

26

April 28, 2023 Letting

Notice to Bidders, Specifications and Proposal



**Illinois Department
of Transportation**

**Contract No. 66N21
Various Counties
Section D3 LIGHTING REPAIR 2023-2
Various Routes
District 3 Construction Funds**

Prepared by

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Checked by

(Printed by authority of the State of Illinois)



NOTICE TO BIDDERS

- 1. TIME AND PLACE OF OPENING BIDS.** Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). All bids must be submitted to the iCX system prior to 12:00 p.m. April 28, 2023 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. 66N21
Various Counties
Section D3 LIGHTING REPAIR 2023-2
Various Routes
District 3 Construction Funds**

Repairing and maintaining traffic signals, flashing beacons, and roadway lighting in various counties in District 3.

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

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

By Order of the
Illinois Department of Transportation

Omer Osman,
Secretary

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2023

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

ERRATA Standard Specifications for Road and Bridge Construction (Adopted 1-1-22) (Revised 1-1-23)

SUPPLEMENTAL SPECIFICATIONS

<u>Std. Spec. Sec.</u>	<u>Page No.</u>
202 Earth and Rock Excavation	1
204 Borrow and Furnished Excavation	2
207 Porous Granular Embankment	3
211 Topsoil and Compost	4
407 Hot-Mix Asphalt Pavement (Full-Depth)	5
420 Portland Cement Concrete Pavement	6
502 Excavation for Structures	7
509 Metal Railings	8
540 Box Culverts	9
542 Pipe Culverts	29
586 Granular Backfill for Structures	34
644 High Tension Cable Median Barrier	35
782 Reflectors	36
801 Electrical Requirements	38
821 Roadway Luminaires	40
1003 Fine Aggregates	41
1004 Coarse Aggregates	42
1020 Portland Cement Concrete	43
1030 Hot-Mix Asphalt	44
1067 Luminaire	45
1097 Reflectors	52

RECURRING SPECIAL PROVISIONS

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

<u>CHECK SHEET #</u>		<u>PAGE NO.</u>
1	Additional State Requirements for Federal-Aid Construction Contracts	53
2	Subletting of Contracts (Federal-Aid Contracts)	56
3	X EEO	57
4	X Specific EEO Responsibilities Non Federal-Aid Contracts	67
5	X Required Provisions - State Contracts	72
6	Asbestos Bearing Pad Removal	78
7	Asbestos Waterproofing Membrane and Asbestos HMA Surface Removal	79
8	Temporary Stream Crossings and In-Stream Work Pads	80
9	Construction Layout Stakes	81
10	Use of Geotextile Fabric for Railroad Crossing	84
11	Subsealing of Concrete Pavements	86
12	Hot-Mix Asphalt Surface Correction	90
13	Pavement and Shoulder Resurfacing	92
14	Patching with Hot-Mix Asphalt Overlay Removal	93
15	Polymer Concrete	95
16	Reserved	97
17	Bicycle Racks	98
18	Temporary Portable Bridge Traffic Signals	100
19	Nighttime Inspection of Roadway Lighting	102
20	English Substitution of Metric Bolts	103
21	Calcium Chloride Accelerator for Portland Cement Concrete	104
22	Quality Control of Concrete Mixtures at the Plant	105
23	Quality Control/Quality Assurance of Concrete Mixtures	113
24	Reserved	129
25	Reserved	130
26	Temporary Raised Pavement Markers	131
27	Restoring Bridge Approach Pavements Using High-Density Foam	132
28	Portland Cement Concrete Inlay or Overlay	135
29	Portland Cement Concrete Partial Depth Hot-Mix Asphalt Patching	139
30	Longitudinal Joint and Crack Patching	142
31	Concrete Mix Design – Department Provided	144
32	Station Numbers in Pavements or Overlays	145

TABLE OF CONTENTS

LOCATION OF PROJECT	1
DESCRIPTION OF PROJECT	1
COMPLETION DATE.....	4
TRAFFIC CONTROL PLAN	4
PAYMENT FOR DRIVING TIME.....	5
PAYMENT OF BILLS ON BEHALF OF THE DEPARTMENT	5
SCOPE OF WORK	5
WORK ORDERS	6
CONTRACTOR'S REPRESENTATIVE.....	7
QUANTITIES	7
PARTS AND MATERIALS	8
CONTRACTOR COMMUNICATION	8
LABOR, TOOLS, AND EQUIPMENT	8
EQUIPMENT RENTAL.....	10
TEST EQUIPMENT	10
CONTRACTOR WORK FORCE REQUIREMENTS	10
CONTROL OF WORK	11
CONTRACTOR RESPONSE AND WORK ORDER COMPLETION TIMES.....	11
FAILURE TO MEET RESPONSE TIME.....	13
REPAIR PARTS, MATERIALS, AND COMPONENTS	13
PAYMENT AND INVOICES	14
SUBCONTRACTOR PAYMENTS.....	14
KNOCKDOWN DOCUMENTATION.....	15
CONTRACTOR INVOICING REQUIREMENTS.....	15
LED MODULE AND HPS LAMP RECYCLING.....	16
TRAFFIC SIGNAL LED MODULE SPECIFICATIONS	16
SIGNAL HEAD, LED.....	19
TRAFFIC SIGNAL BACKPLATE, RETROREFLECTIVE.....	20
TRAFFIC SIGNAL POST, GALVANIZED STEEL.....	21
TRAFFIC SIGNAL BATTERY BACKUP SYSTEM	21
CLOSED CIRCUIT TELEVISION CAMERA.....	29
FURNISH AND INSTALL METAL SCREEN.....	34
SIGNAL VISOR, TUNNEL TYPE, 12 INCH.....	35

KTQ 5A FUSE.....	35
BUCHANAN FUSEHOLDER KIT	36
BREAKAWAY DEVICE, COUPLING WITH STAINLESS STEEL SCREEN	36
BREAKAWAY DEVICE, TRANSFORMER BASE, 15 INCH BOLT CIRCLE.....	37
LUMINAIRE, LED, ROADWAY, OUTPUT DESIGNATION G.....	37
LUMINAIRE, LED, ROADWAY, OUTPUT DESIGNATION H.....	38
HANDHOLE, COVER ONLY (NEENAH R-6660-JP).....	38
LOAD SWITCH, NEMA.....	39
REMOVE AND REPLACE BATTERIES FOR UNINTERRUPTABLE POWER SUPPLY, EXTENDED	40
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION.....	41
TRAFFIC SIGNAL MAINTENANCE CHECKSHEET	42
MAINTENANCE OF EXISTING FLASHING BEACON INSTALLATION	44
FLASHING BEACON MAINTENANCE CHECKSHEET	45
MAINTENANCE OF EXISTING HIGH MAST LIGHT TOWERS	47
AUTOMATED FLAGGER ASSISTANCE DEVICES (BDE)	53
COMPENSABLE DELAY COSTS (BDE)	54
DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)	57
ILLINOIS WORKS APPRENTICESHIP INITIATIVE – STATE FUNDED CONTRACTS (BDE)..	65
SPEED DISPLAY TRAILER (BDE)	65
SUBCONTRACTOR AND DBE PAYMENT REPORTING (BDE).....	67
SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE).....	67
SUBMISSION OF PAYROLL RECORDS (BDE).....	68
TRAFFIC SPOTTERS (BDE).....	69
VEHICLE AND EQUIPMENT WARNING LIGHTS (BDE).....	70
WEEKLY DBE TRUCKING REPORTS (BDE).....	70
WORK ZONE TRAFFIC CONTROL DEVICES (BDE).....	71

STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted January 1, 2022, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein which apply to and govern the construction of Various Routes, Section D3 Lighting Repairs 2023-2, Various Counties, Contract No. 66N21 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 to be done under this contract will be performed in Ford, Grundy, Iroquois, Kankakee, & Livingston Counties.

DESCRIPTION OF PROJECT

The intent of this project is to repair and maintain traffic signals, flashing beacons, roadway lighting, speed display signs, and other electrical services that are requested at the locations described by work orders issued from the Illinois Department of Transportation for the period of July 1, 2023 to June 30, 2025.

The Illinois Department of Transportation contact is the District 3 Traffic Signals Section at 815- 434- 6131.

The Department reserves the right to perform any repairs with its own forces.

The current locations in Ford County are:

Flashing Beacon Locations.

- Location 57F – IL 116 & IL 115 (Overhead beacon)
- Location 59F – IL 54 & IL 115 N (Post-mounted red)
- Location 60F – IL 54 & IL 115 S (Post-mounted red)

Highway Lighting Locations.

- Location 29L – I-57 & IL 9

The current locations in Grundy County are:

Flashing Beacon Locations

- Location 21F – IL 47 & IL 113 (Post)
- Location 73F – IL 47 & Prologis (SB yellow on post)

Signal Locations

- Location 4S – IL 47 & Southmor Road
- Location 7S – IL 47 & Pine Bluff Road

Highway Lighting Locations

- Location 30L – CH 15 – Illini State Park
- Location 34L – I-80 & IL 47
- Location 35L – I-80 & Three Rivers Rest Area
- Location 43L – IL 47 & Pine Bluff Road
- Location 48L – I-80 & Minooka Road
- Location 53L – I-55 & IL 47
- Location 100L – I-80 & Seneca Road
- Location 106L – I-55 & Gardner
- Location 111L – IL 47 & Southmor Road
- Location 130L – US 6 & Brisbin Road
- Location 131L – I-80 & Brisbin Road
- Location 135L – US 52 & IL 47
- Location 137L – I-80 & Lisbon Road (EB sign lighting) (Brown)

The current locations in Iroquois County are:

Flashing Beacon Locations

- Location 1F – IL 1 & US 52
- Location 11F – US 24 & IL 49
- Location 12F – US 24 & Gilman Curve
- Location 17F – US 45/52 & IL 49
- Location 18F – US 45 & Onarga Curve (E. 1500N & 700E)

Highway Lighting Locations

- Location 27L – I-57 & US 24
- Location 28L – I-57 & IL 54
- Location 31L – US 24 & US 52
- Location 32L – US 24 & Sheldon Rest Area
- Location 33L – US 24 & Sheldon Weigh Station
- Location 50L – I-57 & Buckley Rest Area
- Location 52L – I-57 & IL 116
- Location 90L – I-57 & CH 9 (Buckley)
- Location 91L – I-57 & CH 4 (Clifton)
- Location 128L – US 45/52 & IL 49

The current locations in Kankakee County are:

Flashing Beacon Locations

- Location 7F – I-57 SB at MM 316.6 (Radar speed sign)
- Location 19F – US 45/52 & Manteno Road (W. 9000N Rd.)
- Location 29F – IL 102 & Kankakee River State Park South
- Location 30F – IL 102 & Kankakee River State Park North
- Location 37F – IL 102 & Chippewa Campground (Will County)
- Location 40F – IL 1 & IL17
- Location 44F – Armour Road & Birch Drive
- Location 54F – IL 1 & Whitaker Road
- Location 63F – IL 102 & Warner Bridge Road
- Location 64F – IL 113 & Warner Bridge Road
- Location 67F – IL 17 & Lowe Road

Highway Lighting Locations

- Location 36L – I-57 & IL 50
- Location 37L – I-57 & IL 17
- Location 38L – I-57 & IL 45/52
- Location 39L – IL 1 & IL 17
- Location 51L – I-57 & Manteno Road/CH 9 (Manteno Interchange)
- Location 86L – I-57 & CH 37 (Chebanse Interchange)
- Location 136L – I-57 & Bourbonnais Parkway

Signal Location

- Location 3S – IL 1 & IL 17

The current locations in Livingston County are:

Flashing Beacon Locations.

- Location 5F – IL 17 & IL 23 (Overhead beacon)
- Location 6F – IL 17 & IL 170 (Post-mounted beacons)
- Location 8F – IL 17 & Campus Road (N. 3300E Rd.) (Overhead beacon)
- Location 13F – IL 47 & US 24 (Overhead beacon)
- Location 22F – IL 47 & IL 116 (Post-mounted beacons)
- Location 42F – IL 17 & IL 47 (Overhead beacon)

Highway Lighting Locations.

- Location 24L – IL 47 & Old Route 66
- Location 25L – IL 47 & IL 116
- Location 26L – US 24 & Chatsworth Road
- Location 42L – I-55 & Pontiac Rest Area
- Location 44L – I-55 & IL 23
- Location 45L – I-55 & IL 116
- Location 54L – I-55 & IL 17
- Location 59L – I-55 & Odell Road (E. 2600N Rd.)
- Location 105L – IL 23 & IL 170

COMPLETION DATE

All work on this contract shall be completed on or before **June 30, 2025**. Should the Contractor fail to complete all work by June 30, 2025, the Contractor shall be liable in accordance with Article 109.09 of the Standard Specifications.

LOCATION OF UNDERGROUND STATE MAINTAINED FACILITIES

Effective: August 3, 2007 Revised: July 31, 2009

The Contractor shall be responsible for locating existing and proposed IDOT electrical facilities (traffic signal, overhead lighting, Intelligent Transportation System, etc.) prior to performing any work at his/her own expense if required. The Contractor shall also be liable for any damage to IDOT facilities resulting from inaccurate locating.

The Contractor may obtain, on request, plans for existing electrical facilities from the Department.

The Contractor shall also be responsible for locating and providing protection for IDOT facilities during all phases of construction. If at any time the facilities are damaged, the Contractor shall immediately notify the Department and make all necessary arrangements for repair to the satisfaction of the Engineer. This work will not be paid for separately but shall be included in the contract bid price.

TRAFFIC CONTROL PLAN

Effective: December 15, 2022

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, and any special details and Highway Standards contained herein and in the plans.

Special attention is called to Section 701 and Articles 107.09 and 107.14 of the "Standard Specifications for Road and Bridge Construction" and the following Highway Standards relating to traffic control:

701001	701006	701101	701106	701201	701206
701301	701306	701311	701400	701401	701406
701411	701421	701422	701426	701427	701428
701431	701446	701451	701456	701501	701502
701601	701602	701606	701701	701801	701901

Traffic shall be maintained on the associated roadways at all times during construction. All non-emergency lane closures shall be made during off-peak traffic hours, defined as time periods from 8:30 A.M. to 3:00 P.M. and 5:30 P.M. to 7:00 A.M. The Contractor shall notify the Engineer forty-eight (48) hours before the time of a planned closure. The exact time and duration of all lane closures, however, shall be as determined by the Engineer.

All traffic control devices shall be furnished, erected, maintained, and removed by the Contractor in accordance with the Standard Specifications. Where possible, all post-mounted signs shall be placed a minimum of two feet (2') (0.6m) beyond the curb or edge of shoulder. Proposed sign spacing may be modified as approved by the Engineer in order to meet existing field conditions or to prevent obstruction of the motorist's view of permanent signing.

