MINUTES
OF
IOWA DOT SPECIFICATION COMMITTEE MEETING

April 14, 2016

Members Present:	Darwin Bishop	District 3 - Construction
	Mark Brandl	District 6 - Davenport RCE
	Donna Buchwald	Office of Local Systems
	Jeff Devries	District 1 - Materials
	Eric Johnsen, Secretary	Specifications Section
	Wes Musgrove	Office of Contracts
	Gary Novey	Office of Bridges & Structures
	Tom Reis, Chair	Specifications Section
	Brian Smith	Office of Design
	Willy Sorensen	Office of Traffic & Safety
Members Not Present:	Charlie Purcell	Project Delivery Bureau
	Greg Mulder	Office of Construction & Materials
Advisory Members Present:	Lisa McDaniel	FHWA
Others Present:	Todd Hanson	Office of Construction & Materials
	Dan Redmond	District 4 - Construction
	Scott Schram	Office of Construction & Materials

Tom Reis, Specifications Engineer, opened the meeting. The following items were discussed in accordance with the agenda dated April 4, 2016:

The agenda is as follows:

1. Article 2102.04, A, 8, Contractor Furnished Select Treatment.

The Office of Design requested to clarify that the quantity for contractor furnished select treatment does not include shrinkage.

2. Article 2304.02, A, PCC Option.

The Office of Design requested to add specifications for long term detour pavement.

3. Section 2401, Removal of Existing Structures.

The Office of Construction and Materials requested to update the DNR requirements for removal of an existing bridge.

4. Article 2513.03, A, 2, b, 2, Concrete Barrier.

The Office of Construction and Materials requested to update the specification due to Materials I.M. changes.

5. **Article 2602.03, M, Mobilizations, Emergency Erosion Control.**

The Office of Design requested to identify which projects should include Mobilizations, Emergency Erosion Control.

6. **Section 4108, Supplementary Cementitious Materials.**

The Office of Construction and Materials requested to add specifications for natural pozzolans, a new supplementary cementitious material.

7. **Article 4160.01, General Requirements.**
Article 4161.03, B, 6, Handling Treated Products.
Article 4161.03, B, 7, b, Product Marking.
Article 4164.01, A, General Requirements.

The Office of Construction and Materials requested to update the treated wood specifications to meet current AWPA standards.

8. **Article 2116.02, A, 1, b, Full Depth Reclamation.**
Article 2122.02, A, Hot Mix Asphalt Mixture (1,000,000 ESAL Base Mixture).
Article 2213.02, A, 1, Asphalt Base Widening.
Section 2303, Flexible Pavement.
Article 2304.02, B, HMA Option.
Article 2310.02, B, Hot Mix Asphalt Stress Relief Course.
Article 2318.02, A, 2, Cold In-Place Recycled Pavement.
Article 2511.02, B, Hot Mix Asphalt.
Article 2517.02, B, HMA Paving Projects.
Article 2529.02, A, Hot Mix Asphalt Mixture.
Article 2530.02, A, Hot Mix Asphalt Patching Material.
Article 2540.02, Materials.
Article 2543.02, A, Transverse Joint Repair for HMA Pavements.
Section 4137, Asphalt Binder.

The Office of Construction and Materials requested to update asphalt specifications due to the adoption of AASHTO M 332.

9. **DS-15024, Hot Mix Asphalt Interlayer.**

The Office of Construction and Materials requested revisions to the Developmental Specifications for Hot Mix Asphalt Interlayer and to make the DS into an SS.

10. **DS-15037, High Performance Thin Lift Overlay.**

The Office of Construction and Materials requested revisions to the Developmental Specifications for High Performance Thin Lift Overlay.

11. **Article 1107.06, B, Buy America.**

The Office of Construction and Materials requested to address changes to Buy America provisions due to a recent court decision.

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SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Brian Smith	**Office:** Design	**Item 1**
Submittal Date: 3/22/2016	**Proposed Effective Date:** 10/18/2016	
Article No.: 2102.04, A, 8 **Title:** Roadway and Borrow Excavation	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 4/14/2016	**Effective Date:** 10/18/2016

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: The District 6 Office asked if this was consistent with other borrow items. The Office of Design indicated that all other Contractor provided borrow materials include this language, because the designer doesn't know what the Contractor's materials will be. Borrow items without this language would have shrinkage included.

Specification Section Recommended Text:

2102.04, A, 8, Contractor Furnished Select Treatment.

Add as the second sentence:

Shrinkage will not be included in the quantity.

Comments:

Member's Requested Change: (Do not use '**Track Changes**', or '**Mark-Up**'. Use ~~**Strikeout**~~ and **Highlight**.)

2102.04, A, 8, Contractor Furnished Select Treatment.

Add as the second sentence:

8. Contractor Furnished Select Treatment.

Shrinkage will not be included in the quantity.

Reason for Revision: Clarify shrinkage is not included in contractor furnished select treatment quantities.

New Bid Item Required (X one)	**Yes**	**No** X
Bid Item Modification Required (X one)	**Yes**	**No** X
Bid Item Obsoletion Required (X one)	**Yes**	**No** X

Comments:

County or City Comments:

Industry Comments:

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IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Brian Smith	**Office:** Design	**Item 2**
Submittal Date: 2/22/2016	**Proposed Effective Date:** 10/18/2016	
Article No.: 2304.02, A **Title:** PCC Option	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 4/14/2016	**Effective Date:** 10/18/2016

Specification Committee Approved Text:

2304.02, A, PCC Option.

Replace the title and **Add** the Article:

A. ~~PCC~~ Portland Cement Concrete Option.

3. For detour pavement left in place, meet requirements of Section 2301 for Class C PCC Pavement. Use Class 3 durability aggregate, or better, as defined in Article 4115.04.

Comments: The acronym PCC was spelled out in the title.

Specification Section Recommended Text:

2304.02, A, PCC Option.

Add the Article:

3. For detour pavement left in place, meet requirements of Section 2301 for Class C PCC Pavement. Use Class 3 durability aggregate, or better, as defined in Article 4115.04.

Comments:

Member's Requested Change: (Do not use **'Track Changes'**, or **'Mark-Up'**. Use **~~Strikeout~~** and **Highlight**.)

2304.02, A, PCC Option.

Add as a new article:

3. For detour pavement left in place, meet the requirements of Section 2301 for Class C PCC Pavement. Use Class 3 durability aggregate, or better, as defined in Article 4115.04.

Reason for Revision: Add specifications for detour pavement left in place. This is pavement that is intended to be left in place longer than normal detour pavement.

New Bid Item Required (X one)	**Yes**	**No** X
Bid Item Modification Required (X one)	**Yes**	**No** X
Bid Item Obsoletion Required (X one)	**Yes**	**No** X

Comments:

County or City Comments:

Industry Comments:

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Greg Mulder	**Office:** Construction & Materials	**Item 3**
Submittal Date: March 28, 2016	**Proposed Effective Date:** October 2016 GS	
Section No.: 2401 **Title:** Removal of Existing Structures	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 4/14/2016	**Effective Date:** 10/18/2016

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: The Office of Contracts will no longer provide the form to the Contractor, they will have to get the form from the website as stated.

The Office of Contracts indicated that the Department would like to get away from having the Contractor submit this form to the Iowa DNR and handle this internally. This form is only applicable on projects with no asbestos or where the asbestos has already been removed by the Contracting Authority.

There was some question as to the application of this form on a project with partial removals, such as a bridge deck overlay, especially since the form title now includes "and Renovation". Per past practice, this form is only applicable to bridges being completely removed, which is consistent with the Article title, Notification for Complete Removal of Bridges.

Specification Section Recommended Text:

2401.03, A, Notification for Complete Removal of Bridges.

Replace the Article:

1. Notify the Iowa DNR ~~by mail and the Engineer,~~ with the "Asbestos Notification of Bridge Demolition and Renovation" form, no less than 10 business days prior to the start of bridge demolition. Iowa DNR form is available at http://www.iowadnr.gov/Environmental-Protection/Air-Quality/Asbestos-Training-Fires. Provide a copy of the submitted form to the Engineer.

