



# Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

June 4, 2008

SUBJECT: FAI Route 80 (I-80)  
Section (32 – 2)RS-3  
Grundy County  
Contract No. 66737  
Item No. 263, June 13, 2008 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. Revised page 1 of the Schedule of Prices.
2. Revised page i of the Table of Contents to the Special Provisions.
3. Revised pages 1, 4 – 14 of the Special Provisions.
4. Revised sheet 3 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,

Eric E. Harm  
Interim Bureau Chief  
Bureau of Design and Environment

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

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

cc: George F. Ryan, Region 2, District 3; Mike Renner; Estimates

TBW:RS:jc

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 66737

State Job # - C-93-016-08  
 PPS NBR - 3-08032-0060  
 County Name - GRUNDY--  
 Code - 63 - -  
 District - 3 - -  
 Section Number - (32-2)RS-3

Project Number \_\_\_\_\_

Route \_\_\_\_\_  
 FAI 80

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
* DELETED							
* X0325536	RAP SET POLY MOD EMUL	GALLON	17,274.800				
X0325702	NIGHT WORK ZONE LIGHT	L SUM	1.000				
* DELETED							
X0325969	PORT VHMNT CH MSS BRD	CAL DA	8.000				
* X0326129	ULTRA THIN HMA CS	SQ YD	101,616.600				
Z0001050	AGG SUBGRADE 12	SQ YD	218.700				
Z0075310	TIE BARS 3/4	EACH	252.000				
21001000	GEOTECH FAB F/GR STAB	SQ YD	218.700				
40600895	CONSTRUC TEST STRIP	EACH	1.000				
40600985	PCC SURF REM BUTT JT	SQ YD	160.000				
44200630	CL A PATCH T2 15	SQ YD	173.300				
44200631	CL A PATCH T3 15	SQ YD	45.300				
44213000	PATCH REINFORCEMENT	SQ YD	218.700				
44213200	SAW CUTS	FOOT	1,510.000				
67100100	MOBILIZATION	L SUM	1.000				
70100205	TRAF CONT-PROT 701401	EACH	1.000				
							* REVISED : JUNE 4, 2008

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## STATE OF ILLINOIS

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### SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted January 1, 2007, 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 FAI 80 (I-80), Section (32-2)RS-3, in Grundy County and in case of conflict with any part or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

Contract #66737

#### LOCATION OF PROJECT

The project begins 0.5 miles east of the Seneca exit to 0.4 miles west of IL 47 (Morris interchange).

#### DESCRIPTION OF PROJECT

The project shall consist of furnishing all labor, materials and equipment necessary to construct an ultra-thin bonded wearing course overlay in the driving and passing lanes of the eastbound mainline pavement. Class A patching will also be performed throughout this section.

#### TRAFFIC CONTROL PLAN

Revised August 15, 2005;

Revised January 1, 2008

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

Special attention is called to the following sections of the Standard Specifications, the Highway Standards, and the special provisions relating to traffic control:

Standard Specifications:

- Section 701 - Work Zone Traffic Control and Protection
- Section 703 - Work Zone Pavement Marking
- Section 781 - Raised Reflective Pavement Markers
- Section 783 - Pavement Marking and Marker Removal

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The Changeable Message Boards shall be capable of providing three lines of 8" characters and up to 8 characters per line.

The Contractor shall equip the truck with a flashing amber dome light or strobe light, as approved by the Resident Engineer, installed so the illumination is visible from all directions.

The Contractor shall provide an operator to remain with the vehicle at all times the message board will be in use including set up and transport.

This vehicle shall be fitted with a truck mounted crash attenuator and should have an actual weight of no less than 11,000 pounds and no greater than 26,000 pounds. Higher weights may be used when approved by the TMA manufacture. The truck shall be positioned prior to the start of the lane closure taper and prior to any stopped traffic on the interstate or as directed by the Resident Engineer. This work shall be paid for at the contract unit prices per calendar day when utilized.

### **PAVEMENT MARKING REMOVAL/WORK ZONE PAVEMENT MARKING REMOVAL**

Effective August 15, 2005;

Revised January 1, 2007

Description. This work shall consist of removing all permanent or work zone pavement markings by hydro-blasting according to the applicable portions of Sections 783 and 703 of the Standard Specifications and as described herein. Pavement marking tape type III may be peeled or burned off; however, all remnants or burn marks shall be hydro-blasted.

