Iowa Department of Transportation

MINUTES
OF
IOWA DOT SPECIFICATION COMMITTEE MEETING

January 11, 2007

Members Present:	Tom Reis, Chair	Specifications Section
	Daniel Harness, Secretary	Specifications Section
	Keith Norris	District 2-District Materials Engineer
	Gary Novey	Office of Bridges & Structures
	John Smythe	Office of Construction
	Roger Bierbaum	Office of Contracts
	Larry Jesse	Office of Local Systems
	Jim Berger	Office of Materials
	Troy Jerman	Office of Traffic & Safety
	Doug McDonald	District 1-Marshalltown RCE
Members Not Present:	John Adam	Statewide Operations Bureau
	Bruce Kuehl	District 6-District Const. Engineer
	Mike Kennerly	Office of Design
Advisory Members Present:	Lisa Rold	FHWA
Others Present:	Deanna Maifield	Office of Design
	David Grove	Davis County
	Brian Jorgensen	FHWA

Tom Reis, Specifications Engineer, opened the meeting. The following items were discussed in accordance with the agenda dated January 5, 2007:

1. **Article 1107.06, Federal Participation.**
   Article 1107.20, Buy America.

The Office of Contracts is requesting changes that will bring the Standard Specifications in compliance with 23 CFR 635.410 and will relocate the Buy America Provisions to the bid letting section of the Standard Specifications.

2. **Article 2107.12, Rebuilding Embankments.**

The Specifications Section is requesting changes to delete a reference to language no longer contained in the Standard Specifications and to make a minor correction.

3. **Article 2301.13, C, 1, Measurement of Materials.**
   Article 2301.34, A, Portland Cement Concrete Pavement.
   Article 2301.35, A, Portland Cement Concrete Pavement.

The Specifications Section is requesting changes suggested by the Office of Construction.

4. Article 2316.05, A, 2, Hot Mix Asphalt Pavements.

The Specifications Section and Office of Materials are requesting a change to add in language that was removed from Article 2303.03, B, 2, with the 2001 Edition of the Standard Specifications. Currently, Article 2316.05, A, 2 is making reference to language no longer in the Specifications.

5. Article 2413, Surfacing and Repairs and Overlay of Bridge Floors.

The Specifications Section is requesting a change to incorporate Developmental Specifications for High Performance Concrete for Overlays of Bridge Floors, DS-01069, into Section 2413.

6. Article 2415.01, Description.

The Specifications Section is requesting a change to delete language that is no longer necessary.

7. Article 2426.01, B, Regular Repair.

The Specifications Section is requesting a change that will correct a reference.

8. DS-01056, Developmental Specifications for Pavement Smoothness.

The Specifications Section and Office of Materials is requesting a change to add language that was removed from Article 2303.03, B, 2, with the 2001 Edition of the Standard Specifications. Currently, Article 01056.04, D, 2 makes reference to language no longer in the Specifications.

9. Adding Developmental and Supplemental Specifications and Special Provisions.

Several offices have requested a discussion related to the procedures for adding specifications to projects.

10. Adding a New Division to the Standard Specifications.

The Specifications Section is requesting a discussion regarding adding Division 30 to the Standard Specifications. This new division would incorporate the Storm Sewer, Sanitary Sewer, Water Main, and Traffic Signals that are currently contained in the SUDAS manual.

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Roger Bierbaum	**Office:** Contracts	**Item 1**
Submittal Date: November 20, 2006	**Proposed Effective Date:** October 2007 GS	
Article No.: 1107.06 **Title:** Federal Participation (Buy America)	**Other:** 1102.20, Buy America	

Specification Committee Action: None. Item withdrawn.

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

Specification Committee Approved Text:

Comments: The Office of Contracts asked to withdraw this item. They want to talk to the FHWA regarding this item. The Office of Construction noted that much of the proposed language is covered in Materials I.M.s. They also noted that the Materials I.M.s may actually be more restrictive and that the final language that goes into the Specifications should align with what is in the Materials I.M.s. The Office of Construction also stated they agree with elimination of certification by the Contractor, and asked that certification by suppliers be incorporated into the Specifications.

Specification Section Recommended Text:

1107.06, FEDERAL PARTICIPATION.

Delete the second paragraph:

~~On all contracts involving Federal-aid, all products of iron, steel, or a coating of steel which are incorporated into the work must have been 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. The Contractor shall certify that these materials are of domestic origin.~~

1102.20, BUY AMERICA.

Add new article:

1102.20 BUY AMERICA.

On all contracts involving Federal-aid, all products of iron, steel, or a coating of steel which are incorporated into the work shall be manufactured in the United States. A minimal amount of foreign steel and iron materials may be used, if the cost of such materials does not exceed 0.1% of the total contract cost or $2,500, whichever is greater. For purposes of this article, the cost of the steel product shall be the value of steel and iron products as they are delivered to the project.

A bidder may submit a bid exceeding the limitation for minimal use of foreign steel. To be considered, the bidder shall provide written notice to the Contracting Authority of their intent to use foreign steel prior to the deadline for bid submittal. The lowest responsive bid total considered for award, will be with domestic steel unless all bids with domestic steel exceed the lowest responsive bid total based on furnishing foreign steel and iron materials by more than 25%.

Comments:

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

Delete the second paragraph of 1107.06 and add a section 1102.20 – Buy America Provisions

1107.06 FEDERAL PARTICIPATION.
The attention of the Contractor is directed to the provisions of an act of Congress known as Title 23, United States Code, Section 1 and any other acts of Congress providing for road improvements. When the Federal Government is to pay all or any portion of the cost of an improvement or project, the construction work, although it is under the supervision of the Department and subject to laws of the State of Iowa, is also subject to the above mentioned acts of Congress and to all authorities. This construction work shall be subject to inspection by duly authorized agents of the Federal Government, but this inspection will not make the Federal Government a party to the contract.

