

110

April 29, 2022 Letting

Notice to Bidders, Specifications and Proposal



**Illinois Department
of Transportation**

**Contract No. 66M01
GRUNDY County
Section (111)ELE
Route FAP 326
District 3 Construction Funds**

Prepared by

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Checked by

(Printed by authority of the State of Illinois)



NOTICE TO BIDDERS

- 1. TIME AND PLACE OF OPENING BIDS.** Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). All bids must be submitted to the iCX system prior to 12:00 p.m. April 29, 2022 prevailing time at which time the bids will be publicly opened from the iCX SecureVault.
- 2. DESCRIPTION OF WORK.** The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

**Contract No. 66M01
GRUNDY County
Section (111)ELE
Route FAP 326
District 3 Construction Funds**

This work is located at the intersections of IL 47 and Pine Bluff Road and at the intersection of IL 47 and Southmor Road South of Morris in Grundy County. This work consists off the removal of existing traffic signal equipment, signal heads, concrete foundations, controller cabinets, UPS and other related traffic signal equipment.

- 3. INSTRUCTIONS TO BIDDERS.** (a) This Notice, the invitation for bids, proposal and letter of award shall, together with all other documents in accordance with Article 101.09 of the Standard Specifications for Road and Bridge Construction, become part of the contract. Bidders are cautioned to read and examine carefully all documents, to make all required inspections, and to inquire or seek explanation of the same prior to submission of a bid.

(b) State law, and, if the work is to be paid wholly or in part with Federal-aid funds, Federal law requires the bidder to make various certifications as a part of the proposal and contract. By execution and submission of the proposal, the bidder makes the certification contained therein. A false or fraudulent certification shall, in addition to all other remedies provided by law, be a breach of contract and may result in termination of the contract.
- 4. AWARD CRITERIA AND REJECTION OF BIDS.** This contract will be awarded to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the rules, Invitation for Bids and contract documents. The issuance of plans and proposal forms for bidding based upon a prequalification rating shall not be the sole determinant of responsibility. The Department reserves the right to determine responsibility at the time of award, to reject any or all proposals, to readvertise the proposed improvement, and to waive technicalities.

By Order of the
Illinois Department of Transportation

Omer Osman,
Secretary

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2022

This index contains a listing of SUPPLEMENTAL SPECIFICATIONS, frequently used RECURRING SPECIAL PROVISIONS, and LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS.

No ERRATA this year.

SUPPLEMENTAL SPECIFICATIONS

Std. Spec. Sec.

Page No.

No Supplemental Specifications this year.

RECURRING SPECIAL PROVISIONS

The following RECURRING SPECIAL PROVISIONS indicated by an "X" are applicable to this contract and are included by reference:

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STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the “Standard Specifications for Road and Bridge Construction, Adopted January 1, 2022”, the latest edition of the “Manual on Uniform Traffic Control Devices for Streets and Highways”, and the “Manual of Test Procedures for Materials” in effect on the date of invitation for bids, and the “Supplemental Specifications and Recurring Special Provisions” indicated on the Check Sheet included herein, which apply to and govern the construction of FAP Route 326 (IL 47), Section(111)ELE, Grundy County, Contract No. 66M01 and in case of conflict with any part, or parts, of said Specifications, the said Special Provisions shall take precedence and shall govern.

LOCATION OF PROJECT

This project is located at the following intersections.

Grundy County

Location No. 1: Intersection of FAP Route 326 (IL 47) and Pine Bluff Road (south of the Illinois River in Morris).

Location No. 2: Intersection of FAP Route 326 (IL 47) and Southmor Road (South of the Illinois River in Morris).

DESCRIPTION OF PROJECT

This project consists of removing and replacing the traffic signal controller cabinet, signal heads pedestrian signal heads, related controller components and other related traffic signal system components.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701201

Description. This work shall consist of the furnishing, installation, maintenance, relocation, and removal of work zone traffic control and protection.

CONSTRUCTION REQUIREMENTS

General. This work shall be according to applicable portions of Section 701 of the Standard Specifications and Traffic Control and Protection, Standard 701201.

Method of Measurement. This work will be measured for payment as follows:

Revise the first paragraph of Article 701.19(b) to read:

- (b) Measured as Each. Traffic control and protection required under Standard 701201 will be measured for payment at each location specified.

Basis of Payment. This work will be paid for as follows.

Revise the first paragraph of Article 701.20(a) to read:

- (c) Traffic control and protection will be paid for at the contract unit price per each for TRAFFIC CONTROL AND PROTECTION, STANDARD 701201 at the location specified.

TEMPORARY INFORMATION SIGNING

(Effective September 24, 2013; Revised July 31, 2020)

Description. This work shall consist of the furnishing, installation, maintenance, and removal of temporary information signs.

Materials. Materials shall be according to the applicable portions of Section 701 of the Standard Specifications and as shown on the plans.

Construction Requirements. The temporary information signs shall be in place at least one week prior to the beginning of construction activities that impact traffic flow and shall remain in place until the completion of the project. If all lanes are open for an extended period of time during the project, the Contractor shall cover the signs until lane closures resume. If the project is shut down for the winter, the signs shall read "Road Work Resumes Spring 2023."

Signs shall be installed according to the requirements of Section 701.

Method of Measurement. This work will be measured for payment in square feet in place. The auxiliary sign panel will not be measured for payment.

Basis of Payment. This work will be paid for at the contract unit price per square foot for TEMPORARY INFORMATION SIGNING.

MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION

Description. This work shall consist of maintaining an existing traffic signal installation that has been designated to remain in operation during construction including furnishing and installing a Temporary Full-Actuated Controller and Type IV Cabinet at locations to be determined by the Engineer at time of construction.

CONSTRUCTION REQUIREMENTS

Procedure. The energy charges for the operation of the traffic signals will be paid for by the Department or the local agency.

General. At least one week prior to beginning construction within 400 ft of the signalized intersection, the Contractor shall conduct a signal inspection with a representative of the agency responsible for the signal maintenance. The signal inspection shall reveal defective existing traffic signal items such as inductive loop detectors, lead-in cable, detector loop, interconnect cable, and so forth, and the Contractor shall not be held responsible for these items. In case the Contractor fails to contact the signal maintaining agency for the signal inspection, the Contractor shall be held responsible for all the signal items remaining defective at the completion of the construction.

The Contractor shall become responsible for the maintenance of the existing signalized intersection at a date mutually agreed upon between the Contractor and the signal maintaining agency representative, but no later than the beginning of construction by the Contractor within 400 ft (125 m) of the intersection. The Contractor's signal maintenance responsibility shall cease upon the issuance of a Signal Acceptance Notice by the Engineer.

Temporary Full-Actuated Controller and Type IV Cabinet. Temporary Full-Actuated Controller and Type IV Cabinet shall meet the requirements of Sections 857, 1073 and 1074 of the Standard specifications and as modified herein.

- The temporary controller and cabinet shall be installed prior to the removal of the existing controller and cabinet and shall remain in place until such time that the new Full-Actuated Controller and Cabinet has been installed and functioning properly.
- The temporary controller and cabinet shall have capability of functioning as well as the existing controller and cabinet until such time that the new controller and cabinet has been installed and accepted by the Department's Resident Engineer/Technician.
- After the new controller and cabinet has been accepted, the Contractor shall remove the temporary controller and cabinet, become the property of the Contractor and shall be disposed of off the state right of way.

This item requires that a factory representative capable of ensuring that the controller and cabinet are operating to the satisfaction of the Engineer shall be present at the turn on of the controller and shall remain until the intersection is operating to the satisfaction of the Engineer. Should a defect appear in the controller or cabinet operation, the representative shall return as often as necessary until all defects are repaired.

At the preconstruction meeting, the Contractor shall provide the names and phone numbers of two technicians who would be able to respond to controller malfunctions that occur within the 30 day acceptance period after the controller is turned on. If neither person can be reached at the time of the malfunction nor be at the location within 2 hours of receiving the call, any available electrician capable of evaluating and correcting the malfunction may be called at the State's discretion. Any and all bills resulting from defective operation of the controller or cabinet shall be the responsibility of the Contractor.

CONTROLLER:

The controller shall be capable of communicating with the Centrac's Advance Traffic management System and Tactics Advance Traffic management system.

- a) The controller shall be capable of uploading and downloading its database to a laptop computer that has been installed with the proper software. All uploaded data shall be able to be changed within the laptop and then downloaded to the controller. The necessary cables for upload/download shall be provided and upload/download software shall be provided and installed onto the District Three laptop computer if the software and cables have not already been supplied to District Three or the software presently being used by District Three requires updating.
- b) The controller data entry fields shall have a clear distinction between data fields and information. Data fields shall be in matrix format with a minimum of eight phases wide and four date lines deep.
- c) The active status screen shall display the following information for all operating phases in an alpha-numeric display.
- d) A clear distinction between the following detections for each phase: vehicle recall, vehicle detection, pedestrian recall, and pedestrian detection.
- e) A clear distinction among the phases receiving detection.
- f) Status displayed simultaneously whenever one or more of the following is operating: vehicle passage timer, maximum phase timer, added initial timer, time before reduction timer, time to reduce timer, existing gap timer, walk timer, don't walk timer.
- g) When a phase ends, the controller shall report whether the exit was a max out, gap out or force out condition. The controller shall show the yellow and red timers timing and any trailing overlap timers timing.
- h) The color of all operating overlaps.
- i) The phase of the controller shall be as shown in the plans.

