

58

November 17, 2017 Letting

Notice to Bidders, Specifications, and Proposal



**Illinois Department
of Transportation**

Springfield, Illinois 62764

Contract No. 91551
PIATT County
Section 18-00238-02-RS
Route FAS 530 (Ch 14)
Project 4GIV 272-0000(000)
District 5 Construction Funds

Prepared by

Checked by

F

(Printed by authority of the State of Illinois)



- 1. TIME AND PLACE OF OPENING BIDS.** Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). All bids must be submitted to the iCX system prior to 10:00 a.m. November 17, 2017 prevailing time at which time the bids will be publicly opened from the iCX SecureVault.
- 2. DESCRIPTION OF WORK.** The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

**Contract No. 91551
PIATT County
Section 18-00238-02-RS
Project 4GIV 272-0000(000)
Route FAS 530 (Ch 14)
District 5 Construction Funds**

Cold in-place recycling and HMA resurfacing from north corporate limits of Atwood to 1.65 miles north.

- 3. INSTRUCTIONS TO BIDDERS.** (a) This Notice, the invitation for bids, proposal and letter of award shall, together with all other documents in accordance with Article 101.09 of the Standard Specifications for Road and Bridge Construction, become part of the contract. Bidders are cautioned to read and examine carefully all documents, to make all required inspections, and to inquire or seek explanation of the same prior to submission of a bid.

(b) State law, and, if the work is to be paid wholly or in part with Federal-aid funds, Federal law requires the bidder to make various certifications as a part of the proposal and contract. By execution and submission of the proposal, the bidder makes the certification contained therein. A false or fraudulent certification shall, in addition to all other remedies provided by law, be a breach of contract and may result in termination of the contract.
- 4. AWARD CRITERIA AND REJECTION OF BIDS.** This contract will be awarded to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the rules, Invitation for Bids and contract documents. The issuance of plans and proposal forms for bidding based upon a prequalification rating shall not be the sole determinant of responsibility. The Department reserves the right to determine responsibility at the time of award, to reject any or all proposals, to readvertise the proposed improvement, and to waive technicalities.

By Order of the
Illinois Department of Transportation

Randall S. Blankenhorn,
Secretary

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2017

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

ERRATA Standard Specifications for Road and Bridge Construction
(Adopted 4-1-16) (Revised 1-1-17)

SUPPLEMENTAL SPECIFICATIONS

<u>Std. Spec. Sec.</u>	<u>Page No.</u>
106 Control of Materials	1
403 Bituminous Surface Treatment (Class A-1, A-2, A-3)	2
420 Portland Cement Concrete Pavement	3
502 Excavation for Structures	5
503 Concrete Structures	7
504 Precast Concrete Structures	10
542 Pipe Culverts	11
586 Sand Backfill for Vaulted Abutments	12
670 Engineer's Field Office and Laboratory	14
704 Temporary Concrete Barrier	15
888 Pedestrian Push-Button	17
1003 Fine Aggregates	18
1004 Coarse Aggregates	19
1006 Metals	21
1020 Portland Cement Concrete	22
1103 Portland Cement Concrete Equipment	24

CHECK SHEET
FOR
RECURRING SPECIAL PROVISIONS

Adopted January 1, 2017

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

RECURRING SPECIAL PROVISIONS

<u>CHECK SHEET #</u>		<u>PAGE NO.</u>
1	X Additional State Requirements for Federal-Aid Construction Contracts	26
2	X Subletting of Contracts (Federal-Aid Contracts)	29
3	X EEO	30
4	Specific EEO Responsibilities Non Federal-Aid Contracts	40
5	Required Provisions - State Contracts	45
6	Asbestos Bearing Pad Removal	51
7	Asbestos Waterproofing Membrane and Asbestos HMA Surface Removal	52
8	Temporary Stream Crossings and In-Stream Work Pads	53
9	Construction Layout Stakes Except for Bridges	54
10	X Construction Layout Stakes	57
11	Use of Geotextile Fabric for Railroad Crossing	60
12	Subsealing of Concrete Pavements	62
13	Hot-Mix Asphalt Surface Correction	66
14	Pavement and Shoulder Resurfacing	68
15	Patching with Hot-Mix Asphalt Overlay Removal	69
16	Polymer Concrete	70
17	PVC Pipeliner	72
18	Bicycle Racks	73
19	Temporary Portable Bridge Traffic Signals	75
20	Work Zone Public Information Signs	77
21	Nighttime Inspection of Roadway Lighting	78
22	English Substitution of Metric Bolts	79
23	Calcium Chloride Accelerator for Portland Cement Concrete	80
24	Quality Control of Concrete Mixtures at the Plant	81
25	Quality Control/Quality Assurance of Concrete Mixtures	89
26	Digital Terrain Modeling for Earthwork Calculations	105
27	Reserved	107
28	Preventive Maintenance – Bituminous Surface Treatment (A-1)	108
29	Preventive Maintenance – Cape Seal	114
30	Preventive Maintenance – Micro-Surfacing	129
31	Preventive Maintenance – Slurry Seal	140
32	Temporary Raised Pavement Markers	149
33	Restoring Bridge Approach Pavements Using High-Density Foam	150
34	Portland Cement Concrete Inlay or Overlay	153

CHECK SHEET
FOR
LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS

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

LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS

<u>CHECK SHEET #</u>	<u>PAGE NO.</u>
LRS 1 Reserved	158
LRS 2 <input type="checkbox"/> Furnished Excavation	159
LRS 3 <input checked="" type="checkbox"/> Work Zone Traffic Control Surveillance	160
LRS 4 <input checked="" type="checkbox"/> Flaggers in Work Zones	161
LRS 5 <input type="checkbox"/> Contract Claims	162
LRS 6 <input type="checkbox"/> Bidding Requirements and Conditions for Contract Proposals	163
LRS 7 <input type="checkbox"/> Bidding Requirements and Conditions for Material Proposals	169
LRS 8 Reserved	175
LRS 9 <input type="checkbox"/> Bituminous Surface Treatments	176
LRS 10 Reserved	177
LRS 11 <input type="checkbox"/> Employment Practices	178
LRS 12 <input type="checkbox"/> Wages of Employees on Public Works	180
LRS 13 <input type="checkbox"/> Selection of Labor	182
LRS 14 <input type="checkbox"/> Paving Brick and Concrete Paver Pavements and Sidewalks	183
LRS 15 <input type="checkbox"/> Partial Payments	186
LRS 16 <input type="checkbox"/> Protests on Local Lettings	187
LRS 17 <input type="checkbox"/> Substance Abuse Prevention Program.....	188
LRS 18 <input type="checkbox"/> Multigrade Cold Mix Asphalt	189

INDEX

Description of Work	1
Salvageable Materials	1
Cooperation with Utilities	1
Joint Utility Locating Information for Excavators	1
Traffic Control Plan	2-4
Seeding Class 2 (Special)	4
Curing Period for Cold In-Place Recycling	4
HMA Binder Course and Surface Course	4
Aggregate Wedge Shoulder, Type B	4
Grading and Shaping Ditches	5
Cleaning Existing Drainage Structures	5
Catch Basins, Type B (Special), Salvaged Type 7 Grate	5
Concrete Removal	6
Commitments	5
Status Of Utilities To Be Adjusted	6
Individual Density Sites	7
.	
Non-Vertical Impact Roller For Hot-Mix Asphalt	9
Pneumatic-Tired Roller For Hot-Mix Asphalt	9
CID-FDR Foamed Asphalt Mix Design	10- 11

INDEX LOCAL ROADS AND STREETS SPECIAL PROVISIONS

<u>LR #</u>	<u>Pg #</u>	<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
LR SD12		<input type="checkbox"/> Slab Movement Detection Device	Nov. 11, 1984	Jan. 1, 2007
LR SD13		<input type="checkbox"/> Required Cold Milled Surface Texture	Nov. 1, 1987	Jan. 1, 2007
LR 107-2		<input type="checkbox"/> Railroad Protective Liability Insurance for Local Lettings	Mar. 1, 2005	Jan. 1, 2006
LR 107-4	12	<input checked="" type="checkbox"/> Insurance	Feb. 1, 2007	Aug. 1, 2007
LR 108		<input type="checkbox"/> Combination Bids	Jan. 1, 1994	Mar. 1, 2005
LR 109		<input type="checkbox"/> Equipment Rental Rates	Jan. 1, 2012	
LR 109-2		<input type="checkbox"/> Bituminous Materials Cost Adjustment for Local Lettings	June 16, 2017	
LR 109-3		<input type="checkbox"/> Fuel Cost Adjustment for Local Lettings	June 16, 2017	
LR 109-4		<input type="checkbox"/> Steel Cost Adjustment for Local Lettings	June 16, 2017	
LR 212		<input type="checkbox"/> Shaping Roadway	Aug. 1, 1969	Jan. 1, 2002
LR 355-1		<input type="checkbox"/> Bituminous Stabilized Base Course, Road Mix or Traveling Plant Mix	Oct. 1, 1973	Jan. 1, 2007
LR 355-2		<input type="checkbox"/> Bituminous Stabilized Base Course, Plant Mix	Feb. 20, 1963	Jan. 1, 2007
LR 400-1		<input type="checkbox"/> Bituminous Treated Earth Surface	Jan. 1, 2007	Apr. 1, 2012
LR 400-2		<input type="checkbox"/> Bituminous Surface Plant Mix (Class B)	Jan. 1, 2008	
LR 400-3		<input type="checkbox"/> Hot In-Place Recycling (HIR) – Surface Recycling	Jan. 1, 2012	
LR 400-4		<input type="checkbox"/> Full-Depth Reclamation (FDR) with Emulsified Asphalt	Apr. 1, 2012	Jun. 1, 2012
LR 400-5		<input type="checkbox"/> Cold In-Place Recycling (CIR) With Emulsified Asphalt	Apr. 1, 2012	Jun. 1, 2012
LR 400-6	13	<input type="checkbox"/> Cold In Place Recycling (CIR) with Foamed Asphalt	June 1, 2012	
LR 400-7		<input type="checkbox"/> Full-Depth Reclamation (FDR) with Foamed Asphalt	June 1, 2012	
LR 400-8		<input type="checkbox"/> Pulverization	Jan. 24, 2017	
LR 402		<input type="checkbox"/> Salt Stabilized Surface Course	Feb. 20, 1963	Jan. 1, 2007
LR 403-1	22	<input checked="" type="checkbox"/> Surface Profile Milling of Existing, Recycled or Reclaimed Flexible Pavement	Apr. 1, 2012	Jun. 1, 2012
LR 403-2		<input type="checkbox"/> Bituminous Hot Mix Sand Seal Coat	Aug. 1, 1969	Jan. 1, 2007
LR 403-3		<input type="checkbox"/> Preventive Maintenance - Bituminous Surface Treatment (A-1)	July 1, 2016	
LR 403-4		<input type="checkbox"/> Bituminous Surface Treatment (Class A-1, A-2, A-3) for Local Lettings	June 16, 2017	
LR 406	24	<input checked="" type="checkbox"/> Filling HMA Core Holes with Non-Shrink Grout	Jan. 1, 2008	
LR 420		<input type="checkbox"/> PCC Pavement (Special)	May 12, 1964	Jan. 2, 2007
LR 442		<input type="checkbox"/> Bituminous Patching Mixtures for Maintenance Use	Jan. 1, 2004	Jun. 1, 2007
LR 451		<input type="checkbox"/> Crack Filling Bituminous Pavement with Fiber-Asphalt	Oct. 1, 1991	Jan. 1, 2007
LR 503-1		<input type="checkbox"/> Furnishing Class SI Concrete	Oct. 1, 1973	Jan. 1, 2002
LR 503-2		<input type="checkbox"/> Furnishing Class SI Concrete (Short Load)	Jan. 1, 1989	Jan. 1, 2002
LR 542		<input type="checkbox"/> Pipe Culverts, Type _____ (Furnished)	Sep. 1, 1964	Jan. 1, 2007
LR 542-1		<input type="checkbox"/> Pipe Culverts, Special	Apr. 1, 2016	
LR 663		<input type="checkbox"/> Calcium Chloride Applied	Jun. 1, 1958	Jan. 1, 2007
LR 702	25	<input checked="" type="checkbox"/> Construction and Maintenance Signs	Jan. 1, 2004	Jun. 1, 2007
LR 1000-1		<input type="checkbox"/> Cold In-Place Recycling (CIR) and Full Depth Reclamation (FDR) with Emulsified Asphalt Mix Design Procedures	Apr. 1, 2012	Jun. 1, 2012
LR 1000-2	26	<input checked="" type="checkbox"/> Cold In-Place Recycling (CIR) and Full Depth Reclamation (FDR) with Foamed Asphalt Mix Design Procedures	June 1, 2012	
LR 1004		<input type="checkbox"/> Coarse Aggregate for Bituminous Surface Treatment	Jan. 1, 2002	Jan. 1, 2007
LR 1030		<input type="checkbox"/> Growth Curve	Mar. 1, 2008	Jan. 1, 2010
LR 1032-1		<input type="checkbox"/> Emulsified Asphalts	Jan. 1, 2007	Feb. 7, 2008
LR 1102		<input type="checkbox"/> Road Mix or Traveling Plan Mix Equipment	Jan. 1, 2007	
LR 80029-1		<input type="checkbox"/> Disadvantaged Business Enterprise Participation for Local Lettings	Aug. 26, 2016	

BDE SPECIAL PROVISIONS

The following special provisions indicated by an "x" are applicable to this contract. An * indicates a new or revised special provision for the letting.

<u>File Name</u>	<u>Pg.</u>		<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
80099			Accessible Pedestrian Signals (APS)	April 1, 2003	Jan. 1, 2014
80382	33	X	Adjusting Frames and Grates	April 1, 2017	
80274			Aggregate Subgrade Improvement	April 1, 2012	April 1, 2016
80192	35	X	Automated Flagger Assistance Device	Jan. 1, 2008	
80173	37	X	Bituminous Materials Cost Adjustments	Nov. 2, 2006	Aug. 1, 2017
80241			Bridge Demolition Debris	July 1, 2009	
50261			Building Removal-Case I (Non-Friable and Friable Asbestos)	Sept. 1, 1990	April 1, 2010
50481			Building Removal-Case II (Non-Friable Asbestos)	Sept. 1, 1990	April 1, 2010
50491			Building Removal-Case III (Friable Asbestos)	Sept. 1, 1990	April 1, 2010
50531			Building Removal-Case IV (No Asbestos)	Sept. 1, 1990	April 1, 2010
80366	39	X	Butt Joints	July 1, 2016	
* 80386			Calcium Aluminate Cement for Class PP-5 Concrete Patching	Nov. 1, 2017	
80384	40	X	Compensable Delay Costs	June 2, 2017	
80198			Completion Date (via calendar days)	April 1, 2008	
80199			Completion Date (via calendar days) Plus Working Days	April 1, 2008	
80293			Concrete Box Culverts with Skews > 30 Degrees and Design Fills ≤ 5 Feet	April 1, 2012	July 1, 2016
80311			Concrete End Sections for Pipe Culverts	Jan. 1, 2013	April 1, 2016
80277	44	X	Concrete Mix Design – Department Provided	Jan. 1, 2012	April 1, 2016
80261			Construction Air Quality – Diesel Retrofit	June 1, 2010	Nov. 1, 2014
* 80387			Contrast Preformed Plastic Pavement Marking	Nov. 1, 2017	
80029	45	X	Disadvantaged Business Enterprise Participation	Sept. 1, 2000	July 2, 2016
80378			Dowel Bar Inserter	Jan. 1, 2017	
* 80388	56	X	Equipment Parking and Storage	Nov. 1, 2017	
80229			Fuel Cost Adjustment	April 1, 2009	Aug. 1, 2017
* 80304			Grooving for Recessed Pavement Markings	Nov. 1, 2012	Nov. 1, 2017
80246			Hot-Mix Asphalt – Density Testing of Longitudinal Joints	Jan. 1, 2010	April 1, 2016
* 80347			Hot-Mix Asphalt – Pay for Performance Using Percent Within Limits - Jobsite Sampling	Nov. 1, 2014	Nov. 1, 2017
* 80383			Hot-Mix Asphalt – Quality Control for Performance	April 1, 2017	Nov. 1, 2017
80376	58	X	Hot-Mix Asphalt – Tack Coat	Nov. 1, 2016	
80368			Light Tower	July 1, 2016	
80336			Longitudinal Joint and Crack Patching	April 1, 2014	April 1, 2016
80369			Mast Arm Assembly and Pole	July 1, 2016	
80045			Material Transfer Device	June 15, 1999	Aug. 1, 2014
80165			Moisture Cured Urethane Paint System	Nov. 1, 2006	Jan. 1, 2010
80349			Pavement Marking Blackout Tape	Nov. 1, 2014	April 1, 2016
80371			Pavement Marking Removal	July 1, 2016	
* 80390	59	X	Payments to Subcontractors	Nov. 2, 2017	
80377			Portable Changeable Message Signs	Nov. 1, 2016	April 1, 2017
* 80389	60	X	Portland Cement Concrete	Nov. 1, 2017	
* 80359			Portland Cement Concrete Bridge Deck Curing	April 1, 2015	Nov. 1, 2017
80338			Portland Cement Concrete Partial Depth Hot-Mix Asphalt Patching	April 1, 2014	April 1, 2016
80385			Portland Cement Concrete Sidewalk	Aug. 1, 2017	
80300			Preformed Plastic Pavement Marking Type D - Inlaid	April 1, 2012	April 1, 2016
80328	61	X	Progress Payments	Nov. 2, 2013	

