



# Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

May 28, 2009

SUBJECT: FAU Route 1321  
Project HSIP-1321 (019)  
Section 2009-034 TS  
Cook County  
Contract No. 60G39  
Item No. 11, June 12, 2009 Letting  
Addendum A

## NOTICE TO PROSPECTIVE BIDDERS:

Attached is an addendum to the plans or proposal. This addendum involves revised and/or added material.

1. Replaced the Schedule of Prices.
2. Revised the Table of Contents to the Special Provisions.
3. Revised page 16 of the Special Provisions.
4. Added pages 112 - 123 to the Special Provisions.
5. Revised sheets 4, 8 & 14 of the Plans.

Prime contractors must utilize the enclosed material when preparing their bid and must include any Schedule of Prices changes in their bidding proposal.

Bidders using computer-generated bids are cautioned to reflect any and all Schedule of Prices changes, if involved, into their computer programs.

Very truly yours,

Charles Ingersoll, Chief  
Bureau of Design and Environment

A handwritten signature in black ink, appearing to read "Ted B. Walschleger" with a small "P.E." to the right.

By: Ted B. Walschleger, P. E.  
Engineer of Project Management

cc: Diane O'Keefe, Region 1, District 1; Bill Frey, Estimates

TBW:MS:jc

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 60G39

State Job # - C-91-401-09  
 PPS NBR - 1-78057-0000  
 County Name - COOK- -  
 Code - 31 - -  
 District - 1 - -  
 Section Number - 2009-034TS

Project Number  
 HSIP-1321/019/

Route  
 FAU 1321

\* REVISED : MAY 28, 2009

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
XX006937	GROUND ROD 5/8 X 10	EACH	3.000				
X0322256	TEMP INFO SIGNING	SQ FT	51.400				
X0322925	ELCBL C TRACER 14 1C	FOOT	8,589.000				
X0324387	LUM SFTY CABLE ASMBLY	EACH	41.000				
X0325037	PAINT NEW SIGNAL POST	EACH	6.000				
X0325705	RE-OPTIMIZE SIG SYS 2	EACH	3.000				
X0325737	TEMP TR SIGNAL TIMING	EACH	3.000				
X0326164	PT NEW MA&P UNDER 40	EACH	9.000				
X0326458	PAVEMENT REPL SPL	SQ YD	124.000				
X0326616	PT NEW MA&P 40 OVER	EACH	1.000				
X0326617	PAINT LIGHT POLE UNIT	EACH	41.000				
X0945500	PAINT EX POLE COMPL	EACH	1.000				
X8050015	SERV INSTALL POLE MT	EACH	3.000				
X8250085	LTG CONTR DUP CONS TY	EACH	1.000				
X8620020	UNINTER POWER SUPPLY	EACH	3.000				

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X8710020	FOCC62.5/125 MM12SM12	FOOT	8,754.000				
X8730027	ELCBL C GROUND 6 1C	FOOT	2,052.000				
X8730250	ELCBL C 20 3C TW SH	FOOT	1,050.000				
42400200	PC CONC SIDEWALK 5	SQ FT	2,699.000				
42400800	DETECTABLE WARNINGS	SQ FT	220.000				
44000500	COMB CURB GUTTER REM	FOOT	160.000				
44000600	SIDEWALK REM	SQ FT	2,486.000				
44001700	COMB C C&G REM & REPL	FOOT	492.000				
44002020	CONC MEDIAN SURF REM	SQ FT	233.000				
44003100	MEDIAN REMOVAL	SQ FT	490.000				
44003500	MEDIAN REM & REPL SPL	SQ FT	120.000				
67000400	ENGR FIELD OFFICE A	CAL MO	6.000				
67100100	MOBILIZATION	L SUM	1.000				
70102620	TR CONT & PROT 701501	L SUM	1.000				
70102630	TR CONT & PROT 701601	L SUM	1.000				

