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Letting April 24, 2020

Notice to Bidders, Specifications and Proposal



**Contract No. 62D36
MCHENRY County
Section 2016-092B&R
Route FAP 525
Project NHPP-HSIP-LGMW(759)
District 1 Construction Funds**

Prepared by

Checked by

F

(Printed by authority of the State of Illinois)



- 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. April 24, 2020 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. 62D36
MCHENRY County
Section 2016-092B&R
Project NHPP-HSIP-LGMW(759)
Route FAP 525
District 1 Construction Funds**

Project 14,023 LF. Pavement widening, pavement reconstruction, construction of a turnabout, curb and gutter, sidewalk, proposed drainage. replacement of a box culvert with three box culverts and two retaining walls.

- 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, 2020

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

ERRATA Standard Specifications for Road and Bridge Construction (Adopted 4-1-16)
 (Revised 1-1-20)

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STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted April 1, 2016, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein which apply to and govern the construction of FAP Route 525 (US 20), Project NHPP-HSIP-LGMW(759), Section 2016-092B&R, McHenry County, Contract No. 62D36 and in case of conflict with any part or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

LOCATION OF PROJECT

This project is located on US Route 20 (FAP 525) beginning just south of Beck Road to West Union Road. The total gross and net length of the roadway improvement is approximately 14,023 feet (2.66 miles). The project is located in McHenry County.

DESCRIPTION OF WORK

The work consists of pavement widening, pavement reconstruction, a roundabout, new combination concrete curb and gutter, street lighting, earthwork, drainage, signing, restoration, traffic staging and all other work necessary to complete the project as shown on the plans and as described herein.

MAINTENANCE OF ROADWAYS

Effective: September 30, 1985

Revised: November 1, 1996

Beginning on the date that work begins on this project, the Contractor shall assume responsibility for normal maintenance of all existing roadways within the limits of the improvement. This normal maintenance shall include all repair work deemed necessary by the Engineer, but shall not include snow removal operations. Traffic control and protection for maintenance of roadways will be provided by the Contractor as required by the Engineer.

If items of work have not been provided in the contract, or otherwise specified for payment, such items, including the accompanying traffic control and protection required by the Engineer, will be paid for in accordance with Article 109.04 of the Standard Specifications.

COMPLETION DATE PLUS WORKING DAYS

Effective: September 30, 1985

Revised: January 1, 2007

Revise Article 108.05 (b) of the Standard Specifications as follows:

"When a completion date plus working days is specified, the Contractor shall complete all contract items and safely open all roadways to traffic by **11:59 PM on August 31, 2021** except as specified herein.

The Contractor will be allowed to complete all clean-up work and punch list items within **5** working days after the completion date for opening the roadway to traffic. Under extenuating circumstances the Engineer may direct that certain items of work, not affecting the safe opening of the roadway to traffic, may be completed within the working days allowed for clean up work and punch list items. Temporary lane closures for this work may be allowed at the discretion of the Engineer.

Article 108.09 or the Special Provision for "Failure to Complete the Work on Time", if included in this contract, shall apply to both the completion date and the number of working days.

STATUS OF UTILITIES (D-1)

Effective: June 1, 2016

Revised: January 1, 2020

Utility companies and/or municipal owners located within the construction limits of this project have provided the following information regarding their facilities and the proposed improvements. The tables below contain a description of specific conflicts to be resolved and/or facilities which will require some action on the part of the Department's contractor to proceed with work. Each table entry includes an identification of the action necessary and, if applicable, the estimated duration required for the resolution.

UTILITIES TO BE ADJUSTED

Conflicts noted below have been identified by following the suggested staging plan included in the contract. The company has been notified of all conflicts and will be required to obtain the necessary permits to complete their work; in some instances, resolution will be a function of the construction staging. The responsible agency must relocate, or complete new installations as noted below; this work has been deemed necessary to be complete for the Department's contractor to then work in the stage under which the item has been listed.

Pre-Stage

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	DURATION OF TIME
US 20 @ Roundabout STA 93+23 STA 1004+49 STA 1302+70	Existing Manhole for Fiber Optic Cable	Existing fiber optic manhole will be impacted by proposed Run-Around	AT&T	
US 20 @ Roundabout STA 93+23 to STA 102+00, STA 1006+51, STA 1302+75	Fiber Optic Cable	Existing fiber optic cable will be impacted by proposed run- around and road widening.	AT&T	
US 20 @ Roundabout STA 97+00 to STA 110+78	Telephone Cable	Existing telephone cable will be impacted by proposed road widening.	AT&T	
Beck Road STA 192+47 to STA 198+00	Telephone Cable	Existing telephone cable will be impacted by proposed ditch, pavement removal and proposed road widening	AT&T	
Beck Road STA 193+33 to STA 198+00	Existing Manhole for Fiber Optic Cable	Existing fiber optic manhole will be impacted by proposed Road Widening	AT&T	
Beck Road STA 193+33 to STA 195+87	Existing pedestal for Fiber Optic Cable	Existing pedestal will be impacted by proposed Road Widening	AT&T	
Marengo Road STA 201+97 STA 202+05	Existing Manhole for Fiber Optic Cable	Existing fiber optic manhole will be impacted by proposed Road Widening	AT&T	
Marengo Road STA 202+11 to STA 210+35	Fiber Optic Cable	Existing fiber optic cable will be impacted by proposed road widening and driveway culvert.	AT&T	
Marengo Road STA 202+11 to STA 207+81	Telephone Cable	Existing telephone cable will be impacted by proposed road widening and driveway culvert.	AT&T	
Marengo Road STA 20+46 to STA 207+41	Existing pedestal for Fiber Optic Cable	Existing pedestal will be impacted by proposed Road Widening	AT&T	

S Union Road STA 301+20 to 304+94	Telephone Cable	Existing telephone cable will be impacted by proposed road widening and storm sewer.	AT&T	
S Union Road STA 301+20 to STA 302+82	Fiber Optic Cable	Existing fiber optic cable will be impacted by proposed road widening and storm sewer.	AT&T	
Marengo Road STA 302+35	Existing Manhole for Fiber Optic Cable	Existing fiber optic manhole will be impacted by proposed road widening	AT&T	
US 20 @ Culvert STA 116+99 to STA 125+67	Telephone Cable	Existing telephone cable will be impacted by proposed Guardrail, Ditch, Culvert Replacement and Road Widening	AT&T	
US 20 @ Culvert STA 119+57 to STA 126+62	Utility Poles	Existing Utility Pole will be impacted by proposed road widening.	AT&T	
US 20 @ Coral STA 155+60 to STA 161+76	Telephone Cable	Existing telephone cable will be impacted by proposed road widening	AT&T	
US 20 @ Coral STA 161+77	Fiber Optic Cable	Existing fiber optic cable will be impacted by proposed road widening	AT&T	
US 20 @ Coral STA 160+55 to STA 161+84	Telephone Cable	Existing telephone cable will be impacted by proposed road widening	AT&T	
US 20 @ Coral STA 165+88 to STA 167+08	Utility Poles	Existing Utility Pole will be impacted by proposed road widening.	AT&T	
US 20 @ Coral STA 298+46 to STA 299+74	Telephone Cable	Existing telephone cable will be impacted by proposed road widening	AT&T	
US 20 @ Coral STA 300+27 to STA 303+11	Telephone Cable	Existing telephone cable will be impacted by proposed road widening.	AT&T	
US 20 @ W Union STA 219+60 to STA 229+88	Telephone Cable	Existing telephone cable will be impacted by proposed road widening and storm sewer.	AT&T	

US 20 @ W Union STA 224+98 to STA 231+76	Fiber Optic Cable	Existing fiber optic cable will be impacted by proposed road widening and storm sewer.	AT&T	
US 20 @ Roundabout STA 97+00 STA 1302+35	Television Cable	Existing television cable will be impacted by proposed un- around	Comcast	
Beck Road STA 195+81 to STA 195+87	Utility Poles	Existing Utility Pole will be impacted by proposed road widening.	Comcast	
Marengo Road STA 202+11 to STA 207+41	Utility Poles	Existing Utility Pole will be impacted by proposed road widening.	Comcast	
US 20 @ Coral STA 162+37	Utility Poles	Existing Utility Pole will be impacted by proposed road widening.	Comcast	
US 20 @ Roundabout STA 90+95 to STA 115+80	Utility Poles	Existing Utility Pole will be impacted by proposed road widening, ditches and temporary run-around.	ComEd	ComEd to relocate utility poles. _____ Days Total
US 20 @ Roundabout STA 1005+31 to STA 1007+23	Utility Poles	Existing Utility Pole will be impacted by proposed temporary run-around.	ComEd	ComEd to relocate utility poles. _____ Days Total
US 20 @ Roundabout STA 1301+07 to STA 1302+42	Utility Poles	Existing Utility Pole will be impacted by proposed road widening.	ComEd	ComEd to relocate utility poles. _____ Days Total
Beck Road STA 193+55 to STA 198+29	Utility Poles	Existing Utility Pole will be impacted by proposed run-around and road widening	ComEd	ComEd to relocate utility poles. _____ Days Total
Marengo Road STA 200+90 to Sta 208+40	Utility Poles	Existing Utility Pole will be impacted by proposed road widening and temporary pavement.	ComEd	ComEd to relocate utility poles. _____ Days Total
S Union Road STA 302+04	Utility Poles	Existing Utility Pole will be impacted by proposed road widening.	ComEd	ComEd to relocate utility poles. _____ Days Total

FAP Route 525 (US 20)
 Project NHPP-HSIP-LGMW(759)
 Section 2016-092B&R
 McHenry County
 Contract No. 62D36

US 20 @ Culvert STA 117+70 to STA 128+43	Utility Poles	Existing Utility Pole will be impacted by proposed ditch and road widening.	ComEd	ComEd to relocate utility poles. _____ Days Total
US 20 @ Coral STA 156+61, STA 161+71 to STA 168+11	Utility Poles	Existing Utility Pole will be impacted by proposed ditch and road widening.	ComEd	ComEd to relocate utility poles. _____ Days Total
US 20 @ Roundabout STA 1302+95	Existing Gas Valve	Existing gas valve will be impacted by temporary run-around	Nicor	Nicor to relocate gas main. _____ Days Total
US 20 @ Roundabout STA 91+50 to STA 110+79	Existing Gas Main	Existing gas main will be impacted by roadway widening, storm sewer and driveway culvert.	Nicor	Nicor to relocate gas main. _____ Days Total
US 20 @ Roundabout STA 1302+95 to STA 1305+05	Existing Gas Main	Existing gas main will be impacted by pavement removal, temporary run-around and driveway culvert.	Nicor	Nicor to relocate gas main. _____ Days Total
Beck Road STA 194+00 to STA 196+00	Existing Gas Main	Existing gas main will be impacted by proposed roadway widening.	Nicor	Nicor to relocate gas main. _____ Days Total
Marengo Road STA 201+44 to STA 207+50	Existing Gas Main	Existing gas main will be impacted by proposed ditch, storm sewer and roadway widening.	Nicor	Nicor to relocate gas main. _____ Days Total
Marengo Road STA 1101+50 to STA 1102+15	Existing Gas Main	Existing gas main will be impacted by proposed storm sewer.	Nicor	Nicor to relocate gas main. _____ Days Total
Marengo Road STA 202+00	Existing Gas Valves/Vaults	Existing gas valves/vaults will be impacted by proposed storm sewer.	Nicor	Nicor to relocate gas main. _____ Days Total
S Union Road STA 301+00 to STA 305+00	Existing Gas Main	Existing gas main will be impacted by proposed storm sewer.	Nicor	Nicor to relocate gas main. _____ Days Total

US 20 @ Culvert STA 109+00 to STA 127+00	Existing Gas Main	Existing gas main will be impacted by proposed guardrail, ditch, storm sewer and roadway widening.	Nicor	Nicor to relocate gas main. _____ Days Total
US 20 @ Coral STA 156+00 to STA 168+24, STA 300+22	Existing Gas Main	Existing gas main will be impacted by proposed roadway widening and driveway culvert.	Nicor	Nicor to relocate gas main. _____ Days Total
US 20 @ W Union STA 219+00 to STA 225+00	Existing Gas Main	Existing gas main will be impacted by proposed roadway widening, storm sewer and driveway culvert.	Nicor	Nicor to relocate gas main. _____ Days Total
US 20 @ W Union STA 400+50 to STA 401+44	Existing Gas Main	Existing gas main will be impacted by proposed roadway widening, storm sewer and driveway culvert.	Nicor	Nicor to relocate gas main. _____ Days Total

Stage 1A & 1B

No conflicts to be resolved (*or if there are conflicts they are to be listed as noted above*)

Stage 2A & 2B

No conflicts to be resolved (*or if there are conflicts they are to be listed as noted above*)

Pre-Stage: _____ Days Total Installation

The following contact information is what was used during the preparation of the plans as provided by the Agency/Company responsible for resolution of the conflict.

Agency/Company Responsible to Resolve Conflict	Name of contact	Phone	e-mail address
AT&T Distribution	Donna Szpytek	630-573-5450	G11629@att.com
ComEd	Terri Bleck	630-396-8220	Terri.bleck@comed.com
Comcast	Martha Gieras		Martha_Gieras@cable.comcast.com
Nicor	Bruce Koppang		bkoppan@aglresources.com

UTILITIES TO BE WATCHED AND PROTECTED

The areas of concern noted below have been identified by following the suggested staging plan included for the contract. The information provided is not a comprehensive list of all remaining utilities, but those which during coordination were identified as ones which might require the Department's contractor to take into consideration when making the determination of the means and methods that would be required to construct the proposed improvement. In some instances, the contractor will be responsible to notify the owner in advance of the work to take place so necessary staffing on the owner's part can be secured.

Pre-Stage, Stage 1, Stage 2A, and Stage 2B

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER
US 20 / Roundabout STA 97+00	Gas	Existing gas main will be impacted by proposed Utility Pole	Nicor
US 20 / Coral STA 156+70	Electrical	Existing utility pole will be impacted by proposed Road Widening	ComEd
US 20 / Coral STA 167+08 to STA 167+99	Electrical	Existing utility pole will be impacted by proposed Road Widening	ComEd
Beck / Roundabout STA 193+35	Electrical	Existing utility pole will be impacted by proposed Road Widening	ComEd
Beck / Roundabout STA 193+66	Electrical	Existing utility pole will be impacted by proposed Road Widening	ComEd

The following contact information is what was used during the preparation of the plans as provided by the owner of the facility.

Agency/Company Responsible to Resolve Conflict	Name of contact	Address	Phone	e-mail address

The above represents the best information available to the Department and is included for the convenience of the bidder. The days required for conflict resolution should be considered in the bid as this information has also been factored into the timeline identified for the project when setting the completion date. The applicable portions of the Standard Specifications for Road and Bridge Construction shall apply.

Estimated duration of time provided above for the first conflicts identified will begin on the date of the executed contract regardless of the status of the utility relocations. The responsible agencies will be working toward resolving subsequent conflicts in conjunction with contractor activities in the number of days noted.

The estimated relocation duration must be part of the progress schedule submitted by the contractor. A utility kickoff meeting will be scheduled between the Department, the Department's contractor and the utility companies when necessary. The Department's contractor is responsible for contacting J.U.L.I.E. prior to all excavation work.

TRAFFIC CONTROL PLAN

Effective: September 30, 1985

Revised: January 1, 2007

Traffic Control shall be according to the applicable sections of the Standard Specifications, the Supplemental Specifications, the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways", any special details and Highway Standards contained in the plans, and the Special Provisions contained herein.

Special attention is called to Article 107.09 of the Standard Specifications and the following Highway Standards, Details, Quality Standard for Work Zone Traffic Control Devices, Recurring Special Provisions and Special Provisions contained herein, relating to traffic control.

The Contractor shall contact the District One Bureau of Traffic at least 72 hours in advance of beginning work.

STANDARDS:

701006, 701011, 701301, 701311, 701321, 701331, 701336, 701901

DETAILS:

TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS AND DRIVEWAYS (TC-10)
DISTRICT ONE TYPICAL PAVEMENT MARKINGS (TC-13)
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SPECIAL PROVISIONS

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TRAFFIC CONTROL AND PROTECTION (ARTERIALS)

Effective: February 1, 1996

Revised: March 1, 2011

Specific traffic control plan details and Special Provisions have been prepared for this contract. This work shall include all labor, materials, transportation, handling and incidental work necessary to furnish, install, maintain and remove all traffic control devices required as indicated in the plans and as approved by the Engineer.

When traffic is to be directed over a detour route, the Contractor shall furnish, erect, maintain and remove all applicable traffic control devices along the detour route according to the details shown in the plans.

Method of Measurement: All traffic control (except "Traffic Control and Protection (Expressways)" and temporary pavement markings) indicated on the traffic control plan details and specified in the Special Provisions will be measured for payment on a lump sum basis.

Basis of Payment: All traffic control and protection will be paid for at the contract lump sum price for TRAFFIC CONTROL AND PROTECTION (SPECIAL).

Temporary pavement markings will be paid for separately unless shown on a Standard.

KEEPING ARTERIAL ROADWAYS OPEN TO TRAFFIC (WITH 15 MIN FULL STOPS)

Effective: January 22, 2003

Revised: August 10, 2017

The Contractor shall provide the necessary traffic control devices to warn the public and to delineate the work zone as required in these Special Provisions, the Standard Specifications, the State Standards, and the District Details.

Arterial lane closures shall be in accordance with the Standard Specifications, Highway Standards, District Details, and the direction of the Engineer. The Contractor shall request and gain approval from the Engineer seventy-two (72) hours in advance of all long-term (24 hrs. or longer) lane closures.

Arterial lane closures not shown in the staging plans will not be permitted during **peak traffic volume hours**.

Peak traffic volume hours are defined as weekdays (Monday through Friday) from **6:00 AM to 8:30 AM and 4:30 PM to 6:00 PM**.

Full closure of all arterial lanes in one or both directions will only be permitted for a maximum of 15 minutes at a time **during the off-peak traffic volume hours**. During full roadway closures, the Contractor will be required to reduce the roadway to only one open traffic lane in the affected direction(s) of travel using the appropriate State Standard(s) and District Detail(s). Police forces shall be notified and requested to close the remaining lane to facilitate the necessary work activities, except that a flagger may be substituted for daytime closures with the approval of the Engineer. The Contractor shall notify the District One Arterial Traffic Control Supervisor at 847-705-4470 at least three (3) working days (weekends and holidays DO NOT count into this notification time) in advance of the proposed road closures.

Private vehicles shall not be parked in the work zone. Contractor's equipment and/or vehicles shall not be parked on the shoulders or in the median during non-working hours. The parking of equipment and/or vehicles on State right-of-way will only be permitted at locations approved by the Engineer in accordance with Articles 701.08 and 701.11 of the Standard Specifications.

Should the Contractor fail to completely open and keep open all the traffic lanes to traffic in accordance with the limitations specified above, the Contractor shall be liable to the Department for the amount of:

One lane or ramp blocked = \$1,000

Two lanes blocked = \$ 2,500

Not as a penalty but as liquidated and ascertained damages for each and every 15 minute interval or a portion thereof that a lane is blocked outside the allowable time limitations. Such damages may be deducted by the Department from any monies due the Contractor. These damages shall apply during the contract time and during any extensions of the contract time.

PUBLIC CONVENIENCE AND SAFETY (DIST 1)

Effective: May 1, 2012

Revised: July 15, 2012

Add the following to the end of the fourth paragraph of Article 107.09:

"If the holiday is on a Saturday or Sunday, and is legally observed on a Friday or Monday, the length of Holiday Period for Monday or Friday shall apply."

Add the following sentence after the Holiday Period table in the fourth paragraph of Article 107.09:

"The Length of Holiday Period for Thanksgiving shall be from 5:00 AM the Wednesday prior to 11:59 PM the Sunday After"

Delete the fifth paragraph of Article 107.09 of the Standard Specifications:

"On weekends, excluding holidays, roadways with Average Daily Traffic of 25,000 or greater, all lanes shall be open to traffic from 3:00 P.M. Friday to midnight Sunday except where structure construction or major rehabilitation makes it impractical."

SPEED DISPLAY TRAILER (D1)

Effective: April 1, 2015

Add the following to Article 701.15(l) of the Standard Specifications:

- “(l) Speed Display Trailer. A speed display trailer shall be utilized on freeways and expressways as part of Highway Standard 701400. The trailer shall be placed on the right hand side of the roadway adjacent to, or within 100 ft. (30 m) beyond, the first work zone speed limit sign.

Whenever the speed display trailer is not in use, it shall be considered non-operating equipment and shall be stored according to Article 701.11.”

Add the following to Article 701.20 of the Standard Specifications:

- “(k) Revised. “Speed Display Trailer will NOT be paid for by separate pay item, but its costs shall be included in the contract unit price of the various traffic control pay items.

Add the following to Article 1106.02 of the Standard Specifications:

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

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

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

The speed indicator display shall be equipped with a violation alert that flashes the displayed detected speed when the posted limit is exceeded. The speed indicator shall have a maximum speed cutoff. The display shall include automatic dimming for nighttime operation.

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

ENGINEER'S FIELD OFFICE TYPE A (SPECIAL) (D1)

Effective: December 1, 2011

Revised: May 1, 2013

Revise the first paragraph of Article 670.02 to read:

670.02 Engineer's Field Office Type A (Special). Type A (Special) field offices shall have a ceiling height of not less than 7 feet and a floor space of not less than 3000 square feet with a minimum of two separate offices. The office shall also have a separate storage room capable of being locked for the storage of the nuclear measuring devices. The office shall be provided with sufficient heat, natural and artificial light, and air conditioning. Doors and windows shall be equipped with locks approved by the Engineer.

Revise the first sentence of the second paragraph of Article 670.02 to read:

An electronic security system that will respond to any breach of exterior doors and windows with an on-site alarm shall be provided.

Revise the last sentence of the third paragraph of Article 670.02 to read:

Adequate all-weather parking space shall be available to accommodate a minimum of twelve vehicles.

Revise the fifth paragraph of Article 670.02 to read:

Sanitary facilities shall include hot and cold potable running water, lavatory and toilet as an integral part of the office where available. Solid waste disposal consisting of seven waste baskets and an outside trash container of sufficient size to accommodate a weekly provided pick-up service. A weekly cleaning service for the office shall be provided.

Revise subparagraph (a) of Article 670.02 to read:

(a) Twelve desks with minimum working surface 42 inch x 30 inch each and twelve non-folding chairs with upholstered seats and backs.

Revise the first sentence of subparagraph (c) of Article 670.02 to read:

(c) Two four-post drafting tables with minimum top size of 37-½ inch x 48 inch.

Revise subparagraph (d) of Article 670.02 to read:

(d) Eight free standing four-drawer legal size file cabinets with lock and an underwriters' laboratories insulated file device 350 degrees one hour rating.

Revise subparagraph (e) of Article 670.02 to read:

- (e) Twenty folding chairs and two conference tables with minimum top size of 44 inch x 96 inch.

Revise subparagraph (h) of Article 670.02 to read:

- (h) Three electric desk type tape printing calculator and two pocket scientific notation calculators with a 1000 hour battery life or with a portable recharger.

Revise subparagraph (i)(2) of Article 670.02 to read:

- (i)(2) Telephones lines. Five separate telephone lines including one line for the fax machine, and two lines for the exclusive use of the Engineer. All telephone lines shall include long distance service and all labor and materials necessary to install the phone lines at the locations directed by the Engineer. The TELCOM company shall configure ROLL/HUNT features as specified by the engineer.

Revise subparagraph (j) of Article 670.02 to read:

- (j) Two plain paper network multi-function printer/copier/scanner machines capable of reproducing prints up to 11 inch x 17 inch within automatic feed tray capable of sorting 30 sheets of paper. Letter size and 11 inch x 17 inch paper shall be provided. The contractor shall provide the multi-function machines with IT support for setup and maintenance.

Revise subparagraph (k) of Article 670.02 to read:

- (k) One plain paper fax machine including maintenance and supplies.

Revise subparagraph (l) of Article 670.02 to read:

- (l) Six four-line telephones, with touch tone, where available, and two digital answering machines, for exclusive use by the Engineer.

Revise subparagraph (m) of Article 670.02 to read:

- (m) One electric water cooler dispenser including water service.

Add the following subparagraphs to Article 670.02:

- (s) One 4 foot x 6 foot chalkboard or dry erase board.
- (t) One 4 foot x 6 foot framed cork board.

Add the following to Article 670.07 Basis of Payment.

The building or buildings, fully equipped, will be paid for at the contract unit price per calendar month or fraction thereof for ENGINEER'S FIELD OFFICE, TYPE A (SPECIAL).

US ROUTE 20 WORK RESTRICTION

In addition to the requirements set forth in the specific traffic control plan details and Special Provisions for this contract, the Contractor is responsible for removing all temporary signals for the culvert work and open US Route 20 to two-way traffic along the entire contract limits prior to the removal of the US Route 20 temporary runaround. Temporary daytime closures will be allowed per contract details and special provisions.

Liquidated damages for each calendar day US Route 20 is not open to two-way traffic at the culvert location following the removal of the US Route 20 temporary runaround shall be \$5,000 per calendar day.

TEMPORARY PAVEMENT

Effective: March 1, 2003

Revised: April 10, 2008

Description. This work shall consist of constructing a temporary pavement at the locations shown on the plans or as directed by the engineer.

The contractor shall use either Portland cement concrete according to Sections 353 and 354 of the Standard Specifications or HMA according to Sections 355, 356, 406 of the Standard Specifications, and other applicable HMA special provisions as contained herein. The HMA mixtures to be used shall be specified in the plans. The thickness of the Temporary Pavement shall be as described in the plans. The contractor shall have the option of constructing either material type if both Portland cement concrete and HMA are shown in the plans.

Articles 355.08 and 406.11 of the Standard Specifications shall not apply.

The removal of the Temporary Pavement shall conform to Section 440 of the Standard Specification.

Method of Measurement. Temporary pavement will be measured in place and the area computed in square yards (square meters).

Basis of Payment. This work will be paid for at the contract unit price per square yard (square meter) for TEMPORARY PAVEMENT and TEMPORARY PAVEMENT (INTERSTATE).

Removal of temporary pavement will be paid for at the contract unit price per square yard (square meter) for PAVEMENT REMOVAL.

HOT-MIX ASPHALT SURFACE REMOVAL, VARIABLE DEPTH

Description. This work shall be done in accordance with Section 440 of the Standard Specifications except as modified herein.

440.01 Description. Revise this Article to read:

“440.01 Description. This work shall consist of the removal and satisfactory disposal of the HMA surface from a depth of 2” to 3 ½” at the center line to match 2 ½” below the proposed center line profile.”

440.08 Basis of Payment. Revise this Article to read:

“440.08 Basis of Payment. This work will be paid for at the contract unit price per square yard for HOT-MIX ASPHALT SURFACE REMOVAL, VARIABLE DEPTH.”

SHOULDER RUMBLE STRIP REMOVAL

Description. This work shall consist of the scarification of existing shoulder rumble strips constructed in hot-mix asphalt shoulders, and the furnishing and placement of hot-mix asphalt in the scarified area, prior to placing traffic onto the shoulder in a construction stage. This work shall take place per the limits shown on the Plans and/or as directed by the Engineer.

General Requirements. The nominal depth of scarification of the hot-mix asphalt shoulders shall be 2 inches. Unless otherwise shown in the Plans, the width of scarification shall be three (3) feet.

After removing all millings from the scarified limits, the surface shall be primed in accordance with Article 406.05(g) of the Standard Specifications.

The scarified area shall then be filled with hot-mix asphalt surface course and compacted flush with the adjoining pavement and shoulder surfaces. The mix to be used for this item shall be the IDOT Hot Mix Asphalt Surface Course, Mix D, N70, unless otherwise specified in the Contract.

Method of Measurement. This work will be measured for payment in square yards. Any portion of this work constructed outside the dimensions shown on the Plans or as directed by the Engineer will not be measured for payment.

Basis of Payment. This work will be paid at the contract unit price per square yard for SHOULDER RUMBLE STRIP REMOVAL, which payment shall constitute full compensation for scarifying the designated portion of hot-mix asphalt shoulder; cleaning the scarified area and removing all debris; applying prime, furnishing, placing and compacting hot-mix asphalt surface mix; and for all labor, equipment, tools and incidental necessary to complete the work as specified.

CENTER LINE – RUMBLE STRIP

Description. This item shall be constructed, as shown on the plans and in accordance with the applicable portions of Section 642 of the Standard Specifications for Road and Bridge Construction, except that the rumble strips are to be constructed on center line of pavement instead of on the shoulder area.

General Requirements. After the rumble strips are installed, the pavement surface shall be swept clean to the satisfaction of the Engineer, prior to the placement of new pavement markings.

Center line rumble strips shall be omitted at bridge decks, approach pavements, turn lanes, turn lane tapers and entrances.

When used adjust spacing of raised reflective pavement markers to fall in wider gap between rumble strips.

Method of Measurement. This work will be measured for payment along center line in linear foot. Measurement will not include bridge decks, approach pavements, turn lanes, entrances, and other sections where shoulder rumble strips have been omitted. Gaps longer than 10 feet will not be measured for payment.

Basis of Payment. This work will be measured along center line and paid for at the contract unit price per foot for CENTER LINE – RUMBLE STRIP at the width specified. Price shall include all labor, equipment, tools and incidental necessary to complete the work as specified.

Hot-Spray Thermoplastic Pavement Marking will be used over the rumble strips, and will be paid for separately.

45 MIL HOT SPRAY THERMOPLASTIC PAVEMENT MARKING (D-1)

Effective: February 28, 1994

Revised: December 18, 2012

This work shall consist of furnishing and applying spray thermoplastic pavement marking lines, sizes and colors as shown on the plans. The material shall be a mixture of resins and other materials providing an essentially nonvolatile thermoplastic compound especially developed for traffic markings. Spray thermoplastic pavement markings shall be applied only by contractors on the list of Approved Spray Thermoplastic Contractors maintained by the Engineer of Operations and in effect on the date of advertisement for bids.

Ingredient Materials:

- (a) Binder. The binder shall consist of a mixture of synthetic resins, at least one of which is solid at room temperature. The total binder content of the thermoplastic compound shall be well distributed throughout the compound. The binder shall be free from all foreign objects or ingredients that would cause bleeding, staining or discoloration. The binder shall be 25 percent minimum by weight of the thermoplastic compound. The binder shall be characterized by an "IR Spectra". Future shipments of binder will be checked by an "IR Spectra" to verify that the binder has not been changed.

- (b) Pigment. The pigment used for the white thermoplastic compound shall be a highgrade pure (minimum 93 percent) titanium dioxide (TiO₂). The white pigment content shall not be less than 10 percent by weight and shall be uniformly distributed throughout the thermoplastic compound.

The pigments used for the yellow thermoplastic compound shall be heat resistant, and color-fast yellows, golds and oranges, which shall produce a compound meeting the requirements of the current Federal Highway Color Tolerance Chart, PR Color No. 1. The medium chrome yellow pigment content shall be not less than 4 percent by weight and shall be uniformly distributed throughout the thermoplastic compound.

- (c) Filler: The filler to be incorporated with the resins as a binder shall be a white calcium carbonate, silica, or an approved substitute. Any filler, which is insoluble in 6N hydrochloric acid, shall be of such particle size as to pass a No. 100 (150 µm) sieve.

- (d) Glass Beads.

(1) Scope:

This specification covers glass beads to be used for reflectorizing pavement marking lines.

Type A – uncoated

Type B - moisture resistant, silicone coated

Type A shall be used as intermix beads with thermoplastic pavement marking materials. They shall be uniformly mixed throughout the material at the rate of not less than 25 percent by weight (retained on the No. 100 (150 µm) sieve) of thermoplastic compound. Type B shall be used as drop-on beads with thermoplastic pavement marking materials and shall be applied uniformly at a minimum rate of 6 pounds per 100 square feet (2.9 kilograms per 10 square meters).

(2) Properties:

The glass beads furnished under this specification shall consist essentially of transparent, water-white glass particles of a spherical shape. They shall be manufactured from a glass of a composition designed to be highly resistant to traffic wear and to the effects of weathering. The glass beads shall conform to the following requirements:

- (a) Sieve Analysis. The glass beads shall meet the following sieve requirements:

Total Percent (By Weight)	
<u>Sieve Size</u>	<u>Passing</u>
No. 20 (850 μm)	100
No. 30 (600 μm)	75 - 100
No. 50 (300 μm)	15 - 40
No. 100 (150 μm)	0 - 5
No. 200 (75 μm)	0 - 1

- (b) Imperfections. The surface of the glass beads shall be free of pits and scratches. The glass beads shall be spherical in shape and shall contain not more than 20 percent by weight of irregular shapes when tested by the standard method using a vibratile inclined glass plate as adopted by the Department.
- (c) Index of Refraction. The index of refraction of the glass beads shall be not less than 1.50 when tested by the immersion method at 77 °F (25 °C).
- (d) Silica Content. The glass beads shall contain not less than 65 percent silica (SiO₂).
- (e) Chemical Stability. Glass beads which show a tendency toward decomposition, including surface etching, when exposed to paint or thermoplastic constituents will be rejected. The glass beads shall be tested by Federal Specification TT-B-1325B, Section 4.3.9 (water resistance) and evaluated for compliance with Section 3.2.9, with the following exceptions:

The size of the sample to be tested shall be 25 grams and the reflux time shall be 5 hours.

- (f) Flowing Properties. The glass beads shall flow uniformly through dispensing equipment in atmospheric humidity up to 94%.

Intermix beads shall pass the following test: One hundred grams of glass beads, spread evenly and thinly in a suitable container, shall be conditioned at 77 °F (25 °C) for 4 hours over a solution of sulfuric acid (Sp. Gr. 1.10) in a closed desiccator. After 4 hours, the glass beads shall flow readily through a clean glass analytical funnel, 60°, 75 mm diameter and 105 mm stem. Inside diameter of the stem shall be a nominal 1/4 inch (6.35 mm).

The drop-on beads shall have a silicone, moisture resistant coating and pass the following test: One hundred grams of beads are placed in a 600 ml beaker and an equivalent volume of distilled water shall be added to the beaker. The beaker will then stand for 5 minutes, at the end of which time the water shall be carefully poured off and the beads transferred to a clean dry beaker and allowed to stand for 5 minutes. The beads will then be poured slowly into a standard glass funnel (Corning 6120), 127 mm diameter, 102 mm stem length and 11 mm stem inside diameter.

The beads shall flow through the funnel stem without stoppage. Slight initial agitation to start the flow through the funnel at the beginning of the test is permissible.

- (g) Packaging. The Type B glass beads shall be delivered in approved moisture proof bags consisting of a least five-ply paper construction unless otherwise specified. Each bag shall contain 50 pounds (22.7 kg) net, and shall be legibly marked with the manufacturer, specifications and type, lot number, and the month and year the glass beads were packaged.

Thermoplastic Compound:

(a) Characteristic Requirements:

- (1) In the plastic state, the material shall not give off fumes that are toxic or otherwise injurious to persons or property. The manufacturer shall provide material safety data sheets for the product.
- (2) The temperature versus viscosity characteristic of the plastic material shall remain constant and the material shall not deteriorate in any manner during reheating processes.
- (3) There shall be no obvious change in color of the material as a result of repeated heating or from batch to batch. The maximum elapsed time after application after which normal traffic will leave no impression or imprint on the new stripe shall be 30 seconds when the air and road surface temperature is approximately 70 ± 3 °F (21 ± 2 °C). After application and proper drying, the material shall show no appreciable deformation or discoloration, shall remain free from tack, and shall not lift from the pavement under normal traffic conditions within a road temperature range of -20 to 150 °F (-28.9 to 65.6 °C). The stripe shall maintain its original dimensions and placement.

Cold ductility of the material shall be such as to permit normal dimensional distortion as a result of traffic impact within the temperature range specified.

- (4) The material shall provide a stripe that has a uniform thickness throughout its cross section and has the density and character to provide a sharp edge of the line.

- (5) The thermoplastic compound after heating for 4 hours \pm 5 min. at 375 ± 3 °F (190.6 ± 2 °C) and cooled at 77 °F (25 °C) shall meet the following requirements for daylight reflectance and color, when tested, using a color spectrophotometer with 45° circumferential / 0° geometry, illuminant C, and 2° observer angle. The color instrument shall measure the visible spectrum from 380 to 720 nm with a wavelength measurement interval and spectral bandpass of 10 nm.

White: Daylight Reflectance, 75 percent minimum

*Yellow: Daylight Reflectance, 45 percent minimum

*Shall match Federal Highway Color Tolerance Chart, PR Color No. 1.

- (6) Specific Gravity - the specific gravity of the thermoplastic material shall not exceed 2.15.
- (7) Softening Point - After heating the thermoplastic material for 4 hours \pm 5 min. at 375 ± 3 °F (190.6 ± 2 °C) and testing in accordance with ASTM E28, the material shall have a minimum softening point of 180 °F (82.2 °C) as measured by the ring and ball method.
- (8) Tensile Bond Strength - After heating the thermoplastic material for 4 hours \pm 5 min. at 375 °F (190.6 °C), the tensile bond strength to unprimed, sandblasted portland cement concrete block, 0.0625 inch (1.587 mm) thick film drawn-down 375 °F (190.6 °C), tested at 75 ± 2 °F (23.9 ± 1 °C) shall exceed 180 psi (1.24 Mpa) when tested in accordance with ASTM D4796-88.
- (9) Impact Resistance - After heating the thermoplastic material for 4 hours \pm 5 min at 375 ± 3 °F (190.6 ± 2 °C) the impact resistance shall be a minimum of 50 inch pounds (0.576 kilogram meters) with no cracks or bond loss when 0.0625 inch (1.587 mm) thick film drawdown is made at 375 °F (190.6 °C) on an unprimed sandblasted Portland cement concrete block, male indenter 5/8 inch (15.875 mm), no female Die, tested at 75 ± 2 °F (23.9 ± 1 °C) when tested in accordance with ASTM D2794 minimum.
- (10) Yellowness Index - The white thermoplastic material shall not exceed a yellowness index of 12 when tested in accordance with ASTM D1925.

(b) Identification

Each package of material shall be stenciled with the manufacturer's name, the type of material and IDOT specification number, the month and year the material was packaged and lot number. Lot numbers must begin with the last two digits of the year manufactured and be sequential with Lot 1. The letters and numbers used in the stencils shall be a minimum of 1/2 inch (12.7 mm) in height.

(c) Packaging

The thermoplastic material shall be packaged in suitable containers that will not adhere to the product during shipment and storage. The container of thermoplastic material shall weigh approximately 50 lbs (22.7 kg). Each container shall designate the color, binder (alkyd or hydrocarbon), spray and user information. The label shall warn the user that the material shall be heated in the range of 350 – 400 °F (177 – 204 °C).

(d) Storage Life

The material shall meet the requirements of this specification for a period of one year. The thermoplastic must also melt uniformly with no evidence of skins or unmelted particles for this one-year period. The manufacturer shall replace any material that does not meet the above requirements.

Sampling and Testing:

- (a) Unless otherwise provided, all materials shall be sampled and tested in accordance with the latest published standard methods of the American Society for Testing and Materials, and revisions thereof, in effect on the date of invitation for bids, where such standard methods exist. In case there are no ASTM Standards which apply, applicable standard methods of the American Association of State Highway Transportation Officials, or the Federal Government, or of other recognized standardizing agencies shall be used.
- (b) The right is reserved to inspect the material either at the place of manufacture or at the destination or at both places. If inspected at the place of manufacture, the manufacturer shall furnish such facilities as may be required for collecting and forwarding samples, and shall also furnish facilities for testing the material during the process of manufacture, if required. Tests will be made by and at the expense of the Department. All material samples for acceptance tests shall be taken or witnessed by a representative of the Bureau of Materials and Physical Research. All material samples shall be submitted to the Engineer of Materials and Physical Research, 126 East Ash Street, Springfield, Illinois 62704-4766 at least 30 days in advance of the pavement marking operations. Random check samples may be taken at the job site at the discretion of the Engineer.
- (c) The Engineer will test and approve the basic ingredients.
- (d) The sample(s) shall be labeled with the lot number, date, quantity and any other pertinent information. Samples shall be submitted in the following manner:
 - (1) Ingredient Materials:
 - (a) Glass beads: At least three randomly selected bags or containers shall be obtained from each lot or shipment of glass beads. The content of each bag or container shall be passed through a large Riffle Sampler, thus splitting the material down until a representative 1-quart (1-liter) sample is obtained. The sample from each container shall be submitted for testing.

(b) Binder: One pint (0.5 liter).

(c) Pigments: One pint (0.5 liter).

(d) Filler: One pint (0.5 liter).

(2) Thermoplastic:

At least three randomly selected containers shall be obtained from each lot. A 10 pound (4.5 kg) composite sample of the three containers shall be submitted for testing and acceptance. The lot size shall be approximately 44,000 pounds (20,000 kg) unless the total order is less than this amount.

Manufacturer's Responsibility:

- (a) The manufacturer shall perform tests on a minimum of one sample per 10,000 pounds (4,500 kg) of thermoplastic produced. Minimum tests required shall be a softening point determination and color. Manufacturer's test results shall be submitted along with the thermoplastic sample to the Bureau of Materials and Physical Research.
- (b) The manufacturer shall retain the test sample for a minimum period of 18 months.
- (c) The manufacturer shall furnish the Bureau of Materials and Physical Research with copies of bills of lading for all material inspected. Bills of lading shall indicate the consignee and destination, date of shipment, lot numbers, quantity, type of material, name and location of source.

Material Acceptance:

Final acceptance of a particular lot of thermoplastic will be based on the following:

- (a) Compliance of ingredient materials with the specifications.
- (b) Compliance of thermoplastic material with the specifications.
- (c) Manufacturer's test results for each lot of thermoplastic have been received.
- (d) Identification requirements are satisfactory.

Notification: The Contractor shall notify the Engineer 72 hours prior to the placement of the thermoplastic markings in order that an inspector can be present during the operation. At the time of this notification, the Contractor shall indicate the manufacturer and lot numbers of thermoplastic and glass beads that he intends to use. The Engineer will ensure that the approved lot numbers appear on the material package. Failure to comply with this provision may be cause for rejection.

Installation Requirements:

- (a) Before applying thermoplastic, the crack sealant shall be fully cured and hardened and the Contractor shall remove any dirt, glaze, grease, or any other material that would reduce the adhesion of the thermoplastic to the pavement.
- (b) This thermoplastic material shall be readily renewable by placing an overlay of new material directly over old markings of the same material. Such new material shall bond itself to the old markings in such a manner that no splitting or separation takes place. The contractor shall remove all existing material that might cause premature failure of the new material.
- (c) The thermoplastic material shall be installed in a molten state by the spray method at a minimum temperature of 350 °F (177 °C) and a maximum temperature of 400 °F (204 °C). Scorching or discoloration of material shall be cause for rejection by the Engineer. The machinery shall be constructed so that all mixing and conveying parts, up to and including the spray gun maintain the material in the molten state.
- (d) Thermoplastic pavement marking materials shall not be applied by the spray method when air and pavement surface temperatures are below 50 °F (10 °C) or when the surface of the pavement contains any evidence of moisture.
- (e) Unless directed by the Engineer, lines shall not be laid directly over a longitudinal crack or joint. The edge of the center line or lane line shall be offset a minimum distance of 2 inches (50 mm) from a longitudinal crack or joint. Edge lines shall be approximately 2 inches (50 mm) from the edge of pavement. The finished center and lane lines shall be straight, with the lateral deviation of any 10 foot (3 meter) line not to exceed 1 inch (25 mm).
- (f) A primer sealer of the type recommended by the manufacturer of the thermoplastic material shall be applied on all Portland concrete pavement surfaces, and if recommended by the manufacturer, on other types of pavement surface, prior to the installation of the thermoplastic material. The primer shall be free of solvent and water prior to the thermoplastic application.
- (g) The thermoplastic material shall be applied at a thickness of not less than 0.045 inch (1.143 mm), but in no case shall it exceed a thickness of 0.050 inch (1.27 mm). Finished lines shall be within a 1/4 inch (6.35 mm) of the width specified in the plans.
- (h) The Contractor shall place the thermoplastic markings with adequate drop on glass in accordance with the above requirements, uniformly applied to assure nighttime reflectivity. It shall be the Contractor's responsibility to use compatible combination of thermoplastic material and beads to preclude the surface beads from sinking deeply into the thermoplastic.

- (i) The thickness of the markings will be measured above the pavement surface at such random points as the Engineer selects to determine conformance to these specifications. If the measurements show less than 0.045 inch (1.143 mm), the Engineer will "chip" the edges of the markings at random points and measure the thickness of the chips to determine if the overall thickness of the markings is at least 0.045 inch (1.143 mm). If the overall thickness or the thickness above the pavement surface is substantially in conformance with the thickness requirements, payment will be made at 100 percent of the contract unit prices involved. When the thickness at a given location is less than 0.045 inch (1.143 mm), additional measurements will be taken on each side of such location at such intervals as the Engineer may select to determine the extent of the deficient portion of the marking. The Contractor shall then apply additional thermoplastic material and beads to bring the thickness of the markings to at least 0.045 inch (1.143 mm).

Equipment Requirements:

- (a) The application equipment used for placing lane and edge line on freeways shall be permanently mounted on a truck of sufficient size and stability to insure smooth, straight application. The truck shall be equipped to carry a minimum of 4,000 pounds (1800 kilograms) of molten thermoplastic. The equipment shall have the capability of automatically placing intermittent and continuous lines. The equipment shall be so constructed as to provide the various widths of pavement marking lines specified. The mounting shall be such as to allow the spray equipment to accurately follow road irregularities and produce lines of uniform dimensions.
- (b) The equipment used to install hot applied thermoplastic material shall provide continuous uniform heating to temperatures exceeding 400 °F (204 °C), mixing and agitation of the material. Conveying parts of the equipment between the main material reservoir and the dispensing device shall prevent accumulation and clogging. All parts of the equipment, which comes in contact with the material, shall be constructed for easy accessibility and exposure for cleaning and maintenance. The equipment shall operate so that all mixing and conveying parts including the line dispensing device, maintains the material at the plastic temperature. The use of pans, aprons, or similar devices to prevent die overruns will not be permitted.
- (c) Glass beads applied to the surface of the completed marking shall be applied by an automatic bead dispenser attached to the marking machine so that the beads are dispensed closely behind the installed marking. The glass bead dispenser shall be equipped with an automatic cut-off control synchronized with the cut-off of the thermoplastic material.
- (d) A special kettle shall be provided for uniformly melting and heating the thermoplastic material. The kettle must be equipped with an automatic thermostat control device and material thermometer for positive temperature control and to prevent overheating or under-heating of the material. The heating kettle and application equipment shall meet the requirements of the National Fire Underwriters and the National Fire Protection Association.

(e) The Contractor shall provide an accurate temperature measuring device which shall be capable of measuring the pavement temperature prior to installation of the thermoplastic and the temperature of the molten thermoplastic material immediately after it is applied.

Inspection: The 45 mil hot spray thermoplastic pavement markings will be inspected following installation, but no later than November 1, and inspected following a winter performance period that extends 180 days from November 1 in accordance with the provisions of Article 780.10 of the Standard Specification.

Method of Measurement: Lines will be measured for payment in feet. Double yellow lines will be measured as two separate lines.

Basis of Payment: This work will be paid for at the contract unit prices per foot of applied line width for HOT SPRAY THERMOPLASTIC PAVEMENT MARKING – LINE.

DRAINAGE AND INLET PROTECTION UNDER TRAFFIC (DISTRICT 1)

Effective: April 1, 2011

Revised: April 2, 2011

Add the following to Article 603.02 of the Standard Specifications:

- “ (i) Temporary Hot-Mix Asphalt (HMA) Ramp (Note 1)..... 1030
- (j) Temporary Rubber Ramps (Note 2)
- Note 1. The HMA shall have maximum aggregate size of 3/8 in. (95 mm).
- Note 2. The rubber material shall be according to the following.

Property	Test Method	Requirement
Durometer Hardness, Shore A	ASTM D 2240	75 ±15
Tensile Strength, psi (kPa)	ASTM D 412	(2000) min
Elongation, percent	ASTM D 412	90 min
Specific Gravity	ASTM D 792	1.0 - 1.3
Brittleness, °F (°C)	ASTM D 746	-40 (-40)°

Revise Article 603.07 of the Standard Specifications to read:

“603.07 Protection Under Traffic. After the casting has been adjusted and the Class PP concrete has been placed, the work shall be protected by a barricade and two lights according to Article 701.17(e)(3)b.

When castings are under traffic before the final surfacing operation has been started, properly sized temporary ramps shall be placed around the drainage and/or utility castings according to the following methods.

- (a) Temporary Asphalt Ramps. Temporary hot-mix asphalt ramps shall be placed around the casting, flush with its surface and decreasing to a featheredge in a distance of 2 ft. (600 mm) around the entire surface of the casting.
- (b) Temporary Rubber Ramps. Temporary rubber ramps shall only be used on roadways with permanent posted speeds of 40 mph or less and when the height of the casting to be protected meets the proper sizing requirements for rubber ramps as shown below.

Dimension	Requirement
Inside Opening	Outside dimensions of casting + 1 in. (25 mm)
Thickness at edge	Height of casting \pm 1/4. in. (6 mm)
Thickness at outside edge	1/4 in. (6 mm) max.
Width, measured from inside opening to outside edge	8 1/2 in. (215) mm min

Placement shall be according to the manufacturer's specifications.

Temporary ramps for castings shall remain in place until surfacing operations are undertaken within the immediate area of the structure. Prior to placing the surface course, the temporary ramp shall be removed. Excess material shall be disposed of according to Article 202.03."

STAMPED COLORED PORTLAND CEMENT CONCRETE MEDIAN SURFACE 8 INCH

Description. This work shall consist of constructing integrally colored Portland cement concrete median pavement with imprinted pattern, surface hardener, cure, and cure/sealer for roadway medians behind the curb on the specified corners of the roundabout, as shown the plans. This work shall be completed in accordance with the applicable portions of Section 606, as indicated herein and as directed by the Engineer. See plans for locations where the concrete shall be eight inches thick. This work shall be completed in accordance with the applicable portions of Section 606 of the Standard Specifications.

Submittals. Manufacturers' data sheets shall be submitted on each product to be used, including preparation instructions, storage and handling requirements, and installation methods.

Quality Assurance. The installer shall provide a qualified foreman or supervisor who has a minimum of three years' experience with imprinted and textured concrete, and who has successfully completed at least five imprinted concrete installation of high quality and similar in scope to that required. The concrete shall be cast-in-place on the job site by trained and experienced workers. Obtain materials from the same source for all colored and imprinted work. The Contractor shall provide a technical representative from the color supplier for the first day of concrete placement to assist in concrete batching and job site finishing and curing.

Mock-Up. Prior to beginning work, provide field samples of integrally colored Portland cement concrete with imprinted pattern, surface hardener, and cure/sealer. Samples to be 48 inches by 48 inches, 8 inch thick with surface colors and patterns specified. Do not proceed with work until the workmanship, pattern, color, and sheen are approved by the Engineer. Refinish mock-ups or provide additional samples as required to obtain the Engineer's approval.

Materials: Provide all material in accordance with Section 606 of the Standard Specifications. The pattern to be used shall be Herringbone Brick with a single course pattern and the color to be used shall be 2.5YR2/8 from the Munsell color chart or a close approximation. A color hardener will be required. Final pattern and color selections to be approved by the Engineer.

The concrete mix design for all medians shall be integrally colored. The pay item's use shall determine the class of concrete in accordance with Section 1020 of the Standard Specifications, with the exception that the minimum cement factor shall be 6.05 cwt.

Integral coloring admixture shall be a non-fading synthetic oxide pigment meeting ASTM C979. Add integral color according to the manufacturer's instructions.

Color hardener shall be applied to the surface of the concrete according to the manufacturer's instructions and recommended application techniques.

Form release agent shall be a liquid membrane-forming clear curing compound conforming to AASHTO M148, Type 1. Apply a separate curing and sealing compound for integrally colored concrete according to the manufacturer's instructions and recommended application techniques. The compound should include a slip-resistant additive. Apply the curing compound at a uniform interval after each pour to maintain a consistency in finished coloration.

Use admixture designed for use and compatibility with colored concrete pigments. Do not use calcium chloride or admixtures containing chlorides. Use the same admixtures for colored concrete pavement throughout the project.

The change in any material ingredient in the concrete may require a new mock-up be constructed for the Engineer's approval.

Joint fillers shall be selected to match the integral colors selected for the project. Equipment. Imprinting tools shall be used for texturing freshly placed concrete in a pattern/texture as approved by the Engineer. Tools are to be used according to the manufacturer's instructions.

General. This work shall be according to Sections 503 and 606 of the Standard Specifications and the following:

Colored concrete mixes for the entire project are to be consistent. If additional water is added to the colored concrete once a truck is on site, this concrete will be rejected.

Cover and protect adjacent construction and concrete from discoloration and spillage during placement and curing of colored concrete. Remove and replace discolored concrete as Engineer directs.

Uniformly apply liquid release agent onto the colored, still plastic state concrete to provide clean release of imprinting tools from the concrete surface without lifting imprint or rearing concrete.

Contractor shall monitor the setting of the concrete, once the concrete is ready for imprinting, contractor shall accurately align and place the imprinting stamps uniformly pressing or pounding the imprint tools to produce the required pattern and depth of imprint on the concrete surface. Remove platform tools immediately. Hand texture and stamp edges and surfaces unable to be imprinted with the stamping mats. Touch up imperfections such as broken corners, double imprints, and surface cracks.

Do not cure colored concrete using plastic sheeting unless necessary due to weather conditions. Plastic sheeting shall not be laid directly on top to the concrete as discoloration will occur. Plastic shall be suspended above the concrete.

All completed areas of colored concrete shall be of consistent color and appearance and must meet the approval of the Engineer. Any finished areas that are rejected by Engineer shall be removed and replaced by Contractor at no additional cost to the Department.

Note that the adjacent Combination Curb and Gutter is measured and paid for separately and is to remain natural concrete color.

Method of Measurement. STAMPED COLORED PORTLAND CEMENT CONCRETE MEDIAN SURFACE 8 INCH will be measured for payment in place and the area computed per square feet. Concrete curb and gutter around the median will be measured separately for payment.

Basis of Payment. Construction of STAMPED COLORED PORTLAND CEMENT CONCRETE MEDIAN SURFACE 8 INCH will be paid for at the contract unit price per square foot.

AGGREGATE SUBGRADE IMPROVEMENT (D-1)

Effective: February 22, 2012

Revised: April 1, 2016

Add the following Section to the Standard Specifications:

“SECTION 303. AGGREGATE SUBGRADE IMPROVEMENT

303.01 Description. This work shall consist of constructing an aggregate subgrade improvement.

303.02 Materials. Materials shall be according to the following.

Item	Article/Section
(a) Coarse Aggregate	1004.07
(b) Reclaimed Asphalt Pavement (RAP) (Notes 1, 2 and 3)	1031

Note 1. Crushed RAP, from either full depth or single lift removal, may be mechanically blended with aggregate gradation CS 01 but shall not exceed 40 percent by weight of the total product. The top size of the Coarse RAP shall be less than 4 in. (100 mm) and well graded.

Note 2. RAP having 100 percent passing the 1 1/2 in (37.5 mm) sieve and being well graded, may be used as capping aggregate in the top 3 in. (75 mm) when aggregate gradation CS 01 is used in lower lifts. When RAP is blended with any of the coarse aggregates, the blending shall be done with mechanically calibrated feeders. The final product shall not contain more than 40 percent by weight of RAP.

Note 3. The RAP used for aggregate subgrade improvement shall be according to the current Bureau of Materials and Physical Research Policy Memorandum, “Reclaimed Asphalt Pavement (RAP) for Aggregate Applications”.

303.03 Equipment. The vibratory machine shall be according to Article 1101.01, or as approved by the Engineer. The calibration for the mechanical feeders shall have an accuracy of ± 2.0 percent of the actual quantity of material delivered.

303.04 Soil Preparation. The stability of the soil shall be according to the Department's Subgrade Stability Manual for the aggregate thickness specified.

303.05 Placing Aggregate. The maximum nominal lift thickness of aggregate gradation CS 01 shall be 24 in. (600 mm).

303.06 Capping Aggregate. The top surface of the aggregate subgrade shall consist of a minimum 3 in. (75 mm) of aggregate gradations CA 06 or CA 10. When Reclaimed Asphalt Pavement (RAP) is used, it shall be crushed and screened where 100 percent is passing the 1 1/2 in. (37.5 mm) sieve and being well graded. RAP that has been fractionated to size will not be permitted for use in capping. Capping aggregate will not be required when the aggregate subgrade improvement is used as a cubic yard pay item for undercut applications. When RAP is blended with any of the coarse aggregates, the blending shall be done with mechanically calibrated feeders.

303.07 Compaction. All aggregate lifts shall be compacted to the satisfaction of the Engineer. If the moisture content of the material is such that compaction cannot be obtained, sufficient water shall be added so that satisfactory compaction can be obtained.

303.08 Finishing and Maintenance of Aggregate Subgrade Improvement. The aggregate subgrade improvement shall be finished to the lines, grades, and cross sections shown on the plans, or as directed by the Engineer. The aggregate subgrade improvement shall be maintained in a smooth and compacted condition.

303.09 Method of Measurement. This work will be measured for payment according to Article 311.08.

303.10 Basis of Payment. This work will be paid for at the contract unit price per cubic yard (cubic meter) for AGGREGATE SUBGRADE IMPROVEMENT or at the contract unit price per square yard (square meter) for AGGREGATE SUBGRADE IMPROVEMENT, of the thickness specified.

Add the following to Section 1004 of the Standard Specifications:

“1004.07 Coarse Aggregate for Aggregate Subgrade Improvement. The aggregate shall be according to Article 1004.01 and the following.

- (1)Description. The coarse aggregate shall be crushed gravel, crushed stone, or crushed concrete. The top 12 inches of the aggregate subgrade improvement shall be 3 inches of capping material and 9 inches of crushed gravel, crushed stone or crushed concrete. In applications where greater than 36 inches of subgrade material is required, rounded gravel, meeting the CS01 gradation, may be used beginning at a depth of 12 inches below the bottom of pavement.
- (2)Quality. The coarse aggregate shall consist of sound durable particles reasonably free of deleterious materials. Non-mechanically blended RAP may be allowed up to a maximum of 5.0 percent.

(3) Gradation.

1/ The coarse aggregate gradation for total subgrade thicknesses of 12 in. (300 mm) or greater shall be CS 01.

Grad No.	COARSE AGGREGATE SUBGRADE GRADATIONS				
	Sieve Size and Percent Passing				
	8"	6"	4"	2"	#4
CS 01	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20

Grad No.	COARSE AGGREGATE SUBGRADE GRADATIONS (Metric)				
	Sieve Size and Percent Passing				
	200 mm	150 mm	100 mm	50 mm	4.75 mm
CS 01	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20

2/ The 3 in. (75 mm) capping aggregate shall be gradation CA 6 or CA 10.

HOT-MIX ASPHALT BINDER AND SURFACE COURSE (D-1)

Effective: November 1, 2019

Revised: February 1, 2020

Description. This work shall consist of constructing a hot-mix asphalt (HMA) binder and/or surface course on a prepared base. Work shall be according to Sections 406 and 1030 of the Standard Specifications, except as modified herein.

Materials. Revise Article 1004.03(c) to read:

“ (c) Gradation. The coarse aggregate gradations shall be as listed in the following table.

Use	Size/Application	Gradation No.
Class A-1, A-2, & A-3	3/8 in. (10 mm) Seal	CA 16 or CA 20
Class A-1	1/2 in. (13 mm) Seal	CA 15
Class A-2 & A-3	Cover Coat	CA 14
HMA High ESAL	IL-19.0; Stabilized Subbase IL-19.0	CA 11 ^{1/}
	SMA 12.5 ^{2/}	CA 13 ^{4/} , CA 14, or CA 16
	SMA 9.5 ^{2/}	CA 13 ^{3/4/} or CA 16 ^{3/}
	IL-9.5	CA 16, CM 13 ^{4/}
	IL-9.5FG	CA 16
HMA Low ESAL	IL-19.0L	CA 11 ^{1/}
	IL-9.5L	CA 16

1/ CA 16 or CA 13 may be blended with the CA 11.

