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January 17, 2020 Letting

Notice to Bidders, Specifications and Proposal



**Contract No. 72L47
ADAMS County
Section (12)BJR,BRR
Route FAS 1597
District 6 Construction Funds**

Prepared by

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Checked by

(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. January 17, 2020 prevailing time at which time the bids will be publicly opened from the iCX SecureVault.
- 2. DESCRIPTION OF WORK.** The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

**Contract No. 72L47
ADAMS County
Section (12)BJR,BRR
Route FAS 1597
District 6 Construction Funds**

Replacing expansion joints and performing beam end repairs on SN 001-0054 carrying IL 96 over Mill Creek in Adams County.

- 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 and frequently used 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 FAS Route 1597 (IL 96), Section (12) BJR, BRR, Adams County, Contract No. 72L47 and in case of conflict with any part, or parts, of said Specifications, the said Special Provisions shall take precedence and shall govern.

LOCATION AND DESCRIPTION OF PROJECT

This work shall consist of replacing expansion joints and repairing beam ends at SN 001-0054 carrying IL 96 over Mill Creek in Adams County.

TRAFFIC CONTROL PLAN

Effective: November 1, 1984

Revised: January 2, 2007

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

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

701001, 701006, 701201, 701301, 701321 & 701901

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

1. During the construction of this section, the following shall apply: At least one lane shall remain open to traffic at all times.
2. The Contractor shall provide, erect, and maintain all the necessary barricades, cones, drums, and lights for the warning and protection of traffic, as required by Sections 107 and 701 through 703 of the Standard Specifications, and as modified. The Contractor will be responsible for the traffic control devices at all times during construction activities and shall coordinate the items of work in order to keep hazard traffic inconveniences to a minimum.

All Advance warning signs shall be in new or like new condition at the start of the project. All warning signs shall be 48-inches by 48-inches and have a black legend on a fluorescent orange reflectorized background.

3. All post mounted signs shall use 4x4 inches (100 x 100 mm) wood posts according to Article 1007.05 of the Standard Specifications. The use of metal posts will not be permitted.
4. Work shall be accomplished using traffic control standards 701001, 701006, 701201, 701301, 701321, and 701901. Traffic control detailed in standard 701201 shall be measured and paid for at the contract unit price per lump sum for TRAFFIC CONTROL AND PROTECTION, STANDARD 701201. Traffic control detailed in standard 701321 shall be measured and paid for at the contract unit price per each for TRAFFIC CONTROL AND PROTECTION, STANDARD 701321. All other traffic control and protection standards will not be measured for payment.

TEMPORARY BRIDGE TRAFFIC SIGNALS

Effective: June 15, 2004

Revised: January 27, 2016

The use of portable temporary bridge traffic signals will be allowed on this project.

This work shall consist of furnishing and installing a temporary bridge traffic signal in accordance with Standard drawing 701316 or 701321 and Section 701.18 of the Standard Specifications for Road and Bridge Construction with the following additions or exceptions.

Additional signals shall be installed on sideroads and entrances as detailed in the plans.

The near loops shall have separate lead-in wires and shall be terminated on their own detector amplifier in the temporary controller cabinet. This detector amplifier shall be programmed with 8 seconds of delay time. The temporary controller cabinet shall inhibit this delay time during green. The far loop shall be landed under a separate detector amplifier.

Alternative methods of detection such as microwave sensors, video detection or preformed loops may be used for side approaches where pavement conditions are not adequate for the construction of standard inductive loops.

A three (3) inch wide strip of retro reflective sheeting shall be applied to the outside perimeter of the face of all traffic signal back plates. The reflective tape shall be fluorescent yellow in color and shall consist of type ZZ sheeting.

The Contractor shall notify the Engineer at least 72 hours in advance of activating the temporary Bridge Traffic Signals. IDOT District 6 Operations Traffic Signal Section shall be contacted at (217) 558-6718 for controller programming and timing approval.

Basis of Payment: Temporary signals required for Standards 701316 and 701321 will be paid for separately at the contract unit price each for TEMPORARY BRIDGE TRAFFIC SIGNALS. One each for this pay item shall be understood to mean each location, regardless of the number of signals deployed at each location. A maximum of one each shall be paid at each bridge location.

Any relocation of the traffic signal equipment due to stage construction will not be paid for separately, but shall be included in the cost of the initial installation.

FRP STRENGTHENING FOR PPC I-BEAM REPAIRS

Effective: March 14, 2018

Revised: October 30, 2018

Description

This work shall consist of furnishing and installing fiber-reinforced polymer (FRP) wraps at the locations shown in the plans. The FRP strengthening shall be of the size, type, layer, materials, tension, and spacing shown in the plans. The Contractor shall submit drawings of the FRP strengthening system, showing materials, components, and installation procedures to the Engineer for approval prior to ordering materials and commencing work.

All other concrete repairs and/or modifications shall be completed prior to performing this work. Concrete placed in areas receiving FRP wraps shall have a maximum moisture content of 4% using a digital moisture meter before wrapping begins unless bond testing shows no detrimental effect for installing prior to obtaining the required moisture content. All manufacturer's recommendations for surface preparation and installation of FRP wraps shall be followed.

Submittals

The following submittals, but not limited to, shall be required of the FRP system manufacturer, installation contractor and inspection agency. All submittals, except daily installation data logs, shall be given to the Engineer for review allowing at least 60 days for approval.

Submittals required of the *FRP system manufacturer*:

- Product information and data sheets indicating physical, mechanical and chemical properties and limitations of the FRP system and all its components.
- Tensile properties for the FRP system shall be reported in accordance with ASTM D7565 in units of kips/inch/ply for strength and modulus (stiffness). FRP systems not reporting their design properties in accordance with ASTM D7565 are not allowed.
- Durability test data and structural test reports of the FRP system for the proposed application in the expected environmental conditions.
- Installation and maintenance instructions and general recommendations regarding each material used in the FRP system. Note that surface preparation requirements shall be included in the installation procedures.
- Material Safety Data Sheets of each product used and certification that all materials abide by all local, state, and federal environmental and worker's safety laws and regulations.
- Quality control procedures for tracking FRP materials and material certifications.
- List of projects where similar FRP system has been implemented.

Submittals required of the FRP *system installation Contractor*:

- Documentation from the FRP system manufacturer stating the Contractor has been trained to install the FRP system show on the design plans.
- List of completed projects by the Contractor where similar FRP system has been implemented. Include location, owner, engineer and contact numbers associated with each project.
- Quality control procedures, daily installation data logs, and any other inspection forms used by the Contractor.

If an independent inspection agency is used, the following submittals are required of the FRP *system inspection agency*:

- Qualifications and a list of each inspector used on the project.
- Sample inspection forms to be used during inspection.
- List of prior inspections performed by each inspector used on the project.

Material Requirements

The Contractor shall inspect and ensure all materials meet specifications, conform to design plans and are undamaged upon job-site arrival. All products shall be delivered to the job-site in their original, un-opened containers with the Manufacturer's name, labels, product identification, and batch numbers. Ensure FRP system materials are protected from chemicals, dirt, extreme temperatures, moisture, and physical damage, by storing, handling, and applying materials according to manufacturer and OSHA recommendations.

FRP shall be high modulus, high strength fiber fabric of the type, size, layer, materials, tension, spacing and location as specified on the design plans. FRP Reinforcement shall meet the requirements as listed below.

Minimum FRP Cured Composite Property Requirements

| Property | Carbon Fiber | ASTM Test Method |
|---|---------------------|-------------------------|
| Prior to testing, laminate samples shall be cured at least 7 days at 70°F then post-cured at 140°F for 48 hours | | |
| Tensile Strength | 140 ksi | D3039 |
| Tensile Modulus | 11000 ksi | D3039 |
| Elongation at break | 1.0% | D3039 |
| Thickness per Layer* | 0.035 in. | |
| Unit Tensile Strength | 5.6 k/in/layer | D7565 |
| Unit Tensile Modulus | 440 k/in/layer | D7565 |

* Individual layer thickness may not exceed 0.05 in.

Fabric saturant (saturating resin) and concrete primer shall be two-component, 100% solids, tolerant to moisture, high strength and high modulus epoxy. Manufacturer's recommendations for mixing shall be followed. Components of saturating resin may be proportioned; however, provision shall be made for checking the accuracy of proportions and mixing. Dilution of components will not be permitted. Mixtures shall be used within its pot life.

A vapor permeable, UV resistant polymer or acrylic based protective coating shall be used. The protective coating shall be applied according to the manufacturer's recommendations.

Construction Requirements

A technical representative from the manufacturer shall be on site at the start of the installation and for as long as needed to insure the contractor is installing the material in accordance with the Installation manual. All costs associated with providing a technical representative shall be the responsibility of the Contractor.

The Contractor shall maintain a Daily Installation Log. The log shall be available for review by the Engineer, and a copy shall be furnished to the Engineer at completion of installation and construction for each day's production. The Log shall provide material traceability and process records for each wrap and shall include all the following information:

- (a) Date, time and specific location of installation.
- (b) Construction and installation requirements, including plans and drawings and references thereto.
- (c) Surface preparation methods.
- (d) Widths and lengths of cracks not injected with epoxy.
- (e) Material information including product description, data of manufacturer, product and fiber batch numbers, mixture ratios, mixing times, appearance description of mixed resins (i.e. primers, putties, saturants, adhesives, and protective coatings used for the day)
- (f) Ambient temperatures, humidity, and general weather observations at the beginning, middle and end of each wrap installation shift.
- (g) Concrete surface temperature, concrete moisture content and surface cleanliness.
- (h) Heat sources used for increase surface temperature or curing.
- (i) Number of FRP layers used, composite thickness measurements, curing progress of resins including full documentation of curing temperature ramping and final curing temperature and thickness measurements of protecting coating used.
- (j) Location and size of FRP debonding or air voids.
- (k) Documentation stating installation procedures were followed.
- (l) Pull off test results including bond strength, failure mode, and location.
- (m) Other general work progress.

Surface Preparation:

FRP wraps shall be placed on sound concrete having a maximum moisture content of 4%. All bond inhibiting and foreign materials, including but not limited to dust, laitance, paint, grease, curing compounds, impregnations and waxes, shall be removed from the concrete surface by blast cleaning or equivalent mechanical means. All concrete surfaces shall be air blasted and vacuumed clean to a dust-free condition.

All concrete surface irregularities shall be ground smooth and/or filled with an approved repair technique. See special provision for Precast Prestressed Concrete I-Beam Repair for concrete repair at bottom flanges of beams and for the concrete repair of exposed vertical reinforcement at side faces of beam. All sharp edges shall be ground smooth and flush. All repairs shall be completed in such a manner as to not damage the existing structure.

When wrapping FRP around exterior corners of rectangular cross sections, the corners should be rounded to a minimum of ½" radius. Interior corners shall be smoothed by troweling epoxy mortar into the corners. After concrete surface preparation has been completed, adhesive strength of the concrete shall be verified by random pull-off testing according to ACI 503R as per the direction of the Engineer.

All cracks greater than 0.007 in. shall be injected with epoxy according to Section 590 of the Standard Specifications for Road and Bridge Construction and paid for as Epoxy Crack Injection.

Constituent Material Application:

All materials shall be applied according to conditions (i.e. surface temperature of the concrete, air temperature, relative humidity, and corresponding dew point) recommended by the FRP manufacturer.

Components of saturating resin may be proportioned and mixed by hand or by automatic equipment. Provision shall be made for checking the accuracy of proportions and mixing. Diluting is not permitted.

The saturating resin shall be applied to a properly prepared substrate as a surface primer. The primer should be applied uniformly on the prepared surface to all areas of concrete receiving the FRP wrap according to the manufacturer's specifications. Primed surfaces shall be protected from all contaminants (e.g. dust, moisture, etc.) prior to the application of the FRP wraps.

The resin-to-fabric ratio shall be verified and documented on the daily installation data log. Saturating resin shall be applied uniformly to prepared surfaces. FRP-ply orientation shall not deviate from the orientation shown on the design plans. Fiber wraps shall be handled in a manner to maintain fiber straightness and prevent fiber damage. Any kinks, folds, or severe waviness should be reported to the Engineer. If multiple fabric layers are being placed, successive layers shall be placed before the complete curing of the previous layer to ensure complete bonding between layers. Entrapped air beneath each layer of fabric shall be rolled out before the saturating resin sets.

Subject to approval by the Engineer, the Contractor may provide suitable enclosures to permit application and curing of the fiber wrap during inclement weather. Provisions shall be made to control atmospheric conditions artificially within the enclosures within the limits specified for application and curing of the fiber wrap.