~~On all contracts involving Federal-aid, all products of iron, steel, or a coating of steel which are incorporated into the work must have been 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. The Contractor shall certify that these materials are of domestic origin.~~

Add a new Article 1102.20 BUY AMERICA PROVISION
On all contracts involving Federal-aid, all products of iron, steel, or a coating of steel which are incorporated into the work must have been manufactured in the United States. A minimal use of foreign steel and iron materials, if the cost of such materials used does not exceed one-tenth of one percent (0.1 percent) of the total contract cost or $2,500, whichever is greater will be allowed. For purposes of this paragraph, the cost of the steel product is that shown to be the value of the steel and iron products as they are delivered to the project.

A bidder may elect to submit a bid which exceeds the limitation on the minimal use of foreign steel. To be considered, the bidder must provide written notice to the Department of their intent to use foreign steel prior to the deadline for bid submittal. The lowest responsive total bid considered for award, will be with domestic steel unless all bids with domestic steel exceeds the lowest responsive total bid based on furnishing foreign steel and iron materials by more than 25 percent.

Reason for Revision: Current specifications do not comply with 23 CFR 635.410 and relocate the Buy America Provisions to the bid letting section of the Standard Specifications.

County or City Input Needed (X one)	**Yes**	**No** X
Comments:		

Industry Input Needed (X one)			**Yes**	**No** X	
Industry Notified:	**Yes**	**No** X	**Industry Concurrence:**	**Yes**	**No**
Comments:					

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Tom Reis / Daniel Harness	**Office:** Specifications Section	**Item 2**
Submittal Date: 1/02/2007	**Proposed Effective Date:** 10/16/07	
Article No.: 2107.12 **Title:** Rebuilding Embankments	**Other:**	

Specification Committee Action: Approved as is.

Deferred:	**Not Approved:**	**Approved Date:** 1/11/07	**Effective Date:** 10/16/07

Specification Committee Approved Text: See Member's Requested Change.

Comments: None.

Specification Section Recommended Text: See member's requested change.

Comments:

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

2107.12, Rebuilding Embankments.

Replace the first sentence of the third paragraph:

At locations where the width of embankment widening~~, as described above,~~ is less than 4 feet (1.2 ~~1.5~~ m), widening material may be placed and shaped to the bottom of pavement or base elevation without compaction other than that obtained with wheels of motor graders and hauling equipment.

Reason for Revision: Embankment widening is no longer described in this article. That language was removed with the 1995 book. Also, 1.5 m should be 1.2 m.

County or City Input Needed (X one)	**Yes**	**No** X
Comments:		

Industry Input Needed (X one)			**Yes**	**No** X	
Industry Notified:	**Yes**	**No** X	**Industry Concurrence:**	**Yes**	**No**
Comments:					

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Tom Reis / Daniel Harness	**Office:** Specifications Section	**Item 3**
Submittal Date: 1/02/2007	**Proposed Effective Date:** 10/16/07	
Article No.: 2301.13, C, 1 **Title:** Measurement of Materials **Article No.:** 2301.34, A **Title:** Portland Cement Concrete Pavement **Article No.:** 2301.35, A **Title:** Portland Cement Concrete Pavement	**Other:**	

Specification Committee Action: Approved with the changes as noted.

Deferred:	**Not Approved:**	**Approved Date:** 1/11/07	**Effective Date:** 10/16/07

Specification Committee Approved Text: For 2301.13, C, 1, see Members Requested Change.

2301.34, A, Portland Cement Concrete Pavement.

Replace the first sentence of the first paragraph:

> The quantity of Standard or Slip-Form Portland Cement Concrete Pavement of the type specified in square yards (square meters), will be the quantity shown in the contract documents and applies to pavement, concrete pavement widening greater than 6 feet (1.8 m), side street connections, crossovers, ramps, acceleration and deceleration lanes or auxiliary lanes, and concrete paved shoulders ~~having the same design thickness~~.

2301.35, A, Portland Cement Concrete Pavement.

Replace the first sentence of the first paragraph:

> The Contractor will be paid the contract unit price for Standard or Slip-Form Portland Cement Concrete Pavement of the type specified per square yard (square meter) and applies to pavement, concrete pavement widening greater than 6 feet (1.8 m), side street connections, ramps, acceleration and deceleration lanes or auxiliary lanes, and concrete paved shoulders ~~having the same design thickness~~.

Comments: The Office of Construction agreed with the change to Article 2301.13, C, 1, but asked for the background of the changes to Articles 2301.34, A, and 2301.35, A. The Specifications Section noted that they would look into changes. After discussing this item further with the Office of Construction, the changes proposed above were approved.

Specification Section Recommended Text: See member's requested change.

Comments:

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

2301.13, C, 1, Measurement of Materials.

Replace the first sentence of the second paragraph:

On work requiring automatic cement scales, the performance of the scale will be determined near the end of the first full day of production and thereafter at a frequency ~~of approximately~~ not to exceed each 10,000 cubic yards (10,000 m^3) of concrete produced, by comparing the accumulated mass of cement proportioned with the corresponding accumulated mass of cement shipped to the project.

2301.34, A, Portland Cement Concrete Pavement.

Replace the first sentence of the first paragraph:

The quantity of Standard or Slip-Form Portland Cement Concrete Pavement of the type specified in square yards (square meters), will be the quantity shown in the contract documents and applies to pavement, concrete pavement widening greater than 6 feet (1.8 m), side street connections, crossovers, ramps, acceleration and deceleration lanes or auxiliary lanes, and concrete paved shoulders having the same design thickness as the mainline pavement.

2301.35, A, Portland Cement Concrete Pavement.

Replace the first sentence of the first paragraph:

The Contractor will be paid the contract unit price for Standard or Slip-Form Portland Cement Concrete Pavement of the type specified per square yard (square meter) and applies to pavement, concrete pavement widening greater than 6 feet (1.8 m), side street connections, ramps, acceleration and deceleration lanes or auxiliary lanes, and concrete paved shoulders having the same design thickness as the mainline pavement.