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70102635	TR CONT & PROT 701701	L SUM	1.000				
70102640	TR CONT & PROT 701801	L SUM	1.000				
72000100	SIGN PANEL T1	SQ FT	34.500				
72000200	SIGN PANEL T2	SQ FT	82.500				
78000100	THPL PVT MK LTR & SYM	SQ FT	254.800				
78000200	THPL PVT MK LINE 4	FOOT	220.000				
78000400	THPL PVT MK LINE 6	FOOT	991.000				
78000600	THPL PVT MK LINE 12	FOOT	1,152.000				
78000650	THPL PVT MK LINE 24	FOOT	411.000				
78008250	POLYUREA PM T1 LN 12	FOOT	114.000				
78300100	PAVT MARKING REMOVAL	SQ FT	2,234.000				
80400100	ELECT SERV INSTALL	EACH	1.000				
80400200	ELECT UTIL SERV CONN	L SUM	1.000		6,000.000		6,000.000
81000600	CON T 2 GALVS	FOOT	2,456.000				
81000700	CON T 2 1/2 GALVS	FOOT	383.000				

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81000800	CON T 3 GALVS	FOOT	106.000				
81001000	CON T 4 GALVS	FOOT	110.000				
81001100	CON T 5 GALVS	FOOT	20.000				
81018500	CON P 2 GALVS	FOOT	1,500.000				
81018700	CON P 3 GALVS	FOOT	2,200.000				
81018900	CON P 4 GALVS	FOOT	894.000				
81400100	HANDHOLE	EACH	14.000				
81400200	HD HANDHOLE	EACH	8.000				
81400300	DBL HANDHOLE	EACH	5.000				
81603210	UD 3#4#6GEPRRH 1 1/4	FOOT	7,500.000				
81701385	EC C EPR USE 3-1C 350	FOOT	100.000				
81900200	TR & BKFIL F ELECT WK	FOOT	9,252.000				
82102310	LUM SV HOR MT 310W	EACH	41.000				
83050810	LT P A 47.5MH 15MA	EACH	41.000				
83600315	LIGHT POLE FDN 30D OS	FOOT	40.000				

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83600400	POLE FOUNDATION METAL	EACH	41.000				
83800205	BKWY DEV TR B 15BC	EACH	41.000				
85000200	MAIN EX TR SIG INSTAL	EACH	4.000				
85700205	FAC T4 CAB SPL	EACH	2.000				
85700305	FAC T5 CAB SPL	EACH	1.000				
86000105	MASTER CONTROLLER SPL	EACH	1.000				
86400100	TRANSCEIVER - FIB OPT	EACH	3.000				
87301215	ELCBL C SIGNAL 14 2C	FOOT	1,758.000				
87301225	ELCBL C SIGNAL 14 3C	FOOT	3,988.000				
87301245	ELCBL C SIGNAL 14 5C	FOOT	5,715.000				
87301255	ELCBL C SIGNAL 14 7C	FOOT	2,702.000				
87301305	ELCBL C LEAD 14 1PR	FOOT	6,170.000				
87301805	ELCBL C SERV 6 2C	FOOT	224.000				
87502480	TS POST GALVS 14	EACH	1.000				
87502500	TS POST GALVS 16	EACH	5.000				

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87700140	S MAA & P 20	EACH	1.000				
87700150	S MAA & P 22	EACH	1.000				
87700190	S MAA & P 30	EACH	2.000				
87700200	S MAA & P 32	EACH	1.000				
87700210	S MAA & P 34	EACH	3.000				
87700220	S MAA & P 36	EACH	1.000				
87700270	S MAA & P 46	EACH	1.000				
87800100	CONC FDN TY A	FOOT	24.000				
87800150	CONC FDN TY C	FOOT	12.000				
87800400	CONC FDN TY E 30D	FOOT	45.000				
87800415	CONC FDN TY E 36D	FOOT	105.000				
87900200	DRILL EX HANDHOLE	EACH	6.000				
88030020	SH LED 1F 3S MAM	EACH	23.000				
88030050	SH LED 1F 3S BM	EACH	4.000				
88030100	SH LED 1F 5S BM	EACH	5.000				

