

10201

102.01

Designer Note: Insert into all contracts.

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".

Designer Note: Insert into all federal-aid contracts.

SOURCE OF SUPPLY AND QUALITY REQUIREMENTS (BDE)

Effective: January 2, 2023

Add the following to Article 106.01 of the Standard Specifications:

"The final manufacturing process for construction materials and the immediately preceding manufacturing stage for construction materials shall occur within the United States. Construction materials shall include an article, material, or supply that is or consists primarily of the following.

- (a) Non-ferrous metals;
- (b) Plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables);
- (c) Glass (including optic glass);
- (d) Lumber;
- (e) Drywall.

Items consisting of two or more of the listed construction materials that have been combined through a manufacturing process, and items including at least one of the listed materials combined with a material that is not listed through a manufacturing process shall be exempt."

Designer Note: This special does not apply to any counties in District Four.

CONSTRUCTION AIR QUALITY – DIESEL RETROFIT (BDE)

Effective: June 1, 2010

Revised: January 1, 2025

The reduction of emissions of particulate matter (PM) for off-road equipment shall be accomplished by installing retrofit emission control devices. The term "equipment" refers to diesel fuel powered devices rated at 50 hp and above, to be used on the jobsite in excess of seven calendar days over the course of the construction period on the jobsite (including rental equipment).

Contractor and subcontractor diesel powered off-road equipment assigned to the contract shall be retrofitted according to the table below.

Horsepower Range	Model Year and Older
50-99	2003
100-299	2002
300-599	2000
600-749	2001
750 and up	2005

The retrofit emission control devices shall achieve a minimum PM emission reduction of 50 percent and shall be:

- a) Included on the U.S. Environmental Protection Agency (USEPA) *Verified Retrofit Technology List* (<https://www.epa.gov/verified-diesel-tech/verified-technologies-list-clean-diesel>), or verified by the California Air Resources Board (CARB) (<http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>); or
- b) Retrofitted with a non-verified diesel retrofit emission control device if verified retrofit emission control devices are not available for equipment proposed to be used on the project, and if the Contractor has obtained a performance certification from the retrofit device manufacturer that the emission control device provides a minimum PM emission reduction of 50 percent.

Note: Large cranes (Crawler mounted cranes) which are responsible for critical lift operations are exempt from installing retrofit emission control devices if such devices adversely affect equipment operation.

Diesel powered off-road equipment with engine ratings of 50 hp and above, which are unable to be retrofitted with verified emission control devices or if performance certifications are not available which will achieve a minimum 50 percent PM reduction, may be granted a waiver by the Department if documentation is provided showing good faith efforts were made by the Contractor to retrofit the equipment.

Construction shall not proceed until the Contractor submits a certified list of the diesel-powered off-road equipment that will be used, and as necessary, retrofitted with emission control devices. The list(s) shall include (1) the equipment number, type, make, Contractor/rental company name; and (2) the emission control devices make, model, USEPA or CARB verification number, or performance certification from the retrofit device manufacturer. Equipment reported as fitted with emissions control devices shall be made available to the Engineer for visual inspection of the device installation, prior to being used on the jobsite.

The Contractor shall submit an updated list of retrofitted off-road construction equipment as retrofitted equipment changes or comes on to the jobsite. The addition or deletion of any diesel-powered equipment shall be included on the updated list.

If any diesel-powered off-road equipment is found to be in non-compliance with any portion of this special provision, the Engineer will issue the Contractor a diesel retrofit deficiency deduction.

Any costs associated with retrofitting any diesel-powered off-road equipment with emission control devices shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed. The Contractor's compliance with this notice and any associated regulations shall not be grounds for a claim.

Diesel Retrofit Deficiency Deduction

When the Engineer determines that a diesel retrofit deficiency exists, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency continues to exist. The calendar day(s) will begin when the time period for correction is exceeded and end with the Engineer's written acceptance of the correction. The daily monetary deduction will be \$1,000.00 for each deficiency identified.

The deficiency will be based on lack of diesel retrofit emissions control.

If a Contractor accumulates three diesel retrofit deficiency deductions for the same piece of equipment in a contract period, the Contractor will be shutdown until the deficiency is corrected. Such a shutdown will not be grounds for any extension of the contract time, waiver of penalties, or be grounds for any claim.

Inform Robert Julich (Railroad Coordinator) when this item has been revised.

Designer Notes: This special provision will be required in your contract if the construction work in any way is on, over, under, or abuts the railroad right-of-way of a railroad. All resurfacing projects that abut the railroad tracks will also require this special provision. A railroad agreement may be necessary and a minimum one (1) year lead time is required to develop and obtain approval. This special provision has been revised to incorporate the BDE Special Provision, "Railroad Protective Liability Insurance (5 and 10)" by adding a field to indicate when the railroad is a Class 1. It has also been revised to update the list of Class 1 railroads and remove redundancy with Article 107.11 as revised in the 2022 Standard Specifications. Class 1 railroads include the following:

Class 1 Railroads

The Belt Railway Company of Chicago
 BNSF Railway Company
 Chicago, Central & Pacific Railroad Company and its Parents
 Canadian Pacific Railway/Soo Line Railroad
 CSX Transportation, Inc.
 Dakota, Minnesota, and Eastern Railroad Company
 Grand Trunk Western Railroad Company and its Parents
 Illinois Central Railroad Company and its Parents
 Indiana Harbor Belt Railroad Company
 The Kansas City Southern Railway Company and its Affiliates / Gateway Western Railway
 Metra *
 Norfolk Southern Corporation and its subsidiaries
 Union Pacific Railroad Company
 Wisconsin Central, Ltd. Company and its Parents

Discuss use of these railroad special provisions with the District Railroad Coordinator and your Project Engineer.

Make sure to fill in the blanks below and mark "yes" or "no" for the Class 1 Railroad.

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
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Class 1 RR (Y or N):

DOT/AAR No.:

RR Division:

RR Mile Post:

RR Sub-Division:

For Freight/Passenger Information Contact:

For Insurance Information Contact:

Phone:

Phone:

Class 1 RR (Y or N):

DOT/AAR No.:

RR Division:

RR Mile Post:

RR Sub-Division:

For Freight/Passenger Information Contact:

Phone:

For Insurance Information Contact:

Phone:

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.

Designer Note: Include on contracts with building demolition involving building removal with friable and/or non-friable asbestos. Use this special when there are multiple buildings to remove and at least one of them has asbestos.

Include the following from the asbestos containing building material (ACBM) building inspection report: (1) Sketches indicating the location of ACBMs, (2) Materials Description Table for a brief description and location of the various materials, and (3) Materials Quantities Table listing the approximate quantity of reach friable and/or non-friable ACBM. In identifying the buildings (on page 1 of this BDE Special Provision), include if asbestos has been found within the description.

The Pay Item, BUILDING REMOVAL NO. ____ should be inserted for each building on the contract, regardless of asbestos type.

BUILDING REMOVAL WITH ASBESTOS ABATEMENT (BDE)

Effective: September 1, 1990

Revised: August 1, 2022

Description. This work shall consist of the removal and disposal of building(s), including all foundations, retaining walls, and piers, down to a plane 1 ft. (300 mm) below the ultimate bottom of building elevation or proposed bottom of construction elevation. The building(s) are identified as follows:

<u>Bldg. No.</u>	<u>Parcel No.</u>	<u>Location</u>	<u>Description</u>
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CONSTRUCTION REQUIREMENTS

General. The IEPA's "State of Illinois Demolition/Renovation/Asbestos Project Notification Form" shall be submitted and a copy sent to the Engineer. It shall be updated if there is a change in the start and/or finish date or if the quantity of asbestos changes by more than 20 percent.

Asbestos abatement work shall be performed by an IDPH licensed Contractor prequalified with the Illinois Capital Development Board who has an on-site supervisor licensed by IDPH and employs workers licensed by IDPH. This work shall be completed according to the requirements of the U.S. Environmental Protection Agency (USEPA), IEPA, OSHA, and local regulatory agencies.

Discontinuance of Utilities. The Contractor shall arrange for the discontinuance of all utility services and the removal of the metering devices that serve the building(s) according to the respective requirements and regulations of the city, county, or utility companies involved. The Contractor shall disconnect and seal the service outlets.

Posting. Upon execution of the contract and prior to the removal of any buildings, the Contractor shall paint or stencil, in contrasting colors of an oil base paint, on all sides of each building or structure, the following posting:

NO TRESPASSING
VIOLATORS WILL BE PROSECUTED

The postings shall be positioned prominently on the structure(s) so they can be easily read and at a sufficient height to prevent defacing.

Asbestos Abatement. Friable asbestos containing building materials (ACBMs) and Category II non-friable ACBMs shall be removed from the building(s) prior to demolition. Category II non-friable ACBMs include asbestos containing transite boards, siding, and other cementitious materials (cement pipe or highly weathered roofing shingles/materials) which have a likelihood of becoming friable during typical demolition activities (by crumbling, pulverizing, or otherwise reducing to powder) making them regulated asbestos containing materials (RACM). Removed ACBM shall be kept separate from non-ACBM demolition debris for purposes of transport and disposal.

Category I non-friable ACBM may be kept in place for demolition or removal of the building unless it has become friable as determined by the ACBM inspector. If the Contractor demolishes the building(s) with the non-friable asbestos in place, the following shall apply.

- (a) The Contractor shall continuously wet the non-friable ACBM and other building debris with water during demolition and loading for disposal.
- (b) The Contractor shall dispose of all demolition debris as ACBM.

The Contractor shall perform air monitoring during asbestos abatement activities. Air sampling shall be conducted by a qualified air sampling professional. Air sampling shall be conducted according to NIOSH Method 7400. Air monitoring equipment shall be calibrated and maintained in proper operating condition. The Contractor shall submit a copy of the air sampling professional's certificate to the Engineer. The results of the tests, and daily calibration and maintenance records shall be kept on site and be available to the Engineer upon request.

Personal monitoring shall be conducted per applicable OSHA regulations. Excursion limits shall be monitored daily, and corrective actions taken immediately to bring excursions within OSHA permissible exposure limits.

When asbestos is removed prior to demolition, clearance testing per IDPH shall be conducted upon the removal of ACBM.

Submittals. The following submittals shall be made to the Engineer prior to the start of the asbestos abatement:

- (a) Manufacturer's certification stating that vacuums, ventilation equipment, and other equipment required to contain airborne fibers conform to ANSI 29.2.
- (b) A listing of the brand name, manufacturer, and specification of all sealants or surfactants to be used.

- (c) Proof that arrangements for transport and disposal of ACBMs have been obtained (i.e., a letter of authorization to utilize designated landfill).
- (d) A detailed work plan of the Contractor's anticipated procedures including the location and layout of decontamination units, the sequencing of work, the respiratory protection plan, a site safety plan, a disposal plan, and a detailed description of the methods to be used to control pollution.
- (e) Proof of the Contractor's prequalification with Capital Development Board and employee certifications with IDPH.

Submittals that shall be made upon completion of abatement work:

- (f) Copies of waste chain-of-custodies, trip tickets, shipping manifests, or disposal receipts for asbestos waste materials removed from the work area.
- (g) Copies of each day's work site entry logbook with information on worker and visitor access.
- (h) Logs documenting filter changes on respirators, HEPA vacuums, negative pressure ventilation units, and other engineering controls.
- (i) Test results of any bulk material analysis and air sampling data collected during the abatement including results of any on-site testing by any federal, state, or local agency.