The FRP system shall be protected from rain, sand, dust, and other foreign particles during and after curing as per the Engineer and manufacturer's recommendations.

The Contractor shall inspect the cured FRP system to ensure saturating resin has completely cured. The Contractor must check for defects such as voids, delaminations, external cracks, chips, cuts, loose fibers, external abrasions, blemishes, foreign inclusions, depressible raised areas, or fabric wrinkles. All defects with a dimension greater than 1½ inch, or an area greater than one square inch, or defects with any dimension greater than 1 inch within one foot from another defect area of similar size, shall be repaired or replaced as determined by the Engineer. Repairs shall be made according to manufacturer's recommendations and as specified by the Engineer. For large defected areas, additional layers of FRP maybe required as per the Engineer.

A vapor permeable, UV resistant polymer or acrylic based protective coating shall be used. The protective coating shall be compatible with the FRP system and applied according to the manufacturer's recommendations. Any solvents used to clean the FRP surface prior to the application of the protective coating shall be approved by the FRP manufacturer since solvents can have harmful effects on the polymer fabric. Two layers of protective coating shall be applied to all surfaces of the fiber wrap. In addition, one layer of protective coating shall also be applied to the exterior vertical surface and bottom surface of the fascia beams in areas where the fiber wrap is not applied. The cost of the protective coating shall be paid for as Acrylic Coating.

Method of Measurement

FRP wraps will be computed for payment in place in square feet based on the surface area measurements of the substrate to be repaired. The measured quantity will not be modified for multiple layers of FRP needed as shown in the design plans.

The areas upon which the protective coat is applied will be measured for payment in place and the area computed in square yards.

Basis of Payment

This work will be paid for at the contract unit price per square foot for FIBER WRAP. Payment shall constitute full compensation for all materials, labor, tools, equipment, and incidentals necessary to complete the work.

Full compensation for any additional testing, materials, enclosures, or work required because of the use of a particular type of fiber wrap, shall be considered as included in the item FIBER WRAP.

Protective coat will be paid for at the contract unit price per square yard for ACRYLIC COATING.

PRECAST PRESTRESSED CONCRETE I-BEAM REPAIR

Effective: March 14, 2018

Description

This work shall consist of repairing precast prestressed concrete (PPC) I-beams along with all necessary hardware, labor and equipment in accordance with the Plans and as directed by the Engineer.

Materials

Materials shall be according to the following:

| Item | Article/Section |
|--|-----------------|
| (a) Portland Cement Concrete (Note 1) | 1020 |
| (b) Non-shrink Grout (Note 2) | 1024.02 |
| (c) Shotcrete (High Performance) (Notes 3 and 4) | |

Note 1. The concrete shall meet all the requirements specified in Section 1020 of the Standard Specifications for Class PS Concrete for precast prestressed concrete members, except the maximum size of the aggregate shall be 1/2".

Note 2. The concrete shall be from the "Approved List of Non-Shrink Grouts" maintained by the Bureau of Materials and Physical Research. The repair material chosen shall be appropriate for the thickness of repair to be made. Coarse aggregate with a maximum size of $\frac{3}{8}$ " shall be added with the amount as specified by the manufacturer.

Note 3. Packaged shotcrete that includes aggregate shall be from the Department's approved list of Packaged High Performance Shotcrete, and independent laboratory test results showing the product meets Department specifications will be required. The product shall be a packaged, pre-blended, and dry combination of materials, for the wet-mix shotcrete method according to ASTM C 1480. A nonchloride accelerator may be used according to the shotcrete manufacturer's recommendations. The shotcrete shall be Type FA or CA, Grade FR, and Class I. The fibers shall be Type III synthetic according to ASTM C 1116.

The packaged shotcrete shall have a water-soluble chloride ion content of less than 0.40 lb/cu yd (0.24 kg/cu m). The test shall be performed according to ASTM C 1218, and the hardened shotcrete shall have an age of 28 to 42 days at the time of test. The ASTM C 1218 test shall be performed by an independent lab a minimum of once every two years, and the test results shall be provided to the Department.

Each individual aggregate used in the packaged shotcrete shall have either a maximum ASTM C 1260 expansion of 0.16 percent or a maximum ASTM C 1293 expansion of 0.040 percent. However, the ASTM C 1260 value may be increased to 0.27 percent for each individual aggregate if the cement total equivalent alkali content ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$) does not exceed 0.60 percent. As an alternative to these requirements, ASTM C 1567 testing which shows the packaged shotcrete has a maximum expansion of 0.16 percent may be submitted. The ASTM C 1260, C 1293, or C 1567 test shall be performed a minimum of once every two years.

The 7 and 28-day compressive strength requirements in ASTM C 1480 shall not apply. Instead the shotcrete shall obtain a minimum compressive strength of 4000 psi (27,500 kPa) at 14 days.

The packaged shotcrete shall be limited to the following proportions:

The portland cement and finely divided minerals shall be 6.05 cwt/cu yd (360 kg/cu m) to 8.50 cwt/cu yd (505 kg/cu m) for Type FA and 6.05 cwt/cu yd (360 kg/cu. m) to 7.50 cwt/cu yd (445 kg/cu m) for Type CA. The portland cement shall not be below 4.70 cwt/cu yd (279 kg/cu m) for Type FA or CA.

The finely divided mineral(s) shall constitute a maximum of 35 percent of the total cement plus finely divided mineral(s).

Class F fly ash is optional and the maximum shall be 20 percent by weight (mass) of cement.

Class C fly ash is optional and the maximum shall be 25 percent by weight (mass) of cement.

Ground granulated blast-furnace slag is optional and the maximum shall be 30 percent by weight (mass) of cement.

Microsilica is required and shall be a minimum of 5 percent by weight (mass) of cement, and a maximum of 10 percent. As an alternative to microsilica, high reactivity metakaolin may be used at a minimum of 5 percent by weight (mass) of cement, and a maximum of 10 percent.

Fly ash shall not be used in combination with ground granulated blast-furnace slag. Class F fly ash shall not be used in combination with Class C fly ash. Microsilica shall not be used in combination with high-reactivity metakaolin. A finely divided mineral shall not be used in combination with a blended hydraulic cement, except for microsilica or high-reactivity metakaolin.

The water/cement ratio as defined in Article 1020.06 shall be a maximum of 0.42.

The air content as shot shall be 4.0 – 8.0 percent.

Note 4 Packaged shotcrete that does not include pre-blended aggregate shall be from the Department's approved list of Packaged High Performance Shotcrete, and independent laboratory test results showing the product meets Department specifications will be required. The shotcrete shall be according to Note 3, except the added aggregate shall be according to Articles 1003.02 and 1004.02 in addition to each individual aggregate meeting the maximum expansion requirements of Note 3. The aggregate gradation shall be according to the manufacturer. The shotcrete shall be batched and mixed with added aggregate according to the manufacturer.

Equipment

Equipment shall be according to Article 503.03 and the following.

Chipping Hammer – The chipping hammer for removing concrete shall be a light-duty pneumatic or electric tool with a 15 lb. (7 kg) maximum class or less.

Blast Cleaning Equipment – Blast cleaning equipment for concrete surface preparation shall be the abrasive type, and the equipment shall have oil traps.

High Performance Shotcrete Equipment – The batching, mixing, pumping, hose, nozzle, and auxiliary equipment shall be for the wet-mix shotcrete method, and shall meet the requirements of ACI 506R.

Construction Requirements

PPC I-beam repairs shall be done before addition of new concrete, but after removal of any existing concrete

Bottom Flange Repair:

The damaged area of the beams shall be cleaned of all loose and spalled concrete, and sealant. All loose material shall be removed to sound concrete until coarse aggregate will break under chipping rather than dislodging. Hand tools shall be used for the removal of concrete adjacent to prestressing strands. While a 15-pound chipping hammer may be used away from prestressing strands, extreme care shall be used not to damage the exposed prestressing strands.

Using the same tools, remove the existing concrete to sound concrete along the edges of the damaged areas to a depth of 1" min. to 1½" max. The edges shall be saw cut ¾" deep or less. The limits of removal on the beam are shown in the details. The entire area of existing concrete against which new concrete will be placed and any exposed portions of the prestressing strands shall be sandblasted. The concrete shall be sandblasted to expose clean, well-bonded aggregate.

All surfaces of the existing concrete in the areas to be repaired shall be prepared in accordance with Art. 503.09 (b) of the Standard Specs. The concrete beam to be repaired must be at a temperature of at least 50 °F or higher.

Self-drilling anchors or power-driven pins as shown in the Plans shall be placed at 9" alternate centers horizontally and located vertically 3" and 7" up from the bottom of the beam. Use wire ties in areas where the strands are exposed as shown in the details. Place 1" x 1" x 18 gage welded wire fabric in repair areas and attach it to the pins or strands with wire ties. The clearance between the finished surface of the new concrete and the welded wire fabric shall be 1" minimum. The beam involved in this work shall be rebuilt to its original dimensions.

Place the lower form on the bottom of the beam and compact by vibrating (or other approved methods) the concrete mix into the voids. After accessible voids have been filled and compacted, the top vertical form shall be raised into position and the remaining voids filled and compacted. The sloping upper surface shall be finished to the configuration of the existing PPC I-Beam flange.

Web and Top Flange Repair:

The damaged area of the beams shall be cleaned of all loose and spalled concrete, and sealant. All loose material shall be removed to sound concrete until coarse aggregate will break under chipping rather than dislodging.

The edges shall be saw cut ¾" deep or less. The limits of removal on the beam are shown in the details. The entire area of existing concrete against which new concrete will be placed and any exposed portions of the reinforcement bars shall be sandblasted. The concrete shall be sandblasted to expose clean, well-bonded aggregate.

All surfaces of the existing concrete in the areas to be repaired shall be prepared in accordance with Art. 503.09 (b) of the Standard Specs. The concrete beam to be repaired must be at a temperature of at least 50 °F or higher.

The beam involved in this work shall be finished to the configuration of the existing PPC I-Beam web

Method of Measurement

This work will be measured for payment in place and the area computed in square feet.

Basis of Payment

The work will be paid for at the contract unit price per square foot for PRECAST PRESTRESSED CONCRETE I-BEAM REPAIR which payment shall constitute full compensation for furnishing all labor, equipment, tools and incidentals necessary to complete the work as specified.

CLEANING AND PAINTING EXPOSED REBAR

Effective: March 20, 1997

Revised: January 1, 2007

Description. This work shall consist of cleaning and painting all exposed reinforcement bar by the methods specified on the plans; furnishing application and protection of the paint coatings and all other work described herein.

General Requirements. All delaminated, spalled, or loose concrete shall first be removed from the repair area. All exposed rebar and adjacent concrete surfaces on the substructure and superstructure shall be cleaned and painted. All surfaces to be painted shall be power washed at 2500 psi (17,240 kPa) prior to abrasive blasting. After washing, the exposed rebar shall be abrasive blasted per SSPC-SP6 Commercial Blast Cleaning followed by the Aluminum Epoxy Mastic Paint System.

Weather Conditions. The surfaces to be painted after cleaning must remain free of moisture and other contaminants. The Contractor shall control his/her operations to insure that dust, dirt or moisture do not come in contact with surfaces cleaned or painted that day. In addition to the paint system's manufacturer's written instructions for cleaning and painting, the following conditions shall apply. (When in conflict, the most restrictive conditions shall govern).

- (1) Cleaning and painting shall be done between April 15 and November 15.
- (2) The minimum temperature of the air and steel shall be 50 °F (10 °C) unless otherwise specified. Coatings shall not be applied to surfaces hotter than 130 °F (54 °C) or when the air temperature exceeds 100 °F (38 °C).
- (3) The surface temperature shall be at least 5 °F (3 °C) above the dewpoint of the air surrounding the surface. In addition, the relative humidity of this air shall be less than 85%.
- (4) Spray painting will not be permitted when wind velocities are greater than 15 MPH (24 kph).

These conditions will be determined by the Engineer at locations representative of the surfaces to be cleaned and painted. Work accomplished under unfavorable weather conditions will be considered unacceptable and complete recleaning and repainting of these areas will be required at the Contractor's expense.

Equipment. All cleaning and painting equipment shall include gauges capable of accurately measuring fluid and air pressures and shall have valves capable of regulating the flow of air, water or paint as recommended by the equipment manufacturer. The equipment shall be maintained in proper working order.

Spray painting and cleaning equipment shall utilize filters, traps or separators recommended by the manufacturer of the equipment and shall be kept clean to prevent oil, water, dried paint and other foreign materials from being deposited on the surface. The filters, traps and separators shall be cleaned or drained by means, and at intervals, recommended by the manufacturer of the equipment. Paint pots shall be equipped with air operated continuous mixing devices.