Removal Requirements. Work zone pavement markings shall be removed according to the applicable portions of Section 783 of the Standard Specifications and as modified herein.

Add the following paragraph to Article 783.03(a) of the Standard Specifications.

A high pressure water spray or "hydro-blast" shall be used during the removal; the pressure at the nozzle shall be approximately 25,000 psi (172,000 kPa) with maximum flow rate of 15 gal/min (56 L/min). The nozzle shall be in close proximity to the pavement surface.

### **PLASTIC DRUMS**

Effective August 15, 2005;

Revised January 1, 2008

Plastic drums according to Standard 701901 with steady burning lights shall be used in lieu of cones, Type I and Type II barricades, and vertical barricades throughout lane closures.

### **ULTRA-THIN BONDED WEARING COURSE (BMPR)**

Effective: July 25, 2006

Revised: June 1, 2008

Description. This work shall consist of constructing an ultra-thin bonded wearing course on existing hot-mix asphalt (HMA) or portland cement concrete pavement. An ultra-thin bonded

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wearing course consists of an application of a rapid setting polymer modified emulsion followed immediately with an ultra-thin HMA surface course. This work shall be according to Section 406 of the Standard Specifications, except as modified herein.

Materials. Materials shall be according to the following.

Item	Article/Section
(a) Fine Aggregate .....	1003.03
(b) Coarse Aggregate .....	1004
(c) Performance Graded Asphalt Binder (Note 1) .....	1032
(d) Mineral Filler .....	1011
(e) Rapid Setting Polymer Modified Emulsion (Note 2)	

Note 1. The bituminous material shall conform to Article 1032.05 of the Standard Specifications for an SBR or SBS PG 70-22.

Note 2. The supplier shall certify that the rapid setting polymer modified emulsion meets the following requirements, prior to the start of mix production.

Tests on Emulsion	Method	Min.	Max.
Viscosity, Saybolt Furol @ 77 °F (25 °C), s	AASHTO T59	20	100
Storage Stability Test, 24 h, % <sup>1/</sup>	AASHTO T59	--	1
Sieve Test <sup>2/</sup>	AASHTO T59	--	0.05
Residue by Distillation, % <sup>3/</sup>	AASHTO T59	63	
Oil Distillate by Distillation, %	AASHTO T59	--	2
Demulsibility, % 35 ml, 0.02 N CaCl <sub>2</sub> <u>or</u> 35 ml, 0.8% dioctyl sodium sulfosuccinate	AASHTO T59	60	--

Tests on Residue From Distillation	Method	Min.	Max.
Penetration	AASHTO T49	60	150
Elastic Recovery, %	AASHTO T301	60	--

1/ After standing undisturbed for 24 hours, the surface shall show no white, milky colored substance, but shall be a smooth homogeneous color throughout. The material may be released prior to completion of the test based on approval of the Department.

2/ The sieve test will be waived if successful application of the material has been achieved in the field.

3/ AASHTO T59 with modifications to include a 375 °F ± 10 °F (190 °C ± 5 °C) maximum temperature to be held for a period of 15 minutes.

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Equipment. Equipment shall be according to the following.

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

Note 1. A minimum of two tandem rollers ( $T_B$ ), operating in the static mode, sufficient to match paving production will be required. The rollers shall have a properly operating water spray and scraper system.

Note 2. The spreading and finishing machine shall be capable of spraying the rapid setting polymer modified emulsion, applying the surface course, and providing a smooth surface to the mat in one pass at the rate of 30 ft/min (9 m/min) or greater. The surface course shall be spread over the rapid setting polymer modified emulsion in less than five seconds after the application of the rapid setting polymer modified emulsion during normal paving speeds. No wheel or other part of the paving machine shall come in contact with the rapid setting polymer modified emulsion before the surface course is applied. The self-priming paving machine shall also have the following:

- (1) a receiving hopper with a minimum of two heated twin screw feed augers,
- (2) an integral storage tank for rapid setting polymer modified emulsion,
- (3) integral twin expandable emulsion spray bars located immediately in front of the asphalt spread augers and ironing screed,
- (4) variable width vibratory heated ironing type screed. The screed shall have the ability to be crowned at the center both positively and negatively and have vertically adjustable extensions to accommodate the desired pavement profile.