Reason for Revision: The Office of Construction suggested these changes to clarify the text.

County or City Input Needed (X one)			**Yes**	**No** X	
Comments:					
Industry Input Needed (X one)			**Yes**	**No** X	
Industry Notified:	**Yes**	**No** X	**Industry Concurrence:**	**Yes**	**No**
Comments:					

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Tom Reis / Daniel Harness / Mike Heitzman	**Office:** Specifications Section / Office of Materials	**Item 4**
Submittal Date: 12/19/2006	**Proposed Effective Date:** 10/16/07	
Article No.: 2316.05, A, 2 **Title:** Hot Mix Asphalt Pavements	**Other:**	

Specification Committee Action: Approved as is.

Deferred:	**Not Approved:**	**Approved Date:** 1/11/07	**Effective Date:** 10/16/07

Specification Committee Approved Text: See Member's Requested Change**.**

Comments: None.

Specification Section Recommended Text: See member's requested change.

Comments:

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

2316.05, A, 2, Hot Mix Asphalt Pavements.

Replace the second paragraph:

If the surface is corrected by diamond grinding, the work and equipment shall be the same as specified for PCC pavement except that the ground surface shall be covered with a seal coat ~~as described: in Article 2303.03, B, 2, for a runout.~~ in accordance with Section 2307 with the following modifications:

The binder bitumen may be the same material used for tack coat, applied at a rate of 0.10 gallon per square yard (0.45 L/m^2). Hand methods may be used for spraying.

The cover aggregate shall be sand, applied at a rate of 10 pounds per square yard (5 kg/m^2). Hand methods may be used may be used for spreading. The sand shall be slightly damp, but with no free moisture, as determined by visual inspection. Embedment shall be by at least one complete pneumatic roller coverage.

This seal coat is intended to be placed immediately after the diamond grinding is completed in the travel lane. This work shall be completed when the road surface temperature is above 60ºF (16ºC).

Labor, equipment, and materials used for this seal coat will not be paid for separately, but shall be considered incidental to the items for which correction is required.

Reason for Revision: This article is currently making reference to language that was removed with the 2001 Edition of the Standard Specifications. The Specifications Section worked with the Office of Materials to update the old language that was removed and add it in to this article.

County or City Input Needed (X one)	**Yes**	**No** X

Comments:

Industry Input Needed (X one)			**Yes**	**No** X	
Industry Notified:	**Yes**	**No** X	**Industry Concurrence:**	**Yes**	**No**
Comments:					

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Tom Reis / Daniel Harness	**Office:** Specifications Section	**Item 5**
Submittal Date: 1/3/07	**Proposed Effective Date:** 10/16/07	
Article No.: 2413.02, C **Title:** High Performance Concrete (HPC) **Article No.:** 2413.03, B, 3 **Title:** Proportioning and Mixing Equipment **Article No.:** 2413.03 **Title:** Placing and Finishing Equipment **Article No.:** 2413.03, C, 3 **Title:** HPC **Article No.:** 2413.06 **Title:** Proportioning and Mixing **Article No.:** 2413.07 **Title:** Placing and Finishing	**Other:**	

Specification Committee Action: None. Item withdrawn.

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

Specification Committee Approved Text:

Comments: Before the meeting, the Office of Construction asked to withdraw this item.

Specification Section Recommended Text: See member's requested change.

Comments:

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

2413.02, C, High Performance Concrete (HPC).

Add a new article:

C. High Performance Concrete (HPC).
HPC shall have the following proportions:

1. Basic w/c ratio of 0.40, with a maximum w/c ratio of 0.42.
2. A mid-range water reducing admixture meeting the requirements of Materials I.M. 403, Appendix C, shall be used. Other admixtures may be approved by the Engineer.
3. Air content shall be in accordance of Article 2413.02, A, except the target shall be 6.5%, with a maximum variation of plus 2% and minus 1%.

The slump, measured in accordance with Materials I.M. 317 shall be between 1 inch (25 mm) and 3 inches (75 mm) with a maximum of 4 inches (100 mm). Testing for slump from a continuous mixer shall commence within 2 to 4 minutes after the concrete is discharged.

The HPC mix shall have the following characteristics and absolute volumes per unit volume:

1. Cement: 0.134.
2. Fly ash (Class C): 15% replacement by weight (mass) maximum.
3. GGBFS: 25% replacement by weight (mass).
4. Water: 0.168 (w/c ratio of 0.40).
5. Course aggregate: 0.317.
6. Fine aggregate: 0.316.
7. Air: 0.065.

When blended cement (Type IP, IS, or I(SM)) is used, the GGBFS listed in 3 above shall be eliminated from the mix. Other mix combinations may be approved by the Engineer.

Grout for bonding shall meet the requirements of Article 2413.02, A.

2413.03, B, Proportioning and Mixing Equipment.

Add a new article:

3. Proportioning and mixing equipment for HPC shall meet the requirements of Paragraph 1 above. When volumetric proportioning equipment is used, the cement, fly ash, and GGBFS shall be pre-blended by the producer or by using equipment capable of thoroughly mixing the materials to the tolerances in ASTM C 685.

2413.03, C, Placing and Finishing Equipment.

Replace the second sentence of the first paragraph:

A self propelled finishing machine will be required for all surfacing and overlays.~~, and~~ For PCC and latex modified concrete, the front screed shall be designed to consolidate the mixture to be placed to 100% of the rodded density.

2413.03, C, 3, HPC

Add a new article:

3. HPC.
The finishing machine shall meet the requirements of either Article 2413.03, C, 1 or Article 2413.03, C, 2, except that the screed may be cable winched with approval of the Engineer.

2413.06, Proportioning and Mixing.

Replace the first sentence of the first paragraph:

For PCC and latex modified concrete, ~~T~~the mixture shall be proportioned and mixed at the project site.

Add as the second paragraph:

For HPC, ready mixed concrete equipment meeting the requirements of Articles 2001.20 and 2001.21 will be allowed.

