



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

J. ERIC BOYETTE  
SECRETARY

June 7, 2023

**ADDENDUM # 1**

To: Plan Holders

From: Wesley Grindstaff, P.E.  
Division 14 Maintenance Engineer



RE: **Question & Answer, Provision Revisions**  
Contract ID: DN12080720  
County: Cherokee, Clay, Graham, Haywood, Henderson,  
Jackson, Macon, Polk, Swain, Transylvania  
Letting Date: June 13, 2023

**1. Questions & Answers:**

A bidder has posed the following questions and the associated answers are posted beneath each question:

**Question 1:** Page 63/123 notes that “services under this section must be bid”; whereas page 66/123 notes “bidder may bid all or any combination of services in this section...”. Please confirm that all bid items must be bid.

**Answer 1a:** On page **GT-1**, remove the following wording “SERVICES UNDER THIS SECTION MUST BE BID,” as this is no longer applicable. All items in this proposal must be bid. See attached revised Geotech provisions.

**Answer 1b:** On page **GT-4**, remove the following wording “UNDER THIS SECTION BIDDER MAY SELECT FROM SERVICES LISTED BIDDER MAY BID ALL OR ANY COMBINATION OF SERVICES IN THIS SECTION BIDDER MUST SELECT AT LEAST ONE SERVICE FROM THIS SECTION ALL PAY ITEMS UNDER A SERVICE MUST BID,” as this is no longer applicable. All items in this proposal must be bid. See attached revised Geotech provisions.

**Question 2:** Page 67/123 notes a warranty period of 1 year; however, Response 14 from Invitation notes that a 5-year warranty shall be required. Please confirm that a 5-year warranty is required.

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**Answer 2:** On page **GT-5** under the sub-heading **Scope**, remove the following wording from the first paragraph: *“All written estimates must contain a warranty statement guaranteeing the stability for the repaired section for a period of 1 year and that any necessary repairs will be made in a timely manner at no cost to NCDOT. This warranty statement must be jointly endorsed by the Contractor and the Contractor’s Engineer.”* Guarantee provision is addressed elsewhere in this proposal. See attached revised Geotech provisions.

**Question 3:** Page 121/123: are Rock Bolt Proof Tests required for this contract?

**Answer 3:** Rock Bolt Proof Testing is not required for this proposal. This item has been removed from the materials list on page **GT-9**, under the Geotechnical Stabilization Provision. See attached revised Geotech provisions.

2. On page **G-33** under provision, **SP1 G145R, Guarantees**, the first and second paragraphs have been revised to read as follows:

“The Contractor shall guarantee design, materials, and workmanship against latent and patent defects arising from faulty: design, materials, workmanship or negligence for a period of **5 years** following the date of final acceptance of the work for maintenance and shall redesign and replace such defective materials and workmanship without cost to the Department. The Contractor will not be responsible for damage due to normal wear and tear, for negligence on the part of the Department, or for use in excess of the design.

This guarantee shall be invoked only for major components of work, including the design of the same, in which the Contractor would be wholly responsible under the terms of the contract; examples would include but not be limited to soil nail wall components. This provision will not be used as a mechanism to force the Contractor to return to the project to make repairs or perform additional for which the Department would normally compensate the Contractor. In addition, routine maintenance activities (i.e., mowing grass, debris removal, ruts in earth shoulders) are not parts of this guarantee.”

See attached revised page **G-33**.

These revisions do not change bid items or the associated quantities.

Please insert this letter into the addendum section of the proposal and sign the verification. Thank you for your attention to this matter.

**PROJECT SPECIAL PROVISIONS**

**GEOTECHNICAL**

**TABLE OF CONTENTS**

DESIGN PLAN SUBMITTAL ..... GT-2  
HIGH REACH DRILLING ..... GT-2  
LIMITED ACCESS DRILLING ..... GT-3  
GEOSYNTHETICALLY REINFORCED WALL ..... GT-4  
GEOTECHNICAL STABILIZATION ..... GT-5



DocuSigned by:  
*Dean Hardister*  
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 06/06/2023

**DESIGN PLAN SUBMITTAL:****Description**

The work consists of providing a plan submittal reflecting the design for geotechnical stabilization work.

**Submittal Method**

The Contractor shall submit an electronic copy in PDF format of plans and calculations to the Engineer for review and approval in accordance with Section 105-2 of the *Standard Specifications*. When a prequalification classification exists, use a NCDOT prequalified design consultant, or prequalified in-house staff, to prepare geotechnical stabilization designs and calculations. Otherwise, prepare and seal the plans and calculations using a North Carolina Registered Professional Engineer.

