Asphalt Binder* Project Special Provision has been revised. Please void Page No. 63 in your proposal and staple the revised Page No. 63 thereto.

Page No. 202 of the *Environmental Permits* Scope of Work has been revised. Please void Page No. 202 in your proposal and staple the revised Page No. 202 thereto.

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

Telephone: (919) 707-6900
Fax: (919) 250-4119
Customer Service: 1-877-368-4968

Website: www.ncdot.gov

Location:
CENTURY CENTER COMPLEX
ENTRANCE B-2
1020 BIRCH RIDGE DRIVE
RALEIGH, NC 27610

Page No. 289 of the *Structures* Scope of Work has been revised. Please void Page No. 289 in your proposal and staple the revised Page No. 289 thereto.

Page Nos. 336 and 339 of the *Asphalt Concrete Plant Mix Pavements* Standard Special Provision has been revised. Please void Page Nos. 336 and 339 in your proposal and staple the revised Page Nos. 336 and 339 thereto.

Page No. 341 of the *Impact Attenuator Unit, Type TL-3 (Extended Life)* Standard Special Provision has been revised. Please void Page No. 341 in your proposal and staple the revised Page No. 341 thereto.

Page No. 342 of the *Portland Cement Concrete Production and Delivery* Standard Special Provision has been revised. Please void Page No. 342 in your proposal and staple the revised Page No. 342 thereto.

Page Nos. 378 and 379 of the Errata has been revised. Please void Page Nos. 378 and 379 in your proposal and staple the revised Page Nos. 378 and 379 thereto.

If you have any questions or need additional information, I can be reached by telephone at (919) 707-6901.

Sincerely,

DocuSigned by:



F81B6028A47A442
Ronald E. Davenport, Jr., PE
State Contract Officer

RED/lah

cc: Mark Stafford, PE
Boyd Tharrington, PE
File

Lamar Sylvester, PE
Timothy McFadden

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

FINAL REQUEST FOR PROPOSAL



DESIGN-BUILD PROJECT

TIP R-4045 / BR-0012

March 23, 2023

Includes

Addendum No. 1 – April 26, 2023



VOID FOR BIDDING

DATE AND TIME OF TECHNICAL PROPOSAL SUBMISSION: **June 22, 2023 BY 4:00 PM**

DATE AND TIME OF PRICE PROPOSAL SUBMISSION: **July 11 2023 BY 4:00 PM**

DATE AND TIME OF PRICE PROPOSAL OPENING: **July 18, 2023 AT 2:00 PM**

CONTRACT ID: C204860

WBS ELEMENT NO. 34598.2.2, 67012.3.1 XYZ Date

FEDERAL-AID NO. 1168006

COUNTY: Cleveland

ROUTE NO. US 74

MILES: 1.275

LOCATION: US 74 – At SR 1168 (N Academy Street / Lattimore Road) intersection to an interchange and replace Bridge Nos. 220048 and 220049 on US 74 over Sandy Run Creek

TYPE OF WORK: DESIGN-BUILD AS SPECIFIED IN THE SCOPE OF WORK
CONTAINED IN THE REQUEST FOR PROPOSALS

NOTICE:

ALL PROPOSERS 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 PROPOSER 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. PROPOSERS 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. NOT WITHSTANDING THESE LIMITATIONS ON BIDDING, THE PROPOSER WHO IS AWARDED ANY PROJECT SHALL COMPLY WITH CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA FOR LICENSING REQUIREMENTS WITHIN 60 CALENDAR DAYS OF BID OPENING, REGARDLESS OF FUNDING SOURCES.

5% BID BOND OR BID DEPOSIT REQUIRED

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within 150 feet of the NLEB and Tricolored Bat maternity roost trees from **April 1st** through **October 15th** of any year.

Regardless of the presence or absence of NLEB and Tricolored Bat maternity roost trees, tree cutting will not be allowed on any day of the year during the portion of the day that the air temperature is lower than 40 degrees Fahrenheit.

SUBMITTAL OF QUANTITIES, FUEL BASE INDEX PRICE AND OPT-OUT OPTION

(9-19-22)

DB1 G43

(A) Submittal of Quantities

Submit quantities on the *Fuel Usage Factor Chart and Estimate of Quantities* sheet, located in the back of this RFP, following the Itemized Proposal Sheet.

The Design-Build Team shall prepare an Estimate of Quantities that will be incorporating into the completed project and upon which the Price Proposal was based. The quantity breakdown shall include all items of work that appear in the *Fuel Usage Factor Chart and Estimate of Quantities* sheet. Only those items of work which are specifically noted in the *Fuel Usage Factor Chart and Estimate of Quantities* sheet will be subject to fuel price adjustments. The quantity estimate submitted shall be the final total quantity limit for which fuel price adjustments will be made for each item, regardless of Supplemental Agreements.

Submittal - The submittal shall be signed and dated by an officer of the Design-Build Team. The information shall be copied and submitted in a separate sealed package with the outer wrapping clearly marked "Fuel Price Adjustment" and shall be delivered at the same time and location as the Technical Proposal. The original shall be submitted in the Price Proposal.

Trade Secret - Information submitted on the *Fuel Usage Factor Chart and Estimate of Quantities* sheet will be considered "Trade Secret" in accordance with the requirements of G.S. 66-152(3) until such time as the Price Proposal is opened.

(B) Base Index Price

The Design-Build Team's Estimate of Quantities will be used on the various partial payment estimates to determine fuel price adjustments. The Design-Build Team shall submit a payment request for quantities of work completed based on the work completed for that estimate period. The quantities requested for partial payment shall be reflective of the work actually accomplished for the specified period. The Design-Build Team shall certify that the quantities are reasonable for the specified period. The base index price for DIESEL #2 FUEL is **\$ 2.6511** per gallon.

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 Department will calculate the indices for the different categories found on the Product Relationship Table below. For work item numbers that include multiple types of steel products, the category listed for that Trns*port item number shall be used for adjusting each steel component.

CATEGORY STEEL ITEMS PRICE TO BE INCLUDED IN THE FINAL RFP

The bidding index for Category 1 Steel items shall be **\$ 48.25 Dollars** per hundredweight.
 The bidding index for Category 2 Steel items shall be **\$ 74.26 Dollars** per hundredweight.
 The bidding index for Category 3 Steel items shall be **\$ 66.48 Dollars** per hundredweight.
 The bidding index for Category 4 Steel items shall be **\$ 58.60 Dollars** per hundredweight.
 The bidding index for Category 5 Steel items shall be **\$ 59.19 Dollars** per hundredweight.
 The bidding index for Category 6 Steel items shall be **\$ 78.86 Dollars** per hundredweight.
 The bidding index for Category 7 Steel items shall be **\$ 51.93 Dollars** per hundredweight.

The bidding indices represent a selling price of steel based on Fastmarkets data for the month of **April 2023**.

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 Final Request for Proposals, including all Addenda.