<u>File Name</u>	<u>Pg.</u>	<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
34261		Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2006
80157		Railroad Protective Liability Insurance (5 and 10)	Jan. 1, 2006	
80306	62	X Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)	Nov. 1, 2012	April 1, 2016
80340		Speed Display Trailer	April 2, 2014	Jan. 1, 2017
80127		Steel Cost Adjustment	April 2, 2014	Aug. 1, 2017
80379		Steel Plate Beam Guardrail	Jan. 1, 2017	
* 80391	72	X Subcontractor Mobilization Payments	Nov. 2, 2017	
80317		Surface Testing of Hot-Mix Asphalt Overlays	Jan. 1, 2013	April 1, 2016
80298		Temporary Pavement Marking (NOTE: This special provision was previously named "Pavement Marking Tape Type IV".)	April 1, 2012	April 1, 2017
20338		Training Special Provision	Oct. 15, 1975	
80318		Traversable Pipe Grate	Jan. 1, 2013	April 1, 2014
80381		Traffic Barrier Terminal, Type 1 Special	Jan. 1, 2017	
80380		Tubular Markers	Jan. 1, 2017	
80288	73	X Warm Mix Asphalt	Jan. 1, 2012	April 1, 2016
80302	75	X Weekly DBE Trucking Reports	June 2, 2012	April 2, 2015
80071	76	X Working Days	Jan. 1, 2002	

The following special provisions have been deleted from use:

80289 Wet Reflective Thermoplastic Pavement Marking

80367 Light Poles

The following special provisions are in the 2017 Supplemental Specifications and Recurring Special Provisions.

<u>File Name</u>	<u>Special Provision Title</u>	<u>New Location</u>	<u>Effective</u>	<u>Revised</u>
80360	Coarse Aggregate Quality	Article 1004.01	July 1, 2015	
80363	Engineer's Field Office	Article 670.07	April 1, 2016	
80358	Equal Employment Opportunity	Recurring CS #1 and #5	April 1, 2015	
80364	Errata for the 2016 Standard Specifications	Supplemental	April 1, 2016	
80342	Mechanical Side Tie Bar Inserter	Articles 420.03, 420.05, and 1103.19	Aug. 1, 2014	April 1, 2016
80370	Mechanical Splicers	Article 1006.10	July 1, 2016	
80361	Overhead Sign Structures Certification of Metal Fabricator	Article 106.08	Nov. 1, 2015	April 1, 2016
80365	Pedestrian Push-Button	Article 888.03	April 1, 2016	
80353	Portland Cement Concrete Inlay or Overlay	Recurring CS #34	Jan. 1, 2015	April 1, 2016
80372	Preventive Maintenance – Bituminous Surface Treatment (A-1)	Recurring CS #28	Jan. 1, 2009	July 1, 2016
80373	Preventive Maintenance – Cape Seal	Recurring CS #29	Jan. 1, 2009	July 1, 2016
80374	Preventive Maintenance – Micro Surfacing	Recurring CS #30	Jan. 1, 2009	July 1, 2016
80375	Preventive Maintenance – Slurry Seal	Recurring CS #31	Jan. 1, 2009	July 1, 2016
80362	Steel Slag in Trench Backfill	Articles 1003.01 and 1003.04	Jan. 1, 2016	
80355	Temporary Concrete Barrier	Articles 704.02, 704.04, 704.05, and 704.06	Jan. 1, 2015	July 1, 2015

The following special provisions require additional information from the designer. The additional information needs to be included in a separate document attached to this check sheet. The Project Development and Implementation section will then include the information in the applicable special provision. The Special Provisions are:

- Bridge Demolition Debris
- Building Removal-Case I
- Building Removal-Case II
- Building Removal-Case III
- Building Removal-Case IV
- Completion Date
- Completion Date Plus Working Days
- DBE Participation
- Material Transfer Device
- Railroad Protective Liability Insurance
- Training Special Provisions
- Working Days

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted April 1, 2016, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways", and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein which apply to and govern the construction of Section 18-00238-02-RS, and in case of conflict with any part, or parts, of said Specifications, the said Special Provisions shall take precedence and shall govern.

DESCRIPTION OF WORK. The work on this section, located just north of the intersection of Magnolia Avenue and CH 14 near the north edge of Atwood, Illinois, on CH 14, and extending 1.644 miles north consists of furnishing all equipment, labor, and materials necessary to construct culvert extensions, pipe culverts, storm sewer, Cold-In-Place Recycling, construction of HMA Binder Course, HMA Surface Course, aggregate wedge shoulders, earthwork, erosion control, seeding, pavement markings, and all other appurtenant and collateral work as shown in the plans and as required by these special provisions.

COOPERATION WITH UTILITIES. The Contractor shall familiarize himself with the location of all utilities and structures that may be found in the vicinity of the construction. The Contractor shall conduct his operations to avoid damage to the above-mentioned utilities or structures. Should any damage occur due to the Contractor's negligence, repairs shall be made by the Contractor at his expense in a manner acceptable to the Engineer. The Contractor shall notify all utility owners of his construction schedule and shall coordinate construction operations with the utility owners so that relocation of utility lines and structures may proceed in an orderly manner. Notification shall be in writing with copies transmitted to the Engineer.

JOINT UTILITY LOCATING INFORMATION FOR EXCAVATORS. The Contractor's attention is directed to the fact that there exists within the State of Illinois a Joint Utility Locating Information for Excavators (J.U.L.I.E.) System. All utility companies and municipalities which have gas mains and a number of others are a part of this system.

Instead of the Contractor notifying each individual utility owner that he will be working within the area, it will only be necessary to call the number of the Joint Utility Locating Information for Excavators System which is 811 or (800) 892-0123 and they will notify all member utility companies involved that their respective utility should be located. A minimum of forty-eight hours advance notice is required and the political name of the township where the work is located, as shown on the cover sheet, along with other location information such as land section and quarter section will have to be given.

TRAFFIC CONTROL PLAN

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

Special attention is called to Articles 107.09 and 107.14 of the Standard Specifications for Road and Bridge Construction and the following traffic control related (1) Highway Standards; (2) Supplemental Specifications and Recurring Special Provisions; and (3) Other Special Provisions which are included in this contract:

- 1) Highway Standards
 - a) Standard 701006
 - b) Standard 701011
 - c) Standard 701201
 - d) Standard 701306
 - e) Standard 701311
 - f) Standard 701901
 - g) Standard BLR 21
- 2) Supplemental Specifications and Recurring Special Provisions:
 - a) Construction and Maintenance Signs
 - b) Work Zone Traffic Control Surveillance
 - c) Flaggers in Work Zones
- 3) Special Provisions:
 - a) Automated Flagger Assistance Device

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

1. The contractor shall provide, erect, and maintain all the necessary barricades, cones, drums, flags and lights for the warning and protection of traffic, as required by Section 107 and 701 through 703 of the Standard Specifications.
2. In addition to the signs required by the various traffic control standards, the Contractor shall erect ROAD CONSTRUCTION AHEAD signs (W20-1(O)-48) on CH 14 at both ends of the project and on all side roads within the limits of the project.
 1. General: Signposts shall be 100 x 100 mm (4 x 4 inches) wood posts according to Article 1007.05. All posts shall be braced to the satisfaction of the Engineer. The use of metal posts will not be permitted.
 2. All advance warning signs shall be in new or like new condition at the start of the project. All warning signs shall be 48 inches by 48 inches and have a black legend on a fluorescent orange reflectorized background.
 3. No lane closures will be allowed without flagger protection.

4. The Contractor shall schedule and conduct his operations so as to insure the least possible obstruction to traffic, create a minimum of confusion to the public, and conform to Article 107.09 of the Standard Specifications.
5. CH 14 shall remain open to traffic throughout construction of the project except as specified below.

Traffic Control Standards: Traffic control standards shall be applied as directed by the Engineer. Suggested applications for each standard are as follows:

TRAFFIC CONTROL AND PROTECTION STANDARD 701006: This traffic control and protection shall be used for the installation and removal of traffic control devices and any other construction operations that do not encroach closer than two feet from the edge of pavement.

TRAFFIC CONTROL AND PROTECTION STANDARD 701011: This traffic control and protection shall be used for all work operations outside the edge of pavement.

TRAFFIC CONTROL AND PROTECTION STANDARD 701201: This traffic control and protection shall be used when operations require closing a lane.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701306: This traffic control and protection shall be utilized during recycling, and shoulder construction operations.

TRAFFIC CONTROL AND PROTECTION STANDARD 701311: This traffic control and protection shall be used to install pavement markings.

TRAFFIC CONTROL AND PROTECTION STANDARD BLR21: This traffic control and protection shall be used to close CH 14 during construction of storm sewer crossings, leveling binder and HMA surface course.

Measurement and Payment: Traffic Control and Protection Standards 701001, 701011, and 701311 will not be measured for payment. Traffic control and protection standard 701201 will be paid for at the contract lump sum price for TRAFFIC CONTROL AND PROTECTION STANDARD 701201. Traffic control and protection standard 701306 will be paid for at the contract lump sum price for TRAFFIC CONTROL AND PROTECTION STANDARD 701306. Traffic control and protection standard BLR 21 will be paid for at the contract lump sum price for TRAFFIC CONTROL AND PROTECTION STANDARD BLR 21.

Furnishing and placing all short-term, temporary, and permanent pavement marking will be paid for separately along with any necessary removal.

Furnishing, placing and removing all other traffic control and protection (such as temporary Type III barricades, drums, vertical panels, stop signs, etc...) required will not be measured for payment separately and will be considered as part of the traffic control and protection pay items included in the contract.

If at any time the signs are in place but not applicable, they shall be turned from the view of motorists or covered as directed by the Engineer. The cost of furnishing, erecting, maintaining, and removing the required signs shall be incidental to the contract.

All other traffic control and protection required will not be measured for payment and will be considered included in the cost of the contract.

SEEDING, CLASS 2 (SPECIAL)

Description. This work shall consist of seed bed preparation, fertilizing, mulch and seeding in areas as outlined on the plans and as directed by the Engineer. This work shall be in accordance with Section 250 and Section 251 of the Standard Specifications and the following provisions.

Materials. All permanent vegetation areas disturbed during construction shall be seeded with Class 2 mixture as specified in Section 250 of the Standard Specifications. Mulch shall be applied to seeded areas at a rate of 2 tons/acre using Mulch, Method 2 as specified in Section 251 of the Standard Specifications. Fertilizer nutrients are required and shall be applied according to the rates in Section 250.04 of the Standard Specifications. Agricultural ground limestone will not be required.

Basis of Payment. This work shall be paid for at the contract unit price per acre for SEEDING CLASS 2 (SPECIAL). The items of seed, mulch, fertilizer nutrients, soil preparation, along with all material, equipment, and labor will not be paid for separately, but shall be considered as included in the contract unit price per acre for SEEDING CLASS 2 (SPECIAL).

CURING PERIOD FOR COLD IN-PLACE RECYCLING.

The cold in-place recycling layer shall be cured for a minimum of 3 days or for the time required for the moisture content of the cold in-place recycled layer to drop below 2%, whichever is greater, and as approved by the Engineer.

The cold in-place recycled layer shall not be primed during the curing period. If raveling occurs, a fog seal may be applied. The bituminous material for the fog seal shall not contain any cutback solvents.

HMA BINDER COURSE AND SURFACE COURSE

This work shall be done as specified in Section 406 of the Standard Specifications except Hot-mix Asphalt Binder Course, IL 19.0, N50 and Hot-Mix Asphalt Surface Course, Mix "C", N50 shall be constructed the full pavement width with no centerline joint.

This work will be paid for as specified in Article 406.14 of the Standard Specifications.

AGGREGATE WEDGE SHOULDER, TYPE B

This work shall be done as specified in Section 481 of the Standard Specifications except material for Aggregate Wedge Shoulder, Type B shall be crushed stone.

This work will be paid for as specified in Article 481.10 of the Standard Specifications.

GRADING AND SHAPING DITCHES

Effective: April 1, 2008

This work shall consist of grading and shaping existing ditches at locations as designated in the plans. Work shall also include regrading the existing foreslope areas using existing aggregate shoulder material, at locations as designated on the cross sections. The existing foreslope shall be regraded and compacted in a manner and to the slope as approved by the Engineer.

All work shall be done in accordance with the applicable portions of Section 214 of the Standard Specifications.

Basis of Payment. This work will be paid for at the contract unit price per foot for GRADING AND SHAPING DITCHES.

CLEANING EXISTING DRAINAGE STRUCTURES

All existing storm catch basins and inlets shall be considered as drainage structures insofar as the interpretation of this Special Provision is concerned. When specified for payment, the location of drainage structures to be cleaned will be shown on the plans.

All existing drainage structures designated in the plans shall be cleaned in accordance with Article 602.15 of the Standard Specifications.

Basis of Payment. This work will be paid for at the contract unit price each for CATCH BASINS TO BE CLEANED.

CATCH BASINS, (SPECIAL)

This work shall consist of removing the existing inlet and type 7 grate at Station 30+63.11 RT, abandoning the existing field tile connecting to the inlet, and replacing both the inlet and field tile with a Catch Basin, (Special), Grate and a Storm Sewer 18" at Station 30+50.00 RT. The existing Type 7 Grate shall be salvaged and installed on the proposed catch basin, (special)

This work shall be paid for at the contract unit price each for CATCH BASINS, (SPECIAL). Removing the existing inlet will be paid for at the contract unit price each for INLETS TO BE REMOVED, SPECIAL. The cost of abandoning the field tile will not be paid for separately but shall be included in the cost of all other associated pay items.

CONCRETE REMOVAL

This work shall consist of the removal of existing concrete headwalls at various locations as shown on the plans and shall be done in accordance with the applicable portions of Section 501 of the Standard Specifications.

Basis of Payment. This work will be paid for at the contract unit price cubic yard for CONCRETE REMOVAL, and no additional compensation will be allowed due to the various sizes of headwalls.

COMMITMENTS

There are no commitments for this project.

STATUS OF UTILITIES TO BE ADJUSTED

<u>Name and Address of Utility</u>	<u>Type</u>	<u>Location</u>	<u>Estimated Date Relocation Completed</u>
Village of Atwood Attn: Jeff Mercer Phone: (217) 294-1607 Ex cell	Water and Sewer	Throughout Project	During Construction
Ameren CILCO Attn: Martin Fuller Phone: (618) 236-6281	Gas and Electric	Throughout Project	During Construction
Consolidated Telephone Attn: Wes Chambers Phone: (217) 235-3355	Telephone	Throughout Project	During Construction
Mediacom Attn: Del Lingafelter Phone: (217) 348-5533 ex 7808	Cable TV	Throughout Project	During Construction
Windstream Attn: Joseph Green Phone: (319) 790-7510	Fiber Optic	Throughout Project	During Construction
Eastern Illini Electric Coop Attn: Alan Schweighart Phone: (217) 379-2131 Ex 173	Electric	Throughout Project	During Construction

The above represents the best information of the Department and is only included for the convenience of the bidder. The applicable provisions of LRS 105, Articles 105.07 and 107.20 of the Standard Specifications for Road and Bridge Construction shall apply.

If any utility adjustment or removal has not been completed when required by the Contractor's operations, the Contractor shall notify the Engineer in writing. A request for an extension of time will be considered to the extent the Contractor's operations were affected.