Pressure type abrasive air blasting equipment shall be capable of supplying a minimum of 100 psi (690 kPa) pressure and 250 CFM (120 L/S) capacity with all air blast nozzles being used. If blast nozzle orifice sizes larger than 3/8" (9.5 mm) are being used, the minimum capacity of the equipment shall be increased according to the recommendations of SSPC Good Painting Practice, Volume 1, Chapter 2.4, Table 1. The pressure will be measured at the blast nozzle. The equipment shall be capable of providing the minimum required pressure and volume, free of oil, water and other contaminants.

Diesel or gasoline powered equipment shall be positioned or vented in a manner to prevent deposition of combustion contaminants on any part of the structure.

Prior to beginning all painting operations, air equipment shall pass the requirements of ASTM D 4285. This test will be repeated as determined by the Engineer.

Cleaning. The Contractor shall notify the Engineer 24 hours in advance of beginning surface preparation operations. Removal of delaminated, spalled, or loose concrete shall be accomplished with hand tools or pneumatic chipping hammers rated at 15 lbs or less. Care shall be taken not to damage existing reinforcement or to remove sound concrete unnecessarily. The washing shall be completed no more than 2 weeks prior to surface preparation. As directed by the Engineer, washing shall be completed on surfaces to receive second or third coats when foreign matter has accumulated on previously painted surfaces. Power washing shall be accomplished by using potable water meeting the requirements of Section 702 of the Standard Specifications with a flow rate of at least 4 gallons/minute (0.25 L/S), a nozzle fan angle between 15 and 30 degrees and a minimum pressure of 2500 psi (17,240 kPa).

Surface Preparation. The surface preparation Method is defined as outlined below:

The surface preparation shall be accomplished according to the requirements of SSPC Surface Preparation Specifications SP6, for Commercial Blast Cleaning. A Commercial Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining.

Staining shall be limited to no more than 33 percent of each square inch of surface area and may consist of light shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied paint. Slight residues of rust and paint may also be left in the bottoms of pits if the original surface is pitted. Unless otherwise specified, the surface preparation in these areas shall result in 1.0 to 3.5 mil (25 to 90 microns) blast profile as determined by the Engineer. The Contractor shall be careful not to damage sound paint adjacent to paint removal areas by his/her abrasive blasting operations.

Abrasive suppliers shall certify that abrasives shall not be oil contaminated and shall have a water extract pH value within the range of 6 to 8. All surfaces prepared with abrasives which are oil contaminated or have a pH outside the specified range shall be cleaned with solvent cleaner or low pressure water as directed by the Engineer and reblasted by the Contractor at his/her expense. Silica sand shall not be used as an abrasive.

All portions of the structure which could be damaged by the blast cleaning operations, shall be protected by covering or shielding. Tarpaulins, drop cloths, or other approved materials shall be employed. The Contractor shall be responsible for any damage caused to persons, vehicles, or property. Whenever the intended purposes of the protective devices are not being accomplished, as determined by the Engineer, work shall be immediately suspended until corrections are made.

Painting. All exposed rebar and surrounding concrete surfaces adjacent to the rebar shall be painted. The limits of the area to be painted shall be 3 inches (75 mm.) beyond the exposed reinforcement in all directions. Painting shall be accomplished according to these specifications and as specified in the paint manufacturer's written instructions and product data sheets for the paint system used. The prime and finish coat shall all be supplied by the same paint manufacturer.

All ingredients in any container of paint shall be thoroughly mixed by mechanical power mixers in original containers before use or mixing with other containers of paint. The paint shall be power mixed in a manner which will break up all lumps, completely disperse pigment and result in a uniform composition. Paint shall be carefully examined after mixing for uniformity and to verify that no unmixed pigment remains on the bottom of the container. Excessive skinning or partial hardening due to improper or prolonged storage will be cause for rejection of the paint, even though it may have been previously inspected and accepted. Paint shall not remain in spray pots, painters' buckets, etc. overnight. Paint components shall not be stored at temperatures below 40 °F (4 °C). The unit weight (mass) shall be the same as the manufactured unit weight (mass) in pounds per gallon (kg/L), plus or minus 1.0 percent. If the unit weight (mass) does not fall within this range, the Contractor must take corrective action. The Contractor may try additional mixing to correct the problem. If additional mixing cannot correct the paint, it shall be rejected. Any paint that has been applied that does not meet the weight (mass) per gallon (liter) requirements shall be removed and the area shall be inspected and repainted at the Contractor's expense.

Each coat of paint shall be applied as a continuous film of uniform thickness free of pores. Each coat of paint shall be in a proper state of cure before the application of the succeeding coat. Dry film thickness shall be measured according to SSPC PA2.

Aluminum Epoxy Mastic System. All exposed rebar and surrounding concrete surfaces shall be painted with two coats of Aluminum Epoxy Mastic Paint. The dry film thickness shall be between 5.0 and 10.0 mils (125 and 250 microns) per coat. The wet film thickness shall be between 6.0 and 12.0 mils (150 and 300 microns) per coat. The total dry film thickness of the two coats shall be between 10.0 and 20.0 mils (250 and 500 microns).

Application. The aluminum epoxy mastic coating shall not be applied when the surface temperature is below 50 °F (10 °C) and shall not be applied when the ambient temperature is expected to drop below the manufacturer's minimum application temperature before the coating has cured. Curing times at various temperatures shall be provided by the paint manufacturer.

The aluminum epoxy mastic shall be applied by spray, brush or roller according to the paint manufacturer's printed instructions. Thinning of the aluminum epoxy mastic shall be according to the manufacturer's instructions. If brushes and/or rollers are used, two applications, applied at least 8 hours apart, may be required to obtain the required dry film thickness for each of the specified coats. The first application shall be tinted according to the manufacturer's guidance to produce a distinct contrast with the second application. When topcoat is applied, the recommendations of the coating manufacturer shall be followed as to surface preparation of the aluminum epoxy mastic. When the humidity exceeds 75% during the application of the epoxy mastic, the surface shall be washed off with potable water prior to application of the topcoat.

If a paint coating is too thin or if portions of the steel are not coated completely, such portions of the work shall be corrected as directed by the Engineer. If the paint coat wrinkles or shows evidence of having been applied under unfavorable conditions, or if the workmanship is poor, the Engineer may order it removed and the steel cleaned and repainted at the Contractor's expense. All areas where the paint film exceeds the maximum thickness shall be corrected by the Contractor at his/her expense using approved methods.

Aluminum Epoxy Mastic Material Requirements

The aluminum epoxy mastic paint system shall be a two component epoxy containing aluminum pigment. The aluminum epoxy mastic shall be designed as a one coat high-build complete protective coating system with excellent adhesion to rusted steel, inorganic zinc and old paint after such surfaces have been properly cleaned. The aluminum epoxy mastic shall be compatible with a wide range of topcoats including waterborne acrylics, alkyds, and polyurethanes.

The material for aluminum epoxy mastic primer shall conform to the following requirements:

- (1) Pigment - The primary pigment shall be either a leafing or non-leafing aluminum pigment. Secondary pigmentation shall contain no toxic heavy metals.
- (2) Vehicle - The vehicle shall be a modified epoxy and curing agent which is suitably insensitive to moisture to allow trouble free application.
- (3) Packaged Components - The epoxy coating shall be supplied as a two-component material at a one-to-one volume mix ratio. It shall be well ground, free of caking, skins, gellation and excessive settling. The shelf life of each component shall be no less than twelve months.
- (4) Properties Of Aluminum Epoxy Mastic
 - a. The mixed epoxy shall contain a minimum of 89 percent solids by weight, when tested according to ASTM D 1644, Method A, except that the sample shall be heated for 72 hours at $100^{\circ} \pm 2^{\circ} \text{F}$ ($38^{\circ} \pm 1^{\circ} \text{C}$).
 - b. The weight per gallon (mass/liter) of the unmixed components shall not vary more than 0.2 pounds (0.1 kg) from the weight (mass) of the original qualification samples.
 - c. The viscosity of the coating shall be a minimum of 90 KU at $77^{\circ} \pm 2^{\circ} \text{F}$ ($25^{\circ} \pm 1^{\circ} \text{C}$). Viscosity must be checked immediately after addition and mixing of components.

- d. The pot life of the epoxy coating shall be no shorter than 2 hours at 75 °F (24 °C) or one hour at 90 °F (32 °C).
 - e. The epoxy coating shall air cure at a temperature of 75 °F (24 °C) or above to a hard tough film within 5 days by evaporation of solvent and chemical reaction. It shall be dry to the touch in 24 hours at 75 °F (24 °C), and be able to withstand foot traffic in 48 hours at 75 °F (24 °C).
 - f. The mixture, when thinned per manufacturer's recommendations, shall exhibit no runs or sags when applied by conventional or airless spray to produce dry film thicknesses in the 5 to 10 mil (125 to 250 micron) range.
- (5) Resistance Tests of Cured Aluminum Epoxy Mastic - Test panels of steel meeting the requirements of ASTM D 609, having dimensions of 2 X 5 X 1/8 inch (50 X 125 X 3 mm), shall be prepared by abrasive blasting all surfaces to a white metal finish according to SSPC-SP5. The cleaned panels shall then be exposed to outdoor weather for 30 days or until uniform rusting occurs. They shall then be hand cleaned with a wire brush according to SSPC-SP2. A 6 mil (150 micron) dry coating of the epoxy mastic shall then be applied in one coat according to the manufacturer's current printed instructions. The coating shall be cured as recommended by the manufacturer. Each of the following tests shall be performed on one or more test panels. Test panels to be scribed shall be prepared according to the requirements in ASTM D 1654. The material will not be accepted if any individual test panel fails any of the following tests:
- (a) Fresh Water Resistance. Panels shall be scribed down to base metal with an X of at least 2 inch (50 mm) legs and shall be immersed in fresh tap water at 75 ° ± 5 °F (24 ° ± 3 °C). The panels shall show no rusting, blistering, or softening beyond 1/16 inch (1.5 mm) from the scribe mark, when examined after 30 days. Discoloration of the coating will be allowed.
 - (b) Salt Water Resistance. Panels shall be scribed down to base metal with an X of at least 2 inch (50 mm) legs and immersed in 5 percent sodium chloride at 75 ° ± 5 °F (24 ° ± 3 °C). The panels shall show no rusting, blistering or softening beyond 1/16 inch (1.5 mm) from the scribe mark upon examination after 7, 14 and 30 days. Discoloration of the coating will be allowed. The sodium chloride solution shall be replaced with fresh solution after each examination.
 - (c) Salt Fog Resistance. Panels shall be scribed down to base metal with an X of at least 2 inch (50 mm) legs. The panels shall then be tested according to ASTM B 117. After 1,000 hours of continuous exposure, the coating shall show no loss of bond, nor shall it show rusting or blistering beyond 1/16 inch (1.5 mm) from the center of the scribed mark.
 - (d) Weathering Resistance. Panels shall be tested in accelerated weathering using either the light and water exposure apparatus (fluorescent UV-condensation type) as specified in ASTM G154 for 1000 hours with a cycle consisting of eight hours UV exposure at 140 °F (60 °C) followed by four hours of condensation at 104 °F (40 °C) or the weatherometer according to ASTM G154, Type D for 1000 hours beginning the test at the start of the wet cycle. After this period, the panels shall show no loss of bond, nor shall it show rusting, softening or blistering.

- (6) Packaging and Labeling - The aluminum epoxy mastic coating shall be packaged in two containers. The components shall be prepackaged such that mixing in a one-to-one ratio, by volume, utilizes a complete container of each component.

Each container shall have a label on which shall be clearly shown the manufacturer and brand name of paint, the lot number, the date of manufacturer and shelf life. The label on the vehicle container shall also include complete instructions for the use of this paint. The container shall be coated, if necessary, to prevent attack by the paint components.

- (7) Qualification Samples and Tests

The manufacturer shall supply to an independent test laboratory, and to the Department, duplicate samples of the aluminum epoxy mastic paint for evaluation. Prior to approval and use, the manufacturer shall submit a notarized certification of the independent laboratory, together with the results of all tests, stating that the materials meet the requirements as set forth herein. The certified test report shall state lot tested, manufacturers name, product name, and date of manufacture. New certified test results and samples for testing by the department shall be submitted any time the manufacturing process or paint formulation changes. All costs of testing (other than tests conducted by the Department) shall be borne by the manufacturer.

