

31

June 13, 2025 Letting

Notice to Bidders, Specifications and Proposal



**Illinois Department
of Transportation**

**Contract No. 64M38
WINNEBAGO County
Section (1,1-1,1-2)RS-1
Route FAP 303
District 2 Construction Funds**

Prepared by

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Checked by

(Printed by authority of the State of Illinois)



NOTICE TO BIDDERS

- 1. TIME AND PLACE OF OPENING BIDS.** Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). All bids must be submitted to the iCX system prior to 12:00 p.m. June 13, 2025 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. 64M38
WINNEBAGO County
Section (1,1-1,1-2)RS-1
Route FAP 303
District 2 Construction Funds**

2.184 mi Designed Overlay, patching, milling, retaining wall repair, and ADA Improvements from Snow Ave in Loves Park to Whitman St in Rockford & Forest Hills Rd from Landstrom Rd to IL 251.

- 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

Gia Biagi,
Acting Secretary

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2025

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

ERRATA Standard Specifications for Road and Bridge Construction
(Adopted 1-1-22) (Revised 1-1-25)

SUPPLEMENTAL SPECIFICATIONS

| <u>Std. Spec. Sec.</u> | | <u>Page No.</u> |
|------------------------|---|-----------------|
| 202 | Earth and Rock Excavation | 1 |
| 204 | Borrow and Furnished Excavation | 2 |
| 207 | Porous Granular Embankment | 3 |
| 211 | Topsoil and Compost | 4 |
| 406 | Hot-Mix Asphalt Binder and Surface Course | 5 |
| 407 | Hot-Mix Asphalt Pavement (Full-Depth) | 7 |
| 420 | Portland Cement Concrete Pavement | 8 |
| 502 | Excavation for Structures | 9 |
| 509 | Metal Railings | 10 |
| 540 | Box Culverts | 11 |
| 542 | Pipe Culverts | 31 |
| 550 | Storm Sewers | 40 |
| 586 | Granular Backfill for Structures | 47 |
| 630 | Steel Plate Beam Guardrail | 48 |
| 632 | Guardrail and Cable Road Guard Removal | 49 |
| 644 | High Tension Cable Median Barrier | 50 |
| 665 | Woven Wire Fence | 51 |
| 701 | Work Zone Traffic Control and Protection | 52 |
| 781 | Raised Reflective Pavement Markers | 54 |
| 782 | Reflectors | 55 |
| 801 | Electrical Requirements | 57 |
| 821 | Roadway Luminaires | 60 |
| 1003 | Fine Aggregates | 61 |
| 1004 | Coarse Aggregates | 62 |
| 1010 | Finely Divided Minerals | 63 |
| 1020 | Portland Cement Concrete | 64 |
| 1030 | Hot-Mix Asphalt | 67 |
| 1040 | Drain Pipe, Tile, and Wall Drain | 68 |
| 1061 | Waterproofing Membrane System | 69 |
| 1067 | Luminaire | 70 |
| 1097 | Reflectors | 77 |
| 1102 | Hot-Mix Asphalt Equipment..... | 78 |

RECURRING SPECIAL PROVISIONS

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

| <u>CHECK SHEET #</u> | | <u>PAGE NO.</u> |
|----------------------|--|-----------------|
| 1 | Additional State Requirements for Federal-Aid Construction Contracts | 59 |
| 2 | Subletting of Contracts (Federal-Aid Contracts) | 62 |
| 3 | X EEO | 63 |
| 4 | X Specific EEO Responsibilities Non Federal-Aid Contracts | 73 |
| 5 | X Required Provisions - State Contracts | 78 |
| 6 | Asbestos Bearing Pad Removal | 84 |
| 7 | Asbestos Waterproofing Membrane and Asbestos HMA Surface Removal | 85 |
| 8 | Temporary Stream Crossings and In-Stream Work Pads | 86 |
| 9 | X Construction Layout Stakes | 87 |
| 10 | Use of Geotextile Fabric for Railroad Crossing | 90 |
| 11 | Subsealing of Concrete Pavements | 92 |
| 12 | Hot-Mix Asphalt Surface Correction | 96 |
| 13 | X Pavement and Shoulder Resurfacing | 98 |
| 14 | Patching with Hot-Mix Asphalt Overlay Removal | 99 |
| 15 | Polymer Concrete | 101 |
| 16 | Reserved | 103 |
| 17 | Bicycle Racks | 104 |
| 18 | Temporary Portable Bridge Traffic Signals | 106 |
| 19 | X Nighttime Inspection of Roadway Lighting | 108 |
| 20 | English Substitution of Metric Bolts | 109 |
| 21 | Calcium Chloride Accelerator for Portland Cement Concrete | 110 |
| 22 | Quality Control of Concrete Mixtures at the Plant | 111 |
| 23 | X Quality Control/Quality Assurance of Concrete Mixtures | 119 |
| 24 | Reserved | 135 |
| 25 | Reserved | 136 |
| 26 | Temporary Raised Pavement Markers | 137 |
| 27 | Restoring Bridge Approach Pavements Using High-Density Foam | 138 |
| 28 | Portland Cement Concrete Inlay or Overlay | 141 |
| 29 | Portland Cement Concrete Partial Depth Hot-Mix Asphalt Patching | 145 |
| 30 | Longitudinal Joint and Crack Patching | 148 |
| 31 | Concrete Mix Design – Department Provided | 150 |
| 32 | X Station Numbers in Pavements or Overlays | 151 |

TABLE OF CONTENTS

| | |
|--|----|
| LOCATION OF PROJECT | 1 |
| DESCRIPTION OF PROJECT | 1 |
| TRAFFIC CONTROL PLAN | 1 |
| HOT-MIX ASPHALT PATCHING AND HOT-MIX ASPHALT BINDER AND SURFACE COURSE | 4 |
| GEOTECHNICAL REINFORCEMENT | 5 |
| MAINTENANCE OF ROADWAYS | 6 |
| PCC AUTOMATIC BATCHING EQUIPMENT | 7 |
| PCC QC/QA ELECTRONIC REPORTS SUBMITTAL | 7 |
| WORK ZONE PAVEMENT MARKING AND REMOVAL | 7 |
| JOINT TRIMMING | 8 |
| AVAILABILITY OF ELECTRONIC FILES | 9 |
| GROOVING FOR RECESSED PAVEMENT MARKING, LETTERS AND SYMBOLS | 9 |
| MAXIMUM DROP-OFFS BETWEEN ADJACENT LANES | 10 |
| MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION..... | 11 |
| MODIFY EXISTING CONTROLLER CABINET | 11 |
| REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT | 12 |
| VIDEO VEHICLE DETECTION SYSTEM..... | 12 |
| REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES | 19 |
| RAILROAD PROTECTIVE LIABILITY INSURANCE (BDE)..... | 20 |
| GUTTERS TO BE CLEANED | 21 |
| WEEP HOLES CORED | 21 |
| STRUCTURAL REPAIR OF CONCRETE | 23 |
| ACCESSIBLE PEDESTRIAN SIGNALS (APS) (BDE)..... | 33 |
| AGGREGATE SUBGRADE IMPROVEMENT (BDE)..... | 34 |
| AUTOMATED FLAGGER ASSISTANCE DEVICES (BDE) | 36 |
| BITUMINOUS MATERIALS COST ADJUSTMENTS (BDE) | 37 |
| CEMENT, FINELY DIVIDED MINERALS, ADMIXTURES; CONCRETE, AND MORTAR (BDE) | 38 |
| COMPENSABLE DELAY COSTS (BDE) | 48 |
| DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE) | 51 |
| FUEL COST ADJUSTMENT (BDE) | 54 |
| HOT-MIX ASPHALT (BDE)..... | 56 |
| HOT-MIX ASPHALT – LONGITUDINAL JOINT SEALANT (BDE)..... | 57 |

ILLINOIS WORKS APPRENTICESHIP INITIATIVE – STATE FUNDED CONTRACTS (BDE)..58
PAVEMENT MARKING INSPECTION (BDE)58
PERFORMANCE GRADED ASPHALT BINDER (BDE).....59
REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE)63
SHORT TERM AND TEMPORARY PAVEMENT MARKINGS (BDE).....65
SIGN PANELS AND APPURTENANCES (BDE).....68
STEEL COST ADJUSTMENT (BDE)68
SUBCONTRACTOR AND DBE PAYMENT REPORTING (BDE)71
SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE).....71
SUBMISSION OF BIDDERS LIST INFORMATION (BDE)72
SUBMISSION OF PAYROLL RECORDS (BDE)72
SURFACE TESTING OF PAVEMENTS – IRI (BDE).....73
SURVEYING SERVICES (BDE)79
VEHICLE AND EQUIPMENT WARNING LIGHTS (BDE).....79
WEEKLY DBE TRUCKING REPORTS (BDE).....79
WOOD SIGN SUPPORT (BDE).....79
WORK ZONE TRAFFIC CONTROL DEVICES (BDE).....80
WORKING DAYS (BDE).....81

STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted January 1, 2022, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein which apply to and govern the construction of FAP Route 303 (IL 251), Section (1,1-1,1-2) RS-1; Winnebago County, Contract No. 64M38 and in case of conflict with any part or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

LOCATION OF PROJECT

The work on this project is located on IL 251, from Snow Avenue in Loves Park to Whitman Street in Rockford and Forest Hills Road from Landstrom Road to IL 251.

DESCRIPTION OF PROJECT

The work on this project consists of patching, milling 2-3/4 inches and replacing with 2-3/4 inches of combined HMA binder/surface, retaining wall repair, updating curb ramps / sidewalks / cross walks, traffic control, and collateral work necessary to complete the project as shown on the plans and as described herein.

TRAFFIC CONTROL PLAN

Effective: January 14, 1999

Revised: January 13, 2017

Standards:

| | | | | | |
|--------|--------|--------|--------|--------|--------|
| 701006 | 701101 | 701106 | 701411 | 701421 | 701422 |
| 701426 | 701427 | 701428 | 701451 | 701456 | 701601 |
| 701602 | 701606 | 701701 | 701801 | 701901 | |

Details:

District Standard 34.1
District Standard 35.1
District Standard 38.1
District Standard 94.2

General:

Where construction activities involve sidewalks on both sides of the street, the work shall be staged so that both sidewalks are not out of service at the same time.

Signs:

“BUMP” (W8-1(O)48) signs shall be installed as directed by the Engineer.

“UNEVEN LANES” W8-11(O)48 signs shall be installed at 1 mile intervals or as directed by the Engineer.

“LOW SHOULDER” W8-9(O)48 signs shall be installed at 1 mile intervals or as directed by the Engineer.

When covering existing Department signs, no tape shall be used on the reflective portion of the sign. Contact the District sign shop for covering techniques.

Any plates or direct applied sheeting used to alter signs shall have the same sheeting as the base sign.

No more than one kind of alteration shall be used to alter a sign.

Any post stubs without a sign in place and visible shall have a reflector placed on each post.

Devices:

A minimum of 3 drums spaced at 4 feet shall be placed at each return when the sideroad is open.

Flaggers:

Flaggers shall comply with all requirements and signaling methods contained in the Department’s “Traffic Control Field Manual” current at the time of letting. The flagger equipment listed for flaggers employed by the Illinois Department of Transportation shall apply to all flaggers.

In addition to the flaggers shown on applicable standards, on major sideroads, flaggers shall be required on all legs of the intersection. Major sideroads for this project shall be Y Boulevard, Longwood Street, Cospers Avenue, Ethel Avenue, Auburn Street / Spring Creek Road, Forest Hills Road, Cottage Avenue, Snow Avenue, and Landstrom Road.

In addition to the flaggers shown on applicable standards, a flagger shall be required on high volume commercial entrances listed below. High volume commercial entrances for this project shall be none.

Northbound IL Route 251 Stage 2A

For patches curing between Cospers Avenue and Ethel Avenue, traffic from Cospers Avenue will not have access to turn left onto Ethel Avenue.

Southbound IL. Route 251 Stage 2A

For patches curing between Ethel Avenue and Cospers Avenue, traffic from Ethel Avenue will not have access to turn left onto Cospers Avenue.

When the mainline flagger is within 200 feet of an intersection, the sideroad flagger shall be required.

When the road is closed to through traffic and it is necessary to provide access for local traffic, all flaggers as shown on the applicable standards will be required. No reduction in the number of flaggers shall be allowed.

Pavement Marking:

All temporary pavement markings that will be operational during the winter months (December through March) shall be painted.

Short term pavement markings on a milled surface shall be painted.

Highway Standards Application:

Traffic Control and Protection Standard 701701: This work shall be done according to Section 701 of the Standard Specifications and the Typical Application of Traffic Control Devices for Highway Construction, Standard 701701, and as specified herein.

The "left" leg of the intersection shown on this standard also applies when the right turn lane is closed. When the right turn lane is closed, "RIGHT TURN LANE CLOSED AHEAD" shall be substituted for the "LEFT TURN LANE CLOSED AHEAD" and the set up would be a mirror image to what is shown.

Traffic Control and Protection Standards for Patching Layout on Multi-Lane Roads: This work shall be done according to Standard 701601 and Section 701 of the Standard Specifications. The contractor shall be required to install 701601 three calendar days in advance of the areas to be patched for the protection of the State personnel laying out the locations for pavement patching.

The barricades as shown in 701601 shall not encroach on the lanes open to traffic at any time. The only exception to this will be in the immediate work area when workers are present, then the barricades may be moved out to permit the construction operation.

Traffic Control and Protection Standard 701411: This work shall be done according to Section 701 of the Standard Specifications and the Typical Application of Traffic Control Devices for Highway Construction, Standard 701411, and as specified herein.

Method of Measurement: Each ramp will be measured as a separate location and will be considered as a separate location for payment, regardless of the number of installations at that ramp.

Maintenance of Traffic:

The Contractor shall notify the Winnebago County Highway Department, the corresponding Township Commissioner, City of Loves Park, City of Rockford, emergency response agencies (i.e.: fire, ambulance, police), school bus companies and the Department of Transportation (Bureau of Project Implementation) regarding any changes in traffic control.

The Contractor shall notify the Winnebago County Highway Department, corresponding Township Commissioner and/or city municipality for any sideroad closure or opening.

The Contractor shall submit a maintenance of local traffic plan to the Engineer at the preconstruction meeting telling how local access will be maintained at each access location. It will show which locations will be completely closed, and which locations will be constructed utilizing Traffic Control Standard 701206 and/or barricades. This traffic plan will need to be approved by the Engineer before the roadway is closed to traffic.

The Contractor shall be responsible for providing a weekly article and map to the news media (Rockford Daily News, Rockford Register Star, WIFR, WREX, WTOV) describing work being performed and stages closed to traffic.

Milled pavement shall be resurfaced before opening the road to traffic.

Two (2) changeable message signs shall be placed on this project two (2) weeks prior to the start of work informing the public of lane closures. Location of the message signs will be determined by the Resident Engineer.

HOT-MIX ASPHALT PATCHING AND HOT-MIX ASPHALT BINDER AND SURFACE COURSE

Effective: August 18, 1993

Revised July 21, 2015

Article 406.07 - Compaction. This is to modify the first paragraph of the subject Article. Immediately after the Binder or Surface Course Mixtures are placed, each shall be given an initial or breakdown rolling with a three wheeled or tandem roller. After the initial rolling, the Binder or Surface course shall be given an intermediate rolling with a pneumatic-tired roller. The final or finish rolling shall be done with a tandem roller or vibratory roller in the static mode only. If density cannot be obtained with one three wheeled or tandem roller additional static rollers shall be added until density can be achieved.

GEOTECHNICAL REINFORCEMENT

Effective: June 17, 2022

Revised: April 10, 2014

This work consists of furnishing and installing an integrally-formed polypropylene geotechnical grid reinforcement material. The geogrid shall have an aperture, rib and junction cross section sufficient to permit significant mechanical interlock with the material being reinforced. There shall be a high continuity of tensile strength through all ribs and junctions of the grid material to reinforce the subbase or subgrade as shown on the plans and specifications.

| MATERIAL CHARACTERISTICS | TEST METHOD | DATA |
|--------------------------|-------------|---------------|
| polymer type | | polypropylene |
| ultra violet stability | ASTM D 4355 | 50% |

| DIMENSIONAL CHARACTERISTICS | TEST METHOD | UNIT | DATA |
|-----------------------------|-------------|--------------------|------------|
| open area | CW 02215 | % | 75 (max.) |
| unit weight | ASTM D 5261 | oz/yd ² | 5.0 (min.) |

| TECHNICAL CHARACTERISTICS | TEST METHOD | UNIT | DATA |
|---------------------------|-------------|------|-----------|
| junction efficiency | GRI-GG2 | % | 90 (min.) |

The supplier should provide a certification that their product meets the above requirements.

The geotechnical reinforcement shall be placed as described herein or as shown on the cross sections.

Geogrid shall be delivered to the jobsite in such a manner as to facilitate handling and incorporation into the work without damage. Material shall be stored in such a manner as to prevent exposure to direct sunlight and damage by other construction activities.