<i>Product Relationship Table</i>			
<i>Steel Product (Title)</i>	<i>BI, MI*</i>	<i>Adjustment Date for MI</i>	<i>Category</i>
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 and 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 and High Mount Standards	Based on one or more Fastmarkets indices	Material Received Date**	6

- Site specific conditions may limit a particular material beyond what is identified in this Project Special Provision. These conditions include, but are not limited to, abrasion, environmental, soil resistivity and pH, high ground water and special loading conditions. The Design-Build Team shall determine if additional restrictions are necessary.
- Slope drains shall be Corrugated Aluminum Alloy Pipe, Aluminized Corrugated Steel Pipe, Corrugated Polyethylene Pipe (HDPE Pipe) or Polyvinyl-Chloride Pipe (PVC Pipe).
- Transverse median drains, storm drainage system pipes, and open-ended cross drains shall be Reinforced Concrete Pipe unless 1) the pipe slope is greater than 10%, in which case the pipe shall be either Corrugated Aluminum Alloy Pipe or Aluminized Corrugated Steel Pipe 2) the pipe is within a walled roadway section in which case the pipe shall meet the requirements of the Hydraulics Scope of Work found elsewhere in this RFP or 3) the pipe will be constructed using trenchless methods in which case the pipe shall be Welded Steel Pipe.

BRIDGE APPROACH FILLS - GEOTEXTILE

(4-26-22)

DB4 R03

Place a single layer of Type 5 Geotextile one foot below the approach slab for the full width and length of the approach fill. Type 5 Geotextile shall meet the requirements of Section 1056 of the 2018 *Standard Specifications for Roads and Structures*. This revision applies to the 2018 Roadway Standard Drawing Nos. 422.01, 422.02, 422.03 and Detail in Lieu of Standard Drawing No. 422DO10.

PRICE ADJUSTMENTS FOR ASPHALT BINDER

(9-1-11) (Rev. 8-23-18)

DB6 R25

Price adjustments for asphalt binder for plant mix will be made in accordance with Section 620 of the 2018 *Standard Specifications for Roads and Structures*.

The CEI firm is responsible for maintaining records in accordance with the procedures outlined in the Construction Manual for “Weight Tickets As A Basis Of Payment.” And summarizing and submitting these records monthly for review and approval by the Resident Engineer.

The base price index for asphalt binder for plant mix is **\$639.38 per ton**.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on **May 1, 2023**.

PRICE ADJUSTMENTS - ASPHALT CONCRETE PLANT MIX

(9-1-11) (Rev. 9-8-17)

DB6 R26

Revise the 2018 *Standard Specifications for Roads and Structures* as follows:

Page 6-15, Article 609-11 and Page 6-31, Article 610-14

review meeting and the interagency permit impacts meeting, into the design and / or construction methods at no additional cost or contract time extension.

The Design-Build Team shall coordinate with the Department to ensure Dwarf-flowered Heartleaf (*Hexastylis naniflora*) species surveys have been performed and resolved.

All work by the Design-Build Team must be accomplished in strict compliance with the plans submitted with the permit application and in compliance with all conditions of the environmental permits issued by the environmental agencies. The Design-Build Team shall provide each of its contractors and / or agents associated with the construction or maintenance of this project with a copy of the environmental permits.

Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall strictly adhere to these commitments, as well as others, including but not limited to, those included in the R-4045 / BR-0012 Categorical Exclusion, all environmental permits, all interagency meetings, and all site visits.

Cultural Resources

Based on the Department's preliminary design, NCDOT has reached a no adverse effect determination under Section 106 of the National Historic Preservation Act for this Undertaking. (Reference the July 28, 2022 Effects Determination, as well as the archaeological survey and historic architecture survey of the respective Areas of Potential Effects (APE) provided by the Department.) If the Design-Build Team's design or construction activities 1) impact any property that has been determined eligible for the National Register of Historic Places (NRHP) beyond the impacts shown in the Department's Preliminary Roadway Plans, or 2) go outside the limits of the APEs, consultation with NCDOT, North Carolina State Historic Preservation Office (NC-HPO), and FHWA, as appropriate, must occur prior to any construction activities occurring in that area. If the consultation requires additional NRHP evaluation / surveys and / or Section 106 mitigation, the Design-Build Team shall engage the services of a NCDOT prequalified historic architecture and / or archaeology consultant to conduct further historic architecture and / or archaeology evaluation / surveys and / or determine potential mitigation. The Design-Build Team shall be responsible for all costs associated with the additional impacts, including but not limited to any additional design effort, additional construction, historic architecture and / or archaeology evaluations / surveys, coordination with NCDOT, NC-HPO and FHWA, and any required commitments and / or mitigation. The Design-Build Team is cautioned that any impacts to Archaeological Sites 31CL175, 31CL176 and 31CL177 will likely result in an adverse effect to the site and require a reevaluation. The Department will not honor any requests for additional contract time or compensation for any efforts required for the aforementioned activities, including but not limited to public involvement, additional design effort, required evaluations / surveys, required commitments / mitigation, additional construction effort, and / or additional environmental agency coordination and approvals.

Prior to performing any clearing and grubbing operation, the Design-Build Team shall install High-Visibility Fencing along the proposed right of way / control of access and / or easements at Archaeological Sites 31CL175, 31CL176 and 31CL177, as shown on the plans developed by the Design-Build Team. The High-Visibility Fencing shall be maintained and remain in place

Sound Barrier Walls and Retaining Walls

All proposed sound barrier wall and retaining wall surfaces shall have equivalent surface treatment.

All ground mounted sound barrier walls shall be detailed in accordance with Structure Standard Drawings SBW1 and SBW2, and SBW3.

The Design-Build Team shall apply non-sacrificial anti-graffiti coating on all exposed surfaces of sound barrier walls and all retaining walls, including MSE walls.

General

The Design-Build Team's primary design firm shall be on the Department's list of firms qualified for structure design and maintain an office in North Carolina.

The Design-Build Team shall obtain Structure numbers from NCDOT for all new bridges and include the Structure numbers on applicable plan sheets and correspondence.

Unless allowed or directed otherwise in this RFP, designs shall be in accordance with the latest editions of the *AASHTO LRFD Bridge Design Specifications* (with exceptions noted in the *NCDOT Structures Management Unit Manual*), *NCDOT LRFD Driven Pile Foundation Design Policy*, *NCDOT Structures Management Unit Manual* (including Policy Memos) and *NCDOT 2021 Traffic Noise Policy*.

Use of Florida Department of Transportation Prestressed Florida I-Beams (FIB), the Prestressed Concrete Committee for Economic Fabrication (PCEF) prestressed concrete girders, and Modified Bulb Tee girders will be allowed. However, the structural details shall be subject to Department review and acceptance post-award.

Unless allowed or directed otherwise in this RFP, all construction and materials shall be in accordance with 2018 NCDOT *Standard Specifications for Roads and Structures*, *NCDOT Structures Management Unit Project Special Provisions* and *NCDOT Structures Management Unit Standard Drawings*. Reference the Structures Management Unit website below:

<https://connect.ncdot.gov/resources/Structures/Pages/default.aspx>

Alternate designs, details or construction practices (such as those employed by other states, but not standard practice in NC) are subject to Department review and acceptance and will be evaluated on a case by case basis.

