

# 48

**August 2, 2019 Letting**

## **Notice to Bidders, Specifications and Proposal**



**Contract No. 68E91  
PEORIA County  
Section D4 ITS SYSTEM 2019  
Various Routes  
District 4 Construction Funds**

Prepared by	S
Checked by	

(Printed by authority of the State of Illinois)



## **NOTICE TO BIDDERS**

- 1. TIME AND PLACE OF OPENING BIDS.** Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). All bids must be submitted to the iCX system prior to 10:00 a.m. August 2, 2019 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. 68E91  
PEORIA County  
Section D4 ITS SYSTEM 2019  
Various Routes  
District 4 Construction Funds**

- 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,  
Acting Secretary

INDEX  
FOR  
SUPPLEMENTAL SPECIFICATIONS  
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2019

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

ERRATA Standard Specifications for Road and Bridge Construction (Adopted 4-1-16) (Revised 1-1-19)

SUPPLEMENTAL SPECIFICATIONS

<u>Std. Spec. Sec.</u>	<u>Page No.</u>
106 Control of Materials .....	1
107 Legal Regulations and Responsibility to Public .....	2
403 Bituminous Surface Treatment (Class A-1, A-2, A-3) .....	3
404 Micro-Surfacing and Slurry Sealing .....	4
405 Cape Seal .....	15
406 Hot-Mix Asphalt Binder and Surface Course .....	25
420 Portland Cement Concrete Pavement .....	26
424 Portland Cement Concrete Sidewalk .....	28
442 Pavement Patching .....	29
502 Excavation for Structures .....	30
503 Concrete Structures .....	32
504 Precast Concrete Structures .....	35
542 Pipe Culverts .....	36
586 Sand Backfill for Vaulted Abutments .....	37
602 Catch Basin, Manhole, Inlet, Drainage Structure, and Valve Vault Construction, Adjustment, and Reconstruction .....	39
630 Steel Plate Beam Guardrail .....	40
631 Traffic Barrier Terminals .....	43
670 Engineer's Field Office and Laboratory .....	44
701 Work Zone Traffic Control and Protection .....	45
704 Temporary Concrete Barrier .....	46
780 Pavement Striping .....	48
781 Raised Reflective Pavement Markers .....	49
888 Pedestrian Push-Button .....	50
1001 Cement .....	51
1003 Fine Aggregates .....	52
1004 Coarse Aggregates .....	53
1006 Metals .....	56
1020 Portland Cement Concrete .....	58
1043 Adjusting Rings .....	60
1050 Poured Joint Sealers .....	62
1069 Pole and Tower .....	64
1077 Post and Foundation .....	65
1096 Pavement Markers .....	66
1101 General Equipment .....	67
1102 Hot-Mix Asphalt Equipment .....	68
1103 Portland Cement Concrete Equipment .....	70
1105 Pavement Marking Equipment .....	72
1106 Work Zone Traffic Control Devices .....	74

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 .....	75
2	Subletting of Contracts (Federal-Aid Contracts) .....	78
3	X EEO .....	79
4	X Specific EEO Responsibilities Non Federal-Aid Contracts .....	89
5	X Required Provisions - State Contracts .....	94
6	Asbestos Bearing Pad Removal .....	100
7	Asbestos Waterproofing Membrane and Asbestos HMA Surface Removal .....	101
8	Temporary Stream Crossings and In-Stream Work Pads .....	102
9	Construction Layout Stakes Except for Bridges .....	103
10	Construction Layout Stakes .....	106
11	Use of Geotextile Fabric for Railroad Crossing .....	109
12	Subsealing of Concrete Pavements .....	111
13	Hot-Mix Asphalt Surface Correction .....	115
14	Pavement and Shoulder Resurfacing .....	117
15	Patching with Hot-Mix Asphalt Overlay Removal .....	118
16	Polymer Concrete .....	120
17	PVC Pipeliner .....	122
18	Bicycle Racks .....	123
19	Temporary Portable Bridge Traffic Signals .....	125
20	Work Zone Public Information Signs .....	127
21	Nighttime Inspection of Roadway Lighting .....	128
22	English Substitution of Metric Bolts .....	129
23	Calcium Chloride Accelerator for Portland Cement Concrete .....	130
24	Quality Control of Concrete Mixtures at the Plant .....	131
25	Quality Control/Quality Assurance of Concrete Mixtures .....	139
26	Digital Terrain Modeling for Earthwork Calculations .....	155
27	Reserved .....	157
28	Preventive Maintenance – Bituminous Surface Treatment (A-1) .....	158
29	Reserved .....	164
30	Reserved .....	165
31	Reserved .....	166
32	Temporary Raised Pavement Markers .....	167
33	Restoring Bridge Approach Pavements Using High-Density Foam .....	168
34	Portland Cement Concrete Inlay or Overlay .....	171
35	Portland Cement Concrete Partial Depth Hot-Mix Asphalt Patching .....	175

## TABLE OF CONTENTS

LOCATION OF PROJECT .....	1
DESCRIPTION OF PROJECT .....	1
LOCATION OF UNDERGROUND STATE MAINTAINED FACILITIES .....	1
TRAFFIC CONTROL PLAN .....	2
SYSTEM IMPLEMENTATION, EQUIPMENT INTEGRATION AND SUPPORT .....	2
CONTRACT GUARANTEE .....	3
FULL-ACTUATED CONTROLLER IN EXISTING CABINET .....	3
FULL ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL.....	4
VIDEO DETECTION SYSTEM.....	7
ATMS SOFTWARE (CORE MODULE).....	12
2. SYSTEM GRAPHICAL USER INTERFACE .....	18
MAIN MAP DISPLAY .....	18
3. SYSTEM FUNCTIONS.....	23
4. INTERSECTION CONTROL FUNCTIONS.....	28
5. TRAFFIC RESPONSIVE (TR) CONTROL.....	29
6. SYSTEM ANALYSIS AND ENGINEERING TOOLS .....	30
7.0 SYNCHRO SUPPORT .....	32
8.0 SIGNAL PERFORMANCE MEASURES.....	32
ATMS SOFTWARE SUPPORT AND WARRANTY .....	35
REMOTE ACCESS CAPABILITIES .....	36
SPARE FULL ACTUATED CONTROLLER, SPECIAL.....	36
MODIFY EXISTING CONTROLLER CABINET .....	37
COMPENSABLE DELAY COSTS (BDE) .....	37
DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE) .....	41
DISPOSAL FEES (BDE).....	49
EQUIPMENT PARKING AND STORAGE (BDE) .....	50
LIGHTS ON BARRICADES (BDE).....	51
PAYMENTS TO SUBCONTRACTORS (BDE) .....	52
PROGRESS PAYMENTS (BDE).....	52
REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE) .....	53
SUBCONTRACTOR AND DBE PAYMENT REPORTING (BDE) .....	63
SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE).....	64
TRAFFIC CONTROL DEVICES - CONES (BDE).....	64
WEEKLY DBE TRUCKING REPORTS (BDE).....	65

WORKING DAYS (BDE) .....65

## STATE OF ILLINOIS

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### SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted April 1, 2019, 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 D4 ITS System 2019, Peoria County, Contract No. 68E91 and in case of conflict with any part or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

#### LOCATION OF PROJECT

This project consists of installing a central system ATMS software, traffic signal cabinets, video detection systems, modifying existing traffic signal cabinets, and performing all related collateral work necessary to complete the improvements on the project.

#### DESCRIPTION OF PROJECT

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.

#### 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: March 29, 2019

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:

- |        |        |        |        |
|--------|--------|--------|--------|
| 701006 | 701011 | 701101 | 701106 |
| 701701 | 701801 | 701901 |        |

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') (0.6 m) 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 and lane restrictions at all times.

Traffic shall be maintained on the associated roadways at all times during construction. All 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.

**Method of Measurement:** Traffic Control and Protection will be measured by the unit "Lump Sum", complete.

**Basis of Payment:** This work shall be paid for at the contract unit price per Lump Sum for TRAFFIC CONTROL AND PROTECTION, (SPECIAL), which shall be payment in full for all labor, materials, and equipment required to furnish, install, and remove the traffic control with the Highway Standards listed above.

**SYSTEM IMPLEMENTATION, EQUIPMENT INTEGRATION AND SUPPORT**

The ATMS software installation shall be subject to a 60-day burn-in period after all intersections have been programmed into the software and the software features are fully operational as described in the special provision for ATMS SOFTWARE.



After the successful completion of the burn-in period, the system will have completed final acceptance.

The Department will install the ATMS software on its existing hardware, configure it as needed, and perform all data entry into the software.

The Contractor shall be responsible for installing the proposed CCTV cameras in accordance with the plans, specifications, and manufacturers recommended practices.

This work will not be paid for separately, but shall be included in the contract bid price.

### **CONTRACT GUARANTEE**

The Contractor shall guarantee all electrical equipment, apparatus, materials, and workmanship provided under the contract for a period of six (6) months after the date of final inspection according to Article 801.15.

All instruction sheets required to be furnished by the manufacturer for materials and supplies and for operations shall be delivered to the Engineer prior to the acceptance of the project, with the following warranties and guarantees:

1. The manufacturer's standard written warranty for each piece of electrical equipment or apparatus furnished under the contract.
2. The Contractor's written guarantee that, for a period of six (6) months after the date of final inspection of the project, all necessary repairs to or replacement of said warranted equipment, or apparatus shall be made by the Contractor at no cost to the Department.
3. The Contractor's written guarantee for satisfactory operation of all electrical systems furnished and constructed under the contract for a period of six (6) months after final inspection of the project.

### **FULL-ACTUATED CONTROLLER IN EXISTING CABINET**

This work shall be in accordance with the applicable Articles of Sections 857, 1073, and 1074 of the Standard Specifications with the following modifications:

This pay item shall consist of furnishing a traffic signal controller and installing it inside an existing traffic signal cabinet.

The traffic signal controller shall be a NEMA TS-2 Type 2, ATC, NTCIP 1201/1202 compliant controller that meets or exceeds the following specifications:

Hardware Features:

- 4 Standard 10/100 Mbit Ethernet Ports
- 2 USB Ports
- Keypad & 6 Programmable Special Function Keys
- Latest ATC5201 draft standard compliant engine board
- Complaint with ATC 5.2b
- 16 Line X 40 Character (240 X 120 Graphics) LCD Display
- 7 configurable Serial Ports (5 are SDLC capable)
- Power 95 – 250 VAC 50/60 Hz Auto Sensing
- -40 to +80o C operating environment
- 64MB Flash / 64MB DRAM memory / 1MB SRAM

Software Features:

- Compliant with all current NTCIP – ASC requirements
- Open Architecture Embedded Linux Multi-Processing Operating System
- Full support for all required ATC 5.2b software drivers under the latest Linux kernel release v3.4
- ATC Standard API for third party application support
- Runtime libraries per ATC 5.2b Standard
- One touch updates via Network or USB interface
- Compliant with latest TS 2 with NTCIP Standards
- Support for 50 Signal Phases each assignable to one of 16 rings
- Programming of Phases across multiple rings which can operate simultaneously per NTCIP established Phases concurrencies
- Support for Flashing Yellow Arrow Sequencing

The Contractor shall deliver the controller either to the Department or the city of Peoria (depending on the intersection maintenance jurisdiction) a minimum of seven (7) days for programming prior to installation in the existing traffic signal cabinet.

**Basis of Payment:** This work shall be paid for at the contract unit price per Each for FULL-ACTUATED CONTROLLER IN EXISTING CABINET which price shall be payment in full for all labor, equipment, and materials required to furnish the controller described above and deliver it to the Department.

**FULL ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL**

This work shall be in accordance with Sections 857, 1073, and 1074 of the Standard Specifications except as modified herein.

The cabinet and controller shall be compatible with the proposed ATMS software.

The Contractor shall remove the existing traffic signal cabinets and deliver them to the city of Peoria maintenance facility located at 3505 North Dries Lane, Peoria.

The Contractor shall remove existing photocell relays, DIN rail mounted communications equipment, traffic signal interconnect equipment, and fiber optic enclosures from existing traffic signal controller cabinets and install the equipment in the proposed controller cabinets at each location.

The Contractor shall relocate battery backup system cabinets and components from the existing traffic signal controller cabinets to the proposed controller cabinets.