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88030110	SH LED 1F 5S MAM	EACH	7.000				
88030240	SH LED 2F 1-3 1-5 BM	EACH	2.000				
88102717	PED SH LED 1F BM CDT	EACH	6.000				
88102747	PED SH LED 2F BM CDT	EACH	5.000				
88200210	TS BACKPLATE LOU ALUM	EACH	30.000				
88500100	INDUCTIVE LOOP DETECT	EACH	24.000				
88600100	DET LOOP T1	FOOT	2,000.000				
88700200	LIGHT DETECTOR	EACH	2.000				
88700300	LIGHT DETECTOR AMP	EACH	1.000				
88800100	PED PUSH-BUTTON	EACH	11.000				
89000100	TEMP TR SIG INSTALL	EACH	3.000				
89501400	REL EM VEH PR SYS D U	EACH	3.000				
89501410	REL EM VEH PR SYS P U	EACH	2.000				
89502300	REM ELCBL FR CON	FOOT	11,067.000				
89502375	REMOV EX TS EQUIP	EACH	3.000				





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## CONSTRUCTION REQUIREMENTS

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

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

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

For bidding purposes, this item shall be estimated as **\$6,000.00**.

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

**Designers Note:** The estimate of cost of service connections for bidding purposes shall be provided by Bureau of Electrical Operations.

## ELECTRIC SERVICE INSTALLATION

Effective: January 1, 2007

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

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

## CONSTRUCTION REQUIREMENTS

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

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**HOT-MIX ASPHALT - FIELD VOIDS IN THE MINERAL AGGREGATE (BDE)**

Effective: April 1, 2007

Revised: April 1, 2008

Add the following to the table in Article 1030.05(d)(2)a. of the Standard Specifications:

"Parameter	Frequency of Tests	Frequency of Tests	Test Method See Manual of Test Procedures for Materials
	High ESAL Mixture Low ESAL Mixture	All Other Mixtures	
VMA	Day's production ≥ 1200 tons: 1 per half day of production	N/A	Illinois-Modified AASHTO R 35
Note 5.	Day's production < 1200 tons: 1 per half day of production for first 2 days and 1 per day thereafter (first sample of the day)		

Note 5. The  $G_{sb}$  used in the voids in the mineral aggregate (VMA) calculation shall be the same average  $G_{sb}$  value listed in the mix design."

Add the following to the Control Limits table in Article 1030.05(d)(4) of the Standard Specifications:

"CONTROL LIMITS			
Parameter	High ESAL Low ESAL	High ESAL Low ESAL	All Other
	Individual Test	Moving Avg. of 4	
VMA	-0.7 % <sup>2/</sup>	-0.5 % <sup>2/</sup>	N/A

2/ Allowable limit below minimum design VMA requirement"

Add the following to the table in Article 1030.05(d)(5) of the Standard Specifications:

"CONTROL CHART REQUIREMENTS	High ESAL Low ESAL	All Other
	VMA"	

Revise the heading of Article 1030.05(d)(6)a.1. of the Standard Specifications to read:

"1. Voids, VMA, and Asphalt Binder Content."

Revise the first sentence of the first paragraph of Article 1030.05(d)(6)a.1.(a.) of the Standard Specifications to read:

"If the retest for voids, VMA, or asphalt binder content exceeds control limits, HMA production shall cease and immediate corrective action shall be instituted by the Contractor."

Added 05/28/2009

Revise the table in Article 1030.05(e) of the Standard Specifications to read:

“Test Parameter	Acceptable Limits of Precision
% Passing: <sup>1/</sup>	
1/2 in. (12.5 mm)	5.0 %
No. 4 (4.75 mm)	5.0 %
No. 8 (2.36 mm)	3.0 %
No. 30 (600 μm)	2.0 %
Total Dust Content No. 200 (75 μm) <sup>1/</sup>	2.2 %
Asphalt Binder Content	0.3 %
Maximum Specific Gravity of Mixture	0.026
Bulk Specific Gravity	0.030
VMA	1.4 %
Density (% Compaction)	1.0 % (Correlated)

1/ Based on washed ignition.”

