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June 15, 2018 Letting

Notice to Bidders, Specifications and Proposal



**Illinois Department
of Transportation**

Springfield, Illinois 62764

**Contract No. 72K62
SANGAMON-MORGAN Counties
Section ITS D6-1
Various Routes
District 6 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 10:00 a.m. June 15, 2018 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. 72K62
SANGAMON-MORGAN Counties
Section ITS D6-1
Various Routes
District 6 Construction Funds**

Install fiber optic cable runs at various locatins in Springfield and Jacksonville.

- 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

Randall S. Blankenhorn,
Secretary

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2018

This index contains a listing of SUPPLEMENTAL SPECIFICATIONS and frequently used RECURRING SPECIAL PROVISIONS.

ERRATA Standard Specifications for Road and Bridge Construction (Adopted 4-1-16) (Revised 1-1-18)

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STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction, Adopted April 1, 2016", 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 Various Routes, Section ITS D6-1, Sangamon and Morgan Counties, Contract No. 72K62 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

The work in this section is located at following locations:

Springfield PTZ Cameras:

- Stevenson Drive and Dirksen Parkway
- Dirksen Parkway and South Grand Ave
- Dirksen Parkway and Clearlake Ave
- Dirksen Parkway and Sangamon Ave
- Sangamon Ave and Peoria Road
- Veterans and J David Jones Parkway
- Veterans Parkway and Jefferson St
- Veterans Parkway and Monroe St
- Veterans Parkway and Wabash Ave
- Wabash Ave and MacArthur Blvd
- 6th St and Stevenson Drive

Jacksonville PTZ Cameras:

- Morton Avenue/Lincoln Avenue
- Morton Avenue/Massey
- Morton Avenue/Main

Springfield Fiber Work:

- Veteran's Parkway – Iles to Greenbriar
- Jefferson – Veteran's to Churchill
- Sangamon Avenue – Peoria Road to Dirksen Parkway
- Clearlake Avenue – Milton to Madison/Jefferson
- Madison Avenue – Lincoln Avenue to Madison/Jefferson
- South Grand – MacArthur Blvd to 9th Street
- 6th Street – South Grand Avenue to Ash Street
- 5th/6th Street – Iles Avenue to Stevenson Drive
- Stevenson Drive – Taylor Avenue to I55 East Ramp
- MacArthur Blvd – South Grand to Wabash Avenue
- Wabash Avenue – East Mall Entrance to MacArthur

South Jacksonville Fiber Work:

- South Main Street – Vandalia Street to Michigan Street

DESCRIPTION OF PROJECT

The project consists of furnishing all equipment, labor, and material necessary to install fiber optic cable runs and all other miscellaneous work required on the routes specified in "Location of the Project" section. In addition, providing District 6 with quantities and types of Ethernet Switches and Cobalt Controllers listed in the plans.

TRAFFIC CONTROL PLAN

Traffic control shall be in accordance with the applicable sections of the Standard Specifications for Road and Bridge Construction, the applicable guidelines contained in the Illinois Manual on Uniform Traffic Control Devices for Streets and Highways, these Special Provisions, any special details and Highway Standards contained herein and in the plans.

Special attention is called to Sections 107 and 701 through 705 of the Standard Specifications for Road and Bridge Construction, and as amended by the Supplemental Specifications, Recurring Special Provisions, the Special Provisions contained herein, and the following highway standards relating to traffic control:

701101 701601 701602 701901

The Contractor shall coordinate the items of work in order to keep hazards and traffic inconveniences to a minimum, as specified below.

1. The Contractor shall provide, erect and maintain all the necessary barricades, cones, drums and lights for warning and protection of traffic, as required by Sections 107 and 701 through 703 of the Standard Specifications, and as modified.

2. Access must be maintained to all existing facilities, entrances and driveways during construction unless arrangements are made in writing by the contractor with the property owners along the routes. All agreements shall be made in writing by the Contractor with a copy to the Engineer for short-term closures.
3. All advance-warning signs shall be in new or like new condition at the start of the project. All warning signs shall be 48-inches by 48-inches and have a black legend on a fluorescent orange reflectorized background.
4. Parking of personal vehicles on the jobsite shall be approved by the Engineer.
5. The Contractor shall be responsible for the traffic control devices at all times during construction activities and shall coordinate the items of work in order to keep hazard traffic inconveniences to a minimum.

Basis of Payment:

Traffic Control and Protection Standard 701601 and 701602 will be measured and paid for at the contract unit price lump sum for TRAFFIC CONTROL AND PROTECTION STANDARD 701601 and 701602.

All other traffic control and protection required for the completion of this improvement will not be paid for separately but will be considered as part of the unit bid prices for the pay items included in the contract.

CONSTRUCTION PROCEDURE FOR PUBLIC EVENTS

Effective: October 1, 1990

There shall be no lane closures within the limits of this project during the Illinois State Fair, August 9-19, 2018. No broken pavement, open holes, or trenches shall remain on or adjacent to the traveled way during these events. Barricades, cones, drums or other warning devices shall also be removed from the traveled way during this period. This period shall begin at 3:00 p.m. of the day proceeding the beginning day of the event, and end at 12:00 midnight on the final day of the event. Any inconvenience caused the Contractor in complying with these Special Provision shall be considered as incidental to the contract and no additional compensation will be allowed.

STATUS OF UTILITIES TO BE ADJUSTED

The following utilities are involved in this project. The utility companies have provided the estimated dates.

Name & Address of Utility	Type	Location	Estimated Date of Relocation Completed
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NONE ANTICIPATED

The above represents the best information of the Department and is only included for the convenience of the bidder. The applicable provisions of Articles 105.07, 107.20, 107.39, and 108.02 of the Standard Specifications for Road and Bridge Construction shall apply.

The estimated utility relocation dates should be part of the progress schedule submitted by the Contractor. If any utility adjustments or relocations have not been completed by the above dates specified and when required by the Contractor's operations after these dates, the Contractor should notify the Engineer in writing. A request for an extension of time will be considered to the extent the Contractor's critical path schedule is affected.

UNDERGROUND FACILITIES

The Contractor's attention is directed to the possible presence of state-owned underground electrical cable within the limits of the proposed improvement. The contractor shall request the Illinois Department of Transportation in Springfield (217-558-6716) to locate the underground facilities, providing a minimum of 72 hour notice. The Illinois Department of Transportation IS NOT a member of the Joint Utility Locating Information for Excavators (JULIE) System.

Any damage to the underground facilities, caused by the Contractor resulting from his failure to contact the Illinois Department of Transportation as specified above or from negligent operation, shall be repaired to the satisfaction of the Department at the contractor's expense, including temporary repairs which may be required to keep the facility operational while material is being obtained to make permanent repairs. Splicing of electric cable will not be allowed. Electric cable shall be replaced from pole to pole or controller.

SEEDING, MINOR AREAS

Effective July 1, 1990

Revised July 1, 1994

Seeding and fertilizing shall be done in accordance with Article 250 of the Standard Specifications except for the following revisions: All areas disturbed by the work performed shall be seeded, fertilized and mulched as directed by the Engineer. The seed mixture shall be applied at 110 kg/ha (100 pounds/acre). All seeds shall meet the mixture, purity and noxious weed requirements of Article 1081.04 of the Standard Specifications, and be approved by the Engineer. The Contractor shall provide the Engineer with the test results from the seed container and the chemical analysis of the fertilizer nutrients. The seed and fertilizer placed at all disturbed areas will not be measured for payment but will be considered incidental to this contract.

UNDERGROUND CONDUIT, PVC, 1½" DIA.

Revised: March 22, 2018

This work shall consist of furnishing and installing a conduit of the type and size specified in accordance with Sections 810 and 1088.01(b) or 1088.01(c) of the Standard Specifications for Road and Bridge Construction except as described herein.