Prior to the installation of the geogrid, the application surface shall be cleared of debris, sharp objects and trees. Tree stumps shall be cut to the level of the ground surface. If the stumps cannot be cut to the ground level, they shall be completely removed. In the case of subgrades, all wheel tracks or ruts in excess of 3 inches in depth shall be graded smooth or otherwise filled with soil to provide a reasonably smooth surface.

The geotechnical reinforcement shall be placed with the “roll length” parallel to the pavement. Fabric of insufficient width or length to fully cover the specified area shall be lapped a minimum of 24 inches. The geogrid should be secured in place.

Installation:

The granular blanket shall be constructed to the width and depth required on the plans. Unless otherwise specified, the material shall be back-dumped on the Geogrid in a sequence of operations beginning at the outer edges of the treatment area with subsequent placement towards the middle.

Placement of material on the Geogrid shall be accomplished by spreading dumped material off of previously placed material with a bulldozer blade or endloader, in such a manner as to prevent tearing or shoving of the Geogrid. Dumping of material directly on the Geogrid will only be permitted to establish an initial working platform. No construction equipment shall be allowed on the Geogrid prior to placement of the granular blanket. If the geogrid develops wrinkles or moves significantly, an alternative method of securing it shall be used.

Unless otherwise specified in the plans or Special Provisions, the granular material, shall be placed to the full required thickness and compacted to the satisfaction of the Engineer.

Geogrid which is damaged during installation or subsequent placement of granular material, due to failure of the Contractor to comply with these provisions, shall be repaired or replaced at his expense, including costs of removal and replacement of the granular material.

Torn Geogrid may be patched in-place by cutting and placing a piece of the same Geogrid over the tear. The dimensions of the patch shall be at least 2 feet larger than the largest dimension of the tear and it shall be weighted or otherwise secured to prevent the granular material from causing lap separation.

Method of Measurement: Geotechnical Reinforcement will be measured in square yards for the surface area placed. The excavation, replacement and compaction of the granular layer shall be paid for separately.

Basis of Payment: This work will be measured in place and the area computed in square yards. The work will be paid for at the contract unit price per Square Yard for GEOTECHNICAL REINFORCEMENT.

MAINTENANCE OF ROADWAYS

Effective: June 26, 2003

Revised: April 4, 2023

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

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

PCC AUTOMATIC BATCHING EQUIPMENT

Effective: January 1, 2015

Revised: January 31, 2023

Portland cement concrete provided shall be produced from batch plants that conform to the requirements of Article 1103.03 (a) and (b) of the Standard Specifications for Road and Bridge Construction. Semi-automatic batching will not be allowed.

Plants shall have computerized batching interfaced with a printer. IDOT Producer Number, IDOT Design Number, Concrete Material Code, batch weights, aggregate mixtures, water added, amount of each admixture or additive, and percent variance from design shall be printed for each batch. Tickets shall state the actual water-cement ratio as batched, and the amount of water that can be added to the batch without exceeding the maximum water-cement ratio. Truck delivery tickets are still required as per Article 1020.11(a)(7) of the Standard Specifications.

PCC QC/QA ELECTRONIC REPORTS SUBMITTAL

Effective: January 1, 2015

Revised: January 31, 2023

The Contractor's QC personnel shall be responsible for electronically submitting the following reports to the Department: PRO and IND data for BMPR MI654 "Concrete Air, Slump, and Quantity,"; PRO data for BMPR MI655 "P.C. Concrete Strength," and PRO data for BMPR MI504 "Aggregate Gradation" reports to the Department. The format for the electronic submittals shall be the QMP package reporting program, which will be provided by the Department. Microsoft Excel 2007 or newer and Microsoft Outlook is required for this program which shall be provided by the Contractor.

WORK ZONE PAVEMENT MARKING AND REMOVAL

Effective: December 29, 2008

Revised: October 5, 2021

This work shall consist of installing and removing temporary pavement marking according to Section 703 and 783 of the Standard Specifications and the following:

All temporary paint on the final wearing surface shall be removed according to Article 1101.12 Water Blaster with Vacuum Recovery and the applicable portions of Section 783 of the Standard Specifications and as described herein.

Add the following paragraph to Article 1101.12 of the Standard Specifications.

"For the high pressure water spray, the pressure at the nozzle shall be approximately 25,000 psi with maximum flow rate of 15 gal/min. The nozzle shall be in close proximity to the pavement surface."

JOINT TRIMMING

Effective: March 6, 2023

The following is the sequence for milling and paving:

1. If specified in the contract, mill both lanes and shoulders for the entire project.
2. Place the HMA binder on both driving lanes and shoulders for the entire project.
3. On the first lane to be paved, place the tack coat and new HMA surface course 6 in. wider than the joint to be trimmed.
4. After surfacing the first driving lane and prior to cleaning and start of surfacing on the following lane or shoulder, mill off the extra 6 in. of new HMA surface to the joint location, per the typical sections. The milling equipment must be capable of producing a straight line. The depth of the milling must be controlled so as not to gouge the underlying binder lift. The intent is to create a vertical face at the joint and provide lateral confinement for the following surface course material. Skid steer mounted mills will not be allowed.
5. Clean and prepare the surface of the remaining shoulder or lane for HMA placement as per Article 406.05 of the Standard Specifications. The tack coat shall be sprayed the full width of the HMA shoulder or lane and also lapped onto the newly trimmed joint a distance not to exceed 4 in. This additional width is to ensure the vertical face of the adjacent mat is adequately covered with tack coat.
6. Placement of surface course at the trimmed joint shall require the compacted height of HMA to be exactly flush, or not more than 1/32 in. higher, than the adjacent lane to ensure the joint has sufficient material for adequate compaction and proper drainage. During placement, the side plate of the screed shall not exceed 1/2 in. overlap onto the adjacent lane.

The milling of new HMA 6 in. extra width at the joint to be trimmed will be paid for at the contract unit price per square yard for HOT-MIX ASPHALT SURFACE REMOVAL – LONGITUDINAL JOINT.

The additional tack coat will be paid for at the contract unit price per pound of residual asphalt for BITUMINOUS MATERIAL (TACK COAT) or POLYMERIZED BITUMINOUS MATERIAL (TACK COAT).

The additional HMA surface course will be paid for at the contract unit price per ton for HOT-MIX ASPHALT SURFACE COURSE, of the friction aggregate mixture and Ndesign specified or POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, of the friction aggregate mixture and Ndesign specified. All other extra work will not be paid for separately but shall be included in the unit bid price of the various pay items and no other compensation will be allowed.

AVAILABILITY OF ELECTRONIC FILES

Effective 10/16 Revised 1/29/25

Electronic files of this project will be made available to the Contractor after the contract has been awarded. This information will be provided upon request in a Bentley CONNECT Platform software format ONLY. If data is required in other formats, it will be your responsibility to make these conversions. The Contractor shall coordinate obtaining electronic files through the Project Engineer. If there is a conflict between the electronic files and the printed contract plans and documents, the printed contract plans and documents shall take precedence over the electronic files. The Contractor shall accept all risk associated with using the electronic files and shall hold the Department harmless for any errors or omissions in the electronic files and the data contained therein. Errors or delays resulting from the use of the electronic files by the Contractor shall not result in an extension of time for any interim or final completion date or shall not be considered cause for additional compensation. The Contractor shall not use, share, or distribute these electronic files except for the purpose of constructing this contract. Any claims by third parties due to use or errors shall be the sole responsibility of the Contractor. The Contractor shall include this disclaimer with the transfer of these electronic files to any other parties and shall include appropriate language binding them to similar responsibilities.

GROOVING FOR RECESSED PAVEMENT MARKING, LETTERS AND SYMBOLS

This work shall be completed per Article 780.05, except that the grooving for letters and symbols shall be as close to the shape of the letter or symbol as possible, being a minimum of ½ inch wider on all sides. Excessive boxing out for the letter or symbol shall not be allowed.

This work shall be paid for at the contract unit price per SQ FT from the table below for GROOVING FOR RECESSED PAVEMENT MARKING, LETTERS AND SYMBOLS.

Grooving Area Chart (Symbols)

| SYMBOLS | | | | |
|---|----------------------------------|---------------|----------------------------------|---------------|
| Symbol | Pavement Marking Large Size (SF) | Grooving (SF) | Pavement Marking Small Size (SF) | Grooving (SF) |
| Through Arrow | 11.5 | 12.6 | 6.5 | 7.3 |
| Left or Right Arrow | 15.6 | 16.8 | 8.8 | 9.8 |
| 2 Arrow Combination Left (or Right) and Through | 26.0 | 28.2 | 14.7 | 16.2 |
| 3 Arrow Combination Left, Right, and Through | 38.4 | 41.3 | 20.9 | 23.0 |
| Lane Drop Arrow | 41.5 | 43.5 | -- | -- |
| Wrong Way Arrow | 24.3 | 27.3 | -- | -- |
| Railroad "R" 6ft (1.8m) | 3.6 | 5.3 | -- | -- |
| Railroad "X" 20ft (6.1m) | 54.0 | 57.5 | -- | -- |
| International Symbol of Accessibility | 3.1 | 4.0 | -- | -- |
| Bike Symbol | 4.7 | 12.3 | -- | -- |
| Shared Lane Symbol | 8.0 | 16.7 | -- | -- |

MAXIMUM DROP-OFFS BETWEEN ADJACENT LANES

A(Effective April 21, 2023)

When the Contractor's operations cause a difference in elevation greater than 1.5 in. (38 mm) for a vertical milled face or 2 in. (50 mm) for a lift of HMA resurfacing between adjacent lanes, the lane shall remain closed. The Contractor shall adjust his milling and paving operations so that all traffic lanes are open at the end of each work day.

To meet the above requirement, the Contractor shall:

Place the binder lift immediately following the milling operation before opening the lane to traffic or

Place a temporary wedge after the milling operations (minimum 1V:3H slope) or

Mill a sloped wedge between lanes (minimum 1V:3H slope).

When the difference in elevation between adjacent open traffic lanes is greater than 1 in. (25 mm) and less than or equal to 1.5 in. (38 mm) for a vertical milled face or 2 in. (50 mm) for an HMA lift, "UNEVEN LANES" signs (W8-11(FO)) shall be erected at 1-mile (1.6 km) intervals.

The above requirements were developed based on IDOT Safety Engineering Policy Memorandum 4-21. Any changes to the proposed lift thicknesses, milling depths, or sequence of operations that change drop-offs at the centerline or edge of pavement must follow this policy and be approved by the Engineer.

This work will not be paid for separately but shall be included in the cost of the applicable HMA surface removal pay items.

MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION

This item shall be as described in Section 850 of the current Standard Specification for Road and Bridge Construction.

The contractor will be responsible in protecting the existing traffic signal installation and equipment; this work shall be included in the cost of MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION, including any equipment required to keep the install operational at no additional cost.

Temporary shut down shall not last longer than eight (8) hours. During shut down a minimum of two (2) "Stop" signs per leg shall be installed.

The contractor shall contact the Illinois Department of Transportation, District 2 Operations Design and Planning Engineer, Scott Kullerstrand at 815-284-5468 one week prior to the beginning of construction. This is necessary to allow for adjusting signal timing for the traffic flow through the signalized intersection during construction

Basis of Payment: This work will be paid for at then contract unit price EACH for MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION, which price shall be payment in full for maintaining all existing equipment and labor needed to perform the work.

MODIFY EXISTING CONTROLLER CABINET

This item shall be as described in Section 895 of the current Standard Specification for Road and Bridge Construction.

This item shall consist of modifying the existing controller cabinet at the intersections of IL 251 at Y Blvd and Ethel to accommodate the video detection system to be installed. This item shall also include modifying the controller cabinet at the intersection of IL 251 at Ethel to accommodate the accessible pedestrian signal equipment.

This item shall be paid for at contract unit price each for MODIFY EXISTING CONTROLLER CABINET, which price shall be payment in full for furnishing the equipment described above and installing it in satisfactory operating condition.

REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT

This work shall be in accordance with Section 895 of the current "Standard Specifications for Road and Bridge Construction". This will include removing existing video vehicle detection, two existing pedestrian push buttons and pedestrian signal heads on the west leg of the intersection at IL 251 at Ethel as shown on the plans.

The Contractor shall provide any additional material and labor required to maintain the existing wiring to accommodate the proposed signal equipment into the existing signal system.

The work shall be paid for at the contract unit price each for REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT, which price shall be payment in full for removing existing pedestrian signal heads and push buttons. They shall remain the property of the City of Rockford for salvage.

VIDEO VEHICLE DETECTION SYSTEM

The following video vehicle detection systems meet the specifications outlined in this section and are currently approved for use in District 2:

Iteris Vantage Next (4 Camera System)

Autoscope Vision (4 Camera System)

The quantity and type of cable that will be required to complete the installation will vary depending on the equipment manufacturer.

The Contractor shall be responsible for determining the cable type and quantities of cable required for the video detection installations. All cable used shall meet current Department specifications, manufacturer's recommendations, and shall be subject to approval by the Engineer.

Each system to be installed shall be the latest model. Each intersection shall include four (4) cameras plus one (1) spare to be delivered to the Resident Engineer, the processor unit, connectors, software, and all cabling necessary back to the controller. All the equipment shall be compatible with the existing controller on this project. All equipment shall be installed according to manufacturer's recommendations. The video detection cameras shall be capable of being zoomed and focused from a connection in the controller cabinet.

The video vehicle detection system shall include all necessary cables, electrical junction boxes, electrical and coaxial surge suppression, hardware, software, programming, and any camera brackets that are required for installation. These items should be taken into consideration and shall be included in the bid price 4 camera system and 1 spare camera for the VIDEO VEHICLE DETECTOR SYSTEM.

If the unit requires the use of a power strip, the power strip/surge suppressor shall conform to the following minimum specifications:

- Let Through Voltage: <85 Volts
- Operating Voltage: 120VAC, 50/60H
- UL Suppressed Voltage Rating: 330V
- Energy Rating: 320J
- Peak Current NM/CM: 13k Amps NM, 13k Amps CM
- EMI/RFI Noise Filtration: >25-60dB

A total of one 12" color video monitor and trackball with USB connect shall be included in the installation, to allow for the setup and monitoring of the video detection system.

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

The video vehicle system shall be configured and installed to NEMA TS2 Standards.

The Contractor shall be responsible for furnishing and installing all necessary camera brackets that are required for the camera installation. The camera mounting brackets shall be of aluminum or steel construction with a natural or white powder coated finish. All brackets shall be submitted to the Department for approval prior to installation. The material and installation shall be completed to the satisfaction of the Engineer.

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

1.0 General

This Specification sets forth the minimum requirements for a system that monitors vehicles on a roadway via processing of video images and provides detector outputs to a traffic controller or similar device. All video detection systems must be approved by the Department. Currently, only Iteris Vantage Next and Econolite Autoscope Vision video detection systems are approved for use within District 2.

1.1 System Hardware

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

1.2 System Software

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

2.0 Functional Capabilities

2.1 Real-Time Detection

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

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

3.0 Vehicle Detection

3.1 Detection Zone Placement

The video detection system shall provide flexible detection zone placement anywhere and at any orientation within the combined field of view of the image sensors. In addition, detection zones shall be coordinated with the signal phases. Each detection zone shall provide a minimum of two kinds of detection (extend, delay, presence or counting) as each phase may require. The type of detection provided by the detection zone is to be determined by the active status of the zone's governing phase.

3.2 Optimal Detection

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

3.3 Detection Performance

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

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

4.0 ACU Hardware

4.1 ACU Mounting

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

4.2 ACU Environmental

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

5.0 ACU Electrical

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

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

5.3 Serial communications to a remote computer equipped with remote monitoring software shall be through an RS-232 serial port. A 9-pin "D" subminiature connector on the front of the ACU shall be used for serial communications.

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

5.5 The ACU and/or camera hookup panel shall be equipped with four RS-170 (B&W)/NTSC (color) composite video inputs for coaxial camera connections so that signals from four image sensors can be processed in real-time.

5.6 The ACU shall be equipped with a port to provide communications to a computer running the remote access software.

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

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

6.0 Camera

6.1 The video detection system shall use medium resolution, color, image sensors as the video source for real-time vehicle detection. As a minimum, each image sensor shall provide the following capabilities:

- a. Images shall be produced with a CCD sensing element with horizontal resolution of at least 500 lines and vertical resolution of at least 350 lines.
- b. Useable video and resolvable features in the video image shall be produced when those features have luminance levels as low as 0.1 lux at night.
- c. Useable video and resolvable features in the video image shall be produced when those features have luminance levels as high as 10,000 lux during the day.
- d. Automatic gain, automatic iris, and absolute black reference controls shall be furnished.
- e. An optical filter and appropriate electronic circuitry shall be included in the image sensor to suppress "blooming" effects at night.

6.2 The image sensor shall be equipped with an integrated zoom lens with zoom and focus capabilities that can be changed using either configuration computer software or hand-held controller. The machine vision processor (MVP) may be enclosed within the camera.