CONTROLLER CABINET:

- a) The police door compartment shall contain a manual control cord from which the signals may be operated manually. The inside door toggle switches shall be protected from accidental contact by vertical metal slats. The slats shall extend beyond the switches, in a manner similar to the terminals on the back panel. A plastic plans holder shall be installed on the cabinet door. The holder shall be at least 11 inches high and 17 inches wide, shall open from the side, and shall not interfere with the filter. The holder shall have a means of closing the side opening to prevent water from entering.
- b) A Plexiglas cover, or other high strength nonconductive cover, shall be installed over, and completely cover, the power panel. The cover shall completely shield the service wires, and circuit breaker wires from accidental contact.
- c) A Plexiglas cover, or other high strength nonconductive cover, shall be installed over, and completely cover, the power terminals for the thermostatically controlled exhaust fan. The thermostat shall be of the knob type capable of adjustment by hand and without tools. The thermostat and terminals shall be mounted on the left or right side of the controller cabinet.
- d) All harness wiring of connectors A, B, C and D shall be factory installed so that an additional phase may be added to the existing phasing by the addition of a load switch and the proper conflict monitor card pinning.
- e) A self-adhering phasing diagram shall be placed on the inside of the cabinet door.
- f) Three 15" Velcro straps shall be fastened to the front of each cabinet shelf to secure the detector amplifier cables.

Traffic signal controller and the cabinet assembly shall be fully tested by the equipment supplier. Five (5) copies of the complete cabinet wiring showing all connections shall be furnished to the Engineer.

Maintenance. The maintenance shall be according to Article 801.11 and the following.

The Contractor shall be responsible for the controller programming to provide for safe and efficient signal operation during construction. The Contractor may seek assistance from the maintaining agency personnel on the appropriate controller settings.

Basis of Payment. This work will be paid for at the contract unit price per each for MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION. Each intersection will be paid for separately.

REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT

Description. This work shall consist of removing existing traffic signal equipment at the intersections listed herein and on plan details.

CONSTRUCTION REQUIREMENTS

General. This work shall be completed in accordance with the applicable portions of Section 895 of the Standard Specifications.

- a) The following existing traffic signal equipment shall be removed and delivered by the Contractor to the Illinois Department of Transportation, District 3, Sign Shop at 700 E. Norris drive, Ottawa IL. Contact person is Jon Woodyer, Phone (815)434-8506.

IL Route 47 and Pine Bluff Rd.

1 Each Controller
1 Each CMU
All Detector Amplifiers
All UPS Components
Entire AI Unit and Components
PTZ Camera and Components

IL Route 47 and Southmor Rd.

1 Each Controller
1 Each CMU
All Detector Amplifiers
All UPS Components

- b) The following existing traffic signal equipment shall be removed and disposed of by the Contractor outside the limits of the right of way at their expense. The salvage value of the removed equipment shall be reflective in the contract bid price.

IL Route 47 and Pine Bluff Rd.

1 Each - Controller Cabinet
6 Each - Batteries
19 Each - Backplates
5 Each - Signal Head, Polycarbonate, Led, 1-Face, 3 Section, Bracket Mounted
12 Each - Signal Head, Polycarbonate, Led, 1-Face, 3 Section, Mast Arm Mounted
1 Each - Signal Head, Polycarbonate, Led, 1-Face, 5 Section, Bracket Mounted
1 Each - Signal Head, Polycarbonate, Led, 1-Face, 5 Section, Mast Arm Mounted

IL Route 47 and Southmor Rd.

1 Each - Controller Cabinet
6 Each - Batteries
14 Each - Backplates
10 Each - Signal Head, Polycarbonate, Led, 1-Face, 3 Section, Mast Arm Mounted
2 Each - Signal Head, Polycarbonate, Led, 1-Face, 5 Section, Bracket Mounted
2 Each - Signal Head, Polycarbonate, Led, 1-Face, 5 Section, Mast Arm Mounted

Basis of Payment. This work will be paid for at the contract unit price per each for REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT. This price shall be payment in full for removing, delivering and disposing of the equipment as specified above.

FULL-ACTUATED CONTROLLER AND TYPE IV CABINET

Description. This work shall consist of furnishing and installing a Super P Size Full-actuated Controller and Type IV Cabinet at location shown on plan details. A Super P Size Cabinet shall have an additional built-in compartment for battery backup in a single cabinet shell. This work also includes installing a Type C foundation to support the Uninterruptible Power Supply (UPS) and an apron to provide a standing pad for UPS. The existing Type D foundation shall be used as part of the new Type C foundation and apron.

CONSTRUCTION REQUIREMENT

General. The Super P Size Full Actuated Controller and Type IV Cabinet shall meet the requirements of Sections 857, 1073 and 1074 of the Standard Specifications with the following modifications.

- a) This item requires that a factory representative capable of ensuring that the controller and cabinet are operating to the satisfaction of the Engineer shall be present at the turn on of the controller and shall remain until the intersection is operating to the satisfaction of the Engineer. Should a defect appear in the controller or cabinet operation, the representative shall return as often as necessary until all defects are repaired.
- b) At the preconstruction meeting, the Contractor shall provide the names and phone numbers of two technicians who would be able to respond to controller malfunctions that occur within the 30 days acceptance period after the controller is turned on. If neither person can be reached at the time of the malfunction nor be at the location within 2 hours of receiving the call, any available electrician capable of evaluating and correcting the malfunction may be called at the State's discretion. Any, and all bills resulting from defective operation of the controller or cabinet shall be the responsibility of the Contractor.

Modify Existing Type "D" Foundation to Type "C" Foundation

- a) The construction of a Concrete Foundation Type "C" shall be according to Section 878 of the Standard Specifications, Standard 878001, Plan Details and as directed by the Engineer.

At locations shown on plan details, the existing Type "D" concrete foundation shall be incorporated into the construction of the new Type "C" concrete foundation according to the plan detail, "Modify Existing Type "D" Foundation to Type "C" Foundation".

The following work shall be included in the construction of the Type "C" Foundation.

- The Contractor shall remove the existing concrete apron.
- The Contractor shall excavate to the limits shown to expose the face of the existing Type "D" foundation and to provide a subgrade for the proposed concrete apron.
- The Contractor shall saw cut the top and side edges of the existing Type "D" foundation (removing the existing chamfered edges).
- The Contractor shall furnish and install hooked anchor bolts as shown on the plan detail.
- The Contractor shall furnish and install an aggregate subbase to the limits shown on the plan details prior to constructing the Type "C" Foundation and apron.

- The Contractor shall construct the Type “C” Foundation and concrete apron to the limits shown.

CONTROLLER.

- a) The controller shall be capable of uploading and downloading its database to a laptop computer that has been installed with the proper software. All uploaded data shall be able to be changed within the laptop and then downloaded to the controller. The necessary cables for upload/download shall be provided and upload/download software shall be provided and installed onto the District Three laptop computer if the software and cables have not already been supplied to District Three or the software presently being used by District Three requires updating.
- b) The controller data entry fields shall have a clear distinction between data fields and information. Data fields shall be in matrix format with a minimum of eight phases wide and four date lines deep.
- c) The active status screen shall display the following information for all operating phases in an alpha-numeric display.
- d) A clear distinction between the following detections for each phase: vehicle recall, vehicle detection, pedestrian recall, and pedestrian detection.
- e) A clear distinction among the phases receiving detection.
- f) Status displayed simultaneously whenever one or more of the following is operating: vehicle passage timer, maximum phase timer, added initial timer, time before reduction timer, time to reduce timer, existing gap timer, walk timer, don't walk timer.
- g) When a phase ends, the controller shall report whether the exit was a max out, gap out or force out condition. The controller shall show the yellow and red timers timing and any trailing overlap timers timing.
- h) The color of all operating overlaps.
- i) The phase of the controller shall be as shown in the plans.

CONTROLLER CABINET.

- a) The police door compartment shall contain a manual control cord from which the signals may be operated manually. The inside door toggle switches shall be protected from accidental contact by vertical metal slats. The slats shall extend beyond the switches, in a manner, similar to the terminals on the back panel. A plastic plans holder shall be installed on the cabinet door. The holder shall be at least 11 inches high and 17 inches wide, shall open from the side, and shall not interfere with the filter. The holder shall have a means of closing the side opening to prevent water from entering.
- b) A Plexiglas cover, or other high strength nonconductive cover, shall be installed over, and completely cover, the power panel. The cover shall completely shield the service wires, and circuit breaker wires from accidental contact.

- c) A Plexiglas cover, or other high strength nonconductive cover, shall be installed over, and completely cover, the power terminals for the thermostatically controlled exhaust fan. The thermostat shall be of the knob type capable of adjustment by hand and without tools. The thermostat and terminals shall be mounted on the left or right side of the controller cabinet.
- d) All harness wiring of connectors A, B, C and D shall be factory installed so that an additional phase may be added to the existing phasing by the addition of a load switch and the proper conflict monitor card pinning.
- e) A self-adhering phasing diagram shall be placed on the inside of the cabinet door.
- f) Train the wire along the inside of the cabinet for length and cleanliness.
- g) Add call push buttons on inside of cabinet.
- h) Place a thermostatically controlled electric heater in the cabinet with LED light bulbs.
- i) Traffic signal control and cabinet assembly shall be fully tested by the equipment supplier. Five (5) copies of the complete cabinet wiring showing all connections shall be furnished to the Engineer.

Basis of Payment. This work will be paid for at the contract unit price per each for FULL-ACTUATED CONTROLLER AND TYPE IV CABINET which price shall be payment in full to complete this work.

Concrete foundation will be paid for at the contract unit price per foot for CONCRETE FOUNDATION TYPE "C" which price shall include removing the existing concrete apron and chamfers, required excavations, aggregate subbase material, anchor bolts and the concrete necessary to complete this work in full.

SIGN PANEL - TYPE 2

Description. This work shall consist of removing existing mast arm sign panels, fabricating, furnishing, and installing new sign panels, complete with sign faces, legend, and supplemental panels.

GENERAL REQUIREMENTS

General. This work shall be according to applicable portions of Section 720 of the Standard Specifications and as directed by the Engineer.

The existing "Mast Arm" sign panels "Illinois 47", "Pine Bluff Road" and "Southmore Road" shall be removed and replaced with "Upper and Lower Case" lettering as shown on plan details.