2. If unable to begin work on the original intended start date, notify the Iowa DNR and the Engineer, by sending a revised "Asbestos Notification of Bridge Demolition and Renovation" form, of the new intended start date. Provide notification of the inability to commence work on the intended start date no later than 1 business day prior to the original intended start date. Failure to notify the Engineer of a change in start date 1 business day prior to the original intended start date will result in the need for a new 10 business day notification to the Iowa DNR and the Engineer.

3. The Contracting Authority has inspected the existing bridge for asbestos. Unless otherwise indicated in the contract documents, no asbestos was found, or it has been removed prior to the letting. The Contractor may use this information to complete the "Asbestos Notification of Bridge Demolition and Renovation" form.

2401.05, Basis of Payment.

Add the Article:

C. Payment for Removal of Existing Bridge is full compensation for submittal of Asbestos Notification of Bridge Demolition form(s) and associated fees to Iowa DNR, removal of bridge according to contract documents, and transporting and disposal of materials.

Comments:

Member's Requested Change: (Do not use **'Track Changes'**, or **'Mark-Up'**. Use ~~**Strikeout**~~ and **Highlight**.)

2401.03 CONSTRUCTION.

A. Notification for Complete Removal of Bridges.

1. Notify the Iowa DNR ~~by mail and the Engineer,~~ with the "Asbestos Notification of Bridge Demolition and Renovation" form, no less than 10 business days prior to the start of bridge demolition. The Iowa DNR form is available at http://www.iowadnr.gov/Environmental-Protection/Air-Quality/Asbestos-Training-Fires. Provide copy of submitted form to the Engineer.

2. If unable to begin work on the original intended start date, notify the Iowa DNR and the Engineer, by sending a revised "Asbestos Notification of Bridge Demolition and Renovation" form, of the new intended start date. Provide notification of the inability to commence work on the intended start date no later than 1 business day prior to the original intended start date. Failure to notify the Engineer of a change in start date 1 business day prior to the original intended start date will result in the need for a new 10 business day notification to the Iowa DNR and the Engineer.

3. The Contracting Authority has inspected the existing bridge for asbestos. Unless otherwise indicated in the contract documents, no asbestos was found, or it has been removed prior to the letting. The Contractor may use this information to complete the "Asbestos Notification of Bridge Demolition and Renovation" ~~"Notification of Demolition"~~ form.

2401.04 METHOD OF MEASUREMENT.

Lump sum. No method of measurement.

2401.05 BASIS OF PAYMENT.

A. When the contract includes an item for Removal of Existing Structures, payment will be the Lump Sum contract price. When provisions in the contract documents do not cover payment for removal of a structure, including encased culvert pipe, footings, or other unforeseen obstacles to be removed, payment for their removal will include placement of backfill material made necessary by their removal. This payment will be as provided in Article 1109.03, B.

B. The payment for removal of an existing structure is full compensation for:

- Furnishing all material, equipment, and labor and for performance of all work necessary for removal of the old structure from the project, and
- Placement of backfill material made necessary by these operations, and
- If the existing structure will become the property of the Contracting Authority, payment for proper storage, salvage, and delivery of the structure will be according to Section 2555.

C. Payment for "Removal of Existing Bridge" is full compensation for submittal of Asbestos Notification of Bridge Demolition form(s) and associated fees to Iowa DNR, removal of bridge according to contract documents, and transporting and disposal of materials.

Reason for Revision: Iowa DNR revised the Notification of Bridge Demolition form and imposed fees effective Jan 15, 2016.

New Bid Item Required (X one)	**Yes**	**No** X
Bid Item Modification Required (X one)	**Yes**	**No** X
Bid Item Obsoletion Required (X one)	**Yes**	**No** X
Comments:		
County or City Comments:		
Industry Comments:		

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SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Greg Mulder	**Office:** Construction & Materials	**Item 4**
Submittal Date: February 2016	**Proposed Effective Date:** October 2016	
Article No.: 2513.03, A, 2, b, 2) **Title:** Aggregates for Class BR (Concrete Barrier)	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 4/14/2016	**Effective Date:** 10/18/2016

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: None.

Specification Section Recommended Text:

2513.03, A, 2, b, 2).

Replace the Article:

Aggregates for Class BR. Use a well graded combination of aggregates complying with Materials I.M. 532 ~~in Zone II-A or II-B~~. Meet requirements in Division 41 for each individual aggregate used.

Comments:

Member's Requested Change: (Do not use '**Track Changes**', or '**Mark-Up**'. Use ~~**Strikeout**~~ and **Highlight**.)

3) **Aggregates for Class BR.** Use a well graded combination of aggregates complying with Materials I.M. 532 in Zone II~~-A or II-B~~. Meet requirements in Division 41 for each individual aggregate used.

Reason for Revision: The various zones (II-A to II-D) in IM 532 will be eliminated with the latest QMC DS revision. Since the various zones will be eliminated, this change is needed to reflect the changes in IM 532.

New Bid Item Required (X one)	**Yes**	**No** X
Bid Item Modification Required (X one)	**Yes**	**No** X
Bid Item Obsoletion Required (X one)	**Yes**	**No** X

Comments:

County or City Comments:

Industry Comments:

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SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Brian Smith	**Office:** Design	**Item 5**
Submittal Date: 3/22/2016	**Proposed Effective Date:** 10/18/2016	
Article No.: 2602.03, M **Title:** Mobilizations, Emergency Erosion Control	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 4/14/2016	**Effective Date:** 10/18/2016

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: None.

Specification Section Recommended Text:

2602.03, M, Mobilizations, Emergency Erosion Control.

Add as the first sentence:

Mobilizations, Emergency Erosion Control, applies to projects not identified as erosion control or landscaping and containing a Storm Water Pollution Prevention Plan (SWPPP).

Comments:

Member's Requested Change: (Do not use **'Track Changes'**, or **'Mark-Up'**. Use ~~**Strikeout**~~ and **Highlight**.)

2602.03, M, Mobilizations, Emergency Erosion Control.

Add as first sentence to the first paragraph:

Mobilizations, Emergency Erosion Control, applies to projects not identified as erosion control or landscaping and containing a Storm Water Pollution Prevention Plan (SWPPP).

Reason for Revision: Projects containing a SWPPP should contain a bid item for Mobilizations, Emergency Erosion Control in addition to a bid item for Mobilizations, Erosion Control.

New Bid Item Required (X one)	**Yes**	**No** X
Bid Item Modification Required (X one)	**Yes**	**No** X
Bid Item Obsoletion Required (X one)	**Yes**	**No** X

Comments:

County or City Comments:

Industry Comments:

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SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Greg Mulder	**Office:** Construction & Materials	**Item 6**
Submittal Date: March 30, 2016	**Proposed Effective Date:** October 2016	
Article No.: 4108 **Title:** Supplementary Cementitious Materials	**Other:**	

Specification Committee Action: Deferred to the April Specification Committee meeting.

Deferred: X	**Not Approved:**	**Approved Date:**	**Effective Date:**

Specification Committee Approved Text:

Comments: Additional revisions to this section were identified, so this item has been deferred to the April Specification Committee meeting.

Specification Section Recommended Text:

4108.01, A.

Replace the first sentence:

Comply with AASHTO M 295, either Class N, Class F, or Class C, except the value of available alkalies shall not exceed 1.50% as determined by Materials I.M. 491.17.

4108.01, D.

Replace the Article:

Inspection and acceptance of fly ash and natural pozzolans will be according to Materials I.M. 491.17.

Comments:

Member's Requested Change: (Do not use '**Track Changes**', or '**Mark-Up**'. Use ~~**Strikeout**~~ and **Highlight**.)