- (8) Acceptance Samples and Certification

One quart (liter) component samples of each lot of paint produced for use on state or local agency projects shall be submitted to the Department for testing, together with a manufacturers certification. Their certification shall state that the formulation for the lot represented is essentially identical to that used for qualification testing. All acceptance samples shall be taken by a representative of the Illinois Department of Transportation. The aluminum epoxy mastic paint shall not be used until all tests are completed and they have met the requirements as set forth herein.

Method of Measurement: Limits of the area to be painted are determined by the exposed reinforcement after the loose concrete has been removed. The limits of the area to be painted and measured for payment shall be 3 inches (75 mm.) beyond the exposed reinforcement in all directions.

Basis of Payment: This work shall be paid for at the contract unit price per square foot (square meter) for CLEANING AND PAINTING EXPOSED REBAR. This shall include all equipment and labor necessary to remove loose concrete.

DECK SLAB REPAIR

Effective: May 15, 1995

Revised: April 13, 2018

This work shall consist of hot-mix asphalt surface removal, when required, the removal and disposal of all loose and deteriorated concrete from bridge deck and the replacement with new concrete to the original top of deck. The work shall be done according to the applicable requirements of Sections 501, 503 and 1020 of the Standard Specifications and this Special Provision.

Deck slab repairs will be classified as follows:

- (a) Partial-Depth. Partial-depth repairs shall consist of removing the loose and unsound deck concrete, disposing of the concrete removed and replacing with new concrete. The removal may be performed by chipping with power driven hand tools or by hydro-scarification equipment. The depth shall be measured from the top of the concrete deck surface, at least 3/4 in. (20 mm) but not more than 1/2 the concrete deck thickness.
- (b) Full-Depth. Full-depth repairs shall consist of removing concrete full-depth of the deck, disposing of the concrete removed, and replacing with new concrete to the original concrete deck surface. The removal may be performed with power driven hand tools, hydraulic impact equipment, or by hydro-scarification equipment. Full-depth repairs shall be classified for payment as Full-Depth, Type I and Full-Depth, Type II according to the following:

Type I Full-depth patches less than or equal to 5 sq. ft. (0.5 sq m) in area. The minimum dimensions for a patch shall be 1 ft. x 1 ft. (300 mm x 300 mm).

Type II Full-depth patches greater than 5 sq. ft. (0.5 sq. m) in area.

Materials.

Materials shall be according to Article 1020.02.

Portland cement concrete for partial and full-depth repairs shall be according to Section 1020. Class PP-1, PP-2, PP-3, PP-4, PP-5 or BS concrete shall be used at the Contractor's option unless noted otherwise on the contract plans.

Equipment:

The equipment used shall be subject to the approval of the Engineer and shall meet the following requirements:

- (a) Surface Preparation Equipment. Surface preparation and concrete removal equipment shall be according to the applicable portions of Section 1100 and the following:
 - (1) Sawsing Equipment. Sawsing equipment shall be a concrete saw capable of sawing concrete to the specified depth.

- (2) Blast Cleaning Equipment. The blast cleaning may be performed by wet sandblasting, high-pressure waterblasting, shotblasting or abrasive blasting. Blast cleaning equipment shall be capable of removing rust and old concrete from exposed reinforcement bars, and shall have oil traps.
 - (3) Power-Driven Hand Tools. Power-driven hand tools will be permitted including jackhammers lighter than the nominal 45 lb. (20 kg) class. Chipping hammers heavier than a nominal 15 lb. (6.8 kg) class shall not be used for removing concrete from below any reinforcing bar for partial depth repairs, or for removal within 1 ft (300 mm) of existing beams, girders or other supporting structural members that are to remain in service or within 1 ft (300 mm) of the boundaries of full-depth repairs. Jackhammers or chipping hammers shall not be operated at an angle in excess of 45 degrees measured from the surface of the slab.
 - (4) Hydraulic Impact Equipment. Hydraulic impact equipment with a maximum rated striking energy of 360 ft-lbs (270 J) may be permitted only in areas of full depth removal more than 1 ft (300 mm) away from existing beams, girders or other supporting structural members that are to remain in service or more than 1 ft (300 mm) from the boundaries of full-depth repairs.
 - (5) Hydro-Demolition Equipment. The hydro-demolition equipment shall consist of filtering and pumping units operating with a remote-controlled robotic device. The equipment shall use water according to Section 1002. The equipment shall be capable of being controlled to remove only unsound concrete.
- (b) Concrete Equipment: Equipment for proportioning and mixing the concrete shall be according to Article 1020.03.
- (c) Finishing Equipment: Finishing equipment shall be according to Article 1103.17. Adequate hand tools will be permitted for placing and consolidating concrete in the patch areas and for finishing small patches.

Construction Requirements: Sidewalks, curbs, drains, reinforcement and/or existing transverse and longitudinal joints which are to remain in place shall be protected from damage during removal and cleaning operations.

The Contractor shall control the runoff water generated by the various construction activities in such a manner as to minimize, to the maximum extent practicable, the discharge of untreated effluent into adjacent waters, and shall properly dispose of the solids generated according to Article 202.03. The Contractor shall submit a water management plan to the Engineer specifying the control measures to be used. The control measures shall be in place prior to the start of runoff water generating activities. Runoff water shall not be allowed to constitute a hazard to adjacent or underlying roadways, waterways, drainage areas or railroads nor be allowed to erode existing slopes.

(a) Hot-Mix Asphalt Surface Removal.

The hot-mix asphalt surface course and all waterproofing membrane shall be removed and disposed of according to applicable portions of Articles 440.04 and 440.06, except milling equipment will not be allowed if the deck is to receive a waterproofing membrane system. If the overlay or waterproofing membrane contains asbestos fibers, removal shall be in accordance with the Special Provision for "Asbestos Waterproofing Membrane or Asbestos Hot-mix Asphalt Surface Removal". Removal of the hot-mix asphalt surface by the use of radiant or direct heat will not be permitted.

(b) Surface Preparation:

All loose, disintegrated and unsound concrete shall be removed from portions of the deck slab shown on the plans or as designated by the Engineer. The Engineer will determine the limits of removal as the work progresses.

The Contractor shall take care not to damage reinforcement bars or expansion joints which are to remain in place. Any damage to reinforcement bars or expansion joints shall be corrected at the Contractor's expense. All loose reinforcement bars, as determined by the Engineer, shall be retied at the Contractor's expense.

- (1) Partial-Depth. Areas to be repaired will be determined and marked by the Engineer. A concrete saw shall be used to provide vertical edges approximately 3/4 in. (20 mm) deep around the perimeter of the area to be patched when a concrete overlay is not specified. Where high steel is present, the depth may be reduced as directed by the Engineer. A saw cut will not be required on those boundaries along the face of the curb, parapet or joint or when sharp vertical edges are provided by hydro-demolition.

The loose and unsound concrete shall be removed by chipping, with power driven hand tools or by hydro-demolition equipment. All exposed reinforcing bars and newly exposed concrete shall be thoroughly blast cleaned. Where, in the judgment of the Engineer, the bond between existing concrete and reinforcement steel within the patch area has been destroyed, the concrete adjacent to the bar shall be removed to a depth that will permit new concrete to bond to the entire periphery of the exposed bar. A minimum of 1 in. (25 mm) clearance will be required. The Engineer may require enlarging a designated removal area should inspection indicate deterioration beyond the limits previously designated. In this event, a new saw cut shall be made around the extended area before additional removal is begun. The removal area shall not be enlarged solely to correct debonded reinforcement or deficient lap lengths.

- (2) Full-Depth. Concrete shall be removed as determined by the Engineer within all areas designated for full-depth repair and in all designated areas of partial depth repair in which unsound concrete is found to extend below half the concrete deck thickness. Full depth removal shall be performed according to Article 501.05 except that hydraulic impact equipment may be permitted in areas of full depth removal more than 1 ft (300 mm) away from the edges of existing beams, girders or other supporting structural members or more than 1 ft (300 mm) from the boundaries of full-depth repairs. Saw cuts shall be made on the top of the deck, except those boundaries along the face of curbs, parapets and joints or where hydro-demolition provided sharp vertical edges. The top saw cut may be omitted if the deck is to receive an overlay.

Forms for full-depth repair may be supported by hangers with adjustable bolts or by blocking from the beams below. When approved by the Engineer, forms for Type 1 patches may be supported by No. 9 wires or other devices attached to the reinforcement bars.

All form work shall be removed after the curing sequence is complete and prior to opening to traffic.

- (3) Reinforcement Treatment. Care shall be exercised during concrete removal to protect the reinforcement bars and structural steel from damage. Any damage to the reinforcement bars or structural steel to remain in place shall be repaired or replaced. All existing reinforcement bars shall remain in place except as herein provided for corroded bars. Tying of loose bars will be required. Reinforcing bars which have been cut or have lost 25 percent or more of their original cross sectional area shall be supplemented by new in kind reinforcement bars. New bars shall be lapped a minimum of 32 bar diameters to existing bars. An approved mechanical bar splice capable of developing in tension at least 125 percent of the yield strength of the existing bar shall be used when it is not feasible to provide the minimum bar lap. No welding of bars will be permitted.

- (4) Cleaning. Immediately after completion of the concrete removal and reinforcement repairs, the repair areas shall be cleaned of dust and debris. Once the initial cleaning is completed, the repair areas shall be thoroughly blast cleaned to a roughened appearance free from all foreign matter. Particular attention shall be given to removal of concrete fines. Any method of cleaning which does not consistently produce satisfactory results shall be discontinued and replaced by an acceptable method. All debris, including water, resulting from the blast cleaning shall be confined and shall be immediately and thoroughly removed from all areas of accumulation. If concrete placement does not follow immediately after the final cleaning, the area shall be carefully protected with well-anchored polyethylene sheeting.

Exposed reinforcement bars shall be free of dirt, detrimental scale, paint, oil, or other foreign substances which may reduce bond with the concrete. A tight non-scaling coating of rust is not considered objectionable. Loose, scaling rust shall be removed by rubbing with burlap, wire brushing, blast cleaning or other methods approved by the Engineer.

(c) Placement & Finishing of Concrete Repair:

- (1) Bonding Method. The patch area shall be cleaned to the satisfaction of the Engineer and shall be thoroughly wetted and maintained in a dampened condition with water for at least 12 hours before placement of the concrete. Any excess water shall be removed by compressed air or by vacuuming prior to the beginning of concrete placement. Water shall not be applied to the patch surface within one hour before or at any time during placement of the concrete.

(2) Concrete Placement.

The concrete shall be placed and consolidated according to Article 503.07 and as herein specified. Article 1020.14 shall apply.

When an overlay system is not specified, the patches shall be finished according to Article 503.16 (a), followed by a light brooming.

(d) Curing and Protection.

Concrete patches shall be cured by the Wetted Burlap or Wetted Cotton Mat Method according to Article 1020.13 (a)(3) or Article 1020.13 (a)(5). The curing period shall be 3 days for Class PP-1, PP-2, PP-3, PP-4, and PP-5 concrete. The curing period shall be 7 days for Class BS concrete. In addition to Article 1020.13, when the air temperature is less than 55° F (13° C), the Contractor shall cover the patch according to Article 1020.13 (d)(1) with minimum R12 insulation. Insulation is optional when the air temperature is 55° F - 90° F (13° C - 32° C). Insulation shall not be placed when the air temperature is greater than 90° F (32° C). A 72-hour minimum drying period shall be required before placing waterproofing or hot-mix asphalt surfacing.

(e) Opening to Traffic.

No traffic will be permitted on a patch until after the specified cure period, and the concrete has obtained a minimum compressive strength of 4000 psi (27.6 MPa) or flexural strength of 675 psi (4.65 MPa).

Construction equipment will be permitted on a patch during the cure period if the concrete has obtained the minimum required strength. In this instance, the strength specimens shall be cured with the patch.

Method of Measurement.

When specified, hot-mix asphalt surface removal and full or partial depth repairs will be measured for payment and computed in square yards (square meters).

Basis of Payment.

The hot-mix asphalt surface removal will be paid for at the contract unit price per square yard (square meter) for HOT-MIX ASPHALT SURFACE REMOVAL (DECK). Areas removed and replaced up to and including a depth of half the concrete deck thickness will be paid for at the contract unit price per square yard (square meter) for DECK SLAB REPAIR (PARTIAL). Areas requiring removal greater than a depth of half the concrete deck thickness shall be removed and replaced full depth and will be paid for at the contract unit price per square yard (square meter) for DECK SLAB REPAIR (FULL DEPTH, TYPE I) and/or DECK SLAB REPAIR (FULL DEPTH, TYPE II).

When corroded reinforcement bars are encountered in the performance of this work and replacement is required, the Contractor will be paid according to Article 109.04.

No payment will be allowed for removal and replacement of reinforcement bars damaged by the Contractor in the performance of his/her work or for any increases in dimensions needed to provide splices for these replacement bars.