Method of Measurement. Sign panels will be measured for payment in square feet (square meters) according to Article 720.03.

Basis of Payment. This work will be paid for at the contract unit price per square foot (square meter) for SIGN PANEL, of the type specified.

SIGNAL HEADS

Add the following to Article 880.01 of the Standard Specifications.

Description. This work shall consist of furnishing and installing a light emitting diode (LED) signal head or an optically programmed LED signal head.

This work shall also include having a 15-year warranty with warranty certification on all signal heads for this project.

This work shall also include having a manufacture snow cone or heated visor on all red, yellow and green signal heads for this project.

- a) Any other devices that have a proven record of removing snow when snow is compacted in the signal lenses and visors may be used on this project.

All installations shall meet the requirements of the details included on the plans and applicable portions of these specifications.

Revise Article 880.04 of the Standard Specifications to read:

Basis of Payment. This work will be paid for at the contract unit price per each for SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED or SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED or SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED or SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED.

TRAFFIC SIGNAL BACKPLATE, LOUVERED, FORMED PLASTIC, SPECIAL

Description. This work shall consist of furnishing and installing a louvered, formed plastic traffic signal backplate at locations specified on plan details and as specified herein.

CONSTRUCTION REQUIREMENTS

General. All hardware accessories required to install the backplates on all proposed signal heads shall be according to Article 882 and 883 of the Standard Specifications.

The louvered, formed plastic traffic signal backplate shall be as follows:

- a) The vacuum formed ABS plastic backplate shall have a nominal ½ inch deep back flange on all inside and outside edges.
- b) The backplate shall be louvered and provide openings (louvers) for all wind to penetrate and reduce wind loading.
- c) The louver openings shall cover a minimum of 20 percent of the surface area of the backplate.

- d) The entire front and side surface of the backplate including the louver shall be manufactured so that it is imprinted with fluorescent yellow sheeting.
 - 1) The sheeting shall be Type AZ sheeting according to Article 1091.03 and applied to the preferred orientation for the maximum angularity according to the manufacture's recommendation.

Basis of Payment. This work will be measured for payment per each for TRAFFIC SIGNAL BACKPLATE, LOUVERED, FORMED PLASTIC, SPECIAL.

PERMANENT TRAFFIC SIGNAL TIMING

Description. This work shall consist of developing and implementing appropriate traffic signal timings for the specified intersection at the signal turn-on.

CONSTRUCTION REQUIREMENTS

General. All timings and adjustments necessary for this work shall be performed by an approved Consultant who has previous experience in optimizing Closed Loop Traffic Signal Systems for IDOT District 3. The Contractor shall contact the Traffic Signal Engineer for a listing of approved Consultants.

The following tasks are associated with Permanent Traffic Signal Timing:

- a) The Consultant shall conduct on-site implementation of the traffic signal timings for the permanent traffic signal turn-on.
- b) The Consultant shall be responsible for making fin-tuning adjustments to the timings in the field to alleviate observed adverse operating conditions and to enhance operations.
- c) The Consultant is required to calculate and implement new pedestrian yellow and red clearances according to the current edition of the MUTCD and District 3 policies. The Consultant shall provide clearance calculations for the Traffic Signals Engineer to review.
- d) "Zero Out" all density times.
- e) Confirm all detection is "Non-Locking".
- f) Upload signal timings to the District 3 Traffic Signal laptops.

Method of Measurement. This work will be measured for payment as EACH where individual intersections shall be considered as one each.

Basis of Payment. This work will be paid for t the contract unit price per each for PERMANENT TRAFFIC SIGNAL TIMING, which price shall be payment in full for performing all work described herein per intersection.

REMOTE-CONTROLLED VIDEO SYSTEM

Description. This work shall consist of furnishing and installing a Remote-Controlled Video System as specified herein.

- a) The Remote-Controlled Video System shall be installed in the proposed traffic control cabinet at Location No. 1 (intersection of IL Route 47 and Pine Bluff Road) and Location No. 2 (intersection of IL Route 47 and Southmor Road) as shown on the plan details. The cellular or any other reliable interconnectivity router shall provide secure internet connectivity for the video cameras, controller, MMU (conflict monitor), UPS, and all other devices in the new controller cabinet.

This cellular or any other reliable interconnectivity service data plan shall also include unlimited hotspot service for the area covering the State of Illinois.

The Remote-Controlled Video System shall include a PTZ camera and shall be mounted on a mast arm with the extension bracket if needed, using the manufacturer's guidelines. The PTZ camera shall have great visibility for all 4 directions and the traffic signal cabinet.

- b) The Remote-Controlled Video System shall be downloaded and given access to 9 tablets, 9 laptops, and 3 desktops controlled at the IDOT, District 3 office in Ottawa, Illinois. These devices shall have access to all video cameras and be able to watch all intersecting legs and a separate PTZ camera in real time, with real-life pictures of the roadway, vehicles, and signal controller cabinet. The Remote-Controlled Video System shall view all District 3 existing and proposed PTZ cameras in one window on each device.
- c) The Remote-Controlled Video System shall be run on a cellular or any other reliable interconnectivity based communication system and be able to monitor active signal timing and data, red flash, open/closed cabinet door, along with the battery backup alarms during power failure from the District 3 devices. The Remote-Controlled Video System shall also provide detector information and the most current timing software so the State of Illinois has the ability to change timings in the controller from any District 3 devices. All alert alarms shall be automatically emailed to 3 District 3 personnel as specified and all major alert alarms shall be texted to 3 District 3 personnel.
- d) The Remote-Controlled Video System shall have a 10-year warranty and a 10 year paid cellular or any other 10-year reliable connectivity service plan which would be used for cellular or any other 10-year reliable connectivity data for the 9 tablets, 9 laptops, and 3 desktops . The Illinois Department of Transportation shall not have to pay for any cellular or any other 10-year reliable connectivity service plans or data until after the end of the 10-year plan. The plan should have unlimited data, roaming charges, and minutes for all incoming and outgoing connections. The 10-year paid cellular or any other 10-year reliable connectivity service plan shall also have unlimited and uninterruptible streaming video capabilities. The start date of the warranty and paid cellular or any other 10-year reliable connectivity service plan shall not begin until the Remote-Controlled Video System has been approved by the Engineer.

- e) The Remote-Controlled Video System shall include 6 licenses with the latest software which shall be downloaded on 9 existing laptops, 9 tablets and 3 desktops. located at the Illinois Department of Transportation in Ottawa, Illinois. The 6 licenses shall be used to remotely access all video cameras, controllers, MMU (conflict monitor), UPS, and all other devices in the new controller cabinet at the proposed traffic signal at Location No. 1 (intersection of IL Route 47 and Pine Bluff Road) and Location No. 2 (intersection of IL Route 47 and Southmor Road)
- f) The Remote-Controlled Video System shall also include three 9 Timing Software licenses which shall be downloaded on the three 9 laptops, 9 tablets and 3 desktops at the Illinois Department of Transportation in Ottawa, IL.
- g) The contractor shall provide 2 days of training by a factory representative on the software for up to 10 District 3 personnel and anyone else invited. A 10-year software maintenance and update shall be provided for all 9 Remote-Controlled Video System licenses and for the 9 Timing Software licenses. All warranty documentation/procedures and contact information to whom to contact about warranty repairs shall be presented on training day.

Basis of Payment. This work shall be paid at the contract unit price per each for REMOTE-CONTROLLED VIDEO SYSTEM, which price shall be payment in full for all labor, equipment and materials for all items described above.

VIDEO VEHICLE DETECTION SYSTEM

This specification sets forth the minimum requirements for a video detection system that shall detect an advance vehicle on a roadway by processing video images, and that provides vehicle presence, traffic flow data, event alarms, and full-motion video for real-time traffic control and management systems.

The Video Vehicle Detection System shall be used for the traffic signals at the following intersections.

- Location No. 1. Intersection of IL Route 47 and Pine Bluff Road in Grundy County. (South of the Illinois River in Morris).
- Location No. 2. Intersection of IL Route 47 and Southmor Road in Grundy County. (South of the Illinois River in Morris).

The Video Vehicle Detection System shall be the latest version of the Industry Standards and shall take the place of the existing detector loops.

Video Vehicle Detection System Service Plan.

1. The Video Vehicle Detection System shall have a 10-year paid cellular or any other 10-year paid reliable connectivity service plan which would be used for cellular or interconnectivity data.
2. The Illinois Department of Transportation (IDOT) shall not have to pay for any cellular or any other 10-year paid reliable connectivity service plans or data until after the end of the 10-year plan.

- a) The plan should have unlimited data, roaming charges, and minutes for all incoming and outgoing connections.
- b) The 10-year paid cellular or any other 10-year paid reliable connectivity service plan shall also have “Unlimited” and “Uninterruptible streaming Video capabilities”.
- c) The cellular or any other 10-year paid reliable connectivity service data plan shall also include unlimited hotspot service for the area covering the State of Illinois.
- d) This cellular or any other 10-year paid reliable connectivity service plan should be the same as the “Remote-Controlled Video System cellular or any other 10-year paid reliable connectivity plan.
- e) The start date of the paid cellular service plan shall not begin until the Video Vehicle Detection System is approved by the Resident Engineer. Video Vehicle Detection System Removal.

After the “New System” is up and running:

1. The Video Vehicle Detection System shall include removing all existing detector wire from handhole, conduit, poles and controllers due to installation of new cameras.
 - a) Before removal the Contractor shall inform the City Engineer and the District 3 Bureau of Operations, Traffic Signal Section.
2. The Video Vehicle Detection System removal shall include all detector harnesses, detector amplifier racks, amplifier detector loop panels and any other detector loop items inside controller cabinet.
 - a) The amplifiers shall remain the property of the state.
 - b) Remaining detector loop items and wires shall be disposed of as outlined in the Standard Specifications for Road and Bridge Construction, adopted January 1, 2022.
3. The Video Vehicle Detection System removal shall include removing the existing nonfunctional handholes which are the ones that have existing detector loop cable only
 - a) The removal of the existing handholes shall be according to Section 895 of the Standard Specifications for Road and Bridge Construction, adopted January 1, 2022.