Page 6-18, Table 610-3, MIX DESIGN CRITERIA, replace with the following:

TABLE 610-3 MIX DESIGN CRITERIA									
Mix Type	Design ESALs millions ^A	Binder PG Grade	Compaction Levels		Max. Rut Depth (mm)	Volumetric Properties ^B			
			Gmm @			VMA	VTM	VFA	%Gmm @ Nini
			Nini	Ndes		% Min.	%	Min.-Max.	
S4.75A	< 1	64 - 22	6	50	11.5	16.0	4.0 - 6.0	65 - 80	≤ 91.5
S9.5B	0 - 3	64 - 22	6	50	9.5	16.0	3.0 - 5.0	70 - 80	≤ 91.5
S9.5C	3 - 30	64 - 22	7	65	6.5	15.5	3.0 - 5.0	65 - 78	≤ 90.5
S9.5D	> 30	76 - 22	8	100	4.5	15.5	3.0 - 5.0	65 - 78	≤ 90.0
I19.0C	ALL	64 - 22	7	65	-	13.5	3.0 - 5.0	65 - 78	≤ 90.5
B25.0C	ALL	64 - 22	7	65	-	12.5	3.0 - 5.0	65 - 78	≤ 90.5
Design Parameter					Design Criteria				
All Mix Types	Dust to Binder Ratio ($P_{0.075} / P_{be}$)				0.6 - 1.4 ^C				
	Tensile Strength Ratio (TSR) ^D				85% Min. ^E				

A. Based on 20-year design traffic.
 B. Volumetric Properties based on specimens compacted to N_{des} as modified by the Department.
 C. Dust to Binder Ratio ($P_{0.075} / P_{be}$) for Type S4.75A is 1.0 - 2.0.
 D. NCDOT-T-283 (No Freeze-Thaw cycle required).
 E. TSR for Type S4.75A & B25.0C mixes is 80% minimum.

Page 6-19, Table 610-5, BINDER GRADE REQUIREMENTS (BASED ON RBR%), replace with the following:

TABLE 610-5 BINDER GRADE REQUIREMENTS (BASED ON RBR%)			
Mix Type	%RBR ≤ 20%	21% ≤ %RBR ≤ 30%	%RBR > 30%
S4.75A, S9.5B, S9.5C, I19.0C, B25.0C	PG 64-22	PG 64-22 ^A	PG 58-28
S9.5D, OGFC	PG 76-22 ^B	n/a	n/a

- A. If the mix contains any amount of RAS, the virgin binder shall be PG 58-28.
 B. Maximum Recycled Binder Replacement (%RBR) is 18% for mixes using PG 76-22 binder.

TABLE 1012-1 AGGREGATE CONSENSUS PROPERTIES^A				
Mix Type	Coarse Aggregate Angularity^B	Fine Aggregate Angularity % Minimum	Sand Equivalent % Minimum	Flat and Elongated 5 : 1 Ratio % Maximum
<i>Test Method</i>	<i>ASTM D5821</i>	<i>AASHTO T 304</i>	<i>AASHTO T 176</i>	<i>ASTM D4791</i>
S4.75A; S9.5B	75 / -	40	40	-
S9.5C; I19.0C; B25.0C	95 / 90	45	45	10
S9.5D	100 / 100	45	50	10
OGFC	100 / 100	45	45	10
UBWC	100 / 85	45	45	10

A. Requirements apply to the design aggregate blend.

B. 95 / 90 denotes that 95% of the coarse aggregate has one fractured face and 90% has two or more fractured faces.

Page 10-30, Subarticle 1012-1(B)(6), Toughness (Resistance to Abrasion), line 12, replace “OGAFC” with “OGFC”.

SUBSURFACE DRAINAGE

(9-1-11) (Rev. 9-14-17)

DB8 R05

Revise the 2018 *Standard Specifications for Roads and Structures* as follows:

Page 8-11, Article 815-1, delete the first sentence and replace with the following:

The Design-Build Team shall construct subsurface drains, underdrains, blind drains and other types of drains where groundwater is within six feet of subgrade.

GUARDRAIL END UNITS & TEMPORARY GUARDRAIL END UNITS, TYPE TL-2

(10-21-08) (Rev. 5-16-23)

862

DB8 R64

Description

Furnish and install guardrail end units in accordance with the details in the plans developed by the Design-Build Team, the applicable requirements of Section 862 of the 2018 *Standard Specifications for Roads and Structures*, and at locations shown in the plans developed by the Design-Build Team.

Materials

The Design-Build Team shall furnish guardrail end units listed on the NCDOT Approved Products List at <https://apps.dot.state.nc.us/vendor/approvedproducts/>. Units shall not be modified by the manufacturer and installer once approved and on the NCDOT Approved Products List.

GUARDRAIL ANCHOR UNITS AND TEMPORARY GUARDRAIL ANCHOR UNITS

(11-22-17)

862

DB8 R70

Guardrail anchor units shall be in accordance with the details in the plans developed by the Design-Build Team and the applicable requirements of Section 862 of the 2018 *Standard Specifications for Roads and Structures*.

****NOTE**** Deleted *Impact Attenuator Unit, Type TL-3 (Extended Life)* Project Special Provision

IMPACT ATTENUATOR UNIT, TYPE TL-3

(4-20-04) (Rev. 12-12-18)

DB8 R75

Description

The Design-Build Team shall furnish and install impact attenuator units and any components necessary to connect the impact attenuator units in accordance with the manufacturer's requirement, the details in the plans developed by the Design-Build Team, and at locations shown in the plans developed by the Design-Build Team.

Materials

The Design-Build Team shall furnish impact attenuator units listed on the NCDOT Approved Products List at <https://apps.dot.state.nc.us/vendor/approvedproducts/> or approved equal.

Prior to installation, the Design-Build Team shall submit to the Engineer:

1. FHWA acceptance letter for each impact attenuator unit certifying it meets the requirements of the Manual for Assessing Safety Hardware (MASH-16), Test Level 3, in accordance with Article 106-2 of the 2018 *Standard Specifications for Roads and Structures*.
2. Certified working drawings and assembling instructions from the manufacturer for each impact attenuator unit in accordance with Article 105-2 of the 2018 *Standard Specifications for Roads and Structures*.

No modifications shall be made to the impact attenuator unit without the express written permission from the manufacturer. Perform installation in accordance with the details in the plans developed by the Design-Build Team, and details and assembling instructions furnished by the manufacturer.

Construction Methods

If the median width is 40 feet or less, the Design-Build Team shall supply NON-GATING Impact Attenuator Units.

If the median width is greater than 40 feet, the Design-Build Team may use GATING or NON-GATING Impact Attenuator Units.