The Contractor shall utilize traffic control and protection procedures required by the applicable Highway Standards listed above, to properly protect its employees and the motoring public, when work is being performed on or near the roadway.

The Department will pay the Contractor for the actual time and materials required to install and remove traffic control standards based on the hourly rates established in the contract and Article 109.04 of the Standard Specifications.

With approval of the Department, the Contractor may utilize subcontractors to provide interstate lane closures and other complex traffic control installations. The Department will reimburse the Contractor in accordance with Article 109.04 of the Standard Specifications.

Signs and cones are considered included in the contract and will not be paid for separately.

PAYMENT FOR DRIVING TIME

The Department will pay for drive time for workers and crews that are located within the geographical boundaries of District Three with the exception of work associated with MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION or MAINTENANCE OF EXISTING FLASHING BEACON INSTALLATION and any additional pay item work performed during those maintenance operations.

Unless pre-approved by the Department in the execution of a work order, the Department will not pay for drive time for workers and crews that travel to a work site from outside of District Three.

PAYMENT OF BILLS ON BEHALF OF THE DEPARTMENT

The Department may request that the Contractor pay bills on behalf of the Department in accordance with Article 109.05 of the Standard Specifications.

SCOPE OF WORK

Work shall consist of repairing or replacing damaged electrical traffic control devices, servicing malfunctioning traffic signal controllers, roadway lighting, traffic signal re-lamping and cleaning, replacing loop detectors, modernizing existing electrical facilities, repair, replacement and/or installation of traffic data collection stations and/or detectors, repair and maintenance of Intelligent Transportation System devices, repair and maintenance of fiber optic cables, adding new facilities and providing all other electrical services that are requested at locations described in a work order issued by the Department in compliance with this contract.

Entries in service logs in traffic signal controller cabinets are to be made by the Contractor at the time any controller related servicing is performed. The date and time should reflect when the serviceman arrives to begin work on the controller.

When repairing a damaged traffic signal or highway lighting standard, the Contractor shall reinstall all existing traffic signs which were attached to the standard. If these signs are damaged to the extent they cannot be reused, the Contractor shall immediately notify the Department so that replacement signs can be installed.

The Contractor shall be solely responsible for any damage to existing structures or to the right-of-way resulting from the operation of his equipment or employees while making repairs. The Contractor shall, at his/her own expense, restore any damage to a condition equal to that existing before the damage was done as directed by the representative of the Department.

Before starting work at a repair site requiring excavation, the Contractor shall contact J.U.L.I.E. at telephone number 1-(800)-892-0123 to facilitate the location of underground utilities. The Contractor shall also locate all Department lighting circuits, traffic signals, and other electrical facilities in areas of excavation and protect them.

The Contractor shall, at all times, keep Department work sites free from accumulations of waste material or rubbish caused by his employees and at the completion of the work, he shall remove all his rubbish from the work site, tools and surplus materials. The Contractor shall repair and otherwise make good any damage caused by this work and leave the work site in the equivalent of the original condition. The damaged material shall be removed from the site and it is the property of the Contractor, unless otherwise specified. This work shall be included in the cost of the electrical pay items.

The Contractor shall comply with all applicable OSHA requirements while performing requested services including the use of lock out and tag out kits.

In performing work required by this contract, the Contractor shall confine the equipment, the storage of material, and the operation of the workers to State of Illinois property.

At a location where electrical traffic control devices or highway lighting have been damaged, the Contractor shall review the location in order to verify materials required to complete repairs. Any questions as to location of work and/or quantities required must be resolved prior to beginning work.

The Contractor acknowledges there is no guarantee that work may or may not be performed by the Contractor, but that the Contractor will upon request of the Department, within the time element designated, do all work that is offered on a 24-hours-per-day, 7-days-per-week basis.

WORK ORDERS

No work of any kind is to be performed by the Contractor, unless a work order authorizing the work has been issued by the Engineer. Requests for emergency service calls may be initiated, by the Department, with a telephone call, faxed message, or email and followed by a written work order authorizing the work. The work order shall show the date and time issuance, type of facility, location and a description of the service required, or the problem reported and pay item(s). The work order will indicate a Department District Contact and telephone number for the Contractor to contact with any questions regarding the work order.

The Contractor shall be available to respond to calls for service at all times, including Saturdays, Sundays, and holidays, to correct any malfunction of equipment or affect any temporary emergency repair to damaged equipment resulting from any cause, and to perform emergency locates for underground facilities.

Overtime work during nights, weekends and holidays will be performed by Contractor only as authorized by the Department.

If at the time of service being performed, additional work of a minor nature (not to exceed \$500) is needed, the Contractor shall proceed with that work. If it appears that the additional work could result in a substantial addition or change to the current work order, the Contractor shall contact the Department District Contact before proceeding with the additional work.

The date and time the Contractor's work crew begins work on the work order and the date and time the requested work is completed shall be noted on the Contractor's billing invoice submitted to the Department for payment. If the work is not completed on the first trip, the Contractor shall record on the invoice the starting and ending dates and times for all subsequent work crews until the work order is completed.

The Contractor shall advise the Department's District Contact upon arrival and departure of the site of all service calls and provide the status of work. The Contractor will be provided with an after-hour's telephone number for the Department's District Contact.

CONTRACTOR'S REPRESENTATIVE

The Contractor shall designate a service representative to serve as the key contact person for the Department in the execution of this contract. The service representative shall monitor the daily activities of the contract and be available to discuss and respond to any problems that may arise. The services of this person shall be included in the contract and no additional compensation shall be allowed.

The Contractor shall assign two or more service representatives to whom the Department may issue work order and instructions and to monitor Department needs. The Contractor shall provide the Department with the names and telephone numbers of these representatives. One of these representatives of the Contractor shall be available at all times.

The Contractor shall provide the Department with a 24-hour telephone service number so that the Contractor may respond to emergencies that occur outside normal work hours.

The Contractor must notify the Department representative in writing of any employee absence that results in the Contractor representative or on-call employee unavailable for contract work. This includes all scheduled vacations, planned absences, sick time, and employee emergency situations. Contractor representatives shall respond to Department concerns and solve any problems regarding performance under this contract. The Contractor representative shall confer with Department personnel whenever necessary and make recommendations that will ensure the Department receives the most effective service. The Contractor shall furnish the names and telephone number of the representative(s) to the Department.

QUANTITIES

The quantities specified in this contract indicate the estimated amount of work required for the duration of this contract. This is merely an estimate to allow Contractors to establish unit prices and permit the Department to determine the low bidder. It shall be understood that the unit prices of this contract shall prevail throughout the period of this contract regardless of the quantity.

PARTS AND MATERIALS

When performing work not associated with a pay item, the Contractor shall receive the actual cost for parts and materials supplied (including transportation charges paid by the Contractor) in accordance with Article 109.04. The cost of all parts and materials shall be itemized on the invoice for each work order. The actual billing invoices from the suppliers of items greater than \$100 for any single part must be submitted as documentation of parts and materials costs. When such parts and materials are furnished by the Contractor, the material shall be of the best grade of its respective kind, for the intended purpose. The Contractor is expected to make a good faith effort to purchase the parts and materials supplied by them at the lowest possible price. The transportation of the parts and materials to the location on the work order by the Contractor shall be included with the contract and no additional compensation shall be paid [except for when a special piece of equipment is required to properly transport the item(s)].

The Department may request the Contractor in writing to order parts and materials, not to be installed by the Contractor. These parts and materials will be used by the Department in the repair and/or maintenance completed by the Department work force.

Parts and materials may be furnished by the Department when available and practical, unless otherwise specified by this contract. The transportation of Department supplied parts and materials to the location on the work order by the Contractor shall be considered included with the contract and no additional compensation shall be paid (except for when a special piece of equipment is required to properly transport the item(s)). The Department, at its discretion, may expedite the repair of an installation; the Department reserves the right to deliver parts, materials, and equipment directly to the Contractor's shop or to the job site.

CONTRACTOR COMMUNICATION

All Contractor work crews shall be equipped with a cellular telephone to facilitate communications with work crews and to verify operating conditions of key electrical facilities. Only the crew leader will be required to be equipped with a cellular telephone. The Contractor shall provide the Department with the cellular telephone number being used in the execution of each work order. The Department reserves the rights to use the cellular telephone to contact a Contractor's work crew for their location and to request a report on the status of a work order. No additional compensation for cellular telephone expenses will be allowed.

LABOR, TOOLS, AND EQUIPMENT

The Contractor shall furnish all labor, tools, equipment and other incidentals necessary or convenient to successfully complete the work orders and carry out all duties and obligations imposed by the contract.

The Contractor shall furnish and maintain tools and equipment including, but not limited to, pickup trucks, line trucks, trailers, backhoes, trenchers, air compressors and other specialized electrical equipment, and shall possess self-propelled bucket truck(s) capable of servicing overhead flashing, beacons, pole mounted highway lighting units, and overhead traffic signals. All other incidental equipment and tools shall be provided by Contractor at prices established in the Equipment Watch Rental Rate Blue Book which can be obtained at <http://www.equipmentwatch.com>.

The Contractor should utilize the appropriate equipment to complete the repair as authorized by the Department. If the Contractor chooses to use tools and/or equipment that in the opinion of the Department is above and beyond what is required, the Contractor shall be compensated at the appropriate amount as determined by the Department of what was necessary to complete the work order. The Department shall be the sole judge as to what equipment is required.

Standard equipment operating costs for fuel, lubricants, wear-and-tear, loss of equipment, repairs, servicing, filters, tires, etc. are to be borne by the Contractor. No additional compensation for these operating expenses will be allowed.

Protective gear or clothing that is required for Contractor personnel in the execution of a work order (including, but not limited to, dust masks, breathing apparatus, electrically insulated gloves, protective gloves, etc.) will be provided by Contractor and shall be in compliance with the applicable OSHA standard. No additional compensation for these operating expenses will be allowed.

Only labor required to complete work orders, exclusive of pay item work, shall be eligible for payment. Labor rates for Electricians shall be inclusive of (but not limited to) all regular and premium time, insurance, benefits, overhead, and profit.

The time allowed for the truck pay items included in this contract shall be the actual time the truck(s) is used on the work order, exclusive of pay item work. Truck rates include (but not limited to) the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs, overhaul and maintenance of any kind, depreciation, storage, overhead, profits, insurance, and all incidentals.

Arrow boards shall meet the requirements of Articles 701.15(i) and 1106.02.

Truck mounted crash attenuators shall meet the requirements of Articles 701.15(h) and 106.02.

Individual pieces of equipment and tools not listed in the "Equipment Watch Rental Rate Blue Book" and having a replacement value of \$2,500.00 or less shall be considered to be tools or small equipment and no payment will be made for their use on this contract.

Method of Measurement: Labor will be measured to the nearest 0.25 hour for Each JOURNEYMAN ELECTRICIAN or APPRENTICE ELECTRIAN for straight time and premium time rates approved for use on the applicable work order.

Truck usage will be measured to the nearest 0.25 hour for Each PICK-UP TRUCK, BUCKET TRUCK (LENGTH LESS THAN 35 FEET), (BUCKET TRUCK (LENGTH 35 FEET TO 65 FEET), or DIGGER DERRICK approved for use on the applicable work order.

Basis of Payment: Labor will be paid for at the contract unit price per Hour for JOURNEYMAN ELECTRICIAN, JOURNEYMAN ELECTRICIAN (WEEKLY OVERTIME RATE), JOURNEYMAN ELECTRICIAN (SATURDAY OVERTIME RATE), JOURNEYMAN ELECTRICIAN (SUNDAY AND HOLIDAY OVERTIME RATE), APPRENTICE ELECTRICIAN, APPRENTICE ELECTRICIAN (WEEKLY OVERTIME RATE), APPRENTICE ELECTRICIAN (SATURDAY OVERTIME RATE), AND APPRENTICE ELECTRICIAN (SUNDAY AND HOLIDAY OVERTIME RATE).

Truck usage will be paid for at the contract unit price per Hour for PICK-UP TRUCK, BUCKET TRUCK (LENGTH LESS THAN 35 FEET), (BUCKET TRUCK (LENGTH 35 FEET TO 65 FEET), or DIGGER DERRICK.

EQUIPMENT RENTAL

In the event that the Contractor needs to rent equipment for use in the execution of a work order, the Department will pay the Contractor the equipment cost contained in the Equipment Watch Rental Rate Blue Book or the actual cost of the rental if that cost is in excess of the amount shown in the Blue Book guide.

All equipment rental costs in excess of the Blue Book guide shall be authorized and approved by the Department prior to rental.

TEST EQUIPMENT

The Contractor shall provide all of its own testing instruments, as required, to service the facilities of the Department.

The Contractor shall use the established procedures as defined by the manufacturer or standard practice to determine the integrity of the equipment. The Department shall be provided with the testing procedures used upon request.

All required test equipment shall be included in the contract and no additional compensation will be allowed.

CONTRACTOR WORK FORCE REQUIREMENTS

The Contractor shall provide adequate supervision to his work force to ensure that workers and materials are utilized in an efficient manner. This is to include, but not limited to, insuring that knowledgeable and experienced workers are matched to related servicing tasks, and that service vehicles are equipped with the parts, materials, and equipment likely to be required to complete the Work Order.

The Contractor shall at all times provide a force of qualified personnel sufficient, in the opinion of Department, to perform the work and specialized operations required and described herein. A working knowledge will be required in basic electrical circuits, solid state circuits, DC current applications, field testing equipment, and local/national electrical codes. The Contractor shall provide a list of personnel, their training and experience to the Department.

The Department shall be the sole judge as to the qualifications and credentials of the Contractor's personnel. The defining criteria for the "journeyman electrician" category would be a minimum of an I.B.E.W. journeyman electrician or better with training in all areas listed within the contract, as well as specialized training in 'Traffic Signal Controllers' and related equipment (including fiber optic systems).

Apprentice electricians can be used in the execution of this contract under the following provisions:

- All apprentice electricians shall work within the guidelines of the Apprentice Program.
- Apprentices may only be utilized for routine signal maintenance and overhead lighting tasks included but not limited to traffic signal lens cleaning, re-lamping, mast arm traffic signal post inspection and repair, and other various maintenance duties.
- Apprentices may not be utilized for any traffic signal controller cabinet maintenance or repair. Apprentices are prohibited from performing any work of this nature unless under direct supervision of a journeyman.
- Apprentices will be allowed to respond to emergency calls to assist a qualified journeyman electrician when needed.
- Apprentices must be directly supervised at all times by a qualified Contractor representative who meets the requirements listed above.

The Department reserves the right to limit the number of apprentices used in execution of this contract.

The Department reserves the sole right to control all traffic signal maintenance work performed by apprentice electricians. The Department will determine which work can be performed by the apprentice electricians and which work cannot.

