



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT McCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

May 9, 2013

Addendum No. 1

RE: Contract ID C203026

WBS # 34497.3.3

F. A. # NHF-0074(141)

Cleveland County (R-2707AA)

US-74 (Shelby Bypass) From West Of SR-1162 (Peachtree Road)

To East Of SR-1318 (Kimbrell Road)

May 21, 2013 Letting

To Whom It May Concern:

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

The following revisions have been made to the Roadway plans:

Sheet No. 3-M has been revised to correct the table for "Reinforced Soil Slopes". Please void Sheet No. 3-M in your plans and staple the revised Sheet No. 3-M thereto.

Sheet Nos. SIG 2, SIG 3 AND SIG 4 have been revised to add directional drill conduit to run signal cable to the advanced flashers. Please void Sheet Nos. SIG 2, SIG 3 AND SIG 4 in your plans and staple the revised Sheet Nos. SIG 2, SIG 3 AND SIG 4 thereto.

The following revisions have been made to the proposal:

On Page No. 129 the Signals section table of contents was revised to reflect the below noted special provision addition. Please void Page No. 129 in your proposal and staple the revised Page No. 129 thereto.

New Page Nos. 152A, 152B and 152C have been added to include the project special provision entitled "Emergency Vehicle Initiated Preemption Systems". Please staple new Page Nos. 152A, 152B and 152C after Page No. 152 in your proposal.

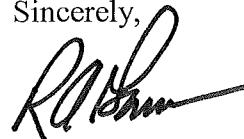
On the item sheets the following pay item quantities have been revised or added:

<u>Item</u>	<u>Description</u>	<u>Old Quantity</u>	<u>New Quantity</u>
234-7300000000-E-1715	Unpaved Trenching (1,2")	1,400 LF	1,450 LF
235-7324000000-N-1715	Junction Box (Standard Size)	8 EA	12 EA
277-7301000000-E-1715	Directional Drill (1 Conduit, 2 Inch)	NEW ITEM	100 LF
278-7980000000-N-SP	Optical Preemption Detector	NEW ITEM	1 EA
279-7980000000-N-SP	Optical Preemption Phase Selector	NEW ITEM	1 EA

The Contractor's bid must be based on these revised pay item quantities and new pay items. The contract will be prepared accordingly.

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

Sincerely,

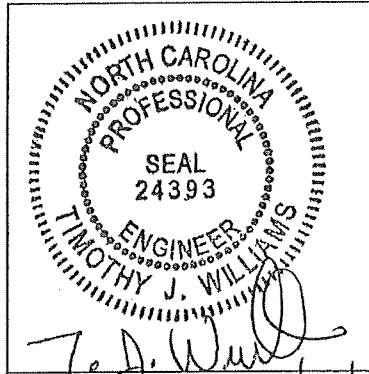


R. A. Garris, PE
Contract Officer

RAG/jag

Attachments

cc:	Mr. Ron Hancock, PE	Mr. Ray Arnold, PE
	Mr. Mike Holder, PE	Ms. Natalie Roskam, PE
	Ms. D. M. Barbour, PE	Ms. Penny Higgins
	Mr. J. V. Barbour, PE	Ms. Jaci Kincaid
	Mr. Jay Bennett, PE	Mr. Ronnie Higgins
	Mr. R.E. Davenport, PE	Mr. Larry Strickland
	Mr. Greg Fuller, PE	Ms. Marsha Sample
	Project File (2)	Ms. Lori Strickland



5/8/13.

Project Special Provisions
(Version 12.1)
Signals and Intelligent Transportation Systems

Prepared By: C. Pierce
8-May-13

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3. EMERGENCY VEHICLE INITIATED PREEMPTION SYSTEMS

3.1. DESCRIPTION

Furnish and install emergency vehicle initiated preemption systems (hereafter referred to as preemption systems) with all necessary hardware and software in accordance with the plans and specifications. Ensure the preemption systems consist of both a means to place a preemption call and a receiver/processor to receive the call that will properly initiate the desired signal preemption and is compatible with the existing preemption system. Ensure the preemption systems comply with all applicable FCC regulations and conform to NEMA TS2-2003 Section 2, "Environmental Requirements."