Any holes, such as basements, shall be backfilled according to Article 502.10.

Basis of Payment. This work will be paid for at the contract lump sum unit price for BUILDING REMOVAL NO. _____.

Removal and disposal of friable ACBM will be paid for at the contract lump sum unit price for REMOVAL AND DISPOSAL OF FRIABLE ASBESTOS, BUILDING NO. _____.

Removal and disposal of non-friable ACBM will be paid for at the contract lump sum unit price for REMOVAL AND DISPOSAL OF NON-FRIABLE ASBESTOS, BUILDING NO. _____.

Designer Note: Include in all contracts with building demolition involving buildings containing no asbestos containing material. If even one building to be removed contains asbestos, use BDE Special "Building Removal with Asbestos Abatement". Land Acquisition inspects all buildings to be removed for asbestos material and can provide you with that information for use in choosing the correct BDE special provision.

BUILDING REMOVAL (BDE)

Effective: September 1, 1990

Revised: August 1, 2022

Description. This work shall consist of the removal and disposal of building(s), including all foundations, retaining walls, and piers, down to a plane 1 ft. (300 mm) below the ultimate bottom of building elevation or proposed bottom of construction elevation. The building(s) are identified as follows:

<u>Bldg. No.</u>	<u>Parcel No.</u>	<u>Location</u>	<u>Description</u>
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CONSTRUCTION REQUIREMENTS

General. The IEPA's "State of Illinois Demolition/Renovation/Asbestos Project Notification Form" shall be submitted and a copy sent to the Engineer. It shall be updated if there is a change in the start and/or finish date or if asbestos is found to be present in the building(s) to be removed.

Discontinuance of Utilities. The Contractor shall arrange for the discontinuance of all utility services and the removal of the metering devices that serve the building(s) according to the respective requirements and regulations of the city, county, and utility companies involved. The Contractor shall disconnect and seal the service outlets.

Posting. Upon execution of the contract and prior to the removal of any buildings, the Contractor shall paint or stencil, in contrasting colors of an oil base paint, on all sides of each building or structure, the following posting:

NO TRESPASSING
VIOLATORS WILL BE PROSECUTED

The postings shall be positioned prominently on the structure so they can be easily read and at a sufficient height to prevent defacing.

Any holes, such as basements, shall be backfilled according to Article 502.10.

Basis of Payment. This work will be paid for at the contract lump sum unit price for BUILDING REMOVAL NO. ____.

Designer Notes: Insert into contracts where a unit of local government has expressed interest in receiving the debris **and** has coordinated it through Local Roads. Also, discuss with construction to ensure it is feasible if requested.

BRIDGE DEMOLITION DEBRIS (BDE)

Effective: July 1, 2009

The debris from removing structure number _____ shall be delivered to _____ (agency name), located at _____ (address), _____ miles from the jobsite. For description of debris to be salvaged, the Contractor shall contact _____ (agency contact person and phone number). The Contractor shall coordinate delivery of the debris to the designated location, at no additional cost to the Department. Upon receipt of the debris, the receiving agency shall be responsible for additional costs of processing, delivery placement and use of the material and shall assume legal and permitting responsibility for the placement of the debris. Payment for delivery of the debris to the designated location shall be included in the cost for removal of existing structures.

Designer Notes: Insert into all contracts.

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."

10805

108.05

Designer Note: Insert into all projects which specify completion based on working days. Designer is required to insert the number of working days. (Must match number of working days shown on your project's CA Sheet.)

WORKING DAYS (BDE)

Effective: January 1, 2002

The Contractor shall complete the work within working days.

10805a

108.05a

Designer Note: Use this BDE special when a specified number of days to complete the contract is desired, regardless of weather or other potential delays. Do not confuse or use in conjunction with District Special "Date of Completion" or BDE Special "Working Days." Consult with your Project Engineer and Construction before use.

COMPLETION DATE (VIA CALENDAR DAYS) (BDE)

Effective: April 1, 2008

The Contractor shall complete all work on or before the completion date of this contract which will be based upon _____ calendar days.

The completion date will be determined by adding the specified number of calendar days to the date the Contractor begins work, or to the date ten days after execution of the contract, whichever is the earlier, unless a delayed start is granted by the Engineer.

Designer Note: Use this BDE special when a specified number of days to complete specific tasks are desired, regardless of weather or other potential delays. An amount of working days to complete clean up tasks shall be allowed after the completion date. Do not confuse or use this special in conjunction with District special "Date of Completion (Plus Working Days)" or BDE special "Working Days." Consult with your Project Engineer and Construction before use.

COMPLETION DATE (VIA CALENDAR DAYS) PLUS WORKING DAYS (BDE)

Effective: April 1, 2008

The Contractor shall complete _____ work on or before the completion date of this contract which will be based upon _____ calendar days. After the completion date, an additional _____ working days will be allowed to complete _____.

The completion date will be determined by adding the specified number of calendar days to the date the Contractor begins work, or to the date ten days after execution of the contract, whichever is the earlier, unless a delayed start is granted by the Engineer.

Designer Note: Insert into federal-aid contracts with at least one Trainee identified by the Office of Business and Workforce Diversity (OBWD). This is not determined by the district at submittal time so don't mark this special unless it is a larger job.

Any Federal Aid Project more than one-half million dollars may have trainees - check with the District EEO Officer at the time DBE goal is set up – if we assign trainees, we need this special provision. Generally, 1 Trainee = 500 Hours. Designer has value to insert (*).

It has been revised to base the applicability of the Illinois Works Apprenticeship Initiative (30 ILCS 559/20-20 to 20-25) on the awarded contract value.

This special provision should be inserted into federal-aid contracts with at least one trainee identified by the Office of Business and Workforce Diversity (OBWD).

The districts should include the BDE Check Sheet marked with the applicable special provisions for the January 21, 2022 and subsequent lettings. The Project Coordination and Implementation Section will include a copy in the contract.

TRAINING SPECIAL PROVISIONS (BDE)

Effective: October 15, 1975

Revised: January 1, 2022

This Training Special Provision supersedes Section 7b of the Special Provision entitled "Specific Equal Employment Opportunity Responsibilities," and is in implementation of 23 U.S.C. 140(a).

As part of the Contractor's equal employment opportunity affirmative action program, training shall be provided as follows:

The Contractor shall provide on-the-job training aimed at developing full journeyman in the type of trade or job classification involved. The number of trainees to be trained under this contract will be _____. In the event the Contractor subcontracts a portion of the contract work, it shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided however, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The Contractor shall also ensure that this Training Special Provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the Contractor's needs and the availability of journeymen in the various classifications within the reasonable area of recruitment. Prior to commencing construction, the Contractor shall submit to the Illinois Department of Transportation for approval the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the Contractor shall specify the starting time for training in each of the classifications. The Contractor will be credited for each trainee it employs on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the Contractor shall make every effort to enroll minority trainees and women (e.g. by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent such persons are available within a reasonable area of recruitment. The Contractor will be responsible for demonstrating the steps it has taken in pursuance thereof, prior to a determination as to whether the Contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he or she has successfully completed a training course leading to journeyman status or in which he or she has been employed as a journeyman. The Contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the Contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the Contractor and approved by the Illinois Department of Transportation and the Federal Highway Administration. The Illinois Department of Transportation and the Federal Highway Administration shall approve a program, if it is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved by not necessarily sponsored by the U.S. Department of Labor Employment Training Administration shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower-level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the Illinois Department of Transportation and the Federal Highway Administration. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the Contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the Engineer, reimbursement will be made for training of persons in excess of the number specified herein. This reimbursement will be made even though the Contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the Contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the Contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the Contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the Contractor and evidences a lack of good faith on the part of the Contractor in meeting the requirement of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program.

It is not required that all trainees be on board for the entire length of the contract. A Contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The Contractor shall furnish the trainee a copy of the program he will follow in providing the training. The Contractor shall provide each trainee with a certification showing the type and length of training satisfactorily complete.

The Contractor shall provide for the maintenance of records and furnish periodic reports documenting its performance under this Training Special Provision.

For contracts with an awarded contract value of \$500,000 or more, the Contractor is required to comply with the Illinois Works Apprenticeship Initiative (30 ILCS 559/20-20 to 20-25) and all applicable administrative rules to the extent permitted by Section 20-20(g). For federally funded projects, the number of trainees to be trained under this contract, as stated in the Training Special Provisions, will be the established goal for the Illinois Works Apprenticeship Initiative 30 ILCS 559/20-20(g). The Contractor shall make a good faith effort to meet this goal. For federally funded projects, the Illinois Works Apprenticeship Initiative will be implemented using the FHWA approved OJT procedures. The Contractor must comply with the recordkeeping and reporting obligations of the Illinois Works Apprenticeship Initiative for the life of the project, including the certification as to whether the trainee/apprentice labor hour goals were met.

Method of Measurement. The unit of measurement is in hours.

Basis of Payment. This work will be paid for at the contract unit price of 80 cents-per-hour for TRAINEES. The estimated total number of hours, unit price, and total price have been included in the schedule of prices.

Designer Note: Insert into all contracts.

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)

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 _____% 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.

Designer Note: Insert in all contracts.

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 (3) 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.

Designer Note: Insert into all non-Federal-Aid contracts. These contracts would be state only funds such as contract maintenance.

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.

Designer Note: Include on all projects involving steel metal piling (excluding temporary sheet piling), structural steel, and reinforcing steel. Also include for other 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), frames and grates, and other miscellaneous items that may be subject to a steel cost adjustment when the pay item they are used in has a contract value of \$10,000 or greater.

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

Designer Note: Insert into all contracts with greater than 1,200 tons (1,100 metric tons) of applicable bituminous items. These items include permanent and temporary HMA mixes, bituminous surface treatments (cover and seal coats), and pavement preservation type surface treatments. This does not apply to bituminous prime coats, tack coats, crack filling/sealing, or joint filling/sealing. Do not include in alternative bid projects. This is not applicable to bituminous prime coats, tack coats, crack-filling/sealing, or joint filling/sealing.

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: $Q, \text{ metric tons} = V \times 1.0 \text{ kg/L} \times \text{SG} / 1000$

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.

Designer Notes: This special provision should be included in projects with at least 25,000 cu. yd. (20,000 cu. m) of earthwork items; 5,000 tons (4,500 metric tons) of applicable aggregate or hot-mix asphalt (HMA) bases course, pavement and shoulder items; 7,500 sq. yd. (6,000 sq. m) of applicable PCC bases course, pavement and shoulder items; and \$250,000 of applicable structure items. The adjustments are applicable to permanent and temporary items.

If the designer identifies items of work, such as channel excavation, rock excavation (Category A), aggregate surface course (Category B), various widening items (Category C or D) or other work efforts which are not included in the categories of specified Sections, but represent the possibility for significant cost fluctuation due to changes in costs of fuel, the identified items should be listed in a separate special provision identifying the category under which the fuel adjustment should be included, and follow this special provision.

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.

Designer Note: Insert into all contracts.

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%”

Designer Note: This special provision should be inserted into federal and nonfederal aid contracts on the state letting.

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."

10914

109.14

Designer Note: Insert into all contracts.

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."

21403

214.03

Designer Note: Insert into any contracts using the pay item GRADING AND SHAPING DITCHES.

GRADING AND SHAPING DITCHES (BDE)

Effective: January 1, 2023

Delete the second paragraph of Article 214.03 of the Standard Specifications.