CONTROL OF WORK

The Department shall conduct frequent inspections of work and installations performed by the Contractor to determine if the work is being performed promptly and satisfactorily, and in the manner specified in the contract. The Contractor's employees shall cooperate with such inspections and shall provide information concerning the work in progress when requested by the Department. A final inspection will be made by the Department of all work locations and final quantities can be adjusted at that time. The Department reserves the right to place maximum or minimum limits on the work force and/or equipment utilized by the Contractor to execute a Work Order.

Each workday, the Contractor shall provide the Department a schedule of contract work activities for the day. The schedule will show the location, type of work and estimate of when each work crew will be at the location on the work order. This information shall be either faxed, emailed, and/or verbally transmitted to the Department representative by 8:30 A.M.

CONTRACTOR RESPONSE AND WORK ORDER COMPLETION TIMES

The Department will establish an expected response and completion time for the requested service at the time a work order is issued. It shall be the Contractor's responsibility to promptly notify the Department, if for any reason, the Contractor cannot meet either the response or completion time established at the issuance of the work order, or the times established herein. In all instances, the Contractor shall comply with the standard response and completion times as follows:

Emergency Service Call Response: During regular working hours (weekdays 7:00 A.M. to 5:00 P.M.) arrive within two and a half (2.5) hours or less, and during non-regular working hours, weekends and holidays arrive within two and a half (2.5) hours or less. Emergency response calls include but are not limited to dark or malfunctioning traffic signals, knocked down traffic signal, highway lighting standards or controllers. Upon arrival at the emergency work site, Contractor personnel must immediately begin work to abate the emergency. At the direction of the Department, abatement of emergency shall be either complete restoration of the electrical device, or a temporary repair as directed by the Department.

Non-emergency Traffic Signal/Flashing Beacon Call Response: Respond within twenty-four (24) hours of issuance of the work order. Completion of work shall be within thirty (30) days of the date the work order was issued.

Highway Lighting Outage Response: Respond within five (5) working days of issuance. Working day when issued in connection with this contract shall mean any day the offices of the Department are open for normal business. The Contractor shall respond to lighting work orders where the entire lighting system is non-functional within two (2) working days.

Traffic Signal Knockdown Completion: All traffic signal knockdowns are expected to be repaired by the next day, regardless of weekends and holidays. The Contractor shall respond within the timeframes as specified herein to repair a traffic signal knockdown to clear all electrical circuits, pick up the knockdown debris, and ensure that the intersection is either back in normal operation, or in the flashing mode. If the Contractor does not have the necessary equipment or is unable to make the necessary knockdown repair the same day, the Department shall be notified.

Highway Lighting Knockdown Completion: Two work orders are normally issued to repair a highway light pole knockdown. The Contractor shall respond within two hours or less to the initial work Order to clear the electrical circuit and remove any knockdown debris from the vicinity of the roadway. When the second work order is issued to repair the knockdown, the Contractor is expected to complete the repair within five (5) working days. The Contractor shall be responsible for notifying the Department if the requested knockdown repair cannot be completed within the allotted time.

When requested by the Contractor, justifiable extensions of work order completion time may be granted at the discretion of the Department. The Contractor understands and agrees that performance will be expected in varying amounts and at various locations on the roadways designated in this contract, and in accordance with work orders issued by Department personnel. In the event the Contractor fails to meet the completion time for a work order, the Contractor and Department agree that an amount of actual damage is difficult to ascertain. Therefore, the Contractor shall be liable to the Department for penalty charges as specified in the following amounts which are reasonable and proportionate to the amount of the Work Order.

Work Order Amount	Penalty Charges Per Calendar Day
\$0 - \$500	\$25
\$501 - \$1,000	\$50
\$1001 and over	\$100

FAILURE TO MEET RESPONSE TIME

Should the Contractor fail to respond and/or complete a work order on time, or such extended time as may have been allowed by the Department, a monetary deduction will be applied to monies due or that may become due to the Contractor. The value of the monetary deduction will be as follows:

Emergency Service Calls:

Work Order Amount	Monetary Deduction for Each Hour*
From \$0 to \$500	\$50
From \$501 to \$1,000	\$100
From \$1,001 and over	\$150

* After applicable response time expires

Priority Non-Emergency Service Calls and Routine Work Items:

\$75.00 per day per work order

For the purpose of calculating the monetary deduction, a day shall be any (or portion of) excluding the following:

- (a) When adverse weather at the field work site prevents work on the controlling item of a work order.
- (b) When job conditions at the field work site due to recent weather conditions prevent work on the controlling item of a work order.
- (c) When work on the controlling item has been suspended by an act or omission by the Department or Engineer.

REPAIR PARTS, MATERIALS, AND COMPONENTS

When available and practical, traffic signal, highway lighting, and ITS equipment parts and components will be furnished by the Department, unless otherwise specified by the Department. If requested by the Department, the Contractor shall be responsible for picking up and transporting to the work site all Department furnished parts and components.

The Contractor is required to provide any parts, components and material not provided by Department. These shall include miscellaneous electrical parts and components, electrical hardware, fasteners, wire, conduit, tape and any other materials normally associated with the maintenance of electrical devices. When such materials are furnished by the Contractor, the material shall be of the best grade of their respective kinds, for the purpose. All materials used should be itemized on the individual billing invoice for that Work Order.

The Contractor shall purchase material from the Department's traffic signal and highway lighting component contracts whenever possible. The Department may require the Contractor to purchase necessary parts and materials from other approved sources. In cases where Contractor is required to acquire parts and supplies from alternate sources and at higher prices than the components contract, the Contractor shall purchase parts at the best available price. On occasion, the Department may require approval of cost prior to purchase. The Contractor shall be compensated at the approved cost or the actual cost, whichever is lower plus the mark-up percentage stated in the contract. Contractor receipts or bills for parts and materials shall be submitted as documentation of costs.

PAYMENT AND INVOICES

Unless otherwise instructed, the Contractor shall submit an invoice upon completion of the work order. Invoices shall include detailed information as to the services performed, and if applicable, the pay items with quantities, the number of non-pay item related hours worked, labor rates, and a list and prices of all parts used. Final payment will not be made until all services are completed and accepted by the Department. The amount shown on each invoice shall be in accordance with the unit prices established in this contract or agreed unit pricing.

Overtime Authorization: At the time the Department issues a work order to the Contractor, the Department shall state if overtime labor is authorized, and the estimated hours of overtime labor authorized for Contractor to bill the Department in responding to and/or completing the work order. All overtime labor in excess of that specified in the work order must be approved in writing in advance by the Department. The Contractor is required to plan work on routine and emergency work orders to avoid overtime labor while meeting the response and/or completion times requested by the Department.

Should the Department require the Contractor to provide workers in addition to the electrician rates specified in the contract, the rates for such labor shall be reasonable and meet the prior approval of the Department.

If the Department authorizes the Contractor to use a piece of machinery or equipment that does not have a contract unit price and is not considered incidental to the contract, payment shall be made in accordance with Article 109.04 (b) (4) of the Standard Specifications for Road and Bridge Construction.

SUBCONTRACTOR PAYMENTS

No Sub-contractors may be utilized without approval by the Department.

When the Department authorizes the use of a subcontractor in the execution of a Work Order, the Department will pay the Contractor the actual amount of the sub-contractor invoice in accordance with Article 109.04.

KNOCKDOWN DOCUMENTATION

The Contractor shall provide the Department with photographs of all on site knockdown debris to document the damage for third party claims. The photographs shall be digital images and should have the number of views necessary to properly detail the motorist causing damage. Three or more photographs are required for adequate documentation. Identifying information should be included in the photographs as much as possible.

This requirement shall be included with this contract and no additional compensation will be allowed.

CONTRACTOR INVOICING REQUIREMENTS

The Contractor shall include the following items with each invoice: Repair Work Orders:

A. Original Copy

1. INFORMATION ON INVOICE:

- a. Location of Service – Description of Location (Route, City, County, etc.)
- b. IDOT Work Order Number – Place Near Top of Invoice
- c. Name of I.D.O.T. Employee Who Authorized Work
- d. Work Classification – "Traffic Signal Repair" or "Traffic Signal Maintenance"
- e. Contractor Invoice Number and Date of Invoice.
- f. Pay Items: Pay items and quantities performed, material documentation for materials associated with each pay item, and unit price of each pay item.
- g. Labor Costs: Provide Original Time Sheets That Detail Who Performed the work and the Date and Time (In Hours and the Rate Per Hour), and a Description of Work Performed. Time sheets required for pay item work but hours working on pay items will not be paid.
- h. Equipment Costs: Provide Type of Equipment Used, the Time and Date Used (In Hours with Rate Per Hour). Equipment hours working on pay items will not be paid.
- i. Material Cost: Provide Specific Brand Name and Model Number (Where Applicable) of all Materials Used on the Project along with the Quantity Used, Unit Price, Mark-Up Cost, and Total Price. Material information required for pay item work but materials associated with pay item work will not be paid separately.
- j. In the Event that Any Part or Material has a Unit Cost of \$50.00 or more, the Original Invoice Must Be Included.

Note: It is permissible for the equipment (g) and materials (h) to be listed on the time sheets (f) as specified above, and then summarized on a separate or "cover" invoice provided that the time sheets are included as attachments.

2. ATTACHMENTS TO INVOICE:

- a. Copy of IDOT Work Order with Contractor Portion Completed
- b. Original of item (1h) – "Materials \$50.00 or More".
- c. Any other items that the Contractor feels necessary to document invoice.

Traffic Signal Maintenance (Work Orders):

A. Original Copy

1. INFORMATION ON INVOICE:

- Include items A, C, D, E, F, G, H, G, I, J

2. ATTACHMENTS TO INVOICE:

- a. Originals of Signal Maintenance Check Sheet Completed By Contractor.
- b. Original of item (1 hr.) – "Materials \$50.00 or More".
- c. Any other items that the Contractor feels necessary to document invoice.

Invoices will not be processed for payment unless work is fully completed and all required documentation is provided with the invoice. No payment will be made on partial bills.

LED MODULE AND HPS LAMP RECYCLING

The Contractor shall recycle all LED modules and high pressure sodium lamps through a certified recycling company. The Contractor shall submit detailed information pertaining to LED module recycling to the Department for review along with the electrical material submittals. The Contractor shall submit proof of recycling to the Department.

Basis of Payment: This work will not be paid for separately, but shall be included in the contract unit price for the traffic signal removal items.

TRAFFIC SIGNAL LED MODULE SPECIFICATIONS

The material requirement shall be in accordance with Sections 880 and 1078 of the Standard Specifications except as modified herein.

All traffic signal solid indication and arrow LED assemblies shall be designed for a fifteen-year service life with enhanced power supplies and LEDs and shall have a fifteen-year replacement warranty. Currently, the following manufacturers and models are approved for use:

- Dialight – 12" Long Life XL15 ITE Compliant Traffic Balls and 12" Long Life XOD15 ITE Compliant Omni-Arrows
- Leotek – 12" Extended Life DT Series Incandescent Look Ball and 12" Extended Life DT Series Incandescent Look Arrows

The LED assemblies for the red, yellow, and green solid and arrow indications shall meet or exceed the following minimum specifications:

SOLID INDICATION LED MODULE SPECIFICATIONS

<u>Compliance:</u>	Fully compliant with ITE VTCSH LED Circular Signal Supplement specifications dated and adopted June 27, 2005
<u>Compliance Verification:</u>	Intertek ETL verified compliance – Product must be listed on the "Directory of LED Modules Certified Products" list located on the ETL website at http://www.intertek.com/lighting/performance-testing/traffic-signals/
<u>Diameter:</u>	12" (300mm)
<u>Lens:</u>	UV stabilized scratch resistant polycarbonate, tinted red or yellow, clear for green, uniform non-pixelated illumination, Incandescent Appearance
<u>LEDS:</u>	Hi-Flux
<u>Operating Temperature Range:</u>	-40°C to +74°C (-40°F to +165°F)
<u>Operating Voltage Range:</u>	80 to 135 V (60Hz AC)
<u>Power Factor (PF):</u>	> 90%
<u>Total Harmonic Distortion (THD):</u>	< 20%
<u>Minimum Voltage Turn-Off:</u>	35V
<u>Turn-On/Turn-Off Time:</u>	<75 ms
<u>Nominal Power:</u>	10.0 W (Red), 18.0W (Yellow), 12.5 W (Green)
<u>Nominal Wavelength:</u>	625-626 nm (Red), 589-590 nm (Yellow), 500-502 nm (Green)
<u>Minimum Maintained Intensity:</u>	365 Cd (Red), 910 Cd (Yellow), 475 Cd (Green)
<u>Standard Conformance:</u>	FCC compliant for electrical noise, MIL-STD-810F for moisture resistance, MIL-STD-883 for mechanical vibration, NEMA TS2 Transient Voltage Protection
<u>Warranty:</u>	15-year replacement (materials, workmanship, and intensity)

ARROW INDICATION LED MODULE SPECIFICATIONS (RED, YELLOW, GREEN)

<u>Compliance:</u>	Fully compliant with ITE VTCSH LED Vehicle Arrow Supplement specifications adopted July 1, 2007
<u>Compliance Verification:</u>	Intertek ETL verified compliance – Product must be listed on the "Directory of LED Modules Certified Products" list located on the ETL website at http://www.intertek.com/lighting/performance-testing/traffic-signals/
<u>Diameter:</u>	12" (300mm)
<u>Lens:</u>	Clear Frosted, UV stabilized scratch resistant polycarbonate, tinted red or yellow, clear for green, uniform non-pixelated illumination, incandescent appearance, omnidirectional
<u>LEDS:</u>	Hi-flux LEDs
<u>Operating Temperature Range:</u>	-40°C to +74°C (-40°F to +165°F)
<u>Operating Voltage Range:</u>	80 to 135 V (60Hz AC)
<u>Power Factor (PF):</u>	> 90%
<u>Total Harmonic Distortion (THD):</u>	< 20%
<u>Minimum Voltage Turn-Off:</u>	35V
<u>Turn-On/Turn-Off Time:</u>	<75 ms
<u>Nominal Power:</u>	5.0-7.0 W (Red), 6.0-12.5W (Yellow), 5.0-7.0 W (Green)
<u>Nominal Wavelength:</u>	625-628 nm (Red), 590 nm (Yellow), 500nm (Green)
<u>Minimum Maintained Intensity:</u>	56.8-58.4 Cd (Red), 141.6-146.0 Cd (Yellow), 73.9-76.0 Cd (Green)
<u>Standard Conformance:</u>	FCC compliant for electrical noise, MIL-STD-810F for moisture resistance, MIL-STD-883 for mechanical vibration, NEMA TS2 Transient Voltage Protection
<u>Warranty:</u>	15-year replacement (materials, workmanship, and intensity)

16" PEDESTRIAN LED MODULE SPECIFICATIONS (MAN/HAND WITH COUNTDOWN TIMER)

<u>Compliance:</u>	Fully compliant with ITE PTCSI Part-2 LED Pedestrian Traffic Signal Modules specification adopted August 4, 2010
<u>Compliance Verification:</u>	Intertek ETL verified compliance – Product must be listed on the "Directory of LED Modules Certified Products" list located on the ETL website at http://www.intertek.com/lighting/performance-testing/traffic-signals/
<u>Size:</u>	16" x 18"
<u>Configuration:</u>	Man/Hand Overlay with Countdown Timer
<u>Lens:</u>	UV stabilized scratch resistant polycarbonate, uniform non-pixelated illumination, incandescent appearance
<u>Operating Temperature Range:</u>	-40°C to +74°C (-40°F to +165°F)
<u>Operating Voltage Range:</u>	80 to 135 V (60Hz AC)
<u>Power Factor (PF):</u>	> 90%
<u>Total Harmonic Distortion (THD):</u>	< 20%
<u>Minimum Voltage Turn-Off:</u>	35V
<u>Turn-On/Turn-Off Time:</u>	<75 ms
<u>Nominal Power:</u>	6.0-9.0 W (Man), 7.0-9.0W (Hand), 5.0-8.0 W (Timer)
<u>Minimum Maintained Intensity:</u>	1,400 Cd (Hand), 1,400 Cd (Timer), 2,200 Cd (Man)
<u>Standard Conformance:</u>	FCC compliant for electrical noise, MIL-STD-810F for moisture resistance, MIL-STD-883 for mechanical vibration, NEMA TS2 Transient Voltage Protection
<u>Warranty:</u>	5-year replacement (materials, workmanship, and intensity)

SIGNAL HEAD, LED

This work shall be in accordance with Sections 880 and 1078 of the Standard Specifications except as modified herein.