2413.07, Placing and Finishing.

Add as the ninth paragraph:

Placing HPC overlay will not be allowed if the theoretical rate of evaporation for the pour exceeds 0.2 pounds per square foot per hour (1 kg/m^2 per hour). The theoretical rate of evaporation shall be calculated using the procedure in Article 2412.05.

Reason for Revision: The Office of Contracts requested that DS-01069 be incorporated into the GS.

County or City Input Needed (X one)			**Yes**	**No** X	
Comments:					
Industry Input Needed (X one)			**Yes**	**No** X	
Industry Notified:	**Yes**	**No** X	**Industry Concurrence:**	**Yes**	**No**
Comments:					

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Tom Reis / Daniel Harness	**Office:** Specifications Section	**Item 6**
Submittal Date: 1/2/07	**Proposed Effective Date:** 10/16/07	
Article No.: 2415.01 **Title:** Description (Concrete Box, Arch, and Circular Culvertrs)	**Other:**	

Specification Committee Action: Approved as is.			
Deferred:	**Not Approved:**	**Approved Date:** 1/11/07	**Effective Date:** 10/16/07
Specification Committee Approved Text: See Member's Requested Change.			
Comments: None.			
Specification Section Recommended Text: See member's requested change.			
Comments:			

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

2415.01, Description.

Replace the second sentence of the second paragraph.

These culvert sections shall meet requirements of ASTM C 1433~~, or if the cover is less than 2 feet (0.6 m) and the culvert is subject to highway loading, ASTM C 1433~~.

Reason for Revision: Previously, two ASTM standards were referenced in this sentence: ASTM C 789, and ASTM C 850 if the cover is less than 2 feet and the culvert is subject to highway loading. These have been replaced by one standard: ASTM C 1433. This eliminates the need to separate out culverts by cover and loading.

County or City Input Needed (X one)			**Yes**	**No** X	
Comments:					
Industry Input Needed (X one)			**Yes**	**No** X	
Industry Notified:	**Yes**	**No** X	**Industry Concurrence:**	**Yes**	**No**
Comments:					

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Tom Reis / Daniel Harness	**Office:** Specifications Section	**Item 7**
Submittal Date: 1/2/07	**Proposed Effective Date:** 10/16/07	
Article No.: 2426.01, B **Title:** Regular Repair	**Other:**	

Specification Committee Action: Approved as is.			
Deferred:	**Not Approved:**	**Approved Date:** 1/11/07	**Effective Date:** 10/16/07
Specification Committee Approved Text: See Member's Requested Change.			
Comments: None.			
Specification Section Recommended Text: See member's requested change.			
Comments:			

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

2426.01, B, Regular Repair.

Replace the fifth sentence:

Forms shall be removed in accordance with Article 2403.18 ~~20~~.

Reason for Revision: Article 2403.20 is Joints. Article 2403.18 is Removal of Forms and Falsework.

County or City Input Needed (X one)			**Yes**	**No** X	
Comments:					
Industry Input Needed (X one)			**Yes**	**No** X	
Industry Notified:	**Yes**	**No** X	**Industry Concurrence:**	**Yes**	**No**
Comments:					

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Tom Reis / Daniel Harness	**Office:** Specifications Section	**Item 8**
Submittal Date: 1/2/07	**Proposed Effective Date:** 4/17/07	
Article No.: DS-01056 **Title:** Developmental Specifications for Pavement Smoothness	**Other:**	

Specification Committee Action: Approved with changes as noted.

Deferred:	**Not Approved:**	**Approved Date:** 1/11/07	**Effective Date:** 4/17/07

Specification Committee Approved Text: See attached revision to DS-01056.

Comments: Before the meeting, the Office of Materials requested a change to the table in Article 2316.04, B (AVERAGE PROFILE INDEX PER 0.1 MILE (161 m) AFTER CORRECTIONS). They asked that the 35.0 in the second column of the second row be changed to 40.0. This change was initiated by Industry.

The Office of Contracts asked if Industry would be accepting of having different average profile indexes for HMA and PCC for speeds of 45 mph or less. The Office of Materials noted that Industry has no problems with it.

The Specifications Section discovered language in the first sentence of the first paragraph of Article 2316.04, B that is somewhat confusing to read. The Office of Materials suggested the changes included in the draft.

Specification Section Recommended Text: See member's requested change.

Comments: This will be issued as DS-01093.

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

See attached revision to DS-01056.

Reason for Revision: This article is currently making reference to language that was removed with the 2001 Edition of the Standard Specifications. The Specifications Section worked with the Office of Materials to update the old language that was removed and add it in to this article.

County or City Input Needed (X one)	**Yes**	**No** X
Comments:		

Industry Input Needed (X one)			**Yes**	**No** X	
Industry Notified:	**Yes**	**No** X	**Industry Concurrence:**	**Yes**	**No**
Comments:					

Draft DS-010XX
(Replaces DS-01056)

Iowa Department of Transportation

DEVELOPMENTAL SPECIFICATIONS
FOR
PAVEMENT SMOOTHNESS

Effective Date
April 17, 2007

THE STANDARD SPECIFICATIONS, SERIES 2001, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE DEVELOPMENTAL SPECIFICATIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

Replace all of Section 2316 with the following:

Section 2316. Pavement Smoothness

2316.01 GENERAL.
Pavement smoothness shall be evaluated for all Interstate and Primary main line pavement surfaces, and all other road surfaces included on Primary projects, except when specifically excluded by the contract documents. Pavement smoothness shall not be evaluated for all other roads unless specified in the contract documents. Main line pavement is defined as all permanent pavement for traffic lanes, including tapers to parallel lanes or through lanes at intersections, tapers to climbing lanes, and tapers to ramps and loops. Pavement smoothness shall also be evaluated for all interchange ramps and loops, side roads, auxiliary lanes, and bridge approaches. Exclusions from profilograph testing are detour pavement, shoulders, crossovers, and individual sections of pavement less than 50 feet (15 m) in length.