4108.01 FLY ASH AND NATURAL POZZOLANS.

A. Comply with AASHTO M 295, either Class N, Class F or Class C, except the value of available alkalies is not to exceed 1.50% as determined by Materials I.M. 491.17. Sources with fly ash between 1.5% and 2.5% available alkalies may be approved based on satisfactory results of the mortar bar expansion test specified in Materials I.M. 491.17. For Class C fly ash, the pozzolanic activity test with lime will not be required.

B. When Class F is required, a Class C fly ash with minimum total oxides (SiO_2 + Al_2O_3 + Fe_2O_3) of 66% and minimum SiO_2 of 38% may be used.

C. Approval of the source of fly ash will be required. This is to be based on fly ash produced when the power plant is using specific materials, equipment, and processes. Any change in materials, equipment, and processes voids the source approval, and a new approval of the source will be required.

D. Inspection and acceptance of fly ash and natural pozzolans will be according to Materials I.M. 491.17.

Reason for Revision: A new source, produced with natural pozzolans, is being developed by an Iowa company. The natural pozzolan can be used to reduce permeability and increase durability for HPC bridges and other concrete items.

New Bid Item Required (X one)	**Yes**	**No** x
Bid Item Modification Required (X one)	**Yes**	**No** x
Bid Item Obsoletion Required (X one)	**Yes**	**No** x
Comments:		
County or City Comments:		
Industry Comments:		

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SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Greg Mulder	**Office:** Construction and Materials	**Item 7**
Submittal Date: February 25, 2016	**Proposed Effective Date:**	
Article No.: 4160.01 **Title:** General Requirements **Article No.:** 4161.03, B, 6 **Title:** Handling Treated Products **Article No.:** 4161.03, B, 7, b **Title:** Product Marking **Article No.:** 4164.01, A **Title:** General Requirements	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 4/14/2016	**Effective Date:** 10/18/2016

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: The Office of Contracts asked if "end cuts, drilled holes, other fabrication after treatment, and damage/injuries…" are actually treated in the field. By specification they will need to be. Commercial products are available for this purpose.

Specification Section Recommended Text:

4160.01, General Requirements.

Replace the Articles:

B. Pentachlorophenol.
Meet the requirements of AASHTO M 133 (AWPA ~~P1~~ P35). Ensure petroleum solvent meets the requirements of AWPA ~~P9~~ HSA for Hydrocarbon Solvent Type A.

C. Copper Naphthenate.
Meet the requirements of AASHTO M 133 (AWPA ~~P8~~ P36). Ensure petroleum solvent meets the requirements of AWPA ~~P9~~ HSA for Hydrocarbon solvent Type A.

D. Ammoniacal Copper Zinc Arsenate (ACZA).
Meet the requirements of AASHTO M 133 (AWPA ~~P5~~ P22).

E. Chromated Copper Arsenate (CCA).
Meet the requirements of AASHTO M 133 (AWPA ~~P5~~ P23)~~, Type A, Type B, or Type C~~.

4161.03, B, 6, Handling Treated Products.

Add to the end of the Article:
End cuts, drilled holes, other fabrication after treatment, and damage/injuries require field treatment and shall be treated with preservatives as specified in AWPA M4.

4161.03, B, 7, b.

Replace the first sentence:
Ensure all treated wood material that requires a grade, with the exception of 45 inch Terminal Posts[1], displays a quality grade mark of an accredited grade monitoring and inspection agency approved under

the American Lumber Standards Committee (ALSC).

4164.01, A.

Replace the second sentence:
For sawed wood posts and wood sign posts, ~~E~~ensure a straight line from the centers of the ends of a spot does not deviate from the longitudinal axis of the post at any point by more than 0.5% of the length of the post.

Comments:

Member's Requested Change: (Do not use '**Track Changes**', or '**Mark-Up**'. Use ~~**Strikeout**~~ and **Highlight**.)

4160.01, General Requirements.

Replace Articles B - D:

B. Pentachlorophenol.
Meet the requirements of AASHTO M 133 (AWPA ~~P1~~ P35). Ensure petroleum solvent meets the requirements of AWPA ~~P9~~ HSA for Hydrocarbon Solvent Type A.

C. Copper Naphthenate.
Meet the requirements of AASHTO M 133 (AWPA ~~P8~~ P36). Ensure petroleum solvent meets the requirements of AWPA ~~P9~~ HSA for Hydrocarbon solvent Type A.

D. Ammoniacal Copper Zinc Arsenate (ACZA).
Meet the requirements of AASHTO M 133 (AWPA ~~P5~~ P22).

E. Chromated Copper Arsenate (CCA).
Meet the requirements of AASHTO M 133 (AWPA ~~P5~~ P23)~~, Type A, Type B, or Type C~~.

4161.03, B, 6, Handling Treated Products.

Add to the end of the Article:
All end cuts, drilled holes, other fabrication after treatment, and damage/injuries require field treatment and shall be treated with preservatives as specified in AWPA M4.

4161.03, B, 7, b.

Replace the first sentence:
Ensure all treated wood material that requires a grade, with the exception of 45 inch Terminal Posts[1], displays a quality grade mark of an accredited grade monitoring and inspection agency approved under the American Lumber Standards Committee (ALSC).

4164.01, A.

Replace the second sentence:
For sawed wood posts and wood sign posts, ~~E~~ensure a straight line from the centers of the ends of a spot does not deviate from the longitudinal axis of the post at any point by more than 0.5% of the length of the post.

Reason for Revision: The current specification of wood treatment is inconsistent with the 2014 American Wood Protection Association (AWPA) Standards.

New Bid Item Required (X one)	**Yes**	**No** X
Bid Item Modification Required (X one)	**Yes**	**No** X
Bid Item Obsoletion Required (X one)	**Yes**	**No** X

Comments:

County or City Comments:

Industry Comments: Industry has reviewed and concurred the proposed revision.

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IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Greg Mulder	**Office:** Construction and Materials	**Item 8**
Submittal Date: 3/28/2016	**Proposed Effective Date:** October 2016	
Article No.: 2116.02, A, 1, b **Title:** Full Depth Reclamation **Article No.:** 2122.02, A **Title:** HMA Mixture (1,000,000 ESAL Base Mixture) **Article No.:** 2213.02, A, 1 **Title:** Asphalt Base Widening **Section No.:** 2303 **Title:** Flexible Pavement **Article No.:** 2304.02, B **Title:** HMA Option **Article No.:** 2310.02, B **Title:** HMA Stress Relief Course **Article No.:** 2318.02, A, 2 **Title:** Cold In-Place Recycled Pavement **Article No.:** 2511.02, B **Title:** Hot Mix Asphalt **Article No.:** 2517.02, B **Title:** HMA Paving Projects **Article No.:** 2529.02, A **Title:** HMA Mixture **Article No.:** 2530.02, A **Title:** HMA Patching Material **Article No.:** 2540.02 **Title:** Materials **Article No.:** 2543.02, A **Title:** Transverse Joint Repair for HMA Pavements **Section No.:** 4137 **Title:** Asphalt Binder	**Other:**	

Specification Committee Action: Approved with changes.

Deferred:	**Not Approved:**	**Approved Date:** 4/14/2016	**Effective Date:** 10/18/2016

Specification Committee Approved Text:

2116.02, A, 1, b.

Replace the Article:

Foamed Asphalt using PG 52 -34S ~~or PG 46 -34~~ asphalt binder meeting requirements of

Section 4137.

2122.02, A, Asphalt Mixture.

Replace the Article:

Use a ~~1,000,000 ESAL~~ Standard Traffic (ST) base mixture with PG 58-28S binder according to Section 2303.

2213.02, A, 1, Asphalt Base Widening.

Replace the Article:

Use 1/2 inch or 3/4 inch ~~1,000,000 ESAL~~ Standard Traffic (ST) Base mixture. For base widening for shoulders, use PG 58-28S binder.

2303.02, B, 1, b, 1, Friction Classification L-2.