PORTLAND CEMENT CONCRETE PRODUCTION AND DELIVERY

(7-27-20)

1000, 1014, 1024

DB10 R01

Revise the 2018 *Standard Specifications for Roads and Structures* as follows:

Page 10-6, Table 1000-1, REQUIREMENTS FOR CONCRETE, replace with the following:

TABLE 1000-1
REQUIREMENTS FOR CONCRETE

Class of Concrete	Min. Compressive Strength at 28 days <i>psi</i>	Maximum Water-Cement Ratio				Consistency Maximum Slump		Cement Content			
		Air-Entrained Concrete		Non-Air-Entrained Concrete		Vibrated <i>inch</i>	Non-Vibrated <i>inch</i>	Vibrated		Non-Vibrated	
		Rounded Aggregate	Angular Aggregate	Rounded Aggregate	Angular Aggregate			Min.	Max.	Min.	Max.
		<i>lb/cy</i>	<i>lb/cy</i>	<i>lb/cy</i>	<i>lb/cy</i>	<i>lb/cy</i>	<i>lb/cy</i>	<i>lb/cy</i>	<i>lb/cy</i>		
AA	4500	0.381	0.426	---	---	3.5 ^A	---	639	715	---	---
AA Slip Form	4500	0.381	0.426	---	---	1.5	---	639	715	---	---
Drilled Pier	4500	---	---	0.450	0.450	---	5 – 7 dry 7 - 9 wet	---	---	640	800
A	3000	0.488	0.532	0.550	0.594	3.5 ^A	4.0	564	---	602	---
B	2500	0.488	0.567	0.559	0.630	1.5 machine placed 2.5 ^A hand placed	4.0	508	---	545	---
Sand Light-weight	4500	---	0.420	---	---	4.0 ^A	---	715	---	---	---
Latex Modified	3000 (at 7 days)	0.400	0.400	---	---	6.0	---	658	---	---	---
Flowable Fill excavatable	150 max. (at 56 days)	as needed	as needed	as needed	as needed	---	Flowable	---	---	40	100
Flowable Fill non-excavatable	125	as needed	as needed	as needed	as needed	---	Flowable	---	---	100	as needed
Pavement	4500 Design, field 650 flexural, design only	0.559	0.559	---	---	1.5 slip form 3.0 hand placed	---	526	---	---	---
Precast	See Table 1077-1	as needed	as needed	---	---	6.0	as needed	as needed	as needed	as needed	as needed
Prestressed	per contract	See Table 1078-1	See Table 1078-1	---	---	8.0	---	564	as needed	---	---

A. The slump may be increased to six inches, provided the increase in slump is achieved by adding a chemical admixture conforming to Section 1024-3. In no case shall the water-cement ratio on the approved design be exceeded. Concrete exhibiting segregation and / or excessive bleeding will be rejected. Utilizing an admixture to modify slump does not relinquish the Design-Build Team’s responsibility to ensure the final product quality

Page 10-48, Subarticle 1020-10(A) Mineral Fibers, Line 27, replace “Table 1012-5” with “Table 1020-2”.

Page 10-52, Article 1024-5 FLY ASH, Line 12, replace “Table 2” with “Table 3”.

Page 10-60, Subarticle 1032-6(F) Joint Materials, Line 15, replace “AASHTO M 198” with “ASTM C990” and delete “Type B”.

Page 10-61, Article 1034-3 CONCRETE SEWER PIPE, Line 33, replace “AASHTO M 198” with “ASTM C990” and delete “Type A or B”.

Page 10-64, Article 1040-1 BRICK, Line 12, replace “ASTM C62” with “ASTM C62 or ASTM C216”.

Page 10-67, Article 1044-7 CORRUGATED PLASTIC PIPE AND FITTINGS, Line 24, replace “AASHTO M 294 for heavy duty tubing” with “Article 1032-7 and AASHTO M 252”.

Page 10-68, Subarticle 1046-3(D) Offset Blocks, Lines 30-32, delete “Before beginning the installation of recycled offset block, submit the FHWA acceptance letter for each type of block to the Engineer for approval.”

Page 10-69, Subarticle 1046-3(D) Offset Blocks, before Line 1, replace “WIRE DIAMETER” with “COMPOSITE OFFSET BLOCKS” as the title of Table 1046-1, delete “Testing” property and associated requirement from Table 1046-1, and replace “Approval” requirement of “Approved for use by the FHWA” with “Approved for use on the NCDOT APL” in Table 1046-1.

Page 10-80, Article 1060-2 FERTILIZER, Line 18, replace “North Carolina Fertilizer Law” with “North Carolina Commercial Fertilizer Law”.

Page 10-83, Article 1060-9 WATER, Line 9, replace “15 NCAC 2B.0200” with “15A NCAC 02B.0200”.

****Deleted Article 1070-2 REINFORCEMENT STEEL BAR FOR ROADS AND STRUCTURES****

Page 10-86, Article 1070-3 COLD DRAWN STEEL WIRE AND WIRE REINFORCEMENT, Line 23 and 25, replace “M 32” and “M 55” with “M 336”.

Page 10-87, Article 1070-6 DOWELS AND TIE BARS FOR PORTLAND CEMENT CONCRETE PAVEMENT, Line 17, replace “AASHTO M 32” with “AASHTO M 336”.

Page 10-88, Subarticle 1070-7(D) Handling, Storage and Transportation, Line 40, replace “Section” with “Subarticle”.

Page 10-89, Article 1070-8 SPIRAL COLUMN REINFORCING STEEL, Line 21, replace “AASHTO M 32” with “AASHTO M 336”.

Page 10-91, Article 1072-3 BEARING PLATE ASSEMBLIES, Line 44, replace “Article 1080-9” with “Article 1080-7”.

Page 10-92, Subarticle 1072-5(A) General, after Line Page 30, replace “SAMPLING REQUIREMENTS FOR HIGH STRENGTH BOLTS, NUTS AND WASHERS” with “SAMPLING REQUIREMENTS FOR HIGH STRENGTH BOLTS, NUTS AND WASHERS TO INCLUDE DIRECT TENSION INDICATORS” as the title of Table 1072-1.

Page 10-92, Subarticle 1072-5(A) General, after Line 30, replace “SAMPLING REQUIREMENTS FOR HIGH STRENGTH BOLTS, NUTS AND WASHERS” with “SAMPLING REQUIREMENTS FOR HIGH STRENGTH BOLTS, NUTS AND WASHERS TO INCLUDE DIRECT TENSION INDICATORS” as the title of Table 1072-1.

Page 10-95, Subarticle 1072-5(D)(7)(a) Mill Test Report(s), Line 18, replace title with “Mill Test Report(s) (MTR)”.

Page 10-95, Subarticle 1072-5(D)(7)(b) Manufacturer Certified Test Report(s), Line 24, replace title with “Manufacturer Certified Test Report(s) (MCTR)”.

Page 10-96, Subarticle 1072-5(D)(7)(c) Distributor Certified Test Report(s), Line 1, replace title with “Distributor Certified Test Report(s) (DCTR)”.

Page 10-98, Subarticle 1072-5(F) Galvanized High Strength Bolts, Nuts and Washers, Line 11, replace “Article 1080-9” with “Article 1080-7”.

Page 10-98, Subarticle 1072-5(F) Galvanized High Strength Bolts, Nuts and Washers, Line 11, replace “Article 1080-9” with “Article 1080-7”.

Page 10-111, Subarticle 1072-18(B) General, Line 24, replace “Structural Welding Code-Reinforcing Steel” with “Structural Welding Code-Steel Reinforcing Bars”.