3.2. MATERIALS

Furnish preemption systems that are compatible with NEMA TS-1, NEMA TS-2 Type 2, and 170/2070 equipment. Ensure the preemption systems can transmit information serially by a RS-485 connector in a NEMA TS-2 Type 1 cabinet. Ensure the equipment is compatible for use in a NEMA TS-2 detector card rack and a Caltrans 332/336 input file. Ensure the operation of the preemption systems are not affected by the following conditions:

- Snow
- Rain
- Ambient light conditions such as bright sunlight, twilight, shadows, vehicle headlights, etc.
- Fog which can be penetrated by traffic signal indications
- Ambient noise levels below 70 db
- Ambient electromagnetic interference

Provide preemption systems that will log and retain a minimum of 1,000 preemption occurrences that include the direction of preemption, time, and date. Ensure that it is impossible to delete a logged preemption event manually using equipment switches or other manual input and controls. Furnish the ability to upload and download all data and operating parameters using a DB-9 communication port or Department approved alternative. Ensure the logged data is maintained in memory until the data is downloaded. When the maximum number of occurrences is recorded, ensure preemption systems retain data from the most recent event and lose data from the oldest event as new preemption calls occur.

Furnish preemption systems with a time clock that utilize the following features:

- provide time clock to adjust the time for the transition between Daylight Saving Time and Standard Time,
- provide time clock with the option to record and report occurrences using a 24 hour clock time stamp,
- provide internal battery or capacitor backup power source to continue the operation of the time clock and memory during a power outage. Ensure the backup power source will supply power for a single outage for a minimum of 48 hours and automatically recharge within 24 hours after power is resumed.

Provide preemption systems with a minimum of four separate preemption inputs and outputs or as specified by the bid list or plans. Ensure preemption system receivers differentiate between any two approaches as the source of a call signal if those approaches intersect at an

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angle greater than 20 degrees. Furnish preemption systems that will detect a preempt call at distances between 250 feet to 1,500 feet. Ensure ambient signal sources will not cause the preemption system to place the intersection in the preemption mode. Also, provide the means to prevent false calls resulting from emergency vehicles passing through nearby locations or nearby intersections such as at cross streets near the signal.

Provide preemption systems to automatically select the programmed output call to the traffic signal controller based on the approach of the emergency vehicle placing the call. Provide a call extension timer that will hold the preempt call for a user selectable time after the preempt call terminates. Furnish preemption systems to display indications for the receipt of a call for each approach to allow a servicing technician to determine proper or improper operation. Ensure the indications last as long as that call is being received by the system. Provide a test switch or push-button for each channel on the control unit to manually place a preemption call to the traffic signal controller.

Provide all necessary software to the State for the operation of the preemption systems. Ensure the software can operate on a personal computer and is compatible with Windows 2000 and Windows XP. Furnish software that is licensed for use by State personnel and personnel of other agencies that are responsible for maintaining State signals. Ensure the State is licensed to duplicate and distribute the software as necessary for design and maintenance support. Furnish software to have the programming of all user application functions to be displayed in a menu format and show like parameters, functions, or data in a group to provide a coherent order.

Provide preemption systems that have control circuitry of solid-state construction. Ensure active devices for logic, timing, and control functions are solid state and sufficiently rated to have no material shortening of life under conditions of maximum power dissipation at maximum ambient temperature. Furnish timing functions using digital devices. Ensure the memory for event data and program data is stored in an electronically erasable memory device which has 100,000 write cycles (minimum) and is designed to retain data for 10 years. Furnish memory that is not required to have an external battery backup to retain data or other programmed entries unless otherwise specified. Ensure each system component unit requires input power by either 120 VAC from the controller cabinet or separate equipment power supply that is powered by the 120 VAC from the controller cabinet.

Ensure the components of the preemption systems do not exceed the dimension and weight as specified below:

- Control Unit – 8” width x 10” height x 10” depth, 10 lbs.
- Detector Unit or Antenna – 15 lbs.

Ensure all equipment of the preemption systems which are exposed to weather be weatherproof and suitable for operation in wet locations. Provide moisture resistant coating on all circuit boards.

Provide all required mounting hardware to install the preemption systems that are suitable for use with wood pole or metal structure application. Ensure the mounting hardware provides a secure position to prevent shifting after the initial alignment of the preemption systems.

3.3. CONSTRUCTION METHODS

Place into operation emergency vehicle initiated preemption systems. Configure emergency vehicle initiated preemption systems to achieve required activation by emergency vehicles within required ranges.

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Install the necessary processing and communications equipment in the signal controller cabinet. Make all necessary modifications to install equipment, cabling harnesses, and phase selector with surge suppression.

Install the necessary cables from each optical detector to the signal controller cabinet along signal cabling routes. Install surge protection where required and terminate all cable conductors.

3.4. MEASUREMENT AND PAYMENT

Actual quantity of optical preemption detectors furnished, installed, and accepted.

Actual quantity of optical preemption phase selectors furnished, installed, and accepted.

Payment will be made under:

Optical Preemption Detector.....	Each
Optical Preemption Phase Selector	Each