Replace Articles c and d:

c) For Interstates and all mixtures designed for ~~30,000,000 ESALS and higher~~ Very High Traffic (VT), the fineness modulus of the combined Type 2 aggregate is at least 1.0. Calculations for fineness modulus are shown in Materials I.M. 501.

d) On Interstates and all mixtures designed for ~~30,000,000 ESALS and higher~~ Very High Traffic (VT), if 40% or more of the total aggregate is a limestone as defined in Materials I.M. T203, at least 30% of the combined aggregate retained on the No. 4 sieve is Type 2 or better friction aggregate

2303.02, D, 6.

Replace the Article:

For base widening refer to Section 2213. When an adjoining surface is designed for ~~300,000 ESALs or less~~ Standard Traffic (ST) and is paved during the same project, use a base mixture at same ~~ESAL level~~ traffic designation used in surface mixture.

2303.02, E, 2, a, 1.

Replace the Article:

Mixtures for Interstate and Primary highways designed for ~~30,000,000 ESALS and higher~~ Very High Traffic (VT), and

2303.02, E, 2, d.

Replace the Article:

Use the following minimum stripping inflection point (SIP) requirements for plant produced material based on traffic designation:

~~PG High Temperature, °C | SIP, Number of Passes1, 2~~

~~< 3,000,000 ESALS | ≥ 3,000,000 ESALS~~

~~58 | 10,000 | 14,000~~

~~64 | 10,000 | 14,000~~

~~70 | 10,000 | 14,000~~

Table 2303.02-1: Minimum Stripping Inflection Point

Traffic Designation	SIP, Number of Passes[1, 2]
S	10,000
H, V	14,000

Note 1: If ratio between creep slope and stripping slope as defined in Materials I.M. 319 is less than 2.00, the SIP is invalid.

Note 2: Minimum SIP for mixtures placed as base widening is 5000 passes.

When notified of non-compliant results, the Engineer may suspend paving operations until an approved "significant mix change" is implemented.

2303.03, C, 2, b, 2

Replace the second bullet:

- Milled HMA/CIR Surface: 0.05 to 0.07 gallon per square yard

2304.02, B, HMA Option.

Replace the title and Article:

B. ~~HMA~~ Hot Mix Asphalt Option.

Design a mixture per Materials I.M. 510 for the following:

1. For detour pavements or median crossovers on interstates and multi-lane primary highways, use a ~~10,000,000 ESAL~~ High Traffic (HT) surface or intermediate mixture, with PG 64-22S asphalt binder. The surface lift requires L-4 friction aggregate.

2. For detour pavements on all other primary highways, use a ~~3,000,000 ESAL~~ High Traffic (HT) surface or intermediate mixture with a PG 64-22S asphalt binder.

3. For detour pavements on non-primary projects use a ~~1,000,000 ESAL~~ Standard Traffic (ST) surface or intermediate mixture with a PG 64-22S asphalt binder.

2310.02, B, Hot Mix Asphalt Stress Relief Course.

Replace Articles 1 and 2:

2. Use PG 58-28S asphalt binder.

3. Use a mixture meeting the following:

a. ~~300,000 ESAL~~ Standard Traffic (ST), 3/8 inch HMA mix requirements.
b. Target air voids of 3.0%.
c. No maximum film thickness restriction and no minimum filler/bitumen ratio restriction.
d. Type B Aggregate (or better) with no percent crushed particle requirements and gradation falling below the restricted zone.

2318.02, A, 2.

Replace the first two sentences;

Foamed Asphalt using PG 52-34S ~~or PG 46-34~~ asphalt binder meeting the requirements of Section 4137 may be used on Interstate, Primary, Secondary, and local projects. For projects using PG 52-34S as the cold in-place stabilizing agent, meet the following requirements:

2511.02, B, Hot Mix Asphalt.

Replace the Article:

1. For sidewalks and recreational trails not adjacent to pavement, use ~~100,000 ESAL~~ Standard Traffic (ST), 3/8 inch HMA, according to Section 2303.

2. When the recreational trail or sidewalk is adjacent to the pavement and also functions as the pavement shoulder, use ~~1,000,000 ESAL~~ Standard Traffic (ST), 1/2 inch base mixture.

3. Use PG 58-28S ~~or PG 52-34~~ Performance Grade binder as specified in the plans.

2517.02, B, HMA Paving Projects.

Replace the title and Article:

B. ~~HMA~~ Hot Mix Asphalt Paving Projects.
Use a~~n~~ High Traffic (HT) HMA surface mixture ~~that is one mix level above the approaching surface course~~. Use asphalt binder meeting or exceeding PG 64-22S.

2529.02, A, Hot Mix Asphalt Mixture.

Replace the Article:

Unless stated elsewhere in the contract documents, use HMA meeting or exceeding Section 2303 requirements for a ~~300,000 ESAL~~ Standard Traffic (ST) surface mixture. Use an asphalt binder meeting or exceeding PG 64-22S.

2530.02, A, Hot Mix Asphalt Patching Material.

Replace the Article:

Unless stated elsewhere in the contract documents, use HMA meeting or exceeding Section 2303 requirements for a ~~300,000 ESAL~~ Standard Traffic (ST) 3/8 or 1/2 inch surface mixture. Use an asphalt binder that meets or exceeds PG 64-22S.

2540.02, Materials.

Replace the Article:

A. Use the following materials for filling the longitudinal joint in the PCC base:

1. For a 0 to 3/4 inch opening, fill the existing joint with either PG 58-xxS or CRS-2 emulsion.

2. For an opening greater than 3/4 inch, fill the existing joint with a 3/8 inch to 1/2 inch commercial HMA mixture with PG 58-xxS or other suitable hot or cold bituminous mixture approved by the Engineer.

B. For completing the joint repair (filling the milled trench above the PCC base), use a ~~300,000 ESAL~~ Standard Traffic (ST) HMA or similar mixture approved by the Engineer.

2543.02, A.

Replace the Article:

Unless stated elsewhere in the contract documents, use HMA meeting or exceeding Section 2303 requirements for a ~~300,000 ESAL~~ Standard Traffic (ST) surface mixture.

4137, Asphalt Binder.

Replace the Section:

A. Meet the requirements for the type and grade specified in the contract documents and comply with the Combined States Binder Group.

B. Determine performance grade according to AASHTO R29.

C. ~~Do not add acids to modify asphalt binders.~~ Polyphosphoric Acid may be used as a co-modifier up to 0.4% by weight of binder. The Engineer may verify with laboratory testing.

D. ~~For asphalt binder grades with a temperature spread of 92° or greater[1], meet the requirements of the Combined State Binder Group as follows:~~ Except for Standard Traffic

grades, meet CSBG requirements for Minimum Percent Recovery when tested per AASHTO T 350 at the high temperature identified by the PG grade.

~~**Table 4137.01-1: PG+ Requirements**~~

~~AASHTO R 29 Grade~~	~~AASHTO T 350 Minimum Percent Recovery ($R_{3.2}$) Test Temperature[2]~~		~~DSR Phase Angle; degrees (original binder)~~
	~~58°C~~	~~64°C~~	
~~58-34P~~	~~30~~	~~25~~	~~77~~
~~64-28P~~	~~30~~	~~25~~	~~77~~
~~64-34P~~	~~55~~	~~45~~	~~75~~
~~70-22P~~	~~55~~	~~45~~	~~77~~
~~70-28P~~	~~55~~	~~45~~	~~75~~
~~70-34P~~	~~75~~	~~75~~	~~73~~
~~76-28P~~	~~75~~	~~75~~	~~73~~
~~76-34P~~	~~75~~	~~75~~	~~73~~
~~82-22P~~	~~75~~	~~75~~	~~73~~

~~1 Temperature spread is determined by subtracting low temperature from high temperature; for example PG 64-28: 64 - (-28) = 92.~~
~~2 See Figure 4137.01-01 for test temperatures.~~

~~**Figure 4137.01-01: AASHTO T 350 Test Temperature by County (°C)**~~

(Delete figure)

Comments: The District 4 Office noticed that the title shown for Article 2122.02, A, includes "ESAL". This article was already retitled in February to "Asphalt Mixture" which is shown, so not retitling is necessary.