**HOT-MIX ASPHALT – PLANT TEST FREQUENCY (BDE)**

Effective: April 1, 2008

Revise the table in Article 1030.05(d)(2)a. of the Standard Specifications to read:

“Parameter	Frequency of Tests	Frequency of Tests	Test Method See Manual of Test Procedures for Materials
	High ESAL Mixture Low ESAL Mixture	All Other Mixtures	
Aggregate Gradation  Hot bins for batch and continuous plants.  Individual cold-feed or combined belt- feed for drier drum plants.  % passing sieves: 1/2 in. (12.5 mm), No. 4 (4.75 mm), No. 8 (2.36 mm), No. 30 (600 μm) No. 200 (75 μm)  Note 1.	1 dry gradation per day of production (either morning or afternoon sample).  and  1 washed ignition oven test on the mix per day of production (conduct in the afternoon if dry gradation is conducted in the morning or vice versa).  Note 3.  Note 4.	1 gradation per day of production.  The first day of production shall be a washed ignition oven test on the mix. Thereafter, the testing shall alternate between dry gradation and washed ignition oven test on the mix.  Note 4.	Illinois Procedure

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Asphalt Binder Content by Ignition Oven  Note 2.	1 per half day of production	1 per day	Illinois-Modified AASHTO T 308
Air Voids  Bulk Specific Gravity of Gyrotory Sample	Day's production $\geq$ 1200 tons:  1 per half day of production	1 per day	Illinois-Modified AASHTO T 312
	Day's production < 1200 tons:  1 per half day of production for first 2 days and 1 per day thereafter (first sample of the day)		
Maximum Specific Gravity of Mixture	Day's production $\geq$ 1200 tons:  1 per half day of production	1 per day	Illinois-Modified AASHTO T 209"
	Day's production < 1200 tons:  1 per half day of production for first 2 days and 1 per day thereafter (first sample of the day)		

**HOT-MIX ASPHALT – TRANSPORTATION (BDE)**

Effective: April 1, 2008

Revise Article 1030.08 of the Standard Specifications to read:

**“1030.08 Transportation.** Vehicles used in transporting HMA shall have clean and tight beds. The beds shall be sprayed with asphalt release agents from the Department’s approved list. In lieu of a release agent, the Contractor may use a light spray of water with a light scatter of manufactured sand (FA 20 or FA 21) evenly distributed over the bed of the vehicle. After spraying, the bed of the vehicle shall be in a completely raised position and it shall remain in this position until all excess asphalt release agent or water has been drained.

When the air temperature is below 60 °F (15 °C), the bed, including the end, endgate, sides and bottom shall be insulated with fiberboard, plywood or other approved insulating material and shall have a thickness of not less than 3/4 in (20 mm). When the insulation is placed inside the bed, the insulation shall be covered with sheet steel approved by the Engineer. Each vehicle shall be equipped with a cover of canvas or other suitable material meeting the approval of the Engineer which shall be used if any one of the following conditions is present.

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- (a) Ambient air temperature is below 60 °F (15 °C).
- (b) The weather is inclement.
- (c) The temperature of the HMA immediately behind the paver screed is below 250 °F (120 °C).

The cover shall extend down over the sides and ends of the bed for a distance of approximately 12 in. (300 mm) and shall be fastened securely. The covering shall be rolled back before the load is dumped into the finishing machine.”

### **USE OF RAP (DIST 1)**

Effective: January 1, 2007

Revised: January 7, 2009

In Article 1030.02(g) of the Standard Specifications, delete the last sentence of the first paragraph in (Note 2).