**Measurement and Payment**

*Design Plan Submittal* will be measured and paid for as the complete design, as submitted in working drawings for each site requiring geotechnical stabilization.

Payment will be made under:

| <b>Pay Item</b>       | <b>Pay Unit</b> |
|-----------------------|-----------------|
| Design Plan Submittal | Each            |

**HIGH REACH DRILLING:****Description**

High reach drilling is defined by drilling activities that require reaches in excess of 25 feet above or 15 feet below working platforms (i.e. road grades). High reach drilling for rock bolts, rock anchors, or soil nails will be accomplished by either using limited access drills or a high reach excavator, depending on site conditions, access and availability of equipment.

**Measurement and Payment**

*High Reach Drilling* will be measured by per linear foot of drilling within site areas defined in the reach descriptions above. Conditions meeting the *High Reach Drilling* descriptions will be applied in addition to any drilling line item needed for the design.

Ex 1) A Rock Bolt installed using Rope Access =  
 [High Reach Drilling per linear foot x 20'] + [unit price for Rock Bolts]

Ex 2) A Soil Nail up to 30' installed 30' above roadway =  
 [High Reach Drilling per linear foot x 30'] + [unit price for Soil Nail up to 30']

Payment at the per linear foot contract unit price shall be full compensation for all labor, equipment, and incidentals to perform high reach drilling. NCDOT will not make payment for materials on site and not installed.

Payment will be made under:

| <b>Pay Item</b>     | <b>Pay Unit</b> |
|---------------------|-----------------|
| High Reach Drilling | Linear Foot     |

**LIMITED ACCESS DRILLING:**

**Description**

Limited access drilling is defined by drilling activities that require rope access to install rock bolts, rock anchors, or soil nails.

**Measurement and Payment**

*Limited Access Drilling* will be measured by per linear foot of drilling using rope access. Conditions meeting the *Limited Access Drilling* description will be applied in addition to any drilling line item needed for the design.

Ex 1) A Rock Bolt installed using Rope Access =  
 [Limited Access Drilling per linear foot x 20'] + [unit price for Rock Bolts]

Ex 2) A Soil Nail up to 30' installed 30' above roadway =  
 [Limited Access Drilling per linear foot x 30'] + [unit price for Soil Nail up to 30']

Payment at the per linear foot contract unit price shall be full compensation for all labor, equipment, and incidentals to perform high reach drilling. NCDOT will not make payment for materials on site and not installed.

Payment will be made under:

| <b>Pay Item</b>         | <b>Pay Unit</b> |
|-------------------------|-----------------|
| Limited Access Drilling | Linear Foot     |

**GEOSYNTHETICALLY REINFORCED WALL:****Description**

The work consists of constructing geosynthetically reinforced walls.

**Materials**

CMU blocks shall meet the requirements of Article 1040-2 of the Standard Specifications.

Backfill shall meet the requirements of Section 1016 of the Standard Specifications for Class IV Select Material. Compaction shall be at least 95% of AASHTO T-180.

Geotextile shall be per design but in no case shall have less than an ultimate wide width strip tensile strength of 2400 pounds per foot.

**Method of Construction**

Geosynthetically Reinforced Walls may be used in conjunction with soil nails/micropiles and/or shotcrete to create a wider roadway platform or to construct a small box or abutment wall. This wall shall consist of a standard split faced concrete masonry unit (CMU), Class IV Select Material backfill, and a woven polypropylene geosynthetic fabric placed between each block. Geosynthetically Reinforced Walls will be constructed to lines and grades determined by NCDOT and the Contractor's Engineer.

**Measurement and Payment**

*Geosynthetically Reinforced Walls* will be measured and paid for as the number of square feet of wall constructed and accepted. Such price and payment will be full compensation for all labor, materials, equipment, and incidentals to furnish and construct geosynthetically reinforced walls.

*Aggregate Backfill* will be measured and paid for as the number of tons of aggregate installed and accepted.

Payment will be made under:

| <b>Pay Item</b>                  | <b>Pay Unit</b> |
|----------------------------------|-----------------|
| Geosynthetically Reinforced Wall | Square Feet     |
| Aggregate Backfill               | Ton             |

**GEOTECHNICAL STABILIZATION:****Description**

Geotechnical stabilization consists of designing and constructing geotechnical foundations, elements, and features to repair or improve roadways, slopes, and retaining walls.