The traffic signal cabinet shall have a NEMA TS-2 back panel. The cabinet shall include a malfunction management unit to allow enhanced fault monitoring capabilities. The malfunction management unit shall support flashing yellow arrow operation and be a Reno A&E model MMU-1600G equipped with a graphical display and Ethernet port or an EDI MMU-16LEip with graphical display and Ethernet port.

The cabinet shall be equipped with an external pedestrian pushbutton isolation panel with functionality to provide for latching pedestrian pushbutton indication lights.

The controller shall be a fully complaint NTCIP 1201/1202 ATC NEMA TS-2 Type 2 controller equipped with an Ethernet port, USB port, and data key.

The malfunction management unit shall be equipped with the latest software and firmware revisions.

The cabinet shall be equipped with a plexi-glass shield that covers the power panel which houses the mercury bus relay, line filter, circuit breakers, and other electrical components.

The cabinet shall be equipped with a plexi-glass shield that covers the thermostat and a fluorescent lighting assembly that turns on when the door is opened. The fluorescent lighting assembly shall be equipped with a cold weather ballast and mounted in a location that will not interfere with cabinet maintenance.

The traffic signal cabinet shall be equipped with a 16-position load switch back panel to accommodate future expansion.

The cabinet shall be furnished with a compact heater strip (to be used for moisture reduction during cold weather. The heater shall be thermostatically controlled, operate at 120 volts, have a minimum wattage of 150 watts, a maximum wattage of 250 watts, have a shield to protect service personnel and equipment from damaging heat, be separately fused, and be mounted where it does not interfere with a person working in the cabinet.

The traffic signal cabinets shall be equipped with two non GFCI duplex NEMA 5-15R receptacles to be used to provide power to auxiliary equipment.

The cabinet shall be equipped with toggle switch guards for all switches located on the door to prevent accidental switching. The cabinet shall include a high quality deluxe pleated filter.

The cabinet shall be equipped with additional surge protection for the controller, malfunction management unit, and detector amplifiers, and/or video detection system. The surge protector shall be a Transtector model ACP100BWN3 and shall be included in addition to an EDCO SHA-1250 IRS protector. The EDCO SHA-1250 IRS surge protector is to be provided in accordance with Section 1085.47 A(4a) and shall be wired to provide surge protection for the controller, malfunction management unit, and detector amplifiers. The Transtector surge suppressor may be wired to the equipment protected power terminals of the EDCO SHA-1250 IRS unit provided that the controller, MMU, and detection system are protected.

The Contractor shall set up each cabinet in his or her shop for inspection by the Engineer. All phases that are utilized shall be hooked up to a light board to provide observation for each signal indication. The Engineer shall be notified when the setup is complete so that all pertinent timings may be entered into each traffic signal controller. The facility shall be subject to a seven day burn-in period before installation will be allowed.

After installing the cabinet in the field, prior to resuming normal signal operation, the Contractor shall test the cabinet by connecting a jumper to the cabinet field terminals to ensure that all conflicting signals will place the cabinet into conflict flash and to verify that the cabinet, controller, and malfunction management unit are operating correctly. The Contractor shall make arrangements with the local police agency to provide traffic control during the conflict test.

**Basis of Payment:** This work will be paid for at the contract unit price Each for FULL ACTUATED CONTROLLER AND TYPE IV CABINET SPECIAL and shall be payment in full for all labor, materials, and equipment required to remove the existing traffic signal cabinet and furnish, install, and test the traffic signal cabinet described above, complete.

## **VIDEO DETECTION SYSTEM**

The video detection system shall be a Gridsmart (1 Camera System for 4 Approaches equipped with Performance Plus Module).

The video vehicle detection system shall include all necessary electric cable, electrical junction boxes, electrical and communications surge suppression, hardware, software, programming, and any camera brackets that are required for installation and configuration. These items should be taken into consideration and shall be included in the bid price for the video detection system.

All CAT 5 Ethernet cable shall meet the requirements contained in the special provisions (outdoor rated, gel-filled, shielded, etc.).

All vehicle video detection systems shall be equipped with the latest software or firmware revisions.

The video vehicle system shall be configured and installed to NEMA TS2 Standards (use of the SDLC port and BIU). Installation conforming to NEMA TS1 standards will not be allowed.

The minimum requirements for a video vehicle detection system are listed below:

### **1.0 General**

This Specification sets forth the minimum requirements for a system that monitors vehicles on a roadway via processing of video images and provides detector outputs to a traffic controller or similar device.

### **1.1 System Hardware**

The system shall consist of four video cameras and an automatic control unit (ACU). The ACU shall process all detected calls and shall be equipped with the latest firmware revisions.

## 1.2 System Software

The system shall be able to detect either approaching or receding vehicles in multiple traffic lanes. A minimum of 24 detection zones shall be user-definable per camera. The user shall be able to modify and delete previously defined detection zones. The software shall provide remote access operation and shall be the latest revision.

## 2.0 Functional Capabilities

### 2.1 Real-Time Detection

2.2 The ACU shall be capable of simultaneously processing information from up to four (4) digital video sources. The video shall be digitized and analyzed at a rate of 30 times per second.

2.3 The system shall be able to detect the presence of vehicles in a minimum of 96 detection zones within the combined field of view of the image sensors.

## 3.0 Vehicle Detection

### 3.1 Detection Zone Placement

The video detection system shall provide flexible detection zone placement anywhere and at any orientation within the combined field of view of the image sensors. In addition, detection zones shall have the capability of implementing logical functions including AND OR.

### 3.2 Optimal Detection

The video detection system shall reliably detect vehicle presence when the image sensor is mounted 10m (30 ft.) or higher above the roadway, when the image sensor is adjacent to the desired coverage area, and when the length of the detection area or field of view (FOV) is not greater than ten (10) times the mounting height of the image sensor. The image sensor shall not be required to be mounted directly over the roadway. A single image sensor, placed at the proper mounting height with the proper lens, shall be able to monitor six (6) to eight (8) traffic lanes simultaneously.

### 3.3 Detection Performance

Overall performance of the video detection system shall be comparable to inductive loops. Using standard image sensor optics and in the absence of occlusion, the system shall be able to detect vehicle presence with 98% accuracy under normal conditions, (days and nights) and 96% accuracy under adverse conditions (fog, rain, snow). The ACU shall output a constant call for each enabled detector output channel if a loss of video signal occurs in any camera.

The ACU shall be capable of processing a minimum of twenty detector zones placed anywhere in the field of view of the camera.

#### 4.0 ACU Hardware

##### 4.1 ACU Mounting

The ACU shall be shelf or rack mountable. Nominal outside dimensions excluding connectors shall not exceed 180mm (7.25") x 475mm (19") x 260mm (10.5") (H x W x D).

##### 4.2 ACU Environmental

The ACU shall be designed to operate reliably in the adverse environment found in the typical roadside traffic cabinet. It shall meet the environmental requirements set forth by the NEMA (National Electrical Manufacturers Association) TS1 and TS2 standards as well as the environmental requirements for Type 170 and Type 179 controllers. The minimum operating temperature range shall be from -35 to +74 degrees C at 0% to 95% relative humidity, non-condensing.

#### 5.0 ACU Electrical

5.1 The ACU shall be modular in design and provide processing capability equivalent to the Intel Pentium microprocessor. The bus connections used to interconnect the modules of the ACU shall be gold-plated DIN connectors.

5.2 The ACU shall be powered by 89 - 135 VAC, 60 Hz, single phase, and draw 0.25 amps, or by 190 - 270 VAC, 50 Hz, single phase and draw 0.12 amps. If a rack mountable ACU is supplied, it shall be capable of operating from 10 to 28 VDC. The power supply shall automatically adapt to the input power level. Surge ratings shall be as set forth in the NEMA TS1 and TS2 specifications.

5.3 Serial communications to a remote computer equipped with remote monitoring software shall be through a RJ-45 Ethernet port.

5.4 The ACU shall be equipped with a NEMA TS2 RS-485 SDLC interface for communicating input and output information. Front panel LEDs shall provide status information when communications are open.

5.5 The ACU and/or camera hookup panel shall be equipped with four RJ-45 connector based/terminal block connections for cameras so that signals from four image sensors can be processed in real-time.

5.6 The ACU shall be equipped with USB ports, WiFi, and Ethernet ports to provide communications to a computer running the configuration and remote access software.

5.7 The ACU and/or camera hookup panels used for a rack mountable ACU shall be equipped with a video output port.

5.8 The ACU shall be equipped with viewable front panel detection LED indications.

## 6.0 Camera

- 6.1 The video detection system shall use high resolution, color, cameras as the video source for real-time vehicle detection. As a minimum, each image sensor shall provide the following capabilities:
- a. MPEG-4 and H.264 video compression and transport
  - b. Support video streaming that is viewable through a standard web browser with an adjustable frame rates of 5/15/30 fps
  - c. Images shall be produced with a CCD sensing element with horizontal resolution of at least 720 lines and vertical resolution of at least 480 lines.
  - d. Useable video and resolvable features in the video image shall be produced when those features have luminance levels as low as 0.1 lux at night.
  - e. Useable video and resolvable features in the video image shall be produced when those features have luminance levels as high as 10,000 lux during the day.
  - f. Automatic gain, automatic iris, and absolute black reference controls shall be furnished.
  - g. An optical filter and appropriate electronic circuitry shall be included in the image sensor to suppress "blooming" effects at night.
- 6.2 The image sensor shall be equipped with an integrated zoom lens with zoom and focus capabilities that can be changed using either configuration computer software or hand-held controller. The machine vision processor (MVP) may be enclosed within the camera.
- 6.3 The image sensor and lens assembly shall be housed in an environmental enclosure that provides the following capabilities:
- a. The enclosure shall be waterproof and dust-tight to NEMA-4 specifications. The camera shall be IP-67 rated.
  - b. The enclosure shall allow the image sensor to operate satisfactorily over an ambient temperature range from -34°C to +74°C while exposed to precipitation as well as direct sunlight.
  - c. The enclosure shall allow the image sensor horizon to be rotated in the field during installation.
  - d. A heater shall be at the front of the enclosure to prevent the formation of ice and condensation in cold weather, as well as to assure proper operation of the lens' iris mechanism. The heater shall not interfere with the operation of the image sensor electronics, and it shall not cause interference with the video signal.



- f. The enclosure shall be light-colored and shall include a sun shield to minimize solar heating. The front edge of the sunshield shall protrude beyond the front edge of the environmental enclosure and shall include provision to divert water flow to the sides of the sunshield. The amount of overhang of the sun shield shall be adjustable to prevent direct sunlight from entering the lens or hitting the faceplate.
  - g. The total weight of the image sensor in the environmental enclosure with sunshield shall be less than 2.7 kg (6 pounds).
  - h. When operating in the environmental enclosure with power and video signal cables connected, the image sensor shall meet FCC class B requirements for electromagnetic interference emissions.
- 6.3 The video output of the image sensor shall be isolated from earth ground. All video connections from the image sensor to the video interface panel shall also be isolated from earth ground.
- 6.4 The video output, communication, and power to the image sensor shall include transient protection to prevent damage to the sensor due to transient voltages occurring on the cable leading from the image sensor to other field locations.
- 6.5 A stainless-steel junction box shall be available as an option with each image sensor for installation on the structure used for image sensor mounting. The junction box shall contain a terminal block for terminating power to the image sensor and connection points for cables from the image sensor and from the ACU.
- 6.6 Software
- 7.1 The system shall include the remote access software that is used to setup and configure the video detection system. The software shall be of the latest revision.
- 7.2 All necessary cable, adapters, and other equipment shall be included with the system.
- 8.0 Installation and Training
- 8.1 The supplier of the video detection system shall supervise the installation and testing of the video and video vehicle detection equipment. A factory certified representative from the supplier shall be on-site during installation.
- 9.0 Warranty, Maintenance, and Support
- 9.1 The video detection system shall be warranted by its supplier for a minimum of three (3) years from date of turn-on. This warranty shall cover all material defects and shall also provide all parts and labor as well as unlimited technical support.
- 9.2 Ongoing software support by the supplier shall include updates of the ACU and supervisor software. These updates shall be provided free of charge during the warranty period.
- 9.3 The supplier shall maintain a program for technical support and software updates following expiration of the warranty period. This program shall be made available to the contracting agency in the form of a separate agreement for continuing support.