Revise Section 1031 of the Standard Specifications to read:

### **“SECTION 1031. RECLAIMED ASPHALT PAVEMENT**

**1031.01 Description.** Reclaimed asphalt pavement (RAP) results from the cold milling or crushing of 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. The contractor can also request that a processed pile be tested by the Department to determine the aggregate quality.

**1031.02 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 and size as listed below (i.e. “Homogenous Surface”).

Prior to milling or removal of an HMA pavement, the Contractor may request the District to provide verification of the existing mix composition to clarify appropriate stockpile.

- (a) Homogeneous. Homogeneous RAP stockpiles shall consist of RAP from Class I, Superpave (High ESAL), HMA (High ESAL), or equivalent 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 “homogenous” with a quality rating dictated by the lowest coarse aggregate quality present in the mixture.
- (b) Conglomerate 5/8. Conglomerate 5/8 RAP stockpiles shall consist of RAP from Class I, Superpave (High ESAL), HMA (High ESAL), or equivalent mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one

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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 5/8 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 5/8 RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.

- (c) Conglomerate 3/8. Conglomerate 3/8 RAP stockpiles shall consist of RAP from Class I, Superpave (High ESAL), HMA (High ESAL), or equivalent mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality but shall be at least B quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate 3/8 RAP shall be processed prior to testing by crushing to where all RAP shall pass the 3/8 in. (9.5 mm) or smaller screen. Conglomerate 3/8 RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.
- (d) Conglomerate Variable Size. Conglomerate variable size RAP shall consist of RAP from Class I, Superpave (High ESAL), HMA (High ESAL), or equivalent mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality but shall be at least B quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate variable size RAP shall be processed prior to testing by crushing and screening to where all RAP is separated into various sizes. All the conglomerate variable size RAP shall pass the 3/4 in. (19 mm) screen and shall be a minimum of two sizes. Conglomerate variable size RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.
- (e) Conglomerate "D" Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP from Class I, Superpave (High or Low ESAL), HMA (High or Low Esal), or equivalent mixtures. The coarse aggregate in this RAP may be crushed or round but shall be at least D quality. This RAP may have an inconsistent gradation and/or asphalt binder content. Conglomerate DQ Rap stockpiles shall not contain steel slag or other expansive material as determined by the Department.
- (f) Non-Quality. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Non-Quality".

RAP 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.

**1031.03 Testing.** When used in HMA, the RAP shall be sampled and tested either during or after 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).

Added 05/28/2009

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 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.

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

- (a) Testing Conglomerate 3/8 and Conglomerate Variable Size. In addition to the requirements above, conglomerate 3/8 and variable size RAP shall be tested for maximum theoretical specific gravity ( $G_{mm}$ ) at a 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).
- (b) Evaluation of 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	Homogeneous/ Conglomerate	Conglomerate "D" Quality
1 in. (25 mm)		± 5 %
3/4 in. (19mm)		
1/2 in. (12.5mm)	± 8 %	± 15 %
No. 4 (4.75 mm)	± 6 %	± 13 %
No. 8 (2.36 mm)	±5 %	
No. 16 (1.18 mm)		± 15 %
No. 30 (600 μm)	± 5. %	
No. 200 (75 μm)	± 2.0 %	± 4.0 %
Asphalt Binder	± 0.4 % <sup>1/</sup>	± 0.5 %
$G_{mm}$	±0.02 % <sup>2/</sup>	
$G_{mm}$	±0.03 % <sup>3/</sup>	

- 1/ The tolerance for conglomerate 3/8 shall be ± 0.3 %.
- 2/ Applies only to conglomerate 3/8. When variation of the  $G_{mm}$  exceeds the ± 0.02 % tolerance, a new conglomerate 3/8 stockpile shall be created which will also require an additional mix design.
- 3/ Applies only to conglomerate variable size. When variation of the  $G_{mm}$  exceeds the ± 0.03 tolerance, a new conglomerate variable size stockpile shall be created which will also require an additional mix design.