**Scope**

North Carolina Department of Transportation (NCDOT) will identify locations of all work to be performed as specified herein. The Contractor may be called out for a site visit prior to issuance of a work request. The purpose of the site visit will be for the Contractor to evaluate and prepare an estimate of the materials and services needed to repair the site to the engineer's specifications. Unless otherwise requested by NCDOT, the Contractor shall schedule the site visit within **24 hours** following notification by NCDOT personnel and shall provide a detailed written estimate of materials and services needed to repair the site to NCDOT's specifications within **24 hours** following the site visit. Any necessary subsurface exploration, site survey, and slope stability modeling, to prepare the estimate, is the responsibility of the Contractor.

Following issuance of a work request, the Contractor will provide all necessary engineering plans and details required to successfully repair or stabilize the affected feature. These plans shall be stamped by a Registered Professional Engineer (PE) licensed in the State of North Carolina, who is knowledgeable and experienced in the design and implementation of geotechnical stabilization with soil nails, micropiles, etc. and related work. Where applicable, the stabilization design engineer shall be a Department-prequalified Key Person for the Work Code elements used for repair and/or stabilization. Changes or deviations from the approved submittals must be resubmitted for approval. No adjustments in project duration will be allowed due to incomplete submittals. The PE stamped submittals shall include at a minimum the following information:

1. A description of the repair or stabilization construction sequence and a schedule of work activities.
2. A description and detail of the size and spacing of geotechnical stabilization elements to be placed in order to meet minimum static/seismic factors of safety for global stability of the repair. The materials and components selected will meet a 75-year design life. Designs will include consideration of appropriate loadings, geometry, and material properties associated with the native soils, backfill, reinforcement connections, facing, and other design elements.
3. All necessary details to successfully complete the work.

The Division Engineer or his duly appointed representative will review the estimate submitted by the contractor and once those measures needed have been agreed upon, contractor will be given the approval to commence work.

Unless otherwise approved by NCDOT, repair operations commencement and submittal of stamped plans shall be within **48 hours** after receipt of a work request. Once repair has commenced, it shall continue until completion. The Contractor must also have the ability to design and repair **multiple** sites at the same time, if necessary, in order to efficiently provide maintenance and emergency repairs as required.

**Materials**

Shotcrete shall be provided in accordance with Section 1002 of the Standard Specifications.

Rock slope materials including, but not limited to, rock bolts, wire mesh and nets, and rockfall barriers shall meet the requirements of the current *Rock Slope Materials* provision.

Materials used for soil nails and micropiles shall be readily available standard geotechnical industry items such as casing, continuous threaded solid bars, and continuous threaded hollow bars with sacrificial bits.

### **Construction Methods**

Soil Nails: Perform soil nail design and construction, including nail installation, grouting, shotcrete, and wall construction, in accordance with the current *Soil Nail Wall* provision, except as modified herein. Soil nail proof testing shall be performed in accordance with the *Soil Nail Wall* provision. Please note that hollow bar soil nails and permanent shotcrete facing may be used to complete work for this contract. Please note that the minimum permanent shotcrete facing thickness is 6" for work for this contract.

Micropiles: Perform micropile design and construction in accordance with the current *Micropiles* provision, except as modified herein. For bidding purposes, define a micropile as constructed with a fully grouted 4" outside diameter, ½" wall thickness, 80 ksi casing extending from the top of the micropile to the top of weathered rock or rock and a #8 Grade 75 all-thread bar extending from the bottom of the bond zone to above the top of micropile, as necessary. Please note that mill secondary casing may be used to complete work for this contract.

Reinforced Shotcrete: Construct reinforced shotcrete with a minimum thickness shown in acceptable submittals with reinforcement a minimum of 3 inches from the ground surface. Do not begin reinforced shotcrete construction or incorporate materials into the work until the submittal requirements are satisfied and accepted by the Department. Any changes or deviations from the accepted submittals or re-submittals before proceeding with work are not allowed. No adjustments in contract time will be allowed due to incomplete submittals.

Ensure the minimum thickness of shotcrete using shooting wires, thickness control pins, or other devices acceptable to the Department. Install thickness control devices normal to the surface such that they protrude the required shotcrete thickness outside the surface. Ensure that the front face of the shotcrete does not extend beyond the limits established by the Department. Use either an undisturbed gun finish as applied from the nozzle or a rough screeded finish, as determined by the Department. Remove shotcrete extending into the structural face section beyond the tolerances specified herein.

A clearly defined pattern of continuous horizontal or vertical ridges or depressions at the reinforcing elements after they are covered with shotcrete will be considered an indication of insufficient reinforcement cover or poor nozzle techniques. In this case immediately suspend the application of shotcrete and implement corrective measures before resuming the shotcrete operations. Correct the shotcreting procedure by adjusting the nozzle distance and orientation, by ensuring adequate cover over the reinforcement, or other means.