INDIVIDUAL DENSITY SITES

Effective: September 1, 2007
 Revised: July 15, 2013

Description: This work shall consist of evaluating the daily average offset density value as part of the quality control/quality assurance (QC/QA) of hot-mix asphalt (HMA). Work shall be according to Section 1030 of the Standard Specifications except as follows:

Revise the Density Control Limits table in 1030.05(d)(4) of the Standard Specifications to read:

INDIVIDUAL OFFSET DENSITY CONTROL LIMITS			
Mixture Composition	Parameter	Mat	Confined & Unconfined Edge
		Daily Average Density Value	Daily Average Density Value
IL-4.75	N _{des} =50	93.0 – 97.4% ^{1/}	90.0%
IL-9.5, IL-12.5	N _{des} ≥ 90	92.0 – 96.0 %	90.0%
IL-9.5, IL-9.5L, IL-12.5	N _{des} < 90	92.5 – 97.4 %	90.0%
IL-19.0, IL-19.0FG, IL-25.0	N _{des} ≥ 90	93.0 – 96.0 %	90.0%
IL-19.0, IL-19.0FG, IL-19.0L, IL-25.0	N _{des} < 90	93.0 – 97.4 %	90.0%
IL-9.5FG <1 ¼ in (32 mm)	N _{des} 50-105	90.0 – 95.0% ^{1/}	90.0%
IL-9.5FG ≥1 ¼ in (32 mm)	N _{des} 50-105	92.0 – 96.0 %	90.0%
SMA	N _{des} 50 & 80	93.5% - 97.4%	91.0%
All Other	N _{des} = 30	93.0- 97.4% ^{2/}	90.0%

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

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

Insert the following after the sixth paragraph Article 1030.05(d)(7) of the Standard Specifications:

When the daily average density value for a given offset exceeds the control limits, the Engineer shall be notified immediately.

If a daily average density value failure occurs at a given offset due to low density for a given mixture, additional compactive effort or paver adjustment shall be required and approved by the Engineer prior to additional paving. If a daily average density value failure occurs at a given offset due to high density for a given mixture, production shall cease until the problem has been investigated and corrected. Reducing compactive effort for failing high densities will not be allowed.

If two daily average density value failures occur at a given offset for a given mixture, the Engineer shall cease production.

NON-VERTICAL IMPACT ROLLER FOR HOT-MIX ASPHALT

Eff. October 13, 2011

For all Hot-Mix Asphalt Mixtures placed at a rate exceeding 85 tons per hour (75 metric tons per hour), a Non-Vertical Impact roller may be used as the finish roller. The roller shall meet the requirements outlined below.

The roller shall be capable of operating in a mode that will provide non-vertical impacts and operate at a speed to produce not less than 10 impacts/ft (30 impacts/m). The roller shall be self-propelled and provide a smooth operation when starting, stopping or reversing directions. The non-vertical impact drum(s) amplitude and frequency shall be approximately the same in each direction and meet the following minimum requirements: drum diameter 48 in. (1200 mm), length of drum 66 in. (1650 mm), unit static force on drum(s) 125 lb/in. (22 N/m), adjustable eccentrics, and reversible eccentrics on non-driven drum(s). The total applied force and the direction it is applied for various combinations of VPM and eccentric positions shall be shown on decals on the vibrating roller or on a chart maintained with the roller. The roller shall be equipped with water tanks and sprinkling devices, or other approved methods, which shall be used to wet the drums to prevent material pickup.

This work will not be measured for payment or paid for separately, but shall be considered as included in the price per ton (metric ton) or square yard (square meter) of the various items of HOT-MIX ASPHALT, of the mixture and Ndesign (if applicable) specified.

PNEUMATIC-TIRED ROLLER FOR HOT-MIX ASPHALT

Eff. 10-01-1998

Rev. 09-01-2006

For all Hot-Mix Asphalt Mixtures placed at a rate exceeding 85 tons per hour (75 metric tons per hour), a pneumatic-tired roller will be required as the intermediate roller. This roller shall meet the requirements of Table 1 of Article 406.07 of the Standard Specifications. This provision shall hold over any other requirements included elsewhere in the contract.

This work will not be measured for payment or paid for separately, but shall be considered as included in the price per ton (metric ton) or square yard (square meter) of the various items of HOTMIX ASPHALT, of the mixture and Ndesign (if applicable) specified.



S Drain Engineering of IL, LLC

P.O. Box 045 Charleston, IL 61920

Client: Cummins Engineering Corporation - Springfield, IL

Project: Platt County CH 14 - Section 18-00238-02-RS

Date Reported:

7/27/2017

FOAMED BITUMEN MIX DESIGN REPORT

<u>MATERIAL TO BE STABILISED</u>	Aggregates	Bitumen	Filler
Location / Source:	County Highway 14 - 3 inch depth		Emulsicoat - Urbana, IL
Description	RAP from Crushed Cores		PG 64-22
Maximum dry density : (lb/ft ³)	145 (2300 kg/m ³)	Optimum moisture content (%):	3.8

BITUMEN FOAMING CONDITIONS

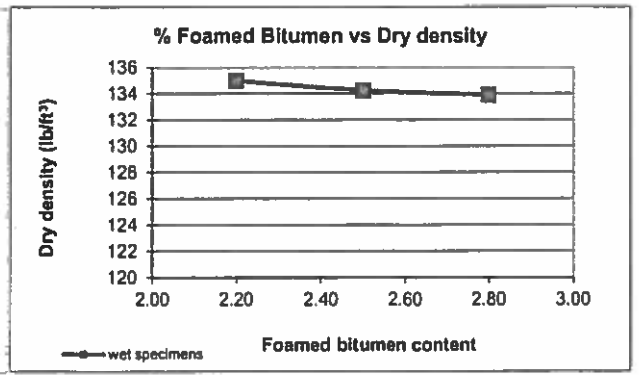
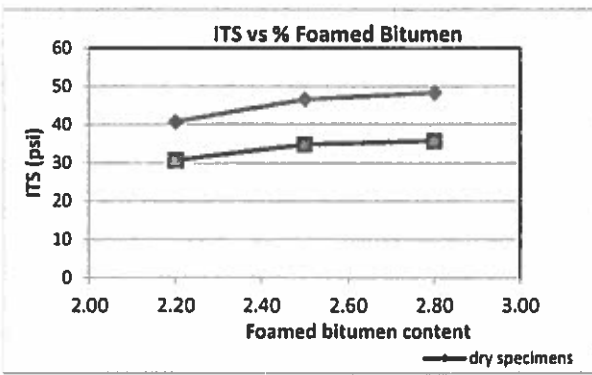
Foaming water added (%)	2.5	Bitumen temperature (°C)	165
		Bitumen temperature (°F)	329

FOAMED BITUMEN STABILISED MATERIAL CHARACTERISTICS

Compactive effort	Marshall Compaction - 75 blows per side			100mm	diameter
Foamed bitumen added (%)	2.20	2.50	2.80		
Type and percent filler added (%)	1.00	1.00	1.00		
Moulding moisture content (%)	3.6	3.8	3.8		

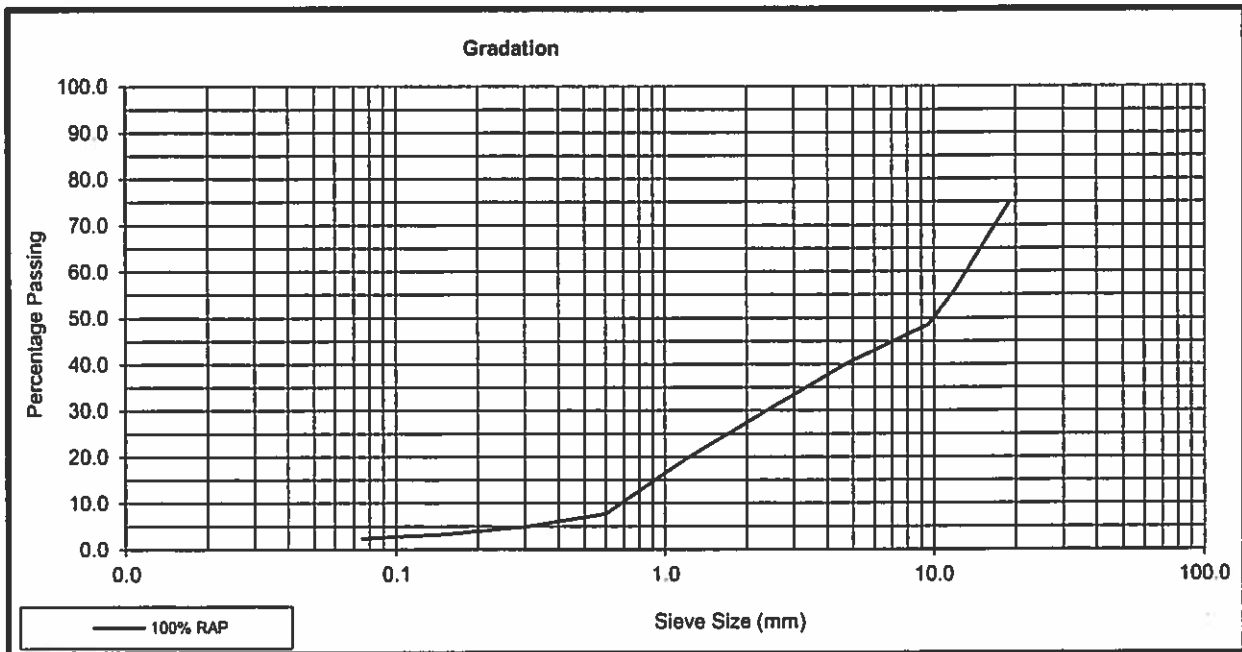
TEST RESULTS

ITS dry (psi)	41	47	48
Moisture content at break (%)	0.0	0.0	0.0
Dry Density (lb/ft ³)	136	135	134
Temperature at break (°F)	77	77	77
ITS wet (psi)	31	35	36
Moisture content at break (%)	4.6	5.0	4.7
Dry Density (lb/ft ³)	135	134	134
Temperature at break (°F)	77	77	77
Retained ITS (%)	75	75	74



		FOAMED BITUMEN SIEVE ANALYSIS	ASTM D 422
Client	Cummins Engineering Corporation - Springfield, IL		
Project	Piatt County CH 14 - Section 18-00238-02-RS		

		1		2		3		
Location:		Multiple						Total percentage in blend
Description:		Crushed RAP		Portland Cement				
Percentage in Blend		99.0		1				
Mass of sample (g)		6150		500				100
Sieve size		Weight	%	Weight	%	Weight	%	Combined Grading
mm	inch	Retained	Pass.	Retained	Pass.	Retained	Pass.	
37.5	1 1/2"	0	100.0	0				99.0
25	1"	615	90.0	0				89.1
19.0	3/4"	1550	74.8	0	100.0			75.0
12	1/2"	2725	55.7	0	100.0			56.1
9.5	3/8"	3198	48.0	0	100.0			48.5
4.75	#4	3712	39.6	0	100.0			40.2
2.36	#8	4350	29.3	0	100.0			30.0
1.18	#16	5004	18.6	0	100.0			19.4
0.600	#30	5730	6.8	0	100.0			7.8
0.300	#50	5907	4.0	0	100.0			4.9
0.150	#100	6003	2.4	25	95.0			3.3
0.075	#200	6058	1.5	50	90.0			2.4



		BITUMEN CALIBRATION	Test Method: Wirtgen Cold Recycling Manual
--	--	--------------------------------	--

BITUMEN

Source :	Emulsiocoat - Urbana, IL
Test temperature:	165 C

Type: PG 64-22 (10127)

MACHINE SETTINGS

Pump calibration

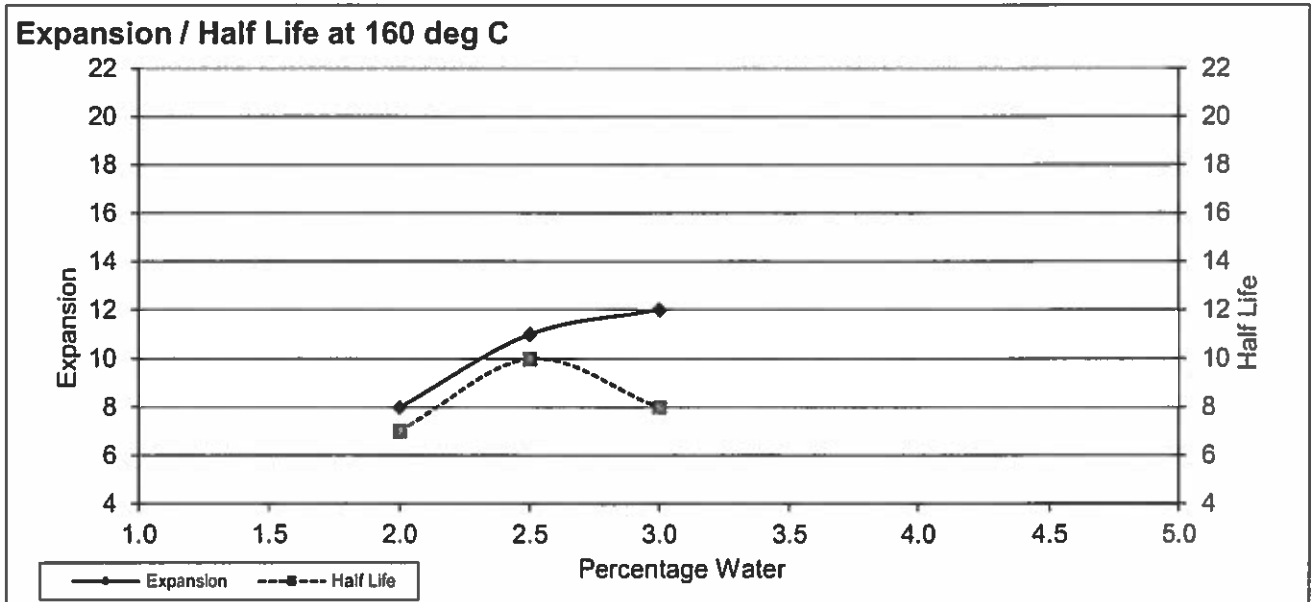
Setting

Quantity required (g):	500
Quantity sprayed (g):	500.00

Water

Quantity required (%):	2.0	2.5	3.0
Flow meter setting (l/h):	7.2	9.0	10.8

% Water	Expansion	Half Life
2.0	8	7
2.5	11	10
3.0	12	8



OPTIMUM FOAM MOISTURE CONTENT

2.5%

State of Illinois
Department of Transportation
Bureau of Local Roads and Streets

SPECIAL PROVISION
FOR
INSURANCE

Effective: February 1, 2007
Revised: August 1, 2007

All references to Sections or Articles in this specification shall be construed to mean specific Section or Article of the Standard Specifications for Road and Bridge Construction, adopted by the Department of Transportation.

The Contractor shall name the following entities as additional insured under the Contractor's general liability insurance policy in accordance with Article 107.27:

Piatt County

The entities listed above and their officers, employees, and agents shall be indemnified and held harmless in accordance with Article 107.26.

State of Illinois
Department of Transportation
Bureau of Local Roads and Streets

SPECIAL PROVISION
FOR
COLD IN-PLACE RECYCLING (CIR) WITH FOAMED ASPHALT

Effective: June 1, 2012

All references to Divisions, Sections, and Articles in this Special Provision shall be construed to mean specific Divisions, Sections, and Articles in the Standard Specifications for Road and Bridge Construction adopted by the Department of Transportation.

Description. This work shall consist of cold milling and pulverizing the existing bituminous material to a specified depth and maximum size; mixing foamed asphalt, water, and additives with the recycled material; and spreading and compacting the mixture.

Materials. Materials shall be according to the following Articles of Division 1000 – Materials.

<u>Item</u>	<u>Article/Section</u>
(a) Portland Cement (Note 1)	1001
(b) Water.....	1002
(c) Fine Aggregate (Note 2).....	1003
(d) Coarse Aggregate (Note 2).....	1004
(e) Fly Ash, Class C (Note 1).....	1010.02
(f) Lime (Note 1)	1012
(g) Reclaimed Asphalt Pavement (Note 3).....	1031
(h) Asphalt Binder (Note 4).....	1032.05
(i) Cold Pulverized Material (Note 5)	
(j) Mix Design (Note 6)	

Note 1. If necessary, the mix design may require additional additives to increase fines in the mix. The type and allowable percentage will be described in the mix design.

Note 2. The mix design will specify gradation and quality of any additional aggregate. Any additional fine aggregate shall meet Class B quality as a minimum. Any additional coarse aggregate shall meet Class C quality as a minimum.

Note 3. The Engineer may allow reclaimed asphalt pavement (RAP) from Conglomerate "D" Quality or better RAP stockpiles as specified in Article 1031.02 or from millings of the existing highway. The RAP material shall not exceed the maximum size requirement of the cold pulverized material, and when blended with the cold pulverized material shall produce a product which meets the specifications of the mix design.

