October 15, 2015

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATION
DEPARTMENT OF ADMINISTRATION

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

RHODE ISLAND CONTRACT NO. 2015-CT-020

FEDERAL-AID PROJECT NO. FAP Nos: STPG-8888(218)

Traffic Signal Optimization 2015 Contract 2
Statewide, Rhode Island

This project consists of the replacement of traffic signal controllers and cabinets, replacement of existing mast arms, installation of loop detectors, pavement markings, wireless magnetometer type detection and other miscellaneous tasks including, but not be limited to, removal of various existing traffic signal equipment, sawcutting pavement, pavement milling and installing bituminous pavement surface course, installing cement concrete sidewalks at isolated locations: traffic control, and other incidentals as necessary to complete the work of this Contract to the satisfaction of the Engineer.

NOTICE TO PROSPECTIVE BIDDERS

ADDENDUM NO. 1

Prospective bidders and all concerned are hereby notified of the following changes in the Plans, Specifications, Proposal and Distribution of Quantities for this contract. These changes shall be incorporated in the Plans, Specifications, Proposal and Distribution of Quantities, and shall become an integral part of the Contract Documents.

A. Contract Specific Specifications

1. Page CS-15 as attached

   Delete page CS-15 in its entirety and insert revised page CS-15(R-1) attached to this Addendum No. 1.

   The following paragraph was deleted under:

   5. Sequence of Construction/Maintenance and Movement of Traffic

   Milestone Completion Date:
   All work at the intersection of Boston Neck Road and Beach Street must be completed by June 24, 2016 to coordinate with Hussey Bridge project (2015-CB-030, Bridge #11).

   The following paragraph was inserted:

   Milestone Completion Date:
   All work at the intersection of Boston Neck Road and Beach Street must be completed by the Phase 1 Completion Date listed in the 108.1000 in order to coordinate with the Hussey Bridge #11 project (2015-CB-030).

2. Page CS-18 as attached.

Delete page CS-18 in its entirety and insert revised page CS-18(R-1) attached to this Addendum No. 1.

The following paragraph was deleted under:

13. Coordination with Other Contracts

Milestone Completion Date:
All work at the intersection of Boston Neck Road and Beach Street must be completed by June 24, 2016 to coordinate with Hussey Bridge project (2015-CB-030, Bridge #11).

The following paragraph was inserted:

Milestone Completion Date:
All work at the intersection of Boston Neck Road and Beach Street must be completed by the Phase 1 Completion Date listed in the 108.1000 in order to coordinate with the Hussey Bridge #11 project (2015-CB-030).

B. Job Specific Specifications

1. Pages JS-31 through JS-35:

   Delete pages JS-31 through JS-35 in their entirety and insert revised JS-31(R-1) through JS-35(R-1) attached to this Addendum No. 1. The specification was revised.

C. Proposal Pages

1. Page P-14 as attached

   Delete page P-14 in its entirety and insert revised P-14(R-1) attached to this Addendum No. 1. The following should be added under:

   Completion Date(s)

   Phase 1 Completion Date June 24, 2016

David W. Fish
RI Department of Transportation
Chief Engineer

F. Documentation: Where any modifications are made at existing traffic signal controller cabinets, Contractor shall supply two (2) copies of box prints showing all of the modifications that are made. Where new loop detectors are installed, the Contractor shall install a revised cabinet door sticker table showing the detector assignment information including the approach names, detector numbers, terminal numbers, detector relay slow number, relay number, relay channel number, and phase associated with each detector. The door sticker should be suitably durable for long term use in an outdoor environment. The cost for the required box prints and door stickers shall be considered incidental to the cost of the items of work being performed.

5. SEQUENCE OF CONSTRUCTION/MAINTENANCE AND MOVEMENT OF TRAFFIC:

Milestone Completion Date:

All work at the intersection of Boston Neck Road and Beach Street must be completed by the Phase 1 Completion Date listed in the 108.1000 in order to coordinate with the Hussey Bridge #11 project (2015-CB-030).

Action Required by Contractor:

Approval of the work sequence and time schedule shall be in accordance with section 108.03. The proposed construction and time schedule must consider and address the safe vehicle passage through the project.