2/ The coarse aggregates used shall be capable of being combined with stone sand, slag sand, or steel slag sand meeting the FA/FM 20 gradation and mineral filler to meet the approved mix design and the mix requirements noted herein.

3/ The specified coarse aggregate gradations may be blended.

4/ CA 13 shall be 100 percent passing the 1/2 in. (12.5mm) sieve.”

Revise Article 1004.03(e) of the Supplemental Specifications to read:

“(e) Absorption. For SMA the coarse aggregate shall also have water absorption ≤ 2.0 percent.”

HMA Nomenclature. Revise the “High ESAL” portion of the table in Article 1030.01 to read:

“High ESAL	Binder Courses	IL-19.0, IL-9.5, IL-9.5FG, IL-4.75, SMA 12.5, Stabilized Subbase IL-19.0
	Surface Courses	IL-9.5, IL-9.5FG, SMA 12.5, SMA 9.5”

Revise Article 1030.02 of the Standard Specifications and Supplemental Specifications to read:

“**1030.02 Materials.** Materials shall be according to the following.

Item	Article/Section
(a) Coarse Aggregate	1004.03
(b) Fine Aggregate	1003.03
(c) RAP Material	1031
(d) Mineral Filler	1011
(e) Hydrated Lime	1012.01
(f) Slaked Quicklime (Note 1)	
(g) Performance Graded Asphalt Binder (Note 2)	1032
(h) Fibers (Note 3)	
(i) Warm Mix Asphalt (WMA) Technologies (Note 4)	

Note 1. Slaked quicklime shall be according to ASTM C 5.

Note 2. The asphalt binder shall be an SBS PG 76-28 when the SMA is used on a full-depth asphalt pavement and SBS PG 76-22 when used as an overlay, except where modified herein. The asphalt binder shall be a SBS PG 76-22 for IL-4.75, except where modified herein. The elastic recovery shall be a minimum of 80.

Note 3. A stabilizing additive such as cellulose or mineral fiber shall be added to the SMA mixture according to Illinois Modified AASHTO M 325. The stabilizing additive shall meet the Fiber Quality Requirements listed in Illinois Modified AASHTO M 325. Prior to approval and use of fibers, the Contractor shall submit a notarized certification by the producer of these materials stating they meet these requirements. Reclaimed Asphalt Shingles (RAS) may be used in Stone Matrix Asphalt (SMA) mixtures designed with an SBA polymer modifier as a fiber additive if the mix design with RAS included meets AASHTO T305 requirements. The RAS shall be from a certified source that produces either Type I or Type 2. Material shall meet requirements noted herein and the actual dosage rate will be determined by the Engineer.

Note 4. Warm mix additives or foaming processes shall be selected from the Department’s Qualified Producer List, “Technologies for the Production of Warm Mix Asphalt (WMA).”

Mixture Design. Revise Article 1030.04(a)(1) of the Standard Specifications and the Supplemental Specifications to read:

High ESAL, MIXTURE COMPOSITION (% PASSING) ^{1/}										
Sieve Size	IL-19.0 mm		SMA 12.5		SMA 9.5		IL-9.5mm		IL-4.75 mm	
	min	max	min	max	min	max	min	max	min	max
1 1/2 in. (37.5 mm)										
1 in. (25 mm)		100								
3/4 in. (19 mm)	90	100		100						
1/2 in. (12.5 mm)	75	89	80	100		100		100		100
3/8 in. (9.5 mm)				65	90	100	90	100		100
#4 (4.75 mm)	40	60	20	30	36	50	34	69	90	100
#8 (2.36 mm)	20	42	16	24 ^{4/}	16	32 ^{4/}	34 ^{5/}	52 ^{2/}	70	90
#16 (1.18 mm)	15	30					10	32	50	65
#30 (600 μm)			12	16	12	18				
#50 (300 μm)	6	15					4	15	15	30
#100 (150 μm)	4	9					3	10	10	18
#200 (75 μm)	3	6	7.0	9.0 ^{3/}	7.5	9.5 ^{3/}	4	6	7	9 ^{3/}
#635 (20 μm)			≤ 3.0		≤ 3.0					
Ratio Dust/Asphalt Binder		1.0		1.5		1.5		1.0		1.0

- 1/ Based on percent of total aggregate weight.
- 2/ The mixture composition shall not exceed 44 percent passing the #8 (2.36 mm) sieve for surface courses with N_{design} = 90.
- 3/ Additional minus No. 200 (0.075 mm) material required by the mix design shall be mineral filler, unless otherwise approved by the Engineer.
- 4/ When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted above the percentage stated on the table.
- 5/ When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted below 34 percent.

Revise Article 1030.04(b)(1) of the Standard Specifications to read:

“(1) High ESAL Mixtures. The target value for the air voids of the HMA shall be 4.0 percent, for IL-4.75 it shall be 3.5 percent and for Stabilized Subbase it shall be 3.0 percent at the design number of gyrations. The voids in the mineral aggregate (VMA) and voids filled with asphalt binder (VFA) of the HMA design shall be based on the nominal maximum size of the aggregate in the mix and shall conform to the following requirements.

VOLUMETRIC REQUIREMENTS High ESAL				
Ndesign	Voids in the Mineral Aggregate (VMA), % minimum			Voids Filled with Asphalt Binder (VFA), %
	IL-19.0; Stabilized Subbase IL- 19.0	IL-9.5	IL-4.75 ^{1/}	
50	13.5	15.0	18.5	65 – 78 ^{2/}
70			65 - 75	
90				

1/ Maximum draindown for IL-4.75 shall be 0.3 percent.

2/ VFA for IL-4.75 shall be 72-85 percent.”

Revise the table in Article 1030.04(b)(3) to read:

“VOLUMETRIC REQUIREMENTS, SMA 12.5 ^{1/} and SMA 9.5 ^{1/}			
Ndesign	Design Air Voids Target %	Voids in the Mineral Aggregate (VMA), % min.	Voids Filled with Asphalt (VFA), %
80 ^{4/}	3.5	17.0 ^{2/}	75 - 83
		16.0 ^{3/}	

1/ Maximum draindown shall be 0.3 percent. The draindown shall be determined at the JMF asphalt binder content at the mixing temperature plus 30 °F.

2/ Applies when specific gravity of coarse aggregate is ≥ 2.760 .

- 3/ Applies when specific gravity of coarse aggregate is < 2.760.
- 4/ Blending of different types of aggregate will not be permitted.
For surface course, the coarse aggregate can be crushed steel slag, crystalline crushed stone or crushed sandstone. For binder course, coarse aggregate shall be crushed stone (dolomite), crushed gravel, crystalline crushed stone, or crushed sandstone.

Add to the end of Article 1030.05 (d) (2) a. of the Standard Specifications:

“During production, the Contractor shall test SMA mixtures for draindown according to AASHTO T305 at a frequency of 1 per day of production.”

Revise the last paragraph of Article 1102.01 (a) (5) of the Standard Specifications to read:

“IL-4.75 and Stone Matrix Asphalt (SMA) mixtures which contain aggregate having absorptions greater than or equal to 2.0 percent, or which contain steel slag sand, shall have minimum surge bin storage plus haul time of 1.5 hours.”

Quality Control/Quality Assurance (QC/QA). Revise the third paragraph of Article 1030.05(d)(3) to read:

“If the Contractor and Engineer agree the nuclear density test method is not appropriate for the mixture, cores shall be taken at random locations determined according to the QC/QA document "Determination of Random Density Test Site Locations". Core densities shall be determined using the Illinois Modified AASHTO T 166 or T 275 procedure.”

Add the following paragraphs to the end of Article 1030.05(d)(3):

“Longitudinal joint density testing shall be performed at each random density test location. Longitudinal joint testing shall be located at a distance equal to the lift thickness or a minimum of 4 in. (100 mm), from each pavement edge (i.e. for a 5 in. (125 mm) lift the near edge of the density gauge or core barrel shall be within 5 in. (125 mm) from the edge of pavement). Longitudinal joint density testing shall be performed using either a correlated nuclear gauge or cores.

- a. Confined Edge. Each confined edge density shall be represented by a one-minute nuclear density reading or a core density and shall be included in the average of density readings or core densities taken across the mat which represents the Individual Test.

- b. Unconfined Edge. Each unconfined edge joint density shall be represented by an average of three one-minute density readings or a single core density at the given density test location and shall meet the density requirements specified herein. The three one-minute readings shall be spaced 10 ft (3 m) apart longitudinally along the unconfined pavement edge and centered at the random density test location.

When a longitudinal joint sealant (LJS) is applied, longitudinal joint density testing will not be required on the joint(s) sealed.”

Revise the second table in Article 1030.05(d)(4) and its notes to read:

“DENSITY CONTROL LIMITS			
Mixture Composition	Parameter	Individual Test (includes confined edges)	Unconfined Edge Joint Density, minimum
IL-4.75	Ndesign = 50	93.0 – 97.4 % ^{1/}	91.0%
IL-9.5FG	Ndesign = 50 - 90	93.0 – 97.4 %	91.0%
IL-9.5	Ndesign = 90	92.0 – 96.0 %	90.0%
IL-9.5, IL-9.5L,	Ndesign < 90	92.5 – 97.4 %	90.0%
IL-19.0	Ndesign = 90	93.0 – 96.0 %	90.0%
IL-19.0, IL-19.0L	Ndesign < 90	93.0 ^{2/} – 97.4 %	90.0%
SMA	Ndesign = 80	93.5 – 97.4 %	91.0%

1/ Density shall be determined by cores or by correlated, approved thin lift nuclear gauge.

2/ 92.0 % when placed as first lift on an unimproved subgrade.”

Equipment. Add the following to Article 1101.01 of the Standard Specifications:

“(h) Oscillatory Roller. The oscillatory roller shall be self-propelled and provide a smooth operation when starting, stopping, or reversing directions. The oscillatory roller shall be able to operate in a mode that will provide tangential impact force with or without vertical impact force by using at least one drum. The oscillatory roller shall be equipped with water tanks and sprinkling devices, or other approved methods, which shall be used to wet the drums to prevent material pickup. The drum(s) amplitude and frequency of the tangential and vertical impact force shall be approximately the same in each direction and meet the following requirements:

- (1) The minimum diameter of the drum(s) shall be 42 in. (1070 mm);
- (2) The minimum length of the drum(s) shall be 57 in. (1480 mm);

- (3) The minimum unit static force on the drum(s) shall be 125 lb/in. (22 N/m); and
- (4) The minimum force on the oscillatory drum shall be 18,000 lb (80 kN)."

Construction Requirements.

Add the following to Article 406.03 of the Standard Specifications:

"(j) Oscillatory Roller1101.01"

Revise the third paragraph of Article 406.05(a) to read:

"All depressions of 1 in. (25 mm) or more in the surface of the existing pavement shall be filled with binder. At locations where heavy disintegration and deep spalling exists, the area shall be cleaned of all loose and unsound material, tacked, and filled with binder (hand method)."

Revise Article 406.05(c) to read.

"(c) Binder (Hand Method). Binder placed other than with a finishing machine will be designated as binder (hand method) and shall be compacted with a roller to the satisfaction of the Engineer. Hand tamping will be permitted when approved by the Engineer."

Revise the special conditions for mixture IL-4.75 in Article 406.06(b)(2)e. to read:

"e. The mixture shall be overlaid within 5 days of being placed."

Revise Article 406.06(d) to read:

"(d) Lift Thickness. The minimum compacted lift thickness for HMA binder and surface courses shall be as follows.

MINIMUM COMPACTED LIFT THICKNESS	
Mixture Composition	Thickness, in. (mm)
IL-4.75	3/4 (19) - over HMA surfaces ^{1/} 1 (25) - over PCC surfaces ^{1/}
IL-9.5FG	1 1/4 (32)
IL-9.5, IL-9.5L	1 1/2 (38)
SMA 9.5	1 3/4 (45)
SMA 12.5	2 (51)
IL-19.0, IL-19.0L	2 1/4 (57)

1/ The maximum compacted lift thickness for mixture IL-4.75 shall be 1 1/4 in. (32 mm)."

Revise Table 1 and Note 3/ of Table 1 in Article 406.07(a) of the Standard Specifications to read:

"TABLE 1 - MINIMUM ROLLER REQUIREMENTS FOR HMA				
	Breakdown Roller (one of the following)	Intermediate Roller	Final Roller (one or more of the following)	Density Requirement
Binder and Surface ^{1/}	V _D , P ^{3/} , T _B , 3W, O _T , O _B	P ^{3/} , O _T , O _B	V _S , T _B , T _F , O _T	As specified in Articles: 1030.05(d)(3), (d)(4), and (d)(7).
IL-4.75 and SMA ^{4/ 5/}	T _B , 3W, O _T	- -	T _F , 3W, O _T	
Bridge Decks ^{2/}	T _B	- -	T _F	As specified in Articles 582.05 and 582.06.

3/ A vibratory roller (V_D) or oscillatory roller (O_T or O_B) may be used in lieu of the pneumatic-tired roller on mixtures containing polymer modified asphalt binder."

Add the following to EQUIPMENT DEFINITION in Article 406.07(a) contained in the Errata of the Supplemental Specifications:

O_T - Oscillatory roller, tangential impact mode. Maximum speed is 3.0 mph (4.8 km/h) or 264 ft/min (80 m/min).

O_B - Oscillatory roller, tangential and vertical impact mode, operated at a speed to produce not less than 10 vertical impacts/ft (30 impacts/m)."

Delete last sentence of the second paragraph of Article 1102.01(a) (4) b. 2.

Add to the end of Article 1102.01 (a) (4) b. 2.:

"As an option, collected dust (baghouse) may be used in lieu of manufactured mineral filler according to the following:

(a.) Sufficient collected dust (baghouse) is available for production of the SMA mix for the entire project.

(b.) A mix design was prepared based on collected dust (baghouse).

Revise Article 1030.04 (d) of the Standard Specifications to read:

“(d) Verification Testing. High ESAL, IL-4.75, and SMA mix designs submitted for verification will be tested to ensure that the resulting mix designs will pass the required criteria for the Hamburg Wheel Test (IL mod AASHTO T-324) and the Tensile Strength Test (IL mod AASHTO T-283). The Department will perform a verification test on gyratory specimens compacted by the Contractor. If the mix fails the Department’s verification test, the Contractor shall make the necessary changes to the mix and resubmit compacted specimens to the Department for verification. If the mix fails again, the mix design will be rejected.

All new mix designs will be required to be tested, prior to submittal for Department verification and shall meet the following requirements:

(4)Hamburg Wheel Test criteria. The maximum allowable rut depth shall be 0.5 in. (12.5 mm). The minimum number of wheel passes at the 0.5 in. (12.5 mm) rut depth criteria shall be based on the high temperature binder grade of the mix as specified in the mix requirements table of the plans.

Illinois Modified AASHTO T 324 Requirements ^{1/}

Asphalt Binder Grade	# Repetitions	Max Rut Depth (mm)
PG 70 -XX (or higher)	20,000	12.5
PG 64 -XX (or lower)	10,000	12.5

1/ When produced at temperatures of 275 ± 5 °F (135 ± 3 °C) or less, loose Warm Mix Asphalt shall be oven aged at 270 ± 5 °F (132 ± 3 °C) for two hours prior to gyratory compaction of Hamburg Wheel specimens.

Note: For SMA Designs (N-80) the maximum rut depth is 6.0 mm at 20,000 repetitions.

For IL 4.75mm Designs (N-50) the maximum rut depth is 9.0mm at 15,000 repetitions.

(2) Tensile Strength Criteria. The minimum allowable conditioned tensile strength shall be 60 psi (415 kPa) for non-polymer modified performance graded (PG) asphalt binder and 80 psi (550 kPa) for polymer modified PG asphalt binder. The maximum allowable unconditioned tensile strength shall be 200 psi (1380 kPa).”

Production Testing. Revise first paragraph of Article 1030.06(a) of the Standard Specifications to read:

“(a) High ESAL, IL-4.75, WMA, and SMA Mixtures. For each contract, a 300 ton (275 metric tons) test strip, except for SMA mixtures it will be 400 ton (363 metric ton), will be required at the beginning of HMA production for each mixture at the beginning of each construction year according to the Manual of Test Procedures for Materials “Hot Mix Asphalt Test Strip Procedures”. At the request of the Producer, the Engineer may waive the test strip if previous construction during the current construction year has demonstrated the constructability of the mix using Department test results.”

Add the following after the sixth paragraph in Article 1030.06 (a) of the Standard Specifications:

“The Hamburg Wheel test shall also be conducted on all HMA mixtures from a sample taken within the first 500 tons (450 metric tons) on the first day of production or during start up with a split reserved for the Department. The mix sample shall be tested according to the Illinois Modified AASHTO T 324 and shall meet the requirements specified herein. Mix production shall not exceed 1500 tons (1350 metric tons) or one day’s production, whichever comes first, until the testing is completed and the mixture is found to be in conformance. The requirement to cease mix production may be waived if the plant produced mixture demonstrates conformance prior to start of mix production for a contract.

If the mixture fails to meet the Hamburg Wheel criteria, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria”

Method of Measurement:

Add the following after the fourth paragraph of Article 406.13 (b):

“The plan quantities of SMA mixtures shall be adjusted using the actual approved binder and surface Mix Design’s G_{mb} .”

Basis of Payment. Replace the second through the fifth paragraphs of Article 406.14 with the following:

“HMA binder and surface courses will be paid for at the contract unit price per ton (metric ton) for MIXTURE FOR CRACKS, JOINTS, AND FLANGEWAYS; HOT-MIX ASPHALT BINDER COURSE (HAND METHOD), of the N_{design} specified; HOT-MIX ASPHALT BINDER COURSE, of the mixture composition and N_{design} specified; HOT-MIX ASPHALT SURFACE COURSE, of the mixture composition, friction aggregate, and N_{design} specified; POLYMERIZED HOT-MIX ASPHALT BINDER COURSE (HAND METHOD), of the N_{design} specified; POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, of the mixture composition and N_{design} specified; POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, of the mixture composition, friction aggregate, and N_{design} specified; POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, STONE MATRIX ASPHALT, of the mixture composition and N_{design} specified; POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, STONE MATRIX ASPHALT, of the mixture composition, friction aggregate, and N_{design} specified.”

GROUND TIRE RUBBER (GTR) MODIFIED ASPHALT BINDER (D-1)

Effective: June 26, 2006

Revised: April 1, 2016

Add the following to the end of article 1032.05 of the Standard Specifications:

“(c) Ground Tire Rubber (GTR) Modified Asphalt Binder. A quantity of 10.0 to 14.0 percent GTR (Note 1) shall be blended by dry unit weight with a PG 64-28 to make a GTR 70-28 or a PG 58-28 to make a GTR 64-28. The base PG 64-28 and PG 58-28 asphalt binders shall meet the requirements of Article 1032.05(a). Compatible polymers may be added during production. The GTR modified asphalt binder shall meet the requirements of the following table.

Test	Asphalt Grade GTR 70-28	Asphalt Grade GTR 64-28
Flash Point (C.O.C.), AASHTO T 48, °F (°C), min.	450 (232)	450 (232)
Rotational Viscosity, AASHTO T 316 @ 275 °F (135 °C), Poises, Pa·s, max.	30 (3)	30 (3)
Softening Point, AASHTO T 53, °F (°C), min.	135 (57)	130 (54)
Elastic Recovery, ASTM D 6084, Procedure A (sieve waived) @ 77 °F, (25 °C), aged, ss, 100 mm elongation, 5 cm/min., cut immediately, %, min.	65	65

Note 1. GTR shall be produced from processing automobile and/or light truck tires by the ambient grinding method. GTR shall not exceed 1/16 in. (2 mm) in any dimension and shall contain no free metal particles or other materials. A mineral powder (such as talc) meeting the requirements of AASHTO M 17 may be added, up to a maximum of four percent by weight of GTR to reduce sticking and caking of the GTR particles. When tested in accordance with Illinois modified AASHTO T 27, a 50 g sample of the GTR shall conform to the following gradation requirements:

Sieve Size	Percent Passing
No. 16 (1.18 mm)	100
No. 30 (600 µm)	95 ± 5
No. 50 (300 µm)	> 20

Add the following to the end of Note 1. of article 1030.03 of the Standard Specifications:

“A dedicated storage tank for the Ground Tire Rubber (GTR) modified asphalt binder shall be provided. This tank must be capable of providing continuous mechanical mixing throughout by continuous agitation and recirculation of the asphalt binder to provide a uniform mixture. The tank shall be heated and capable of maintaining the temperature of the asphalt binder at 300 °F to 350 °F (149 °C to 177 °C). The asphalt binder metering systems of dryer drum plants shall be calibrated with the actual GTR modified asphalt binder material with an accuracy of ± 0.40 percent.”

Revise 1030.02(c) of the Standard Specifications to read:

“(c) RAP Materials (Note 5)1031”

Add the following note to 1030.02 of the Standard Specifications:

Note 5. When using reclaimed asphalt pavement and/or reclaimed asphalt shingles, the maximum asphalt binder replacement percentage shall be according to the most recent special provision for recycled materials.

RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES (D-1)

Effective: November 1, 2012

Revise: November 1, 2019

Revise Section 1031 of the Standard Specifications to read:

“SECTION 1031. RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES

1031.01 Description. Reclaimed asphalt pavement and reclaimed asphalt shingles shall be according to the following.

- (a) Reclaimed Asphalt Pavement (RAP). RAP is the material resulting from cold milling or crushing an existing hot-mix asphalt (HMA) pavement. RAP will be considered processed FRAP after completion of both crushing and screening to size. The Contractor shall supply written documentation that the RAP originated from routes or airfields under federal, state, or local agency jurisdiction.

- (b) Reclaimed Asphalt Shingles (RAS). Reclaimed asphalt shingles (RAS). RAS is from the processing and grinding of preconsumer or post-consumer shingles. RAS shall be a clean and uniform material with a maximum of 0.5 percent unacceptable material, as defined in Central Bureau of Materials Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Sources", by weight of RAS. All RAS used shall come from a Central Bureau of Materials approved processing facility where it shall be ground and processed to 100 percent passing the 3/8 in. (9.5 mm) sieve and 90 percent passing the #4 (4.75 mm) sieve. RAS shall meet the testing requirements specified herein. In addition, RAS shall meet the following Type 1 or Type 2 requirements.
- (1) Type 1. Type 1 RAS shall be processed, preconsumer asphalt shingles salvaged from the manufacture of residential asphalt roofing shingles.
 - (2) Type 2. Type 2 RAS shall be processed post-consumer shingles only, salvaged from residential, or four unit or less dwellings not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP).

1031.02 Stockpiles. RAP and RAS stockpiles shall be according to the following.

- (a) RAP Stockpiles. The Contractor shall construct individual, sealed RAP stockpiles meeting one of the following definitions. Additional processed RAP (FRAP) shall be stockpiled in a separate working pile, as designated in the QC Plan, and only added to the sealed stockpile when test results for the working pile are complete and are found to meet tolerances specified herein for the original sealed FRAP stockpile. Stockpiles shall be sufficiently separated to prevent intermingling at the base. All stockpiles (including unprocessed RAP and FRAP) shall be identified by signs indicating the type as listed below (i.e. "Non- Quality, FRAP -#4 or Type 2 RAS", etc...).
- (1) Fractionated RAP (FRAP). FRAP shall consist of RAP from Class I, HMA (High and Low ESAL) or equivalent mixtures. The coarse aggregate in FRAP shall be crushed aggregate and may represent more than one aggregate type and/or quality, but shall be at least C quality. All FRAP shall be processed prior to testing and sized into fractions with the separation occurring on or between the #4 (4.75 mm) and 1/2 in. (12.5 mm) sieves. Agglomerations shall be minimized such that 100 percent of the RAP in the coarse fraction shall pass the maximum sieve size specified for the mixture composition of the mix design.
 - (2) Restricted FRAP (B quality) stockpiles shall consist of RAP from Class I, HMA (High ESAL), or HMA (High ESAL). If approved by the Engineer, the aggregate from a maximum 3.0 in. (75 mm) single combined pass of surface/binder milling will be classified as B quality. All millings from this application will be processed into FRAP as described previously.

- (3) Conglomerate. Conglomerate RAP stockpiles shall consist of RAP from Class I, HMA (High and Low ESAL) or equivalent mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality, but shall be at least C quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate RAP shall be processed (FRAP) prior to testing. Conglomerate RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.
- (4) Conglomerate "D" Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP from HMA shoulders, bituminous stabilized subbases or HMA (Low ESAL)/HMA (Low ESAL) IL-19.0L binder mixture. The coarse aggregate in this RAP may be crushed or round but shall be at least D quality. This RAP may have an inconsistent gradation and/or asphalt binder content. Conglomerate DQ RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.
- (5) Non-Quality. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Non-Quality".

RAP or FRAP containing contaminants, such as earth, brick, sand, concrete, sheet asphalt, bituminous surface treatment (i.e. chip seal), pavement fabric, joint sealants, plant cleanout etc., will be unacceptable unless the contaminants are removed to the satisfaction of the Engineer. Sheet asphalt shall be stockpiled separately.

- (b) RAS Stockpiles. Type 1 and Type 2 RAS shall be stockpiled separately and shall be sufficiently separated to prevent intermingling at the base. Each stockpile shall be signed indicating what type of RAS is present.

However, a RAS source may submit a written request to the Department for approval to blend mechanically a specified ratio of Type 1 RAS with Type 2 RAS. The source will not be permitted to change the ratio of the blend without the Department prior written approval. The Engineer's written approval will be required, to mechanically blend RAS with any fine aggregate produced under the AGCS, up to an equal weight of RAS, to improve workability. The fine aggregate shall be "B Quality" or better from an approved Aggregate Gradation Control System source. The fine aggregate shall be one that is approved for use in the HMA mixture and accounted for in the mix design and during HMA production.

Records identifying the shingle processing facility supplying the RAS, RAS type, and lot number shall be maintained by project contract number and kept for a minimum of three years.

1031.03 Testing. FRAP and RAS testing shall be according to the following.

- (a) FRAP Testing. When used in HMA, the FRAP shall be sampled and tested either during processing or after stockpiling. It shall also be sampled during HMA production.
- (1) During Stockpiling. For testing during stockpiling, washed extraction samples shall be run at the minimum frequency of one sample per 500 tons (450 metric tons) for the first 2000 tons (1800 metric tons) and one sample per 2000 tons (1800 metric tons) thereafter. A minimum of five tests shall be required for stockpiles less than 4000 tons (3600 metric tons).
 - (2) Incoming Material. For testing as incoming material, washed extraction samples shall be run at a minimum frequency of one sample per 2000 tons (1800 metric tons) or once per week, whichever comes first.
 - (3) After Stockpiling. For testing after stockpiling, the Contractor shall submit a plan for approval to the District proposing a satisfactory method of sampling and testing the RAP/FRAP pile either in-situ or by restocking. The sampling plan shall meet the minimum frequency required above and detail the procedure used to obtain representative samples throughout the pile for testing.

Before extraction, each field sample of FRAP, shall be split to obtain two samples of test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedure. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

- (b) RAS Testing. RAS shall be sampled and tested during stockpiling according to Central Bureau of Materials Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Sources". The Contractor shall also sample as incoming material at the HMA plant.
- (1) During Stockpiling. Washed extraction and testing for unacceptable materials shall be run at the minimum frequency of one sample per 200 tons (180 metric tons) for the first 1000 tons (900 metric tons) and one sample per 1000 tons (900 metric tons) thereafter. A minimum of five samples are required for stockpiles less than 1000 tons (900 metric tons). Once a ≤ 1000 ton (900 metric ton), five-sample/test stockpile has been established it shall be sealed. Additional incoming RAS shall be in a separate working pile as designated in the Quality Control plan and only added to the sealed stockpile when the test results of the working pile are complete and are found to meet the tolerances specified herein for the original sealed RAS stockpile.
 - (2) Incoming Material. For testing as incoming material at the HMA plant, washed extraction shall be run at the minimum frequency of one sample per 250 tons (227 metric tons). A minimum of five samples are required for stockpiles less than 1000 tons (900 metric tons). The incoming material test results shall meet the tolerances specified herein.

The Contractor shall obtain and make available all test results from start of the initial stockpile sampled and tested at the shingle processing facility in accordance with the facility's QC Plan.

Before extraction, each field sample shall be split to obtain two samples of test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedures. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

1031.04 Evaluation of Tests. Evaluation of test results shall be according to the following.

- (a) Evaluation of FRAP Test Results. All test results shall be compiled to include asphalt binder content, gradation and, when applicable (for slag), G_{mm} . A five test average of results from the original pile will be used in the mix designs. Individual extraction test results run thereafter, shall be compared to the average used for the mix design, and will be accepted if within the tolerances listed below.

Parameter	FRAP
No. 4 (4.75 mm)	± 6 %
No. 8 (2.36 mm)	± 5 %
No. 30 (600 μm)	± 5 %
No. 200 (75 μm)	± 2.0 %
Asphalt Binder	± 0.3 %
G_{mm}	± 0.03 ^{1/}

1/ For stockpile with slag or steel slag present as determined in the current Manual of Test Procedures Appendix B 21, "Determination of Reclaimed Asphalt Pavement Aggregate Bulk Specific Gravity".

If any individual sieve and/or asphalt binder content tests are out of the above tolerances when compared to the average used for the mix design, the FRAP stockpile shall not be used in Hot-Mix Asphalt unless the FRAP representing those tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

The Contractor shall maintain a representative moving average of five tests to be used for Hot-Mix Asphalt production.

With the approval of the Engineer, the ignition oven may be substituted for extractions according to the ITP, "Calibration of the Ignition Oven for the Purpose of Characterizing Reclaimed Asphalt Pavement (RAP)" or Illinois Modified AASHTO T-164-11, Test Method A.

- (b) Evaluation of RAS Test Results. All of the test results, with the exception of percent unacceptable materials, shall be compiled and averaged for asphalt binder content and gradation. A five test average of results from the original pile will be used in the mix designs. Individual test results run thereafter, when compared to the average used for the mix design, will be accepted if within the tolerances listed below.

Parameter	RAS
No. 8 (2.36 mm)	± 5 %
No. 16 (1.18 mm)	± 5 %
No. 30 (600 µm)	± 4 %
No. 200 (75 µm)	± 2.5 %
Asphalt Binder Content	± 2.0 %

If any individual sieve and/or asphalt binder content tests are out of the above tolerances when compared to the average used for the mix design, the RAS shall not be used in Hot-Mix Asphalt unless the RAS representing those tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

- (c) Quality Assurance by the Engineer. The Engineer may witness the sampling and splitting conduct assurance tests on split samples taken by the Contractor for quality control testing a minimum of once a month.

The overall testing frequency will be performed over the entire range of Contractor samples for asphalt binder content and gradation. The Engineer may select any or all split samples for assurance testing. The test results will be made available to the Contractor as soon as they become available.

The Engineer will notify the Contractor of observed deficiencies.

Differences between the Contractor's and the Engineer's split sample test results will be considered acceptable if within the following limits.

Test Parameter	Acceptable Limits of Precision	
	FRAP	RAS
% Passing: ^{1/}		
1/2 in.	5.0%	
No. 4	5.0%	
No. 8	3.0%	4.0%
No. 30	2.0%	4.0%
No. 200	2.2%	4.0%
Asphalt Binder Content	0.3%	3.0%
G _{mm}	0.030	

1/ Based on washed extraction.

In the event comparisons are outside the above acceptable limits of precision, the Engineer will immediately investigate.

- (d) Acceptance by the Engineer. Acceptable of the material will be based on the validation of the Contractor's quality control by the assurance process.

1031.05 Quality Designation of Aggregate in RAP and FRAP.

- (a) RAP. The aggregate quality of the RAP for homogeneous, conglomerate, and conglomerate "D" quality stockpiles shall be set by the lowest quality of coarse aggregate in the RAP stockpile and are designated as follows.

- (1) RAP from Class I, HMA (High ESAL), or (Low ESAL) IL-9.5L surface mixtures are designated as containing Class B quality coarse aggregate.
- (2) RAP from HMA (Low ESAL) IL-19.0L binder mixture is designated as Class D quality coarse aggregate.
- (3) RAP from Class I, HMA (High ESAL) binder mixtures, bituminous base course mixtures, and bituminous base course widening mixtures are designated as containing Class C quality coarse aggregate.
- (4) RAP from bituminous stabilized subbase and BAM shoulders are designated as containing Class D quality coarse aggregate.

- (b) FRAP. If the Engineer has documentation of the quality of the FRAP aggregate, the Contractor shall use the assigned quality provided by the Engineer.

If the quality is not known, the quality shall be determined as follows. Fractionated RAP stockpiles containing plus #4 (4.75 mm) sieve coarse aggregate shall have a maximum tonnage of 5,000 tons (4,500 metric tons). The Contractor shall obtain a representative sample witnessed by the Engineer. The sample shall be a minimum of 50 lb (25 kg). The sample shall be extracted according to Illinois Modified AASHTO T 164 by a consultant laboratory prequalified by the Department for the specified testing. The consultant laboratory shall submit the test results along with the recovered aggregate to the District Office. The cost for this testing shall be paid by the Contractor. The District will forward the sample to the Central Bureau of Materials Aggregate Lab for MicroDeval Testing, according to ITP 327. A maximum loss of 15.0 percent will be applied for all HMA applications. The fine aggregate portion of the fractionated RAP shall not be used in any HMA mixtures that require a minimum of "B" quality aggregate or better, until the coarse aggregate fraction has been determined to be acceptable thru a MicroDeval Testing.

1031.06 Use of FRAP and/or RAS in HMA. The use of FRAP and/or RAS shall be the Contractor's option when constructing HMA in all contracts.

- (a) FRAP. The use of FRAP in HMA shall be as follows.
- (1) Coarse Aggregate Size (after extraction). The coarse aggregate in all FRAP shall be equal to or less than the nominal maximum size requirement for the HMA mixture to be produced.
 - (2) Steel Slag Stockpiles. FRAP stockpiles containing steel slag or other expansive material, as determined by the Department, shall be homogeneous and will be approved for use in HMA (High ESAL and Low ESAL) mixtures regardless of lift or mix type.
 - (3) Use in HMA Surface Mixtures (High and Low ESAL). FRAP stockpiles for use in HMA surface mixtures (High and Low ESAL) shall have coarse aggregate that is Class B quality or better. FRAP shall be considered equivalent to limestone for frictional considerations unless produced/screened to minus 3/8 inch.
 - (4) Use in HMA Binder Mixtures (High and Low ESAL), HMA Base Course, and HMA Base Course Widening. FRAP stockpiles for use in HMA binder mixtures (High and Low ESAL), HMA base course, and HMA base course widening shall be FRAP in which the coarse aggregate is Class C quality or better.
 - (5) Use in Shoulders and Subbase. FRAP stockpiles for use in HMA shoulders and stabilized subbase (HMA) shall be FRAP, Restricted FRAP, conglomerate, or conglomerate DQ.
- (b) RAS. RAS meeting Type 1 or Type 2 requirements will be permitted in all HMA applications as specified herein.
- (c) FRAP and/or RAS Usage Limits. Type 1 or Type 2 RAS may be used alone or in conjunction with FRAP in HMA mixtures up to a maximum of 5.0 percent by weight of the total mix.

When FRAP is used alone or FRAP is used in conjunction with RAS, the percent of virgin asphalt binder replacement (ABR) shall not exceed the amounts listed below for a given N Design.

Maximum Asphalt Binder Replacement (ABR) for FRAP with RAS Combination

HMA Mixtures <small>1/ 2/ 4/</small>	Maximum % ABR			
	Ndesign	Binder ^{5/}	Surface ^{5/}	Polymer Modified ^{3/}
30L		50	40	30
50		40	35	30
70		40	30	30
90		40	30	30
SMA				30
IL-4.75				40

1/ For Low ESAL HMA shoulder and stabilized subbase, the percent asphalt binder replacement shall not exceed 50 % of the total asphalt binder in the mixture.

2/ When the binder replacement exceeds 15 % for all mixes, except for SMA and IL-4.75, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 % binder replacement using a virgin asphalt binder grade of PG64-22 will be reduced to a PG58-28). When constructing full depth HMA and the ABR is less than 15 %, the required virgin asphalt binder grade shall be PG64-28.

3/ When the ABR for SMA or IL-4.75 is 15 % or less, the required virgin asphalt binder shall be SBS PG76-22 and the elastic recovery shall be a minimum of 80. When the ABR for SMA or IL-4.75 exceeds 15%, the virgin asphalt binder grade shall be SBS PG70-28 and the elastic recovery shall be a minimum of 80.

4/ When FRAP or RAS is used alone, the maximum percent asphalt binder replacement designated on the table shall be reduced by 10 %.

5/ When the mix has Illinois Flexibility Index Test (I-FIT) requirements, the maximum percent asphalt binder replacement designated on the table may be increased by 5%.

1031.07 HMA Mix Designs. At the Contractor's option, HMA mixtures may be constructed utilizing FRAP and/or RAS material meeting the detailed requirements specified herein.

(a) FRAP and/or RAS. FRAP and /or RAS mix designs shall be submitted for verification. If additional FRAP or RAS stockpiles are tested and found to be within tolerance, as defined under "Evaluation of Tests" herein, and meet all requirements herein, the additional FRAP or RAS stockpiles may be used in the original design at the percent previously verified.

(b) RAS. Type 1 and Type 2 RAS are not interchangeable in a mix design.

The RAP, FRAP and RAS stone specific gravities (G_{sb}) shall be according to the “Determination of Aggregate Bulk (Dry) Specific Gravity (G_{sb}) of Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)” procedure in the Department’s Manual of Test Procedures for Materials.

1031.08 HMA Production. HMA production utilizing FRAP and/or RAS shall be as follows.

A scalping screen, gator, crushing unit, or comparable sizing device approved by the Engineer shall be used in the RAS and FRAP feed system to remove or reduce oversized and agglomerated material.

If during mix production, corrective actions fail to maintain FRAP, RAS or QC/QA test results within control tolerances or the requirements listed herein, the Contractor shall cease production of the mixture containing FRAP or RAS and conduct an investigation that may require a new mix design.

- (a) FRAP. The coarse aggregate in all FRAP used shall be equal to or less than the nominal maximum size requirement for the HMA mixture being produced.
- (b) RAS. RAS shall be incorporated into the HMA mixture either by a separate weight depletion system or by using the RAP weigh belt. Either feed system shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes. The portion of RAS shall be controlled accurately to within ± 0.5 percent of the amount of RAS utilized. When using the weight depletion system, flow indicators or sensing devices shall be provided and interlocked with the plant controls such that the mixture production is halted when RAS flow is interrupted.
- (c) HMA Plant Requirements. HMA plants utilizing FRAP and/or RAS shall be capable of automatically recording and printing the following information.

(1) Dryer Drum Plants.

- a. Date, month, year, and time to the nearest minute for each print.
- b. HMA mix number assigned by the Department.
- c. Accumulated weight of dry aggregate (combined or individual) in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).
- d. Accumulated dry weight of RAS and FRAP in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).
- e. Accumulated mineral filler in revolutions, tons (metric tons), etc. to the nearest 0.1 unit.

- f. Accumulated asphalt binder in gallons (liters), tons (metric tons), etc. to the nearest 0.1 unit.
 - g. Residual asphalt binder in the RAS and FRAP material as a percent of the total mix to the nearest 0.1 percent.
 - h. Aggregate RAS and FRAP moisture compensators in percent as set on the control panel. (Required when accumulated or individual aggregate and RAS and FRAP are printed in wet condition.)
 - i. When producing mixtures with FRAP and/or RAS, a positive dust control system shall be utilized.
 - j. Accumulated mixture tonnage.
 - k. Dust Removed (accumulated to the nearest 0.1 ton (0.1 metric ton))
- (2) Batch Plants.
- a. Date, month, year, and time to the nearest minute for each print.
 - b. HMA mix number assigned by the Department.
 - c. Individual virgin aggregate hot bin batch weights to the nearest pound (kilogram).
 - d. Mineral filler weight to the nearest pound (kilogram).
 - e. RAS and FRAP weight to the nearest pound (kilogram).
 - f. Virgin asphalt binder weight to the nearest pound (kilogram).
 - g. Residual asphalt binder in the RAS and FRAP material as a percent of the total mix to the nearest 0.1 percent.

The printouts shall be maintained in a file at the plant for a minimum of one year or as directed by the Engineer and shall be made available upon request. The printing system will be inspected by the Engineer prior to production and verified at the beginning of each construction season thereafter.

1031.09 RAP in Aggregate Surface Course and Aggregate Wedge Shoulders, Type B.

The use of RAP in aggregate surface course and aggregate shoulders shall be as follows.

- (a) Stockpiles and Testing. RAP stockpiles may be any of those listed in Article 1031.02, except “Non-Quality” and “FRAP”. The testing requirements of Article 1031.03 shall not apply. RAP used shall be according to the current Central Bureau of Materials Policy Memorandum, “Reclaimed Asphalt Pavement (RAP) for Aggregate Applications”.
- (b) Gradation. The RAP material shall meet the gradation requirements for CA 6 according to Article 1004.01(c), except the requirements for the minus No. 200 (75 µm) sieve shall not apply. The sample for the RAP material shall be air dried to constant weight prior to being tested for gradation.”

COARSE AGGREGATE FOR BACKFILL, TRENCH BACKFILL AND BEDDING (D-1)

Effective: November 1, 2011

Revised: November 1, 2013

This work shall be according to Section 1004.05 of the Standard Specifications except for the following:

Reclaimed Asphalt Pavement (RAP) maybe blended with gravel, crushed gravel, crushed stone crushed concrete, crushed slag, chats, crushed sand stone or wet bottom boiler slag. The RAP used shall be according to the current Bureau of Materials and Physical Research Policy Memorandum, “Reclaimed Asphalt Pavement (RAP) for Aggregate Applications”. The RAP shall be uniformly graded and shall pass the 1.0 in. (25 mm) screen. When RAP is blended with any of the coarse aggregate listed above, the blending shall be done mechanically with calibrated feeders. The feeders shall have an accuracy of ± 2.0 percent of the actual quantity of material delivered. The final blended product shall not contain more than 40 percent by weight RAP.

The coarse aggregate listed above shall meet CA 6 and CA 10 gradations prior to being blended with the processed and uniformly graded RAP. Gradation deleterious count shall not exceed 10% of total RAP and 5% of other by total weight.

FRICITION AGGREGATE (D-1)

Effective: January 1, 2011
 Revised: November 1, 2019

Revise Article 1004.03(a) of the Standard Specifications to read:

1004.03 Coarse Aggregate for Hot-Mix Asphalt (HMA). The aggregate shall be according to Article 1004.01 and the following.

(a) Description. The coarse aggregate for HMA shall be according to the following table.

Use	Mixture	Aggregates Allowed
Class A	Seal or Cover	<u>Allowed Alone or in Combination</u> ^{5/} : Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag Crushed Concrete
HMA Low ESAL	Stabilized Subbase Shoulders	or <u>Allowed Alone or in Combination</u> ^{5/} : Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag ^{1/} Crushed Concrete
HMA High ESAL Low ESAL	Binder IL-19.0 or IL-19.0L SMA Binder	<u>Allowed Alone or in Combination</u> ^{5/ 6/} : Crushed Gravel Carbonate Crushed Stone ^{2/} Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Concrete ^{3/}

Use	Mixture	Aggregates Allowed	
HMA High ESAL Low ESAL	C Surface and Binder IL-9.5 or IL-9.5L SMA Ndesign 50 Surface	<u>Allowed Alone or in Combination</u> ^{5/} :	
		Crushed Gravel Carbonate Crushed Stone ^{2/} Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag ^{4/} Crushed Concrete ^{3/}	
HMA High ESAL	D Surface and Binder IL-9.5 SMA Ndesign 50 Surface	<u>Allowed Alone or in Combination</u> ^{5/} :	
		Crushed Gravel Carbonate Crushed Stone (other than Limestone) ^{2/} Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag ^{4/} Crushed Concrete ^{3/}	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>
		25% Limestone	Dolomite
		50% Limestone	Any Mixture D aggregate other than Dolomite
		75% Limestone	Crushed Slag (ACBF) or Crushed Sandstone
HMA High ESAL	E Surface IL-9.5 SMA Ndesign 80 Surface	<u>Allowed Alone or in Combination</u> ^{5/ 6/} :	
		Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag No Limestone.	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>
	50% Dolomite ^{2/}	Any Mixture E aggregate	

Use	Mixture	Aggregates Allowed	
		75% Dolomite ^{2/}	Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone
		75% Crushed Gravel ^{2/} or Crushed Concrete ^{3/}	Crushed Sandstone, Crystalline Crushed Stone, Crushed Slag (ACBF), or Crushed Steel Slag
HMA High ESAL	F Surface IL-9.5 SMA Ndesign 80 Surface	<u>Allowed Alone or in Combination</u> ^{5/ 6/} :	
		Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag No Limestone.	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>
		50% Crushed Gravel ^{2/} , Crushed Concrete ^{3/} , or Dolomite ^{2/}	Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone

- 1/ Crushed steel slag allowed in shoulder surface only.
- 2/ Carbonate crushed stone (limestone) and/or crushed gravel shall not be used in SMA Ndesign 80. In SMA Ndesign 50, carbonate crushed stone shall not be blended with any of the other aggregates allowed alone in Ndesign 50 SMA binder or Ndesign 50 SMA surface.
- 3/ Crushed concrete will not be permitted in SMA mixes.
- 4/ Crushed steel slag shall not be used as leveling binder.
- 5/ When combinations of aggregates are used, the blend percent measurements shall be by volume.”
- 6/ Combining different types of aggregate will not be permitted in SMA Ndesign 80.”

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (PROJECT SPECIFIC)

Description. This work shall consist of the removal and disposal of regulated substances according to Section 669 of the Standard Specifications as revised below.

Contract Specific Sites. The excavated soil and groundwater within the areas listed below shall be managed as either “uncontaminated soil”, hazardous waste, special waste or non-special waste. For stationing, the lateral distance is measured from centerline and the farthest distance is the offset distance or construction limit, whichever is less.

Site 3696-2 (2790V-2): Agricultural Land, 6500 – 6700 Blocks of S. Grant Highway, Marengo, McHenry County

- Station 230+00 to Station 231+00 (CL US Route 20), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameters: Lead and Manganese.
- Station 400+00 to Station 401+75 (CL W. Union Road), 0 to 40 feet LT and Station 224+65 to Station 225+80 (CL US Route 20), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameters: Lead and Manganese.
- Station 225+80 to Station 227+00 (CL US Route 20), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(1). COC sampling parameters: Lead and Manganese.

Site 3696-3 (2790V-3): Farmstead, 19412 E. Grant Highway, Marengo, McHenry County

- Station 231+00 to Station 231+75 (CL US Route 20), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(1). COC sampling parameter: Lead.

Site 3696-4 (2790V-4): Residence, 19324 E. Grant Highway, Marengo, McHenry County

- Station 227+35 to Station 228+45 (CL US Route 20), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(3). COC sampling parameters: Benzo(a)pyrene and Manganese.
- Station 228+45 to Station 231+00 (CL US Route 20), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(1). COC sampling parameters: Benzo(a)pyrene, Lead, and Manganese.

Site 3696-5 (2790V-5): Franks, Gerkin, and McKenna, 19333 E. Grant Highway, Marengo, McHenry County

- Station 227+50 to Station 230+00 (CL US Route 20), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-6 (2790V-6): Pondview Building, 19323 E. Grant Highway, Marengo, McHenry County

- Station 224+80 to Station 227+15 (CL US Route 20), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-7: Tributary to South Branch of Kishwaukee River, 19300 Block of E. Grant Highway, Marengo, McHenry County

- Station 227+15 to Station 227+50 (CL US Route 20), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.
- Station 227+00 to Station 227+35 (CL US Route 20), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(3). COC sampling parameters: Benzo(a)pyrene and Manganese.

Site 3696-8 (2790V-7): 2 Sisters Antique Barn, 6617 S. Grant Highway, Marengo, McHenry County

- Station 220+00 to Station 224+80 (CL US Route 20), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-9 (2790V-8): Residences, 19207 – 19217 W. Union Road, Marengo, McHenry County

- Station 219+00 to Station 220+55 (CL US Route 20), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(3). COC sampling parameter: Benzo(a)pyrene.
- Station 221+55 to Station 222+50 (CL US Route 20), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameters: Lead and Manganese.
- Station 223+50 to Station 224+65 (CL US Route 20), 0 to 50 feet RT and Station 400+00 to Station 401+75 (CL W. Union Road), 0 to 45 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-12 (2790V-13): Vacant Land, 7500 Block of S. Grant Highway, Coral, McHenry County

- Station 167+20 to Station 169+70 (CL US Route 20), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(3). COC sampling parameters: Benzo(a)pyrene and Manganese.

Site 3696-15 (2790V-16): Residence, 7524 S. Grant Highway, Coral, McHenry County

- Station 166+60 to Station 167+70 (CL US Route 20), 0 to 40 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(1). COC sampling parameters: Lead, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene and Manganese.

Site 3696-16 (2790V-17): Residence, 7604 S. Grant Highway, Coral, McHenry County

- Station 163+30 to Station 164+30 (CL US Route 20), 0 to 40 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(3). COC sampling parameter: Benzo(a)pyrene and Manganese.
- Station 164+30 to Station 165+30 (CL US Route 20), 0 to 40 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(5). COC sampling parameters: Lead and Manganese.
- Station 165+30 to Station 166+60 (CL US Route 20), 0 to 40 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(1). COC sampling parameters: Lead and Manganese.

Site 3696-17 (2790V-18): Vacant Land, 7500 Block of S. Grant Highway, Coral, McHenry County

- Station 164+04 to Station 165+35 (CL US Route 20), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-18 (2790V-20): Vacant Land, 7613 S. Grant Highway, Coral, McHenry County

- Station 162+35 to Station 164+05 (CL US Route 20), 0 to 40 feet LT and Station 298+35 to Station 300+00 (Coral Road), 0 to 35 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameters: Lead and Manganese.

Site 3696-19 (2790V-24): Vacant Land, 7616 S. Grant Highway, Coral, McHenry County

- Station 300+80 to Station 301+70 (CL Coral Road), 0 to 30 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(3). COC sampling parameters: Benzo(a)pyrene, Lead and Manganese.
- Station 301+70 to Station 303+10 (CL Coral Road), 0 to 30 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameters: Lead and Manganese.

Site 3696-20 (2790V-23): ROW, 7700 Block of S. Grant Highway, Coral, McHenry County

- Station 161+60 to Station 162+05 (CL US Route 20), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(3). COC sampling parameter: Benzo(a)pyrene.
- Station 162+05 to Station 162+35 (CL US Route 20), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.
- Station 161+60 to Station 162+35 (CL US Route 20), 0 to 40 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-21 (2790V-22): Grizzly's Pumpkins Coral Farm, 7701 S. Grant Highway, Coral, McHenry County

- Station 160+00 to Station 160+95 (CL US Route 20), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.
- Station 160+95 to Station 161+60 (CL US Route 20), 0 to 40 feet LT and Station 299+45 to Station 300+00 (Coral Road), 0 to 30 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(3). COC sampling parameter: Benzo(a)pyrene.
- Station 298+45 to Station 299+45 (CL Coral Road), 0 to 30 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-22 (2790V-25): Grizzly's, 7702 S. Grant Highway, Coral, McHenry County

- Station 158+35 to Station 159+40 (CL US Route 20), 0 to 40 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(3). COC sampling parameter: Benzo(a)pyrene.
- Station 159+40 to Station 161+60 (CL US Route 20), 0 to 40 feet RT and Station 300+00 to Station 300+85 (Coral Road), 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameters: Lead and Manganese.
- Station 300+40 to Station 300+80 (CL Coral Road), 0 to 60 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.
- Station 301+80 to Station 303+15 (CL Coral Road), 0 to 35 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-23 (2790V-19): Agricultural Land, 18700 – 19000 Blocks of E. and W. Coral Road, Coral, McHenry County

- Station 155+60 to Station 157+00 (CL US Route 20), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(3). COC sampling parameter: Benzo(a)pyrene.
- Station 157+00 to Station 160+00 (CL US Route 20), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(1). COC sampling parameters: Lead, Benzo(a)pyrene, and Manganese.
- Station 155+60 to Station 156+95 (CL US Route 20), 0 to 40 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(3). COC sampling parameters: Lead, Benzo(a)pyrene, and Manganese.
- Station 156+95 to Station 158+35 (CL US Route 20), 0 to 40 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-24 (2956V-2 [partial]): Agricultural Land, 8100 Block of S. Grant Highway, Coral, McHenry County

- Station 129+15 to Station 131+00 (CL US Route 20), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-25 (2956V-3): Remke's Garage, 8122 S. Grant Highway, Coral, McHenry County

- Station 127+70 to Station 128+70 (CL US Route 20), 0 to 40 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-26 (2956V-4 partial): Residence, 8119 S. Grant Highway, Coral, McHenry County

- Station 127+50 to Station 129+15 (CL US Route 20), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-27 (2956V-4 partial): Farmstead, 8215 S. Grant Highway, Coral, McHenry County

- Station 125+00 to Station 127+50 (CL US Route 20), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-28 (2956V-5, 2956V-8 partial): Residence, 8214 S. Grant Highway, Coral, McHenry County

- Station 120+40 to Station 121+70 (CL US Route 20), 0 to 55 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(3). COC sampling parameters: Benzo(a)pyrene and Manganese.
- Station 122+80 to Station 123+70 (CL US Route 20), 0 to 55 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(1). COC sampling parameters: Lead, Benzo(a)pyrene, and Manganese.
- Station 123+70 to Station 125+70 (CL US Route 20), 0 to 40 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-29 (2956V-6): Vacant Land, 8200 Block of S. Grant Highway, Coral, McHenry County

- Station 117+85 to Station 121+45 (CL US Route 20), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.
- Station 122+80 to Station 125+00 (CL US Route 20), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameters: Lead and Manganese.

Site 3696-32 (2273V-1, 2956V-9 partial): Vacant Land, 8300 Block of S. Grant Highway, Coral, McHenry County

- Station 109+65 to Station 110+80 (CL US Route 20), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(1). COC sampling parameter: Manganese.
- Station 113+85 to Station 114+90 (CL US Route 20), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-33 (2273V-2 partial, 2956V-10): Agricultural Land, 8300 – 8800 Blocks of S. Grant Highway, Marengo, McHenry County

- Station 192+50 to Station 193+20 (CL Beck Road), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.
- Station 91+55 to Station 93+00 (CL US Route 20), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.
- Station 95+00 to Station 96+25 (CL US Route 20), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Lead.
- Station 96+25, 0 to 10 feet LT and 0 to 150 feet RT, to Station 98+90, 0 to 80 feet LT and 0 to 150 feet RT (CL US Route 20). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Lead and Manganese.
- Station 99+00, 80 to 140 LT, to Station 100+05, 80 to 190 feet LT (CL US Route 20). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.
- Station 201+50, 0 to 55 feet LT and 0 to 70 feet RT, to Station 202+60, 0 to 40 feet LT and 0 to 70 feet RT (CL Marengo Road). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.
- Station 204+00, 0 to 20 feet LT and 0 to 45 feet RT, to Station 205+65, 0 to 45 feet RT (CL Marengo Road). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.
- Station 205+65 to Station 208+05, 0 to 45 feet RT (CL Marengo Road). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(3). COC sampling parameters: Benzo(a)pyrene and Manganese.
- Station 301+00, 0 to 55 RT and 0 to 70 LT, to Station 303+70, 0 to 50 feet LT (CL South Union Road). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.
- Station 104+15, 0 to 60 feet LT and 0 to 55 feet RT, to Station 108+60, 0 to 15 feet LT and 0 to 55 feet RT (CL US Route 20). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

- Station 109+95 to Station 111+45, 0 to 55 feet RT (CL US Route 20). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.
- Station 112+95 to Station 114+20, 0 to 55 feet RT (CL US Route 20). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.
- Station 115+20 to Station 116+45, 0 to 55 feet RT (CL US Route 20). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-34 (2273V-9): Roland Machinery Co., 18210 Beck Road, Marengo, McHenry County

- Station 1301+50, 60 to 120 feet LT, to Station 1302+60, 50 to 105 feet LT (CL US Route 20 Runaround). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(1). COC sampling parameter: Manganese.
- Station 1306+60 to Station 1309+65, 0 to 50 feet LT (CL US Route 20 Runaround). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.
- Station 193+60 to Station 194+60, 0 to 50 feet LT (CL Beck Road). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). COC sampling parameter: Manganese.
- Station 194+60 to Station 195+70, 5 to 50 feet LT (CL Beck Road). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). COC sampling parameter: Lead.
- Station 195+70 to Station 196+60, 10 to 50 feet LT (CL Beck Road). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). COC sampling parameter: Manganese.
- Station 197+70 to Station 198+40, 10 to 50 feet LT (CL Beck Road). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). COC sampling parameter: Manganese.

Site 3696-35 (2273V-6): Commercial Buildings, 18250 Beck Road, Marengo, Henry County

- Station 192+50 to Station 193+60 (CL Beck Road), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-37 (2273V-8): Farmstead, 18119 Beck Road, Marengo, McHenry County

- Station 194+00 to Station 194+85 (CL Beck Road), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-38: Row, 8500 Block of S. Grant Highway, Marengo, McHenry County

- Station 100+00 to Station 100+35 (CL US Route 20), 0 to 150 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-39 (2273V-10): Vacant Land, 8524 S. Grant Highway, Marengo, McHenry County

- Station 100+35, 0 to 150 feet LT and 0 to 60 feet RT, to Station 102+20, 30 to 110 feet LT and 25 to 200 RT (CL US Route 20). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.
- Station 102+20, 30 to 110 feet LT and 25 to 60 RT, to Station 103+00, 20 to 90 feet LT and 0 to 60 RT (CL US Route 20). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-40 (2273V-11) (Vacant Land, 8600 Block of S. Union Road, Marengo, McHenry County

- Station 99+00, 0 to 40 feet RT and 0 to 80 LT, to Station 100+05, 0 to 110 feet LT and 0 to 30 feet RT (CL US Route 20). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-41 (2273V-4): Commercial Buildings, 8512 S. Union Road, Union, McHenry County

- Station 303+30 to Station 305+10 (CL South Union Road), 0 to 30 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameters: Lead and Manganese.
- Station 205+00 to Station 207+40 (CL Marengo Road), 0 to 40 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-42 (2273V-12): Residence, 8518 S. Union Road, Union, McHenry County

- Station 301+00, 55 to 100 RT, to Station 303+30, 0 to 30 feet RT (CL Union Road). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.
- Station 203+10, 30 to 65 LT, to Station 204+00, 20 to 50 feet LT (CL Marengo Road). The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Site 3696-43 (2273V-13): Farmstead, 17912 Marengo Road, Union, McHenry County

- Station 207+40 to Station 210+25 (CL Marengo Road), 0 to 35 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05 (a)(2). COC sampling parameter: Manganese.

Work Zones

Three distinct OSHA HAZWOPER work zones (exclusion, decontamination, and support) shall apply to projects adjacent to or within sites with documented leaking underground storage tank (LUST) incidents, or sites under management in accordance with the requirements of the Site Remediation Program (SRP), Resource Conservation and Recovery Act (RCRA), or Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), or as deemed necessary. For this project, the work zones apply for the following ISGS PESA Sites:

None

Additional information on the above sites collected during the Phase I Engineering process is available through the District's Environmental Studies Unit (DESU).

GRADING AND SHAPING SHOULDERS (D-1)

Effective: December 28, 2001

Revised: January 1, 2007

Description. This work consists of regrading the existing aggregate shoulder high areas before a new layer of stone is laid for the proposed Aggregate Shoulder.

Construction Requirements. Applicable portions of Sections 202 and 481 shall apply. The existing aggregate shoulder shall be redistributed and regraded to fill any low spots and compacted in a manner approved by the Engineer.