Delete the second paragraph of Article 214.04 of the Standard Specifications.

Designer Note: This special provision should be inserted into all contracts with SEEDING or INTERSEEDING.

SEEDING (BDE)

Effective: November 1, 2022

Revise Article 250.07 of the Standard Specifications to read:

"250.07 Seeding Mixtures. The classes of seeding mixtures and combinations of mixtures will be designated in the plans.

When an area is to be seeded with two or more seeding classes, those mixtures shall be applied separately on the designated area within a seven-day period. Seeding shall occur prior to placement of mulch cover. A Class 7 mixture can be applied at any time prior to applying any seeding class or added to them and applied at the same time.

TABLE 1 - SEEDING MIXTURES

Class - Type		Seeds	lb/acre (kg/hectare)
1	Lawn Mixture 1/	Kentucky Bluegrass	100 (110)
		Perennial Ryegrass	60 (70)
		<i>Festuca rubra</i> ssp. <i>rubra</i> (Creeping Red Fescue)	40 (50)
1A	Salt Tolerant Lawn Mixture 1/	Kentucky Bluegrass	60 (70)
		Perennial Ryegrass	20 (20)
		<i>Festuca rubra</i> ssp. <i>rubra</i> (Creeping Red Fescue)	20 (20)
		<i>Festuca brevipilla</i> (Hard Fescue)	20 (20)
		<i>Puccinellia distans</i> (Fulfs Saltgrass or Salty Alkaligrass)	60 (70)
1B	Low Maintenance Lawn Mixture 1/	Turf-Type Fine Fescue 3/	150 (170)
		Perennial Ryegrass	20 (20)
		Red Top	10 (10)
		<i>Festuca rubra</i> ssp. <i>rubra</i> (Creeping Red Fescue)	20 (20)
2	Roadside Mixture 1/	<i>Lolium arundinaceum</i> (Tall Fescue)	100 (110)
		Perennial Ryegrass	50 (55)
		<i>Festuca rubra</i> ssp. <i>rubra</i> (Creeping Red Fescue)	40 (50)
		Red Top	10 (10)
2A	Salt Tolerant Roadside Mixture 1/	<i>Lolium arundinaceum</i> (Tall Fescue)	60 (70)
		Perennial Ryegrass	20 (20)
		<i>Festuca rubra</i> ssp. <i>rubra</i> (Creeping Red Fescue)	30 (20)
		<i>Festuca brevipilla</i> (Hard Fescue)	30 (20)
		<i>Puccinellia distans</i> (Fulfs Saltgrass or Salty Alkaligrass)	60 (70)
3	Northern Illinois Slope Mixture 1/	<i>Elymus canadensis</i> (Canada Wild Rye) 5/	5 (5)
		Perennial Ryegrass	20 (20)
		Alsike Clover 4/	5 (5)
		<i>Desmanthus illinoensis</i> (Illinois Bundleflower) 4/ 5/	2 (2)
		<i>Schizachyrium scoparium</i> (Little Bluestem) 5/	12 (12)
		<i>Bouteloua curtipendula</i> (Side-Oats Grama) 5/	10 (10)
		<i>Puccinellia distans</i> (Fulfs Saltgrass or Salty Alkaligrass)	30 (35)
		Oats, Spring	50 (55)
		Slender Wheat Grass 5/	15 (15)
		Buffalo Grass 5/ 7/	5 (5)
		3A	Southern Illinois Slope Mixture 1/
<i>Elymus canadensis</i> (Canada Wild Rye) 5/	20 (20)		
<i>Panicum virgatum</i> (Switchgrass) 5/	10 (10)		
<i>Schizachyrium scoparium</i> (Little Blue Stem) 5/	12 (12)		
<i>Bouteloua curtipendula</i> (Side-Oats Grama) 5/	10 (10)		
<i>Dalea candida</i> (White Prairie Clover) 4/ 5/	5 (5)		
<i>Rudbeckia hirta</i> (Black-Eyed Susan) 5/	5 (5)		
Oats, Spring	50 (55)		

Class – Type		Seeds	lb/acre (kg/hectare)
4	Native Grass 2/ 6/	<i>Andropogon gerardi</i> (Big Blue Stem) 5/	4 (4)
		<i>Schizachyrium scoparium</i> (Little Blue Stem) 5/	5 (5)
		<i>Bouteloua curtipendula</i> (Side-Oats Grama) 5/	5 (5)
		<i>Elymus canadensis</i> (Canada Wild Rye) 5/	1 (1)
		<i>Panicum virgatum</i> (Switch Grass) 5/	1 (1)
		<i>Sorghastrum nutans</i> (Indian Grass) 5/	2 (2)
		Annual Ryegrass	25 (25)
		Oats, Spring	25 (25)
		Perennial Ryegrass	15 (15)
4A	Low Profile Native Grass 2/ 6/	<i>Schizachyrium scoparium</i> (Little Blue Stem) 5/	5 (5)
		<i>Bouteloua curtipendula</i> (Side-Oats Grama) 5/	5 (5)
		<i>Elymus canadensis</i> (Canada Wild Rye) 5/	1 (1)
		<i>Sporobolus heterolepis</i> (Prairie Dropseed) 5/	0.5 (0.5)
		Annual Ryegrass	25 (25)
		Oats, Spring	25 (25)
		Perennial Ryegrass	15 (15)
		4B	Wetland Grass and Sedge Mixture 2/ 6/
Oats, Spring	25 (25)		
Wetland Grasses (species below) 5/	6 (6)		
	<u>Species:</u>	<u>% By Weight</u>	
	<i>Calamagrostis canadensis</i> (Blue Joint Grass)		12
	<i>Carex lacustris</i> (Lake-Bank Sedge)		6
	<i>Carex slipata</i> (Awl-Fruited Sedge)		6
	<i>Carex stricta</i> (Tussock Sedge)		6
	<i>Carex vulpinoidea</i> (Fox Sedge)		6
	<i>Eleocharis acicularis</i> (Needle Spike Rush)		3
	<i>Eleocharis obtusa</i> (Blunt Spike Rush)		3
	<i>Glyceria striata</i> (Fowl Manna Grass)		14
	<i>Juncus effusus</i> (Common Rush)		6
	<i>Juncus tenuis</i> (Slender Rush)		6
	<i>Juncus torreyi</i> (Torrey's Rush)		6
	<i>Leersia oryzoides</i> (Rice Cut Grass)		10
	<i>Scirpus acutus</i> (Hard-Stemmed Bulrush)		3
	<i>Scirpus atrovirens</i> (Dark Green Rush)		3
	<i>Bolboschoenus fluviatilis</i> (River Bulrush)		3
	<i>Schoenoplectus tabernaemontani</i> (Softstem Bulrush)		3
	<i>Spartina pectinata</i> (Cord Grass)		4

Class – Type	Seeds	lb/acre (kg/hectare)
5	Forb with Annuals Mixture 2/ 5/ 6/	Annuals Mixture (Below) Forb Mixture (Below)
		1 (1) 10 (10)
	Annuals Mixture - Mixture not exceeding 25 % by weight of any one species, of the following:	
	<i>Coreopsis lanceolata</i> (Sand Coreopsis)	
	<i>Leucanthemum maximum</i> (Shasta Daisy)	
	<i>Gaillardia pulchella</i> (Blanket Flower)	
	<i>Ratibida columnifera</i> (Prairie Coneflower)	
	<i>Rudbeckia hirta</i> (Black-Eyed Susan)	
	Forb Mixture - Mixture not exceeding 5 % by weight PLS of any one species, of the following:	
	<i>Amorpha canescens</i> (Lead Plant) 4/	
	<i>Anemone cylindrica</i> (Thimble Weed)	
	<i>Asclepias tuberosa</i> (Butterfly Weed)	
	<i>Aster azureus</i> (Sky Blue Aster)	
	<i>Symphotrichum leave</i> (Smooth Aster)	
	<i>Aster novae-angliae</i> (New England Aster)	
	<i>Baptisia leucantha</i> (White Wild Indigo) 4/	
	<i>Coreopsis palmata</i> (Prairie Coreopsis)	
	<i>Echinacea pallida</i> (Pale Purple Coneflower)	
	<i>Eryngium yuccifolium</i> (Rattlesnake Master)	
	<i>Helianthus mollis</i> (Downy Sunflower)	
	<i>Heliopsis helianthoides</i> (Ox-Eye)	
	<i>Liatris aspera</i> (Rough Blazing Star)	
	<i>Liatris pycnostachya</i> (Prairie Blazing Star)	
	<i>Monarda fistulosa</i> (Prairie Bergamot)	
	<i>Parthenium integrifolium</i> (Wild Quinine)	
	<i>Dalea candida</i> (White Prairie Clover) 4/	
	<i>Dalea purpurea</i> (Purple Prairie Clover) 4/	
	<i>Physostegia virginiana</i> (False Dragonhead)	
	<i>Potentilla arguta</i> (Prairie Cinquefoil)	
	<i>Ratibida pinnata</i> (Yellow Coneflower)	
	<i>Rudbeckia subtomentosa</i> (Fragrant Coneflower)	
	<i>Silphium laciniatum</i> (Compass Plant)	
	<i>Silphium terebinthinaceum</i> (Prairie Dock)	
	<i>Oligoneuron rigidum</i> (Rigid Goldenrod)	
	<i>Tradescantia ohiensis</i> (Spiderwort)	
	<i>Veronicastrum virginicum</i> (Culver's Root)	

Class – Type		Seeds	lb/acre (kg/hectare)
5A	Large Flower Native Forb Mixture 2/ 5/ 6/	Forb Mixture (see below)	5 (5)
	<u>Species:</u>		<u>% By Weight</u>
	<i>Aster novae-angliae</i> (New England Aster)		5
	<i>Echinacea pallida</i> (Pale Purple Coneflower)		10
	<i>Helianthus mollis</i> (Downy Sunflower)		10
	<i>Heliopsis helianthoides</i> (Ox-Eye)		10
	<i>Liatris pycnostachya</i> (Prairie Blazing Star)		10
	<i>Ratibida pinnata</i> (Yellow Coneflower)		5
	<i>Rudbeckia hirta</i> (Black-Eyed Susan)		10
	<i>Silphium laciniatum</i> (Compass Plant)		10
	<i>Silphium terebinthinaceum</i> (Prairie Dock)		20
	<i>Oligoneuron rigidum</i> (Rigid Goldenrod)		10
5B	Wetland Forb 2/ 5/ 6/	Forb Mixture (see below)	2 (2)
	<u>Species:</u>		<u>% By Weight</u>
	<i>Acorus calamus</i> (Sweet Flag)		3
	<i>Angelica atropurpurea</i> (Angelica)		6
	<i>Asclepias incarnata</i> (Swamp Milkweed)		2
	<i>Aster puniceus</i> (Purple Stemmed Aster)		10
	<i>Bidens cernua</i> (Beggarticks)		7
	<i>Eutrochium maculatum</i> (Spotted Joe Pye Weed)		7
	<i>Eupatorium perfoliatum</i> (Boneset)		7
	<i>Helenium autumnale</i> (Autumn Sneezeweed)		2
	<i>Iris virginica shrevei</i> (Blue Flag Iris)		2
	<i>Lobelia cardinalis</i> (Cardinal Flower)		5
	<i>Lobelia siphilitica</i> (Great Blue Lobelia)		5
	<i>Lythrum alatum</i> (Winged Loosestrife)		2
	<i>Physostegia virginiana</i> (False Dragonhead)		5
	<i>Persicaria pensylvanica</i> (Pennsylvania Smartweed)		10
	<i>Persicaria lapathifolia</i> (Curlytop Knotweed)		10
	<i>Pycnanthemum virginianum</i> (Mountain Mint)		5
	<i>Rudbeckia laciniata</i> (Cut-leaf Coneflower)		5
	<i>Oligoneuron riddellii</i> (Riddell Goldenrod)		2
	<i>Sparganium eurycarpum</i> (Giant Burreed)		5
6	Conservation Mixture 2/ 6/	<i>Schizachyrium scoparium</i> (Little Blue Stem) 5/ <i>Elymus canadensis</i> (Canada Wild Rye) 5/ Buffalo Grass 5/ 7/ Vernal Alfalfa 4/ Oats, Spring	5 (5) 2 (2) 5 (5) 15 (15) 48 (55)
6A	Salt Tolerant Conservation Mixture 2/ 6/	<i>Schizachyrium scoparium</i> (Little Blue Stem) 5/ <i>Elymus canadensis</i> (Canada Wild Rye) 5/ Buffalo Grass 5/ 7/ Vernal Alfalfa 4/ Oats, Spring <i>Puccinellia distans</i> (Fults Saltgrass or Salty Alkaligrass)	5 (5) 2 (2) 5 (5) 15 (15) 48 (55) 20 (20)
7	Temporary Turf Cover Mixture	Perennial Ryegrass Oats, Spring	50 (55) 64 (70)