6.3 The image sensor and lens assembly shall be housed in an environmental enclosure that provides the following capabilities:

- a. The enclosure shall be waterproof and dust-tight to NEMA-4 specifications.
- b. The enclosure shall allow the image sensor to operate satisfactorily over an ambient temperature range from -34C to +74C while exposed to precipitation as well as direct sunlight.
- c. The enclosure shall allow the image sensor horizon to be rotated in the field during installation.
- d. The enclosure shall include a provision at the rear of the enclosure for connection of power and video signal cables fabricated at the factory. Input power to the environmental enclosure shall be either 115 VAC 60 Hertz or 24 VAC/DC 60 Hertz.
- e. A heater shall be at the front of the enclosure to prevent the formation of ice and condensation in cold weather, as well as to assure proper operation of the lens' iris mechanism. The heater shall not interfere with the operation of the image sensor electronics, and it shall not cause interference with the video signal.
- f. The enclosure shall be light-colored and shall include a sun shield to minimize solar heating. The front edge of the sunshield shall protrude beyond the front edge of the environmental enclosure and shall include provision to divert water flow to the sides of the sunshield. The amount of overhang of the sun shield shall be adjustable to prevent direct sunlight from entering the lens or hitting the faceplate.
- g. The total weight of the image sensor in the environmental enclosure with sunshield shall be less than 6 pounds.

h. When operating in the environmental enclosure with power and video signal cables connected, the image sensor shall meet FCC class B requirements for electromagnetic interference emissions.

6.4 The video output of the image sensor shall be isolated from earth ground. All video connections from the image sensor to the video interface panel shall also be isolated from earth ground.

6.5 The video output, communication, and power to the image sensor shall include transient protection to prevent damage to the sensor due to transient voltages occurring on the cable leading from the image sensor to other field locations.

6.6 A stainless steel junction box shall be available as an option with each image sensor for installation on the structure used for image sensor mounting. The junction box shall contain a terminal block for terminating power to the image sensor and connection points for coaxial cables from the image sensor and from the ACU.

6.7 A video interface panel shall be included for installation inside of the traffic cabinet. The panel shall provide coaxial cable / twisted pair connection points and an Edco RMCXI-06 or approved equal transient suppressor for each image sensor. The shield side of the coaxial cable connection at the transient suppressor shall be connected to earth ground via the transient suppressor. If the coaxial cable / twisted pair used to connect the video signal from the image sensor to the ACU are to be routed through a conduit containing unbundled AC power cables, a video isolation amplifier shall be installed in addition to the video interface panel if interference is present. There will be no additional compensation for providing the video isolation amplifier if necessitated by the presence of video interference. The isolation amplifier shall buffer the video signal and provide transient suppression. The isolation amplifier shall have a minimum common mode rejection ratio at 60 Hz of 100 dB.

6.8 The image sensor shall be connected to the ACU such that the video signal originating from the image sensor is not attenuated more than 3 dB when measured at the ACU. When the connection between the image sensor and the ACU is coaxial cable, the coaxial cable used shall be a low loss 75 ohm precision video cable suited for outdoor installation, such as Belden 8281, West Penn P806, or approved equal.

7.0 Software

7.1 The system shall include the remote access software that is used to setup and configure the video detection system. The software shall be of the latest revision.

7.2 All necessary cable, adapters, and other equipment shall be included with the system.

8.0 Installation and Training

8.1 The supplier of the video detection system shall supervise the installation and testing of the video and video vehicle detection equipment. A factory certified representative from the supplier shall be on-site during installation.

8.2 Training shall be available upon request.

9.0 Warranty, Maintenance, and Support

9.1 The video detection system shall be warranted by its supplier for a minimum of two (2) years from date of turn-on. This warranty shall cover all material defects and shall also provide all parts and labor as well as unlimited technical support.

9.2 Ongoing software support by the supplier shall include updates of the ACU and supervisor software. These updates shall be provided free of charge during the warranty period.

9.3 The supplier shall maintain a program for technical support and software updates following expiration of the warranty period. This program shall be made available to the contracting agency in the form of a separate agreement for continuing support.

Basis of Payment:

The above work will be paid for at the contract unit price EACH for VIDEO VEHICLE DETECTION SYSTEM which price will be payment in full for all labor, equipment, and materials required to supply, install, configure, and test the video vehicle detection system described above, complete.

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES

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

Contract Specific Work Areas. For stationing, the lateral distance is measured from centerline and the farthest distance is the offset distance or construction limit, whichever is less.

The following contract specific work areas shall be monitored by the Environmental Firm for soil contamination and workers protection.

ISGS Site 4424-3 – Clayton House Motel, 4800 N 2nd Street, Loves Park, Winnebago County, Illinois

- Station 612+72.91 to Station 612+50.89, 54.89 to 59.89 LT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). COC sampling parameters: VOCs, SVOCs, metals.

ISGS Site 4424-12 – Superior Ambulance Service, 4620 N 2nd Street, Loves Park, Winnebago County, Illinois

- Station 606+00.70 to Station 605+65.71, 54.64 to 56.63 LT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). COC sampling parameters: VOCs, SVOCs, metals.

ISGS Site 4424-45 – Vacant Lot, 1105 N 2nd Street, Rockford, Winnebago County, Illinois

- Station 523+09 to Station 522+95.84, 58.45 to 86.39 RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). COC sampling parameters: VOCs, SVOCs, metals.

Work Zones

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

None

Additional information on the contract specific work areas listed above collected during the regulated substances due-diligence process is available through the District's Environmental Studies Unit (DESU).

RAILROAD PROTECTIVE LIABILITY INSURANCE (BDE)

Effective: December 1, 1986
Revised: January 1, 2022

Description. Railroad Protective Liability and Property Damage Liability Insurance shall be carried according to Article 107.11 of the Standard Specifications. A separate policy is required for each railroad unless otherwise noted.

| NAMED INSURED & ADDRESS | NUMBER & SPEED OF PASSENGER TRAINS | NUMBER & SPEED OF FREIGHT TRAINS |
|---|--|---|
| Union Pacific Railroad Company 1400 Douglas Street Omaha, NE 68179-1870 | 0 | 1 per day at 10 mph |
| Class 1 RR (Y or N): Yes | | |
| DOT/AAR No.: 174596V RR Division: Great Lakes | RR Mile Post: 70.24 RR Sub-Division: Kd Ind. Lead | |
| DOT/AAR No.: 174594G RR Division: Great Lakes | RR Mile Post: 70.93 RR Sub-Division: Kd Ind. Lead | |
| For Freight/Passenger Information Contact: Brian Dyer | | Phone: (815) 739-6003 |
| For Insurance Information Contact: Matt Hertel at Marsh | | Phone: (630) 524-8438 Matt.Hertel@marsh.com |

Comments: Railroad flaggers are required if working within 25 feet, horizontally, of the tracks or whenever working over the tracks.

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

GUTTERS TO BE CLEANED

Description: This work consists of cleaning gutters in front of the existing abutments. The extent of cleaning of the gutter drains, and related work items, are herein described.

CONSTRUCTION REQUIREMENTS

General: All soil/aggregate build-up, trash, debris, and any other foreign material must be removed, including any material lodged inside the gutters. If water does not suffice, the Contractor is to use compressed air, hand tools or whatever appropriate means necessary, subject to approval of the Engineer, to remove accumulated foreign material.

The Contractor shall properly dispose of all accumulated materials according to Article 203.03. Runoff water will not be allowed to constitute a hazard on adjacent or underlying roadways, waterways, drainage areas or railroads nor be allowed to erode existing slopes.

The Contractor shall take caution not to damage the existing gutters or surrounding bridge material. Any damaged bridge materials shall be repaired or replaced by the Contractor. No additional payment will be made for such damages.

Basis of Payment: This work will be paid for at the contract unit price per foot for GUTTERS TO BE CLEANED, which price shall include all material and labor to satisfactorily complete the work.

WEEP HOLES CORED

Effective: March 7, 2017

Description. This work consists of the installation of weep hole assemblies at locations shown on the drawings and/or directed by the Engineer in the field.

The weep hole assembly includes: a housing containing a flat steel flange and a perforated conical steel shell, a shell adapted to extend into the hole with its apex extending toward the landward side, a flange having a frontward side adapted to fit flush against the earth retaining structure, the flange having a landward side connected to the shell and a flange having an opening that defines an open base for the shell. A filter cartage is contained inside the steel housing.

Materials.

FLAME RETARDANT POLYCARBONATE/ ACRYLONITRILE- BUTADIENE-STYRENE:

Filter cartridges are U/V protected.

(b) STEEL:

ASTM A-36 Hot Rolled Steel 316 Stainless Steel, Corrosion Resistance

(c) FILTER MEDIA:

Media Properties:

Geotextile is inert to biological degradation and resists naturally encountered chemicals, alkalis, and acids.

Geotextile is composed of high-tenacity monofilament polypropylene yarns, which are woven into a stable network such that the yarns retain their relative position.

| | | | | |
|--|------------|---------------|--|------------|
| Wide Width Tensile Strength | ASTM D4595 | lbs/in (kN/m) | 230 (40.3) | 225 (39.4) |
| Grab Tensile Strength | ASTM D4632 | lbs (N) | 400 (1780.0) | 335 (1491) |
| Grab Tensile Elongation | ASTM D4632 | % | 20 | 15 |
| Trapezoid Tear Strength | ASTM D4533 | lbs (N) | 145 (645) | 125(556) |
| CBR Puncture Strength | ASTM D6241 | 1250 (5563) | lbs (N) | |
| Apparent Opening Size (AOS) ¹ | ASTM D4751 | 30 (0.60) | U.S. Sieve (mm) | |
| Percent Open Area | COE-02215 | 8 | % | |
| Permittivity | ASTM D4491 | 1.5 | sec-1 | |
| Permeability | ASTM D4491 | 0.13 | cm/sec | |
| Flow Rate | ASTM D4491 | 115 (4685) | gal/min/ft ² (l/min/m ²) | |
| UV Resistance (at 500 hours) | ASTM D4355 | 90 | % strength retained | |

Installation.

SUBMITTALS:

Shop drawings are to be submitted to the Engineer and approved prior to ordering of material. One Weep Hole Assembly shall be included with the shop drawings submittal.

INSTALLATION PROCEDURE:

Step 1. Core a 4 inch diameter (or as required by the manufacture) hole in the earth retaining structure at locations shown on the drawings. If the hole is cored in an existing concrete wall and the hole diameter is 4 inches or larger then the annular space shall be partially backfilled with CA 16 according to Article 1004.05 for pipe underdrains. Removal of the earth from behind the cored hole shall be limited to the volume of the steel housing in the weep hole assembly.

Step 2. Insert weep hole assembly into the drilled hole on wall.

Step 3. Pre-drill a pilot hole. Attach with self-taping screws (sized per manufacture's recommendations) through the filter plate holes into the sheet pile wall.

Step 4. Epoxy seal around the housing for any possible openings of the core per manufacture's recommendations.

Method of Measurement. Weep holes assemblies will be measured for payment in place as EACH. All labor, materials and equipment required for the installation will be included and not measured separately. The weep hole assembly submitted as part of the shop drawings submittal will not be measured for payment.

Basis of Payment. The weep hole assemblies will be paid for at the contract unit price per EACH for WEEP HOLES CORED.

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) nozzlemen 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 nozzlemen as determined by the Engineer. A copy of the nozzlemen 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.

ACCESSIBLE PEDESTRIAN SIGNALS (APS) (BDE)

Effective: April 1, 2003

Revised: January 1, 2022

Description. This work shall consist of furnishing and installing accessible pedestrian signals (APS). Each APS shall consist of an interactive vibrotactile pedestrian pushbutton with speaker, an informational sign, a light emitting diode (LED) indicator light, a solid-state electronic control board, a power supply, wiring, and mounting hardware. The APS shall meet the requirements of the MUTCD and Sections 801 and 888 of the Standard Specifications, except as modified herein.

Electrical Requirements. The APS shall operate with systems providing 95 to 130 VAC, 60 Hz and throughout an ambient air temperature range of -29 to +160 °F (-34 to +70 °C).

The APS shall contain a power protection circuit consisting of both fuse and transient protection.

Audible Indications. A pushbutton locator tone shall sound at each pushbutton and shall be deactivated during the associated walk indication and when associated traffic signals are in flashing mode. Pushbutton locator tones shall have a duration of 0.15 seconds or less and shall repeat at 1-second intervals. Each actuation of the pushbutton shall be accompanied by the speech message "Wait".

If two accessible pedestrian pushbuttons are placed less than 10 ft (3 m) apart or placed on the same pole, the audible walk indication shall be a speech walk message. This message shall sound throughout the WALK interval only. The verbal message shall be modeled after: "Street Name. Walk Sign is on to cross "Street Name." For signalized intersections utilizing exclusive pedestrian phasing, the verbal message shall be "Walk sign is on for all crossings". In addition, a speech pushbutton information message shall be provided by actuating the APS pushbutton when the WALK interval is not timing. This verbal message shall be modeled after: "Wait. Wait to cross 'Street Name' at 'Street Name'".

Where two accessible pedestrian pushbuttons are separated by at least 10 ft (3 m), the walk indication shall be an audible percussive tone. It shall repeat at 8 to 10 ticks per second with a dominant frequency of 880 Hz.

Automatic volume adjustments in response to ambient traffic sound level shall be provided up to a maximum volume of 100 dBA. Locator tone and verbal messages shall be no more than 5 dB louder than ambient sound.

At locations with railroad interconnection, an additional speech message stating "Walk time shortened when train approaches" shall be used after the speech walk message. At locations with emergency vehicle preemption, an additional speech message "Walk time shortened when emergency vehicle approaches" shall be used after the speech walk message.

Pedestrian Pushbutton. Pedestrian pushbuttons shall be at least 2 in. (50 mm) in diameter or width. The force required to activate the pushbutton shall be no greater than 3.5 lb (15.5 N).

A red LED shall be located on or near the pushbutton which, when activated, acknowledges the pedestrians request to cross the street.

Signage. A sign shall be located immediately above the pedestrian pushbutton and parallel to the crosswalk controlled by the pushbutton. The sign shall conform to one of the following standard MUTCD designs: R10-3, R10-3a, R10-3e, R10-3i, R10-4, and R10-4a.

Tactile Arrow. A tactile arrow, pointing in the direction of travel controlled by a pushbutton, shall be provided on the pushbutton.

Vibrotactile Feature. The pushbutton shall pulse when depressed and shall vibrate continuously throughout the WALK interval.

Method of Measurement. This work will be measured for payment as each, per pushbutton.

Basis of Payment. This work will be paid for at the contract unit price per each for ACCESSIBLE PEDESTRIAN SIGNALS.

AGGREGATE SUBGRADE IMPROVEMENT (BDE)

Effective: April 1, 2012

Revised: April 1, 2022

Add the following Section to the Standard Specifications:

“SECTION 303. AGGREGATE SUBGRADE IMPROVEMENT

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

303.02 Materials. Materials shall be according to the following.

| Item | Article/Section |
|--|-----------------|
| (a) Coarse Aggregate | 1004.07 |
| (b) Reclaimed Asphalt Pavement (RAP) | 1031.09 |

303.03 Equipment. The vibratory roller shall be according to Article 1101.01, or as approved by the Engineer. Vibratory machines, such as tampers, shall be used in areas where rollers do not fit.

303.04 Soil Preparation. The minimum immediate bearing value (IBV) of the soil below the improved subgrade shall be according to the Department’s “Subgrade Stability Manual” for the aggregate thickness specified.

303.05 Placing and Compacting. The maximum nominal lift thickness of aggregate gradations CA 2, CA 6, and CA 10 when compacted shall be 9 in. (225 mm). The maximum nominal lift thickness of aggregate gradations CS 1, CS 2, and RR 1 when compacted shall be 24 in. (600 mm).

The top surface of the aggregate subgrade improvement shall consist of a layer of capping aggregate gradations CA 6 or CA 10 that is 3 in. (75 mm) thick after compaction. Capping aggregate will not be required when aggregate subgrade improvement is used as a cubic yard pay item for undercut applications.

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

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

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

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

Add the following to Section 1004 of the Standard Specifications:

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

- (a) Description. The coarse aggregate shall be crushed gravel, crushed stone, or crushed concrete. In applications where greater than 24 in. (600 mm) of ASI material is required, gravel may be used below the top 12 in (300 mm) of ASI.
- (b) Quality. The coarse aggregate shall consist of sound durable particles reasonably free of deleterious materials.
- (c) Gradation.
 - (1) The coarse aggregate gradation for total ASI thickness less than or equal to 12 in. (300 mm) shall be CA 2, CA 6, CA 10, or CS 1.