Page 10-117, Article 1074-1 WELDING, Lines 21-22, replace “Structural Welding Code-Reinforcing Steel” with “Structural Welding Code-Steel Reinforcing Bars”.

Page 10-119, Article 1074-7(B) Gray Iron Castings, Line 16, replace “M306” with “AASHTO M 306”.

Page 10-121, Article 1076-7, REPAIR OF GALVANIZING, Line 8, replace Article “1080-9” with “1080-7”.

Page 10-125, Subarticle 1077-5(B) Testing, Line 31, replace “T 23” with “R 100”.

Page 10-131, Subarticle 1078-4(A) Composition and Design, after Line 23, in Table 1078-2 replace “T 23” with “R 100”.

Page 10-135, Subarticle 1078-4(J)(2) Mixing Time for Central Mixed Concrete, line 46, replace “Table 1078-2” with “Table 1078-3”

Page 10-136, Subarticle 1078-4(J)(2) Mixing Time for Central Mixed Concrete, after Line 17, replace “T23” with “R100”.

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

FINAL REQUEST FOR PROPOSAL



DESIGN-BUILD PROJECT

TIP R-4045 / BR-0012

March 23, 2023

Includes

Addendum No. 1 – April 26, 2023



VOID FOR BIDDING

DATE AND TIME OF TECHNICAL PROPOSAL SUBMISSION: **June 22, 2023 BY 4:00 PM**

DATE AND TIME OF PRICE PROPOSAL SUBMISSION: **July 11 2023 BY 4:00 PM**

DATE AND TIME OF PRICE PROPOSAL OPENING: **July 18, 2023 AT 2:00 PM**

CONTRACT ID: C204860

WBS ELEMENT NO. 34598.2.2, 67012.3.1 XYZ Date

FEDERAL-AID NO. 1168006

COUNTY: Cleveland

ROUTE NO. US 74

MILES: 1.275

LOCATION: US 74 – At SR 1168 (N Academy Street / Lattimore Road) intersection to an interchange and replace Bridge Nos. 220048 and 220049 on US 74 over Sandy Run Creek

TYPE OF WORK: DESIGN-BUILD AS SPECIFIED IN THE SCOPE OF WORK
CONTAINED IN THE REQUEST FOR PROPOSALS

NOTICE:

ALL PROPOSERS 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 PROPOSER 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. PROPOSERS 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. NOT WITHSTANDING THESE LIMITATIONS ON BIDDING, THE PROPOSER WHO IS AWARDED ANY PROJECT SHALL COMPLY WITH CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA FOR LICENSING REQUIREMENTS WITHIN 60 CALENDAR DAYS OF BID OPENING, REGARDLESS OF FUNDING SOURCES.

5% BID BOND OR BID DEPOSIT REQUIRED

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within 150 feet of the NLEB and Tricolored Bat maternity roost trees from **April 1st** through **October 15th** of any year.

Regardless of the presence or absence of NLEB and Tricolored Bat maternity roost trees, tree cutting will not be allowed on any day of the year during the portion of the day that the air temperature is lower than 40 degrees Fahrenheit.

SUBMITTAL OF QUANTITIES, FUEL BASE INDEX PRICE AND OPT-OUT OPTION

(9-19-22)

DB1 G43

(A) Submittal of Quantities

Submit quantities on the *Fuel Usage Factor Chart and Estimate of Quantities* sheet, located in the back of this RFP, following the Itemized Proposal Sheet.

The Design-Build Team shall prepare an Estimate of Quantities that will be incorporating into the completed project and upon which the Price Proposal was based. The quantity breakdown shall include all items of work that appear in the *Fuel Usage Factor Chart and Estimate of Quantities* sheet. Only those items of work which are specifically noted in the *Fuel Usage Factor Chart and Estimate of Quantities* sheet will be subject to fuel price adjustments. The quantity estimate submitted shall be the final total quantity limit for which fuel price adjustments will be made for each item, regardless of Supplemental Agreements.

Submittal - The submittal shall be signed and dated by an officer of the Design-Build Team. The information shall be copied and submitted in a separate sealed package with the outer wrapping clearly marked "Fuel Price Adjustment" and shall be delivered at the same time and location as the Technical Proposal. The original shall be submitted in the Price Proposal.

Trade Secret - Information submitted on the *Fuel Usage Factor Chart and Estimate of Quantities* sheet will be considered "Trade Secret" in accordance with the requirements of G.S. 66-152(3) until such time as the Price Proposal is opened.

(B) Base Index Price

The Design-Build Team's Estimate of Quantities will be used on the various partial payment estimates to determine fuel price adjustments. The Design-Build Team shall submit a payment request for quantities of work completed based on the work completed for that estimate period. The quantities requested for partial payment shall be reflective of the work actually accomplished for the specified period. The Design-Build Team shall certify that the quantities are reasonable for the specified period. The base index price for DIESEL #2 FUEL is **\$ 2.6511** per gallon.

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 Department will calculate the indices for the different categories found on the Product Relationship Table below. For work item numbers that include multiple types of steel products, the category listed for that Trns*port item number shall be used for adjusting each steel component.

CATEGORY STEEL ITEMS PRICE TO BE INCLUDED IN THE FINAL RFP

The bidding index for Category 1 Steel items shall be **\$ 48.25 Dollars** per hundredweight.
 The bidding index for Category 2 Steel items shall be **\$ 74.26 Dollars** per hundredweight.
 The bidding index for Category 3 Steel items shall be **\$ 66.48 Dollars** per hundredweight.
 The bidding index for Category 4 Steel items shall be **\$ 58.60 Dollars** per hundredweight.
 The bidding index for Category 5 Steel items shall be **\$ 59.19 Dollars** per hundredweight.
 The bidding index for Category 6 Steel items shall be **\$ 78.86 Dollars** per hundredweight.
 The bidding index for Category 7 Steel items shall be **\$ 51.93 Dollars** per hundredweight.

The bidding indices represent a selling price of steel based on Fastmarkets data for the month of **April 2023**.

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 Final Request for Proposals, including all Addenda.

<i>Product Relationship Table</i>			
<i>Steel Product (Title)</i>	<i>BI, MI*</i>	<i>Adjustment Date for MI</i>	<i>Category</i>
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 and 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 and High Mount Standards	Based on one or more Fastmarkets indices	Material Received Date**	6

- Site specific conditions may limit a particular material beyond what is identified in this Project Special Provision. These conditions include, but are not limited to, abrasion, environmental, soil resistivity and pH, high ground water and special loading conditions. The Design-Build Team shall determine if additional restrictions are necessary.
- Slope drains shall be Corrugated Aluminum Alloy Pipe, Aluminized Corrugated Steel Pipe, Corrugated Polyethylene Pipe (HDPE Pipe) or Polyvinyl-Chloride Pipe (PVC Pipe).
- Transverse median drains, storm drainage system pipes, and open-ended cross drains shall be Reinforced Concrete Pipe unless 1) the pipe slope is greater than 10%, in which case the pipe shall be either Corrugated Aluminum Alloy Pipe or Aluminized Corrugated Steel Pipe 2) the pipe is within a walled roadway section in which case the pipe shall meet the requirements of the Hydraulics Scope of Work found elsewhere in this RFP or 3) the pipe will be constructed using trenchless methods in which case the pipe shall be Welded Steel Pipe.