Note 4. The asphalt binder performance grade shall be determined by the mixture design but shall have a penetration between 80 dmm and 110 dmm. Throughout the job, the Contractor will need to check the foaming characteristics of the asphalt binder to insure that the asphalt binder is being adequately dispersed.

The asphalt binder shall be no less than 320 °F (160 °C) and no greater than 375 °F (190 °C) at the time of foaming.

Note 5. Prior to the addition of the foamed asphalt, the gradation of the cold pulverized material shall meet the following.

COLD PULVERIZED MATERIAL GRADATIONS		
Grad No.	Sieve Size and Percent Passing	
	1 ½ in. (37.5 mm)	1 in. (25 mm)
PM 1	100	
PM 2		100

PM 2 should only be used when a finer gradation of RAP is required by the mix design.

Note 6. A mix design for each distinct section shall be submitted to the Department prior to construction using actual materials (in-situ sampled by the Contractor and new materials from the Contractor's material suppliers) proposed for the project. The job mix formula shall meet the following criteria and be approved by the Engineer.

CIR WITH FOAMED ASPHALT BINDER MIX DESIGN REQUIREMENTS	
Test Method	CIR
Gradation for Design Millings, AASHTO T 27	Report
Plasticity Index	< 10
Modified Proctor, ASTM D 1557, Method C	Report
Design Moisture Content	Report
Foamed Asphalt Expansion Ratio ¹	8 minimum
Foamed Asphalt Half-life, s	6 minimum
Optimum Foamant Water Content	Report
Marshall Density, AASHTO T 245 (IL Modified)	75 blows at 4 in. (100 mm)
Bulk Specific Gravity (Density), ASTM D 6752 or ASTM D 2726	Report
Rice (Maximum Theoretical) Specific Gravity, ASTM D 2041	Report
Air Voids	Report
Raveling Test, 50 °F, %	2.0
Indirect Tensile Strength, AASHTO T 283 (IL Modified), Dry, psi Wet (Conditioned), psi Tensile Strength Ratio (TSR), %	45 minimum 30 minimum 70
Additional Additive(s) ² Coarse Aggregate Fine Aggregate RAP Lime Fly Ash Cement, %	Report Report Report Report Report 1.0 maximum
Asphalt Binder ² PG Grade Penetration, dmm	Report Report

Notes: 1. If the ambient temperature at the time of construction is expected to be 50 to 77 °F (10 to 25 °C) the foamed expansion ratio should be increased to 10.

2. Report shall include type/gradation and producer/supplier.

Equipment. Equipment shall be according to the following Articles of Division 1100 – Equipment.

<u>Item</u>	<u>Article/Section</u>
(a) Self-Propelled Pneumatic-Tired Rollers (Note 1).....	1101.01(c)
(b) Steel Wheel Tandem Rollers	1101.01(e)
(c) Vibratory Roller (Note 2)	1101.01(g)
(d) Mechanical Sweeper.....	1101.03
(e) Self-Propelled Milling Machine.....	1101.16(a)
(f) Spreading and Finishing Machine.....	1102.03
(g) Dry Material Spreader (Note 3)	
(h) Multi-unit Recycling Train (Note 4, 6)	
(i) Single-unit Recycler (Note 5, 6)	
(j) Pick Up Machine (Note 7)	

Note 1. The self-propelled pneumatic-tired roller shall have a gross weight (mass) of not less than 25 tons (23 metric tons).

Note 2. The double drum vibratory rollers shall have a gross operating weight of not less than 10 tons (9 metric tons) and a width of 78 in. (1950 mm).

Note 3. When the mix design indicates the need of Type I Portland Cement; Fly Ash, Class C; or Lime; the Contractor must use a spreader that has the following specifications: a mechanical cement or fly ash spreader of a type that has an adjustable rate of flow and will distribute the cement uniformly at the required rate in one pass. Pneumatic distribution of dry additives is prohibited. The material must be spread in one pass and systems must be in place to keep the additives within the confines of the job.

Note 4. The multi-unit recycling train shall contain the following.

- a. A self-propelled cold milling machine that is capable of pulverizing the existing bituminous material in a single pass to the depth shown on the plans and to a minimum width of not less than 12.5 ft (3.8 m). The machine shall have automatic depth controls to maintain the cutting depth to within ± 0.25 in. (6 mm) of that shown on the plans, and shall have a positive means for controlling cross slope elevations. The use of a heating device to soften the pavement will not be permitted.
- b. A material sizing unit having screening and crushing capabilities to reduce the cold pulverized material to the appropriate size. The screening and crushing unit shall have a closed circuit system capable of continuously returning oversized material to the crusher. All of the pulverized material (100 percent) shall be processed to the maximum size requirements as specified.

- c. A mixing unit equipped with a belt scale for the continuous weighing of the pulverized and sized bituminous material and a coupled/interlocked computer controlled liquid metering device. The mixing unit shall be an on-board completely self-contained pugmill. The liquid metering device shall be capable of automatically adjusting the flow of foamed asphalt to compensate for any variation in the weight of pulverized material coming into the mixer. The metering device shall deliver the amount of foamed asphalt to within ± 0.2 percent of the required amount by weight of pulverized bituminous material (for example, if the design requires 3.0 percent, the metering device shall maintain between 2.8 percent to 3.2 percent). The foamed asphalt pump should be of sufficient capacity to allow foamed asphalt contents up to 3.5 percent by weight of pulverized bituminous material. Also, automatic digital readings will be displayed for both the flow rate and total amount of pulverized bituminous material and foamed asphalt in appropriate units of weight and time.

Note 5. The single-unit recycler shall be a self-propelled cold milling machine/cold recycling machine with a down cutting cutter head capable of pulverizing and recycling the existing hot-mix asphalt pavement to a maximum depth of 5 in. (125 mm), incorporate the foamed asphalt and water, and mix the materials to produce a homogeneous material. The minimum power of this machine is 900 hp (670 kW). The machine shall be capable of pulverizing and recycling not less than 12.5 ft (3.8 m) wide in each pass. The machine shall have two systems for adding foamed asphalt and water with each system having a full-width spray bar with a positive displacement pump interlocked to the machine's ground speed to insure that the amount of foamed asphalt and water being added is automatically adjusted with changes to the machine's ground speed. Each additive system shall have its own spray bar equipped with 2 nozzles per ft (6 nozzles per m) of spray bar and be capable of incorporating up to 5 gal/sq yd (23 L/sq m) of foamed asphalt and/or water. Individual valves on the spray bar shall be capable of being turned off as necessary to minimize foamed asphalt and water overlap on subsequent passes.

Note 6. Whether the equipment being used is a multi-unit or single-unit recycler, the foaming system must meet the following requirements.

- a. The foamed asphalt shall be produced at the spray bar in individual expansion chambers into which both the hot asphalt binder and water are injected under pressure through individual and separate orifices that promote atomization. The rate of addition of water into the hot asphalt binder shall be kept at a constant rate (percentage by mass of asphalt binder) by a computerized system.
- b. An inspection (or test) nozzle shall be fitted at one end of the spray bar that produces a representative sample of foamed asphalt.
- c. An electrical heating system capable of maintaining the temperature of all foamed asphalt flow components above 340 °F (171 °C).
- d. A single asphalt binder feed line installed between the recycling machine and the supply tanker. Circulating systems that incorporate a return line to the supply tanker shall not be used.

Any additives such as water, lime slurry, etc. added by the recycling equipment at the mill head or mixing unit shall be controlled through liquid metering devices capable of automatically adjusting for the variation in the weight of the pulverized material going into the mixing unit. The metering devices shall be capable of delivering the amount of additive to within ± 0.2 percent of the required amount by weight of the pulverized bituminous material. A capability of adding up to 5 percent water by weight of the pulverized bituminous material, if necessary based on environmental and material requirements, is mandatory. It will not be required to meter the water added at the milling machine to control dust in the screens, belts, or crusher/material sizing unit.

Note 7. The pick-up machine shall be capable of removing the entire windrow down to the remaining underlying material.

CONSTRUCTION REQUIREMENTS

Weather Limitations. This work shall be performed when atmospheric temperature in the shade and away from artificial heat is 50 °F (10 °C) and rising. Also, the weather shall not be foggy or rainy. The weather forecast shall not call for freezing temperature within 48 hours after placement of any portion of the project. The Engineer may restrict work when the heat index is greater than 100 °F (38 °C).

Preparation of Existing Pavement. Grass and other vegetation shall be removed from the edge of the existing pavement to prevent contamination of the pulverized bituminous material during the milling operation.

The existing pavement shall be milled to the required depth and width as indicated on the plans. Recycling shall be in a manner that does not disturb the underlying material in the existing roadway. The milling operation shall be conducted so that the amount of fines occurring along the vertical faces of the cut will not prevent bonding of the cold recycled materials. The pulverized bituminous material shall be processed to the required gradation specified. When a paving fabric is encountered during the CIR operation, the Contractor shall make the necessary adjustments in equipment or operations so that at least 90 percent of the shredded fabric in the recycled material is no more than 5 sq in. (3200 sq mm). Additionally, no fabric piece shall have any dimension exceeding a length of 4 in. (100 mm). These changes may include, but not be limited to, adjusting the milling rate or screens in order to obtain a recycled material meeting specification requirements. The Contractor shall be required to waste material containing oversized pieces of paving fabric as directed by the Engineer. When the Contractor is aware that paving fabric exists, such as indicated on the plans, the Contractor will not receive additional payment. However, if the Contractor is not made aware of the paving fabric, then the Contractor shall receive additional payment for any necessary adjustments in equipment and operations.

Mixing Operation. The pulverized material shall be processed through a mixing unit capable of combining the pulverized material, foamed asphalt and any additives to produce a homogeneous recycled mixture. The foamed asphalt shall be incorporated into the pulverized bituminous material at the initial rate determined by the mix design(s) and approved by the Engineer. Sampling and mix design may determine different levels of foamed asphalt at various portions of the project.

Spreading and Finishing. The recycled material shall be spread using a self-propelled paver. A pick-up machine shall be used to transfer the windrowed recycled material into the spreading and finishing machine. The pickup machine must be within 150 ft (45 m) of the mixing unit. The recycled material shall be spread by a spreading and finishing machine in one continuous pass, without segregation and to the lines and grades established by the Engineer.

Compaction. The compacted recycled material shall be at a thickness of 2.5 to 5.0 in. (63 to 127 mm). The recycled material shall be compacted according to the following.

- (a) **Growth Curve.** Compaction shall be accomplished by performing a growth curve within the first one-half mile of production. If an adjustment is made to the foamed asphalt application rate or recycled depth, the Engineer reserves the right to request an additional growth curve. The growth curve, consisting of a plot of lb/cu ft (kg/cu m) versus number of passes with the project breakdown roller, shall be developed. Roller speed during the growth curve testing shall be the same as the normal paving operation. This curve shall be established by use of a nuclear gauge. Tests shall be taken after each pass until the highest lb/cu ft (kg/cu m) is obtained. This value shall be the target density.

A new growth curve is required if the rollers used on the growth curve are replaced with a new roller during production. The target density shall apply only to the specific gauge used. If additional gauges are to be used to determine density specification compliance, the Contractor shall establish a unique minimum allowable target density from the growth curve location for each gauge.

- (b) **Rollers.** Immediately after processing and final shaping the recycled material shall be compacted with equipment meeting the following requirements.

MINIMUM ROLLER REQUIREMENTS FOR CIR			
Breakdown Roller (one of the following) ¹	Intermediate Roller ¹	Final Roller (one or more of the following) ¹	Density Requirement
V _s , V _D	P	V _s , T _F	95 - 102 percent of the target density obtained on the growth curve

Note: 1. Equipment definitions in Table 1 of Article 406.07.

- (c) **Rolling.** Breakdown rolling shall be achieved by using a vibratory roller either operating in a static or vibratory mode. Vibratory mode should only be used if it is shown to not damage the pavement. Intermediate rolling shall be completed by a self-propelled pneumatic roller(s) until no displacement is occurring or until the pneumatic roller(s) is walking out of the mixture. Final rolling to eliminate pneumatic tire marks and to achieve density shall be done by a separate double drum steel roller(s) operating in static mode.

Rolling shall start no more than 30 minutes behind the paver. Finish rolling shall be completed no more than one hour after milling is completed. When possible, rolling shall not be started or stopped on uncompacted material but with rolling patterns established so that they begin or end on previously compacted material or the existing pavement.

Opening to Traffic. After the completion of compaction of the recycled material, no traffic, including that of the Contractor, shall be permitted on the completed recycled material for at least two hours. After two hours, rolling traffic may be permitted on the recycled material. This time may be adjusted by the Engineer to allow establishment of sufficient cure so traffic will not initiate raveling or permanent deformation. All loose particles that may develop on the pavement surface shall be removed by power brooming.

After opening to traffic, the surface of the recycled pavement shall be maintained in a condition suitable for the safe movement of traffic.

Maintenance. The Contractor shall maintain the recycled pavement in a manner satisfactory to the Engineer until the wearing course has been constructed. Maintenance related to Contractor construction procedures or quality of work, shall not be paid for separately.

Curing. Before placing the specified wearing course, the recycled pavement shall be allowed to cure until the moisture of the material is reduced to 2.0 percent or less, or approval of the Engineer. Unless otherwise directed by the Engineer, the specified wearing course shall be placed within two weeks of the recycled pavement final cure, but no later than November 1.

Surface Tests. The completed recycled pavement will be tested for smoothness in the wheel paths with a 16 ft (5 m) straightedge.

For each variation in the recycled pavement that exceeds 3/8 in. (10 mm), the entire area affected shall be corrected by a self-propelled milling machine. The recycled pavement shall be swept by a mechanical broom to remove all loose material from the recycled pavement before opening to traffic.

The Contractor shall furnish a 16 ft (5 m) straightedge and shall provide for its jobsite transportation at no additional cost to the Department.

Quality Assurance/ Quality Control (QC/QA).

(a) Quality Control by the Contractor. The Contractor shall perform or have performed the inspection and tests required to assure conformance to contract requirements. Control includes the recognition of obvious defects and their immediate correction. This may require increased testing, communication of test results to the job site, modification of operations, suspension of the work, or other actions as appropriate.

The Engineer shall be immediately notified of any failing tests and subsequent remedial action. Passing tests shall be reported to the Engineer no later than the start of the next work day.

(b) Quality Assurance by the Engineer. The Engineer will conduct independent assurance tests on split samples taken by the Contractor for quality control testing. In addition, the Engineer will witness the sampling and splitting of these samples and will immediately retain witnessed split samples for quality assurance testing.

(c) Tests Methods and Frequency.

(1) Depth of Pulverization (Milling). The nominal depth at the centerline shall be required. Anytime depth changes are made or equipment is idle, a depth check shall be taken.

- (2) Pulverized Material Sizing and Gradation. A sample shall be obtained before foamed asphalt addition and screened using a 1.5 in. (37.5 mm) sieve (or smaller sieve if required) to determine if meeting the maximum particle size requirement. Gradations shall be performed each day on the moist millings using the following sieves: 1.5 in., 1.0 in., 3/4 in., 1/2 in., 3/8 in., No. 4, No. 8, No. 16, and No. 30. The resulting gradation shall be compared to the mix design gradations to determine any necessary changes to foamed asphalt content.

Sampling procedures shall generally be in accordance with ASTM D 979 or AASHTO T 168. When the Engineer determines the location for a gradation sample, the Contractor will be notified to turn off the foamed asphalt and mark the location continuing to pulverize the hot-mix asphalt pavement until the Engineer is satisfied with the length of material pulverized without the addition of the foamed asphalt. The maximum length of pulverization without the addition of the foamed asphalt shall not exceed 100 ft (30 m). After the Contractor collects the gradation sample, the machine will be backed up to the location where the foamed asphalt was turned off, then re-pulverize this material adding the required amount of foamed asphalt to the pulverized material.

- (3) Foamed Asphalt Content. The Engineer shall be notified any time foamed asphalt content is changed. The foamed asphalt content shall be checked and recorded for each segment in which the percentage is changed. Foamed asphalt content changes shall be made based upon mix design recommendations, which are based upon different mix designs for road segments of varying construction. The foamed asphalt content shall be checked from the belt scale totalizer or foamed asphalt pump totalizer.
- (4) Water Content. The Engineer shall be notified any time the water content is changed. Water content at the milling head shall be checked and recorded for each segment in which the percentage is changed. This information shall be gathered from the water metering device, which can be checked from the belt scale totalizer to verify daily quantities used. Water content changes shall be made based on mixture consistency, coating, and dispersion of the recycled materials.
- (5) Compacted Density. A wet density shall be determined using a nuclear moisture-density gauge generally following the procedures for ASTM D 2950, backscatter measurement. This measurement shall be compared to the target density obtained by the growth curve.
- (6) Frequency. The following table provides the minimum frequency for tests; however, the Engineer may increase the testing frequency if the construction process is experiencing problems or unknown conditions are encountered.