Mixture. A mix design meeting the following design criteria shall be supplied.

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SIEVES	#4 – Type A		3/8 in. - Type B		1/2 in. - Type C	
	Design General Limits, % Passing	Production Tolerance, %	Design General Limits, % Passing	Production Tolerance, %	Design General Limits, % Passing	Production Tolerance, %
3/4 in.	--	--	--	--	100	--
1/2 in.	--	--	100	--	85 - 100	--
3/8 in.	100	±5	85 - 100	±5	60 - 80	±5
#4	40 - 55	±5	24 - 41	±5	24 - 41	±5
#8	22 - 32	±5	19 - 32	±5	19 - 32	±5
#16	15 - 25	--	12 - 22	--	12 - 22	--
#30	10 - 18	--	9 - 16	--	9 - 16	--
#50	8 - 13	--	7 - 13	--	7 - 13	--
#100	6 - 10	--	5 - 10	--	5 - 10	--
#200	4 - 5.5	±1.5	4 - 5.5	±1.5	4 - 5.5	±1.5
Asphalt Content	4.8 - 6.2	±0.3	4.8 - 6.2	±0.3	4.6 - 6.2	±0.3

SIEVES	4.75 mm - Type A		9.5 mm - Type B		12.5 mm - Type C	
	Design General Limits, % Passing	Production Tolerance, %	Design General Limits, % Passing	Production Tolerance, %	Design General Limits, % Passing	Production Tolerance, %
19 mm	--	--	--	--	100	--
12.5 mm	--	--	100	--	85 - 100	--
9.5 mm	100	±5	85 - 100	±5	60 - 80	±5
4.75 mm	40 - 55	±5	24 - 41	±5	24 - 41	±5
2.36 mm	22 - 32	±5	19 - 32	±5	19 - 32	±5
1.18 mm	15 - 25	--	12 - 22	--	12 - 22	--
600 µm	10 - 18	--	9 - 16	--	9 - 16	--
300 µm	8 - 13	--	7 - 13	--	7 - 13	--
150 µm	6 - 10	--	5 - 10	--	5 - 10	--
75 µm	4 - 5.5	±1.5	4 - 5.5	±1.5	4 - 5.5	±1.5
Asphalt Content	4.8 - 6.2	±0.3	4.8 - 6.2	±0.3	4.6 - 6.2	±0.3

The film thickness of the asphalt coating on the rock shall be a minimum of 0.35 mils (9 µm) when calculated using the effective asphalt content in conjunction with the surface area for the aggregates in the job mix formula according to the following method.

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Formula: 
$$T_F = \frac{V_{asp}}{\sum [(SA_i)(W_i)]}$$

Where:  $T_F$  = Average film thickness, in. (microns)  
 $V_{asp}$  = Effective volume of asphalt cement, cu in. (cu cm)  
 SA = Surface Area Factor, sq ft/lb of aggregate (sq m/kg of aggregate)  
 W = Weight of aggregate retained on sieve, lb (kg)  
 i = Particular sieve

Surface area factors:

Sieve size	Surface Area (SA) Factors, sq ft/lb (sq m/kg)
Percent passing maximum sieve size	2 (0.41)
1/2 in. (12.5 mm)	2 (0.41)
3/8 in. (9.5 mm)	2 (0.41)
No. 4 (4.75 mm)	2 (0.41)
No. 8 (2.36 mm)	4 (0.82)
No. 16 (1.18 mm)	8 (1.64)
No. 30 (600 $\mu$ m)	14 (2.87)
No. 50 (300 $\mu$ m)	30 (6.14)
No. 100 (150 $\mu$ m)	60 (12.29)
No. 200 (75 $\mu$ m)	160 (32.77)

The mixing and compaction temperatures shall be according to Illinois Modified AASHTO T 312.