If this specification is required by contract documents on non-Primary projects let by the Department, it will be added in its entirety without modification.

The Engineer may determine the pavement smoothness according to Materials I.M. 341 using a 10 foot (3 m) straightedge or rolling straightedge on surfaces excluded from profilograph testing. The variation of the surface from the testing edge of the straightedge shall not exceed 1/8 inch (3 mm) between any two contacts, longitudinal or transverse. The Contractor shall correct all irregularities exceeding the specified tolerance using equipment and methods approved by the Engineer. After the Contractor has corrected an irregularity, the Engineer may perform monitor testing of the area to verify compliance with the specified tolerance.

2316.02 EQUIPMENT.
The Contractor shall provide and operate a California type profilograph to determine the pavement profile in accordance with Materials I.M. 341. Other types of profilographs or profilers that produce compatible results and meet the requirements of Materials I.M. 341 may be used. The Contractor's operator shall be trained and certified to operate the profilograph as required by the Contracting Authority.

If the Contractor's profilograph has a mechanical recorder, the Contractor shall provide automated trace reduction equipment in accordance with Materials I.M. 341. If the Contractor's profilograph has a computerized recorder, the trace produced will be evaluated without further reduction.

2316.03 SURFACE TOLERANCES, TESTING, AND EVALUATION.
A pavement section is defined as a continuous area of finished pavement 0.1 mile (161 m) in length and one lane (10 to 12 foot (3.0 to 3.7 m) nominal) in width. A partial section resulting from an interruption of the continuous pavement surface (i.e. bridge approaches, side road tie-ins, the cessation of the daily paving operations, etc.) is subject to the same evaluation as a whole section.

A. Tolerances.
The Contractor shall produce pavement with an average profile index per 0.1 mile (161 m) section as shown in the table below.

TOLERANCE FOR AVERAGE PROFILE INDEX PER 0.1 MILE (161 m)
(0 inch blanking band)

Surface Type	Profile Index For greater than 45 mph	Profile Index For 45 mph or less and ramps
	Inches per mile (mm/km)	Inches per mile (mm/km)
PCC Pavement	45.0 or less (710 or less)	65.0 or less (1025 or less)
HMA Pavement	40.0 or less (630 or less)	45.0 or less (710 or less)

B. Testing.
The Contractor shall determine the pavement profiles for each lane according to the procedures for one lane, as shown in Materials I.M. 341 except for main line traffic lanes and through lanes which will be tested in the wheel paths. Round the trace scallops to the nearest 0.01 inch (0.1 mm). The wheel paths are defined as the 3 feet (0.9 m) and 9 feet (2.7 m) from the center line or lane line. Average the two wheel path profile indexes for each section. Additional profiles may be taken only to define the limits of an out-of-tolerance surface variation. The Engineer may use a 10 foot (3 m) straightedge (or other means) to detect irregularities outside the required trace paths. The Engineer may also use the straightedge to delineate the areas that require corrective action.

C. Evaluation.
The Contractor shall determine a profile index based on the 0 inch (0 mm) blanking band following the same procedures shown in Materials I.M. 341 for each section of finished pavement surface except for:

1. Side roads connections less than 600 feet (180 m) in length.
2. Bridge approaches less than 50 feet (15 m).
3. Storage lanes, turn lanes, and other auxiliary lanes less than 600 feet (180 m).
4. Pavement less than 8.5 feet (2.6 m) in width.
5. The 16 feet (5 m) beyond the ends of the section when the Contractor is not responsible for the adjoining surface.
6. On HMA pavements, single lift pavement overlays.
7. Runout tapers on HMA overlays at existing pavement, bridges, or bridge approach sections where the thickness is less than the design thickness.

The Contractor shall determine, for information only, a profile index based on the 0.2 inch (5.1 mm) blanking band.

For the following situations, the profile index will be evaluated. If the average profile index exceeds the tolerances listed in Article 2316.03, A, the Contractor may elect to eliminate that area from the profile index for the day's paving operation and evaluate the area using a 10 foot (3 m) straightedge as outlined in Article 2316.01.

1. Horizontal curves with a centerline radius of less than 1000 feet (300 m) and the pavement within the superelevation transition of such curves.
2. Crest and sag vertical curves with an L/A < 100 where L is the length of curve in feet and A is the grade change in percent (L/A < 30.5 where L is the length in meters and A is the grade change in percent).

The Contractor shall determine a daily average profile index for each day's paving operation. A day's paving operation is defined as a minimum of 0.1 mile (161 m) section of pavement placed in a day. If less than 0.1 mile (161 m) section is paved, the day's production will be grouped with the next day's production. If the production of the last day of project paving is less than 0.1 mile (161 m) section, it will be grouped with the previous day's production.

During the first 3 days of the paving operation, and after long shut-down periods, the pavement shall be tested and the test report furnished to the Engineer and District Materials Engineer by the end of the next day worked following the placement. On HMA pavement, the testing shall be performed as soon as the pavement has cooled sufficiently to permit testing. The Engineer and the Contractor will use the results of the initial testing to evaluate the paving methods and equipment. If the initial paving operation produces acceptable results, the Contractor may continue paving.

If the day's average profile index exceeds 45.0 inches per mile (710 mm/km) (65.0 inches per mile (1025 mm/km) on roadways with posted speeds of 45 mph or less), the paving operation will be suspended until corrective action is taken by the Contractor. When the paving is resumed, the paving operations will be evaluated with the start-up testing procedures in the preceding paragraph.

The Contractor shall make the profilogram and evaluation available to the Engineer and District Materials Engineer during the project and furnish both at the end of the project. The evaluation of the trace shall be performed according to Materials I.M. 341. The test report shall be furnished to the Engineer within 2 working days after placement of the pavement and again within 2 working days after any corrections are made.