**Basis of Payment:**

This work will not be paid for separately but shall be included in the contract unit price Each for VIDEO DETECTION SYSTEM which price shall be payment in full for all labor, equipment, and materials required to furnish, install, and test the video vehicle detection system described above, complete.

**ATMS SOFTWARE (CORE MODULE)**

The Contractor shall furnish a central system software Advanced Traffic Management System.

The existing closed loop and central traffic signal system software shall remain in operation during the installation and configuration of the proposed software.

The Department will be responsible for installing and configuring the proposed ATMS software on its existing virtual server cluster.

The Contractor shall provide vendor support and technical assistance (on-site, via telephone, web conference, and/or remote access into the system using IDOT furnished VPN client software) during the initial software installation and configuration if requested by the Department.

The Department will be responsible for installing the communications equipment in the traffic signal cabinets, assigning the IP addresses, programming the IP address information into the controllers, and ensuring that each controller has communications to the ATMS server.

The Department will be responsible for adding the existing intersections to the system and programming the ATMS parameters for each intersection.

Once the software has been installed and configured, the Vendor shall provide assistance as requested by the Department to assist with adding intersections to the system and configuring parameters in the software for each intersection.

The ATMS software will be initially be configured to provide communications to each existing closed loop group of controllers as a virtual master controller used to synchronize the controller time clocks and command scheduled TOD program changes to avoid traffic disruptions.

All existing ASC/3 controllers will remain in use as indicated on the plan sheets. The Department can upgrade controller firmware as needed to ensure optimal performance and communications with the ATMS.

The proposed ATMS software shall have the capability of communicating with Econolite ASC/3 and Cobalt controllers running ASC/3 software to perform traffic management tasks as described in the software specifications. The department will not accept software that does not currently have this capability and will not accept software with vendor commitments for the future development of the capability.

### **Microsoft Database and Server Licenses**

The Department will provide all Microsoft licensing for database server and applications servers.

The Contractor shall furnish all licensing for the ATMS software and any other associated licenses required for the ATMS software operation.

### **ATMS Software Controller Licensing**

The ATMS software shall include licenses for 250 traffic signal controllers and a minimum of fifty users.

### **ATMS Software Maintenance and Upgrade Costs**

The bid price for the ATMS software shall include all software maintenance costs for a ten year period and all costs for software version upgrades and licensing costs associated with the software version updates during a two year period that will commence upon the date of final acceptance for the contract.

Additionally, the vendor shall provide software security and bug-fix patches for the life of the software or until the software is no longer supported.

### **ATMS Software Training**

As part of the contract, the Contractor shall provide on-site training for technicians and operators of the ATMS software and associated equipment. This training will address normal operations of the system, routine system maintenance, provisioning and system setup, and fault diagnosis and system repair.

The Contractor shall provide the following training:

- Two (2) 8-hour software operations training sessions with capacity for twelve (12) participants for IDOT District Four and city of Peoria traffic signal personnel to be held at the city of Peoria Dries Lane facility located in Peoria.
- Two (2) 4-hour maintenance training sessions with capacity for ten (10) participants for IDOT District Four and city of Peoria maintenance personnel to be held at the city of Peoria Dries Lane facility located in Peoria.

The training shall include, but not be limited to, the following:

1. "Hands-on" operation of all ATMS hardware and software
2. Explanation of all system commands, their function and usage
3. Insertion of data
4. Required preventative maintenance procedures
5. Servicing procedures
6. System "troubleshooting" or problem identification procedures

Training shall be hands-on with ample time for questions. The Contractor shall submit an agenda for the training and one complete set of training material (manual and schematic) along with the qualification of proposed instructors to the Department for approval at least 30 calendar days before the training is to begin. The Department will review material and approve or request changes.

The Contractor shall furnish training manuals that contain a course outline, ATMS software operation information, hands-on training exercises, and any other pertinent items for each participant.

This work will not be paid for separately but shall be included in the contract bid price for the ATMS software.

### ATMS Software Requirements and Specifications

The ATMS software shall conform to the following requirements and specifications:

## **INTRODUCTION**

### 1.1. SYSTEM SOFTWARE OVERVIEW

- 1.1.1. The system shall be a Commercially-available Off-the-Shelf (COTS), National Transportation Communication for ITS Protocol (NTCIP) compliant, Advanced Transportation Management System (ATMS) software application.
- 1.1.2. The software shall provide, as a base, an intersection control and traffic management software platform, from which additional ITS applications can be integrated.
- 1.1.3. All additional ITS features and functionalities shall be modular and integrated seamlessly into a single user interface.
- 1.1.4. The system shall utilize the following Microsoft® products for each aspect of the system:
  - *Core Database: Microsoft SQL 2012 R2+ or newer*
  - *Server OS: Microsoft Server 2012 R2+ Standard or newer*
  - *Workstation OS: Windows 7 Professional or newer*
  - *Laptop OS: Windows 7 Professional or newer*

## 1.2. SYSTEM SOFTWARE STANDARDS

- 1.2.1. NTCIP 1201 and 1202 communications protocol standard shall be implemented in such a manner that the system can adapt to changes in technology and increase functionality over time with minimal impact on individual system components. The system developer and the controller manufacture shall verify that the system and controller firmware are NTCIP compliant and compatible.
- 1.2.2. The primary communications standards shall be NTCIP 1202 and 1202 based for communicating from Center-to-Field (C2F) and the developer shall document the standards to which the systems level of conformity of each standard is developed.

## 1.3. SOFTWARE UPDATES

- 1.3.1. Browser Based System Software: The central software shall allow for the server components to be upgraded or re-installed directly over an existing installation. The software installer shall migrate all system data to a new system database. The software installer shall never overwrite the existing system database when upgrading or reinstalling the software. As additional versions are installed or upgraded, the software shall leave the old system databases provisioned in SQL Server, even though they are no longer used. Every time the client is opened on a client workstation, the central software will automatically check for a new version. If a new version is available, the system shall display a notification asking the user to restart the client to load the newest version. When the client is closed and reopened, the new software version shall be automatically downloaded and installed for use.
- 1.3.2. Client/Server Based System Software: The central software shall incorporate a means for client workstations and laptop computers to be automatically updated with new versions that are installed on the server. Upon attempting to login to the server, the client software shall determine if a newer version is available at the server installation. If not, the client software shall complete the login normally. If there is a newer version of software, the user shall be able to have it automatically downloaded, installed, and run with no additional action on the part of the user.

#### 1.4. *SYSTEM DEVICE INTEGRATION*

- 1.4.1. Devices shall be added or deleted from the system by right-clicking on the system devices tree and selecting the proper menu item and/or selecting the menu item from the system menus.
- 1.4.2. When adding a device, a dialog box shall be used to enter all the required and optional parameters to allow the device to be integrated into the system.
- 1.4.3. Each device shall be configured to communicate through a device manager service and allowed to be on-line or off-line to reduce failures and alerts for devices not currently connected to the system.
- 1.4.4. Devices may be added to the system map by clicking and dragging the associated item from the entity tree to its desired location on the map.

#### 1.5. *SYSTEM SUPPORT AND USER MANAGEMENT*

- 1.5.1. Devices may be added to the system map by clicking and dragging the associated item from the entity tree to its desired location on the map.
- 1.5.2. The system shall not limit the number of user accounts that can be defined to allow and grant access. The system shall support a minimum of fifty user accounts without regard to licensing.
- 1.5.3. A valid user account shall be required to access the central software.
- 1.5.4. The system shall utilize role-based permissions and user groups to define the available functions and allowable actions the user can perform when signed into the system.
- 1.5.5. The system shall provide for the following user groups:

1.5.5.1.

Group	Privileges
Control - System	Permissions to: <ul style="list-style-type: none"> <li>• Add, delete or edit Time of Day schedule</li> <li>• Add, delete or edit Manual Control Commands</li> <li>• Add, delete or edit Action Set commands</li> <li>• Acknowledge or unacknowledged system alarms</li> <li>• Get/set controller time.</li> <li>• View database editor/detailed status</li> </ul>
Editor - System	Permissions to: <ul style="list-style-type: none"> <li>• Upload/download database tables</li> <li>• Add, delete or edit a schedule upload</li> <li>• Add, delete or edit Time of Day schedule</li> <li>• Add, delete or edit Manual Control Commands</li> <li>• Add, delete or edit Action Set commands</li> <li>• Acknowledge or unacknowledge system alarms</li> <li>• Get/set controller time.</li> <li>• Add, edit or delete action set plans</li> <li>• Add, edit or delete traffic responsive plans</li> <li>• View database editor/detailed status</li> </ul>
View Only – System	Permission to: <ul style="list-style-type: none"> <li>• View database editor/detailed status</li> </ul>

1.5.6. Devices may be added to the system map by clicking and dragging the associated item from the entity tree to its desired location on the map.

1.5.6.

1.5.6.1. 1.5.7. The system should be able to employ Microsoft Active Directory for user management and to manage access to various system functions.

1.5.6.2. 1.5.8. Where Active Directory is employed by the system, the ATMS client software shall be able to recognize the user's Windows login credentials when starting the client software. Where the Windows login credentials are used, the user shall be able to open the ATMS client software without providing an additional user name and password.

1.5.6.3. The ATMS administrator shall be able to create and assign user application and jurisdictional permissions based on group definitions.

2. SYSTEM GRAPHICAL USER INTERFACE  
2.1. GENERAL DISPLAY FEATURES

- 2.1.1. The software shall support multiple windows being opened within the main window at the same time.
- 2.1.2. The system shall allow for the management of open windows using the Window main menu items.
- 2.1.3. The system shall allow the user to arrange and tile open windows, minimize all windows, restore all windows, and close all windows.

MAIN MAP DISPLAY

- 2.1.4. The system shall incorporate an agency-wide map as the major portion of the main graphics display.
  - 2.1.4.1. The main map shall have the capability of being resized.
  - 2.1.4.2. The map displays shall have pan and zoom capabilities.
  - 2.1.4.3. The system shall support automatic rendering of icons without user configuration. As a user zooms into the main map, the density of information shall automatically increase to show more detailed data.
  - 2.1.4.4. The system shall support different map views that can be quickly selected for viewing to allow a user to quickly obtain a high-level status overview of the entire system.
  - 2.1.4.5. The system shall allow a user to save a set of viewing preferences and/or allow a user to save a set of devices designated as "Favorites" that will always be visible within the main window.
  - 2.1.4.6. Users shall be able to specify a current map, with its pan and zoom levels as a default map that will be loaded any time a new map is opened for viewing.
  - 2.1.4.7. It shall be possible for a user to interactively enable or disable the display of defined map layers.



- 2.1.4.8. The system shall have the capability of utilizing a GIS database for the purpose of displaying roadway information and other map elements.
- 2.1.5. The system shall be capable to employing multiple map sources for the base map. These sources shall include, but not limited to:
- Navtec
  - ESRI shape files
  - Bing Maps
  - WMS Maps
- 2.1.6. The system shall update the status of all devices on all map display at least once per second, with no more than four seconds latency, once data is retrieved from a field device.
- 2.1.7. At a minimum, at all zoom levels the agency-wide map display shall dynamically identify the following status for each traffic signal, in real or near-real time:
- Free Operation
  - Coordinated Operation
  - Transitioning between Free and Coordinated or from one Coordination pattern to another
  - Flash
  - Preemption
  - Loss of Communications
- 2.1.8. When zooming in, the main map shall automatically provide a greater level of detailed information, at user-set and configured zoom levels, including, but not limited to:
- Signal colors or overlaps (green, yellow, red)
  - Active Coordination pattern (if in Coordination Operation)
  - Active Preemption plan (in Preemption only)
  - Signal colors for all pedestrian phases in use
  - Graphical representation of demand on vehicle phases and pedestrian phases
  - Graphical representation of active special function outputs
  - Detailed timing and controller information to include (when zoomed to intersection level):
    - Coordination Status
    - Time Space Diagram
    - Programmed and actual cycle length
    - Programmed and actual offset
    - Programmed and actual phase timings
    - Alarm status
    - Overlap timings and status
    - Phase Next
  - Signal colors or overlaps (green, yellow, red)

2.1.9. Maps shall be capable of displaying a variety of device and entity types, including, but not limited to:

- CCTV cameras
- Ramp Meters
- RTMS
- Dynamic Message Signs
- Vehicle Detectors
- Asset and maintenance management locations

## 2.2. MANUAL COMMANDS

2.2.1.1. Manual commands shall offer the same functionality for initiating or terminating events and functionality as the Scheduler, but with the following exceptions:

2.2.1.2.

