Illinois Department of Transportation
2300 South Dirksen Parkway / Springfield, Illinois / 62764

June 1, 2022

SUBJECT Various Routes
Section D9 RAILROAD SIGNAL FY22-1
Various Counties
Contract No. 78947
Item No. 97, June 17, 2022 Letting
Addendum A

NOTICE TO PROSPECTIVE BIDDERS:

Attached is an addendum to the plans or proposal. This addendum involves revised and/or added material.

1. Revised Schedule of Prices.
2. Revised pages 2-4 of the Special Provisions
3. Revised sheets 1, 3-4, 6, 8, 10, 12, and 14-16 of the Plans.
4. Added sheets 17A-17H of the Plans.

Prime contractors must utilize the enclosed material when preparing their bid and must include any changes to the Schedule of Prices in their bid.

Very truly yours,

Jack A. Elston, P.E.
Bureau Chief, Design and Environment

MTS

1

Add the following after the first paragraph of Article 107.39 of the Standard Specifications:

The Contractor is advised that this project includes areas of highway illumination and/or signalized intersections. These areas have underground cable or conduit throughout which is to remain in service. Before driving any posts or beginning any excavation operations, the Contractor shall locate, uncover by hand, and relocate any wiring which conflicts with the proposed work. Any cable or conduit which is damaged as a result of the Contractor's operations shall be replaced by him or at their expense. Replacement material and methods shall meet or exceed the original specifications for the wiring. Splicing will not be permitted.

SEEDING, MINOR AREAS

Seeding and fertilizing shall be done in accordance with Article 250 of the Standard Specifications, except for the following revisions:

The seed mixture shall be Seeding, Class 1.

The fertilizer nutrients shall be applied at a rate of 270 pounds/acre. The fertilizer furnished shall be ready mixed material having a ratio of (1-1-1).

The Contractor shall provide the Engineer with the test results from the seed container and the chemical analysis of the fertilizer nutrients.

All areas disturbed by work performed shall be mulched in accordance with Article 251.03(a) and as directed by the Engineer.

Basis of Payment: The seed and fertilizer placed at all disturbed areas will not be measured for payment but will be included in the contract bid price for UNDERGROUND CONDUIT.

1

RAILROAD, FULL ACTUATED CONTROLLER AND CABINET

The removal and installation of a Traffic Actuated Controller shall meet the requirements of Sections 857, 863, and 895 except as revised by this special provision.

This work shall consist of the removal of existing controller cabinet and controller and furnishing and installing of the proposed controller cabinet, controller and peripheral equipment at the same location as the existing cabinet and peripheral equipment.

The Contractor shall notify the Bureau of Operations, Traffic Section, 72 hours in advance of removal of the existing controller cabinets and controllers.

The installation of the cabinets shall include removing the existing UPS battery cabinet, service meter, disconnect switch and disconnecting the UPS and reinstalling them on/in the new cabinet. The relocation work shall be paid for under the RELOCATE EXISTING TRAFFIC SIGNAL EQUIPMENT pay item.

1

The controller(s) supplied shall be the Siemens M60 Series for integration into the existing District 9 Eagle Signal system and shall be fully compatible with the District's Tactics software.

A traffic actuated solid state digital controller shall meet or exceed with the requirements of NEMA Standards for Traffic Control Systems, TS 2-2016. One possible start up mode shall be an all red display for a minimum of 15 seconds. The controller shall be capable of telemetry for controller to controller and controller to computer system or solo operation data transfer. The controller shall be capable to operate in both TS-2 Type 1 and 2 cabinets. Through telemetry, the system or solo operation shall be capable of being monitored on an IBM AT or compatible personal computer. Typically the controller shall be completely uploaded or downloaded through telemetry either from a remote location or side by side from the computer. The CPU of the controller shall operate on a standard Linux operating system with an open architecture platform. The CPU shall also contain the minimum memory requirements: 512 MB FLASH, 64 MB DRAM, and 2 MB SRAM. The CPU shall also contain a TOD Clock with automatic daylight savings time adjustment. The latest computer software, shall be provided so data, including all timing parameters, can be transferred. The controller shall be compatible with SEPAC traffic controller software. The controller will use non-volatile EEPROM memory. All harnesses shall be furnished, if different than provided previously, for the controller to controller and controller to computer data transfer. The controller shall contain all normal connectors and any special connectors required for data transfer. The controller's "D" connector termination panel, and all other connectors shall be completely terminated, even if not required in this application. The twisted shielded field cables should remain shielded to within 1" of the cabinet terminals. The controller shall also feature an active TFT backlit LCD display.