2316.04 CORRECTIVE ACTIONS.
The pavement will be evaluated in 0.1 mile (161 m) sections using the profilograph, to determine pavement sections where corrective work or pay adjustments will be necessary. Each individual profilograph trace will be evaluated (not the average of multiple traces) to determine the areas where corrective action on 0.5 inches (12.7 mm) bumps and dips is needed.

Within each 0.1 mile (161 m) section, all areas representing high points (bumps) or low points (dips) with deviations in excess of 0.5 inches (12.7 mm) in a length of 25 feet (7.6 m) or less shall be corrected by the Contractor regardless of the profile index value. Pavement sections excluded from profile index evaluation in Article 2316.03 shall be evaluated for high points and low points with deviations in excess of 0.5 inches (12.7 mm) in a length of 25 feet (7.6 m) or less and shall be corrected by the Contractor.

Bumps and dips equal to or exceeding 0.5 inches (12.7 mm) in a length of 25 feet (7.6 m) or less shall be identified separately.

A. ~~For r~~Roadways with a posted speed greater than 45 mph.

Any 0.1 mile (161 m) section, including bumps, having an initial average profile index of greater than those tolerances shown in Article 2316.03, A, shall be corrected to reduce the average profile index to those shown in the table below, or replaced at the Contractor's option. On sections where corrections are made, the Contractor shall test the pavement to verify that corrections have met the average profile index as shown in the table below.

B. ~~For r~~Roadways with a posted speed of 45 mph, or less, and ramps~~. from the nose to the intersection of the adjoining roadway, acceleration and deceleration lanes including the taper, and/or~~

~~acceleration lanes that become a through lane are limited to 500 feet (150 m) from the nose:~~

Any 0.1 mile (161 m) section, including bumps, having an initial average profile index of greater than those tolerances shown in Article 2316.03, A, shall be corrected to reduce the average profile index to those shown in the table below, or replaced at the Contractor's option. On sections where corrections are made, the Contractor shall test the pavement to verify that corrections have met the average profile index as shown in the table below.

AVERAGE PROFILE INDEX PER 0.1 MILE (161 m) AFTER CORRECTIONS
(0 inch blanking band)

Surface Type	Profile Index For greater than 45 mph	Profile Index For 45 mph or less and ramps
	Inches per mile (mm/km)	Inches per mile (mm/km)
PCC Pavement	40.0 or less (630 or less)	65.0 or less (1025 or less)
HMA Pavement	~~35.0~~ 40.0 or less (550 or less)	45.0 or less (710 or less)

C. Bridge approach sections having an initial average profile index of 65.1 inches per mile (1026 mm/km) or greater shall be corrected to reduce the profile index to 65.0 inches per mile (1025 mm/km) or less on each trace, or replaced at the Contractor's option. On sections where corrections are made, the pavement will be tested by the Contractor to verify that corrections have produced a profile index of 65.0 inches per mile (1025 mm/km) or less for each trace.

D. Corrective work shall be at the Contractor's expense except for the 16 feet (5 m) beyond the end of the section when the Contractor is not responsible for the adjoining surface. Corrective work shall be completed prior to determining pavement thickness.

Bush hammers or other impact devices will not be permitted.

1. PCC Pavement.
On PCC pavement, corrections shall be made using an approved profiling device or by removing and replacing the pavement. The corrective methods used by the Contractor shall be applied to the full lane width. When completed, the corrected area (full lane width) shall have uniform texture and appearance, with the beginning and ending of the corrected area squared normal to centerline of the paved surface. Where surface corrections are made, transverse grooving will not be required.

2. HMA Pavement.
On HMA pavement, corrections shall be made by diamond grinding, by overlaying the area, by replacing the area, or by inlaying the area. If the surface is corrected by diamond grinding, the work and equipment shall be the same as specified for PCC pavement except that the ground surface shall be covered with a seal coat ~~as described in Article 2303.03, A, 2, for a runout.~~ in accordance with Section 2307 with the following modifications:

The binder bitumen may be the same material used for tack coat, applied at a rate of 0.10 gallon per square yard (0.45 L/m^2). Hand methods may be used for spraying.

The cover aggregate shall be sand, applied at a rate of 10 pounds per square yard (5 kg/m^2). Hand methods may be used may be used for spreading. The sand shall be slightly damp, but with no free moisture, as determined by visual inspection. Embedment shall be by at least one complete pneumatic roller coverage.

This seal coat is intended to be placed immediately after the diamond grinding is completed in the travel lane. This work shall be completed when the road surface temperature is above 60ºF (16ºC).

Labor, equipment, and materials used for this seal coat will not be paid for separately, but shall be considered incidental to the items for which correction is required.

If the surface is corrected by overlay, replacement, or inlay, the surface correction shall begin and end with a transverse saw cut normal to the pavement lane lines or edge lines within any one area. The profile of the surface must be smooth with no bumps or dips at beginning or end or correction.

Overlay correction must be for the entire pavement width. Pavement cross slope must be maintained through the corrected areas.

E. The Engineer may perform profilograph testing on the surface for monitoring and comparison purposes. The procedure for monitoring and comparing results is in Materials I.M. 216. The Engineer may test the entire project length if it is determined that the Contractor certified test results are inaccurate, and the Contractor will be charged for this work at a rate of $400.00 per mile ($250.00 per kilometer), per profile track, with a minimum charge of $800.00. Furnishing inaccurate tests may result in decertification of the Contractor's certified operator.

On lanes over 8.5 feet (2.6 m) in width, for through traffic which requires matching the surface of the new pavement to the surface of an existing pavement, an Average Base Index (ABI) will be calculated as shown in Materials I.M. 341; this will be the smoothness base in inches per mile (millimeters per kilometer) for payment for the new pavement unless otherwise specified. The schedule for adjusted payment for the ABI is in Article 2316.05. Should the surface of the existing pavement be specified for correction, smoothness testing for ABI calculation shall be done after correction. Surface correction is required for smoothness exceeding ABI+50 for any section for posted speeds greater than 45 mph or exceeding ABI+85 for any section for posted speeds of 45 mph or less and ramps.