Removal and disposal of asbestos waterproofing and/or asbestos bituminous concrete will be paid for as specified in the Special Provision for "Asbestos Waterproofing Membrane or Asbestos Hot-Mix Asphalt Surface Removal".

STRUCTURAL REPAIR OF CONCRETE

Effective: March 15, 2006

Revised: August 9, 2019

Description. This work shall consist of structurally repairing concrete.

Materials. Materials shall be according to the following.

| Item | Article/Section |
|--|-----------------|
| (a) Portland Cement Concrete (Note 1) | 1020 |
| (b) R1, R2, or R3 Concrete (Note 2) | |
| (c) Normal Weight Concrete (Notes 3 and 4) | |
| (d) Shotcrete (High Performance) (Notes 5 and 6) | |
| (e) Reinforcement Bars | 1006.10 |
| (f) Anchor Bolts | 1006.09 |
| (g) Water | 1002 |
| (h) Curing Compound | 1022.01 |
| (i) Cotton Mats | 1022.02 |
| (j) Protective Coat | 1023.01 |
| (k) Epoxy (Note 7) | 1025 |
| (l) Mechanical Bar Splicers | 508.06(c) |

Note 1. The concrete shall be Class SI, except the cement factor shall be a minimum 6.65 cwt/cu yd (395 kg/cu m), the coarse aggregate shall be a CA 16, and the strength shall be a minimum 4000 psi (27,500 kPa) compressive or 675 psi (4650 kPa) flexural at 14 days. A high range water-reducing admixture shall be used to obtain a 5-7 in. (125-175 mm) slump, but a cement factor reduction according to Article 1020.05(b)(8) is prohibited. A self-consolidating concrete mixture is also acceptable per Article 1020.04, except the mix design requirements of this note regarding the cement factor, coarse aggregate, strength, and cement factor reduction shall apply.

Note 2. The R1, R2, or R3 concrete shall be from the Department's qualified product list of Packaged, Dry, Rapid Hardening, Cementitious Materials for Concrete Repairs. The R1, R2, or R3 concrete shall comply with the air content and strength requirements for Class SI concrete as indicated in Note 1. Mixing shall be per the manufacturer's recommendations, except the water/cement ratio shall not exceed the value specified for Class SI concrete as indicated in Note 1. A high range water-reducing admixture shall be used to obtain a 5-7 in. (125-175 mm) slump, and a retarder may be required to allow time to perform the required field tests. The admixtures shall be per the manufacturer's recommendation, and the Department's qualified product list of Concrete Admixtures shall not apply.

- Note 3. The “high slump” packaged concrete mixture shall be from the Department’s qualified product list of Packaged, Dry, Formed, Concrete Repair Mixtures. The materials and preparation of aggregate shall be according to ASTM C 387. The cement factor shall be 6.65 cwt/cu yd (395 kg/cu m) minimum to 7.05 cwt/cu yd (418 kg/cu m) maximum. Cement replacement with fly ash or ground granulated blast-furnace slag shall be according to Section 1020. The “high slump” packaged concrete mixture shall have a water soluble chloride ion content of less than 0.40 lb/cu yd (0.24 kg/cu m). The test shall be performed according to ASTM C 1218, and the “high slump” packaged concrete mixture shall have an age of 28 to 42 days at the time of test. The ASTM C 1218 test shall be performed by an independent lab a minimum of once every two years, and the test results shall be provided to the Department. The coarse aggregate shall be a maximum size of 1/2 in. (12.5 mm). The packaged concrete mixture shall comply with the air content and strength requirements for Class SI concrete as indicated in Note 1. Mixing shall be per the manufacturer’s recommendations, except the water/cement ratio shall not exceed the value specified for Class SI concrete as indicated in Note 1. A high range water-reducing admixture shall be used to obtain a 5-7 in. (125-175 mm) slump. The admixture shall be per the manufacturer’s recommendation, and the Department’s qualified product list of Concrete Admixtures shall not apply. A maximum slump of 10 in. (250 mm) may be permitted if no segregation is observed by the Engineer in a laboratory or field evaluation.
- Note 4 The “self-consolidating concrete” packaged concrete mixture shall be from the Department’s qualified product list of Packaged, Dry, Formed, Concrete Repair Mixtures. The materials and preparation of aggregate shall be according to ASTM C 387. The cement factor shall be 6.65 cwt/cu yd (395 kg/cu m) minimum to 7.05 cwt/cu yd (418 kg/cu m) maximum. Cement replacement with fly ash or ground granulated blast-furnace slag shall be according to Section 1020. The “self-consolidating concrete” packaged concrete mixture shall have a water soluble chloride ion content of less than 0.40 lb/cu yd (0.24 kg/cu m). The test shall be performed according to ASTM C 1218, and the “self-consolidating concrete” packaged concrete mixture shall have an age of 28 to 42 days at the time of test. The ASTM C 1218 test shall be performed by an independent lab a minimum of once every two years, and the test results shall be provided to the Department. The concrete mixture should be uniformly graded, and the coarse aggregate shall be a maximum size of 1/2 in. (12.5 mm). The fine aggregate proportion shall be a maximum 50 percent by weight (mass) of the total aggregate used. The packaged concrete mixture shall comply with the air content and strength requirements for Class SI concrete as indicated in Note 1. Mixing shall be per the manufacturer’s recommendations, except the water/cement ratio shall not exceed the value specified for Class SI concrete as indicated in Note 1. The admixtures used to produce self-consolidating concrete shall be per the manufacturer’s recommendation, and the Department’s qualified product list of Concrete Admixtures shall not apply. The packaged concrete mixture shall meet the self-consolidating requirements of Article 1020.04.

Note 5. Packaged shotcrete that includes aggregate shall be from the Department's qualified product list of Packaged High Performance Shotcrete, and independent laboratory test results showing the product meets Department specifications will be required. The product shall be a packaged, pre-blended, and dry combination of materials, for the wet-mix shotcrete method according to ASTM C 1480. A non-chloride accelerator may be used according to the shotcrete manufacturer's recommendations. The shotcrete shall be Type FA or CA, Grade FR, and Class I. The fibers shall be Type III synthetic according to ASTM C 1116.

The packaged shotcrete shall have a water soluble chloride ion content of less than 0.40 lb/cu yd (0.24 kg/cu m). The test shall be performed according to ASTM C 1218, and the hardened shotcrete shall have an age of 28 to 42 days at the time of test. The ASTM C 1218 test shall be performed by an independent lab a minimum of once every two years, and the test results shall be provided to the Department.

Each individual aggregate used in the packaged shotcrete shall have either a maximum ASTM C 1260 expansion of 0.16 percent or a maximum ASTM C 1293 expansion of 0.040 percent. However, the ASTM C 1260 value may be increased to 0.27 percent for each individual aggregate if the cement total equivalent alkali content ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$) does not exceed 0.60 percent. As an alternative to these requirements, ASTM C 1567 testing which shows the packaged shotcrete has a maximum expansion of 0.16 percent may be submitted. The ASTM C 1260, C 1293, or C 1567 test shall be performed a minimum of once every two years.

The 7 and 28 day compressive strength requirements in ASTM C 1480 shall not apply. Instead the shotcrete shall obtain a minimum compressive strength of 4000 psi (27,500 kPa) at 14 days.

The packaged shotcrete shall be limited to the following proportions:

The portland cement and finely divided minerals shall be 6.05 cwt/cu yd (360 kg/cu m) to 8.50 cwt/cu yd (505 kg/cu m) for Type FA and 6.05 cwt/cu yd (360 kg/cu. m) to 7.50 cwt/cu yd (445 kg/cu m) for Type CA. The portland cement shall not be below 4.70 cwt/cu yd (279 kg/cu m) for Type FA or CA.

The finely divided mineral(s) shall constitute a maximum of 35 percent of the total cement plus finely divided mineral(s).

Class F fly ash is optional and the maximum shall be 20 percent by weight (mass) of cement.

Class C fly ash is optional and the maximum shall be 25 percent by weight (mass) of cement.

Ground granulated blast-furnace slag is optional and the maximum shall be 30 percent by weight (mass) of cement.

Microsilica is required and shall be a minimum of 5 percent by weight (mass) of cement, and a maximum of 10 percent. As an alternative to microsilica, high-reactivity metakaolin may be used at a minimum of 5 percent by weight (mass) of cement, and a maximum of 10 percent.

Fly ash shall not be used in combination with ground granulated blast-furnace slag. Class F fly ash shall not be used in combination with Class C fly ash. Microsilica shall not be used in combination with high-reactivity metakaolin. A finely divided mineral shall not be used in combination with a blended hydraulic cement, except for microsilica or high-reactivity metakaolin.

The water/cement ratio as defined in Article 1020.06 shall be a maximum of 0.42.

The air content as shot shall be 4.0 – 8.0 percent.

Note 6 Packaged shotcrete that does not include pre-blended aggregate shall be from the Department's qualified product list of Packaged High Performance Shotcrete, and independent laboratory test results showing the product meets Department specifications will be required. The shotcrete shall be according to Note 5, except the added aggregate shall be according to Articles 1003.02 and 1004.02 in addition to each individual aggregate meeting the maximum expansion requirements of Note 5. The aggregate gradation shall be according to the manufacturer. The shotcrete shall be batched and mixed with added aggregate according to the manufacturer.

Note 7. In addition ASTM C 881, Type IV, Grade 2 or 3, Class A, B, or C may be used.

Equipment. Equipment shall be according to Article 503.03 and the following.

Chipping Hammer – The chipping hammer for removing concrete shall be a light-duty pneumatic or electric tool with a 15 lb. (7 kg) maximum class or less.

Blast Cleaning Equipment – Blast cleaning equipment for concrete surface preparation shall be the abrasive type, and the equipment shall have oil traps.

Hydrodemolition Equipment – Hydrodemolition equipment for removing concrete shall be calibrated, and shall use water according to Section 1002.

High Performance Shotcrete Equipment – The batching, mixing, pumping, hose, nozzle, and auxiliary equipment shall be for the wet-mix shotcrete method, and shall meet the requirements of ACI 506R.

Construction Requirements

General. The repair methods shall be either formed concrete repair or shotcrete. The repair method shall be selected by the Contractor with the following rules.

- (a) Rule 1. For formed concrete repair, a subsequent patch to repair the placement point after initial concrete placement will not be allowed. As an example, this may occur in a vertical location located at the top of the repair.

- (b) Rule 2. Formed concrete repair shall not be used for overhead applications.
- (c) Rule 3. If formed concrete repair is used for locations that have reinforcement with less than 0.75 in. (19 mm) of concrete cover, the concrete mixture shall contain fly ash or ground granulated blast-furnace slag at the maximum cement replacement allowed.
- (d) Rule 4. Shotcrete shall not be used for any repair greater than 6 in. (150 mm) in depth, except in horizontal applications, where the shotcrete may be placed from above in one lift.
- (e) Rule 5. Shotcrete shall not be used for column repairs greater than 4 in. (100 mm) in depth, unless the shotcrete mixture contains 3/8 in. (9.5 mm) aggregate.

Temporary Shoring or Cribbing. When a temporary shoring or cribbing support system is required, the Contractor shall provide details and computations, prepared and sealed by an Illinois licensed Structural Engineer, to the Department for review and approval. When ever possible the support system shall be installed prior to starting the associated concrete removal. If no system is specified, but during the course of removal the need for temporary shoring or cribbing becomes apparent or is directed by the Engineer due to a structural concern, the Contractor shall not proceed with any further removal work until an appropriate and approved support system is installed.

Concrete Removal. The Contractor shall provide ladders or other appropriate equipment for the Engineer to mark the removal areas. Repair configurations will be kept simple, and squared corners will be preferred. The repair perimeter shall be sawed a depth of 1/2 in. (13 mm) or less, as required to avoid cutting the reinforcement. Any cut reinforcement shall be repaired or replaced at the expense of the Contractor. If the concrete is broken or removed beyond the limits of the initial saw cut, the new repair perimeter shall be recut. The areas to be repaired shall have all loose, unsound concrete removed completely by the use of chipping hammers, hydrodemolition equipment, or other methods approved by the Engineer. The concrete removal shall extend along the reinforcement bar until the reinforcement is free of bond inhibiting corrosion. Reinforcement bar with 50 percent or more exposed shall be undercut to a depth of 3/4 in. (19 mm) or the diameter of the reinforcement bar, whichever is greater.

If sound concrete is encountered before existing reinforcement bars are exposed, further removal of concrete shall not be performed unless the minimum repair depth is not met.