Added 05/28/2009

If more than 20 percent of the individual sieves are out of the gradation tolerances, or if more than 20 percent of the asphalt binder content test results fall outside the appropriate tolerances, the RAP shall not be used in HMA unless the RAP 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 Illinois Test Procedure, "Calibration of the Ignition Oven for the Purpose of Characterizing Reclaimed Asphalt Pavement (RAP)".

**1031.04 Quality Designation of Aggregate in RAP.** The quality of the RAP shall be set by the lowest quality of coarse aggregate in the RAP stockpile and are designated as follows.

- (a) RAP from Class I, Superpave (High ESAL), or HMA (High ESAL) surface mixtures are designated as containing Class B quality coarse aggregate.
- (b) RAP from Superpave (Low ESAL)/HMA (Low ESAL) IL-19.0L binder and IL-9.5L surface mixtures are designated as Class D quality coarse aggregate.
- (c) RAP from Class I, Superpave (High ESAL), or HMA (High ESAL) binder mixtures, bituminous base course mixtures, and bituminous base course widening mixtures are designated as containing Class C quality coarse aggregate.
- (d) RAP from bituminous stabilized subbase and BAM shoulders are designated as containing Class D quality coarse aggregate.

**1031.05 Use of RAP in HMA.** The use of RAP in HMA shall be as follows.

- (a) 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.
- (b) Steel Slag Stockpiles. RAP stockpiles containing steel slag or other expansive material, as determined by the Department, shall be homogeneous and will be approved for use in HMA (High ESAL and Low ESAL) surface mixtures only.
- (c) Use in HMA Surface Mixtures (High and Low ESAL). RAP stockpiles for use in HMA surface mixtures (High and Low ESAL) shall be either homogeneous or conglomerate 3/8 or variable size in which the coarse aggregate is Class B quality or better.
- (d) Use in HMA Binder Mixtures (High and Low ESAL), HMA Base Course, and HMA Base Course Widening. RAP stockpiles for use in HMA binder mixtures (High and Low ESAL), HMA base course, and HMA base course widening shall be homogeneous, conglomerate 5/8, or conglomerate 3/8, conglomerate variable size, in which the coarse aggregate is Class C quality or better.
- (e) Use in Shoulders and Subbase. RAP stockpiles for use in HMA shoulders and stabilized subbase (HMA) shall be homogeneous, conglomerate 5/8, conglomerate 3/8, conglomerate variable size, or conglomerate DQ.

Added 05/28/2009

- (f) The use of RAP shall be a contractor's option when constructing HMA in all contracts. When the contractor chooses the RAP option, the percentage of RAP shall not exceed the amounts indicated in the table for a given N Design.

Max Mix Rap Percentage

HMA Mixtures <sup>1/3/</sup>		Maximum % Rap	
Ndesign	Binder/Leveling Binder	Surface	Polymer Modified
30	30/40 <sup>2/</sup>	30	10
50	25/40 <sup>2/</sup>	15/25 <sup>2/</sup>	10
70	25/30 <sup>2/</sup>	10/20 <sup>2/</sup>	10
90	10/15 <sup>2/</sup>	10/15 <sup>2/</sup>	10
105	10/15 <sup>2/</sup>	10/15 <sup>2/</sup>	10

- 1/ For HMA Shoulder and Stabilized Sub-Base (HMA) N-30, the amount of RAP shall not exceed 50% of the mixture.
- 2/ Value of Max % RAP If 3/8 Rap or conglomerate variable size RAP is utilized.
- 3/ When RAP exceeds 20% the AC shall be PG58-22. However, when RAP exceeds 20% and is used in full depth HMA pavement the AC shall be PG58-28.

**1031.06 HMA Mix Designs.** At the Contractor's option, HMA mixtures may be constructed utilizing RAP material meeting the above detailed requirements.