BRIDGE APPROACH FILLS - GEOTEXTILE

(4-26-22)

DB4 R03

Place a single layer of Type 5 Geotextile one foot below the approach slab for the full width and length of the approach fill. Type 5 Geotextile shall meet the requirements of Section 1056 of the 2018 *Standard Specifications for Roads and Structures*. This revision applies to the 2018 Roadway Standard Drawing Nos. 422.01, 422.02, 422.03 and Detail in Lieu of Standard Drawing No. 422DO10.

PRICE ADJUSTMENTS FOR ASPHALT BINDER

(9-1-11) (Rev. 8-23-18)

DB6 R25

Price adjustments for asphalt binder for plant mix will be made in accordance with Section 620 of the 2018 *Standard Specifications for Roads and Structures*.

The CEI firm is responsible for maintaining records in accordance with the procedures outlined in the Construction Manual for “Weight Tickets As A Basis Of Payment.” And summarizing and submitting these records monthly for review and approval by the Resident Engineer.

The base price index for asphalt binder for plant mix is **\$639.38 per ton**.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on **May 1, 2023**.

PRICE ADJUSTMENTS - ASPHALT CONCRETE PLANT MIX

(9-1-11) (Rev. 9-8-17)

DB6 R26

Revise the 2018 *Standard Specifications for Roads and Structures* as follows:

Page 6-15, Article 609-11 and Page 6-31, Article 610-14

review meeting and the interagency permit impacts meeting, into the design and / or construction methods at no additional cost or contract time extension.

The Design-Build Team shall coordinate with the Department to ensure Dwarf-flowered Heartleaf (*Hexastylis naniflora*) species surveys have been performed and resolved.

All work by the Design-Build Team must be accomplished in strict compliance with the plans submitted with the permit application and in compliance with all conditions of the environmental permits issued by the environmental agencies. The Design-Build Team shall provide each of its contractors and / or agents associated with the construction or maintenance of this project with a copy of the environmental permits.

Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall strictly adhere to these commitments, as well as others, including but not limited to, those included in the R-4045 / BR-0012 Categorical Exclusion, all environmental permits, all interagency meetings, and all site visits.

Cultural Resources

Based on the Department's preliminary design, NCDOT has reached a no adverse effect determination under Section 106 of the National Historic Preservation Act for this Undertaking. (Reference the July 28, 2022 Effects Determination, as well as the archaeological survey and historic architecture survey of the respective Areas of Potential Effects (APE) provided by the Department.) If the Design-Build Team's design or construction activities 1) impact any property that has been determined eligible for the National Register of Historic Places (NRHP) beyond the impacts shown in the Department's Preliminary Roadway Plans, or 2) go outside the limits of the APEs, consultation with NCDOT, North Carolina State Historic Preservation Office (NC-HPO), and FHWA, as appropriate, must occur prior to any construction activities occurring in that area. If the consultation requires additional NRHP evaluation / surveys and / or Section 106 mitigation, the Design-Build Team shall engage the services of a NCDOT prequalified historic architecture and / or archaeology consultant to conduct further historic architecture and / or archaeology evaluation / surveys and / or determine potential mitigation. The Design-Build Team shall be responsible for all costs associated with the additional impacts, including but not limited to any additional design effort, additional construction, historic architecture and / or archaeology evaluations / surveys, coordination with NCDOT, NC-HPO and FHWA, and any required commitments and / or mitigation. The Design-Build Team is cautioned that any impacts to Archaeological Sites 31CL175, 31CL176 and 31CL177 will likely result in an adverse effect to the site and require a reevaluation. The Department will not honor any requests for additional contract time or compensation for any efforts required for the aforementioned activities, including but not limited to public involvement, additional design effort, required evaluations / surveys, required commitments / mitigation, additional construction effort, and / or additional environmental agency coordination and approvals.

Prior to performing any clearing and grubbing operation, the Design-Build Team shall install High-Visibility Fencing along the proposed right of way / control of access and / or easements at Archaeological Sites 31CL175, 31CL176 and 31CL177, as shown on the plans developed by the Design-Build Team. The High-Visibility Fencing shall be maintained and remain in place

Sound Barrier Walls and Retaining Walls

All proposed sound barrier wall and retaining wall surfaces shall have equivalent surface treatment.

All ground mounted sound barrier walls shall be detailed in accordance with Structure Standard Drawings SBW1 and SBW2, and SBW3.

The Design-Build Team shall apply non-sacrificial anti-graffiti coating on all exposed surfaces of sound barrier walls and all retaining walls, including MSE walls.

General

The Design-Build Team's primary design firm shall be on the Department's list of firms qualified for structure design and maintain an office in North Carolina.

The Design-Build Team shall obtain Structure numbers from NCDOT for all new bridges and include the Structure numbers on applicable plan sheets and correspondence.

Unless allowed or directed otherwise in this RFP, designs shall be in accordance with the latest editions of the *AASHTO LRFD Bridge Design Specifications* (with exceptions noted in the *NCDOT Structures Management Unit Manual*), *NCDOT LRFD Driven Pile Foundation Design Policy*, *NCDOT Structures Management Unit Manual* (including Policy Memos) and *NCDOT 2021 Traffic Noise Policy*.

Use of Florida Department of Transportation Prestressed Florida I-Beams (FIB), the Prestressed Concrete Committee for Economic Fabrication (PCEF) prestressed concrete girders, and Modified Bulb Tee girders will be allowed. However, the structural details shall be subject to Department review and acceptance post-award.

Unless allowed or directed otherwise in this RFP, all construction and materials shall be in accordance with 2018 NCDOT *Standard Specifications for Roads and Structures*, *NCDOT Structures Management Unit Project Special Provisions* and *NCDOT Structures Management Unit Standard Drawings*. Reference the Structures Management Unit website below:

<https://connect.ncdot.gov/resources/Structures/Pages/default.aspx>

Alternate designs, details or construction practices (such as those employed by other states, but not standard practice in NC) are subject to Department review and acceptance and will be evaluated on a case by case basis.

Page 6-18, Table 610-3, MIX DESIGN CRITERIA, replace with the following:

TABLE 610-3 MIX DESIGN CRITERIA									
Mix Type	Design ESALs millions ^A	Binder PG Grade	Compaction Levels		Max. Rut Depth (mm)	Volumetric Properties ^B			
			Gmm @			VMA	VTM	VFA	%Gmm @ Nini
			Nini	Ndes		% Min.	%	Min.-Max.	
S4.75A	< 1	64 - 22	6	50	11.5	16.0	4.0 - 6.0	65 - 80	≤ 91.5
S9.5B	0 - 3	64 - 22	6	50	9.5	16.0	3.0 - 5.0	70 - 80	≤ 91.5
S9.5C	3 - 30	64 - 22	7	65	6.5	15.5	3.0 - 5.0	65 - 78	≤ 90.5
S9.5D	> 30	76 - 22	8	100	4.5	15.5	3.0 - 5.0	65 - 78	≤ 90.0
I19.0C	ALL	64 - 22	7	65	-	13.5	3.0 - 5.0	65 - 78	≤ 90.5
B25.0C	ALL	64 - 22	7	65	-	12.5	3.0 - 5.0	65 - 78	≤ 90.5
Design Parameter					Design Criteria				
All Mix Types	Dust to Binder Ratio ($P_{0.075} / P_{be}$)				0.6 - 1.4 ^C				
	Tensile Strength Ratio (TSR) ^D				85% Min. ^E				

A. Based on 20-year design traffic.
 B. Volumetric Properties based on specimens compacted to N_{des} as modified by the Department.
 C. Dust to Binder Ratio ($P_{0.075} / P_{be}$) for Type S4.75A is 1.0 - 2.0.
 D. NCDOT-T-283 (No Freeze-Thaw cycle required).
 E. TSR for Type S4.75A & B25.0C mixes is 80% minimum.