PVC Conduits:

When it is necessary to connect PVC conduit to steel conduit a heavy wall set screw connector with a PVC female adapter shall be installed and sealed by duct seal and plastic tape.

When conduits are installed in the excavation behind a curb, the conduit shall be installed below driveway and entrances at a depth which will prevent the conduit from protruding into the entrance pavement material.

PVC Conduit, Augured:

The term augured shall cover both the pushed and bored method of installing conduit. Because of differences in equipment and techniques, the contractor may use either method to install the conduit for the term AUGURED.

If subsurface conditions are encountered which prevent conduit from being augured or pushed through an entire conduit run in three (3) sincere attempts, as determined by the Engineer, compensation for the proposed conduit run will be as follows:

1. The Department will delete the contract specified method of payment for the subject conduit run.
2. The Department will pay for the installation of the conduit run and the three unsuccessful attempts to install the conduit run, under Article 109.04 of the Standard Specification on a force account basis.
3. The Engineer will determine the method to be utilized to install the conduit run.

Basis of Payment:

This work will be paid for at the contract unit price per foot for CONDUIT, of the size and type specified, which price shall be payment in full for furnishing and installing the complete conduit run, including all fittings.

HANDHOLE

Revised: March 22, 2018

This work shall be in accordance with Sections 814 and 1088 of the Standard Specifications except as modified herein.

This work shall consist of furnishing and installing a junction box constructed of polymer concrete.

The junction box shall conform to the following specifications:

Cover:

Material: Polymer Concrete
Nominal Dimensions: 11" W x 20" L"
Gasketed, Heavy Duty Lid with 2 Bolts
Design/Test Load: 15,000/22,500 lbs.
ANSI Tier: 15 Gasketed

Box:

Material: Polymer Concrete
Nominal Dimensions: 11" W x 20" L x 24" D
Open Bottom
Design/Test Load: 22,500/33,750 lbs.
ANSI Tier: 22

The junction box and cover shall be a composite concrete according to Article 1088.07 of the Standard Specifications.

Basis of Payment:

This work will be paid for at the contract unit price Each for HANDHOLE and shall be payment in full for all labor, materials, and equipment required to furnish and install the junction box described above, complete.

MODIFY EXISTING CONTROLLER CABINET

Revised: March 22, 2018

This work shall consist of terminating, connecting, and testing newly-installed fiber optic cable in existing controller cabinets as indicated in the plans.

12 of 24 fibers within the single-mode cable shall be terminated with fusion-type LC connectors. The connectors shall meet TIA/EIA 568B specifications and shall have an operating temperature range of -10°C (14°F) to 60°C (140°F). The connectors shall be free from defects in material and manufacture for 6 months.

Breakout kits shall be provided for the separation and protection of individual fibers with buffer tubing and jacketing materials suitable for termination of the fiber with the fiber optic connectors. Stripped cable jackets shall be completely removed and all protective gel shall be cleaned from the loose tubes as recommended by the cable supplier.

Fiber optic cables shall be terminated in the controller cabinets within wall-mountable interconnection enclosures. The interconnection enclosures shall seal out dust and moisture and shall be sized sufficiently to store any and all fiber, windings, and splices. The dimensions of the enclosures shall not exceed 9.25" x 8.5" x 3". The enclosures shall accept 2 modular connector panels which shall be configured to accept 12 terminated single-mode fibers. These 12 single-mode user connection adapters shall be configured to accept LC patch cables. The location of the distribution enclosure shall not restrict access to existing traffic signal systems components. The single-mode field cable shall be firmly secured to the enclosure with appropriate and applicable clamping devices. The single-mode fiber optic cable shall leave the enclosure through rubber grommets or similar devices to protect the cable against wear.

All installed fiber optic cable shall be tested at its nominal operating wavelength and in accordance with Article 801. Additionally, detailed and complete post-installation power meter and OTDR test documentation shall be provided electronically to the Engineer to the satisfaction of the Engineer. The test data should be formatted as an Excel spreadsheet and may be either emailed to the Engineer for inspection and acceptance or provided on a thumb drive.

In addition to the applicable preceding provisions, the following additional work shall be required pursuant to modifying the controller cabinets at 1st/Madison, 2nd/Madison, 4th/Madison, 5th/Madison, 6th/Madison, 7th/Madison, 9th/Madison, 11th/Madison, Clearlake/M.L.K., Madison/Jefferson:

All existing multi-mode traffic signal system fiber connections shall be disconnected from existing equipment, replaced with newly installed and identically terminated multi-mode fiber, and restored to an equally operational state within a period not to exceed 48 hours at any single intersection. The existing fiber at these locations is integral to downtown Springfield traffic signal system coordination and will be operational at the time of this project. **The Contractor shall coordinate, intersection by intersection, this fiber removal/replacement with Paul Bullpit, City of Springfield,** by verifying the functional state of fiber prior to removal and by validating that the same functional state is restored after replacement. The contractor shall not be responsible for any existing ancillary equipment failure prior to, during, or after this fiber removal and replacement, nor shall the Contractor be responsible for any administration of the network. The contractor shall only be responsible for verifying the functionality of fiber before removal, and validating that the fiber still functions after its installation and for reasonably coordinating this process with the City of Springfield.

All 12 multi-mode fibers within the multi-mode cable shall be terminated with either fusion-type or mechanical ST connectors. The connectors shall meet TIA/EIA 568B specifications and shall have an operating temperature range of -10°C (14°F) to 60°C (140°F). The connectors shall be free from defects in material and manufacture for 6 months.

Breakout kits shall be provided for the separation and protection of individual fibers with buffer tubing and jacketing materials suitable for termination of the fiber with the fiber optic connectors. Stripped cable jackets shall be completely removed and all protective gel shall be cleaned from the loose tubes as recommended by the cable supplier.

Fiber optic cables shall be terminated in the controller cabinets using the existing splice trays and jumpers. If existing jumpers or patching fails during this removal and replacement process, functionally identical jumpers or patching shall be provided by the Contractor and shall be considered incidental to this pay item. The multi-mode field cable shall be firmly secured to the enclosure with appropriate and applicable clamping devices.

Paul Bullpit: 217-757-8515 (office); 217-303-6966 (cell)

Basis of Payment:

This work will be paid for at the contract unit price each for MODIFY EXISTING CONTROLLER CABINET, which price shall be payment in full for installing the specified equipment and any incidental removal/replacement of existing equipment.

REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT

Revised: March 22, 2018

This work shall consist of removing an existing controller and cabinet and delivering the equipment to a location directed by the Engineer.

Omission of existing master controller cabinet on Wabash Avenue in front of Popeye's Chicken:

The existing master controller cabinet and foundation shall be removed. The conduits entering and leaving the cabinet shall be coupled as indicated in the Plans. The fiber passing through the cabinet shall be removed, replaced, and relinked to its entry and exit termination as indicated in the Plans.

All parts necessary to complete this work shall be incidental to this provision.

Removal and replacement of traffic signal cabinet at 11th/Madison:

The existing signal cabinet shall be removed and replaced with the Fiber Optic Interconnect Cabinet specified herein a separate provision. All existing equipment is to be removed, replaced, and restored to its full and former state of operation.

Basis of Payment:

This work will be paid for at the contract unit price each for REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT, which price shall be payment in full for removing and delivering the equipment indicated on the plans.

CAT 5 ETHERNET CABLE

Revised: March 22, 2018

This work shall be in accordance with Sections 873, 1076, and 1088 of the Standard Specifications except as modified herein.

This work shall consist of furnishing and installing an outdoor rated CAT5E cable in conduits, handholes, and poles.