Repair shotcrete surface defects as soon as possible after placement. Remove and replace shotcrete that exhibits segregation, honeycombing, lamination, voids, or sand pockets. In-place shotcrete not meeting the specified strength requirement will be subject to remediation. Possible remediation options include placement of additional shotcrete thickness or removal and replacement, at no additional cost to the Department.

Do not place shotcrete if the ambient air or ground temperature is below 40° F unless artificial heat and tenting is used to elevate the temperature. Maintain cold weather protection if the temperature after placement is below 40° F until the in-place compressive strength of the shotcrete is greater than 725 psi.



Cold weather protection includes blankets, heating under tents, or other means acceptable to the Department. The shotcrete mix shall have a temperature of not less than 50° F or more than 100° F at the nozzle during placement.

Suspend shotcrete application during high winds and heavy rains unless suitable protective covers, enclosures or wind breaks are installed. Remove and replace newly placed shotcrete exposed to rain that washes out cement or otherwise makes the shotcrete unacceptable. Provide a polyethylene film or equivalent to protect the work from exposure to adverse weather.

Wire Mesh Stabilization: Perform wire mesh stabilization design and construction in accordance with the current *Soil Nail Slope Stabilization*, *Rock Slope Materials*, or *Rock Slope Stabilization* provisions.

Rock Bolts: Perform rock slope stabilization design and install rock bolts in accordance with the current *Rock Slope Stabilization* provision. For bidding purposes, rock bolts will be #8 Grade 75 all thread bar and have an installed length of up to 20 feet and includes nuts and plates, as needed. Rock bolt proof testing to 120% of the Design Load will be required as determined by the Department.

Rock Slope Scaling: Define scaling as removing loose and/or potentially unstable rock from the rock slope and rock resting on any soil slope above the rock face. Scaling of loose or potentially unstable rock shall be accomplished by manual scaling methods. This work shall include scaling at locations shown on the plans, or as directed by the Department, to the specified degree. This work may also include vegetation removal from slope or excavation of soil/weathered rock. Scaling that creates a rockfall hazard such as overhangs or launching pads shall be remediated as directed by the Department. Erosion channels above the rock slope may require remediation prior to acceptance by the Department.

Care shall be taken to minimize damage by equipment or falling rock to the surface of any adjacent roadways, guardrail, drainage structures, signs, or other facilities. Damage attributable to the Contractor's means and methods shall be repaired at no additional cost to the Department.

### **Measurement and Payment**

*Soil Nails* will be measured and paid for as the number of soil nails furnished and installed in the following incremental lengths: up to 20 feet, up to 30 feet, up to 40 feet, up to 50 feet, up to 60 feet, up to 70 feet, and up to 80 feet in length. Such price and payment will be full compensation for all labor, materials, equipment, and incidentals to furnish, install and proof test required soil nails. No additional payment will be made for soil nail proof testing. No payment will be made for materials which are not installed.

*Micropiles* will be measured and paid for as the number of micropiles furnished and installed in the following incremental lengths: up to 20 feet, up to 30 feet, up to 40 feet, up to 50 feet, up to 60 feet, up to 70 feet, and up to 80 feet in length. Such price and payment will be full compensation for all labor, materials, equipment, and incidentals to furnish and install required micropiles. No payment will be made for materials which are not installed.

*Reinforced Shotcrete* will be measured and paid for in square feet per that has been completed and accepted in the following incremental thicknesses: up to 6 inches, up to 8 inches, and up to 12 inches. Such price and payment will be full compensation for all labor, materials, equipment, and incidentals to furnish and construct reinforced shotcrete, including but not limited to geocomposite drainage strips, weep holes, reinforcing steel, shotcrete, any preparatory trimming and cleaning of soil/rock surfaces and shotcrete cold joints in preparation for receiving new shotcrete, and all incidentals for placing shotcrete around the soil nails or micropiles. No additional payment will be made for additional shotcrete thickness or area not required by the accepted submittal or as requested by the Department.

*Shotcrete Shoulder Build-Up* will be paid for in linear feet that has been completed and accepted. Such price and payment will be full compensation for all labor, materials, equipment, and incidentals to furnish and construct reinforced shotcrete, including but not limited to geocomposite drainage strips, weep holes, reinforcing steel, shotcrete, any preparatory trimming and cleaning of soil/rock surfaces and shotcrete cold joints in preparation for receiving new shotcrete, and all incidentals for placing shotcrete around the soil nails or micropiles. No payment will be made for materials which are not installed. No payment will be made for partial deliveries.