Basis of Payment. This work will be paid for at the contract unit price per unit (equivalent to 100 linear feet) for GRADING AND SHAPING SHOULDERS

EMBANKMENT I

Effective: March 1, 2011

Revised: November 1, 2013

Description. This work shall be according to Section 205 of the Standard Specifications except for the following.

Material. All material shall be approved by the District Geotechnical Engineer. The proposed material must meet the following requirements.

- a. The laboratory Standard Dry Density shall be a minimum of 90 lb/cu ft (1450 kg/cu m) when determined according to AASHTO T 99 (Method C).
- b. The organic content shall be less than ten percent determined according to AASHTO T 194 (Wet Combustion).
- c. Soils which demonstrate the following properties shall be restricted to the interior of the embankment and shall be covered on both the sides and top of the embankment by a minimum of 3 ft (900 mm) of soil not considered detrimental in terms of erosion potential or excess volume change.
 - 1) A grain size distribution with less than 35 percent passing the number 75 um (#200) sieve.
 - 2) A plasticity index (PI) of less than 12.
 - 3) A liquid limit (LL) in excess of 50.
- d. Reclaimed asphalt shall not be used within the ground water table or as a fill if ground water is present.
- e. The RAP used shall be according to the current Bureau of Materials and Physical Research Policy Memorandum, "Reclaimed Asphalt Pavement (RAP) for Aggregate Applications". Gradation deleterious count shall not exceed 10% of total RAP and 5% of other by total weight.

CONSTRUCTION REQUIREMENTS

Samples. Embankment material shall be sampled, tested, and approved before use. The contractor shall identify embankment sources, and provide equipment as the Engineer requires, for the collection of samples from those sources. Samples will be furnished to the Geotechnical Engineer a minimum of three weeks prior to use in order that laboratory tests for approval and compaction can be performed. Embankment material placement cannot begin until tests are completed and approval given.

Placing Material. In addition to Article 202.03, broken concrete, reclaimed asphalt with no expansive aggregate, or uncontaminated dirt and sand generated from construction or demolition activities shall be placed in 6 inches (150 mm) lifts and disked with the underlying lift until a uniform homogenous material is formed. This process also applies to the overlaying lifts. The disk must have a minimum blade diameter of 24 inches (600 mm).

When embankments are to be constructed on hillsides or existing slopes that are steeper than 3H:1V, steps shall be keyed into the existing slope by stepping and benching as shown in the plans or as directed by the engineer.

Compaction. Soils classification for moisture content control will be determined by the Soils Inspector using visual field examination techniques and the IDH Textural Classification Chart.

When tested for density in place each lift shall have a maximum moisture content as follows.

- a) A maximum of 110 percent of the optimum moisture for all forms of clay soils.
- b) A maximum of 105 percent of the optimum moisture for all forms of clay loam soils.

Stability. The requirement for embankment stability in Article 205.04 will be measured with a Dynamic Cone Penetrometer (DCP) according to the test method in the IDOT Geotechnical Manual. The penetration rate must be equal or less than 1.5 inches (38 mm) per blow.

Basis of Payment. This work will not be paid separately but will be considered as included in the various items of excavation.

ROCK FILL

Description: This work shall consist of furnishing, transporting and placing rock fill for ground stabilization.

Material: The material shall meet Quality Designation "B" as required in Article 1005.01 of the Standard Specifications for Road and Bridge Construction and may be shot rock or primary crusher run. It shall not contain objectionable quantities of dirt, sand, clay, rock fines, RAP, wood or brick. The material shall be open graded CA 1, CA 3, CA 5, or CA 7 gradation.

Method of Measurement: Rock fill will be measured for payment in place and the volume computed to the nearest cubic yard, based on the actual lengths, widths, and depths.

Basis of Payment: This work will be paid for at the contract unit price per cubic yard of ROCK FILL.

TEMPORARY INFORMATION SIGNING

Effective: November 13, 1996

Revised: January 2, 2007

Description.

This work shall consist of furnishing, installing, maintaining, relocating for various states of construction and eventually removing temporary informational signs. Included in this item may be ground mount signs, skid mount signs, truss mount signs, bridge mount signs, and overlay sign panels which cover portions of existing signs.

Materials.

Materials shall be according to the following Articles of Section 1000 - Materials:

	<u>Item</u>	<u>Article/Section</u>
a.)	Sign Base (Notes 1 & 2)	1090
b.)	Sign Face (Note 3)	1091
c.)	Sign Legends	1092
d.)	Sign Supports	1093
e.)	Overlay Panels (Note 4)	1090.02

Note 1. The Contractor may use 5/8 inch (16 mm) instead of 3/4 inch (19 mm) thick plywood.

Note 2. Type A sheeting can be used on the plywood base.

Note 3. All sign faces shall be Type A except all orange signs shall meet the requirements of Article 1106.01.

Note 4. The overlay panels shall be 0.08 inch (2 mm) thick.

GENERAL CONSTRUCTION REQUIREMENTS

Installation.

The sign sizes and legend sizes shall be verified by the Contractor prior to fabrication.

Signs which are placed along the roadway and/or within the construction zone shall be installed according to the requirements of Article 701.14 and Article 720.04. The signs shall be 7 ft. (2.1 m) above the near edge of the pavement and shall be a minimum of 2 ft. (600 mm) beyond the edge of the paved shoulder. A minimum of two (2) posts shall be used.

The attachment of temporary signs to existing sign structures or sign panels shall be approved by the Engineer. Any damage to the existing signs due to the Contractor's operations shall be repaired or signs replaced, as determined by the Engineer, at the Contractor's expense.

Signs which are placed on overhead bridge structures shall be fastened to the handrail with stainless steel bands. These signs shall rest on the concrete parapet where possible. The Contractor shall furnish mounting details for approval by the Engineer.

Method of Measurement.

This work shall be measured for payment in square feet (square meters) edge to edge (horizontally and vertically).

All hardware, posts or skids, supports, bases for ground mounted signs, connections, which are required for mounting these signs will be included as part of this pay item.

Basis of Payment.

This work shall be paid for at the contract unit price per square foot (square meter) for TEMPORARY INFORMATION SIGNING.

TELESCOPING STEEL SIGN SUPPORT (SPECIAL)

Description: This work shall consist of furnishing and installing telescoping steel sign supports for ground-mounted signs according to the detail shown on the plans and as described herein. This work shall include all telescoping sign posts, signs bases, sign base wedges, and all other materials required to install the telescoping steel sign supports as detailed on the plans. This work will apply to signs mounted in both soil as well as concrete or asphalt surfaces.

Materials: Materials shall be according to the following:

- a) Telescoping Sign Post: The post shall be a square tube formed of 12-gauge steel according to the standard specification for cold rolled carbon steel sheets commercial quality ASTM A 1008 (A 1008M). The post shall be formed to size and, if necessary, shall be welded in such a manner that weld or flash shall not interfere with telescoping. Holes 7/16" (+/- 1/64") will be spaced on 1-inch centers on at least two opposite sides. The holes shall align to accept a 3/8-inch bolt through the post at any location. The post shall have a smooth galvanized finish applied either before or after forming. For all other requirements, refer to Section 1093 of the "Standard Specifications".

Sign Bases:

- a. Soil Installation: 30" bases for breakaway telescoping sign supports shall be model V-Loc, 200-VS3, for use in soft soil and shall be manufactured by TAPCO (Traffic & Parking Control Co., Inc.)
- b. Concrete and Asphalt Installation: Model V-Loc 200-VS1
- b) Sign Base Wedge: Galvanized Steel Wedge SQI for V-Loc post bases.

Method of Measurement: This work will be measured for payment in feet of telescoping steel sign post installed.

Basis of Payment: This work will be paid for at the contract unit price per foot for TELESCOPING STEEL SIGN SUPPORT (SPECIAL). The unit price shall include all equipment, materials, and labor required to install the posts as described and as detailed on the plans.

AGGREGATE SURFACE COURSE FOR TEMPORARY ACCESS

Effective: April 1, 2001

Revised: January 2, 2007

Revise Article 402.10 of the Standard Specifications to read:

"402.10 For Temporary Access. The contractor shall construct and maintain aggregate surface course for temporary access to private entrances, commercial entrances and roads according to Article 402.07 and as directed by the Engineer.

The aggregate surface course shall be constructed to the dimensions and grades specified below, except as modified by the plans or as directed by the Engineer.

- (b) Private Entrance. The minimum width shall be 12 ft. (3.6 m). The minimum compacted thickness shall be 6 in. (150 mm). The maximum grade shall be eight percent, except as required to match the existing grade.
- (a) Commercial Entrance. The minimum width shall be 24 ft. (7.2 m). The minimum compacted thickness shall be 9 in. (230 mm). The maximum grade shall be six percent, except as required to match the existing grade.
- (b) Road. The minimum width shall be 24 ft. (7.2 m). The minimum compacted thickness shall be 9 in. (230 mm). The grade and elevation shall be the same as the removed pavement, except as required to meet the grade of any new pavement constructed.

Maintaining the temporary access shall include relocating and/or regrading the aggregate surface coarse for any operation that may disturb or remove the temporary access. The same type and gradation of material used to construct the temporary access shall be used to maintain it.

When use of the temporary access is discontinued, the aggregate shall be removed and utilized in the permanent construction or disposed of according to Article 202.03.”

Add the following to Article 402.12 of the Standard Specifications:

“Aggregate surface course for temporary access will be measured for payment as each for every private entrance, commercial entrance or road constructed for the purpose of temporary access. If a residential drive, commercial entrance, or road is to be constructed under multiple stages, the aggregate needed to construct the second or subsequent stages will not be measured for payment but shall be included in the cost per each of the type specified.”

Revise the second paragraph of Article 402.13 of the Standard Specifications to read:

“Aggregate surface course for temporary access will be paid for at the contract unit price per each for TEMPORARY ACCESS (PRIVATE ENTRANCE), TEMPORARY ACCESS (COMMERCIAL ENTRANCE) or TEMPORARY ACCESS (ROAD).

Partial payment of the each amount bid for temporary access, of the type specified, will be paid according to the following schedule:

- (a) Upon construction of the temporary access, sixty percent of the contract unit price per each, of the type constructed, will be paid.
- (b) Subject to the approval of the Engineer for the adequate maintenance and removal of the temporary access, the remaining forty percent of the pay item will be paid upon the permanent removal of the temporary access.”

BOX CULVERT REMOVAL

Description. This work shall be done in accordance with Section 501 of the Standard Specifications except as modified herein.

501.07 Basis of Payment. Add the following to the end of this Article:

“Removal of existing box culverts will be paid for at the contract unit price per foot (meter) for BOX CULVERT REMOVAL.”

The box culvert to be removed at 754+25 RT has an unknown length and connection point. The contractor shall determine the length and connection point in the field.

EROSION CONTROL BLANKET (SPECIAL)

This Special Provision revises Section 251 of the Standard Specifications for Road and Bridge Construction to eliminate the use of Excelsior Blanket for Erosion Control Blanket. This work shall consist of furnishing, transporting, and placing 100 % biodegradable erosion control blanket over seeded areas as detailed on the plans, according to Section 251 except as modified herein.

Delete Article 1081.10(a) Excelsior Blanket.

Delete the first paragraph of Article 1081.10 (b) Knitted Straw Mat and substitute the following:

Knitted Straw Mat. Knitted straw mat shall be a machine-produced mat of 100% clean, weed free agricultural straw. The blanket shall be of consistent thickness with the straw evenly distributed over the entire area of the blanket. The blanket shall be covered on top and bottom sides with a 100% biodegradable woven natural organic fiber netting. No plastic netting will be allowed. The netting shall consist of machine directional strands formed from two intertwined yarns with cross directional strands interwoven through the twisted machine stands that are loose-weave with movable joints, not welded or fixed, to form an approximate 0.50 x 1.0 (1.27 x 2.54 cm) mesh. The blanket shall be sewn together on 1.50 inch (3.81 cm) centers with degradable thread. The blanket shall be manufactured with a colored thread stitched along both outer edges (approximately 2-5 inches (5-12.5cm) from the edge) as an overlap guide for adjacent mats.

Short-term photodegradable erosion control blanket will not be allowed.

Delete Article 1081.10(d) Wire Staples.

Add the following to Article 1081.10 (e) Wood Stakes:

Biodegradable plastic stakes will be allowed. The biodegradable plastic anchor shall be approximately 6 in (15.24 cm) in length. No metal wire stakes will be allowed.

GENERAL REQUIREMENTS FOR WEED CONTROL SPRAYING

Experience:

The Contractor shall have previous experience with the use of weed control chemicals. He/she shall have had at least one (1) season's experience in the use of their chemicals in spraying highway right-of-way or at least three (3) season's experience in their use in farm or custom spraying. The Contractor shall observe and comply with all sections of the Illinois Custom Spray Law, including licensing.

Equipment:

The equipment used shall consist of a vehicle-mounted tank, pump, spray bar and handgun, plus any other accessories needed to complete the specified work. Spraying shall be done through multiple low-pressure flooding or broad jet nozzles mounted on spray bars operated not more than 36" above the ground. If different sizes or types of nozzles are used to make up the spray pattern, the pressure, sizes and capacities shall be adjusted to provide a uniform rate of application for each segment of the spray pattern. Hand spray guns may be used for spraying areas around traffic control devices, lighting standard and similar inaccessible areas. Maximum speed of the spray vehicle during application of chemical shall be five (5) miles per hour.

Pumps used shall have a volume and pressure capacity range sufficient to deliver the mixture at a pressure to provide the required coverage and to keep the spray pattern full and steady without pulsation or excessive pressure as to cause fogging. Maximum pressure for application shall be 15 PSI. Quick acting shut-off valves and spring-loaded ball check valves shall be provided to stop the spray pattern with a minimum of nozzle drip. In areas where the spray vehicle must traverse the right-of-way, a four-wheel drive vehicle with flotation tires will be required to minimize damage to the ground surface.

Prior to beginning work, the Contractor shall obtain approval from the Engineer of the spraying equipment proposed for completing this work. The proposed equipment shall be in an operational condition and available for inspection by the Engineer at least two (2) weeks prior to the proposed starting time. If requested by the Engineer, the Contractor shall demonstrate the calibration of the equipment.

The equipment must provide consistently uniform coverage and keep the spray mixture sufficiently agitated or the work will be suspended until the equipment is repaired or replaced.

Spraying Areas:

This work includes roadsides and other types of right-of-way of various widths and gradients. Spray areas often extend more than thirty (30) feet from the edge of the roadway, requiring both spray bar and hand gun applications.

When the description of work requires weed control of a stated species, such as teasel, the chemical shall be applied only to locations where the stated species is present. When the description of work requires general weed control within a bed or area, such as broadleaf weed control in turf, then the chemical shall be applied to the entire bed or area.

Exclusion of Spraying Areas:

Areas where weed control spraying is inappropriate or detrimental to the environment, desirable planting, or private property shall be excluded from the spray area.

Spraying will not be permitted over any drainage swales or waterways, or other areas where the chemical label prohibits application. Spraying within 150 feet of a natural area or site where endangered or threatened species occur.

Responsibility for Prevention of Damage to Private Property:

The Contractor shall, at all times, exercise extreme caution to prevent damage to residential plantings, flower or vegetable gardens, vegetable crops, farm crops, orchard or desirable plants adjacent to the roadside.

The Contractor or Department receives a complaint, the Contractor shall contact a complaint within ten (10) days after receiving a claim for damages, either in person or by letter. The Contractor, or his authorized representative, shall make a personal contact with the complainant within twenty (20) days. The Engineer shall also be notified by the Contractor of all claims for damage he received and shall keep the Engineer informed as to the progress in arriving at a settlement for such claims.

Communication with the Engineer:

The Contractor is required to communicate with the Engineer to receive all required approvals in a timely way and to assure that the Engineer can accurately document the work performed.

It shall be the Contractor's responsibility to assure that all chemical containers are opened and added to the spray mixture in the presence of the Engineer.

The Contractor shall obtain approval from the Engineer to proceed with spraying at each location 24 hours prior to the proposed spray operations.

SEEDING, CLASS 4 (SPECIAL)

This work shall consist of Seeding, Class 4 (Special) in areas as shown in the plans or a directed by the Engineer.

All work, materials, and equipment shall conform to Sections 250 and 1081 of the Standard Specifications except as modified herein.

Seeding, Class 4 (Special) seed mixture shall be supplied in separate bags of the three mixture components: Temporary Cover, Permanent Grasses, and Forbs. All native species will be local genotype and verified that original seed collection source will be from a radius of 150 miles from the project site. Fertilizer is not required.

Article 250.07 Seeding Mixtures – Delete sentence 4. Add the following to Table 1 – Seeding Mixtures:

CLASS – TYPE	SEEDS	PURE LIVE SEED LB/ACRE
4 (Special)		
	<u>Native Grass</u>	22.0
	Andropogon gerardii (Big Bluestem)	4.0
	Bouteloua curtipendula (Side-Oats Grama)	5.0
	Elymus canadensis (Canada Wild Rye)	3.0
	Panicum virgatum (Switch Grass)	3.0
	Schizachyrium scoparium (Little Bluestem)	5.0
	Sorghastrum nutans (Indian Grass)	2.0
	<u>Temporary Cover</u>	30.0
	Avena sativa (November 1 to May 31) (Annual Oats)	30.0
	OR	
	Lolium multiflorum (June 1 to October 31) (Annual Rye)	30.0
	<u>Native Forbs</u>	2.75
	Asclepias syriaca (Common Milkweed)	0.25
	Dalea candida (White Prairie Clover)	0.10
	Dalea purpurea (Purple Prairie Clover)	0.10
	Desmodium illinoensis (Illinois Bundleflower)	0.25
	Heliopsis helianthoides (Ox-eye Sunflower)	0.25
	Monarda fistulosa (Bergamot)	0.25
	Penstemon digitalis (Foxglove Beardtongue)	0.25
	Ratibida pinnata (Yellow Coneflower)	0.50
	Rudbeckia hirta (Black-Eyed Susan)	0.50
	Solidago rigida (Stiff Goldenrod)	0.25
	Symphotrichum novae-angliae (New England Aster)	0.25

Notes:

1. The seeding time for this work shall be October 15 to June 1. Seeding done outside of this time frame will not be measured for payment. No seed shall be sown during high winds or when the ground is not in proper condition for seeding, such as when raining or when the ground is covered with snow.
2. Purity and germination tests no older than twelve months of the date of sowing must be submitted to verify all bulk seed required to achieve LB PLS specified.
3. The seedbed shall be prepared and approved by the Engineer prior to seeding. The Contractor shall delineate the perimeter of the seedbed with wooden lathe. The wooden lathe shall remain in place.
4. The Engineer must witness the delivery of seed with original labels attached in the field. Provide to the Engineer the seed labels from the bags in which the seed is delivered in.
5. Temporary cover seed shall be kept separate from the native seed mixture. It shall be mixed on site under the direction of the Engineer.
6. In order to eliminate potential introduction of invasive or exotic species, all equipment used on the planting site shall be free of mud and/or plant material. This includes tires, mower decks, undercarriage, etc.
7. The Temporary cover (Cover Crop) shall be thoroughly mixed with native grass seed mix of each class and seeded using a mechanical seeder that applies the seed uniformly at a depth of 1/4 inch. Second, the native forb seed shall be thoroughly mixed with 2 bushels of moistened horticultural grade vermiculite per acre and uniformly seeded at a depth of 1/8 inch. The seedbed shall be immediately mulched as specified.
8. Within two hours after the seeding and mulching are complete, water shall be applied at a rate of 5 gal/sq yd.
9. The Contractor shall have on hand enough equipment to completely water all seeded areas in two days at the watering rate specified above. The Engineer will make periodic checks of the Contractor's watering equipment to determine its adequacy and operating condition.
10. All watering described shall be done with a spray application. An open-end hose will not be acceptable. The method of watering shall meet the approval of the Engineer.
11. Supplemental Watering: During periods exceeding 26 degree C (80 degree F) or subnormal rainfall (less than 1" of rainfall per week) supplemental watering may be required after the initial watering and prior to acceptance of the work. Supplemental watering shall be performed when directed by the Engineer. Water shall be applied at the rate specified by the Engineer within 24-hour notice.

If specified seed material is unavailable, the Engineer shall approve the substitutes in writing. Adjustments will be made at no cost to the contract. Approval of substitutes shall in no way waive any requirements of the contract.

Article 250.09 – Add

Seeding, Class 4 (Special).

Seeding, watering will not be measured for payment.

Seeding, native forb mix horticultural grade vermiculite will not be measured for payment.

Supplemental watering will be measured for payment as specified in Special Provision for SUPPLEMENTAL WATERING.

Article 250.10 – Add Seeding, Class 4 (Special).

SELECTIVE CLEARING

Description: This work shall consist of extensive removal and disposal of shrubs, brush, debris (including rocks, bottles, etc.) and selected trees up to six (6) inches (150 mm) in diameter. All trees and shrubs to be saved shall be carefully protected as provided by Article 201.05 of the Standard Specifications. Locations for Selective Clearing and vegetation to be cleared or saved shall be designated by the Engineer.

The undesirable trees and brush (Siberian Elm, European Buckhorn, Mulberry, etc.) shall be cut flush with the ground and all stubs or stumps shall be treated with a resprout herbicide approved by the Engineer to prevent regrowth from the stumps. Trees of Tree of Heaven shall not be cut off as specified above, but shall be pulled or grubbed in such a manner as to insure complete removal. Branches on remaining trees shall be pruned off up to 6 feet (2 meters) from the ground.

All selective cleared areas shall be graded, trimmed, smoothed, and finished uniformly to the satisfaction of the Engineer with equipment approved by the Engineer. Disposal of material shall be done in accordance with Article 202.03.

Method of Measurement: Selective Clearing will be measured in units of 1,000 square feet (90 square meters). Areas not meeting the satisfaction of the Engineer shall not be measured for payment. Plan quantities are estimates only. Actual quantities will be measured in place. Agreement to plan quantities will not be allowed.

Basis of Payment: This work will be paid for at the contract unit price per unit for SELECTIVE CLEARING. Payment for Selective Clearing shall include the cost of all minor grading, debris removal and disposal, trimming, pruning, smoothing, finishing, labor, materials, tools and equipment required to complete the work as specified herein and to the satisfaction of the Engineer.

STUMP REMOVAL ONLY

Special attention is called to this item since the Contractor will, in this case, be required to remove stumps only. The trees have previously been removed by others. All excess chips and debris from this operation shall be removed from State right-of-way. This work shall be done in accordance with Section 201 of the Standard Specifications for tree removal, except that stumps are to be removed to a minimum of six (6) inches below the natural surface of the ground.

Basis of Payment: Stump removal shall be paid for at the contract unit price per unit diameter for STUMP REMOVAL ONLY measured as specified herein across the top of the stump. All references to tree removal in the Standard Specifications shall include the item STUMP REMOVAL ONLY.

WEED CONTROL, PRE-EMERGENT GRANULAR HERBICIDE

Description: This work shall consist of spreading a pre-emergent granular herbicide in areas as shown on the plans or as directed by the Engineer. This item will be used in mulched plant beds and mulch rings.

Materials: The pre-emergent granular herbicide shall contain the chemicals Trifluralin 2% active ingredient and Isoxaben with 0.5% active ingredient. The herbicide label shall be submitted to the Engineer for approval at least seventy-two (72) hours prior to application.

Method: The pre-emergent granular herbicide shall be used in accordance with the manufacturer's directions on the package. The granules are to be applied prior to mulching.

Apply the granular herbicide using a drop or rotary-type designed to apply granular herbicide or insecticides. Calibrate application equipment to use according to manufacturer's directions. Check frequently to be sure equipment is working properly and distributing granules uniformly. Do not use spreaders that apply material in narrow concentrated bands. Avoid skips or overlaps as poor weed control or crop injury may occur. More uniform application may be achieved by spreading half of the required amount of product over the area and then applying the remaining half in swaths at right angles to the first. Apply the granular herbicide at the rate of 100 lbs/acre (112 kg/ha) or 2.3 lbs/1000 sq. ft. (11.2 kg/1000 sq. meters).

Method of Measurement: Pre-emergent granular herbicide will be measured in place in Pounds (Kilograms) of Pre-emergent Granular Herbicide applied. Areas treated after mulch placement shall not be measured for payment.

Basis of Payment: This work will be paid for at the contract unit price per pound (kilogram) of WEED CONTROL, PRE-EMERGENT GRANULAR HERBICIDE which price shall include all materials, equipment, and labor necessary to complete the work as specified.

ABANDON EXISTING CULVERT

Description. This work shall consist of the abandonment and filling of an existing concrete box culvert located at approximately Station 226+18 (Existing Station 879+60). The barrel section measures approximately 46 feet in length, and has interior dimensions of 6 feet by 6 feet. Culvert end sections include small concrete headwalls and concrete wingwalls approximately 6 feet in length.

Materials. The interior of the culvert shall be filled with controlled low-strength material in accordance with Sections 593 and 1019 of the Standard Specifications. The openings of the culvert shall either be sealed with Class SI concrete in accordance with Section 1020, or with brick or masonry units in accordance with Article 1042.15 of the Standard Specifications.

Submittals. At least 15 days prior to beginning construction, the contractor shall submit a written work plan for the abandonment of the culvert to the Engineer for approval. This plan shall address the proposed work sequence, including concrete removal, drilling of vent holes and their locations, and any necessary traffic control. The work plan shall be supplemented with sketches as necessary.

Removal. Prior to filling operations, the contractor shall remove and dispose of the existing headwalls, and shall remove and dispose of the existing wingwalls to a depth of at least one foot below the proposed subgrade elevation. The contractor shall also remove and dispose of the existing culvert top slab within the limits of proposed pavement widening on the west side of the roadway. Concrete Removal shall be performed in accordance with the applicable portions of Section 501 of the Standard Specifications.

General. Filling shall begin at the upstream end of the existing culvert to be abandoned. Any vent holes used for introduction of material shall be plugged and filled as soon as possible after daily operations are complete. Culvert abandonment work shall be completed prior to beginning adjacent earthwork and pavement operations.

Method of Measurement. Concrete removal shall be measured for payment in place and the volume calculated in cubic yards.

Basis of Payment. Concrete removal work as described herein will be paid for at the contract unit price per cubic yard for CONCRETE REMOVAL.

All other work as described above and not paid for as Concrete Removal will be paid for at the contract unit price per each for ABANDON EXISTING CULVERT. Traffic control related to this work will not be paid for separately, but shall be included in the unit price per each for ABANDON EXISTING CULVERT.

COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.24 (SPECIAL):

This work shall be done in accordance with Section 606 of the Standard Specifications and the Detail provided in the Plans, except as modified herein.

Basis of Payment.

“This work will be paid for at the contract unit price per foot for COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.24 (SPECIAL).

STORM SEWERS, EQUIVALENT ROUND-SIZE

This work shall be done in accordance with Section 550 of the Standard Specifications except as modified herein.

Description. Revise the following Article to read:

“**550.01 Description.** This work shall consist of constructing storm sewers of the required inside equivalent round-size with rubber gaskets and the necessary fittings.”

550.02 Materials. Add the following sentence to the end of this Article:

“The rubber gasket shall be a rubber ring gasket joint conforming to the requirements of ASTM Designation C443 (latest revision) for Joints for Circular Concrete Sewer and Culvert Pipe, Using Flexible Watertight Rubber Gaskets.”

550.10 Basis of Payment. Revise the first paragraph of this Article to read:

“**550.10 Basis of Payment.** This work will be paid for at the contract unit price per foot for STORM SEWERS, of the class, type, and EQUIVALENT ROUND-SIZE specified.”

EXPLORATION TRENCH, SPECIAL

Description. This work consists of exploratory excavation for an existing water main, water service line, sanitary sewer, sanitary sewer service line, or storm sewer at a location mark more than 2 feet beyond the actual location of the pipe, complete; including excavation, removal and disposal of waste excavated materials, and backfilling with compacted trench backfill materials.

Measurement. This work will be measured for payment in feet perpendicular to the existing pipe to be located and beyond 2 feet of the location marked by the Engineer in the field.

Basis of Payment. This work will be paid for at the contract unit price per foot for EXPLORATION TRENCH, SPECIAL.

DRAINAGE SCUPPERS, DS-12M10

Description. This work shall consist of furnishing and installing drainage scuppers, and all appurtenances, as shown on the structure plans.

Basis of Payment. This work will be paid for at the contract unit price per each for DRAINAGE SCUPPERS, DS-12M10 which price shall include installation and all materials and no additional compensation will be allowed.

TEMPORARY DRAINAGE SYSTEM NO. 1

Description. This work shall consist of furnishing all formwork, material, pipe, structures, equipment and labor to install and remove a temporary drainage system for Stage 1 construction along US Route 20. The contractor is responsible to provide positive drainage and maintain all existing drainage outlets. This design is to be performed by the Contractor. This work shall also include any necessary diversion for the purpose of box culvert replacement.

The temporary drainage system shall remain in place and operate until the final stage of construction which would include final grading.

This work shall include the contractor maintaining conveyance of all flows during construction of the project. When existing drainage facilities are disturbed, the contractor shall provide and maintain temporary outlets and connections for private and public drains, sewers, culverts, and other drainage facilities. The contractor shall provide and maintain a pumping plant, if necessary, and temporary outlet and be prepared at all times to dispose of the water received from these temporary connections until such time that the permanent connections with sewers or culverts are built and in service.

Design. The temporary drainage system shall be designed by the Contractor and approved by the Engineer. The design may include temporary swales, existing storm sewer and drainage structures, temporary connections, temporary structures and pumps.

Construction Requirements: The Contractor shall submit, for approval by the Engineer, details of the temporary drainage system he/she proposes to use, prior to ordering of material and implementation. All dewatering, pumping, formwork, labor, equipment and materials required for this work is included in the price for TEMPORARY DRAINAGE SYSTEM NO. 1.

Method of Measurement: This work shall be measured by the contract lump sum for TEMPORARY DRAINAGE SYSTEM NO. 1 as indicated on the Plans and specified herein.

Basis of Payment. This work will be paid for at the contract lump sum price for TEMPORARY DRAINAGE SYSTEM NO. 1.

TEMPORARY DRAINAGE SYSTEM NO. 2

Description. This work shall consist of furnishing all formwork, material, pipe, structures, equipment and labor to install and remove a temporary drainage system for the Stage 2 construction along US Route 20. The contractor is responsible to provide positive drainage and maintain all existing drainage outlets. This design is to be performed by the Contractor. This work shall also include any necessary diversion for the purpose of box culvert replacement.

The temporary drainage system shall remain in place and operate until the final stage of construction which would include final grading.

This work shall include the contractor maintaining conveyance of all flows during construction of the project. When existing drainage facilities are disturbed, the contractor shall provide and maintain temporary outlets and connections for private and public drains, sewers, culverts, and other drainage facilities. The contractor shall provide and maintain a pumping plant, if necessary, and temporary outlet and be prepared at all times to dispose of the water received from these temporary connections until such time that the permanent connections with sewers or culverts are built and in service.

Design. The temporary drainage system shall be designed by the Contractor and approved by the Engineer. The design may include temporary swales, existing storm sewer and drainage structures, temporary connections, temporary structures and pumps.

Construction Requirements: The Contractor shall submit, for approval by the Engineer, details of the temporary drainage system he/she proposes to use, prior to ordering of material and implementation. All dewatering, pumping, formwork, labor, equipment and materials required for this work is included in the price for TEMPORARY DRAINAGE SYSTEM NO. 2.

Method of Measurement: This work shall be measured by the contract lump sum for TEMPORARY DRAINAGE SYSTEM NO. 2 as indicated on the Plans and specified herein.

Basis of Payment. This work will be paid for at the contract lump sum price for TEMPORARY DRAINAGE SYSTEM NO. 2.

CLASS SI CONCRETE (OUTLET)

Description: This work shall consist of the construction of the concrete outlet in accordance with the detail for OUTLETS FOR CONCRETE CURB AND GUTTER TYPE M-4.24 (M-10.60) as included in the plans.

Method of Measurement: This work shall be measured for payment in place and the volume calculated in cubic yards.

Basis of Payment: The concrete outlet work as described herein will be paid for at the contract unit price per cubic yard for CLASS SI CONCRETE (OUTLET).

COFFERDAM (TYPE 1) (IN-STREAM/WETLAND WORK) (D-1)

Effective: January 1, 2019

Description. This work shall be performed in accordance with Section 502.06 of the Supplemental Specifications and Recurring Special Provisions, except as herein modified. The work shall consist of the preparation of an in-stream/wetland work plan and the installation, maintenance, removal and disposal of the temporary cofferdam(s) to isolate the work area from water within regulated wetlands and Waters of the U.S. (WOUS) in accordance with the authorized U.S. Army Corps of Engineers (USACE) Section 404 Permit and the General Conditions of the current Regional Permit Program.

Materials. Materials shall be in accordance with the USACE Section 404 Permit and General Conditions of the current Regional Permit Program.

Construction Requirements. Construction shall be in accordance with Article 502.06(a) of the Supplemental Specifications and Recurring Special Provisions and in accordance with the authorized USACE Section 404 Permit. For Cofferdam - Type 1, it is anticipated the design will be based on the flow requirement as shown in the plans and per the General Conditions of the current Regional Permit Program.

The Contractor shall be responsible for diverting the water flow from the construction area using a method meeting the approval of the Engineer and in accordance with the authorized USACE Section 404 Permit and General Conditions of the current Regional Permit Program.

This project requires a USACE Section 404 Permit prior to the start of work. All conditions of the Section 404 Permit must be followed. As a condition of the Section 404 Permit, the Contractor will be required to submit an In-Stream/Wetland Work Plan to the Department for approval. The USACE defines and determines in-stream/wetland work within the WOUS.

Guidelines on acceptable In-Stream/Wetland work techniques can be found on the USACE website: <https://www.lrc.usace.army.mil/Missions/Regulatory/Regional-Permit-Program>

Method of Measurement. This work will be measured for payment in units of Each where Each is defined as a plan detailed stage of bridge, culvert or other construction for which a temporary in-stream cofferdam(s) is required. If staged construction is not detailed/specified on the plans, this work will be measured as a total of One Each.

Basis of Payment. This work will be paid for at the contract unit price per each for COFFERDAM (TYPE 1) (IN-STREAM/WETLAND WORK).

GENERAL ELECTRICAL REQUIREMENTS (D1)

Effective: September 1, 2019

This special provision replaces Articles 801.01 – 801.07, 801.09 – 801-16 of the Standard Specifications.

Definition. Codes, standards, and industry specifications cited for electrical work shall be by definition the latest adopted version thereof, unless indicated otherwise.

Materials by definition shall include electrical equipment, fittings, devices, motors, appliances, fixtures, apparatus, all hardware and appurtenances, and the like, used as part of, or in connection with, electrical installation.

Standards of Installation. Materials shall be installed according to the manufacturer's recommendations, the NEC, OSHA, the NESC, and AASHTO's Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

All like materials shall be from the same manufacturer. Listed and labeled materials shall be used whenever possible. The listing shall be according to UL or an approved equivalent.

Safety and Protection. Safety and protection requirements shall be as follows.

Safety. Electrical systems shall not be left in an exposed or otherwise hazardous condition. All electrical boxes, cabinets, pole handholes, etc. which contain wiring, either energized or non-energized, shall be closed or shall have covers in place and be locked when possible, during nonworking hours.

Protection. Electrical raceway or duct openings shall be capped or otherwise sealed from the entrance of water and dirt. Wiring shall be protected from mechanical injury.

Equipment Grounding Conductor. All electrical systems, materials, and appurtenances shall be grounded. Good ground continuity throughout the electrical system shall be assured, even though every detail of the requirements is not specified or shown. Electrical circuits shall have a continuous insulated equipment grounding conductor. When metallic conduit is used, it shall be bonded to the equipment grounding conductor, but shall not be used as the equipment grounding conductor.

Detector loop lead-in circuits, circuits under 50 volts, and runs of fiber optic cable will not require an equipment grounding conductor.

Where connections are made to painted surfaces, the paint shall be scraped to fully expose metal at the connection point. After the connection is completed, the paint system shall be repaired to the satisfaction of the Engineer.

Bonding of all boxes and other metallic enclosures throughout the wiring system to the equipment grounding conductor shall be made using a splice and pigtail connection. Mechanical connectors shall have a serrated washer at the contact surface.

All connections to structural steel or fencing shall be made with exothermic welds. Care shall be taken not to weaken load carrying members. Where connections are made to epoxy coated reinforcing steel, the epoxy coating shall be sufficiently removed to facilitate a mechanical connection. The epoxy coating shall be repaired to the satisfaction of the Engineer. Where connections are made to insulated conductors, the connection shall be wrapped with at least four layers of electrical tape extended 6 in. (150 mm) onto the conductor insulation.

Submittals. At the preconstruction meeting, the Contractor shall submit a written listing of manufacturers for all major electrical and mechanical items. The list of manufacturers shall be binding, except by written request from the Contractor and approval by the Engineer. The request shall include acceptable reasons and documentation for the change.

Major items shall include, but not limited to the following:

Type of Work (discipline)	Item
All Electrical Work	Electric Service Metering Emergency Standby System Transformers Cable Unit Duct Splices Conduit Surge Suppression System
Lighting	Tower Pole Luminaire Foundation Breakaway Device Controllers Control Cabinet and Peripherals
ITS	Controller Cabinet and Peripherals CCTV Cameras Camera Structures Ethernet Switches Detectors Detector Loop Fiber Optic Cable

Within 30 calendar days after contract execution, the Contractor shall submit, for approval, one copy each of the manufacturer's product data (for standard products and components) and detailed shop drawings (for fabricated items). Submittals for the materials for each individual pay item shall be complete in every respect. Submittals which include multiple pay items shall have all submittal material for each item or group of items covered by a particular specification, grouped together and the applicable pay item identified. Various submittals shall, when taken together, form a complete coordinated package. A partial submittal will be returned without review unless prior written permission is obtained from the Engineer.

The submittal shall be properly identified by route, section, county, and contract number.

The Contractor shall have reviewed the submittal material and affixed his/her stamp of approval, with date and signature, for each individual item. In case of subcontractor submittal, both the subcontractor and the Contractor shall review, sign, and stamp their approval on the submittal.

Illegible print, incompleteness, inaccuracy, or lack of coordination will be grounds for rejection.

Items from multiple disciplines shall not be combined on a single submittal and transmittal. Items for lighting, signals, surveillance and CCTV must be in separate submittals since they may be reviewed by various personnel in various locations.

The Engineer will review the submittals for conformance with the design concept of the project according to Article 105.04 and the following. The Engineer will stamp the drawings indicating their status as "Approved", "Approved as Noted", "Disapproved", or "Information Only". Since the Engineer's review is for conformance with the design concept only, it shall be the Contractor's responsibility to coordinate the various items into a working system as specified. The Contractor shall not be relieved from responsibility for errors or omissions in the shop, working, or layout drawings by the Engineer's approval thereof. The Contractor shall still be in full compliance with contract and specification requirements.

All submitted items reviewed and marked "Disapproved" or "Approved as Noted" shall be resubmitted by the Contractor in their entirety, unless otherwise indicated within the submittal comments.

Work shall not begin until the Engineer has approved the submittal. Material installed prior to approval by the Engineer, will be subject to removal and replacement at no additional cost to the Department.

Unless otherwise approved by the Engineer, all of the above items shall be submitted to the Engineer at the same time. Each item shall be properly identified by route, section, and contract number.

Electronic Submittals. Unless otherwise directed, the Contractor shall utilize the **Traffic Operations Construction Submittal (TOCS)** system.

Certifications. When certifications are specified and are available prior to material manufacture, the certification shall be included in the submittal information. When specified and only available after manufacture, the submittal shall include a statement of intent to furnish certification. All certificates shall be complete with all appropriate test dates and data.

Authorized Project Delay. See Article 801.08

Maintenance transfer and Preconstruction Inspection:

General. Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, the Contractor shall request a maintenance transfer and preconstruction site inspection, to be held in the presence of the Engineer and a representative of the party or parties responsible for maintenance of any lighting and/or traffic control systems which may be affected by the work. The request for the maintenance transfer and preconstruction inspection shall be made no less than fourteen (14) calendar days prior to the desired inspection date. The maintenance transfer and preconstruction inspection shall:

Establish the procedures for formal transfer of maintenance responsibility required for the construction period.

Establish the approximate location and operating condition of lighting and/or traffic control systems which may be affected by the work

Marking of Existing Cable Systems. The party responsible for maintenance of any existing lighting and/or traffic control systems at the project site will, at the Contractor's request, mark and/or stake, once per location, all underground cable routes owned or maintained by the State. A project may involve multiple "locations" where separated electrical systems are involved (i.e. different controllers). The markings shall be taken to have a horizontal tolerance of at least 1 foot (304.8 mm) to either side.. The request for the cable locations and marking shall be made at the same time the request for the maintenance transfer and preconstruction inspection is made. The Contractor shall exercise extreme caution where existing buried cable runs are involved. The markings of existing systems are made strictly for assistance to the Contractor and this does not relieve the Contractor of responsibility for the repair or replacement of any cable run damaged in the course of his work, as specified elsewhere herein. Note that the contractor shall be entitled to only one request for location marking of existing systems and that multiple requests may only be honored at the contractor's expense. No locates will be made after maintenance is transferred, unless it is at the contractor's expense.

Condition of Existing Systems. The Contractor shall conduct an inventory of all existing electrical system equipment within the project limits, which may be affected by the work, making note of any parts which are found broken or missing, defective or malfunctioning. Megger and load readings shall be taken for all existing circuits which will remain in place or be modified. If a circuit is to be taken out in its entirety, then readings do not have to be taken. The inventory and test data shall be reviewed with and approved by the Engineer and a record of the inventory shall be submitted to the Engineer for the record. Without such a record, all systems transferred to the Contractor for maintenance during construction shall be returned at the end of construction in complete, fully operating condition.”

Maintenance and Responsibility During Construction.

Lighting Operation and Maintenance Responsibility. The scope of work shall include the assumption of responsibility for the continuing operation and maintenance of the existing, proposed, temporary, sign and navigation lighting, or other lighting systems and all appurtenances affected by the work as specified elsewhere herein. Maintenance of lighting systems is specified elsewhere and will be paid for separately

The proposed lighting system must be operational prior to opening the roadway to traffic unless temporary lighting exists which is designed and installed to properly illuminate the roadway.

Energy and Demand Charges. The payment of basic energy and demand charges by the electric utility for existing lighting which remains in service will continue as a responsibility of the Owner, unless otherwise indicated. Unless otherwise indicated or required by the Engineer duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously at the Owner's expense and lighting systems shall not be kept in operation during long daytime periods at the Owner's expense. Upon written authorization from the Engineer to place a proposed new lighting system in service, whether the system has passed final acceptance or not, (such as to allow temporary lighting to be removed), the Owner will accept responsibility for energy and demand charges for such lighting, effective the date of authorization. All other energy and demand payments to the utility shall be the responsibility of the Contractor until final acceptance.

Damage to Electrical Systems. Should damage occur to any existing electrical systems through the Contractor's operations, the Engineer will designate the repairs as emergency or non-emergency in nature.

Emergency repairs shall be made by the Contractor, or as determined by the Engineer, the Department, or its agent. Non-emergency repairs shall be performed by the Contractor within six working days following discovery or notification. All repairs shall be performed in an expeditious manner to assure all electrical systems are operational as soon as possible. The repairs shall be performed at no additional cost to the Department.

Lighting. An outage will be considered an emergency when three or more lights on a circuit or three successive lights are not operational. Knocked down materials, which result in a danger to the motoring public, will be considered an emergency repair.

Temporary aerial multi-conductor cable, with grounded messenger cable, will be permitted if it does not interfere with traffic or other operations, and if the Engineer determines it does not require unacceptable modification to existing installations.

Marking Proposed Locations for Highway Lighting System. The Contractor shall mark or stake the proposed locations of all poles, cabinets, junction boxes, pull boxes, handholes, cable routes, pavement crossings, and other items pertinent to the work. A proposed location inspection by the Engineer shall be requested prior to any excavation, construction, or installation work after all proposed installation locations are marked. Any work installed without location approval is subject to corrective action at no additional cost to the Department.

Inspection of electrical work. Inspection of electrical work shall be according to Article 105.12 and the following.

Before any splice, tap, or electrical connection is covered in handholes, junction boxes, light poles, or other enclosures, the Contractor shall notify and make available such wiring for the Engineer's inspection.

Testing. Before final inspection, the electrical work shall be tested. Tests may be made progressively as parts of the work are completed, or may be made when the work is complete. Tests shall be made in the presence of the Engineer. Items which fail to test satisfactorily shall be repaired or replaced. Tests shall include checks of control operation, system voltages, cable insulation, and ground resistance and continuity.

The forms for recording test readings will be available from the Engineer in electronic format. The Contractor shall provide the Engineer with a written report of all test data including the following:

- Voltage Tests
- Amperage Tests
- Insulation Resistance Tests
- Continuity tests
- Detector Loop Tests

Lighting systems. The following tests shall be made.

- (1) Voltage Measurements. Voltages in the cabinet from phase to phase and phase to neutral, at no load and at full load, shall be measured and recorded. Voltage readings at the last termination of each circuit shall be measured and recorded.
- (2) Insulation Resistance. Insulation resistance to ground of each circuit at the cabinet, with all loads connected, shall be measured and recorded.

On tests of new cable runs, the readings shall exceed 50 megohms for phase and neutral conductors with a connected load over 20 A, and shall exceed 100 megohms for conductors with a connected load of 20 A or less.

On tests of cable runs which include cables which were existing in service prior to this contract, the resistance readings shall be the same or better than the readings recorded at the maintenance transfer at the beginning of the contract. Measurements shall be taken with a megohm meter approved by the Engineer.

- (3) Loads. The current of each circuit, phase main, and neutral shall be measured and recorded. The Engineer may direct reasonable circuit rearrangement. The current readings shall be within ten percent of the connected load based on material ratings.
- (4) Ground Continuity. Resistance of the system ground as taken from the farthest extension of each circuit run from the controller (i.e. check of equipment ground continuity for each circuit) shall be measured and recorded. Readings shall not exceed 2.0 ohms, regardless of the length of the circuit.
- (5) Resistance of Grounding Electrodes. Resistance to ground of all grounding electrodes shall be measured and recorded. Measurements shall be made with a ground tester during dry soil conditions as approved by the Engineer. Resistance to ground shall not exceed 10 ohms.

ITS. The following test shall be made in addition to the lighting system test above.

Detector Loops. Before and after permanently securing the loop in the pavement, the resistance, inductance, resistance to ground, and quality factor for each loop and lead-in circuit shall be tested. The loop and lead-in circuit shall have an inductance between 20 and 2500 microhenries. The resistance to ground shall be a minimum of 50 megohms under any conditions of weather or moisture. The quality factor (Q) shall be 5 or greater.

Fiber Optic Systems. Fiber optic testing shall be performed as required in the fiber optic cable special provision and the fiber optic splice special provision.

All test results shall be furnished to the Engineer seven working days before the date the inspection is scheduled.

Contract Guarantee. The Contractor shall provide a written guarantee for all electrical work provided under the contract for a period of six months after the date of acceptance with the following warranties and guarantees.

- (a) The manufacturer's standard written warranty for each piece of electrical material or apparatus furnished under the contract. The warranty for light emitting diode (LED) modules, including the maintained minimum luminance, shall cover a minimum of 60 months from the date of delivery.
- (b) The Contractor's written guarantee that, for a period of six months after the date of final acceptance of the work, all necessary repairs to or replacement of said warranted material or apparatus for reasons not proven to have been caused by negligence on the part of the user or acts of a third party shall be made by the Contractor at no additional cost to the Department.

- (c) The Contractor's written guarantee for satisfactory operation of all electrical systems furnished and constructed under the contract for a period of six months after final acceptance of the work.

The warranty for an uninterruptable power supply (UPS) shall cover a minimum of two years from date the equipment is placed in operation; however, the batteries of the UPS shall be warranted for full replacement for a minimum of five years.

Record Drawings. Alterations and additions to the electrical installation made during the execution of the work shall be neatly and plainly marked in red by the Contractor on the full-size set of record drawings kept at the Engineer's field office for the project. These drawings shall be updated on a daily basis and shall be available for inspection by the Engineer during the course of the work. The record drawings shall include the following:

- Cover Sheet
- Summary of Quantities, electrical items only
- Legends, Schedules and Notes
- Plan Sheet
- Pertinent Details
- Single Line Diagram
- Other useful information useful to locate and maintain the systems.

Any modifications to the details shall be indicated. Final quantities used shall be indicated on the Summary of Quantities. Foundation depths used shall also be listed.

As part of the record drawings, the Contractor shall inventory all materials, new or existing, on the project and record information on inventory sheets provided by the Engineer.

The inventory shall include:

- Location of Equipment, including rack, chassis, slot as applicable.
- Designation of Equipment
- Equipment manufacturer
- Equipment model number
- Equipment Version Number
- Equipment Configuration
 - Addressing, IP or other
 - Settings, hardware or programmed
- Equipment Serial Number

The following electronic inventory forms are available from the Engineer:

- Lighting Controller Inventory
- Lighting Inventory
- Light Tower Inspection Checklist
- ITS Location Inventory

The information shall be entered in the forms; handwritten entries will not be acceptable; except for signatures. Electronic file shall also be included in the documentation.

When the work is complete, and seven days before the request for a final inspection, the set of contract drawings, stamped "**RECORD DRAWINGS**", shall be submitted to the Engineer for review and approval and shall be stamped with the date and the signature of the Contractor's supervising Engineer or electrician. The record drawings shall be submitted in PDF format on CDROM as well as hardcopy's for review and approval.

In addition to the record drawings, PDF copies of the final catalog cuts which have been Approved and Approved as Noted with applicable follow-up shall be submitted along with the record drawings. The PDF files shall clearly indicate either by filename or PDF table of contents the respective pay item number. Specific part or model numbers of items which have been selected shall be clearly visible. Hard copies of the catalog are not required with this submittal.

The Contractor shall provide two sets of electronically produced drawings in a moisture proof pouch to be kept on the inside door of the controller cabinet or other location approved by the Engineer. These drawings shall show the final as-built circuit orientation(s) of the project in the form of a single line diagram with all luminaires numbered and clearly identified for each circuit.

Final documentation shall be submitted as a complete submittal package, i.e. record drawings, test results, inventory, etc. shall be submitted at the same time. Partial piecemeal submittals will be rejected without review. A total of five hardcopies and CDROMs of the final documentation shall be submitted.

GPS Documentation. In addition to the specified record drawings, the Contactor shall record GPS coordinates of the following electrical components being installed, modified or being affected in other ways by this contract:

- All light poles and light towers.
- Handholes and vaults.
- Junction Boxes
- Conduit roadway crossings.
- Controllers.
- Control Buildings.
- Structures with electrical connections, i.e. DMS, lighted signs.
- Electric Service locations.
- CCTV Camera installations.
- Roadway Surveillance installations.
- Fiber Optic Splice Locations.
- Fiber Optic Cables. Coordinates shall be recorded along each fiber optic cable route every 200 feet.
- All fiber optic slack locations shall be identified with quantity of slack cable included. When sequential cable markings are available, those markings shall be documented as cable marking into enclosure and marking out of enclosure.

Datum to be used shall be North American 1983.

Data shall be provided electronically and in print form. The electronic format shall be compatible with MS Excel. Latitude and Longitude shall be in decimal degrees with a minimum of 6 decimal places. Each coordinate shall have the following information:

1. District
2. Description of item
3. Designation
4. Use
5. Approximate station
6. Contract Number
7. Date
8. Owner
9. Latitude
10. Longitude
11. Comments

A spreadsheet template will be available from the Engineer for use by the Contractor.

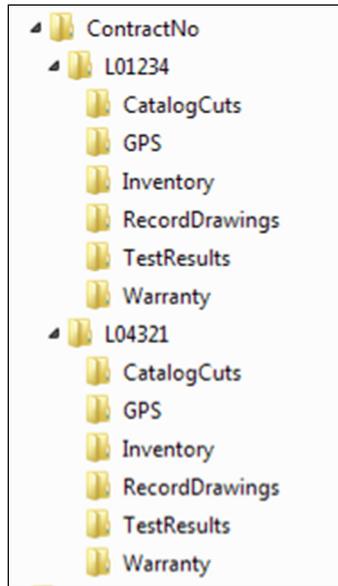
Prior to the collection of data, the contractor shall provide a sample data collection of at least six data points of known locations to be reviewed and verified by the Engineer to be accurate within 20 feet. Upon verification, data collection can begin. Data collection can be made as construction progresses, or can be collected after all items are installed. If the data is unacceptable the contractor shall make corrections to the data collection equipment and or process and submit the data for review and approval as specified. **Data collection prior to the submittal and review of the sample data of existing data points will be unacceptable and rejected.**

Accuracy. Data collected is to be mapping grade. A handheld mapping grade GPS device shall be used for the data collection. The receiver shall support differential correction and data shall have minimum 5 meter accuracy after post processing.

GPS receivers integrated into cellular communication devices, recreational and automotive GPS devices are not acceptable.

The GPS shall be the product of an established major GPS manufacturer having been in the business for a minimum of 6 years.”

The documents on the CD shall be organized by the Electrical Maintenance Contract Management System (EMCMS) location designation. If multiple EMCMS locations are within the contract, separate folders shall be utilized for each location as follows:



Extraneous information not pertaining to the specific EMCMS location shall not be included in that particular folder and sub-folder.

The inspection will not be made until after the delivery of acceptable record drawings, specified certifications, and the required guarantees.

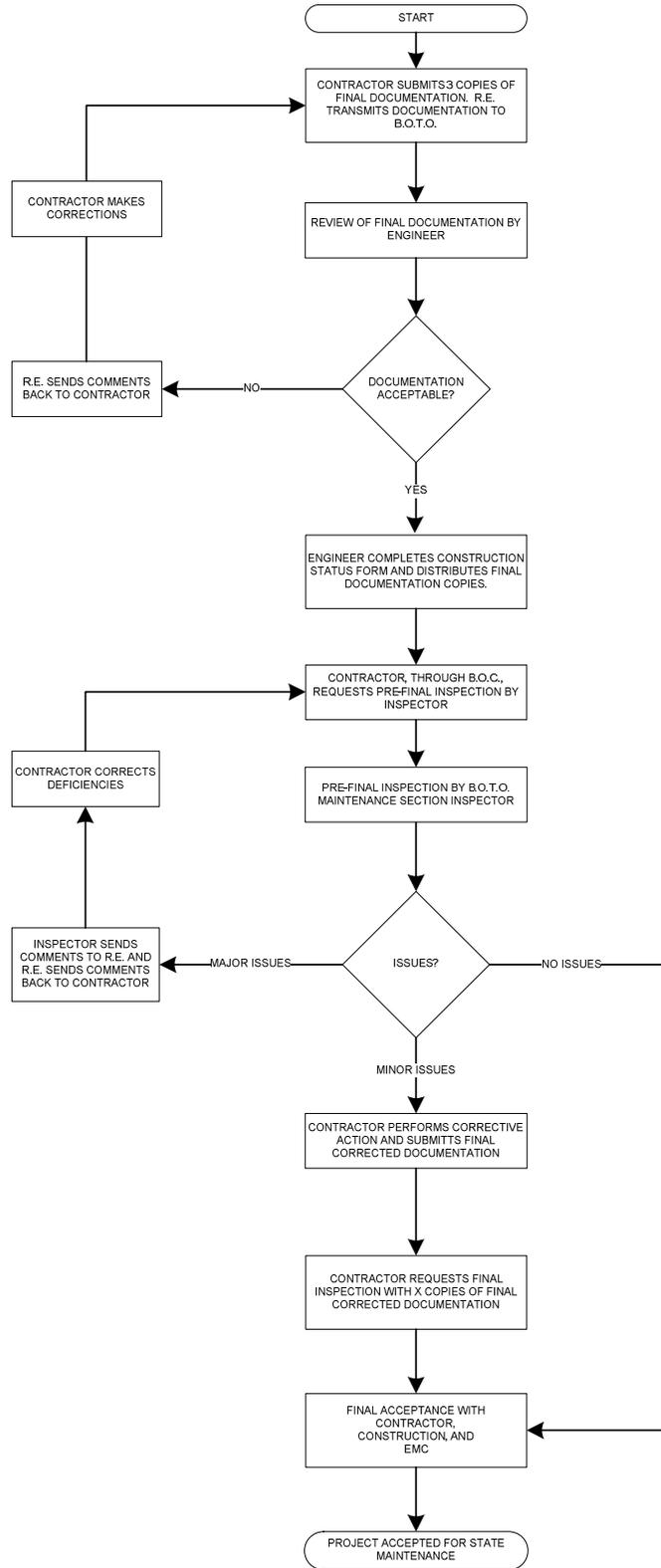
The Final Acceptance Documentation Checklist shall be completed and is contained elsewhere herein.

All CD's shall be labeled as illustrated in the CD Label Template contained herein.

Acceptance. Acceptance of electrical work will be given at the time when the Department assumes the responsibility to protect and maintain the work according to Article 107.30 or at the time of final inspection.

When the electrical work is complete, tested, and fully operational, the Contractor shall schedule an inspection for acceptance with the Engineer no less than seven working days prior to the desired inspection date. The Contractor shall furnish the necessary labor and equipment to make the inspection.

A written record of the test readings taken by the Contractor according to Article 801.13 shall be furnished to the Engineer seven working days before the date the inspection is scheduled. Inspection will not be made until after the delivery of acceptable record drawings, specified certifications, and the required guarantees.



LOCATION	
Route US 20	Common Name S. Grant Hwy
Limits At Marengo	Section
Contract # 62D36	County McHenry
Controller Designation(s)	EMC Database Location Number(s)

Final Acceptance Documentation Checklist

ITEM	Contractor (Verify)	Resident Engineer (Verify)
Record Drawings -Four hardcopies (11" x 17") -Scanned to two CD-ROMs	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
Field Inspection Tests -Voltage -Amperage -Cable Insulation Resistance -Continuity -Controller Ground Rod Resistance (Four Hardcopies & scanned to two CD's)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
GPS Coordinates -Excel file (Check Special Provisions, Excel file scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>
Job Warranty Letter (Four Hardcopies & scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>
Catalog Cut Submittals -Approved & Approved as Noted (Scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>
Lighting Inventory Form (Four Hardcopies & scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>
Lighting Controller Inventory Form (Four Hardcopies & scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>
Light Tower Inspection Form (If applicable, Four Hardcopies & scanned to two CD's)	<input type="checkbox"/>	<input type="checkbox"/>

Four Hardcopies & scanned to two CD's shall be submitted for all items above. The CD ROM shall be labeled as shown in the example contained herein.

General Notes:

Record Drawings – The record drawings should contain contract cover sheet, summary of quantities showing all lighting pay item sheets, proposed lighting plans and lighting detail sheets. Submit hardcopies 11 x 17 size. Include the original “red-ink” copy. The red-ink markup should be neatly drawn. Record drawings copies should be legible. Blurred copies will not be acceptable. Temporary lighting plans and removal lighting plans should not be part of the set.

Field Inspection Tests – Testing should be done for proposed cables. Testing shall be per standard specifications. Forms shall be neatly filled out.

GPS Coordinates – Check special provisions “General Electrical Requirements”. Submit electronic “EXCEL” file.

Job Warranty Letter – See standard specifications.

Cutsheet Submittal – See special provisions “General Electrical Requirements”. Scan Approved and Approved as Noted cutsheets.