The cable shall be rated for outdoor use and conform to the following specifications:

- Outdoor CMX Rated Jacket (climate/oil resistant jacket)
- UV Resistant Outer Jacket Material (PVC-UV, UV Stabilized)
- Outer Jacket Ripcord
- Designed For Outdoor Above- Ground or Conduit Duct applications
- Cat5E rated to 350MHz (great for 10/100 or even 1000mbps Gigabit Ethernet)
- Meets TIA/EIA 568b.2 Standard
- Unshielded Twist Pair
- 4 Pairs, 8 Conductors
- 24AWG, Solid Core Copper
- UL 444 ANSI TIA/EIA-568.2 ISO/IEC 11801
- RoHS Compliant
- Water Blocking Gel

Basis of Payment:

This work will be paid for at the contract unit price per Foot for CAT 5 ETHERNET CABLE, which shall be payment in full for all labor, equipment, and materials required to provide and install the cable described above, complete.

CLOSED-CIRCUIT TELEVISION DOME CAMERA, IP BASED

Revised: March 22, 2018

Description:

This work shall consist of furnishing and installing closed-circuit television (CCTV) cameras, dome camera assemblies, camera brackets, and all other items required for installation and operation as indicated on the plan sheets.

Camera:

The CCTV camera shall be an Axis Model Q6042-E Dome Camera Assembly for integration into the existing District 6 ITS/ATMS network. The Contractor shall provide all materials required to install the proposed camera on the proposed pole or existing mast arm as shown on the plan sheets. The Contractor shall submit catalog cut sheets to the Department for all items (mounting brackets, hardware, etc.) that will be utilized for review prior to commencing work. The Department will program the cameras.

Environmental Enclosure/Housing:

The environmental enclosure shall be designed to physically protect the integrated camera from the outdoor environment and moisture via a sealed enclosure. The assembly shall be supplied with an integral sun shield. The enclosure shall be fully water and weather resistant with a NEMA 4 rating or better. The camera dome shall be constructed of distortion free acrylic or equivalent material that must not degrade from environmental conditions. The environmental housing shall include a camera mounting bracket. In addition, the environmental housing shall include a heater, blower, and power surge protector. An integral fitting compatible with a standard 1-1/2 in (38.1 mm) NPT pipe, suitable for outdoor pendant mounting shall also be provided. The enclosure shall be equipped with a heater controlled by a thermostat. The heater shall turn on when the temperature within the enclosure falls below 40°F (4.4°C). The heater shall turn off when the temperature exceeds 60°F (15.6°C). The heater will minimize internal fogging of the dome faceplate when the assembly is operated in cold weather. In addition, a fan shall be provided as part of the enclosure. The fan will provide airflow to ensure effective heating and to minimize condensation.

The enclosure shall be equipped with a hermetically sealed, IP 66 Rated weatherproof connector, located near the top for external interface. CCTV Dome Camera Mounting Supports The Contractor shall furnish and install an Axis Pole Mount Bracket T91A67 (Part Number 5017-671) for camera installation on traffic signal mast arms and CCTV camera poles and stainless-steel banding as required.

Mounting supports shall be configured as shown on the camera support detail plans and as approved by the Engineer. Mount shall be of aluminum construction with enamel or polyester powder coat finish. Braces, supports, and hardware shall be stainless steel. Wind load rating shall be designed for sustained gusts up to 90 m.p.h. (145 km/hr), with a 30% gust factor. Load rating shall be designed to support up to 75 lbs. (334 N). For roof or structural post/light pole mounting, mount shall have the ability to swivel inward for servicing. The mounting flange shall use standard 1-1/2 inch (38.1 mm) NPT pipe thread.

Connecting Cables:

The Contractor shall furnish and install outdoor rated, CAT 5E cable. The cable shall be terminated using the IP66 rated RJ-45 connector on the camera end and a shielded RJ-45 connector in the cabinet. The Contractor shall test the cable after termination.

Cable will be paid for separately under the pay item CAT 5 ETHERNET CABLE.

Construction Requirements:

The Contractor shall prepare a shop drawing detailing the complete CCTV Dome Camera Assembly and installation of all components to be supplied for approval of the Engineer. Particular emphasis shall be given to the cabling and the interconnection of all of the components. The Contractor shall install the CCTV dome camera assembly at the locations indicated in the Plans. The CCTV Dome Camera Assembly shall be mounted on a pole, wall, or other structure.

Testing:

The Contractor shall test each installed CCTV Dome Camera Assembly. The test shall be conducted from the field cabinet using the standard communication protocol and a laptop computer. The Contractor shall verify that the camera can be fully exercised and moved through the entire limits of Pan, Tilt, Zoom, Focus and Iris adjustments, using both the manual control and presets. The Contractor shall maintain a log of all testing and the results. A representative of the Contractor and a representative of the Engineer shall sign the log as witnessing the results. Records of all tests shall be submitted to the Engineer prior to accepting the installation.

Method of Measurement:

The closed circuit television dome camera bid item will be measured for payment by the actual number of CCTV dome camera assemblies furnished, installed, tested, and accepted.

Basis of Payment:

Payment will be made at the contract unit price for each CLOSED CIRCUIT TELEVISION DOME CAMERA, IP BASED including all equipment, material, testing, documentation, and labor detailed in the contract documents for this bid item.

FIBER OPTIC CABLE 24 FIBERS, SINGLE MODE

Revised: March 22, 2018

This work shall be in accordance with Sections 801, 864, 871, and 1076 of the Standard Specifications except as modified herein.

Each cable shall be clearly labeled in each cabinet utilizing a durable computer-generated label. The label shall contain information regarding the locations to and from which the cable is installed. The Contractor shall provide numerical foot marking data at all handholes, vaults, cabinets, or enclosures to the Department.

12 of the fibers shall be terminated with LC connectors. All terminated fibers shall be clearly labeled pursuant to fiber color, termini locations, and buffer tubes.

Terminated fibers not being used shall be labeled "spare", and terminated fibers not attached to a distribution enclosure shall be capped and sealed, after testing.

All ancillary components required to complete the fiber optic cable plant, including but not limited to moisture and water sealants, cable caps, fan-out kits, weather-proof splice kits, boots, cable trays, splice enclosures, termination panels, etc., shall be supplied under this pay item and will not be paid for separately. These items shall be submitted to the Department for approval.

The fiber optic cable shall be clearly marked in each handhole, communication vault, or cabinet with a brightly colored (orange or yellow) weather resistant label securely attached to the cable. The Contractor shall provide and install simultaneously with each new fiber optic cable installation a stranded and insulated 12 AWG (EPR-TYPE RHW or THHN) tracer cable. There will be no additional compensation for this work.

Materials.

The single-mode fiber optic cable shall incorporate a loose buffer-tube design. The cable shall conform to the requirements of RUS 7 CFR1755.900 (PE-90) for a single, sheathed, and non-armored cable and shall be new, unused, and of current design and manufacture.

Experience Requirements.

Personnel involved in the installation, splicing and testing of the fiber optic cables shall meet the following requirements:

The Contractor and the Contractor's fiber optic installation personnel shall have a minimum of 3 years' experience in the installation of fiber optic cables, including splicing, terminating, and testing single mode fibers.

The Contractor and the Contractor's fiber optic installation personnel shall have successfully and completely installed two outdoor fiber optic cable systems in conduit where the systems have been continuously and fully operational for at least two years. The Contractor shall submit the names, addresses, and telephone numbers of personnel who can be contacted regarding the installed fiber optic systems, along with photographs and other supporting documents pursuant to these installations, and shall plan to demonstrate one of these systems to Department representatives and the Engineer.

Installers shall be familiar with the cable manufacturer's recommended procedures for installing the cable. This shall include knowledge of splicing procedures for and equipment being used on this project and knowledge of all hardware such as furcation kits and splice closures. The Contractor shall submit documented cabling, testing, splicing, furcation, and other installation procedures to the Engineer for purposes of inspection and acceptance of the Contractor's work.