Page 6-19, Table 610-5, BINDER GRADE REQUIREMENTS (BASED ON RBR%), replace with the following:

TABLE 610-5 BINDER GRADE REQUIREMENTS (BASED ON RBR%)			
Mix Type	%RBR ≤ 20%	21% ≤ %RBR ≤ 30%	%RBR > 30%
S4.75A, S9.5B, S9.5C, I19.0C, B25.0C	PG 64-22	PG 64-22 ^A	PG 58-28
S9.5D, OGFC	PG 76-22 ^B	n/a	n/a

- A. If the mix contains any amount of RAS, the virgin binder shall be PG 58-28.
 B. Maximum Recycled Binder Replacement (%RBR) is 18% for mixes using PG 76-22 binder.

TABLE 1012-1 AGGREGATE CONSENSUS PROPERTIES^A				
Mix Type	Coarse Aggregate Angularity^B	Fine Aggregate Angularity % Minimum	Sand Equivalent % Minimum	Flat and Elongated 5 : 1 Ratio % Maximum
<i>Test Method</i>	<i>ASTM D5821</i>	<i>AASHTO T 304</i>	<i>AASHTO T 176</i>	<i>ASTM D4791</i>
S4.75A; S9.5B	75 / -	40	40	-
S9.5C; I19.0C; B25.0C	95 / 90	45	45	10
S9.5D	100 / 100	45	50	10
OGFC	100 / 100	45	45	10
UBWC	100 / 85	45	45	10

A. Requirements apply to the design aggregate blend.

B. 95 / 90 denotes that 95% of the coarse aggregate has one fractured face and 90% has two or more fractured faces.

Page 10-30, Subarticle 1012-1(B)(6), Toughness (Resistance to Abrasion), line 12, replace “OGAFC” with “OGFC”.

SUBSURFACE DRAINAGE

(9-1-11) (Rev. 9-14-17)

DB8 R05

Revise the 2018 *Standard Specifications for Roads and Structures* as follows:

Page 8-11, Article 815-1, delete the first sentence and replace with the following:

The Design-Build Team shall construct subsurface drains, underdrains, blind drains and other types of drains where groundwater is within six feet of subgrade.

GUARDRAIL END UNITS & TEMPORARY GUARDRAIL END UNITS, TYPE TL-2

(10-21-08) (Rev. 5-16-23)

862

DB8 R64

Description

Furnish and install guardrail end units in accordance with the details in the plans developed by the Design-Build Team, the applicable requirements of Section 862 of the 2018 *Standard Specifications for Roads and Structures*, and at locations shown in the plans developed by the Design-Build Team.

Materials

The Design-Build Team shall furnish guardrail end units listed on the NCDOT Approved Products List at <https://apps.dot.state.nc.us/vendor/approvedproducts/>. Units shall not be modified by the manufacturer and installer once approved and on the NCDOT Approved Products List.

GUARDRAIL ANCHOR UNITS AND TEMPORARY GUARDRAIL ANCHOR UNITS

(11-22-17)

862

DB8 R70

Guardrail anchor units shall be in accordance with the details in the plans developed by the Design-Build Team and the applicable requirements of Section 862 of the 2018 *Standard Specifications for Roads and Structures*.

****NOTE**** Deleted *Impact Attenuator Unit, Type TL-3 (Extended Life)* Project Special Provision

IMPACT ATTENUATOR UNIT, TYPE TL-3

(4-20-04) (Rev. 12-12-18)

DB8 R75

Description

The Design-Build Team shall furnish and install impact attenuator units and any components necessary to connect the impact attenuator units in accordance with the manufacturer's requirement, the details in the plans developed by the Design-Build Team, and at locations shown in the plans developed by the Design-Build Team.

Materials

The Design-Build Team shall furnish impact attenuator units listed on the NCDOT Approved Products List at <https://apps.dot.state.nc.us/vendor/approvedproducts/> or approved equal.

Prior to installation, the Design-Build Team shall submit to the Engineer:

1. FHWA acceptance letter for each impact attenuator unit certifying it meets the requirements of the Manual for Assessing Safety Hardware (MASH-16), Test Level 3, in accordance with Article 106-2 of the 2018 *Standard Specifications for Roads and Structures*.
2. Certified working drawings and assembling instructions from the manufacturer for each impact attenuator unit in accordance with Article 105-2 of the 2018 *Standard Specifications for Roads and Structures*.

No modifications shall be made to the impact attenuator unit without the express written permission from the manufacturer. Perform installation in accordance with the details in the plans developed by the Design-Build Team, and details and assembling instructions furnished by the manufacturer.

Construction Methods

If the median width is 40 feet or less, the Design-Build Team shall supply NON-GATING Impact Attenuator Units.

If the median width is greater than 40 feet, the Design-Build Team may use GATING or NON-GATING Impact Attenuator Units.

PORTLAND CEMENT CONCRETE PRODUCTION AND DELIVERY

(7-27-20)

1000, 1014, 1024

DB10 R01

Revise the 2018 *Standard Specifications for Roads and Structures* as follows:

Page 10-6, Table 1000-1, REQUIREMENTS FOR CONCRETE, replace with the following:

TABLE 1000-1
REQUIREMENTS FOR CONCRETE

Class of Concrete	Min. Compressive Strength at 28 days <i>psi</i>	Maximum Water-Cement Ratio				Consistency Maximum Slump		Cement Content			
		Air-Entrained Concrete		Non-Air-Entrained Concrete		Vibrated <i>inch</i>	Non-Vibrated <i>inch</i>	Vibrated		Non-Vibrated	
		Rounded Aggregate	Angular Aggregate	Rounded Aggregate	Angular Aggregate			Min.	Max.	Min.	Max.
		<i>lb/cy</i>	<i>lb/cy</i>	<i>lb/cy</i>	<i>lb/cy</i>	<i>lb/cy</i>	<i>lb/cy</i>	<i>lb/cy</i>	<i>lb/cy</i>		
AA	4500	0.381	0.426	---	---	3.5 ^A	---	639	715	---	---
AA Slip Form	4500	0.381	0.426	---	---	1.5	---	639	715	---	---
Drilled Pier	4500	---	---	0.450	0.450	---	5 – 7 dry 7 - 9 wet	---	---	640	800
A	3000	0.488	0.532	0.550	0.594	3.5 ^A	4.0	564	---	602	---
B	2500	0.488	0.567	0.559	0.630	1.5 machine placed 2.5 ^A hand placed	4.0	508	---	545	---
Sand Light-weight	4500	---	0.420	---	---	4.0 ^A	---	715	---	---	---
Latex Modified	3000 (at 7 days)	0.400	0.400	---	---	6.0	---	658	---	---	---
Flowable Fill excavatable	150 max. (at 56 days)	as needed	as needed	as needed	as needed	---	Flowable	---	---	40	100
Flowable Fill non-excavatable	125	as needed	as needed	as needed	as needed	---	Flowable	---	---	100	as needed
Pavement	4500 Design, field 650 flexural, design only	0.559	0.559	---	---	1.5 slip form 3.0 hand placed	---	526	---	---	---
Precast	See Table 1077-1	as needed	as needed	---	---	6.0	as needed	as needed	as needed	as needed	as needed
Prestressed	per contract	See Table 1078-1	See Table 1078-1	---	---	8.0	---	564	as needed	---	---