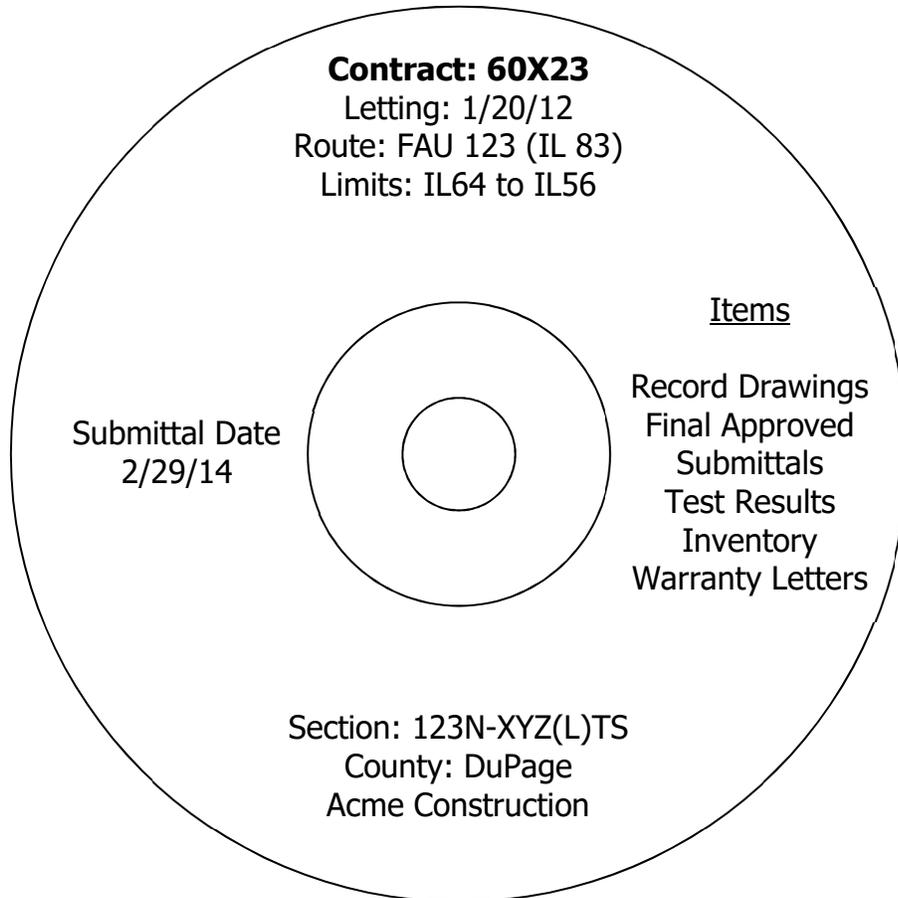
Lighting Inventory Form – Inventory form should include only proposed light poles, proposed light towers, proposed combination (traffic/light pole) lighting and proposed underpass luminaires.

Lighting Controller Inventory Form – Form should be filled out for only proposed lighting controllers.

Light Tower Safety Inspection Form – Form should be filled out for each proposed light tower.

CD LABEL FORMAT TEMPLATE.

Label must be printed; hand written labels are unacceptable and will be rejected.



LUMINAIRE SAFETY CABLE ASSEMBLY

Effective: January 1, 2012

Description: This item shall consist of providing a luminaire safety cable assembly as specified herein and as indicated in the plans.

Materials. Materials shall be according to the following:

Wire Rope. Cables (wire rope) shall be manufactured from Type 304 or Type 316 stainless steel having a maximum carbon content of 0.08 % and shall be a stranded assembly. Cables shall be 3.18 mm (0.125") diameter, 7x19 Class strand core and shall have no strand joints or strand splices.

Cables shall be manufactured and listed for compliance with Federal Specification RR-W-410 and Mil-DTL-83420.

Cable terminals shall be stainless steel compatible with the cable and as recommended by the cable manufacturer. Terminations and clips shall be the same stainless steel grade as the wire rope they are connected to.

U-Bolts. U-Bolts and associated nuts, lock washers, and mounting plates shall be manufactured from Type 304 or Type 316 stainless steel.

CONSTRUCTION REQUIREMENTS

General. The safety cable assembly shall be installed as indicated in the plan details. One end of the cable assembly shall have a loop fabricated from a stainless steel compression sleeve. The other end of the cable assembly shall be connected with stainless steel wire rope clips as indicated. Slack shall be kept to a minimum to prevent the luminaire from creeping off the end of the mast arm. Unless otherwise indicated in the plans, the luminaire safety cable shall only be used in conjunction with luminaires which are directly above the traveled pavement.

Basis of Payment: This work shall be paid for at the contract price each for LUMINAIRE SAFETY CABLE ASSEMBLY, which shall be payment for the work as described herein and as indicated in the plans.

UNDERGROUND RACEWAYS

Effective: March 1, 2015

Revise Article 810.04 of the Standard Specifications to read:

“Installation. All underground conduits shall have a minimum depth of 30-inches (700 mm) below the finished grade.”

Add the following to Article 810.04 of the Standard Specifications:

“All metal conduit installed underground shall be Rigid Steel Conduit unless otherwise indicated on the plans.”

Add the following to Article 810.04 of the Standard Specifications:

“All raceways which extend outside of a structure or duct bank but are not terminated in a cabinet, junction box, pull box, handhole, post, pole, or pedestal shall extend a minimum of 300 mm (12”) or the length shown on the plans beyond the structure or duct bank. The end of this extension shall be capped and sealed with a cap designed for the conduit to be capped.

The ends of rigid metal conduit to be capped shall be threaded, the threads protected with full galvanizing, and capped with a threaded galvanized steel cap.

The ends of rigid nonmetallic conduit and coilable nonmetallic conduit shall be capped with a rigid PVC cap of not less than 3 mm (0.125”) thick. The cap shall be sealed to the conduit using a room-temperature-vulcanizing (RTV) sealant compatible with the material of both the cap and the conduit. A washer or similar metal ring shall be glued to the inside center of the cap with epoxy, and the pull cord shall be tied to this ring.”

ELECTRIC UTILITY SERVICE CONNECTION (COMED)

Effective: January 1, 2012

Description. This item shall consist of payment for work performed by ComEd in providing or modifying electric service as indicated. THIS MAY INVOLVE WORK AT MORE THAN ONE ELECTRIC SERVICE. For summary of the Electrical Service Drop Locations see the schedule contained elsewhere herein.

CONSTRUCTION REQUIREMENTS

General. It shall be the Contractor's responsibility to contact ComEd. The Contractor shall coordinate his work fully with the ComEd both as to the work required and the timing of the installation. No additional compensation will be granted under this or any other item for extra work caused by failure to meet this requirement. **Please contact ComEd, New Business Center Call Center, at 866 NEW ELECTRIC (1-866-639-3532) to begin the service connection process. The Call Center Representatives will create a work order for the service connection. The representative will ask the requestor for information specific to the request. The representative will assign the request based upon the location of project.**

The Contractor should make particular note of the need for the earliest attention to arrangements with ComEd for service. In the event of delay by ComEd, no extension of time will be considered applicable for the delay unless the Contractor can produce written evidence of a request for electric service within 30 days of execution.

Method Of Payment. The Contractor will be reimbursed to the exact amount of money as billed by ComEd for its services. Work provided by the Contractor for electric service will be paid separately as described under ELECTRIC SERVICE INSTALLATION. No extra compensation shall be paid to the Contractor for any incidental materials and labor required to fulfill the requirements as shown on the plans and specified herein.

For bidding purposes, this item shall be estimated as \$5000.00

Basis Of Payment. This work will be paid for at the contract lump sum price for ELECTRIC UTILITY SERVICE CONNECTION which shall be reimbursement in full for electric utility service charges.

ELECTRIC SERVICE INSTALLATION

Effective: January 1, 2012

Description. This item shall consist of all material and labor required to extend, connect or modify the electric services, as indicated or specified, which is over and above the work performed by the utility. Unless otherwise indicated, the cost for the utility work, if any, will be reimbursed to the Contractor separately under ELECTRIC UTILITY SERVICE CONNECTION. This item may apply to the work at more than one service location and each will be paid separately.

Materials. Materials shall be in accordance with the Standard Specifications.

CONSTRUCTION REQUIREMENTS

General. The Contractor shall ascertain the work being provided by the electric utility and shall provide all additional material and work not included by other contract pay items required to complete the electric service work in complete compliance with the requirements of the utility.

No additional compensation will be allowed for work required for the electric service, even though not explicitly shown on the Drawings or specified herein

Method Of Measurement. Electric Service Installation shall be counted, each.

Basis Of Payment. This work will be paid for at the contract unit price each for ELECTRIC SERVICE INSTALLATION which shall be payment in full for the work specified herein.

UNIT DUCT

Effective: January 1, 2012

Revise the first paragraph of Article 810.04 to read:

“The unit duct shall be installed at a minimum depth of 30-inches (760 mm) unless otherwise directed by the Engineer.”

Revise Article 1088.01(c) to read:

“(c) Coilable Nonmetallic Conduit.

General:

The duct shall be a plastic duct which is intended for underground use and which can be manufactured and coiled or reeled in continuous transportable lengths and uncoiled for further processing and/or installation without adversely affecting its properties of performance. The duct shall be a plastic duct which is intended for underground use and can be manufactured and coiled or reeled in continuous transportable lengths and uncoiled for further processing and/or installation without adversely affecting its properties of performance.

The duct shall be made of high density polyethylene which shall meet the requirements of ASTM D 2447, for schedule 40. The duct shall be composed of black high density polyethylene meeting the requirements of ASTM D 3350, Class C, Grade P33. The wall thickness shall be in accordance with Table 2 for ASTM D 2447.

The duct shall be UL Listed per 651-B for continuous length HDPE coiled conduit. The duct shall also comply with NEC Article 354.100 and 354.120.

Submittal information shall demonstrate compliance with the details of these requirements.

Dimensions:

Duct dimensions shall conform to the standards listed in ASTM D2447. Submittal information shall demonstrate compliance with these requirements.

Nominal Size		Nominal I.D.		Nominal O.D.		Minimum Wall	
mm	in	mm	in	mm	in	mm	in
31.75	1.25	35.05	1.380	42.16	1.660	3.556 +0.51	0.140 +0.020
38.1	1.50	40.89	1.610	48.26	1.900	3.683 +0.51	0.145 +0.020

Nominal Size		Pulled Tensile	
mm	in	N	lbs
31.75	1.25	3322	747
38.1	1.50	3972	893

Marking:

As specified in NEMA Standard Publication No. TC-7, the duct shall be clearly and durably marked at least every 3.05 meters (10 feet) with the material designation (HDPE for high density polyethylene), nominal size of the duct and the name and/or trademark of the manufacturer.

Performance Tests:

Polyethylene Duct testing procedures and test results shall meet the requirements of UL 651. Certified copies of the test report shall be submitted to the Engineer prior to the installation of the duct. Duct crush test results shall meet or exceed the following requirements:

Duct Diameter		Min. force required to deform sample 50%	
mm	in	N	lbs
35	1.25	4937	1110
41	1.5	4559	1025

WIRE AND CABLE

Effective: January 1, 2012

Add the following to the first paragraph of Article 1066.02(a):

“The cable shall be rated at a minimum of 90°C dry and 75°C wet and shall be suitable for installation in wet and dry locations, and shall be resistant to oils and chemicals.”

Revise the Aerial Electric Cable Properties table of Article 1066.03(a)(3) to read:

Aerial Electric Cable Properties

Phase Conductor		Messenger wire			
Size AWG	Stranding	Average Insulation Thickness		Minimum Size AWG	Stranding
		mm	mils		
6	7	1.1	(45)	6	6/1
4	7	1.1	(45)	4	6/1
2	7	1.1	(45)	2	6/1
1/0	19	1.5	(60)	1/0	6/1
2/0	19	1.5	(60)	2/0	6/1
3/0	19	1.5	(60)	3/0	6/1
4/0	19	1.5	(60)	4/0	6/1

Add the following to Article 1066.03(b) of the Standard Specifications:

“Cable sized No. 2 AWG and smaller shall be U.L. listed Type RHH/RHW and may be Type RHH/RHW/USE. Cable sized larger than No. 2 AWG shall be U.L. listed Type RHH/RHW/USE.”

Revise Article 1066.04 to read:

“Aerial Cable Assembly. The aerial cable shall be an assembly of insulated aluminum conductors according to Section 1066.02 and 1066.03. Unless otherwise indicated, the cable assembly shall be composed of three insulated conductors and a steel reinforced bare aluminum conductor (ACSR) to be used as the ground conductor. Unless otherwise indicated, the code word designation of this cable assembly is “Palomino”. The steel reinforced aluminum conductor shall conform to ASTM B-232. The cable shall be assembled according to ANSI/ICEA S-76-474.”

Revise the second paragraph of Article 1066.05 to read:

“The tape shall have reinforced metallic detection capabilities consisting of a woven reinforced polyethylene tape with a metallic core or backing.”

ROADWAY LUMINAIRE, LED

Effective: September 1, 2019

Description.

This work shall consist of furnishing and installing a roadway LED luminaire as shown on the plans, as specified herein.

General.

The luminaire including the housing, driver and optical assembly shall be assembled in the U.S.A. The luminaire shall be assembled by and manufactured by the same manufacturer. The luminaire shall be mechanically strong and easy to maintain. The size, weight, and shape of the luminaire shall be designed so as not to incite detrimental vibrations in its respective pole and it shall be compatible with the pole and arm. All electrical and electronic components of the luminaire shall comply with the requirements of Restriction of Hazardous Materials (RoHS) regulations. The luminaire shall be listed for wet locations by an NRTL and shall meet the requirements of UL 1598 and UL 8750

Submittal Requirements.

The Contractor shall also the following manufacturer's product data for each type of luminaire:

1. Descriptive literature and catalogue cuts for luminaire, LED driver, and surge protection device. Completed manufacturer's luminaire ordering form with the full catalog number provided
2. LED drive current, total luminaire input wattage and total luminaire current at the system operating voltage or voltage range and ambient temperature of 25 C.
3. LED efficacy per luminaire expressed in lumens per watt (l/w).
4. Initial delivered lumens at the specified color temperature, drive current, and ambient temperature.
5. IES file associated with each submitted luminaire in the IES LM-63 format.
6. Computer photometric calculation reports as specified and in the luminaire performance table.
7. TM-15 BUG rating report.

8. Isofootcandle chart with max candela point and half candela trace indicated.
9. Documentation of manufacturers experience and verification that luminaires were assembled in the U.S.A. as specified.
10. Written warranty.

Upon request by the Engineer, submittals shall also include any or all the following:

- a. TM-21 calculator spreadsheet (XLSX or PDF format) and if available, TM-28 report for the specified luminaire or luminaire family. Both reports shall be for 50,000 hours at an ambient temperature of 77 °F (25 °C).
- b. LM-79 report with National Voluntary Laboratory Accreditation Program (NVLAP) current at the time of testing in PDF format inclusive of the following: isofootcandle diagram with half candela contour and maximum candela point; polar plots through maximum plane and maximum cone; coefficient of utilization graph; candela table; and spectral distribution graph and chromaticity diagram.
- c. LM-80 report for the specified LED package in PDF format and if available, LM-84 report for the specified luminaire or luminaire family in PDF format. Both reports shall be conducted by a laboratory with NVLAP certification current at the time of testing.
- d. AGi32 calculation file matching the submittal package.
- e. In Situ Temperature Measurement Test (ISTMT) report for the specified luminaire or luminaire family in PDF format.
- f. Vibration test report in accordance with ANSI C136.31 in PDF format.
- g. ASTM B117/ASTM D1654 (neutral salt spray) test and sample evaluation report in PDF format.
- h. ASTM G154 (ASTM D523) gloss test report in PDF format.
- i. LED drive current, total luminaire input wattage, and current over the operating voltage range at an ambient temperature of 77 °F (25 °C).
- j. Power factor (pf) and total harmonic distortion (THD) at maximum and minimum supply and at nominal voltage for the dimmed states of 70%, 50%, and 30% full power.
- k. Ingress protection (IP) test reports, conducted according to ANSI C136.25 requirements, for the driver and optical assembly in PDF format.
- l. Installation, maintenance, and cleaning instructions in PDF format, including recommendations on periodic cleaning methods.

- m. Documentation in PDF format that the reporting laboratory is certified to perform the required tests.

A sample luminaire shall also be provided upon request of the Engineer. The sample shall be as proposed for the contract and shall be delivered by the Contractor to the District Headquarters. After review, the Contractor shall retrieve the luminaire.

Manufacturer Experience.

The luminaire shall be designed to be incorporated into a lighting system with an expected 20 year lifetime. The luminaire manufacturer shall have a minimum of 33 years' experience manufacturing HID roadway luminaires and shall have a minimum of seven (7) years' experience manufacturing LED roadway luminaires. The manufacturer shall have a minimum of 25,000 total LED roadway luminaires installed on a minimum of 100 separate installations, all within the U.S.A.

Housing.

Material. The luminaire shall be a single device not requiring on-site assembly for installation. The driver for the luminaire shall be integral to the unit.

Finish. The luminaire shall have a baked acrylic enamel finish. The color of the finish shall be gray, unless otherwise indicated.

The finish shall have a rating of six or greater according to ASTM D1654, Section 8.0 Procedure A – Evaluation of Rust Creepage for Scribed Samples after exposure to 1000 hours of testing according to ASTM B117 for painted or finished surfaces under environmental exposure.

The luminaire finish shall have less than or equal to 30% reduction of gloss according to ASTM D523 after exposure of 500 hours to ASTM G154 Cycle 6 QUV® accelerated weathering testing.

The luminaire shall slip-fit on a mounting arm with a 2" diameter tenon (2.375" outer diameter), and shall have a barrier to limit the amount of insertion. The slip fitter clamp shall utilize four (4) bolts to clamp to the tenon arm. The luminaire shall be provided with a leveling surface and shall be capable of being tilted ± 5 degrees from the axis of attachment in 2.5 degree increments and rotated to any degree with respect to the supporting arm.

All external surfaces shall be cleaned in accordance with the manufacturer's recommendations and be constructed in such a way as to discourage the accumulation of water, ice, and debris.

The effective projected area of the luminaire shall not exceed 1.6 sq. ft.

The total weight including accessories, shall not exceed 40 lb (18.14 kg). If the weight of the luminaire is less than 20 lb (9.07 kg), weight shall be added to the mounting arm or a supplemental vibration damper installed as approved by the Engineer.

A passive cooling method with no moving, rotating parts, or liquids shall be employed for heat management.

The luminaire shall include a fully prewired, 7-pin twist lock ANSI C136.41-compliant receptacle. Unused pins shall be connected as directed by the Manufacturer and as approved by the Engineer. A shorting cap shall be provided with the luminaire that is compliant with ANSI C136.10.

Vibration Testing. All luminaires shall be subjected to and pass vibration testing requirements at "3G" minimum zero to peak acceleration in accordance with ANSI C136.31 requirements using the same luminaire. To be accepted, the luminaire housing, hardware, and each individual component shall pass this test with no noticeable damage and the luminaire must remain fully operational after testing.

Labels. An internal label shall be provided indicating the luminaire is suitable for wet locations and indicating the luminaire is an NRTL listed product to UL1598 and UL8750. The internal label shall also comply with the requirements of ANSI C136.22.

An external label consisting of two black characters on a white background with the dimensions of the label and the characters as specified in ANSI C136.15 for HPS luminaires. The first character shall be the alphabetical character representing the initial lumen output as specified in Table 1 of Article 1067.06(c). The second character shall be the numerical character representing the transverse light distribution type as specified in IES RP-8 (i.e. Types 1, 2, 3, 4, or 5).

Hardware. All hardware shall be stainless steel or of other corrosion resistant material approved by the Engineer.

Luminaires shall be designed to be easily serviced, having fasteners such as quarter-turn clips of the heavy spring-loaded type with large, deep straight slot heads, complete with a receptacle and shall be according to military specification MIL-f-5591.

All hardware shall be captive and not susceptible to falling from the luminaire during maintenance operations. This shall include lens/lens frame fasteners as well hardware holding the removable driver and electronic components in place.

Provisions for any future house-side external or internal shielding should be indicated along with means of attachment.

Circuiting shall be designed to minimize the impact of individual LED failures on the operation of the other LED's.

Wiring. Wiring within the electrical enclosure shall be rated at 600v, 105°C or higher.

Driver.

The driver shall be integral to the luminaire shall be capable of receiving an indefinite open and short circuit output conditions without damage.

The driver shall incorporate the use of thermal foldback circuitry to reduce output current under abnormal driver case temperature conditions and shall be rated for a lifetime of 100,000 hours at an ambient temperature exposure of 77 °F (25 °C) to the luminaire. If the driver has a thermal shut down feature, it shall not turn off the LEDs when operated at 104 °F (40 °C) or less.

The driver shall have an input voltage range of 120 to 277 volts ($\pm 10\%$) or 347 to 480 volts ($\pm 10\%$) according to the contract documents. When the driver is operating within the rated input voltage range and in an un-dimmed state, the power factor measurement shall be not less than 0.9 and the THD measurement shall be no greater than 20%.

The driver shall meet the requirements of the FCC Rules and Regulations, Title 47, Part 15 for Class A devices with regard to electromagnetic compatibility. This shall be confirmed through the testing methods in accordance with ANSI C63.4 for electromagnetic interference.

The driver shall be dimmable using the protocol listed in the Luminaire Performance Table shown in the contract.

Surge Protection. The luminaire shall comply the requirements of ANSI C136.2 for electrical transient immunity at the "Extreme" level (20KV/10KA) and shall be equipped with a surge protective device (SPD) that is UL1449 compliant with indicator light. An SPD failure shall open the circuit to protect the driver.

LED Optical Assembly

The optical assembly shall have an IP66 or higher rating in accordance with ANSI C136.25. The circuiting of the LED array shall be designed to minimize the effect of individual LED failures on the operation of other LEDs. All optical components shall be made of glass or a UV stabilized, non-yellowing material.

The optical assembly shall utilize high brightness, long life, minimum 70 CRI, 4,000K color temperature (+/-300K) LEDs binned in accordance with ANSI C78.377. Lenses shall be UV-stabilized acrylic or glass.

Lumen depreciation at 50,000 hours of operation shall not exceed 15% of initial lumen output at the specified LED drive current and an ambient temperature of 25° C.

The luminaire may or may not have a glass lens over the LED modules. If a glass lens is used, it must be a flat lens. Material other than glass will not be acceptable. If a glass lens is not used, the LED modules may not protrude lower than the luminaire housing.

The assembly shall have individual serial numbers or other means for manufacturer tracking.

Photometric Performance.

Luminaires shall be tested according to IESNA LM-79. This testing shall be performed by a test laboratory holding accreditation from the National Institute of Standards and Technology (NIST) National Voluntary Laboratory Accreditation Program (NVLAP) for the IESNA LM-79 test procedure.

Data reports as a minimum shall yield an isofootcandle chart, with max candela point and half candela trace indicated, maximum plane and maximum cone plots of candela, a candlepower table (house and street side), a coefficient of utilization chart, a luminous flux distribution table, spectral distribution plots, chromaticity plots, and other standard report outputs of the above mentioned tests.

The luminaire shall have a BUG rating of Back Light B3 or less, Up Light rating of U0, and a Glare rating of G3 or less unless otherwise indicated in the luminaire performance table.

Photometric Calculations.

Calculations. Submitted report shall include a luminaire classification system graph with both the recorded lumen value and percent lumens by zone along with the BUG rating according to IESNA TM-15.

Complete point-by-point luminance and veiling luminance calculations as well as listings of all indicated averages and ratios as applicable shall be provided in accordance with IESNA RP-8 recommendations. Lighting calculations shall be performed using AGi32 software with all luminance calculations performed to one decimal place (i.e. x.x cd/m²). Uniformity ratios shall also be calculated to one decimal place (i.e. x.x:1). Calculation results shall demonstrate that the submitted luminaire meets the lighting metrics specified in the project Luminaire Performance Table(s). Values shall be rounded to the number of significant digits indicated in the luminaire performance table(s).

All photometry must be **photopic**. Scotopic or mesopic factors will not be allowed. The AGi32 file shall be submitted at the request of the Engineer.

**IDOT DISTRICT 1 LUMINAIRE PERFORMANCE TABLE
 ROADWAY LIGHTING**

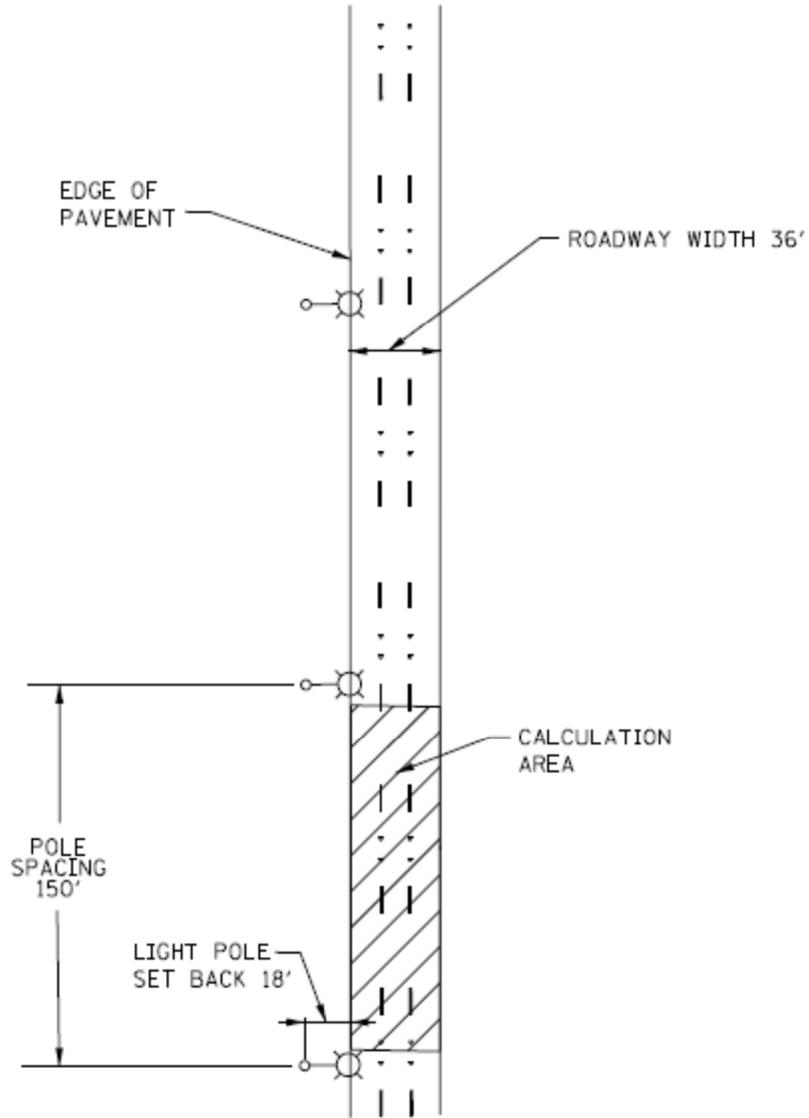
GIVEN CONDITIONS		
ROADWAY DATA	Pavement Width	36 (ft)
	Number of Lanes	3
	Median Width	N/A
	I.E.S. Surface Classification	R3
	Q-Zero Value	.07
LIGHT POLE DATA	Mounting Height	40.5 (ft)
	Mast Arm Length	6 (ft)
	Pole Set-Back From Edge Of Pavement	18 (ft)
LUMINAIRE DATA	Lumens	26,000 (Min)
	BUG Rating	B3 – U0 – G4 (Max)
	I.E.S. Vertical Distribution	Medium
	I.E.S. Lateral Distribution	Type III or II
	Total Light Loss Factor	0.70
LAYOUT DATA	Spacing	150 (ft)
	Configuration	One side
	Luminaire Overhang over EOP	-12 (ft)

NOTE: Variations from the above specified I.E.S. distribution pattern may be requested and acceptance of variations will be subject to review by the Engineer based on how well the performance requirements are met.

PERFORMANCE REQUIREMENTS		
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NOTE: These performance requirements shall be the minimum acceptable standards of photometric performance for the luminaire, based on the given conditions listed above.

ROADWAY Luminance	Average Luminance, L_{AVE}	.9 Cd/m ² (Max)
	Uniformity Ratio, L_{AVE}/L_{MIN}	3.00:1 (Max)
	Uniformity Ratio, L_{MAX}/L_{MIN}	5.00:1 (Max)
	Veiling Luminance Ratio, L_V/L_{AVE}	.3:1 (Max)



Independent Testing

When a contract has 30 or more luminaires of the same type (distribution type and lumen output/wattage), that luminaire type shall be independently tested, unless otherwise noted. The quantity of luminaires to be tested shall be as specified in the following table.

Contract Quantity	Luminaires to be Tested
1-29	0 (unless otherwise noted)
30-80	2
81-130	3
131-180	4
181-230	5
231-280	6
281-330	7

Testing is not required for temporary lighting luminaires.

The Contractor shall coordinate the testing with the contract schedule considering submittal, manufacturing, testing, and installation lead-times and deadlines.

The Electrical Engineer shall select from all the project luminaires at the Contractor's or distributor's storage facility, within District 1, the luminaires for testing. In all cases, the selection of luminaires shall be a random selection from the entire completed lot of luminaires required for the contract. Selections from partial lots will not be allowed. An additional luminaire shall also be selected for physical inspection by the Engineer at the District Headquarters. This luminaire will be available for the Contractor to pick up at a later date to be installed under this contract. This luminaire is in addition to the luminaire required as a part of the submittal process specified elsewhere.

Alternative selection process. With the Engineer's prior approval, the Contractor shall provide a list of luminaire serial numbers for all the luminaires. The Engineer shall make a random selection of the required number of luminaires for testing from the serial numbers. That luminaire must then be photographed clearly showing the serial number prior to shipment to the selected and approved testing laboratory. The testing laboratory shall include a photograph of the luminaire along with the test results directly to the Engineer.

Luminaires shall be tested at a National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory approved for each of the required tests. The testing facility shall not be associated in any way, subsidiary or otherwise, with the luminaire manufacturer. All costs associated with luminaire testing shall be included in the bid price of the luminaire.

The selection of the proposed independent laboratory shall be presented with the information submitted for review and approval.

The testing performed shall include photometric and electrical testing.

Photometric testing shall be according to IES recommendations, performed with a goniophotometer and as a minimum, shall yield an isofootcandle chart, with max candela point and half candela trace indicated, an isocandela diagram, maximum planned and maximum cone plots of candela, a candlepower table (House and street side), a coefficient of utilization chart, a luminous flux distribution table, BUG rating report, and complete calculations based on specified requirements and test results.

Electrical testing shall conform to NEMA and ANSI standards and, as a minimum shall include a complete check of wiring connections and a table of characteristics showing input amperes, watts, power factor, total harmonic distortion and LED drive current.

Two copies of the summary report and the test results including IES photometric files (including CDRom) shall be certified by the test laboratory and shall be sent by certified mail directly to the Engineer.

To: District Engineer
Attn: Bureau Chief of Traffic Operations
Illinois Department of transportation
201 West center Ct.
Schaumburg, IL 60196

The package shall state "luminaire test reports" and the contract number clearly.

A copy of this material shall be sent to the Contractor and the Resident Engineer at the same time.

Photometric performance shall meet or exceed that of the specified values. If the luminaire does not meet the specified photometric values, the luminaire has failed regardless of whether the test results meet the submitted factory data.

Should any of the tested luminaires of a given type, and distribution fail to satisfy the specifications and perform according to approved submittal information, the luminaire type of that distribution type and wattage shall be unacceptable and be replaced by alternate equipment meeting the specifications with the submittal and testing process repeated in their entirety; or corrections made to achieve required performance.

In the case of corrections, the Contractor shall advise the Engineer of the proposed corrections and shall request a repeat of the specified testing and, if the corrections are deemed reasonable by the Engineer, the testing process shall be repeated in its entirety.

The number of luminaires to be tested shall be the same quantity as originally tested as required in the above table.

Retesting, should it become necessary, shall not be grounds for additional compensation or extension of time

Submittal information shall include a statement of intent to provide the testing as well as a request for approval of the chosen laboratory.

Installation.

Each luminaire shall be installed according to the luminaire manufacturer's recommendations.

Luminaires which are pole mounted shall be mounted on site such that poles and arms are not left unloaded. Pole mounted luminaires shall be leveled/adjusted after poles are set and vertically aligned before being energized. When mounted on a tenon, care shall be exercised to assure maximum insertion of the mounting tenon. Each luminaire shall be checked to assure compatibility with the project power system. When the night-time check of the lighting system by the Engineer indicates that any luminaires are mis-aligned, the mis-aligned luminaires shall be corrected at no additional cost.

No luminaire shall be installed prior to approval. Where independent testing is required, full approval will not be given until complete test results, demonstrating compliance with the specifications, have been reviewed and accepted by the Engineer.

Pole wiring shall be provided with the luminaire. Pole wire shall run from handhole to luminaire. Pole wire shall be sized No. 10, rated 600 V, RHW/USE-2, and have copper conductors, stranded in conformance with ASTM B 8. Pole wire shall be insulated with cross-linked polyethylene (XLP) insulation. Pole wire shall include a phase, neutral, and green ground wire. Wire shall be trained within the pole or sign structure so as to avoid abrasion or damage to the insulation.

Pole wire shall be extended through the pole, pole grommet, luminaire ring, and any associated arm and tenon. The pole wire shall be terminated in a manner that avoids sharp kinks, pinching, pressure on the insulation, or any other arrangement prone to damaging insulation value and producing poor megger test results. Wires shall be trained away from heat sources within the luminaire. Wires shall be terminated so all strands are extended to the full depth of the terminal lug with the insulation removed far enough so it abuts against the shoulder of the lug, but is not compressed as the lug is tightened.

Included with the pole wiring shall be fusing located in the handhole. Fusing shall be according to Article 1065.01 with the exception that fuses shall be 6 amperes.

Each luminaire and optical assembly shall be free of all dirt, smudges, etc. Should the optical assembly require cleaning, a luminaire manufacturer approved cleaning procedure shall be used.

Horizontal mount luminaires shall be installed in a level, horizontal plane, with adjustments as needed to insure the optics are set perpendicular to the traveled roadway.

When the pole is bridge mounted, a minimum size stainless steel 1/4-20NC set screw shall be provided to secure the luminaire to the mast arm tenon. A hole shall be drilled and tapped through the tenon and luminaire mounting bracket and then fitted with the screw.

Warranty.

The entire luminaire and all of its component parts shall be covered by a 10-year warranty. Failure is when one or more of the following occur:

- 1) Negligible light output from more than 10 percent of the discrete LEDs.
- 2) Significant moisture that deteriorates performance of the luminaire.
- 3) Driver that continues to operate at a reduced output due to overheating.

The warranty period shall begin on the date of luminaire shipment. The Contractor shall verify that the Resident Engineer has noted the shipment date in the daily diary. Copy of the shipment documentation shall be submitted.

The replacement luminaire shall be of the same manufacturer, model, and photometric distribution as the original.

Method of Measurement.

The rated initial minimum luminous flux (lumen output) of the light source, as installed in the luminaire, shall be according to the following table for each specified output designation.

Designation Type	Minimum Initial Luminous Flux
A	2,200
B	3,150
C	4,400
D	6,300
E	9,450
F	12,500
G	15,500
H	25,200
I	47,250
J	63,300
K	80,000+

Where delivered lumens is defined as the minimum initial delivered lumens at the specified color temperature. Luminaires with an initial luminous flux less than the values listed in the above table will not be acceptable even if they meet the requirements given in the Luminaire Performance table shown in the contract.

Basis of Payment.

This work will be paid for at the contract unit price per each for **LUMINAIRE, LED, ROADWAY**, of the output designation specified.

TRAFFIC SIGNAL GENERAL REQUIREMENTS

Effective: May 22, 2002

Revised: March 25, 2016

800.01TS

These Traffic Signal Special Provisions and the "District One Standard Traffic Signal Design Details" supplement the requirements of the State of Illinois "Standard Specifications for Road and Bridge Construction." The intent of these Special Provisions is to prescribe the materials and construction methods commonly used for traffic signal installations.

- All material furnished shall be new unless otherwise noted herein.
- Traffic signal construction and maintenance work shall be performed by personnel holding current IMSA Traffic Signal Technician Level II certification. A copy of the certification shall be immediately available upon request of the Engineer.
- The work to be done under this contract consists of furnishing, installing and maintaining all traffic signal work and items as specified in the Plans and as specified herein in a manner acceptable and approved by the Engineer.

Definitions of Terms.

Add the following to Section 101 of the Standard Specifications:

101.56 Vendor. Company that sells a particular type of product directly to the contractor or the Equipment Supplier.

101.57 Equipment supplier. Company that supplies, represents and provides technical support for IDOT District One approved traffic signal controllers and other related equipment. The Equipment Supplier shall be located within IDOT District One and shall:

- Be full service with on-site facilities to assemble, test and trouble-shoot traffic signal controllers and cabinet assemblies.
- Maintain an inventory of IDOT District One approved controllers and cabinets.
- Be staffed with permanent sales and technical personnel able to provide traffic signal controller and cabinet expertise and support.
- Technical staff shall hold current IMSA Traffic Signal Technician Level III certification and shall attend traffic signal turn-ons and inspections with a minimum 14 calendar day notice.

Submittals.

Revise Article 801.05 of the Standard Specifications to read:

All material approval requests shall be submitted electronically through the District's SharePoint System unless directed otherwise by the Engineer. Electronic material submittals shall follow the District's Traffic Operations Construction Submittals guidelines. General requirements include:

1. All material approval requests shall be made prior to or no later than the date of the preconstruction meeting. A list of major traffic signal items can be found in Article 801.05. Material or equipment which is similar or identical shall be the product of the same manufacturer, unless necessary for system continuity. Traffic signal materials and equipment shall bear the U.L. label whenever such labeling is available.

2. Product data and shop drawings shall be assembled by pay item. Only the top sheet of each pay item submittal will be stamped by the Department with the review status, except shop drawings for mast arm pole assemblies and the like will be stamped with the review status on each sheet.
3. Original manufacturer published product data and shop drawing sheets with legible dimensions and details shall be submitted for review.
4. When hard copy submittals are necessary, four complete copies of the manufacturer's descriptive literatures and technical data for the traffic signal materials shall be submitted. For hard copy or electronic submittals, the descriptive literature and technical data shall be adequate for determining whether the materials meet the requirements of the plans and specifications. If the literature contains more than one item, the Contractor shall indicate which item or items will be furnished.
5. When hard copy submittals are necessary for structural elements, four complete copies of the shop drawings for the mast arm assemblies and poles, and the combination mast arm assemblies and poles showing, in detail, the fabrication thereof and the certified mill analyses of the materials used in the fabrication, anchor rods, and reinforcing materials shall be submitted.
6. Partial or incomplete submittals will be returned without review.
7. Certain non-standard mast arm poles and special structural elements will require additional review from IDOT's Central Office. Examples include ornamental/decorative, non-standard length mast arm pole assemblies and monotube structures. The Contractor shall account for the additional review time in his schedule.
8. The contract number or permit number, project location/limits and corresponding pay code number must be on each sheet of correspondence, catalog cuts and mast arm poles and assemblies drawings.
9. Where certifications and/or warranties are specified, the information submitted for approval shall include certifications and warranties. Certifications involving inspections, and/or tests of material shall be complete with all test data, dates, and times.
10. After the Engineer reviews the submittals for conformance with the design concept of the project, the Engineer will stamp the drawings indicating their status as 'Approved', 'Approved-As-Noted', 'Disapproved', or 'Incomplete'. Since the Engineer's review is for conformance with the design concept only, it is the Contractor's responsibility to coordinate the various items into a working system as specified. The Contractor shall not be relieved from responsibility for errors or omissions in the shop, working, layout drawings, or other documents by the Department's approval thereof. The Contractor must still be in full compliance with contract and specification requirements.
11. The Contractor shall secure approved materials in a timely manner to assure construction schedules are not delayed.
12. All submitted items reviewed and marked 'APPROVED AS NOTED', 'DISAPPROVED', or 'INCOMPLETE' are to be resubmitted in their entirety, unless otherwise indicated within the submittal comments, with a disposition of previous comments to verify contract compliance at no additional cost to the contract.

13. Exceptions to and deviations from the requirements of the Contract Documents will not be allowed. It is the Contractor's responsibility to note any deviations from Contract requirements at the time of submittal and to make any requests for deviations in writing to the Engineer. In general, substitutions will not be acceptable. Requests for substitutions must demonstrate that the proposed substitution is superior to the material or equipment required by the Contract Documents. No exceptions, deviations or substitutions will be permitted without the approval of the Engineer.
14. Contractor shall not order major equipment such as mast arm assemblies prior to Engineer approval of the Contractor marked proposed traffic signal equipment locations to assure proper placement of contract required traffic signal displays, push buttons and other facilities. Field adjustments may require changes in proposed mast arm length and other coordination.

Marking Proposed Locations.

Revise "Marking Proposed Locations for Highway Lighting System" of Article 801.09 to read "Marking Proposed Locations for Highway Lighting System and Traffic Signals."

Add the following to Article 801.09 of the Standard Specifications:

It shall be the contractor's responsibility to verify all dimensions and conditions existing in the field prior to ordering materials and beginning construction. This shall include locating the mast arm foundations and verifying the mast arms lengths.

Inspection of Electrical Systems.

Add the following to Article 801.10 of the Standard Specifications:

- (c) All cabinets including temporary traffic signal cabinets shall be assembled by an approved equipment supplier in District One. The Department reserves the right to request any controller and cabinet to be tested at the equipment supplier's facility prior to field installation, at no extra cost to this contract.

Maintenance and Responsibility.

Revise Article 801.11 of the Standard Specifications to read:

- f. Existing traffic signal installations and/or any electrical facilities at all or various locations may be altered or reconstructed totally or partially as part of the work on this Contract. The Contractor is hereby advised that all traffic control equipment, presently installed at these locations, may be the property of the State of Illinois, Department of Transportation, Division of Highways, County, Private Developer, Municipality or Transit Agency in which they are located. Once the Contractor has begun any work on any portion of the project, all traffic signals within the limits of this contract or those which have the item "Maintenance of Existing Traffic Signal Installation," "Temporary Traffic Signal Installation(s)" and/or "Maintenance of Existing Flashing Beacon Installation," shall become the full responsibility of the Contractor. The Contractor shall supply the Engineer, Area Traffic Signal Maintenance and Operations Engineer, IDOT ComCenter and the Department's Electrical Maintenance Contractor with two 24-hour emergency contact names and telephone numbers.

- g. Automatic Traffic Enforcement equipment such as red lighting running and railroad crossing camera systems are owned and operated by others and the Contractor shall not be responsible for maintaining this equipment.
- h. Regional transit, County and other agencies may also have equipment connected to existing traffic signal or peripheral equipment such as PTZ cameras, switches, transit signal priority (TSP and BRT) servers and other devices that shall be included with traffic signal maintenance at no additional cost to the contract.
- i. When the project has a pay item for “Maintenance of Existing Traffic Signal Installation,” “Temporary Traffic Signal Installation(s)” and/or “Maintenance of Existing Flashing Beacon Installation,” the Contractor must notify both the Area Traffic Signal Maintenance and Operations Engineer at (847) 705-4424 and the Department’s Electrical Maintenance Contractor, of their intent to begin any physical construction work on the Contract or any portion thereof. This notification must be made a minimum of seven (7) working days prior to the start of construction to allow sufficient time for inspection of the existing traffic signal installation(s) and transfer of maintenance to the Contractor. The Department will attempt to full-fill the Contractor’s inspection date request(s), however workload and other conditions may prevent the Department from accommodating specific dates or times. The Contractor shall not be entitled to any other compensation if the requested inspection date(s) cannot be scheduled by the Department. If work is started prior to an inspection, maintenance of the traffic signal installation(s) will be transferred to the Contractor without an inspection. The Contractor will become responsible for repairing or replacing all equipment that is not operating properly or is damaged at no cost to the owner of the traffic signal. Final repairs or replacement of damaged equipment must meet the approval of the Engineer prior to or at the time of final inspection otherwise the traffic signal installation will not be accepted.
- j. The Contractor is advised that the existing and/or temporary traffic signal installation must remain in operation during all construction stages, except for the most essential down time. Any shutdown of the traffic signal installation, which exceeds fifteen (15) minutes, must have prior approval of the Engineer. Approval to shut down the traffic signal installation will only be granted during the period extending from 10:00 a.m. to 3:00 p.m. on weekdays. Shutdowns shall not be allowed during inclement weather or holiday periods.

- k. The Contractor shall be fully responsible for the safe and efficient operation of the traffic signals and other equipment noted herein. Any inquiry, complaint or request by the Department, the Department's Electrical Maintenance Contractor or the public, shall be investigated and repairs begun within one hour. Failure to provide this service will result in liquidated damages of \$1000 per day per occurrence. In addition, the Department reserves the right to assign any work not completed within this timeframe to the Electrical Maintenance Contractor. All costs associated to repair this uncompleted work shall be the responsibility of the Contractor. Failure to pay these costs to the Electrical Maintenance Contractor within one month after the incident will result in additional liquidated damages of \$1000 per month per occurrence. Unpaid bills will be deducted from the cost of the Contract. The Department may inspect any signaling device on the Department's highway system at any time without notification.
- l. Any proposed activity in the vicinity of a highway-rail grade crossing must adhere to the guidelines set forth in the current edition of the Manual on Uniform Traffic Control Devices (MUTCD) regarding work in temporary traffic control zones in the vicinity of highway-rail grade crossings which states that lane restrictions, flagging, or other operations shall not create conditions where vehicles can be queued across the railroad tracks. If the queuing of vehicles across the tracks cannot be avoided, a uniformed law enforcement officer or flagger shall be provided at the crossing to prevent vehicles from stopping on the tracks, even if automatic warning devices are in place.
- m. The Contractor shall be responsible to clear snow, ice, dirt, debris or other condition that obstructs visibility of any traffic signal display or access to traffic signal equipment.
- n. The Contractor shall maintain the traffic signal in normal operation during short or long term loss of utility or battery back-up power at critical locations designated by the Engineer. Critical locations may include traffic signals interconnected to railroad warning devices, expressway ramps, intersection with an SRA route, critical corridors or other locations identified by the Engineer. Temporary power to the traffic signal must meet applicable NEC and OSHA guidelines and may include portable generators and/or replacement batteries. Temporary power to critical locations shall not be for separately but shall be included in the contract.

Damage to Traffic Signal System.

Add the following to Article 801.12(b) of the Standard Specifications to read:

Any traffic signal control equipment damaged or not operating properly from any cause shall be replaced with new equipment meeting current District One traffic signal specifications and provided by the Contractor at no additional cost to the Contract and/or owner of the traffic signal system, all as approved by the Engineer. Final replacement of damaged equipment must meet the approval of the Engineer prior to or at the time of final inspection otherwise the traffic signal installation will not be accepted. Cable splices are only allowed at the bases of post and mast arms.

Temporary replacement of damaged or knockdown of a mast arm pole assembly shall require construction of a full or partial span wire signal installation or other method approved by the Engineer to assure signal heads are located overhead and over traveled pavement. Temporary replacement of mast arm mount signals with post mount signals will not be permitted.

Automatic Traffic Enforcement equipment, such as Red Light Enforcement cameras, detectors, and peripheral equipment, damaged or not operating properly from any cause, shall be the responsibility of the municipality or the Automatic Traffic Enforcement company per Permit agreement.

Traffic Signal Inspection (TURN-ON).

Revise Article 801.15(b) of the Standard Specifications to read:

It is the intent to have all electric work completed and equipment field tested by the Equipment Supplier prior to the Department's "turn-on" field inspection. If in the event the Engineer determines work is not complete and the inspection will require more than two (2) hours to complete, the inspection shall be canceled and the Contractor will be required to reschedule at another date. The maintenance of the traffic signals will not be accepted until all punch list work is corrected and re-inspected.

When the road is open to traffic, except as otherwise provided in Section 850 of the Standard Specifications, the Contractor may request a turn-on and inspection of the completed traffic signal installation at each separate location. This request must be made to the Area Traffic Signal Maintenance and Operations Engineer at (847) 705-4424 a minimum of seven (7) working days prior to the time of the requested inspection. The Department will attempt to full-fill the Contractor's turn-on and inspection date request(s), however workload and other conditions may prevent the Department from accommodating specific dates or times. The Contractor shall not be entitled to any other compensation if the requested turn-on and inspection date(s) cannot be scheduled by the Department. The Department will not grant a field inspection until written or electronic notification is provided from the Contractor that the equipment has been field tested and the intersection is operating according to Contract requirements. The Contractor must invite local fire department personnel to the turn-on when Emergency Vehicle Preemption (EVP) is included in the project. When the contract includes the item RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM, OPTIMIZE TRAFFIC SIGNAL SYSTEM, or TEMPORARY TRAFFIC SIGNAL TIMINGS, the Contractor must notify the SCAT Consultant of the turn-on/detour implementation schedule, as well as stage changes and phase changes during construction.

The Contractor must have all traffic signal work completed and the electrical service installation connected by the utility company prior to requesting an inspection and turn-on of the traffic signal installation. The Contractor shall be responsible to provide a police officer to assist with traffic control at the time of testing.

The Contractor shall provide a representative from the control equipment vendor's office who is knowledgeable of the cabinet design and controller functions to attend the traffic signal inspection for both permanent and temporary traffic signal turn-ons.

Upon demonstration that the signals are operating and all work is completed in accordance with the Contract and to the satisfaction of the Engineer, the Engineer will then allow the signals to be placed in continuous operation. The Agency that is responsible for the maintenance of each traffic signal installation will assume the maintenance upon successful completion of this inspection.

The District requires the following Final Project Documentation from the Contractor at traffic signal turn-ons in electronic format in addition to hard copies where noted. A CD/DVD shall be submitted with separate folders corresponding to each numbered title below. The CD/DVD shall be labelled with date, project location, company and contract or permit number. Record Drawings, Inventory and Material Approvals shall be submitted prior to traffic signal turn-on for review by the Department as described here-in.

Final Project Documentation:

1. Record Drawings. Signal plans of record with field revisions marked in red ink. One hard copy set of 11"x17" record drawings shall also be provided.
2. Inventory. Inventory of new and existing traffic signal equipment including cabinet types and devices within cabinets in an Excel spread sheet format. One hard copy shall also be provided.
3. Pictures. Digital pictures of a minimum 12M pixels of each intersection approach showing all traffic signal displays and equipment. Pictures shall include controller cabinet equipment in enough detail to clearly identify manufacture and model of major equipment.
4. Field Testing. Written notification from the Contractor and the equipment vendor of satisfactory field testing with corresponding material performance measurements, such as for detector loops and fiber optic systems (see Article 801.13). One hard copy of all contract required performance measurement testing shall also be provided.
5. Materials Approval. The material approval letter. A hard copy shall also be provided.
6. Manuals. Operation and service manuals of the signal controller and associated control equipment. One hard copy shall also be provided.
7. Cabinet Wiring Diagram and Cable Logs. Five (5) hard copies 11" x 17" of the cabinet wiring diagrams shall be provided along with electronic pdf and dgn files of the cabinet wiring diagram. Five hard copies of the cable logs and electronic excel files shall be provided with cable #, number of conductors and spares, connected device/signal head and intersection location.
8. Controller Programming Settings. The traffic signal controller's timings; backup timings; coordination splits, offsets, and cycles; TBC Time of Day, Week and Year Programs; Traffic Responsive Program, Detector Phase Assignment, Type and Detector Switching; and any other functions programmable from the keyboard. The controller manufacturer shall also supply a printed form, not to exceed 11" x 17" for recording that data noted above. The form shall include a location, date, manufacturer's name, controller model and software version. The form shall be approved by the Engineer and a minimum of three (3) copies must be furnished at each turn-on. The manufacturer must provide all programming information used within the controller at the time of turn-on.

9. Warrantees and Guarantees. All manufacturer and contractor warrantees and guarantees required by Article 801.14.
10. GPS coordinate of traffic signal equipment as describe in the Record Drawings section herein.

Acceptance of the traffic signal equipment by the Department shall be based upon inspection results at the traffic signal “turn on”, completeness of the required documentation and successful operation during a minimum 72 hour “burn-in” period following activation of the traffic signal. If approved, traffic signal acceptance shall be verbal at the “turn on” inspection followed by written correspondence from the Engineer. The Contractor shall be responsible for all traffic signal equipment and associated maintenance thereof until Departmental acceptance is granted.

All equipment and/or parts to keep the traffic signal installation operating shall be furnished by the Contractor. No spare traffic signal equipment is available from the Department.

All punch list work shall be completed within two (2) weeks after the final inspection. The Contractor shall notify the Electrical Maintenance Contractor to inspect all punch list work. Failure to meet these time constraints shall result in liquidated damage charges of \$500 per month per incident.

All cost of work and materials required to comply with the above requirements shall be included in the pay item bid prices, under which the subject materials and signal equipment are paid, and no additional compensation will be allowed. Materials and signal equipment not complying with the above requirements shall be subject to removal and disposal at the Contractor's expense.

Record Drawings.

The requirements listed for Electrical Installation shall apply for Traffic Signal Installations in Article 801.16. Revise the 2nd paragraph of Article 801.16 of the Standard Specifications to read:

“When the work is complete, and seven days before the request for a final inspection, the reduced-size set of contract drawings, stamped “RECORD DRAWINGS”, shall be submitted to the Engineer for review and approval and shall be stamped with the date and the signature of the Contractor’s supervising Engineer or electrician. The record drawings shall be submitted in PDF format on CDROM as well as hardcopy for review and approval. If the contract consists of multiple intersections, each intersection shall be saved as an individual PDF file with TS# and location name in its file name.

In addition to the record drawings, copies of the final catalog cuts which have been Approved or Approved as Noted shall be submitted in PDF format along with the record drawings. The PDF files shall clearly indicate the pay item either by filename or PDF Table of Contents referencing the respective pay item number for multi-item PDF files. Specific part or model numbers of items which have been selected shall be clearly visible.”

As part of the record drawings, the Contractor shall inventory all traffic signal equipment, new or existing, on the project and record information in an Excel spreadsheet. The inventory shall include equipment type, model numbers, software manufacturer and version and quantities.

Add the following to Article 801.16 of the Standard Specifications:

“In addition to the specified record drawings, the Contactor shall record GPS coordinates of the following traffic signal components being installed, modified or being affected in other ways by this contract:

- All Mast Arm Poles and Posts
- Traffic Signal Wood Poles
- Rail Road Bungalow
- UPS
- Handholes
- Conduit roadway crossings
- Controller Cabinets
- Communication Cabinets
- Electric Service Disconnect locations
- CCTV Camera installations
- Fiber Optic Splice Locations
- Conduit Crossings

Datum to be used shall be North American 1983.

Data shall be provided electronically and in print form. The electronic format shall be compatible with MS Excel. Latitude and Longitude shall be in decimal degrees with a minimum of 6 decimal places. Each coordinate shall have the following information:

- File shall be named: TSXXX-YY-MM-DD (i.e. TS22157_15-01-01)
- Each intersection shall have its own file
- Row 1 should have the location name (i.e. IL 31 @ Klausen)
- Row 2 is blank
- Row 3 is the headers for the columns
- Row 4 starts the data
- Column A (Date) – should be in the following format: MM/DD/YYYY
- Column B (Item) – as shown in the table below
- Column C (Description) – as shown in the table below
- Column D and E (GPS Data) – should be in decimal form, per the IDOT special provisions

Examples:

Date	Item	Description	Latitude	Longitude
01/01/2015	MP (Mast Arm Pole)	NEQ, NB, Dual, Combination Pole	41.580493	-87.793378
01/01/2015	HH (Handhole)	Heavy Duty, Fiber, Intersection, Double	41.558532	-87.792571
01/01/2015	ES (Electrical Service)	Ground mount, Pole mount	41.765532	-87.543571
01/01/2015	CC (Controller Cabinet)		41.602248	-87.794053
01/01/2015	RSC (Rigid Steel Crossing)	IL 31 east side crossing south leg to center HH at Klausen	41.611111	-87.790222
01/01/2015	PTZ (PTZ)	NEQ extension pole	41.593434	-87.769876
01/01/2015	POST (Post)		41.651848	-87.762053
01/01/2015	MCC (Master Controller Cabinet)		41.584593	-87.793378
01/01/2015	COMC (Communication Cabinet)		41.584600	-87.793432
01/01/2015	BBS (Battery Backup System)		41.558532	-87.792571
01/01/2015	CNCR (Conduit Crossing)	4-inch IL 31 n/o of Klausen	41.588888	-87.794440

Prior to the collection of data, the contractor shall provide a sample data collection of at least six data points of known locations to be reviewed and verified by the Engineer to be accurate within 1 foot. Upon verification, data collection can begin. Data collection can be made as construction progresses, or can be collected after all items are installed. If the data is unacceptable the contractor shall make corrections to the data collection equipment and or process and submit the data for review and approval as specified.

Accuracy. Data collected is to be mapping grade. A handheld mapping grade GPS device shall be used for the data collection. The receiver shall support differential correction and data shall have a minimum 1 foot accuracy after post processing.

GPS receivers integrated into cellular communication devices, recreational and automotive GPS devices are not acceptable.

The GPS shall be the product of an established major GPS manufacturer having been in the business for a minimum of 6 years.”

Delete the last sentence of the 3rd paragraph of Article 801.16.

Locating Underground Facilities.

Revise Section 803 to the Standard Specifications to read:

IDOT traffic signal facilities are not part of any of the one-call locating service such as J.U.L.I.E or Digger. If this Contract requires the services of an Electrical Contractor, the Contractor shall be responsible at his/her own expense for locating existing IDOT electrical facilities prior to performing any work. If this Contract does not require the services of an Electrical Contractor, the Contractor may request one free locate for existing IDOT electrical facilities from the District One Electrical Maintenance Contractor prior to the start of any work. Additional requests may be at the expense of the Contractor. The location of underground traffic facilities does not relieve the Contractor of their responsibility to repair any facilities damaged during construction at their expense.

The exact location of all utilities shall be field verified by the Contractor before the installation of any components of the traffic signal system. For locations of utilities, locally owned equipment, and leased enforcement camera system facilities, the local Counties or Municipalities may need to be contacted: in the City of Chicago contact Digger at (312) 744-7000 and for all other locations contact J.U.L.I.E. at 1-800-892-0123 or 811.

Restoration of Work Area.

Add the following article to Section 801 of the Standard Specifications:

801.17 Restoration of work area. Restoration of the traffic signal work area shall be included in the related pay items such as foundation, conduit, handhole, underground raceways, etc. All roadway surfaces such as shoulders, medians, sidewalks, pavement, etc. shall be replaced in kind. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded. All brick pavers disturbed in the work area shall be restored to their original configuration as directed by the Engineer. All damaged brick pavers shall be replaced with a comparable material approved by the Engineer. Restoration of the work area shall be included in the contract without any extra compensation allowed to the Contractor.

Bagging Signal Heads.

Light tan colored traffic and pedestrian signal reusable covers shall be used to cover dark/un-energized signal sections and visors. Covers shall be made of outdoor fabric with urethane coating for repelling water, have elastic fully sewn around the cover ends for a tight fit over the visor, and have a minimum of two straps with buckles to secure the cover to the backplate. A center mesh strip allows viewing without removal for signal status testing purposes. Covers shall include a message indicating the signal is not in service.

SERVICE INSTALLATION (TRAFFIC SIGNALS)

Effective: May 22, 2002

Revised: June 15, 2016

805.01TS

Revise Section 805 of the Standard Specifications to read:

Description.

This work shall consist of all materials and labor required to install, modify, or extend the electric service installation. All installations shall meet the requirements of the "District One Standard Traffic Signal Design Details".

General.

The electric service installation shall be the electric service disconnecting means and it shall be identified as suitable for use as service equipment.

The electric utility contact information is noted on the plans and represents the current information at the time of contract preparation. The Contractor must request in writing for service and/or service modification within 10 days of contract award and must follow-up with the electric utility to assure all necessary documents and payment are received by the utility. The Contractor shall forward copies of all correspondence between the contractor and utility company to the Engineer and Area Traffic Signal Maintenance and Operations Engineer. The service agreement and sketch shall be submitted for signature to the IDOT's Traffic Operations Programs Engineer.

Materials.

- a. General. The completed control panel shall be constructed in accordance with UL Std. 508A, Industrial Control Panel, and carry the UL label. Wire terminations shall be UL listed.
- b. Enclosures.
 1. Pole Mounted Cabinet. The cabinet shall be UL 50, NEMA Type 4X, unfinished single door design, fabricated from minimum 0.080-inch (2.03 mm) thick Type 5052 H-32 aluminum. Seams shall be continuous welded and ground smooth. Stainless steel screws and clamps shall secure the cover and assure a watertight seal. The cover shall be removable by pulling the continuous stainless steel hinge pin. The cabinet shall have an oil-resistant gasket and a lock kit shall be provided with an internal O-ring in the locking mechanism assuring a watertight and dust-tight seal. The cabinet shall be sized to adequately house all required components with extra space for arrangement and termination of wiring. A minimum size of 14-inches (350 mm) high, 9-inches (225 mm) wide and 8-inches (200 mm) in depth is required. The cabinet shall be channel mounted to a wooden utility pole using assemblies recommended by the vendor.