Personnel involved in testing shall have been trained by the manufacturer of the fiber optic cable test equipment to be used. Proof of this training shall be submitted to the Engineer for approval. The Contractor shall also submit documentation of the testing procedures for approval by the Engineer.

Installation in Conduit.

The Contractor shall ensure that the maximum cable bending radius is not exceeded during any unreeling, pulling, or installation operation. Entry guide chutes shall be used to guide the cable into handhole conduit ports. Lubricating compound shall be used to minimize friction. Corner rollers (wheels), if used, shall not have effective radii greater than the maximum specified installation bending radius of the cable.

The pulling tension shall be continuously measured and shall not be allowed to exceed the maximum tension specified by the manufacturer of the cable. Fuse links and breaks can be used to ensure that the cable tensile strength is not exceeded. The pulling system shall have an audible alarm that sounds whenever a pre-selected tension level is reached. Tension levels shall be recorded continuously and shall be given to the Engineer upon request.

The cable shall be pulled into the conduit as a single component, absorbing the pulling force in all tension elements. The central strength member and aramid yarn shall be attached directly to the pulling eye during cable pulling. "Basket grip" or "Chinese-finger type" attachments, which only attach to the cable's outer jacket, shall not be permitted. A breakaway swivel, rated at 95% of the cable manufacturer's approved maximum tensile loading, shall be used on all pulls. When simultaneously pulling fiber optic cable with other cables, separate grooved rollers shall be used for each cable.

Splicing Requirements:

Splices shall be made at locations shown on the Plans. Any other splices shall be permitted only with the approval of the Engineer. The Contractor shall submit a splicing plan to the Department for approval.

Operation and Maintenance Documentation:

After the fiber optic cable plant has been installed, two (2) complete sets of Operation and Maintenance Documentation shall be provided. The documentation shall, as a minimum, include the following:

- Complete and accurate as-built diagrams showing the entire fiber optic cable plant including locations of all splices.
- Final copies of all approved test procedures.
- Complete performance data of the cable plant showing the losses at each terminal connector.
- Complete parts lists including names of vendors.
- Electronic Testing Files (OTDR traces, power meter data, etc.)

Testing Requirements:

Testing shall be in accordance with Article 801.13 except where modified by this special provision.

The Contractor shall submit detailed test procedures for approval by the Engineer. All continuous fiber runs shall be tested bi-directionally at both 1310 nm and 1550 nm with a power meter and optical source and OTDR. For testing, intermediate breakout fibers may be concatenated and tested end-to-end. Any discrepancies between the measured results and these specifications will be resolved to the satisfaction of the Engineer.

The Contractor shall provide the date, time and location of any tests required by this specification to the Engineer at least 5 days before performing the test. Upon completion of the cable installation, splicing, and termination, the Contractor shall test all fibers in each link for continuity and attenuation. The test procedure shall be as follows:

A Certified Technician utilizing an Optical Source/Power Meter and OTDR shall conduct the testing. The Technician is directed to conduct the test using the standard operating procedures defined by the manufacturer of the test equipment. All fibers installed shall be tested in both directions.

At the completion of the test, the Contractor shall provide two copies of documentation of the test results to the Engineer. The test documentation shall be bound and shall include the following:

Cable & Fiber Identification:

Cable ID
Cable Location - beginning and end
Fiber ID, including tube and fiber color
Operator Name
Date & Time
Setup Parameters
Wavelength
Pulse width (OTDR)
Refractory index (OTDR)
Range (OTDR)
Scale (OTDR)
Setup Option chosen to pass OTDR "dead zone"

Test Results:

Optical Source/Power Meter:

Total Attenuation (dB/km)

These results shall be provided in tabular form. The following shall be the criteria for the acceptance of the cable:

The test results shall show that the dB/km loss does not exceed +3% of the factory test or 1% of the cable's published production loss. However, no event shall exceed 0.10 dB. If any event is detected above 0.10 dB, the Contractor shall replace or repair the proposed fiber and/or fusion splice and connector including that event point.

The total dB loss of the cable, less events, shall not exceed the manufacturer's production specifications as follows: 0.5 dB/km at both 1310 and 1550 nm.

If the total loss exceeds these specifications, the Contractor shall replace or repair that cable run at the Contractor's expense including both labor and materials. Elevated attenuation due to exceeding the pulling tension during installation shall require the replacement of the cable run at the Contractor's expense, including labor and materials.

The Contractor shall label the destination of each trunk cable onto the cable in each handhole and termination panel.

Slack Storage of Fiber Optic Cables:

A part of this pay item, slack fiber shall be supplied as necessary to allow splicing the fiber optic cables in a controlled environment, such as a splicing van or tent. After splicing has been completed, the slack fiber shall be stored underground in handholes and in the traffic controller cabinets.

The amount of slack cable listed in Article 873.03 shall be revised as follows:

Location	Length of Slack Cable (Ft.)
Communications Vault	30.0
Double Handhole	30.0
Handhole	10.0
CCTV or Signal Cabinet	10.0
Junction Box	10.0
Equipment Cabinet	3.0

Basis of Payment:

This work will be paid for at the contract unit price per foot for FIBER OPTIC CABLE 24 FIBERS, SINGLE MODE and shall be payment in full for all labor, equipment, and material required to provide, install, terminate, splice, and test the fiber optic cable as described above.

CAMERA MOUNTING ASSEMBLY

Revised: March 22, 2018

This work shall consist of furnishing and installing a camera mounting assembly on the existing mast arm at Stevenson Drive / Dirksen Pkwy, as shown on the plan details.

The assembly consists of 30 feet of rigid aluminum pipe with applicable mast arm clamps, and a camera mounting bracket. The camera mounting bracket shall be affixed to the pipe with stainless steel $\frac{3}{4}$ " banding. The entire assembly shall be designed to support up to 75 lbs and withstand, without failure or deformation, sustained wind gusts up to 90 m.p.h., including a 30% gust factor.

Basis of Payment:

This work will be paid for at the contract unit price each for CAMERA MOUNTING ASSEMBLY, which price shall be payment in full for furnishing and installing the equipment specified and shown on the plans to the satisfaction of the Engineer.

ETHERNET SWITCH

Revised: March 22, 2018

Description:

This work shall consist of providing a hardened Ethernet Switch, including the applicable power supply. Two 10km single-mode fiber optic modules shall be supplied with each Ethernet switch.

The Contractor shall furnish the following equipment (MATERIAL ONLY) and deliver it to the Department:

There are no support requirements associated with this pay item.

The Ethernet Switch shall meet the following material specifications:

1. Overall switch station capacity and flexibility: Managed Gigabit Ethernet switch with 7 10/100BaseT(X) ports, and 3 10/100/1000BaseT(X) or 100/1000BaseSFP combo ports, with -40 to 75°C operating temperature. In addition, the switch shall include a SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, with -40 to 85°C operating temperature.
2. Cabling options: The switch shall be able to utilize a variety of connecting interfaces including 10/100Base(T)X, 10/100/1000Base(T)X, and 1000BaseSX/LX/LHX/ZX (LC connector).
3. Port configuration options: Port configurations shall be accessible via a standard web browser without requiring special vendor software. Port configuration changes shall be possible by personnel without special IT training. The configuration can be done via a console UI, telnet connection or command line interface. All T(X) ports shall provide cable autocross capability.