- Manual commands shall override any normally scheduled event.
- Manual commands shall be implemented using the following modes:
  - Immediate and full manual
  - Immediate with limited duration
  - Scheduled with limited duration

## 2.3. SCHEDULER

2.3.1. A means shall be provided by which a user can schedule events and functions to be implemented or terminated by TOD/DOW, and shall include means by which the events can be called with the following frequencies:

- Daily
- Weekly
- Annually
- Seasonally
- Holidays
- Special – an event for any situation not described above (IE. sporting events, concerts, etc.)
- One-Time Event – provide the ability to run an event once and only once.

2.3.2. The scheduler shall provide a means by which alerts can be configured to be delivered to different individuals via email or text (SMS) messages by TOD/DOW.

2.3.3. The system shall provide a calendar-based on-call scheduler to allow a user to schedule when specific users or groups of users will receive system generated text and email notifications.

## 2.4. ADDITIONAL DISPLAYS

2.4.1. The system shall allow additional displays, each of which can be opened or closed at any time, and float or be docked. The system shall include the following displays, at a minimum:

#### 2.4.2. Entity Tree

- 2.4.2.1. All devices configured in the system shall be displayable on an “entity tree”.
- 2.4.2.2. The entity tree shall allow the user to sort and filter by device type, allowing the user to easily locate any device.
- 2.4.2.3. The user shall be able to add any device to the entity tree by right-clicking in the window or on the main map and selecting the appropriate device type to add.
- 2.4.2.4. The Entity Tree shall list all the installed devices on the system, and shall be common across all workstations.
- 2.4.2.5. The entity tree shall provide a rapid search window to simplify locating a specific entity by its name or description.
- 2.4.2.6. The entity tree shall provide a filtering mechanism to only display specific types of entities on the tree to reduce clutter.

#### 2.4.3. Alerts

- 2.4.3.1. The system shall provide an alert indicator which is always visible on the main window, providing real-time details on the number of open alerts and the criticality of each alert.
- 2.4.3.2. The system shall provide an alerts window, displaying all alerts from the system or field devices, along with specific details including alert aging.
- 2.4.3.3. This display shall be updated in real time with the event details, along with a time and date stamp and any acknowledgement information.
- 2.4.3.4. Alerts shall provide three levels of user-definable criticality:
  - Critical (highest level)
  - Warning (medium level)
  - Information (lowest level)
- 2.4.3.5. The alert window shall provide a means by which users can acknowledge, un-acknowledge, and close individual critical and warning alerts.
- 2.4.3.6. All acknowledgements, un-acknowledgements, and closures shall be time and date stamped with the user’s credentials upon change of status.

#### 2.4.4. Intersection Display

- 2.4.4.1. The system shall provide a display where intersection timings, phase details, and ring information is presented in graphical form.

- 2.4.4.2. Any intersection display shall easily be accessed by selecting the device on the main map or device tree and double-clicking over the selection. The intersection display window shall then open on the top layer for viewing.
- 2.4.4.3. The intersection display window, when floating, shall be able to be stretched to any size for better visibility.
- 2.4.4.4. Phase indication arrows shall be programmable for up to 16 phases, including protected/permissive movements and overlaps.
- 2.4.4.5. Protected/permissive indications shall be configured as one of the following: MUTCD flashing left turn yellow arrow and 5 section left protected/permissive left turn.
- 2.4.4.6. All intersection-level graphics shall be placed on a zoomed-in portion of the main map or graphical image of the intersection by selecting the graphic from a menu and/or dropping it on the intersection.
- 2.4.4.7. All intersection-level graphics shall be associated with a phase, overlap, or function (preemption, status, alarms, etc.), and shall change color or appearance upon change of status at the intersection.
- 2.4.4.8. Intersection graphics configurations shall be transferrable from one intersection to another.
- 2.4.4.9. Users shall be able to place a remote vehicle and/or pedestrian call to any enabled phase through controls placed on the Intersection Display and/or Intersection Status Window.
- 2.4.4.10. Remote Front Panel: The system shall provide the ability to launch a front panel to simulate working in the front panel of the controller.

## 2.5. DEVICE GROUPING

- 2.5.1. All devices shall be added and configured within a common Entity Tree. Any device shall be allowed to be assigned as a stand-alone entity, not associated with any other entity or device, System, Section, Subsection (Nested Groups), or Group.
- 2.5.2. Any device in the Device Tree, shall be assigned to one of the following static groups:
  - 2.5.2.1. System – associated with an agency or jurisdiction. System events shall have the lowest priority control over all other scheduled events.
  - 2.5.2.2. Section – associated with a portion of a system. Section events shall have higher priority than System Events, but lower priority than events scheduled on Subsections.

- 2.5.2.3. Subsection (Nested) – associated with a portion of a Section. Sub-section events have higher priority than events scheduled on Sections, but lower priority than those scheduled for flexible Grouped intersections.
- 2.5.3. Any device in the Device Tree shall also be included into one or more flexible groupings. These Groups shall allow users to associate entities with common requirements for TOD scheduling, action plan control or manual command operation, and placed into their own unique grouping. Group commands override System, Section or Subsection events. Events scheduled on Groups have higher priority than all the groupings in the section above, but lower priority than a Stand-alone device.
- 2.5.4. Devices shall also be capable of being added to the entity tree as a Stand-alone device, not associated with any Static or Flexible Grouping. Scheduled events to these devices have highest priority of all, over all other scheduled events.
- 2.5.5. Devices, Systems, Sections, and Groups shall also be capable of being dynamically grouped by TOD schedule or by manual commands. Any static group, flexible group, device, or combination thereof shall be configured into a single scheduled event, action plan, or manual command and operate as a single entity.
- 2.5.6. Manual commands shall follow the same prioritization as above for scheduled events with respect to grouping, but they shall override any currently scheduled event for the devices being commanded.

### 3. SYSTEM FUNCTIONS

#### 3.1. CENTER-TO-FIELD COMMUNICATIONS

- 3.1.1. The system shall communicate to the field devices using Ethernet or serial communications, using the agency's LAN, licensed band or spread-spectrum radios, private twisted-wire-pair copper (TWP), or fiber-optic cabling or Cellular Modems.
- 3.1.2. The system shall communicate with field devices using NTCIP protocols or established proprietary protocols.
- 3.1.3. The system shall be capable of controlling, receiving status and data from, uploading and downloading field data, and applicable control parameters to and from each device.
- 3.1.4. The system shall maintain a copy of each field device's database of applicable operational parameters.

### 3.2. DATABASE ADMINISTRATION, SECURITY, AND SYSTEM ACCESS

- 3.2.1. The system shall provide, at the top level, the ability to manage the ATMS and all device databases to monitor and control all field devices from one central location and optional remote facilities.
- 3.2.2. Each system client workstation or laptop shall require a username and password for any user, this is assigned by the system administrator. The username and password may be the same as that used by the operating system but shall be required to be entered for each new system session.
- 3.2.3. The system shall allow for user and group privileges to be defined and assigned by the Administrator.
- 3.2.4. Operating privileges should be available for the following:
  - 3.2.4.1. System Administrator Configuration – full access to all system functions
  - 3.2.4.2. Inter-jurisdictional control – full access, partial access, read-only access to other agencies field devices, status, and logs.
  - 3.2.4.3. User Profile Configuration – full access or read-only access to functions below (at a minimum), regardless of device type:
    - Device configuration – adding, editing, deleting devices, and properties
    - Device control – sending commands and instructions to devices
    - Database configuration – access to modifying or editing segments (all or portions) of existing device databases
    - Database maintenance – backup, restore, archiving, etc
    - Database report creation and generation – includes standard and custom reports
    - Map display characteristics – base map controls and intersection display editing
    - Communications configurations – modifying communications to the field

### 3.3. CONTROLLER DATABASE MANAGEMENT

#### 3.3.1. Traffic Signal Controller Database

- 3.3.1.1. Database management shall allow programming of the intersection controller databases.
- 3.3.1.2. Each device shall have separate database programming pages. These pages shall contain all the programming options unique to each device.
- 3.3.1.3. Programming entries shall primarily consist of numerical or text values, YES/NO or ON/OFF entries, or appropriate values for each type of device. Check boxes shall be used for flags as appropriate. Hexadecimal or binary code shall not be used as entry values unless the data is represented in a similar encoded form on the controller's front panel display.
- 3.3.1.4. During program entry, the new data shall overwrite the old data. If the data entered is out of range, changes shall not be permitted, and an error message shall alert the user.
- 3.3.1.5. The system shall provide contextual help assistance to the user if requested during database editing.
- 3.3.1.6. When a user is editing data for a specific device, that database shall be "locked" and unavailable for edit by other users.
- 3.3.1.7. Standard industry accepted traffic engineering terminology shall be used throughout the programming displays.
- 3.3.1.8. Mnemonic usage shall be minimized and limited to recognized traffic engineering terms.

### 3.4. CONTROLLER DATABASE UPLOAD/DOWNLOAD

- 3.4.1. Upload/download shall transfer the programmable database from/to the selected device.
- 3.4.2. All upload/download data shall be verified for integrity using CRC techniques.
- 3.4.3. Following an upload, it shall be possible to compare the controller configuration to the database on file.
- 3.4.4. The system shall provide the ability for users to schedule a database comparison. Based on operator command or TOD/DOW schedule, the system shall automatically upload databases from devices and compare to database versions stored in the central database. The results of this comparison shall be available in a device comparison log. The log shall contain the following information (or similar information) on a per controller basis:
  - Device number
  - Status (upload failed, databases differ, databases match, no upload present)
  - Date and time of last database comparison
- 3.4.5. It shall be possible to switch between the uploaded data and the central data with a simple menu selection. The differences shall be highlighted on the uploaded data.
- 3.4.6. It shall be possible to revert a controller database configuration to any previously saved version for that location.
- 3.4.7. The system's device database management shall provide an operator menu selection interface that is similar to the controller's menu selections.



- 3.4.8. When the operator of the ATMS selects either an upload or a download of a field device database, it shall be possible for the operator to select only the segments of the database to upload or download provided the field device can accept data transfer in this manner.

### 3.5. ALERT AND EVENT NOTIFICATION

- 3.5.1. At a minimum, the system shall be capable of automatically sending alphanumeric messages (SMS – text messaging) to cellular telephones and email addresses upon detecting problems with the system or from any device.
- 3.5.2. The system shall be configurable to display a system notification (toast notification) and play a sound to notify users when system alarms are received and cleared.
- 3.5.3. Alert notifications shall also appear as a pop-up alarm, or similar notification, on each workstation logged into the system, provided a user has been configured to receive pop-up alarms, and that user is logged onto the system.
- 3.5.4. Alert notifications shall consist of at least three (3), user configurable, priority levels, to include “informational” (low priority), “warning” (medium priority) and “critical” (high priority) alerts.
- 3.5.5. Acknowledgements of incoming alerts shall be required for all medium and high priority on-screen notifications. Low priority alarm notifications shall not require acknowledgements.
- 3.5.6. The system shall be capable of sending alerts via text (SMS) or email and shall be configurable by TOD/DOW, allowing recipients to be selected based upon severity or priority of event and to issue text/email messages sent to multiple devices or addresses.
- 3.5.7. Notifications should allow a confirmation to assure that the malfunction has been acknowledged.
- 3.5.8. If no acknowledgement is received upon expiration of a user programmable time-out period, subsequent notifications shall be configurable to be sent (or escalated) to alternate devices.
- 3.5.9. The system shall log all malfunction notifications, retries, and acknowledgements with time and date stamps. The first acknowledgement shall be recorded; all others shall be ignored.

### 3.6. SYSTEM ANALYSIS AND ENGINEERING TOOLS

3.6.1. The system shall include engineering and analysis tools, providing users the ability to comparatively evaluate current system and field operation, historical operation, or proposed changes to operation. These tools shall include, but not limited to:

- Interface to third party traffic plan optimization software
- Time-space diagrams
- Split monitor displays
- Traffic system and operational analysis reports
- Traffic Responsive Report
- Raw Detector Report

## 4. INTERSECTION CONTROL FUNCTIONS

### 4.1. INTERSECTION CONTROLLER ACCESS

4.1.1. Access to the intersection controllers shall be controlled by privileges associated with system user logon IDs.

4.1.2. Any field located intersection controllers, connected to the system shall be capable of being represented by objects on the system map.