*Wire Mesh Stabilization* will be measured and paid for as the number of square feet of Type 1 or Type 2 wire mesh furnished and installed according to the plans, including plates. Price and payment will be full compensation for all materials, labor, and equipment necessary for the placement of the wire mesh surface treatment.

*Rock Bolts* will be measured and paid for as the number of rock bolts furnished and installed. Such price and payment will be full compensation for all labor, materials, equipment, and incidentals to furnish, and install required rock bolts. No payment will be made for materials which are not installed.

*Rock Bolt Proof Tests* will be measured and paid in units of each. Testing will be measured as the number of initial proof tests performed. The contract unit prices for *Rock Bolt Proof Tests* will be full compensation for initial bolt testing. No payment will be made for subsequent testing performed on the same or replacement test bolts.

*Rock Slope Scaling* will be measured in units per day and will be paid for at the contract unit price and shall be full compensation for all labor, materials, equipment, and incidentals for a four-man crew. Scaling rate does not include resizing, haul off or disposal of materials brought down during scaling operations.

Payment will be made under:

| <b>Pay Item</b>      | <b>Pay Unit</b> |
|----------------------|-----------------|
| Soil Nails up to 20' | Each            |
| Soil Nails up to 30' | Each            |
| Soil Nails up to 40' | Each            |
| Soil Nails up to 50' | Each            |
| Soil Nails up to 60' | Each            |
| Soil Nails up to 70' | Each            |
| Soil Nails up to 80' | Each            |
|                      |                 |
| Micropiles up to 20' | Each            |
| Micropiles up to 30' | Each            |
| Micropiles up to 40' | Each            |
| Micropiles up to 50' | Each            |
| Micropiles up to 60' | Each            |
| Micropiles up to 70' | Each            |
| Micropiles up to 80' | Each            |

| <b>Pay Item</b>                         | <b>Pay Unit</b> |
|---|-----------------|
| Reinforced Shotcrete Up To 6" Thickness | Square Foot     |

|  |             |
|--|-------------|
| Reinforced Shotcrete Up To 8” Thickness  | Square Foot |
| Reinforced Shotcrete Up To 12” Thickness | Square Foot |
|  |             |
| Shotcrete Shoulder Build-Up              | Linear Foot |
|  |             |
| Type 1 Pinned Wire Mesh Stabilization    | Square Foot |
| Type 1 Draped Wire Mesh Stabilization    | Square Foot |
| Type 2 Pinned Wire Mesh Stabilization    | Square Foot |
| Type 2 Draped Wire Mesh Stabilization    | Square Foot |
|  |             |
| Rock Bolts                               | Each        |
|  |             |
| Rock Slope Scaling                       | Day         |

**COOPERATION BETWEEN CONTRACTORS:**

(7-1-95)

105-7

SP1 G133

The Contractor's attention is directed to Article 105-7 of the *2018 Standard Specifications*.

To Be Determined.

The Contractor on this project shall cooperate with the Contractor working within or adjacent to the limits of this project to the extent that the work can be carried out to the best advantage of all concerned.

**AWARD LIMITS:**

(4-19-22)

103

SP1 G141

Revise the *2018 Standard Specifications* as follows:

**Page 1-29, Subarticle 103-4(C), Award Limits**, line 4-8, delete and replace the first sentence in the first paragraph with the following:

A bidder who desires to bid on more than one project on which bids are to be opened in the same letting and who desires to avoid receiving an award of more projects than he is equipped to handle, may bid on any number of projects but may limit the total amount of work awarded to him on selected projects by completing the form Award Limits on Multiple Projects for each project subject to the award limit.

**GUARANTEES:**

(7-15-03)(06-13-23) Rev.

108

SP1 G145R

The Contractor shall guarantee design, materials, and workmanship against latent and patent defects arising from faulty: design, materials, workmanship or negligence for a period of **5 years** following the date of final acceptance of the work for maintenance and shall redesign and replace such defective materials and workmanship without cost to the Department. The Contractor will not be responsible for damage due to normal wear and tear, for negligence on the part of the Department, or for use in excess of the design.

This guarantee shall be invoked only for major components of work, including the design of the same, in which the Contractor would be wholly responsible under the terms of the contract; examples would include but not be limited to soil nail wall components. This provision will not be used as a mechanism to force the Contractor to return to the project to make repairs or perform additional for which the Department would normally compensate the Contractor. 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 bonds (for **1 year**) and performance bonds (for **5 years**) 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.