The Ethernet Switch shall be compatible with following network and software requirements:

1. Networking and Software: The Ethernet switches shall be IEEE802.3/802.3u/802.3ab/802.3z/802.3x/802.1D-2004/802.1w/802.1s/802.1Q/802.1p/802.1X/802.3ad compliant. The switch shall support the following standards and software interfaces:
 - a. Redundant fast/Gigabit Ethernet ring capability
 - b. IGMP Snooping and GMRP for filtering multicast traffic from industrial Ethernet protocols
 - c. Supports IEEE 802.1Q VLAN and GVRP protocol to ease network planning
 - d. Supports QoS-IEEE 802.1p/1Q and TOS/DiffServ to increase determinism
 - e. Supports 802.3ad, LACP for optimum bandwidth utilization
 - f. Supports TACACS+, SNMPv3, IEEE 802.1X, HTTPS, and SSH to enhance network security
 - g. Support EtherNet/IP, PROFINET, and Modbus/TCP protocols for device management and monitoring
 - h. SNMPv1/v2c/v3 for different levels of network management security
 - i. Bandwidth management to prevent unpredictable network status
 - j. Lock port for authorized MAC address access only
 - k. Port mirroring for online debugging
 - l. Automatic warning by exception through e-mail, relay output
 - m. Digital inputs to integrate a sensor and alarm with an IP network
 - n. Automatic recovery of connected device IP addresses
 - o. Line-swap fast recovery
2. Port Trunking for Flexible Network Connection: Maximum of four trunk groups for all Gigabit ports with maximum of 8 trunk ports for each trunk group shall be available. The user shall be able to either choose the type of the trunk group to be "Static" or "LACP."
3. IP Addressing Approach Options: IP addresses shall be set over the network using BootP/DHCP. The user shall have the capability to disable BootP or DHCP network based IP address changes. In addition, the switch shall support both a serial port and web page based manual (static) addressing approach.
4. Ethernet Packet Transfer Accuracy and Capacity: The switch shall be capable of forwarding valid Ethernet frames using the store and forward method or equivalent method and the address table shall have a maximum capacity of 8192 addresses.
5. Quality of Service Functions Enhance Determinism: The switches shall be able to read IEEE 802.1Q VLAN priority tags, and support a minimum of a low, normal, medium and high priority buffer. High priority messages shall be able to process before low priority messages. It also shall support QoS-IEEE 802.1p/1Q and TOS/DiffServ.
6. SNMP Traps: The switches shall support sending SNMP messages to maximum 2 SNMP "Trap" server and The SNMP traps IP addresses shall be settable through a web browser interface.
7. Multicast Message Control for Filtering Multicast Traffic: The switches shall be able to support IEEE 802.1D-1998 GMRP (GARP Multicast Registration Protocol), and IGMP (Internet Group Management Protocol).
8. Port Access Control Enhances User Authentication: The switches shall support IEEE 802.1X and Static Port Lock for Port-Base Access Control.
9. Accessible IP Settings: It shall allow the user to add or remove "Legal" remote host IP addresses to prevent unauthorized access. Access to switch shall be controlled by IP address. That is, if a host's IP address is in the accessible IP table, then the host shall be allowed access to the switch.

10. Additional network and software requirements shall be met:
 - a. IEEE 802.1X, HTTPS, and SSH to Enhance Network Security
 - b. Bandwidth Management Prevents Unpredictable Network Status
 - c. Port mirroring for Online Debugging
 - d. Automatic Warning by Exception through Email and Relay Output
 - e. Digital Inputs to Integrate Sensors and Alarms with IP Networks
 - f. Automatic Recovery of Connected Device's IP Addresses
 - g. Line-swap Fast Recovery
 - h. Support EDS-SNMP OPC Server Pro
 - i. Software based IEEE 1588 PTP (Precision Time Protocol) for precise time synchronization of networks
 - j. DHCP Option 82 for IP address assignment with different policies
 - k. Modbus/TCP / EtherNet/IP / PROFINET industrial Ethernet protocols supported
 - l. Supports LLDP (Link Layer Discovery Protocol)
 - m. Turbo Ring™ and Turbo Chain™ (< 20ms recovery time for fast Ethernet ports and < 50 ms recovery time for Gigabit Ethernet ports at full load) and STP/RSTP (IEEE 802.1w/D)

The Ethernet Switch shall meet the following general installation requirements:

1. Mounting: The switch shall be DIN-Rail or wall mountable
2. Power supply: Low voltage ranges: 12/24/48 VDC (9.6-60 VDC). In addition, a provision shall be made such that the loss of a power supply may be user configurable to trigger a hardware (i.e. relay contact), SNMP, e-mail and web page alarms.
3. Environmental specifications: Temperature & humidity - The switch shall have operating temperature ranges of -10 to 60°C or -40 to 75°C. In addition, the switch shall be rated to withstand a maximum continuous operating humidity of 95% without condensation.
4. Electrical Noise Immunity: The switch will conform to the IEC61000-4-2 to 4-8 series of noise specifications as specified below:
 - IEC 61000-4-2 Electrostatic Discharge: Criterion A
 - IEC 61000-4-3 Radiated Noise Immunity: Criterion A
 - IEC 61000-4-4 Fast Transient (Burst) Withstand: Criterion A
 - IEC 61000-4-5 Surge Voltage: Criterion A
 - IEC 61000-4-6 Conducted Noise Interference: Criterion A
 - IEC 61000-4-8 Electromagnetic Field withstand: Criterion A
 - IEC 61000-4-12
 - IEC 61000-4-29
5. Shock & Vibration: The operating shock rating shall conform to IEC60068-2-27 and withstand a 15 g, 11 ms duration, and 18 shocks. In addition, the operating vibration spec shall conform to IEC60068-2-6 (Criterion 3) at 1 mm, 2 Hz - 13.2 Hz, 90 min.; 0.7g, 13.2 Hz - 100 Hz, 90 min.; 3.5 mm, 3 Hz - 9 Hz, 10 cycles, 1 octave/min.; 1g, 9 Hz - 150 Hz, 10 cycles, 1 octave/min.
6. Switch shall be compliant with IEC 62443-4-2.

The Ethernet Switch shall meet the following hardware based diagnostics and user interfaces requirements:

1. Alarm contact: The switch shall contain an alarm contact that can be configured via standard web browser to annunciate the drop out of either or both power supply inputs and/or to annunciate the active link status of any combination of ports. A Fault LED will be provided to indicate the status of the alarm contact.
2. LED Indications
3. Diagnostic display for internal switch status
4. Serial Port: The switch shall include a USB serial port that can be accessed by computers with hyper terminal or equivalent capability. The serial console connection manner shall require a short USB cable applied to connect the switch to a PC's USB port.

The Ethernet switch shall meet the following security requirements:

1. Port Disable: unused ports shall be able to be disabled to prevent unauthorized access.
2. It shall support IEEE 802.1X and SSL to enhance network security.
3. Switch configuration password protection
4. https/SSL

The Ethernet switch shall have following communication redundancy:

1. The switch shall be able to detect and compensate for the failure of another switch, cable disruption or hardware failure of one or more ports.
2. IEEE standards based redundancy, including IEEE 802.1D/W spanning tree Turbo Ring: Gigabit Ethernet redundant ring capability (Turbo Ring V2: recovery time <20ms for fast Ethernet ports; < 50 ms for Gigabit Ethernet ports). Ring coupling function to integrate different Turbo Ring for distributed application
3. Turbo Chain function for a multiple-ring architecture (recovery time <20ms for fast Ethernet ports; <50 ms for Gigabit Ethernet ports)

The Ethernet switch shall be compatible with following software suite that assists with installation, operation, maintenance, and diagnostics of the existing network:

1. The switch must be compliant with a mass configuration tool:
 - a. The tool must contain a security wizard for convenient setup of security-related parameters.
 - b. The tool must allow for topology analysis to eliminate manual setting errors
 - c. The tool must contain a configuration overview for efficient management
2. The switch shall be compliant with network management software (NMS).
 - a. The NMS must allow for auto-discovery of network devices and physical connections.
 - b. The NMS must allow for event playback for quick troubleshooting
 - c. The NMS must allow for color-coded VLAN/IGMP groups and other visualized network data.
 - d. The NMS must allow for a security view for the security status of network devices.
 - e. The NMS must support a mobile app for remote monitoring and notification.