2. Ground Mounted Cabinet. The cabinet shall be UL 50, NEMA Type 3R unfinished single door design with back panel. The cabinet shall be fabricated from Type 5052 H-32 aluminum with the frame and door 0.125-inch (3.175 mm) thick, the top 0.250-inch (6.350 mm) thick and the bottom 0.500-inch (12.70 mm) thick. Seams shall be continuous welded and ground smooth. The door and door opening shall be double flanged. The door shall be approximately 80% of the front surface, with a full length tamperproof stainless steel .075-inch (1.91 mm) thick hinge bolted to the cabinet with stainless steel carriage bolts and nylocks nuts. The locking mechanism shall be slam-latch type with a keyhole cover. The cabinet shall be sized to adequately house all required components with extra space for arrangement and termination of wiring. A minimum size of 40-inches (1000 mm) high, 16-inches (400 mm) wide and 15-inches (375 mm) in depth is required. The cabinet shall be mounted upon a square Type A concrete foundation as indicated on the plans. The foundation is paid for separately.
 3. All enclosures shall include a green external power indicator LED light with circuitry as shown in the Electrical Service-Panel Diagram detail sheet. For pole mounted service enclosures, the power indicator light shall be mounted as shown in the detail. For ground mounted enclosures, the power indicator light shall be mounted on the side of the enclosure most visible from the major roadway.
- c. Electric Utility Meter Housing and Riser. The electric meter housing and meter socket shall be supplied and installed by the contractor. The contractor is to coordinate the work to be performed and the materials required with the utility company to make the final connection at the power source. Electric utility required risers, weather/service head and any other materials necessary for connection shall also be included in the pay item. Materials shall be in accordance with the electric utility's requirements. For ground-mounted service, the electric utility meter housing shall be mounted to the enclosure. The meter shall be supplied by the utility company. Metered service shall not be used unless specified in the plans.
 - d. Surge Protector. Overvoltage protection, with LED indicator, shall be provided for the 120 volt load circuit by the means MOV and thermal fusing technology. The response time shall be <5n seconds and operate within a range of -40C to +85C. The surge protector shall be UL 1449 Listed.
 - e. Circuit Breakers. Circuit breakers shall be standard UL listed molded case, thermal-magnetic bolt-on type circuit breakers with trip free indicating handles. 120 volt circuit breakers shall have an interrupting rating of not less than 65,000 rms symmetrical amperes. Unless otherwise indicated, the main disconnect circuit breaker for the traffic signal controller shall be rated 60 amperes, 120 V and the auxiliary circuit breakers shall be rated 10 amperes, 120 V.

- f. Fuses, Fuseholders and Power Indicating Light. Fuses shall be small-dimensional cylindrical fuses of the dual element time-delay type. The fuses shall be rated for 600 V AC and shall have a UL listed interrupting rating of not less than 10,000 rms symmetrical amperes at rated voltage. The power indicating light shall be LED type with a green colored lens and shall be energized when electric utility power is present.
- g. Ground and Neutral Bus Bars. A single copper ground and neutral bus bar, mounted on the equipment panel shall be provided. Ground and neutral conductors shall be separated on the bus bar. Compression lugs, plus 2 spare lugs, shall be sized to accommodate the cables with the heads of the connector screws painted green for ground connections and white for neutral connections.
- h. Utility Services Connection. The Contractor shall notify the Utility Company marketing representative a minimum of 30 working days prior to the anticipated date of hook-up. This 30 day advance notification will begin only after the Utility Company marketing representative has received service charge payments from the Contractor. Prior to contacting the Utility Company marketing representative for service connection, the service installation controller cabinet and cable must be installed for inspection by the Utility Company.
- i. Ground Rod. Ground rods shall be copper-clad steel, a minimum of 10 feet (3.0m) in length, and 3/4 inch (20mm) in diameter. Ground rod resistance measurements to ground shall be 25 ohms or less. If necessary additional rods shall be installed to meet resistance requirements at no additional cost to the contract.

Installation.

- a. General. The Contractor shall confirm the orientation of the traffic service installation and its door side with the engineer, prior to installation. All conduit entrances into the service installation shall be sealed with a pliable waterproof material.
- b. Pole Mounted. Brackets designed for pole mounting shall be used. All mounting hardware shall be stainless steel. Mounting height shall be as noted on the plans or as directed by the Engineer.
- c. Ground Mounted. The service installation shall be mounted plumb and level on the foundation and fastened to the anchor bolts with hot-dipped galvanized or stainless steel nuts and washers. The space between the bottom of the enclosure and the top of the foundation shall be caulked at the base with silicone.

Basis of Payment.

The service installation shall be paid for at the contract unit price each for SERVICE INSTALLATION of the type specified which shall be payment in full for furnishing and installing the service installation complete. The CONCRETE FOUNDATION, TYPE A, which includes the ground rod, shall be paid for separately. SERVICE INSTALLATION, POLE MOUNTED shall include the 3/4 inch (20mm) grounding conduit, ground rod, and pole mount assembly. Any charges by the utility companies shall be approved by the engineer and paid for as an addition to the contract according to Article 109.05 of the Standard Specifications.

GROUNDING OF TRAFFIC SIGNAL SYSTEMS

Effective: May 22, 2002

Revised: July 1, 2015

806.01TS

Revise Section 806 of the Standard Specifications to read:

General.

All traffic signal systems, equipment and appurtenances shall be properly grounded in strict conformance with the NEC. This work shall be in accordance with IDOT's District One Traffic Signal Design Details.

The grounding electrode system shall include a ground rod installed with each traffic signal controller concrete foundation and all mast arm and post concrete foundations. An additional ground rod will be required at locations where measured resistance exceeds 25 ohms. Ground rods are included in the applicable concrete foundation or service installation pay item and will not be paid for separately.

Testing shall be according to Article 801.13 (a) (4) and (5).

- (a) The grounded conductor (neutral conductor) shall be white color coded. This conductor shall be bonded to the equipment grounding conductor only at the Electric Service Installation. All power cables shall include one neutral conductor of the same size.
- (b) The equipment grounding conductor shall be green color coded. The following is in addition to Article 801.04 of the Standard Specifications.
 1. Equipment grounding conductors shall be bonded to the grounded conductor (neutral conductor) only at the Electric Service Installation. The equipment grounding conductor is paid for separately and shall be continuous. The Earth shall not be used as the equipment grounding conductor.
 2. Equipment grounding conductors shall be bonded, using a UL Listed grounding connector, to all traffic signal mast arm poles, traffic signal posts, pedestrian posts, pull boxes, handhole frames and covers, conduits, and other metallic enclosures throughout the traffic signal wiring system, except where noted herein. Bonding shall be made with a splice and pigtail connection, using a sized compression type copper sleeve, sealant tape, and heat-shrinkable cap. A UL listed electrical joint compound shall be applied to all conductors' terminations, connector threads and contact points. Conduit grounding bushings shall be installed at all conduit terminations including spare or empty conduits.
 3. All metallic and non-metallic raceways shall have a continuous equipment grounding conductor, except raceways containing only detector loop lead-in circuits, circuits under 50 volts and/or fiber optic cable will not be required to include an equipment grounding conductor.

4. Individual conductor splices in handholes shall be soldered and sealed with heat shrink. When necessary to maintain effective equipment grounding, a full cable heat shrink shall be provided over individual conductor heat shrinks.
- (c) The grounding electrode conductor shall be similar to the equipment grounding conductor in color coding (green) and size. The grounding electrode conductor is used to connect the ground rod to the equipment grounding conductor and is bonded to ground rods via exothermic welding, UL listed pressure connectors, and UL listed clamps.

MAINTENANCE OF EXISTING TRAFFIC SIGNAL AND FLASHING BEACON INSTALLATION

Effective: May 22, 2002

Revised: July 1, 2015

850.01TS

General.

1. Full maintenance responsibility shall start as soon as the Contractor begins any physical work on the Contract or any portion thereof. If Contract work is started prior to a traffic signal inspection, maintenance of the traffic signal installation(s) will be transferred to the Contractor without an inspection.
2. The Contractor shall have electricians with IMSA Level II certification on staff to provide signal maintenance. A copy of the certification shall be immediately available upon request of the Engineer.
3. This item shall include maintenance of all traffic signal equipment and other connected and related equipment such as flashing beacons, emergency vehicle pre-emption equipment, master controllers, uninterruptable power supply (UPS and batteries), PTZ cameras, vehicle detection, handholes, lighted signs, telephone service installations, communication cables, conduits to adjacent intersections, and other traffic signal equipment.
4. Regional transit, County and other agencies may also have equipment connected to existing traffic signal or peripheral equipment such as PTZ cameras, switches, transit signal priority (TSP and BRT) servers, radios and other devices that shall be included with traffic signal maintenance at no additional cost to the contract.
5. Maintenance shall not include Automatic Traffic Enforcement equipment, such as Red Light Enforcement cameras, detectors, or peripheral equipment. This equipment is operated and maintained by the local municipality and should be de-activated while on contractor maintenance.
6. The energy charges for the operation of the traffic signal installation shall be paid for by the Contractor.

Maintenance.

1. The Contractor shall check all controllers every two (2) weeks, which will include visually inspecting all timing intervals, relays, detectors, and pre-emption equipment to ensure that they are functioning properly. The Contractor shall check signal system communications and phone lines to assure proper operation. This item includes, as routine maintenance, all portions of emergency vehicle pre-emption equipment. The Contractor shall maintain in stock at all times a sufficient amount of materials and equipment to provide effective temporary and permanent repairs. Prior to the traffic signal maintenance transfer, the contractor shall supply a detailed maintenance schedule that includes dates, locations, names of electricians providing the required checks and inspections along with any other information requested by the Engineer.
2. The Contractor is advised that the existing and/or span wire traffic signal installation must remain in operation during all construction stages, except for the most essential down time. Any shutdown of the traffic signal installation, which exceeds fifteen (15) minutes, must have prior approval of the Engineer. Approval to shut down the traffic signal installation will only be granted during the period extending from 10:00 a.m. to 3:00 p.m. on weekdays. Shutdowns shall not be allowed during inclement weather or holiday periods.
3. The Contractor shall provide immediate corrective action when any part or parts of the system fail to function properly. Two far side heads facing each approach shall be considered the minimum acceptable signal operation pending permanent repairs. When repairs at a signalized intersection require that the controller be disconnected or otherwise removed from normal operation, and power is available, the Contractor shall place the traffic signal installation on flashing operation. The signals shall flash RED for all directions unless a different indication has been specified by the Engineer. The Contractor shall be required to place stop signs (R1-1-36) at each approach of the intersection as a temporary means of regulating traffic. When the signals operate in flash, the Contractor shall furnish and equip all their vehicles assigned to the maintenance of traffic signal installations with a sufficient number of stop signs as specified herein. The Contractor shall maintain a sufficient number of spare stop signs in stock at all times to replace stop signs which may be damaged or stolen.
4. The Contractor shall provide the Engineer with 2 (two) 24 hour telephone numbers for the maintenance of the traffic signal installation and for emergency calls by the Engineer.
5. Traffic signal equipment which is lost or not returned to the Department for any reason shall be replaced with new equipment meeting the requirements of the Standard Specifications and these special provisions.

6. The Contractor shall respond to all emergency calls from the Department or others within one (1) hour after notification and provide immediate corrective action. When equipment has been damaged or becomes faulty beyond repair, the Contractor shall replace it with new and identical equipment. The cost of furnishing and installing the replaced equipment shall be borne by the Contractor at no additional charge to the contract. The Contractor may institute action to recover damages from a responsible third party. If at any time the Contractor fails to perform all work as specified herein to keep the traffic signal installation in proper operating condition or if the Engineer cannot contact the Contractor's designated personnel, the Engineer shall have the State's Electrical Maintenance Contractor perform the maintenance work. The Contractor shall be responsible for all of the State's Electrical Maintenance Contractor's costs and liquidated damages of \$1000 per day per occurrence. The State's Electrical Maintenance Contractor shall bill the Contractor for the total cost of the work. The Contractor shall pay this bill within thirty (30) days of the date of receipt of the invoice or the cost of such work will be deducted from the amount due the Contractor. The Contractor shall allow the Electrical Maintenance Contractor to make reviews of the Existing Traffic Signal Installation that has been transferred to the Contractor for Maintenance.
7. Any proposed activity in the vicinity of a highway-rail grade crossing must adhere to the guidelines set forth in the current edition of the Manual on Uniform Traffic Control Devices (MUTCD) regarding work in temporary traffic control zones in the vicinity of highway-rail grade crossings which states that lane restrictions, flagging, or other operations shall not create conditions where vehicles can be queued across the railroad tracks. If the queuing of vehicles across the tracks cannot be avoided, a uniformed law enforcement officer or flagger shall be provided at the crossing to prevent vehicles from stopping on the tracks, even if automatic warning devices are in place.
8. Equipment included in this item that is damaged or not operating properly from any cause shall be replaced with new equipment meeting current District One traffic signal specifications and provided by the Contractor at no additional cost to the Contract and/or owner of the traffic signal system, all as approved by the Engineer. Final replacement of damaged equipment must meet the approval of the Engineer prior to or at the time of final inspection otherwise the traffic signal installation will not be accepted. Cable splices outside the controller cabinet shall not be allowed.
9. Automatic Traffic Enforcement equipment, such as Red Light Enforcement cameras, detectors, and peripheral equipment, damaged or not operating properly from any cause, shall be the responsibility of the municipality or the Automatic Traffic Enforcement Company per Permit agreement.
10. The Contractor shall be responsible to clear snow, ice, dirt, debris or other condition that obstructs visibility of any traffic signal display or access to traffic signal equipment.

11. The Contractor shall maintain the traffic signal in normal operation during short or long term loss of utility or battery back-up power at critical locations designated by the Engineer. Critical locations may include traffic signals interconnected to railroad warning devices, expressway ramps, intersection with an SRA route, critical corridors or other locations identified by the Engineer. Temporary power to the traffic signal must meet applicable NEC and OSHA guidelines and may include portable generators and/or replacement batteries. Temporary power to critical locations shall not be paid for separately but shall be included in the contract.
12. Temporary replacement of damaged or knockdown of a mast arm pole assembly shall require construction of a full or partial span wire signal installation or other method approved by the Engineer to assure signal heads are located overhead and over traveled pavement. Temporary replacement of mast arm mount signals with post mount signals will not be permitted.

Basis of Payment.

This work will be paid for at the contract unit price per each for MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION. Each intersection will be paid for separately. Maintenance of a standalone and or not connected flashing beacon shall be paid for at the contract unit price for MAINTENANCE OF EXISTING FLASHING BEACON INSTALLATION. Each flashing beacon will be paid for separately.

UNINTERRUPTABLE POWER SUPPLY, SPECIAL

Effective: January 1, 2013

Revised: May 19, 2016

862.01TS

This work shall be in accordance with section 862 of the Standard Specification except as modified herein

Add the following to Article 862.01 of the Standard Specifications:

The UPS shall have the power capacity to provide normal operation of a signalized intersection that utilizes all LED type signal head optics, for a minimum of 6 (six) hours.

Add the following to Article 862.02 of the Standard Specifications:

Materials shall be according to Article 1074.04 as modified in UNINTERRUPTABLE POWER SUPPLY, SPECIAL.

Add the following to Article 862.03 of the Standard Specifications:

The UPS shall additionally include, but not be limited to, a battery cabinet, where applicable. For Super-P (Type IV) and Super-R (Type V) cabinets, the battery cabinet is integrated to the traffic signal cabinet, and shall be included in the cost for the traffic signal cabinet of the size and type indicated on the plans.

The UPS shall provide reliable emergency power to the traffic signals in the event of a power failure or interruption.

Revise Article 862.04 of the Standard Specifications to read:

Installation.

When a UPS is installed at an existing traffic signal cabinet, the UPS cabinet shall partially rest on the lip of the existing controller cabinet foundation and be secured to the existing controller cabinet by means of at least four (4) stainless steel bolts. The UPS cabinet shall be completely enclosed with the bottom and back constructed of the same material as the cabinet.

When a UPS is installed at a new signal cabinet and foundation, it shall be mounted as shown on the plans.

At locations where UPS is installed and an Emergency Vehicle Priority System is in use, any existing incandescent confirmation beacons shall be replaced with LED lamps in accordance with the District One Emergency Vehicle Priority System specification at no additional cost to the contract. A concrete apron shall be provided and be in accordance with Articles 424 and 202 of the Standard Specifications. The concrete apron shall also, follow the District 1 Standard Traffic Signal Design Detail, Type D for Ground Mounted Controller Cabinet and UPS Battery Cabinet.

This item shall include any required modifications to an existing traffic signal controller as a result of the addition of the UPS including the addition of alarms.

Materials.

Revise Article 1074.04(a)(1) of the Standard Specifications to read:

The UPS shall be line interactive or double conversion and provide voltage regulation and power conditioning when utilizing utility power. The UPS shall be sized appropriately for the intersection(s) normal traffic signal operating load. The UPS must be able to maintain the intersection's normal operating load plus 20 percent (20%) of the intersection's normal operating load. When installed at a railroad-interconnected intersection the UPS must maintain the railroad pre-emption load, plus 20 percent (20%) of the railroad preemption-operating load. The total connected traffic signal load shall not exceed the published ratings for the UPS.

The UPS shall provide a minimum of 6 (six) hours of normal operation run-time for signalized intersections with LED type signal head optics at 77 °F (25 °C) (minimum 1000 W active output capacity, with 86 percent minimum inverter efficiency).

Revise the first paragraph of Article 1074.04(a)(3) of the Standard Specifications to read:

The UPS shall have a minimum of four (4) sets of normally open (NO) and normally closed (NC) single-pole double-throw (SPDT) relay contact closures, available on a panel mounted terminal block or locking circular connectors, rated at a minimum 120 V/1 A, and labeled so as to identify each contact according to the plans.

Revise Article 1074.04(a)(10) of the Standard Specifications to read:

The UPS shall be compatible with the District's approved traffic controller assemblies utilizing NEMA TS 1 or NEMA TS 2 controllers and cabinet components for full time operation.

Revise Article 1074.04(a)(17) of the Standard Specifications to read:

When the intersection is in battery backup mode, the UPS shall bypass all internal cabinet lights, ventilation fans, cabinet heaters, service receptacles, luminaires, any lighted street name signs, any automated enforcement equipment and any other devices directed by the Engineer.

Revise Article 1074.04(b)(2)b of the Standard Specifications to read:

Batteries, inverter/charger and power transfer relay shall be housed in a separate NEMA Type 3R cabinet. The cabinet shall be Aluminum alloy, 5052-H32, 0.125-inch thick and have a natural mill finish.

Revise Article 1074.04(b)(2)c of the Standard Specifications to read:

No more than three batteries shall be mounted on individual shelves for a cabinet housing six batteries and no more than four batteries per shelf for a cabinet housing eight batteries.

Revise Article 1074.04(b)(2)e of the Standard Specifications to read:

The battery cabinet housing shall have the following nominal outside dimensions: a width of 25 in. (785 mm), a depth of 16 in. (440 mm), and a height of 41 to 48 in. (1.1 to 1.3 m). Clearance between shelves shall be a minimum of 10 in. (250 mm).

End of paragraph 1074.04(b)(2)e

The door shall be equipped with a two position doorstop, one a 90° and one at 120°.

Revise Article 1074.04(b)(2)g of the Standard Specifications to read:

The door shall open to the entire cabinet, have a neoprene gasket, an Aluminum continuous piano hinge with stainless steel pin, and a three point locking system. The cabinet shall be provided with a main door lock which shall operate with a traffic industry conventional No. 2 key. Provisions for padlocking the door shall be provided.

Add the following to Article 1074.04(b)(2) of the Standard Specifications:

j. The battery cabinet shall have provisions for an external generator connection.

Add the following to Article 1074.04(c) of the Standard Specifications:

- (8) The UPS shall include a tip or kill switch installed in the battery cabinet, which shall completely disconnect power from the UPS when the switch is manually activated.
- (9) The UPS shall include standard RS-232 and internal Ethernet interface.
- (10) The UPS shall incorporate a flanged electric generator inlet for charging the batteries and operating the UPS. The generator connector shall be male type, twist-lock, rated as 15A, 125VAC with a NEMA L5-15P configuration and weatherproof lift cover plate. Access to the generator inlet shall be from a secured weatherproof lift cover plate or behind a locked battery cabinet police panel.
- (11) The bypass switch shall include an internal power transfer relay that allows removal of the battery back-up unit, while the traffic signal is connected to utility power, without impacting normal traffic signal operation.

Revise Article 1074.04(d)(3) of the Standard Specifications to read:

All batteries supplied in the UPS shall be either gel cell or AGM type, deep cycle, completely sealed, prismatic lead calcium based, silver alloy, valve regulated lead acid (VRLA) requiring no maintenance. All batteries in a UPS installation shall be the same type; mixing of gel cell and AGM types within a UPS installation is not permitted.

Revise Article 1074.04(d)(4) of the Standard Specifications to read:

Batteries shall be certified by the manufacturer to operate over a temperature range of -13 to 160 °F (-25 to + 71 °C) for gel cell batteries and -40 to 140 °F (-40 to + 60 °C) for AGM type batteries.

Add the following to Article 1074.04(d) of the Standard Specifications:

- (9) The UPS shall consist of an even number of batteries that are capable of maintaining normal operation of the signalized intersection for a minimum of 6 (six) hours. Calculations shall be provided showing the number of batteries of the type supplied that are needed to satisfy this requirement. A minimum of four batteries shall be provided.
- (10) Battery Heater mats shall be provided, when gel cell type batteries are supplied.

Add the following to the Article 1074.04 of the Standard Specifications:

- (e) Warranty. The warranty for an uninterruptable power supply (UPS) and batteries (full replacement) shall cover a minimum of 5 years from date the equipment is placed in operation.
- (f) Installation. Bypass switch shall completely disconnect the traffic signal cabinet from the utility provider.

(g) The UPS shall be set-up to run the traffic signal continuously, without going to a red flashing condition, when switched to battery power unless otherwise directed by the Engineer. The Contractor shall confirm set-up with the Engineer. The continuous operation mode when switched to battery may require modification to unit connections and these modifications are included in the unit price for this item.

Revise Article 862.05 of the Standard Specifications to read:

Basis of Payment.

This work will be paid for at the contract unit price per each for UNINTERRUPTABLE POWER SUPPLY, SPECIAL or UNINTERRUPTABLE POWER SUPPLY AND CABINET, SPECIAL. Replacement of Emergency Vehicle Priority System confirmation beacons and any required modifications to the traffic signal controller shall be included in the cost of the UNINTERRUPTABLE POWER SUPPLY, SPECIAL or UNINTERRUPTABLE POWER SUPPLY AND CABINET, SPECIAL item. The concrete apron and earth excavation required shall be included in the cost of the UNINTERRUPTABLE POWER SUPPLY AND CABINET, SPECIAL item.

FLASHING BEACON INSTALLATION, RELOCATION AND REMOVAL

Effective: January 1, 2007

Revised: July 1, 2015

880.02TS

This work shall consist of furnishing and installing a new flashing beacon installation, solar powered flashing beacon installation, relocation of existing flashing beacon, and/or the removal of the existing flashing beacon installation as shown on the plans and as described herein. The energy charges for the operation of the flashing beacon installation shall be paid for by the Department unless otherwise directed by the Engineer.

The installation, relocation and removal of flashing beacon installation shall be according to the applicable portions of Sections 800 and 1000 of the Standard Specifications for Road and Bridge Construction and District 1 Flashing Beacon Installation Details except as revised herein. LED signal heads shall be as modified in 880.01TS LED SIGNAL HEAD AND OPTICALLY PROGRAMMED LED SIGNAL HEAD Special Provision.

(a) Flashing Beacon Installation. This item shall consist of installing a post mounted 12 inch (300 mm) L.E.D. single section red or yellow flashing beacon on a new or existing post as shown on the plans or as directed by the Engineer. This item shall include furnishing and installing a flasher controller in an aluminum cabinet, or integrated within the signal head, 12 inch (300 mm) L.E.D. red or yellow signal section with a dimmer if required by the Engineer, and all other hardware necessary to complete the installation.

- (b) Solar Powered Flashing Beacon Installation. This item shall consist of installation of a solar powered flashing beacon, post mounted as shown on the plans or as directed by the Engineer. This item shall consist of furnishing and installing a 12 inch (300 mm) single red or yellow flashing module on a new or existing post as shown on the plans or as directed by the Engineer. This item shall included furnishing and installing a flasher controller that is integrated within the signal head, with discrete solar panels, LED module, battery, electronics, compact housing and be capable of operating 24 hours, 7 days a week. The flasher unit shall be installed on standard wood or metal posts. The flash pattern shall be MUTCD compliant and have alternate flash patterns available. The battery shall have a life span of a minimum of 5 years and be field replaceable. The battery and electronics may be located inside the solar panel housing or signal head. The sections of the flasher unit shall be secured with tamper resistant stainless steel hardware and unless otherwise noted, the housing shall be black in color.
- (c) Relocate Existing Flashing Beacon. Relocation of an existing flashing beacon installation, as shown on the plans or as directed by the Engineer, shall meet the above requirements. This work shall include the complete relocation of the existing flashing beacon installation, the backfilling of the holes created by the removal of the poles, restoration of the surface to match the adjoining area.
- (d) Remove Existing Flashing Beacon Installation Complete. Removal of an existing flashing beacon installation shall be as shown on the plans or as directed by the Engineer and shall be according to applicable portions of Section 895 of the Standard Specifications. This work shall include a complete removal of an existing flashing beacon installation, backfilling of the holes created by the removal of the poles and restoration of the surface to match the adjoining area. The flashing beacon installation will be removed only after the permanent signal installation is accepted for maintenance, or as directed by the Engineer.

Basis of Payment.

This work shall be paid for at the contract unit price each for FLASHING BEACON INSTALLATION; SOLAR POWERED FLASHING BEACON INSTALLATION; RELOCATE EXISTING FLASHING BEACON or REMOVE EXISTING FLASHING BEACON INSTALLATION COMPLETE. The price shall be payment in full for all labor and material necessary to complete the work described above.

TEMPORARY TRAFFIC SIGNAL INSTALLATION

Effective: May 22, 2002

Revised: January 1, 2017

890.01TS

Revise Section 890 of the Standard Specifications to read:

Description.

This work shall consist of furnishing, installing, maintaining, and removing a temporary traffic signal installation as shown on the plans, including but not limited to temporary signal heads, emergency vehicle priority systems, interconnect, vehicle detectors, uninterruptable power supply, and signing. Temporary traffic signal controllers and cabinets interconnected to railroad traffic control devices shall be new. When temporary traffic signals will be operating within a county or local agency Traffic Management System, the equipment must be NTCIP compliant and compatible with the current operating requirements of the Traffic Management System.

General.

Only an approved controller equipment supplier will be allowed to assemble temporary traffic signal and railroad traffic signal cabinet. Traffic signal inspection and TURN-ON shall be according to 800.01TS TRAFFIC SIGNAL GENERAL REQUIREMENTS special provision.

Construction Requirements.

(a) Controllers.

1. Only controllers supplied by one of the District approved closed loop equipment supplier will be approved for use at temporary signal locations. All controllers used for temporary traffic signals shall be fully actuated NEMA microprocessor based with RS232 data entry ports compatible with existing monitoring software approved by IDOT District 1, installed in NEMA TS2 cabinets with 8 phase back panels, capable of supplying 255 seconds of cycle length and individual phase length settings up to 99 seconds. On projects with one lane open and two way traffic flow, such as bridge deck repairs, the temporary signal controller shall be capable of providing an adjustable all red clearance setting of up to 30 seconds in length. All controllers used for temporary traffic signals shall meet or exceed the requirements of Section 857 of the Standard Specifications with regards to internal time base coordination and preemption. All railroad interconnected temporary controllers and cabinets shall be new and shall satisfy the requirements of Article 857.02 of the Standard Specifications and as modified herein.

2. Only control equipment, including controller cabinet and peripheral equipment, supplied by one of the District approved closed loop equipment suppliers will be approved for use at temporary traffic signal locations. All control equipment for the temporary traffic signal(s) shall be furnished by the Contractor unless otherwise stated in the plans. On projects with multiple temporary traffic signal installations, all controllers shall be the same manufacturer brand and model number with the latest version software installed at the time of the signal TURN-ON.
 - (b) Cabinets. All temporary traffic signal cabinets shall have a closed bottom made of aluminum alloy. The bottom shall be sealed along the entire perimeter of the cabinet base to ensure a water, dust and insect-proof seal. The bottom shall provide a minimum of two (2) 4 inch (100 mm) diameter holes to run the electric cables through. The 4 inch (100 mm) diameter holes shall have a bushing installed to protect the electric cables and shall be sealed after the electric cables are installed.
 - (c) Grounding. Grounding shall be provided for the temporary traffic signal cabinet meeting or exceeding the applicable portions of the National Electrical Code, Section 806 of the Standard Specifications and shall meet the requirements of the 806.01TS GROUNDING OF TRAFFIC SIGNAL SYSTEMS special provision.
 - (d) Traffic Signal Heads. All traffic signal sections shall be 12 inches (300 mm). Pedestrian signal sections shall be 16 inch (406mm) x 18 inch (457mm). Traffic signal sections shall be LED with expandable view, unless otherwise approved by the Engineer. Pedestrian signal heads shall be Light Emitting Diode (LED) Pedestrian Countdown Signal Heads except when a temporary traffic signal is installed at an intersection interconnected with a railroad grade crossing. When a temporary traffic signal is installed at an intersection interconnected with a railroad grade crossing, Light Emitting Diode (LED) Pedestrian Signal Heads shall be furnished. The temporary traffic signal heads shall be placed as indicated on the temporary traffic signal plan or as directed by the Engineer. If no traffic staging is in place or will not be staged on the day of the turn on, the temporary traffic signal shall have the signal head displays, signal head placements and controller phasing match the existing traffic signal or shall be as directed by the engineer. The Contractor shall furnish enough extra cable length to relocate heads to any position on the span wire or at locations illustrated on the plans for construction staging. The temporary traffic signal shall remain in operation during all signal head relocations. Each temporary traffic signal head shall have its own cable from the controller cabinet to the signal head.

(e) Interconnect.

1. Temporary traffic signal interconnect shall be provided using fiber optic cable or wireless interconnect technology as specified in the plans. The Contractor may request, in writing, to substitute the fiber optic temporary interconnect indicated in the contract documents with a wireless interconnect. The Contractor must provide assurances that the radio device will operate properly at all times and during all construction staging. If approved for use by the Engineer, the Contractor shall submit marked-up traffic signal plans indicating locations of radios and antennas and installation details. If wireless interconnect is used, and in the opinion of the engineer, it is not viable, or if it fails during testing or operations, the Contractor shall be responsible for installing all necessary poles, fiber optic cable, and other infrastructure for providing temporary fiber optic interconnect at no cost to the contract.
2. The existing system interconnect and phone lines are to be maintained as part of the Temporary Traffic Signal Installation specified for on the plan. The interconnect, including any required fiber splices and terminations, shall be installed into the temporary controller cabinet as per the notes or details on the plans. All labor and equipment required to install and maintain the existing interconnect as part of the Temporary Traffic Signal Installation shall be included in the cost of TEMPORARY TRAFFIC SIGNAL INSTALLATION. When shown in the plans, temporary traffic signal interconnect equipment shall be furnished and installed. The temporary traffic signal interconnect shall maintain interconnect communications throughout the entire signal system for the duration of the project. Any temporary signal within an existing closed loop traffic signal system shall be interconnected to that system using similar brand control equipment at no additional cost to the contract.
3. Temporary wireless interconnect. The radio interconnect system shall be compatible with Eagle or Econolite controller closed loop systems. This work shall include all temporary wireless interconnect components, at the adjacent existing traffic signal(s) to provide a completely operational closed loop system. This work shall include all materials, labor and testing to provide the completely operational closed loop system as shown on the plans. The radio interconnect system shall include the following components:

- a. Rack or Shelf Mounted RS-232 Frequency Hopping Spread Spectrum (FHSS) Radio
- b. Software for Radio Configuration (Configure Frequency and Hopping Patterns)
- c. Antennas (Omni Directional or Yagi Directional)
- d. Antenna Cables, LMR400, Low Loss. Max. 100-ft from controller cabinet to antenna
- e. Brackets, Mounting Hardware, and Accessories Required for Installation
- f. RS232 Data Cable for Connection from the radio to the local or master controller
- g. All other components required for a fully functional radio interconnect system

All controller cabinet modifications and other modifications to existing equipment that are required for the installation of the radio interconnect system components shall be included in the cost of TEMPORARY TRAFFIC SIGNAL INSTALLATION.

The radio interconnect system may operate at 900Mhz (902-928) or 2.4 Ghz depending on the results of a site survey. The telemetry shall have an acceptable rate of transmission errors, time outs, etc. comparable to that of a hardwire system.

The proposed or existing master controller and telemetry module shall be configured for use with the radio interconnect at a minimum rate of 9600 baud.

The radio interconnect system shall include all other components required for a complete and fully functional telemetry system and shall be installed in accordance to the vendors recommendations.

- (f) Emergency Vehicle Pre-Emption. All emergency vehicle preemption equipment (light detectors, light detector amplifiers, confirmation beacons, etc.) as shown on the temporary traffic signal plans shall be provided by the Contractor. It shall be the Contractor's responsibility to contact the municipality or fire district to verify the brand of emergency vehicle preemption equipment to be installed prior to the contract bidding. The equipment must be completely compatible with all components of the equipment currently in use by the Agency. All light operated systems shall operate at a uniform rate of 14.035 hz \pm 0.002, or as otherwise required by the Engineer, and provide compatible operation with other light systems currently being operated in the District. All labor and material required to install and maintain the Emergency Vehicle Preemption installation shall be included in the item Temporary Traffic Signal Installation.

- (g) Vehicle Detection. All temporary traffic signal installations shall have vehicular detection installed at all approaches of the intersection and as directed by the Engineer. Pedestrian push buttons shall be provided for all pedestrian signal heads/phases as directed by the Engineer. Microwave vehicle sensors or video vehicle detection system shall be approved by IDOT prior to Contractor furnishing and installing. The Contractor shall install, wire, and adjust the alignment of the microwave vehicle sensor or video vehicle detection system in accordance to the manufacturer's recommendations and requirements. The Contractor shall be responsible for adjusting the alignment of the microwave vehicle sensor or video vehicle detection system for all construction staging changes and for maintaining proper alignment throughout the project. An equipment supplier shall be present and assist the contractor in setting up and maintaining the microwave vehicle sensor or video vehicle detection system. An in-cabinet video monitor shall be provided with all video vehicle detection systems and shall be included in the item Temporary Traffic Signal Installation.
- (h) Uninterruptable Power Supply. All temporary traffic signal installations shall have Uninterruptable Power Supply (UPS). The UPS cabinet shall be mounted to the temporary traffic signal cabinet and shall be according to the applicable portions of Section 862 of the Standard Specifications and as modified in 862.01TS UNINTERRUPTABLE POWER SUPPLY, SPECIAL Special Provision.
- (i) Signs. All existing street name and intersection regulatory signs shall be removed from existing poles and relocated to the temporary signal span wire. If new mast arm assembly and pole(s) and posts are specified for the permanent signals, the signs shall be relocated to the new equipment at no extra cost. Any intersection regulatory signs that are required for the temporary traffic signal shall be provided as shown on the plans or as directed by the Engineer. Relocation, removing, bagging and installing the regulatory signs for the various construction stages shall be provided as shown on the plans or as directed by the Engineer. If Illuminated Street Name Signs exist they shall be taken down and stored by the contractor and reflecting street name signs shall be installed on the temporary traffic signal installation.
- (j) Energy Charges. The electrical utility energy charges for the operation of the temporary traffic signal installation shall be paid for by others if the installation replaces an existing signal. Otherwise charges shall be paid for under 109.05 of the Standard Specifications.

- (k) Maintenance. Maintenance shall meet the requirements of the Standard Specifications and 850.01TS MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION Special Provisions. Maintenance of temporary signals and of the existing signals shall be included in the cost of the TEMPORARY TRAFFIC SIGNAL INSTALLATION pay item. When temporary traffic signals are to be installed at locations where existing signals are presently operating, the Contractor shall be fully responsible for the maintenance of the existing signal installation as soon as he begins any physical work on the Contract or any portion thereof. In addition, a minimum of seven (7) days prior to assuming maintenance of the existing traffic signal installation(s) under this Contract, the Contractor shall request that the Resident Engineer contact the Bureau of Traffic Operations (847) 705-4424 for an inspection of the installation(s).
- (l) Temporary Traffic Signals for Bridge Projects. Temporary Traffic Signals for bridge projects shall follow the State Standards, Standard Specifications, Special Provisions and any plans for Bridge Temporary Traffic Signals included in the plans. The installation shall meet the Standard Specifications and all other requirements in this TEMPORARY TRAFFIC SIGNAL INSTALLATION specification. In addition all electric cable shall be aerially suspended, at a minimum height of 18 feet (5.5m) on temporary wood poles (Class 5 or better) of 45 feet (13.7 m) minimum height. The signal heads shall be span wire mounted or bracket mounted to the wood pole or as directed by the Engineer. The Controller cabinet shall be mounted to the wood pole as shown in the plans, or as directed by the Engineer. Microwave vehicle sensors or video vehicle detection system may be used in place of detector loops as approved by the Engineer.
- (m) Temporary Portable Traffic Signal for Bridge Projects.
1. The controller and cabinet shall be NEMA type designed for NEMA TS2 Type 1 operation. Controller and LED signal displays shall meet the applicable Standard Specifications and all other requirements in this TEMPORARY TRAFFIC SIGNAL INSTALLATION special provision.
 2. Work shall be according to Article 701.18(b) of the Standard Specifications except as noted herein.
 3. General.
 - a. The temporary portable bridge traffic signals shall be trailer-mounted units. The trailer-mounted units shall be set up securely and level. Each unit shall be self-contained and consist of two signal heads. The left signal head shall be mounted on a mast arm capable of extending over the travel lane. Each unit shall contain a solar cell system to facilitate battery charging. There shall be a minimum of 12 days backup reserve battery supply and the units shall be capable of operating with a 120 V power supply from a generator or electrical service.

- b. All signal heads located over the travel lane shall be mounted at a minimum height of 17 feet (5m) from the bottom of the signal back plate to the top of the road surface. All far right signal heads located outside the travel lane shall be mounted at a minimum height of 8 feet (2.5m) from the bottom of the signal back plate to the top of the adjacent travel lane surface.
- c. The long all red intervals for the traffic signal controller shall be adjustable up to 250 seconds in one-second increments.
- d. As an alternative to detector loops, temporary portable bridge traffic signals may be equipped with microwave sensors or other approved methods of vehicle detection and traffic actuation.
- e. All portable traffic signal units shall be interconnected using hardwire communication cable. Radio communication equipment may be used only with the approval of the Engineer. If radio communication is used, a site analysis shall be completed to ensure that there is no interference present that would affect the traffic signal operation. The radio equipment shall meet all applicable FCC requirements.
- f. The temporary portable bridge traffic signal system shall meet the physical display and operational requirements of conventional traffic signals as specified in Part IV and other applicable portions of the currently adopted version of the Manual on Uniform Traffic Control Devices (MUTCD) and the Illinois MUTCD. The signal system shall be designed to continuously operate over an ambient temperature range between -30 °F (-34 °C) and 120 °F (48 °C). When not being utilized to inform and direct traffic, portable signals shall be treated as non-operating equipment according to Article 701.11.

Basis of Payment.

This work shall be paid for at the contract unit price each for TEMPORARY TRAFFIC SIGNAL INSTALLATION, TEMPORARY BRIDGE TRAFFIC SIGNAL INSTALLATION, or TEMPORARY PORTABLE BRIDGE TRAFFIC SIGNAL INSTALLATION, the price of which shall include all costs for the modifications required for traffic staging, changes in signal phasing as required in the Contract plans, microwave vehicle sensors, video vehicle detection system, any maintenance or adjustment to the microwave vehicle sensors/video vehicle detection system, the temporary wireless interconnect system, temporary fiber optic interconnect system, all material required, the installation and complete removal of the temporary traffic signal, and any changes required by the Engineer. Each intersection will be paid for separately.

TEMPORARY TRAFFIC SIGNAL TIMING

Effective: May 22, 2002

Revised: July 1, 2015

890.02TS

Description.

This work shall consist of developing and maintaining appropriate traffic signal timings for the specified intersection for the duration of the temporary signalized condition, as well as impact to existing traffic signal timings caused by detours or other temporary conditions.

All timings and adjustments necessary for this work shall be performed by an approved Consultant who has previous experience in optimizing Closed Loop Traffic signal Systems for District One of the Illinois Department of Transportation. The Contractor shall contact the Traffic Signal Engineer at (847) 705-4424 for a listing of approved Consultants.

The following tasks are associated with TEMPORARY TRAFFIC SIGNAL TIMING.

- (a) Consultant shall attend temporary traffic signal inspection (turn-on) and/or detour meeting and conduct on-site implementation of the traffic signal timings.
- (b) Consultant shall be responsible for making fine-tuning adjustments to the timings in the field to alleviate observed adverse operating conditions and to enhance operations.
- (c) Consultant shall provide monthly observation of traffic signal operations in the field.
- (d) Consultant shall provide on-site consultation and adjust timings as necessary for construction stage changes, temporary traffic signal phase changes, and any other conditions affecting timing and phasing, including lane closures, detours, and other construction activities.
- (e) Consultant shall make timing adjustments and prepare comment responses as directed by the Area Traffic Signal Operations Engineer.
- (f) Return original timing plan once construction is complete.

Basis of Payment.

The work shall be paid for at the contract unit price each for TEMPORARY TRAFFIC SIGNAL TIMING, which price shall be payment in full for performing all work described herein per intersection. When the temporary traffic signal installation is turned on and/or detour implemented, 50 percent of the bid price will be paid. The remaining 50 percent of the bid price will be paid following the removal of the temporary traffic signal installation and/or detour.

TEMPORARY LIGHTING FOR SINGLE LANE STAGING (D1)

Effective: January 1, 2012

Description.

This item shall consist of furnishing, installing, operating, maintaining and removing all the components necessary for the complete and safe Temporary Lighting in construction zone where traffic is staged in a single lane.

Materials.

The materials used for the installation of the Temporary Lighting for Single Lane Staging can be new or used and shall remain the property of the Contractor after the removal.

The material shall be according to the Standard Specifications, the special provisions or as directed by the Engineer. The contractor shall submit to the Engineer, prior to installation, suitable and complete information for the proposed material documenting conformance to requirements herein.

The Temporary Lighting for Single Lane Staging plan sheets show typical materials to be installed. The Contractor shall provide the materials shown in the plans and any additional materials required to install Temporary Lighting for Single Lane Staging. All materials required for the complete and safe installation of the Temporary Lighting for Single Lane Staging shall be included as part of this pay item.

Wood poles, luminaires, mast arms, electric service box, conduit, wire, ground rods and any additional materials required to install a complete Temporary Lighting for Single Lane Staging shall be included as part of this item as indicated and as required.

The electric service installation, the electric utility service connection, electric utility charges, and any associated labor or materials are included in the lump sum payment and will not be paid separately.

The maintenance of the Temporary Lighting for Single Lane Staging is part of this item and will not be paid separately.

The equipment used for the Temporary Lighting shall be UL listed or as otherwise approved by the Engineer.

Installation.

The Temporary Lighting for Single Lane Staging layout as shown in the contract plans shows spacing, setback, and placement of the equipment required for a typical installation. The layout of the temporary equipment will vary based on field conditions, staging, utility impacts, and electric service location as coordinated with the electric utility. The contractor shall submit a plan or sketch indicating the setting of poles, traffic signals, and the combined service including dimensions between poles, setback, and pole locations by stationing or dimensioning from some existing fixed objects as well as any revisions required for staging. This submittal must be approved by the engineer before any poles are placed.

The contractor is responsible for advance coordination with the electric utility company required to attain electric service for the Temporary Lighting for Single Lane Staging. The contractor shall contact the electric utility company prior to the pre-construction meeting and document the status of the coordination at the meeting.

Contractor shall coordinate his work fully with the ComEd both as to the work required and the timing of the installation. No additional compensation will be granted under this or any other item for extra work caused by failure to meet this requirement. **Please contact ComEd, New Business Center Call Center, at 866 NEW ELECTRIC (1-866-639-3532) to begin the service connection process. The Call Center Representatives will create a work order for the service connection. The representative will ask the requestor for information specific to the request. The representative will assign the request based upon the location of project.**

The Contractor should make particular note of the need for the earliest attention to arrangements with ComEd for service. In the event of delay by ComEd, no extension of time will be considered applicable for the delay unless the Contractor can produce written evidence of a request for electric service within 30 days of execution.

Electrical service shall be 240/120V 1 Phase 3 Wire. Where 240V service is not available, the contractor may submit a proposal for 120V service. Where 120 volt source is indicated, service drop cable shall be installed accordingly and lighting main breaker and all other service appurtenances shall be appropriately rated and included regardless of the service voltage applied to the installation.

Temporary lighting and temporary traffic signals shall be powered by one shared electric service 120/240V 3 wire one phase and shall be metered or as otherwise approved by the Engineer. Electric service costs shall be paid as specified in the special provision for temporary traffic signals. The contractor shall be responsible for discontinuing electric service when so approved by the Engineer.

The disconnect box shall be NEMA 4X stainless steel, nominally 12" W x 16" H x 8" D with piano hinged door, steel back panel, fast acting stainless steel enclosure clamps, padlock provisions and door stop kit (Hoffman catalog #A-16H1208SS6LP/A-16P12/A-DSTOPK/C-PMK12, or approved equal).

Circuit Breakers shall be thermal magnetic bolt-on type with a minimum interrupt capacity of 25,000 symmetrical amperes at 240 volts. Breakers shall be lockable in the off position for lockout/tag-out compliance.

Bus bars, connectors, and lugs shall be copper, insulated and isolated, and configured to prevent shorted conditions from tightening terminations. Lugs and connectors shall be rated for 75°C. Overall bus sections shall be configured behind an insulating barrier shield which is removable for access to connections. The circuit breakers and bus may be part of an approved panelboard assembly.

Disconnect surge protector shall be suitable for 240/120 volt single phase 60Hz, AC electrical service. Protector shall have a surge energy capability of 2160 joules or better at 8/20 microseconds, rate -40 to 60°C., with LED operating indicators and shall be UL listed per UL 1449. The surge protector shall be a Cutler Hammer CMOV230L065XST or approved equal.

Steel strut channel, conduit, wire, and ground rods to complete the installation of the disconnect box shall be included as part of this item, as required and as indicated.

Combination ground and neutral bar shall be configured with separate ground and neutral sections and spare terminals as indicated. The heads of grounding screws shall be painted green. The heads of neutral screws shall be painted white.

A plastic laminated layout and circuit diagram shall be affixed to the interior side of the enclosure door.

A 2-color engraved plastic nameplate, attached with screws and engraved as indicated, shall be provided for each main breaker.

The exact mounting height for the Electric Service Disconnect shall be field determined and marked by the Engineer.

The contractor is responsible for contacting IDOT Electrical Maintenance Contractor for locates of any buried State electrical facilities. The contractor shall contact JULIE for locates of any other utilities in the construction zone.

When the temporary traffic signal and lighting installation are to share any common elements such as wood poles, electrical service, disconnect box, cable, etc., the contractor shall coordinate the temporary signals and the lighting installation.

The contractor shall install the equipment in accordance with the Standard Specifications for Road and Bridge Construction, the special provisions or as directed by the Engineer. The Temporary Lighting and any other associated provisional installation, including Traffic Signals, shall be inspected and approved by the Engineer prior to placing in operation.

When the contract work is complete and all the lanes are open to the traffic, the contractor shall remove and salvage all the temporary lighting equipment within 30 days.

The contractor is responsible for restoring, including any grading or seeding, of all areas disturbed under this contract to the satisfaction of the Engineer.

Method Of Measurement.

Temporary Lighting for Single Lane Staging installed complete as specified and as indicated on the plans, shall be counted as lump sum for payment.

The contractor shall receive and accept the compensation as herein described; 50 percent of the total cost of this pay item shall be paid after the installation and approval by the Engineer of the complete Temporary Lighting, and the remaining 50 percent shall be paid after the removal once the project is completed.

All equipment and work provided by the Contractor including coordination, revisions, relocations, installation, maintenance, removal and restoration required to provide complete and operational Temporary Lighting for Single Lane Staging are included in the lump sum payment. The electric service installation, the electric utility service connection, and any associated material, labor, or charges to the utility company are included in the lump sum payment and will not be paid separately.

No extra compensation shall be paid to the Contractor for any incidental materials and labor required to fulfill the requirements as shown on the plans and specified herein.

Basis Of Payment.

This work will be paid for at the contract lump sum price for TEMPORARY LIGHTING FOR SINGLE LANE STAGING.

AVAILABLE REPORTS

No project specific reports were prepared.

When applicable, the following checked reports and record information is available for Bidders' reference upon request:

- Record structural plans
- Preliminary Site Investigation (PSI)
- Preliminary Environmental Site Assessment (PESA)
- Soils/Geotechnical Report
- Boring Logs
- Pavement Cores
- Location Drainage Study (LDS)
- Hydraulic Report
- Noise Analysis
- Other: _____

Those seeking these report can download it from:

Baxter & Woodman's FTP Site
Hostname:
Username: GEOTECH
Password:

WETLAND “NO INTRUSION” SIGNAGE

Description: This work shall consist of placing “Wetlands No Intrusion” signage at the boundary of all un-impacted wetlands and/or WOUS within the project limits. The signage is available for the contractor to borrow from the Bureau of Maintenance. The signage shall be placed in addition to temporary fence as shown on the plans or as determined by the engineer. Signage shall be returned to the Roadside Development Unit once the temporary fence has been taken down. Contractor should coordinate with the Resident Engineer for the collection of the signs.

Method of Measurement: This work will not be measured for payment.

Basis of Payment: This work will not be paid for as a separate items, but shall be included in the bid price for TEMPORARY FENCE.

SLIPFORM PARAPET

Effective: June 1, 2007

Revised: March 1, 2019

The following shall be added to the end of Article 503.16(b) of the Standard Specifications.

- (3) Slipforming parapets. Unless otherwise prohibited herein or on the plans, at the option of the Contractor, concrete parapets on bridge decks may be constructed by slipforming in lieu of the conventional forming methods. Slipforming will not be permitted for curved parapets on a radius of 1500ft (457 m) or less.

The slipform machine shall be self-propelled and have automatic horizontal and vertical grade control. For 34 inch (864 mm) and 39 inch (991 mm) tall parapets the machine shall be equipped with a minimum of four (4) vibrators. For 42 inch (1.067 m) and 44 inch (1.118 m) tall parapets the machine shall be equipped with a minimum of five (5) vibrators. The equipment shall be approved by the Engineer before use.

If the Contractor wishes to use the slipform parapet option for 44 inch (1.067 m) tall parapets he/she shall construct a test section in a temporary location to demonstrate his/her ability to construct the parapets without defect. The test section shall be constructed under similar anticipated weather conditions, using the same means and methods, equipment, operator, concrete plant, concrete mix design, and slump as proposed for the permanent slipform parapets.

The test section shall be at least 50 feet (15 meters) in length and shall be of the same cross section shown on the plans. The contractor shall place all of the reinforcement embedded in the parapet shown on the plans. Upon completion of the test section, the Contractor shall saw cut the test section into 2 foot (600 mm) segments and separate the segments for inspection by the Engineer.

The test section shall demonstrate to the satisfaction of the Engineer that the Contractor can slipform the parapets on this project without defects. The acceptance of the test section does not constitute acceptance of the slipform parapets in place.

The concrete mix design may combine two or more coarse aggregate sizes, consisting of CA-7, CA-11, CA-13, CA-14, and CA-16, provided a CA-7 or CA-11 is included in the blend in a proportion approved by the Engineer.

The slipform machine speed shall not exceed 3 ft (0.9 m) per minute. Any section of parapet placed with the slipform machine moving in excess of the maximum allowed speed will be rejected. Any time the speed of the machine drops below 0.5 ft (150 mm) per minute will be considered a stoppage of the slipforming operation, portions of parapet placed with three or more intermittent stoppages within any 15 ft (4.6 m) length will be rejected. The contractor shall schedule concrete delivery to maintain a uniform delivery rate of concrete into the slipform machine. If delivery of concrete from the truck into the slipforming machine is interrupted by more than 15 minutes, the portion of the wall within the limits of the slipform machine will be rejected. Any portion of the parapet where the slipforming operation is interrupted or stopped within the 15 minute window may be subject to coring to verify acceptance.

If the Contractor elects to slipform, the parapet cross-sectional area and reinforcement bar clearances shall be revised according to the details for the Concrete Parapet Slipforming Option. In addition, if embedded conduit(s) are detailed, then the contractor shall utilize the alternate reinforcement as detailed.

The use of cast-in-place anchorage devices for attaching appurtenances and/or railings to the parapets will not be allowed in conjunction with slipforming of parapets. Alternate means for making these attachments shall be as detailed on the plans or as approved by the Engineer.

All reinforcement bar intersections within the parapet cross section shall be 100 percent tied utilizing saddle ties, wrap and saddle ties or figure eight ties to maintain rigidity during concrete placement. At pre-planned sawcut joints in the parapet, Glass Fiber Reinforced Polymer (GFRP) reinforcement shall be used to maintain the rigidity of the reinforcement cage across the proposed joints as detailed for the Concrete Parapet Slipforming Option.

Glass Fiber Reinforced Polymer (GFRP) reinforcement shall be subject to approval by the Engineer. Other non-ferrous reinforcement may be proposed for use but shall be subject to approval by the Engineer. GFRP reinforcement shall be tied the same as stated in the previous paragraph.

The Contractor may propose supplemental reinforcement for stiffening to prevent movement of the reinforcement cage and/or for conduit support subject to approval by the Engineer.

Clearances for these bars shall be the same as shown for the required bars and these bars shall be epoxy coated. If the additional reinforcement is used, it shall be at no additional cost to the Department.

For projects with plan details specifying parapet joints spaced greater than 20 ft (6 m) apart, additional sawcut joints, spaced between 10 ft (3 m) and 20 ft (6 m), shall be placed as directed by the Engineer. The horizontal reinforcement extending through the proposed joints shall be precut to provide a minimum of 4 in. (100 mm) gap, centered over the joint, between rebar ends. The ends of the reinforcement shall be repaired according to Article 508.04.

After the slipform machine has been set to proper grade and prior to concrete placement, the clearance between the slipform machine inside faces and reinforcement bars shall be checked during a dry run by the Contractor in the presence of the Engineer. The dry run shall not begin until the entire reinforcing cage has been tied and the Engineer has verified and approved the placement and tying of the reinforcing bars. Any reinforcement bars found to be out of place by more than ½ in. (13 mm), or any dimensions between bars differing from the plans by more than ½ in. (13 mm) shall be re-tied to the plan dimensions.

During the dry run and in the presence of the Engineer, the Contractor shall check the clearance of the reinforcement bars from the inside faces of the slipform mold. In all locations, the Contractor shall ensure the reinforcement bars have the minimum cover distance shown on the plans. This dry run check shall be made for the full distance that is anticipated to be placed in the subsequent pour. Reinforcement bars found to have less than the minimum clearance shall be adjusted and the dry run will be performed again, at least in any locations that have been readjusted.

For parapets adjacent to the watertable, the contractor shall, for the duration of the construction and curing of the parapet, provide and maintain an inspection platform along the back face of the parapet. The inspection platform shall be rigidly attached to the bridge superstructure and be of such design to allow ready movement of inspection personnel along the entire length of the bridge.

The aluminum cracker plates as detailed in the plans shall be securely tied in place and shall be coated or otherwise treated to minimize their potential reaction with wet concrete. In lieu of chamfer strips at horizontal and vertical edges, radii may be used. Prior to slipforming, the Contractor shall verify proper operation of the vibrators using a mechanical measuring device subject to approval by the Engineer.

The top portion of the joint shall be sawcut as shown in the details for the Concrete Parapet Slipforming Option. Sawing of the joints shall commence as soon as the concrete has hardened sufficiently to permit sawing without excessive raveling. All joints shall be sawed to the full thickness before uncontrolled shrinkage cracking takes place but no later than 8 hours after concrete placement. The sawcut shall be approximately 3/8 in. (10 mm) wide and shall be performed with a power circular concrete saw. The joints shall be sealed with an approved polyurethane sealant, conforming to ASTM C 920, Type S, Grade NS, Class 25, Use T, to a minimum depth of 1/2 in. (12 mm), with surface preparation and installation according to the manufacturer's written instructions. Cork, hemp or other compressible material may be used as a backer. The sawcut will not require chamfered edges.

Ends of the parapet shall be formed and the forms securely braced. When slipforming of parapets with cross sectional discontinuities such as light standards, junction boxes or other embedded appurtenances except for name plates, is allowed, the parapet shall be formed for a minimum distance of 4 ft (1.2 m) on each side of the discontinuity.

For acceptance and rejection purposes a parapet section shall be defined as the length of parapet between adjacent vertical parapet joints.

The maximum variance of actual to proposed longitudinal alignment shall not exceed $\pm 3/4$ in. (20 mm) with no more than 1/4 inch in 10 ft (6 mm in 3 m). Notwithstanding this tolerance, abrupt variance in actual alignment of 1/2 inch in 10 ft (13 mm in 3 m) will be cause for rejection of the parapet section.

In addition, all surfaces shall be checked with a 10 ft (3 m) straight edge furnished and used by the Contractor as the concrete is extruded from the slipform mold. Continued variations in the barrier surface exceeding 1/4 inch in 10 ft (6 mm in 3 m) will not be permitted and remedial action shall immediately be taken to correct the problem.

The use of equipment or methods which result in dimensions outside the tolerance limits shall be discontinued. Parapet sections having dimensions outside the tolerance limits will be rejected.

Any visible indication that less than specified cover of concrete over the reinforcing bars has been obtained, or of any cracking, tearing or honeycombing of the plastic concrete, or any location showing diagonal or horizontal cracking will be cause for rejection of the parapet section in which they are found.

The vertical surfaces at the base of the barrier within 3 in. (75 mm) of the deck surface shall be trowelled true after passage of the slipform machine. Hand finishing of minor sporadic surface defects may be allowed at the discretion of the Engineer. All surfaces of the parapet except the top shall receive a final vertical broom finish. Any deformations or bulges remaining after the initial set shall be removed by grinding after the concrete has hardened.

Slipformed parapets shall be wet cured according to either Article 1020.13(a)(3) or Article 1020.13(a)(5). For either method, the concrete surface shall be covered within 30 minutes after it has been finished. The cotton mat or burlap covering shall be held in place with brackets or another method approved by the Engineer. The Contractor shall have the option, during the period from April 16 through October 31, to delay the start of wet curing by applying a linseed oil emulsion curing compound. Exercising this option waives the requirement for protective coat according to Article 503.19. The linseed oil emulsion shall be according to Article 1022.01 and shall be applied according to Articles 1020.13 Notes-General 8/ and 1020.13(a)(4). The delay for wet curing shall not exceed 3 hours after application of the linseed oil emulsion.

A maximum of three random 4 in. (100 mm) diameter cores per 100 ft (30 m) of parapet shall be taken as directed by the Engineer, but no less than three random cores shall be taken for each parapet pour. At least 2 cores shall be located to intercept the top horizontal bar. Unless otherwise directed by the Engineer, coring shall be accomplished within 48 hours following each parapet pour. Separate parapets poured on the same date shall be considered separate pours. Random cores will not be measured for payment.

