Iowa Department of Transportation

**SPECIAL PROVISIONS**
**FOR**
**REFLECTIVE CRACK DELAY SYSTEM**

**Cerro Gordo County**
**IMX-035-7(69)194--02-17**

**Effective Date**
**May 15, 2012**

**THE STANDARD SPECIFICATIONS, SERIES 2009, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS AND APPLICABLE DEVELOPMENTAL SPECIFICATIONS.**

## 090201.01 DESCRIPTION.

**A.** These special provisions apply to the North-bound lanes only. Bottom lift in passing lane shall be a 1 inch thick layer of HMA with crack resistant qualities. Design, produce, and place base layer with the following supplemental requirements:

**B.** Mill to a depth of 4 inches in passing lane and 3 inches in driving lane and pave as follows:

| **Passing Lane** (mill 4 inches) | **Driving Lane** (mill 3 inches) |
|---|---|
| 1.5 inches (1/2 HMA 30M S L-2) | 1.5 inches (1/2 HMA 30M S L-2) |
| 1.5 inches (1/2 HMA 30M INT) | 1.5 inches (1/2 HMA 30M INT) |
| 1 inches (*3/8 HMA 30M B) | |
| Existing | |

*Base mix design is modified below

## 090201.02 MATERIALS.

**A. Asphalt Binder.**

- Surface: PG+ 64-28
- Intermediate: PG+ 64-28
- Interlayer (Base): PG+ 64-34

**B. Base Mix Design.**
Use a 3/8 inch HMA 30M ESAL Base mix with the following modifications:

**1.** Ndesign = 50, $N_{initial}$ and $N_{max}$ will not apply.

**2.** Design Target Air Voids = 0.5% minimum to 2.0% maximum.

**3.** Minimum VMA = 16%.

**4.** VFA = 70-95%.

**5.** Gradation:

| Sieve | Sieve |
|---|---|
| 3/8-inch | 100% |
| No. 4 | 80-100% |
| No. 8 | 60-85% |
| No. 16 | 40-70% |
| No. 30 | 25-55% |
| No. 50 | 15-35% |
| No. 100 | 8-20% |
| No. 200 | 6-14% |

**6.** Do not use Recycled Asphalt Materials.

**7.** No maximum film thickness.

**8.** No minimum filler/bitumen ratio.

**C.** Mix Approval is based on the following performance testing requirements:

**1.** AASHTO T 321, Flexural Beam Fatigue Device.
- **a.** Failure criterion shall be 50% of initial flexural stiffness measured at 200$^{th}$ load cycle.
- **b.** Minimum 100,000 cycles to failure at 2,000 microstrain.
- **c.** An alternate binder grade may be selected by Contractor to meet above criterion as long as it exceeds performance grade specified on the contract.

**2.** Base layer may be exposed to traffic if mixture design meets the following testing criteria for AASHTO T 324, Hamburg Wheel Tracking Device.
- **a.** Test temperature = 50°C.
- **b.** Minimum number of passes to 12 mm rut depth > 10,000 (Average the rut depths measured at each position per pass).
- **c.** Traffic shall not be allowed for more than 3 total days on base mix. If more than 3 mm of rutting is observed, remove traffic until intermediate lift can be placed.

**090201.03 CONSTRUCTION.**

**A.** Tack milled and cleaned surface prior to placement of interlayer. Apply second tack coat prior to placement of intermediate layer.

**B.** Compact with static steel wheeled roller unless otherwise approved by Engineer.

**090201.04 QUALITY ASSURANCE/QUALITY CONTROL.**
For interlayer, acceptance for laboratory voids will be based on a moving absolute average deviation (AAD) from target as defined in Materials I.M. 501. Use production tolerance in Table 2303.03-5.

For interlayer, the lower specification limit for field voids of 3.5% will not apply.

**090201.05 RESEARCH SAMPLING.**
Provide advanced notification of mixture placement to the Engineer such that research sampling can be coordinated. Provide safe access to research personnel at plant and on the grade to collect samples.