The coarse aggregate gradation for total ASI thickness greater than 12 in. (300 mm) shall be CS 1 or CS 2 as shown below or RR 1 according to Article 1005.01(c).

| COARSE AGGREGATE SUBGRADE GRADATIONS | | | | | |
|--------------------------------------|--------------------------------|--------|---------|---------|---------|
| Grad No. | Sieve Size and Percent Passing | | | | |
| | 8" | 6" | 4" | 2" | #4 |
| CS 1 | 100 | 97 ± 3 | 90 ± 10 | 45 ± 25 | 20 ± 20 |
| CS 2 | | 100 | 80 ± 10 | 25 ± 15 | |

| COARSE AGGREGATE SUBGRADE GRADATIONS (Metric) | | | | | |
|---|--------------------------------|--------|---------|---------|---------|
| Grad No. | Sieve Size and Percent Passing | | | | |
| | 200 mm | 150 mm | 100 mm | 50 mm | 4.75 mm |
| CS 1 | 100 | 97 ± 3 | 90 ± 10 | 45 ± 25 | 20 ± 20 |
| CS 2 | | 100 | 80 ± 10 | 25 ± 15 | |

- (2) Capping aggregate shall be gradation CA 6 or CA 10.”

Add the following to Article 1031.09 of the Standard Specifications:

“(b) RAP in Aggregate Subgrade Improvement (ASI). RAP in ASI shall be according to Articles 1031.01(a), 1031.02(a), 1031.06(a)(1), and 1031.06(a)(2), and the following.

- (1) The testing requirements of Article 1031.03 shall not apply.
- (2) Crushed RAP used for the lower lift may be mechanically blended with aggregate gradations CS 1, CS 2, and RR 1 but it shall be no greater than 40 percent of the total product volume. RAP agglomerations shall be no greater than 4 in. (100 mm).
- (3) For capping aggregate, well graded RAP having 100 percent passing the 1 1/2 in. (38 mm) sieve may be used when aggregate gradations CS 1, CS 2, CA 2, or RR 1 are used in the lower lift. FRAP will not be permitted as capping material.

Blending shall be through calibrated interlocked feeders or a calibrated blending plant such that the prescribed blending percentage is maintained throughout the blending process. The calibration shall have an accuracy of ± 2.0 percent of the actual quantity of material delivered.”

AUTOMATED FLAGGER ASSISTANCE DEVICES (BDE)

Effective: January 1, 2008

Revised: April 1, 2023

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

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

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

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

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

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

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

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

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

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

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

BITUMINOUS MATERIALS COST ADJUSTMENTS (BDE)

Effective: November 2, 2006

Revised: August 1, 2017

Description. Bituminous material cost adjustments will be made to provide additional compensation to the Contractor, or credit to the Department, for fluctuations in the cost of bituminous materials when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract.

The adjustments shall apply to permanent and temporary hot-mix asphalt (HMA) mixtures, bituminous surface treatments (cover and seal coats), and preventative maintenance type surface treatments that are part of the original proposed construction, or added as extra work and paid for by agreed unit prices. The adjustments shall not apply to bituminous prime coats, tack coats, crack filling/sealing, joint filling/sealing, or extra work paid for at a lump sum price or by force account.

Method of Adjustment. Bituminous materials cost adjustments will be computed as follows.

$$CA = (BPI_P - BPI_L) \times (\%AC_V / 100) \times Q$$

Where: CA = Cost Adjustment, \$.

BPI_P = Bituminous Price Index, as published by the Department for the month the work is performed, \$/ton (\$/metric ton).

BPI_L = Bituminous Price Index, as published by the Department for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price, \$/ton (\$/metric ton).

%AC_V = Percent of virgin Asphalt Cement in the Quantity being adjusted. For HMA mixtures, the % AC_V will be determined from the adjusted job mix formula. For bituminous materials applied, a performance graded or cutback asphalt will be considered to be 100% AC_V and undiluted emulsified asphalt will be considered to be 65% AC_V.

Q = Authorized construction Quantity, tons (metric tons) (see below).

For HMA mixtures measured in square yards: $Q, \text{ tons} = A \times D \times (G_{mb} \times 46.8) / 2000$. For HMA mixtures measured in square meters: $Q, \text{ metric tons} = A \times D \times (G_{mb} \times 1) / 1000$. When computing adjustments for full-depth HMA pavement, separate calculations will be made for the binder and surface courses to account for their different G_{mb} and % AC_V.

For bituminous materials measured in gallons: $Q, \text{ tons} = V \times 8.33 \text{ lb/gal} \times SG / 2000$

For bituminous materials measured in liters: $Q, \text{ metric tons} = V \times 1.0 \text{ kg/L} \times SG / 1000$

Where: A = Area of the HMA mixture, sq yd (sq m).
 D = Depth of the HMA mixture, in. (mm).
 G_{mb} = Average bulk specific gravity of the mixture, from the approved mix design.
 V = Volume of the bituminous material, gal (L).
 SG = Specific Gravity of bituminous material as shown on the bill of lading.

Basis of Payment. Bituminous materials cost adjustments may be positive or negative but will only be made when there is a difference between the BPI_L and BPI_P in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(BPI_L - BPI_P) \div BPI_L\} \times 100$$

Bituminous materials cost adjustments will be calculated for each calendar month in which applicable bituminous material is placed; and will be paid or deducted when all other contract requirements for the work placed during the month are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

CEMENT, FINELY DIVIDED MINERALS, ADMIXTURES; CONCRETE, AND MORTAR (BDE)

Effective: January 1, 2025

Revise the first paragraph of Article 285.05 of the Standard Specifications to read:

“285.05 Fabric Formed Concrete Revetment Mat. The grout shall consist of a mixture of cement, fine aggregate, and water so proportioned and mixed as to provide a pumpable slurry. Fly ash or ground granulated blast furnace (GGBF) slag, and concrete admixtures may be used at the option of the Contractor. The grout shall have an air content of not less than 6.0 percent nor more than 9.0 percent of the volume of the grout. The mix shall obtain a compressive strength of 2500 psi (17,000 kPa) at 28 days according to Article 1020.09.”

Revise Article 302.02 of the Standard Specifications to read:

“302.02 Materials. Materials shall be according to the following.

| Item | Article/Section |
|---|-----------------|
| (a) Cement | 1001 |
| (b) Water | 1002 |
| (c) Hydrated Lime | 1012.01 |
| (d) By-Product, Hydrated Lime | 1012.02 |
| (e) By-Product, Non-Hydrated Lime | 1012.03 |
| (f) Lime Slurry | 1012.04 |
| (g) Fly Ash | 1010 |
| (h) Soil for Soil Modification (Note 1) | 1009.01 |
| (i) Bituminous Materials (Note 2) | 1032 |

Note 1. This soil requirement only applies when modifying with lime (slurry or dry).

Note 2. The bituminous materials used for curing shall be emulsified asphalt RS-2, CRS-2, HFE 90, or HFE 150; rapid curing liquid asphalt RC-70; or medium curing liquid asphalt MC-70 or MC-250.”

Revise Article 312.07(c) of the Standard Specifications to read:

“(c) Cement1001”

Add Article 312.07(i) of the Standard Specifications to read:

“(i) Ground Granulated Blast Furnace (GGBF) Slag1010”

Revise the first paragraph of Article 312.09 of the Standard Specifications to read:

“**312.09 Proportioning and Mix Design.** At least 60 days prior to start of placing CAM II, the Contractor shall submit samples of materials to be used in the work for proportioning and testing. The mixture shall contain a minimum of 200 lb (120 kg) of cement per cubic yard (cubic meter). Cement may be replaced with fly ash or ground granulated blast furnace (GGBF) slag according to Article 1020.05(c)(1) or 1020.05(c)(2), respectively, however the minimum cement content in the mixture shall be 170 lbs/cu yd (101 kg/cu m). Blends of coarse and fine aggregates will be permitted, provided the volume of fine aggregate does not exceed the volume of coarse aggregate. The Engineer will determine the proportions of materials for the mixture according to the “Portland Cement Concrete Level III Technician Course” manual. However, the Contractor may substitute their own mix design. Article 1020.05(a) shall apply, and a Level III PCC Technician shall develop the mix design.”

Revise Article 352.02 of the Standard Specifications to read:

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

| Item | Article/Section |
|--|-----------------|
| (a) Cement (Note 1) | 1001 |
| (b) Soil for Soil-Cement Base Course | 1009.03 |
| (c) Water | 1002 |
| (d) Bituminous Materials (Note 2) | 1032 |

Note 1. Bulk cement may be used for the traveling mixing plant method if the equipment for handling, weighing, and spreading the cement is approved by the Engineer.

Note 2. The bituminous materials used for curing shall be emulsified asphalt RS-2, CRS-2, HFE 90, or HFE 150; rapid curing liquid asphalt RC-70; or medium curing liquid asphalt MC-70 or MC-250.”

Revise Article 404.02 of the Standard Specifications to read:

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

| Item | Article/Section |
|---|-----------------|
| (a) Cement | 1001 |
| (b) Water | 1002 |
| (c) Fine Aggregate | 1003.08 |
| (d) Bituminous Material (Tack Coat) | 1032.06 |
| (e) Emulsified Asphalts (Note 1) (Note 2) | 1032.06 |
| (f) Fiber Modified Joint Sealer | 1050.05 |
| (g) Additives (Note 3) | |

Note 1. When used for slurry seal, the emulsified asphalt shall be CQS-1h according to Article 1032.06(b).

Note 2. When used for micro-surfacing, the emulsified asphalt shall be CQS-1hP according to Article 1032.06(e).

Note 3. Additives may be added to the emulsion mix or any of the component materials to provide the control of the quick-traffic properties. They shall be included as part of the mix design and be compatible with the other components of the mix.

Revise the last sentence of the fourth paragraph of Article 404.08 of the Standard Specifications to read:

“When approved by the Engineer, the sealant may be dusted with fine sand, cement, or mineral filler to prevent tracking.”

Revise Note 2 of Article 516.02 of the Standard Specifications to read:

“Note 2. The sand-cement grout mix shall be according to Section 1020 and shall be a 1:1 blend of sand and cement comprised of a Type I, IL, or II cement at 185 lb/cu yd (110 kg/cu m). The maximum water cement ratio shall be sufficient to provide a flowable mixture with a typical slump of 10 in. (250 mm).”

Revise Note 2 of Article 543.02 of the Standard Specifications to read:

“Note 2. The grout mixture shall be 6.50 hundredweight/cu yd (385 kg/cu m) of cement plus fine aggregate and water. Fly ash or ground granulated blast furnace (GGBF) slag may replace a maximum of 5.25 hundredweight/cu yd (310 kg/cu m) of the cement. The water/cement ratio, according to Article 1020.06, shall not exceed 0.60. An air-entraining admixture shall be used to produce an air content, according to Article 1020.08, of not less than 6.0 percent nor more than 9.0 percent of the volume of the grout. The Contractor shall have the option to use a water-reducing or high range water-reducing admixture.”

Revise Article 583.01 of the Standard Specifications to read:

“**583.01 Description.** This work shall consist of placing cement mortar along precast, prestressed concrete bridge deck beams as required for fairing out any unevenness between adjacent deck beams prior to placing of waterproofing membrane and surfacing.”

Revise Article 583.02(a) of the Standard Specifications to read:

“(a) Cement1001”

Revise the first paragraph of Article 583.03 of the Standard Specifications to read:

“ **583.03 General.** This work shall only be performed when the air temperature is 45 °F (7 °C) and rising. The mixture for cement mortar shall consist of three parts sand to one part cement by volume. The amount of water shall be no more than that necessary to produce a workable, plastic mortar.”

Revise Note 2/ in Article 1003.01(b) of the Standard Specifications to read:

“2/ Applies only to sand. Sand exceeding the colorimetric test standard of 11 (Illinois Modified AASHTO T 21) will be checked for mortar making properties according to Illinois Modified ASTM C 87 and shall develop a compressive strength at the age of 14 days when using Type I, IL, or II cement of not less than 95 percent of the comparable standard.

Revise the second sentence of Article 1003.02(e)(1) of the Standard Specifications to read:

“The test will be performed with Type I, IL, or II portland cement having a total equivalent alkali content ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$) of 0.90 percent or greater.”

Revise the first sentence of the second paragraph of Article 1003.02(e)(3) of the Standard Specifications to read:

“The ASTM C 1293 test shall be performed with Type I, IL, or II portland cement having a total equivalent alkali content ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$) of 0.80 percent or greater.”

Revise the second sentence of Article 1004.02(g)(1) of the Standard Specifications to read:

“The test will be performed with Type I, IL, or II portland cement having a total equivalent alkali content ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$) of 0.90 percent or greater.”

Revise Article 1017.01 of the Standard Specifications to read:

“**1017.01 Requirements.** The mortar shall be high-strength according to ASTM C 387 and shall have a minimum 80.0 percent relative dynamic modulus of elasticity when tested by the Department according to Illinois Modified AASHTO T 161 or AASHTO T 161 when tested by an independent lab. The high-strength mortar 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-strength mortar 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 five years, and the test results shall be provided to the Department. Mixing of the high-strength mortar shall be according to the manufacturer’s specifications. The Department will maintain a qualified product list.”

Revise the fourth sentence of Article 1018.01 of the Standard Specifications to read:

“The ASTM C 1218 test shall be performed by an independent lab a minimum of once every five years, and the test results shall be provided to the Department.”

Revise Article 1019.02 of the Standard Specifications to read:

“**1019.02 Materials.** Materials shall be according to the following.

| Item | Article/Section |
|--|-----------------|
| (a) Cement | 1001 |
| (b) Water | 1002 |
| (c) Fine Aggregate for Controlled Low-Strength Material (CLSM) | 1003.06 |
| (d) Fly Ash | 1010 |
| (e) Ground Granulated Blast Furnace (GGBF) Slag..... | 1010 |

(f) Admixtures (Note 1)

Note 1. The air-entraining admixture may be in powder or liquid form. Prior to approval, a CLSM air-entraining admixture will be evaluated by the Department. The admixture shall be able to meet the air content requirements of Mix 2. The Department will maintain a qualified product list.”

Revise Article 1019.05 of the Standard Specifications to read:

“**1019.05 Department Mix Design.** The Department mix design shall be Mix 1, 2, or 3 and shall be proportioned to yield approximately one cubic yard (cubic meter).

| Mix 1 | |
|--|-----------------------|
| Cement | 50 lb (30 kg) |
| Fly Ash – Class C or F, and/or GGBF Slag | 125 lb (74 kg) |
| Fine Aggregate – Saturated Surface Dry | 2900 lb (1720 kg) |
| Water | 50-65 gal (248-322 L) |
| Air Content | No air is entrained |

| Mix 2 | |
|--|-----------------------|
| Cement | 125 lb (74 kg) |
| Fine Aggregate – Saturated Surface Dry | 2500 lb (1483 kg) |
| Water | 35-50 gal (173-248 L) |
| Air Content | 15-25 % |

| Mix 3 | |
|--|-----------------------|
| Cement | 40 lb (24 kg) |
| Fly Ash – Class C or F, and/or GGBF Slag | 125 lb (74 kg) |
| Fine Aggregate – Saturated Surface Dry | 2500 lb (1483 kg) |
| Water | 35-50 gal (179-248 L) |
| Air Content | 15-25 %” |

Revise Article 1020.04, Table 1, Note (8) of the Standard Specifications to read:

“(8) In addition to the Type III portland cement, 100 lb/cu yd of ground granulated blast-furnace slag and 50 lb/cu yd of microsilica (silica fume) shall be used. For an air temperature greater than 85 °F, the Type III portland cement may be replaced with Type I, IL, or II portland cement.”

Revise Article 1020.04, Table 1 (Metric), Note (8) of the Standard Specifications to read:

“(8) In addition to the Type III portland cement, 60 kg/cu m of ground granulated blast-furnace slag and 30 kg/cu m of microsilica (silica fume) shall be used. For an air temperature greater than 30 °C, the Type III portland cement may be replaced with Type I, IL, or II portland cement.”

Revise the second paragraph of Article 1020.05(a) of the Standard Specifications to read:

“For a mix design using a portland-pozzolan cement, portland blast-furnace slag cement, portland-limestone cement, or replacing portland cement with finely divided minerals per

Articles 1020.05(c) and 1020.05(d), the Contractor may submit a mix design with a minimum portland cement content less than 400 lbs/cu yd (237 kg/cu m), but not less than 375 lbs/cu yd (222 kg/cu m), if the mix design is shown to have a minimum relative dynamic modulus of elasticity of 80 percent determined according to AASHTO T 161. Testing shall be performed by an independent laboratory accredited by AASHTO re:source for Portland Cement Concrete.”

Revise the first sentence of the first paragraph of Article 1020.05(b) of the Standard Specifications to read:

“Corrosion inhibitors and concrete admixtures shall be according to the qualified product lists.”

Delete the fourth and fifth sentences of the second paragraph of Article 1020.05(b) of the Standard Specifications.

Revise the third sentence of the second paragraph of Article 1020.05(b)(5) of the Standard Specifications to read:

“The qualified product lists of concrete admixtures shall not apply.”

