# Wisconsin Department of Transportation

**Division of Transportation Systems Development**
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*February 28, 2023*

## NOTICE TO ALL CONTRACTORS:

**Proposal #05:**

**5030-01-72**
**Hillsboro - Reedsburg**
**V Wonewoc S Limits to Main Street**
**STH 33**
**Juneau and Sauk County**

**5030-01-73, WISC 2023271**
**Hillsboro – Reedsburg**
**La Valle Street to Preston Avenue**
**STH 33**
**Sauk County**

**5030-01-74**
**Reedsburg - Baraboo**
**Preston Avenue to STH 23**
**STH 33**
**Sauk County**

## Letting of March 14, 2023

This is Addendum No. 01, which provides for the following:

**Special Provisions:**

| **Added** Special Provisions | |
|---|---|
| Article No. | Description |
| 30 | HMA Pavement Balanced Mix Design |

The responsibility for notifying potential subcontractors and suppliers of these changes remains with the prime contractor.

Sincerely,

*Mike Coleman*

Proposal Development Specialist
Proposal Management Section

**ADDENDUM NO. 01**

**5030-01-72**

**February 28, 2023**

**Special Provisions**

## 30. HMA Pavement Balanced Mix Design.

### A Description

Conform to standard specification 450 and 460 except as modified in this special provision.

This special provision incorporates balanced mix design (BMD) into the mix design procedures specified in standard specification 460. This specification applies to the primary upper layer mixture under the following bid item: 460.6224. Mix designs will be tested by the Hamburg Wheel-Track Test (HWT) according to AASHTO T 324 as modified by CMM 836.6.10.1 and the Indirect Tensile Cracking Test at Intermediate Temperature (CT-Index) according to ASTM D8225 as modified by CMM 836.6.10.2.

### B Materials

*Add the following to standard specification 460.2.1:*

(4) Proposed additives or alternative materials must be submitted with the mix design submission along with samples of all other mix design materials.

*Replace standard specification 460.2.3 with the following:*

(1) The department will designate the grade of asphaltic binder in the HMA Pavement bid item. The virgin binder grade designation may be different than what is specified by the department in the pay item, however, the resultant modified binder's grade must be at least that of which is specified by the bid item. The contractor may use virgin binder, modified binder, a blend of virgin and recycled binder, or a blend of modified and recycled binder to meet or exceed the upper and lower temperature grade requirements designated by the department in the bid item.

*Replace standard specification 460.2.6 with the following:*

(2) The contractor may replace virgin binder with recovered binder up to the maximum percentage allowed under 460.2.5 without further testing. When the design percent asphalt binder replaced exceeds the allowable limits in 460.2.5, the contractor must document in the mix design submittal adjustments made and provide test results from extracted and recovered binder indicating that the mixture's asphaltic binder meets or exceeds the upper and lower temperature grade requirements designated by the department in the bid item.

*Append table 460-2 with the following:*

**TABLE 460-2 Addendum**

| Binder Designation Level[1] | S | H | V | E |
|---|---|---|---|---|
| Hamburg Wheel Tracking<br>(AASHTO T 324 as modified in CMM 836.6.10.1)<br>Passes to 12.5mm rut depth<br>Stripping Inflection Point | <br><br>10,000<br>8,000 | <br><br>15,000<br>8,000 | <br><br>20,000<br>8,000 | <br><br>20,000<br>8,000 |
| IDEAL-CT[2]<br>(ASTM D8225 as modified in CMM 836.6.10.2)<br>CT-Index | 30 | 30 | 30 | 30 |

[1] Asphalt binders will be tested against the contract specified traffic level performance requirements, which may not be the same traffic level as classified by AASHTO M332.

[2] For SMA mixtures increase the CT-Index to 80 for all binder designation levels.

*Add the following to standard specification 460.2.8.2.1.3.1:*

(7) During the first 10,000 tons of production, the department will collect additional material along with the standard QV sample to verify conformance with the prescribed performance specifications herein for informational purposes.

*Append CMM table 866-2 with the following:*

| HMA TEST | TEST PROCEDURE |
|---|---|
| Hamburg Wheel-Track Testing of Compacted Asphalt Mixtures | WisDOT-modified AASHTO T 324 |
| Indirect Tensile Cracking Test at Intermediate Temperature | WisDOT-modified ASTM D8225 |

*Modify the following in CMM 866.2.2:*

5. Complete a mix design report identifying materials used and summarizing volumetric and performance properties in meeting required specifications in 866.2.4.

*Modify the following in CMM 866.2.4.2:*

Mixture Properties (3.0% “Air-Void Regression” asphalt binder content):

- Binder content, % (Pb).
- Maximum specific gravity (Gmm).
- Bulk specific gravity (Gmb).
- Air voids, % (Va)
- VMA (voids of the mineral aggregate), %.
- VFB (voids filled with binder) also called VFA (voids filled with asphalt), %.
- TSR (tensile strength ratio).
- TSR Compaction Effort (N = “x”).
- Hamburg Wheel-Track Test
    - Passes to 12.5mm rut depth
    -Stripping Inflection Point
- IDEAL-CT
    - CT-Index

*Append Table 866-4 with the following:*

| Test | Allowable Difference |
|---|---|
| Hamburg Wheel-Track Testing of Compacted Asphalt Mixtures | N/A |
| Indirect Tensile Cracking Test at Intermediate Temperature | N/A |

*Add the following in CMM 866.2.5.1:*

The department's performance test results for the Hamburg Wheel-Track Test and IDEAL-CT will be used for informational purposes only to determine reproducibility tolerances and will not be used to reject mix designs that are less than the values in standard specification 460.2, table 460-2 (including the addendum herein).

*Modify the following to CMM 866.2.5.2:*

This process requires submittal of the mix design summary report and blended aggregates representing the mix design job mix formula (JMF). The contractor needs to submit materials to the department a minimum of 10 working days before paving.

- The contractor must include four 6800g (15 lb) batches of the blended aggregate, representing the mix design JMF, (inclusive of any components containing recycled asphaltic materials or stabilizing agents) and either three full 1-quart containers or one full 1-gallon container of design PG binder. Virgin blended aggregate is submitted separately from RAM and both must be dried before sending to BTS. The contractor must also include three 16000 g (approx. 35 lb) batches of unaged, batched HMA material representing the JMF for the department performance testing described herein.
- BTS may request individual aggregate/RAM samples for each component and either three full 1-quart containers or one full 1-gallon container of the design PG binder in place of the composite aggregate samples.

**C (Vacant)**

**D (Vacant)**

**E Payment**

Costs for all sampling, testing, and documentation required under this special provision are incidental to the work.

END OF ADDENDUM