Video Vehicle Detection System.

1. The Contractor shall provide 2 days of training by a factory representative on the software for up to 10 people.
2. The Video Vehicle Detection System shall provide remote access to the 9 tablets, 9 laptops and 3 desktops at the IDOT District 3 Office in Ottawa. All devices shall have access to all video cameras to be able to watch or change detector loops placement, type and size at all intersecting legs.

3. The Video Vehicle Detection System shall be capable of communicating with the Centrac's Advance Traffic Management System and the Tactic's Advance Traffic Management System. The Video Detection System shall work wirelessly to the new controller placed inside the new traffic signal cabinet.
 - a) The video camera shall provide real life pictures of the roadway and vehicles.
 - b) The manufacturer shall recommend the height and location of the video camera so the proper detection zones will detect and monitor all legs from 10 feet in front of the stop bar until 600 feet in advance of the stop bar.
4. The Video Detection System shall use as many cameras as needed to provide and monitor the proper detection for all legs.
 - a) The video camera or cameras shall either be mounted on the luminaire arm, the mast arm or a 6-foot extension attached to the mast arm.
5. The Video Detection System shall include a monitor (minimum size of 12" by 12") with a mouse and keyboard inside the cabinet so the maintainer can monitor the detector loops in each direction. The Contractor shall make sure the traffic signal cabinet is big enough to provide comfortable room for the monitor.
6. The complete system shall also include an 18 AWG 3 conductor unshielded 600V cable.
7. The video detection system shall also include a 6-foot video detection pipe extension mounted on all mast arms to withstand 100 mph wind. See plan details for existing traffic signal plan sheets for the following locations
 - a) Location No. 1. Intersection of IL Route 47 and Pine Bluff Road in Grundy County. (South of the Illinois River in Morris)
 - b) Location No. 2. Intersection of IL Route 47 and Southmor Road in Grundy County. (South of the Illinois River in Morris).

System Hardware.

1. The video detection system shall be comprised of two major hardware components: a video sensor and a communications interface panel. An optional wired input/output card shall be available for certain cabinet types.

Video Sensor.

1. The video detection system shall include a video sensor that integrates a high- definition (HD) camera with an embedded processor for analyzing the video and performing detection.
 - a) Camera and Processor. The camera shall be a color CMOS imaging array.
 - b) The camera shall have HD resolution of at least 720p (1280x720 pixels).
 - c) The camera shall include a minimum 10X optical zoom.
 - 1) It shall be possible to zoom the lens as required to satisfy across-the-intersection detection objectives, including stop line and advance detection.

- 2) It shall be possible to zoom the lens remotely from the TMC for temporary traffic surveillance operations or to inspect the cleanliness of the faceplate.
- d) The camera shall have direct, real-time iris and shutter speed control by the integrated processor.
- e) The processor shall support H.264 video compression for streaming output.

Video Sensor Enclosure Assembly.

1. The camera and processor shall be housed in a sealed IP-67 enclosure.
 - a) The faceplate of the enclosure shall be glass and shall have hydrophilic coating on the exterior surface to reduce debris accumulation and maintenance.
 - b) The faceplate shall have a thermostatically-controlled indium tin oxide (ITO) heater applied directly on the interior surface to keep the faceplate clear of condensation, snow, ice, and frost.
 - c) An adjustable aluminum visor shall shield the faceplate from the sun and extraneous light sources.
 - d) An integral aiming sight shall assist in aiming the camera for the detection objectives.
 - e) A removable rear cap and cable strain relief shall seal the power connection.
 - 1) The rear cap shall be tethered to the enclosure to avoid dropping the cap during installation.
 - 2) The rear cap shall be fastened to the body of the video sensor with a single, captive bolt.
 - f) The rear cap and enclosure shall include Gore breathers to equalize internal and external pressure while preventing moisture from entering the camera.
 - g) The sensor shall be self-supporting on the manufacturer's mounting brackets for easier fastening during installation.
 - 1) It shall be possible to rotate the field-of-view 360° without changing the angle of the visor.

Power and Communications.

1. Power and communications for the video sensor shall be carried over a single three-conductor cable.
 - a) Termination of the three-conductor cable shall be inside the rear cap of the enclosure on a three-position, removable Phoenix terminal block. Each conductor shall be attached to the Phoenix plug via a screw connection.
 - b) The video sensor shall operate normally over an input voltage range of 89 to 265 VAC at 50 or 60 Hz.

- c) Power consumption shall be no more than 16 watts typical.
- d) No supplemental surge suppression shall be required outside the cabinet.
- e) All communications to the video sensor shall be broadband-over-power via the same three-conductor cable that powers the unit. Coaxial cable shall not be required.

Communications Interface Panel.

- 1. The video detection system shall include an interface panel in the traffic cabinet that manages communications between the video sensors, the traffic management center, a maintenance technician, and the traffic cabinet itself.

Video Sensor Connection.

- 1. The communications interface panel shall provide connection points for four video sensors.
 - a) Each sensor connection shall be a 3-pole terminal block, which supplies power and broadband-over-power communications to the sensor.
 - b) The broadband-over-power communications shall provide a throughput of 70 to 90 Mbps.
 - c) The broadband-over-power connection shall support at least 1,000 feet of cabling to the video sensor.
 - d) Each video sensor connection shall include a power switch.
 - e) There shall be an LED for each video sensor to indicate the state of the power to the sensor and an LED for each video sensor to indicate the status of communications.
 - f) Each video sensor connection shall contain a resettable fuse.
 - g) Each video sensor connection shall provide high-energy transient protection.

Traffic Management Center (TMC) Communications.

- 1. An Ethernet port shall be provided to connect to a remote Traffic Management Center (TMC).
 - a) The TMC connection shall support 10/100/1000 Mbps Ethernet communication.
 - b) The communications interface panel shall proxy all network requests that arrive on the TMC connection to avoid unwanted network traffic from reaching the broadband-over-power network between the communications interface panel and the video sensors.

- c) All communications to the video detection system through the TMC connection shall be to a single IP address.
- d) The system shall be able to provide Full HD quality video through its WAN port for use in streaming video back to the TMC or any remote location.

Local User Communications.

1. A wired Ethernet port shall be provided to connect the technician at the cabinet to the video detection system for setup and maintenance purposes.
 - a) The maintenance port shall support 10/100/1000 Mbps Ethernet communication.
 - b) All communications to the video detection system through the maintenance port shall be to a single IP address.
 - c) The maintenance port shall support DHCP to automatically assign an IP address to the user's computer.
2. An 802.11g Wi-Fi access point shall allow wireless connection to the video detection system at the cabinet for setup and maintenance purposes.
 - a) All communications to the video detection system through the Wi-Fi access point shall be to a single IP Address.
 - b) The Wi-Fi access point shall support DHCP to automatically assign an IP Address to the user's computer.
 - c) The Wi-Fi access point shall include a dipole, omnidirectional antenna.
 - d) A momentary pushbutton shall allow the user to turn the Wi-Fi access point on or off.
 - e) The Wi-Fi access point shall turn itself off automatically after a period of inactivity from connected devices.
 - f) An LED shall indicate when the Wi-Fi access point is enabled.
 - g) The Wi-Fi access point shall operate simultaneously with the wired maintenance port and with the TMC connection.
 - h) The WiFi access point shall require a password for connection by a user's computer. The default password shall be changeable.

Traffic Controller Connection.

1. The communications interface panel shall provide one (1) connection to communicate to the traffic controller through the cabinet.
 - a) The traffic controller connection shall support a TS2 Type 1 compatible SDLC interface.

- 1) The traffic controller connector shall be a 15-pin female metal shell D sub-miniature type connector to support a standard NEMA TS2 or TEES SDLC cable.
 - 2) The traffic controller connection shall support a protocol interface to SDLC-capable traffic controllers (NEMA or TEES).
 - 3) The traffic controller connection shall support the NEMA TS2 SDLC protocol to include up to 64 detector outputs and 32 inputs.
- b) The traffic controller connection shall be able to connect to a wired input/output card, which supports wired I/O in cabinets without a SDLC-capable controller.
- 1) The wired J/O data communications link shall support at least 24 outputs and 16 inputs.
- c) It shall be possible to connect and use both SDLC communications and communication to the wired input/output card simultaneously.

USB Ports.

1. The communications interface panel shall include two USB 2.0 ports.
 - a) If a communications interface panel fails to start and run due to a software or operating system failure, it shall be possible to reinstall all system and application software from a USB memory stick without necessitating removal of the communications interface panel from the cabinet.
 - b) Video recording of up to 2 cameras simultaneously shall commence automatically when an appropriately configured USB memory stick is installed in either USB port.

Power.

1. The communications interface panel shall accept input voltage in the range of 89-265 VAC, 50/60 Hz power from the transient-protected side of the cabinet.
2. The communications interface panel shall be protected by two slow blow fuses. Spare fuses shall be attached to the panel.

Wired Input/Output Card.

1. The video detection system shall support an optional wired input/output card that communicates with the communications interface panel for real-time detection states and other I/O to the traffic controller. The card may reside in a standard detector rack or shelf-mount enclosure with power module.
2. The optional wired input/output card shall comply with the form factor and electrical characteristics to plug directly into a NEMA type C or D detector rack or Caltrans TEES Input File.

The card shall occupy two slots of the detector rack.