Revise second paragraph of Article 1020.05(b)(10) of the Standard Specifications to read:

“When calcium nitrite is used, it shall be added at the rate of 4 gal/cu yd (20 L/cu m) and shall be added to the mix immediately after all compatible admixtures have been introduced to the batch. Other corrosion inhibitors shall be added per the manufacturer’s specifications.”

Delete the third paragraph of Article 1020.05(b)(10) of the Standard Specifications.

Revise Article 1020.15(b)(1)c. of the Standard Specifications to read:

“c. The minimum portland cement content in the mixture shall be 375 lbs/cu yd (222 kg/cu m). When the total of organic processing additions, inorganic processing additions, and limestone addition exceed 5.0 percent in the cement, the minimum portland cement content in the mixture shall be 400 lbs/cu yd (237 kg/cu m). For a drilled shaft, foundation, footing, or substructure, the minimum portland cement may be reduced to as low as 330 lbs/cu yd (196 kg/cu m) if the concrete has adequate freeze/thaw durability. The Contractor shall provide freeze/thaw test results according to AASHTO T 161, and the relative dynamic modulus of elasticity of the mix design shall be a minimum of 80 percent. Testing shall be performed by an independent laboratory accredited by AASHTO re:source for Portland Cement Concrete. Freeze/thaw testing will not be required for concrete that will not be exposed to freezing and thawing conditions as determined by the Engineer.”

Revise Article 1021.01 of the Standard Specifications to read:

“**1021.01 General.** Admixtures shall be furnished in liquid or powder form ready for use. The admixtures shall be delivered in the manufacturer's original containers, bulk tank trucks or such containers or tanks as are acceptable to the Engineer. Delivery shall be accompanied by a ticket which clearly identifies the manufacturer, the date of manufacture, and trade name of the material.

Containers shall be readily identifiable as to manufacturer, the date of manufacture, and trade name of the material they contain.

Concrete admixtures shall be on one of the Department's qualified product lists. Unless otherwise noted, admixtures shall have successfully completed and remain current with the AASHTO Product Eval and Audit Concrete Admixture (CADD) testing program. For admixture submittals to the Department; the product brand name, manufacturer name, admixture type or types, an electronic link to the product's technical data sheet, and the NTPEP testing number which contains an electronic link to all test data shall be provided. In addition, a letter shall be submitted certifying that no changes have been made in the formulation of the material since the most current round of tests conducted by AASHTO Product Eval and Audit. After 28 days of testing by AASHTO Product Eval and Audit, air-entraining admixtures may be provisionally approved and used on Departmental projects. For all other admixtures, unless otherwise noted, the time period after which provisionally approved status may be earned is 6 months.

The manufacturer shall include the following in the submittal to the AASHTO Product Eval and Audit CADD testing program: the manufacturing range for specific gravity, the midpoint and manufacturing range for residue by oven drying, and manufacturing range of pH. The submittal shall also include an infrared spectrophotometer trace no more than five years old.

For air-entraining admixtures according to Article 1021.02, the specific gravity allowable manufacturing range established by the manufacturer shall be according to AASHTO M 194. For residue by oven drying and pH, the allowable manufacturing range and test methods shall be according to AASHTO M 194.

For admixtures according to Articles 1021.03, 1021.04, 1021.05, 1021.06, 1021.07, and 1021.08, the pH allowable manufacturing range established by the manufacturer shall be according to ASTM E 70. For specific gravity and residue by oven drying, the allowable manufacturing range and test methods shall be according to AASHTO M 194.

All admixtures, except chloride-based accelerators, shall contain a maximum of 0.3 percent chloride by weight (mass) as determined by an appropriate test method. To verify the test result, the Department will use Illinois Modified AASHTO T 260, Procedure A, Method 1.

Prior to final approval of an admixture, the Engineer reserves the right to request a sample for testing. The test and reference concrete mixtures tested by the Engineer will contain a cement content of 5.65 cwt/cu yd (335 kg/cu m). For freeze-thaw testing, the Department will perform the test according to Illinois Modified AASHTO T 161. The flexural strength test will be performed according to AASHTO T 177. If the Engineer decides to test the admixture, the manufacturer shall submit AASHTO T 197 water content and set time test results on the standard cement used by the Department. The manufacturer may select their lab or an independent lab to perform this testing. The laboratory is not required to be accredited by AASHTO.

Random field samples may be taken by the Department to verify an admixture meets specification. A split sample will be provided to the manufacturer if requested. Admixtures that do not meet specification requirements or an allowable manufacturing range established by the manufacturer shall be replaced with new material."

Revise Article 1021.03 of the Standard Specifications to read:

“1021.03 Retarding and Water-Reducing Admixtures. The admixture shall be according to the following.

- (a) Retarding admixtures shall be according to AASHTO M 194, Type B (retarding) or Type D (water-reducing and retarding).
- (b) Water-reducing admixtures shall be according to AASHTO M 194, Type A.
- (c) High range water-reducing admixtures shall be according to AASHTO M 194, Type F (high range water-reducing) or Type G (high range water-reducing and retarding).”

Revise Article 1021.05 of the Standard Specifications to read:

“1021.05 Self-Consolidating Admixtures. Self-consolidating admixture systems shall consist of either a high range water-reducing admixture only or a high range water-reducing admixture combined with a separate viscosity modifying admixture. The one or two component admixture system shall be capable of producing a concrete that can flow around reinforcement and consolidate under its own weight without additional effort and without segregation.

High range water-reducing admixtures shall be according to AASHTO M 194, Type F.

Viscosity modifying admixtures shall be according to AASHTO M 194, Type S (specific performance).”

Revise Article 1021.06 of the Standard Specifications to read:

“1021.06 Rheology-Controlling Admixture. Rheology-controlling admixtures shall be capable of producing a concrete mixture with a lower yield stress that will consolidate easier for slipform applications used by the Contractor. Rheology-controlling admixtures shall be according to AASHTO M 194, Type S (specific performance).”

Revise Article 1021.07 of the Standard Specifications to read:

“1021.07 Corrosion Inhibitor. The corrosion inhibitor shall be according to one of the following.

- (a) Calcium Nitrite. Corrosion inhibitors shall contain a minimum 30 percent calcium nitrite by weight (mass) of solution and shall comply with either the requirements of AASHTO M 194, Type C (accelerating) or the requirements of ASTM C 1582. The corrosion inhibiting performance requirements of ASTM C 1582 shall not apply.
- (b) Other Materials. The corrosion inhibitor shall be according to ASTM C 1582.

For submittals requiring testing according to ASTM M 194, Type C (accelerating), the admixture shall meet the requirements of the AASHTO Product Eval and Audit CADD testing program according to Article 1021.01.

For submittals requiring testing according to ASTM C 1582, a report prepared by an independent laboratory accredited by AASHTO re:source for portland cement concrete shall be provided. The report shall show the results of physical tests conducted no more than five years prior to the time of submittal, according to applicable specifications. However, ASTM G 109 test information specified in ASTM C 1582 is not required to be from an independent accredited lab. All other information in ASTM C 1582 shall be from an independent accredited lab. Test data and other information required to be submitted to AASHTO Product Eval and Audit according to Article 1021.01, shall instead be submitted directly to the Department.”

Add Article 1021.08 of the Standard Specifications as follows:

“1021.08 Other Specific Performance Admixtures. Other specific performance admixtures shall, at a minimum, be according to AASHTO M 194, Type S (specific performance). The Department also reserves the right to require other testing, as determined by the Engineer, to show evidence of specific performance characteristics.

Initial testing according to AASHTO M 194 may be conducted under the AASHTO Product Eval and Audit CADD testing program according to Article 1021.01, or by an independent laboratory accredited by AASHTO re:source for Portland Cement Concrete. In either case, test data and other information required to be submitted to AASHTO Product Eval and Audit according to Article 1021.01, shall also be submitted directly to the Department. The independent accredited lab report shall show the results of physical tests conducted no more than five years prior to the time of submittal, according to applicable specifications.”

Revise Article 1024.01 of the Standard Specifications to read:

“1024.01 Requirements for Grout. The grout shall be proportioned by dry volume, thoroughly mixed, and shall have a minimum temperature of 50 °F (10 °C). Water shall not exceed the minimum needed for placement and finishing.

Materials for the grout shall be according to the following.

| Item | Article/Section |
|--|-----------------|
| (a) Cement | 1001 |
| (b) Water | 1002 |
| (c) Fine Aggregate | 1003.02 |
| (d) Fly Ash | 1010 |
| (e) Ground Granulated Blast Furnace (GGBF) Slag..... | 1010 |
| (f) Concrete Admixtures | 1021” |

Revise Note 1 of Article 1024.02 of the Standard Specifications to read:

“Note 1. Nonshrink grout shall be according to Illinois Modified ASTM C 1107.

The nonshrink grout 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 grout 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 five years, and the test results shall be provided to the Department. Mixing of the nonshrink grout shall be according to the manufacturer’s specifications. The Department will maintain a qualified product list.”

Revise Article 1029.02 of the Standard Specifications to read:

“ **1029.02 Materials.** Materials shall be according to the following.

| Item | Article/Section |
|---|-----------------|
| (a) Cement..... | 1001 |
| (b) Fly Ash | 1010 |
| (c) Ground Granulated Blast Furnace (GGBF) Slag | 1010 |
| (d) Water..... | 1002 |
| (e) Fine Aggregate..... | 1003 |
| (f) Concrete Admixtures | 1021 |
| (g) Foaming Agent (Note 1) | |

Note 1. The manufacturer shall submit infrared spectrophotometer trace and test results indicating the foaming agent meets the requirements of ASTM C 869 in order to be on the Department’s qualified product list. Submitted data/results shall not be more than five years old.”

Revise the second paragraph of Article 1103.03(a)(4) the Standard Specifications to read:

“The dispenser system shall provide a visual indication that the liquid admixture is actually entering the batch, such as via a transparent or translucent section of tubing or by independent check with an integrated secondary metering device. If approved by the Engineer, an alternate indicator may be used for admixtures dosed at rates of 25 oz/cwt (1630 mL/100 kg) or greater, such as accelerating admixtures, corrosion inhibitors, and viscosity modifying admixtures.”

Revise the first two sections of Check Sheet #11 of the Supplemental Specifications and Recurring Special Provisions to read:

“Description. This work shall consist of filling voids beneath rigid and composite pavements with cement grout.

Materials. Materials shall be according to the following Articles of Division 1000 - Materials of the Standard Specifications:

| Item | Article/Section |
|---|-----------------|
| (a) Cement | 1001 |
| (b) Water | 1002 |
| (c) Fly Ash | 1010 |
| (d) Ground Granulated Blast Furnace (GGBF) Slag..... | 1010 |
| (e) Admixtures | 1021 |
| (f) Packaged Rapid Hardening Mortar or Concrete | 1018” |

Revise the third paragraph of Materials Note 2 of Check Sheet #28 of the Supplemental Specifications and Recurring Special Provisions to read:

“The Department will maintain a qualified product list of synthetic fibers, which will include the minimum required dosage rate. For the minimum required fiber dosage rate based on the Illinois Modified ASTM C 1609 test, a report prepared by an independent laboratory accredited by AASHTO re:source for Portland Cement Concrete shall be provided. The

report shall show results of tests conducted no more than five years prior to the time of submittal.”

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: January 2, 2025

1. OVERVIEW AND GENERAL 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 in accordance with the requirements of 49 CFR Part 26 and listed in the Illinois Unified Certification Program (IL UCP) DBE Directory. Award of the contract is conditioned on meeting the requirements of 49 CFR Part 26, and failure by the Contractor to carry out the requirements of Part 26 is a material breach of the contract and may result in the termination of the contract or such other remedies as the Department deems appropriate.
2. CONTRACTOR ASSURANCE. All assurances set forth in FHWA 1273 are hereby incorporated by reference and will be physically attached to the final contract and all subcontracts.
3. CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. The Department has determined the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies and that, in the absence of unlawful discrimination and in an arena of fair and open competition, DBE companies can be expected to perform **4.00%** 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 in accordance with the requirements of 49 CFR 26.53 and SBE Memorandum No. 24-02.
4. IDENTIFICATION OF CERTIFIED DBE. Information about certified DBE Contractors can be found in the Illinois UCP Directory. Bidders can obtain additional information and assistance with identifying DBE-certified companies at the Department's website or by contacting the Department's Bureau of Small Business Enterprises at (217) 785-4611.

5. BIDDING PROCEDURES. Compliance with this Special Provision and SBE Policy Memorandum 24-02 is a material bidding requirement. The following shall be included with the bid.
- (a) DBE Utilization Plan (form SBE 2026) documenting enough DBE participation has been obtained to meet the goal, or a good faith effort has been made to meet the goal even though the efforts did not succeed in obtaining enough DBE participation to meet the goal.
 - (b) Applicable DBE Participation Statement (form SBE 2023, 2024, and/or 2025) for each DBE firm the bidder has committed to perform the work to achieve the contract goal.

The required forms and documentation shall 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 bid if it does not meet the bidding procedures set forth herein and the bid will be declared non-responsive. A bidder declared non-responsive for failure to meet the bidding procedures will not give rise to an administrative reconsideration. In the event the bid is declared non-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.

6. UTILIZATION PLAN EVALUATION. 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 the bidder has committed to DBE participation sufficient to meet the goal, or that the bidder has made good faith efforts to do so, in the event the bidder cannot meet the goal, in order for the Department to 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 Department determines, based upon the documentation submitted, that the bidder has made a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A and the requirements of SBE 2026.

If the Department determines that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan of that determination in accordance with SBE Policy Memorandum 24-02.

7. CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work the bidder commits to have performed by the specified DBEs 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 firms. 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 guidelines for counting goal credit are provided in 49 CFR Part 26.55. In evaluating Utilization Plans for award the Department will count goal credit as set forth in Part 26 and in accordance with SBE Policy Memorandum 24-02.

8. **CONTRACT COMPLIANCE.** The Contractor must utilize the specific DBEs listed to perform the work and supply the materials for which each DBE is listed in the Contractor's approved Utilization Plan, unless the Contractor obtains the Department's written consent to terminate the DBE or any portion of its work. The DBE Utilization Plan approved by SBE is a condition-of-award, and any deviation to that Utilization Plan, the work set forth therein to be performed by DBE firms, or the DBE firms specified to perform that work, must be approved, in writing, by the Department in accordance with federal regulatory requirements. Deviation from the DBE Utilization Plan condition-of-award without such written approval is a violation of the contract and may result in termination of the contract or such other remedy the Department deems appropriate. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan.
- (a) **NOTICE OF DBE PERFORMANCE.** The Contractor shall provide the Engineer with at least three days advance notice of when all DBE firms are expected to perform the work committed under the Contractor's Utilization Plan.
 - (b) **SUBCONTRACT.** If awarded the contract, the Contractor is required to enter into written subcontracts with all DBE firms indicated in the approved Utilization Plan and must provide copies of fully executed 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.
 - (c) **PAYMENT TO DBE FIRMS.** 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 goal has been paid to the DBE. The Contractor shall document and report all payments for work performed by DBE certified firms in accordance with Article 109.11 of the Standard Specifications. All records of payment for work performed by DBE certified firms shall be made available to the Department upon request.
 - (d) **FINAL PAYMENT.** After the performance of the final item of work or trucking, or delivery of material by a DBE and final payment 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 (form SBE 2115) to the Engineer. 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.
 - (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.

FUEL COST ADJUSTMENT (BDE)

Effective: April 1, 2009

Revised: August 1, 2017

Description. Fuel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in fuel prices when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract. Failure to indicate "Yes" for any category of work will make that category of work exempt from fuel cost adjustment.

General. The fuel cost adjustment shall apply to contract pay items as grouped by category. The adjustment shall only apply to those categories of work checked "Yes", and only when the cumulative plan quantities for a category exceed the required threshold. Adjustments to work items in a category, either up or down, and extra work paid for by agreed unit price will be subject to fuel cost adjustment only when the category representing the added work was subject to the fuel cost adjustment. Extra work paid for at a lump sum price or by force account will not be subject to fuel cost adjustment. Category descriptions and thresholds for application and the fuel usage factors which are applicable to each are as follows:

(a) Categories of Work.