In addition to the requirements of the Standard Specifications for Road and Bridge Construction and the Special Requirements of other sections of these contract documents, the Contractor must adhere to the following requirements;

The Contractor is advised that the signs and other traffic control devices shown on the Plans are minimum requirements, and it is the Contractor's responsibility to supplement these if necessary to ensure the public's safety. All Maintenance and Protection of Traffic devices shall be in place and approved by the RIDOT prior to starting construction. All Maintenance and Protection of Traffic shall conform to the latest edition and revisions of the Manual on Uniform Traffic Control Devices (MUTCD). The Contractor must submit for approval a traffic control plan when implementing any changes to the details shown on the plans or when providing traffic control for situations differing from those shown on the plans, including subcontractor work.

Any deviations from the requirements stated here or detailed in the plans, as well as any deviation from the approved construction sequence, time schedule and TMP, must be submitted to the RIDOT in writing for approval a minimum of 72 hours prior to implementation.

Traffic Fines in Work Zone Regulatory Signs, R.I. Std. 27.1.1, shall be utilized whenever construction activities are in progress and construction personnel is present. These signs shall be removed or covered at all other times.

8. WORK ADJACENT TO GAS LINES, WATER LINES AND TELEPHONE DUCTS:

Extreme care, particularly when installing foundations, conduit, and handholes shall be exercised during construction in the vicinity of the gas lines, water lines and telephone ducts. Complete coordination with the utility companies shall be maintained.

9. RIGHT OF WAY DAMAGE TO PROPERTY:

The Contractor shall take all precautions to avoid damaging pavement, utilities, or private properties and shall promptly repair (in-kind) at his own expense any damage to such pavement, utilities or private properties to the satisfaction of the Engineer. The Contractor assumes all risk and liability for his equipment on site during both working and non-working hours.

10. BUILDING UTILITY SERVICES:

The Contractor is to assume building services connections (electric, gas, telephone, water, and sanitary) are present to all buildings. Locations are to be checked with appropriate utility companies. The Contractor shall follow the Dig Safe process in accordance with the State of Rhode Island specifications for road and bridge construction.

11. DAMAGE TO EXISTING UTILITIES:

The Contractor shall check and verity the exact location of all existing utilities and service connections with Dig Safe. All damage to the utilities, which are detailed by Dig Safe, shall be the Contractor's responsibility. Cost to repair such damage shall be borne by the Contractor.

12. USE OF EXPLOSIVES:

Explosives shall not be used in the performance of the work of this contract.

13. COORDINATION WITH OTHER CONTRACTS:

It shall be the Contractor's responsibility to coordinate, cooperate, and schedule his work and all segments thereof with the RIDOT, other contractors, utility owners, and applicable local authorities.

All work at the intersection of Boston Neck Road and Beach Street must be completed by the Phase 1 Completion Date listed in the 108.1000 in order to coordinate with the Hussey Bridge #11 project (2015-CB-030).

14. MAINTENANCE OF PUBLIC ACCESS:

The contractor, at his own expense, shall keep the streets, highways, roads, private walks and sidewalks, in which he may be at work, open for pedestrians and vehicular traffic at all times unless otherwise authorized by the Engineer in writing. If, in the opinion of the Engineer, the interest of abutters and public requires it, the Contractor shall bridge or construct plank crossings

JOB SPECIFIC

CODE: T12.9902

NEMA ADVANCED TRANSPORTATION CONTROLLER GROUND MOUNTED INCLUDING FOUNDATION AND CABINET STD 19.1.0

DESCRIPTION: The work under this item shall conform to the applicable requirements of Section T.12 "Traffic Signal Controllers and Cabinets" and Section M.02 "Portland Cement Concrete" of the Rhode Island Standard Specifications for Road and Bridge Construction 2010 Edition and the latest revisions and include the following additions.

APPLICABLE STANDARDS: All electronic components, workmanship, and functionality of the traffic signal controller shall conform to the applicable standards for TS-2 traffic signal controllers mandated by the National Electrical Manufacturers Association's (NEMA) current edition NEMA Standards Publication TS2-2003 v02.06 for Traffic Controller Assemblies with National Transportation Communications for ITS Protocol (NTCIP) Requirements. Controller motherboard and CPU shall also support open architecture and be compliant with most recent ITE, AASHTO, and NEMA Standard Publication for Advanced Traffic Controllers Draft Version 6.x.