QC/QA TESTING FREQUENCY		
Test	QC Frequency ¹	QA Frequency ¹
Depth of Pulverization	1 per 500 ft (150 m)	1 per 1000 ft (300 m)
Pulverized Material Sizing and Gradation	1 per 0.5 day production	1 per day production
Foamed Asphalt Content	1 per 500 ft (150 m)	1 per 1000 ft (300 m)
Water Content	1 per 500 ft (150 m)	1 per 1000 ft (300 m)
Compacted Density	1 per 0.25 mile (0.4 km)	1 per mile (1.6 km)

Note: 1. The Contractor shall perform all quality control tests within the first 500 ft (150 m) after startup or any change in the mix. The Department will also run the split samples at these locations.

Method of Measurement.

Bituminous material; will be measured for payment as specified in Section 1032.

Coarse aggregate will be measured in square yards (square meters).

The cold in-place recycling will be measured in square yards (square meters) of the recycled pavement.

Basis of Payment.

The asphalt binder will be paid for at the contract unit price per ton (metric ton) for CIR-FDR FOAMED ASPHALT.

The coarse aggregate will be paid for at the contract unit price per square yard (square meter) for ADD ROCK.

The cold in-place recycling will be paid for at the contract unit price per square yard (square meter) for COLD IN-PLACE RECYCLING, of the thickness specified.

State of Illinois
Department of Transportation
Bureau of Local Roads and Streets

SPECIAL PROVISION
FOR
SURFACE PROFILE MILLING OF EXISTING, RECYCLED, OR RECLAIMED
FLEXIBLE PAVEMENT

Effective: April 1, 2012
Revised: June 1, 2012

All references to Divisions, Sections, and Articles in this Special Provision shall be construed to mean specific Divisions, Sections, and Articles in the Standard Specifications for Road and Bridge Construction adopted by the Department of Transportation.

Description. This work shall consist of surface profile milling existing, recycled, or reclaimed flexible pavement prior to application of a surface treatment less than or equal to 1.5 in. (38 mm) thick.

Equipment. Equipment shall be according to the following Articles of Division 1100 – Equipment.

- (a) Self-Propelled Milling Machine (Note 1)..... 1101.16

Note 1. The self-propelled milling machine shall be capable of milling an entire lane width in a single pass and have the capability of loading the millings into a truck.

The cutting drum and teeth shall be designed to produce the required surface texture. Each tooth on the cutting drum shall produce a series of discontinuous longitudinal striations. There shall be 16 to 20 striations (tooth marks) for each tooth for each 6 ft (1.8 m) in the longitudinal direction, and each striation shall be 1.7 ± 0.2 in. (43 ± 5 mm) in length after the area is planed by the moldboard. The planed length between each pair of striations shall be 2.3 ± 0.2 in. (58 ± 5 mm). There shall be 80 to 96 rows of discontinuous longitudinal striations for each 5 ft (1.5 m) in the transverse direction. The pattern of striations shall be such that a line connecting striations in adjacent rows shall form approximately a 70 degree skew angle with the roadway centerline. The areas between the striations in both the longitudinal and transverse directions shall be flat-topped and coplanar.

The milling machine shall be capable of accurately and automatically establishing grades by use of an automatic grade control device on one side of the machine with an automatic slope control device controlling the opposite side. It shall be equipped with a traveling grade reference (averaging ski) which shall not be less than 30 feet (9 m) in length.

CONSTRUCTION REQUIREMENTS

Surface Test. The completed recycled or reclaimed pavement will be tested for smoothness in the wheel paths with a 16 ft (5 m) straightedge.

For each variation in the recycled or reclaimed pavement that exceeds 3/16 in. (5 mm), the entire area affected shall be corrected by surface profile milling. The self-propelled milling machine shall be used for surface profile milling. At any time the surface profile milling fails to produce a flat plane interspersed with the specified uniform pattern of discontinuous longitudinal striations, the surface profile milling shall be stopped until corrections are made to the equipment. The surface profile milling speed shall be limited to 60 ft/min (18 m/min). If the Contractor demonstrates that the desired striations and ride specifications are obtained at a greater speed, the Engineer may permit the Contractor to operate at an increased speed.

After surface profile milling, the recycled or reclaimed pavement shall be swept by a mechanical broom to remove all loose material from the recycled or reclaimed pavement before opening to traffic.

The Contractor shall furnish a 16 ft (5 m) straightedge and shall provide for its jobsite transportation at no additional cost to the Department.

Method of Measurement.

The surface profile milling will be measured in square yards (square meters).

Basis of Payment.

The surface profile milling will be paid for at the contract unit price per square yard (square meter) for SURFACE PROFILE MILLING.

State of Illinois
DEPARTMENT OF TRANSPORTATION
Bureau of Local Roads & Streets

SPECIAL PROVISION
FOR
FILLING HMA CORE HOLES WITH NON-SHRINK GROUT

Effective: January 1, 2008

All references to Sections and Articles in this Special Provision shall be construed to mean specific Sections and Articles in the Standard Specifications for Road and Bridge Construction adopted by the Department of Transportation.

Add the following after the first paragraph of Article 406.07(c) of the Standard Specifications:

“Upon completion of coring for density testing, all free water shall be removed from the core holes prior to filling. All core holes shall be filled with a non-shrink grout from the Department’s approved list, which shall be mixed in a separate container prior to placement in the hole. Only enough water to permit placement and consolidation by rodding shall be used, and the material shall be struck-off flush with the adjacent pavement.”

State of Illinois
Department of Transportation
Bureau of Local Roads and Streets
SPECIAL PROVISION
FOR
CONSTRUCTION AND MAINTENANCE SIGNS

Effective: January 1, 2004
Revised: June 1, 2007

All references to Sections or Articles in this specification shall be construed to mean a specific Section or Article of the Standard Specifications for Road and Bridge Construction, adopted by the Department of Transportation.

701.14. Signs. Add the following paragraph to Article 701.14:

All warning signs shall have minimum dimensions of 1200 mm x 1200 mm (48" x 48") and have a black legend on a fluorescent orange reflectorized background, meeting, as a minimum, Type AP reflectivity requirements of Table 1091-2 in Article 1091.02.

State of Illinois
Department of Transportation
Bureau of Local Roads and Streets

SPECIAL PROVISION
FOR
COLD IN-PLACE RECYCLING (CIR) AND FULL-DEPTH RECLAMATION (FDR) WITH
FOAMED ASPHALT MIX DESIGN PROCEDURES

Effective: June 1, 2012

All references to Divisions, Sections, and Articles in this Special Provision shall be construed to mean specific Divisions, Sections, and Articles in the Standard Specifications for Road and Bridge Construction adopted by the Department of Transportation.

Laboratory Temperature and Humidity Control

Each laboratory performing mix designs shall have heating, ventilation, and air conditioning (HVAC) equipment that maintains a room temperature of 68 to 86 °F (20 to 30 °C) and relative humidity of less than 60 percent.

Sampling and Processing

A minimum sample size of 350 lb (160 kg) is needed for each mix design. Bulk samples of the recycled layer thickness shall be obtained from either test pits or cores. Each layer shall be examined to confirm thickness and material.

The bituminous layers shall be crushed. A washed gradation of the crushed bituminous layer(s) shall be performed according to AASHTO T 27, reported, and meet the following requirement(s).

Sieve Size		Percent Passing	
		CIR/FDR with Foamed Asphalt	
		Ideal	Less Suitable
2 in.	50 mm	100	
1 1/2 in.	37.5 mm	87 – 100	
1 in.	25 mm	77 – 100	100
3/4 in.	19 mm	66 – 99	99 – 100
1/2 in.	12.5 mm	67 – 87	87 – 100
3/8 in.	9.5 mm	49 – 74	74 – 100
No. 4	4.75 mm	35 – 56	56 – 95
No. 8	2.36 mm	25 – 42	42 – 78
No. 16	1.18 mm	18 – 33	33 – 65
No. 50	300 µm	10 – 24	24 – 43
No. 200	75 µm	4 – 10	10 – 20

Washed gradation (AASHTO T 27) and sand equivalent (ASTM D 2419, Method B) shall be performed and reported for any granular layer. The washed gradation (AASHTO T 27) of combined layers shall be performed and reported. If combined layers include an aggregate layer, the sand equivalent (ASTM D 2419, Method B) shall be performed and reported.

All washed gradations shall be dried at no greater than 104 °F (40 °C).

Active filler requirements

Foamed asphalt stabilization is normally carried out in combination with a small amount of active filler (cement, fly ash, or lime) to enhance the dispersion of the foamed asphalt. The following application rates (by mass) of cement, fly ash, or lime should be used as a guide:

Plasticity Index: < 10	Plasticity Index: > 10
Add 1 percent ordinary portland cement or 1 percent lime (material dependent)	Pre-treat with minimum 2 percent lime. The initial consumption of lime (ICL) has to be satisfied.

Pre-treatment requires that the lime and water be added at least four hours prior to the addition of the foamed asphalt. The treated material must be placed in an air-tight container to retain moisture. However, due to the hydration process, the moisture content should always be checked and, if necessary, adjusted prior to adding the foamed asphalt.

Note: Additional tests without active filler should always be carried out as part of the mix design process. The results of these tests allow a decision to be made as to whether the addition of an active filler is warranted.

Mixing and Compaction

The Optimum Fluid Content (OFC) and the Maximum Dry Density (MDD) of the stabilized material is determined using modified compaction effort (Modified Proctor, ASTM D 1557, Method C).

Determination of Expansion Ratio and Half-Life

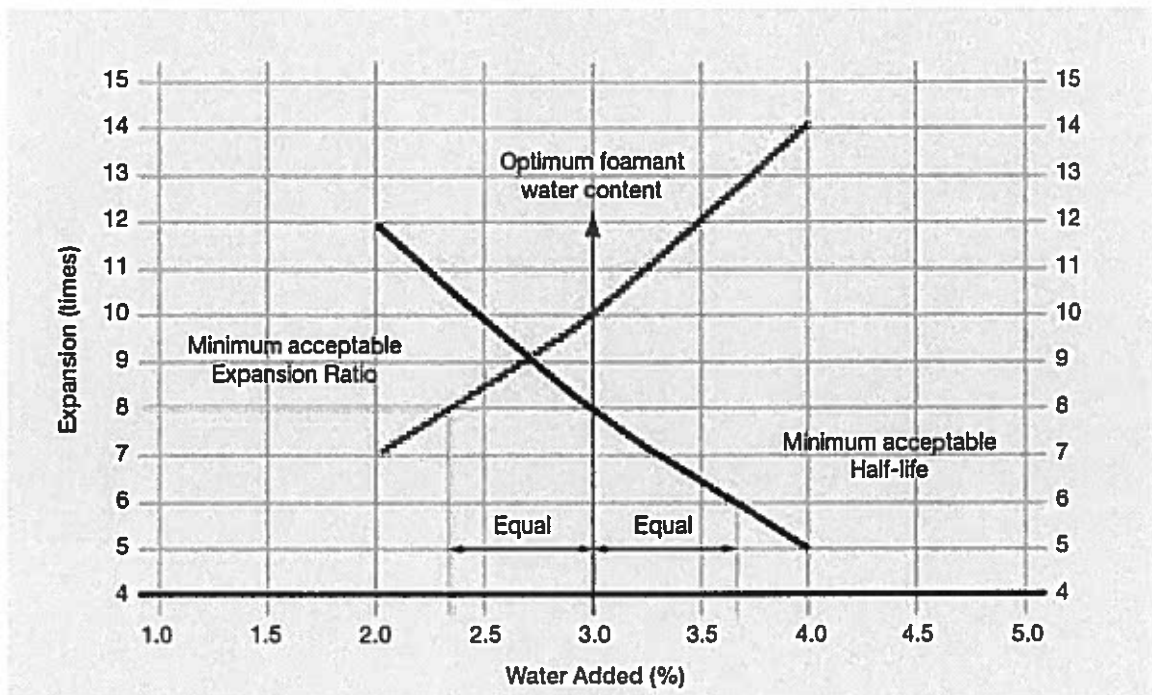
The foaming properties of asphalt are characterized by:

- Expansion Ratio. A measure of the viscosity of the foamed bitumen, calculated as the ratio of the maximum volume of the foam relative to the original volume of bitumen.
- Half-Life. A measure of the stability of the foamed bitumen, calculated as the time taken in seconds for the foam to collapse to one-half of its maximum volume.

The objective is to determine the temperature and percentage of water addition that is required to produce the best foam properties (maximum expansion ratio and half-life) for a particular source of bitumen. This is achieved at three different bitumen temperatures not exceeding 380 °F (195 °C) with the following procedure.

1. Heat the bitumen in the kettle foaming laboratory unit with the pump circulating the bitumen through the system until the required temperature is achieved normally starting with 320 °F (160 °C). Maintain the required temperature for at least five minutes prior to commencing with testing.
2. Calibrate the discharge rate of the bitumen and set the timer on the foaming laboratory unit to discharge 500 g of bitumen (Q_{bitumen}).
3. Set the water flow-meter to achieve the required water injection rate normally starting with 2 percent by mass of the bitumen.
4. Discharge foamed bitumen into steel drum preheated to ± 135 °F (± 75 °C) of the bitumen for a calculated spray time for 500 g of bitumen. Immediately after the foam discharge stops, start a stopwatch.
5. Using the calibrated dipstick supplied with the foaming laboratory unit measure the maximum height the foamed bitumen achieves in the drum. This is recorded as the maximum volume.

6. Use the stopwatch to measure the time in seconds that the foam takes to dissipate to one-half of its maximum volume. This is recorded as the foamed bitumen's half-life.
7. Repeat the above procedures three times or until similar readings are achieved.
8. Repeat Steps 3 through 7 for a range of at least three water injection rates. Typically, values of 2 percent, 3 percent and 4 percent by mass of bitumen are used.
9. Plot a graph of the expansion ratio versus half-life at the different water injection rates on the same set of axes (see an example in the graph below). The optimum water addition is chosen as an average of the two water contents required to meet these minimum criteria.



Repeat Steps 1 through 9 for two other bitumen temperatures normally 340 °F (170 °C) and 360 °F (180 °C). The temperature and optimum water addition that produces the best foam is then used in the mix design procedure described below.

Sample preparation for foamed bitumen treatment

Prepare the material for foamed bitumen treatment as follows:

1. Place 20 to 25 kg of prepared sample into the pug mill mixer.
2. Determine the dry mass of the sample using the following equation:

$$m_{\text{sample}} = \frac{m_{\text{air-dry}}}{\left(1 + \left(\frac{W_{\text{air-dry}}}{100}\right)\right)}$$

Where: m_{sample} = dry mass of the sample in grams
 $m_{\text{air-dry}}$ = air-dried mass of the sample in grams
 $W_{\text{air-dry}}$ = moisture content of air-dried sample in percent by mass

3. Determine the required percentage of active filler (lime, cement, or fly ash) using the following equation:

$$m_{\text{cement}} = \left(\frac{W_{\text{c-add}}}{100} \right) m_{\text{sample}}$$

Where: m_{cement} = mass of lime, cement, or fly ash to be added in grams
 $W_{\text{c-add}}$ = percentage of lime, cement, or fly ash required in percent by mass
 m_{sample} = dry mass of the sample in grams

4. Determine the percentage of water to be added for optimum mixing moisture and the amount of water to be added to the sample using the following equations:

$$W_{\text{add}} = 0.75W_{\text{OMC}} - W_{\text{air-dry}}$$

$$m_{\text{water}} = \left(\frac{W_{\text{add}}}{100} \right) (m_{\text{sample}} + m_{\text{cement}})$$

where: W_{add} = water to be added to sample in percent by mass
 W_{OMC} = optimum moisture content in percent by mass
 $W_{\text{air-dry}}$ = moisture content of air-dried sample in percent by mass
 m_{water} = mass of water to be added in grams
 m_{sample} = dry mass of the sample in grams
 m_{cement} = mass of lime, cement or fly ash to be added in grams

5. Mix the material, active filler, and water in the mixer until uniform.

Note: Inspect the sample after mixing to ensure that the mixed material is not packed against the sides of the mixer. If this situation occurs, mix a new sample at a lower moisture content. Check to see that the material mixes easily and remains in a "fluffed" state. If any dust is observed at the end of the mixing process, add small amounts of water and remix until a "fluffed" state is achieved with no dust.