- (1) Category A: Earthwork. Contract pay items performed under Sections 202, 204, and 206 including any modified standard or nonstandard items where the character of the work to be performed is considered earthwork. The cumulative total of all applicable item plan quantities shall exceed 25,000 cu yd (20,000 cu m). Included in the fuel usage factor is a weighted average 0.10 gal/cu yd (0.50 liters/cu m) factor for trucking.
- (2) Category B: Subbases and Aggregate Base Courses. Contract pay items constructed under Sections 311, 312 and 351 including any modified standard or nonstandard items where the character of the work to be performed is considered construction of a subbase or aggregate, stabilized or modified base course. The cumulative total of all applicable item plan quantities shall exceed 5000 tons (4500 metric tons). Included in the fuel usage factor is a 0.60 gal/ton (2.50 liters/metric ton) factor for trucking.
- (3) Category C: Hot-Mix Asphalt (HMA) Bases, Pavements and Shoulders. Contract pay items constructed under Sections 355, 406, 407 and 482 including any modified standard or nonstandard items where the character of the work to be performed is considered HMA bases, pavements and shoulders. The cumulative total of all applicable item plan quantities shall exceed 5000 tons (4500 metric tons). Included in the fuel usage factor is 0.60 gal/ton (2.50 liters/metric ton) factor for trucking.
- (4) Category D: Portland Cement Concrete (PCC) Bases, Pavements and Shoulders. Contract pay items constructed under Sections 353, 420, 421 and 483 including any modified standard or nonstandard items where the character of the work to be performed is considered PCC base, pavement or shoulder. The cumulative total of all applicable item plan quantities shall exceed 7500 sq yd (6000 sq m). Included in the fuel usage factor is 1.20 gal/cu yd (5.94 liters/cu m) factor for trucking.
- (5) Category E: Structures. Structure items having a cumulative bid price that exceeds \$250,000 for pay items constructed under Sections 502, 503, 504, 505, 512, 516 and 540 including any modified standard or nonstandard items where the character of the

work to be performed is considered structure work when similar to that performed under these sections and not included in categories A through D.

(b) Fuel Usage Factors.

| English Units | | |
|--|--------|--------------|
| Category | Factor | Units |
| A - Earthwork | 0.34 | gal / cu yd |
| B – Subbase and Aggregate Base courses | 0.62 | gal / ton |
| C – HMA Bases, Pavements and Shoulders | 1.05 | gal / ton |
| D – PCC Bases, Pavements and Shoulders | 2.53 | gal / cu yd |
| E – Structures | 8.00 | gal / \$1000 |

| Metric Units | | |
|--|--------|---------------------|
| Category | Factor | Units |
| A - Earthwork | 1.68 | liters / cu m |
| B – Subbase and Aggregate Base courses | 2.58 | liters / metric ton |
| C – HMA Bases, Pavements and Shoulders | 4.37 | liters / metric ton |
| D – PCC Bases, Pavements and Shoulders | 12.52 | liters / cu m |
| E – Structures | 30.28 | liters / \$1000 |

(c) Quantity Conversion Factors.

| Category | Conversion | Factor |
|----------|--------------------|--------------------------------------|
| B | sq yd to ton | 0.057 ton / sq yd / in depth |
| | sq m to metric ton | 0.00243 metric ton / sq m / mm depth |
| C | sq yd to ton | 0.056 ton / sq yd / in depth |
| | sq m to metric ton | 0.00239 m ton / sq m / mm depth |
| D | sq yd to cu yd | 0.028 cu yd / sq yd / in depth |
| | sq m to cu m | 0.001 cu m / sq m / mm depth |

Method of Adjustment. Fuel cost adjustments will be computed as follows.

$$CA = (FPI_P - FPI_L) \times FUF \times Q$$

- Where: CA = Cost Adjustment, \$
 FPI_P = Fuel Price Index, as published by the Department for the month the work is performed, \$/gal (\$/liter)
 FPI_L = Fuel Price Index, as published by the Department for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price, \$/gal (\$/liter)
 FUF = Fuel Usage Factor in the pay item(s) being adjusted
 Q = Authorized construction Quantity, tons (metric tons) or cu yd (cu m)

The entire FUF indicated in paragraph (b) will be used regardless of use of trucking to perform the work.

Basis of Payment. Fuel cost adjustments may be positive or negative but will only be made when there is a difference between the FPI_L and FPI_P in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(FPI_L - FPI_P) \div FPI_L\} \times 100$$

Fuel cost adjustments will be calculated for each calendar month in which applicable work is performed; and will be paid or deducted when all other contract requirements for the items of work are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

HOT-MIX ASPHALT (BDE)

Effective: January 1, 2024

Revised: January 1, 2025

Revise the first and second paragraphs of Articles 1030.06(c)(2) of the Standard Specifications to read:

“(2) Personnel. The Contractor shall provide a QC Manager who shall have overall responsibility and authority for quality control. This individual shall maintain active certification as a Hot-Mix Asphalt Level II technician.

In addition to the QC Manager, the Contractor shall provide sufficient personnel to perform the required visual inspections, sampling, testing, and documentation in a timely manner. Mix designs shall be developed by personnel with an active certification as a Hot-Mix Asphalt Level III technician. Technicians performing mix design testing and plant sampling/testing shall maintain active certification as a Hot-Mix Asphalt Level I technician. The Contractor may provide a technician trainee who has successfully completed the Department’s “Hot-Mix Asphalt Trainee Course” to assist in the activities completed by a Hot-Mix Asphalt Level I technician for a period of one year after the course completion date. The Contractor may also provide a Gradation Technician who has successfully completed the Department’s “Gradation Technician Course” to run gradation tests only under the supervision of a Hot-Mix Asphalt Level II Technician. The Contractor shall provide a Hot-Mix Asphalt Density Tester who has successfully completed the Department’s “Nuclear Density Testing” course to run all nuclear density tests on the job site.”

Revise the second paragraph of Articles 1030.07(a)(11) and 1030.08(a)(9) of the Standard Specifications to read:

“When establishing the target density, the HMA maximum theoretical specific gravity (G_{mm}) will be based on the running average of four available Department test results for that project. If less than four G_{mm} test results are available, an average of all available Department test results for that project will be used. The initial G_{mm} will be the last available Department test result from a QMP project. If there is no available Department test result from a QMP project, the Department mix design verification test result will be used as the initial G_{mm} .”

Revise Article 1030.09(g)(2) of the Standard Specifications to read:

“(2) The Contractor shall complete split verification sample tests listed in the Limits of Precision table in Article 1030.09(h)(1).”

In the Supplemental Specifications, replace the revision for the end of the third paragraph of Article 1030.09(h)(2) with the following:

“When establishing the target density, the HMA maximum theoretical specific gravity (G_{mm}) will be the Department mix design verification test result.”

Revise the tenth paragraph of Article 1030.10 of the Standard Specifications to read:

“Production is not required to stop after a test strip has been constructed.”

HOT-MIX ASPHALT – LONGITUDINAL JOINT SEALANT (BDE)

Effective: November 1, 2022

Revised: August 1, 2023

Add the following after the second sentence in the eighth paragraph of Article 406.06(h)(2) of the Standard Specifications:

“If rain is forecasted and traffic is to be on the LJS or if pickup/tracking of the LJS material is likely, the LJS shall be covered immediately following its application with FA 20 fine aggregate mechanically spread uniformly at a rate of 1.5 ± 0.5 lb/sq yd (0.75 ± 0.25 kg/sq m). Fine aggregate landing outside of the LJS shall be removed prior to application of tack coat.”

Add the following after the first sentence in the ninth paragraph of Article 406.06(h)(2) of the Standard Specifications:

“LJS half-width shall be applied at a width of 9 ± 1 in. (225 ± 25 mm) in the immediate lane to be placed with the outside edge flush with the joint of the next HMA lift. The vertical face of any longitudinal joint remaining in place shall also be coated.”

Add the following after the eleventh paragraph of Article 406.06(h)(2) of the Standard Specifications:

| “LJS Half-Width Application Rate, lb/ft (kg/m) ^{1/} | | | |
|--|---|--------------------------------------|---------------------------------------|
| Lift Thickness, in. (mm) | Coarse Graded Mixture (IL-19.0, IL-19.0L, IL-9.5, IL-9.5L, IL-4.75) | Fine Graded Mixture (IL-9.5FG) | SMA Mixture (SMA-9.5, SMA-12.5) |
| $\frac{3}{4}$ (19) | 0.44 (0.66) | | |
| 1 (25) | 0.58 (0.86) | | |
| 1 $\frac{1}{4}$ (32) | 0.66 (0.98) | 0.44 (0.66) | |
| 1 $\frac{1}{2}$ (38) | 0.74 (1.10) | 0.48 (0.71) | 0.63 (0.94) |
| 1 $\frac{3}{4}$ (44) | 0.82 (1.22) | 0.52 (0.77) | 0.69 (1.03) |
| 2 (50) | 0.90 (1.34) | 0.56 (0.83) | 0.76 (1.13) |
| $\geq 2 \frac{1}{4}$ (60) | 0.98 (1.46) | | |

- 1/ The application rate includes a surface demand for liquid. The thickness of the LJS may taper from the center of the application to a lesser thickness on the edge of the application, provided the correct width and application rate are maintained.”

Revise the second paragraph of Article 406.13(b) of the Standard Specifications to read:

“Aggregate for covering tack, LJS, or FLS will not be measured for payment.”

Add the following to the end of the second paragraph of Article 406.14 of the Standard Specifications:

“Longitudinal joint sealant (LJS) half-width will be paid for at the contract unit price per foot (meter) for LONGITUDINAL JOINT SEALANT, HALF-WIDTH.”

ILLINOIS WORKS APPRENTICESHIP INITIATIVE – STATE FUNDED CONTRACTS (BDE)

Effective: June 2, 2021

Revised: April 2, 2024

Illinois Works Jobs Program Act (30 ILCS 559/20-1 et seq.). For contracts having an awarded contract value of \$500,000 or more, the Contractor shall comply with the Illinois Works Apprenticeship Initiative (30 ILCS 559/20-20 to 20-25) and all applicable administrative rules. The goal of the Illinois Apprenticeship Works Initiative is that apprentices will perform either 10% of the total labor hours actually worked in each prevailing wage classification or 10% of the estimated labor hours in each prevailing wage classification, whichever is less. Of this goal, at least 50% of the labor hours of each prevailing wage classification performed by apprentices shall be performed by graduates of the Illinois Works Pre-Apprenticeship Program, the Illinois Climate Works Pre-Apprenticeship Program, or the Highway Construction Careers Training Program.

The Contractor may seek from the Department of Commerce and Economic Opportunity (DCEO) a waiver or reduction of this goal in certain circumstances pursuant to 30 ILCS 559/20-20(b). The Contractor shall ensure compliance during the term of the contract and will be required to report on and certify its compliance. An apprentice use plan, apprentice hours, and a compliance certification shall be submitted to the Engineer on forms provided by the Department and/or DCEO.

PAVEMENT MARKING INSPECTION (BDE)

Effective: April 1, 2025

Revise the second sentence of the first paragraph of Article 780.13 of the Standard Specifications to read:

“In addition, thermoplastic, preformed plastic, epoxy, preformed thermoplastic, polyurea, and modified urethane pavement markings will be inspected following a winter performance period that extends from November 15 to April 1 of the next year.”

PERFORMANCE GRADED ASPHALT BINDER (BDE)

Effective: January 1, 2023

Revise Article 1032.05 of the Standard Specifications to read:

“1032.05 Performance Graded Asphalt Binder. These materials will be accepted according to the Bureau of Materials Policy Memorandum, “Performance Graded Asphalt Binder Qualification Procedure.” The Department will maintain a qualified producer list. These materials shall be free from water and shall not foam when heated to any temperature below the actual flash point. Air blown asphalt, recycle engine oil bottoms (ReOB), and polyphosphoric acid (PPA) modification shall not be used.

When requested, producers shall provide the Engineer with viscosity/temperature relationships for the performance graded asphalt binders delivered and incorporated in the work.

- (a) Performance Graded (PG) Asphalt Binder. The asphalt binder shall meet the requirements of AASHTO M 320, Table 1 “Standard Specification for Performance Graded Asphalt Binder” for the grade shown on the plans and the following.

| Test | Parameter |
|---|------------|
| Small Strain Parameter (AASHTO PP 113) BBR, ΔT_c , 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs) | -5 °C min. |

- (b) Modified Performance Graded (PG) Asphalt Binder. The asphalt binder shall meet the requirements of AASHTO M 320, Table 1 “Standard Specification for Performance Graded Asphalt Binder” for the grade shown on the plans.

Asphalt binder modification shall be performed at the source, as defined in the Bureau of Materials Policy Memorandum, “Performance Graded Asphalt Binder Qualification Procedure.”

Modified asphalt binder shall be safe to handle at asphalt binder production and storage temperatures or HMA construction temperatures. Safety Data Sheets (SDS) shall be provided for all asphalt modifiers.

- (1) Polymer Modification (SB/SBS or SBR). Elastomers shall be added to the base asphalt binder to achieve the specified performance grade and shall be either a styrene-butadiene diblock, triblock copolymer without oil extension, or a styrene-butadiene rubber. The polymer modified asphalt binder shall be smooth, homogeneous, and be according to the requirements shown in Table 1 or 2 for the grade shown on the plans.

| Table 1 - Requirements for Styrene-Butadiene Copolymer (SB/SBS) Modified Asphalt Binders | | |
|---|---|---|
| Test | Asphalt Grade SB/SBS PG 64-28 SB/SBS PG 70-22 | Asphalt Grade SB/SBS PG 64-34 SB/SBS PG 70-28 SB/SBS PG 76-22 SB/SBS PG 76-28 |
| Separation of Polymer ITP, "Separation of Polymer from Asphalt Binder" Difference in °F (°C) of the softening point between top and bottom portions | 4 (2) max. | 4 (2) max. |
| TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240) | | |
| Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, % | 60 min. | 70 min. |

| Table 2 - Requirements for Styrene-Butadiene Rubber (SBR) Modified Asphalt Binders | | |
|---|---|---|
| Test | Asphalt Grade SBR PG 64-28 SBR PG 70-22 | Asphalt Grade SB/SBS PG 64-34 SB/SBS PG 70-28 SBR PG 76-22 SBR PG 76-28 |
| Separation of Polymer ITP, "Separation of Polymer from Asphalt Binder" Difference in °F (°C) of the softening point between top and bottom portions | 4 (2) max. | 4 (2) max. |
| Toughness ASTM D 5801, 77 °F (25 °C), 20 in./min. (500 mm/min.), in.-lbs (N-m) | 110 (12.5) min. | 110 (12.5) min. |
| Tenacity ASTM D 5801, 77 °F (25 °C), 20 in./min. (500 mm/min.), in.-lbs (N-m) | 75 (8.5) min. | 75 (8.5) min. |
| TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240) | | |
| Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, % | 40 min. | 50 min. |

- (2) Ground Tire Rubber (GTR) Modification. GTR modification is the addition of recycled ground tire rubber to liquid asphalt binder to achieve the specified performance grade. GTR shall be produced from processing automobile and/or truck tires by the ambient grinding method or micronizing through a cryogenic process. GTR shall not exceed 1/16 in. (2 mm) in any dimension and shall not contain free metal particles, moisture that would cause foaming of the asphalt, or other foreign materials. A mineral powder (such as talc) meeting the requirements of AASHTO M 17 may be added, up to a maximum of four percent by weight of GTR to reduce sticking and caking of the GTR

particles. When tested in accordance with Illinois Modified AASHTO T 27 “Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates” or AASHTO PP 74 “Standard Practice for Determination of Size and Shape of Glass Beads Used in Traffic Markings by Means of Computerized Optical Method”, a 50 g sample of the GTR shall conform to the following gradation requirements.

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

GTR modified asphalt binder shall be tested for rotational viscosity according to AASHTO T 316 using spindle S27. GTR modified asphalt binder shall be tested for original dynamic shear and RTFO dynamic shear according to AASHTO T 315 using a gap of 2 mm.

The GTR modified asphalt binder shall meet the requirements of Table 3.

| Table 3 - Requirements for Ground Tire Rubber (GTR) Modified Asphalt Binders | | |
|--|---|---|
| Test | Asphalt Grade GTR PG 64-28 GTR PG 70-22 | Asphalt Grade GTR PG 76-22 GTR PG 76-28 GTR PG 70-28 |
| TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240) | | |
| Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, % | 60 min. | 70 min. |

- (3) Softener Modification (SM). Softener modification is the addition of organic compounds, such as engineered flux, bio-oil blends, modified vegetable oils, glycol amines, and fatty acid derivatives, to the base asphalt binder to achieve the specified performance grade. Softeners shall be dissolved, dispersed, or reacted in the asphalt binder to enhance its performance and shall remain compatible with the asphalt binder with no separation. Softeners shall not be added to modified PG asphalt binder as defined in Articles 1032.05(b)(1) or 1032.05(b)(2).

An Attenuated Total Reflectance-Fourier Transform Infrared spectrum (ATR-FTIR) shall be collected for both the softening compound as well as the softener modified asphalt binder at the dose intended for qualification. The ATR-FTIR spectra shall be collected on unaged softener modified binder, 20-hour Pressurized Aging Vessel (PAV) aged softener modified binder, and 40-hour PAV aged softener modified binder. The ATR-FTIR shall be collected in accordance with Illinois Test Procedure 601. The electronic files spectral files (in one of the following extensions or equivalent: *.SPA, *.SPG, *.IRD, *.IFG, *.CSV, *.SP, *.IRS, *.GAML, *.[0-9], *.IGM, *.ABS, *.DRT, *.SBM, *.RAS) shall be submitted to the Central Bureau of Materials.