4.1.3. All systems shall provide database management with upload, download and control to Econolite ASC/3 controllers, 2070 controllers running the Econolite ASC/3 2070, Econolite Cobalt controllers running ASC/3 controller software, and Generic Controllers using NTCIP 1201 and 1202 complaint communications protocols.

4.1.4. MaxView systems shall shall provide database management with upload, download and control to Intelight Controllers running MaxTime controller software (NEMA X3L, NEMA X3c, and NEMA X3 controllers) in addition to the requirements listed above in section 4.1.3.

### 4.2. INTERSECTION CONTROL MODES

4.2.1. Traffic-Responsive (TR) – A controller shall be considered to be in the TR mode when it is operating on-line under central supervision and responding to system commands for plan selection based on the traffic-responsive algorithm.

4.2.2. Time-of-Day (TOD) - A controller shall be considered to be in the TOD mode when the controller is operating in a pre-determined timing plan based on a TOD schedule stored in the central database.

4.2.3. Manual – A controller shall be operating under the MAN mode when it is responding to system commands for plan selection issued from central control using manual override. From the perspective of the controller, this mode shall be identical to TR or TOD.

- 4.2.4. Failed - A controller shall be deemed "Failed" when the controller fails one or more monitoring checks. Once failed, a controller shall be in the failed mode until the problem has been corrected and the failure state has been cleared by periodic system retry commands.
- 4.2.5. Local - A controller shall be in the LOCAL mode when the local intersection controller makes the plan selection decision. The central system can command a local intersection to run in LOCAL mode, or LOCAL mode may result from manual command at the intersection. Communication of detector data and other status information shall continue even when in LOCAL mode.
- 4.2.6. Flash - Flash mode status shall be logged for each entry or exit from flash. The system shall have the be capable of detecting and reporting Central Flash, Cabinet Flash and Conflict or MMU Flash events provided the controller is able to discriminate between them and report its mode.

## 5. TRAFFIC RESPONSIVE (TR) CONTROL

### 5.1. GENERAL DESCRIPTION

- 5.1.1. The system shall utilize a V+kO (volume plus scaled occupancy) based on the algorithm developed by the US Department of Transportation for traffic-responsive operations.
- 5.1.2. System detector data shall provide the basis for all TR plan selections by the system.
- 5.1.3. The system shall utilize a threshold-based algorithm, utilizing computational channels to evaluate system congestion and traffic flows.
- 5.1.4. The TR operation shall automatically select the timing plans for which traffic flow parameters have been defined that exceed the user-defined threshold of traffic. The TR mode shall be selected by a manual user command or on a TOD basis.
- 5.1.5. TR database shall identify the system detectors that are to be used for TR plan selection for each section.
  - 5.1.5.1. The detector data shall have smoothing factors to configure importance of most recent data vs. historical data
  - 5.1.5.2. The detector data shall have scaling factors to accommodate loop placement and redundancy as well as establish ratio of detectors used to establish computational channel. A separate weighting factor is used for each detector but each shares the same "k" value.

### 5.2. PLAN IMPLEMENTATION TECHNIQUES

- 5.2.1. Plans shall be selected for implementation using the following process sequence:
  - 1. Process vehicle volumes and occupancies from defined system detectors.

2. Calculate weighted sum of volumes plus a factor of occupancies (V+KO).
  3. Compare the V+KO value with the programmed thresholds.
  4. Select the plan with the closest match to the calculated value and that satisfies the user configured change threshold.
  5. The selected timing plan shall be transmitted to the controllers. The plan will be invoked provided that it is available at each controller in the applicable section or system.
- 5.2.2. The duration of each TR sampling period shall be operator-selectable.
- 5.2.3. TR operation shall be capable of being overridden by manual selection.
- 5.2.4. TR operation shall be capable of operating in the background without selecting patterns until a user specified level of demand or occupancy is achieved at which point the user selected pattern will be commanded to the intersections and thus overriding the local or system time-of-day patterns.
- 5.2.5. System detectors shall provide volume and occupancy data for archived storage and analysis purposes.
- 5.2.6. Plan changes shall be implemented under TR only if the minimum change threshold has been exceeded.
- 5.2.7. Plan changes shall be implemented under TR only if the user-specified percentage of valid detection is met or exceeded.

## 6. SYSTEM ANALYSIS AND ENGINEERING TOOLS

### 6.1. TIME/SPACE DIAGRAMS

- 6.1.1. The system shall allow the operator to display time-space diagrams. At a minimum, the operator shall be able perform the following:
- 6.1.1.1. Display time-space diagrams for both programmed and real-time coordination timings.
  - 6.1.1.2. Display sloping progression bands for each direction of travel on the same diagram.
  - 6.1.1.3. The System shall be able to save time-space diagram offset adjustments to the database and download them to the controller.
  - 6.1.1.4. Display the current offset as a numeric value next to each intersection.
  - 6.1.1.5. Select the phases and/or overlaps for progression phases.
  - 6.1.1.6. Time Space diagrams shall be capable of using GIS data to automatically calculate and display distances between signals.

## 6.2. SPLIT MONITOR

- 6.2.1. The system shall include a real-time split monitor that provides, at a minimum, the following functionality:
  - 6.2.1.1. It shall be possible to present the operator with an analysis of the splits of an intersection per phase
  - 6.2.1.2. The system user shall be able to view and process both programmed and actual real-time data.
  - 6.2.1.3. Programmed timing data for each phase shall be obtained from the current database of controller timings stored in the central system.
  - 6.2.1.4. Actual real-time data for each phase shall be obtained by monitoring the controller status on a second-by-second basis.
  - 6.2.1.5. Number of cycles analyzed shall be displayed.
  - 6.2.1.6. It shall be possible to select the period for which the data shall be displayed by start and stop time and date, day of week, the last occurrence of a plan, or the last X minutes (where X is defined by the operator).

## 6.3. SYSTEM AND OPERATIONAL REPORTS

- 6.3.1. Each report shall allow users to select report parameters and to customize report filtering and data selection.
- 6.3.2. Users shall be able to save report parameter selections to a named report that the user can run again at a later time without re-selecting the parameters.
- 6.3.3. Users shall be able to use the system scheduler or the manual command scheduler to run any user defined reports, as well as system defined reports.
- 6.3.4. Report output formats shall include at a minimum PDF, Microsoft Word and Microsoft Excel formats.
- 6.3.5. The system shall provide a list of reports, providing information compiled from data retrieved from the system and any field device capable of logging data. These reports should include, but not be limited to the following:
  - Alerts Log Report
  - Coordination Report
  - Actual/Set Splits Report
  - Phase Termination Report
  - Manual Control Report
  - Preempt Report
  - TSP Report
  - Detector Reports
  - Device Communications Configuration Report
  - Scheduler Report

- Detector Failure Report
- Power Failure Report
- Time Drift Report
- Signal Changes Report
- Signal Detector Events Report
- Split Monitor Report
- System Events Report
- Upload and Compare Report

## **7.0 SYNCHRO SUPPORT**

- 7.1.1. The vendor's ATMS system shall be capable of importing and exporting Synchro UTDF timing data and phasing information.
- 7.1.2. After importing Synchro UTDF files, the vendor's ATMS shall be capable of storing timing and related data to the ATMS master database and shall be capable of downloading the timing data to the local controllers supported by the ATMS.
- 7.1.3. The vendor's ATMS shall support Synchro Version 10 UTDF formats.

## **8.0 SIGNAL PERFORMANCE MEASURES**

### **8.1 MOE Reports**

- 8.1.1 The system shall support the following graphical Measure of Effectiveness (MOE) monitors or displays. MOE displays or reports shall be based on high density data, collected by the controller at a frequency of 10 times per second.
- 8.1.2 The ATMS shall be able to selectively schedule MOE data collection through the system scheduler.
- 8.1.3 The user shall be able to schedule polling for individual intersections as well as for sections or subsections of intersections.
- 8.1.4 When MOE polling is enabled, the ATMS system shall upload MOE data once per minute.
- 8.1.5 The ATMS shall be capable of producing each MOE report based on a user selectable date for any date for which the system has collected MOE data.
- 8.1.6 MOE reports shall be provided as graphs or data plots over 24-hour periods.
- 8.1.7 The ATMS shall be capable of printing any of the MOE displays.
- 8.1.8 The ATMS shall provide means for archiving, restoring and purging MOE data from the ATMS database.
- 8.1.9 The MOE reports shall include the Purdue Coordination Diagram (PCD)

- 8.1.9.1 The PCD shall be capable of reporting vehicle arrivals at the time in cycle for each cycle over a 24hour period.
- 8.1.9.2 The PCD shall visually map vehicle arrivals against the Green Band, Yellow Band and Red Band portions of the Cycle.
- 8.1.9.3 The PCD shall visually indicate pattern changes throughout the day
- 8.1.9.4 The ATMS shall be able to produce a PCD for each phase of a signal.
- 8.1.10The MOE reports shall include a Cycle Length Report
  - 8.1.10.1 The Cycle Length Report shall be capable of reporting cycle lengths for each cycle over a 24-hour period.
  - 8.1.10.2 The Cycle Length Report shall be capable of displaying data in a scatter-plot format.
  - 8.1.10.3 The Cycle Length Report shall visually indicate pattern changes throughout the day
  - 8.1.10.4 The Cycle Length Report shall include a moving-average plot of the Cycle lengths throughout the day.
- 8.1.11The MOE reports shall include a Flow Rate Report
  - 8.1.11.1 The Flow Rate Report shall be capable of reporting vehicle volumes reported for each cycle over a 24-hour period.
  - 8.1.11.2 The Flow Rate Report shall be capable of displaying data in a scatter-plot or line-plot format.
  - 8.1.11.3 The Flow Rate Report shall visually indicate pattern changes throughout the day
  - 8.1.11.4 The Flow Rate Report shall include a moving-average plot of the Volumes throughout the day.
- 8.1.12The MOE reports shall include a Green Times Report
  - 8.1.12.1 The Green Time Report shall be capable of reporting length of green for any phase of a cycle as reported over a 24-hour period.
  - 8.1.12.2 The Green Time Report shall be capable of displaying Green Time data in a scatter-plot or line-plot format.
  - 8.1.12.3 The Green Time Report shall visually indicate pattern changes throughout the day
  - 8.1.12.4 The Green Time Report shall include a moving-average plot of the Green Times throughout the day.

8.1.13 The MOE reports shall include a Percent Ped Calls Report

- 8.1.13.1 The Ped Calls Report shall be capable of reporting the percent of cycles affected by pedestrian calls for standard pedestrian phases of a cycle as reported over a 24-hour period.

8.1.14 The MOE reports shall include a Volume to Capacity Report

- 8.1.14.1 The Volume to Capacity report shall be capable of reporting vehicle volume to capacity ratio reported for each cycle over a 24-hour period relative to the capacity of the intersection.
- 8.1.14.2 The Volume to Capacity report shall be capable of displaying data in a scatter-plot or line-plot format.
- 8.1.14.3 The Volume to Capacity report shall visually indicate pattern changes throughout the day
- 8.1.14.4 The Volume to Capacity report shall be capable of including a moving-average plot of the data throughout the day.

8.1.15 The MOE reports shall include a Split Failures Report

- 8.1.15.1 The Split Failure Report shall be capable of reporting the number split failures that occur as reported over a 24-hour period.
- 8.1.15.2 The Split Failure Report shall provide graphical display of Split Failures for each phase of the intersection.
- 8.1.15.3 The Split Failure Report shall display graphs for up to eight (8) phases.
- 8.1.15.4 The Split Failure Report shall include a moving-average plot of Split Failures throughout the day.
- 8.1.15.5 Split Failures shall be defined as occurrences of volume exceeding capacity as defined in the Volume to Capacity Report

Glossary

ATMS – Advanced Transportation Management System  
COTS – Commercial Off-the-Shelf  
CRC – Cyclical Redundancy Check  
DMS – Dynamic Message Sign  
GIS – Geographic Information System  
ITS – Intelligent Transportation System  
LAN – Local Area Network  
MOE – Measure of Effectiveness  
MULTI – Mark-up Language for Transportation Information  
NTCIP – National Transportation Communications for ITS Protocol  
PTZ – Pan/Tilt/Zoom  
RTMS – Remote Traffic Microwave Sensor



SMS – Short Message Service (text messaging for cellular phones)  
TOD/DOW – Time-of-Day/Day-of-Week  
TSP – Transit Signal Priority  
TWP – Twisted-Wire-Pair copper interconnect  
VOS – Volume/Occupancy/Speed  
VPN – Virtual Private Network

## **ATMS SOFTWARE SUPPORT AND WARRANTY**

The Contractor shall provide the following:

- The Contractor shall warranty the ATMS software for a two-year period. The warranty shall include parts, labor, and materials and shall begin after final acceptance by the Department.
- During the warranty period, the Contractor shall provide corrective maintenance to address and repair any issues that arise with the proposed implementation of the ATMS software. Corrective maintenance does not include upgrades, preventive maintenance, scheduled maintenance, replacement of equipment, enhancements, or consulting support.
- All ATMS software shall be supported through a Next Business Day response time via telephone or email.