6. Determine the amount of foamed bitumen to be added using the following equation:

$$m_{\text{bitumen}} = \left(\frac{W_{\text{b-add}}}{100} \right) (m_{\text{sample}} + m_{\text{cement}})$$

where: m_{bitumen} = mass of foamed bitumen to be added in grams
 $W_{\text{b-add}}$ = foamed bitumen content in percent by mass
 m_{sample} = dry mass of the sample in grams
 m_{cement} = mass of lime, cement or fly ash to be added in grams

7. Determine the timer setting on the foaming laboratory unit using the following equation:

$$t = \frac{m_{\text{bitumen}}}{Q_{\text{bitumen}}}$$

where: t = time to be set on the foaming laboratory unit timer
 m_{bitumen} = mass of foamed bitumen to be added in grams
 Q_{bitumen} = bitumen flow rate for the foaming laboratory unit in grams/second

8. Position the mixer adjacent to the foaming unit so that the foamed bitumen can be discharged directly into the mixing chamber.
9. Start the mixer and allow it to mix for at least 10 seconds before discharging the required mass of foamed bitumen into the mixing chamber. After the foamed bitumen has discharged into the mixer, continue mixing for an additional 30 seconds or until uniformly mixed.
10. The moisture content of the material is to be adjusted to 90 percent of optimum moisture content.
11. Add the additional water and mix until uniform.

12. Transfer the foamed bitumen treated material into a container and immediately seal the container to retain moisture. To minimize moisture loss from the prepared sample, compact the specimens as soon as possible.

Repeat the above steps for at least four different foamed asphalt contents.

Compaction

Six specimens are manufactured for each sample at the different bitumen contents. Compact the specimens as follows:

1. Prepare the Marshall mold and hammer by cleaning the mold, collar, base-plate and face of the compaction hammer.

Note: The compaction equipment must not be heated but kept at ambient temperature.

2. Weigh sufficient material to achieve a compacted height of 2.5 ± 0.125 in. (63.5 ± 1.5 mm) (usually 1150 g is adequate). Poke the mixture with a spatula 15 times around the perimeter and 10 times on the surface, leaving the surface slightly rounded.
3. Compact the mixture by applying 75 blows with the compaction hammer. Care must be taken to ensure the continuous free fall of the hammer.
4. Take ± 1000 g representative samples after compaction of the second and fifth specimen and dry to a constant mass at 220 to 230 °F (105 to 110 °C). Determine the molding moisture using the following equation:

$$w_{mold} = \left(\frac{m_{moist} - m_{dry}}{m_{dry}} \right) 100$$

where: w_{mold} = molding moisture content in percent by mass
 m_{moist} = mass of moist material in grams
 m_{dry} = mass of dry material in grams

5. Remove the mold and collar from the pedestal, invert the specimen (turn over). Replace it and press down firmly to ensure that it is secure on the base plate. Compact the other face of the specimen with an additional 75 blows.
6. After compaction, remove the mold from the base-plate and extrude the specimen by means of an extrusion jack. Measure the height of the specimen and adjust the amount material if the height is not within the required limits.

Note: With certain materials lacking cohesion, it may be necessary to leave the specimen in the mold for 24 hours, allowing sufficient strength to develop before extracting.

Curing after Compaction

Specimens shall be cured for 72 hours at 104 °F (40 °C). The bottom of the specimens shall rest on racks with slots or holes for air circulation. After curing, specimens for moisture conditioning shall be cooled at ambient temperature a maximum of 24 hours; specimens for dry strength shall cool at ambient temperature or 77 °F (25 °C) and be tested at the same time as moisture-conditioned specimens.

Specimens for Rice (maximum theoretical) specific gravity shall be cured at the same conditions as the compacted specimens, except they can be tested after cooling a maximum of 24 hours.

Volumetric Measurements

Determine bulk specific gravity (ASTM D 6752) of the specimens. Keep specimens in bags until testing or vacuum saturation is performed. ASTM D 2726 may be used to determine bulk specific gravity if specimens' absorption is less than or equal to 2 percent of water by volume.

Determine Rice (maximum theoretical) specific gravity (ASTM D 2041).

Determine air voids at all foamed asphalt contents used in the design.

Mechanical Measurements

Perform ITS testing according to AASHTO T 283 (IL Modified). Specimens shall be conditioned at 77 °F (25 °C) for two hours before testing. Vacuum saturate one-half of the specimens at each foamed asphalt content to a minimum 55 percent of the voids filled with water. Soak for 24 hours at 77 °F (25 °C) before testing.

Raveling Test (CIR with Foamed Asphalt Only)

The apparatus used for the raveling test is a modified A-120 Hobart mixer and abrasion head (including hose) used in the Wet Track Abrasion of Slurry Surfaces Test (ISSA TB-100). The rotation speed for the raveling test is not modified from ISSA TB-100. The ring weight is removed from the abrasion head for the raveling test below. The weight of the abrasion head and hose in contact with the specimen should be 600 g ± 15 g. The prepared sample must be able to be secured under the abrasion head, and centered for an accurate result, allowing for free movement vertically of the abrasion head. The device used for securing and centering the sample must allow a minimum of 0.4 in. (10 mm) of the sample to be available for abrasion. The Hobart mixer will need to be modified to allow the sample to fit properly for abrasion. The modification may be accomplished by adjusting the abrasion head height, or the height of the secured sample. The Hobart C-100 and N-50 Models are not acceptable for this test procedure due to differences in size and speed of rotation.

1. Split out two recycled asphalt samples from the medium gradation, or field sample, to a quantity of 2700 g in mass. The 2700 g is an approximate weight to give 2.8 in. ± 0.2 in. (70 mm ± 5 mm) of height after compaction.
2. The recycled asphalt sample should be placed in a container of adequate size for mixing.
3. Field or design moisture contents should be added to each of the recycled asphalt samples and mixed for 60 seconds.
4. The design emulsion content shall be added to each of the recycled asphalt samples and mixed for 60 seconds.
5. The samples shall be placed immediately into a 6 in. (150 mm) gyratory compaction mold and compacted to 20 gyrations. If the sample height is not 2.8 in. ± 0.2 in. (70 mm ± 5 mm), the recycled asphalt weight should be adjusted.
6. After compaction, the samples shall be removed from the compaction mold and placed on a flat pan to cure at the specified temperature and humidity (if required) for 240 minutes ± 5 minutes. The temperature shall be maintained at 50 °F ± 3.5 °F (10 °C ± 2 °C).
7. The specimens shall be weighed after the curing, just prior to testing.
8. The specimens shall be placed on the raveling test apparatus. Care should be taken that the specimen is centered and well supported. The area of the hose in contact with the specimen should not have been previously used. It is allowable to rotate the hose to an unworn section for testing. The abrasion head (with hose) shall be free to move vertically downward a minimum of 0.2 in. (5 mm) if abrasion allows.
9. The samples shall be abraded for 15 minutes and immediately weighed.
10. The Percent Raveling Loss shall be determined as follows:

$$PRL = 100 \times \frac{W_P - W_A}{W_P}$$

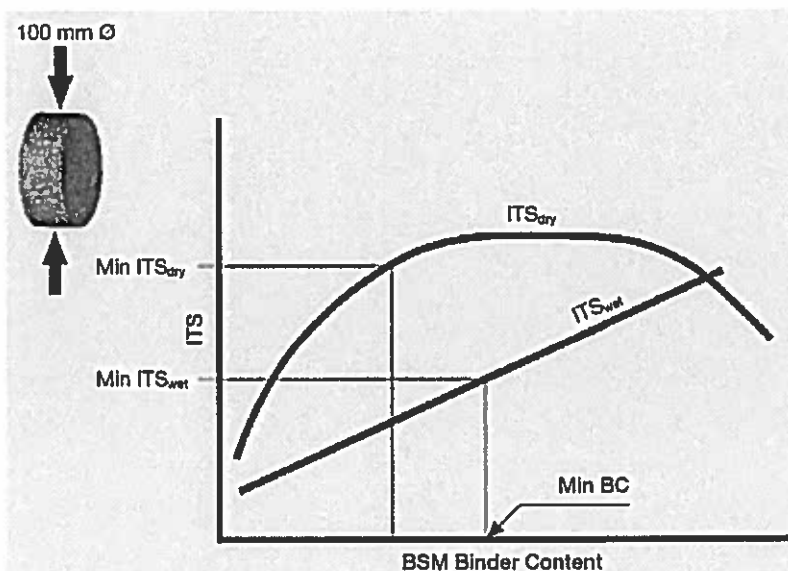
Where: PRL = Percent Raveling Loss
 W_P = Weight of Sample Prior to Testing
 W_A = Weight of Sample After Testing

11. The average of the two specimens shall be reported as the Percent Raveling Loss. If there is a difference of > 0.5 percent raveling loss between the two test specimens, the Raveling Test shall be repeated. If both of the test specimens have a Percent Raveling Loss of > 10 percent, the two test results shall be averaged and the maximum 0.5 percent difference between test specimens shall not be required.

Note: If field mix samples are taken, steps 2, 3, and 4 shall be omitted.

Foamed Asphalt Content Selection

The results of the respective soaked and unsoaked ITS test results are plotted against the relevant bitumen content that was added. The added bitumen content that best meets the desired Bitumen Stabilized Material (BSM) classification is selected as the amount of bitumen to be added, as shown in the example below.



Report

All mix design test results shall be reported to the Department. All additional additives and bituminous material shall be reported to the Department.

ADJUSTING FRAMES AND GRATES (BDE)

Effective: April 1, 2017

Add the following to Article 602.02 of the Standard Specifications:

- “(s) High Density Expanded Polystyrene Adjusting Rings
with Polyurea Coating (Note 4) 1043.04
- (t) Expanded Polypropylene (EPP) Adjusting Rings (Note 5) 1043.05

Note 4. High density expanded polystyrene adjusting rings with polyurea coating shall meet the design load requirements of AASHTO HS20/25. The rings may be used to adjust the frames and grates of drainage and utility structures up to a maximum of 6 in. (150 mm). They shall be installed and sealed underneath the frames according to the manufacturer’s specifications.

Note 5. Riser rings fabricated from EPP may be used to adjust the frames and grates of drainage and utility structures up to a maximum of 6 in. (150 mm). An adhesive meeting ASTM C 920, Type S, Grade N5, Class 25 shall be used with EPP adjustment rings. The top ring of the adjustment stack shall be a finish ring with grooves on the lower surface and flat upper surface. The joints between all manhole adjustment rings and the frame and cover shall be sealed using the approved adhesive. In lieu of the use of an adhesive, an internal or external mechanical frame-chimney seal may be used for watertight installation. EPP adjustment rings shall not be used with heat shrinkable infiltration barriers.”

Add the following to Section 1043 of the Standard Specifications:

“1043.04 High Density Expanded Polystyrene Adjusting Rings with Polyurea Coating. High density expanded polystyrene adjustment rings with polyurea coating shall be designed and tested to meet or exceed an HS25 wheel load according to the AASHTO Standard Specifications for Highway Bridges (AASHTO M306 HS-25). The raw material suppliers shall provide certifications of quality or testing using the following ASTM standards, and upon request, certify that only virgin material was used in the manufacturing of the expanded polystyrene rings.

Physical Property	Test Standard	Value	
		3.0 lb/cu ft	4.5 lb/cu ft
Compression Resistance at 10% deformation at 5% deformation at 2% deformation	ASTM D 1621	50 - 70	70 - 90
		45 - 60	60 - 80
		15 - 20	20 - 40
Flexural Strength	ASTM D 790	90 - 120	130 - 200
Water Absorption	ASTM D 570	2.0%	1.7%
Coefficient of Linear Expansion	ASTM D 696	2.70E-06 in./in./°F	2.80E-06 in./in./°F
Shear Strength	ASTM D 732	55	80

Tensile Strength	ASTM D 1623	70 - 90	130 - 140
Water Vapor Transmission	ASTM C 355	0.82 – 0.86 perm – in.	

High density expanded polystyrene adjustment rings with polyurea coating shall have no void areas, cracks, or tears. The actual diameter or length shall not vary more than 0.125 in. (3 mm) from the specified diameter or length. Variations in height are limited to ± 0.063 in. (± 1.6 mm). Variations shall not exceed 0.25 in. (6 mm) from flat (dish, bow, or convoluting edge) or 0.125 in. (3 mm) for bulges or dips in the surface.

1043.05 Expanded Polypropylene (EPP) Adjusting Rings. The EPP adjusting rings shall be manufactured using a high compression molding process to produce a minimum finished density of 7.5 lb/cu ft (120 g/l). The EPP rings shall be made of materials meeting ASTM D 3575 and ASTM D 4819-13. The grade adjustments shall be designed and tested according to the AASHTO Standard Specifications for Highway Bridges (AASHTO M 306 HS-25).

Grade rings shall contain upper and lower keyways (tongue and groove) for proper vertical alignment and sealing. The top ring, for use directly beneath the cast iron frame, shall have keyways (grooves) on the lower surface with a flat upper surface.

Adhesive or sealant used for watertight installation of the manhole grade adjustment rings shall meet ASTM C 920, Type S, Grade NS, Class 25, Uses NT, T, M, G, A, and O.

EPP adjustment rings shall have no void areas, cracks, or tears. The actual diameter or length shall not vary more than 0.125 in. (3 mm) from the specified diameter or length. Variations in height are limited to ± 0.063 in. (± 1.6 mm). Variations shall not exceed 0.25 in. (6 mm) from flat (dish, bow, or convoluting edge) or 0.125 in. (3 mm) for bulges or dips in the surface.”

80382

AUTOMATED FLAGGER ASSISTANCE DEVICES (BDE)

Effective: January 1, 2008

Description. This work shall consist of furnishing and operating automated flagger assistance devices (AFADs) as part of the work zone traffic control and protection for two-lane highways where two-way traffic is maintained over one lane of pavement. Use of these devices shall be at the option of the Contractor.

Equipment. AFADs shall be according to the FHWA memorandum, "MUTCD - Revised Interim Approval for the use of Automated Flagger Assistance Devices in Temporary Traffic Control Zones (IA-4R)", dated January 28, 2005. The devices shall be mounted on a trailer or a moveable cart and shall meet the requirements of NCHRP 350, Category 4.

The AFAD shall be the Stop/Slow type. This device uses remotely controlled "STOP" and "SLOW" signs to alternately control right-of-way.

Signs for the AFAD shall be according to Article 701.03 of the Standard Specifications and the MUTCD. The signs shall be 24 x 24 in. (600 x 600 mm) having an octagon shaped "STOP" sign on one side and a diamond shaped "SLOW" sign on the opposite side. The letters on the signs shall be 8 in. (200 mm) high. If the "STOP" sign has louvers, the full sign face shall be visible at a distance of 50 ft (15 m) and greater.

The signs shall be supplemented with one of the following types of lights.

- (a) Flashing Lights. When flashing lights are used, white or red flashing lights shall be mounted within the "STOP" sign face and white or yellow flashing lights within the "SLOW" sign face.
- (b) Stop and Warning Beacons. When beacons are used, a stop beacon shall be mounted 24 in. (600 mm) or less above the "STOP" sign face and a warning beacon mounted 24 in. (600 mm) or less above, below, or to the side of the "SLOW" sign face. As an option, a Type B warning light may be used in lieu of the warning beacon.

A "WAIT ON STOP" sign shall be placed on the right hand side of the roadway at a point where drivers are expected to stop. The sign shall be 24 x 30 in. (600 x 750 mm) with a black legend and border on a white background. The letters shall be at least 6 in. (150 mm) high.

This device may include a gate arm or mast arm that descends to a horizontal position when the "STOP" sign is displayed and rises to a vertical position when the "SLOW" sign is displayed. When included, the end of the arm shall reach at least to the center of the lane being controlled. The arm shall have alternating red and white retroreflective stripes, on both sides, sloping downward at 45 degrees toward the side on which traffic will pass. The stripes shall be 6 in. (150 mm) in width and at least 2 in. (50 mm) in height.

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

AFADs shall be placed at each end of the traffic control, where a flagger is shown on the plans. The flaggers shall be able to view the face of the AFAD and approaching traffic during operation.

To stop traffic, the "STOP" sign shall be displayed, the corresponding lights/beacon shall flash, and when included, the gate arm shall descend to a horizontal position. To permit traffic to move, the "SLOW" sign shall be displayed, the corresponding lights/beacon shall flash, and when included, the gate arm shall rise to a vertical position.

If used at night, the AFAD location shall be illuminated according to Section 701 of the Standard Specifications.