Softener modified asphalt binders shall meet the requirements in Table 4.

| Table 4 - Requirements for Softener Modified Asphalt Binders | | |
|--|---------------|-------------|
| Test | Asphalt Grade | |
| | SM PG 46-28 | SM PG 46-34 |
| | SM PG 52-28 | SM PG 52-34 |
| | SM PG 58-22 | SM PG 58-28 |
| | SM PG 64-22 | |
| Small Strain Parameter (AASHTO PP 113) BBR, ΔT_c , 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs) | -5°C min. | |
| Large Strain Parameter (Illinois Modified AASHTO T 391) DSR/LAS Fatigue Property, $\Delta G^* _{peak}$, 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs) | ≥ 54 % | |

The following grades may be specified as tack coats.

| Asphalt Grade | Use |
|------------------------------|------------|
| PG 58-22, PG 58-28, PG 64-22 | Tack Coat" |

Revise Article 1031.06(c)(1) and 1031.06(c)(2) of the Standard Specifications to read:

“(1) RAP/RAS. When RAP is used alone or RAP is used in conjunction with RAS, the percentage of virgin ABR shall not exceed the amounts listed in the following table.

| HMA Mixtures - RAP/RAS Maximum ABR % ^{1/ 2/} | | | |
|---|--------|---------|--|
| Ndesign | Binder | Surface | Polymer Modified Binder or Surface ^{3/} |
| 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).
- 3/ The maximum ABR percentages for ground tire rubber (GTR) modified mixes shall be equivalent to the percentages specified for SBS/SBR polymer modified mixes.

- (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.

| HMA Mixtures - FRAP/RAS Maximum ABR % ^{1/ 2/} | | | |
|--|--------|---------|--|
| Ndesign | Binder | Surface | Polymer Modified Binder or Surface ^{3/} |
| 30 | 55 | 45 | 15 |
| 50 | 45 | 40 | 15 |
| 70 | 45 | 35 | 15 |
| 90 | 45 | 35 | 15 |
| SMA | -- | -- | 25 |
| IL-4.75 | -- | -- | 35 |

- 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).
- 3/ The maximum ABR percentages for GTR modified mixes shall be equivalent to the percentages specified for SBS/SBR polymer modified mixes.”

Add the following to the end of Note 2 of Article 1030.03 of the Standard Specifications.

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

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE)

Effective: January 1, 2024

Revised: April 1, 2024

Revise the first paragraph of Article 669.04 of the Standard Specifications to read:

“669.04 Regulated Substances Monitoring. Regulated substances monitoring includes environmental observation and field screening during regulated substances management activities. The excavated soil and groundwater within the work areas shall be managed as either uncontaminated soil, hazardous waste, special waste, or non-special waste.

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)”.

Revise the first two sentences of the nineteenth paragraph of Article 669.05 of the Standard Specifications to read:

“The Contractor shall coordinate waste disposal approvals with the disposal facility and provide the specific analytical testing requirements of that facility. The Contractor shall make all arrangements for collection, transportation, and analysis of landfill acceptance testing.”

Revise the last paragraph of Article 669.05 of the Standard Specifications to read:

“The Contractor shall select a permitted landfill facility or CCDD/USFO facility meeting the requirements of 35 Ill. Admin. Code Parts 810-814 or Part 1100, respectively. The Department will review and approve or reject the facility proposed by the Contractor based upon information provided in BDE 2730. The Contractor shall verify whether the selected facility is compliant with those applicable standards as mandated by their permit and whether the 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 facility shall in no manner delay the construction schedule or alter the Contractor's responsibilities as set forth.”

Revise the first paragraph of Article 669.07 of the Standard Specifications to read:

“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. All other 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.

Topsoil for re-use as final cover which has been field screened and found not to exhibit PID readings over daily background readings as documented on the BDE 2732, visual staining or odors, and is classified according to Articles 669.05(a)(2), (a)(3), (a)(4), (b)(1), or (c) may be temporarily staged at the Contractor's option.”

Add the following paragraph after the sixth paragraph of Article 669.11 of the Standard Specifications.

“The sampling and testing of effluent water derived from dewatering discharges for priority pollutants volatile organic compounds (VOCs), priority pollutants semi-volatile organic compounds (SVOCs), or priority pollutants metals, will be paid for at the contract unit price per each for VOCS GROUNDWATER ANALYSIS using EPA Method 8260B, SVOCs GROUNDWATER ANALYSIS using EPA Method 8270C, or RCRA METALS GROUNDWATER ANALYSIS using EPA Methods 6010B and 7471A. This price shall include transporting the sample from the job site to the laboratory.”

Revise the first sentence of the eight paragraph of Article 669.11 of the Standard Specifications to read:

“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) to be managed and disposed of, if required and approved by the Engineer, will be paid according to Article 109.04.”

SHORT TERM AND TEMPORARY PAVEMENT MARKINGS (BDE)

Effective: April 1, 2024

Revised: April 2, 2024

Revise Article 701.02(d) of the Standard Specifications to read:

“(d) Pavement Marking Tapes (Note 3)1095.06”

Add the following Note to the end of Article 701.02 of the Standard Specifications:

“Note 3. White or yellow pavement marking tape that is to remain in place longer than 14 days shall be Type IV tape.”

Revise Article 703.02(c) of the Standard Specifications to read:

“(c) Pavement Marking Tapes (Note 1)1095.06”

Add the following Note to the end of Article 703.02 of the Standard Specifications:

“Note 1. White or yellow pavement marking tape that is to remain in place longer than 14 days shall be Type IV tape.”

Revise Article 1095.06 of the Standard Specifications to read:

“1095.06 Pavement Marking Tapes. Type I white or yellow marking tape shall consist of glass spheres embedded into a binder on a foil backing that is precoated with a pressure sensitive adhesive. The spheres shall be of uniform gradation and distributed evenly over the surface of the tape.

Type IV tape shall consist of white or yellow tape with wet reflective media incorporated to provide immediate and continuing retroreflection in wet and dry conditions. The wet retroreflective media shall be bonded to a durable polyurethane surface. The patterned surface shall have approximately 40 ± 10 percent of the surface area raised and presenting a near vertical face to traffic from any direction. The channels between the raised areas shall be substantially free of exposed reflective elements or particles.

Blackout tape shall consist of a matte black, non-reflective, patterned surface that is precoated with a pressure sensitive adhesive.

(a) Color. The white and yellow markings shall meet the following requirements for daylight reflectance and color, when tested, using a color spectrophotometer with 45 degrees circumferential/zero degree geometry, illuminant D65, and two degree observer angle. The color instrument shall measure the visible spectrum from 380 to 720 nm with a wavelength measurement interval and spectral bandpass of 10 nm.

| Color | Daylight Reflectance %Y |
|----------|-------------------------|
| White | 65 min. |
| Yellow * | 36 - 59 |

*Shall match Aerospace Material Specification Standard 595 33538 (Orange Yellow) and the chromaticity limits as follows.

| | | | | |
|---|-------|-------|-------|-------|
| x | 0.490 | 0.475 | 0.485 | 0.530 |
| y | 0.470 | 0.438 | 0.425 | 0.456 |

- (b) Retroreflectivity. The white and yellow markings shall be retroreflective. Reflective values measured in accordance with the photometric testing procedure of ASTM D 4061 shall not be less than those listed in the table below. The coefficient of retroreflected luminance, R_L , shall be expressed as average millicandelas/footcandle/sq ft (millicandelas/lux/sq m), measured on a 3.0 x 0.5 ft (900 mm x 150 mm) panel at 86 degree entrance angle.

| Coefficient of Retroreflected Luminance, R_L , Dry | | | | | |
|--|-------|--------|-------------------|-------|--------|
| Type I | | | Type IV | | |
| Observation Angle | White | Yellow | Observation Angle | White | Yellow |
| 0.2° | 2700 | 2400 | 0.2° | 1300 | 1200 |
| 0.5° | 2250 | 2000 | 0.5° | 1100 | 1000 |

Wet retroreflectance shall be measured for Type IV under wet conditions according to ASTM E 2177 and meet the following.

| Wet Retroreflectance, Initial R_L | |
|-------------------------------------|------------------|
| Color | R_L 1.05/88.76 |
| White | 300 |
| Yellow | 200 |

- (c) Skid Resistance. The surface of Type IV and blackout markings shall provide a minimum skid resistance of 45 BPN when tested according to ASTM E 303.
- (d) Application. The pavement marking tape shall have a precoated pressure sensitive adhesive and shall require no activation procedures. Test pieces of the tape shall be applied according to the manufacturer's instructions and tested according to ASTM D 1000, Method A, except that a stiff, short bristle roller brush and heavy hand pressure will be substituted for the weighted rubber roller in applying the test pieces to the metal test panel. Material tested as directed above shall show a minimum adhesion value of 750 g/in. (30 g/mm) width at the temperatures specified in ASTM D 1000. The adhesive shall be resistant to oils, acids, solvents, and water, and shall not leave objectionable stains or residue after removal. The material shall be flexible and conformable to the texture of the pavement.
- (e) Durability. Type IV and blackout tape shall be capable of performing for the duration of a normal construction season and shall then be capable of being removed intact or in large sections at pavement temperatures above 40 °F (4 °C) either manually or with a roll-up device without the use of sandblasting, solvents, or grinding. The Contractor shall provide a manufacturer's certification that the material meets the requirements for being removed after the following minimum traffic exposure based on transverse test decks with rolling traffic.

- (1) Time in place - 400 days
- (2) ADT per lane - 9,000 (28 percent trucks)
- (3) Axle hits - 10,000,000 minimum

Samples of the material applied to standard specimen plates will be measured for thickness and tested for durability in accordance with ASTM D 4060, using a CS-17 wheel and 1000-gram load, and shall meet the following criteria showing no significant change in color after being tested for the number of cycles indicated.

| Test | Type I | Type IV | Blackout |
|---|-----------|-------------------------|-------------------------|
| Minimum Initial Thickness, mils (mm) | 20 (0.51) | 65 (1.65) ^{1/} | 65 (1.65) ^{1/} |
| | | 20 (0.51) ^{2/} | 20 (0.51) ^{2/} |
| Durability (cycles) | 5,000 | 1,500 | 1,500 |

1/ Measured at the thickest point of the patterned surface.

2/ Measured at the thinnest point of the patterned surface.

The pavement marking tape, when applied according to the manufacturer's recommended procedures, shall be weather resistant and shall show no appreciable fading, lifting, or shrinkage during the useful life of the marking. The tape, as applied, shall be of good appearance, free of cracks, and edges shall be true, straight, and unbroken.

(f) Sampling and Inspection.

- (1) Sample. Prior to approval and use of Type IV pavement marking tape, the manufacturer shall submit a notarized certification from an independent laboratory, together with the results of all tests, stating that the material meets the requirements as set forth herein. The independent laboratory test report shall state the lot tested, the manufacturer's name, and the date of manufacture.

After initial approval by the Department, samples and certification by the manufacturer shall be submitted for each subsequent batch of Type IV tape used. The manufacturer shall submit a certification stating that the material meets the requirements as set forth herein and is essentially identical to the material sent for qualification. The certification shall state the lot tested, the manufacturer's name, and the date of manufacture.

- (2) Inspection. The Contractor shall provide a manufacturer's certification to the Engineer stating the material meets all requirements of this specification. All material samples for acceptance tests shall be taken or witnessed by a representative of the Bureau of Materials and shall be submitted to the Engineer of Materials, 126 East Ash Street, Springfield, Illinois 62704-4766 at least 30 days in advance of the pavement marking operations."

SIGN PANELS AND APPURTENANCES (BDE)

Effective: January 1, 2025

Revised: April 1, 2025

Add Article 720.02(c) of the Standard Specifications to read:

“(c) Aluminum Epoxy Mastic1008.03”

Revise the second and third paragraphs of Article 720.02 of the Standard Specifications to read:

“The sign mounting support channel shall be manufactured from steel or aluminum and shall be according to Standard 720001.

Steel support channels shall be according to ASTM A 1011 (A 1011M), ASTM A 635 (A 635M), ASTM A 568 (A 568M), or ASTM A 684 (A 684M), and shall be galvanized. Galvanizing shall be according to ASTM A 653 (A 653M) when galvanized before fabrication, and AASHTO M 111 (M 111M) when galvanized after fabrication. Field or post fabricated drilled holes shall be spot painted with one coat of aluminum epoxy mastic paint prior to installation.”

Revise the fifth paragraph of Article 720.02 of the Standard Specifications to read:

“The stainless steel banding for mounting signs or sign support channels to light or signal standards shall be according to ASTM A 240 (A 240M) Type 302 stainless steel.”

STEEL COST ADJUSTMENT (BDE)

Effective: April 2, 2004

Revised: January 1, 2022

Description. Steel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in steel prices when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract. Failure to indicate “Yes” for any item of work will make that item of steel exempt from steel cost adjustment.

Types of Steel Products. An adjustment will be made for fluctuations in the cost of steel used in the manufacture of the following items:

- Metal Piling (excluding temporary sheet piling)
- Structural Steel
- Reinforcing Steel

Other steel materials such as dowel bars, tie bars, welded reinforcement, guardrail, steel traffic signal and light poles, towers and mast arms, metal railings (excluding wire fence), and frames and grates will be subject to a steel cost adjustment when the pay items they are used in have a contract value of \$10,000 or greater.

The adjustments shall apply to the above items when they are part of the original proposed construction, or added as extra work and paid for by agreed unit prices. The adjustments shall not apply when the item is added as extra work and paid for at a lump sum price or by force account.

Documentation. Sufficient documentation shall be furnished to the Engineer to verify the following:

- (a) The dates and quantity of steel, in lb (kg), shipped from the mill to the fabricator.
- (b) The quantity of steel, in lb (kg), incorporated into the various items of work covered by this special provision. The Department reserves the right to verify submitted quantities.

Method of Adjustment. Steel cost adjustments will be computed as follows:

$$SCA = Q \times D$$

Where: SCA = steel cost adjustment, in dollars
Q = quantity of steel incorporated into the work, in lb (kg)
D = price factor, in dollars per lb (kg)

$$D = MPI_M - MPI_L$$

Where: MPI_M = The Materials Cost Index for steel as published by the Engineering News-Record for the month the steel is shipped from the mill. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

MPI_L = The Materials Cost Index for steel as published by the Engineering News-Record for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price,. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

The unit weights (masses) of steel that will be used to calculate the steel cost adjustment for the various items are shown in the attached table.

No steel cost adjustment will be made for any products manufactured from steel having a mill shipping date prior to the letting date.

If the Contractor fails to provide the required documentation, the method of adjustment will be calculated as described above; however, the MPI_M will be based on the date the steel arrives at the job site. In this case, an adjustment will only be made when there is a decrease in steel costs.

Basis of Payment. Steel cost adjustments may be positive or negative but will only be made when there is a difference between the MPI_L and MPI_M in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(MPI_L - MPI_M) \div MPI_L\} \times 100$$

Steel cost adjustments will be calculated by the Engineer and will be paid or deducted when all other contract requirements for the items of work are satisfied. Adjustments will only be made for fluctuations in the cost of the steel as described herein. No adjustment will be made for changes in the cost of manufacturing, fabrication, shipping, storage, etc.

The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

Attachment

| Item | Unit Mass (Weight) |
|--|--------------------------------|
| Metal Piling (excluding temporary sheet piling) | |
| Furnishing Metal Pile Shells 12 in. (305 mm), 0.179 in. (3.80 mm) wall thickness | 23 lb/ft (34 kg/m) |
| Furnishing Metal Pile Shells 12 in. (305 mm), 0.250 in. (6.35 mm) wall thickness | 32 lb/ft (48 kg/m) |
| Furnishing Metal Pile Shells 14 in. (356 mm), 0.250 in. (6.35 mm) wall thickness | 37 lb/ft (55 kg/m) |
| Other piling | See plans |
| Structural Steel | See plans for weights (masses) |
| Reinforcing Steel | See plans for weights (masses) |
| Dowel Bars and Tie Bars | 6 lb (3 kg) each |
| Welded Reinforcement | 63 lb/100 sq ft (310 kg/sq m) |
| Guardrail | |
| Steel Plate Beam Guardrail, Type A w/steel posts | 20 lb/ft (30 kg/m) |
| Steel Plate Beam Guardrail, Type B w/steel posts | 30 lb/ft (45 kg/m) |
| Steel Plate Beam Guardrail, Types A and B w/wood posts | 8 lb/ft (12 kg/m) |
| Steel Plate Beam Guardrail, Type 2 | 305 lb (140 kg) each |
| Steel Plate Beam Guardrail, Type 6 | 1260 lb (570 kg) each |
| Traffic Barrier Terminal, Type 1 Special (Tangent) | 730 lb (330 kg) each |
| Traffic Barrier Terminal, Type 1 Special (Flared) | 410 lb (185 kg) each |
| Steel Traffic Signal and Light Poles, Towers and Mast Arms | |
| Traffic Signal Post | 11 lb/ft (16 kg/m) |
| Light Pole, Tenon Mount and Twin Mount, 30 - 40 ft (9 – 12 m) | 14 lb/ft (21 kg/m) |
| Light Pole, Tenon Mount and Twin Mount, 45 - 55 ft (13.5 – 16.5 m) | 21 lb/ft (31 kg/m) |
| Light Pole w/Mast Arm, 30 - 50 ft (9 – 15.2 m) | 13 lb/ft (19 kg/m) |
| Light Pole w/Mast Arm, 55 - 60 ft (16.5 – 18 m) | 19 lb/ft (28 kg/m) |
| Light Tower w/Luminaire Mount, 80 - 110 ft (24 – 33.5 m) | 31 lb/ft (46 kg/m) |
| Light Tower w/Luminaire Mount, 120 - 140 ft (36.5 – 42.5 m) | 65 lb/ft (97 kg/m) |
| Light Tower w/Luminaire Mount, 150 - 160 ft (45.5 – 48.5 m) | 80 lb/ft (119 kg/m) |
| Metal Railings (excluding wire fence) | |
| Steel Railing, Type SM | 64 lb/ft (95 kg/m) |
| Steel Railing, Type S-1 | 39 lb/ft (58 kg/m) |
| Steel Railing, Type T-1 | 53 lb/ft (79 kg/m) |
| Steel Bridge Rail | 52 lb/ft (77 kg/m) |
| Frames and Grates | |
| Frame | 250 lb (115 kg) |
| Lids and Grates | 150 lb (70 kg) |

SUBCONTRACTOR AND DBE PAYMENT REPORTING (BDE)

Effective: April 2, 2018

Add the following to Section 109 of the Standard Specifications.