The Contractor shall furnish and install a traffic signal head including brackets, hardware, and all materials required for installation at a location as specified by the Department.

Travel time to and from the work site will be paid separately under the contract pay items for labor and equipment unless the pay item work is being performed in conjunction with MAINTENANCE OF EXISTING SIGNAL INSTALLATION.

The traffic signal heads shall consist of 12" polycarbonate sections and shall be equipped with LED assemblies for all red bulb, yellow bulb, green bulb, red arrow, yellow arrow, and green arrow indications.

The traffic signal heads shall have a black finish with black doors and tunnel visors.

The LED signal faces shall be equipped with spade connectors and connected to the traffic signal head terminal block.

The LED modules shall conform to the specifications listed under the section TRAFFIC SIGNAL LED MODULE SPECIFICATIONS.

All costs associated with furnishing and installing new galvanized steel signal head bracketing shall be included in the cost of this pay item. The Contractor shall minimize the total number of holes drilled in a mast arm to no more than three.

Basis of Payment: This work will be paid for at the contract unit prices Each for Signal Head, LED of the type specified and will be payment in full for all labor, equipment, and materials required to remove the existing signal heads and bracketing and furnish and install traffic signal heads equipped with LED indications and new bracketing as described above, complete.

TRAFFIC SIGNAL BACKPLATE, RETROREFLECTIVE

This work shall be in accordance with Sections 882 and 1078 of the Standard Specifications except as modified herein.

The Contractor shall furnish and install a retroreflective traffic signal backplate including hardware and all materials required for installation at a location as specified by the Department.

Travel time to and from the work site will be paid separately under the contract pay items for labor and equipment unless the pay item work is being performed in conjunction with MAINTENANCE OF EXISTING SIGNAL INSTALLATION.

The traffic signal backplates shall be of the same material as the traffic signal heads as specified on the plans.

A three (3) inch wide strip of reflective sheeting shall be applied to the outside perimeter of the face of the backplates. The reflective tape shall be fluorescent yellow in color and shall consist of type AZ sheeting.

Basis of Payment: This work will be paid for at the contract unit price Each for TRAFFIC SIGNAL BACKPLATE, RETROREFLECTIVE and shall be payment in full for all labor, materials, and equipment required to furnish and install a traffic signal backplate with reflective tape as described above, complete.

TRAFFIC SIGNAL POST, GALVANIZED STEEL

This work shall be in accordance with Sections 878 and 1077 of the Standard Specifications except as modified herein.

Travel time to and from the work site will be paid separately under the contract pay items for labor and equipment unless the pay item work is being performed in conjunction with MAINTENANCE OF EXISTING SIGNAL INSTALLATION.

The traffic signal post shall be attached to the foundation with four 3/4" x 18" galvanized anchor bolts. The post base shall be secured to the foundation using galvanized nuts and galvanized steel flat washers that have a minimum thickness of 1/4" and are trapezoidal in shape. The washers shall be sized so as to completely capture the mounting flanges of the traffic signal base. Round washers will not be acceptable.

The traffic signal post, breakaway base, caps, and appurtenances shall be galvanized.

Basis of Payment: This work will be paid for at the contract unit price Each for TRAFFIC SIGNAL POST, GALVANIZED STEEL of the height specified which price shall be payment in full for all labor, material, and equipment required to provide and install the traffic signal post and base described above.

TRAFFIC SIGNAL BATTERY BACKUP SYSTEM

The Contractor shall furnish and install a battery backup system complete with all accessories specified below. The contractor shall furnish hardware, cables, and all materials required for installation at a location as specified by the Department.

Travel time to and from the work site will be paid separately under the contract pay items for labor and equipment unless the pay item work is being performed in conjunction with MAINTENANCE OF EXISTING SIGNAL INSTALLATION.

The following models of Battery Backup Systems are approved for use within District Three:

- Alpha Technologies Novus XFM 1100 (with standard IDOT cabinet or Alpha Technologies Side Mount 6 Integrated BBS Cabinet), Equipped with Ethernet SNMP Interface and Enhanced Capability Battery Monitoring System (AlphaGuard Plus)
- Multilink, EP 2200-T, 1500 Watts/2 kVA, 48 Volt, Equipped with Internal Communication Card and Monitoring Software

The Contractor may elect to submit an alternate product for consideration provided that it meets the minimum requirements contained in this specification.

The Contractor shall be responsible for providing Battery Backup Systems that are sized appropriately for the intersection load. The total system load shall not exceed the manufacturer's specifications.

The Battery Backup System shall be equipped with a deluxe pleated air filter and plexiglass covers to prevent accidental contact to terminal strips and connections carrying line voltage.

The battery backup systems for the existing traffic signal cabinets shall be installed as shown on the plan detail sheets and as follows:

- A separate circuit breaker shall be installed in the battery backup system cabinet (or in the traffic signal cabinet). The circuit breaker shall be rated equivalent to the main power circuit breaker rating in the existing traffic signal cabinet. The Contractor shall install #6 wiring from the test circuit breaker to the line voltage in the traffic signal cabinet. The circuit breaker shall be used to shut off the incoming utility power to test the battery backup system.
- The cabinet light, ventilation fans, heater strips, and service receptacle shall be wired to a separate circuit that will not be powered by the battery backup system
- A hole of sufficient size for the cables will be drilled into the side of the cabinet to accommodate the battery backup system cables and harnesses from the BBS cabinet. The hole shall be free of sharp edges and equipped with a plastic or rubber grommet.
- The fail-safe automatic by-pass switch and blue indicator light shall be installed in the battery backup cabinet (or in the existing traffic signal cabinet).

GENERAL REQUIREMENTS: The Battery Back-up System (BBS) shall include, but not be limited to the following: inverter/charger, power transfer relay, batteries, battery cabinet, a separate failsafe automatic bypass switch and all necessary hardware and interconnect wiring. The BBS shall provide reliable emergency power to a traffic signal in the event of a power failure or interruption. The transfer from utility power to battery power and vice versa shall not interfere with the normal operation of traffic controller, conflict monitor/malfunction management unit or any other peripheral devices within the traffic controller assembly.

The BBS shall provide power for full run-time operation for an "LED-only" intersection (all colors red, yellow, and green) or flashing mode operation for an intersection using Red LED's. As the battery reserve capacity reaches 50%, the intersection shall automatically be placed in all-red flash. The BBS shall allow the controller to automatically resume normal operation after the power has been restored. The BBS shall log an alarm in the controller for each time it is activated.

All 48-volt Battery Backup Systems shall include four batteries and all 36-volt Battery Backup Systems shall include six batteries.

The BBS shall be designed for outdoor applications, and shall meet the environmental requirements of, "NEMA Standards Publication No. TS 2 – Traffic Controller Assemblies," or applicable successor NEMA specifications, except as modified herein.

The BBS shall conform to the following specifications:

1.0 OPERATION

- 1.1 The BBS shall be on line and provide voltage regulation and power conditioning when utilizing utility power.
- 1.2 The BBS shall provide a minimum two (2) hours of full run-time operation and four (4) hours all-red flash operation for an "LED-only" intersection (minimum 1,000W/1,000VA active output capacity, with 80% minimum inverter efficiency).
- 1.3 The maximum transfer time from loss of utility power to switchover to battery backed inverter power shall be 150 milliseconds.
- 1.4 The BBS shall provide the user with 4-sets of normally open (NO) and normally closed (NC) single-pole double-throw (SPDT) relay contact closures, available on a panel mounted terminal block, rated at a minimum 120V/1A, and labeled to identify each contact. For typical configuration, see the plan detail sheet.
- 1.5 A first set of NO and NC contact closures shall be energized whenever the unit switches to battery power. Contact shall be labeled or marked "On Batt."
- 1.6 The second set of NO and NC contact closures shall be energized whenever the battery approaches approximately 40% of remaining useful capacity. Contact shall be labeled or marked "Low Batt."
- 1.7 The third set of NO and NC contact closures shall be energized two hours after the unit switches to battery power. Contact shall be labeled or marked "Timer."
- 1.8 The fourth set of NO and NC contact closures shall be energized in the event of inverter/charger failure, battery failure or complete battery discharge. Contact shall be labeled or marked "BBS Fail or Status."
- 1.9 A surge suppression unit shall be provided for the output power if available as an option by the BBS manufacturer.
- 1.10 Operating temperature for both the inverter/power transfer relay and failsafe automatic bypass switch shall be -37°C to +74°C.
- 1.11 The Power Transfer Relay shall be rated at 240VAC/30AMPS minimum and failsafe automatic bypass switch shall be rated at 240VAC/20 amps, minimum.
- 1.12 The fail-safe automatic bypass switch shall be wired to provide power to the BBS when the switch is set to bypass.
- 1.13 The BBS shall use a temperature-compensated battery charging system. The charging system shall compensate over a range of 2.5 – 4.0 mV/°C per cell.
- 1.14 The temperature sensor shall be external to the inverter/charger unit. The temperature sensor shall come with 2 meters (6' – 6") of wire.

- 1.15 Batteries shall not be recharged when battery temperature exceeds $50^{\circ}\text{C} \pm 3^{\circ}\text{C}$.
- 1.16 BBS shall bypass the utility line power whenever the utility line voltage is outside of the following voltage range: 100VAC to 130VAC ($\pm 2\text{VAC}$).
- 1.17 When utilizing battery power, the BBS output voltage shall be between 110 VAC and 125 VAC, pure sine wave output, $\pm 3\%$ THD, 60Hz $\pm 3\text{Hz}$.
- 1.18 BBS shall be compatible with Illinois DOT's traffic controller assemblies utilizing NEMA TS 1 or NEMA TS 2 controllers and cabinet components for full time operation.
- 1.19 When the utility line power has been restored at above 105 VAC ± 2 VAC for more than 30 seconds, the BBS shall dropout of battery backup mode and return to utility line mode.
- 1.20 When the utility line power has been restored at below 125VAC ± 2 VAC for more than 30 seconds, the BBS shall dropout of battery backup mode and return to utility line mode.
- 1.21 BBS shall be equipped to prevent malfunction feedback to the cabinet or from feeding back to the utility service.
- 1.22 In the event of inverter/charger failure, battery failure or complete battery discharge, the power transfer relay shall revert to the NC state, where utility line power is reconnected to the cabinet. The BBS shall always revert to utility line power and shall be designed to revert to utility line power in the event of a BBS fault condition.
- 1.23 Recharge time for the battery, from "protective low-cutoff" to 80% or more of full battery charge capacity, shall not exceed twenty (20) hours.
- 1.24 When the intersection is in battery operation, the BBS shall bypass all internal cabinet lights, ventilation fans, heater strips, and service receptacles.
- 1.25 The fail-safe automatic bypass switch shall be wired to provide power to the BBS when the switch is set to bypass.
- 1.26 A blue LED indicator light shall be mounted on the front of the traffic signal cabinet or on the side of the BBS cabinet facing traffic and shall turn on to indicate when the cabinet power has been disrupted and the BBS is in operation. The light shall be a minimum 1" diameter, be viewable from the driving lanes, and shall be large enough and visible enough to be seen from 200 ft. away.
- 1.27 All 36 volt and 48-volt systems shall include an external component that monitors battery charging to ensure that every battery in the string is fully charged. The device shall compensate for the effects of adding a new battery to an existing battery system by ensuring that the charge voltage is spread equally across all batteries. All cables, harnesses, cards, and other components that are required to provide the functionality described above shall be included in the unit bid price for the battery backup system. The following products are currently approved for use within District 3: Alpha Technologies: AlphaGuard with Charge Management Technology Module and Approved Equivalent

1.28 The BBS shall be equipped with an integrated safety switch that will interrupt inverter output power in the event of a cabinet knockdown. The safety switch may be either internal to the inverter/charger is externally mounted inside of the BBS cabinet. The safety switch shall be designed to interrupt output power if the charger/inverter is tilted more than twenty degrees on any axis. The switch shall be mechanically latching to ensure that power is not automatically restored to the BBS until the charger/inverter has been "reset". The switch shall also be resettable and reusable unless it has been physically damaged.

1.29 The BBS shall be equipped with an Ethernet port and network management card.

2.0 MOUNTING AND CONFIGURATION

2.1 GENERAL

2.2 Inverter/Charger Unit shall be rack or shelf mounted.

2.3 (Reserved).

2.4 All interconnect wiring provided between Power Transfer Relay, Bypass Switch and Cabinet Terminal Service Block shall be no greater than two (2) meters (6' – 6") of #10 AWG wire.

2.5 Relay contact wiring provided for each set of NO/NC relay contact closure terminals shall be #18 AWG wire.

2.6 All necessary hardware for mounting (shelf angles, rack, etc.) shall be included in the bid price of the BBS. The swing-trays shall be screwed to the Type IV or Type V NEMA cabinets using continuous stainless steel or aluminum piano hinge. All bolts/fasteners and washers shall be ½" diameter galvanized or stainless steel.

3.0 EXTERNAL BATTERY CABINET

3.1 The external cabinet shall be a rated NEMA Type 3R Cabinet.

3.2 Inverter/Charger and Power Transfer Relay shall be installed inside the external battery cabinet and the failsafe automatic bypass switch shall be installed inside the existing traffic signal cabinet or proposed battery backup cabinet.