- a) The card shall provide four detector outputs on its rear-edge connector.
- b) A front connector shall provide communication to the communications interface panel.
- c) A front connector shall allow 16 inputs and 24 contact-closure detector outputs for wiring into the cabinet.
 - 1) A front panel LED for each of the 16 inputs and 24 outputs shall indicate the state of the input or output.
- d) The wired input/output card shall support optional expansion cards in other slots. Each expansion card shall support 4 outputs to the back edge of the card.
- e) The wired input/output card shall support optional harnesses for connection to Input Files or C1, C4, C11, and C12 ports to support Type 170 or Type 2070 controllers.

System Software.

1. The video detection system shall include management software for configuration, monitoring and data collection purposes.

Management Software.

1. Management software shall be a Windows-based application.
 - a) The software shall be compatible with the latest Windows operating system (OS).
 - b) The software shall communicate with the video detection system via Ethernet.
2. The management software shall automatically determine all video sensors and communications interface panels available on the local network and populate a list of all devices.
3. The management software shall provide a means to add video sensors and communications interface panels on routed networks by the communications panel's WAN IP address.
4. The management software shall provide the user a means to name individual video sensors and communications interface panels.
5. The management software shall provide a means for the user to zoom the camera optics while viewing a live video stream.
6. The management software shall provide a means for the user to easily calibrate distances in the field of view so as to create a 3-dimensional mapping of the complete field of view.

- a) The management software shall provide the user a means to create 4-sided detection zones in the field of view using either a still snapshot or live video.
- b) The management software will overlay an outline of each detection zone over the background image.
- c) It shall be possible for the user to place detection zones anywhere in the field of view for stop line detection and/or advance detection.
- d) It shall be possible for the user to set the desired color of both the "on" and "off" states of the overlay for individual detection zones.
- e) It shall be possible for the user to alter the size and shape of any previously created zone.
 - 1) It shall be possible for the user to click and drag any of the 4 sides of a zone and the system will automatically scale the length of the side consistent with the 3- dimensional field of view.
 - 2) It shall be possible for the user to move an entire zone without automatic rescaling.
- f) It shall be possible for the user to create a new zone by selecting an existing zone and duplicating it on either the left or right side or specifying a new zone behind (for advance) with a specific length and distance back from selected zone.
- g) It shall be possible for the user to easily rotate a zone by selecting any of its four corners and dragging to rotate it.
- h) It shall be possible to easily flip the zone direction 180 degrees from its current orientation.
- i) It shall be possible for the user to name each zone uniquely.
- j) It shall be possible for the user to assign each zone to detect vehicles, to detect bicycles, or to detect both, and to specify different outputs for each type.
- k) It shall be possible for the user to specify the output of a zone as a presence, pulse, or snappy type output (presence during red and pulse during green signal phase state).
- l) The pulse output shall be usable for both approaching and receding traffic.
- m) The pulse output shall have a user programmable duration from 100 to 400 ms.
- n) It shall be possible for a zone to have multiple output types (presence, pulse, snappy) on separate output channels.
- o) It shall be possible for the user to tie the presence outputs of multiple zones as well as signal phase state together with AND/OR Boolean logic.

- p) It shall be possible for the user to assign the same output to multiple zones such that the output will be on if any of the zones are detecting a vehicle or bicycle.
 - q) It shall be possible for the user to assign a single zone to more than one output such that if a vehicle or bicycle is detected, all the assigned outputs shall be turned on.
 - r) The management software shall be capable of creating at least 99 detection zones per video sensor.
1. It shall be possible for the management software to retrieve all configuration parameters from video sensors or communications interface panels.
 - a) It shall be possible for the user to save all the settings for a video sensor or a communications interface panel to a laptop file.
 - b) The management software shall provide a means to read or import all the settings from a previously saved configuration file for a video sensor or a communications interface panel.
 2. The management software shall be able to download a new version of the application software into a communications interface panel and its attached video sensors.
 3. The management software shall provide a screen to monitor operation of a video sensor.
 - a) The monitoring screen shall include a live video stream from the video sensor with at least HD 1280x720 pixel resolution.
 - b) The monitoring screen shall show indications of detection in real time by changing the color of the detection zone.
 - c) It shall be possible for the user to configure different indications for vehicle detections vs. bicycle detections when both are configured for the same zone.
 - d) The monitoring screen shall include the following optional, configurable objects. It shall be possible for the user to size and position them anywhere on the screen and to change the color and size of text.
 - 1) An indication of when either a zone or an output is on or off, along with a user- configurable name for that indicator, applicable to any zone or output type.
 - 2) The current time in the video sensor.
 - 3) A user-configurable title or name.
 - 4) The version number of the video sensor software.
 - 5) Configurable text as defined by the user.
 4. Undo/Redo functions shall be available for operations during detection zone setup and programming.

5. It shall be possible for the user to turn the overlay graphics on or off with a single setting.
 - a) The management software shall provide a screen to monitor operation of the intersection with a quad-view video stream from the communications interface panel.
 - 1) The quad-view video stream shall have a resolution of at least HD 1280x720 pixels, where each of the sensor videos comprising the quad-view shall be at least 640x360 pixels.
 - 2) It shall be possible for the user to configure the order that the sensor videos appear in the quad-view.
 - 3) The real-time quad-view video stream shall be capable of displaying the overlay graphics for all four sensors simultaneously.
6. While monitoring the video of a single video sensor or of the quad-view, it shall be possible for the user to request a "snapshot" or single-frame image to save to a named file on a laptop.
7. While monitoring the video of a single video sensor or of the quad-view, it shall be possible for the user to record a period of the video to save to a named file on a laptop.

System Functionality.

1. The video detection system shall provide the following features and functionality.

Detection Performance.

1. The video detection system shall detect the presence of vehicles in defined zones and turn on the assigned output when the vehicle is present in the zone.
 - a) Stop Line Detection
 - 1) For detection zones placed at the stop line, the probability of not detecting the presence of a vehicle shall be 1% or less when aggregated over a 24-hour period when the video sensor is installed and configured properly.
 - 2) For detection zones placed at the stop line, the probability of falsely detecting a vehicle that is not present shall be 3% or less when aggregated over a 24-hour period when the video sensor is installed and configured properly.
 - b) Advance Detection
 - 1) It shall be possible to place advance detector zones such that the farthest point of the zone is up to 600 feet from the stop bar. Advance detector zone placement shall include 2-3 car lengths of field-of-view beyond the farthest point of the zone.
 - c) Receding Zones

- 1) The video detection system shall be capable of detecting receding vehicles in day or night conditions when the video sensor is installed and configured properly.
- d) To ensure statistical significance for the above detection performance specifications, the data shall be collected over 24-hour time intervals (so as to avoid a single lighting condition) and will contain a minimum of one hundred (100) vehicles per lane. The calculations of detection performance will not include turning movements where vehicles do not pass through the detectors, vehicle lane-change anomalies, or where they stop short or stop beyond the combined detection zones.

Failsafe Mode.

1. The video detection system shall provide three (3) failsafe options during optical contrast loss. The default shall be maximum recall. The end-user may also choose to use minimum recall or fixed recall in which a user-defined number of seconds may be implemented to hold call during green.
2. The video sensor shall continuously monitor the overall contrast in the video. If the overall contrast falls below a preset level (such as caused by dirty faceplate, severe glare, extreme fog, or temporary ice/snow on the faceplate), the sensor shall enable the chosen failsafe mode. When sufficient contrast is restored in the video, the sensor will exit the failsafe mode.
3. The communications interface panel shall continuously monitor the connectivity status of the attached video sensors. If any video sensor goes offline due to either electrical failure or internal software failure, the communications interface panel shall enable the failsafe mode for that video sensor. If the video sensor comes back online, failsafe mode shall end.

Data Collection.

1. The video detection system shall automatically collect and store traffic flow data in non-volatile memory for later retrieval and analysis. No additional hardware or software shall be necessary. Data functionality shall include the following:
 - a) Data shall be collected automatically for all zones created by the user once the learn period is complete and normal detection is active. No further setup shall be required.
 - b) Vehicle counts per zone.
 - c) Vehicle turning movements independent of zone.
 - d) Vehicle average speeds.
 - e) Vehicle lengths.
 - f) Detection statistics with the on/off timestamps when zones were activated.

- g) Detection actuation statistics for whether a zone was triggered by a vehicle or a bicycle.
2. The management software shall be able to retrieve collected data over a specified period of time or for all currently stored data and save into a standard CSV file.
 - a) The sensor hardware shall include up to 8GB of memory storage capacity for data collection.
 - b) Data Download Types
 - 1) Options shall be provided for downloaded data in the form of a .csv file for Raw data, Binned data, Detections and Zone Status as defined below:
 - Raw Data - Includes time stamped Zone statistics for vehicle or bike actuations and average speed as well as time stamped Exiting Vehicle Statistics which include volume, turning movement direction, speed and length for vehicles exiting each zone.
 - Binned Data - Pre-binned data with bin time set by the user down to as little as 1 minute. Data shall include volume, occupancy, turning movement counts and speed for vehicles for each zone.
 - Detections - Date/time stamped data regarding vehicles exiting zones including type of object (vehicle or bike), speed, length and direction of movement (through, left, right).
 - Zone Status – Date/Time stamped indications of whether a vehicle or bicycle actuated a zone and the average speed of all objects in the zone.
 - 2) Remote Data Interface
 - Data including counts, turning movements, speed and length, as well as zone names, sensor status, and video snapshots shall be available to remote systems via remote communication to the system using an Applications Programming Interface (API). This API shall consist of a set of GET commands embedded in HTTP protocol. The resulting data returned shall be in JSON format.

Operations Log.

1. The communications interface panel and each video sensor shall maintain a time-stamped operations log of routine and special events in non-volatile memory for later retrieval and analysis.

Time Synchronization.

1. The video detection system and management software shall provide three methods to synchronize the time of day clocks in the communication interface panel and the video sensors, as follows:

- a) Manual time synchronization operation by the user, which sets the time to the current time on the laptop where the management software is running.
- b) A configuration setting to allow the communications interface panel to automatically obtain time from the NEMA TS2 protocol on the SDLC channel and broadcast it to the video sensors.
- c) A configuration setting to allow the communications interface panel to automatically obtain time from up to five Network Time Protocol (NTP) sources and broadcast it to the video sensors.