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

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

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

SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)

Effective: November 2, 2017

Revised: April 1, 2019

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

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

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

SUBMISSION OF BIDDERS LIST INFORMATION (BDE)

Effective: January 2, 2025

Revised: March 2, 2025

In accordance with 49 CFR 26.11(c) all DBE and non-DBEs who bid as prime contractors and subcontractors shall provide bidders list information, including all DBE and non-DBE firms from whom the bidder has received a quote or bid to work as a subcontractor, whether or not the bidder has relied upon that bid in placing its bid as the prime contractor.

The bidders list information shall be submitted with the bid using the link provided within the “Integrated Contractor Exchange (iCX)” application of the Department’s “EBids System”.

SUBMISSION OF PAYROLL RECORDS (BDE)

Effective: April 1, 2021

Revised: November 2, 2023

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

“STATEMENTS AND PAYROLLS

The payroll records shall include the worker’s name, social security number, last known address, telephone number, email address, classification(s) of work actually performed, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof), daily and weekly number of hours actually worked in total, deductions made, and actual wages paid.

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

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

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

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

SURFACE TESTING OF PAVEMENTS – IRI (BDE)

Effective: January 1, 2021

Revised: January 1, 2023

Description. This work shall consist of testing the ride quality of the finished surface of pavement sections with new concrete pavement, PCC overlays, full-depth HMA, and HMA overlays with at least 2.25 in. (57 mm) total thickness of new HMA combined with either HMA binder or HMA surface removal, according to Illinois Test Procedure 701, “Ride Quality Testing Using the International Roughness Index (IRI)”. Work shall be according to Sections 406, 407, or 420 of the Standard Specifications, except as modified herein.

Hot-Mix Asphalt (HMA) Overlays

Add the following to Article 406.03 of the Standard Specifications:

“(n) Pavement Surface Grinding Equipment.....1101.04”

Revise Article 406.11 of the Standard Specifications to read:

“406.11 Surface Tests. Prior to HMA overlay pavement improvements, the Engineer will measure the smoothness of the existing high-speed mainline pavement. The Contractor shall measure the smoothness of the finished high-speed mainline, low-speed mainline, and miscellaneous pavements after the pavement improvement is complete but within the same construction season. Testing shall be performed in the presence of the Engineer and according to Illinois Test Procedure 701. The pavement will be identified as high-speed mainline, low-speed mainline, or miscellaneous as follows.

(a) Test Sections.

- (1) High-Speed Mainline Pavement. High-speed mainline pavement consists of pavements, ramps, and loops with a posted speed limit greater than 45 mph. These sections shall be tested with an inertial profiling system (IPS).
- (2) Low-Speed Mainline Pavement. Low-speed mainline pavement consists of pavements, ramps, and loops with a posted speed limit of 45 mph or less. These sections shall be tested using a 16 ft (5 m) straightedge or with an IPS analyzed using the rolling 16 ft (5 m) straightedge simulation in ProVAL.

- (3) Miscellaneous Pavement. Miscellaneous pavement are segments that either cannot readily be tested by an IPS or conditions beyond the control of the Contractor preclude the achievement of smoothness levels typically achievable with mainline pavement construction. This may include the following examples or as determined by the Engineer.
- a. Pavement on horizontal curves with a centerline radius of curvature of less than or equal to 1,000 ft (300 m) and the pavement within the superelevation transition of such curves;
 - b. Pavement on vertical curves having a length less than or equal to 200 ft (60 m) in combination with an algebraic change in tangent grade greater than or equal to 3 percent as may occur on urban ramps or other constricted-space facilities;
 - c. The first and last 50 ft (15 m) of a pavement section where the Contractor is not responsible for the adjoining surface;
 - d. Intersections and the 25 ft (7.6 m) before and after an intersection or end of radius return;
 - e. Variable width pavements;
 - f. Side street returns, to the end of radius return;
 - g. Crossovers;
 - h. Pavement connector for bridge approach slab;
 - i. Bridge approach slab;
 - j. Pavement that must be constructed in segments of 600 ft (180 m) or less;
 - k. Pavement within 25 ft (7.6 m) of manholes, utility structures, at-grade railroad crossings, or other appurtenances;
 - l. Turn lanes; and
 - m. Pavement within 5 ft (1.5 m) of jobsite sampling locations for HMA volumetric testing that fall within the wheel path.

Miscellaneous pavement shall be tested using a 16 ft (5 m) straightedge.

- (4) International Roughness Index (IRI). An index computed from a longitudinal profile measurement using a quarter-car simulation at a simulation speed of 50 mph (80 km/h).

- (5) Mean Roughness Index (MRI). The average of the IRI values for the right and left wheel tracks.
 - a. MRI_O . The MRI of the existing pavement prior to construction.
 - b. MRI_I . The MRI value that warrants an incentive payment.
 - c. MRI_F . The MRI value that warrants full payment.
 - d. MRI_D . The MRI value that warrants a financial disincentive.
- (6) Areas of Localized Roughness (ALR). Isolated areas of roughness, which can cause significant increase in the calculated MRI for a given subplot.
- (7) Sublot. A continuous strip of pavement 0.1 mile (160 m) long and one lane wide. A partial subplot greater than or equal to 264 ft (80 m) will be subject to the same evaluation as a whole subplot. Partial sublots less than 264 ft (80 m) shall be included with the previous subplot for evaluation purposes.

(b) Corrective Work. Corrective work shall be completed according to the following.

- (1) High-Speed Mainline Pavement. For high-speed mainline pavement, any 25 ft (7.6 m) interval with an ALR in excess of 200 in./mile (3,200 mm/km) will be identified by the Engineer and shall be corrected by the Contractor. Any subplot having a MRI greater than MRI_D , including ALR, shall be corrected to reduce the MRI to the MRI_F , or replaced at the Contractor's option.
- (2) Low-Speed Mainline Pavement. Surface variations in low-speed mainline pavement which exceed the 5/16 in. (8 mm) tolerance will be identified by the Engineer and shall be corrected by the Contractor.
- (3) Miscellaneous Pavements. Surface variations in miscellaneous pavement which exceed the 5/16 in. (8 mm) tolerance will be identified by the Engineer and shall be corrected by the Contractor.

Corrective work shall be completed with pavement surface grinding equipment or by removing and replacing the pavement. Corrective work shall be applied to the full lane width. When completed, the corrected area shall have uniform texture and appearance, with the beginning and ending of the corrected area perpendicular to the centerline of the paved surface.

Upon completion of the corrective work, the surface of the subplot(s) shall be retested. The Contractor shall furnish the data and reports to the Engineer within 2 working days after corrections are made. If the MRI and/or ALR still do not meet the requirements, additional corrective work shall be performed.

Corrective work shall be at no additional cost to the Department.

(c) Smoothness Assessments. Assessments will be paid to or deducted from the Contractor for each subplot of high-speed mainline pavement per the Smoothness Assessment Schedule. Assessments will be based on the MRI of each subplot prior to performing any corrective work unless the Contractor has chosen to remove and replace the pavement. For pavement that is replaced, assessments will be based on the MRI determined after replacement.

The upper MRI thresholds for high-speed mainline pavement are dependent on the MRI of the existing pavement before construction (MRI_0) and shall be determined as follows.

| Upper MRI Thresholds ^{1/} | MRI Thresholds (High-Speed, HMA Overlay) | |
|------------------------------------|--|--|
| | $MRI_0 \leq 125.0$ in./mile ($\leq 1,975$ mm/km) | $MRI_0 > 125.0$ in./mile ^{1/} ($> 1,975$ mm/km) |
| Incentive (MRI_I) | 45.0 in./mile (710 mm/km) | $0.2 \times MRI_0 + 20$ |
| Full Pay (MRI_F) | 75.0 in./mile (1,190 mm/km) | $0.2 \times MRI_0 + 50$ |
| Disincentive (MRI_D) | 100.0 in./mile (1,975 mm/km) | $0.2 \times MRI_0 + 75$ |

1/ MRI_0 , MRI_I , MRI_F , and MRI_D shall be in in./mile for calculation.

Smoothness assessments for high-speed mainline pavement shall be determined as follows.

| SMOOTHNESS ASSESSMENT SCHEDULE (High-Speed, HMA Overlay) | |
|--|--|
| Mainline Pavement MRI Range | Assessment Per Subplot ^{1/} |
| $MRI \leq MRI_I$ | $+ (MRI_I - MRI) \times \$20.00$ ^{2/} |
| $MRI_I < MRI \leq MRI_F$ | $+ \$0.00$ |
| $MRI_F < MRI \leq MRI_D$ | $- (MRI - MRI_F) \times \$8.00$ |
| $MRI > MRI_D$ | $- \$200.00$ |

1/ MRI , MRI_I , MRI_F , and MRI_D shall be in in./mile for calculation.

2/ The maximum incentive amount shall not exceed \$300.00.

Smoothness assessments will not be paid or deducted until all other contract requirements for the pavement are satisfied. Pavement that is corrected or replaced for reasons other than smoothness, shall be retested as stated herein.”

Hot-Mix Asphalt (HMA) Pavement (Full-Depth)

Revise the first paragraph of Article 407.03 of the Standard Specifications to read:

“407.03 Equipment. Equipment shall be according to Article 406.03.”

Revise Article 407.09 of the Standard Specifications to read:

“407.09 Surface Tests. The finished surface of the pavement shall be tested for smoothness according to Article 406.11, except as follows:

The testing of the existing pavement prior to improvements shall not apply and the smoothness assessment for high-speed mainline pavement shall be determined according to the following table.

| SMOOTHNESS ASSESSMENT SCHEDULE (High-Speed, Full-Depth HMA) | |
|---|--------------------------------------|
| Mainline Pavement MRI, in./mile (mm/km) | Assessment Per Sublot ^{1/} |
| ≤ 45.0 (710) | + (45 – MRI) × \$45.00 ^{2/} |
| > 45.0 (710) to 75.0 (1,190) | + \$0.00 |
| > 75.0 (1,190) to 100.0 (1,580) | – (MRI – 75) × \$20.00 |
| > 100.0 (1,580) | – \$500.00 |

1/ MRI shall be in in./mile for calculation.

2/ The maximum incentive amount shall not exceed \$800.00.”

Portland Cement Concrete Pavement

Delete Article 420.03(i) of the Standard Specifications.

Revise Article 420.10 of the Standard Specifications to read:

“420.10 Surface Tests. The finished surface of the pavement shall be tested for smoothness according to Article 406.11, except as follows.

The testing of the existing pavement prior to improvements shall not apply. The Contractor shall measure the smoothness of the finished surface of the pavement after the pavement has attained a flexural strength of 250 psi (3,800 kPa) or a compressive strength of 1,600 psi (20,700 kPa).

Membrane curing damaged during testing shall be repaired as directed by the Engineer at no additional cost to the Department.

- (a) Corrective Work. No further texturing for skid resistance will be required for areas corrected by grinding. Protective coat shall be reapplied to areas ground according to Article 420.18 at no additional cost to the Department.

Jointed portland cement concrete pavement corrected by removal and replacement, shall be corrected in full panel sizes.

- (b) Smoothness Assessments. Smoothness assessment for high-speed mainline pavement shall be determined as follows.

| SMOOTHNESS ASSESSMENT SCHEDULE (High-Speed, PCC) | |
|---|--------------------------------------|
| Mainline Pavement MRI, in./mile (mm/km) ^{3/} | Assessment Per Sublot ^{1/} |
| ≤ 45.0 (710) | + (45 – MRI) × \$60.00 ^{2/} |
| > 45.0 (710) to 75.0 (1,190) | + \$0.00 |
| > 75.0 (1,190) to 100.0 (1,580) | – (MRI – 75) × \$37.50 |
| > 100.0 (1,580) | – \$750.00 |

- 1/ MRI shall be in in./mile for calculation.
- 2/ The maximum incentive amount shall not exceed \$1200.00.
- 3/ If pavement is constructed with traffic in the lane next to it, then an additional 10 in./mile will be added to the upper thresholds.”

Removal of Existing Pavement and Appurtenances

Revise the first paragraph of Article 440.04 of the Standard Specifications to read:

“**440.04 HMA Surface Removal for Subsequent Resurfacing.** The existing HMA surface shall be removed to the depth specified on the plans with a self-propelled milling machine. The removal depth may be varied slightly at the discretion of the Engineer to satisfy the smoothness requirements of the finished pavement. The temperature at which the work is performed, the nature and condition of the equipment, and the manner of performing the work shall be such that the milled surface is not torn, gouged, shoved or otherwise damaged by the milling operation. Sufficient cutting passes shall be made so that all irregularities or high spots are eliminated to the satisfaction of the Engineer. When tested with a 16 ft (5 m) straightedge, the milled surface shall have no surface variations in excess of 3/16 in. (5 mm).”

General Equipment

Revise Article 1101.04 of the Standard Specifications to read:

“**1101.04 Pavement Surface Grinding Equipment.** The pavement surface grinding device shall have a minimum effective head width of 3 ft (0.9 m).

- (a) Diamond Saw Blade Machine. The machine shall be self-propelled with multiple diamond saw blades.
- (b) Profile Milling Machine. The profile milling machine shall be a drum device with carbide or diamond teeth with spacing of 0.315 in. (8 mm) or less and maintain proper forward speed for surface texture according to the manufacturer’s specifications.”

SURVEYING SERVICES (BDE)

Effective: April 1, 2025

Delete the fourth paragraph of Article 667.04 of the Standard Specifications.

Delete Section 668 of the Standard Specifications.

VEHICLE AND EQUIPMENT WARNING LIGHTS (BDE)

Effective: November 1, 2021

Revised: November 1, 2022

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

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

WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012

Revised: January 2, 2025

The following applies to all Disadvantaged Business Enterprise (DBE) trucks on the project, whether they are utilized for DBE goal credit or not.

The Contractor shall notify the Engineer at least three days prior to DBE trucking activity.

The Contractor shall submit a weekly report of DBE trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) to the Engineer on Department form “SBE 723” within ten business days following the reporting period. The reporting period shall be Sunday through Saturday for each week reportable trucking activities occur.

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

WOOD SIGN SUPPORT (BDE)

Effective: November 1, 2023

Add the following to Article 730.02 of the Standard Specifications:

“(c) Preservative Treatment1007.12”

Revise the first paragraph of Article 730.03 of the Standard Specifications to read:

“ **730.03 General.** Wood sign supports shall be treated. When the 4 x 6 in. (100 x 150 mm) posts are used, they shall be modified to satisfy the breakaway requirements by drilling 1 1/2 in. (38 mm) diameter holes centered at 4 and 18 in. (100 and 450 mm) above the groundline and perpendicular to the centerline of the roadway.”

WORK ZONE TRAFFIC CONTROL DEVICES (BDE)

Effective: March 2, 2020

Revised: January 1, 2025

Add the following to Article 701.03 of the Standard Specifications:

“(q) Temporary Sign Supports 1106.02”

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

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

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

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

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

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

Category 1 includes small, lightweight, channelizing and delineating devices that have been in common use for many years and are known to be crashworthy by crash testing of similar devices or years of demonstrable safe performance. These include cones, tubular markers, plastic drums, and delineators, with no attachments (e.g. lights). Category 1 devices shall be MASH compliant.

Category 2 includes devices that are not expected to produce significant vehicular velocity change but may otherwise be hazardous. These include vertical panels with lights, barricades, temporary sign supports, and Category 1 devices with attachments (e.g. drums with lights). Category 2 devices shall be MASH compliant.

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

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

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

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

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

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

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

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

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

WORKING DAYS (BDE)

Effective: January 1, 2002

The Contractor shall complete the work within **50** 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.