A. The slump may be increased to six inches, provided the increase in slump is achieved by adding a chemical admixture conforming to Section 1024-3. In no case shall the water-cement ratio on the approved design be exceeded. Concrete exhibiting segregation and / or excessive bleeding will be rejected. Utilizing an admixture to modify slump does not relinquish the Design-Build Team’s responsibility to ensure the final product quality

Page 10-48, Subarticle 1020-10(A) Mineral Fibers, Line 27, replace “Table 1012-5” with “Table 1020-2”.

Page 10-52, Article 1024-5 FLY ASH, Line 12, replace “Table 2” with “Table 3”.

Page 10-60, Subarticle 1032-6(F) Joint Materials, Line 15, replace “AASHTO M 198” with “ASTM C990” and delete “Type B”.

Page 10-61, Article 1034-3 CONCRETE SEWER PIPE, Line 33, replace “AASHTO M 198” with “ASTM C990” and delete “Type A or B”.

Page 10-64, Article 1040-1 BRICK, Line 12, replace “ASTM C62” with “ASTM C62 or ASTM C216”.

Page 10-67, Article 1044-7 CORRUGATED PLASTIC PIPE AND FITTINGS, Line 24, replace “AASHTO M 294 for heavy duty tubing” with “Article 1032-7 and AASHTO M 252”.

Page 10-68, Subarticle 1046-3(D) Offset Blocks, Lines 30-32, delete “Before beginning the installation of recycled offset block, submit the FHWA acceptance letter for each type of block to the Engineer for approval.”

Page 10-69, Subarticle 1046-3(D) Offset Blocks, before Line 1, replace “WIRE DIAMETER” with “COMPOSITE OFFSET BLOCKS” as the title of Table 1046-1, delete “Testing” property and associated requirement from Table 1046-1, and replace “Approval” requirement of “Approved for use by the FHWA” with “Approved for use on the NCDOT APL” in Table 1046-1.

Page 10-80, Article 1060-2 FERTILIZER, Line 18, replace “North Carolina Fertilizer Law” with “North Carolina Commercial Fertilizer Law”.

Page 10-83, Article 1060-9 WATER, Line 9, replace “15 NCAC 2B.0200” with “15A NCAC 02B.0200”.

****Deleted Article 1070-2 REINFORCEMENT STEEL BAR FOR ROADS AND STRUCTURES****

Page 10-86, Article 1070-3 COLD DRAWN STEEL WIRE AND WIRE REINFORCEMENT, Line 23 and 25, replace “M 32” and “M 55” with “M 336”.

Page 10-87, Article 1070-6 DOWELS AND TIE BARS FOR PORTLAND CEMENT CONCRETE PAVEMENT, Line 17, replace “AASHTO M 32” with “AASHTO M 336”.

Page 10-88, Subarticle 1070-7(D) Handling, Storage and Transportation, Line 40, replace “Section” with “Subarticle”.

Page 10-89, Article 1070-8 SPIRAL COLUMN REINFORCING STEEL, Line 21, replace “AASHTO M 32” with “AASHTO M 336”.

Page 10-91, Article 1072-3 BEARING PLATE ASSEMBLIES, Line 44, replace “Article 1080-9” with “Article 1080-7”.

Page 10-92, Subarticle 1072-5(A) General, after Line Page 30, replace “SAMPLING REQUIREMENTS FOR HIGH STRENGTH BOLTS, NUTS AND WASHERS” with “SAMPLING REQUIREMENTS FOR HIGH STRENGTH BOLTS, NUTS AND WASHERS TO INCLUDE DIRECT TENSION INDICATORS” as the title of Table 1072-1.

Page 10-92, Subarticle 1072-5(A) General, after Line 30, replace “SAMPLING REQUIREMENTS FOR HIGH STRENGTH BOLTS, NUTS AND WASHERS” with “SAMPLING REQUIREMENTS FOR HIGH STRENGTH BOLTS, NUTS AND WASHERS TO INCLUDE DIRECT TENSION INDICATORS” as the title of Table 1072-1.

Page 10-95, Subarticle 1072-5(D)(7)(a) Mill Test Report(s), Line 18, replace title with “Mill Test Report(s) (MTR)”.

Page 10-95, Subarticle 1072-5(D)(7)(b) Manufacturer Certified Test Report(s), Line 24, replace title with “Manufacturer Certified Test Report(s) (MCTR)”.

Page 10-96, Subarticle 1072-5(D)(7)(c) Distributor Certified Test Report(s), Line 1, replace title with “Distributor Certified Test Report(s) (DCTR)”.

Page 10-98, Subarticle 1072-5(F) Galvanized High Strength Bolts, Nuts and Washers, Line 11, replace “Article 1080-9” with “Article 1080-7”.

Page 10-98, Subarticle 1072-5(F) Galvanized High Strength Bolts, Nuts and Washers, Line 11, replace “Article 1080-9” with “Article 1080-7”.

Page 10-111, Subarticle 1072-18(B) General, Line 24, replace “Structural Welding Code-Reinforcing Steel” with “Structural Welding Code-Steel Reinforcing Bars”.

Page 10-117, Article 1074-1 WELDING, Lines 21-22, replace “Structural Welding Code-Reinforcing Steel” with “Structural Welding Code-Steel Reinforcing Bars”.

Page 10-119, Article 1074-7(B) Gray Iron Castings, Line 16, replace “M306” with “AASHTO M 306”.

Page 10-121, Article 1076-7, REPAIR OF GALVANIZING, Line 8, replace Article “1080-9” with “1080-7”.

Page 10-125, Subarticle 1077-5(B) Testing, Line 31, replace “T 23” with “R 100”.

Page 10-131, Subarticle 1078-4(A) Composition and Design, after Line 23, in Table 1078-2 replace “T 23” with “R 100”.

Page 10-135, Subarticle 1078-4(J)(2) Mixing Time for Central Mixed Concrete, line 46, replace “Table 1078-2” with “Table 1078-3”

Page 10-136, Subarticle 1078-4(J)(2) Mixing Time for Central Mixed Concrete, after Line 17, replace “T23” with “R100”.