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

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

80192

BITUMINOUS MATERIALS COST ADJUSTMENTS (BDE)

Effective: November 2, 2006

Revised: August 1, 2017

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

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

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

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

Where: CA = Cost Adjustment, \$.

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

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

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

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

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

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

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

Where: A = Area of the HMA mixture, sq yd (sq m).

D = Depth of the HMA mixture, in. (mm).

G_{mb} = Average bulk specific gravity of the mixture, from the approved mix design.

- V = Volume of the bituminous material, gal (L).
SG = Specific Gravity of bituminous material as shown on the bill of lading.

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

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

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

80173

BUTT JOINTS (BDE)

Effective: July 1, 2016

Add the following to Article 406.08 of the Standard Specifications.

- "(c) Temporary Plastic Ramps. Temporary plastic ramps shall be made of high density polyethylene meeting the properties listed below. Temporary plastic ramps shall only be used on roadways with permanent posted speeds of 55 mph or less. The ramps shall have a minimum taper rate of 1:30 (V:H). The leading edge of the plastic ramp shall have a maximum thickness of 1/4 in. (6 mm) and the trailing edge shall match the height of the adjacent pavement \pm 1/4 in. (\pm 6 mm).

The ramp will be accepted by certification. The Contractor shall furnish a certification from the manufacturer stating the temporary plastic ramp meets the following requirements.

Physical Property	Test Method	Requirement
Melt Index	ASTM D 1238	8.2 g/10 minutes
Density	ASTM D 1505	0.965 g/cc
Tensile Strength @ Break	ASTM D 638	2223 psi (15 MPa)
Tensile Strength @ Yield	ASTM D 638	4110 psi (28 MPa)
Elongation @ Yield ^{1/} , percent	ASTM D 638	7.3 min.
Durometer Hardness, Shore D	ASTM D 2240	65
Heat Deflection Temperature, 66 psi	ASTM D 648	176 °F (80 °C)
Low Temperature Brittleness, F ₅₀	ASTM D 746	<-105 °F (<-76 °C)

1/ Crosshead speed -2 in./minute

The temporary plastic ramps shall be installed according to the manufacturer's specifications and fastened with anchors meeting the manufacturer's recommendations. Temporary plastic ramps that fail to stay in place or create a traffic hazard shall be replaced immediately with temporary HMA ramps at the Contractor's expense."

80366

COMPENSABLE DELAY COSTS (BDE)

Effective: June 2, 2017

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 working day contracts the payment will be made according to Article 109.04. For completion date contracts, an adjustment will be determined as follows.

Extended Traffic Control occurs between April 1 and November 30:

$$\text{ETCP Adjustment (\$)} = \text{TE} \times (\% / 100 \times \text{CUP} / \text{OCT})$$

Extended Traffic Control occurs between December 1 and March 31:

$$\text{ETCP Adjustment (\$)} = \text{TE} \times 1.5 (\% / 100 \times \text{CUP} / \text{OCT})$$

Where: TE = Duration of approved time extension in calendar days.

% = Percent maintenance for the traffic control, % (see table below).

CUP = Contract unit price for the traffic control pay item in place during the delay.

OCT = Original contract time in calendar days.

Original Contract Amount	Percent Maintenance
Up to \$2,000,000	65%
\$2,000,000 to \$10,000,000	75%
\$10,000,000 to \$20,000,000	85%
Over \$20,000,000	90%

When an ETCP 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."

CONCRETE MIX DESIGN – DEPARTMENT PROVIDED (BDE)

Effective: January 1, 2012

| Revised: April 1, 2016

| For the concrete mix design requirements in Article 1020.05(a) of the Standard Specifications, the Contractor has the option to request the Engineer determine mix design material proportions for Class PV, PP, RR, BS, DS, SC, and SI concrete. A single mix design for each class of concrete will be provided. Acceptance by the Contractor to use the mix design developed by the Engineer shall not relieve the Contractor from meeting specification requirements.

80277

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)

Effective: September 1, 2000

Revised: July 2, 2016

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR Part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR Part 26 and listed in the Illinois Unified Certification Program (IL UCP) DBE Directory.

STATE OBLIGATION. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. When this Special Provision is used to satisfy state law requirements on 100 percent state-funded contracts, the federal government has no involvement in such contracts (not a federal-aid contract) and no responsibility to oversee the implementation of this Special Provision by the Department on those contracts. DBE participation on 100 percent state-funded contracts will not be credited toward fulfilling the Department's annual overall DBE goal required by the US Department of Transportation to comply with the federal DBE program requirements.

CONTRACTOR ASSURANCE. The Contractor makes the following assurance and agrees to include the assurance in each subcontract that the Contractor signs with a subcontractor.

The Contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of contracts funded in whole or in part with federal or state funds. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (a) Withholding progress payments;
- (b) Assessing sanctions;
- (c) Liquidated damages; and/or
- (d) Disqualifying the Contractor from future bidding as non-responsible.

OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR Part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a

good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE companies performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined that the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. The determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates that, in the absence of unlawful discrimination, and in an arena of fair and open competition, DBE companies can be expected to perform 1.00 % of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set for in this Special Provision:

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

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

BIDDING PROCEDURES. Compliance with this Special Provision is required prior to the award of the contract and the failure of the low bidder to comply will render the bid not responsive.

In order to assure the timely award of the contract, the low bidder shall submit:

- (a) The bidder shall submit a DBE Utilization Plan on completed Department forms SBE 2025 and 2026.
 - (1) The final Utilization Plan must be submitted within five calendar days after the date of the letting in accordance with subsection (a)(2) of Bidding Procedures herein.

- (2) To meet the five day requirement, the bidder may send the Utilization Plan electronically by scanning and sending to DOT.DBE.UP@illinois.gov or faxing to (217) 785-1524. The subject line must include the bid Item Number and the Letting date. The Utilization Plan should be sent as one .pdf file, rather than multiple files and emails for the same Item Number. It is the responsibility of the bidder to obtain confirmation of email or fax delivery.

Alternatively, the Utilization Plan may be sent by certified mail or delivery service within the five calendar day period. If a question arises concerning the mailing date of a Utilization Plan, the mailing date will be established by the U.S. Postal Service postmark on the certified mail receipt from the U.S. Postal Service or the receipt issued by a delivery service when the Utilization Plan is received by the Department. It is the responsibility of the bidder to ensure the postmark or receipt date is affixed within the five days if the bidder intends to rely upon mailing or delivery to satisfy the submission day requirement. The Utilization Plan is to be submitted to:

Illinois Department of Transportation
Bureau of Small Business Enterprises
Contract Compliance Section
2300 South Dirksen Parkway, Room 319
Springfield, Illinois 62764

The Department will not accept a Utilization Plan if it does not meet the five day submittal requirement and the bid will be declared not responsive. In the event the bid is declared not responsive due to a failure to submit a Utilization Plan or failure to comply with the bidding procedures set forth herein, 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. The Department reserves the right to invite any other bidder to submit a Utilization Plan at any time for award consideration.

- (b) The Utilization Plan shall indicate that the bidder either has obtained sufficient DBE participation commitments to meet the contract goal or has not obtained enough DBE participation commitments in spite of a good faith effort to meet the goal. The Utilization Plan shall further provide the name, telephone number, and telefax number of a responsible official of the bidder designated for purposes of notification of Utilization Plan approval or disapproval under the procedures of this Special Provision.
- (c) The Utilization Plan shall include a DBE Participation Commitment Statement, Department form SBE 2025, for each DBE proposed for the performance of work to achieve the contract goal. For bidding purposes, submission of the completed SBE 2025 forms, signed by the DBEs and scanned or faxed to the bidder will be acceptable as long as the original is available and provided upon request. All elements of information indicated on the said form shall be provided, including but not limited to the following:

- (1) The names and addresses of DBE firms that will participate in the contract;
- (2) A description, including pay item numbers, of the work each DBE will perform;
- (3) The dollar amount of the participation of each DBE firm participating. The dollar amount of participation for identified work shall specifically state the quantity, unit price, and total subcontract price for the work to be completed by the DBE. If partial pay items are to be performed by the DBE, indicate the portion of each item, a unit price where appropriate and the subcontract price amount;
- (4) DBE Participation Commitment Statements, form SBE 2025, signed by the bidder and each participating DBE firm documenting the commitment to use the DBE subcontractors whose participation is submitted to meet the contract goal;
- (5) If the bidder is a joint venture comprised of DBE companies and non-DBE companies, the Utilization Plan must also include a clear identification of the portion of the work to be performed by the DBE partner(s); and,
- (6) If the contract goal is not met, evidence of good faith efforts; the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor is selected over a DBE for work on the contract.

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

- (a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors

are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases, and will be considered by the Department.

- (1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.
- (2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime Contractor might otherwise prefer to perform these work items with its own forces.
- (3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- (4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.
 - b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable. In accordance with subsection (c)(6) of the above Bidding Procedures, the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract.

- (5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.
 - (6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.
 - (7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.
 - (8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.
- (b) If the Department determines that the apparent successful bidder has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided that it is otherwise eligible for award. If the Department determines that the bidder has failed to meet the requirements of this Special Provision or that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan that the bid is not responsive. The notification shall include a statement of reasons for the determination. If the Utilization Plan is not approved because it is deficient as a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no more than a five calendar day period in order to cure the deficiency.
- (c) The bidder may request administrative reconsideration of a determination adverse to the bidder within the five working days after the receipt of the notification date of the determination by delivering the request to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217) 785-1524). Deposit of the request in the United States mail on or before the fifth business day shall not be deemed delivery. The determination shall become final if a request is not made and delivered. A request may provide additional written documentation or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. The request will be forwarded to the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person in order to consider all issues of documentation and whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for consideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration

Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

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

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

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

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

- (a) **NO AMENDMENT.** No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764. Telephone number (217) 785-4611. Telefax number (217) 785-1524.
- (b) **CHANGES TO WORK.** Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A or AER 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, then a new Request for Approval of Subcontractor shall not be required. However, the Contractor must document efforts to assure that the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.

- (c) SUBCONTRACT. The Contractor must provide DBE subcontracts to IDOT upon request. Subcontractors shall ensure that all lower tier subcontracts or agreements with DBEs to supply labor or materials be performed in accordance with this Special Provision.
- (d) ALTERNATIVE WORK METHODS. In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:
- (1) That the replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award; or
 - (2) That the DBE is aware that its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or
 - (3) That the DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.
- (e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in this Special Provision. The Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the Contractor obtains the Department's written consent as provided in subsection (a) of this part. Unless Department consent is provided for termination of a DBE subcontractor, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the DBE in the Utilization Plan.

As stated above, the Contractor shall not terminate or replace a DBE subcontractor listed in the approved Utilization Plan without prior written consent. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Written consent will be granted only if the Bureau of Small Business Enterprises agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate or replace the DBE firm. Before transmitting to the Bureau of Small Business Enterprises any request to terminate and/or substitute a DBE subcontractor, the Contractor shall give notice in writing to the DBE subcontractor,

with a copy to the Bureau, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor shall give the DBE five days to respond to the Contractor's notice. The DBE so notified shall advise the Bureau and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Bureau should not approve the Contractor's action. If required in a particular case as a matter of public necessity, the Bureau may provide a response period shorter than five days.

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

- (1) The listed DBE subcontractor fails or refuses to execute a written contract;
- (2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the prime contractor;
- (3) The listed DBE subcontractor fails or refuses to meet the prime Contractor's reasonable, nondiscriminatory bond requirements;
- (4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1200 or applicable state law.
- (6) You have determined that the listed DBE subcontractor is not a responsible contractor;
- (7) The listed DBE subcontractor voluntarily withdraws from the projects and provides to you written notice of its withdrawal;
- (8) The listed DBE is ineligible to receive DBE credit for the type of work required;
- (9) A DBE owner dies or becomes disabled with the result that the listed DBE subcontractor is unable to complete its work on the contract;
- (10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the prime Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the prime Contractor can self-perform the work for which the DBE contractor was engaged or so that the prime Contractor can substitute another DBE or non-DBE contractor after contract award.

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

- (f) PAYMENT RECORDS. The Contractor shall maintain a record of payments for work performed to the DBE participants. The records shall be made available to the Department for inspection upon request. After the performance of the final item of work or delivery of material by a DBE and final payment therefore to the DBE by the Contractor, but not later than thirty calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Resident Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes that the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.
- (g) ENFORCEMENT. The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.
- (h) RECONSIDERATION. Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of "Good Faith Effort Procedures" of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department. The result of the reconsideration process is not administratively appealable to the U.S. Department of Transportation.

EQUIPMENT PARKING AND STORAGE (BDE)

Effective: November 1, 2017

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

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

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

80388

56

HOT-MIX ASPHALT - DENSITY TESTING OF LONGITUDINAL JOINTS (BDE)

Effective: January 1, 2010

Revised: April 1, 2016

Description. This work shall consist of testing the density of longitudinal joints as part of the quality control/quality assurance (QC/QA) of hot-mix asphalt (HMA). Work shall be according to Section 1030 of the Standard Specifications except as follows.

Quality Control/Quality Assurance (QC/QA). Delete the second and third sentence of the third paragraph of Article 1030.05(d)(3) of the Standard Specifications.

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

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

- a. Confined Edge. Each confined edge density shall be represented by a one-minute nuclear density reading or a core density and shall be included in the average of density readings or core densities taken across the mat which represents the Individual Test.
- b. Unconfined Edge. Each unconfined edge joint density shall be represented by an average of three one-minute density readings or a single core density at the given density test location and shall meet the density requirements specified herein. The three one-minute readings shall be spaced 10 ft (3 m) apart longitudinally along the unconfined pavement edge and centered at the random density test location.”

Revise the Density Control Limits table in Article 1030.05(d)(4) of the Standard Specifications to read:

"Mixture Composition	Parameter	Individual Test (includes confined edges)	Unconfined Edge Joint Density Minimum
IL-4.75	N _{design} = 50	93.0 – 97.4% ^{1/}	91.0%
IL-9.5	N _{design} = 90	92.0 – 96.0%	90.0%
IL-9.5, IL-9.5L	N _{design} < 90	92.5 – 97.4%	90.0%
IL-19.0	N _{design} = 90	93.0 – 96.0%	90.0%
IL-19.0, IL-19.0L	N _{design} < 90	93.0 ^{2/} – 97.4%	90.0%
SMA	N _{design} = 50 & 80	93.5 – 97.4%	91.0%”

80246

HOT-MIX ASPHALT – TACK COAT (BDE)

Effective: November 1, 2016

Revise Article 1032.06(a) of the Standard Specifications to read:

“(a) Anionic Emulsified Asphalt. Anionic emulsified asphalts shall be according to AASHTO M 140. SS-1h emulsions used as a tack coat shall have the cement mixing test waived.”

80376

PAYMENTS TO SUBCONTRACTORS (BDE)

Effective: November 2, 2017

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

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

80390

PORTLAND CEMENT CONCRETE (BDE)

Effective: November 1, 2017

Revise the Air Content % of Class PP Concrete in Table 1 Classes of Concrete and Mix Design Criteria in Article 1020.04 of the Standard Specifications to read:

Class of Conc.	Use	Air Content %
PP	Pavement Patching	4.0 - 8.0"
	Bridge Deck Patching (10)	
	PP-1	
	PP-2	
	PP-3	
	PP-4	
PP-5		

Revise Note (4) at the end of Table 1 Classes of Concrete and Mix Design Criteria in Article 1020.04 of the Standard Specifications to read:

“(4) For all classes of concrete, the maximum slump may be increased to 7 in (175 mm) when a high range water-reducing admixture is used. For Class SC, the maximum slump may be increased to 8 in. (200 mm). For Class PS, the maximum slump may be increased to 8 1/2 in. (215 mm) if the high range water-reducing admixture is the polycarboxylate type.”

80389

PROGRESS PAYMENTS (BDE)

Effective: November 2, 2013

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

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

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

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

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

80328

RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES (BDE)

Effective: November 1, 2012

Revise: April 1, 2016

Revise Section 1031 of the Standard Specifications to read:

"SECTION 1031. RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES

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

- (a) Reclaimed Asphalt Pavement (RAP). RAP is the material produced by cold milling or crushing an existing hot-mix asphalt (HMA) pavement. The Contractor shall supply written documentation that the RAP originated from routes or airfields under federal, state, or local agency jurisdiction.
- (b) Reclaimed Asphalt Shingles (RAS). Reclaimed asphalt shingles (RAS). RAS is from the processing and grinding of preconsumer or post-consumer shingles. RAS shall be a clean and uniform material with a maximum of 0.5 percent unacceptable material, as defined in Bureau of Materials and Physical Research Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Sources", by weight of RAS. All RAS used shall come from a Bureau of Materials and Physical Research approved processing facility where it shall be ground and processed to 100 percent passing the 3/8 in. (9.5 mm) sieve and 93 percent passing the #4 (4.75 mm) sieve based on a dry shake gradation. RAS shall be uniform in gradation and asphalt binder content and shall meet the testing requirements specified herein. In addition, RAS shall meet the following Type 1 or Type 2 requirements.
 - (1) Type 1. Type 1 RAS shall be processed, preconsumer asphalt shingles salvaged from the manufacture of residential asphalt roofing shingles.
 - (2) Type 2. Type 2 RAS shall be processed post-consumer shingles only, salvaged from residential, or four unit or less dwellings not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP).