The repair depth shall be a minimum of 1 in. (25 mm). The substrate profile shall be $\pm 1/16$ in. (± 1.5 mm). The perimeter of the repair area shall have a vertical face.

If a repair is located at the ground line, any excavation required below the ground line to complete the repair shall be included in this work.

The Contractor shall have a maximum of 14 calendar days to complete each repair location with concrete or shotcrete, once concrete removal has started for the repair.

The Engineer shall be notified of concrete removal that exceeds 6 in. (150 mm) in depth, one fourth the cross section of a structural member, more than half the vertical column reinforcement is exposed in a cross section, more than 6 consecutive reinforcement bars are exposed in any direction, within 1.5 in. (38 mm) of a bearing area, or other structural concern. Excessive deterioration or removal may require further evaluation of the structure or installation of temporary shoring and cribbing support system.

Surface Preparation. Prior to placing the concrete or shotcrete, the Contractor shall prepare the repair area and exposed reinforcement by blast cleaning. The blast cleaning shall provide a surface that is free of oil, dirt, and loose material.

If a succeeding layer of shotcrete is to be applied, the initial shotcrete surface and remaining exposed reinforcement shall be free of curing compound, oil, dirt, loose material, rebound (i.e. shotcrete material leaner than the original mixture which ricochets off the receiving surface), and overspray. Preparation may be by lightly brushing or blast cleaning if the previous shotcrete surface is less than 36 hours old. If more than 36 hours old, the surface shall be prepared by blast cleaning.

The repair area and perimeter vertical face shall have a rough surface. Care shall be taken to ensure the sawcut face is roughened by blast cleaning. Just prior to concrete or shotcrete placement, saturate the repair area with water to a saturated surface-dry condition. Any standing water shall be removed.

Concrete or shotcrete placement shall be done within 3 calendar days of the surface preparation or the repair area shall be prepared again.

Reinforcement. Exposed reinforcement bars shall be cleaned of concrete and corrosion by blast cleaning. After cleaning, all exposed reinforcement shall be carefully evaluated to determine if replacement or additional reinforcement bars are required.

Reinforcing bars that have been cut or have lost 25 percent or more of their original cross sectional area shall be supplemented by new in kind reinforcement bars. New bars shall be lapped a minimum of 32 bar diameters to existing bars. A mechanical bar splicer shall be used when it is not feasible to provide the minimum bar lap. No welding of bars shall be performed.

Intersecting reinforcement bars shall be tightly secured to each other using 0.006 in. (1.6 mm) or heavier gauge tie wire, and shall be adequately supported to minimize movement during concrete placement or application of shotcrete.

For reinforcement bar locations with less than 0.75 in. (19 mm) of cover, protective coat shall be applied to the completed repair. The application of the protective coat shall be according to Article 503.19, 2nd paragraph, except blast cleaning shall be performed to remove curing compound.

The Contractor shall anchor the new concrete to the existing concrete with 3/4 in. (19 mm) diameter hook bolts for all repair areas where the depth of concrete removal is greater than 8 in. (205 mm) and there is no existing reinforcement extending into the repair area. The hook bolts shall be spaced at 15 in. (380 mm) maximum centers both vertically and horizontally, and shall be a minimum of 12 in. (305 mm) away from the perimeter of the repair. The hook bolts shall be installed according to Section 584.

Repair Methods. All repair areas shall be inspected and approved by the Engineer prior to placement of the concrete or application of the shotcrete.

- (a) Formed Concrete Repair. Falsework shall be according to Article 503.05. Forms shall be according to Article 503.06. Formwork shall provide a smooth and uniform concrete finish, and shall approximately match the existing concrete structure. Formwork shall be mortar tight and closely fitted where they adjoin the existing concrete surface to prevent leakage. Air vents may be provided to reduce voids and improve surface appearance. The Contractor may use exterior mechanical vibration, as approved by the Engineer, to release air pockets that may be entrapped.

The concrete for formed concrete repair shall be a Class SI Concrete, or a packaged R1, R2, or R3 Concrete, or a packaged Normal Weight Concrete at the Contractor's option. The concrete shall be placed and consolidated according to Article 503.07. The concrete shall not be placed when frost is present on the surface of the repair area, or the surface temperature of the repair area is less than 40 °F (4 °C). All repaired members shall be restored as close as practicable to their original dimensions.

Curing shall be done according to Article 1020.13.

If temperatures below 45°F (7°C) are forecast during the curing period, protection methods shall be used. Protection Method I according to Article 1020.13(d)(1), or Protection Method II according to Article 1020.13(d)(2) shall be used during the curing period.

The surfaces of the completed repair shall be finished according to Article 503.15.

- (b) Shotcrete. Shotcrete shall be tested by the Engineer for air content according to Illinois Modified AASHTO T 152. The sample shall be obtained from the discharge end of the nozzle by shooting a pile large enough to scoop a representative amount for filling the air meter measuring bowl. Shotcrete shall not be shot directly into the measuring bowl for testing.

For compressive strength of shotcrete, a 18 x 18 x 3.5 in. (457 x 457 x 89 mm) test panel shall be shot by the Contractor for testing by the Engineer. A steel form test panel shall have a minimum thickness of 3/16 in. (5 mm) for the bottom and sides. A wood form test panel shall have a minimum 3/4 in. (19 mm) thick bottom, and a minimum 1.5 in. (38 mm) thickness for the sides. The test panel shall be cured according to Article 1020.13 (a) (3) or (5) while stored at the jobsite and during delivery to the laboratory. After delivery to the laboratory for testing, curing and testing shall be according to ASTM C 1140.

The method of alignment control (i.e. ground wires, guide strips, depth gages, depth probes, and formwork) to ensure the specified shotcrete thickness and reinforcing bar cover is obtained shall be according to ACI 506R. Ground wires shall be removed after completion of cutting operations. Guide strips and formwork shall be of dimensions and a configuration that do not prevent proper application of shotcrete. Metal depth gauges shall be cut 1/4 in. (6 mm) below the finished surface. All repaired members shall be restored as close as practicable to their original dimensions.

For air temperature limits when applying shotcrete in cold weather, the first paragraph of Article 1020.14(b) shall apply. For hot weather, shotcrete shall not be applied when the air temperature is greater than 90°F (32°C). The applied shotcrete shall have a minimum temperature of 50°F (10°C) and a maximum temperature of 90°F (32°C). The shotcrete shall not be applied during periods of rain unless protective covers or enclosures are installed. The shotcrete shall not be applied when frost is present on the surface of the repair area, or the surface temperature of the repair area is less than 40°F (4°C). If necessary, lighting shall be provided to provide a clear view of the shooting area.

The shotcrete shall be applied according to ACI 506R, and shall be done in a manner that does not result in cold joints, laminations, sandy areas, voids, sags, or separations. In addition, the shotcrete shall be applied in a manner that results in maximum densification of the shotcrete. Shotcrete which is identified as being unacceptable while still plastic shall be removed and re-applied.

The nozzle shall normally be at a distance of 2 to 5 ft. (0.6 to 1.5 m) from the receiving surface, and shall be oriented at right angles to the receiving surface. Exceptions to this requirement will be permitted to fill corners, encase large diameter reinforcing bars, or as approved by the Engineer. For any exception, the nozzle shall never be oriented more than 45 degrees from the surface. Care shall be taken to keep the front face of the reinforcement bar clean during shooting operations. Shotcrete shall be built up from behind the reinforcement bar. Accumulations of rebound and overspray shall be continuously removed prior to application of new shotcrete. Rebound material shall not be incorporated in the work.

Whenever possible, shotcrete shall be applied to the full thickness in a single layer. The maximum thickness shall be according to Rules 4 and 5 under Construction Requirements, General. When two or more layers are required, the minimum number shall be used and shall be done in a manner without sagging or separation. A flash coat (i.e. a thin layer of up to 1/4 in. (6 mm) applied shotcrete) may be used as the final lift for overhead applications.

Prior to application of a succeeding layer of shotcrete, the initial layer of shotcrete shall be prepared according to the surface preparation and reinforcement bar cleaning requirements. Upon completion of the surface preparation and reinforcement bar treatment, water shall be applied according to the surface preparation requirements unless the surface is moist. The second layer of shotcrete shall then be applied within 30 minutes.

Shotcrete shall be cut back to line and grade using trowels, cutting rods, screeds or other suitable devices. The shotcrete shall be allowed to stiffen sufficiently before cutting. Cutting shall not cause cracks or delaminations in the shotcrete. For depressions, cut material may be used for small areas. Rebound material shall not be incorporated in the work. For the final finish, a wood float shall be used to approximately match the existing concrete texture. A manufacturer approved finishing aid may be used. Water shall not be used as a finishing aid. All repaired members shall be restored as close as practicable to their original dimensions.

Contractor operations for curing shall be continuous with shotcrete placement and finishing operations. Curing shall be accomplished using wetted cotton mats, membrane curing, or a combination of both. Cotton mats shall be applied according to Article 1020.13(a)(5) except the exposed layer of shotcrete shall be covered within 10 minutes after finishing, and wet curing shall begin immediately. Curing compound shall be applied according to Article 1020.13(a)(4), except the curing compound shall be applied as soon as the shotcrete has hardened sufficiently to prevent marring the surface, and each of the two separate applications shall be applied in opposite directions to ensure coverage. The curing compound shall be according to Article 1022.01. Note 5 of the Index Table in Article 1020.13 shall apply to the membrane curing method.

When a shotcrete layer is to be covered by a succeeding shotcrete layer within 36 hours, the repair area shall be protected with intermittent hand fogging, or wet curing with either burlap or cotton mats shall begin within 10 minutes. Intermittent hand fogging may be used only for the first hour. Thereafter, wet curing with burlap or cotton mats shall be used until the succeeding shotcrete layer is applied. Intermittent hand fogging may be extended to the first hour and a half if the succeeding shotcrete layer is applied by the end of this time.

The curing period shall be for 7 days, except when there is a succeeding layer of shotcrete. In this instance, the initial shotcrete layer shall be cured until the surface preparation and reinforcement bar treatment is started.

If temperatures below 45°F (7°C) are forecast during the curing period, protection methods shall be used. Protection Method I according to Article 1020.13(d)(1), or Protection Method II according to Article 1020.13(d)(2) shall be used during the curing period

Inspection of Completed Work. The Contractor shall provide ladders or other appropriate equipment for the Engineer to inspect the repaired areas. After curing but no sooner than 28 days after placement of concrete or shooting of shotcrete, the repair shall be examined for conformance with original dimensions, cracks, voids, and delaminations. Sounding for delaminations will be done with a hammer or by other methods determined by the Engineer.

The acceptable tolerance for conformance of a repaired area shall be within 1/4 in. (6 mm) of the original dimensions. A repaired area not in dimensional conformance or with delaminations shall be removed and replaced.

A repaired area with cracks or voids shall be considered as nonconforming. Exceeding one or more of the following crack and void criteria shall be cause for removal and replacement of a repaired area.

1. The presence of a single surface crack greater than 0.01 in. (0.25 mm) in width and greater than 12 in. (300 mm) in length.
2. The presence of two or more surface cracks greater than 0.01 in. (0.25 mm) in width that total greater than 24 in. (600 mm) in length.

3. The presence of map cracking in one or more regions totaling 15 percent or more of the gross surface area of the repair.
4. The presence of two or more surface voids with least dimension 3/4 in. (19 mm) each.

A repaired area with cracks or voids that do not exceed any of the above criteria may remain in place, as determined by the Engineer.

If a nonconforming repair is allowed to remain in place, cracks greater than 0.007 in. (0.2 mm) in width shall be repaired with epoxy according to Section 590. For cracks less than or equal to 0.007 in. (0.2 mm) in width, the epoxy may be applied to the surface of the crack. Voids shall be repaired according to Article 503.15.

Publications and Personnel Requirements. The Contractor shall provide a current copy of ACI 506R to the Engineer a minimum of one week prior to start of construction.

The shotcrete personnel who perform the work shall have current American Concrete Institute (ACI) nozzle men certification for vertical wet and overhead wet applications, except one individual may be in training. This individual shall be adequately supervised by a certified ACI nozzle men as determined by the Engineer. A copy of the nozzle men certificate(s) shall be given to the Engineer.

Method of Measurement. This work will be measured for payment in place and the area computed in square feet (square meters). For a repair at a corner, both sides will be measured.

Basis of Payment. This work will be paid for at the contract unit price per square foot (square meter) for STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 IN. (125 MM)), STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 IN. (125 MM)).

When not specified to be paid for elsewhere, the work to design, install, and remove the temporary shoring and cribbing will be paid for according to Article 109.04.

