



Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

April 5, 2018

SUBJECT: FAP 332 (IL 1)
Section 15-00033-02-PV (Tilton)
Vermilion County
Contract No. 91562
Item 205
April 27, 2018 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 page iii of the Table of Contents.**
- 2. Revised pages 21, 22, 28, 34, 35, 37, 41 & 42 of the Special Provisions.**
- 3. Added page 35B to the Special Provisions.**

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

Very truly yours,

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

A handwritten signature in cursive script, reading "Ted B. Walschleger, P.E.", with the initials "P.E." written in a smaller font to the right.

By: Ted B. Walschleger, P.E.
Engineer of Project Management

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General: The controller shall function in a fiber optic network that communicates via Ethernet switches with SFP transceivers and fiber optic jumpers.

The Type IV controller cabinet shall be the Eagle Size P base mounted cabinet. The controller cabinet shall be constructed of unpainted aluminum.

The controller cabinet shall include a TS-1 conflict monitor, TS-1 load switches, a TS-1 panel and terminal facilities, and a TS-1 flasher unit and flasher relays.

The controller cabinet shall include a fiber optic distribution enclosure for termination of the fiber optic cable. The distribution enclosure shall be the Multilink FRM-2RU-4X-SO and shall have adequate capacity to accommodate the number of fibers to be terminated in the cabinet. The enclosure shall be shelf mounted and shall support ST terminations.

The controller cabinet shall contain separate ground and neutral buses. The neutral bus shall be electrically isolated from ground. The controller cabinet shall be bonded to the equipment grounding conductor in accordance with the NEC and the NESC.

The controller cabinet shall contain the circuit breakers, lighting contactor, and Hand-Off-Auto switch as shown in the “Traffic Signal Controller Installation Diagram (Illinois Route 1 and Ramp Road)” in the plans. All circuit breakers shall be clearly labeled. The lighting contactor shall be a minimum of 4 pole, 30 amp, 240 VAC with 120 VAC electrically held coil. The Hand-Off-Auto switch shall be connected such that the lights are on in the Hand position and are controlled by the photocell in the Auto position.

The anti-backup feature for controller programming required in Article 1073.01(c) of the Standard Specifications shall have the following added to the definition shown in Article 1073.01(a): “The components used to accomplish this feature shall be hardwired on the controller cabinet back panel and labeled for identification.”

The Contractor shall make all necessary connections of the traffic signal cables, fiber optic cables, and roadway lighting cables in the controller cabinet. The Contractor shall provide all equipment and make all connections required to receive the existing internet signal along the fiber optic cable from the proposed controller cabinet at Southgate Drive.

The Contractor shall submit a detailed plan of the controller, cabinet, and all peripheral equipment included in the cabinet with the traffic signal shop drawings.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, which price shall include all labor, equipment, and material necessary to complete the work as specified.

The Ethernet switches with SFP transceivers and fiber optic jumpers to be installed in the traffic signal controller cabinet for the fiber optic network will be paid for separately. The additional equipment to be installed in the traffic signal controller cabinet for the wide area video detection system and the uninterruptable power supply will be paid for separately.

UNINTERRUPTABLE POWER SUPPLY, STANDARD

Description: This work shall consist of furnishing and installing an uninterruptable power supply in accordance with Section 862 of the Standard Specifications, the details in the plans, and the following additions or exceptions.

General: The battery cabinet for the UPS shall be mounted as shown in the “UPS Battery Cabinet Mounting Detail (Illinois Route 1 and Ramp Road)” in the plans and as specified herein. The battery cabinet shall be installed on the controller cabinet foundation and bolted directly to the left side of the controller cabinet (when looking into the controller cabinet) with at least four bolts. There shall not be a gap between the battery cabinet and the controller cabinet. The cables shall be routed through the sides of the cabinets, with the holes in the cabinets protected with grommets. Only the batteries shall be housed in the battery cabinet; all other UPS equipment shall be housed in the controller cabinet.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for UNINTERRUPTABLE POWER SUPPLY, STANDARD, which price shall include all labor, equipment, and material necessary to complete the work as specified, including the battery cabinet.

ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C,

ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C,

ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C,

ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C

Description: This work shall consist of furnishing and installing electric cables in conduit, complete with all splicing, identifications, and terminations, in accordance with Section 873 of the Standard Specifications, the details in the plans, and the following additions or exceptions.