Video Streaming.

1. In addition to the ability to view video streams in the management software, it shall be possible to view video from individual sensors or to view the quad-view from the communications interface panel using a third-party video player application on a Microsoft Surface Laptop 4 or equivalent smartphone or laptop computer.
2. Video bitrate is user-definable between 100 Kbps-5000 Kbps. The default shall be 2048 Kbps. All bitrates shall provide 30 fps.

Installation and Setup.

1. The video detection system hardware shall be designed for flexible, fast and easy installation and setup.
2. It shall be possible to mount the video sensor on an intersection pole, mast arm, or luminaire arm.
3. No special tools or extra equipment, other than a laptop for configuration, will be required.
4. Once all hardware is installed, connected and functional, it shall be possible to configure the video detection system for a typical 4-approach, 8-phase intersection in 15 minutes or less.

Warranty, Service, and Support.

1. The video detection system shall be provided with the following warranty, service, and support options.

Warranty.

1. The manufacturer shall warrant the video detection system for a minimum of six (6) years.

Service.

1. Ongoing software support by the manufacturer will include software updates of the video sensor, communications interface panel, and management software. These updates will be provided free of charge during the warranty period. The manufacturer will maintain a program for technical support and software updates following expiration of the warranty period. This program will be available to the contracting agency in the form of a separate agreement for continuing support.

Support.

1. A quick-start guide, installation guide, application notes, and other materials shall be available from the manufacturer to assist in product installation and setup for various applications. In addition, training online or in person shall be available.
2. Training shall be available to personnel of the contracting agency in application design, operation, setup, and maintenance of the video detection system.
3. Manufacturer shall provide a tech support website, support email address and a 1-800 number for technical support.

Basis of Payment. This work will be paid for at the contract unit price each for VIDEO VEHICLE DETECTION SYSTEM, which price shall be payment in full for all labor and materials for all items described herein.

UNINTERRUPTIBLE POWER SUPPLY, EXTENDED

Revised the first paragraph of Section 862 of the Standard Specifications to read:

Description. This work shall consist of furnishing and installing an uninterruptable power supply (UPS). This work also includes placing heating pads below each battery and providing a blue indicator light. All installations shall meet the requirements of the details included in the plans and applicable portions of these specifications.

Revise the last paragraph of section 862 of the Standard Specifications to read:

Basis of Payment. This work will be paid for at the contract unit price per respectively each for UNINTERRUPTABLE POWER SUPPLY, EXTENDED.

RESTORATION OF WORK AREA

(Effective April 1, 2003; Revised April 27, 2018)

Add to Section 801 of the Standard Specifications:

The Contractor shall restore the work area as specified in Article 104.06 of the Standard Specifications. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded. Restoration of the work area will not be paid for separately, but shall be included in the cost of the associated pay items.

BLENDED FINELY DIVIDED MINERALS (BDE)

Effective: April 1, 2021

Revise the second paragraph of Article 1010.01 of the Standard Specifications to read:

“Different sources or types of finely divided minerals shall not be mixed or used alternately in the same item of construction, except as a blended finely divided mineral product according to Article 1010.06.”

Add the following article to Section 1010 of the Standard Specifications:

“1010.06 Blended Finely Divided Minerals. Blended finely divided minerals shall be the product resulting from the blending or intergrinding of two or three finely divided minerals. Blended finely divided minerals shall be according to ASTM C 1697, except as follows.

- (a) Blending shall be accomplished by mechanically or pneumatically intermixing the constituent finely divided minerals into a uniform mixture that is then discharged into a silo for storage or tanker for transportation.
- (b) The blended finely divided mineral product will be classified according to its predominant constituent or the manufacturer’s designation and shall meet the chemical requirements of its classification. The other finely divided mineral constituent(s) will not be required to conform to their individual standards.”

COMPENSABLE DELAY COSTS (BDE)

Effective: June 2, 2017

Revised: April 1, 2019

Revise Article 107.40(b) of the Standard Specifications to read:

“(b) Compensation. Compensation will not be allowed for delays, inconveniences, or damages sustained by the Contractor from conflicts with facilities not meeting the above definition; or if a conflict with a utility in an unanticipated location does not cause a shutdown of the work or a documentable reduction in the rate of progress exceeding the limits set herein. The provisions of Article 104.03 notwithstanding, compensation for delays caused by a utility in an unanticipated location will be paid according to the provisions of this Article governing minor and major delays or reduced rate of production which are defined as follows.

- (1) Minor Delay. A minor delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two hours, but not to exceed two weeks.
- (2) Major Delay. A major delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two weeks.

- (3) Reduced Rate of Production Delay. A reduced rate of production delay occurs when the rate of production on the work in conflict with the utility in an unanticipated location decreases by more than 25 percent and lasts longer than seven calendar days.”

Revise Article 107.40(c) of the Standard Specifications to read:

“(c) Payment. Payment for Minor, Major, and Reduced Rate of Production Delays will be made as follows.

- (1) Minor Delay. Labor idled which cannot be used on other work will be paid for according to Article 109.04(b)(1) and (2) for the time between start of the delay and the minimum remaining hours in the work shift required by the prevailing practice in the area.

Equipment idled which cannot be used on other work, and which is authorized to standby on the project site by the Engineer, will be paid for according to Article 109.04(b)(4).

- (2) Major Delay. Labor will be the same as for a minor delay.

Equipment will be the same as for a minor delay, except Contractor-owned equipment will be limited to two weeks plus the cost of move-out to either the Contractor’s yard or another job and the cost to re-mobilize, whichever is less. Rental equipment may be paid for longer than two weeks provided the Contractor presents adequate support to the Department (including lease agreement) to show retaining equipment on the job is the most economical course to follow and in the public interest.

- (3) Reduced Rate of Production Delay. The Contractor will be compensated for the reduced productivity for labor and equipment time in excess of the 25 percent threshold for that portion of the delay in excess of seven calendar days. Determination of compensation will be in accordance with Article 104.02, except labor and material additives will not be permitted.

Payment for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be determined according to Article 109.13.”

Revise Article 108.04(b) of the Standard Specifications to read:

“(b) No working day will be charged under the following conditions.

- (1) When adverse weather prevents work on the controlling item.
- (2) When job conditions due to recent weather prevent work on the controlling item.
- (3) When conduct or lack of conduct by the Department or its consultants, representatives, officers, agents, or employees; delay by the Department in making the site available; or delay in furnishing any items required to be furnished to the Contractor by the Department prevents work on the controlling item.
- (4) When delays caused by utility or railroad adjustments prevent work on the controlling item.

(5) When strikes, lock-outs, extraordinary delays in transportation, or inability to procure critical materials prevent work on the controlling item, as long as these delays are not due to any fault of the Contractor.

(6) When any condition over which the Contractor has no control prevents work on the controlling item.”

Revise Article 109.09(f) of the Standard Specifications to read:

“(f) Basis of Payment. After resolution of a claim in favor of the Contractor, any adjustment in time required for the work will be made according to Section 108. Any adjustment in the costs to be paid will be made for direct labor, direct materials, direct equipment, direct jobsite overhead, direct offsite overhead, and other direct costs allowed by the resolution. Adjustments in costs will not be made for interest charges, loss of anticipated profit, undocumented loss of efficiency, home office overhead and unabsorbed overhead other than as allowed by Article 109.13, lost opportunity, preparation of claim expenses and other consequential indirect costs regardless of method of calculation.

The above Basis of Payment is an essential element of the contract and the claim cost recovery of the Contractor shall be so limited.”

Add the following to Section 109 of the Standard Specifications.

“**109.13 Payment for Contract Delay.** Compensation for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be allowed when such costs result from a delay meeting the criteria in the following table.

Contract Type	Cause of Delay	Length of Delay
Working Days	Article 108.04(b)(3) or Article 108.04(b)(4)	No working days have been charged for two consecutive weeks.
Completion Date	Article 108.08(b)(1) or Article 108.08(b)(7)	The Contractor has been granted a minimum two week extension of contract time, according to Article 108.08.

Payment for each of the various costs will be according to the following.

(a) Escalated Material and/or Labor Costs. When the delay causes work, which would have otherwise been completed, to be done after material and/or labor costs have increased, such increases will be paid. Payment for escalated material costs will be limited to the increased costs substantiated by documentation furnished by the Contractor. Payment for escalated labor costs will be limited to those items in Article 109.04(b)(1) and (2), except the 35 percent and 10 percent additives will not be permitted.

(b) Extended Project Overhead. For the duration of the delay, payment for extended project overhead will be paid as follows.

(1) Direct Jobsite and Offsite Overhead. Payment for documented direct jobsite overhead and documented direct offsite overhead, including onsite supervisory and administrative personnel, will be allowed according to the following table.

Original Contract Amount	Supervisory and Administrative Personnel
Up to \$5,000,000	One Project Superintendent
Over \$ 5,000,000 - up to \$25,000,000	One Project Manager, One Project Superintendent or Engineer, and One Clerk
Over \$25,000,000 - up to \$50,000,000	One Project Manager, One Project Superintendent, One Engineer, and One Clerk
Over \$50,000,000	One Project Manager, Two Project Superintendents, One Engineer, and One Clerk

(2) Home Office and Unabsorbed Overhead. Payment for home office and unabsorbed overhead will be calculated as 8 percent of the total delay cost.

(c) Extended Traffic Control. Traffic control required for an extended period of time due to the delay will be paid for according to Article 109.04.

When an extended traffic control adjustment is paid under this provision, an adjusted unit price as provided for in Article 701.20(a) for increase or decrease in the value of work by more than ten percent will not be paid.