The Office of Contracts asked if "HMA" should be spelled out in all article titles, as it is sometimes shown. Titles should all be spelled out to be consistent. This has been revised.

The District 4 Office asked if Standard Traffic (ST) and the other traffic designations should be spelled out every time or if we should use the acronyms. The Office of Construction and Materials requested that we show it spelled out every time, as it is new. Perhaps the next time the book is published, the acronyms can be used.

Specification Section Recommended Text:

2116.02, A, 1, b.

Replace the Article:

Foamed Asphalt using PG 52 -34S ~~or PG 46 -34~~ asphalt binder meeting requirements of Section 4137.

2122.02, A, Hot Mix Asphalt Mixture (1,000,000 ESAL Base Mixture).

Replace the title and Article:

A. Asphalt Mixture.

Use a ~~1,000,000 ESAL~~ Standard Traffic (ST) base mixture with PG 58-28S binder according to Section 2303.

2213.02, A, 1, Asphalt Base Widening.

Replace the Article:

Use 1/2 inch or 3/4 inch ~~1,000,000 ESAL~~ Standard Traffic (ST) Base mixture. For base widening for shoulders, use PG 58-28S binder.

2303.02, B, 1, b, 1, Friction Classification L-2.

Replace Articles c and d:

c) For Interstates and all mixtures designed for ~~30,000,000 ESALS and higher~~ Very High Traffic (VT), the fineness modulus of the combined Type 2 aggregate is at least 1.0. Calculations for fineness modulus are shown in Materials I.M. 501.

d) On Interstates and all mixtures designed for ~~30,000,000 ESALS and higher~~ Very High Traffic (VT), if 40% or more of the total aggregate is a limestone as defined in Materials I.M. T203, at least 30% of the combined aggregate retained on the No. 4 sieve is Type 2 or better friction aggregate

2303.02, D, 6.

Replace the Article:

For base widening refer to Section 2213. When an adjoining surface is designed for ~~300,000 ESALs or less~~ Standard Traffic (ST) and is paved during the same project, use a base mixture at same ~~ESAL level~~ traffic designation used in surface mixture.

2303.02, E, 2, a, 1.

Replace the Article:

Mixtures for Interstate and Primary highways designed for ~~30,000,000 ESALS and higher~~ Very High Traffic (VT), and

2303.02, E, 2, d.

Replace the Article:

Use the following minimum stripping inflection point (SIP) requirements for plant produced material based on traffic designation:

~~PG High Temperature, °C | SIP, Number of Passes1, 2~~

~~< 3,000,000 ESALS | ≥ 3,000,000 ESALS~~

~~58 | 10,000 | 14,000~~

~~64 | 10,000 | 14,000~~

~~70 | 10,000 | 14,000~~

Table 2303.02-1: Minimum Stripping Inflection Point

Traffic Designation	SIP, Number of Passes[1, 2]
S	10,000
H, V	14,000

Note 1: If ratio between creep slope and stripping slope as defined in Materials IM 319 is less than 2.00, the SIP is invalid.

Note 2: Minimum SIP for mixtures placed as base widening is 5000 passes.

When notified of non-compliant results, the Engineer may suspend paving operations until an approved “significant mix change” is implemented.

2303.03, C, 2, b, 2

Replace the second bullet:

- Milled HMA/CIR Surface: 0.05 to 0.07 gallon per square yard

2304.02, B, HMA Option.

Replace the Article:

Design a mixture per Materials I.M. 510 for the following:

1. For detour pavements or median crossovers on interstates and multi-lane primary highways, use a ~~10,000,000 ESAL~~ High Traffic (HT) surface or intermediate mixture, with PG 64-22S asphalt binder. The surface lift requires L-4 friction aggregate.

2. For detour pavements on all other primary highways, use a ~~3,000,000 ESAL~~ High Traffic (HT) surface or intermediate mixture with a PG 64-22S asphalt binder.

3. For detour pavements on non-primary projects use a ~~1,000,000 ESAL~~ Standard Traffic (ST) surface or intermediate mixture with a PG 64-22S asphalt binder.

2310.02, B, Hot Mix Asphalt Stress Relief Course.

Replace Articles 1 and 2:

2. Use PG 58-28S asphalt binder.

3. Use a mixture meeting the following:
   - **a.** ~~300,000 ESAL~~ Standard Traffic (ST), 3/8 inch HMA mix requirements.
   - **b.** Target air voids of 3.0%.
   - **c.** No maximum film thickness restriction and no minimum filler/bitumen ratio restriction.
   - **d.** Type B Aggregate (or better) with no percent crushed particle requirements and gradation falling below the restricted zone.

2318.02, A, 2.

Replace the first two sentences;

Foamed Asphalt using PG 52-34S ~~or PG 46-34~~ asphalt binder meeting the requirements of Section 4137 may be used on Interstate, Primary, Secondary, and local projects. For projects using PG 52-34S as the cold in-place stabilizing agent, meet the following requirements:

2511.02, B, Hot Mix Asphalt.

Replace the Article:

1. For sidewalks and recreational trails not adjacent to pavement, use ~~100,000 ESAL~~ Standard Traffic (ST), 3/8 inch HMA, according to Section 2303.

2. When the recreational trail or sidewalk is adjacent to the pavement and also functions as the pavement shoulder, use ~~1,000,000 ESAL~~ Standard Traffic (ST), 1/2 inch base mixture.

3. Use PG 58-28S ~~or PG 52-34~~ Performance Grade binder as specified in the plans.

2517.02, B, HMA Paving Projects.

Replace the Article:

Use a~~n~~ High Traffic (HT) HMA surface mixture ~~that is one mix level above the approaching surface course~~. Use asphalt binder meeting or exceeding PG 64-22S.

2529.02, A, Hot Mix Asphalt Mixture.

Replace the Article:

Unless stated elsewhere in the contract documents, use HMA meeting or exceeding Section 2303 requirements for a ~~300,000 ESAL~~ Standard Traffic (ST) surface mixture. Use an asphalt binder meeting or exceeding PG 64-22S.

2530.02, A, Hot Mix Asphalt Patching Material.

Replace the Article:

Unless stated elsewhere in the contract documents, use HMA meeting or exceeding Section 2303 requirements for a ~~300,000 ESAL~~ Standard Traffic (ST) 3/8 or 1/2 inch surface mixture. Use an asphalt binder that meets or exceeds PG 64-22S.

2540.02, Materials.

Replace the Article:

A. Use the following materials for filling the longitudinal joint in the PCC base:

1. For a 0 to 3/4 inch opening, fill the existing joint with either PG 58-xxS or CRS-2 emulsion.

2. For an opening greater than 3/4 inch, fill the existing joint with a 3/8 inch to 1/2 inch commercial HMA mixture with PG 58-xxS or other suitable hot or cold bituminous mixture approved by the Engineer.

B. For completing the joint repair (filling the milled trench above the PCC base), use a ~~300,000 ESAL~~ Standard Traffic (ST) HMA or similar mixture approved by the Engineer.

2543.02, A.

Replace the Article:

Unless stated elsewhere in the contract documents, use HMA meeting or exceeding Section 2303 requirements for a ~~300,000 ESAL~~ Standard Traffic (ST) surface mixture.

4137, Asphalt Binder.

Replace the Section:

A. Meet the requirements for the type and grade specified in the contract documents and comply with the Combined States Binder Group.

B. Determine performance grade according to AASHTO R29.

C. ~~Do not add acids to modify asphalt binders.~~ Polyphosphoric Acid may be used as a co-modifier up to 0.4% by weight of binder. The Engineer may verify with laboratory tesing.

D. ~~For asphalt binder grades with a temperature spread of 92° or greater[1], meet the requirements of the Combined State Binder Group as follows:~~ Except for Standard Traffic grades, meet CSBG requirements for Minimum Percent Recovery when tested per AASHTO T350 at the high temperature identified by the PG grade.