General: All cables shall be tagged with wiring identification markers at each point of access. All handholes, gulfbox junctions, junction boxes, pole handholes, and controller cabinets shall be considered points of access. Wiring identification markers shall be in accordance with Article 1066.07 of the Standard Specifications. The type of wiring identification marker shall be determined by the Engineer.

Measurement and Payment: This work will be measured and paid for at the contract unit price per foot for ELECTRIC CABLE IN CONDUIT, of the type, size, and number of conductors specified, which price shall include all labor, equipment, and material necessary to complete the work as specified.

PEDESTRIAN SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER

Description: This work shall consist of furnishing and installing a light emitting diode (LED) pedestrian signal head in accordance with Section 881 of the Standard Specifications, the details in the plans and applicable Highway Standards, and the following additions or exceptions.

General: The LED pedestrian signal modules and LED countdown pedestrian signal modules shall be manufactured by Dialight Corporation and shall have a 5-year manufacturer's warranty.

Each directional unit shall consist of one LED pedestrian signal module and one LED countdown pedestrian signal module. The nominal dimensions of each module shall be 12" by 12" as detailed in the plans.

The pedestrian signal module shall have a two-symbol overlay configuration. The symbols for the walking person ("walk") and the upraised hand ("don't walk") shall be full symbols.

The housing and door for the polycarbonate pedestrian signal head shall be yellow in color.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for PEDESTRIAN SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER, which price shall include all labor, equipment, and material necessary to complete the work as specified.

PEDESTRIAN PUSH-BUTTON

Description: This work shall consist of furnishing and installing a pedestrian push-button and an appropriate traffic signal instruction sign in accordance with Section 888 of the Standard Specifications, the details in the plans, and the following additions or exceptions.

General: The pedestrian push-button shall be the latest version of the BullDog ADA-compliant pedestrian push-button manufactured by Polara Enterprises LLC, or the Pre-Approved Equivalent. The body style shall be round and yellow in color. The button style shall include left or right arrows as appropriate for the proposed direction of travel.

The mounting hardware shall include a 9" x 12" push-button frame. The MUTCD R10-3 sign shall be mounted to the push-button frame, with the finger and arrow on the sign legend pointing in the proposed direction of travel. A spacer shall be provided at each location where two 9" x 12" push-button frames will be mounted to the same traffic signal post. The push-button frame and spacer shall be yellow in color.

All necessary control equipment for the push-button to operate in latching mode shall be furnished and installed in the traffic signal controller cabinet as part of this pay item, along with all necessary power supplies and wiring in the controller cabinet.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for PEDESTRIAN PUSH-BUTTON, which price shall include all labor, equipment, and material necessary

the traffic signal controller cabinet foundation. The proposed underground conduit for the service cables shall be 2" diameter schedule 80 PVC.

The grounded conductor shall be bonded to ground at the service disconnect in accordance with the requirements of Ameren Illinois, the NEC, and the NESC. A #6 AWG bare, solid copper grounding electrode conductor shall be provided from the traffic signal controller cabinet to the ground rod located in the proposed double handhole and shall be exothermically welded to the ground rod. A 1" diameter schedule 80 PVC conduit shall be provided from the meter socket to the proposed double handhole for the #6 AWG bare, solid copper grounding electrode conductor as shown in the "Service Installation, Type A (Modified) Detail (Illinois Route 1 and Ramp Road)" in the plans. The conduit shall pass through the traffic signal controller cabinet foundation.

The Contractor shall be responsible for coordinating all requirements and fees for the service installation with Ameren Illinois and shall adhere to latest standards as provided by Ameren Illinois unless otherwise directed by the Engineer. No additional compensation will be allowed for work required for the electric service or utility connection fees, even though not explicitly shown on the plans or specified herein.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for SERVICE INSTALLATION, TYPE A (MODIFIED), which price shall include all labor, equipment, and material necessary to complete the work as specified, including the meter socket, disconnect switch, 2" diameter RGS conduit, 1" and 2" diameter PVC conduit, weatherhead, #3 AWG service cables, #6 AWG grounding electrode conductor, exothermic weld, and other materials required by Ameren Illinois for the service installation.

HANDHOLE TO BE ADJUSTED

Description: This work shall include all labor, equipment, tools, and materials needed to adjust existing handholes located within proposed sidewalks or as directed by the Engineer.