Upon payment for a contract delay under this provision, the Contractor shall assign subrogation rights to the Department for the Department's efforts of recovery from any other party for monies paid by the Department as a result of any claim under this provision. The Contractor shall fully cooperate with the Department in its efforts to recover from another party any money paid to the Contractor for delay damages under this provision."

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)

Effective: September 1, 2000

Revised: March 2, 2019

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR Part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. For the purposes of this Special Provision, a disadvantaged business enterprise

(DBE) means a business certified by the Department in accordance with the requirements of 49 CFR Part 26 and listed in the Illinois Unified Certification Program (IL UCP) DBE Directory.

STATE OBLIGATION. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. When this Special Provision is used to satisfy state law requirements on 100 percent state-funded contracts, the federal government has no involvement in such contracts (not a federal-aid contract) and no responsibility to oversee the implementation of this Special Provision by the Department on those contracts. DBE participation on 100 percent state-funded contracts will not be credited toward fulfilling the Department's annual overall DBE goal required by the US Department of Transportation to comply with the federal DBE program requirements.

CONTRACTOR ASSURANCE. The Contractor makes the following assurance and agrees to include the assurance in each subcontract the Contractor signs with a subcontractor.

The Contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of contracts funded in whole or in part with federal or state funds. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (a) Withholding progress payments;
- (b) Assessing sanctions;
- (c) Liquidated damages; and/or
- (d) Disqualifying the Contractor from future bidding as non-responsible.

OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR Part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE companies performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. The determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates, in the absence of unlawful discrimination and in an arena of fair and open competition, DBE companies can be expected to perform **0.00%** of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set for in this Special Provision:

- (a) The bidder documents enough DBE participation has been obtained to meet the goal or,
- (b) The bidder documents a good faith effort has been made to meet the goal, even though the effort did not succeed in obtaining enough DBE participation to meet the goal.

DBE LOCATOR REFERENCES. Bidders shall consult the IL UCP DBE Directory as a reference source for DBE-certified companies. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217) 785-4611, or by visiting the Department's website at:
<http://www.idot.illinois.gov/doing-business/certifications/disadvantaged-business-enterprise-certification/il-ucp-directory/index>.

BIDDING PROCEDURES. Compliance with this Special Provision is a material bidding requirement and failure of the bidder to comply will render the bid not responsive.

The bidder shall submit a DBE Utilization Plan (form SBE 2026), and a DBE Participation Statement (form SBE 2025) for each DBE company proposed for the performance of work to achieve the contract goal, with the bid. If the Utilization Plan indicates the contract goal will not be met, documentation of good faith efforts shall also be submitted. The documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor is selected over a DBE for work on the contract. The required forms and documentation must be submitted as a single .pdf file using the "Integrated Contractor Exchange (iCX)" application within the Department's "EBids System".

The Department will not accept a Utilization Plan if it does not meet the bidding procedures set forth herein and the bid will be declared not responsive. In the event the bid is declared not responsive, the Department may elect to cause the forfeiture of the penal sum of the bidder's proposal guaranty and may deny authorization to bid the project if re-advertised for bids.

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan is approved. All information submitted by the bidder must be complete, accurate and adequately document enough DBE participation has been obtained or document the good faith efforts of the bidder, in the event enough DBE participation has not been obtained, before the Department will commit to the performance of the contract by the bidder. The Utilization Plan will be approved by the Department if the Utilization Plan documents sufficient commercially useful DBE work to meet the contract goal or the bidder submits sufficient documentation of a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A. This means the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which, by their scope, intensity and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not successful. The Department will consider the quality, quantity, and intensity of the kinds of efforts the bidder has made. Mere *pro forma* efforts, in other words efforts done as a matter of form, are not good faith efforts; rather, the bidder is expected to have taken genuine efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

- (a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other

factors or efforts brought to the attention of the Department may be relevant in appropriate cases and will be considered by the Department.

- (1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.
- (2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to perform these work items with its own forces.
- (3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- (4)
 - a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.
 - b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable. In accordance with the above Bidding Procedures, the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract.
- (5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.

- (6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.
 - (7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.
 - (8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.
- (b) If the Department determines the bidder has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided it is otherwise eligible for award. If the Department determines the bidder has failed to meet the requirements of this Special Provision or that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan that the bid is not responsive. The notification will also include a statement of reasons for the adverse determination. If the Utilization Plan is not approved because it is deficient as a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no more than a five calendar day period to cure the deficiency.
- (c) The bidder may request administrative reconsideration of an adverse determination by emailing the Department at "DOT.DBE.UP@illinois.gov" within the five calendar days after the receipt of the notification of the determination. The determination shall become final if a request is not made on or before the fifth calendar day. A request may provide additional written documentation or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. The request will be reviewed by the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person to consider all issues of documentation and whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR Part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR Part 26.55, the provisions of which govern over the summary contained herein.

- (a) DBE as the Contractor: 100 percent goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE does not count toward the DBE goals.
- (b) DBE as a joint venture Contractor: 100 percent goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.
- (c) DBE as a subcontractor: 100 percent goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE does not count toward the DBE goal.
- (d) DBE as a trucker: 100 percent goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed, and insured by the DBE must be used on the contract. Credit will be given for the following:
 - (1) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.
 - (2) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission is receives as a result of the lease arrangement.
- (e) DBE as a material supplier:
 - (1) 60 percent goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.
 - (2) 100 percent goal credit for the cost of materials of supplies obtained from a DBE manufacturer.
 - (3) 100 percent credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a DBE regular dealer or DBE manufacturer.

CONTRACT COMPLIANCE. Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan. After approval of the Utilization Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the Contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal. All work indicated for performance by an approved DBE

shall be performed, managed, and supervised by the DBE executing the DBE Participation Commitment Statement.

- (a) NO AMENDMENT. No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be emailed to the Department at DOT.DBE.UP@illinois.gov.
- (b) CHANGES TO WORK. Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A or AER 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, a new Request for Approval of Subcontractor will not be required. However, the Contractor must document efforts to assure the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.
- (c) SUBCONTRACT. The Contractor must provide copies of DBE subcontracts to the Department upon request. Subcontractors shall ensure that all lower tier subcontracts or agreements with DBEs to supply labor or materials be performed in accordance with this Special Provision.
- (d) ALTERNATIVE WORK METHODS. In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:
 - (1) The replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award; or
 - (2) The DBE is aware its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or
 - (3) The DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.
- (e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in this Special Provision. The Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the Contractor obtains the Department's written consent as provided in subsection (a) of this part. Unless Department consent is provided

for termination of a DBE subcontractor, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the DBE in the Utilization Plan.

As stated above, the Contractor shall not terminate or replace a DBE subcontractor listed in the approved Utilization Plan without prior written consent. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Written consent will be granted only if the Bureau of Small Business Enterprises agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate or replace the DBE firm. Before transmitting to the Bureau of Small Business Enterprises any request to terminate and/or substitute a DBE subcontractor, the Contractor shall give notice in writing to the DBE subcontractor, with a copy to the Bureau, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor shall give the DBE five days to respond to the Contractor's notice. The DBE so notified shall advise the Bureau and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Bureau should not approve the Contractor's action. If required in a particular case as a matter of public necessity, the Bureau may provide a response period shorter than five days.

For purposes of this paragraph, good cause includes the following circumstances:

- (1) The listed DBE subcontractor fails or refuses to execute a written contract;
- (2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the Contractor;
- (3) The listed DBE subcontractor fails or refuses to meet the Contractor's reasonable, nondiscriminatory bond requirements;
- (4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1200 or applicable state law.
- (6) The Contractor has determined the listed DBE subcontractor is not a responsible contractor;
- (7) The listed DBE subcontractor voluntarily withdraws from the projects and provides written notice to the Contractor of its withdrawal;
- (8) The listed DBE is ineligible to receive DBE credit for the type of work required;
- (9) A DBE owner dies or becomes disabled with the result that the listed DBE subcontractor is unable to complete its work on the contract;

- (10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE contractor was engaged or so that the Contractor can substitute another DBE or non-DBE contractor after contract award.

When a DBE is terminated or fails to complete its work on the Contract for any reason, the Contractor shall make a good faith effort to find another DBE to substitute for the original DBE to perform at least the same amount of work under the contract as the terminated DBE to the extent needed to meet the established Contract goal. The good faith efforts shall be documented by the Contractor. If the Department requests documentation under this provision, the Contractor shall submit the documentation within seven days, which may be extended for an additional seven days if necessary at the request of the Contractor. The Department will provide a written determination to the Contractor stating whether or not good faith efforts have been demonstrated.

- (f) FINAL PAYMENT. After the performance of the final item of work or delivery of material by a DBE and final payment therefore to the DBE by the Contractor, but not later than 30 calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Resident Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.
- (g) ENFORCEMENT. The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.
- (h) RECONSIDERATION. Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of "Good Faith Effort Procedures" of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department. The result of the reconsideration process is not administratively appealable to the U.S. Department of Transportation.

ILLINOIS WORKS APPRENTICESHIP INITIATIVE – STATE FUNDED CONTRACTS (BDE)

Effective: June 2, 2021
 Revised: September 2, 2021

Illinois Works Jobs Program Act (30 ILCS 559/20-1 et seq.). For contracts having an awarded contract value of \$500,000 or more, the Contractor shall comply with the Illinois Works Apprenticeship Initiative (30 ILCS 559/20-20 to 20-25) and all applicable administrative rules. The goal of the Illinois Apprenticeship Works Initiative is that apprentices will perform either 10% of the total labor hours actually worked in each prevailing wage classification or 10% of the estimated labor hours in each prevailing wage classification, whichever is less. The Contractor may seek from the Department of Commerce and Economic Opportunity (DCEO) a waiver or reduction of this goal in certain circumstances pursuant to 30 ILCS 559/20-20(b). The Contractor shall ensure compliance during the term of the contract and will be required to report on and certify its compliance. An apprentice use plan, apprentice hours, and a compliance certification shall be submitted to the Engineer on forms provided by the Department and/or DCEO.