Notes:

- 1/ Seeding shall be performed when the ambient temperature has been between 45°F (7°C) and 80°F (27°C) for a minimum of seven (7) consecutive days and is forecasted to be the same for the next five (5) days according to the National Weather Service.
- 2/ Seeding shall be performed in late fall through spring beginning when the ambient temperature has been below 45°F (7°C) for a minimum of seven (7) consecutive days and ending when the ambient temperature exceeds 80°F (27°C) according to the National Weather Service.
- 3/ Specific variety as shown in the plans or approved by the Engineer.
- 4/ Inoculation required.
- 5/ Pure Live Seed (PLS) shall be used.
- 6/ Fertilizer shall not be used.
- 7/ Seed shall be primed with KNO₃ to break dormancy and dyed to indicate such.

Seeding will be inspected after a period of establishment. The period of establishment shall be six (6) months minimum, but not to exceed nine (9) months. After the period of establishment, areas not exhibiting 75 percent uniform growth shall be interseeded or reseeded, as determined by the Engineer, at no additional cost to the Department."

Designer Note: This special provision should be inserted into contracts containing any erosion control blanket (temporary, permanent, or wildlife friendly).

EROSION CONTROL BLANKET (BDE)

Effective: August 1, 2025

Revise Article 251.02 of the Standard Specifications to read:

"251.02 Materials. Materials shall be according to the following.

Item	Article/Section
(a) Compost	1081.05(b)
(b) Mulch	1081.06(a)
(c) Chemical Mulch Binder	1081.06(a)(3)
(d) Chemical Compost Binder	1081.06(a)(4)
(e) Erosion Control Blanket	1081.10(a)
(f) Wildlife Friendly Erosion Control Blanket	1081.10(b)
(g) Wire Staples	1081.10(c)
(h) Wood Stakes	1081.10(d)
(i) Turf Reinforcement Mat	1081.10(e)"

Revise the first and second sentences of Article 251.04 of the Standard Specifications to read:

"251.04 Erosion Control Blanket. All erosion control blanket materials shall be placed on the areas specified within 24 hours of seed placement."

Revise the second paragraph of Article 251.04 of the Standard Specifications to read:

"After the area has been properly shaped, fertilized (when applicable), and seeded, the blanket shall be laid out flat, evenly, and smoothly, without stretching the material. The erosion control blanket shall be placed according to the manufacture's recommendations."

Revise the second sentence of Article 251.06(b) of the Standard Specifications to read:

"Erosion control blanket, wildlife friendly erosion control blanket, and turf reinforcement mat will be measured for payment in square yards (square meters)."

Revise Article 251.07 of the Standard Specifications to read:

"251.07 Basis of Payment. This work will be paid for at the contract unit price per Acre (Hectare) for MULCH, of the method specified; and at the contract unit price per Square Yard (Square Meter) for EROSION CONTROL BLANKET, WILDLIFE FRIENDLY EROSION CONTROL BLANKET, or TURF REINFORCEMENT MAT."

Revise first sentence of Article 280.04(h) of the Standard Specifications to read:

"This system consists of temporarily installing erosion control blanket or wildlife friendly erosion control blanket over areas that are to be reworked during a later construction phase."

Revise Article 280.08(g) of the Standard Specifications to read:

"(g) Temporary Erosion Control Blanket. Temporary erosion control blanket will be paid for at the contract unit price per Square Yard (Square Meter) for TEMPORARY EROSION CONTROL BLANKET or TEMPORARY WILDLIFE FRIENDLY EROSION CONTROL BLANKET.

The work of removing, storing, and reinstalling the blanket over areas to be reworked more than once will not be paid for separately but shall be included in the cost of the temporary erosion control blanket or temporary wildlife friendly erosion control blanket."

Revise Article 1081.10 of the Standard Specifications to read:

"1081.10 Erosion Control Blankets. The manufacturer shall furnish a certificate with each shipment stating the amount of product furnished and that the material complies with these requirements.

(a) Erosion Control Blanket. Erosion control blanket shall be covered on top and bottom, also known as double net, with a 100 percent biodegradable woven, natural fiber or jute net meeting the following.

Material	Minimum Value
Excelsior	80%
Straw	100%
Coconut or Coir	100% Coconut or Coir
Straw/Coconut or Coir	70% Straw/30% Coconut or Coir

(b) Wildlife Friendly Erosion Control Blanket. Wildlife friendly erosion control blanket shall be according to Article 1081.10(a) except the netting shall be loose weave, also known as leno weave or gauze weave, with a moveable joint.

(c) Wire Staples. Staples shall be made from No. 11 gauge or heavier uncoated black carbon steel wire, a minimum of 1 in. (25 mm) wide at the top and a minimum overall length of 8 in. (200 mm).

(d) Wood Stakes. Hardwood blanket anchors shall be nominally 7 in. (180 mm) long from neck of hook to tip of anchor. The anchor shall have a minimum 1/2 in. (13 mm) curving hook to hold the blanket in place.

(e) Turf Reinforcement Mat (TRM). The TRM shall be comprised of non-degradable, ultraviolet stabilized synthetic fibers, filaments, netting, and/or wire mesh processed into a three-dimensional reinforced mat. The mats may include degradable material to assist with vegetation establishment. Soil filled mats will not be allowed.

The TRM shall meet the following physical and performance properties:

Property	Value	Test Method
Tensile Strength, lb./ft. (kN/m)	150 (2.19) min.	ASTM D 6818
UV Stability, (% Tensile Retained)	80 min.	ASTM D 4355 (1,000 Hour Exposure)
Resiliency, (% Thickness Retained)	80 min.	ASTM D 6524
Allowable Shear Stress, lb./sq. ft. (Pa) ^{1/}	8 (384)	ECTC approved test method and independent laboratory

- 1/ Minimum shear stress the TRM (fully vegetated) can sustain without physical damage or excess erosion (>1/2 in. (13 mm) soil loss) during a 30-minute flow event in large scale testing.

For TRMs containing degradable components, all property values shall be obtained on the non-degradable portion of the matting alone."

Designer Note: Use in all contracts using aggregate subgrade improvements. This special allows the use of gravel in fills between 12 and 24 inches in thickness. Discuss with the District Geotechnical Engineer to determine the appropriate thickness of the aggregate subgrade material.

AGGREGATE SUBGRADE IMPROVEMENT (BDE)

Effective: April 1, 2012

Revised: January 13, 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 1½ 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.”

Designer Note: This special provision should be inserted into contracts involving bituminous surface treatment (aka chip seal) with fog seal.

The aggregate gradation must be specified in the plans as CA 14, CA 15, CA 16, CA 20, FA 1 (Special), FA 4 (Special), or FA 22. Districts are encouraged to use CA 20.

BITUMINOUS SURFACE TREATMENT WITH FOG SEAL (BDE)

Effective: January 1, 2020

Revised: January 1, 2022

Replace Section 403 of the Standard Specifications with the following:

"SECTION 403. BITUMINOUS SURFACE TREATMENT WITH FOG SEAL

403.01 Description. This work shall consist of constructing a single or multiple course bituminous surface treatment with fog seal.

- (a) A-1. A-1 shall consist of an emulsified asphalt and a seal coat aggregate with an emulsified asphalt fog seal.
- (b) A-2. A-2 shall consist of an emulsified asphalt and a cover coat aggregate, and an emulsified asphalt and seal coat aggregate with an emulsified asphalt fog seal.
- (c) A-3. A-3 shall consist of two separate applications of an emulsified asphalt and cover coat aggregate, and an emulsified asphalt and seal coat aggregate with an emulsified asphalt fog seal.

403.02 Materials. Materials shall be according to the following.

Item	Article/Section
(a) Cover Coat Aggregate.....	1003, 1004.03
(b) Seal Coat Aggregate (Note 1)	1003, 1004.03
(c) Emulsified Asphalts (Note 2) (Note 3)	1032

Note 1. The seal coat aggregate shall be either fine or coarse aggregate.

When fine aggregate is used, it shall be stone sand, wet bottom boiler slag, slag sand, or steel slag sand. The aggregate gradation shall be FA 1 (Special), FA 4 (Special), or FA 22 as specified on the plans and shall meet the following.

FINE AGGREGATE GRADATIONS						
Grad. No.	Sieve Size and Percent Passing					
		3/8 in. (9.5 mm)	No. 4 (4.75 mm)	No. 8 (2.36 mm)	No. 16 (1.18 mm)	No. 40 (425 µm)

FA 1 (Special)	100	90 ±10	62.5 ±17.5	32.5 ±7.5	7.5 ±7.5	1.5 ±1
FA 4 (Special)	100	--	--	2 ± 2	--	1.5 ±1
FA 22	100	1/	1/	8 ± 8	--	2 ±2

1/ For the fine aggregate gradation FA 22, the aggregate producer shall set the midpoint percent passing, and the Department will apply a range of ±10 percent. The midpoint shall not be changed without Department approval.

When coarse aggregate is used, it shall be crushed gravel, crushed stone, wet bottom boiler slag, crushed slag, crushed sandstone, or crushed steel slag. The coarse aggregate material shall be selected from the table in Article 1004.03(a) based upon the friction aggregate mixture specified. The aggregate quality shall be Class B and the total chert count shall be no more than 25.0 percent by weight (mass) as determined by the ITP 203. The aggregate gradation shall be CA 14, CA 15, CA 16, or CA 20 as specified on the plans.

Note 2. The emulsified asphalt used to construct the bituminous surface treatment shall be either CRS-2P or HFRS-2P.

Note 3. The emulsified asphalt used to construct the fog seal shall be either SS-1h or CSS-1h.

403.03 Equipment. Equipment shall be according to the following.

Item	Article/Section
(a) Self-Propelled Pneumatic-Tired Roller (Note 1)	1101.01
(b) Mechanical Sweeper (Note 2)	1101.03
(c) Aggregate Spreaders (Note 3)	1102.04
(d) General Use Pressure Distributor (Note 4)	1102.05(a)
(e) Heating Equipment	1102.07

Note 1. There shall be a minimum of two rollers, with the final number of rollers determined by the rollers' abilities to maintain proper spacing with the aggregate spreader as directed by the Engineer.