General:

The Contractor shall remove the existing handhole frame and lid and dispose of them in accordance with Article 202.03 of the Standard Specifications. The top of the existing handhole shall be saw cut to the appropriate elevation and slope to fit within the proposed sidewalk. The Contractor shall provide a new frame and lid for the adjusted handhole. The new handhole frame shall be cast into the proposed sidewalk. Joints in the proposed sidewalk shall be tooled around the handhole frame as directed by the Engineer. The joint between the top of the existing handhole and the bottom of the proposed sidewalk shall be sealed as directed by the Engineer.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for HANDHOLE TO BE ADJUSTED, which price shall include all labor, equipment, and material necessary to complete the work as specified.

CONTROLLER CABINET TYPE IV, SPECIAL

Description: This work shall consist of furnishing and installing a controller cabinet and peripheral equipment on an existing concrete foundation for an existing traffic signal controller, along with the modification of the existing traffic signal controller, in accordance with the applicable portions of Sections 857, 863, 864, and 895 of the Standard Specifications and the following additions or exceptions.

General: The existing Siemens M52 TS2 Type 2 traffic signal controller at the Illinois Route 1 and Southgate Drive intersection shall be installed in the new controller cabinet.

The existing Siemens M52 TS2 Type 2 traffic signal controller shall be modified as necessary for the proposed traffic signal installation.

The controller shall function in a fiber optic network that communicates via Ethernet switches with SFP transceivers and fiber optic jumpers.

The Type IV controller cabinet shall be the Eagle Size P base mounted cabinet. The controller cabinet shall be constructed of unpainted aluminum.

The controller cabinet shall include a TS-1 conflict monitor, TS-1 load switches, a TS-1 panel and terminal facilities, and a TS-1 flasher unit and flasher relays.

The controller cabinet shall include a fiber optic distribution enclosure for termination of the fiber optic cable. The distribution enclosure shall be the Multilink FRM-2RU-4X-SO, or the Pre-Approved Equivalent and shall have adequate capacity to accommodate the number of fibers to be terminated in the cabinet. The enclosure shall be mounted under shelf and shall support ST terminations.

The controller cabinet shall contain separate ground and neutral buses. The neutral bus shall be electrically isolated from ground. The controller cabinet shall be bonded to the equipment grounding conductor in accordance with the NEC and the NESC.

The controller cabinet shall contain the circuit breakers, lighting contactor, and Hand-Off-Auto switch as shown in the "Traffic Signal Controller Installation Diagram (Illinois Route 1 and Southgate Drive)" in the plans. All circuit breakers shall be clearly labeled. The lighting contactor shall be manufactured by Square D and shall be a minimum of 4 pole, 30 amp, 240 VAC with 120 VAC electrically held coil. The Hand-Off-Auto switch shall be manufactured by Square D and shall be connected such that the lights are on in the Hand position and are controlled by the photocell in the Auto position.

The anti-backup feature for controller programming required in Article 1073.01(c) of the Standard Specifications shall have the following added to the definition shown in Article 1073.01(a): "The components used to accomplish this feature shall be hardwired on the controller cabinet back panel and labeled for identification."

The Contractor shall make all necessary connections of the traffic signal cables, fiber optic cables, and roadway lighting cables in the controller cabinet. The Contractor shall furnish and install the

Measurement and Payment: This work will be measured and paid for at the contract lump sum price for REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT, SPECIAL, which price shall include all labor, equipment, and material necessary to complete the work as specified. Removal of individual items will not be paid for separately.

ROADWAY LIGHTING COORDINATION

The Contractor shall notify the Village of Tilton at least 48 hours in advance of any work that requires power to the existing Village-owned lights to be shut off.

GULFBOX JUNCTION, COMPOSITE CONCRETE

Description: This work shall consist of furnishing and installing a gulfbox junction in accordance with Section 815 of the Standard Specifications and the following additions or exceptions

General: The gulfbox cover shall be constructed of the same material as the gulfbox and shall have the words "STREET LIGHTING" cast into the cover. The gulfbox cover and collar shall be standard concrete grey color in sidewalks and shall be the manufacturer's dark green color in grass areas.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for GULFBOX JUNCTION, COMPOSITE CONCRETE, which price shall include all labor, equipment, and material necessary to complete the work as specified.

ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 10

ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 6

Description: This work shall be performed in accordance with Section 817 of the Standard Specifications and the following additions or exceptions.