3.3 Batteries shall be housed in the external cabinet which shall be NEMA Standard rated cabinet mounted to the side of the Type IV or Type V Cabinet (see plan sheets for details). This external battery cabinet shall conform to the IDOT Standard Specifications for traffic signal cabinets for the construction and finish of the cabinet.

3.4 The external battery cabinet shall mount to the Type IV or Type V NEMA Cabinet with a minimum of four (4) bolts to the satisfaction of the Engineer.

3.5 The dimensions of the external battery cabinet shall be 25" (L) x 16" (W) x 41" (H) and installed in accordance with the plan sheet cabinet detail and this specification.

- 3.6 The cabinet shall include heater mats for each battery shelf and/or battery. If the BBS charger/inverter does not have facilities to accommodate heater mat connections, thermostatically controlled heater mats shall be provided with the system. The heater mat thermostat shall be a separate thermostat (from the ventilation fan thermostat) and be adjustable from 0°F to 32°F for heater mat turn-on.
- 3.7 A warning sticker shall be placed on the outside of the cabinet indicating that there is an Uninterruptible Power Supply inside the cabinet.
- 3.8 The external battery cabinet shall be ventilated using louvered vents (2), filters, and one thermostatically controlled fan as per NEMA TS 2 Specifications. The cabinet shall include a cleanable or replaceable cabinet filter.
- 3.9 External battery cabinet fan shall be AC operated from the same line output of the bypass switch that supplies power to the Type IV or Type V Cabinet.
- 3.10 The BBS with external battery cabinet shall come with all bolts, conduits and bushings, gaskets, shelves, and hardware needed for mounting. The external battery cabinet shall have a hinged door opening to the entire cabinet. The cabinet shall include a bottom constructed from the same material as the cabinet.
- 3.11 The external cabinet shall be equipped with a power receptacle to accommodate the inverter/charger. The receptacle shall be wired to the line output of the manual bypass switch.

4.0 MAINTENANCE, DISPLAYS, CONTROLS AND DIAGNOSTICS

- 4.1 The BBS shall include a display and /or meter to indicate current battery charge status and conditions.
- 4.2 The BBS shall have lightning surge protection compliant with IEEE/ANSI C.62.41.
- 4.3 The BBS shall be equipped with an integral system to prevent battery from destructive discharge and overcharge.
- 4.4 The BBS and batteries shall be easily replaced with all needed hardware and shall not require any special tools for installation.
- 4.5 The BBS shall be equipped with a RS-232 port.
- 4.6 The BBS shall include a resettable front-panel event counter display to indicate the number of times the BBS was activated and a front-panel hour meter to display the total number of hours the unit has operated on battery power.
- 4.7 Manufacturer shall include two (2) sets of equipment lists, operation and maintenance manuals, and board-level schematic and wiring diagrams of the BBS, and the battery data sheets. Manufacturer shall include any software needed to monitor, diagnose, and operate the BBS. The manufacturer shall include any required cables to connect to a laptop computer.

4.8 The BBS shall include a data cable for the serial connection to the RS232 port and diagnostic software if it is available as an option with the unit (only two cables required for project).

4.9 One copy of the owner/maintenance manuals shall be provided with the BBS.

5.1 BATTERY SYSTEM

5.2 Individual batteries shall be 12V type and shall be easily replaced and commercially available off the shelf.

5.3 The batteries shall be premium gel type with a 5-year full replacement warranty.

5.4 Batteries used for BBS shall consist of a minimum of four (4) to eight (8) batteries with a cumulative minimum rated capacity of 280 amp-hours.

5.5 Batteries shall be deep cycle, completely sealed, silver alloy VRLA (Valve Regulated Lead Acid) requiring no maintenance with maximum run time.

5.6 Batteries shall be certified by the manufacturer to operate over a temperature range of – 40°C to +71°C.

5.7 The batteries shall be provided with appropriate interconnect wiring and corrosion- resistant mounting trays and/or brackets appropriate for the cabinet into which they will be installed.

5.8 Batteries shall indicate maximum recharge data and recharging cycles.

5.9 Battery interconnect wiring shall be via modular harness. Batteries shall be shipped with positive and negative terminals pre-wired with red and black cabling that terminates into a typical power-pole style connector. Harness shall be equipped with mating power-pole style connectors for batteries and a single, insulated plug-in style connection to inverter/charger unit. Harness shall allow batteries to be quickly and easily connected in any order and shall be keyed and wired to ensure proper polarity and circuit configuration.

5.10 Battery terminals shall be covered and insulated to prevent accidental shorting.

6.0 QUALITY ASSURANCE

6.1 BBS shall be manufactured in accordance with a manufacturer quality assurance (QA) program. The QA program shall include two types of quality assurance: (1) Design quality assurance and (2) Production quality assurance. The production quality assurance shall include statistically controlled routine tests to ensure minimum performance levels of BBS units built to meet this specification and a documented process of how problems are to be resolved.

6.2 QA process and test results documentation shall be kept on file for a minimum period of seven years.

6.3 Battery Backup System designs not satisfying design qualification testing and the production quality assurance testing performance requirements described below shall not be labeled, advertised, or sold as conforming to this specification.

7.0 DESIGN QUALIFICATION TESTING

7.1 The manufacturer, or an independent testing lab hired by the manufacturer, shall perform design Qualification Testing on new BBS designs, and when a major design change has been implemented on an existing design. A major design change is defined as a design change (electrical or physical) which changes any of the performance characteristics of the system, or results in a different circuit configuration.

7.2 Burn In. The sample systems shall be energized for a minimum of 5 hours, with full load of 700 watts, at temperatures of +74°C and -37°C., excluding batteries, before performing any design qualification testing.

7.3 Any failure of the BBS, which renders the unit non-compliant with the specification after burn-in, shall be cause for rejection.

7.4 For Operational Testing, all specifications may be measured including, but not limited to:

7.5 Run time while in battery backup mode, at full load.

7.6 Proper operation of all relay contact closures ("On-Batt", "Low-Batt", "Timer" and "BBSFail").

7.7 Inverter output voltage, frequency, harmonic distortion, and efficiency, when in battery backup mode.

7.8 All utility mode – battery backup mode transfer voltage levels. See Section 1 Operation.

7.9 Power transfer time from loss of utility power to switchover to battery backed inverter power.

7.10 Backfeed voltage to utility when in battery backup mode.

7.11 IEEE/ANSI C.62.41 compliance.

7.12 Battery charging time.

7.13 Event counter and runtime meter accuracy.

8.0 PRODUCTION QUALITY CONTROL TESTING

8.1 Production Quality Control tests shall consist of the above listed tests and shall be performed on each new system prior to shipment. Failure to meet requirements of any of these tests shall be cause for rejection. The manufacturer shall retain test results for seven years.

8.2 Each BBS shall be given a minimum 100-hour burn-in period to catch any premature failures.

8.3 Each system shall be visually inspected for any exterior physical damage or assembly anomalies. Any defects shall be cause for rejection.

9.0 WARRANTY

9.1 Manufacturers shall provide a minimum two (2) year factory-repair warranty for parts and labor on the BBS from date of acceptance by the State. Batteries shall be warranted for full replacement for five (5) years from date of purchase. The warranty shall be included in the total bid price of the BBS.

9.2 The Contractor shall furnish a warranty certificate for each Battery Backup System that includes the equipment description and details, serial numbers, effective dates, and the details of the warranty regarding materials and labor. The warranty period shall begin on the date of installation and the warranty certificate shall reflect this date.

Basis of Payment: The above work will be paid for at the contract unit price Each for TRAFFIC SIGNAL BATTERY BACKUP SYSTEM shall be payment in full for all labor, materials, and equipment required to provide, install, and test the battery backup system described above, complete.

CLOSED CIRCUIT TELEVISION CAMERA

The Contractor shall furnish and install a HD CCTV camera complete with all accessories specified below. The contractor shall furnish hardware, brackets, cables, and all materials required for installation at a location as specified by the Department.

Travel time to and from the work site will be paid separately under the contract pay items for labor and equipment unless the pay item work is being performed in conjunction with MAINTENANCE OF EXISTING SIGNAL INSTALLATION.

Description. This work shall consist of furnishing and installing an integrated Closed-Circuit Television (CCTV) Dome Camera Assembly, camera bracket, and all other items required for installation and operation. This assembly shall contain all components identified in the Materials Section and shall be configured as indicated on the plan sheets.

Materials.

The CCTV camera shall be an Axis Model Q6075-E Dome Camera Assembly.

The Contractor shall provide all materials required to install the proposed camera.

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 camera shall meet or exceed the following specifications:

CAMERA

VIDEO: 60 Hz (NTSC), 50 Hz (PAL)

IMAGE SENSOR: 1/2.8" progressive scan CMOS LENS: 4.44–142.6 mm, F1.6–4.41

Horizontal angle of view: 62.8°–2.23°

Vertical angle of view: 36.8°–1.3° Autofocus, auto-iris

DAY AND NIGHT: Automatically removable infrared-cut filter MINIMUM ILLUMINATION:

Color: 0.3 lux at 30 IRE F1.6

B/W: 0.03 lux at 30 IRE F1.6

Color: 0.5 lux at 50 IRE F1.6 B/W: 0.04 lux at 50 IRE F1.6

SHUTTER TIME: NTSC: 1/33000 s to 1/3 s with 50 Hz

1/33000 s to 1/4 s with 60 Hz

PAN/TILT/ZOOM: Pan: 360° endless, 0.05° - 450°/s

Tilt: 220°, 0.05°-450°/s

32x optical zoom and 12x digital zoom, total 384x zoom

E-flip, 256 preset positions, Tour recording, Guard tour, Control queue, On-screen directional indicator, Set new pan 0°, Adjustable zoom speed

VIDEO

VIDEO COMPRESSION: H.264 (MPEG-4 Part 10/AVC), Motion JPEG

RESOLUTIONS: HDTV 1080p 1920x1080 to 320x180

HDTV 720p 1280x720 to 320x180

FRAME RATE (H.264): Up to 60/50 fps (60/50 Hz) in HDTV 720p

Up to 30/25 fps (60/50 Hz) in HDTV 1080p

VIDEO STREAMING: Multiple, individually configurable streams in H.264 and Motion JPEG, Axis' Zipstream technology, Controllable frame rate and bandwidth, VBR/MBR H.264

IMAGE SETTING: Manual shutter time, compression, color, brightness, sharpness, white balance, exposure control, exposure zones, fine tuning of behavior at low light, rotation: 0°, 180°, text and image overlay, 32 individual 3D privacy masks, image freeze on PTZ, automatic defog, backlight compensation

Wide Dynamic Range (WDR): Up to 120 dB depending on scene, highlight compensation

NETWORK

SECURITY: Password protection, IP address filtering, HTTPSa encryption, IEEE 802.1Xa network access control, Digest authentication, User access log, Centralized Certificate Management

PROTOCOLS: IPv4/v6, HTTP, HTTPSa, SSL/TLSa, QoS Layer 3 DiffServ, FTP, CIFS/SMB, SMTP, Bonjour, UPnP, SNMP v1/v2c/v3 (MIB-II), DNS, DynDNS, NTP, RTSP, RTP, SFTP, TCP, UDP, IGMP, RTCP, ICMP, DHCP, ARP, SOCKS, SSH, NTP

SYSTEM INTEGRATION

APPLICATION PROG Open API for software integration, including VAPIX® INTERFACE: and AXIS Camera Application Platform; specifications at www.axis.com, AXIS Video Hosting System (AVHS) with One-Click Connection, ONVIF Profile S, specification at www.onvif.org

ANALYTICS: Video motion detection, Autotracking, Active Gatekeeper
Basic Analytics (not to be compared with third-party analytics): Object removed, Enter/Exit detector, Fence detector, Object Counter, Highlight compensation, Support for AXIS Camera Application Platform enabling installation of third-party applications, see www.axis.com/acap

EVENT TRIGGERS: Detectors: Live stream accessed, Video motion detection, Shock Detection, Object removed, Enter/Exit detector, Fence detector, Object counter; Hardware: Fan, Network, Temperature, Casing Open; PTZ: Autotracking, Error, Moving, Ready, Preset Reached; Storage: Disruption, Recording; System: System Ready; Time: Recurrence, Use Schedule; Input signal: Manual trigger, Virtual input

EVENT ACTIONS: Day/night mode, overlay text, video recording to edge storage, pre- and post-alarm video buffering, send SNMP trap PTZ: PTZ preset, start/stop guard tour File upload via FTP, SFTP, HTTP, HTTPS network share and Email; Notification via email, HTTP, HTTPS and TCP

DATA STREAMING Event data

BUILT IN INSTALLATION Pixel Counter AIDS

GENERAL

CASING: IP66-, NEMA 4X- and IK10-rated
Metal casing (aluminum), polycarbonate (PC) clear dome, sunshield (PC/ASA)

SUSTAINABILITY: PVC Ffree

MEMORY: 512 MB RAM, 128 MB Flash

POWER CAMERA: Axis High PoE midspan 1-port: 100–240 V AC, max 74 W
Camera consumption: typical 16 W, max 60 W

CONNECTORS: RJ45 10BASE-T/100BASE-TX PoE, RJ45 Push-pull Connector
(IP66) included

EDGE STORAGE: Support for SD/SDHC/SDXC card
Support for recording to dedicated network-attached storage (NAS); For SD card and NAS
recommendations see www.axis.com

OPERATING With 30 W midspan: -20 °C to 50 °C (-4 °F to 122 °F)
CONDITIONS: With 60 W midspan: -50 °C to 50 °C (-58 °F to 122 °F)
Maximum temperature (intermittent): 60 °C (140 °F)
Arctic Temperature Control: Start-up as low as -40 °C (-40 °F) Humidity 10–100% RH (condensing)

APPROVALS: EMC: EN 55022 Class A, EN 61000-3-2, EN 61000-3-3, EN
61000-6-1, EN 61000-6-2, EN 55024, FCC Part 15 Subpart B Class A, ICES-003 Class A, VCCI
Class A, RCM AS/NZS CISPR 22 Class A, KCC KN32 Class A, KN35

Safety: IEC/EN/UL 60950-1, IEC/EN/UL 60950-22

Environment: EN 50121-4, IEC 62236-4, IEC 60068-2-1, IEC
60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27,
IEC 60721-4-3, NEMA 250 Type 4X, IEC 60068-2-30,
IEC 60068-2-60, IEC 60068-2-78, IEC/EN 60529 IP66,
NEMA TS-2-2003 v02.06, Subsection 2.2.7, 2.2.8, 2.2.9;
IEC 62262 IK10, ISO 4892-2

Midspan: EN 60950-1, GS, UL, cUL, CE, FCC, VCCI, CB, KCC, UL-AR

WEIGHT: 3.7 kg (8.2 lb.)