~~**Table 4137.01-1: PG+ Requirements**~~

~~AASHTO R 29 Grade~~	~~AASHTO T 350 Minimum Percent Recovery ($R_{3.2}$) Test Temperature[2]~~		~~DSR Phase Angle; degrees (original binder)~~
	~~58°C~~	~~64°C~~	
~~58-34P~~	~~30~~	~~25~~	~~77~~
~~64-28P~~	~~30~~	~~25~~	~~77~~
~~64-34P~~	~~55~~	~~45~~	~~75~~
~~70-22P~~	~~55~~	~~45~~	~~77~~
~~70-28P~~	~~55~~	~~45~~	~~75~~
~~70-34P~~	~~75~~	~~75~~	~~73~~
~~76-28P~~	~~75~~	~~75~~	~~73~~
~~76-34P~~	~~75~~	~~75~~	~~73~~

~~82-22P~~	~~75~~	~~75~~	~~73~~

~~3 Temperature spread is determined by subtracting low temperature from high temperature; for example PG 64-28: 64 - (-28) = 92.~~
~~4 See Figure 4137.01-01 for test temperatures.~~

~~Figure 4137.01-01: AASHTO T 350 Test Temperature by County (°C)~~
(Delete figure)

Comments:

Member's Requested Change: (Do not use **'Track Changes'**, or **'Mark-Up'**. Use **~~Strikeout~~** and **Highlight**.)

2116.02 Materials.

A. Asphalt Stabilizing Agent.

1. Unless specified otherwise in the contract documents, the asphalt stabilizing agent may, at the Contractor's option, be either of the following:
a. Emulsified Asphalt (HFMS-2s) meeting the requirements of Section 4140.
b. Foamed Asphalt using PG 52 -34S ~~or PG 46 -34~~ asphalt binder meeting the requirements of Section 4137.

2122.02 Materials.

A. Hot Mix Asphalt Mixture (Standard Traffic (ST) ~~1,000,000 ESAL~~ Base Mixture).
Use materials specified in a Standard Traffic (ST) ~~1,000,000 ESAL~~ base mixture with PG 58-28S binder according to Section 2303.

2213.02 Materials.
Use materials meeting the following requirements:

A. Base Material.

1. HMA Asphalt Base Widening.
Use 1/2 inch or 3/4 inch Standard Traffic (ST) ~~1,000,000 ESAL~~ Base mixture. For base widening for shoulders, use PG 58-28S binder.
a. Use mixture specified on the contract documents.
b. Meet requirements of Section 2303, as specified.

2303.02, B. Aggregates.

1. Individual Aggregates.
   a. Use virgin mineral aggregate as specified in Section 4127.
   b. When specified, furnish friction aggregate from sources identified in Materials I.M. T203.
   1) Friction Classification L-2.
   Use a combined aggregate such that:
   a) At least 80% of the combined aggregate retained on the No. 4 sieve is Type 4 or better friction aggregate, and
   b) At least 25% of the combined aggregate retained on the No. 4 sieve is Type 2 or better friction aggregate, and
   c) For Interstates and all mixtures designed for Very High Traffic (VT) ~~30,000,000 ESALS and higher~~, the fineness modulus of the combined Type 2 aggregate is at least 1.0. Calculations for fineness modulus are shown in Materials I.M. 501.
   d) On Interstates and all mixtures designed for Very High Traffic (VT) ~~30,000,000 ESALS and higher~~, if 40% or more of the total aggregate is a limestone as defined in Materials I.M. T203, at least 30% of the combined aggregate retained on the No. 4 sieve is Type 2 or better

friction aggregate

2303.02, D, 6.
For base widening refer to Section 2213. When an adjoining surface is designed for Standard Traffic (ST) ~~300,000 ESALs or less~~ and is paved during the same project, use a base mixture at same traffic designation ~~ESAL level~~ used in surface mixture.

2303.02, E, 2.
a. Perform a moisture sensitivity evaluation of the proposed asphalt mixture design in accordance with Materials I.M. 319 for the following mixtures when placed in travelled lanes:
1) Mixtures for Interstate and Primary highways designed for Very High Traffic (HT) ~~30,000,000 ESALS and higher~~

d. Use the following minimum stripping inflection point (SIP) requirements for plant produced material based on traffic designation.:

Traffic Designation	SIP, Number of Passes[1, 2]
S	10,000
H, V	14,000

~~PG High Temperature, °C | SIP, Number of Passes1, 2~~
~~< 3,000,000 ESALS | ≥ 3,000,000 ESALS~~
~~58 | 10,000 | 14,000~~
~~64 | 10,000 | 14,000~~
~~70 | 10,000 | 14,000~~

Note 1: If ratio between creep slope and stripping slope as defined in Materials I.M 319 is less than 2.00, the SIP is invalid.
Note 2: Minimum SIP for mixtures placed as base widening is 5000 passes.

C. HMA Construction.
b. Tack Coats.
1) Apply tack coats when the entire surface area on which the coat is to be applied is free of moisture. Do not apply them when the temperature on the surface being covered is less than 25°F.

2) Place a tack coat to form a continuous, uniform film on the area to be covered. Unless directed otherwise, spread tack coat at the following undiluted rates:
· New HMA Surface 0.03 to 0.05 gallon per square yard
· Milled HMA/CIR Surface 0.05 to 0.07 gallon per square yard
· PCC/Existing HMA Surface 0.04 to 0.06 gallon per square yard

Tack coat may be diluted with water up to 1:1 to improve application.

2304.02, Materials.
B. HMA Option.
Design a mixture per Materials I.M. 510 for the following:

1. For detour pavements or median crossovers on interstates and primary highways, use a High Traffic (HT) ~~10,000,000 ESAL~~ surface or intermediate mixture, with PG 64-22S asphalt binder. The surface lift requires L-4 friction aggregate.

2. For detour pavements on non-primary projects use a Standard Traffic (ST) ~~1,000,000 ESAL~~ surface or intermediate mixture with a PG 64-22S asphalt binder.

2310.02, Materials.
B. Hot Mix Asphalt Stress Relief Course.

1. Use an HMA stress relief course for unbonded overlays consisting of a nominal 1 inch (25 mm) course of HMA meeting the requirements of Section 2303.

2. Use PG 58-28S asphalt binder.

3. Use a mixture meeting the following:

a. Standard Traffic (ST) ~~300,000 ESAL~~, 3/8 inch (9.5 mm) HMA mix requirements.

b. Target air voids of 3.0%.

c. No maximum film thickness restriction and no minimum filler/bitumen ratio restriction.

d. Type B Aggregate (or better) with no percent crushed particle requirements and gradation falling below the restricted zone.

2318.02, A, Asphalt Stabilizing Agent
2. Foamed Asphalt using PG 52-34S ~~or PG 46-34~~ asphalt binder meeting the requirements of Section 4137 may be used on Interstate, Primary, Secondary, and local projects. For projects using PG 52-34S as the cold in-place stabilizing agent, meet the following requirements:
- Minimum G*/sinδ of 0.70 kPa for the original asphalt binder,
- Minimum G*/sinδ of 1.5 kPa for RTFO aged binder, or
- Maximum G*sinδ of 5000 kPa for PAV aged binder.

2517.02, Materials.
B. HMA Paving Projects.
Use a High Traffic (HT) ~~an~~ HMA surface mixture ~~that is one mix level above the approaching surface course~~. Use asphalt binder meeting or exceeding PG 64-22S.

2529.02 materials.

A. Hot Mix Asphalt Mixture.
Unless stated elsewhere in the contract documents, use HMA meeting or exceeding Section 2303 requirements for a Standard Traffic (ST) ~~300,000 ESAL~~ surface mixture. Use an asphalt binder meeting or exceeding PG 64-22S.