RAP designs shall be submitted for volumetric verification. If additional RAP 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 stockpile and HMA mix design, and meets all of the requirements herein, the additional RAP stockpiles may be used in the original mix design at the percent previously verified.

**1031.07 HMA Production.** The coarse aggregate in all RAP 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, 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 control tolerances or QC/QA test results require corrective action, the Contractor shall cease production of the mixture containing RAP and either switch to the virgin aggregate design or submit a new RAP design. When producing mixtures containing conglomerate 3/8 or conglomerate variable size RAP, a positive dust control system shall be utilized.

HMA plants utilizing RAP shall be capable of automatically recording and printing the following information.

Added 05/28/2009

(a) Drier Drum Plants

- (1) Date, month, year, and time to the nearest minute for each print.
- (2) HMA Mix number assigned by the Department
- (3) Accumulated weight of dry aggregate (combined or individual) in tons (metric tons) Accumulated weight of dry aggregate (combined or individual) in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton)
- (4) Accumulated dry weight of RAP in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton)
- (5) Accumulated mineral filler in revolutions, tons (metric tons), etc. to the nearest 0.1 unit.
- (6) Accumulated asphalt binder in gallons (liters), tons (metric tons), etc. to the nearest 0.1 unit.
- (7) Residual asphalt binder in the RAP material (per size) as a percent of the total mix to the nearest 0.1 unit.
- (8) Aggregate and RAP moisture compensators in percent as set on the control panel (Required when accumulated or individual aggregate and RAP are printed in wet condition).

(b) Batch Plants

- (1) Date, month, year, and time to the nearest minute for each print.
- (2) HMA mix number assigned by the Department.
- (3) Individual virgin aggregate hot bin batch weights to the nearest pound (kilogram)
- (4) Mineral filler weight to the nearest pound (kilogram).
- (5) Individual RAP Aggregate weight to the nearest pound (kilogram).
- (6) Virgin asphalt binder weight to the nearest pound (kilogram)
- (7) Residual asphalt binder of each RAP size 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.

Added 05/28/2009

**1031.08 RAP in Aggregate Surface Course and Aggregate Shoulders.** The use of RAP in aggregate surface course and aggregate shoulders shall be as follows.

- (a) Stockpiles and Testing. RAP stockpiles may be any of those listed in Article 1031.02, except "Other". The testing requirements of Article 1031.03 shall not apply.
- (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."

### **HOT MIX ASPHALT – DENSITY TESTING OF LONGITUDINAL JOINTS (D-1)**

Effective: January 1, 2007

Revised: January 8, 2009

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). This work shall be according to Section 1030 of the Standard Specifications except as follows.

#### Definitions:

Density Test Location: The station location used for density testing.

Density Test Site: Individual test site where a single density value is determined.

Density Reading: A single, one minute nuclear density reading.

Density Value: The density determined at a given density test site from the average of two "density readings".

#### Quality Control / Quality Assurance (QC/QA)

1030.05(d) (3) add the following paragraphs:

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 two inches, from each pavement edge. For Example, on a four inch HMA lift the near edge of the nuclear gauge or core barrel shall be within four inches from the edge of pavement. The remaining 3 density test sites shall be equally spaced between the two edge readings. Documentation shall indicate whether the joint was confined or unconfined.

The joint density value shall be determined using either a correlated nuclear gauge or cores. When using a correlated nuclear gauge, two "density readings" shall be taken at the given density test site. The gauge shall be rotated 180 degrees between "density readings". If the two "density readings" are not within 1.5 lb/cu ft (23 kg/cu m) then one additional "density reading" shall be taken. Additional "density readings" taken at a given site shall not be allowed to replace the original "density readings" unless an error has occurred (i.e. the nuclear gauge was sitting on debris).