Note 2. The mechanical sweeper shall be power driven and self-propelled with the broom located between the axles. The mechanical sweeper shall not use a cantilever-mounted broom and the broom rotation shall not be operated by forward movement.

Note 3. The aggregate spreader shall be a self-propelled mechanical type with the receiving hopper in the rear and shall pull the aggregate truck. The spreader shall be fitted with an automated system which provides positive interconnected control of the aggregate flow with the forward speed of the spreader. The automated system shall provide uniform and consistent aggregate application at the rate specified.

The Engineer will check the spread roll of the aggregate spreader for straightness each day before operations begin. Should the surface of the spread roll vary off a straight line along its longitudinal dimension by more than 1/16 in. (1.5 mm), the Engineer will inspect

the application of aggregate for corrugations and, should these occur, the machine shall be repaired or replaced. The forward speed of the spreader during calibration shall be the same as is to be used during construction. The equipment required for aggregate spreader calibration may consist of several sheets of canvas, each being exactly 1 sq.yd. (0.8 sq.m), and a weight scale. By making several runs at different gate openings over the sheets of canvas, placed to cover the full width applied by the spreader, and carefully measuring the aggregate on each canvas sheet, the gate opening at the pre-established speed required to apply aggregate at the specified rate may be determined.

Note 4. The general use pressure distributor shall have a minimum capacity of 3,000 gal. (11,500 L). The application rate control shall be automated and shall control the application rate regardless of ground speed or spray bar width. The computer shall have the capability of recording the application rate, gallons sprayed, square yards, and feet traveled. The general use pressure distributor shall be capable of maintaining the asphalt emulsion at the specified temperature. The spray bar nozzles shall produce a uniform triple lap application fan spray, and the shutoff shall be instantaneous, with no dripping. The general use pressure distributor shall be capable of maintaining the specified application rate within ± 0.015 gal/sq. yd. (± 0.070 L/sq. m) for each load. The spray-bar nozzles shall be turned to make the same angle with the longitudinal axis of the spray bar as recommended by the manufacturer.

Application rates shall be determined by the procedures listed in ASTM D 2995, except the sample may be taken on three 8 x 12 in. (200 mm x 300 mm) metal plates. The three plates shall be positioned as directed by the Engineer.

CONSTRUCTION REQUIREMENTS

403.04 Weather Limitations. This work shall be done between May 1st and August 31st. Emulsified asphalt shall be applied only when the temperature of the air in the shade is above 55°F (13°C). No work shall be started if local conditions indicate that rain is imminent.

Fog seal operations shall be performed during daylight hours and not during foggy weather. The road surface may be damp but shall be free of standing water.

This work may be done between September 1st and September 15th provided both of the following conditions are met:

- (a) The temperature of the air in the shade is above 70°F (20°C) and the temperature of the surface to which the asphalt will be applied is 70°F (20°C) or above, and
- (b) The National Weather Service forecast for the area does not show any rain or any temperatures below 55°F (13°C) for the day the work is to be done or for the following five days.

403.05 Repair and Preparation of Base or Existing Surface. The base or existing surface shall be prepared according to Section 358.

403.06 Calibration. At least three days prior to starting the work, the Contractor shall provide the Engineer with a copy of the manufacturer's recommendations for the equipment to be used. The working day prior to starting construction, the general use pressure distributor and aggregate spreader shall be calibrated and adjusted according to the manufacturer's

recommendations. Calibrations and adjustments shall be made in the presence of the Engineer on a level surface at a location approved by the Engineer. The Contractor shall maintain proper calibration and adjustment of the equipment and the Engineer reserves the right to check application rates as the work progresses. Should the equipment fail to consistently apply the specified rates, the work shall be stopped, and the Contractor shall recalibrate and readjust the equipment.

403.07 Application Rates. Based upon the aggregate gradation to be used, the Contractor shall determine the application rates of emulsified asphalt and cover or seal coat aggregate. The application rates along with the gradations shall be submitted to the Engineer for approval prior to the start of work. Application rates shall be according to the following table for the aggregate type shown on the plans and shall result in aggregate embedment between 50 and 70 percent behind the roller. Changes in the application rate of greater than 15 percent shall be resubmitted to the Engineer for approval.

Aggregate Type	Emulsified Asphalt Rate	Aggregate Rate
CA 14	0.38 – 0.46 gal./sq. yd. (1.7 – 2.1 L/sq. m)	24 – 32 lb./sq. yd. (13 – 17 kg/sq. m)
CA 15	0.38 – 0.46 gal./sq. yd. (1.7 – 2.1 L/sq. m)	22 – 30 lb./sq. yd. (12 – 16 kg/sq. m)
CA 16	0.38 – 0.45 gal./sq. yd. (1.7 – 2.0 L/sq. m)	18 – 26 lb./sq. yd. (10 – 14 kg/sq. m)
CA 20	0.36 – 0.45 gal./sq. yd. (1.6 – 2.0 L/sq. m)	18 – 26 lb./sq. yd. (10 – 14 kg/sq. m)
FA 1 (Special)	0.26 – 0.30 gal./sq. yd. (1.2 – 1.4 L/sq. m)	16 – 20 lb./sq. yd. (9 – 11 kg/sq. m)
FA 4 (Special)	0.28 – 0.36 gal./sq. yd. (1.3 – 1.6 L/sq. m)	18 – 24 lb./sq. yd. (10 – 13 kg/sq. m)
FA 22	0.32 – 0.40 gal./sq yd (1.5 – 1.8 L/sq m)	15 – 22 lb/sq yd (8 – 12 kg/sq m)

403.08 Preparation of Emulsified Asphalt. The temperature of the emulsified asphalt at the time of application shall be such that it sprays uniformly without clogging the spraying nozzles and is applied within the temperature range of 150°F – 190°F (65°C – 90°C).

403.09 Preparation of Aggregate. The aggregate shall be stockpiled near the jobsite according to Article 1003.01(e) or 1004.01(e). The aggregate used shall contain no free moisture, but the aggregate shall be slightly damp (saturated surface-dry or drier).

403.10 Application of Emulsified Asphalt. The emulsified asphalt shall be applied with a general use pressure distributor. The entire length of the spray bar shall be set at the height above the surface recommended by the manufacturer for even distribution of the emulsified asphalt. A hand spray bar shall be used at locations not covered by the distributor.

The distributor shall be operated in a manner such that missing or overlapping of transverse joints shall be avoided. To prevent overlapping of successive applications of emulsified asphalt at transverse joints, heavy paper shall be spread over the previously applied emulsified asphalt and aggregates. In order to obtain a uniform application of the emulsified asphalt, the distributor

shall be traveling at the speed required for the specified rate of application when the spray bar crosses the paper.

Adjacent construction, such as concrete pavement, curb and gutter, bridge floors, raised reflective pavement markers, and bridge handrails, shall be protected by shields, covers or other means. If emulsified asphalt is applied to adjacent construction, the Contractor shall remove such material to the satisfaction of the Engineer.

The emulsified asphalt shall not be applied when the wind conditions will inhibit uniform coverage from the fans of asphalt being applied.

403.11 Application of Aggregates. The cover and seal coat aggregates shall be spread evenly with an aggregate spreader over the entire surface being treated. When treating one-half of the pavement width at a time, an inside strip of uncovered emulsified asphalt 3 in. (75 mm) wide shall be left during construction of the first half to provide center joint overlap when the second half of the treatment is placed. In all cases, the aggregate shall be applied ahead of the truck or spreader wheels. Hand spreading will be permitted only when approved by the Engineer and, when so permitted, the aggregate shall be spread uniformly and at the approximate rate specified. Any ridges of aggregate left by the aggregate spreader shall be smoothed out with hand brooms immediately behind the aggregate spreader.

Equipment involved in the work shall operate as close to each other as practical. The aggregate spreader shall be within 150 ft. (45 m) of the pressure distributor and the aggregate shall cover the asphalt emulsion within 30 seconds of application to ensure proper asphalt/aggregate adhesion.

Each aggregate truck shall be equipped with a suitable hitch for connection to the aggregate spreader while unloading. The trucks shall avoid contact between the truck body or bed and the aggregate spreader. The body or bed of the truck shall be modified, if necessary, to empty cleanly and completely into the receiving hopper of the aggregate spreader. No aggregate shall be allowed to spill onto the road surface when the truck is emptying into this hopper.

403.12 Cover Coat. Emulsified asphalt for the cover coat shall not be applied until the previous application is acceptable to the Engineer.

At the beginning of each day's work, no emulsified asphalt shall be applied until there is sufficient cover coat aggregate in the trucks at the work site to completely cover the first application of asphalt emulsion. The amount of surface area covered by each successive application of emulsified asphalt shall be determined by the Engineer. In no case shall this area be greater than can be covered with cover coat aggregate and given the initial rolling while the emulsified asphalt is still in condition to hold aggregate.

The emulsified asphalt shall be applied uniformly over the surface at the rate specified in the table above. Immediately following the application of the asphalt emulsion, the cover coat aggregate shall be spread over the treated surface at the rate specified in the table above.

The aggregate shall be rolled following spreading. A maximum time of five minutes will be allowed between the spreading of aggregate and completion of the initial rolling of the aggregate. The rollers shall proceed in a longitudinal direction at a speed less than or equal to 5 m.p.h. (8 km/h). Each roller will travel over the aggregate a minimum of two times. The entire surface

shall be rolled immediately with a self-propelled pneumatic-tired roller. Rolling shall proceed in a longitudinal direction beginning at the edges and progressing toward the center, overlapping on successive trips by at least 1/2 the width of the roller. The aggregate shall then be rolled with a separate pneumatic-tired roller until the aggregate is properly seated in the asphalt emulsion.

403.13 Seal Coat. When constructing A-2 or A-3, the seal coat shall not be started until the cover coat immediately preceding the seal coat is completed.

Application of the emulsified asphalt and aggregate and rolling of the seal coat shall be the same as specified above for the cover coat.

During the construction period, the Contractor shall maintain the completed work. If necessary, the Contractor shall apply additional seal coat aggregate to absorb excess bitumen appearing on the surface and shall repair any areas where pickup has occurred.

The Contractor shall use the appropriate sweeping equipment to perform an initial sweeping after a minimum of two hours curing and not less than one hour before sunset on the day the bituminous surface treatment is placed. The initial sweeping shall remove excess aggregate by lightly sweeping each pavement lane. The sweeping shall be sufficient to prevent migration of loose aggregate back onto any part of the pavement.

The Contractor shall sweep the pavement surface as needed to remove excess aggregate.

403.14 Application of Fog Seal. The emulsified asphalt for the fog seal shall not be applied to the treated surface until the seal coat has cured for at least 24 hours.

The emulsified asphalt shall be applied uniformly and at a rate that will provide a residual asphalt rate on the prepared surface of 0.03 to 0.08 lb./sq. ft. (0.146 to 0.391 kg/sq. m). An application rate greater than 0.05 lb./sq. ft. (0.244 kg/sq. m) shall be applied in two passes, one from each direction. The Contractor shall demonstrate the application will produce 100 percent coverage of the surface after curing. If the application demonstration does not meet the coverage requirements, the spray pattern shall be adjusted until approved by the Engineer. The emulsified asphalt shall be applied in a manner to minimize the amount of overspray.