### Warranty and maintenance requirements:

- One complete set of manuals, in electronic format, shall be supplied on a CD or DVD for all systems and hardware provided as part of the contract.
- All instruction sheets and other documentation required to be furnished by the manufacturer for materials and supplies and for operations shall be delivered to the Engineer prior to the acceptance of the project, with the following warranties and guarantees:
  - The manufacturer's standard written warranty for each piece of equipment furnished under the contract.
  - The Contractor's written guarantee for satisfactory operation of all hardware and software furnished and constructed under the contract for a period of two years (three years for computer workstations and servers) after final acceptance of the project.
  - The Contractor shall furnish a warranty certificate that lists each component and 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 final acceptance and the warranty certificate shall reflect this date.

The Contractor will not be responsible for components that are not provided under this contract.

## REMOTE ACCESS CAPABILITIES

The Department will provide remote access capabilities into the Intelligent Transportation System to provide the Contractor with the ability to perform work remotely for the initial deployment and support of the ATMS software and for maintenance purposes.

**Payment Schedule:** The payment schedule for this pay item is listed below:

- Initial documentation submittal (10%)
- Software is installed and is operating successfully on Department server (25%)
- Software features operate successfully for twenty-five intersections (25%)
- Completion of 60 day burn-in period (25%)
- Resolution of any outstanding Issues (10%)
- System training completion. (5%)

**Basis of Payment:** This work will be paid for at the contract unit price per Lump Sum for ATMS SOFTWARE (CORE MODULE) which price shall be payment in full for all labor, materials, and equipment required to furnish and install the ATMS software that meets all of the requirements described above with deployment, integration, and testing as specified in this document, complete.

## SPARE FULL ACTUATED CONTROLLER, SPECIAL

This work shall be in accordance with the applicable Articles of Sections 895, 1073, and 1074 of the Standard Specifications with the following modifications:

This item shall consist of furnishing a spare controller and delivering it to the city of Peoria Dries Lane Traffic facility located at 3505 N. Dries Lane, Peoria, IL. The contractor shall notify Irv Leblanc, city of Peoria Lead Electrician, at (309) 303-7440 a minimum of forty-eight hours in advance to arrange delivery.

The Contractor shall furnish and deliver the following items:

- NEMA TS-2 Type 2 Controller and controller accessories as specified in the special provision for FULL-ACTUATED CONTROLLER IN EXISTING CABINET

**Basis of Payment:** This work shall be paid for at the contract unit price per Each for SPARE FULL ACTUATED CONTROLLER, SPECIAL which price shall be payment in full for all labor, equipment, and materials required to furnish the controller described above and deliver it to the city of Peoria traffic facility.

## **MODIFY EXISTING CONTROLLER CABINET**

This work shall be in accordance with the applicable Articles of Sections 895, 1073, and 1074 of the Standard Specifications with the following modifications:

This item shall consist of furnishing and installing equipment inside existing traffic signal controller cabinets at the locations shown on the plan sheets.

### **The Contractor shall perform the following:**

- The Contractor shall furnish and install a NEMA 5-15 duplex receptacle, receptacle box, cover plate to be used to power auxiliary equipment. The receptacle shall be wired into the load side (protected power output) side of the cabinet surge suppressor.
- The Contractor shall install the outlet in a location where it will not interfere with cabinet maintenance. The Contractor shall relocate and re-arrange the contents in the cabinet as needed to facilitate installation of the proposed duplex receptacle.
- The Contractor shall furnish and install a new SDLC communications panel complete with five SDLC cables in all Eagle Type III controller cabinets at the locations shown in the plans. The Contractor shall remove the existing SDLC panel and cables and dispose of them off site.
- The Contractor will be allowed to place the intersection into all-way red flash mode and all-way stop control between the hours of 8:30AM to 3:30PM to facilitate the controller cabinet modification. The Contractor shall furnish and install a minimum of two stop signs per approach when the intersection is operating in all-red flash mode or all-way stop control. Stop signs shall be displayed in accordance with MUTCD requirements.

**Basis of Payment:** This work will be paid for at the contract unit price per Each for MODIFY EXISTING CONTROLLER CABINET which price shall be payment in full for all labor, materials, and equipment required to modify the cabinet to support flashing yellow operation and test the modified cabinet as described above.

### **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](mailto:DOT.DBE.UP@illinois.gov)" within the five calendar days after the receipt of the notification of the determination. The determination shall become final if a request is not made on or before the fifth calendar day. A request may provide additional written documentation or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. The request will be reviewed by the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person to consider all issues of documentation and whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

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

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

- (2) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission is receives as a result of the lease arrangement.

(e) DBE as a material supplier:

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

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

- (a) NO AMENDMENT. No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be emailed to the Department at [DOT.DBE.UP@illinois.gov](mailto: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.

**DISPOSAL FEES (BDE)**

Effective: November 1, 2018

Replace Articles 109.04(b)(5) – 109.04(b)(8) of the Standard Specifications with the following:

- "(5) Disposal Fees. When the extra work performed includes paying for disposal fees at a clean construction and demolition debris facility, an uncontaminated soil fill operation or a landfill, the Contractor shall receive, as administrative costs, an amount equal to five percent of the first \$10,000 and one percent of any amount over \$10,000 of the total approved costs of such fees.
- (6) Miscellaneous. No additional allowance will be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.

- (7) Statements. No payment will be made for work performed on a force account basis until the Contractor has furnished the Engineer with itemized statements of the cost of such force account work. Statements shall be accompanied and supported by invoices for all materials used and transportation charges. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices, the Contractor shall furnish an affidavit certifying that such materials were taken from his/her stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

Itemized statements at the cost of force account work shall be detailed as follows.

- a. Name, classification, date, daily hours, total hours, rate, and extension for each laborer and foreman. Payrolls shall be submitted to substantiate actual wages paid if so requested by the Engineer.
  - b. Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment.
  - c. Quantities of materials, prices and extensions.
  - d. Transportation of materials.
  - e. Cost of property damage, liability and workmen's compensation insurance premiums, unemployment insurance contributions, and social security tax.
- (8) Work Performed by an Approved Subcontractor. When extra work is performed by an approved subcontractor, the Contractor shall receive, as administrative costs, an amount equal to five percent of the total approved costs of such work with the minimum payment being \$100.
- (9) All statements of the cost of force account work shall be furnished to the Engineer not later than 60 days after receipt of the Central Bureau of Construction form "Extra Work Daily Report". If the statement is not received within the specified time frame, all demands for payment for the extra work are waived and the Department is released from any and all such demands. It is the responsibility of the Contractor to ensure that all statements are received within the specified time regardless of the manner or method of delivery."

#### **EQUIPMENT PARKING AND STORAGE (BDE)**

Effective: November 1, 2017

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

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



- (a) When the project has adequate right-of-way, vehicles, materials, and equipment shall be located a minimum of 30 ft (9 m) from the pavement.
- (b) When adequate right-of-way does not exist, vehicles, materials, and equipment shall be located a minimum of 15 ft (4.5 m) from the edge of any pavement open to traffic.
- (c) Behind temporary concrete barrier, vehicles, materials, and equipment shall be located a minimum of 24 in. (600 mm) behind free standing barrier or a minimum of 6 in. (150 mm) behind barrier that is either pinned or restrained according to Article 704.04. The 24 in. or 6 in. measurement shall be from the base of the non-traffic side of the barrier.
- (d) Behind other man-made or natural barriers meeting the approval of the Engineer.”

**LIGHTS ON BARRICADES (BDE)**

Effective: January 1, 2018

Revise Article 701.16 of the Standard Specifications to read:

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

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

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

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

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

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

**PAYMENTS TO SUBCONTRACTORS (BDE)**

Effective: November 2, 2017

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

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

**PROGRESS PAYMENTS (BDE)**

Effective: November 2, 2013

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

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

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

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

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

## **REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE)**

Effective: January 1, 2019

Revise Section 669 of the Standard Specifications to read:

### **“SECTION 669. REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES**

**669.01 Description.** This work shall consist of the transportation and proper disposal of contaminated soil and groundwater. This work shall also consist of the removal, transportation, and proper disposal of underground storage tanks (UST), their content and associated underground piping to the point where the piping is above the ground, including determining the content types and estimated quantities.

**669.02 Equipment.** The Contractor shall notify the Engineer of the delivery of all excavation, storage, and transportation equipment to a work area location. The equipment shall comply with OSHA and American Petroleum Institute (API) guidelines and shall be furnished in a clean condition. Clean condition means the equipment does not contain any residual material classified as a non-special waste, non-hazardous special waste, or hazardous waste. Residual materials include, but are not limited to, petroleum products, chemical products, sludges, or any other material present in or on equipment.

Before beginning any associated soil or groundwater management activity, the Contractor shall provide the Engineer with the opportunity to visually inspect and approve the equipment. If the equipment contains any contaminated residual material, decontamination shall be performed on the equipment as appropriate to the regulated substance and degree of contamination present according to OSHA and API guidelines. All cleaning fluids used shall be treated as the contaminant unless laboratory testing proves otherwise.

**669.03 Pre-construction Submittals.** Prior to beginning this work, or working in areas with regulated substances, the Contractor shall submit a Regulated Substance Pre-Construction Plan (RSPCP) to the Engineer for review and approval using form BDE 2730. The form shall be signed by an Illinois licensed Professional Engineer or Professional Geologist.

As part of the RSPCP, the qualifications of Contractor(s) or firm(s) performing the following work shall be listed.

- (a) On-Site Monitoring. Qualification for on-site monitoring of regulated substance work and on-site monitoring of UST removal requires either pre-qualification in Hazardous Waste by the Department or demonstration of acceptable project experience in remediation and special waste operations for contaminated sites in accordance with applicable Federal, State, or local regulatory requirements.

Qualification for each individual performing on-site monitoring requires a minimum of one-year of experience in similar activities as those required for the project.

- (b) Underground Storage Tank. Qualification for underground storage tank (UST) work requires licensing and certification with the Office of the State Fire Marshall (OSFM) and possession of all permits required to perform the work. A copy of the permit shall be provided to the Engineer prior to tank removal.

The qualified Contractor(s) or firm(s) shall also document it does not have any current or former ties with any of the properties contained within, adjoining, or potentially affecting the work.

The Engineer will require up to 30 calendar days for review of the RSPCP. The review may involve rejection or revision and resubmittal; in which case, an additional 30 days will be required for each subsequent review. Work shall not commence until the RSPCP has been approved by the Engineer. After approval, the RSPCP shall be revised as necessary to reflect changed conditions in the field.

## CONSTRUCTION REQUIREMENTS

**669.04 Contaminated Soil and/or Groundwater Monitoring.** Prior to beginning excavation, the Contractor shall mark the limits of removal for approval by the Engineer. Once excavation begins, the work and work area involving regulated substances shall be monitored by qualified personnel. The qualified personnel shall be on-site continuously during excavation and loading of material containing regulated substances. The qualified personnel shall be equipped with either a photoionization detector (PID) (minimum 10.6eV lamp), or a flame ionization detector (FID), and other equipment, as appropriate, to monitor for potential contaminants associated with volatile organic compounds (VOCs) or semi-volatile organic compounds (SVOCs). The PID or FID meter shall be calibrated on-site and background level readings taken and recorded daily, and as field and weather conditions change. Any field screen reading on the PID or FID in excess of background levels indicates the potential presence of contaminated material requiring handling as a non-special waste, special waste, or hazardous waste. PID or FID readings may be used as the basis of increasing the limits of removal with the approval of the Engineer but shall in no case be used to decrease the limits.