3. The switch must be compliant with a stand-alone data collection tool to take network snapshots for quick troubleshooting.
 - a. The collection tool must allow for the ability to compare network and device data and then highlight the differences.

Construction:

The Contractor shall deliver the Ethernet Switches, power supplies, and fiber optic modules, to the District 6 Bureau of Operations, Traffic Signal Section, 650 North Lincoln Avenue – Bldg. E, Springfield, IL. It is the Contractor's responsibility to coordinate the delivery location and time with District 6 Operations.

Phone Numbers: 217-558-6718 (Stan Clow) or 217-558-6695 (Bill Shaw)

Basis of Payment:

This work will be paid for at the contract unit price per each for ETHERNET SWITCH which price shall be payment in full for all labor, materials, and equipment required to provide the equipment specified above and deliver it to the Department.

COBALT CONTROLLER

Revised: March 22, 2018

Description:

This work shall consist of furnishing a shelf-mounted, two through sixteen-phase, fully-actuated, digital, solid-state traffic controller.

Controller:

The controller shall be an Econolite Cobalt C traffic controller for integration into the existing District 6 ITS/ATMS network and shall be fully compatible with the District's Centracs ATMS. The Department will program the controllers.

Description:

The Contractor shall furnish the following equipment (MATERIAL ONLY) and deliver it to the Department:

There are no support requirements associated with this pay item.

A shelf-mounted, two through sixteen phase, fully-actuated, digital, solid-state traffic controller. The controller shall be configurable to meet, as a minimum, all applicable sections of the NEMA Standards Publications for TS2 and NTCIP 1202 and ATC standard 6.10. Where differences occur, these specifications shall govern. Controller versions shall be available to comply with NEMA TS2 Types 1 and 2. Type 2 versions of the controller shall be capable of operating as a Type 1 controller.

The controller shall require no more than 7" shelf depth. External dimensions shall not be larger than 8.5" x 15.2 1/4" x 6.375" (H x W x D).

The top and bottom of the chassis shall be made from extruded aluminum and include an integral handle on the back for easy transport. The sides shall be constructed of injection-molded polycarbonate. The model, serial number, and program information shall be displayed on the outside of the controller.

The electronics shall be modular in design and shall consist of vertical circuit boards. Horizontal circuit boards shall not be acceptable. In the interest of reliability, no sockets shall be used for any electronic device. All devices shall be directly soldered to the printed circuit board. Surface mount parts shall be used for the majority of the electronic components in the controller.

A built-in, high-efficiency switching power supply shall generate the primary, +5VDC internal voltage, an isolated +24 VDC for internal and external use, VSTANDBY, LINESYNC, POWERUP and POWERDOWN signals. All voltages shall be regulated. The 120 or 220VAC fuse shall be mounted on the front of the controller. Protection for the 24VDC supply shall be provided by a re-settable electronic fuse. All printed circuit boards shall meet the requirements of the NEMA Standard plus the following requirements to enhance reliability. Both sides of the printed circuit board shall be covered with a solder mask material. The circuit reference designation for all components and the polarity of all polarized capacitors and two-lead diodes shall be clearly marked adjacent to the component. Pin 1 for all integrated circuit packages shall be designated on all printed circuit boards. All printed circuit board assemblies shall be coated on both sides with a clear moisture-proof and fungus-proof sealant. Timing of the controller traffic application shall be derived from the AC power line.

To facilitate the transfer of user-programmed data from one controller to another, a Datakey receptacle for using a separate 2070-style, serial flash memory device shall be an available hardware option. In addition two USB sockets and one SD Card socket shall be provided for memory devices that can be used for data transfer. These data transfer devices shall be easily removable and directly accessible from the outside of the controller. The controller will not require this Datakey, USB memory thumb drive or SD Card to be present for proper operation. All controller software shall be stored in Flash Memory devices. The controller software shall be easily updated without the removal of any memory device from the controller. The use of removable PROMS or EPROMS from the controller shall not be acceptable. The controller shall include an option that allows updating software using a Windows based computer, a USB memory thumb drive or an SD card.

The controller shall include an ATC engine board compliant to ATC standard 5.2b and proposed version 6.10. The engine board shall include a PowerPC 83XX family processor with QUICC engine.

The engine board shall have a minimum of the following memory:

128Mbytes of DDR2 DRAM memory used for application and OS program execution
64 Mbytes of FLASH memory used for storage of OS Software and user applications
2MB of SRAM memory used for non-volatile parameter storage

The engine board shall provide the seven ATC serial ports, Ethernet, USB and all other control signal required by ATC standard. The operating system shall be Linux 2.6.35 or later

Program values shall be entered through the keypad. Menu selections shall be entered by entering the numerical value of the desired option.

The front of the controller shall consist of a panel for the display, keyboard and connectors for all necessary user connections. The display shall be a 7", TFT (Thin Film Transistor) LCD (Liquid Crystal Display) with high brightness. It shall be readable in direct sunlight. The display shall perform over the NEMA temperature range and shall have a resolution of 800 X 480. The luminous intensity shall be a minimum of 800 nits. The display shall not be affected by condensation or water drops.

Front-panel operator inputs shall be via clearly labeled elastomeric keypad. These shall include a 10-digit numeric keypad, Main and Sub keys, toggle keys, special function and enter keys, six function keys, status and help keys and a large, four-direction cursor control key.

The front panel shall include a built in speaker for enhanced controller audio feedback.

The front panel shall include a tri-color status LED.

The controller shall have the capability of supporting Ethernet communications, using TCP/IP communications protocols. The controller shall provide four front-panel Ethernet ports. Two of the ports shall be connected to Ethernet switch ENET1 and the other two shall be connected to Ethernet switch ENET2.

The controller shall provide two USB 2.0 ports. USB ports shall be used for USB thumb drives to update software, upload or download configuration or uploading logged data.

All non-optional interface connectors shall be accessible from the front of the controller in the NEMA Configured Controller models. Configurations shall be offered to accommodate different versions, as follows:

- NEMA TS2 Type 1
- NEMA TS2 Type 2
- NEMA TS1

The D connector shall be compatible with the Econolite Model ASC/2, ASC/2S, and ASC/3 D connectors.

To facilitate special applications the controller shall have the capability of assignment of any input or output function to any input or output pin respectively on the interface connectors, with the exception of Flashing Monitor, Controller Voltage Monitor, AC+, AC-, Chassis Ground, 24VDC, Logic Ground and TS2 Mode bits.

The controller shall as a minimum have the following communications ports:

- Port 1 SDLC for communications to other devices in the cabinet
- Port 2 serial port for systems communications
- Console serial port for local communications

An optional telemetry module shall utilize TDM/FSK data transmission at 1200 baud or 9600 baud over two pairs of wires. This module shall include the Econolite 25-pin D-sub connector.

All electronic modules including the power supply shall be easily removable from the controller using a screwdriver as the only tool. All power and signal connections to the circuit boards shall be via plug-in connectors.

A Datakey and receptacle shall be available for use as a database storage device (backup) or as a database transfer module. It shall be capable of storing a minimum 2MB of data. The Datakey shall be hot swappable, so that it can be inserted and removed without powering down the controller. The Datakey shall be capable of storing the entire controller database and shall retain the information without use of battery or capacitor backup. The controller shall not require this key to be present during normal operation. If the Datakey is present the controller shall automatically backup the database to the data key 20 minutes following the last data change.

The controller shall provide support one ATC-2070 Type communications slot that can be added, if needed, providing access to ATC communications ports

Construction:

The Contractor shall deliver the controllers to the District 6 Bureau of Operations, Traffic Signal Section, 650 North Lincoln Avenue – Bldg. E, Springfield, IL. It is the Contractor's responsibility to coordinate the delivery location and time with District 6 Operations.