A check shall be performed in the first 1,000 ft. (300 m) to verify the application rate according to the test procedure for "Determination of Residual Asphalt in Prime and Tack Coat Materials".

403.15 Opening to Traffic. The road shall be opened to traffic according to Article 701.17(c)(4).

403.16 Method of Measurement. The bituminous surface treatment (A-1, A-2, or A-3) will be measured for payment in place and the area computed in square yards (square meters). The width for measurement will be the top width of the bituminous surface treatment as shown on the plans or as directed by the Engineer.

Emulsified asphalt for fog seal will be measured for payment as specified in Section 1032.

403.17 Basis of Payment. This work will be paid for at the contract unit price per Square Yard (Square Meter) for BITUMINOUS SURFACE TREATMENT, of the type specified.

Emulsified asphalt for fog seal will be paid for at the contract unit price per Pound (Kilogram) of residual asphalt for BITUMINOUS MATERIALS (FOG SEAL).

When provided as a payment item, the preparation of the existing surface will be measured and paid for as specified in Section 358. If not provided as a payment item, preparation of existing surface will be paid for according to Article 109.04."

Designer Note: Select the mixture composition based upon the roadway type and calculate the quantity of the rapid setting polymer modified emulsion (RSPME), i.e. tack coat, based upon the planned residual asphalt rate shown below. The planned thickness of each mixture is shown for the designers use in determining final elevations and is not something that can be altered.

Roadway Type	Mixture Composition	Planned Thickness	Planned Residual Asphalt Rate of RSPME
Interstate	IL-12.5 UTB	0.9 in.	0.19 lb./sq. ft.
Non-Interstate	IL-9.5 UTB	0.75 in.	0.14 lb./sq. ft.

ULTRA-THIN BONDED WEARING COURSE (BDE)

Effective: April 1, 2020

Revised: January 1, 2022

Description. This work shall consist of constructing an ultra-thin bonded (UTB) wearing course on a prepared pavement.

Materials. Materials shall be according to the following.

Item	Article/Section
(a) Fine Aggregate	1003.03
(b) Coarse Aggregate (Note 1).....	1004.03
(c) Mineral Filler	1011
(d) Performance Graded Asphalt Binder (Note 2)	1032.05
(e) Bituminous Materials (Note 3)	1032

Note 1. The blending, alternate use, and/or substitutions of aggregates from different sources for use in this work will not be permitted without the approval of the Engineer. Any blending shall be by interlocked mechanical feeders. The blending shall be uniform, compatible with the other components of the mix, and the equipment shall be approved by the Engineer.

If blending aggregates, the blend shall have a washed gradation performed every other day or a minimum of three tests per week. Testing shall be completed before the aggregate receives final acceptance for use in the mix.

Note 2. The asphalt binder shall be either SBR or SBS PG 70-22.

Note 3. The bituminous material used for tack coat shall be a rapid setting anionic polymer modified emulsion or a rapid setting cationic polymer modified emulsion. When using a cationic material, the supplier shall certify prior to the start of mix production, the material has a positive particle charge when tested according to AASHTO T 59. When using either a cationic or anionic material, the supplier shall certify prior to the start of mix production, the material meets the following requirements.

Tests on Emulsions (AASHTO T 59)	Result
Viscosity, Saybolt Furol, 77°F (25°C), s	20 - 100
Viscosity, Rotational Paddle, 77°F (25°C), mPa-s (AASHTO T 382)	40 - 200
Storage Stability Test, 24 hours, % ^{1/}	1 max.
Sieve Test, % retained on #20 (850 µm) sieve	0.05 max.
Residue from Distillation, %	63 min.
Demulsibility: 35 ml, 0.02N CaCl ₂ , %, <u>or</u> 35 ml, 0.8% dioctyl sodium sulfosuccinate, %	40 min. 40 min.

Tests on Residue from Evaporation	Result
Penetration, 77°F (25°C), 100 g, 5 s, 0.1 mm, (AASHTO T 49)	90 - 150
Elastic Recovery, 50°F (10°C), straight sided, 5 cm/min, 20 cm elongation, 5 min hold, % (AASHTO T 301)	50 min.
Ash Content, % (AASHTO T 59)	1 max.

1/ Upon examination of the storage stability test cylinder after standing undisturbed for 24 hours, the surface shall show minimal to no white, milky colored substance and shall be a homogenous brown color throughout. The material may be released prior to completion of the test based on approval of the Department.

Equipment. Equipment shall be according to the following.

Item	Article/Section
(a) Tandem Rollers (Note 1)	1101.01
(b) Hot-Mix Asphalt Plant	1102.01
(c) Spreading and Finishing Machine (Note 2)	1102.03
(d) Heating Equipment	1102.07

Note 1. A minimum of two tandem rollers (T_B), operating in the static mode, sufficient to match paving production will be required.

Note 2. The spreading and finishing machine shall be a "spray-paver" capable of spraying the tack coat, applying the wearing course, and providing a smooth surface to the mat in one pass at the rate of 30 ft./min. (9 m/min.) or greater. The wearing course shall be spread over the tack coat within five seconds of applying the tack coat during normal paving speeds. No wheel or other part of the spray-paver shall come in contact with the tack coat before the wearing course is applied. The spray-paver shall also have the following:

- (1) a receiving hopper with a minimum of two heated twin screw feed augers,
- (2) an integral storage tank for tack coat material,
- (3) integral twin expandable emulsion spray bars located immediately in front of the asphalt spread augers and an activated screed,

- (4) variable width vibratory heated activated screed. The screed shall have the ability to be crowned at the center both positively and negatively and have vertically adjustable extensions to accommodate the desired pavement profile.

CONSTRUCTION REQUIREMENTS

Mixture Design. The target values for the Job Mix Formula (JMF) shall fall within the following limits.

ULTRA-THIN BONDED, MIXTURE COMPOSITION (% PASSING)		
Sieve Size	IL-12.5 UTB	IL-9.5 UTB
3/4 in. (19 mm)	100	--
1/2 in. (12.5 mm)	85 - 100	100
3/8 in. (9.5 mm)	55 - 80	85 - 100
No. 4 (4.75 mm)	22 - 38	22 - 38
No. 8 (2.36 mm)	19 - 32	19 - 32
No. 16 (1.18 mm)	15 - 24	15 - 24
No. 30 (600 µm)	11 - 18	11 - 18
No. 50 (300 µm)	8 - 14	8 - 14
No. 100 (150 µm)	5 - 10	5 - 10
No. 200 (75 µm)	4 - 5.5	4 - 5.5
Asphalt Binder, %	4.6 - 6.1	4.8 - 6.1

The need for an anti-stripping additive shall be determined according to Article 1030.05(c).

The effective binder film thickness shall be a minimum of 0.3 ±0.03 mils (10 ±1 µm). The percent asphalt binder of the mix shall be determined by calculating the binder film thickness in accordance with Illinois Test Procedure (ITP) 406.

Draindown from the loose mixture shall not exceed 0.10 percent when tested according to Illinois Modified AASHTO T 305. The draindown shall be tested at the job mix formula asphalt content plus 0.5 percent. The temperature shall be the mixing temperature plus 59°F (15°C). The temperature shall not exceed 350°F (175°C).

The mixture shall not contain reclaimed materials.

The mixing temperature shall be according to Illinois Modified AASHTO T 312.

Preparation of Mineral Aggregates. The aggregates shall be heated in such a manner as to assure the mixing temperature is uniformly maintained. The aggregates shall be dried to less than 0.3 percent residual moisture by weight. This may require the aggregate to be processed twice through the drier.

Mix Production. After target values have been determined for the JMF, an adjustment/plant change may be made according to the following limitations.

Parameter	Adjustment
-----------	------------

3/8 in. (9.5 mm)	±5%
No. 4 (4.75 mm)	±5%
No. 8 (2.36 mm)	±5%
No. 200 (75 µm)	±1.5%
Asphalt Binder Content ^{1/}	±0.3%

1/ The quantity of anti-stripping additive will not be included in this percentage.

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

Placing. The placement conditions of Article 406.06(c) shall apply, except the surface of the existing pavement shall be cleaned using a mechanical or vacuum sweeper; and the mixture shall only be placed when the pavement and ambient air temperatures are at least 50°F (10°C) at the time of placement and the forecast is for rising temperatures.

The IL-12.5 UTB mixture shall be placed at a rate of 90 lb./sq. yd. (50 kg/sq. m). The IL-9.5 UTB mixture shall be placed at a rate of 75 lb./sq. yd. (40 kg/sq. m). These placement rates are based on a mixture with a unit weight of 100 lb./sq. yd./in. (2.1 kg/sq m/mm) and a specific gravity of 2.5. Mixtures with a different specific gravity will require an adjusted placement rate to maintain the planned thickness.

The tack coat shall be uniformly spray applied with the spreading and finishing machine at a temperature of 120 - 180°F (50 - 80°C). The rate of application shall be accurately and continuously monitored to ensure a uniform application over the entire width to be overlaid. The rate of application shall be determined as follows.

- (a) Determination of In-Place Air Voids. Two 6 in. (150 mm) specimens shall be prepared according to AASHTO T 312 to 80 gyrations. The percent air voids shall be determined according to AASHTO T 269. The air void determination shall be the average of the two specimens. 2.5 percent air voids shall be added to the lab determined air voids to approximate in-place air voids.
- (b) Calculated Application Rate. Calculate the volume of 1 sq. yd. (1 sq. m) of mix at a depth of 70 percent of the nominal maximum aggregate size. Multiply that volume by the percent of in-place air voids. Convert the volume to gal (L). Express the result in lb./sq. ft. (kg/sq. m).

The Engineer will make field adjustments to the calculated application rate no greater than ±0.05 lb./sq. ft. (±0.25 kg/sq. m) based on the existing surface condition. Once the target application rate is established, the tolerance shall be ±0.01 lb./sq. ft. (±0.05 kg/sq. m).

Compaction. Compaction shall consist of each area of the mat receiving a minimum of two passes with a tandem roller, before the material temperature has fallen below 180°F (80°C).

Opening to Traffic. The wearing course may be opened to traffic when it has hardened to the satisfaction of the Engineer.

Quality Control/Quality Assurance. Material testing shall be according to Articles 1030.06 and 1030.09, except the following tests will not be required.

- (a) Bituminous Core Density
- (b) Nuclear Density
- (c) G_{mm} and G_{mb} testing

Additionally, the Contractor shall have a representative present during construction that is familiar with the lay down of the product and its design methods.

Method of Measurement. The bituminous material for tack coat will be measured for payment as specified in Section 1032.

The wearing course will be measured for payment in place and the quantity computed in Square Yards (Square Meters).

Basis of Payment. The tack coat will be paid for at the contract unit price per Pound (Kilogram) of residual asphalt for RAPID SETTING POLYMER MODIFIED EMULSION.

The wearing course will be paid for at the contract unit price per Square Yard (Square Meter) for ULTRA-THIN BONDED WEARING COURSE, of the mixture composition and friction aggregate specified.

Designer Note: This special provisions should be inserted into contracts with the Longitudinal Joint Sealant pay item or the Longitudinal Joint Sealant – Half Width pay item. District 4 has not been using this method in the past, so confirm with the Mixtures Control Engineer or your Project Engineer prior to use.