Added 05/28/2009

1030.05(d) (4) Replace the density control limits table with the following:

DENSITY CONTROL LIMITS			
Mixture Composition	Parameter	Individual Test <sup>2/</sup>	Minimum Unconfined Test
IL-9.5, IL-12.5	Ndesign ≥ 90	92.0 – 96.0 %	90.0 %
IL-9.5, IL-9.5L, IL-12.5	Ndesign < 90	92.5 – 97.4 %	90.0 %
IL-19.0, IL-25.0	Ndesign ≥ 90	93.0 – 96.0 %	90.0 %
IL-19.0, IL-19.0L, IL-25.0	Ndesign < 90	93.0 – 97.4 %	90.0 %
All Other	Ndesign = 30	93.0 <sup>1/</sup> - 97.4 %	90.0 %

- 1/ 92.0 % when placed as first lift on an unimproved subgrade.
- 2/ “Density values” shall meet the “Individual Test” density control limits specified herein.

**TEMPERATURE CONTROL FOR CONCRETE PLACEMENT (DISTRICT ONE)**

Effective: May 1, 2007

Delete the second and third sentences of the second paragraph of Article 1020.14(a) of the Standard Specifications.

**BITUMINOUS PRIME COAT FOR HOT-MIX ASPHALT PAVEMENT (FULL DEPTH) (D-1)**

Effective: May 1, 2007

Revise Article 407.06(b) of the Standard Specifications to read:

“A bituminous prime coat shall be applied between each lift of HMA according to Article 406.05(b) at a rate of 0.02 to 0.05 gal/sq yd (0.1 to 0.2 L/sq m), the exact rate to be determined by the Engineer.”

Revise the second paragraph of Article 407.12 of the Standard Specifications to read:

“Prime Coat will be paid for at the contract unit price per gallon (liter) or per ton (metric ton) for BITUMINOUS MATERIALS (PRIME COAT).”

**FINE AGGREGATE FOR HOT- MIX ASPHALT (HMA) (D-1)**

Effective: May 1, 2007

Revised: February 5, 2009

Add the following to the gradation tables of Article 1003.01(c) of the Standard Specifications:

FINE AGGREGATE GRADATIONS					
Grad No.	Sieve Size and Percent Passing				
	3/8	No. 4	No. 8	No. 16	No. 200
FM 23	100	6/	6/	8±8	2±2

Added 05/28/2009

FINE AGGREGATE GRADATIONS (metric)					
Grad No.	Sieve Size and Percent Passing				
	9.5 mm	4.75 mm	2.36 mm	1.16 mm	0.075 mm
FM 23	100	6/	6/	8±8	2±2

6/ For the fine aggregate gradations FA 23, the aggregate producer shall set the midpoint percent passing and a range of ± 10% shall be applied. The midpoint shall not be changed without Department approval.

Revise Article 1003.03 (c) of the Standard Specifications to read:

“Gradation. The fine aggregate gradation for all HMA shall be FA1, FA 2, FA 20, FA 21 or FA 23. When Reclaimed Asphalt Pavement (RAP) is incorporated in the HMA design, the use of FA 21 Gradation will not be permitted.

**PAINTING, LIGHT POLE UNIT**

Effective: June 1, 2009

**Description** This item shall consist of painting a light pole unit with a factory applied color selected by the Village from the manufacturer’s options, in accordance with the manufacturer’s recommendations and standard proven practices. The light pole unit shall consist of an aluminum pole & mast arm, luminaire and breakaway device transformer base. The manufacture(s) shall supply a sample of their standard colors and the contractor shall assure that the various components, even if painted separately, will match in color. The color selections shall include black. The painting methods may vary depending on standard practices for each item.

Matching touch up paint shall be furnished to the Engineer. The contractor shall touch-up any paint damage in the field in accordance with manufacturer’s directions, to the satisfaction of the Engineer, using additional touch-up paint, with any surplus also being delivered to the Engineer.

**Method of Measurement** Painting of the light pole unit shall be counted for each light pole unit.

**Basis of Payment** This item shall be paid at the contract unit price each **PAINTING, LIGHT POLE UNIT** which shall be payment in full for work described herein.

Added 05/28/2009