Phone Numbers: 217-558-6718 (Stan Clow) or 217-558-6695 (Bill Shaw)

Basis of Payment:

This work will be paid for at the contract unit price per each for COBALT CONTROLLER which price shall be payment in full for all labor, materials, and equipment required to provide the equipment specified above and deliver it to the Department.

FIBER OPTIC INTERCONNECT CABINET

Revised: March 22, 2018

Description:

This work shall consist of furnishing and installing an Econolite Hybrid Rack Mounted Cabinet assembly for 333SD TYPE CABINET, or equivalent, to replace the existing cabinet at 11th/Madison as indicated in the Plans and in coordination with the REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT special provision.

Construction:

After removal of the existing cabinet, the existing 36" x 46" foundation will need to be drilled and tapped to provide for the secure mounting of this new cabinet.

Basis of Payment:

This work will be paid for at the contract unit price each for FIBER OPTIC INTERCONNECT CABINET, which price shall be payment in full for furnishing and installing the equipment specified and shown on the Plans to the satisfaction of the Engineer. All materials required to complete this installation shall be incidental to this provision.

REMOVE EXISTING JUNCTION BOX

Revised: March 22, 2018

Description:

This work shall consist of removing existing junction boxes at the locations indicated on the Plans and in accordance with Article 895 of the Standard Specifications.

Construction:

At locations where the removed junction boxes are not being replaced, the entering and exiting conduits shall be connected in the most direct and secure path possible using conduits and fittings of like material and size to the satisfaction of the Engineer. All materials and labor required to accomplish these conduit connections shall be incidental to this provision.

Basis of Payment:

This work will be paid for at the contract unit price each for REMOVE EXISTING JUNCTION BOX, which price shall be payment in full removal of junction boxes or full removal of junction boxes including connection of entry and exit conduits as indicated on the plans to the satisfaction of the Engineer. All materials required to complete this installation shall be incidental to this provision.

COMPLETION DATE

All work on this project shall be completed by July 31, 2019.

COMPENSABLE DELAY COSTS (BDE)

Effective: June 2, 2017

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 working day contracts the payment will be made according to Article 109.04. For completion date contracts, an adjustment will be determined as follows.

Extended Traffic Control occurs between April 1 and November 30:

$$\text{ETCP Adjustment (\$)} = \text{TE} \times (\% / 100 \times \text{CUP} / \text{OCT})$$

Extended Traffic Control occurs between December 1 and March 31:

$$\text{ETCP Adjustment (\$)} = \text{TE} \times 1.5 (\% / 100 \times \text{CUP} / \text{OCT})$$

Where: TE = Duration of approved time extension in calendar days.

% = Percent maintenance for the traffic control, % (see table below).

CUP = Contract unit price for the traffic control pay item in place during the delay.

OCT = Original contract time in calendar days.

Original Contract Amount	Percent Maintenance
Up to \$2,000,000	65%
\$2,000,000 to \$10,000,000	75%
\$10,000,000 to \$20,000,000	85%
Over \$20,000,000	90%

When an ETCP 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 (DBE)

Effective: September 1, 2000

Revised: April 2, 2018

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 that 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 that 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 that, in the absence of unlawful discrimination, and in an arena of fair and open competition, DBE companies can be expected to perform **3.00%** 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 that enough DBE participation has been obtained to meet the goal or,
- (b) The bidder documents that 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 required prior to the award of the contract and the failure of the low bidder to comply will render the bid not responsive.

In order to assure the timely award of the contract, the low bidder shall submit:

- (a) The bidder shall submit a DBE Utilization Plan on completed Department forms SBE 2025 and 2026.
 - (1) The final Utilization Plan must be submitted within five calendar days after the date of the letting in accordance with subsection (a)(2) of Bidding Procedures herein.

- (2) To meet the five day requirement, the bidder may send the Utilization Plan electronically by scanning and sending to DOT.DB.E.UP@illinois.gov or faxing to (217) 785-1524. The subject line must include the bid Item Number and the Letting date. The Utilization Plan should be sent as one .pdf file, rather than multiple files and emails for the same Item Number. It is the responsibility of the bidder to obtain confirmation of email or fax delivery.

Alternatively, the Utilization Plan may be sent by certified mail or delivery service within the five calendar day period. If a question arises concerning the mailing date of a Utilization Plan, the mailing date will be established by the U.S. Postal Service postmark on the certified mail receipt from the U.S. Postal Service or the receipt issued by a delivery service when the Utilization Plan is received by the Department. It is the responsibility of the bidder to ensure the postmark or receipt date is affixed within the five days if the bidder intends to rely upon mailing or delivery to satisfy the submission day requirement. The Utilization Plan is to be submitted to:

Illinois Department of Transportation
Bureau of Small Business Enterprises
Contract Compliance Section
2300 South Dirksen Parkway, Room 319
Springfield, Illinois 62764

- The Department will not accept a Utilization Plan if it does not meet the five day submittal requirement and the bid will be declared not responsive. In the event the bid is declared not responsive due to a failure to submit a Utilization Plan or failure to comply with the bidding procedures set forth herein, 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. The Department reserves the right to invite any other bidder to submit a Utilization Plan at any time for award consideration.
- (b) The Utilization Plan shall indicate that the bidder either has obtained sufficient DBE participation commitments to meet the contract goal or has not obtained enough DBE participation commitments in spite of a good faith effort to meet the goal. The Utilization Plan shall further provide the name, telephone number, and telefax number of a responsible official of the bidder designated for purposes of notification of Utilization Plan approval or disapproval under the procedures of this Special Provision.
- (c) The Utilization Plan shall include a DBE Participation Commitment Statement, Department form SBE 2025, for each DBE proposed for the performance of work to achieve the contract goal. For bidding purposes, submission of the completed SBE 2025 forms, signed by the DBEs and scanned or faxed to the bidder will be acceptable as long as the original is available and provided upon request. All elements of information indicated on the said form shall be provided, including but not limited to the following:
- (1) The names and addresses of DBE firms that will participate in the contract;
 - (2) A description, including pay item numbers, of the work each DBE will perform;

- (3) The dollar amount of the participation of each DBE firm participating. The dollar amount of participation for identified work shall specifically state the quantity, unit price, and total subcontract price for the work to be completed by the DBE. If partial pay items are to be performed by the DBE, indicate the portion of each item, a unit price where appropriate and the subcontract price amount;
- (4) DBE Participation Commitment Statements, form SBE 2025, signed by the bidder and each participating DBE firm documenting the commitment to use the DBE subcontractors whose participation is submitted to meet the contract goal;
- (5) If the bidder is a joint venture comprised of DBE companies and non-DBE companies, the Utilization Plan must also include a clear identification of the portion of the work to be performed by the DBE partner(s); and,
- (6) If the contract goal is not met, evidence of good faith efforts; 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.

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan submitted by the apparent successful bidder is approved. All information submitted by the bidder must be complete, accurate and adequately document that enough DBE participation has been obtained or document that 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. The Utilization Plan will not be approved by the Department if the Utilization Plan does not document sufficient DBE participation to meet the contract goal unless the apparent successful bidder documented in the Utilization Plan that it made a good faith effort to meet the goal. This means that 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 that 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 prime 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 subsection (c)(6) of 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 that the apparent successful 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 that it is otherwise eligible for award. If the Department determines that 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 shall include a statement of reasons for the 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 in order to cure the deficiency.
- (c) The bidder may request administrative reconsideration of a determination adverse to the bidder within the five working days after the receipt of the notification date of the determination by delivering the request to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217) 785-1524). Deposit of the request in the United States mail on or before the fifth business day shall not be deemed delivery. The determination shall become final if a request is not made and delivered. 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 forwarded to the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person in order 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 prime 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 submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764. Telephone number (217) 785-4611. Telefax number (217) 785-1524.
- (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, then a new Request for Approval of Subcontractor shall not be required. However, the Contractor must document efforts to assure that 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 DBE subcontracts to IDOT 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) That 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) That the DBE is aware that 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) That 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 prime contractor;
- (3) The listed DBE subcontractor fails or refuses to meet the prime 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) You have determined that the listed DBE subcontractor is not a responsible contractor;
- (7) The listed DBE subcontractor voluntarily withdraws from the projects and provides to you written notice 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 prime Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the prime Contractor can self-perform the work for which the DBE contractor was engaged or so that the prime 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 shall 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 thirty 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 that 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.