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

- (a) RAP Stockpiles. The Contractor shall construct individual, sealed RAP stockpiles meeting one of the following definitions. No additional RAP shall be added to the pile after the pile has been sealed. Stockpiles shall be sufficiently separated to prevent intermingling at the base. Stockpiles shall be identified by signs indicating the type as listed below (i.e. "Homogeneous Surface").

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

- (1) Fractionated RAP (FRAP). FRAP shall consist of RAP from Class I, HMA (High and Low ESAL) mixtures. The coarse aggregate in FRAP shall be crushed aggregate and may represent more than one aggregate type and/or quality, but shall be at least C quality. All FRAP shall be fractionated prior to testing by screening into a minimum of two size fractions with the separation occurring on or between the #4 (4.75 mm) and 1/2 in. (12.5 mm) sieves. Agglomerations shall be minimized such that 100 percent of the RAP shall pass the sieve size specified below for the mix into which the FRAP will be incorporated.

Mixture FRAP will be used in:	Sieve Size that 100 % of FRAP Shall Pass
IL-19.0	1 1/2 in. (40 mm)
IL-9.5	3/4 in. (20 mm)
IL-4.75	1/2 in. (13 mm)

- (2) Homogeneous. Homogeneous RAP stockpiles shall consist of RAP from Class I, HMA (High and Low ESAL) mixtures and represent: 1) the same aggregate quality, but shall be at least C quality; 2) the same type of crushed aggregate (either crushed natural aggregate, ACBF slag, or steel slag); 3) similar gradation; and 4) similar asphalt binder content. If approved by the Engineer, combined single pass surface/binder millings may be considered "homogeneous" with a quality rating dictated by the lowest coarse aggregate quality present in the mixture.
- (3) Conglomerate. Conglomerate RAP stockpiles shall consist of RAP from Class I, HMA (High and Low ESAL) mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality, but shall be at least C quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate RAP shall be processed prior to testing by crushing to where all RAP shall pass the 5/8 in. (16 mm) or smaller screen. Conglomerate RAP stockpiles shall not contain steel slag.
- (4) Non-Quality. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Non-Quality".

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

- (b) RAS Stockpiles. Type 1 and Type 2 RAS shall be stockpiled separately and shall not be intermingled. Each stockpile shall be signed indicating what type of RAS is present.

Unless otherwise specified by the Engineer, mechanically blending manufactured sand (FM 20 or FM 22) up to an equal weight of RAS with the processed RAS will be permitted to improve workability. The sand shall be "B Quality" or better from an approved Aggregate Gradation Control System source. The sand shall be accounted for in the mix design and during HMA production.

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

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

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

(1) During Stockpiling. For testing during stockpiling, washed extraction samples shall be run at the minimum frequency of one sample per 500 tons (450 metric tons) for the first 2000 tons (1800 metric tons) and one sample per 2000 tons (1800 metric tons) thereafter. A minimum of five tests shall be required for stockpiles less than 4000 tons (3600 metric tons).

(2) After Stockpiling. For testing after stockpiling, the Contractor shall submit a plan for approval to the District proposing a satisfactory method of sampling and testing the RAP/FRAP pile either in-situ or by restockpiling. The sampling plan shall meet the minimum frequency required above and detail the procedure used to obtain representative samples throughout the pile for testing.

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

(b) RAS Testing. RAS or RAS blended with manufactured sand shall be sampled and tested during stockpiling according to Bureau of Materials and Physical Research Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Source".

Samples shall be collected during stockpiling at the minimum frequency of one sample per 200 tons (180 metric tons) for the first 1000 tons (900 metric tons) and one sample per 250 tons (225 metric tons) thereafter. A minimum of five samples are required for stockpiles less than 1000 tons (900 metric tons). Once a ≤ 1000 ton (900 metric ton), five-sample/test stockpile has been established it shall be sealed. Additional incoming RAS or RAS blended with manufactured sand shall be stockpiled in a separate working pile as designated in the Quality Control plan and only added to the sealed stockpile when the test results of the working pile are complete and are found to meet the tolerances specified herein for the original sealed RAS stockpile.

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

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

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

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

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

1/ The tolerance for FRAP shall be ± 0.3 %.

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

With the approval of the Engineer, the ignition oven may be substituted for extractions according to the ITP, "Calibration of the Ignition Oven for the Purpose of Characterizing Reclaimed Asphalt Pavement (RAP)".

- (b) Evaluation of RAS and RAS Blended with Manufactured Sand Test Results. All of the test results, with the exception of percent unacceptable materials, shall be compiled and averaged for asphalt binder content and gradation. Individual test results, when compared to the averages, will be accepted if within the tolerances listed below.

65

Parameter	RAS
No. 8 (2.36 mm)	± 5 %
No. 16 (1.18 mm)	± 5 %
No. 30 (600 µm)	± 4 %
No. 200 (75 µm)	± 2.0 %
Asphalt Binder Content	± 1.5 %

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

1031.05 Quality Designation of Aggregate in RAP/FRAP.

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

(1) RAP from Class I, Superpave/HMA (High ESAL), or (Low ESAL) IL-9.5L surface mixtures are designated as containing Class B quality coarse aggregate.

(2) RAP from Class I binder, Superpave/HMA (High ESAL) binder, or (Low ESAL) IL-19.0L binder mixtures are designated as containing Class C quality coarse aggregate.

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

If the quality is not known, the quality shall be determined as follows. Coarse and fine FRAP stockpiles containing plus #4 (4.75 mm) sieve coarse aggregate shall have a maximum tonnage of 5000 tons (4500 metric tons). The Contractor shall obtain a representative sample witnessed by the Engineer. The sample shall be a minimum of 50 lb (25 kg). The sample shall be extracted according to Illinois Modified AASHTO T 164 by a consultant laboratory prequalified by the Department for the specified testing. The consultant laboratory shall submit the test results along with the recovered aggregate to the District Office. The cost for this testing shall be paid by the Contractor. The District will forward the sample to the Bureau of Materials and Physical Research Aggregate Lab for MicroDeval Testing, according to ITP 327. A maximum loss of 15.0 percent will be applied for all HMA applications.

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

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

- 66

- (1) Coarse Aggregate Size. The coarse aggregate in all RAP shall be equal to or less than the nominal maximum size requirement for the HMA mixture to be produced.
 - (2) Steel Slag Stockpiles. Homogeneous RAP stockpiles containing steel slag will be approved for use in all HMA (High ESAL and Low ESAL) Surface and Binder Mixture applications.
 - (3) Use in HMA Surface Mixtures (High and Low ESAL). RAP/FRAP stockpiles for use in HMA surface mixtures (High and Low ESAL) shall be FRAP or homogeneous in which the coarse aggregate is Class B quality or better. RAP/FRAP from Conglomerate stockpiles shall be considered equivalent to limestone for frictional considerations. Known frictional contributions from plus #4 (4.75 mm) homogeneous RAP and FRAP stockpiles will be accounted for in meeting frictional requirements in the specified mixture.
 - (4) Use in HMA Binder Mixtures (High and Low ESAL), HMA Base Course, and HMA Base Course Widening. RAP/FRAP stockpiles for use in HMA binder mixtures (High and Low ESAL), HMA base course, and HMA base course widening shall be FRAP, homogeneous, or conglomerate, in which the coarse aggregate is Class C quality or better.
 - (5) Use in Shoulders and Subbase. RAP/FRAP stockpiles for use in HMA shoulders and stabilized subbase (HMA) shall be FRAP, homogeneous, or conglomerate.
 - (6) When the Contractor chooses the RAP option, the percentage of RAP shall not exceed the amounts indicated in Article 1031.06(c)(1) below for a given Ndesign.
- (b) RAS. RAS meeting Type 1 or Type 2 requirements will be permitted in all HMA applications as specified herein.
- (c) RAP/FRAP and/or RAS Usage Limits. Type 1 or Type 2 RAS may be used alone or in conjunction with RAP or FRAP in HMA mixtures up to a maximum of 5.0 percent by weight of the total mix.
- (1) RAP/RAS. When RAP is used alone or RAP is used in conjunction with RAS, the percentage of virgin asphalt binder replacement shall not exceed the amounts listed in the Max RAP/RAS ABR table listed below for the given Ndesign.

RAP/RAS Maximum Asphalt Binder Replacement (ABR) Percentage

HMA Mixtures <i>1, 2</i>	RAP/RAS Maximum ABR %		
	Binder/Leveling Binder	Surface	Polymer Modified
30	30	30	10

50	25	15	10
70	15	10	10
90	10	10	10

1/ For Low ESAL HMA shoulder and stabilized subbase, the RAP/RAS ABR shall not exceed 50 percent of the mixture.

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

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

FRAP/RAS Maximum Asphalt Binder Replacement (ABR) Percentage

HMA Mixtures <i>1/, 2/</i>	FRAP/RAS Maximum ABR %		
	Ndesign	Binder/Leveling Binder	Surface
30	50	40	10
50	40	35	10
70	40	30	10
90	40	30	10

1/ For Low ESAL HMA shoulder and stabilized subbase, the FRAP/RAS ABR shall not exceed 50 percent of the mixture.

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

3/ For SMA the FRAP/RAS ABR shall not exceed 20 percent.

4/ For IL-4.75 mix the FRAP/RAS ABR shall not exceed 30 percent.

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

- (a) RAP/FRAP and/or RAS. RAP/FRAP and/or RAS mix designs shall be submitted for verification. If additional RAP/FRAP and/or RAS stockpiles are tested and found that no more than 20 percent of the results, as defined under "Testing" herein, are outside of the control tolerances set for the original RAP/FRAP and/or RAS stockpile and HMA mix design, and meets all of the requirements herein, the additional RAP/FRAP and/or RAS stockpiles may be used in the original mix design at the percent previously verified.
- (b) RAS. Type 1 and Type 2 RAS are not interchangeable in a mix design. A RAS stone bulk specific gravity (Gsb) of 2.300 shall be used for mix design purposes.

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

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

To remove or reduce agglomerated material, a scalping screen, gator, crushing unit, or comparable sizing device approved by the Engineer shall be used in the RAP feed system to remove or reduce oversized material. If material passing the sizing device adversely affects the mix production or quality of the mix, the sizing device shall be set at a size specified by the Engineer.

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

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

(1) Dryer Drum Plants.

- a. Date, month, year, and time to the nearest minute for each print.

- b. HMA mix number assigned by the Department.
- c. Accumulated weight of dry aggregate (combined or individual) in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).
- d. Accumulated dry weight of RAP/FRAP/RAS in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).
- e. Accumulated mineral filler in revolutions, tons (metric tons), etc. to the nearest 0.1 unit.
- f. Accumulated asphalt binder in gallons (liters), tons (metric tons), etc. to the nearest 0.1 unit.
- g. Residual asphalt binder in the RAP/FRAP material as a percent of the total mix to the nearest 0.1 percent.
- h. Aggregate and RAP/FRAP moisture compensators in percent as set on the control panel. (Required when accumulated or individual aggregate and RAP/FRAP are printed in wet condition.)

(2) Batch Plants.

- a. Date, month, year, and time to the nearest minute for each print.
- b. HMA mix number assigned by the Department.
- c. Individual virgin aggregate hot bin batch weights to the nearest pound (kilogram).
- d. Mineral filler weight to the nearest pound (kilogram).
- e. RAP/FRAP/RAS weight to the nearest pound (kilogram).
- f. Virgin asphalt binder weight to the nearest pound (kilogram).
- g. Residual asphalt binder in the RAP/FRAP/RAS material as a percent of the total mix to the nearest 0.1 percent.

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



1031.09 RAP in Aggregate Surface Course and Aggregate Wedge Shoulders, Type B. The use of RAP in aggregate surface course (temporary access entrances only) and aggregate wedge shoulders, Type B shall be as follows.

- (a) Stockpiles and Testing. RAP stockpiles may be any of those listed in Article 1031.02, except "Non-Quality" and "FRAP". The testing requirements of Article 1031.03 shall not apply. RAP used shall be according to the current Bureau of Materials and Physical Research Policy Memorandum, "Reclaimed Asphalt Pavement (RAP) for Aggregate Applications".
- (b) Gradation. One hundred percent of the RAP material shall pass the 1 1/2 in. (37.5 mm) sieve. The RAP material shall be reasonably well graded from coarse to fine. RAP material that is gap-graded or single sized will not be accepted."

80306

SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)

Effective: November 2, 2017

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

"This mobilization payment shall be made at least 14 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%

80391

72

WARM MIX ASPHALT (BDE)

Effective: January 1, 2012

Revised: April 1, 2016

Description. This work shall consist of designing, producing and constructing Warm Mix Asphalt (WMA) in lieu of Hot Mix Asphalt (HMA) at the Contractor's option. Work shall be according to Sections 406, 407, 408, 1030, and 1102 of the Standard Specifications, except as modified herein. In addition, any references to HMA in the Standard Specifications, or the special provisions shall be construed to include WMA.

WMA is an asphalt mixture which can be produced at temperatures lower than allowed for HMA utilizing approved WMA technologies. WMA technologies are defined as the use of additives or processes which allow a reduction in the temperatures at which HMA mixes are produced and placed. WMA is produced by the use of additives, a water foaming process, or combination of both. Additives include minerals, chemicals or organics incorporated into the asphalt binder stream in a dedicated delivery system. The process of foaming injects water into the asphalt binder stream, just prior to incorporation of the asphalt binder with the aggregate.

Approved WMA technologies may also be used in HMA provided all the requirements specified herein, with the exception of temperature, are met. However, asphalt mixtures produced at temperatures in excess of 275 °F (135 °C) will not be considered WMA when determining the grade reduction of the virgin asphalt binder grade.

Equipment.

Revise the first paragraph of Article 1102.01 of the Standard Specifications to read:

"1102.01 Hot-Mix Asphalt Plant. The hot-mix asphalt (HMA) plant shall be the batch-type, continuous-type, or dryer drum plant. The plants shall be evaluated for prequalification rating and approval to produce HMA according to the current Bureau of Materials and Physical Research Policy Memorandum, "Approval of Hot-Mix Asphalt Plants and Equipment". Once approved, the Contractor shall notify the Bureau of Materials and Physical Research to obtain approval of all plant modifications. The plants shall not be used to produce mixtures concurrently for more than one project or for private work unless permission is granted in writing by the Engineer. The plant units shall be so designed, coordinated and operated that they will function properly and produce HMA having uniform temperatures and compositions within the tolerances specified. The plant units shall meet the following requirements."

Add the following to Article 1102.01(a) of the Standard Specifications.

"(11) Equipment for Warm Mix Technologies.

- a. **Foaming.** Metering equipment for foamed asphalt shall have an accuracy of ± 2 percent of the actual water metered. The foaming control system shall be electronically interfaced with the asphalt binder meter.

- b. Additives. Additives shall be introduced into the plant according to the supplier's recommendations and shall be approved by the Engineer. The system for introducing the WMA additive shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes."

Mix Design Verification.

Add the following to Article 1030.04 of the Standard Specifications.

"(e) Warm Mix Technologies.

- (1) Foaming. WMA mix design verification will not be required when foaming technology is used alone (without WMA additives). However, the foaming technology shall only be used on HMA designs previously approved by the Department.
- (2) Additives. WMA mix designs utilizing additives shall be submitted to the Engineer for mix design verification."

Construction Requirements.

Revise the second paragraph of Article 406.06(b)(1) of the Standard Specifications to read:

"The HMA shall be delivered at a temperature of 250 to 350 °F (120 to 175 °C).
WMA shall be delivered at a minimum temperature of 215 °F (102 °C)."

Basis of Payment.

This work will be paid at the contract unit price bid for the HMA pay items involved. Anti-strip will not be paid for separately, but shall be considered as included in the cost of the work.

80288

WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012

| Revised: April 2, 2015

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

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

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

80302

WORKING DAYS (BDE)

Effective: January 1, 2002

The Contractor shall complete the work within 45 working days.

80071