INCLUDED Axis High PoE 60 W midspan 1-port, RJ45 Push-pull Connector ACCESSORIES:
(IP66), Sunshield, Installation Guide, Windows decoder 1-user
license

VIDEO MANAGEMENT: AXIS Camera Companion, AXIS Camera Station, Video SOFTWARE:
management software from Axis' Application Development
Partners available on www.axis.com/techsup/software WARRANTY: Axis 3-year warranty and
AXIS Extended Warranty option

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. If the option exists in the standard product line of the manufacturer, 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, weatherproof connector, located near the top for external interface with power, video, and control feeds.

CCTV Dome Camera Mounting Supports

The Contractor shall furnish and install an Axis Pole Mount Bracket T91L61 (Part Number 5801-721) for camera installation on traffic signal mast arms and CCTV camera poles and stainless steel banding as required. The CAT5 cable shall be terminated inside the bracket by using the IEC punch down blocks.

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 mph (145 km/hr), with a 30% gust factor. Load rating shall be designed to support up to 75 lb (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, shielded CAT 5E cable at the locations shown on the plan sheets. The cable shall be terminated using the terminal block inside the camera bracket and the IDC connector and pre-formed IP66 rated RJ-45 connector on the camera end and a shielded RJ-45 connector in the cabinet. The Contractor shall test the cable prior after termination.

General

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 CAMERA including all equipment, material, testing, documentation, and labor detailed in the contract documents for this bid item.

FURNISH AND INSTALL METAL SCREEN

This work shall be in accordance with Sections 838 and 1070 of the Standard Specifications except as modified herein.

The Contractor shall furnish and install a metal screen complete with all accessories specified below. The contractor shall furnish hardware and all materials required for installation at a location as specified by the Department.

Travel time to and from the work site will be paid separately under the contract pay items for labor and equipment unless the pay item work is being performed in conjunction with MAINTENANCE OF EXISTING SIGNAL INSTALLATION.

The Contractor shall remove the existing metal screen that is installed around the break-away couplings or leveling nuts and furnish and install a new metal screen that fits snugly around the breakaway couplings or leveling nuts between the bottom face of the pole base plate and top of the foundation to prevent rodent entry. No gaps greater than 0.125 inches will be allowed.

The contractor shall cover all holes and gaps greater than 0.25" diameter in and around the light pole base and anchor bolt slots by furnishing and installing all materials required to cover the holes and gaps.

All work shall be performed to the satisfaction of the Engineer.

Basis of Payment: This work shall be paid for at the contract unit price per each for FURNISH AND INSTALL METAL SCREEN which price shall be payment in full for all labor, equipment, and materials required to furnish and install the metal screen described above, complete.

SIGNAL VISOR, TUNNEL TYPE, 12 INCH

This work shall be in accordance with Sections 880 and 1078 of the Standard Specifications except as modified herein.

The Contractor shall furnish and install a polycarbonate tunnel visor on an existing traffic signal head. The Contractor shall provide visors that are compatible with existing signal heads.

The tunnel visor shall be secured to the existing traffic signal head using a minimum of four fasteners.

The Contractor shall furnish hardware and all materials required for installation at a location as specified by the Department.

Travel time to and from the work site will be paid separately under the contract pay items for labor and equipment unless the pay item work is being performed in conjunction with MAINTENANCE OF EXISTING SIGNAL INSTALLATION.

The Contractor shall remove the existing visor and dispose of it off site. All work shall be performed to the satisfaction of the Engineer.

Basis of Payment: This work shall be paid for at the contract unit price per each for SIGNAL VISOR, TUNNEL TYPE, 12 INCH which price shall be payment in full for all labor, equipment, and materials required to furnish and install the signal head visor described above, complete.

KTQ 5A FUSE

This work shall be in accordance with Sections 821 and 1065 of the Standard Specifications except as modified herein.

The Contractor shall furnish and install a fast-acting KTQ 5A mini fuse inside a fuse holder located inside an existing light pole.

The Contractor shall furnish hardware and all materials required for installation at a location as specified by the Department.

Travel time to and from the work site will be paid separately under the contract pay items for labor and equipment unless the pay item work is being performed in conjunction with MAINTENANCE OF EXISTING SIGNAL INSTALLATION.

The Contractor shall remove the existing fuse and dispose of it off site. All work shall be performed to the satisfaction of the Engineer.

Basis of Payment: This work shall be paid for at the contract unit price per each for KTQ 5A FUSE which price shall be payment in full for all labor, equipment, and materials required to furnish and install the fuse described above, complete.

BUCHANAN FUSEHOLDER KIT

This work shall be in accordance with Sections 821 and 1065 of the Standard Specifications except as modified herein.

The Contractor shall furnish and install a fuseholder inside an existing light pole.

The Contractor shall furnish hardware and all materials required for installation at a location as specified by the Department.

Travel time to and from the work site will be paid separately under the contract pay items for labor and equipment unless the pay item work is being performed in conjunction with MAINTENANCE OF EXISTING SIGNAL INSTALLATION.

The Contractor shall remove the existing fuseholder and dispose of it off site. All work shall be performed to the satisfaction of the Engineer.

Basis of Payment: This work shall be paid for at the contract unit price per each for BUCHANAN FUSEHOLDER KIT which price shall be payment in full for all labor, equipment, and materials required to furnish and install the fuseholder kit described above, complete.

BREAKAWAY DEVICE, COUPLING WITH STAINLESS STEEL SCREEN

This work shall be in accordance with Sections 838 and 1070 of the Standard Specifications except as modified herein.

The Contractor shall furnish and install one breakaway coupling with stainless steel or perforated aluminum screen on an existing light pole.

A minimum of four couplings will be installed per work order.

The Contractor shall furnish hardware and all materials required for installation at a location as specified by the Department.

Travel time to and from the work site will be paid separately under the contract pay items for labor and equipment unless the pay item work is being performed in conjunction with MAINTENANCE OF EXISTING SIGNAL INSTALLATION.

The Contractor shall remove the existing breakaway coupling and screen and dispose of it off site.

The proposed coupling shall be constructed from galvanized steel and shall be compatible with the existing light pole foundation.

The screen shall fit snugly around the breakaway couplings between the bottom face of the pole base plate and top of the foundation to prevent rodent entry. No gaps greater than 0.125 inches will be allowed.

The contractor shall cover all holes and gaps greater than 0.25" diameter in and around the light pole base and anchor bolt slots by furnishing and installing all materials required to cover the holes and gaps.

All work shall be performed to the satisfaction of the Engineer.

Basis of Payment: This work shall be paid for at the contract unit price per each for BREAKAWAY DEVICE, COUPLING WITH STAINLESS STEEL SCREEN which price shall be payment in full for all labor, equipment, and materials required to furnish and install the breakaway device and screen as described above, complete.

BREAKAWAY DEVICE, TRANSFORMER BASE, 15 INCH BOLT CIRCLE

This work shall be in accordance with Sections 838 and 1070 of the Standard Specifications except as modified herein.

The Contractor shall furnish and install an aluminum transformer base on an existing or proposed light pole.

The Contractor shall furnish hardware and all materials required for installation at a location as specified by the Department.

Travel time to and from the work site will be paid separately under the contract pay items for labor and equipment unless the pay item work is being performed in conjunction with MAINTENANCE OF EXISTING SIGNAL INSTALLATION.

The Contractor shall remove the existing transformer base and dispose of it off site.

The proposed transformer base shall be constructed from aluminum and shall be compatible with the light pole and light pole foundation.

All work shall be performed to the satisfaction of the Engineer.

Basis of Payment: This work shall be paid for at the contract unit price per each for BREAKAWAY DEVICE, TRANSFORMER BASE, 15 INCH BOLT CIRCLE which price shall be payment in full for all labor, equipment, and materials required to furnish and install the breakaway device as described above, complete.

LUMINAIRE, LED, ROADWAY, OUTPUT DESIGNATION G

This work shall be in accordance with Sections 821 and 1067 of the Supplemental Specifications except as modified herein.

The Contractor shall furnish and install a LED luminaire on an existing or proposed light pole.

The Contractor shall furnish hardware and all materials required for installation at a location as specified by the Department.

Travel time to and from the work site will be paid separately under the contract pay items for labor and equipment unless the pay item work is being performed in conjunction with MAINTENANCE OF EXISTING SIGNAL INSTALLATION.

The Contractor shall remove the existing luminaire and dispose of it off site.

Basis of Payment: This work shall be paid for at the contract unit price per each for LUMINAIRE, LED, ROADWAY, OUTPUT DESIGNATION G which price shall be payment in full for all labor, equipment, and materials required to furnish and install the LED luminaire described above, complete.

LUMINAIRE, LED, ROADWAY, OUTPUT DESIGNATION H

This work shall be in accordance with Sections 821 and 1067 of the Supplemental Specifications except as modified herein.

The Contractor shall furnish and install a LED luminaire on an existing or proposed light pole.

The Contractor shall furnish hardware and all materials required for installation at a location as specified by the Department.

Travel time to and from the work site will be paid separately under the contract pay items for labor and equipment unless the pay item work is being performed in conjunction with MAINTENANCE OF EXISTING SIGNAL INSTALLATION.

The Contractor shall remove the existing luminaire and dispose of it off site.

Basis of Payment: This work shall be paid for at the contract unit price per each for LUMINAIRE, LED, ROADWAY, OUTPUT DESIGNATION H which price shall be payment in full for all labor, equipment, and materials required to furnish and install the LED luminaire described above, complete.

HANDHOLE, COVER ONLY (NEENAH R-6660-JP)

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

The Contractor shall furnish and install a steel handhole cover on an existing concrete handhole.

The Contractor shall ground/safety bond the handhole cover in accordance with NEC requirements.

The handhole shall be a NEENAH FOUNDRY model R-6660-JP. The Contractor shall verify that the proposed handhole lid is compatible with the existing handhole frame.

The Contractor shall furnish hardware and all materials required for installation at a location as specified by the Department.

Travel time to and from the work site will be paid separately under the contract pay items for labor and equipment unless the pay item work is being performed in conjunction with MAINTENANCE OF EXISTING SIGNAL INSTALLATION.

The Contractor shall remove the existing handhole cover and dispose of it off site.

Basis of Payment: This work shall be paid for at the contract unit price per each for HANDHOLE, COVER ONLY (NEENAH R-6660-JP) which price shall be payment in full for all labor, equipment, and materials required to furnish and install the handhole cover described above, complete.

LOAD SWITCH, NEMA

This work shall be in accordance with Sections 857 and 1074 of the Standard Specifications except as modified herein.

The Contractor shall furnish and install a load switch inside a traffic signal cabinet.

The load switch shall be a RENO traffic modem LS-200 or approved equal.

The Contractor shall label the load switch in with the cabinet phase.

The Contractor shall furnish hardware and all materials required for installation at a location as specified by the Department.

Travel time to and from the work site will be paid separately under the contract pay items for labor and equipment unless the pay item work is being performed in conjunction with MAINTENANCE OF EXISTING SIGNAL INSTALLATION.

The Contractor shall remove the existing load switch and dispose of it off site.

Basis of Payment: This work shall be paid for at the contract unit price per each for LOAD SWITCH, NEMA which price shall be payment in full for all labor, equipment, and materials required to furnish and install the load switch described above, complete.

GFCI 20 AMP DUPLEX RECEPTACLE

This work shall be in accordance with Sections 857 and 1074 of the Standard Specifications except as modified herein.

The Contractor shall furnish and install a GFCI 20Amp receptacle inside an existing traffic signal, lighting, or ITS cabinet.

The Department may request that the Contractor furnish a standard non-GFCI receptacle to be used to power equipment instead of a GFCI receptacle.

The Contractor shall replace the existing receptacle or wire in a new receptacle at the Department's request. The Contractor shall furnish an outlet box, wiring, and all materials required to install a new equipment receptacle in accordance with NEC requirements.

Travel time to and from the work site will be paid separately under the contract pay items for labor and equipment unless the pay item work is being performed in conjunction with MAINTENANCE OF EXISTING SIGNAL INSTALLATION.

The Contractor shall remove the existing receptacle and dispose of it off site.

Basis of Payment: This work shall be paid for at the contract unit price per each for GFCI 20 AMP DUPLEX RECEPTACLE which price shall be payment in full for all labor, equipment, and materials required to furnish and install the duplex receptacle as described above, complete.

REMOVE AND REPLACE BATTERIES FOR UNINTERRUPTABLE POWER SUPPLY, EXTENDED

This work shall be in accordance with Sections 862 and 1074 of the Standard Specifications except as modified herein.

The Contractor shall furnish and install four new batteries inside an existing battery backup cabinet.

The Contractor shall remove the existing batteries and recycle them at a certified recycling center.

The Contractor shall inspect the battery cables and remove any signs of corrosion from the cables.

The Contractor shall connect the batteries to the UPS and ensure that the battery heater mats are plugged in and operational.

The Contractor shall label each battery with the installation dates using a permanent black marker or other permanent labeling system.

The batteries shall be AlphaCell XTV (100Ah, AGM) batteries manufactured by Alpha and have a five year full replacement warranty.

Upon installation, the Contractor shall measure the battery voltages and test the existing battery backup system to ensure that it is operating correctly.

The Contractor shall furnish hardware and all materials required for installation at a location as specified by the Department.

Travel time to and from the work site will be paid separately under the contract pay items for labor and equipment unless the pay item work is being performed in conjunction with MAINTENANCE OF EXISTING SIGNAL INSTALLATION.

Basis of Payment: This work shall be paid for at the contract unit price per each for REMOVE AND REPLACE BATTERIES FOR UNINTERRUPTABLE POWER SUPPLY, EXTENDED which price shall be payment in full for all labor, equipment, and materials required to furnish and install the batteries described above, complete.

MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION

This work shall be in accordance with the applicable Articles of Sections 850 of the Standard Specifications.

This work shall consist of the following items:

- The locations of the existing traffic signal installations to be maintained are listed in the plans. IDOT personnel will supply the contractor with a work order prior to the contractor performing any maintenance.
- The Contractor shall travel to the work site and transport all material and equipment needed to complete the maintenance work. The cost of all labor, materials, and equipment required to complete the maintenance and inspection work shall be included in this pay item. Travel time to/from the work site will not be paid separately and shall be included in this pay item.
- The Contractor shall inspect each traffic signal installation utilizing the attached inspection sheet.
- The Contractor shall perform all routine maintenance procedures that are detailed on the check sheet and complete all entries.
- The Contractor shall supply all required materials and perform all other work that is required to complete the items listed on the check sheet.
- The Contractor shall perform all work to the satisfaction of the Engineer.
- Check Sheet will be provided with each work order issued.