All major components shall meet the environmental, design, and operating standards outlined in NEMA Standards Publication TS2-2003 v02.06, Section 2.

These standards specify minimum requirements for the traffic signal controller except where requirements specified in this document exceed the aforementioned documents.

CONSTRUCTION METHODS

The Contractor shall make all arrangements for the termination, alteration and adjustment of electric and telephone connections with the rewiring of new cabinets. This work shall be incidental to the installation of the Controller.

HARDWARE

Enclosure: The Controller enclosure shall be designed for placement on a shelf. All hardware and electrical components shall be modular for ease of replacement and repair. All controller input/output connectors, fuse holders, indications, displays, switches and control devices required for the operation and adjustments of the controller shall be mounted on the front panel. The front panel of the controller shall be permanently marked to identify I/O connections, fuse holders, indicators, etc.
Additional Hardware Requirements:

- Engine Board and CPU shall be compliant with the ATC Standard 5.2b as noted above

- Minimum required board memory: 64 MB Flash, 64 MB DRAM, and 1 MB SRAM;
- There shall be no batteries or moving parts such as fans or memory storage devices with rotating parts on the controller unit;
- All keypads to be mounted on the controller front panel and are to be covered with a one-piece, water-resistant, poly-vinyl membrane;
- The active status light shall be an LED and be visible in direct sunlight;
- Controller hardware shall facilitate the use of the controller in TS-1 and TS-2 Type 1 or 2 traffic signal control cabinets;
- Controllers shall be configured for TS-2 Type 1 operation.

Communications Ports
In addition to the NEMA TS-2 with NTCIP v02.06 Standard, the traffic signal controller shall include the following communications ports and configurations:

- Two, two-port 10/100 Mbit Ethernet network cards with independent user programmable subnets (IP Address, Subnet Mask, and Default Gateway);
- One, four-port Universal Serial Bus (USB) Hub;

OPERATING SYSTEM

O/S Version
The Traffic Signal Controller shall use a Linux operating system (O/S) with kernel version 2.6 or later and shall include standard POSIX libraries for application support including real-time extensions of POSIX 1003.1b. To facilitate application level access to the ATC hardware, a Board Support Package (BSP) shall be provided by the controller manufacturer for access to hardware-specific drivers.

The Provider's current software development tool kit (including tool-chain and other necessary Linux Libraries) for the ATC engine board shall be publicly available for the lifetime of the product. Once standard ATC API Software has been developed per the ATC API 2.06a specification and released by the ITE, AASHTO, and NEMA Joint Committee on ATCs, the new industry standard API and toolkit should be provided on all engine boards provided.

O/S Updates
The controller shall provide Operating System updates from both of the following options that are selectable by the end user: a personal computer over an Ethernet connection or directly from a USB flash drive plugged into the controller's front panel. The update process shall be automated and packaged as a simple executable file enabling the user to perform the update within a few steps.

Intersection Control Software

The intersection control software should provide at a minimum, the functionality and operations specified in the NEMA TS-2 with NTCIP v02.06 Standard. All objects and functions available in the local control software should be named and defined according to the current NTCIP standard. Additional, non-required or manufacturer specific objects and functions should have a straight-forward, logical label and/or definition.

Provider shall provide all NTCIP Management Information Base (MIBs) files associated with the licensed controller software including manufacturer specific and extended objects. Vendor places no limitations under this contract on the re-distribution and re-use of the MIBs associated with the licensed controller software. The Agency and its partners are permitted to copy, re-distribute and/or reuse the MIBs as they see fit to support their authorized use of the license software.