The Engineer will mark additional locations for cores where, in the sole opinion of the Engineer, the quality of the slipformed parapet is suspect.

The Engineer or his representative will be responsible for evaluation the cores. Any cores showing voids of any size adjacent to the reinforcement bars, or showing voids not adjacent to reinforcement bars of 1/4 square inch (160 square millimeters) in area or more, or showing signs of segregation, or showing signs of cracking shall be considered failures and the parapet section from which it was taken will be rejected. Parapets with less than 1 1/2 inches of concrete cover over the reinforcement shall be rejected.

Rejected parapet sections shall be removed and replaced for the full depth cross-section of the parapet except that concrete covers between 1 inch and 1½ inches may be open to remedial action subject to the approval of the Engineer. Such action could entail up to and including removal and replacement.

The minimum length of parapet removed and replaced shall be 3 ft (1 m). Additional cores may be required to determine the longitudinal extent of removal and replacement if it can not be determined and agreed upon by other means (i.e. visual, sounding, non-destructive testing, etc.).

Any parapet section with more than one half of its length rejected or with remaining segments less than 10 ft (3 m) in length shall be removed and replaced in its entirety.

If reinforcement bars are damaged during the removal and replacement, additional removal and replacement shall be done, as necessary, to ensure minimum splice length of replacement bars. Any damage to epoxy coating of bars shall be repaired according to Article 508.04.

All core holes will be filled with a non-shrink grout meeting the requirements of Section 1024.

Basis of Payment. When the contractor, at his/her option, constructs the parapet using slipforming methods, no adjustment in the quantities for Concrete Superstructures and Reinforcement Bars, Epoxy Coated to accommodate this option will be allowed. Compensation under the contract bid items for Concrete Superstructures and Reinforcement Bars, Epoxy Coated shall cover the cost of all work required for the construction of the parapet and any test section(s) required, and for any additional costs of work or materials associated with slipforming methods.

WEEP HOLE DRAINS FOR ABUTMENTS, WINGWALLS, RETAINING WALLS AND CULVERTS

Effective: April 19, 2012

Revised: October 22, 2013

Delete the last paragraphs of Articles 205.05 and 502.10 and replace with the following.

“If a geocomposite wall drain according to Section 591 is not specified, a prefabricated geocomposite strip drain according to Section 1040.07 shall be placed at the back of each drain hole. The strip drain shall be 24 inches (600 mm) wide and 48 inches (1.220 m) tall. The strip drain shall be centered over the drain hole with the bottom located 12 inches (300 mm) below the bottom of the drain hole. All form boards or other obstructions shall be removed from the drain holes before placing any geocomposite strip drain.”

Revise the last sentence of the first paragraph of Article 503.11 to read as follows.

“Drain holes shall be covered to prevent the leakage of backfill material according to Article 502.10.”

Revise the title of Article 1040.07 to Geocomposite Wall Drains and Strip Drains.

MEMBRANE WATERPROOFING SYSTEM FOR BURIED STRUCTURES

Effective: October 4, 2016

Revised: March 1, 2019

Description. This work shall consist of furnishing and placing a membrane waterproofing system on the top slab and sidewalls, or portions thereof, for buried structures as detailed on the contract plans.

All membrane waterproofing systems shall be supplied by qualified producers. The Department will maintain a list of qualified producers.

Materials. The materials used in the waterproofing system shall consist of the following.

- (a) Cold-applied, self-adhering rubberized asphalt/polyethylene membrane sheet with the following properties:

Physical Properties	
Thickness ASTM D 1777 or D 3767	60 mils (1.500 mm) min.
Width	36 inches (914 mm) min.
Tensile Strength, Film ASTM D 882	5000 lb./in ² (34.5 MPa) min.
Pliability [180° bend over 1" inch (25 mm) mandrel @ -20 °F (-29 °C)] ASTM D 146 (Modified) or D1970	No Effect
Puncture Resistance-Membrane ASTM E 154	40 lb. (178 N) min.
Permeability (Perms) ASTM E 96, Method B	0.1 max.
Water Absorption (% by Weight) ASTM D 570	0.2 max.
Peel Strength ASTM D 903	9 lb./in (1576 N/m) min.

- (b) Ancillary Materials: Adhesives, Conditioners, Primers, Mastic, Two-Part Liquid Membranes, and Sealing Tapes as required by the manufacturer of the membrane and film for use with the respective membrane waterproofing system.

Construction. The areas requiring waterproofing shall be prepared and the waterproofing shall be installed in accordance with the manufacturer's instructions. The Contractor shall not install any part of a membrane waterproofing system in wet conditions, or if the ambient or concrete surface temperature is below 40° (4° C), unless allowed by the Engineer.

Surfaces to be waterproofed shall be smooth and free from projections which might damage the membrane sheet. Projections or depressions on the surface that may cause damage to the membrane shall be removed or filled as directed by the Engineer. The surface shall be power washed and cleaned of dust, dirt, grease, and loose particles, and shall be dry before the waterproofing is applied.

The Contractor shall uniformly apply primer to the entire area to be waterproofed, at the rate stated in the manufacturer's instructions, by brush, or roller. The Contractor shall brush out primer that tends to puddle in low spots to allow complete drying. The primer shall be cured according to the manufacturer's instructions. Primed areas shall not stand uncovered overnight. If membrane sheets are not placed over primer within the time recommended by the manufacturer, the Contractor shall recoat the surfaces at no additional cost to the Department.

The installation of the membrane sheet to primed surfaces shall be such that all joints are shingled to shed water by commencing from the lowest elevation of the buried structure's top slab and progress towards the highest elevation. The membrane sheets shall be overlapped as required by the manufacturer. The Contractor shall seal with mastic any laps that were not thoroughly sealed. The membrane shall be smooth and free of wrinkles and there shall be no depressions in horizontal surfaces of the finished waterproofing. After placement, exposed edges of membrane sheets shall be sealed with a troweled bead of a manufacturer's recommended mastic, or two-part liquid membrane, or with sealing tape.

Sealing bands at joints between precast segments shall be installed prior to the waterproofing system being applied. Where the waterproofing system and sealing band overlap, the installation shall be planned such that water will not be trapped or directed underneath the membrane or sealing band.

Care shall be taken to protect and to prevent damage to the waterproofing system prior to and during backfilling operations. The waterproofing system shall be removed as required for the installation of slab mounted guardrails and other appurtenances. After the installation is complete, the system shall be repaired and sealed against water intrusion according to the manufacturer's instructions and to the satisfaction of the Engineer.

Replace the last paragraph of Article 540.06 Precast Concrete Box Culverts and replace with:

Handling holes shall be filled with a polyethylene plug. The plug shall not project beyond the inside surface after installation nor project above the outside surface to the extent that may cause damage to the membrane. When metal lifting inserts are used, their sockets shall be filled with mastic or mortar compatible with the membrane.

Method of Measurement. The waterproofing system will be measured in place, in square yards (square meters) of the concrete surface to be waterproofed.

Basis of Payment. This work will be paid for at the contract unit price, per square yard (square meter) for MEMBRANE WATERPROOFING SYSTEM FOR BURIED STRUCTURES.

AUTOMATED FLAGGER ASSISTANCE DEVICES (BDE)

Effective: January 1, 2008

Description. This work shall consist of furnishing and operating automated flagger assistance devices (AFADs) as part of the work zone traffic control and protection for two-lane highways where two-way traffic is maintained over one lane of pavement. Use of these devices shall be at the option of the Contractor.

Equipment. AFADs shall be according to the FHWA memorandum, "MUTCD - Revised Interim Approval for the use of Automated Flagger Assistance Devices in Temporary Traffic Control Zones (IA-4R)", dated January 28, 2005. The devices shall be mounted on a trailer or a moveable cart and shall meet the requirements of NCHRP 350, Category 4.

The AFAD shall be the Stop/Slow type. This device uses remotely controlled "STOP" and "SLOW" signs to alternately control right-of-way.

Signs for the AFAD shall be according to Article 701.03 of the Standard Specifications and the MUTCD. The signs shall be 24 x 24 in. (600 x 600 mm) having an octagon shaped "STOP" sign on one side and a diamond shaped "SLOW" sign on the opposite side. The letters on the signs shall be 8 in. (200 mm) high. If the "STOP" sign has louvers, the full sign face shall be visible at a distance of 50 ft (15 m) and greater.

The signs shall be supplemented with one of the following types of lights.

- (a) Flashing Lights. When flashing lights are used, white or red flashing lights shall be mounted within the "STOP" sign face and white or yellow flashing lights within the "SLOW" sign face.
- (b) Stop and Warning Beacons. When beacons are used, a stop beacon shall be mounted 24 in. (600 mm) or less above the "STOP" sign face and a warning beacon mounted 24 in. (600 mm) or less above, below, or to the side of the "SLOW" sign face. As an option, a Type B warning light may be used in lieu of the warning beacon.

A "WAIT ON STOP" sign shall be placed on the right hand side of the roadway at a point where drivers are expected to stop. The sign shall be 24 x 30 in. (600 x 750 mm) with a black legend and border on a white background. The letters shall be at least 6 in. (150 mm) high.

This device may include a gate arm or mast arm that descends to a horizontal position when the "STOP" sign is displayed and rises to a vertical position when the "SLOW" sign is displayed. When included, the end of the arm shall reach at least to the center of the lane being controlled. The arm shall have alternating red and white retroreflective stripes, on both sides, sloping downward at 45 degrees toward the side on which traffic will pass. The stripes shall be 6 in. (150 mm) in width and at least 2 in. (50 mm) in height.

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

AFADs shall be placed at each end of the traffic control, where a flagger is shown on the plans. The flaggers shall be able to view the face of the AFAD and approaching traffic during operation.

To stop traffic, the "STOP" sign shall be displayed, the corresponding lights/beacon shall flash, and when included, the gate arm shall descend to a horizontal position. To permit traffic to move, the "SLOW" sign shall be displayed, the corresponding lights/beacon shall flash, and when included, the gate arm shall rise to a vertical position.

If used at night, the AFAD location shall be illuminated according to Section 701 of the Standard Specifications.

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

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

BITUMINOUS MATERIALS COST ADJUSTMENTS (BDE)

Effective: November 2, 2006

Revised: August 1, 2017

Description. Bituminous material cost adjustments will be made to provide additional compensation to the Contractor, or credit to the Department, for fluctuations in the cost of bituminous materials when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract.

The adjustments shall apply to permanent and temporary hot-mix asphalt (HMA) mixtures, bituminous surface treatments (cover and seal coats), and preventative maintenance type surface treatments that are part of the original proposed construction, or added as extra work and paid for by agreed unit prices. The adjustments shall not apply to bituminous prime coats, tack coats, crack filling/sealing, joint filling/sealing, or extra work paid for at a lump sum price or by force account.

Method of Adjustment. Bituminous materials cost adjustments will be computed as follows.

$$CA = (BPI_P - BPI_L) \times (\%AC_V / 100) \times Q$$

- Where: CA = Cost Adjustment, \$.
BPI_P = Bituminous Price Index, as published by the Department for the month the work is performed, \$/ton (\$/metric ton).
BPI_L = Bituminous Price Index, as published by the Department for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price, \$/ton (\$/metric ton).
%AC_V = Percent of virgin Asphalt Cement in the Quantity being adjusted. For HMA mixtures, the % AC_V will be determined from the adjusted job mix formula. For bituminous materials applied, a performance graded or cutback asphalt will be considered to be 100% AC_V and undiluted emulsified asphalt will be considered to be 65% AC_V.
Q = Authorized construction Quantity, tons (metric tons) (see below).

For HMA mixtures measured in square yards: $Q, \text{ tons} = A \times D \times (G_{mb} \times 46.8) / 2000$. For HMA mixtures measured in square meters: $Q, \text{ metric tons} = A \times D \times (G_{mb} \times 1) / 1000$. When computing adjustments for full-depth HMA pavement, separate calculations will be made for the binder and surface courses to account for their different G_{mb} and % AC_V.

For bituminous materials measured in gallons: $Q, \text{ tons} = V \times 8.33 \text{ lb/gal} \times SG / 2000$
For bituminous materials measured in liters: $Q, \text{ metric tons} = V \times 1.0 \text{ kg/L} \times SG / 1000$

- Where: A = Area of the HMA mixture, sq yd (sq m).
D = Depth of the HMA mixture, in. (mm).
G_{mb} = Average bulk specific gravity of the mixture, from the approved mix design.
V = Volume of the bituminous material, gal (L).
SG = Specific Gravity of bituminous material as shown on the bill of lading.

Basis of Payment. Bituminous materials cost adjustments may be positive or negative but will only be made when there is a difference between the BPI_L and BPI_P in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(BPI_L - BPI_P) \div BPI_L\} \times 100$$

Bituminous materials cost adjustments will be calculated for each calendar month in which applicable bituminous material is placed; and will be paid or deducted when all other contract requirements for the work placed during the month are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

COMPENSABLE DELAY COSTS (BDE)

Effective: June 2, 2017

Revised: April 1, 2019

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Add the following to Section 109 of the Standard Specifications.

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

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

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

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

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

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

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

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

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

CONSTRUCTION AIR QUALITY – DIESEL RETROFIT (BDE)

Effective: June 1, 2010

Revised: November 1, 2014

The reduction of emissions of particulate matter (PM) for off-road equipment shall be accomplished by installing retrofit emission control devices. The term "equipment" refers to diesel fuel powered devices rated at 50 hp and above, to be used on the jobsite in excess of seven calendar days over the course of the construction period on the jobsite (including rental equipment).

Contractor and subcontractor diesel powered off-road equipment assigned to the contract shall be retrofitted using the phased in approach shown below. Equipment that is of a model year older than the year given for that equipment's respective horsepower range shall be retrofitted:

Effective Dates	Horsepower Range	Model Year
June 1, 2010 ^{1/}	600-749	2002
	750 and up	2006
June 1, 2011 ^{2/}	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006
June 1, 2012 ^{2/}	50-99	2004
	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006

1/ Effective dates apply to Contractor diesel powered off-road equipment assigned to the contract.

2/ Effective dates apply to Contractor and subcontractor diesel powered off-road equipment assigned to the contract.

The retrofit emission control devices shall achieve a minimum PM emission reduction of 50 percent and shall be:

- a) Included on the U.S. Environmental Protection Agency (USEPA) *Verified Retrofit Technology List* (<http://www.epa.gov/cleandiesel/verification/verif-list.htm>), or verified by the California Air Resources Board (CARB) (<http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>); or
- b) Retrofitted with a non-verified diesel retrofit emission control device if verified retrofit emission control devices are not available for equipment proposed to be used on the project, and if the Contractor has obtained a performance certification from the retrofit device manufacturer that the emission control device provides a minimum PM emission reduction of 50 percent.

Note: Large cranes (Crawler mounted cranes) which are responsible for critical lift operations are exempt from installing retrofit emission control devices if such devices adversely affect equipment operation.

Diesel powered off-road equipment with engine ratings of 50 hp and above, which are unable to be retrofitted with verified emission control devices or if performance certifications are not available which will achieve a minimum 50 percent PM reduction, may be granted a waiver by the Department if documentation is provided showing good faith efforts were made by the Contractor to retrofit the equipment.

Construction shall not proceed until the Contractor submits a certified list of the diesel powered off-road equipment that will be used, and as necessary, retrofitted with emission control devices. The list(s) shall include (1) the equipment number, type, make, Contractor/rental company name; and (2) the emission control devices make, model, USEPA or CARB verification number, or performance certification from the retrofit device manufacturer. Equipment reported as fitted with emissions control devices shall be made available to the Engineer for visual inspection of the device installation, prior to being used on the jobsite.

The Contractor shall submit an updated list of retrofitted off-road construction equipment as retrofitted equipment changes or comes on to the jobsite. The addition or deletion of any diesel powered equipment shall be included on the updated list.

If any diesel powered off-road equipment is found to be in non-compliance with any portion of this special provision, the Engineer will issue the Contractor a diesel retrofit deficiency deduction.

Any costs associated with retrofitting any diesel powered off-road equipment with emission control devices 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. The Contractor's compliance with this notice and any associated regulations shall not be grounds for a claim.

Diesel Retrofit Deficiency Deduction

When the Engineer determines that a diesel retrofit deficiency exists, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency continues to exist. The calendar day(s) will begin when the time period for correction is exceeded and end with the Engineer's written acceptance of the correction. The daily monetary deduction will be \$1,000.00 for each deficiency identified.

The deficiency will be based on lack of diesel retrofit emissions control.

If a Contractor accumulates three diesel retrofit deficiency deductions for the same piece of equipment in a contract period, the Contractor will be shutdown until the deficiency is corrected. Such a shutdown will not be grounds for any extension of the contract time, waiver of penalties, or be grounds for any claim.

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (DBE)

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 **19.00%** of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set for in this Special Provision:

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

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

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

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

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

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

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

- (a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder’s good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases and will be considered by the Department.
 - (1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.

- (2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to perform these work items with its own forces.
- (3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- (4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.

b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable. In accordance with the above Bidding Procedures, the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract.
- (5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.
- (6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.
- (7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.

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

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

- (a) DBE as the Contractor: 100 percent goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE does not count toward the DBE goals.

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

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

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

- (1) The replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award; or
 - (2) The DBE is aware its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or
 - (3) The DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.
- (e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in this Special Provision. The Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the Contractor obtains the Department's written consent as provided in subsection (a) of this part. Unless Department consent is provided for termination of a DBE subcontractor, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the DBE in the Utilization Plan.

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

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

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

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

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

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

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."

ELECTRIC SERVICE INSTALLATION (BDE)

Effective: January 1, 2020

Revise Article 804.04 of the Standard Specifications to read:

“ **804.04 Installation.** The electric service installation shall extend from the existing utility owned transformer to the point of cable termination of the incoming power at the controller enclosure.

The Contractor shall ascertain the work being provided by the electric utility and shall provide all additional material and work required to complete the electric service installation while meeting the requirements of the utility. Unless otherwise required by the utility, grounding shall be according to Section 806, raceways shall be according to Sections 810 – 812, and conductors shall be according to Sections 817 – 818.

The electric service installation shall include an appropriate service disconnect and when required, metering. Metering shall include all metering material, including potential and current transformers. The metering and service disconnect shall be installed remote to the controller enclosure where possible.

The total length of aerial and underground service between the controller enclosure and utility transformer shall not exceed 250 ft (76 m). The service pole or structure and controller shall be located adjacent to the right-of-way line or a minimum distance of 30 ft (9 m) from the edge of pavement. The exact location will be established by the Engineer.

Specific requirements for aerial and underground electric service installations shall be as follows.

- (a) **Aerial Electric Service.** The aerial service shall be mounted on a wood pole, along with a weatherhead, disconnect switch, meter base (if required), and all appurtenances to complete the installation.

The wood pole shall be installed according to Article 830.03(c), except the pole shall be a minimum of 25 ft (7.5 m) in length and shall be increased as necessary to maintain ground clearance.

- (b) **Underground Electric Service.**

(1) **Ground Mounted Service.** The ground mounted service shall be installed on a corrosion resistant pedestal or structure with a service disconnect switch, meter base (if required), and all appurtenances to complete the installation.

(2) **Pole Mounted Service.** The service shall be installed on a 12 ft (3.7 m) wood pole on which the meter base (if required) and service disconnect switch shall be channel mounted. The wood pole shall be installed according to Article 830.03(c), except the pole shall be plumb.

- (c) Conduit Protection. Feeder conductors in PVC conduit on the service pole or structure shall be protected by galvanized steel “U” guard. When on a pole, the “U” guard shall be attached with 3/8 in. x 3 in. (M10 x 75 mm) galvanized steel lag bolts.”

Revise Article 804.05 of the Standard Specifications to read:

“804.05 Basis of Payment. This work will be paid for at the contract unit price per each for ELECTRIC SERVICE INSTALLATION.

For aerial electric service, work on the utility side of the weatherhead at the service pole will be paid for according to Article 109.04 when not provided by the utility company.

For underground electric service, work on the utility side of the service pole, pedestal, or structure where the service cables penetrate the ground will be paid for according to Article 109.04 when not provided by the utility company.

Any charges by the utility company to provide electrical service will be paid for according to Article 109.05.”

EMULSIFIED ASPHALTS (BDE)

Effective: August 1, 2019

Revise Article 1032.06 of the Standard Specifications to read:

“1032.06 Emulsified Asphalts. Emulsified asphalts will be accepted according to the current Bureau of Materials Policy Memorandum, “Emulsified Asphalt Acceptance Procedure”. These materials shall be homogeneous and shall show no separation of asphalt after thorough mixing, within 30 days after delivery, provided separation has not been caused by freezing. They shall coat the aggregate being used in the work to the satisfaction of the Engineer and shall be according to the following requirements.

- (a) Anionic Emulsified Asphalt. Anionic emulsified asphalts RS-1, RS-2, HFRS-2, SS-1h, and SS-1 shall be according to AASHTO M 140, except as follows.
- (1) The cement mixing test will be waived when the emulsion is being used as a tack coat.
 - (2) The Solubility in Trichloroethylene test according to AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent.
- (b) Cationic Emulsified Asphalt. Cationic emulsified asphalts CRS-1, CRS-2, CSS-1h, and CSS-1 shall be according to AASHTO M 208, except as follows.
- (1) The cement mixing test will be waived when the emulsion is being used as a tack coat.

(2) The Solubility in Trichloroethylene test according to AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent.

(c) High Float Emulsion. High float emulsions HFE-90, HFE-150, and HFE-300 are medium setting and shall be according to the following table.

Test	HFE-90	HFE-150	HFE-300
Viscosity, Saybolt Furol, at 122 °F (50 °C), (AASHTO T 59), SFS ^{1/}	50 min.	50 min.	50 min.
Sieve Test, No. 20 (850 µm), retained on sieve, (AASHTO T 59), %	0.10 max.	0.10 max.	0.10 max.
Storage Stability Test, 1 day, (AASHTO T 59), %	1 max.	1 max.	1 max.
Coating Test (All Grades), (AASHTO T 59), 3 minutes	stone coated thoroughly		
Distillation Test, (AASHTO T 59): Residue from distillation test to 500 °F (260 °C), % Oil distillate by volume, %	65 min. 7 max.	65 min. 7 max.	65 min. 7 max.
Characteristics of residue from distillation test to 500 °F (260 °C): Penetration at 77 °F (25 °C), (AASHTO T 49), 100 g, 5 sec, dmm	90-150	150-300	300 min.
Float Test at 140 °F (60 °C), (AASHTO T 50), sec.	1200 min.	1200 min.	1200 min.

1/ The emulsion shall be pumpable.

(d) Penetrating Emulsified Prime. Penetrating Emulsified Prime (PEP) shall be according to AASHTO T 59, except as follows.

Test	Result
Viscosity, Saybolt Furol, at 77 °F (25 °C), SFS	75 max.
Sieve test, retained on No. 20 (850 µm) sieve, %	0.10 max.
Distillation to 500 °F (260 °C) residue, %	38 min.
Oil distillate by volume, %	4 max.

The PEP shall be tested according to the current Bureau of Materials Illinois Laboratory Test Procedure (ILTP), "Sand Penetration Test of Penetrating Emulsified Prime (PEP)". The time of penetration shall be equal to or less than that of MC-30. The depth of penetration shall be equal to or greater than that of MC-30.

(e) Delete this subparagraph.

- (f) Polymer Modified Emulsified Asphalt. Polymer modified emulsified asphalts, e.g. SS-1hP, CSS-1hP, CRS-2P (formerly CRSP), CQS-1hP (formerly CSS-1h Latex Modified) and HFRS-2P (formerly HFP) shall be according to AASHTO M 316, except as follows.
- (1) The cement mixing test will be waived when the polymer modified emulsion is being used as a tack coat.
 - (2) CQS-1hP (formerly CSS-1h Latex Modified) emulsion for micro-surfacing treatments shall use latex as the modifier.
 - (3) Upon examination of the storage stability test cylinder after standing undisturbed for 24 hours, the surface shall show minimal to no white, milky colored substance and shall be a homogenous brown color throughout.
 - (4) The distillation for all polymer modified emulsions shall be performed according to AASHTO T 59, except the temperature shall be 374 ± 9 °F (190 ± 5 °C) to be held for a period of 15 minutes and measured using an ASTM 16F (16C) thermometer.
 - (5) The specified temperature for the Elastic Recovery test for all polymer modified emulsions shall be 50.0 ± 1.0 °F (10.0 ± 0.5 °C).
 - (6) The Solubility in Trichloroethylene test according to AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent.
- (g) Non-Tracking Emulsified Asphalt. Non-tracking emulsified asphalt NTEA (formerly SS-1vh) shall be according to the following.

Test	Requirement
Saybolt Viscosity at 77 °F (25 °C), (AASHTO T 59), SFS	20-100
Storage Stability Test, 24 hr, (AASHTO T 59), %	1 max.
Residue by Distillation, 500 ± 10 °F (260 ± 5 °C), or Residue by Evaporation, 325 ± 5 °F (163 ± 3 °C), (AASHTO T 59), %	50 min.
Sieve Test, No. 20 (850 µm), (AASHTO T 59), %	0.3 max.
Tests on Residue from Evaporation	
Penetration at 77 °F (25 °C), 100 g, 5 sec, (AASHTO T 49), dmm	40 max.
Softening Point, (AASHTO T 53), °F (°C)	135 (57) min.
Ash Content, (AASHTO T 111), % ^{1/}	1 max.

1/ The Solubility in Trichloroethylene test according to AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent

The different grades are, in general, used for the following.

Grade	Use
SS-1, SS-1h, RS-1, RS-2, CSS-1, CRS-1, CRS-2, CSS-1h, HFE-90, SS-1hP, CSS-1hP, NTEA (formerly SS-1vh)	Tack Coat
PEP	Prime Coat
RS-2, HFE-90, HFE-150, HFE-300, CRS-2P (formerly CRSP), HFRS-2P (formerly HFP), CRS-2, HFRS-2	Bituminous Surface Treatment
CQS-1hP (formerly CSS-1h Latex Modified)	Micro-Surfacing Slurry Sealing Cape Seal™

ENGINEER’S FIELD OFFICE AND LABORATORY (BDE)

Effective: January 1, 2020

Revise the last sentence of the first paragraph of Article 670.01 of the Standard Specifications to read:

“The building shall remain available for use until released by the Engineer.”

Revise the fifth and sixth paragraphs of Article 670.02 of the Standard Specifications to read:

“Sanitary facilities shall include hot and cold potable running water, lavatory and toilet as an integral part of the office where available. A portable toilet, if necessary, shall be serviced once per week. Solid waste disposal consisting of two waste baskets and an outside trash container of sufficient size to accommodate a weekly provided pick-up service.

In addition, the following furniture and equipment meeting the approval of the Engineer shall be furnished.”

Revise Article 670.02(b) through 670.02(r) of the Standard Specifications to read:

- “(b) One desk with minimum working surface of 48 x 72 in. (1.2 x 1.8 m).
- (c) Two free standing four drawer legal size file cabinets with lock and an underwriters' laboratories insulated file device 350 degrees one hour rating.
- (d) Table(s) and chairs capable of seating 10 people.

- (e) One equipment cabinet of minimum inside dimension of 44 in. (1100 mm) high x 24 in. (600 mm) wide x 30 in. (750 mm) deep with lock. The walls shall be of steel with a 3/32 in. (2 mm) minimum thickness with concealed hinges and enclosed lock constructed in such a manner as to prevent entry by force. The cabinet assembly shall be permanently attached to a structural element of the field office in a manner to prevent theft of the entire cabinet.
- (f) One refrigerator with a minimum size of 14 cu ft (0.40 cu m) with a freezer unit.
- (g) One electric desk type tape printing calculator.
- (h) A minimum of two communication paths. The configuration shall include:
 - (1) Internet Connection. An internet service connection with a wireless router capable of providing service to a minimum of five devices. The internet service shall be for unlimited data with a minimum internet data download speed of 25 megabits per second. For areas where this minimum download speed is not available, the maximum speed available for the area shall be provided.
 - (2) Telephone Line. One landline touch tone telephone with voicemail or answering machine. The telephone shall have an unpublished number.
- (i) One plain paper wireless color printer capable of reproducing prints up to 11 x 17 in. (280 x 432 mm) with an automatic feed tray. Separate paper trays for letter size and 11 x 17 in. (280 x 432 mm) paper shall be provided. The wireless printer shall also be equipped to copy in color and scan documents.
- (j) One electric water cooler dispenser.
- (k) One first-aid cabinet fully equipped.
- (l) One microwave oven (minimum 700 watt) with a turntable and 1 cu ft (0.03 cu m) minimum capacity.
- (m) One fire-proof safe, 0.5 cu ft (0.01 cu m) minimum capacity.
- (n) One electric paper shredder.
- (o) One post mounted rain gauge, located on the project site for each 5 miles (8 km) of project length.”

Revise the last sentence of the first paragraph of Articles 670.04 and 670.05 of the Standard Specifications to read:

“Doors and windows shall be equipped with locks.”

Revise Article 670.04(c) through 670.04(n) of the Standard Specifications to read:

- “(c) Two folding chairs.
- (d) One equipment cabinet of minimum inside dimension of 44 in. (1100 mm) high x 24 in. (600 mm) wide x 30 in. (750 mm) deep with lock. The walls shall be of steel with a 3/32 in. (2 mm) minimum thickness with concealed hinges and enclosed lock constructed to prevent entry by force. The cabinet assembly shall be permanently attached to a structural element of the field office to prevent theft of the entire cabinet.
- (e) A minimum of two communication paths. The configuration shall include:
 - (1) Internet Connection. An internet service connection with a wireless router capable of providing service to a minimum of five devices. The internet service shall be for unlimited data with a minimum internet download speed of 25 megabits per second. For areas where this minimum download speed is not available, the maximum speed available for the area shall be provided.
 - (2) Telephone Line. One land line touch tone telephone with voicemail or answering machine. The telephone shall have an unpublished number.
- (f) One electric desk type tape printing calculator.
- (g) One first-aid cabinet fully equipped.
- (h) One plain paper wireless color printer capable of reproducing prints up to 11 x 17 in. (280 x 432 mm) with an automatic feed tray. Separate paper trays for letter size and 11 x 17 in. (280 x 432 mm) paper shall be provided. The wireless printer shall also be equipped to copy in color and scan documents.
- (i) A portable toilet meeting Federal, State, and local health department requirements shall be provided, maintained clean and in good working condition, and shall be stocked with lavatory and sanitary supplies at all times. The portable toilet shall be serviced once per week.
- (j) One electric water cooler dispenser.
- (k) One refrigerator with a minimum size of 14 cu ft (0.45 cu m) with a freezer unit.
- (l) One microwave oven (minimum 700 watt) with a turntable and 1 cu ft (0.03 cu m) minimum capacity.”

Revise Article 670.05(f) of the Standard Specifications to read:

“(f) One landline touch tone telephone with voicemail or an answering machine. The telephone shall have an unpublished number.”

Delete the last sentence of the second paragraph of Article 670.06 of the Standard Specifications.

Revise the fifth sentence of the first paragraph of Article 670.07 of the Supplemental Specifications to read:

“This price shall include all utility costs and shall reflect the salvage value of the building or buildings, equipment, and furniture which remain the property of the Contractor after release by the Engineer, except the Department will pay that portion of the monthly long distance and monthly local telephone, when combined, exceed \$250.”

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.”

FUEL COST ADJUSTMENT (BDE)

Effective: April 1, 2009 Revised: August 1, 2017

Description. Fuel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in fuel prices when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract. Failure to indicate “Yes” for any category of work will make that category of work exempt from fuel cost adjustment.

General. The fuel cost adjustment shall apply to contract pay items as grouped by category. The adjustment shall only apply to those categories of work checked “Yes”, and only when the cumulative plan quantities for a category exceed the required threshold. Adjustments to work items in a category, either up or down, and extra work paid for by agreed unit price will be subject to fuel cost adjustment only when the category representing the added work was subject to the fuel cost adjustment. Extra work paid for at a lump sum price or by force account will not be subject to fuel cost adjustment. Category descriptions and thresholds for application and the fuel usage factors which are applicable to each are as follows:

(a) Categories of Work.

- (1) Category A: Earthwork. Contract pay items performed under Sections 202, 204, and 206 including any modified standard or nonstandard items where the character of the work to be performed is considered earthwork. The cumulative total of all applicable item plan quantities shall exceed 25,000 cu yd (20,000 cu m). Included in the fuel usage factor is a weighted average 0.10 gal/cu yd (0.50 liters/cu m) factor for trucking.
- (2) Category B: Subbases and Aggregate Base Courses. Contract pay items constructed under Sections 311, 312 and 351 including any modified standard or nonstandard items where the character of the work to be performed is considered construction of a subbase or aggregate, stabilized or modified base course. The cumulative total of all applicable item plan quantities shall exceed 5000 tons (4500 metric tons). Included in the fuel usage factor is a 0.60 gal/ton (2.50 liters/metric ton) factor for trucking.
- (3) Category C: Hot-Mix Asphalt (HMA) Bases, Pavements and Shoulders. Contract pay items constructed under Sections 355, 406, 407 and 482 including any modified standard or nonstandard items where the character of the work to be performed is considered HMA bases, pavements and shoulders. The cumulative total of all applicable item plan quantities shall exceed 5000 tons (4500 metric tons). Included in the fuel usage factor is 0.60 gal/ton (2.50 liters/metric ton) factor for trucking.
- (4) Category D: Portland Cement Concrete (PCC) Bases, Pavements and Shoulders. Contract pay items constructed under Sections 353, 420, 421 and 483 including any modified standard or nonstandard items where the character of the work to be performed is considered PCC base, pavement or shoulder. The cumulative total of all applicable item plan quantities shall exceed 7500 sq yd (6000 sq m). Included in the fuel usage factor is 1.20 gal/cu yd (5.94 liters/cu m) factor for trucking.

(5) Category E: Structures. Structure items having a cumulative bid price that exceeds \$250,000 for pay items constructed under Sections 502, 503, 504, 505, 512, 516 and 540 including any modified standard or nonstandard items where the character of the work to be performed is considered structure work when similar to that performed under these sections and not included in categories A through D.

(b) Fuel Usage Factors.

English Units Category	Factor	Units
A - Earthwork	0.34	gal / cu yd
B – Subbase and Aggregate Base courses	0.62	gal / ton
C – HMA Bases, Pavements and Shoulders	1.05	gal / ton
D – PCC Bases, Pavements and Shoulders	2.53	gal / cu yd
E – Structures	8.00	gal / \$1000

Metric Units Category	Factor	Units
A - Earthwork	1.68	liters / cu m
B – Subbase and Aggregate Base courses	2.58	liters / metric ton
C – HMA Bases, Pavements and Shoulders	4.37	liters / metric ton
D – PCC Bases, Pavements and Shoulders	12.52	liters / cu m
E – Structures	30.28	liters / \$1000

(c) Quantity Conversion Factors.

Category	Conversion	Factor
B	sq yd to ton	0.057 ton / sq yd / in depth
	sq m to metric ton	0.00243 metric ton / sq m / mm depth
C	sq yd to ton	0.056 ton / sq yd / in depth
	sq m to metric ton	0.00239 m ton / sq m / mm depth
D	sq yd to cu yd	0.028 cu yd / sq yd / in depth
	sq m to cu m	0.001 cu m / sq m / mm depth

Method of Adjustment. Fuel cost adjustments will be computed as follows.

$$CA = (FPI_P - FPI_L) \times FUF \times Q$$

Where: CA = Cost Adjustment, \$
FPI_P = Fuel Price Index, as published by the Department for the month the work is performed, \$/gal (\$/liter)
FPI_L = Fuel Price Index, as published by the Department for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price, \$/gal (\$/liter)
FUF = Fuel Usage Factor in the pay item(s) being adjusted
Q = Authorized construction Quantity, tons (metric tons) or cu yd (cu m)

The entire FUF indicated in paragraph (b) will be used regardless of use of trucking to perform the work.

Basis of Payment. Fuel cost adjustments may be positive or negative but will only be made when there is a difference between the FPI_L and FPI_P in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(FPI_L - FPI_P) \div FPI_L\} \times 100$$

Fuel cost adjustments will be calculated for each calendar month in which applicable work is performed; and will be paid or deducted when all other contract requirements for the items of work are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

GEOTECHNICAL FABRIC FOR PIPE UNDERDRAINS AND FRENCH DRAINS (BDE)

Effective: November 1, 2019

Revise Article 1080.01(a) of the Standard Specifications to read:

- “ (a) Fabric Materials. Fabric materials shall be as follows.
- (1) Knitted Fabric. Knitted fabric envelope shall be Type A according to ASTM D 6707 and be a continuous one piece knitted polymeric material that fits over the pipe underdrain like a sleeve. It shall be free from any chemical treatment or coating that might significantly reduce porosity and permittivity.
 - (2) Woven or Nonwoven Fabric. The fabric shall be Class 3 according to AASHTO M 288 and consist of woven yarns or nonwoven filaments of polyolefins or polyesters. Woven slit film geotextiles (i.e. geotextiles made from yarns of a flat, tape like character) shall not be permitted. The yarns or filaments shall be dimensionally stable (i.e. maintain their relative position with respect to each other) and resistant to delamination. The yarns or filaments shall be free from any chemical treatment or coating that might significantly reduce porosity and permittivity.

(3) Physical Properties. The physical properties for knitted, woven, and nonwoven fabrics shall be according to the following.

PHYSICAL PROPERTIES			
	Knitted ^{1/}	Woven ^{2/}	Nonwoven ^{2/}
Grab Strength, lb (N) ASTM D 4632 ^{3/}	--	180 (800) min.	112 (500) min.
Elongation/Grab Strain, % ASTM D 4632 ^{3/}	--	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 ^{3/}	--	67 (300) min.	40 (180) min.
Puncture Strength, lb (N) ASTM D 6241 ^{3/}	180 (800) min.	370 (1650) min.	222 (990) min.
Apparent Opening Size, Sieve No. (mm) ASTM D 4751 ^{4/}	30 (0.60) max.	40 (0.425) max.	40 (0.425) max.
Permittivity, sec ⁻¹ ASTM D 4491	1.0 min.		
Ultraviolet Stability, % retained strength after 500 hours of exposure ASTM D 4355	--	50 min.	50 min.

- 1/ Manufacturer's certification to meet test requirements.
- 2/ NTPEP results or manufacturer's certification to meet test requirements.
- 3/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].
- 4/ Values represent the maximum average roll value."

Revise Article 1080.05 of the Standard Specifications to read:

" **1080.05 Geotechnical Fabric for French Drains and Pipe Underdrains, Type 2.** Geotechnical fabric for french drains and pipe underdrains, Type 2 shall be Class 3 according to AASHTO M 288 and consist of woven yarns or nonwoven filaments of polyolefins or polyesters. Woven slit film geotextiles (i.e. geotextiles made from yarns of a flat, tape-like character) shall not be permitted. The yarns or filaments shall be dimensionally stable (i.e. maintain their relative position with respect to each other) and resistant to delamination. The yarns or filaments shall be free from any chemical treatment or coating that might significantly reduce porosity and permittivity.

The fabric shall be according to the following.

PHYSICAL PROPERTIES ^{1/}		
	Woven	Nonwoven
Grab Strength, lb (N) ASTM D 4632 ^{2/}	180 (800) min.	112 (500) min.
Elongation/Grab Strain, % ASTM D 4632 ^{2/}	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 ^{2/}	67 (300) min.	40 (180) min.
Puncture Strength, lb (N) ASTM D 6241 ^{2/}	370 (1650) min.	222 (990) min.
Apparent Opening Size, Sieve No. (mm) ASTM D 4751 ^{3/}	60 (0.25) max.	
Permittivity, sec ⁻¹ ASTM D 4491	0.2 min.	
Ultraviolet Stability % retained strength after 500 hours of exposure - ASTM D 4355	50 min.	

- 1/ NTPEP results to meet test requirements. Manufacturer shall have public release status and current reports on laboratory results in Test Data of NTPEP's DataMine.
- 2/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].
- 3/ Values represent the maximum average roll value."

HOT MIX ASPHALT – QUALITY CONTROL FOR PERFORMANCE (BDE)

Effective: April 1, 2017

Revised: July 2, 2019

Description. This special provision describes the procedures for production, placement and payment of hot-mix asphalt (HMA) under the quality control for performance (QCP) program; as well as the requirements for intelligent compaction. This special provision shall apply to the HMA mixtures specified in the plans. This work shall be according to the Standard Specifications and the special provision, “Hot-Mix Asphalt Binder and Surface Course” except as modified herein.

Delete Articles:	406.06(b)(1), 2 nd Paragraph	(Temperature Requirements)
	406.06(b)(2)d.	(Temperature Requirements)
	406.06(b)(3)b.	(Temperature Requirements)
	406.06(e), 3 rd Paragraph	(Paver Speed Requirements)
	406.07(b)	(Rolling)
	406.07(c)	(Density)
	1030.05(a)(4, 5, 9,)	(QC/QA Documents)
	1030.05(d)(2)a.	(Plant Tests)
	1030.05(d)(2)b.	(Dust-to-Asphalt and Moisture Content)
	1030.05(d)(2)d.	(Small Tonnage)
	1030.05(d)(2)f.	(HMA Sampling)
	1030.05(d)(3)	(Required Field Tests)
	1030.05(d)(4)	(Control Limits)
	1030.05(d)(5)	(Control Charts)
	1030.05(d)(7)	(Corrective Action for Field Tests (Density))
	1030.05(e)	(Quality Assurance by the Engineer)
	1030.05(f)	(Acceptance by the Engineer)
	1030.06(a), 2 nd paragraph	(Before start-up...)

Definitions.

- (a) Quality Control (QC). All production and construction activities by the Contractor required to achieve the required level of quality.
- (b) Quality Assurance (QA). All monitoring and testing activities by the Engineer required to assess product quality, level of payment, and acceptability of the product.
- (c) Pay Parameters. Pay parameters shall be field voids in the mineral aggregate (Field VMA), voids, and density. Field VMA will be calculated using the combined aggregates bulk specific gravity (G_{sb}) from the mix design.
- (d) Mixture Lot. A mixture lot shall begin once an acceptable test strip has been completed and the adjusted job mix formula has been determined. If the test strip is waived, a mixture lot shall begin with the start of production. A mixture lot shall consist of four sublots unless it is the last or only lot, in which case it may consist of as few as one subplot.

- (e) Mixture Sublot. A mixture sublot for Field VMA, voids, and dust/AC shall be a maximum of 1000 tons (910 metric tons).
- (1) If the remaining quantity is greater than 200 tons (180 metric tons) but less than 1000 tons (910 metric tons), the last mixture sublot will be that quantity.
 - (2) If the remaining quantity is 200 tons (180 metric tons) or less, the quantity shall be combined with the previous mixture sublot.
- (f) Density Interval. Density intervals shall be every 0.2 miles (320 m) for lift thicknesses of 3 in. (75 mm) or less and 0.1 miles (160 m) for lift thicknesses greater than 3 in. (75 mm). If a density interval is less than 200 ft (60 m), it will be combined with the previous density interval.
- (g) Density Sublot. A density sublot shall be the average of five consecutive density intervals.
- (1) If less than three density intervals remain outside a density sublot, they shall be included in the previous density sublot.
 - (2) If three or more density intervals remain, they shall be considered a density sublot.
- (h) Density Test. A density test shall consist of a core taken at a random location within each density interval.

When establishing the target density, the HMA maximum theoretical gravity (G_{mm}) shall be based on the running average of four Department test results. Initial G_{mm} shall be based on the average of the first four test results. If less than four G_{mm} results are available, an average of all available Department G_{mm} test results shall be used.

Pre-Production Meeting. The Engineer will schedule a pre-production meeting prior to the start of production. The HMA QC Plan, test frequencies, and responsibilities of all parties involved in testing will be addressed. The Engineer will provide the random locations, tonnages, and sublot selected from each lot in a sealed envelope for the Contractor to sign at the pre-production meeting or prior to paving. The locations, tonnages, and sublot selected from each lot may be adjusted due to field conditions according to the Department's Manual of Test Procedures for Materials "PFP and QCP Hot-Mix Asphalt Random Jobsite Sampling" and "PFP and QCP Random Density Procedure". The signed sealed envelope will be given to the Contractor after paving is complete, along with documentation of any adjustments. Personnel attending the meetings may include the following:

- (a) Resident Engineer
- (b) District Mixture Control Representative
- (c) QC Manager

(d) Contractor Paving Superintendent

(e) Any consultant involved in any part of the HMA sampling or testing on this project

Quality Control (QC) by the Contractor. The Contractor’s QC plan shall include the schedule of testing for both pay parameters and non-pay parameters required to control the product such as asphalt binder content and mixture gradation. The minimum test frequency shall be according to Table 1.

Table 1

Minimum Quality Control Sampling and Testing Requirements		
Quality Characteristic	Minimum Test Frequency	
Mixture Gradation	1 per subplot	
Asphalt Binder Content		
Dust/AC Ratio		
Field VMA		
Voids		G_{mb}
		G_{mm}

The Contractor’s splits in conjunction with other quality control tests shall be used to control production.

The Contractor shall submit split jobsite mix sample test results to the Engineer within 48 hours of the time of sampling. All QC testing shall be performed in a qualified laboratory by personnel who have successfully completed the Department’s HMA Level I training.

Intelligent Compaction. When a “Number of Roller Passes” is specified in the HMA Mixture Requirements table on the plans, the Contractor may opt to use intelligent compaction (IC) in lieu of density testing. Coring according to the Department’s Manual of Test Procedures for Materials “PFP and QCP Random Density Procedure” is required and will be used for pay adjustments for density sublots that are not in compliance with the contract specifications.

The IC equipment shall be mounted on the breakdown roller(s) and shall record GPS location data, roller pass counts, roller speeds, and HMA mat temperatures. Each day, the accuracy of the GPS and temperature data shall be verified and documented. If the verification fails or is not performed, the IC data will not be used for the affected density sublots.

The IC data for each density subplot shall be analyzed using Veta software to determine the average roller speed, percent roller coverage, and average mat surface temperature for the initial roller pass. The Contractor shall submit these summary results, and if requested the raw data from the IC equipment and the data analysis software, to the Engineer within 24 hours of each day of paving using IC.

The required number of roller passes shall be as specified on the plans. The roller speeds shall be according to Article 406.07. The minimum roller coverage shall be 90 percent. The average HMA mat temperature for the initial break down roller pass shall be according to Table 2.

Table 2

Asphalt Mixture Type	Temperature Range (°F (°C))
Warm Mix Asphalt	215-275 °F (102-135 °C)
IL-4.75	300-350 °F (155-175 °C)
HMA using SBS PG76-22	300-350 °F (155-175 °C)
HMA using SBS PG76-28	300-350 °F (155-175 °C)
HMA using SBS PG70-22	300-350 °F (155-175 °C)
HMA using SBS PG70-28	300-350 °F (155-175 °C)
Other HMA not listed above	260-325 °F (125-165 °C)

Quality Assurance (QA) by the Engineer. Quality Assurance by the Engineer will be as follows.

- (a) Voids, Field VMA, and Dust/AC Ratio. The Engineer will determine the random tonnage and the Contractor shall be responsible for obtaining the sample according to the Department's Manual of Test Procedures for Materials "PFP and QCP Hot-Mix Asphalt Random Jobsite Sampling Procedure".
- (b) Density: After final rolling, the Engineer will identify the random core locations within each density testing interval according to the Department's Manual of Test Procedures for Materials "PFP and QCP Random Density Procedure".

The Contractor shall cut the 4 in. (100 mm) cores within the same day and prior to opening to traffic unless otherwise approved by the Engineer. All core holes shall be filled immediately upon completion of coring. All water shall be removed from the core holes prior to filling. All core holes shall be filled with a rapid hardening mortar or concrete which shall be mixed in a separate container prior to placement in the hole. Any depressions in the surface of the filled core holes greater than 1/4 in. (6 mm) at the time of final inspection will require removal of the fill material to the depth of the lift thickness and replacement.

The Engineer will witness and secure all mixture and density samples. The Contractor shall transport the secured sample to a location designated by the Engineer.

The Engineer will select at random one split sample from each lot for testing of voids, Field VMA and dust/AC ratio. The Engineer will test a minimum of one sample per project. The Engineer will test all of the pavement cores for density unless intelligent compaction is used. All QA testing will be performed in a qualified laboratory by personnel who have successfully completed the Department's HMA Level I training. QA test results will be available to the Contractor within ten working days from receipt of secured cores and split mixture samples and after the last sublot from each lot.

The Engineer will maintain a complete record of all Department test results and copies will be provided to the Contractor with each set of subplot results. The records will contain, at a minimum, the originals of all Department test results and raw data, random numbers used and resulting calculations for sampling locations, and quality level analysis calculations.

If the QA results for a subplot meet the precision limits listed in Table 3, the QA results will be defined as the final mixture QA results for that subplot. If QA results for a subplot do not meet the precision limits listed in Table 3, the Department will verify the results by retesting the retained split sample. The retest will replace the original results and will be defined as the final mixture QA results for that subplot.

If the final mixture QA results for the random subplot do not meet the 100 percent subplot pay factor limits or do not compare to QC results within the precision limits in Table 3, the Engineer will test all split subplot mix samples for the lot.

Table 3

Test Parameter	Limits of Precision
G _{mb}	0.030
G _{mm}	0.026
Field VMA	1.0 %

Acceptance by the Engineer. All of the Department's tests shall be within the acceptable limits listed in Table 4.

Table 4

Parameter		Acceptable Limits
Field VMA		-1.0 – +3.0% ^{1/}
Voids		2.0 – 6.0%
Density	IL-19.0, IL-9.5, IL-9.5FG, IL-4.75	90.0 – 98.0%
	SMA 12.5, SMA 9.5	92.0 – 98.0%
Dust / AC Ratio		0.4 – 1.6 ^{2/}

1/ Based on minimum required VMA from mix design

2/ Does not apply to SMA.

In addition, no visible pavement distresses shall be present such as, but not limited to, segregation, excessive coarse aggregate fracturing or flushing.

Basis of Payment. Payment will be based on the calculation of the composite pay factor using QA test results for each mixture according to the Department’s Manual of Test Procedures for Materials “QCP Pay Calculation” document.

If intelligent compaction is successfully implemented, the Contractor will receive 100 percent for the density pay factor in Equation 1 of the “QCP Pay Calculation” document for each applicable HMA mixture; otherwise, the density tests and pay adjustments will apply. The pay factor for each density subplot will be based upon either intelligent compaction or density tests and the two will not be mixed.

Dust/AC Ratio. A monetary deduction will be made using the pay adjustment table below for dust/AC ratios that deviate from the 0.6 to 1.2 range. If the tested mixture subplot is outside of this range, the Department will test the remaining sublots for dust/AC pay adjustment.

Table 5

Dust/AC Pay Adjustment Table ^{1/}	
Range	Deduct / subplot
$0.6 \leq X \leq 1.2$	\$0
$0.5 \leq X < 0.6$ or $1.2 < X \leq 1.4$	\$1000
$0.4 \leq X < 0.5$ or $1.4 < X \leq 1.6$	\$3000
$X < 0.4$ or $X > 1.6$	Shall be removed and replaced

1/ Does not apply to SMA.

MANHOLES, VALVE VAULTS, AND FLAT SLAB TOPS (BDE)

Effective: January 1, 2018 Revised: March 1, 2019

Description. In addition to those manufactured according to the current standards included in this contract, manholes, valve vaults, and flat slab tops manufactured prior to March 1, 2019, according to the previous Highway Standards listed below will be accepted on this contract:

Product	Previous Standards		
Precast Manhole Type A, 4’ (1.22 m) Diameter	602401-05	602401-04	602401-03
Precast Manhole Type A, 5’ (1.52 m) Diameter	602402-01	602402	602401-03
Precast Manhole Type A, 6’ (1.83 m) Diameter	602406-09	602406-08	602406-07
Precast Manhole Type A, 7’ (2.13 m) Diameter	602411-07	602411-06	602411-05
Precast Manhole Type A, 8’ (2.44 m) Diameter	602416-07	602416-06	602416-05
Precast Manhole Type A, 9’ (2.74 m) Diameter	602421-07	602421-06	602421-05
Precast Manhole Type A, 10’ (3.05 m) Diameter	602426-01	602426	
Precast Valve Vault Type A, 4’ (1.22 m) Diameter	602501-04	602501-03	602501-02
Precast Valve Vault Type A, 5’ (1.52 m) Diameter	602506-01	602506	602501-02
Precast Reinforced Concrete Flat Slab Top	602601-05	602601-04	

The following revisions to the Standard Specifications shall apply to manholes, valve vaults, and flat slab tops manufactured according to the current standards included in this contract:

Revise Article 602.02(g) of the Standard Specifications to read:

“(g) Structural Steel (Note 4) 1006.04

Note 4. All components of the manhole joint splice shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable.”

Add the following to Article 602.02 of the Standard Specifications:

“(s) Anchor Bolts and Rods (Note 5) 1006.09

Note 5. The threaded rods for the manhole joint splice shall be according to the requirements of ASTM F 1554, Grade 55, (Grade 380).”

Revise the second paragraph of Article 1042.10 of the Standard Specifications to read:

“Catch basin Types A, B, C, and D; Manhole Type A; Inlet Types A and B; Drainage Structures Types 1, 2, 3, 4, 5, and 6; Valve Vault Type A; and reinforced concrete flat slab top (Highway Standard 602601) shall be manufactured according to AASHTO M 199 (M 199M), except as shown on the plans. Additionally, catch basins, inlets, and drainage structures shall have a minimum concrete compressive strength of 4500 psi (31,000 kPa) at 28 days and manholes, valve vaults, and reinforced concrete flat slab tops shall have a minimum concrete compressive strength of 5000 psi (34,500 kPa) at 28 days.”

MOBILIZATION (BDE)

Effective: April 1, 2020

Replace Articles 671.02(a), (b), and (c) of the Standard Specifications with the following:

“(a) Upon execution of the contract, 90 percent of the pay item will be paid.

(b) When 90 percent of the adjusted contract value is earned, the remaining ten percent of the pay item will be paid along with any amount bid in excess of six percent of the original contract amount.”

PAVEMENT MARKING REMOVAL (BDE)

Effective: July 1, 2016

Revise Article 783.02 of the Standard Specifications to read:

“783.02 Equipment. Equipment shall be according to the following.

Item	Article/Section
(a) Grinders (Note 1)	
(b) Water Blaster with Vacuum Recovery	1101.12

Note 1. Grinding equipment shall be approved by the Engineer.”

Revise the first paragraph of Article 783.03 of the Standard Specifications to read:

“783.03 Removal of Conflicting Markings. Existing pavement markings that conflict with revised traffic patterns shall be removed. If darkness or inclement weather prohibits the removal operations, such operations shall be resumed the next morning or when weather permits. In the event of removal equipment failure, such equipment shall be repaired, replaced, or leased so removal operations can be resumed within 24 hours.”

Revise the first and second sentences of the first paragraph of Article 783.03(a) of the Standard Specifications to read:

“The existing pavement markings shall be removed by the method specified and in a manner that does not materially damage the surface or texture of the pavement or surfacing. Small particles of tightly adhering existing markings may remain in place, if in the opinion of the Engineer, complete removal of the small particles will result in pavement surface damage.”

Revise the first paragraph of Article 783.04 of the Standard Specifications to read:

“783.04 Cleaning. The roadway surface shall be cleaned of debris or any other deleterious material by the use of compressed air or water blast.”

Revise the first paragraph of Article 783.06 of the Standard Specifications to read:

“783.06 Basis of Payment. This work will be paid for at the contract unit price per each for RAISED REFLECTIVE PAVEMENT MARKER REMOVAL, or at the contract unit price per square foot (square meter) for PAVEMENT MARKING REMOVAL – GRINDING and/or PAVEMENT MARKING REMOVAL – WATER BLASTING.”

Delete Article 1101.13 from the Standard Specifications.

PORTLAND CEMENT CONCRETE (BDE)

Effective: November 1, 2017

Revise the Air Content % of Class PP Concrete in Table 1 Classes of Concrete and Mix Design Criteria in Article 1020.04 of the Standard Specifications to read:

"TABLE 1. CLASSES OF CONCRETE AND MIX DESIGN CRITERIA		
Class of Conc.	Use	Air Content %
PP	Pavement Patching Bridge Deck Patching (10)	4.0 - 8.0"
	PP-1	
	PP-2	
	PP-3	
	PP-4	
	PP-5	

Revise Note (4) at the end of Table 1 Classes of Concrete and Mix Design Criteria in Article 1020.04 of the Standard Specifications to read:

“(4) For all classes of concrete, the maximum slump may be increased to 7 in (175 mm) when a high range water-reducing admixture is used. For Class SC, the maximum slump may be increased to 8 in. (200 mm). For Class PS, the maximum slump may be increased to 8 1/2 in. (215 mm) if the high range water-reducing admixture is the polycarboxylate type.”

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE)

Effective: January 1, 2019

Revised: January 1, 2020

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 regulated substances. This work shall also consist of the removal, transportation, and proper disposal of underground storage tanks (UST), their contents 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 and Qualifications. Prior to beginning this work, or working in areas with regulated substances, the Contractor shall submit a "Regulated Substances 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 Contractor(s) or firm(s) performing the work shall meet the following qualifications.

- (a) **Regulated Substances Monitoring.** Qualification for environmental observation and field screening of regulated substances work and environmental observation of UST removal shall require either pre-qualification in Hazardous Waste by the Department or demonstration of acceptable project experience in remediation and operations for contaminated sites in accordance with applicable Federal, State, or local regulatory requirements using BDE 2730.

Qualification for each individual performing regulated substances monitoring shall require a minimum of one-year of experience in similar activities as those required for the project.

- (b) **Underground Storage Tank Removal.** Qualification for underground storage tank (UST) removal work shall require 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 21 calendar days for review of the RSPCP. The review may involve rejection or revision and resubmittal; in which case, an additional 21 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 and documented using BDE 2730A "Regulated Substances Pre-Construction Plan (RSPCP) Addendum" and submitted to the Engineer for approval.

CONSTRUCTION REQUIREMENTS

669.04 Regulated Substances Monitoring. Regulated substances monitoring includes environmental observation and field screening during regulated substances management activities at the contract specific work areas. As part of the regulated substances monitoring, the monitoring personnel shall perform and document the applicable duties listed on form BDE 2732 "Regulated Substances Monitoring Daily Record (RSMDR)".

- (a) Environmental Observation. Prior to beginning excavation, the Contractor shall mark the limits of the contract specific work areas. Once work begins, the monitoring personnel shall be present on-site continuously during the excavation and loading of material.
- (b) Field Screening. Field screening shall be performed during the excavation and loading of material from the contract specific work areas, except for material classified according to Article 669.05(b)(1) or 669.05(c) where field screening is not required.

Field screening shall be performed 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 regulated substances. The PID or FID shall be calibrated on-site, and background level readings taken and recorded daily, and as field and weather conditions change. Field screen readings on the PID or FID in excess of background levels indicates the potential presence of regulated substances 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.

669.05 Regulated Substances Management and Disposal. The management and disposal of soil and/or groundwater containing regulated substances shall be according to the following:

- (a) Soil Analytical Results Exceed Most Stringent MAC. When the soil analytical results indicate detected levels exceed the most stringent maximum allowable concentration (MAC) for chemical constituents in soil established pursuant to Subpart F of 35 Ill. Adm. Code 1100.605, the soil shall be managed as follows:
 - (1) When analytical results indicate inorganic chemical constituents exceed the most stringent MAC, but still considered within area background levels by the Engineer, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable. If the soils cannot be utilized within the right-of-way, they shall be managed and disposed of at a landfill as a non-special waste.

- (2) When analytical results indicate inorganic chemical constituents exceed the most stringent MAC but do not exceed the MAC for a Metropolitan Statistical Area (MSA) County identified in 35 Ill. Admin. Code 742 Appendix A. Table G, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of 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 right-of-way as embankment or fill, when suitable, or managed and disposed of off-site 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 right-of-way as embankment or fill, when suitable, or managed and disposed of off-site 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 and the materials do not contain special waste or hazardous waste, as determined by the Engineer, the soil shall be managed and disposed of at a landfill as a non-special waste.
 - (6) When analytical results indicate soil is hazardous by characteristic or listing pursuant to 35 Ill. Admin. Code 721, contains radiological constituents, or the Engineer otherwise determines the soil cannot be managed according to Articles 669.05(a)(1) through (a)(5) above, the soil shall be managed and disposed of off-site as a 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 right-of-way as embankment or fill, when suitable, or managed and disposed of off-site 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 Ill. Admin. Code 742 Appendix B Table A, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of off-site 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 Ill. Admin. 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 or hazardous waste as applicable. Special waste 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 sanitary sewer or combined 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 sanitary sewer or combined sewer.