General: Revise the second sentence of the first paragraph of Article 1066.02 to read: "**The cable shall be rated at a minimum of 90°C dry and 75°C wet and shall be suitable for installation in wet and dry locations, and shall be resistant to oils and chemicals.**"

Add the following to Article 1066.03 of the Standard Specifications: "**The cable shall be rated 600 volts and shall be UL Listed Type RHH/RHW/USE.**"

Measurement and Payment: This work will be measured and paid for at the contract unit price per foot for ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C, of the size specified, which price shall include all labor, equipment, and material necessary to complete the work as specified.

Revise the first paragraph of Article 844.03(b) of the Standard Specifications to read: **“Reinstallation. The lighting unit shall be installed on the proposed foundation. The electric cables shall be connected to the power supply cables.”**

Steel helix foundations shall be provided for reinstallation of the lighting units. Steel helix foundations will be paid for separately.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for RELOCATE EXISTING LIGHTING UNIT, which price shall include all labor, equipment, and material necessary to complete the work as specified, including all reconnection of pole wiring to power supply wiring.

REMOVAL OF LIGHTING LUMINAIRE, SALVAGE

Description: This work shall consist of the removal and salvage of existing lighting luminaires in accordance with Section 842 of the Standard Specifications and the following additions or exceptions.

General: Existing lighting luminaires shall remain the property of the Department and shall be delivered by the Contractor to a location designated by the Engineer. The Contractor shall remove, store, and protect the salvaged lighting luminaires in a workmanlike manner to avoid damaging, denting, or scratching the material. Any repair or touch-up required shall be performed by the Contractor using a method approved by the Engineer and at the Contractor’s expense. Any materials damaged beyond repair by the Contractor shall be replaced as determined by the Engineer and at the Contractor’s expense.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for REMOVAL OF LIGHTING LUMINAIRE, SALVAGE, which price shall include all labor, equipment, and material necessary to complete the work as specified.

JUNCTION BOX (SPECIAL)

Description: This work shall consist of furnishing and installing a junction box in accordance with Section 815 of the Standard Specifications and the following additions or exceptions..

The junction box shall be composite concrete. The junction box cover shall be constructed of the same material as the junction box and shall have the words “STREET LIGHTING” cast into the cover. The junction box cover and collar shall be standard concrete grey color in sidewalks and shall be the manufacturer’s dark green color in grass areas.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for JUNCTION BOX (SPECIAL), which price shall include all labor, equipment, and material necessary to complete the work as specified.

LIGHT POLE FOUNDATION, SPECIAL

Description: This work shall consist of furnishing and installing a metal light pole foundation in accordance with Section 836 of the Standard Specifications, the details of Highway Standard 836001, the details in the plans, and the following additions or exceptions.

General: The bolt circle diameter of the metal foundation shall accommodate the bolt circle diameter of the light pole to be installed on the foundation. The top plate dimensions of the metal foundation shall accommodate the bolt circle diameter and the anchor base dimensions of the light pole to be installed on the foundation.

Measurement and Payment: This work will be measured and paid for at the contract unit price each for LIGHT POLE FOUNDATION, SPECIAL, which price shall include all labor, equipment, and material necessary to complete the work as specified, including the anchor bolts.

CONTROLLER SOFTWARE REQUIREMENTS

General: The traffic signal controller manufacturers approved for use in District 5 are Siemens, Intelight, and Econolite. The traffic signal controllers supplied under this contract shall be the latest model of the respective manufacturer that are compatible with NEMA TS1 controller cabinets. They shall be equipped with the latest proprietary software and NTCIP compliant software available from the manufacturer. The controller shall comply with all parts of Article 1073.01 of the Standard Specifications.

The contractor shall provide to the Department a licensed copy of the latest ATMS software produced by the controller manufacturer. The software shall be able to provide remote communication to the traffic signal controllers via ethernet or serial connection from the IDOT District 5 office or any local agencies maintaining the signals for District 5. The software shall provide full upload/download capabilities. The software shall continuously monitor the signal controller for alarms. The software shall be capable of generating e-mails to remote users in response to user defined alarms.

The software shall be licensed to IDOT District 5. The license shall provide for communication to 300 traffic signal controllers for up to 10 users and 10 client machines in addition to the server computer that the program will reside on. All technical support and software upgrades shall be provided to IDOT District 5 for a period of 10 years following the acceptance of the contract.

The software shall be functioning properly prior to any of the traffic signal controllers being installed in the field.

Measurement and Payment: This work shall be considered as included in the applicable traffic signal controller pay items and no additional compensation will be allowed.