2316.05 PAY ADJUSTMENTS.
Pay adjustments will be based on the initial average profile index determined for the sections prior to performing any corrective work. Areas excluded from the profilograph testing and bridges approaches will not be subject to price adjustments.

If the Contractor elects to remove and replace the sections, the Contractor will be paid the price adjustment that corresponds to the initial average profile index obtained on the pavement sections after replacement.

When the plans dictate that an area of pavement is to be hand finished, the area will not be subject to reduced payment. However, the area is to be profiled and corrected as necessary to meet these specifications.

A. PCC Pavement.
The payment will be adjusted as shown in the table below according to the posted or proposed speed.

SCHEDULE FOR ADJUSTMENT PAYMENT
FOR PCC PAVEMENTS (0 inch blanking band)

Profile Index For greater than 45 mph	Profile Index For 45 mph or less and ramps	
Inches per mile (mm/km)	Inches per mile (mm/km)	Dollars per 0.1 mi. section per lane
22.0 or less (345 or less)	25.0 or less (395 or less)	+850.00
22.1 to 23.5 (346 to 370)		+650.00
23.6 to 26.0 (371 to 410)	25.1 to 30.0 (396 to 475)	+450.00
26.1 to 45.0 (411 to 710)	30.1 to 65.0 (476 to 1025)	0.00
45.1 or more (711 or more)	65.1 or more (1026 or more)	0.00*

* These sections must be corrected to the levels shown in the table in Article 2316.04.

B. HMA Pavement.
The payment will be adjusted as shown in the table below according to the posted or proposed speed.

SCHEDULE FOR ADJUSTMENT PAYMENT
FOR HMA PAVEMENTS (0 inch blanking band)

Profile Index For greater than 45 mph	Profile Index For 45 mph or less and ramps	
Inches per mile (mm/km)	Inches per mile (mm/km)	Dollars per 0.1 mi. section per lane
10.0 or less (160 or less)		+750.00
10.1 to 11.5 (161 to 180)	15.0 or less (235 or less)	+500.00
11.6 to 13.5 (181 to 215)		+350.00
13.6 to 15.5 (216 to 245)	15.1 to 20.0 (236 to 315)	+200.00
15.6 to 40.0 (246 to 630)	20.1 to 45.0 (316 to 710)	0.00
40.1 or more (631 or more)	45.1 or more (711 or more)	0.00*

* These sections must be corrected to the levels shown in the table in Article 2316.04.

C. Pavements using ABI.

SCHEDULE FOR ADJUSTMENT PAYMENT
FOR PAVEMENTS USING ABI (0 inch blanking band)

Profile Index For greater than 45 mph	Profile Index 45 mph or less and ramps	Contract Price Adjustment
Inches per mile (mm/km)	inches per mile (mm/km)	Dollars per section*
0 to ABI	0 to ABI	0.00
ABI +.1 (1) to ABI +30.0 (470)	ABI +0.1 (1) to ABI +45.0 (710)	-300.00
ABI +30.1 (471) to ABI +40.0 (630)	ABI +45.1 (711) to ABI +65.0 (1025)	-500.00
ABI +40.1 (631) to ABI+50.0 (790)	ABI +65.1 (1026) to ABI +85.0 (1340)	-800.00

* Payment will be based on results after correction.

Item 9

Adding Developmental and Supplemental Specifications and Special Provisions.

Several offices requested a discussion related to the best procedure for adding specifications to projects. Topics of interest are the procedures for adding specifications (SS, DS, or SP), timetables involved, processing of the specification list, and better communication between offices regarding adding specifications.

Synopsis of Discussion:

The Specifications Section explained that three Specification lists are prepared for each letting: the first Tuesday of the month (coinciding with plan turn-in), the third Tuesday of the month (coinciding with the last day for plan changes from the designer), and the first Tuesday of the following month (coinciding with the Office of Contracts preparing to print proposals). Changes from one list to the next are indicated using highlight and strikeout.

The Office of Contracts explained that having three Specification lists requires their office to check plans for changes to SPs, DSs, and SSs two more times after plan turn-in. They would prefer that all specifications be turned in at plan turn-in. The Office of Construction agreed with the idea of having a set date that all documents must be turned in, but noted it needs to be a realistic date. They have in the past requested DSs to be added to plans after turn-in without any problems. The Office of Contacts noted that they don't have a problem with a DS being added after turn-in, but it should be the exception, not normal practice. The Office of Construction explained that they can live with whatever date works best for the Office of Contracts, but they need to be aware of that date and what drives the choice for that date.

The Office of Construction noted that it would be very beneficial if the Controller of a DS could add that DS to the Project Scheduling System (PSS). The Office of Design agreed. The PSS could be set up so that if the controller adds a DS, PSS automatically sends an e-mail to the designer and the Specifications Section. Currently, PSS sends an e-mail to the Controller and the Specifications Section when the designer selects a DS with a Controller. The Office of Construction also added they would like for the Controller to have the ability to remove their DS. The Specifications Section explained that PSS was set up to allow only personnel in the Specifications Section to remove SSs, DSs, and SPs to avoid potential problems with people inadvertently deleting them. The Specifications Section asked if it would be beneficial to also allow designers to remove DSs. The Office of Design noted that it would be helpful, especially in situations when a designer inadvertently adds a DS twice to the same project. Currently, they need to contact the Specifications Section to have it done.

The Office Contracts noted that DSs and SPs shouldn't be added after plan turn-in without contacting their office. The Office of Construction agreed and suggested that PSS be locked down after plan turn-in.

The Office of Construction noted they have a service request to allow them to select an SS or DS and have PSS produce a report of projects to which they have been applied. They noted that the current system of relying on the Specification list isn't working since the list isn't finalized until after plan turn-in. They need to know before plan turn-in what DSs and SSs are being applied to which projects.