The controller shall be provided with an RS232 Port 3 as well as an RS232 Port 2. Connections on the "D" panel, Aux. one output should be connected to red rest. Aux. three should be connected to the special status 3 inputs. Special status 1 shall be connected to report if the cabinet door is open. A door open switch shall be provided. The controller's "D" connector termination panel shall be provided and fully connected to provide information to the controller, of manual or monitor flash status. The controller shall be provided with a communications module containing the following items; a 10/100 Base-T Ethernet with built-in switch and 4 panel RJ-45 connectors - ENT1 and ENT2 network switches - 5 10/100 TCP/IP ports, 4 USB 2.0 Ports and a Datakey Port, Dedicated GPS – SP8 Port (9pin EIA-574), and an unique MAC address assigned by the Institute of Electrical and Electronic Engineers (IEEE).

A slide out shelf shall be provided below the standard shelf and above the back panel terminal board. The pull out shelf should be mounted as far left as possible. The cabinet shall be equipped with an IP addressable Power Strip. A standard TS-2 detector card rack shall be provided. The cabinet shall have thermostat controlled heater.

During conflict monitor flash a means shall be provided to restart the controller at the beginning of startup, just as if the power had been removed, and reset the monitor with a momentary pulse. The signal to restart/reset shall be delivered by a momentary switch, labeled RESET, located in the police door. The pulse shall only be functional while the signals are in a monitor flash mode. Jumpers shall be installed in the unused load switch sockets to prevent false red fail reports. Hardwiring of this feature on the back panel will not be permitted. The cabinet series / parallel surge protector shall be the plug in type. The controller cabinet shall be a TS-2, Type 2 equipped with a 16 load switch, load bay using a conflict monitor capable of operating with 16 or 12 channels.

1

The conflict monitor shall be a malfunction management unit meeting NEMA TS2-2016 standards and capable of supporting Flashing Yellow Arrow (FYA) operation and also be equipped with IP addressable network capability. The conflict monitor shall be capable of providing modes in both TS-2 and TS-1 cabinet configurations. The conflict monitor shall provide error sensing of two +24Vdc cabinet supplies and the controller power supplies via +24V MONITOR I, +24V MONITOR II, and Controller Voltage Monitor (CVM) inputs respectively. The conflict monitor shall use a programmable alpha-numeric Liquid Crystal Display (LCD) to show monitor status and two icon based LCDs to show field signal channel and fault status.

The traffic signal controller will not be approved for installation until the requirements of Articles 801.10(b) and 801.07 are satisfied. The contractor shall prepare traffic signal materials at a suitable location, meeting the approval of the Engineer. The cabinet shall be tested and approved by IDOT personnel at the contractors shop before moving it to the job site.

Basis of Payment.
This work will be paid for at the contract unit price EACH for RAILROAD, FULL-ACTUATED CONTROLLER AND TYPE V CABINET.

SPARE RAILROAD, FULL ACTUATED CONTROLLER

Description.
This work shall consist of furnishing a spare traffic actuated solid state digital controller to IDOT District 9.

Materials.
Spare traffic signal controller shall be matching the specs listed in the RAILROAD, FULL ACTUATED CONTROLLER AND CABINET special provision.

Basis of Payment.
This work will be paid for at the contract unit price per EACH for SPARE RAILROAD, FULL ACTUATED CONTROLLER, SPECIAL.

UNINTERRUPTABLE POWER SUPPLY EXTENDED

This work shall consist of furnishing and installing an uninterruptable power supply, hereinafter referred to as the "UPS", in the local controller cabinet.

The UPS shall be capable of keeping the signals running green, yellow, and red during periods of utility power failure. The UPS shall meet the following requirements:

1. Maintain power for a minimum of 60 minutes upon power failure.
2. Electrical inputs: AC Input Voltage 95-135 Volts AC Input Current 30 Amps Max Frequency 60 + 1Hz
3. Electrical outputs: AC Output Voltage 120 VAC + 5%
4. ‘Phoenix-type’ connectors should output to the controller's "D" panel when the UPS battery is about to fail