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 may be discharged to a sanitary sewer or combined sewer when permitted by the local sewer authority, or it shall be containerized and trucked to an off-site treatment facility as a special waste or hazardous waste. The Contractor is prohibited from discharging groundwater within the trench through a 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 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 Contractor shall obtain all documentation including any permits and/or licenses required to transport the material containing regulated substances to the disposal facility. The Contractor shall coordinate with the Engineer on the completion of all documentation. The Contractor shall make all arrangements for collection and analysis of landfill acceptance testing. The Contractor shall coordinate waste disposal approvals with the disposal facility.

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

Transportation and disposal of material classified according to Article 669.05(a)(5) or 669.05(a)(6) shall be completed each day so that none of the material remains on-site by the close of business, except when temporary staging has been approved.

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 provided by the Bureau of Design and Environment. 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 permitted for disposal 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 their permit 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 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 Ill. Admin. Code 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 Ill. Admin. Code 811.107;
 - (4) a regulated asbestos-containing waste material, as defined under the National Emission Standards for Hazardous Air Pollutants in 40 CFR Part 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 Ill. Admin. Code 728.107 under land disposal restrictions of 35 Ill. Admin. Code 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. Soil classified according to Articles 669.05(a)(2), (b)(1), or (c) may be temporarily staged at the Contractor's option. Soil classified according to Articles 669.05(a)(1), (a)(3), (a)(4), (a)(5), (a)(6), or (b)(2) shall be managed and disposed of without temporary staging to the greatest extent practicable. If circumstances beyond the Contractor's control require temporary staging of these latter materials, the Contractor shall request approval from the Engineer in writing.

Temporary staging shall be accomplished within the right-of-way and the Contractor's means and methods shall be described in the approved or amended RSPCP. Staging areas shall not be located within 200 feet (61 m) of a public or private water supply well; nor within 100 feet (30 m) of sensitive environmental receptor areas, including wetlands, rivers, streams, lakes, or designated habitat zones.

The method of staging shall consist of containerization or stockpiling as applicable for the type, classification, and physical state (i.e., liquid, solid, semisolid) of the material. Materials of different classifications shall be staged separately with no mixing or co-mingling.

When containers are used, the containers and their contents shall remain intact and inaccessible to unauthorized persons until the manner of disposal is determined. 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 not use a storage container if visual inspection of the container reveals the presence of free liquids or other substances that could cause the waste to be reclassified as a hazardous or special waste.

When stockpiles are used, they shall be covered with a minimum 20-mil plastic sheeting or tarps secured using weights or tie-downs. Perimeter berms or diversionary trenches shall be provided to contain and collect for disposal any water that drains from the soil. Stockpiles shall be managed to prevent or reduce potential dust generation.

When staging non-special waste, special waste, or hazardous waste, the following additional requirements shall apply:

- (a) Non-Special Waste. When stockpiling soil classified according to Article 669.05(a)(1) or 669.05(a)(5), an impermeable surface barrier between the materials and the ground surface shall be installed. The impermeable barrier shall consist of a minimum 20-mil plastic liner material and the surface of the stockpile area shall be clean and free of debris prior to placement of the liner. Measures shall also be taken to limit or discourage access to the staging area.
- (b) Special Waste and Hazardous Waste. Soil classified according to Article 669.05(a)(6) shall not be stockpiled but shall be containerized immediately upon generation in containers, tanks or containment buildings as defined by RCRA, Toxic Substances Control Act (TSCA), and other applicable State or local regulations and requirements, including 35 Ill. Admin. Code Part 722, Standards Applicable to Generators of Hazardous Waste.

The staging area(s) shall be enclosed (by a fence or other structure) to restrict direct access to the area, and all required regulatory identification signs applicable to a staging area containing special waste or hazardous waste shall be deployed.

Storage containers shall be placed on an all-weather gravel-packed, asphalt, or concrete surface. Containers shall be in good condition and free of leaks, large dents, or severe rusting, which may compromise containment integrity. Containers must be constructed of, or lined with, materials that will not react or be otherwise incompatible with the hazardous or special waste contents. Containers used to store liquids shall not be filled more than 80 percent of the rated capacity. Incompatible wastes shall not be placed in the same container or comingled.

All containers shall be legibly labeled and marked using pre-printed labels and permanent marker in accordance with applicable regulations, clearly showing the date of waste generation, location and/or area of waste generation, and type of waste. The Contractor shall place these identifying markings on an exterior side surface of the container.

Storage containers shall be kept closed, and storage pads covered, except when access is needed by authorized personnel.

Special waste and hazardous waste shall be transported and disposed within 90 days from the date of generation.

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 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. Admin. 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. Admin. 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 District Environmental Studies Unit (DESU). Upon confirmation of a release of contaminants 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 tank 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 tank excavation zone and entered into subsurface structures (such as sewers or basements).

The tank excavation shall be backfilled according to applicable portions of Sections 205, 208, and 550 with a material that will compact and develop stability. 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 Substances Final Construction Report. Not later than 90 days after completing this work, the Contractor shall submit a “Regulated Substances 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.

Regulated substances monitoring, 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 to the nearest 0.5 calendar day, for REGULATED SUBSTANCES MONITORING.

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 UST removal, soil excavation, soil and content sampling, the management of excavated soil and 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 of soil classified according to Articles 669.05(a)(1), (a)(3), (a)(4), (a)(5), (a)(6), or (b)(2) will be paid for according to Article 109.04. 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.

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.

When the waste material for disposal requires sampling for landfill 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.”

SILT FENCE, INLET FILTERS, GROUND STABILIZATION AND RIPRAP FILTER FABRIC (BDE)

Effective: November 1, 2019

Revised: April 1, 2020

Revise Article 280.02(m) and add Article 280.02(n) so the Standard Specifications read:

“ (m)Above Grade Inlet Filter (Fitted)
1081.15(j)
(n) Above Grade Inlet Filter (Non-Fitted)1081.15(k)”

Revise the last sentence of the first paragraph in Article 280.04(c) of the Standard Specifications to read:

“ The protection shall be constructed with hay or straw bales, silt filter fence, above grade inlet filters (fitted and non-fitted), or inlet filters.

Revise the first sentence of the second paragraph in Article 280.04(c) of the Standard Specifications to read:

“When above grade inlet filters (fitted and non-fitted) are specified, they shall be of sufficient size to completely span and enclose the inlet structure.”

Revise Article 1080.02 of the Standard Specifications to read:

“ **1080.02 Geotextile Fabric.** The fabric for silt filter fence shall consist of woven fabric meeting the requirements of AASHTO M 288 for unsupported silt fence.

The fabric for ground stabilization shall consist of woven yarns or nonwoven filaments of polyolefins or polyesters. Woven fabrics shall be Class 2 and nonwoven fabrics shall be Class 1 according to AASHTO M 288.

The physical properties for silt fence and ground stabilization fabrics shall be according to the following.

PHYSICAL PROPERTIES			
	Silt Fence Woven ^{1/}	Ground Stabilization Woven ^{2/}	Ground Stabilization Nonwoven ^{2/}
Grab Strength, lb (N) ^{3/} ASTM D 4632	123 (550) MD 101 (450) XD	247 (1100) min. ^{4/}	202 (900) min. ^{4/}
Elongation/Grab Strain, % ASTM D 4632 ^{4/}	49 max.	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 ^{4/}	--	90 (400) min.	79 (350) min.
Puncture Strength, lb (N) ASTM D 6241 ^{4/}	--	494 (2200) min.	433 (1925) min.
Apparent Opening Size, Sieve No. (mm) ASTM D 4751 ^{5/}	30 (0.60) max.	40 (0.43) max.	40 (0.43) max.
Permittivity, sec ⁻¹ ASTM D 4491	0.05 min.		
Ultraviolet Stability, % retained strength after 500 hours of exposure ASTM D 4355	70 min.	50 min.	50 min.

- 1/ NTPEP results or manufacturer's certification to meet test requirements.
- 2/ NTPEP results to meet test requirements. Manufacturer shall have public release status and current reports on laboratory results in Test Data of NTPEP's DataMine.
- 3/ MD = Machine direction. XD = Cross-machine direction.
- 4/ Values represent the minimum average roll value (MARV) in the weaker principle direction, MD or XD.
- 5/ Values represent the maximum average roll value."

Revise Article 1080.03 of the Standard Specifications to read:

“ **1080.03 Filter Fabric.** The filter fabric shall consist of woven yarns or nonwoven filaments of polyolefins or polyesters. Woven fabrics shall be Class 3 for riprap gradations RR 4 and RR 5, and Class 2 for RR 6 and RR 7 according to AASHTO M 288. Woven slit film geotextiles (i.e. geotextiles made from yarns of a flat, tape-like character) shall not be permitted. Nonwoven fabrics shall be Class 2 for riprap gradations RR 4 and RR 5, and Class 1 for RR 6 and RR 7 according to AASHTO M 288. After forming, the fabric shall be processed so that the yarns or filaments retain their relative positions with respect to each other. The fabric shall be new and undamaged.

The filter fabric shall be manufactured in widths of not less than 6 ft (2 m). Sheets of fabric may be sewn together with thread of a material meeting the chemical requirements given for the yarns or filaments to form fabric widths as required. The sheets of filter fabric shall be sewn together at the point of manufacture or another approved location.

The filter fabric shall be according to the following.

PHYSICAL PROPERTIES ^{1/}				
	Gradation Nos. RR 4 & RR 5		Gradation Nos. RR 6 & RR 7	
	Woven	Nonwoven	Woven	Nonwoven
Grab Strength, lb (N) ASTM D 4632 ^{2/}	180 (800) min.	157 (700) min.	247 (1100) min.	202 (900) min.
Elongation/Grab Strain, % ASTM D 4632 ^{2/}	49 max.	50 min.	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 ^{2/}	67 (300) min.	56 (250) min.	90 (400) min.	79 (350) min.
Puncture Strength, lb (N) ASTM D 6241 ^{2/}	370 (1650) min.	309 (1375) min.	494 (2200) min.	433 (1925) min.
Ultraviolet Stability, % retained strength after 500 hours of exposure - ASTM D 4355	50 min.			

1/ NTPEP results to meet test requirements. Manufacturer shall have public release status and current reports on laboratory results in Test Data of NTPEP's DataMine.

2/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].

As determined by the Engineer, the filter fabric shall meet the requirements noted in the following after an onsite investigation of the soil to be protected.

Soil by Weight (Mass) Passing the No. 200 sieve (75 µm), %	Apparent Opening Size, Sieve No. (mm) - ASTM D 4751 ^{1/}	Permittivity, sec ⁻¹ ASTM D 4491
49 max.	60 (0.25) max.	0.2 min.
50 min.	70 (0.22) max.	0.1 min.

1/ Values represent the maximum average roll value."

Revise Article 1081.15(h)(3)a of the Standard Specifications to read:

- “a. Inner Filter Fabric Bag. The inner filter fabric bag shall be constructed of woven yarns or nonwoven filaments made of polyolefins or polyesters with a minimum silt and debris capacity of 2.0 cu ft (0.06 cu m). Woven fabric shall be Class 3 and nonwoven fabric shall be Class 2 according to AASHTO M 288. The fabric bag shall be according to the following.

PHYSICAL PROPERTIES		
	Woven	Nonwoven
Grab Strength, lb (N) ASTM D 4632 ^{1/}	180 (800) min.	157 (700) min.
Elongation/Grab Strain, % ASTM D 4632 ^{1/}	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 ^{1/}	67 (300) min.	56 (250) min.
Puncture Strength, lb (N) ASTM D 6241 ^{1/}	370 (1650) min.	309 (1375) min.
Apparent Opening Size, Sieve No. (mm) ASTM D 4751 ^{2/}	60 (0.25) max.	
Permittivity, sec ⁻¹ ASTM D 4491	2.0 min.	
Ultraviolet Stability, % retained strength after 500 hours of exposure – ASTM D 4355	70 min.	

1/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].

2/ Values represent the maximum average roll value.”

Revise Article 1081.15(i)(1) of the Standard Specifications to read:

- “(i) Urethane Foam/Geotextile. Urethane foam/geotextile shall be triangular shaped having a minimum height of 10 in. (250 mm) in the center with equal sides and a minimum 20 in. (500 mm) base. The triangular shaped inner material shall be a low density urethane foam. The outer geotextile fabric cover shall consist of woven yarns or nonwoven filaments made of polyolefins or polyesters placed around the inner material and shall extend beyond both sides of the triangle a minimum of 18 in. (450 mm). Woven filter fabric shall be Class 3 and nonwoven filter fabric shall be Class 2 according to AASHTO M 288.

(1) The geotextile shall meet the following properties.

PHYSICAL PROPERTIES		
	Woven	Nonwoven
Grab Strength, lb (N) ASTM D 4632 ^{1/}	180 (800) min.	157 (700) min.
Elongation/Grab Strain, % ASTM D 4632 ^{1/}	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 ^{1/}	67 (300) min.	56 (250) min.
Puncture Strength, lb (N) ASTM D 6241 ^{1/}	370 (1650) min.	309 (1375) min.
Apparent Opening Size, Sieve No. (mm) ASTM D 4751 ^{2/}	30 (0.60) max.	
Permittivity, sec ⁻¹ ASTM D 4491	2.0 min.	
Ultraviolet Stability, % retained strength after 500 hours of exposure – ASTM D 4355	70 min.	

1/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].

2/ Values represent the maximum average roll value.”

Add the following to Article 1081.15(i) of the Standard Specifications.

“(3) Certification. The manufacturer shall furnish a certificate with each shipment of urethane foam/geotextile assemblies stating the amount of product furnished and that the material complies with these requirements.”

Revise the title and first sentence of Article 1081.15(j) of the Standards Specifications to read:

“(j) Above Grade Inlet Filters (Fitted). Above grade inlet filters (fitted) shall consist of a rigid polyethylene frame covered with a fitted geotextile filter fabric.”

Revise Article 1081.15(j)(2) of the Standard Specifications to read:

- (2) Fitted Geotextile Filter Fabric. The fitted geotextile filter fabric shall consist of woven yarns or nonwoven filaments made of polyolefins or polyesters. Woven filter fabric shall be Class 3 and nonwoven filter fabric shall be Class 2 according to AASHTO M 288. The filter shall be fabricated to provide a direct fit to the frame. The top of the filter shall integrate a coarse screen with a minimum apparent opening size of 1/2 in. (13 mm) to allow large volumes of water to pass through in the event of heavy flows. The filter shall have integrated anti-buoyancy pockets capable of holding a minimum of 3.0 cu ft (0.08 cu m) of stabilization material. Each filter shall have a label with the following information sewn to or otherwise permanently adhered to the outside: manufacturer's name, product name, and lot, model, or serial number. The fitted geotextile filter fabric shall be according to the table in Article 1081.15(h)(3)a above."

Add Article 1081.15(k) to the Standard Specifications to read:

"(k) Above Grade Inlet Filters (Non-Fitted). Above grade inlet filters (non-fitted) shall consist of a geotextile fabric surrounding a metal frame. The frame shall consist of either a) a circular cage formed of welded wire mesh, or b) a collapsible aluminum frame, as described below.

(1) Frame Construction.

- a) Welded Wire Mesh Frame. The frame shall consist of 6 in. x 6 in. (150 mm x 150 mm) welded wire mesh formed of #10 gauge (3.42 mm) steel conforming to ASTM A 185. The mesh shall be 30 in. (750 mm) tall and formed into a 42 in. (1.05 m) minimum diameter cylinder.
 - b) Collapsible Aluminum Frame. The collapsible aluminum frame shall consist of grade 6036 aluminum. The frame shall have anchor lugs that attach it to the inlet grate, which shall resist movement from water and debris. The collapsible joints of the frame shall have a locking device to secure the vertical members in place, which shall prevent the frame from collapsing while under load from water and debris.
- (2) Geotextile Fabric. The geotextile fabric shall consist of woven yarns or nonwoven filaments made of polyolefins or polyesters. The woven filter fabric shall be a Class 3 and the nonwoven filter fabric shall be a Class 2 according to AASHTO M 288. The geotextile fabric shall be according to the table in Article 1081.15(h)(3)a above.

(3) Geotechnical Fabric Attachment to the Frame.

- a) Welded Wire Mesh Frame. The woven or nonwoven geotextile fabric shall be wrapped 3 in. (75 mm) over the top member of a 6 in. x 6 in. (150 mm x 150 mm) welded wire mesh frame and secured with fastening rings constructed of wire conforming to ASTM A 641, A 809, A 370, and A 938 at 6 in. (150 mm) on center. The fastening rings shall penetrate both layers of geotextile and securely close around the steel mesh. The geotextile shall be secured to the sides of the welded wire mesh with fastening rings at a spacing of 1 per sq ft (11 per sq m) and securely close around a steel member.
 - b) Collapsible Aluminum Frame. The woven or nonwoven fabric shall be secured to the aluminum frame along the top and bottom of the frame perimeter with strips of aluminum secured to the perimeter member, such that the anchoring system provides a uniformly distributed stress throughout the geotechnical fabric.
- (4) Certification. The manufacturer shall furnish a certificate with each shipment of above grade inlet filter assemblies stating the amount of product furnished and that the material complies with these requirements.”

STEEL COST ADJUSTMENT (BDE)

Effective: April 2, 2004 Revised: August 1, 2017

Description. Steel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in steel prices when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract. Failure to indicate “Yes” for any item of work will make that item of steel exempt from steel cost adjustment.

Types of Steel Products. An adjustment will be made for fluctuations in the cost of steel used in the manufacture of the following items:

- Metal Piling (excluding temporary sheet piling)
- Structural Steel
- Reinforcing Steel

Other steel materials such as dowel bars, tie bars, mesh reinforcement, guardrail, steel traffic signal and light poles, towers and mast arms, metal railings (excluding wire fence), and frames and grates will be subject to a steel cost adjustment when the pay items they are used in have a contract value of \$10,000 or greater.

The adjustments shall apply to the above items when they are part of the original proposed construction, or added as extra work and paid for by agreed unit prices. The adjustments shall not apply when the item is added as extra work and paid for at a lump sum price or by force account.

Documentation. Sufficient documentation shall be furnished to the Engineer to verify the following:

- (a) The dates and quantity of steel, in lb (kg), shipped from the mill to the fabricator.
- (b) The quantity of steel, in lb (kg), incorporated into the various items of work covered by this special provision. The Department reserves the right to verify submitted quantities.

Method of Adjustment. Steel cost adjustments will be computed as follows:

$$SCA = Q \times D$$

Where: SCA = steel cost adjustment, in dollars
Q = quantity of steel incorporated into the work, in lb (kg)
D = price factor, in dollars per lb (kg)

$$D = MPI_M - MPI_L$$

Where: MPI_M = The Materials Cost Index for steel as published by the Engineering News-Record for the month the steel is shipped from the mill. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

MPI_L = The Materials Cost Index for steel as published by the Engineering News-Record for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price,. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

The unit weights (masses) of steel that will be used to calculate the steel cost adjustment for the various items are shown in the attached table.

No steel cost adjustment will be made for any products manufactured from steel having a mill shipping date prior to the letting date.

If the Contractor fails to provide the required documentation, the method of adjustment will be calculated as described above; however, the MPI_M will be based on the date the steel arrives at the job site. In this case, an adjustment will only be made when there is a decrease in steel costs.

Basis of Payment. Steel cost adjustments may be positive or negative but will only be made when there is a difference between the MPI_L and MPI_M in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(MPI_L - MPI_M) \div MPI_L\} \times 100$$

Steel cost adjustments will be calculated by the Engineer and will be paid or deducted when all other contract requirements for the items of work are satisfied. Adjustments will only be made for fluctuations in the cost of the steel as described herein. No adjustment will be made for changes in the cost of manufacturing, fabrication, shipping, storage, etc.

The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

Attachment

Item	Unit Mass (Weight)
Metal Piling (excluding temporary sheet piling)	
Furnishing Metal Pile Shells 12 in. (305 mm), 0.179 in. (3.80 mm) wall thickness	23 lb/ft (34 kg/m)
Furnishing Metal Pile Shells 12 in. (305 mm), 0.250 in. (6.35 mm) wall thickness	32 lb/ft (48 kg/m)
Furnishing Metal Pile Shells 14 in. (356 mm), 0.250 in. (6.35 mm) wall thickness	37 lb/ft (55 kg/m)
Other piling	See plans
Structural Steel	See plans for weights (masses)
Reinforcing Steel	See plans for weights (masses)
Dowel Bars and Tie Bars	6 lb (3 kg) each
Mesh Reinforcement	63 lb/100 sq ft (310 kg/sq m)
Guardrail	
Steel Plate Beam Guardrail, Type A w/steel posts	20 lb/ft (30 kg/m)
Steel Plate Beam Guardrail, Type B w/steel posts	30 lb/ft (45 kg/m)
Steel Plate Beam Guardrail, Types A and B w/wood posts	8 lb/ft (12 kg/m)
Steel Plate Beam Guardrail, Type 2	305 lb (140 kg) each
Steel Plate Beam Guardrail, Type 6	1260 lb (570 kg) each
Traffic Barrier Terminal, Type 1 Special (Tangent)	730 lb (330 kg) each
Traffic Barrier Terminal, Type 1 Special (Flared)	410 lb (185 kg) each
Steel Traffic Signal and Light Poles, Towers and Mast Arms	
Traffic Signal Post	11 lb/ft (16 kg/m)
Light Pole, Tenon Mount and Twin Mount, 30 - 40 ft (9 - 12 m)	14 lb/ft (21 kg/m)
Light Pole, Tenon Mount and Twin Mount, 45 - 55 ft (13.5 - 16.5 m)	21 lb/ft (31 kg/m)
Light Pole w/Mast Arm, 30 - 50 ft (9 - 15.2 m)	13 lb/ft (19 kg/m)
Light Pole w/Mast Arm, 55 - 60 ft (16.5 - 18 m)	19 lb/ft (28 kg/m)
Light Tower w/Luminaire Mount, 80 - 110 ft (24 - 33.5 m)	31 lb/ft (46 kg/m)
Light Tower w/Luminaire Mount, 120 - 140 ft (36.5 - 42.5 m)	65 lb/ft (97 kg/m)
Light Tower w/Luminaire Mount, 150 - 160 ft (45.5 - 48.5 m)	80 lb/ft (119 kg/m)
Metal Railings (excluding wire fence)	
Steel Railing, Type SM	64 lb/ft (95 kg/m)
Steel Railing, Type S-1	39 lb/ft (58 kg/m)
Steel Railing, Type T-1	53 lb/ft (79 kg/m)
Steel Bridge Rail	52 lb/ft (77 kg/m)
Frames and Grates	
Frame	250 lb (115 kg)
Lids and Grates	150 lb (70 kg)

STEEL PLATE BEAM GUARDRAIL MANUFACTURING (BDE)

Effective: January 1, 2019

Revise the first three paragraphs of Article 1006.25 of the Standard Specifications to read:

“1006.25 Steel Plate Beam Guardrail. Steel plate beam guardrail, including bolts, nuts, and washers, shall be according to AASHTO M 180. The guardrail shall be Class A, with a Type II galvanized coating.

Steel plates for mounting guardrail on existing culverts shall be according to AASHTO M 270 Grade 36 (M 270M Grade 250) and zinc coated according to AASHTO M 111.

The Department will accept guardrail based on the “Brand Registration and Guarantee” requirements of AASHTO M 180 and the manufacturer shall be listed as compliant through the NTPEP Program. The Department will maintain a qualified product list.”

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%”

TEMPORARY PAVEMENT MARKING (BDE)

Effective: April 1, 2012

Revised: April 1, 2017

Revise Article 703.02 of the Standard Specifications to read:

“**703.02 Materials.** Materials shall be according to the following.

- (a) Pavement Marking Tape, Type I and Type III 1095.06
- (b) Paint Pavement Markings 1095.02
- (c) Pavement Marking Tape, Type IV 1095.11”

Revise the second paragraph of Article 703.05 of the Standard Specifications to read:

“Type I marking tape or paint shall be used at the option of the Contractor, except paint shall not be applied to the final wearing surface unless authorized by the Engineer for late season applications where tape adhesion would be a problem. Type III or Type IV marking tape shall be used on the final wearing surface when the temporary pavement marking will conflict with the permanent pavement marking such as on tapers, crossovers and lane shifts.”

Revise Article 703.07 of the Standard Specifications to read:

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

- a) Short Term Pavement Marking. Short term pavement marking will be paid for at the contract unit price per foot (meter) for SHORT TERM PAVEMENT MARKING. Removal of short term pavement markings will be paid for at the contract unit price per square foot (square meter) for SHORT TERM PAVEMENT MARKING REMOVAL.
- b) Temporary Pavement Marking. Where the Contractor has the option of material type, temporary pavement marking will be paid for at the contract unit price per foot (meter) for TEMPORARY PAVEMENT MARKING of the line width specified, and at the contract unit price per square foot (square meter) for TEMPORARY PAVEMENT MARKING LETTERS AND SYMBOLS.

Where the Department specifies the use of pavement marking tape, the Type III or Type IV temporary pavement marking will be paid for at the contract unit price per foot (meter) for PAVEMENT MARKING TAPE, TYPE III or PAVEMENT MARKING TAPE, TYPE IV of the line width specified and at the contract unit price per square feet (square meter) for PAVEMENT MARKING TAPE, TYPE III - LETTERS AND SYMBOLS or PAVEMENT MARKING TAPE, TYPE IV – LETTERS AND SYMBOLS.

Removal of temporary pavement markings will be paid for at the contract unit price per square foot (square meter) for TEMPORARY PAVEMENT MARKING REMOVAL.

When temporary pavement marking is shown on the Standard, the cost of the temporary pavement marking and its removal will be included in the cost of the Standard.”

Add the following to Section 1095 of the Standard Specifications:

“1095.11 Pavement Marking Tape, Type IV. The temporary, preformed, patterned markings shall consist of a white or yellow tape with wet retroreflective media incorporated to provide immediate and continuing retroreflection during both wet and dry conditions. The tape shall be manufactured without the use of heavy metals including lead chromate pigments or other similar, lead-containing chemicals.

The white and yellow Type IV marking tape shall meet the Type III requirements of Article 1095.06 and the following.

- (a) Composition. The retroreflective pliant polymer pavement markings shall consist of a mixture of high-quality polymeric materials, pigments and glass beads distributed throughout its base cross-sectional area, with a layer of wet retroreflective media bonded to a durable polyurethane topcoat surface. The patterned surface shall have approximately 40% ± 10% of the surface area raised and presenting a near vertical face to traffic from any direction. The channels between the raised areas shall be substantially free of exposed beads or particles.

(b) Retroreflectance. The white and yellow markings shall meet the following for initial dry and wet retroreflectance.

(1) Dry Retroreflectance. Dry retroreflectance shall be measured under dry conditions according to ASTM D 4061 and meet the values described in Article 1095.06 for Type III tape.

(2) Wet Retroreflectance. Wet retroreflectance shall be measured under wet conditions according to ASTM E 2177 and meet the values shown in the following table.

Wet Retroreflectance, Initial R_L	
Color	R_L 1.05/88.76
White	300
Yellow	200

(c) Color. The material shall meet the following requirements for daylight reflectance and color, when tested, using a color spectrophotometer with 45 degrees circumferential/zero degree geometry, illuminant D65, and a two degree observer angle. The color instrument shall measure the visible spectrum from 380 to 720 nm with a wavelength measurement interval and spectral bandpass of 10 nm.

Color	Daylight Reflectance %Y
White	65 minimum
*Yellow	36-59

*Shall match Federal 595 Color No. 33538 and the chromaticity limits as follows.

x	0.490	0.475	0.485	0.530
y	0.470	0.438	0.425	0.456

(d) Skid Resistance. The surface of the markings shall provide an average minimum skid resistance of 50 BPN when tested according to ASTM E 303.

(e) Sampling, Testing, Acceptance, and Certification. Prior to approval and use of the wet reflective, temporary, removable pavement marking tape, the manufacturer shall submit a notarized certification from an independent laboratory, together with the results of all tests, stating that the material meets the requirements as set forth herein. The certification test report shall state the lot tested, manufacturer's name, and date of manufacture.

After approval by the Department, samples and certification by the manufacturer shall be submitted for each batch used. The manufacturer shall submit a certification stating that the material meets the requirements as set forth herein and is essentially identical to the material sent for qualification. The certification shall state the lot tested, manufacturer's name, and date of manufacture.

All costs of testing (other than tests conducted by the Department) shall be borne by the manufacturer."

TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL (BDE)

Effective: November 1, 2018

Revise Article 631.04 of the Supplemental Specifications to read:

“631.04 Traffic Barrier Terminal, Type 1 Special (Tangent) and Traffic Barrier Terminal, Type 1 Special (Flared). These terminals shall be on the Department’s qualified product list.

The terminal shall be installed according to the manufacturer’s specifications. The beginning length of need point of the terminal shall be placed within 12 ft 6 in (3.8 m) of the length of need point shown on the plans.

The terminal shall be delineated with a terminal marker direct applied. No other guardrail delineation shall be attached to the terminal section.”

Revise the first paragraph of Article 631.12 of the Standard Specifications to read:

“631.12 Method of Measurement. The various types of traffic barrier terminals will be measured for payment, complete in place, in units of each. The pay limit between the traffic barrier terminal and the adjacent guardrail shall be as shown on the plans, except for the following:

- (a) Traffic Barrier Type 1, Special. The pay limit for a traffic barrier, Type 1 special shall be as shown on the manufacturer’s drawing(s).
- (b) Traffic Barrier Type 10. The pay limit for the traffic barrier terminal, Type 10 shall be at the centerline of the end shoe splice.”

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.”

TRAINING SPECIAL PROVISIONS (BDE)

Effective: October 15, 1975

This Training Special Provision supersedes Section 7b of the Special Provision entitled “Specific Equal Employment Opportunity Responsibilities,” and is in implementation of 23 U.S.C. 140(a).

As part of the Contractor’s equal employment opportunity affirmative action program, training shall be provided as follows:

The Contractor shall provide on-the-job training aimed at developing full journeyman in the type of trade or job classification involved. The number of trainees to be trained under this contract will be 2. In the event the Contractor subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided however, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The Contractor shall also insure that this Training Special Provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the Contractor's needs and the availability of journeymen in the various classifications within the reasonable area of recruitment. Prior to commencing construction, the Contractor shall submit to the Illinois Department of Transportation for approval the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the Contractor shall specify the starting time for training in each of the classifications. The Contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the Contractor shall make every effort to enroll minority trainees and women (e.g. by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent such persons are available within a reasonable area of recruitment. The Contractor will be responsible for demonstrating the steps that he has taken in pursuance thereof, prior to a determination as to whether the Contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journeyman status or in which he has been employed as a journeyman. The Contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the Contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the Contractor and approved by the Illinois Department of Transportation and the Federal Highway Administration. The Illinois Department of Transportation and the Federal Highway Administration shall approve a program, if it is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved by not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the Illinois Department of Transportation and the Federal Highway Administration. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the Contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the Engineer, reimbursement will be made for training of persons in excess of the number specified herein. This reimbursement will be made even though the Contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the Contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the Contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the Contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the Contractor and evidences a lack of good faith on the part of the Contractor in meeting the requirement of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program.

It is not required that all trainees be on board for the entire length of the contract. A Contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The Contractor shall furnish the trainee a copy of the program he will follow in providing the training. The Contractor shall provide each trainee with a certification showing the type and length of training satisfactorily complete.

The Contractor shall provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

Method of Measurement. The unit of measurement is in hours.

Basis of Payment. This work will be paid for at the contract unit price of 80 cents per hour for TRAINEES. The estimated total number of hours, unit price, and total price have been included in the schedule of prices.

IDOT TRAINING PROGRAM GRADUATE ON-THE-JOB TRAINING SPECIAL PROVISION

Effective: August 1, 2012

Revised: February 2, 2017

In addition to the Contractor's equal employment opportunity (EEO) affirmative action efforts undertaken as required by this Contract, the Contractor is encouraged to participate in the incentive program described below to provide additional on-the-job training to certified graduates of the IDOT pre-apprenticeship training program, as outlined in this Special Provision.

IDOT funds, and various Illinois community colleges operate, pre-apprenticeship training programs throughout the State to provide training and skill-improvement opportunities to promote the increased employment of minority groups, disadvantaged persons and women in all aspects of the highway construction industry. The intent of this IDOT Pre-Apprenticeship Training Program Graduate (TPG) special provision (Special Provision) is to place these certified program graduates on the project site for this Contract in order to provide the graduates with meaningful on-the-job training. Pursuant to this Special Provision, the Contractor must make every reasonable effort to recruit and employ certified TPG trainees to the extent such individuals are available within a practicable distance of the project site.

Specifically, participation of the Contractor or its subcontractor in the Program entitles the participant to reimbursement for graduates' hourly wages at \$15.00 per hour per utilized TPG trainee, subject to the terms of this Special Provision. Reimbursement payment will be made even though the Contractor or subcontractor may also receive additional training program funds from other non-IDOT sources for other non-TPG trainees on the Contract, provided such other source does not specifically prohibit the Contractor or subcontractor from receiving reimbursement from another entity through another program, such as IDOT through the TPG program. With regard to any IDOT funded construction training program other than TPG, however, additional reimbursement for other IDOT programs will not be made beyond the TPG Program described in this Special Provision when the TPG Program is utilized.

No payment will be made to the Contractor if the Contractor or subcontractor fails to provide the required on-site training to TPG trainees, as solely determined by IDOT. A TPG trainee must begin training on the project as soon as the start of work that utilizes the relevant trade skill and the TPG trainee must remain on the project site through completion of the Contract, so long as training opportunities continue to exist in the relevant work classification. Should a TPG trainee's employment end in advance of the completion of the Contract, the Contractor must promptly notify the IDOT District EEO Officer for the Contract that the TPG's involvement in the Contract has ended. The Contractor must supply a written report for the reason the TPG trainee involvement terminated, the hours completed by the TPG trainee on the Contract, and the number of hours for which the incentive payment provided under this Special Provision will be, or has been claimed for the separated TPG trainee.

Finally, the Contractor must maintain all records it creates as a result of participation in the Program on the Contract, and furnish periodic written reports to the IDOT District EEO Officer that document its contractual performance under and compliance with this Special Provision. Finally, through participation in the Program and reimbursement of wages, the Contractor is not relieved of, and IDOT has not waived, the requirements of any federal or state labor or employment law applicable to TPG workers, including compliance with the Illinois Prevailing Wage Act.

Method of Measurement: The unit of measurement is in hours.

Basis of Payment: This work will be paid for at the contract unit price of \$15.00 per hour for each utilized certified TPG Program trainee (TRAINEES TRAINING PROGRAM GRADUATE). The estimated total number of hours, unit price, and total price must be included in the schedule of prices for the Contract submitted by Contractor prior to beginning work. The initial number of TPG trainees for which the incentive is available for this contract is 2.

The Department has contracted with several educational institutions to provide screening, tutoring and pre-training to individuals interested in working as a TPG trainee in various areas of common construction trade work. Only individuals who have successfully completed a Pre-Apprenticeship Training Program at these IDOT approved institutions are eligible to be TPG trainees. To obtain a list of institutions that can connect the Contractor with eligible TPG trainees, the Contractor may contact: HCCTP TPG Program Coordinator, Office of Business and Workforce Diversity (IDOT OBWD), Room 319, Illinois Department of Transportation, 2300 S. Dirksen Parkway, Springfield, Illinois 62764. Prior to commencing construction with the utilization of a TPG trainee, the Contractor must submit documentation to the IDOT District EEO Officer for the Contract that provides the names and contact information of the TPG trainee(s) to be trained in each selected work classification, proof that that the TPG trainee(s) has successfully completed a Pre-Apprenticeship Training Program, proof that the TPG is in an Apprenticeship Training Program approved by the U.S. Department of Labor Bureau of Apprenticeship Training, and the start date for training in each of the applicable work classifications.

To receive payment, the Contractor must provide training opportunities aimed at developing a full journeyworker in the type of trade or job classification involved. During the course of performance of the Contract, the Contractor may seek approval from the IDOT District EEO Officer to employ additional eligible TPG trainees. In the event the Contractor subcontracts a portion of the contracted work, it must determine how many, if any, of the TPGs will be trained by the subcontractor. Though a subcontractor may conduct training, the Contractor retains the responsibility for meeting all requirements imposed by this Special Provision. The Contractor must also include this Special Provision in any subcontract where payment for contracted work performed by a TPG trainee will be passed on to a subcontractor.

Training through the Program is intended to move TPGs toward journeyman status, which is the primary objective of this Special Provision. Accordingly, the Contractor must make every effort to enroll TPG trainees by recruitment through the Program participant educational institutions to the extent eligible TPGs are available within a reasonable geographic area of the project. The Contractor is responsible for demonstrating, through documentation, the recruitment efforts it has undertaken prior to the determination by IDOT whether the Contractor is in compliance with this Special Provision, and therefore, entitled to the Training Program Graduate reimbursement of \$15.00 per hour.

Notwithstanding the on-the-job training requirement of this TPG Special Provision, some minimal off-site training is permissible as long as the offsite training is an integral part of the work of the contract, and does not compromise or conflict with the required on-site training that is central to the purpose of the Program. No individual may be employed as a TPG trainee in any work classification in which he/she has previously successfully completed a training program leading to journeyman status in any trade, or in which he/she has worked at a journeyman level or higher.

WARM MIX ASPHALT (BDE)

Effective: January 1, 2012

Revised: April 1, 2016

Description. This work shall consist of designing, producing and constructing Warm Mix Asphalt (WMA) in lieu of Hot Mix Asphalt (HMA) at the Contractor's option. Work shall be according to Sections 406, 407, 408, 1030, and 1102 of the Standard Specifications, except as modified herein. In addition, any references to HMA in the Standard Specifications, or the special provisions shall be construed to include WMA.

WMA is an asphalt mixture which can be produced at temperatures lower than allowed for HMA utilizing approved WMA technologies. WMA technologies are defined as the use of additives or processes which allow a reduction in the temperatures at which HMA mixes are produced and placed. WMA is produced by the use of additives, a water foaming process, or combination of both. Additives include minerals, chemicals or organics incorporated into the asphalt binder stream in a dedicated delivery system. The process of foaming injects water into the asphalt binder stream, just prior to incorporation of the asphalt binder with the aggregate.

Approved WMA technologies may also be used in HMA provided all the requirements specified herein, with the exception of temperature, are met. However, asphalt mixtures produced at temperatures in excess of 275 °F (135 °C) will not be considered WMA when determining the grade reduction of the virgin asphalt binder grade.

Equipment.

Revise the first paragraph of Article 1102.01 of the Standard Specifications to read:

“1102.01 Hot-Mix Asphalt Plant. The hot-mix asphalt (HMA) plant shall be the batch-type, continuous-type, or dryer drum plant. The plants shall be evaluated for prequalification rating and approval to produce HMA according to the current Bureau of Materials and Physical Research Policy Memorandum, “Approval of Hot-Mix Asphalt Plants and Equipment”. Once approved, the Contractor shall notify the Bureau of Materials and Physical Research to obtain approval of all plant modifications. The plants shall not be used to produce mixtures concurrently for more than one project or for private work unless permission is granted in writing by the Engineer. The plant units shall be so designed, coordinated and operated that they will function properly and produce HMA having uniform temperatures and compositions within the tolerances specified. The plant units shall meet the following requirements.”

Add the following to Article 1102.01(a) of the Standard Specifications.

“(11) Equipment for Warm Mix Technologies.

- a. Foaming. Metering equipment for foamed asphalt shall have an accuracy of ± 2 percent of the actual water metered. The foaming control system shall be electronically interfaced with the asphalt binder meter.
- b. Additives. Additives shall be introduced into the plant according to the supplier’s recommendations and shall be approved by the Engineer. The system for introducing the WMA additive shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes.”

Mix Design Verification.

Add the following to Article 1030.04 of the Standard Specifications.

“(e) Warm Mix Technologies.

- (1) Foaming. WMA mix design verification will not be required when foaming technology is used alone (without WMA additives). However, the foaming technology shall only be used on HMA designs previously approved by the Department.
- (2) Additives. WMA mix designs utilizing additives shall be submitted to the Engineer for mix design verification.”

Construction Requirements.

Revise the second paragraph of Article 406.06(b)(1) of the Standard Specifications to read:

“The HMA shall be delivered at a temperature of 250 to 350 °F (120 to 175 °C). WMA shall be delivered at a minimum temperature of 215 °F (102 °C).”

Basis of Payment.

This work will be paid at the contract unit price bid for the HMA pay items involved. Anti-strip will not be paid for separately, but shall be considered as included in the cost of the work.

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.

WORK ZONE TRAFFIC CONTROL DEVICES (BDE)

Effective: March 2, 2020

Add the following to Article 701.03 of the Standard Specifications:

"(q) Temporary Sign Supports 1106.02"

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

STORM WATER POLLUTION PREVENTION PLAN



Storm Water Pollution Prevention Plan



Route US Route 20	Marked Route FAP 525	Section 2016-092B&R
Project Number C-91-003-17	County McHenry	Contract Number 62D36

This plan has been prepared to comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) Permit No. ILR10 (Permit ILR10), issues by the Illinois Environmental Protection Agency (IEPA) for storm water discharges from construction site activities.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name Anthony Quigley, P.E.	Title Regional Engineer	Agency IDOT
Signature 		Date 7-26-18

I. Site Description

A. Provide a description of the project location (include latitude and longitude):

This project is located on US Route 20 (FAP 525) beginning just south of Beck Road to West Union Road in Marengo, McHenry County. Project includes the intersections of US Route 20 and S Union Rd, Marengo Rd, Beck Rd, Coral Rd, and W Union Rd. The Latitude 42.20392, Longitude -88.55056 Section 6,7,8,16,17, Township 43N, Range 6E.

The design, installation, and maintenance of BMPs at these locations are within an area where annual erosivity (R value) is less than or equal to 160. Erosivity is less than 5 in all two-week periods between October 12 and April 15, which would qualify for a construction rainfall erosivity waiver under the US Construction General Permit requirements. At these locations, erosivity is highest in spring and summer, April 16-October 11.

B. Provide a description of the construction activity which is subject of this plan:

The project will be completed in 3 stages. This project involves roundabout construction with widening of roadway, culvert installation, driveway reconstruction, and parkway and ditch restoration. Construction of a runaround (detour) to maintain traffic flow and temporary drainage and erosion control measures will be instituted. The described activities will occur at US Route 20 and Marengo Rd/S Union Rd/ Beck Rd (roundabout location), 200 FT north of Beck Rd on US Route 20 (culvert replacement), US Route 20 and Coral Rd (intersection widening), and US Route 20 and W Union Rd (intersection widening). Work on US Route 20 in between these locations will be resurfacing only. The project will be permanently stabilized by stages with Class 2A and 4 (Special) seed. The project also includes the installation, maintenance, and removal of ESC measures.

C. Provide the estimated duration of this project:

6 months

D. The total area of the construction site is estimated to be 36.1 acres.

The total area of the site estimated to be disturbed by excavation, grading or other activities is 17.6 acres.

- E. The following is a weighted average of the runoff coefficient for this project after construction activities are completed:

C=0.70 (Proposed), C=0.67 (Existing)

- F. List all soils found within project boundaries. Include map unit name, slope information and erosivity:

59A Lisbon silt loam, 0 to 2 percent slopes, K=0.32
 59B Lisbon silt loam, 2 to 4 percent slopes, K=0.32
 67A Harpster silty clay loam, 0 to 2 percent slopes, K=0.24
 100A Palms muck, 0 to 2 percent slopes
 153A Pella silty clay loam, cool, 0 to 2 percent slopes, K=0.28
 153A+ Pella silt loam, 0 to 2 percent slopes, K=0.32, overwash
 221B Parr silt loam, 2 to 5 percent slopes, K=0.37
 221C2 Parr silt loam, 5 to 10 percent slopes, K=0.37, eroded
 290A Warsaw loam, 0 to 2 percent slopes, K=0.24
 290B Warsaw loam, 2 to 4 percent slopes, K=0.28
 290C2 Warsaw loam, 4 to 6 percent slopes, K=0.28, eroded
 318B Lorenzo loam, 2 to 4 percent slopes, K=0.28
 318C2 Lorenzo loam, 4 to 6 percent slopes, K=0.28, eroded
 343A Kane silt loam, 0 to 2 percent slopes, K=0.24
 488A Hoopole loam, 0 to 2 percent slopes, K=0.20
 527B Kidami silt loam, 2 to 4 percent slopes, K=0.43
 527C Kidami silt loam, 4 to 6 percent slopes, K=0.43
 527C2 Kidami loam, 4 to 6 percent slopes, K=0.37, eroded
 527D Kidami silt loam, 6 to 12 percent slopes, K=0.43
 527D2 Kidami loam, 6 to 12 percent slopes, K=0.37, eroded
 527D3 Kidami clay loam, 6 to 12 percent slopes, K=0.28, severely eroded
 528A Lahoguess loam, 0 to 2 percent slopes, K=0.28
 656B Octagon silt loam, 2 to 4 percent slopes, K=0.28
 656C2 Octagon silt loam, 4 to 6 percent slopes, K=0.28, eroded
 1067A Harpster silt loam, 0 to 2 percent slopes, K=0.28, undrained
 1153A Pella silty clay loam, 0 to 2 percent slopes, K=0.24, undrained

- G. Provide an aerial extent of wetland acreage at the site:

Project will involve a permanent impact to 0.061 acres of wetlands and will temporarily impact 0.044 acres of wetlands from temporary construction activities.
 Roundabout Location
 Wetland 1: 1.438 acres/ 0.011 acres permanent impacted/ 0.000 acres temporary impacted
 Wetland 3: 0.086 acres/ 0.030 acres permanent impacted/ 0.027 acres temporary impacted

 No Impacts at Coral

 W Union Intersection
 Unnamed Tributary to Kishwaukee River: 0.020 acres / 0.015 acres permanent impacted/ 0.006 acres temporary impacted

 Culvert over Ditch Location
 Unnamed Tributary to West Branch Union Creek: 0.040 acres / 0.013 permanent impacted/ 0.005 acres temporary impacted
 Wetland 1: 0.500 acres / 0.020 acres permanent impacted/ 0.017 acres temporary impacted

- H. Provide a description of potentially erosive areas associated with this project:

Streambanks and streambed of unnamed tributaries to the South Branch of the Kishwaukee River. Areas at risk are the culvert removal and installation location (approximately 0.4 miles Northwest of Beck Road) and culvert extension installation at US Route 20 and W Union Rd intersection. Areas of earth excavation, temporary storm sewer system, storm sewer system, ditch grading and pavement excavation is potentially erosive area.

- I. The following is a description of soil disturbing activities by stages, their locations, and their erosive factors (e.g. steepness of slopes, length of scopes, etc.):

Stages 1 and 2 will involve installing temporary pavement and temporary and permanent ditch grading throughout the project. Maximum ditch slope as listed on the engineering plan set is 4%. Stage 3 will involve earth excavation and the removal of the runaround near the roundabout location. Permanent ditches will be graded and stabilized in this stage. Refer to the engineering plan set for ditch length, grade, and slopes.

- J. See the erosion control plans and/or drainage plans for this contract for information regarding drainage patterns, approximate slopes anticipated before and after major grading activities, locations where vehicles enter or exit the site and controls to prevent off site sediment tracking (to be added after contractor identifies locations), areas of soil disturbance, the location of major structural and non-structural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands) and locations where storm water is discharged to surface water including wetlands.

- K. Identify who owns the drainage system (municipality or agency) this project will drain into:

McHenry County, Illinois Department of Transportation, and Coral Township

- L. The following is a list of General NPDES ILR40 permittees within whose reporting jurisdiction this project is located.

McHenry County, IDOT

- M. The following is a list of receiving water(s) and the ultimate receiving water(s) for this site. The location of the receiving waters can be found on the erosion and sediment control plans:

Unnamed tributaries to South Branch Kishwaukee River drain to South Branch Kishwaukee River which ultimately drains to the Rock River. None are identified by the IDNR as a biologically significant stream.

- N. Describe areas of the site that are to be protected or remain undisturbed. These areas may include steep slopes, highly erodible soils, streams, stream buffers, specimen trees, natural vegetation, nature preserves, etc.

Ditches and sideslopes associated with resurfacing areas of the project are to remain undisturbed.

- O. The following sensitive environmental resources are associated with this project, and may have the potential to be impacted by the proposed development:

- Floodplain
 Wetland Riparian
 Threatened and Endangered Species
 Historic Preservation
 303(d) Listed receiving waters for suspended solids, turbidity, or siltation
 Receiving waters with Total Maximum Daily Load (TMDL) for sediment, total suspended solids, turbidity, or siltation
 Applicable Federal, Tribal, State or Local Programs
 Other

1. 303(d) Listed receiving waters (fill out this section if checked above):

South Branch Kishwaukee River

- a. The name(s) of the listed water body, and identification of all pollutants causing impairment:

Bottom Deposits

- b. Provide a description of how erosion and sediment control practices will prevent a discharge of sediment resulting from a storm event equal to or greater than a twenty-five (25) year, twenty-four (24) hour rainfall event:

Inlet filters, temporary ditch checks, silt fences will reduce runoff from construction area.
 Contractor is required to submit an in-stream work plan to McHenry-Lake County SWCD.

c. Provide a description of the location(s) of direct discharge from the project site to the 303(d) water body:
 No direct discharge

d. Provide a description of the location(s) of any dewatering discharges to the MS4 and/or water body:
 None

2. TMDL (fill out this section if checked above)

a. The name(s) of the listed water body:

b. Provide a description of the erosion and sediment control strategy that will be incorporated into the site design that is consistent with the assumptions and requirements of the TMDL:

c. If a specific numeric waste load allocation has been established that would apply to the project's discharges, provide a description of the necessary steps to meet the allocation:

P. The following pollutants of concern will be associated with this construction project:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Soil Sediment | <input checked="" type="checkbox"/> Petroleum (gas, diesel, oil, kerosene, hydraulic oil / fluids) |
| <input checked="" type="checkbox"/> Concrete | <input checked="" type="checkbox"/> Antifreeze / Coolants |
| <input checked="" type="checkbox"/> Concrete Truck waste | <input checked="" type="checkbox"/> Waste water from cleaning construction equipment |
| <input checked="" type="checkbox"/> Concrete Curing Compounds | <input type="checkbox"/> Other (specify) _____ |
| <input checked="" type="checkbox"/> Solid waste Debris | <input type="checkbox"/> Other (specify) _____ |
| <input type="checkbox"/> Paints | <input type="checkbox"/> Other (specify) _____ |
| <input type="checkbox"/> Solvents | <input type="checkbox"/> Other (specify) _____ |
| <input checked="" type="checkbox"/> Fertilizers / Pesticides | <input type="checkbox"/> Other (specify) _____ |

II. Controls

This section of the plan addresses the controls that will be implemented for each of the major construction activities described in I.C. above and for all use areas, borrow sites, and waste sites. For each measure discussed, the Contractor will be responsible for its implementation as indicated. The Contractor shall provide to the Resident Engineer a plan for the implementation of the measures indicated. The Contractor and subcontractors, will notify the Resident Engineer of any proposed changes, maintenance, or modifications to keep construction activities compliant with the Permit ILR10. Each such Contractor has signed the required certification on forms which are attached to, and are a part of, this plan:

- A. **Erosion and Sediment Controls:** At a minimum, controls must be coordinated, installed, and maintained to:
1. Minimize the amount of soil exposed during construction activity;
 2. Minimize the disturbance of steep slopes;
 3. Maintain natural buffers around surface waters, direct storm water to vegetated areas to increase sediment removal and maximize storm water infiltration, unless infeasible;
 4. Minimize soil compaction and, unless infeasible, preserve topsoil.
- B. **Stabilization Practices:** Provided below is a description of interim and permanent stabilization practices, including

site- specific scheduling of the implementation of the practices. Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices may include but are not limited to: temporary seeding, permanent seeding, mulching, geotextiles, sodding, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Except as provided below in II(B)(1) and II(B)(2), stabilization measures shall be initiated immediately where construction activities have temporarily or permanently ceased, but in no case more than one (1) day after the construction activity in that portion of the site has temporarily or permanently ceases on all disturbed portions of the site where construction will not occur for a period of fourteen (14) or more calendar days.

1. Where the initiation of stabilization measures is precluded by snow cover, stabilization measures shall be initiated as soon as practicable.
2. On areas where construction activity has temporarily ceased and will resume after fourteen (14) days, a temporary stabilization method can be used.

The following stabilization practices will be used for this project:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Preservation of Mature Vegetation | <input checked="" type="checkbox"/> Erosion Control Blanket / Mulching |
| <input type="checkbox"/> Vegetated Buffer Strips | <input type="checkbox"/> Sodding |
| <input type="checkbox"/> Protection of Trees | <input type="checkbox"/> Geotextiles |
| <input checked="" type="checkbox"/> Temporary Erosion Control Seeding | <input checked="" type="checkbox"/> Other (specify) <u>Mulch Method 2.</u> |
| <input type="checkbox"/> Temporary Turf (Seeding, Class 7) | <input type="checkbox"/> Other (specify) _____ |
| <input type="checkbox"/> Temporary Mulching | <input type="checkbox"/> Other (specify) _____ |
| <input checked="" type="checkbox"/> Permanent Seeding | <input type="checkbox"/> Other (specify) _____ |

Describe how the stabilization practices listed above will be utilized during construction:

Stabilization controls runoff volume and velocity, peak runoff rates and volumes of discharge to minimize exposed soil, disturbed slopes, sediment discharges from construction, and provides for natural buffers and minimization of soil compaction. Existing vegetated areas where disturbance can be avoided will not require stabilization.

Where possible, temporary stabilization of the initial stage should be completed before work is moved to subsequent stages.

Temporary Erosion control seeding will placed whenever disturbed areas will be left idle for more than 7 days. Areas outside pavement will be permanently stabilized with seed and erosion blanket. Temporary Erosion Control Seeding seed mixture shall depend on the time of the year it is applied. Oats shall be applied from March 1 to July 31 and Winter Wheat shall be applied from August 1 to November 15.

Mulch Method 2 should be applied to slopes for temporary stabilization prior to seasons when Temporary seed will not germinate, for example in mid-July or in winter.

Temporary Fence shall be placed around all areas with Mature Vegetation for their preservation.

Describe how the stabilization practices listed above will be utilized after construction activities have been completed:

IDOT seeding class 2A shall be used in all locations of disturbance, unless disturbance falls within a wetland or wetland buffer area. The seeding in this case shall be class 4. Please refer to the Landscaping Plan within the engineering plan set. Under no circumstances shall the contractor prolong final grading and shaping so that the entire project can be permanently stabilized at one time.

- C. **Structural Practices:** Provided below is a description of structural practices that will be implemented, to the degree attainable, to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Such practices may include but are not limited to: perimeter erosion barrier, earth dikes, drainage swales, sediment traps, ditch checks, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins. The installation of these devices may be subject to Section 404 of the Clean Water Act.

The following stabilization practices will be used for this project:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Perimeter Erosion Barrier | <input type="checkbox"/> Rock Outlet Protection |
| <input checked="" type="checkbox"/> Temporary Ditch Check | <input checked="" type="checkbox"/> Riprap |
| <input checked="" type="checkbox"/> Storm Drain Inlet Protection | <input type="checkbox"/> Gabions |
| <input type="checkbox"/> Sediment Trap | <input type="checkbox"/> Slope Mattress |
| <input type="checkbox"/> Temporary Pipe Slope Drain | <input checked="" type="checkbox"/> Retaining Walls |
| <input type="checkbox"/> Temporary Sediment Basin | <input type="checkbox"/> Slope Walls |
| <input type="checkbox"/> Temporary Stream Crossing | <input type="checkbox"/> Concrete Revetment Mats |
| <input checked="" type="checkbox"/> Stabilized Construction Exits | <input type="checkbox"/> Level Spreaders |
| <input type="checkbox"/> Turf Reinforcement Mats | <input checked="" type="checkbox"/> Other (specify) <u>In-Stream Work Plan</u> |
| <input checked="" type="checkbox"/> Permanent Check Dams | <input type="checkbox"/> Other (specify) _____ |
| <input type="checkbox"/> Permanent Sediment Basin | <input type="checkbox"/> Other (specify) _____ |
| <input type="checkbox"/> Aggregate Ditch | <input type="checkbox"/> Other (specify) _____ |
| <input type="checkbox"/> Paved Ditch | <input type="checkbox"/> Other (specify) _____ |

Describe how the structural practices listed above will be utilized during construction:

Perimeter Erosion Barrier (Silt Fence) will be placed along all areas that slope away from the project. Storm Drain Inlet Protection and Sediment Traps will be installed on all open-lidded structures (existing and proposed) to prevent sediment from entering the storm sewer.

Silt fence should only be used as PEB in areas where the work area is higher than the perimeter. The use of silt fence at the top of the slope/elevations higher than the work area should always be avoided. If necessary, temporary fence should be utilized in these locations (where the top of slope/elevation is higher than the work area) in lieu of silt fence.

Temporary ditch checks shall be applied in accordance with the "Standard Specifications for Road and Bridge Construction" (current edition). Temporary ditch checks shall also be used for perimeter barrier where concentrated flow enters or leaves the ROW.

The Contractor should provide to the Resident Engineer a plan to ensure that a stabilized flow line will be provided during storm sewer construction. The use of a stabilized flow line between installed storm sewer and open disturbance will reduce the potential for the offsite discharge of sediment bearing waters, particularly when rain is forecasted so that flow will not erode. Lack of an approved plan or failure to comply will result in an ESC Deficiency Deduction.

Stabilized Construction Exits shall be applied in accordance with the "Illinois Urban Manual (IUM), Practice 930". Stabilized Construction Exits shall be designed for heaviest anticipated loads, installed prior to major land-disturbing activities, constructed where construction traffic will be crossing or entering public roadway from unstabilized areas. Stabilized Construction Exits shall be properly graded to prevent runoff from leaving construction sites.

Avoid using the INLET AND PIPE PROTECTION shown on the Highway Standard Sheets 280001. Straw bales and silt fence should not be used as inlet and pipe protection. Inlet and pipe protection should be comprised of ditch checks, temporary seeding and temporary erosion control blanket and will be installed at all storm sewer and culverts. Inlet filters, as specified in Article 1081.15(h) of the Standard Specifications (current edition) will be installed at all inlets, catch basins, and manholes for the duration of construction. Inlet filters will be cleaned on a regular basis. Ensure proper quantities of inlet filters, ditch checks, temporary seeding and temporary erosion control blanket are included in the contract.

THIS PROJECT REQUIRES A US ARMY CORPS OF ENGINEERS (USACE) 404 PERMIT THAT WILL BE SECURED BY THE DEPARTMENT. ALL CONDITIONS OF THE 404 PERMIT, FOUND IN THE SPECIAL PROVISIONS, MUST BE FOLLOWED. AS A CONDITION OF THIS PERMIT, THE CONTRACTOR WILL NEED TO SUBMIT AN-INSTREAM WORK PLAN (INCLUDING WORK WITHIN WETLANDS) TO THE DEPARTMENT FOR APPROVAL. GUIDELINES ON ACCEPTABLE IN-STREAM WORK TECHNIQUES (INCLUDING WORK WITHIN THE WETLANDS) CAN BE FOUND ON THE USACE WEBSITE. THE USACE DEFINES AND DETERMINES IN-STREAM WORK. THE COST OF ALL MATERIALS AND LABOR NECESSARY TO COMPLY WITH THE ABOVE PROVISIONS TO PREPARE AND IMPLEMENT AN IN-STREAM WORK PLAN (INCLUDING WORK WITHIN WETLANDS) WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED AS INCLUDED IN THE UNIT BID PRICES OF THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

All work associated with installation and maintenance of Stabilized Construction Entrances, Concrete Washouts, and In-Stream Work are incidental to the contract and should not be paid for separately.