Draindown from the loose mixture shall not exceed 0.10 percent when tested according to Illinois Modified AASHTO T 305. The draindown shall be tested at the job mix formula asphalt content plus 0.5 percent. The temperature shall be the mixing temperature plus 59 °F (15 °C). The temperature shall not exceed 350 °F (180 °C).

The mixture designer shall determine if an additive is needed in the mix to prevent stripping according to Article 1030.04(c).

The mixture shall not contain reclaimed materials.

## CONSTRUCTION REQUIREMENTS

General. Article 406.06(b) of the Standard Specifications shall apply, except the mixture shall only be placed when the pavement and ambient air temperature are at least 50 °F (10 °C) at the time of placement and the forecast is for rising temperatures.

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Preparation of Existing Surfaces. Prior to placing the ultra-thin bonded wearing course, the surface of the existing pavement shall be cleaned using a mechanical or vacuum sweeper.

Longitudinal and transverse joints and cracks 1/4 in. (6 mm) and wider shall be sealed using an approved polymer modified joint filler material. Overbanding shall be avoided.

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

Mix Formula. The proportions of the mix shall be within the following compositions limits by weight:

Aggregate	93.8 - 95.4%
Asphalt Binder (Note 1)	4.6 - 6.2%

Note 1. The range of asphalt content is based on the varying physical properties of the coarse aggregate that can be used for the manufacture of ultra-thin bonded wearing course. The amount of anti-stripping agent will not be included in this percentage.

Placement of Emulsion and Surface Course. The rapid setting polymer modified emulsion shall be spray applied immediately prior to the application of the surface course so that no wheel or other part of the paving machine shall come in contact with the rapid setting polymer modified emulsion before the surface course is applied. The process of spreading the rapid setting polymer modified emulsion, spreading the surface course, and screed compacting shall be performed in under five seconds during normal paving speeds resulting in a homogeneous surface course that can be opened to traffic when the surface temperature of the mat is 160 °F (70 °C) or less.

- (a) The rapid setting polymer modified emulsion shall be sprayed by a metered mechanical pressure spray bar at a temperature of 120 - 180 °F (50 - 80 °C). The sprayer shall accurately and continuously monitor the rate of spray and provide a uniform application across the entire width to be overlaid. The rate of application shall be determined by the mix design according to the following method.
  - (1) Summary of method. The quantity of polymer modified emulsion to be applied shall be calculated based on the volumetrics of laboratory specimens and the nominal maximum aggregate size of the mix. The in-place air voids of the mixture shall be filled to 70 percent of the height of the nominal maximum aggregate size.
  - (2) Determination of In-Place Air Voids. Two 6-in. (150-mm) specimens shall be prepared according to AASHTO T 312 to 80 gyrations. The percent air voids shall be determined according to AASHTO T 269. The air void determination shall be the average of the two specimens. 2.5 percent air voids shall be added to the lab determined air voids to approximate in-place air voids.

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- (3) Calculation. Calculate the volume of 1 sq yd (1 sq m) of mix at a depth of 70 percent of the nominal maximum aggregate size. Multiply the volume of mix at the 70 percent height of the maximum aggregate size times the percent of in-place air voids as determined by the specimen previous section. Convert the volume to gal (L). Express the result in gal/sq yd (L/sq m).

The Engineer will make field adjustments to the calculated application rate no greater than  $\pm 0.05$  gal/sq yd ( $\pm 0.25$  L/sq m) based on the existing surface condition. Once the target application rate is established, the tolerance shall be  $\pm 0.01$  gal/sq yd ( $\pm 0.05$  L/sq m).

- (b) The maximum speed of the paver shall not be limited.

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

Quality Control/Quality Assurance. Material testing shall be according to Article 1030.05, except the following tests will not be required.

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

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

Method of Measurement. The rapid setting polymer modified emulsion will be measured for payment as specified in Section 1032.

The ultra-thin HMA surface course will be measured in place and the area computed in square yards (square meters). The measured width shall not exceed that shown on the plans.

Basis of Payment. The rapid setting polymer modified emulsion will be paid for at the contract unit price per gallon (liter) for RAPID SETTING POLYMER MODIFIED EMULSION.

The ultra-thin HMA surface course will be paid for at the contract unit price per square yard (square meter) for ULTRA-THIN HMA SURFACE COURSE.

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