The qualified personnel shall document field activities using form BDE 2732 (Regulated Substances Monitoring Daily Record) including the name(s) of personnel conducting the monitoring, weather conditions, PID or FID calibration records, a list of equipment used on-site, a narrative of activities completed, photo log sheets, manifests and landfill tickets, monitoring results, how regulated substances were managed and other pertinent information.

Samples will be collected in accordance with the RSPCP. Samples shall be analyzed for the contaminants of concern (COCs), including pH, based on the property's land use history, the encountered abnormality and/or the parameters listed in the maximum allowable concentration (MAC) for chemical constituents in uncontaminated soil established pursuant to Subpart F of 35 Ill. Adm. Code 1100.605. The analytical results shall serve to document the level of contamination.

Samples shall be grab samples (not combined with other locations). The samples shall be taken with decontaminated or disposable instruments. The samples shall be placed in sealed containers and transported in an insulated container to the laboratory. The container shall maintain a temperature of 39 °F (4 °C). All samples shall be clearly labeled. The labels shall indicate the sample number, date sampled, collection location and depth, and any other relevant observations.

The laboratory shall use analytical methods which are able to meet the lowest appropriate practical quantitation limits (PQL) or estimated quantitation limit (EQL) specified in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", EPA Publication No. SW-846; "Methods for the Determination of Organic Compounds in Drinking Water", EPA, EMSL, EPA-600/4-88/039; and "Methods for the Determination of Organic Compounds in Drinking Water, Supplement III", EPA 600/R-95/131, August 1995. For parameters where the specified cleanup objective is below the acceptable detection limit (ADL), the ADL shall serve as the cleanup objective. For other parameters the ADL shall be equal to or below the specified cleanup objective.

**669.05 Contaminated Soil and/or Groundwater Management and Disposal.** The management and disposal of contaminated soil and/or groundwater shall be according to the following:

- (a) Soil Analytical Results Exceed Most Stringent MAC. When the soil analytical results indicate that detected levels exceed the most stringent maximum allowable concentration (MAC) for chemical constituents in uncontaminated soil established pursuant to Subpart F of 35 Illinois Administrative Code 1100.605, the soil shall be managed as follows:
  - (1) When analytical results indicate inorganic chemical constituents exceed the most stringent MAC but they are still considered within area background levels by the Engineer, the excavated soil can be utilized within the construction limits as fill, when suitable. If the soils cannot be utilized within the construction limits, they shall be managed and disposed of off-site as a non-special waste, special waste, or hazardous waste as applicable.
  - (2) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for a Metropolitan Statistical Area (MSA) County, the excavated soil can be utilized within the construction limits as fill, when suitable, or managed and disposed of off-site as "uncontaminated soil" at a clean construction and demolition debris (CCDD) facility or an uncontaminated soil fill operation (USFO) within an MSA County provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.
  - (3) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for an MSA County excluding Chicago, or the MAC within the Chicago corporate limits, the excavated soil can be utilized within the construction limits as fill, when suitable, or managed and disposed of off-site as "uncontaminated soil" at a CCDD facility or an USFO within an MSA County excluding Chicago or within the Chicago corporate limits provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.
  - (4) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for an MSA County excluding Chicago, the excavated soil can be utilized within the construction limits as fill, when suitable, or managed and disposed of off-site as "uncontaminated soil" at a CCDD facility or an USFO within an MSA County excluding Chicago provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.

- (5) When the Engineer determines soil cannot be managed according to Articles 669.05(a)(1) through (a)(4) above, the soil shall be managed and disposed of off-site as a non-special waste, special waste, or hazardous waste as applicable.
- (b) Soil Analytical Results Do Not Exceed Most Stringent MAC. When the soil analytical results indicate that detected levels do not exceed the most stringent MAC, the excavated soil can be utilized within the construction limits or managed and disposed off-site as “uncontaminated soil” according to Article 202.03. However, the excavated soil cannot be taken to a CCDD facility or an USFO for any of the following reasons.
- (1) The pH of the soil is less than 6.25 or greater than 9.0.
  - (2) The soil exhibited PID or FID readings in excess of background levels.
- (c) Soil Analytical Results Exceed Most Stringent MAC but Do Not Exceed Tiered Approach to Corrective Action Objectives (TACO) Residential. When the soil analytical results indicate that detected levels exceed the most stringent MAC but do not exceed TACO Tier 1 Soil Remediation Objectives for Residential Properties pursuant to 35 IAC 742 Appendix B Table A, the excavated soil can be utilized within the right-of-way or managed and disposed off-site as “uncontaminated soil” according to Article 202.03. However, the excavated soil cannot be taken to a CCDD facility or an USFO.
- (d) Groundwater. When groundwater analytical results indicate the detected levels are above Appendix B, Table E of 35 Illinois Administrative Code 742, the most stringent Tier 1 Groundwater Remediation Objectives for Groundwater Component of the Groundwater Ingestion Route for Class 1 groundwater, the groundwater shall be managed off-site as a special waste. The groundwater shall be containerized and trucked to an off-site treatment facility or may be discharged to a sanitary sewer or combined sewer when permitted by the local sewer authority. Groundwater discharged to a sewer shall be pre-treated to remove particulates and measured with a calibrated flow meter to comply with applicable discharge limits. A copy of the permit shall be provided to the Engineer prior to discharging groundwater to the sewer.

All groundwater encountered within trenches may be managed within the trench and allowed to infiltrate back into the ground. If the groundwater cannot be managed within the trench it must be removed as a special or hazardous waste. The Contractor is prohibited from managing groundwater within the trench by discharging it through any existing or new storm sewer. The Contractor shall install backfill plugs within the area of groundwater contamination.

One backfill plug shall be placed down gradient to the area of groundwater contamination. Backfill plugs shall be installed at intervals not to exceed 50 ft (15 m). Backfill plugs are to be 4 ft (1.2 m) long, measured parallel to the trench, full trench width and depth. Backfill plugs shall not have any fine aggregate bedding or backfill, but shall be entirely cohesive soil or any class of concrete. The Contractor shall provide test data that the material has a permeability of less than  $10^{-7}$  cm/sec according to ASTM D 5084, Method A or per another test method approved by the Engineer.

The Contractor shall use due care when transferring contaminated material from the area of origin to the transporter. Should releases of contaminated material to the environment occur (i.e., spillage onto the ground, etc.), the Contractor shall clean-up spilled material and place in the appropriate storage containers as previously specified. Clean-up shall include, but not be limited to, sampling beneath the material staging area to determine complete removal of the spilled material.

The Contractor shall be responsible for transporting and disposing all material classified as a non-special waste, special waste, or hazardous waste from the job site to an appropriately permitted landfill facility. The transporter and the vehicles used for transportation shall comply with all federal, state, and local rules and regulations governing the transportation of non-special waste, special waste, or hazardous waste.

All equipment used by the Contractor to haul contaminated material to the landfill facility shall be lined with a 6 mil (150 micron) polyethylene liner and securely covered during transportation. The Contractor shall obtain all documentation including any permits and/or licenses required to transport the contaminated material to the disposal facility.

The Contractor shall provide engineered barriers, when required, and shall include materials sufficient to completely line excavation surfaces, including sloped surfaces, bottoms, and sidewall faces, within the areas designated for protection.

The Engineer shall coordinate with the Contractor on the completion of all documentation. The Contractor shall make all arrangements for collection and analysis of landfill acceptance testing. The Contractor shall coordinate for waste disposal approval with the disposal facility. After the Contractor completes these activities and upon receipt of authorization from the Engineer, the Contractor shall initiate the disposal process.

The Contractor shall provide the Engineer with all transport-related documentation within two days of transport or receipt of said document(s). The Engineer shall maintain the file for all such documentation. For management of special or hazardous waste, the Contractor shall provide the Engineer with documentation the Contractor (or subcontractor, if a subcontractor is used for transportation) is operating with a valid Illinois special waste transporter permit at least two weeks before transporting the first load of contaminated material.

The Contractor shall schedule and arrange the transport and disposal of each load of contaminated material produced. The Contractor shall make all transport and disposal arrangements so no contaminated material remains within the project area at the close of business each day. Exceptions to this specification require prior approval from the Engineer within 24 hours of close of business. The Contractor shall be responsible for all other pre-disposal/transport preparations necessary daily to accomplish management activities.

Any waste generated as a special or hazardous waste from a non-fixed facility shall be manifested off-site using the Department's county generator number. An authorized representative of the Department shall sign all manifests for the disposal of the contaminated material and confirm the Contractor's transported volume. Any waste generated as a non-special waste may be managed off-site without a manifest, a special waste transporter, or a generator number.

The Contractor shall select a landfill mandated by definition of the contaminant within the State of Illinois. The Department will review and approve or reject the facility proposed by the Contractor to use as a landfill. The Contractor shall verify whether the selected disposal facility is compliant with those applicable standards as mandated by definition of the contaminant and whether the disposal facility is presently, has previously been, or has never been, on the United States Environmental Protection Agency (U.S. EPA) National Priorities List or the Resource Conservation and Recovery Act (RCRA) List of Violating Facilities. The Contractor shall be responsible for coordinating permits with the IEPA. The use of a Contractor selected landfill shall in no manner delay the construction schedule or alter the Contractor's responsibilities as set forth.

**669.06 Non-Special Waste Certification.** An authorized representative of the Department shall sign and date all non-special waste certifications. The Contractor shall be responsible for providing the Engineer with the required information that will allow the Engineer to certify the waste is not a special waste.

- (a) Definition. A waste is considered a non-special waste as long as it is not:
- (1) a potentially infectious medical waste;
  - (2) a hazardous waste as defined in 35 IAC 721;
  - (3) an industrial process waste or pollution control waste that contains liquids, as determined using the paint filter test set forth in subdivision (3)(A) of subsection (m) of 35 IAC 811.107;
  - (4) a regulated asbestos-containing waste material, as defined under the National Emission Standards for Hazardous Air Pollutants in 40 CFR 61.141;
  - (5) a material containing polychlorinated biphenyls (PCB's) regulated pursuant to 40 CFR Part 761;
  - (6) a material subject to the waste analysis and recordkeeping requirements of 35 IAC 728.107 under land disposal restrictions of 35 IAC 728;
  - (7) a waste material generated by processing recyclable metals by shredding and required to be managed as a special waste under Section 22.29 of the Environmental Protection Act; or
  - (8) an empty portable device or container in which a special or hazardous waste has been stored, transported, treated, disposed of, or otherwise handled.
- (b) Certification Information. All information used to determine the waste is not a special waste shall be attached to the certification. The information shall include but not be limited to:
- (1) the means by which the generator has determined the waste is not a hazardous waste;
  - (2) the means by which the generator has determined the waste is not a liquid;



- (3) if the waste undergoes testing, the analytic results obtained from testing, signed and dated by the person responsible for completing the analysis;
- (4) if the waste does not undergo testing, an explanation as to why no testing is needed;
- (5) a description of the process generating the waste; and
- (6) relevant material safety data sheets.

**669.07 Temporary Staging.** The Contractor shall excavate and dispose of all waste material as mandated by the contaminants without temporary staging. If circumstances require temporary staging, he/she shall request in writing, approval from the Engineer.

When approved, the Contractor shall prepare a secure location within the project area capable of housing containerized waste materials. The Contractor shall contain all waste material in leak-proof storage containers such as lined roll-off boxes or 55 gal (208 L) drums, or stored in bulk fashion on storage pads. The design and construction of such storage pad(s) for bulk materials shall be subject to approval by the Engineer. The Contractor shall place the staged storage containers on an all-weather gravel-packed, asphalt, or concrete surface. The Contractor shall maintain a clearance both above and beside the storage units to provide maneuverability during loading and unloading. The Contractor shall provide any assistance or equipment requested by the Engineer for authorized personnel to inspect and/or sample contents of each storage container. All containers and their contents shall remain intact and undisturbed by unauthorized persons until the manner of disposal is determined. The Contractor shall keep the storage containers covered, except when access is requested by authorized personnel of the Department. The Engineer shall authorize any additional material added to the contents of any storage container before being filled.