With the exception of reinforcement damaged by the Contractor during removal, the furnishing and installation of supplemental reinforcement bars, mechanical bar splicers, hook bolts, and protective coat will be paid according to Article 109.04.

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.

COMPENSABLE DELAY COSTS (BDE)

Effective: June 2, 2017

Revised: April 1, 2019

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Add the following to Section 109 of the Standard Specifications.

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

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

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

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

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

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

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

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

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

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (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 **0.00%** of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set for in this Special Provision:

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

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

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

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

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

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

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

(a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder’s good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases and will be considered by the Department.

(1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.

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

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

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

- (a) DBE as the Contractor: 100 percent goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE does not count toward the DBE goals.

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

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

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

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

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

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

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

- (7) The listed DBE subcontractor voluntarily withdraws from the projects and provides written notice to the Contractor of its withdrawal;
- (8) The listed DBE is ineligible to receive DBE credit for the type of work required;
- (9) A DBE owner dies or becomes disabled with the result that the listed DBE subcontractor is unable to complete its work on the contract;
- (10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE contractor was engaged or so that the Contractor can substitute another DBE or non-DBE contractor after contract award.

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

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

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

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."

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™ |

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.”

HOT-MIX ASPHALT – BINDER AND SURFACE COURSE (BDE)

Effective: July 2, 2019

Revised: November 1, 2019

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. Add the following after the second paragraph of Article 1003.03(c):

“For mixture IL-9.5FG, at least 67 percent of the required fine aggregate fraction shall consist of either stone sand, slag sand, steel slag sand, or combinations thereof meeting FA 20 gradation.”

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 | CA 11 ^{1/} |
| | SMA 12.5 ^{2/} | CA 13, CA 14, or CA 16 |
| | SMA 9.5 ^{2/} | CA 13 or CA 16 ^{3/} |
| | IL-9.5 | CA 16 |
| | 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.”

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, SMA 9.5 |
| | Surface Courses | IL-9.5, IL-9.5FG, SMA 12.5, SMA 9.5” |

Mixture Design. Revise the table in Article 1030.04(a)(1) and add SMA 9.5 and IL-9.5FG mixture compositions as follows:

| "HIGH ESAL, MIXTURE COMPOSITION (% PASSING) ^{1/} | | | | | | |
|---|------------------------|--------------------|-----------------------|--------------------|----------|------|
| Sieve Size | SMA 12.5 ^{5/} | | SMA 9.5 ^{5/} | | IL-9.5FG | |
| | min. | max. | min. | max. | min. | max. |
| 1 in. (25 mm) | | | | | | |
| 3/4 in. (19 mm) | | 100 | | 100 | | |
| 1/2 in. (12.5 mm) | 90 | 99 | 95 | 100 | | 100 |
| 3/8 in. (9.5 mm) | 50 | 85 | 70 | 95 | 90 | 100 |
| #4 4.75 mm) | 20 | 40 | 30 | 50 | 60 | 75 |
| #8 (2.36 mm) | 16 | 24 ^{4/} | 20 | 30 | 45 | 60 |
| #16 (1.18 mm) | | | | 21 | 25 | 40 |
| #30 (600 μm) | | | | 18 | 15 | 30 |
| #50 (300 μm) | | | | 15 | 8 | 15 |
| #100 (150 μm) | | | | | 6 | 10 |
| #200 (75 μm) | 8.0 | 11.0 ^{3/} | 8.0 | 11.0 ^{3/} | 4.0 | 6.5 |
| #635 (20 μm) | | ≤ 3.0 | | ≤ 3.0 | | |
| Ratio of Dust/Asphalt Binder | | | | | | 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 24 percent.
- 5/ When the bulk specific gravity (G_{sb}) of the component aggregates vary by more than 0.2, the blend gradations shall be based on volumetric percentage."

Revise the table in Article 1030.04(b)(1) to read:

| "VOLUMETRIC REQUIREMENTS, High ESAL | | | | |
|-------------------------------------|---|--------------------|-----------------------|---|
| Ndesign | Voids in the Mineral Aggregate (VMA), % minimum | | | Voids Filled with Asphalt Binder (VFA), % |
| | IL-19.0 | IL-9.5 IL-9.5FG | IL-4.75 ^{1/} | |
| 50 | 13.5 | 15.0 | 18.5 | 65 - 78 ^{2/} |
| 70 | | | 65 - 75 ^{3/} | |
| 90 | | | | |

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

2/ VFA for IL-4.75 shall be 76-83 percent.

3/ VFA for IL-9.5FG shall be 65-78 percent."

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

| "VOLUMETRIC REQUIREMENTS, SMA 12.5 ^{1/} and SMA 9.5 ^{1/} | | | | |
|--|---------|----------------------------|--|------------------------------------|
| ESALs (million) | Ndesign | Design Air Voids Target, % | Voids in the Mineral Aggregate (VMA), % min. | Voids Filled with Asphalt (VFA), % |
| ≤ 10 | 50 | 4.0 | 16.0 | 75 - 80 |
| > 10 | 80 | 4.0 | 17.0 | 75 - 80 |

1/ Maximum draindown shall be 0.3 percent."

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 = 50 or 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 1/2 (38) |
| 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)."

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 FLANGWAYS; HOT-MIX ASPHALT BINDER COURSE (HAND METHOD), of the Ndesign specified; HOT-MIX ASPHALT BINDER COURSE, of the mixture composition and Ndesign specified; HOT-MIX ASPHALT SURFACE COURSE, of the mixture composition, friction aggregate, and Ndesign specified; POLYMERIZED HOT-MIX ASPHALT BINDER COURSE (HAND METHOD), of the Ndesign specified; POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, of the mixture composition and Ndesign specified; POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, of the mixture composition, friction aggregate, and Ndesign specified; POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, STONE MATRIX ASPHALT, of the mixture composition and Ndesign specified; POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, STONE MATRIX ASPHALT, of the mixture composition, friction aggregate, and Ndesign specified."

HOT-MIX ASPHALT – MIXTURE DESIGN VERIFICATION AND PRODUCTION (MODIFIED FOR I-FIT DATA COLLECTION) (BDE)

Effective: January 1, 2019

Revised: January 2, 2020

Description. This special provision requires the Illinois Flexibility Index Test (I-FIT) be used during mixture design verification and production testing for all hot-mix asphalt (HMA) mixtures.

Mixture Design. Add the following to the list of referenced standards in Article 1030.04 of the Standard Specifications:

“Illinois Modified AASHTO TP 124 Determining the Fracture Potential of Asphalt Mixtures Using the Illinois Flexibility Index Test (I-FIT)”

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

“(d) Verification Testing. During mixture design, prepared samples shall be submitted to the District laboratory for verification testing. The required testing, and number and size of prepared samples submitted, shall be according to the following tables.

| High ESAL – Required Samples for Verification Testing ^{1/} | | |
|---|---|--------------------------|
| Mixture | Hamburg Wheel Testing and I-FIT Testing | Tensile Strength Testing |
| Binder | total of 3 - 160 mm tall bricks ^{2/} | 6 - 95 mm tall bricks |
| Surface | total of 4 - 160 mm tall bricks ^{2/} | 6 - 95 mm tall bricks |

| Low ESAL – Required Samples for Verification Testing ^{1/} | | |
|--|--------------------------------------|--------------------------|
| Mixture | I-FIT Testing | Tensile Strength Testing |
| Binder | 1 - 160 mm tall brick ^{2/} | 6 - 95 mm tall bricks |
| Surface | 2 - 160 mm tall bricks ^{2/} | 6 - 95 mm tall bricks |

1/ Prepared samples shall be compacted gyratory bricks yielding test specimens with $7.0 \pm 1.0\%$ air voids.

2/ If the Contractor does not possess the equipment to prepare the 160 mm tall brick(s), twice as many 115 mm tall compacted gyratory bricks will be acceptable.

New and renewal mix designs shall meet the following requirements for verification testing.

(1) 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/} | |
|---|--------------------------------|
| PG Grade | Minimum Number of Wheel Passes |
| PG 58-xx (or lower) | 5,000 |
| PG 64-xx | 7,500 |
| PG 70-xx | 15,000 |
| PG 76-xx (or higher) | 20,000 |

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.

(2) Tensile Strength Criteria. Tensile strength testing shall be according to the Illinois Modified AASHTO T 283 procedure. 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).

(3) I-FIT Flexibility Index (FI) Criteria. I-FIT testing will be according to Illinois Modified AASHTO TP 124 and the results will be for informational purposes only.

If a mix fails the Department's verification testing, the Contractor shall make necessary changes to the mix and provide passing Hamburg Wheel and Tensile Strength test results from a private lab. The Department will verify the passing results."

Start of HMA Production and Job Mix Formula (JMF) Adjustments. Revise Article 1030.06(a) of the Standard Specifications to read:

"(a) High ESAL Mixtures. A test strip will be required at the beginning of HMA production for each mixture according to the Manual of Test Procedures for Materials "Hot Mix Asphalt Test Strip Procedures". A test strip will not be required for shoulder applications or HMA mixtures with a quantity less than 3000 tons (2750 metric tons); however, such mixtures shall still be sampled on the first day of production for the Hamburg Wheel and I-FIT testing.

Before start-up, target values shall be determined by applying gradation correction factors to the JMF when applicable. These correction factors shall be determined from previous experience. The target values, when approved by the Engineer, shall be used to control HMA production. Plant settings and control charts shall be set according to target values.

Before constructing the test strip, target values shall be determined by applying gradation correction factors to the JMF when applicable. After any JMF adjustment, the JMF shall become the Adjusted Job Mix Formula (AJMF). Upon completion of the first acceptable test strip, the JMF shall become the AJMF regardless of whether or not the JMF has been adjusted. If an adjustment/plant change is made, the Engineer may require a new test strip to be constructed. If the HMA placed during the initial test strip is determined to be unacceptable to remain in place by the Engineer, it shall be removed and replaced.

The limitations between the JMF and AJMF are as follows.

| Parameter | Adjustment |
|------------------------|------------|
| 1/2 in. (12.5 mm) | ± 5.0 % |
| No. 4 (4.75 mm) | ± 4.0 % |
| No. 8 (2.36 mm) | ± 3.0 % |
| No. 30 (600 µm) | * |
| No. 200 (75 µm) | * |
| Asphalt Binder Content | ± 0.3 % |

* In no case shall the target for the amount passing be greater than the JMF.

Adjustments outside the above limitations will require a new mix design.

Mixture sampled to represent the test strip shall include approximately 60 lb (27 kg) of additional material for the Department to conduct Hamburg Wheel testing and approximately 80 lb (36 kg) of additional material for the Department to conduct I-FIT testing. Within one working day after sampling, the Contractor shall deliver prepared samples to the District laboratory for verification testing. The required number and size of prepared samples submitted for the Hamburg Wheel and I-FIT testing shall be according to the “High ESAL - Required Samples for Verification Testing” table in Article 1030.04(d) above.

Mixture sampled during production for Hamburg Wheel and I-FIT will be tested by the Department. The Hamburg Wheel results shall meet the requirements specified in Article 1030.04(d) above.

Upon notification by the Engineer of a failing Hamburg Wheel test and prior to restarting production, the Contractor shall make necessary adjustments approved by the Engineer to the mixture production and submit another mixture sample for the Department to conduct Hamburg testing. Prior produced material may be paved out provided all other mixture criteria is being met. Upon consecutive failing Hamburg Wheel tests, no additional mixture shall be produced until the Engineer receives passing Hamburg Wheel test results.

The Department may conduct additional Hamburg Wheel testing on production material as determined by the Engineer.”

Add the following to the end of Article 1030.06(b) of the Standard Specifications:

“I-FIT testing will be performed for Low ESAL mixtures (excluding Class D patches, pavement patching and incidental HMA) during mixture production. Within one working day after sampling, the Contractor shall deliver prepared samples to the District laboratory for verification testing. The required number and size of prepared samples submitted for the I-FIT testing shall be according to the “Low ESAL - Required Samples for Verification Testing” table in Article 1030.04(d) above.”

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) | |
| | PP-1 | 4.0 - 8.0" |
| | 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."

PROGRESS PAYMENTS (BDE)

Effective: November 2, 2013

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

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

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

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

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

RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES (BDE)

Effective: November 1, 2012

Revised: January 2, 2020

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 produced by cold milling or crushing an existing hot-mix asphalt (HMA) pavement. 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 93 percent passing the #4 (4.75 mm) sieve based on a dry shake gradation. RAS shall be uniform in gradation and asphalt binder content and 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. No additional RAP shall be added to the pile after the pile has been sealed. Stockpiles shall be sufficiently separated to prevent intermingling at the base. Stockpiles shall be identified by signs indicating the type as listed below (i.e. "Homogeneous Surface").