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)
¾ (19)	0.44 (0.66)		
1 (25)	0.58 (0.86)		
1 ¼ (32)	0.66 (0.98)	0.44 (0.66)	
1 ½ (38)	0.74 (1.10)	0.48 (0.71)	0.63 (0.94)
1 ¾ (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)
≥ 2 ¼ (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."

Designer Note: This special provision should be inserted with contracts involving new concrete pavement, PCC overlays, hot-mix asphalt pavement (full-depth), or HMA overlays with a minimum of 2.25 inches total thickness of new HMA material and at least two activities. An activity is defined as either milling or a lift of HMA (binder or surface).

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 sublot greater than or equal to 264 ft. (80 m) will be subject to the same evaluation as a whole sublot. Partial sublots less than 264 ft. (80 m) shall be included with the previous sublot 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 sublot 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 sublot(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 sublot of high-speed mainline pavement per the Smoothness Assessment Schedule. Assessments will be based on the MRI of each sublot 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 Sublot ^{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)	$+ (45 - MRI) \times \$45.00$ ^{2/}
> 45.0 (710) to 75.0 (1,190)	+ \$0.00
> 75.0 (1,190) to 100.0 (1,580)	$- (MRI - 75) \times \$20.00$
> 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."

Designer Note: This special provision should be inserted into contracts containing pavement patching.

PAVEMENT PATCHING (BDE)

Effective: August 1, 2025

Revise the first sentence of the last paragraph of Article 442.06(a)(2) of the Standard Specifications to read:

"Type IV patches shall be reinforced with welded wire reinforcement according to the details shown on the plans."

Revise Article 442.06(a)(3) of the Standard Specifications to read:

"(3) Class C Patching. Patches adjacent to a new lane of pavement, new Portland cement concrete shoulder, or new curb and gutter of more than 20 ft. (6 m) in length shall be tied with No. 6 (No. 19) tie bars, 24 in. (600 mm) long, embedded 8 in. (200 mm) at 36 in. (900 mm) centers according to Article 420.05(b).

When the patched pavement is not to be resurfaced, transverse contraction joints shall be formed on 15 ft. (4.5 m) to 20 ft. (6 m) centers by sawing in all patches that are more than 20 ft. (6 m) in length. They shall be placed in line with joints or cracks in the existing slab whenever possible."

Revise the eighth paragraph of Article 442.11 of the Standard Specifications to read:

"Pavement tie bars for patches will be paid for at the contract unit price per Each for TIE BARS, of the diameter specified."

51100

511.00

Designer Note: This special provision should be inserted into contracts containing slope wall.

SLOPE WALL (BDE)

Effective: August 1, 2025

Revise Article 511.02(b) of the Standard Specifications to read:

"(b) Welded Wire Reinforcement (Note 3)1006.10"

Add the following note to the end of Article 511.02 of the Standard Specifications.

"Note 3. Welded wire reinforcement used for concrete slope wall shall be epoxy coated or galvanized according to AASHTO M 111 (M 111M)."

Revise the second sentence of Article 511.03(a) of the Standard Specifications to read:

"Concrete slope walls shall be reinforced with welded wire reinforcement consisting of 6 x 6 in. (150 x 150 mm) mesh, #4 gauge (5.74 mm), 58 lb. (26 kg) per 100 sq. ft. (9 sq. m) and supported 2 in. (50 mm) below the upper surface of the slope wall by concrete blocks."

Add the following to the end of Article 511.03(a) of the Standard Specifications as the last paragraph.

"The concrete slope wall shall be given a broom finish. The broom shall be drawn vertically along the slope wall surface, with adjacent strokes slightly overlapping, producing a uniform, slightly rough surface with parallel broom marks."

Designer Note: Use on all projects utilizing Full Lane Sealant Waterproofing System pay item.

FULL LANE SEALANT WATERPROOFING SYSTEM (BDE)

Effective: November 1, 2023

Replace Section 581 of the Standard Specifications with the following:

"SECTION 581. FULL LANE SEALANT WATERPROOFING SYSTEM

581.01 Description. This work shall consist of furnishing and placing a full lane sealant (FLS) waterproofing system over a prepared concrete bridge deck.

581.02 Materials. Materials shall be according to the following.

Item	Article/Section
(a) Hot-Mix Asphalt	1030
(b) Bituminous Materials (Note 1)	1032
(c) Full Lane Sealant (FLS)	1032.13

Note 1. The bituminous material used for the tack coat shall be emulsified asphalt according to Article 1032.06. The emulsion producer shall perform any dilution with water. The emulsified asphalt shall be thoroughly agitated within 24 hours of application and show no separation of water and emulsion.

581.03 Equipment. Equipment shall be according to Article 406.03 and the following.

- (a) Regenerative Air Vacuum Sweeper (Note 1)

Note 1. The regenerative air vacuum sweeper shall blast re-circulated, filtered air through a vacuum head having a minimum width of 6.0 ft. (1.83 m) at a minimum rate of 20,000 cu ft./min (560 cu m/min).

CONSTRUCTION REQUIREMENTS

581.04 General. FLS waterproofing system shall be constructed according to Section 406, except as modified herein, with a tack coat, a layer of FLS, a layer of IL-4.75, a second layer of FLS, and a final layer of SMA-9.5 as shown on the plans.

581.05 Preparation of Concrete Deck. Surfaces shall be cleaned according to Article 406.05(c). In non-attainment areas, vacuum sweeping shall be performed using a regenerative air vacuum sweeper.

Deck drains shall be temporarily plugged before the tack coat is applied. The material used to plug the drains shall be removed and disposed of upon completion of the work.

From the time the bridge deck is cleaned and prepared for the FLS until the HMA is spread and compacted, the only traffic permitted shall be the necessary workers and equipment to perform the work.

581.06 Application of Full Lane Sealant Waterproofing System. FLS shall be applied uniformly to the surface of the bridge deck in a single application per pass with an FLS pressure distributor. Hand application with a squeegee shall be used at places not covered by the FLS pressure distributor.

If FLS pickup occurs, paving shall cease in order for corrective measures to be taken. Corrective measures shall include applying water to the wheels or paving in cooler ambient conditions and repairing all areas where the pickup occurred.

Before applying the second layer of FLS, remove any standing water from the IL-4.75 binder course.

581.07 HMA Compaction. HMA shall be compacted according to Article 406.07, except the density requirement for mixtures on bridge decks shall be replaced with 5 and 7 roller pass coverages per location of IL-4.75 and SMA-9.5 mixtures, respectively.

581.08 Sequence of Construction Operations. The sequence of construction operations shall be as follows.

- (a) Tack coat shall be applied at a residual rate of 0.05 lb./sq. ft. (0.244 kg/sq. m).
- (b) FLS shall be applied at a residual rate of 0.25 lb./sq. ft. (1.21 kg/sq. m).
- (c) HMA IL-4.75 binder course shall have a compacted lift thickness of 3/4 in. (19 mm).
- (d) FLS shall be applied at a residual rate of 0.15 lb./sq. ft. (0.73 kg/sq. m).
- (e) HMA SMA-9.5 surface course shall have a compacted lift thickness of 1½ in. (38 mm).

581.09 Method of Measurement. This work will be measured for payment as follows.

- (a) Contract Quantities. The requirements for the use of contract quantities shall conform to Article 202.07(a).
- (b) Measured Quantities. This work will be measured for payment and the area computed in square yards (square meters) of the bridge deck surface covered. No measurement or allowance will be made for laps, the material used for extending up curb faces, other vertical barriers, or extensions over lips or edges.

HMA SMA-9.5 will be measured for payment according to Article 406.13(b).

581.10 Basis of Payment. This work will be paid for at the contract unit price per Square Yard (Square Meter) for FULL LANE SEALANT WATERPROOFING SYSTEM.

HMA SMA-9.5 will be paid for at the contract unit price per ton (metric ton) for POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, STONE MATRIX ASPHALT, 9.5, of the friction aggregate and Ndesign specified, according to Article 406.14."

63712

637.12

Designer Note: This special provisions should be inserted into contracts with CONCRETE BARRIER.

CONCRETE BARRIER (BDE)

Effective: January 1, 2025

Revise the second paragraph of Article 637.12 of the Standard Specifications to read:

"When a double face concrete barrier with a variable cross-section is required, and the variation exceeds 1/2 in. (13 mm), the barrier will be paid for at the contract unit price per Foot (Meter) for CONCRETE BARRIER, VARIABLE CROSS-SECTION, of the height specified."

66704

667.04

Designer Note: Insert into all contracts.

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.

Designer Note: This special provision should be inserted into all contracts.

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."

Designer Note: This special provision should be used on two-lane highways where two-way traffic will be maintained over one lane of pavement in segments where no sideroads or entrances require deployment of additional flaggers. Applications include rural milling and/or resurfacing projects, bridge maintenance projects, haul road crossings, pavement patching, or other similar projects with slow moving or stationary operations where the use of a flagger is required. AFADs should not be used on projects with numerous intersections where additional flaggers are required to control traffic.

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.

Designer Note: Insert into all contracts.

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."

70108

701.08

Designer Note: This special provision should be inserted into all contracts with closed lane construction. It should not be used with moving operations only contracts.

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."

Designer Note: This special provision should be inserted into all freeway and expressway projects involving Highway Standard 701400 and other contracts at the district's discretion requiring speed display trailers.

SPEED DISPLAY TRAILER (BDE)

Effective: April 2, 2014

Revised: January 1, 2022

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

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

Add the following to Article 701.15 of the Standard Specifications:

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

Add the following to Article 701.20 of the Standard Specifications:

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

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

Add the following to Article 1106.02 of the Standard Specifications:

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

The speed measurement shall be by radar and provide a minimum detection distance of 1,000 ft. (300 m). The radar shall have an accuracy of ± 1 mile-per-hour.

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

The speed indicator display shall be equipped with a violation alert that flashes the displayed detected speed when the work zone posted speed limit is exceeded. The speed indicator shall have a maximum speed cutoff. On roadway facilities with a normal

posted speed limit greater than or equal to 45 m.p.h., the detected speeds of vehicles traveling more than 25 m.p.h. over the work zone speed limit shall not be displayed. On facilities with normal posted speed limit of less than 45 m.p.h., the detected speeds of vehicles traveling more than 15 m.p.h. over the work zone speeds limit shall not be displayed. On any roadway facility if detected speeds are less than 25 mph, they shall not be displayed. The display shall include automatic dimming for nighttime operation.

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

Designer Note: Insert into all contracts using temporary rumble strips.

TEMPORARY RUMBLE STRIPS (BDE)

Effective: April 1, 2025

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

"(k) Temporary Rumble Strips. Temporary rumble strips provide an audible and tactile warning to alert motorists of an approaching work zone or change in driving pattern or highway condition. The number and spacing of temporary rumble strips installed per set shall be as shown in Standard 701901. Temporary rumble strips shall be applied to the pavement according to the manufacturer's recommendations.

Breakage or significant permanent deformation of the strip shall constitute failure. Compaction or slipping of material that reduces the effectiveness of the audible or vibration warnings shall constitute failure.

Upon completion of the project, or as directed by the Engineer, temporary rumble strips shall be entirely removed using a method that does not permanently damage the pavement surface."

Revise Article 701.19(e) of the Standard Specifications to read:

"(e) Temporary rumble strips will be measured as each, where each is defined as a set of six temporary rumble strips across a single lane of pavement, and each set of temporary rumble strips will be measured for payment once per location."