Describe how the structural practices listed above will be utilized after construction activities have been completed:

All temporary structural measures should be removed after construction activities are completed and the site has been stabilized.

D. Treatment Chemicals

Will polymer flocculents or treatment chemicals be utilized on this project: Yes No

If yes above, identify where and how polymer flocculents or treatment chemicals will be utilized on this project.

E. Permanent Storm Water Management Controls: Provided below is a description of measures that will be installed during the construction process to control volume and pollutants in storm water discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water act.

1. Such practices may include but are not limited to: storm water detention structures (including wet ponds), storm water retention structures, flow attenuation by use of open vegetated swales and natural depressions, infiltration of runoff on site, and sequential systems (which combine several practices).

The practices selected for implementation were determined on the basis of the technical guidance in Chapter 41 (Construction Site Storm Water Pollution Control) of the IDOT Bureau of Design & Environment Manual. If practices other than those discussed in Chapter 41 are selected for implementation or if practices are applied to situations different from those covered in Chapter 41, the technical basis for such decisions will be explained below.

2. Velocity dissipation devices will be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g. maintenance of hydrologic conditions such as the hydroperiod and hydrodynamics present prior to the initiation of construction activities).

Description of permanent storm water management controls:

Permanent ditch checks will be installed as directed on the engineering plan set.

F. Approved State or Local Laws: The management practices, controls, and provisions contained in this plan will be in accordance with IDOT specifications, which are at least as protective as the requirements contained in the Illinois Environmental Protection Agency's Illinois Urban Manual. Procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials shall be described or incorporated by reference in the space provided below. Requirements specified in sediment and erosion site plans, site permits, storm water management site plans or site permits approved by local officials that are applicable to protecting surface water resources are, upon submittal of an NOI, to be authorized to discharge under the Permit ILR10 incorporated by reference and are enforceable under this permit even if they are not specifically included in the plan.

Description of procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials:

This project will be approved by USACE and signoff from McHenry-Lake County Soil and Water Conservation district will be required. These standards are listed in the Erosion Control General Notes.

G. Contractor Required Submittals: Prior to conducting any professional services at the site covered by this plan, the Contractor and each subcontractor responsible for compliance with the permit shall submit to the Resident Engineer a Contractor Certification Statement, BDE 2342a.

1. The Contractor shall provide a construction schedule containing an adequate level of detail to show major activities with implementation of pollution prevention BMPs, including the following items:
 - Approximate duration of the project, including each stage of the project
 - Rainy season, dry season, and winter shutdown dates
 - Temporary stabilization measures to be employed by contract phases
 - Mobilization time frame
 - Mass clearing and grubbing/roadside clearing dates
 - Deployment of Erosion Control Practices
 - Deployment of Sediment Control Practices (including stabilized construction entrances/exits)
 - Deployment of Construction Site Management Practices (including concrete washout facilities, chemical storage, refueling locations, etc.)
 - Paving, saw-cutting, and any other pavement related operations
 - Major planned stockpiling operations
 - Time frame for other significant long-term operations or activities that may plan non-storm water discharges such as dewatering, grinding, etc.
 - Permanent stabilization activities for each area of the project

2. The Contractor and each subcontractor shall provide, as an attachment to their signed Contractor Certification Statement, a discussion of how they will comply with the requirements of the permit in regard to the following items and provide a graphical representation showing location and type of BMPs to be used when applicable:
- Vehicle Entrances and Exits - Identify type and location of stabilized construction entrances and exits to be used and how they will be maintained.
 - Material delivery, Storage, and Use - Discuss where and how materials including chemicals, concrete curing compounds, petroleum products, etc. will be stored for this project.
 - Stockpile Management - Identify the location of both on-site and off-site stockpiles. Discuss what BMPs will be used to prevent pollution of storm water from stockpiles.
 - Waste Disposal - Discuss methods of waste disposal that will be used for this project.
 - Spill Prevention and Control - Discuss steps that will be taken in the event of a material spill (chemicals, concrete curing compounds, petroleum, etc.).
 - Concrete Residuals and Washout Wastes - Discuss the location and type of concrete washout facilities to be used on this project and how they will be signed and maintained.
 - Litter Management - Discuss how litter will be maintained for this project (education of employees, number of dumpsters, frequency of dumpster pick-up, etc.).
 - Vehicle and Equipment Cleaning and Maintenance - Identify where equipment cleaning and maintenance locations for this project and what BMPs will be used to ensure containment and spill prevention.
 - Dewatering Activities - Identify the controls which will be used during dewatering operations to ensure sediments will not leave the construction site.
 - Polymer Flocculants and Treatment Chemicals - Identify the use and dosage of treatment chemicals and provide the Resident Engineer with Material Safety Data Sheets. Describe procedures on how the chemicals will be used and identify who will be responsible for the use and application of these chemicals. The selected individual must be trained on the established procedures.
 - Additional measures indicated in the plan.

III. Maintenance

When requested by the Contractor, the Resident Engineer will provide general maintenance guides to the Contractor for the practices associated with this project. The following additional procedures will be used to maintain, in good and effective operating conditions, the vegetation, erosion and sediment control measures and other protective measures identified in this plan. It will be Contractor's responsibility to attain maintenance guidelines for any manufactured BMPs which are to be installed and maintained per manufacture's specifications.

Contractor should use erosion control measures as directed on the engineering plan set where appropriate depending on staging for maintenance of traffic. Erosion control measures from previous stages of maintenance of traffic shall be maintained until the entire project is completed or until stabilization has occurred.

The Contractor shall check all ESC measures weekly and after each rainfall, 0.5 inches or greater in a 24 hour period, or equivalent snowfall. Additionally, during winter months, all measures should be checked by the contractor after each significant snow melt.

All ESC measures will be maintained in accordance with the IDOT Erosion and Sediment Control Field Guide for Construction Inspection and IDOT's Best Management Practices- Maintenance Guide: (<http://www.idot.illinois.gov/transportation-system/environment/erosion-and-sediment-control>). Following are the ESC measures that shall be installed:

1. Perimeter Erosion Barrier
2. Riprap
3. Temporary Ditch Check
4. Storm Drain Inlet Protection
5. Retaining Walls
6. Stabilized Construction Entrances
7. Permanent Check Dams
8. In-Stream Work Plan
9. Temporary Erosion Control Seeding
10. Temporary Erosion Blanket
11. Permanent Seeding
12. Mulch Method 2
13. Preservation of Mature Vegetation

Perimeter Erosion Barrier shall be repaired for tears, gaps, and undermines. Missing or broken stakes shall be repaired or replaced. Perimeter Erosion Barrier shall be cleaned if sediment reaches one-third of barrier.

Temporary Ditch Checks shall be maintained by removing debris from checks, replacing torn fabric, removing sediment from upstream side when sediment has reached 50% of height of structure.

Storm Drain Inlet Protection shall be maintained by removing sediment from inlet filter basket when 25% full or 50% of fabric pores are covered with silt, cleaning filter if water present for more than one hour after a rain event, cleaning sediment or replacing silt fence when sediment accumulates to one-third of fabric height, removing ponded on road surfaces immediately, replacing filter in case tears are present.

Stabilized Construction Exits shall be replaced or replenished with stones if vehicles continue to track sediment onto the roadway from the construction site. Street sweeping shall be done if sediments are not removed by stabilized construction entrance. Culverts shall be checked for damages.

Temporary Erosion Control Seeding shall be maintained by reapplying seed if stabilization is not achieved, applying temporary mulch to hold seed in place if seed is getting washed away, restoring rills, mowing to improve seed soil contact, supplement BMP if weather conditions are not favorable.

Temporary Erosion Control Blankets shall be maintained for damages because of running water, replacing displaced blankets.

IV. Inspections

Qualified personnel shall inspect disturbed areas of the construction site which have not yet been finally stabilized, structural control measures, and locations where vehicles and equipment enter and exit the site using IDOT Storm Water Pollution Prevention Plan Erosion Control Inspection Report (BC 2259). Such inspections shall be conducted at least once every seven (7) calendar days and within twenty-four (24) hours of the end of a storm or by the end of the following business or work day that is 0.5 inch or greater or equivalent snowfall.

Inspections may be reduced to once per month when construction activities have ceased due to frozen conditions. Weekly inspections will recommence when construction activities are conducted, or if there is 0.5" or greater rain event, or a discharge due to snowmelt occurs.

If any violation of the provisions of this plan is identified during the conduct of the construction work covered by this plan, the Resident Engineer shall notify the appropriate IEPA Field Operations Section office by e-mail at: epa.swnoncomp@illinois.gov, telephone or fax within twenty-four (24) hours of the incident. The Resident Engineer shall then complete and submit an "Incidence of Non-Compliance" (ION) report for the identified violation within five (5) days of the incident. The Resident Engineer shall use forms provided by IEPA and shall include specific information on the cause of noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detailing any environmental impact which may have resulted from the noncompliance. All reports of non-compliance shall be signed by a responsible authority in accordance with Part VI. G of the Permit ILR10.

The Incidence of Non-Compliance shall be mailed to the following address:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Attn: Compliance Assurance Section
1021 North Grand East
Post Office Box 19276
Springfield, Illinois 62794-9276

Additional Inspections Required:

All offsite Borrow, Waste and Use areas are part of construction site and are to be inspected according to the language in this section.

V. Failure to Comply

Failure to comply with any provisions of this Storm Water Pollution Prevention Plan will result in the implementation of a National Pollutant Discharge Elimination System/Erosion and Sediment Control Deficiency Deduction against the Contractor and/or penalties under the Permit ILR10 which could be passed on to the Contractor.



Contractor Certification Statement



Prior to conducting any professional services at the site covered by this contract, the Contractor and every subcontractor must complete and return to the Resident Engineer the following certification. A separate certification must be submitted by each firm. Attach to this certification all items required by Section II.G of the Storm Water Pollution Prevention Plan (SWPPP) which will be handled by the Contractors/subcontractor completing this form.

Route US Route 20	Marked Route FAP 525	Section 2016-092B&R
Project Number C-91-003-17	County McHenry County	Contract Number 62D36

This certification statement is a part of SWPPP for the project described above, in accordance with the General NPDES Permit No. ILR10 issued by the Illinois Environmental Protection Agency.

I certify under penalty of law that I understand the terms of the Permit No. ILR10 that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

In addition, I have read and understand all of the information and requirements stated in SWPPP for the above mentioned project; I have received copies of all appropriate maintenance procedures; and, I have provided all documentation required to be in compliance with the Permit ILR10 and SWPPP and will provide timely updates to these documents as necessary.

- Contractor
- Sub-Contractor

Print Name 	Signature
Title 	Date
Name of Firm 	Telephone
Street Address 	City/State/Zip

Items which the Contractor/subcontractor will be responsible for as required in Section II.G. of SWPPP:

404 PERMIT



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
CHICAGO DISTRICT, CORPS OF ENGINEERS
231 SOUTH LASALLE STREET
CHICAGO, ILLINOIS 60604-1437

October 4, 2019

Technical Services Division
Regulatory Branch
LRC-2015-844

SUBJECT: Authorization for Roadway Improvements, Culvert Replacements, and Roundabout Construction along US Route 20 from intersection with Marengo Road, S. Union Road, and Beck Road, north to W. Union Road in Unincorporated Coral Township, McHenry County, Illinois (Latitude 42.204184, Longitude -88.551235)

Anthony Quigley
Illinois Department of Transportation
201 West Center Court
Schaumburg, Illinois 60196

Dear Mr. Quigley:

This office has verified that your proposed activity complies with the terms and conditions of Regional Permit 3, 7, and the General Conditions for all activities authorized under the Regional Permit Program.

This verification expires three (3) years from the date of this letter and covers only your activity as described in your notification and as shown on the plans entitled "State of Illinois Department of Transportation Proposed Highway Plans FAP 525 (US Route 20) FAS 35 (Marengo Rd) to W Union Rd, Section: 2016-092B&R, Project: LGMW(759), Intersection Improvements, Roadway Rehabilitation, and Box Culvert Replacement, McHenry County, C-91-003-17", dated 4/6/2018, prepared by Baxter & Woodman Consulting Engineers, Inc. Caution must be taken to prevent construction materials and activities from impacting waters of the United States beyond the scope of this authorization. If you anticipate changing the design or location of the activity, you should contact this office to determine the need for further authorization.

The activity may be completed without further authorization from this office provided the activity is conducted in compliance with the terms and conditions of the RPP, including conditions of water quality certification issued under Section 401 of the Clean Water Act by the Illinois Environmental Protection Agency (IEPA). If the design, location, or purpose of the project is changed, you should contact this office to determine the need for further authorization.

The following special conditions are a requirement of your authorization:

- 2 -

1. You shall undertake and complete the project as described in the plans titled, "State of Illinois Department of Transportation Proposed Highway Plans FAP 525 (US Route 20) FAS 35 (Marengo Rd) to W Union Rd, Section: 2016-092B&R, Project: LGMW(759), Intersection Improvements, Roadway Rehabilitation, and Box Culvert Replacement, McHenry County, C-91-003-17", dated 4/6/2018, prepared by Baxter & Woodman Consulting Engineers, Inc., including all relevant documentation to the project plans as proposed.
2. This authorization is contingent upon implementing and maintaining soil erosion and sediment controls in a serviceable condition throughout the duration of the project. As part of the soil erosion and sediment control (SESC) process, you are required to retain a qualified Independent SESC Inspector (ISI) to review the project's SESC plans and provide a detailed narrative that explains the measures to be implemented at the project site. The ISI is also required to perform site inspections of the implemented SESC measures to ensure proper installation and regular maintenance of the approved methods.

The following requirements apply:

- a. You shall contact this office and the ISI at least 10 calendar days prior to the preconstruction meeting so that a representative of this office may attend. The meeting agenda will include a discussion of the SESC plan and the installation and maintenance requirements of the SESC practices on the site;
- b. Prior to commencement of any in-stream work, you shall submit construction plans and a detailed narrative to this office that disclose the contractor's preferred method of cofferdam and dewatering method;
- c. The ISI will perform weekly inspections of the implemented SESC measures to ensure proper installation and regular maintenance of the approved methods. The ISI contact information form shall be submitted to this office via e-mail and/or hard copy prior to commencement of the permitted work;
- d. The ISI shall submit to the Corps an inspection report with digital photographs of the SESC measures on a weekly basis during the active and non-active phases of construction. An inspection report shall also be submitted at the completion of the project once the SESC measures have been removed and final stabilization has been completed; and
- e. Field conditions during project construction may require the implementation of additional SESC measures not included in the SESC plans for further protection of aquatic resources. You shall contact this office immediately in the event of any changes or modifications to the approved plan set or non-compliance of an existing SESC method. Upon direction of the Corps, corrective measure shall be instituted at the site to resolve the problem along with a plan to protect and/or restore the impacted jurisdictional area(s). If you fail to implement corrective measures, this office may require more frequent site inspections to ensure the installed SESC measures are acceptable.

- 3 -

3. Under no circumstances shall the Contractor prolong final grading and shaping so that the entire project can be permanently seeded at one time. Permanent stabilization within the wetland and stream buffers identified in the plans shall be initiated immediately following the completion of work. Final stabilization of these areas should not be delayed due to utility work to be performed by others.
4. Please note that this site is within the aboriginal homelands of several American Indian Tribes. If any cultural, archaeological or historical resources are unearthed during activities authorized by this permit, work in that area must be stopped immediately and the Corps, State Historic Preservation Office and/or Tribal Historic Preservation Office must be contacted for further instruction. The Corps will initiate the coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing on the National Register of Historic Places.
5. You are responsible for all work authorized herein and for ensuring that all contractors are aware of the terms and conditions of this authorization.
6. A copy of this authorization must be present at the project site during all phases of construction.
7. You shall notify this office of any proposed modifications to the project, including revisions to any of the plans or documents cited in this authorization. You must receive approval from this office before work affected by the proposed modification is performed.
8. You shall notify this office prior to the transfer of this authorization and liabilities associated with compliance with its terms and conditions.
9. Work in the waterway should be timed to take place during low or no-flow conditions. Low flow conditions are flow at or below the normal water elevation.
10. The plan will be designed to allow for the conveyance of the 2-year peak flow past the work area without overtopping the cofferdam. The Corps has the discretion to reduce this requirement if documented by the applicant to be infeasible or unnecessary.
11. Water shall be isolated from the in-stream work area using a cofferdam constructed of non-erodible materials (steel sheets, aqua barriers, rip rap and geotextile liner, etc.). Earthen cofferdams are not permissible.
12. The cofferdam must be constructed from the upland area and no equipment may enter flowing water at any time. If the installation of the cofferdam cannot be completed from shore and access is needed to reach the area to be coffered, other measures, such as the construction of a causeway, will be necessary to ensure that equipment does not enter the water. Once the cofferdam is in place and the isolated area is dewatered, equipment may enter the coffered area to perform the required work.

- 4 -

13. If bypass pumping is necessary, the intake hose shall be placed on a stable surface or floated to prevent sediment from entering the hose. The bypass discharge shall be placed on a non-erodible, energy dissipating surface prior to rejoining the stream flow and shall not cause erosion. Filtering of bypass water is not necessary unless the bypass water has become sediment-laden as a result of the current construction activities.
14. During dewatering of the coffered work area, all sediment-laden water must be filtered to remove sediment. Possible options for sediment removal include baffle systems, anionic polymers systems, dewatering bags, or other appropriate methods. Water shall have sediment removed prior to being re-introduced to the downstream waterway. A stabilized conveyance from the dewatering device to the waterway must be identified in the plan. Discharge water is considered clean if it does not result in a visually identifiable degradation of water clarity.
15. The portion of the side slope that is above the observed water elevation shall be stabilized as specified in the plans prior to accepting flows. The substrate and toe of slope that has been disturbed due to construction activities shall be restored to proposed or pre-construction conditions and fully stabilized prior to accepting flows.

This office is in receipt of an updated IDOT mitigation ledger for the credit block purchased from Kishwaukee Bottoms. 1.91 acres of mitigation have been deducted.

This verification does not obviate the need to obtain all other required Federal, state, or local approvals before starting work. Please note that Section 401 Water Quality Certification has been issued by IEPA for this RP. If you have any questions regarding Section 401 certification, please contact Mr. Darin LeCrone at IEPA Division of Water Pollution Control, Permit Section #15, by telephone at (217) 782-0610.

Once you have completed the authorized activity, please sign and return the enclosed compliance certification. If you have any questions, please contact Ms. Brielle Cummings of my staff by telephone at (312) 846-5545, or email at Brielle.K.Cummings@usace.army.mil.

Sincerely,

MCLAURIN.DIE
DRA.L.1230340
362
Diedra L. McLaurin
Team Leader, West Section
Regulatory Branch

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- 5 -

Enclosures

Copy Furnished:

McHenry County Department of Planning and Development (Joanna Colletti)
IDOT (Ken Eng)

- 6 -



**PERMIT COMPLIANCE
CERTIFICATION**

Permit Number: LRC-2015-844
Permittee: Illinois Department of Transportation c/o Anthony Quigley
Date: October 4, 2019

I hereby certify that the work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of said permit and if applicable, compensatory wetland mitigation was completed in accordance with the approved mitigation plan.¹

PERMITTEE

DATE

Upon completion of the activity authorized by this permit and any mitigation required by the permit, this certification must be signed and returned to the following address:

U.S. Army Corps of Engineers
Chicago District, Regulatory Branch
231 South LaSalle Street, Suite 1500
Chicago, Illinois 60604-1437

Please note that your permitted activity is subject to compliance inspections by Corps of Engineers representatives. If you fail to comply with this permit, you may be subject to permit suspension, modification, or revocation.

¹ If compensatory mitigation was required as part of your authorization, you are certifying that the mitigation area has been graded and planted in accordance with the approved plan. You are acknowledging that the maintenance and monitoring period will begin after a site inspection by a Corps of Engineers representative or after thirty days of the Corps' receipt of this certification. You agree to comply with all permit terms and conditions, including additional reporting requirements, for the duration of the maintenance and monitoring period.



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3. TRANSPORTATION PROJECTS

RP3 authorizes the construction or replacement of transportation projects, including roads, bridges, runways and taxiways, and railroads. Authorization under RP3 is subject to the General Conditions of the Regional Permit Program beginning on page 6 of this document. In addition, the following requirements must be addressed in writing and submitted with the notification:

- a. The impact to waters of the US must not exceed 1.0 acre for a single and complete project. For projects that impact greater than 0.10 acres of waters of the U.S., the permittee is required to provide compensatory mitigation.
- b. Projects that impact no more than 0.5 acres of waters of the U.S. and do not impact high-quality aquatic resources will be processed under Category I.
- c. Projects that impact over 0.5 acres up to 1.0 acre of waters of the U.S., impact a high quality aquatic resource, or cross a Section 10 Waterway, will be processed under Category II (www.lrc.usace.army.mil/Missions/Regulatory/NavigableWaters.aspx).
- d. The discharge must be limited to the minimum width necessary to complete the authorized work.
- e. Crossings of waterways and/or wetlands must be culverted, bridged or otherwise designed to prevent the restriction of expected high water flows. The crossing must be designed as to not impede low water flows or the safe passage of fish and aquatic organisms. Additional conditions may be required for streams determined to be a high quality fisheries resource such as designing the bottom of the culvert to include “roughness” to reduce flow velocities. “Roughness” can include cemented-in stone, baffles, or the placement of rock along the bottom of the culvert and/or along the culvert wall. Embedding the culvert to a depth greater than 12 inches may also be required.
 - 1) An alternatives analysis must be prepared for perennial stream crossings where a culvert is proposed for a new crossing or to replace a bridge. The analysis must document why a bridged crossing would not be a practicable alternative. If use of a multiple-barrel pipe or multi-cell box culvert is proposed, document why a single pipe or box -culvert system cannot be utilized. For crossings over HQARs, arch span and bottomless culverts must be considered.
 - 2) For culverts, the upstream and downstream invert must be embedded 6 to 12 inches below the streambed elevation. This will allow the natural substrate to colonize the structure’s bottom, encourage fish movement, and maintain the existing channel slope. Culvert slope should match adjacent elevations. The width of the base flow culvert must be approximately equal to the average channel width to promote the safe passage of fish and other aquatic organisms.

Culvert(s) must not permanently widen /constrict the channel or reduce/increase stream depth. Multiple pipe culverts may not be used to receive base flows.

- 3) For all crossings, provide cross-sections of the stream in three locations: at the crossing, and upstream and downstream of the crossing. The crossing must be designed to maintain the width of the base flow channel through the project area.
- f. The permittee must clearly label the construction drawings to include limits of Waters of the U.S., existing and proposed grading contours, all structures associated with the installation of the crossing such as wing walls, rock and concrete protection measures, existing and proposed utilities lines, outfalls and associated structures. A detailed narrative must accompany the construction plans and describe all work to be performed as indicated on the plans.
- g. All temporary construction activities must adhere to the requirements of items c through g of Regional Permit 7 (Temporary Construction Activities) and must be addressed in writing and submitted with the notification.
- h. This permit may not be used to authorize structural bank stabilization methods such as retaining walls, gabion baskets, riprap, etc., other than those structures necessary to assure the integrity of the stream and stream bank immediately adjacent to the crossing.
- i. To the greatest extent possible, the permittee must establish and maintain a protective upland buffer composed of native plants (or other appropriate vegetation approved by the District) within the right-of-way adjacent to all waters of the U.S.
- j. The project must consider permanent, post-construction Best Management Practices (BMPs) to protect water quality, preserve natural hydrology and minimize the overall impacts of the project on aquatic resources. BMPs must be evaluated at the earliest planning stages of the project and prior to the purchase of new right-of-way (ROW). Please note that temporary SESC measures are not permanent BMPs.

To the greatest extent practicable, the activity must be designed such that surface water does not directly discharge into waters of the U.S. For each location where stormwater discharges towards a jurisdictional wetland or stream, provide a written narrative discussing opportunities to implement permanent BMPs. The type of BMPs proposed should be based on the scope of work, the change in impervious surface runoff discharging to the waters of the U.S., and the overall direct impacts to waters of the U.S. resulting from the proposed work.

Possible BMPs include, but are not limited to: preserving (i.e. not developing) existing permeable areas on site, native vegetated swales, permanent ditch checks, bioswales, infiltration trenches, naturalized detention basins, and mechanical stormwater treatment units. For bridge replacements, stormwater from the bridge deck should be directed to the roadside ditches and as far from the stream as practicable so that water does not directly enter the stream through drains in the bridge deck.

For discharges associated with maintenance projects, partial intersection improvements, and bridge/culvert replacements, native vegetated roadside ditches could be utilized as an appropriate BMP. For capacity improvement projects (intersection reconstructions, road widening) or for projects that impacts HQARs, the use of permanent ditch checks, bioswales or naturalized basins

should be utilized. Compensatory storage basins may also be modified to provide water quality benefit. Appropriate BMPs will be determined during permit review.

Naturalized detention basin design should include:

- 1) Emergent vegetation in the bottoms of the wetland basins and along the periphery of wet bottom basins and side slopes vegetated in native prairie (traditional dry bottom basins are not approved BMPs).
- 2) Stilling basins at inlets
- 3) Design the basin to maximize the distance between inlet(s) and outlet(s)

A management and monitoring plan will be required on a case-by-case basis and will include performance standards such as the BMPs ability to function as designed, percent coverage of vegetation, stabilization of soils, and corrective measures to bring areas into compliance. For additional information, please refer to our BMP Maintenance & Monitoring (M&M) Guidelines: www.lrc.usace.army.mil/Portals/36/docs/regulatory/pdf/BMPMMG.pdf

- k. This permit does not authorize discharges into jurisdictional areas for temporary use of construction material or equipment storage.
- l. For a project site adjacent to a conservation area, the permittee must request a letter from the organization responsible for management of the area. The response letter must identify recommended measures to protect the area from impacts that may occur as a result of the development. A copy of the request and any response received from the organization must be submitted to the District with the notification.
- m. This permit cannot be used to authorize the installation of road crossings associated with residential, commercial or institutional developments.



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7. TEMPORARY CONSTRUCTION ACTIVITIES

RP7 authorizes temporary structures and discharges necessary for construction activities, access fills and dewatering of construction sites. Authorization under RP7 is subject to the General Conditions of the Regional Permit Program beginning on page 6 of this document. In addition, the following requirements must be addressed in writing and submitted with the notification:

- a. All projects will be processed under Category I.
- b. The temporary fill to waters of the U.S. must be limited to the minimum necessary to complete the activity. The acreage and purpose of each temporary fill must be specified.
- c. Fill must be composed of non-erodible materials and be constructed to withstand expected high flows.
- d. Low ground-pressure equipment is required for work in wetlands. However, after careful consideration, if the District accepts a proposal to use heavy equipment to accomplish the work, the placement of timber mats or other protective measures must be utilized to minimize soil disturbance. Lumber to be used for temporary construction activities must be free of all chemical treatment.
- e. All materials used for temporary construction activities must be moved to an upland area immediately following completion of the construction activity.
- f. The permittee is required to restore the construction area to pre-construction conditions, including grading to original contours and revegetating disturbed areas with appropriate native vegetation immediately upon completion of the project. A restoration plan must be submitted with the notification. A 1-foot contour topographic map of the project area may be required on a case-by-case basis.
- g. For projects that require installation and operation of a cofferdam, the cofferdam method and a detailed construction sequence must be specified in the project narrative and clearly labeled on the construction plans. The following requirements will be adhered to for any project requiring in-stream work and must be incorporated into the soil erosion and sediment control plans for the project:
 - 1) Work in the waterway should be timed to take place during low or no-flow conditions. Low flow conditions are at or below the normal water elevation.
 - 2) The plan must be designed to allow for the conveyance of the 2-year peak flow past the work area without overtopping the cofferdam. The Corps has the discretion to reduce this requirement if documented by the applicant to be infeasible or unnecessary.

- 3) Water must be isolated from the in-stream work area using a cofferdam constructed of non-erodible materials (steel sheets, aqua barriers, rip rap and geotextile liner, etc.). Earthen cofferdams are not permissible.
- 4) The cofferdam must be constructed from the upland area and no equipment may enter the water at any time. If the installation of the cofferdam cannot be completed from shore and access is needed to reach the area to be coffered, other measures, such as the construction of a causeway, will be necessary to ensure that equipment does not enter the water. Once the cofferdam is in place and the isolated area is dewatered, equipment may enter the coffered area to perform the required work.
- 5) If bypass pumping is necessary, the intake hose must be placed on a stable surface or floated to prevent sediment from entering the hose. The bypass discharge must be released onto a non-erodible, energy dissipating surface prior to rejoining the stream flow and must not cause erosion. Filtering of bypass water is not necessary unless the bypass water has become sediment-laden as a result of the current construction activities.
- 6) During dewatering of the coffered work area, all sediment-laden water must be filtered to remove sediment. Possible options for sediment removal include baffle systems, anionic polymers systems, dewatering bags, or other appropriate methods. Water must have sediment removed prior to being re-introduced to the downstream waterway. A stabilized conveyance from the dewatering device to the waterway must be identified in the plan. Discharge water may not result in a visually identifiable degradation of water clarity.
- 7) The area from the toe to the top of the side slope must be temporarily stabilized during construction to reduce the potential for erosion. All areas disturbed due to construction activities must be restored to proposed conditions and fully stabilized prior to accepting flows.



US Army Corps of Engineers®
Chicago District

GENERAL CONDITIONS
APPLICABLE TO THE 2017
REGIONAL PERMIT PROGRAM

The permittee must comply with the terms and conditions of the Regional Permits and the following general conditions for all activities authorized under the RPP:

1. State 401 Water Quality Certification - Water quality certification under Section 401 of the Clean Water Act may be required from the Illinois Environmental Protection Agency (IEPA). The District may consider water quality, among other factors, in determining whether to exercise discretionary authority and require an Individual Permit. Please note that Section 401 Water Quality Certification is a requirement for projects carried out in accordance with Section 404 of the Clean Water Act. Projects carried out in accordance with Section 10 of the Rivers and Harbors Act of 1899 do not require Section 401 Water Quality Certification

On February 16, 2017, the IEPA granted Section 401 certification, with conditions, for all Regional Permits, except for activities in certain waterways noted under RPs 4 and 8. The following conditions of the certification are hereby made conditions of the RPP:

1. The applicant must not cause:
 - a) a violation of applicable water quality standards of the Illinois Pollution Control Board Title 35, Subtitle C: Water Pollution Rules and Regulations;
 - b) water pollution defined and prohibited by the Illinois Environmental Protection Act;
 - c) interference with water use practices near public recreation areas or water supply intakes;
 - d) a violation of applicable provisions of the Illinois Environmental Protection Act.
2. The applicant must provide adequate planning and supervision during the project construction period for implementing construction methods, processes and cleanup procedures necessary to prevent water pollution and control erosion.
3. Except as allowed under condition 7, 9 and 10, any spoil material excavated, dredged or otherwise produced must not be returned to the waterway but must be deposited in a self-contained area in compliance with all state statutes, regulations and permit requirements with no discharge to waters of the State unless a permit has been issued by the Illinois EPA. Any backfilling must be done with clean material and placed in a manner to prevent violation of applicable water quality standards.
4. All areas affected by construction must be mulched and seeded as soon after construction as possible. The applicant shall undertake necessary measures and procedures to reduce erosion during construction. Interim measures to prevent erosion during construction shall be taken and may include the installation of staked straw bales, sedimentation basins and temporary mulching. All construction within the waterway shall be constructed during zero or low flow conditions. The applicant shall be responsible for obtaining a NPDES Storm Water Permit prior to initiating construction if the construction activity associated with the project will result in the disturbance of (1) one or more acres, total land area. An NPDES Storm Water Permit may be obtained by submitting a properly completed Notice of Intent (NOI) form by certified mail to the Illinois EPA's Division of Water Pollution Control, Permit Section.
5. The applicant shall implement erosion control measures consistent with the "Illinois Urban Manual" (IEPA/USDA, NRCS; 2016).
6. The applicant is advised that the following permits(s) must be obtained from the Illinois EPA: The applicant must obtain permits to construct sanitary sewers, water mains and related facilities prior to construction.
7. Backfill used in stream crossing trenches shall be predominantly sand or larger size material, with less than 20% passing a #230 U.S. sieve.
8. Any channel relocation shall be constructed under dry conditions and stabilized to prevent erosion prior to the diversion of flow.
9. Backfill used within trenches passing through surface waters of the State, except wetland areas, shall be clean course aggregate, gravel or other material which will not cause siltation, pipe damage during placement, or chemical corrosion in place. Excavated material may be used only if:
 - a) particle size analysis is conducted and demonstrates the material to be at least 80% sand or larger size material, using #230 U.S. sieve; or

- b) excavation and backfilling are done under dry conditions.
10. Backfill used within trenches passing through wetland areas shall consist of clean material which will not cause siltation, pipe damage during placement, or chemical corrosion in place. Excavated material shall be used to the extent practicable, with the upper six (6) to twelve (12) inches backfilled with the topsoil obtained during trench excavation.
 11. Any applicant proposing activities in a mined area or previously mined area shall provide to the IEPA a written determination regarding the sediment and materials used which are considered "acid-producing material" as defined in 35 Il. Adm. Code, Subtitle D. If considered "acid-producing material," the applicant shall obtain a permit to construct pursuant to 35 Il. Adm. Code 404.101.
 12. Asphalt, bituminous material and concrete with protruding material such as reinforcing bar or mesh shall not be 1) used for backfill, 2) placed on shorelines/stream banks, or 3) placed in waters of the State.
 13. Applicants that use site dewatering techniques in order to perform work in waterways for construction activities approved under Regional Permits 1 (Residential, Commercial and Institutional Developments), 2 (Recreation Projects), 3 (Transportation Projects), 7 (Temporary Construction Activities), 9 (Maintenance), or 12 (Bridge Scour Protection) shall maintain flow in the stream during such construction activity by utilizing dam and pumping, fluming, culverts or other such techniques.
 14. In addition to any action required of the Regional Permit 13 (Cleanup of Toxic and Hazardous Materials Projects) with respect to the "Notification" General Condition 23, the applicant shall notify the Illinois EPA Bureau of Water, of the specific activity. This notification must include information concerning the orders and approvals that have been or will be obtained from the Illinois EPA Bureau of Land (BOL) for all cleanup activities under BOL jurisdiction, or for which authorization or approval is sought from BOL for no further remediation. This Regional Permit is not valid for activities that do not require or will not receive authorization or approval from the BOL.
 15. The applicant shall implement Best Management Practices (BMPs) to protect water quality, preserve natural hydrology and minimize the overall impacts to aquatic resources during and after construction. If the project involves a water with an approved Total Maximum Daily Load (TMDL) allocation for any parameter, measures which ensure consistency with the assumption and requirements of the TMDL shall be included. TMDL program information and water listings are available at <http://www.epa.illinois.gov/topics/water-quality/watershed-management/tmdls/index>. If the project involves and impaired water listed on the Illinois Environmental Protection Agency's Section 303(d) list for suspended solids, turbidity, or siltation, measures designed for at least a 25-year, 24-hour rainfall event shall be incorporated. Impaired waters are identified at <http://www.epa.illinois.gov/topics/water-quality/watershed-management/tmdls/303d-list/index>.
 16. Earthen granular fill used for construction of temporary structures in waters of the State shall have less than 20% passing a #230 U.S. sieve.
 17. The use of directional drilling to install utility pipelines below surface waters of the State is hereby certified provided that:
 - a) All pits and other construction necessary for the directional drilling process are located outside of surface waters of the State;
 - b) All drilling fluids shall be adequately contained such that they cannot cause a discharge to surface waters of the State. Such fluids shall be managed such that they are not discharged to waters of the State and disposed of appropriately in accordance with the regulations at 35 Il. Adm. Code Subtitle G.
 - c) Erosion and sediment control is provided with Conditions 2, 4, and 5.
2. Illinois Coastal Management Program - Any non-federal entity applying to the Corps for an Individual Permit or a Letter of Permission for a project located within the boundary of the Illinois Coastal Management Program (ICMP), including waters of Lake Michigan, is required to submit a Federal Consistency Determination confirmation from the Illinois Coastal Management Program as part of the permit review process.

On February 18, 2017, the Illinois Department of Natural Resources, Coastal Management Program granted the Federal Consistent Determination for the Regional Permit Program. This determination is confirmation that the activities covered under the Regional Permit Program are consistent with the policies of the ICMP.

PDF maps of the Illinois Coastal Management Program's Zone Boundaries can be found at the bottom of the page at www.dnr.illinois.gov/cmp/Pages/boundaries.aspx and instructions on requesting an ICMP Federal Consistency Determination can be found at www.dnr.illinois.gov/cmp/Documents/ICMPFederalConsistencyReviewProcedures.pdf.

3. Threatened and Endangered Species –

- a) For applications where a Federal agency other than the District is designated as the lead agency, the designated lead agency shall follow agency specific procedures for complying with the requirements of Section 7 of the Endangered Species Act of 1973 (Act). Federal permittees must provide the District with the following documentation to demonstrate compliance with those requirements: the species list, your effects determination for each species, and the rationale for your effects determination for each species.
- b) For non-Federal permittees, if the District determines that the activity may affect Federally listed species or critical habitat, the District must initiate section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) in accordance with the Endangered Species Act of 1973, as amended (Act). Applicants must provide additional information that would enable the District to conclude that the proposed action will have no effect on Federally listed species.

The application packet must indicate whether resources (species, their suitable habitats, or critical habitat) listed or designated under the Act, may be present within areas affected (directly or indirectly) by the proposed project. Applicants must provide a section 7 species list for the action area using the on-line process at the USFWS website. You can access "U.S. Fish and Wildlife Service Endangered Species Program of the Upper Midwest" website at www.fws.gov/midwest/Endangered. Click on the section 7 Technical Assistance green shaded box in the lower right portion of the screen and follow the instructions to completion. Review all documentation pertaining to the species list and provide your effects determination for each species along with the rationale for your effects determination for each species to this office for review.

If no species, their suitable habitats, or critical habitats are listed, then a "no effect" determination can be made, and section 7 consultation is not warranted. If species or critical habitat appear on the list or suitable habitat is present within the action area, then a biological assessment or biological evaluation will need to be completed to determine if the proposed action will have "no effect" or "may affect" the species or suitable habitat. The District must request initiation of section 7 consultation with the USFWS upon agreement with the applicant on the effect determinations in the biological assessment or biological evaluation.

If the issues are not resolved, the analysis of the situation is complicated, or impacts to listed species or critical habitat are found to be greater than minimal, the District will consider reviewing the project under the Individual Permit process.

Projects in Will, DuPage, or Cook Counties that are located in the recharge zones for Hine's emerald dragonfly critical habitat units may be reviewed under the RPP, with careful consideration due to the potential impacts to the species. All projects reviewed that are located within 3.25 miles of a critical habitat unit will be reviewed under Category II of the RPP. Please visit the following website for the locations of the Hine's emerald dragonfly critical habitat units in Illinois. www.fws.gov/midwest/endangered/insects/hed/FRHinesFinalRevisedCH.html

4. Historic Properties - In cases where the District determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity may require an Individual Permit. A determination of whether the activity may be authorized under the RPP instead of an Individual Permit will not be made until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

Federal permittees designated as the lead agency shall follow agency specific procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the District with the appropriate documentation to demonstrate compliance with those requirements.

Non-Federal permittees must include notification to the District if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the permit application must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)).

When reviewing permit submittals, the District will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. Based on the information submitted and these efforts, the District will determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the District,

the non-Federal applicant must not begin the activity until notified by the District either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

The District must take into account the effects on such properties in accordance with 33 CFR Part 325, Appendix C, and 36 CFR 800. If all issues pertaining to historic properties have been resolved through the consultation process to the satisfaction of the District, Illinois State Historic Preservation Officer (SHPO) and Advisory Council on Historic Preservation, the District may, at its discretion, authorize the activity under the RPP.

Applicants are encouraged to obtain information on historic properties from the SHPO and the National Register of Historic Places at the earliest stages of project planning. For information, contact:

Illinois State Historic Preservation Office
Illinois Department of Natural Resources
Attn: Review & Compliance
Old State Capital
1 Natural Resources Way
Springfield, IL 62702
(217) 782-4836
<https://www2.illinois.gov/dnrhistoric/Pages/default.aspx>

If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity, you must immediately notify this office of what you have found, and to the maximum extent practicable, stop activities that would adversely affect those remains and artifacts until the required coordination has been completed. The District will initiate the Federal, Tribal and State coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

5. Soil Erosion and Sediment Control - Measures must be taken to control soil erosion and sedimentation at the project site to ensure that sediment is not transported to waters of the U.S. during construction. Soil erosion and sediment control measures must be implemented before initiating any clearing, grading, excavating or filling activities. All temporary and permanent soil erosion and sediment control measures must be maintained throughout the construction period and until the site is stabilized. All exposed soil and other fills, and any work below the ordinary high water mark must be permanently stabilized at the earliest practicable date.

Applicants are required to prepare a soil erosion and sediment control (SESC) plan including temporary best management practices (BMPs) to be implemented during construction. It is recommended that the plan be designed in accordance with the Illinois Urban Manual, current edition (www.aiswcd.org/illinois-urban-manual). Practice standards and specifications for measures outlined in the soil erosion and sediment control plans should follow the latest edition of the "Illinois Urban Manual: A Technical Manual Designed for Urban Ecosystem Protection and Enhancement." Additional SESC measures not identified in the Illinois Urban Manual may also be utilized upon District approval.

At the District's discretion, an applicant may be required to submit the SESC plan to the local Soil and Water Conservation District (SWCD) or the Lake County Stormwater Management Commission (SMC) for review. When the District requires submission of an SESC plan, the following applies: An activity may not commence until the SESC plan for the project site has been approved; The SWCD/SMC will review the plan and provide a written evaluation of its adequacy; A SESC plan is considered acceptable when the SWCD/SMC has determined that it meets technical standards. Once a determination has been made, the authorized work may commence unless the SWCD/SMC has requested that they be notified prior to commencement of the approved plans. The SWCD/SMC may elect to attend pre-construction meetings with the permittee and conduct inspections during construction to determine compliance with the plans. Applicants are encouraged to begin coordinating with the appropriate SWCD/SMC office at the earliest stages of project planning. For information, contact:

Kane-DuPage SWCD
2315 Dean Street, Suite 100
St. Charles, IL 60174
(630) 584-7960 ext.3
www.kanedupageswcd.org

Lake County SMC
500 W. Winchester Rd, Suite 201
Libertyville, IL 60048
(847) 377-7700
www.lakecountyil.gov/stormwater

McHenry-Lake County SWCD
1648 South Eastwood Dr.
Woodstock, IL 60098
(815) 338-0099 ext.3
www.mchenryswcd.org

North Cook SWCD
640 Cosman Rd
Elk Grove Village, IL 60007

Will/South Cook SWCD
1201 S. Gougar Rd
New Lenox, IL 60451

(847) 885-8830
www.northcookswcd.org

(815) 462-3106
www.will-scookswcd.org

6. Total Maximum Daily Load - For projects that include a discharge of pollutant(s) to waters for which there is an approved Total Maximum Daily Load (TMDL) allocation for any parameter, the applicant must develop plans and BMPs that are consistent with the assumptions and requirements in the approved TMDL. The applicant must incorporate into their plans and BMPs any conditions applicable to their discharges necessary for consistency with the assumptions and requirements of the TMDL within any timeframes established in the TMDL. The applicant must carefully document the justifications for all BMPs and plans, and install, implement and maintain practices and BMPs that are consistent with all relevant TMDL allocations and with all relevant conditions in an implementation plan. Information regarding the TMDL program, including approved TMDL allocations, can be found at the following website: www.epa.state.il.us/water/tmdl/

7. Floodplain - Discharges of dredged or fill material into waters of the United States within the 100-year floodplain (as defined by the Federal Emergency Management Agency) resulting in permanent above-grade fills must be avoided and minimized to the maximum extent practicable. When such an above-grade fill would occur, the applicant may need to obtain approval from the Illinois Department of Natural Resources, Office of Water Resources, (IDNR-OWR) which regulates activities affecting the floodway and the local governing agency (e.g., Village or County) with jurisdiction over activities in the floodplain. Compensatory storage may be required for fill within the floodplain. Applicants are encouraged to obtain information from the IDNR-OWR and the local governing agency with jurisdiction at the earliest stages of project planning. For information on floodway construction, contact:

IDNR/OWR
2050 Stearns Road
Bartlett, IL 60103
(847) 608-3100
www.dnr.illinois.gov/WaterResources/

For information on floodplain construction, please contact the local government and/or the Federal Emergency Management Agency. Pursuant to 33 CFR 320.4(j), the District will consider the likelihood of the applicant obtaining approval for above-ground permanent fills in floodplains in determining whether to issue authorization under the RPP.

8. Navigation - Regulated activities may not cause more than a minimal adverse effect on navigation. Safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities within navigable waters of the United States. The permittee understands and agrees that if future operations by the United States require the removal, relocation, or other alteration of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work will cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim will be made against the United States on account of any such removal or alteration.

9. Proper Maintenance - Authorized structures or fill must be properly maintained, including that necessary to ensure public safety.

10. Aquatic Life Movements - Regulated activities may not substantially disrupt the movement of those species of aquatic life indigenous to the waterbody, including species that normally migrate through the area, unless the activity's primary purpose is to impound water.

11. Equipment - Soil disturbance and compaction in regulated areas must be minimized through the use of low ground pressure equipment, matting for heavy equipment, or other measures as approved by the District.

12. Wild and Scenic Rivers - Regulated activities may not occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system, while the river is in an official study status. Information on Wild and Scenic Rivers may be obtained from the appropriate land management agency in the area, such as the National Park Service and the U.S. Forest Service.

13. Tribal Rights - Regulated activities or their operation may not impair reserved Tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

14. Water Supply Intakes - Discharges of dredged or fill material may not occur in the proximity of a public water supply intake except where the discharge is for repair of the public water supply intake structures or adjacent bank stabilization.
15. Shellfish Production - Discharges of dredged or fill material may not occur in areas of concentrated shellfish production.
16. Suitable Material - Discharges of dredged or fill material may not consist of unsuitable material. Material discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act). Unsuitable material includes trash, debris, vehicle parts, asphalt, and creosote treated wood.
17. Spawning Areas - Discharges in spawning areas during spawning seasons must be avoided to the maximum extent practicable.
18. Obstruction of High Flows - Discharges must not permanently restrict or impede the passage of normal or expected high flows. All crossings must be culverted, bridged or otherwise designed to prevent the restriction of expected high water flows and designed so as not to impede low water flows or the movement of aquatic organisms.
19. Impacts From Impoundments - If the discharge creates an impoundment of water, adverse impacts on aquatic resources caused by the accelerated passage of water and/or the restriction of its flow must be avoided to the maximum extent practicable.
20. Waterfowl Breeding Areas - Discharges into breeding areas utilized by migratory waterfowl must be avoided to the maximum extent practicable.
21. Removal of Temporary Fills - Temporary fill material must be removed in its entirety and the affected area returned to pre-existing condition.
22. Mitigation - All appropriate and practicable steps must first be taken to avoid and minimize impacts to aquatic resources. For unavoidable impacts, compensatory mitigation is required to replace the loss of wetland, stream, and/or other aquatic resource functions (33 CFR 332). The proposed compensatory mitigation must utilize a watershed approach and fully consider the ecological needs of the watershed. Where an appropriate watershed plan is available, mitigation site selection should consider recommendations in the plan. The applicant must describe in detail how the mitigation site was chosen and will be developed, and be based on the specific resource need of the impacted watershed. Permit applicants are responsible for proposing an appropriate compensatory mitigation option to offset unavoidable impacts. However, the District is responsible for determining the appropriate form and amount of compensatory mitigation required when evaluating compensatory mitigation options and determining the type of mitigation that would be environmentally preferable. In making this determination, the District will assess the likelihood for ecological success and sustainability, the location of the compensation site relative to the impact site, and their significance within the watershed. Methods of providing compensatory mitigation include aquatic resource restoration, establishment, enhancement, and in certain circumstances, preservation. Compensatory mitigation will be accomplished by establishing a minimum ratio of 1.5 acres of mitigation for every 1.0 acre of impact to waters of the U.S. Furthermore, the District has the discretion to require additional mitigation to ensure that the impacts are no more than minimal. Further information is available at www.lrc.usace.army.mil/Missions/Regulatory/Illinois/Mitigation.aspx.
23. Notification - The applicant must provide written notification (i.e., a complete application) for a proposed activity to be verified under the RPP prior to commencing a proposed activity. The District's receipt of the complete application is the date when the District receives all required notification information from the applicant (see below). If the District informs the applicant within 60 calendar days that the notification is incomplete (i.e., not a complete application), the applicant must submit to the District, in writing, the requested information to be considered for review under the Regional Permit Program. A new 60 day review period will commence when the District receives the requested information. Applications that involve unauthorized activities that are completed or partially completed by the applicant are not subject to the 60-day review period. Applications may be either sent to ChicagoRequests@usace.army.mil or mailed to our office: USACE Regulatory Branch, 231 South LaSalle Street, Suite 1500, Chicago, Illinois 60604.

For all activities, notification must include:

- a. A detailed narrative of the proposed activity describing all work to be performed, a clear project purpose and need statement, the Regional Permit(s) to be used for the activity, the area (in acres) of permanent and temporary fills proposed in each water of the U.S., and a statement that the terms and conditions of the RPP will be followed. For projects with impacts to multiple aquatic resources, provide a table identifying impact types and amounts.

- b. A completed joint application form for Illinois signed by the applicant or agent. The application form is available at www.lrc.usace.army.mil/Portals/36/docs/regulatory/forms/appform.pdf. If the applicant does not sign the joint application form, notification must include a signed, written statement from the applicant designating the agent as their representative.
- c. A delineation of waters of the U.S., including wetlands, for the project area, and for areas adjacent to the project site (off-site wetlands must be identified through the use of reference materials including review of local wetland inventories, soil surveys, and the most recent available aerial photography), must be prepared in accordance with the current U.S. Army Corps of Engineers methodology (www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/reg_supp.aspx) and generally conducted during the growing season.* The District's wetland delineation standards are available at www.lrc.usace.army.mil/Portals/36/docs/regulatory/pdf/Delineations.pdf. For sites supporting wetlands, the delineation must include a Floristic Quality Assessment (Swink and Wilhelm, 1994, latest edition, Plants of the Chicago Region). The delineation must also include information on the occurrence of any high-quality aquatic resources (see Appendix A), and a listing of waterfowl, reptile and amphibian species observed while at the project area. The District reserves the right to exercise judgment when reviewing submitted wetland delineations. Flexibility of these requirements may be allowed by the District on a case-by-case basis only.
- d. A street map showing the location of the project area.
- e. Latitude and longitude for the project in decimal degrees format (for example 41.878639N, -87.631212W).
- f. Preliminary engineering drawings sized 11" by 17" (full-sized may be requested by the project manager) showing all aspects of the proposed activity and the location of waters of the U.S. to be impacted and not impacted. The plans must include grading contours, proposed and existing structures such as buildings footprints, roadways, road crossings, stormwater management facilities, utilities, construction access areas and details of water conveyance structures. The plans must also depict buffer areas, outlots or open space designations, best management practices, deed restricted areas and restoration areas, if required under the specific RP.
- g. Submittal of soil erosion and sediment control (SESC) plans that identify all SESC measures to be utilized during construction of the project.
- h. A determination whether resources (species, their suitable habitats, or critical habitat) listed or designated under the Endangered Species Act of 1973, as amended, may be present within areas affected (directly or indirectly) by the proposed project. Applicants must provide a section 7 species list for the action area using the on-line process at the USFWS website. You can access "U.S. Fish and Wildlife Service Endangered Species Program of the Upper Midwest" website at www.fws.gov/midwest/Endangered. Click on the section 7 Technical Assistance green shaded box in the lower right portion of the screen and follow the instructions to completion. Review all documentation pertaining to the species list and provide your effects determination for each species along with the rationale for your effects determination for each species to this office for review.

In the event there are no species, their suitable habitats, or critical habitats within areas affected (directly or indirectly) by the proposed project, then a "no effect" determination can be made and section 7 consultation is not warranted. If species or critical habitat appear on the list, or suitable habitat is present within the action area, then a biological assessment or biological evaluation will need to be completed to determine if the proposed action will have a "no effect" or a "may affect" determination on the species or suitable habitat. The District will request initiation of section 7 consultation with the USFWS upon agreement with the applicant on the effects determinations in the biological assessment or biological evaluation. If the issues are not resolved, the analysis of the situation is complicated, or impacts to listed species or critical habitat are found to be greater than minimal, the District will consider reviewing the project under the Individual Permit process.
- i. A determination of the presence or absence of any State threatened or endangered species. Please contact the Illinois Department of Natural Resources (IDNR) to determine if any State threatened and endangered species could be in the project area. You can access the IDNR's Ecological Compliance Assessment Tool (EcoCAT) at the following website: dnr.illinois.gov/EcoPublic/. For the first general information question, select "To obtain information on Illinois T&E species or INAI sites for federal agency actions" and select "U.S. Army Corps of Engineers" from the drop down

* If a wetland delineation is conducted outside of the growing season, the District will determine on a case-by-case basis whether sufficient evidence is available to make an accurate determination. If the District finds that the delineation lacks sufficient evidence, the application will not be considered complete until the information is provided. This may involve re-delineating the project site during the growing season.

menu. Once the EcoCAT and consultation process is complete, forward all resulting information to this office for consideration. The report must also include recommended methods as required by the IDNR for minimizing potential adverse effects of the project.

- j. A statement about the knowledge of the presence or absence of historic properties, which includes properties listed, or properties eligible to be listed in the National Register of Historic Places. The permittee must provide all pertinent correspondence documenting compliance. Initial documentation required for the Illinois State Historic Preservation Officer (ILSHPO) is located here: <https://www2.illinois.gov/dnrhistoric/preserve/pages/resource-protection.aspx>. The Historic and Architectural Resources Geographic Information System (HARGIS) at <http://gis.hpa.state.il.us/hargis/> is the public portal to Illinois' historic buildings, structures, sites, objects, and districts. This database contains properties that have been listed in the National Register of Historic Places, determined eligible for listing, or surveyed without a determination.
- k. Where an appropriate watershed plan is available, the applicant must address in writing how the proposed activity is aligned with the relevant water quality, hydrologic, and aquatic resource protection recommendations in the watershed plan. A list of watershed plans is available at www.lrc.usace.army.mil/Missions/Regulatory/Illinois/WatershedPlans.aspx.
- l. A discussion of measures taken to avoid and/or minimize impacts to aquatic resources on the project site.
- m. A compensatory mitigation plan for all impacts to waters of the U.S. (if compensatory mitigation is required under the specific RP) in compliance with 33 CFR 332.
- n. A written narrative individually addressing each of the items listed under the specific RP(s) being requested.

For Category II activities, the District will provide an Agency Request for Comments (ARC) which describes the proposed activity. The ARC will be sent to interested Federal, state and local agencies, and appropriate Indian Tribes for review and comment. Additional entities may also be notified as needed. Agencies have ten (10) calendar days from the date of the ARC to contact the District and either provide comments or request an extension, not to exceed fifteen (15) calendar days. The Illinois Historic Preservation Agency and Indian Tribes have thirty (30) calendar days from the date of the ARC to provide comments. The District will fully consider agency comments received within the specified time frame. If the District determines that the activity complies with the terms and conditions of the RPP and impacts on aquatic resources are minimal, the District will notify the applicant in writing and include special conditions if deemed necessary. If the District determines the impacts of the proposed activity are more than minimal, the District will notify the applicant that the project does not qualify for authorization under the RPP and instruct the applicant on the procedures to seek authorization under an Individual Permit.

24. Compliance Certification - Any permittee who has received authorization under the RPP from the District must submit a signed certification stating that the authorized work has been completed. The certification will be forwarded by the District with the authorization letter and will include: a) a statement that the authorized work was done in accordance with the District's authorization, including any general or specific conditions; b) a statement that any required mitigation was completed in accordance with the permit conditions, and; c) the signature of the permittee certifying the completion of the work and mitigation.

25. Multiple use of Regional Permits - In any case where a Regional Permit is combined with any other Regional Permit to cover a single and complete project (except where prohibited under specific Regional Permits), the applicant must notify the District in accordance with General Condition 23. If multiple Regional Permits are used, the total impact may not exceed the maximum allowed by the Regional Permit with the greatest impact threshold.

26. Other Restrictions - Authorization under the RPP does not obviate the need to obtain other Federal, State or local permits, approvals, or authorizations required by law nor does it grant any property rights or exclusive privileges, authorize any injury to the property or rights of others or authorize interference with any existing or proposed Federal project.

Approved by:

//ORIGINAL SIGNED/

Christopher T. Drew
Colonel, U.S. Army
District Commander

March 23, 2017

Date

MENTOR-PROTÉGÉ PROGRAM

Effective: June 1, 2007 Revised: February 1, 2013

Eligibility. This contract is eligible for the Department's Mentor-Protégé Program for those bidders with an approved Mentor-Protégé Development Plan.

In order for a Mentor-Protégé relationship to be recognized as part of this contract, the Protégé shall be used as a subcontractor and a Mentor-Protégé Agreement for Contract Assistance and Training shall be fully executed and approved. The Mentor-Protégé Agreement for Contract Assistance and Training shall be completed on the form provided by the Department and submitted with the DBE Utilization Plan for approval by the Department. If approved, the Mentor-Protégé Agreement for Contract Assistance and Training shall become part of the contract. In the event the Mentor-Protégé Agreement for Contract Assistance and Training is not approved, the contract shall be performed in accordance with the DBE Utilization Plan exclusive of the Agreement.

DBE Goal Reduction. The DBE participation goal set for this contract may, at the discretion of the Department, be reduced according to the Mentor-Protégé Program Guidelines when the Protégé is used as a subcontractor. When submitting the DBE Utilization Plan, the bidder shall indicate whether the Protégé will be used as a subcontractor and to what extent.

Quarterly Reports. The Mentor shall submit quarterly progress reports as outlined in the Mentor-Protégé Program Implementation document. The reports shall indicate the progress toward each of the Plan's stated goals. The reports shall be signed by an authorized principal of each firm and submitted to the Engineer of Construction.

Failure to timely submit reports, or submission of incomplete reports may result in dissolution of relationship.

Reimbursement of Mentor Expenses. The direct and indirect expenses of the Mentor, as detailed in the approved Mentor-Protégé Agreement for Contract Assistance and Training will be reimbursed by the Department.

**REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor

performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection

for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor 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 DOT-assisted contracts. 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 contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#).

The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each

classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a

separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice

performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one

and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of

Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of

Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

Contract Provision - Cargo Preference Requirements

In accordance with Title 46 CFR § 381.7 (b), the contractor agrees—

“(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.”

Provisions (1) and (2) apply to materials or equipment that are acquired solely for the project. The two provisions do not apply to goods or materials that come into inventories independent of the project, such as shipments of Portland cement, asphalt cement, or aggregates, when industry suppliers and contractors use these materials to replenish existing inventories.

**MINIMUM WAGES FOR FEDERAL AND FEDERALLY
ASSISTED CONSTRUCTION CONTRACTS**

This project is funded, in part, with Federal-aid funds and, as such, is subject to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Sta. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in a 29 CFR Part 1, Appendix A, as well as such additional statutes as may from time to time be enacted containing provisions for the payment of wages determined to be prevailing by the Secretary of Labor in accordance with the Davis-Bacon Act and pursuant to the provisions of 29 CFR Part 1. The prevailing rates and fringe benefits shown in the General Wage Determination Decisions issued by the U.S. Department of Labor shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

General Wage Determination Decisions, modifications and supersedes decisions thereto are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision, together with any modifications issued, must be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable DBRA Federal prevailing wage law and 29 CFR Part 5. The wage rates and fringe benefits contained in the General Wage Determination Decision shall be the minimum paid by contractors and subcontractors to laborers and mechanics.