Basic Functionality

In addition to the aforementioned NEMA TS-2 Standard, the controller must satisfy the following additional requirements:

- 16 programmable phases
- 4 timing rings that can be configured by the user to run concurrently or independently
- 16 overlaps
- User can easily configure:
    - Flashing Yellow Arrow functionality
    - Pedestrian Overlaps
    - Pedestrian advance or exclusive pedestrian intervals
    - Trailing green sequences for compound intersections
    - Preemption routines in accordance with the NEMA TS-2 specification (v02.06)
- Detectors
    - Ability to call multiple phases with one detector
    - Detector Diagnostics
- 16 Preempt Routines
- 8 Customizable Alarms

User Interface

In addition to the front panel screen, the traffic signal controller shall have an on-board web server which hosts a graphical user interface for monitoring and configuring the intersection control software. The web server interface shall provide access from any internet enabled device with a web browser. No additional or proprietary applications or software shall be needed to use the graphical user interface.

Input/Output Configuration

The intersection control software should allow the user to dynamically configure and modify input and output pins on an individual, pin by pin basis. In addition, the user should be able to configure the signal output channels (phase/overlap to load-switch) so that any phase, overlap, or pedestrian output can drive any available load-switch in the traffic signal cabinet. The user shall perform such configurations and modifications from the controller front panel or web user interface, without the need for additional configuration software or downloading additional files to the controller.

The Intersection Control Software shall support Peer to Peer functionality. Peer to Peer allows a controller to change the operation of another controller by sending messages including but not limited to detector calls, preemption status, phase interval states, transit priority calls, and phase interval timer values directly to other controllers connected in the same network via serial or Ethernet communications.

Database Management

The user shall have the option of transferring databases to the controller from a personal computer via an Ethernet connection using the web-user interface, or by using a standard FAT (or FAT-32) formatted USB flash drive inserted into the controller front panel user interface. The software shall provide a user interface to select and save a database from the USB flash drive to the controller when multiple databases are located on the USB flash drive.

METHOD OF MEASUREMENT: "NEMA ADVANCED TRANSPORTATION CONTROLLER GROUND MOUNTED INCLUDING FOUNDATION AND CABINET STD. 19.1.0" shall be measured for payment by the unit "EACH" for each unit installed and accepted.

BASIS OF PAYMENT: "NEMA ADVANCED TRANSPORTATION CONTROLLER GROUND MOUNTED INCLUDING FOUNDATION AND CABINET STD. 19.1.0" shall be paid for at the contract unit price bid per "EACH", which price shall include full compensation for all materials, equipment, relays, existing conduit modifications, bracket for post mounted controller, controller programming, concrete, tools, testing, labor and work incidental thereto complete in place and accepted by the Engineer.

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Revised: 2/19/2002

Total or gross sum of bid for Rhode Island Contract Number: 2015-CT-020

Federal-Aid Project Number(s): STPG-8888(218)

WRITTEN IN WORDS:

The undersigned bidder declares that this Proposal is made without connection with any other person or persons making proposals for the same work, and is in all respects fair and without collusion or fraud. The undersigned bidder submits herewith, a proposal guarantee in the form of a bid bond in favor of the State of Rhode Island in the amount of 5% of the total or gross sum of the bid and agrees and consents that the proposal guarantee shall be forfeited to the State as liquidated damages if the required contract agreement and contract bond are not executed within ten(10) days of the notice of award. All surety companies must be listed with The Department of the Treasury, Fiscal Services, Circular 570, (Latest Revision published by The Federal Register). The State reserves the right to retain the surety of all bidders until the successful bidder enters into the Contract or until such time as the award or cancellation of the Contract is announced at which point Sureties will be returned to all bidders by the State of Rhode Island, Office of Purchases. The undersigned bidder further agrees, if awarded the contract on this proposal, to begin work within ten (10) calendar days after the date of execution of the contract unless otherwise specified under special provisions or permitted by the Engineer, and further agrees to complete the work on or before the dates outlined in the Contract Documents.

COMPLETION DATE(S)

DESCRIPTION	DATE
Advertise Date	October 2, 2015
Bid-Opening Date	October 23, 2015
Substantial Completion Date	August 19, 2016
Phase 1 Completion Date	June 24, 2016

THE BIDDER ACKNOWLEDGES RECEIPT OF THE FOLLOWING:

ADDENDA	DATE POSTED	DOCUMENT(S)	PAGE
		1. Status Certification for: Debarment, Eligibility, Indictments, Convictions or Civil Judgements	1
		2. Anti-Collusion Certificate	2
		4. DBE Affirmative Action Certification	3 - 9
		3. Disclosure of Lobbying Activities	