The Contractor shall ensure the staging area is enclosed (by a fence or other structure) to ensure direct access to the area is restricted, and he/she shall procure and place all required regulatory identification signs applicable to an area containing the waste material. The Contractor shall be responsible for all activities associated with the storage containers including, but not limited to, the procurement, transport, and labeling of the containers. The Contractor shall clearly mark all containers in permanent marker or paint with the date of waste generation, location and/or area of waste generation, and type of waste (e.g., decontamination water, contaminated clothing, etc.). The Contractor shall place these identifying markings on an exterior side surface of the container. The Contractor shall separately containerize each contaminated medium, i.e. contaminated clothing is placed in a separate container from decontamination water. Containers used to store liquids shall not be filled in excess of 80 percent of the rated capacity. The Contractor shall not use a storage container if visual inspection of the container reveals the presence of free liquids or other substances that could classify the material as a hazardous waste in the container.

The Department will not be responsible for any additional costs incurred, if mismanagement of the staging area, storage containers, or their contents by the Contractor results in excess cost expenditure for disposal or other material management requirements.

**669.08 Underground Storage Tank Removal.** For the purposes of this section, an underground storage tank (UST) includes the underground storage tank, piping, electrical controls, pump island, vent pipes and appurtenances.

Prior to removing an UST, the Engineer shall determine whether the Department is considered an "owner" or "operator" of the UST as defined by the UST regulations (41 Ill. Adm. Code Part 176). Ownership of the UST refers to the Department's owning title to the UST during storage, use or dispensing of regulated substances. The Department may be considered an "operator" of the UST if it has control of, or has responsibility for, the daily operation of the UST. The Department may however voluntarily undertake actions to remove an UST from the ground without being deemed an "operator" of the UST.

In the event the Department is deemed not to be the "owner" or "operator" of the UST, the OSFM removal permit shall reflect who was the past "owner" or "operator" of the UST. If the "owner" or "operator" cannot be determined from past UST registration documents from OSFM, then the OSFM removal permit will state the "owner" or "operator" of the UST is the Department. The Department's Office of Chief Counsel (OCC) will review all UST removal permits prior to submitting any removal permit to the OSFM. If the Department is not the "owner" or "operator" of the UST then it will not register the UST or pay any registration fee.

The Contractor shall be responsible for obtaining all permits required for removing the UST, notification to the OSFM, using an OSFM certified tank contractor, removal and disposal of the UST and its contents, and preparation and submittal of the OSFM Site Assessment Report in accordance with 41 Ill. Adm. Code Part 176.330.

The Contractor shall contact the Engineer and the OSFM's office at least 72 hours prior to removal to confirm the OSFM inspector's presence during the UST removal. Removal, transport, and disposal of the UST shall be according to the applicable portions of the latest revision of the "American Petroleum Institute (API) Recommended Practice 1604".

The Contractor shall collect and analyze tank content (sludge) for disposal purposes. The Contractor shall remove as much of the regulated substance from the UST system as necessary to prevent further release into the environment. All contents within the tank shall be removed, transported and disposed of, or recycled. The tank shall be removed and rendered empty according to IEPA definition.

The Contractor shall collect soil samples from the bottom and sidewalls of the excavated area in accordance with 35 Ill. Adm. Code Part 734.210(h) after the required backfill has been removed during the initial response action, to determine the level of contamination remaining in the ground, regardless if a release is confirmed or not by the OSFM on-site inspector.

In the event the UST is designated a leaking underground storage tank (LUST) by the OSFM's inspector, or confirmation by analytical results, the Contractor shall notify the Engineer and the DESU. Upon confirmation of a release of contaminants from the UST and notifications to the Engineer and DESU, the Contractor shall report the release to the Illinois Emergency Management Agency (IEMA) (e.g., by telephone or electronic mail) and provide them with whatever information is available ("owner" or "operator" shall be stated as the past registered "owner" or "operator", or the IDOT District in which the UST is located and the DESU Manager);

The Contractor shall perform the following initial response actions if a release is indicated by the OSFM inspector:

- (a) Take immediate action to prevent any further release of the regulated substance to the environment, which may include removing, at the Engineer's discretion, and disposing of up to 4 ft (1.2 m) of the contaminated material, as measured from the outside dimension of the tank
- (b) Identify and mitigate fire, explosion and vapor hazards;
- (c) Visually inspect any above ground releases or exposed below ground releases and prevent further migration of the released substance into surrounding soils and groundwater; and
- (d) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors and free product that have migrated from the UST excavation zone and entered into subsurface structures (such as sewers or basements).

The UST excavation shall be backfilled according to applicable portions of Sections 205, 208, and 550 with a material that will compact and develop stability. The material shall be approved prior to placement. All uncontaminated concrete and soil removed during tank extraction may be used to backfill the excavation, at the discretion of the Engineer.

After backfilling the excavation, the site shall be graded and cleaned.

**669.09 Regulated Substance Final Construction Report.** Not later than 90 days after completing this work, the Contractor shall submit a Regulated Substance Final Construction Report (RSFCR) to the Engineer using form BDE 2733 and required attachments. The form shall be signed by an Illinois licensed Professional Engineer or Professional Geologist.

**669.10 Method of Measurement.** Non-special waste, special waste, and hazardous waste soil will be measured for payment according to Article 202.07(b) when performing earth excavation, Article 502.12(b) when excavating for structures, or by computing the volume of the trench using the maximum trench width permitted and the actual depth of the trench.

Groundwater containerized and transported off-site for management, storage, and disposal will be measured for payment in gallons (liters).

Backfill plugs will be measured in cubic yards (cubic meters) in place, except the quantity for which payment will be made shall not exceed the volume of the trench, as computed by using the maximum width of trench permitted by the Specifications and the actual depth of the trench, with a deduction for the volume of the pipe.

Engineered Barriers will be measured for payment in square yards (square meters).

**669.11 Basis of Payment.** The work of preparing, submitting and administering a Regulated Substances Pre-Construction Plan will be paid for at the contract lump sum price for REGULATED SUBSTANCES PRE-CONSTRUCTION PLAN.

On-site monitoring of regulated substances, including completion of form BDE 2732 for each day of work, will be paid for at the contract unit price per calendar day, or fraction thereof, for ON-SITE MONITORING OF REGULATED SUBSTANCES.

The installation of engineered barriers will be paid for at the contract unit price per square yard (square meter) for ENGINEERED BARRIER.

The work of removing a UST, soil excavation, soil and content sampling, and the excavated soil, UST content, and UST disposal will be paid for at the contract unit price per each for UNDERGROUND STORAGE TANK REMOVAL.

The transportation and disposal of soil and other materials from an excavation determined to be contaminated will be paid for at the contract unit price per cubic yard (cubic meter) for NON-SPECIAL WASTE DISPOSAL, SPECIAL WASTE DISPOSAL, or HAZARDOUS WASTE DISPOSAL.

The transportation and disposal of groundwater from an excavation determined to be contaminated will be paid for at the contract unit price per gallon (liter) for SPECIAL WASTE GROUNDWATER DISPOSAL or HAZARDOUS WASTE GROUNDWATER DISPOSAL. When groundwater is discharged to a sanitary or combined sewer by permit, the cost will be paid for according to Article 109.05.

Backfill plugs will be paid for at the contract unit price per cubic yard (cubic meter) for BACKFILL PLUGS.

Payment for temporary staging, if required, will be paid for according to Article 109.04.

Payment for accumulated stormwater removal and disposal will be according to Article 109.04. Payment will only be allowed if appropriate stormwater and erosion control methods were used.

Payment for decontamination, labor, material, and equipment for monitoring areas beyond the specified areas, with the Engineer's prior written approval, will be according to Article 109.04.

The sampling and testing associated with this work will be paid for as follows.

- (a) BETX Soil/Groundwater Analysis. When the contaminants of concern are gasoline only, soil or groundwater samples shall be analyzed for benzene, ethylbenzene, toluene, and xylenes (BETX). The analysis will be paid for at the contract unit price per each for BETX SOIL ANALYSIS and/or BETX GROUNDWATER ANALYSIS using EPA Method 8021B.
- (b) BETX-PNAS Soil/Groundwater Analysis. When the contaminants of concern are middle distillate and heavy ends, soil or groundwater samples shall be analyzed for BETX and polynuclear aromatics (PNAS). The analysis will be paid for at the contract unit price per each for BETX-PNAS SOIL ANALYSIS and/or BETX-PNAS GROUNDWATER ANALYSIS using EPA Method 8021B for BETX and EPA Method 8310 for PNAS.
- (c) Priority Pollutants Soil Analysis. When the contaminants of concern are used oils, soil samples shall be analyzed for priority pollutant VOCs, priority pollutants SVOCs, and priority pollutants metals. The analysis will be paid for at the contract unit price per each for PRIORITY POLLUTANTS SOIL ANALYSIS using EPA Method 8260B for VOCs, EPA Method 8270C for SVOCs, and using an ICP instrument and EPA Methods 6010B and 7471A for metals.

- (d) Priority Pollutant Groundwater Analysis. When the contaminants of concern are used oils, non-petroleum material, or unknowns, groundwater samples shall be analyzed for priority pollutant VOCs, priority pollutants SVOCs, and priority pollutants metals. The analysis will be paid for at the contract unit price per each for PRIORITY POLLUTANTS GROUNDWATER ANALYSIS using EPA Method 8260B for VOCs, EPA Method 8270C for SVOCs, and EPA Methods 6010B and 7470A for metals.
- (e) Target Compound List (TCL) Soil Analysis. When the contaminants of concern are unknowns or non-petroleum material, soil samples shall be analyzed for priority pollutant VOCs, priority pollutants SVOCs, priority pollutants metals, pesticides, and Resource Conservation and Recovery Act (RCRA) metals by the toxicity characteristic leaching procedure (TCLP). The analysis will be paid for at the contract unit price per each for TCL SOIL ANALYSIS using EPA Method 8260B for VOCs, EPA Method 8270C for SVOCs, EPA Method 8081 for pesticides, and ICP instrument and EPA Methods 6010B, 7471A, 1311 (extraction), 6010B, and 7470A for metals.
- (f) Soil Disposal Analysis. When the waste material for disposal requires sampling for disposal acceptance, the samples shall be analyzed for TCLP VOCs, SVOCs, RCRA metals, pH, ignitability, and paint filter test. The analysis will be paid for at the contract unit price per each for SOIL DISPOSAL ANALYSIS using EPA Methods 1311 (extraction), 8260B for VOCs, 8270C for SVOCs, 6010B and 7470A for RCRA metals, 9045C for pH, 1030 for ignitability, and 9095A for paint filter.

The work of preparing, submitting and administering a Regulated Substances Final Construction Report will be paid for at the contract lump sum price REGULATED SUBSTANCES FINAL CONSTRUCTION REPORT.”

#### **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%”

**TRAFFIC CONTROL DEVICES - CONES (BDE)**

Effective: January 1, 2019

Revise Article 701.15(a) of the Standard Specifications to read:

“(a) Cones. Cones are used to channelize traffic. Cones used to channelize traffic at night shall be reflectorized; however, cones shall not be used in nighttime lane closure tapers or nighttime lane shifts.”

Revise Article 1106.02(b) of the Standard Specifications to read:

“(b) Cones. Cones shall be predominantly orange. Cones used at night that are 28 to 36 in. (700 to 900 mm) in height shall have two white circumferential stripes. If non-reflective spaces are left between the stripes, the spaces shall be no more than 2 in. (50mm) in width. Cones used at night that are taller than 36 in. (900 mm) shall have a minimum of two white and two fluorescent orange alternating, circumferential stripes with the top stripe being fluorescent orange. If non-reflective spaces are left between the stripes, the spaces shall be no more than 3 in. (75 mm) in width.

The minimum weights for the various cone heights shall be 4 lb for 18 in. (2 kg for 450 mm), 7 lb for 28 in. (3 kg for 700 mm), and 10 lb for 36 in. (5 kg for 900 mm) with a minimum of 60 percent of the total weight in the base. Cones taller than 36 in. shall be weighted per the manufacturer’s specifications such that they are not moved by wind or passing traffic.”

**WEEKLY DBE TRUCKING REPORTS (BDE)**

Effective: June 2, 2012

Revised: April 2, 2015

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

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

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

**WORKING DAYS (BDE)**

Effective: January 1, 2002

The Contractor shall complete the work within **60** working days.

## **REVISIONS TO THE ILLINOIS PREVAILING WAGE RATES**

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

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