If at the time of service being performed, additional work of a minor nature (not to exceed \$500) is needed, the Contractor shall proceed with that work. For work in excess of \$500, the Contractor shall contact the Department District Contact before proceeding with the additional work. Pay item work performed will be paid in accordance with the pay item basis of payment. Extra work will be paid for in accordance with Article 109.04 of the Standard Specifications.

Basis of Payment: This work shall be paid for at the contract unit price per each per intersection for MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION which price shall be payment in full for all labor, equipment, and materials required to complete the traffic signal inspection and maintenance work described, complete.

TRAFFIC SIGNAL MAINTENANCE CHECKSHEET

IDOT District 3 Intersection Number: _____

Location: _____

Inspection Date: _____

The following items shall be inspected by the contractor:

1. Check signal head clearances, leveling, and aiming. Adjust as needed for optimum viewing and adequate clearance.

Comments: _____

2. _____ Check masking (programmable heads).

Comments: _____

3. _____ Clean LED signal and pedestrian head faces.

Comments: _____

4. _____ Check all mounting brackets and adjust and tighten if necessary.

Comments: _____

5. _____ Check backplates and resecure as necessary.

Comments: _____

6. Check operation of all pedestrian pushbuttons. Ensure that the proper indications come up. Notify IDOT of any malfunctioning push buttons.

Comments: _____

- 7. Check mast arm for cracked welds and report any mast arm damage to the Department (dents, corrosion, etc.)

Comments: _____

- 8. Visually inspect electric service installation. Test battery backup system operation by using test circuit breaker or removing AC power. Visually inspect batteries for signs of damage and leakage.

Comments: _____

- 9. Inspect and clean existing PTZ and video vehicle detection cameras per manufacturers guidelines.

Comments: _____

- 10. _____ Test the Conflict Monitor with the latest version of an ATSI PCMT 8000 Conflict Monitor Tester or equal.

Comments: _____

Note all other repairs made or needed: __

Inspected _____ By:

Date: _____

MAINTENANCE OF EXISTING FLASHING BEACON INSTALLATION

This work shall be in accordance with the applicable Articles of Sections 850 of the Standard Specifications.

This work shall consist of the following items:

- The locations of the existing flashing beacon installations to be maintained are listed in the plans. IDOT personnel will supply the contractor with a work order prior to the contractor performing any maintenance.
- The Contractor shall travel to the work site and transport all material and equipment needed to complete the maintenance work. The cost of all labor, materials, and equipment required to complete the maintenance and inspection work shall be included in this pay item. Travel time to/from the work site will not be paid separately and shall be included in this pay item.
- The Contractor shall inspect each flashing installation utilizing the attached inspection sheet.
- The Contractor shall perform all routine maintenance procedures that are detailed on the check sheet and complete all entries.
- The Contractor shall supply all required materials and perform all other work that is required to complete the items listed on the check sheet.
- The Contractor shall perform all work to the satisfaction of the Engineer.
- Check Sheet will be provided with each work order issued.

If at the time of service being performed, additional work of a minor nature (not to exceed \$500) is needed, the Contractor shall proceed with that work. For work in excess of \$500, the Contractor shall contact the Department District Contact before proceeding with the additional work. Pay item work performed will be paid in accordance with the pay item basis of payment. Extra work will be paid for in accordance with Article 109.04 of the Standard Specifications.

Basis of Payment: This work shall be paid for at the contract unit price per each per intersection for MAINTENANCE OF EXISTING FLASHING BEACON INSTALLATION which price shall be payment in full for all labor, equipment, and materials required to complete the flashing beacon inspection and maintenance work described, complete.

FLASHING BEACON MAINTENANCE CHECKSHEET

IDOT District 3 Intersection Number: _____

Location: _____

Inspection Date: _____

The following items shall be inspected by the contractor:

1. Check signal head clearances, leveling, and aiming. Adjust as needed for optimum viewing and adequate clearance. Span wire mounted traffic signal heads shall have a minimum clearance of 17 ft. above the highest point of the roadway.

Comments: _____

2. Clean LED flasher head faces.

Comments: _____

3. Check all traffic signal head mounting brackets and span wire assembly hardware. Tighten if needed.

Comments: _____

4. Check backplates and resecure as necessary.

Comments: _____

5. Check electrical service installation and note any deficiencies.

Comments: _____

Note all other repairs made or needed: _____

Inspected _____ **By:**

Date: _____

MAINTENANCE OF EXISTING HIGH MAST LIGHT TOWERS

This work shall be in accordance with the applicable Articles of Sections 850 of the Standard Specifications.

This work shall consist of the following items:

- The locations of the existing high mast light tower installations to be maintained are listed in the plans. IDOT personnel will supply the contractor with a work order prior to the contractor performing any maintenance.
- The Contractor shall travel to the work site and transport all material and equipment needed to complete the maintenance work. The cost of all labor, materials, and equipment required to complete the maintenance and inspection work shall be included in this pay item. Travel time to/from the work site will not be paid separately and shall be included in this pay item.
- The Contractor shall inspect each high mast light tower installation utilizing the attached inspection sheet.
- The Contractor shall perform all routine maintenance procedures that are detailed on the check sheet and complete all entries.
- The Contractor shall supply all required materials and perform all other work that is required to complete the items listed on the check sheet.
- The Contractor shall perform all work to the satisfaction of the Engineer.
- Check sheet will be provided with each work order issued.

If at the time of service being performed, additional work of a minor nature (not to exceed \$500) is needed, the Contractor shall proceed with that work. For work in excess of \$500, the Contractor shall contact the Department District Contact before proceeding with the additional work. Pay item work performed will be paid in accordance with the pay item basis of payment. Extra work will be paid for in accordance with Article 109.04 of the Standard Specifications.

Basis of Payment: This work shall be paid for at the contract unit price per each per HMLT for MAINTENANCE OF EXISTING HIGH MAST LIGHT TOWERS which price shall be payment in full for all labor, equipment, and materials required to complete the HMLT inspection and maintenance work described, complete.

MAINTENANCE OF EXISTING HIGH MAST LIGHT TOWERS

District 3 County: _____

Route: _____

Location: _____ Date Inspected: _____ Inspected By: _____

Tower Number					
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TOWER

1. Tower vents - check and clean					
2. Padlocks - check and lubricate					
3. Power cord caps - check connections					
4. Winch assembly - check and lubricate					
5. Replace bad locks					
6. Lubricate locks, even new locks. Spray graphite into the tumbler mechanism. Insert and remove key to spread graphite. Spray penetrating oil into shank.					
7. Check and repair screening as necessary.					
8. Check for rodent damage.					
9. IMPORTANT: Check oil level in crank case before lowering ring.					
10. Lower ring. (IMPORTANT. Stand away from tower whenever ring is moving in case ring falls.) Check for fraying of cable as cable unwinds.					
11. If ring has locking mechanism at top, make sure all locks are holding the ring. If ring is held up by motor, DO NOT release tension on cable to put weight on safety chains; that will allow ring to sway and fray cables.					
12. Make sure to install safety chains, if they are available.					
13. Lock tower door					
14. Inspect tower for cracks or structural damage.					
15. Inspect tower base weld for damage or deterioration.					
16. Fill out and send in inspection report for each tower.					

17. Clean out any nests. PLACE HANDFUL OF MOTHBALLS IN EACH TOWER BASE (This will repel rodents).					
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FOUNDATION

1. Check for spalling and cracks					
2. Check anchor bolts					
2. Check outside ground connection					
4. Ground Rod Reading					

LOWER DEVICES

1. Check power cable for wear					
2. Check kelleem grip					
3. Check turnbuckle					
4. Check wire insulation					
5. Check safety cables					
6. Check hoist					
7. Check electrical ring connections					
8. Tighten until tightening ring is secure against stops					
9. Attach winch cable safety mechanism.					

LIGHTING RING

1. Visual check					
2. Number of luminaries					
3. Replace bulbs or luminaires as needed.					
4. Check around ring for cable fraying. Report all damage to cables.					
5. Ring - check level and lubricate moving parts.A34					
6. Hoist and support cables - check for wear.					
7. Check for bad or flat rollers.					

CABINET

1. Spray graphite into the tumbler mechanism of the lock. Insert and remove key to spread graphite.					
2. Check for rodent damage.					
3. Tighten loose screws.					

SERVICE INSTALLATION

1. Replace bad locks.					
2. Lubricate locks, even new locks. Spray graphite into the tumbler mechanism. Insert and remove key to spread graphite. Spray penetrating oil into shank.					
3. Check for rodent damage.					
4. Tighten screws					

Comments:

s:\opr\tower inspection.xlsx

MAINTAIN EXISTING HIGHWAY LIGHTING

This work shall be in accordance with the applicable Articles of Sections 850 of the Standard Specifications.

This work shall consist of the following items:

- The locations of the existing highway lighting installations to be maintained are listed in the plans. IDOT personnel will supply the contractor with a work order prior to the contractor performing any maintenance.
- The Contractor shall travel to the work site and transport all material and equipment needed to complete the maintenance work. The cost of all labor, materials, and equipment required to complete the maintenance and inspection work shall be included in this pay item. Travel time to/from the work site will not be paid separately and shall be included in this pay item.
- The Contractor shall inspect each highway lighting installation utilizing the attached inspection sheet.
- The Contractor shall perform all routine maintenance procedures that are detailed on the check sheet and complete all entries.
- The Contractor shall supply all required materials and perform all other work that is required to complete the items listed on the check sheet.
- The Contractor shall perform all work to the satisfaction of the Engineer.
- Check sheet will be provided with each work order issued.

If at the time of service being performed, additional work of a minor nature (not to exceed \$500) is needed, the Contractor shall proceed with that work. For work in excess of \$500, the Contractor shall contact the Department District Contact before proceeding with the additional work. Pay item work performed will be paid in accordance with the pay item basis of payment. Extra work will be paid for in accordance with Article 109.04 of the Standard Specifications.

Basis of Payment: This work shall be paid for at the contract unit price per each per light pole for MAINTAIN EXISTING HIGHWAY LIGHTING which price shall be payment in full for all labor, equipment, and materials required to complete the highway lighting inspection and maintenance work described, complete.

HIGHWAY LIGHTING MAINTENANCE CHECKSHEET - IDOT DISTRICT 3

Date Inspected: _____ Inspected By: _____ Intersection: _____
 County & City: _____ Contractor Or Agency: _____ Quadrant: _____

INSPECT BASE OF POLE			
	INSPECTED	DEFECT FOUND	COMMENTS
1. Permanently remove all shrouds. Remove anchor bolt covers if present and inspect for corrosion. If none found <u>reinstall</u> or follow steps below. <i>Apply an anti-seize compound to <u>all</u> of the anchor bolts' exposed threaded surfaces.</i>			
2. Check for corrosion or disturbance at base. Inspect inside pole handhole for corrosion with flashlight. <i>Clean out any buildup of corrosion or other material under the base.</i>			
3. Remove grout at base of pole, reinstall or install rodent mesh if missing or damaged. <i>Examine for grout that blocks air flow at the base of the pole. If present, remove grout with a hand chipping hammer and retrofit rodent mesh.</i>			
4. Sound pole around base. <i>Hit the pole around base with varying force with the flat side of a ball peen hammer. If pole 'thuds' instead of 'rings' may be <u>corrosion</u> at the base. <u>Further</u> investigation will be required.</i>			
INSPECT FOUNDATION & ANCHOR BOLTS			
	INSPECTED	DEFECT FOUND	COMMENTS
1. Foundation <i>Check for spalls, cracks, and deterioration. Indicate diameter in comments section.</i>			
2. Anchor Bolts <i>Visually inspect for loose nuts and damaged anchor bolts and leveling nuts Strike anchor bolts with a hammer. If the bolts do not 'ring' they are suspect for corrosion and concrete deterioration.</i>			
LIGHT POLE & LIGHT POLE CONNECTIONS			
	INSPECTED	DEFECT FOUND	COMMENTS
1. Visually inspect the light pole connections where the arm bolts to the pole <i>Examine for cracking by bucket truck or by number 5 or 7 power binoculars and pole caps.</i>			
2. Visually inspect vertical and horizontal <u>structural</u> elements <i>Examine for corrosion and or impact damage. Look for open holes on mast or arm. Examine luminaire arm extension if present.</i>			
3. Pictures <i>Take a minimum of 4 to 8 <u>digital</u> pictures of the light pole, foundation, anchor bolts, base of pole, and areas of concern if found. Send pictures labeled with applicable information to IDOT D3 Signals Unit digitally.</i>			
4. Inspect Luminaire (if applicable) <i>Test for proper operation of luminaire.</i>			
Additional Comments: _____ _____			
Instructions Indicate inspected and acceptable with initials under "INSPECTED" column. Note any defects with description and explanation under "DEFECT FOUND" and "COMMENTS" column. Contact District 3 Signals Unit if any issues are discovered immediately at: 815-434-6131			

AUTOMATED FLAGGER ASSISTANCE DEVICES (BDE)

Effective: January 1, 2008

Revised: April 1, 2023

Description. This work shall consist of furnishing and operating automated flagger assistance devices (AFADs) as part of the work zone traffic control and protection for two-lane highways where two-way traffic is maintained over one lane of pavement in segments where no sideroads or entrances require deployment of additional flaggers. Use of these devices shall be at the option of the Contractor.

Equipment. AFADs shall be the STOP/SLOW or Red/Yellow Lens type mounted on a trailer or moveable cart meeting the requirements of the MUTCD and NCHRP 350 or MASH 2016, Category 4.

General. AFADs shall be placed at each end of the traffic control, where a flagger is shown on the plans. The AFAD shall be setup within five degrees of vertical.

Flagger symbol signs as shown on the plans shall be replaced with "BE PREPARED TO STOP" signs when the AFAD is in operation.

Personal communication devices shall not be used to operate the AFAD.

Flagging Requirements. Flaggers and flagging requirements shall be according to Article 701.13 of the Standard Specifications and the following.

Each AFAD shall be operated by a flagger trained to operate the specific AFAD to be deployed. A minimum of two flaggers shall be on site at all times during operation. Each flagger shall be positioned outside the lane of traffic and near each AFAD's location.

Flagging equipment required for traditional flagging shall be available near each AFAD location in the event of AFAD equipment malfunction/failure.

For nighttime flagging, the AFAD and flagger shall be illuminated according to Article 701.13 of the Standard Specifications.

When not in use, AFADs will be considered non-operating equipment and shall be stored according to Article 701.11 of the Standard Specifications.

Basis of Payment. This work will not be paid for separately but shall be considered as included in the cost of the various traffic control items included in the contract.

COMPENSABLE DELAY COSTS (BDE)

Effective: June 2, 2017

Revised: April 1, 2019

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

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

- (1) Minor Delay. A minor delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two hours, but not to exceed two weeks.
- (2) Major Delay. A major delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two weeks.
- (3) Reduced Rate of Production Delay. A reduced rate of production delay occurs when the rate of production on the work in conflict with the utility in an unanticipated location decreases by more than 25 percent and lasts longer than seven calendar days.”