The Office of Contracts noted that ideally, controllers should be adding their DSs to PSS with an e-mail being sent to the designer. In addition, anyone should be able to go into PSS and select a project and be able to see which DSs, SSs, and SPs apply. The Office of Construction noted that they would also like to be able to see the history for DSs and SSs.

The Specifications Section will investigate if the history can be made available to everyone. The Specifications Section will also investigate if controllers can be allowed to add their DSs to PSS and if the system can be locked down so DSs, SSs, and SPs cannot be added except by the Office of Contracts after plan turn-in date. The Office of Design will check to see if BIAS, when added to PSS, will indicate if a DS or SS is required.

Item 10

Adding a New Division to the Standard Specifications.

The Specifications Section requested a discussion of adding a Division 30 to the Standard Specifications. This new division would incorporate Traffic Signals, Storm Sewer, Sanitary Sewer, and Water Main from the SUDAS manual.

Currently, a group of individuals from the Iowa DOT and SUDAS are working to eliminate inconsistencies between the Standard Specifications and SUDAS specifications, with the goal of merging the two manuals in the future. The group is proposing to add several divisions of the SUDAS manual as Division 30 in the Standard Specifications. SUDAS will maintain the text of this Division with input from the Iowa DOT.

SUDAS is nearing completion of revisions for the October 2007 ERL. These revisions will require DS-01043, Sanitary Sewer (SUDAS); DS-01044, Storm Sewer (SUDAS); and DS-01046, Water Main (SUDAS), to be rewritten. The Specifications Section would like input from the Committee on adding these rewritten DSs to the GS as a first step towards the eventual merging of the manuals. This would result in a fairly substantial increase to the size of the GS, but would eliminate the need for the DSs, and would allow a trial run for merging the manuals before the new Standard Specifications manual is published for use with the October 2008 letting.

Synopsis of Discussion:

The Specifications Section noted the SUDAS DSs total approximately 230 pages. This would increase the size of the GS significantly. Another option might be to convert the DSs to SSs. This would be a first step towards adding these into the Standard Specifications.

Office of Construction expressed concern with discrepancies between SUDAS sections and the Standard Specifications. The Specifications Section explained that the SUDAS specifications would replace the Iowa DOT's sections. The Office of Construction is concerned that the end result might be specifications that are too broad and general, rather than tailored for the needs of the Iowa DOT.

The Specifications Section explained that one advantage of merging the manuals is economy of scale. Contractors would need only one manual. They further explained that SUDAS already refers extensively to the Standard Specifications. Where discrepancies occur, the specifications could be tiered. The Office of Construction expressed concern with tiered specifications. Tiered specifications have failed in some situations. The Office of Contracts pointed out that merging specifications would benefit contractors further by bringing consistency between projects that involve both rural and urban work. The Office of Local Systems noted that water mains, storm sewers, sanitary sewers, traffic signals, sidewalks, driveways, and recreation trails are typically maintained by local agencies. It would make sense to use their specifications. In addition, they have expertise in these areas, so it would be to our advantage to let SUDAS maintain sections related to that type of work.

The Office of Contracts explained that the benefits resulting from allowing SUDAS to have the lead on a division related to urban work would outweigh the cost of creating new bid items associated with it. Placing the SUDAS sections in a new division would demonstrate the Iowa DOT's willingness to partner with SUDAS. The Office of Construction asked if the SUDAS specifications could be incorporated into current Standard Specification sections. Local Systems stated they could be, but creating a new division would further help to indicate the sections for which SUDAS has the lead.

The Specifications Section noted that the study of inconsistencies between DOT and SUDAS specifications revealed over 900 differences. Not all these differences are going to be resolved. Some work items, the Iowa DOT will stay with what it does and SUDAS will stay with what they do. A process for resolving those differences has not yet been established, but will need to be before the manuals can be effectively merged.

The Office of Traffic and Safety expressed concern with how changes in SUDAS specifications would be referenced. The Specifications Section explained that SUDAS publishes their changes once per year to coordinate with the Iowa DOT's schedule so they can be released with the Electronic Reference Library (ERL).

The Office of Design mentioned that they are working with SUDAS to merge a number of standard drawings related to storm sewers.

The Office of Construction noted that the DOT needs to have oversight on what goes into the specifications regardless of who has the lead. The Specifications Section agreed and added that there is already quite a bit of overlap between SUDAS and the Iowa DOT. However, some areas, such as payment of incentives and pavement smoothness may create differences that can only be resolved using tiered specifications.

The Office of Contracts noted that everyone on the committee seems to recognize SUDAS has the expertise on specifications for work in urban areas. The issue to resolve is how to place SUDAS specifications into the Standard Specifications. Incorporating their specifications into our current divisions would be easiest for the Office of Contracts. It would avoid the need to create new bid items. However, creating a new division would help to emphasize that those sections are for urban areas. In addition, it would indicate to SUDAS the Iowa DOT's willingness to work with them by placing a division in the Standard Specifications for which they have the lead. The Office of Local Systems noted that SUDAS would likely prefer a new division be created.

The Specifications Section noted that the Specification Committee will need to decide which sections of SUDAS, beyond sanitary sewer, storm sewer, water mains, and traffic signalization, to include in the Standard Specifications. They would also need to investigate the timeline for adding the new sections to the GS and investigate SUDAS' timeline for rewriting their sections to ensure it matches ours for publishing a new book.

The Office of Contracts proposed we notify SUDAS that the committee is agreeable to letting them take the lead on water mains, sanitary sewers, storm sewers, and traffic signals, but we still need to determine our level of approval and involvement. The Iowa DOT would replace those sections with SUDAS' and SUDAS would remove those sections from their manual and reference the Standard Specifications. SUDAS and the Iowa DOT need to determine where the sections will be placed in the Standard Specifications.

The Specifications Section has decided for now to proceed with maintaining the SUDAS storm sewer, sanitary sewer, water main, and traffic signals DSs as DSs. If the Specification Committee decides to include these in the Standard Specifications, they will be reorganized into the 5 part AASHTO format.