EQUIPMENT PARKING AND STORAGE (BDE)

Effective: November 1, 2017

Replace the first paragraph of Article 701.11 of the Standard Specifications with the following.

"701.11 Equipment Parking and Storage. During working hours, all vehicles and/or nonoperating equipment which are parked, two hours or less, shall be parked at least 8 ft (2.5 m) from the open traffic lane. For other periods of time during working and for all nonworking hours, all vehicles, materials, and equipment shall be parked or stored as follows.

- (a) When the project has adequate right-of-way, vehicles, materials, and equipment shall be located a minimum of 30 ft (9 m) from the pavement.
- (b) When adequate right-of-way does not exist, vehicles, materials, and equipment shall be located a minimum of 15 ft (4.5 m) from the edge of any pavement open to traffic.

(c) Behind temporary concrete barrier, vehicles, materials, and equipment shall be located a minimum of 24 in. (600 mm) behind free standing barrier or a minimum of 6 in. (150 mm) behind barrier that is either pinned or restrained according to Article 704.04. The 24 in. or 6 in. measurement shall be from the base of the non-traffic side of the barrier.

(d) Behind other man-made or natural barriers meeting the approval of the Engineer.”

LIGHTS ON BARRICADES (BDE)

Effective: January 1, 2018

Revise Article 701.16 of the Standard Specifications to read:

“**701.16 Lights.** Lights shall be used on devices as required in the plans, the traffic control plan, and the following table.

Circumstance	Lights Required
Daylight operations	None
First two warning signs on each approach to the work involving a nighttime lane closure and “ROUGH GROOVED SURFACE” (W8-I107) signs	Flashing mono-directional lights
Devices delineating isolated obstacles, excavations, or hazards at night (Does not apply to patching)	Flashing bi-directional lights
Devices delineating obstacles, excavations, or hazards exceeding 100 ft (30 m) in length at night (Does not apply to widening)	Steady burn bi-directional lights
Channelizing devices for nighttime lane closures on two-lane roads	None
Channelizing devices for nighttime lane closures on multi-lane roads	None
Channelizing devices for nighttime lane closures on multi-lane roads separating opposing directions of traffic	None
Channelizing devices for nighttime along lane shifts on multilane roads	Steady burn mono-directional lights
Channelizing devices for night time along lane shifts on two lane roads	Steady burn bi-directional lights
Devices in nighttime lane closure tapers on Standards 701316 and 701321	Steady burn bi-directional lights
Devices in nighttime lane closure tapers	Steady burn mono-directional lights
Devices delineating a widening trench	None
Devices delineating patches at night on roadways with an ADT less than 25,000	None
Devices delineating patches at night on roadways with an ADT of 25,000 or more	None

Batteries for the lights shall be replaced on a group basis at such times as may be specified by the Engineer.”

Delete the fourth sentence of the first paragraph of Article 701.17(c)(2) of the Standard Specifications.

Revise the first paragraph of Article 603.07 of the Standard Specifications to read:

“**603.07 Protection Under Traffic.** After the casting has been adjusted and Class SI concrete has been placed, the work shall be protected by a barricade for at least 72 hours.”

PAYMENTS TO SUBCONTRACTORS (BDE)

Effective: November 2, 2017

Add the following to the end of the fourth paragraph of Article 109.11 of the Standard Specifications:

“If reasonable cause is asserted, written notice shall be provided to the applicable subcontractor and/or material supplier and the Engineer within five days of the Contractor receiving payment. The written notice shall identify the contract number, the subcontract or material purchase agreement, a detailed reason for refusal, the value of payment being withheld, and the specific remedial actions required of the subcontractor and/or material supplier so that payment can be made.”

PROGRESS PAYMENTS (BDE)

Effective: November 2, 2013

Revise Article 109.07(a) of the Standard Specifications to read:

“(a) Progress Payments. At least once each month, the Engineer will make a written estimate of the quantity of work performed in accordance with the contract, and the value thereof at the contract unit prices. The amount of the estimate approved as due for payment will be vouchered by the Department and presented to the State Comptroller for payment. No amount less than \$1000.00 will be approved for payment other than the final payment.

Progress payments may be reduced by liens filed pursuant to Section 23(c) of the Mechanics' Lien Act, 770 ILCS 60/23(c).

If a Contractor or subcontractor has defaulted on a loan issued under the Department's Disadvantaged Business Revolving Loan Program (20 ILCS 2705/2705-610), progress payments may be reduced pursuant to the terms of that loan agreement. In such cases, the amount of the estimate related to the work performed by the Contractor or subcontractor, in default of the loan agreement, will be offset, in whole or in part, and vouchered by the Department to the Working Capital Revolving Fund or designated escrow account. Payment for the work shall be considered as issued and received by the Contractor or subcontractor on the date of the offset voucher. Further, the amount of the offset voucher shall be a credit against the Department's obligation to pay the Contractor, the Contractor's obligation to pay the subcontractor, and the Contractor's or subcontractor's total loan indebtedness to the Department. The offset shall continue until such time as the entire loan indebtedness is satisfied. The Department will notify the Contractor and Fund Control Agent in a timely manner of such offset. The Contractor or subcontractor shall not be entitled to additional payment in consideration of the offset.

The failure to perform any requirement, obligation, or term of the contract by the Contractor shall be reason for withholding any progress payments until the Department determines that compliance has been achieved.”

RAILROAD PROTECTIVE LIABILITY INSURANCE (5 AND 10) (BDE)

Effective: January 1, 2006

Description. Railroad Protective Liability and Property Damage Liability Insurance shall be carried according to Article 107.11 of the Standard Specifications, except the limits shall be a minimum of \$5,000,000 combined single limit per occurrence for bodily injury liability and property damage liability with an aggregate limit of \$10,000,000 over the life of the policy. A separate policy is required for each railroad unless otherwise noted.

NAMED INSURED & ADDRESS	NUMBER & SPEED OF PASSENGER TRAINS	NUMBER & SPEED OF FREIGHT TRAINS
Illinois Central Railroad 17641 South Ashland Ave. Homewood, IL 60430	-0- (*RR tracks are under the subject bridge)	10 per day at 25 mph
DOT/AAR No.: 313 631S* RR Division: Gulf	RR Mile Post: 192.32 RR Sub-Division: Gilman	
For Freight/Passenger Information Contact: Paul Chojenski For Insurance Information Contact: Paul Chojenski	Phone: (708) 332-3557 Phone: (708) 332-3557	

Approval of Insurance. The original and one certified copy of each required policy shall be submitted to the following address for approval:

Illinois Department of Transportation
Bureau of Design and Environment
2300 South Dirksen Parkway, Room 326
Springfield, Illinois 62764

The Contractor will be advised when the Department has received approval of the insurance from the railroad(s). Before any work begins on railroad right-of-way, the Contractor shall submit to the Engineer evidence that the required insurance has been approved by the railroad(s). The Contractor shall also provide the Engineer with the expiration date of each required policy.

Basis of Payment. Providing Railroad Protective Liability and Property Damage Liability Insurance will be paid for at the contract unit price per Lump Sum for RAILROAD PROTECTIVE LIABILITY INSURANCE.

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

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

“This mobilization payment shall be made at least 14 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%”

WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012

Revised: April 2, 2015

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 Monday through Sunday 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.

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.