2530.02 MATERIALS.
Meet the requirements for the type of material specified.

A. Hot Mix Asphalt Patching Material.
Unless stated elsewhere in the contract documents, use HMA meeting or exceeding Section 2303 requirements for a Standard Traffic (ST) ~~300,000 ESAL~~ 3/8 or 1/2 inch surface mixture. Use an asphalt binder that meets or exceeds PG 64-22S.

2540.02 materials.

A. Use the following materials for filling the longitudinal joint in the PCC base:

1. For a 0 to 3/4 inch (0 mm to 20 mm) opening, fill the existing joint with either PG 58-xxS or CRS-2 emulsion.

2. For an opening greater than 3/4 inch (20 mm), fill the existing joint with a 3/8 inch to 1/2 inch (9.5

mm to 12.5 mm) commercial HMA mixture with PG 58-xxS or other suitable hot or cold bituminous mixture approved by the Engineer.

B. For completing the joint repair (filling the milled trench above the PCC base), use a Standard Traffic (ST) ~~300,000 ESAL~~ HMA or similar mixture approved by the Engineer.

2543.02 materials.

A. Unless stated elsewhere in the contract documents, use HMA meeting or exceeding Section 2303 requirements for a Standard Traffic (ST) ~~300,000 ESAL~~ surface mixture.

4137.01 GENERAL REQUIREMENTS.

A. Meet the requirements for the type and grade specified in the contract documents and comply with the Combined States Binder Group.

B. Determine performance grade according to AASHTO R29..

C. Polyphosphoric Acid may be used as a co-modifier up to 0.4% by weight of binder. The Engineer may verify with laboratory tesing.. ~~Do not add acids to modify asphalt binders.~~

D. Except for Standard Traffic grades, meet CSBG requirements for Minimum Percent Recovery when tested per AASHTO T350 at the high temperature identified by the PG grade. ~~For asphalt binder grades with a temperature spread of 92° or greater[1], meet the requirements of the Combined State Binder Group as follows:~~

~~**Table 4137.01-1: PG+ Requirements**~~

~~AASHTO R 29 Grade~~	~~AASHTO T 350 Minimum Percent Recovery ($R_{3.2}$) Test Temperature[2]~~		~~DSR Phase Angle; degrees (original binder)~~
	~~58°C~~	~~64°C~~	
~~58-34P~~	~~30~~	~~25~~	~~77~~
~~64-28P~~	~~30~~	~~25~~	~~77~~
~~64-34P~~	~~55~~	~~45~~	~~75~~
~~70-22P~~	~~55~~	~~45~~	~~77~~
~~70-28P~~	~~55~~	~~45~~	~~75~~
~~70-34P~~	~~75~~	~~75~~	~~73~~
~~76-28P~~	~~75~~	~~75~~	~~73~~
~~76-34P~~	~~75~~	~~75~~	~~73~~
~~82-22P~~	~~75~~	~~75~~	~~73~~

~~5 Temperature spread is determined by subtracting low temperature from high temperature; for example PG 64-28: 64 - (-28) = 92.~~
~~6 See Figure 4137.01-01 for test temperatures.~~

~~**Figure 4137.01-01: AASHTO T 350 Test Temperature by County (°C)**~~

Reason for Changes: Adopt AASHTO M332. New bid items will reflect the changes.		
New Bid Item Required (X one)	**Yes** X	**No**
Bid Item Modification Required (X one)	**Yes**	**No** X
Bid Item Obsoletion Required (X one)	**Yes**	**No** X
Comments: To simplify the specification, 7 gyratory levels will be consolidated into 3. New bid items		

will reflect the changes.
County or City Comments:
Industry Comments: Industry in support

Form 510130 (08-15)

IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Greg Mulder	**Office:** Construction and Materials	**Item 9**
Submittal Date: 3/1/2016	**Proposed Effective Date:** October 2016	
Article No.: **Title:**	**Other:** DS-15024, Developmental Specifications for Hot Mix Asphalt Interlayer	

Specification Committee Action: Approved with changes.

Deferred:	**Not Approved:**	**Approved Date:** 4/14/2016	**Effective Date:** 10/18/2016

Specification Committee Approved Text: See attached Supplemental Specifications for Hot Mix Asphalt Interlayer.

Comments: The Office of Construction and Materials indicated that no changes to this specification are needed and a controller is no longer necessary and it should become a Supplemental Specification.

The Office of Construction and Materials asked to replace the use of trackless tack. This product has not shown good results. Standard tack placement will be required per Section 2303.

The District 4 Office noticed that Table 4 in Materials I.M. 510 Appendix A is now Table 3. This revision has been made.

The District 4 Office asked if the reference in Article SS-15XXX.03, E, 2 is correct with the revisions to Section 2303. This reference has been verified, so no changes are requires.

Specification Section Recommended Text: See attached Draft Supplemental Specifications for Hot Mix Asphalt Interlayer.

Comments: Why are we making this an SS?

Member's Requested Change: (Do not use **'Track Changes'**, or **'Mark-Up'**. Use ~~**Strikeout**~~ and **Highlight**.)

A. Asphalt Binder.
Use a PG 58-34E ~~PG 64-34~~.

MOVE OUT OF A DS AND INTO AN SS

Reason for Revision: Adopt the new binder designation

New Bid Item Required (X one)	**Yes**	**No** x
Bid Item Modification Required (X one)	**Yes**	**No** X
Bid Item Obsoletion Required (X one)	**Yes**	**No** x

Comments:

County or City Comments:

Industry Comments: Industry in support

SS-15006
(Replaces DS-15024)

SUPPLEMENTAL SPECIFICATIONS
FOR
HOT MIX ASPHALT INTERLAYER

Effective Date
October 18, 2016

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SUPPLEMENTAL SPECIFICATIONS AND THEY PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

15006.01 DESCRIPTION.
These specifications describe requirements for a highly polymer modified asphalt interlayer. Apply Section 2303 of the Standard Specifications unless otherwise directed in these specifications.

15006.02 MATERIALS.

A. Asphalt Binder.
Use a PG ~~64-34~~ 58-34E.

B. Mix Design.

1. See Materials I.M. 510 Appendix A.

2. Mix approval is based on Performance Testing Requirements per ~~Table 4~~ Table 3 in Materials I.M. 510 Appendix A.

3. Do not use RAP.

15006.03 CONSTRUCTION.

A. ~~Tack the cleaned surface prior to placement of the interlayer using a trackless product approved on AASHTO's Product Evaluation Listing (APEL). Apply a second tack coat prior to placement of the next lift. Subsequent lifts that are at least 1 1/2 inches in thickness may use any approved tack outlined in Article 2303.02, E, 1.~~ Apply tack coat prior to placement of HMA interlayer according to Section 2303.

B. Compact with steel wheeled roller.

C. Do not pave unless ambient temperatures are at least 60ºF and rising.

D. Do not open to traffic until the entire mat has cooled below 150°F.

E. Quality Assurance/Quality Control.

1. **Field Voids Acceptance.**
   Acceptance for field voids shall be Class II compaction defined in Section 2303.

2. **Lab Voids Acceptance.**
   Sample and test one hot box per day of production unless otherwise approved by the Engineer. Apply Article 2303.05, A, 3, a, 2, for AAD acceptance. Air void target is based on approved JMF.

3. Take at least one cold feed for gradation control.

15006.04 METHOD OF MEASUREMENT.
Hot Mix Asphalt Interlayer, of the size specified, will be measured according to Article 2303.04.

15006.05 BASIS OF PAYMENT.
Hot Mix Asphalt Interlayer, of the size specified, will be paid for according to Article 2303.05.

Form 510130 (08-15)

IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Greg Mulder	**Office:** Construction and Materials	**Item 10**
Submittal Date: 3/28/2016	**Proposed Effective Date:** October 2016	
Article No.: **Title:**	**Other:** DS-15037, Developmental Specifications for High Performance Thin Lift Overlay	

Specification Committee Action: Approved with changes.