Prior to milling, the Contractor shall request the District provide documentation on the quality of the RAP to clarify the appropriate stockpile.

- (1) Fractionated RAP (FRAP). FRAP shall consist of RAP from Class I, HMA (High and Low ESAL) 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 fractionated prior to testing by screening into a minimum of two size 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 shall pass the sieve size specified below for the mix into which the FRAP will be incorporated.

| Mixture FRAP will be used in: | Sieve Size that 100 % of FRAP Shall Pass |
|-------------------------------|--|
| IL-19.0 | 1 1/2 in. (37.5 mm) |
| SMA 12.5 | 1 in. (25.0 mm) |
| IL-9.5, IL-9.5FG, SMA 9.5 | 3/4 in. (19.0 mm) |
| IL-4.75 | 1/2 in. (12.5 mm) |

- (2) Homogeneous. Homogeneous RAP stockpiles shall consist of RAP from Class I, HMA (High and Low ESAL) mixtures and represent: 1) the same aggregate quality, but shall be at least C quality; 2) the same type of crushed aggregate (either crushed natural aggregate, ACBF slag, or steel slag); 3) similar gradation; and 4) similar asphalt binder content. If approved by the Engineer, combined single pass surface/binder millings may be considered "homogeneous" with a quality rating dictated by the lowest coarse aggregate quality present in the mixture.
- (3) Conglomerate. Conglomerate RAP stockpiles shall consist of RAP from Class I, HMA (High and Low ESAL) 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 prior to testing by crushing to where all RAP shall pass the 5/8 in. (16 mm) or smaller screen. Conglomerate RAP stockpiles shall not contain steel slag.

- (4) Non-Quality. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Non-Quality".

RAP/FRAP containing contaminants, such as earth, brick, sand, concrete, sheet asphalt, bituminous surface treatment (i.e. chip seal), pavement fabric, joint sealants, 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 not be intermingled. Each stockpile shall be signed indicating what type of RAS is present.

Unless otherwise specified by the Engineer, mechanically blending manufactured sand (FM 20 or FM 22) up to an equal weight of RAS with the processed RAS will be permitted to improve workability. The sand shall be "B Quality" or better from an approved Aggregate Gradation Control System source. The sand shall be 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. RAP/FRAP and RAS testing shall be according to the following.

- (a) RAP/FRAP Testing. When used in HMA, the RAP/FRAP shall be sampled and tested either during or after stockpiling.

(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) 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 restockpiling. The sampling plan shall meet the minimum frequency required above and detail the procedure used to obtain representative samples throughout the pile for testing.

Each sample shall be split to obtain two equal 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 or RAS blended with manufactured sand shall be sampled and tested during stockpiling according to Central Bureau of Materials Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Source".

Samples shall be collected during stockpiling 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 250 tons (225 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 or RAS blended with manufactured sand shall be stockpiled 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.

Before testing, each sample shall be split to obtain two test samples. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall perform a washed extraction and test for unacceptable materials on 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.

If the sampling and testing was performed at the shingle processing facility in accordance with the QC Plan, the Contractor shall obtain and make available all of the test results from start of the initial stockpile.

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

- (a) Evaluation of RAP/FRAP Test Results. All of the extraction results shall be compiled and averaged for asphalt binder content and gradation, and when applicable G_{mm} . Individual extraction test results, when compared to the averages, will be accepted if within the tolerances listed below.

| Parameter | FRAP/Homogeneous/ Conglomerate |
|-----------------------------|-----------------------------------|
| 1 in. (25 mm) | |
| 1/2 in. (12.5 mm) | $\pm 8 \%$ |
| No. 4 (4.75 mm) | $\pm 6 \%$ |
| No. 8 (2.36 mm) | $\pm 5 \%$ |
| No. 16 (1.18 mm) | |
| No. 30 (600 μm) | $\pm 5 \%$ |
| No. 200 (75 μm) | $\pm 2.0 \%$ |
| Asphalt Binder | $\pm 0.4 \%$ ^{1/} |
| G_{mm} | ± 0.03 |

1/ The tolerance for FRAP shall be $\pm 0.3 \%$.

If more than 20 percent of the individual sieves and/or asphalt binder content tests are out of the above tolerances, the RAP/FRAP shall not be used in HMA unless the RAP/FRAP representing the failing tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

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)".

- (b) Evaluation of RAS and RAS Blended with Manufactured Sand 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. Individual test results, when compared to the averages, 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) | ± 2.0 % |
| Asphalt Binder Content | ± 1.5 % |

If more than 20 percent of the individual sieves and/or asphalt binder content tests are out of the above tolerances, or if the percent unacceptable material exceeds 0.5 percent by weight of material retained on the # 4 (4.75 mm) sieve, the RAS or RAS blend shall not be used in Department projects. All test data and acceptance ranges shall be sent to the District for evaluation.

1031.05 Quality Designation of Aggregate in RAP/FRAP.

- (a) RAP. The aggregate quality of the RAP for homogeneous and conglomerate 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, Superpave/HMA (High ESAL), or (Low ESAL) IL-9.5L surface mixtures are designated as containing Class B quality coarse aggregate.
 - (2) RAP from Class I binder, Superpave/HMA (High ESAL) binder, or (Low ESAL) IL-19.0L binder mixtures are designated as containing Class C 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. Coarse and fine FRAP stockpiles containing plus #4 (4.75 mm) sieve coarse aggregate shall have a maximum tonnage of 5000 tons (4500 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.

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

- (a) RAP/FRAP. The use of RAP/FRAP in HMA shall be as follows.

- (1) Coarse Aggregate Size. The coarse aggregate in all RAP shall be equal to or less than the nominal maximum size requirement for the HMA mixture to be produced.
- (2) Steel Slag Stockpiles. Homogeneous RAP stockpiles containing steel slag will be approved for use in all HMA (High ESAL and Low ESAL) Surface and Binder Mixture applications.
- (3) Use in HMA Surface Mixtures (High and Low ESAL). RAP/FRAP stockpiles for use in HMA surface mixtures (High and Low ESAL) shall be FRAP or homogeneous in which the coarse aggregate is Class B quality or better. FRAP from Conglomerate stockpiles shall be considered equivalent to limestone for frictional considerations. Known frictional contributions from plus #4 (4.75 mm) homogeneous FRAP stockpiles will be accounted for in meeting frictional requirements in the specified mixture.
- (4) Use in HMA Binder Mixtures (High and Low ESAL), HMA Base Course, and HMA Base Course Widening. RAP/FRAP stockpiles for use in HMA binder mixtures (High and Low ESAL), HMA base course, and HMA base course widening shall be FRAP, homogeneous, or conglomerate, in which the coarse aggregate is Class C quality or better.
- (5) Use in Shoulders and Subbase. RAP/FRAP stockpiles for use in HMA shoulders and stabilized subbase (HMA) shall be FRAP, homogeneous, or conglomerate.
- (6) When the Contractor chooses the RAP option, the percentage of RAP shall not exceed the amounts indicated in Article 1031.06(c)(1) below for a given Ndesign.

- (b) RAS. RAS meeting Type 1 or Type 2 requirements will be permitted in all HMA applications as specified herein.
- (c) RAP/FRAP and/or RAS Usage Limits. Type 1 or Type 2 RAS may be used alone or in conjunction with RAP or FRAP in HMA mixtures up to a maximum of 5.0 percent by weight of the total mix.
- (1) RAP/RAS. When RAP is used alone or RAP is used in conjunction with RAS, the percentage of virgin asphalt binder replacement shall not exceed the amounts listed in the following table.

RAP/RAS Maximum Asphalt Binder Replacement (ABR) Percentage

| HMA Mixtures ^{1/ 2/} | RAP/RAS Maximum ABR % | | |
|-------------------------------|-----------------------|---------|------------------------------------|
| Ndesign | Binder | Surface | Polymer Modified Binder or Surface |
| 30 | 30 | 30 | 10 |
| 50 | 25 | 15 | 10 |
| 70 | 15 | 10 | 10 |
| 90 | 10 | 10 | 10 |

- 1/ For Low ESAL HMA shoulder and stabilized subbase, the RAP/RAS ABR shall not exceed 50 percent of the mixture.
- 2/ When RAP/RAS ABR exceeds 20 percent, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent ABR would require a virgin asphalt binder grade of PG 64-22 to be reduced to a PG 58-28). If warm mix asphalt (WMA) technology is utilized and production temperatures do not exceed 275 °F (135 °C), the high and low virgin asphalt binder grades shall each be reduced by one grade when RAP/RAS ABR exceeds 25 percent (i.e. 26 percent RAP/RAS ABR would require a virgin asphalt binder grade of PG 64-22 to be reduced to a PG 58-28).

- (2) FRAP/RAS. When FRAP is used alone or FRAP is used in conjunction with RAS, the percentage of virgin asphalt binder replacement shall not exceed the amounts listed in the following table.

FRAP/RAS Maximum Asphalt Binder Replacement (ABR) Percentage

| HMA Mixtures ^{1/2/} | FRAP/RAS Maximum ABR % | | |
|------------------------------|------------------------|---------|------------------------------------|
| Ndesign | Binder | Surface | Polymer Modified Binder or Surface |
| 30 | 50 | 40 | 10 |
| 50 | 40 | 35 | 10 |
| 70 | 40 | 30 | 10 |
| 90 | 40 | 30 | 10 |
| SMA | -- | -- | 20 |
| IL-4.75 | -- | -- | 30 |

- 1/ For Low ESAL HMA shoulder and stabilized subbase, the FRAP/RAS ABR shall not exceed 50 percent of the mixture.
- 2/ When FRAP/RAS ABR exceeds 20 percent for all mixes, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent ABR would require a virgin asphalt binder grade of PG 64-22 to be reduced to a PG 58-28). If warm mix asphalt (WMA) technology is utilized and production temperatures do not exceed 275 °F (135 °C), the high and low virgin asphalt binder grades shall each be reduced by one grade when FRAP/RAS ABR exceeds 25 percent (i.e. 26 percent ABR would require a virgin asphalt binder grade of PG 64-22 to be reduced to a PG 58-28).

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

- (a) RAP/FRAP and/or RAS. RAP/FRAP and/or RAS mix designs shall be submitted for verification. If additional RAP/FRAP and/or RAS stockpiles are tested and found that no more than 20 percent of the results, as defined under “Testing” herein, are outside of the control tolerances set for the original RAP/FRAP and/or RAS stockpile and HMA mix design, and meets all of the requirements herein, the additional RAP/FRAP and/or RAS stockpiles may be used in the original mix 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 bulk 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 RAP/FRAP and/or RAS shall be as follows.

- (a) RAP/FRAP. The coarse aggregate in all RAP/FRAP used shall be equal to or less than the nominal maximum size requirement for the HMA mixture being produced.

To remove or reduce agglomerated material, a scalping screen, gator, crushing unit, or comparable sizing device approved by the Engineer shall be used in the RAP feed system to remove or reduce oversized material.

If the RAP/FRAP control tolerances or QC/QA test results require corrective action, the Contractor shall cease production of the mixture containing RAP/FRAP and either switch to the virgin aggregate design or submit a new RAP/FRAP design.

- (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) RAP/FRAP and/or RAS. HMA plants utilizing RAP/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 RAP/FRAP/RAS 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 RAP/FRAP material as a percent of the total mix to the nearest 0.1 percent.
- h. Aggregate and RAP/FRAP moisture compensators in percent as set on the control panel. (Required when accumulated or individual aggregate and RAP/FRAP are printed in wet condition.)

(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. RAP/FRAP/RAS weight to the nearest pound (kilogram).
- f. Virgin asphalt binder weight to the nearest pound (kilogram).
- g. Residual asphalt binder in the RAP/FRAP/RAS 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 (temporary access entrances only) and aggregate wedge shoulders, Type B 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. One hundred percent of the RAP material shall pass the 1 1/2 in. (37.5 mm) sieve. The RAP material shall be reasonably well graded from coarse to fine. RAP material that is gap-graded or single sized will not be accepted."

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."

SUBCONTRACTOR AND DBE PAYMENT REPORTING (BDE)

Effective: April 2, 2018

Add the following to Section 109 of the Standard Specifications.

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

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

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

SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)

Effective: November 2, 2017

Revised: April 1, 2019

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

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

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

TRAFFIC CONTROL DEVICES - CONES (BDE)

Effective: January 1, 2019

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

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

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

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

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

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.

WORKING DAYS (BDE)

Effective: January 1, 2002

The Contractor shall complete the work within 30 working days.

REVISIONS TO THE ILLINOIS PREVAILING WAGE RATES

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

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