PORTLAND CEMENT CONCRETE – HAUL TIME (BDE)

Effective: July 1, 2020

Revise Article 1020.11(a)(7) of the Standard Specifications to read:

“(7) Haul Time. Haul time shall begin when the delivery ticket is stamped. The delivery ticket shall be stamped no later than five minutes after the addition of the mixing water to the cement, or after the addition of the cement to the aggregate when the combined aggregates contain free moisture in excess of two percent by weight (mass). If more than one batch is required for charging a truck using a stationary mixer, the time of haul shall start with mixing of the first batch. Haul time shall end when the truck is emptied for incorporation of the concrete into the work. The maximum haul time shall be as follows.

Concrete Temperature at Point of Discharge, °F (°C)	Maximum Haul Time ^{1/} (minutes)	
	Truck Mixer or Truck Agitator	Nonagitator Truck
50 - 64 (10 - 17.5)	90	45
> 64 (> 17.5) - without retarder	60	30
> 64 (> 17.5) - with retarder	90	45

1/ To encourage start-up testing for mix adjustments at the plant, the first two trucks will be allowed an additional 15 minutes haul time whenever such testing is performed.

For a mixture which is not mixed on the jobsite, a delivery ticket shall be required for each load. The following information shall be recorded on each delivery ticket: (1) ticket number; (2) name of producer and plant location; (3) contract number; (4) name of Contractor; (5) stamped date and time batched; (6) truck number; (7) quantity

batched; (8) amount of admixture(s) in the batch; (9) amount of water in the batch; and (10) Department mix design number.

For concrete mixed in jobsite stationary mixers, the above delivery ticket may be waived, but a method of verifying the haul time shall be established to the satisfaction of the Engineer.”

SUBCONTRACTOR AND DBE PAYMENT REPORTING (BDE)

Effective: April 2, 2018

Add the following to Section 109 of the Standard Specifications.

“109.14 Subcontractor and Disadvantaged Business Enterprise Payment Reporting.
 The Contractor shall report all payments made to the following parties:

- (a) first tier subcontractors;
- (b) lower tier subcontractors affecting disadvantaged business enterprise (DBE) goal credit;
- (c) material suppliers or trucking firms that are part of the Contractor’s submitted DBE utilization plan.

The report shall be made through the Department’s on-line subcontractor payment reporting system within 21 days of making the payment.”

SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)

Effective: November 2, 2017

Revised: April 1, 2019

Replace the second paragraph of Article 109.12 of the Standard Specifications with the following:

“This mobilization payment shall be made at least seven days prior to the subcontractor starting work. The amount paid shall be at the following percentage of the amount of the subcontract reported on form BC 260A submitted for the approval of the subcontractor’s work.

Value of Subcontract Reported on Form BC 260A	Mobilization Percentage
Less than \$10,000	25%
\$10,000 to less than \$20,000	20%
\$20,000 to less than \$40,000	18%
\$40,000 to less than \$60,000	16%
\$60,000 to less than \$80,000	14%
\$80,000 to less than \$100,000	12%
\$100,000 to less than \$250,000	10%
\$250,000 to less than \$500,000	9%
\$500,000 to \$750,000	8%
Over \$750,000	7%”

SUBMISSION OF PAYROLL RECORDS (BDE)

Effective: April 1, 2021

Revise Item 3 of Section IV of Check Sheet #5 of the Recurring Special Provisions to read:

- “3. Submission of Payroll Records. The Contractor and each subcontractor shall, no later than the 15th day of each calendar month, file a certified payroll for the immediately preceding month to the Illinois Department of Labor (IDOL) through the Illinois Prevailing Wage Portal in compliance with the State Prevailing Wage Act (820 ILCS 130). The portal can be found on the IDOL website at <https://www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/Prevailing-Wage-Portal.aspx>. Payrolls shall be submitted in the format prescribed by the IDOL.”

VEHICLE AND EQUIPMENT WARNING LIGHTS (BDE)

Effective: November 1, 2021

Add the following paragraph after the first paragraph of Article 701.08 of the Standard Specifications:

“The Contractor shall equip all vehicles and equipment with high-intensity oscillating, rotating, or flashing, amber or amber-and-white, warning lights which are visible from all directions. The lights shall be in operation while the vehicle or equipment is engaged in construction operations.”

WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012

Revised: November 1, 2021

The Contractor shall submit a weekly report of Disadvantaged Business Enterprise (DBE) trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) that are used for DBE goal credit.

The report shall be submitted to the Engineer on Department form “SBE 723” within ten business days following the reporting period. The reporting period shall be Sunday through Saturday for each week reportable trucking activities occur.

Any costs associated with providing weekly DBE trucking reports shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

WORK ZONE TRAFFIC CONTROL DEVICES (BDE)

Effective: March 2, 2020

Add the following to Article 701.03 of the Standard Specifications:

“(q) Temporary Sign Supports1106.02”

Revise the third paragraph of Article 701.14 of the Standard Specifications to read:

“For temporary sign supports, the Contractor shall provide a FHWA eligibility letter for each device used on the contract. The letter shall provide information for the set-up and use of the device as well as a detailed drawing of the device. The signs shall be supported within 20 degrees of vertical. Weights used to stabilize signs shall be attached to the sign support per the manufacturer’s specifications.”

Revise the first paragraph of Article 701.15 of the Standard Specifications to read:

“701.15 Traffic Control Devices. For devices that must meet crashworthiness standards, the Contractor shall provide a manufacturer’s self-certification or a FHWA eligibility letter for each Category 1 device and a FHWA eligibility letter for each Category 2 and Category 3 device used on the contract. The self-certification or letter shall provide information for the set-up and use of the device as well as a detailed drawing of the device.”

Revise the first six paragraphs of Article 1106.02 of the Standard Specifications to read:

“1106.02 Devices. Work zone traffic control devices and combinations of devices shall meet crashworthiness standards for their respective categories. The categories are as follows.

Category 1 includes small, lightweight, channelizing and delineating devices that have been in common use for many years and are known to be crashworthy by crash testing of similar devices or years of demonstrable safe performance. These include cones, tubular markers, plastic drums, and delineators, with no attachments (e.g. lights). Category 1 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 1 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2024.

Category 2 includes devices that are not expected to produce significant vehicular velocity change but may otherwise be hazardous. These include vertical panels with lights, barricades, temporary sign supports, and Category 1 devices with attachments (e.g. drums with lights). Category 2 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 2 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2024.

Category 3 includes devices that are expected to cause significant velocity changes or other potentially harmful reactions to impacting vehicles. These include crash cushions (impact attenuators), truck mounted attenuators, and other devices not meeting the definitions of Category 1 or 2. Category 3 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 3 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2029. Category 3 devices shall be crash tested for Test Level 3 or the test level specified.

Category 4 includes portable or trailer-mounted devices such as arrow boards, changeable message signs, temporary traffic signals, and area lighting supports. It is preferable for Category 4 devices manufactured after December 31, 2019 to be MASH-16 compliant; however, there are currently no crash tested devices in this category, so it remains exempt from the NCHRP 350 or MASH compliance requirement.

For each type of device, when no more than one MASH-16 compliant is available, an NCHRP 350 or MASH-2009 compliant device may be used, even if manufactured after December 31, 2019.”

Revise Articles 1106.02(g), 1106.02(k), and 1106.02(l) to read:

“(g) Truck Mounted/Trailer Mounted Attenuators. The attenuator shall be approved for use at Test Level 3. Test Level 2 may be used for normal posted speeds less than or equal to 45 mph.

(k) Temporary Water Filled Barrier. The water filled barrier shall be a lightweight plastic shell designed to accept water ballast and be on the Department’s qualified product list.

Shop drawings shall be furnished by the manufacturer and shall indicate the deflection of the barrier as determined by acceptance testing; the configuration of the barrier in that test; and the vehicle weight, velocity, and angle of impact of the deflection test. The Engineer shall be provided one copy of the shop drawings.

(l) Movable Traffic Barrier. The movable traffic barrier shall be on the Department’s qualified product list.

Shop drawings shall be furnished by the manufacturer and shall indicate the deflection of the barrier as determined by acceptance testing; the configuration of the barrier in that test; and the vehicle weight, velocity, and angle of impact of the deflection test. The Engineer shall be provided one copy of the shop drawings. The barrier shall be capable of being moved on and off the roadway on a daily basis.”

WORKING DAYS (BDE)

Effective: January 1, 2002

The Contractor shall complete the work within **20** working days.

REVISIONS TO THE ILLINOIS PREVAILING WAGE RATES

The Prevailing rates of wages are included in the Contract proposals which are subject to Check Sheet #5 of the Supplemental Specifications and Recurring Special Provisions. The rates have been ascertained and certified by the Illinois Department of Labor for the locality in which the work is to be performed and for each craft or type of work or mechanic needed to execute the work of the Contract. As required by Prevailing Wage Act (820 ILCS 130/0.01, et seq.) and Check Sheet #5 of the Contract, not less than the rates of wages ascertained by the Illinois Department of Labor and as revised during the performance of a Contract shall be paid to all laborers, workers and mechanics performing work under the Contract. Post the scale of wages in a prominent and easily accessible place at the site of work.

If the Illinois Department of Labor revises the prevailing rates of wages to be paid as listed in the specification of rates, the contractor shall post the revised rates of wages and shall pay not less than the revised rates of wages. Current wage rate information shall be obtained by visiting the Illinois Department of Labor web site at <http://www.state.il.us/agency/idol/> or by calling 312-793-2814. It is the responsibility of the contractor to review the rates applicable to the work of the contract at regular intervals in order to insure the timely payment of current rates. Provision of this information to the contractor by means of the Illinois Department of Labor web site satisfies the notification of revisions by the Department to the contractor pursuant to the Act, and the contractor agrees that no additional notice is required. The contractor shall notify each of its subcontractors of the revised rates of wages.