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

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

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

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

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

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

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

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

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

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

- (1) When adverse weather prevents work on the controlling item.
- (2) When job conditions due to recent weather prevent work on the controlling item.
- (3) When conduct or lack of conduct by the Department or its consultants, representatives, officers, agents, or employees; delay by the Department in making the site available; or delay in furnishing any items required to be furnished to the Contractor by the Department prevents work on the controlling item.
- (4) When delays caused by utility or railroad adjustments prevent work on the controlling item.
- (5) When strikes, lock-outs, extraordinary delays in transportation, or inability to procure critical materials prevent work on the controlling item, as long as these delays are not due to any fault of the Contractor.
- (6) When any condition over which the Contractor has no control prevents work on the controlling item.”

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

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

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

Add the following to Section 109 of the Standard Specifications.

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

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

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

- (a) Escalated Material and/or Labor Costs. When the delay causes work, which would have otherwise been completed, to be done after material and/or labor costs have increased, such increases will be paid. Payment for escalated material costs will be limited to the increased costs substantiated by documentation furnished by the Contractor. Payment for escalated labor costs will be limited to those items in Article 109.04(b)(1) and (2), except the 35 percent and 10 percent additives will not be permitted.
- (b) Extended Project Overhead. For the duration of the delay, payment for extended project overhead will be paid as follows.
 - (1) Direct Jobsite and Offsite Overhead. Payment for documented direct jobsite overhead and documented direct offsite overhead, including onsite supervisory and administrative personnel, will be allowed according to the following table.

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

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

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

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

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

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)

Effective: September 1, 2000

Revised: March 2, 2019

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR Part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR Part 26 and listed in the Illinois Unified Certification Program (IL UCP) DBE Directory.

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

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

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

- (a) Withholding progress payments;
- (b) Assessing sanctions;
- (c) Liquidated damages; and/or

- (d) Disqualifying the Contractor from future bidding as non-responsible.

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

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

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

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

<http://www.idot.illinois.gov/doing-business/certifications/disadvantaged-business-enterprise-certification/il-ucp-directory/index>.

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

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

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

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

- (a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases and will be considered by the Department.
 - (1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.
 - (2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to perform these work items with its own forces.
 - (3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
 - (4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected

for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.

- b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable. In accordance with the above Bidding Procedures, the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract.
- (5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.
 - (6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.
 - (7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.
 - (8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.
- (b) If the Department determines the bidder has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided it is otherwise eligible for award. If the Department determines the bidder has failed to meet the requirements of this Special Provision or that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan that the bid is not responsive. The notification will also include a statement of reasons for the adverse determination. If the Utilization Plan is not approved because it is deficient as a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no more than a five calendar day period to cure the deficiency.
 - (c) The bidder may request administrative reconsideration of an adverse determination by emailing the Department at "DOT.DBE.UP@illinois.gov" within the five calendar days after the receipt of the notification of the determination. The determination shall become final if a request is not made on or before the fifth calendar day. A request may provide additional written documentation or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address

efforts made prior to submitting the bid. The request will be reviewed by the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person to consider all issues of documentation and whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

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

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

- (1) 60 percent goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.
- (2) 100 percent goal credit for the cost of materials of supplies obtained from a DBE manufacturer.
- (3) 100 percent credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a DBE regular dealer or DBE manufacturer.

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

- (a) NO AMENDMENT. No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be emailed to the Department at DOT.DBE.UP@illinois.gov.
- (b) CHANGES TO WORK. Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A or AER 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, a new Request for Approval of Subcontractor will not be required. However, the Contractor must document efforts to assure the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.
- (c) SUBCONTRACT. The Contractor must provide copies of DBE subcontracts to the Department upon request. Subcontractors shall ensure that all lower tier subcontracts or agreements with DBEs to supply labor or materials be performed in accordance with this Special Provision.
- (d) ALTERNATIVE WORK METHODS. In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute

work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:

- (1) The replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award; or
- (2) The DBE is aware its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or
- (3) The DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.

- (e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in this Special Provision. The Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the Contractor obtains the Department's written consent as provided in subsection (a) of this part. Unless Department consent is provided for termination of a DBE subcontractor, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the DBE in the Utilization Plan.

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

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

- (1) The listed DBE subcontractor fails or refuses to execute a written contract;
- (2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the Contractor;
- (3) The listed DBE subcontractor fails or refuses to meet the Contractor's reasonable, nondiscriminatory bond requirements;

- (4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1200 or applicable state law.
- (6) The Contractor has determined the listed DBE subcontractor is not a responsible contractor;
- (7) The listed DBE subcontractor voluntarily withdraws from the projects and provides written notice to the Contractor of its withdrawal;
- (8) The listed DBE is ineligible to receive DBE credit for the type of work required;
- (9) A DBE owner dies or becomes disabled with the result that the listed DBE subcontractor is unable to complete its work on the contract;
- (10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE contractor was engaged or so that the Contractor can substitute another DBE or non-DBE contractor after contract award.

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

- (f) **FINAL PAYMENT.** After the performance of the final item of work or delivery of material by a DBE and final payment therefore to the DBE by the Contractor, but not later than 30 calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Resident Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.
- (g) **ENFORCEMENT.** The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be

made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.

- (h) **RECONSIDERATION.** Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of “Good Faith Effort Procedures” of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department. The result of the reconsideration process is not administratively appealable to the U.S. Department of Transportation.

ILLINOIS WORKS APPRENTICESHIP INITIATIVE – STATE FUNDED CONTRACTS (BDE)

Effective: June 2, 2021

Revised: September 2, 2021

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

SPEED DISPLAY TRAILER (BDE)

Effective: April 2, 2014

Revised: January 1, 2022

Revise the last paragraph of Article 701.11 of the Standard Specifications to read:

“When not being utilized to inform and direct traffic, sign trailers, speed display trailers, arrow boards, and portable changeable message boards shall be treated as nonoperating equipment.”

Add the following to Article 701.15 of the Standard Specifications:

“(m) Speed Display Trailer. A speed display trailer is used to enhance safety of the traveling public and workers in work zones by alerting drivers of their speed, thus deterring them from driving above the posted work zone speed limit.”

Add the following to Article 701.20 of the Standard Specifications:

“(k) When speed display trailers are shown on the Standard, this work will not be paid for separately but shall be considered as included in the cost of the Standard.

For all other speed display trailers, this work will be paid for at the contract unit price per calendar month or fraction thereof for each trailer as SPEED DISPLAY TRAILER.”

Add the following to Article 1106.02 of the Standard Specifications:

“(o) Speed Display Trailer. The speed display trailer shall consist of a LED speed indicator display with self-contained, one-direction radar mounted on an orange see-through trailer. The height of the display and radar shall be such that it will function and be visible when located behind concrete barrier.

The speed measurement shall be by radar and provide a minimum detection distance of 1000 ft (300 m). The radar shall have an accuracy of ± 1 mile per hour.

The speed indicator display shall face approaching traffic and shall have a sign legend of “YOUR SPEED” immediately above or below the speed display. The sign letters shall be between 5 and 8 in. (125 and 200 mm) in height. The digital speed display shall show two digits (00 to 99) in mph. The color of the changeable message legend shall be a yellow legend on a black background. The minimum height of the numerals shall be 18 in. (450 mm), and the nominal legibility distance shall be at least 750 ft (250 m).

The speed indicator display shall be equipped with a violation alert that flashes the displayed detected speed when the work zone posted speed limit is exceeded. The speed indicator shall have a maximum speed cutoff. On roadway facilities with a normal posted speed limit greater than or equal to 45 mph, the detected speeds of vehicles traveling more than 25 mph over the work zone speed limit shall not be displayed. On facilities with normal posted speed limit of less than 45 mph, the detected speeds of vehicles traveling more than 15 mph over the work zone speeds limit shall not be displayed. On any roadway facility if detected speeds are less than 25 mph, they shall not be displayed. The display shall include automatic dimming for nighttime operation.

The speed indicator measurement and display functions shall be equipped with the power supply capable of providing 24 hours of uninterrupted service.”

SUBCONTRACTOR AND DBE PAYMENT REPORTING (BDE)

Effective: April 2, 2018

Add the following to Section 109 of the Standard Specifications.

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

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

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

SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)

Effective: November 2, 2017

Revised: April 1, 2019

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

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

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

SUBMISSION OF PAYROLL RECORDS (BDE)

Effective: April 1, 2021

Revised: November 1, 2022

FEDERAL AID CONTRACTS. Revise the following section of Check Sheet #1 of the Recurring Special Provisions to read:

“STATEMENTS AND PAYROLLS

The payroll records shall include the worker’s name, the worker’s address, the worker’s telephone number when available, the worker’s social security number, the worker’s classification or classifications, the worker’s gross and net wages paid in each pay period, the worker’s number of hours worked each day, and the worker’s starting and ending times of work each day. However, any Contractor or subcontractor who remits contributions to a fringe benefit fund that is not jointly maintained and jointly governed by one or more employers and one or more labor organization must additionally submit the worker’s hourly wage rate, the worker’s hourly overtime wage rate, the worker’s hourly fringe benefit rates, the name and address of each fringe benefit fund, the plan sponsor of each fringe benefit, if applicable, and the plan administrator of each fringe benefit, if applicable.

The Contractor and each subcontractor shall certify and submit payroll records to the Department each week from the start to the completion of their respective work, except that full social security numbers shall not be included on weekly submittals. Instead, the payrolls shall include an identification number for each employee (e.g., the last four digits of the employee’s social security number). In addition, starting and ending times of work each day may be omitted from the payroll records submitted. The submittals shall be made using LCPtracker Pro software. The software is web-based and can be accessed at <https://lcptracker.com/>. When there has been no activity during a work week, a payroll record shall still be submitted with the appropriate option (“No Work”, “Suspended”, or “Complete”) selected.”

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

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

In addition to filing certified payroll(s) with the IDOL, the Contractor and each subcontractor shall certify and submit payroll records to the Department each week from the start to the completion of their respective work, except that full social security numbers shall not be included on weekly submittals. Instead, the payrolls shall include an identification number for each employee (e.g., the last four digits of the employee’s social security number). In addition, starting and ending times of work each day may be omitted from the payroll records submitted. The submittals shall be made using LCPtracker Pro software. The software is web-based and can be accessed at <https://lcptracker.com/>. When there has been no activity during a work week, a payroll record shall still be submitted with the appropriate option (“No Work”, “Suspended”, or “Complete”) selected.”

TRAFFIC SPOTTERS (BDE)

Effective: January 1, 2019

Revise Article 701.13 of the Standard Specifications to read:

“701.13 Flaggers and Spotters. Flaggers shall be certified by an agency approved by the Department. While on the job site, each flagger shall have in his/her possession a current driver’s license and a current flagger certification I.D. card. For non-drivers, the Illinois Identification Card issued by the Secretary of State will meet the requirement for a current driver’s license. This certification requirement may be waived by the Engineer for emergency situations that arise due to actions beyond the Contractor’s control where flagging is needed to maintain safe traffic control on a temporary basis. Spotters are defined as certified flaggers that provide support to workers by monitoring traffic.

Flaggers and spotters shall be stationed to the satisfaction of the Engineer and be equipped with a fluorescent orange, fluorescent yellow/green, or a combination of fluorescent orange and fluorescent yellow/green vest meeting the requirements of ANSI/ISEA 107-2004 or ANSI/ISEA 107-2010 for Conspicuity Class 2 garments. Flaggers shall be equipped with a stop/slow traffic control sign. Spotters shall be equipped with a loud warning device. The warning sound shall be identifiable by workers so they can take evasive action when necessary. Other types of garments may be substituted for the vest as long as the garments have a manufacturer’s tag identifying them as meeting the ANSI Class 2 requirement. The longitudinal placement of the flagger may be increased up to 100 ft (30 m) from that shown on the plans to improve the visibility of the flagger. Flaggers shall not encroach on the open lane of traffic unless traffic has been stopped. Spotters shall not encroach on the open lane of traffic, nor interact with or control the flow of traffic.

For nighttime flagging, flaggers shall be illuminated by an overhead light source providing a minimum vertical illuminance of 10 fc (108 lux) measured 1 ft (300 mm) out from the flagger’s chest. The bottom of any luminaire shall be a minimum of 10 ft (3 m) above the pavement. Luminaire(s) shall be shielded to minimize glare to approaching traffic and trespass light to adjoining properties. Nighttime flaggers shall be equipped with fluorescent orange or fluorescent orange and fluorescent yellow/green apparel meeting the requirements of ANSI/ISEA 107-2004 or ANSI/ISEA 107-2010 for Conspicuity Class 3 garments.

Flaggers and spotters shall be provided per the traffic control plan and as follows.

- (a) Two-Lane Highways. Two flaggers will be required for each separate operation where two-way traffic is maintained over one lane of pavement. Work operations controlled by flaggers shall be no more than 1 mile (1600 m) in length. Flaggers shall be in sight of each other or in direct communication at all times. Direct communication shall be obtained by using portable two-way radios or walkie-talkies.

The Engineer will determine when a side road or entrance shall be closed to traffic. A flagger will be required at each side road or entrance remaining open to traffic within the operation where two-way traffic is maintained on one lane of pavement. The flagger shall be positioned as shown on the plans or as directed by the Engineer.

- (b) Multi-Lane Highways. At all times where traffic is restricted to less than the normal number of lanes on a multilane pavement with a posted speed limit greater than 40 mph and the workers are present, but not separated from the traffic by physical barriers, a flagger or spotter shall be furnished as shown on the plans. Flaggers shall warn and direct traffic.

Spotters shall monitor traffic conditions and warn workers of errant approaching vehicles or other hazardous conditions as they occur. One flagger will be required for each separate activity of an operation that requires frequent encroachment in a lane open to traffic. One spotter will be required for each separate activity with workers near the edge of the open lane or with their backs facing traffic.

Flaggers will not be required when no work is being performed, unless there is a lane closure on two-lane, two-way pavement.”

VEHICLE AND EQUIPMENT WARNING LIGHTS (BDE)

Effective: November 1, 2021
Revised: November 1, 2022

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

“The Contractor shall equip all vehicles and equipment with high-intensity oscillating, rotating, or flashing, amber or amber-and-white, warning lights which are visible from all directions. In accordance with 625 ILCS 5/12-215, the lights may only be in operation while the vehicle or equipment is engaged in construction operations.”

WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012

Revised: November 1, 2021

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

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

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

WORK ZONE TRAFFIC CONTROL DEVICES (BDE)

Effective: March 2, 2020

Add the following to Article 701.03 of the Standard Specifications:

“(q) Temporary Sign Supports1106.02”

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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.