Revise Article 1106.03 of the Standard Specifications to read:

Revise Article 701.19(e) of the Standard Specifications to read:

"(e) Temporary rumble strips will be measured as each, where each is defined as a set of six temporary rumble strips across a single lane of pavement, and each set of temporary rumble strips will be measured for payment once per location."

"1106.03 Temporary Rumble Strips. Temporary rumble strips shall be black or white. Temporary rumble strips shall be constructed of a flexible, pliant, impact-resistant material capable of supporting a load of 6,000 lb. (2,700 kg). Temporary rumble strips shall be ¼ in. (6 mm) to 1 in. (25 mm) thick and 4 in. (100 mm) to 6 in. (150 mm) wide. Temporary rumble strips shall be weather resistant and, through normal traffic wear, show no appreciable fading, lifting, tearing, rollback, or other signs of poor adhesion."

72002

720.02

Designer Note: This special provisions should be inserted into contracts with SIGN PANELS.

SIGN PANELS AND APPURTENANCES (BDE)

Effective: January 1, 2025

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

"Steel support channels shall be according to ASTM A 653 (A 653M) (mild strip), Standard 720001, and galvanized according to AASHTO M 232, Class B 2 after forming."

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."

Designer Note: Use on all projects utilizing Wood Sign Support pay item.

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 in. x 6 in. (100 mm x 150 mm) posts are used, they shall be modified to satisfy the breakaway requirements by drilling 1½ in. (38 mm) diameter holes centered at 4 in. and 18 in. (100 mm and 450 mm) above the groundline and perpendicular to the centerline of the roadway."

78013

780.13

Designer Note: Insert into all contracts using pavement markings.

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."

Designer Note: This special provision should be inserted in contracts using green thermoplastic pavement markings as part of an intersection with specific bicycle accommodation design.

Green pavement markings for right-turn lane conflicts and bicycle boxes shall be detailed in the plans and paid for per Square Foot as PREFORMED THERMOPLASTIC PAVEMENT MARKINGS – LETTERS AND SYMBOLS. See BDE Manual 17-2.02(e) for more guidance.

GREEN PREFORMED THERMOPLASTIC PAVEMENT MARKINGS (BDE)

Effective: January 1, 2021

Revised: January 1, 2022

Revise the following in Table 1 of Article 780.15 of the Standard Specifications to read:

"SYMBOLS ^{1/}		
Symbol	Large Size sq. ft. (sq. m)	Small Size sq. ft. (sq. m)
Through Arrow	11.5 (1.07)	6.5 (0.60)
Left or Right Arrow	15.6 (1.47)	8.8 (0.82)
2 Arrow Combination Left (or Right) and Through	26.0 (2.42)	14.7 (1.37)
3 Arrow Combination Left, Right, and Through	38.4 (3.56)	20.9 (1.94)
Lane Drop Arrow	41.5 (3.86)	--
Wrong Way Arrow	24.3 (2.26)	--
Railroad "R" 6 ft. (1.8 m)	3.6 (0.33)	--
Railroad "X" 20 ft. (6.1 m)	54.0 (5.02)	--
International Symbol of Accessibility	3.1 (0.29)	--
Bike Symbol	4.7 (0.44)	--
Shared Lane Symbol	8.0 (0.74)	
Intersection Bicycle Box ^{2/}	variable sizes	
Two-Stage Bicycle Turn Box ^{2/}	variable sizes	

1/ Table applies to all types of pavement marking materials, except intersection bicycle box and two-stage bicycle turn box which are limited to preformed thermoplastic.

2/ The cost of symbols appearing in the box are included in the overall square area of the box."

Add the following paragraph to the end of Article 1095.01(a)(2) of the Standard Specifications:

"The pigments used for the green thermoplastic compound shall not contain any hazardous materials listed in the Environmental Protection Agency Code of Federal Regulations (CFR) 40, Section 261.24, Table 1. The combined total of RCRA listed heavy metals shall not exceed 100

ppm when tested by X-ray fluorescence spectroscopy. The pigments shall also be heat resistant, UV stable, and color-fast greens. The pigment shall be uniformly distributed throughout the thermoplastic compound."

Add the following to Article 1095.01(b)(1)e. of the Standard Specifications:

"Green **	Daylight Reflectance	15 % min.
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** Shall meet the coordinates of the following color tolerance chart.

x	0.230	0.266	0.367	0.444
y	0.754	0.460	0.480	0.583"

Designer Note: This special provision should be inserted into contracts using APS.

The installation of APS at signalized intersections should be based on the Bureau of Operations Policy on Accessible Pedestrian Signals and Pushbuttons for Traffic Signals and Pedestrian Hybrid Beacons.

- Pedestrian pushbutton posts and pedestrian signal heads are not part of this work. If they are needed, use the appropriate pay items as per Sections 876 and 881 of the Standard Specifications.
- Signs R10-3 and R10-3a may be used at any location with pedestrian signals to direct the pedestrian to the pushbutton.
- Signs R10-3e and R10-3i may be used as an educational sign where countdown pedestrian signals are provided. In order to assist the pedestrian in understanding which button to push, Sign R10-3i adds the name of the street to be crossed.
- The name of the street to be crossed may be substituted for the word STREET in the legend of signs R10-3a and R10-4a.
- Signs R10-4 and R10-4a shall be used at locations where pedestrian signals are not used and pedestrians proceed on a green signal indication.
- Specify the sign type in the plans. This may be accomplished with a schedule of quantities.

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°F to +160 F (-34°C 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 lbs. (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.

Designer Note: This special provisions should be inserted into all contracts.

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 2,500 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) Cement 1001"

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

"(i) Ground Granulated Blast Furnace (GGBF) Slag 1010"

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 lbs. (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 hundred weight/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) Cement 1001"

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 resource 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 resource 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 resource 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 resource 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. Non-shrink grout shall be according to Illinois Modified ASTM C 1107.

The non-shrink 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 non-shrink 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 (1,630 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 1,000 - 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 resource 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."

100307

1003.07

Designer Note: This special provisions should be inserted into contracts requiring permanent or temporary mechanically stabilized earth (MSE) retaining walls.

MECHANICALLY STABILIZED EARTH RETAINING WALLS (BDE)

Effective: August 1, 2023

Revised: August 1, 2025

Add the following to Article 522.02 of the Standard Specifications:

"(s) Metal Hardware Cast into Concrete 1006.13"

Revise the first paragraph of Article 522.09(b)(1) of the Standard Specifications to read:

"(1) General. At least seven calendar days prior to the start of installation, the Contractor shall meet with the Engineer, supplier, consultants, and subcontractors involved in any part of the MSE wall installation or inspection to outline procedures and ensure proper construction of the wall."

Revise Article 522.09(b)(5)(a.)(2.) of the Standard Specifications to read:

"2. The maximum allowable offset between adjacent panels shall be 3/4 in. (19 mm)."

Add the following as Article 522.09(b)(5)(a.)(5.) to the Standard Specifications:

"5. The width of each panel joint shall be within 1/4 in. (6 mm) of that shown on the plans."

Revise the second sentence of Articles 1003.07(d) and 1004.06(d) of the Standard Specifications to read:

"The Illinois Modified AASHTO T 296 test with pore pressure measurement may be used in lieu of AASHTO T 236."

102601

1026.01

Designer Note: Use on all projects utilizing Concrete Sealer pay item.

CONCRETE SEALER (BDE)

Effective: November 1, 2023

Replace Section 1026 of the Standard Specifications with the following:

"SECTION 1026. CONCRETE SEALER

1026.01 General. Sealer types shall be according to the listing in AASHTO M 224. All concrete sealer types shall meet the sealer requirements of AASHTO M 224 when tested in accordance with AASHTO T 384. The sealer shall be listed on the Department's qualified product list.

The sealer shall have a clear or amber color when dry.

The Department will perform the sealer characterization properties of ATR-FTIR spectra, total solids, and specific gravity in accordance with AASHTO M 224."

Designer Note: This special provision should be inserted into all HMA paving contracts.

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."

Designer Note: This special provision should be inserted into contracts containing the pay item BITUMINOUS MATERIALS (TACK COAT), or any of the following types of work:

Section 312 Stabilized Subbase
 Section 355 HMA Base Course
 Section 356 HMA Base Course Widening
 Section 404 Micro-Surfacing and Slurry Sealing
 Section 405 Cape Seal
 Section 406 HMA Binder and Surface Course
 Section 407 HMA Pavement (Full-Depth)
 Section 442 Pavement Patching
 Section 507 Timber Structures
 Section 581 Waterproofing Membrane System
 BDE Special Provision "Ultra-Thin Bonded Wearing Course"
 Local Roads & Streets Recurring Special Provision "Reflective Crack Control Treatment"

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
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.)	$\geq 54\%$

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."

106103

1061.03

Designer Note: This special provision should be inserted into contracts using the pay item WATERPROOFING MEMBRANE SYSTEM.

WATERPROOFING MEMBRANE SYSTEM (BDE)

Effective: August 1, 2024

Revise Article 1061.03 of the Standard Specifications to read:

"1061.03 Coal Tar Pitch Emulsion. The coal tar pitch emulsion shall be compounded of heavy closed ring hydrocarbons dispersed in water by means of a combination of irreversible colloidal clays meeting ASTM D 5727. The Contractor shall submit a manufacturer's certification stating it meets these requirements."

107803

1078.03

Designer Note: This special provision should be inserted into contracts containing traffic signal backplate.

TRAFFIC SIGNAL BACKPLATE (BDE)

Effective: August 1, 2025

Revise the second sentence of the third paragraph of Article 1078.03 of the Standard Specifications to read:

"Retroreflective sheeting shall be Type AZ or Type ZZ according to Article 1091.03 and applied in the preferred orientation for the maximum angularity according to the manufacturer's recommendations."

Designer Note: This special provision should be inserted into contracts with PREFORMED PLASTIC PAVEMENT MARKING.

PREFORMED PLASTIC PAVEMENT MARKING (BDE)

Effective: June 2, 2024

Revise Article 1095.03(h) of the Standard Specifications to read:

“(h) Glass Beads. Glass beads shall be colorless and uniformly distributed throughout the yellow and white portions of the material only. A top coating of beads shall be bonded to or directly embedded into the surface of the markings such that the beads are not easily removed when the film is scratched firmly with a thumb nail.

The glass bead refractive index shall be tested using the liquid immersion method.

Type B material shall have an inner mix of glass beads with a minimum refractive index of 1.50 and a top coating of ceramic beads bonded to top urethane wear surface with a minimum refractive index of 1.70. Beads with a refractive index greater than 1.80 shall not be used.

Type C material shall have glass beads with a minimum refractive index of 1.50 and a layer of skid resistant ceramic particles bonded to the top urethane wear surface. The urethane wear surface shall have a nominal thickness of 5 mils (0.13 mm).”

Revise Article 1095.03(n) of the Standard Specifications to read:

“(n) Sampling and Inspection.

(1) Sample. Prior to approval and use of preformed plastic pavement markings, 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 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 will be taken or witnessed by a representative of the Bureau of Materials and will 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.”

109506 1095.06

Designer Note: This special provision should be inserted into contracts with short term or temporary pavement markings.

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
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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) Retro-reflectivity. 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 ft. 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 retro-reflectance shall be measured for Type IV under wet conditions according to ASTM E 2177 and meet the following.

Wet Retro-reflectance, 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/} 20 (0.51) ^{2/}	65 (1.65) ^{1/} 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."