Deferred:	**Not Approved:**	**Approved Date:** 4/14/2016	**Effective Date:** 10/18/2016

Specification Committee Approved Text: See attached Developmental Specifications for High Performance Thin Lift Overlay.

Comments: The Office of Construction and Materials asked to replace the use of trackless tack. This product has not shown good results. Standard tack placement will be required per Section 2303.

Specification Section Recommended Text: See attached Draft Developmental Specifications for High Performance Thin Lift Overlay.

Comments:

Member's Requested Change: (Do not use **'Track Changes'**, or **'Mark-Up'**. Use ~~**Strikeout**~~ and **Highlight**.)

15025.02 MATERIALS.

B. Asphalt Binder.

Use a PG 58-34E ~~PG 76-34~~ with a minimum percent recovery of 90% when tested at 58°C ~~64°C~~ per AASHTO T 350 at 3.2 kPa.

15025.02, B MIX DESIGN

1. Do not use more than 15.0% binder replacement. Do not use RAS.

15025.03 CONSTRUCTION.

A. Apply tack coat prior to placement of thin lift overlay using a trackless product from Appendix A of this DS or otherwise approved on AASHTO's Product Evaluation Listing (APEL).

Appendix A – Approved Trackless Materials

Product Name	Producer
TRACKLESS (NTSS-1HM)	Blacklidge Emulsions
CAT-TAC (CNTT)	Hunt Refining Company
FastTack	Colas Solutions
eTac (CBC-LT)	Ergon Asphalt & Emulsions
EM-50-TT	Seaboard/Specialty Emulsions
Cationic Non-Tracking Tack Coat (CNTTC)	Hammaker East
Emulvia Clean (NTCRS-1hM)	Eurovia (BCI Materials/Blythe Construction)
FastSet Tack	Western Emulsion.

New Bid Item Required (X one)	**Yes**	**No** x
Bid Item Modification Required (X one)	**Yes**	**No** X

Bid Item Obsoletion Required (X one)	**Yes**	**No** x
Comments:		
County or City Comments:		
Industry Comments: Industry in support		

DS-15043
(Replaces DS-15037)

DEVELOPMENTAL SPECIFICATIONS
FOR
HIGH PERFORMANCE THIN LIFT OVERLAY

Effective Date
October 18, 2016

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE DEVELOPMANTAL SPECIFICATIONS AND THEY PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

15043.01 DESCRIPTION.
These specifications describe requirements for a highly polymer modified asphalt thin lift surface course. Apply Section 2303 of the Standard Specifications unless otherwise directed in these specifications.

15043.02 MATERIALS.

A. Asphalt Binder.
Use PG ~~76-34~~ 58-34E with a minimum percent recovery of 90% when tested at ~~64°C~~ 58°C per AASHTO T 350 at 3.2 kPa.

B. Mix Design.

1.

Design Gyrations	50
Design Target (%Gmm)	3.0
Film Thickness	8.0 – 13.0
Aggregate Quality	A
Crushed Content (minimum)	50%
FAA (minimum)	40
Sand Equivalency (minimum)	50
VMA (minimum)	16%

2. Friction Aggregate.
Interstates: minimum 30% of Total Aggregate shall be Type 2 or better
Non-Interstates: minimum 50% of Total Aggregate shall be Type 4 or better

3. Hamburg Testing (AASHTO T324).
Compact to 3.5% air voids. No more than 8 mm rutting in the first 8000 passes.

4. Do not use more than 15.0% binder replacement. Do not use RAS.

5. Gradation.

Sieve Size	Min % Passing	Max % Passing
1½ inch		
1 inch		

3/8 inch	91	100
#4		90
#8	27	63
#16		
#30		
#50		
#100		
#200	2	10

15043.03 CONSTRUCTION.

A. Apply tack coat prior to placement of thin lift overlay ~~using a trackless product approved on AASHTO's Product Evaluation Listing (APEL)~~ according to Section 2303.

B. Pave when ambient temperatures are at least 60ºF and rising

C. Compact with steel wheeled roller.

D. Do not open to traffic until the entire mat has cooled below 150°F.

E. Quality Assurance/Quality Control.

1. **Field Voids Acceptance.**
   Acceptance for field voids shall be Class II compaction defined in Section 2303 of the Standard Specifications.

2. **Lab Voids Acceptance.**
   Sample from windrow or hopper. Apply Article 2303.05, A, 3, a, 2 for AAD acceptance. Air void target is based on approved JMF.

3. Take at least one cold feed for gradation control each day of production.

15043.04 METHOD OF MEASUREMENT.
Hot Mix Asphalt Thin Lift Overlay will be measured according to Article 2303.04.

15043.05 BASIS OF PAYMENT.
Hot Mix Asphalt Thin Lift Overlay will be paid for according to Article 2303.05.

Form 510130 (08-15)

IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Greg Mulder	**Office:** Construction and Materials	**Item 11**
Submittal Date: 4/4/2016	**Proposed Effective Date:** October 2016	
Article No.: 1107.06, B **Title:** Buy America (Federal Requirement)	**Other:**	

Specification Committee Action: This item was deferred to the May Specification Committee meeting.

Deferred: X	**Not Approved:**	**Approved Date:**	**Effective Date:**

Specification Committee Approved Text:

Comments: The FHWA indicated that they are not yet satisfied with the Departments plans to enforce Buy America and as such do not approve of this revision.

The Office of Contracts asked if a title change is necessary as this article falls under Article 1107.06, Federal Requirement. This could be confusing to some, as Article 1107.06, B applies to all contracts let by the Department, not just Federal Aid contracts.

The Office of Local Systems asked why we apply Buy America to all contracts. The Office of Contracts indicated that Buy America applies to any project that is eligible for Federal Aid, even if Federal Aid is not used. The Department decided to apply Buy America to all contracts to make sure it is not missed.

The wording for this article will be reviewed per the recommended text comments prior to resubmission.

Specification Section Recommended Text:

1107.06, B, Buy America.

Replace the Article:

On all contracts, per Materials I.M. 107, all products of iron, steel, or a coating of steel which are incorporated into the work shall be of domestic origin and shall be melted and manufactured in the United States. The Engineer may allow minimal amounts of these materials from foreign sources, provided the cost does not exceed 0.1% of the contract sum or $2,500, whichever is greater. This amount shall include transportation, assembly, and testing as delivered cost of foreign products to the project. ~~Per Materials I.M. 107,~~ Some miscellaneous steel or iron components, subcomponents, and hardware, ~~as defined by FHWA,~~ will not be subject to Buy America requirements.

Comments: The new wording appears to indicate that Materials I.M. 107 defines which contracts Buy America applies to. Is this the case? I thought it applied to all contracts. Can we reword this to reflect whatever we are trying to convey with this revision?

Is 'some' an adequate description of what miscellaneous items are not subject to Buy America?

Member's Requested Change: (Do not use 'Track Changes', or 'Mark-Up'. Use ~~Strikeout~~ and Highlight.)

1107.06 FEDERAL REQUIREMENT.

B. Buy America.

On all contracts, per Materials IM 107, all products of iron, steel, or a coating of steel which are incorporated into the work shall be of domestic origin and shall be melted and manufactured in the United States. The Engineer may allow minimal amounts of these materials from foreign sources, provided the

cost does not exceed 0.1% of the contract sum or $2,500, whichever is greater. This amount shall include transportation, assembly, and testing as delivered cost of foreign products to the project. ~~Per~~ ~~Materials I.M. 107~~, Some miscellaneous steel or iron components, subcomponents, and hardware, ~~as defined by FHWA,~~ will not be subject to Buy America requirements.		
Reason for Changes: Addresses impacts from recent US District Court decision regarding Buy America.		
New Bid Item Required (X one)	**Yes**	**No** X
Bid Item Modification Required (X one)	**Yes**	**No** X
Bid Item Obsoletion Required (X one)	**Yes**	**No** x
Comments:		
County or City Comments:		
Industry Comments:		