**INDIANA DEPARTMENT OF TRANSPORTATION**
*Driving Indiana's Economic Growth*

100 North Senate Avenue
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**Mitchell E. Daniels, Jr., Governor**
**Michael B. Cline, Commissioner**

# FIRST DRAFT MINUTES

## January 19, 2012 Standards Committee Meeting

**(The changes made to the Agenda and Addendum 01 by the action of the Committee are shown highlighted in yellow.)**

FIRST DRAFT MINUTES

MEMORANDUM

January 27, 2012

TO: Standards Committee

FROM: Scott Trammell, Secretary

RE: Minutes from the January 19, 2012 Standards Committee Meeting

The Standards Committee meeting was called to order by Mr. Miller at 09:00 a.m. on January 19, 2012 in the N955 Bay Window Conference Room.
The meeting was adjourned at 12:44 p.m.

The following committee members were in attendance:

Mark Miller, Chairman
Greg Pankow**, State Constr. Eng.
Dave Boruff, Traffic Admin.
Ron Walker, Materials Mgmt.
Ron Heustis, Major Prgm. Mgmt.
Jim Keefer, Fort Wayne Dist.
Randy Strain, Str. Services
Richard VanCleave, Roadway Servs.
Bob Cales, Contract Admin.
Mike Buening*, Pvmt. Eng.

**Proxy for Dave Andrewski*
***Proxy for Mark Miller (items 02, 03, and 04)*

Also in attendance were the following:

Bren George, FHWA
Paul Berebitsky, ICA
Tony Uremovich, INDOT
Michael Prather, INDOT
Charlie Holland, APAI
Peter Capon, APAI Rieth-Riley
Athar Khan, INDOT
Scott Trammell, Secretary
Steve Fisher, INDOT SiteManager
Wendy Chiles, INDOT
Jim Reilman*, INDOT
Howard Lewis Duke Energy
Derrick Hauser, INDOT
Lana Podorvanova, INDOT

**Proxy for Greg Pankow (items 02, 03, and 04)*

The following items were listed for consideration:

*A. GENERAL BUSINESS ITEMS*

OLD BUSINESS

*(No items on this agenda)*

NEW BUSINESS

1. Payment for Stockpiled Dowel Bar Assemblies

Refer to Construction Memo 11-11.

*B. CONCEPTUAL PROPOSAL ITEMS*

OLD BUSINESS

*(No items on this agenda)*

NEW BUSINESS

*(No items on this agenda)*

*C. STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS PROPOSED ITEMS*

OLD BUSINESS

*(No items on this agenda)*

NEW BUSINESS

Item No. 01 01/19/12 (2012 SS) Mr. Cales pg 08
Recurring Special Provision
*105-X-XXX* *HMA ITEM CONTRACT PRICE EXTENSION TO INDOT MAINTENANCE*

ACTION: WITHDRAWN

Item No. 02 01/19/12 (2012 SS) Mr. Pankow pg 11
Recurring Special Provision
*202-X-XXX* *REMOVAL OF RCBA AND REINFORCED CONCRETE MOMENT SLABS*

ACTION: PASSED AS REVISED

Item No. 03 01/19/12 (2012 SS) Mr. Pankow pg 14
Recurring Special Provision
*704-X-XXX* *PLACING REINFORCEMENT AND CONCRETE*

ACTION: WITHDRAWN

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Item No. 04 01/20/12 (2012 SS) Mr. Pankow pg 18

Recurring Special Provision

*711-X-XXX* *STRUCTURAL STEEL, GENERAL*

ACTION: PASSED AS REVISED

Item No. 05 01/19/12 (2012 SS) Mr. Walker pg 22

Recurring Special Provision

203-R-360 ~~EMBANKMENTS CONSTRUCTED OF COAL COMBUSTION BY PRODUCTS~~ *EMBANKMENT CONSTRUCTION USING COAL ASH*

ACTION: WITHDRAWN

Item No. 06 01/19/12 (2012 SS) Mr. Walker pg 34

903.05 Organic Soils
903.06 Marly Soils

ACTION PASSED AS SUBMITTED

Item No. 07 01/19/12 (2012 SS) Mr. Walker pg 37

Recurring Special Provision

412-R-549 FOG SEAL

ACTION PASSED AS SUBMITTED

Item No. 08 01/19/12 (2012 SS) Mr. Walker pg 41

Recurring Special Provision

401-R-581 JOINT ADHESIVE ~~AND INFORMATIONAL CORES~~

ACTION WITHDRAWN

Item No. 09 01/19/12 (2012 SS) Mr. Walker pg 47

105.13 Maintenance During Construction
401.04 Design Mix Formula
401.05 Volumetric Mix Design
401.08 Job Mix Formula
401.09 Acceptance of Mixtures
401.11 Preparation of Surfaces to be Overlaid
401.16 Density
401.20(d) BSG of the Density Core
402.04 Design Mix Formula
402.06 Job Mix Formula
402.11 Preparation of Surfaces to be Overlaid
402.16 Low Temperature Compaction Requirements
402.20 Basis of Payment
410.04 Design Mix Formula
410.08 Job Mix Formula
410.16 Density
410.20(c) BSG of the Density Core

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*SECTION 415* *BASE SEAL*

ACTION WITHDRAWN

cc: Committee Members (11)
FHWA (2)
ICA (1)

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**INDIANA DEPARTMENT OF TRANSPORTATION**
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**Mitchell E. Daniels, Jr., Governor**
**Michael B. Cline, Commissioner**

December 5, 2011

**CONSTRUCTION MEMORANDUM**
**11-11**

TO: District Deputy Commissioners
District Construction Directors
District Testing Engineers
District Area Engineers
District LPA Coordinators
Field Engineers
Technical Services Directors
Project Engineers/Supervisors
Office of Materials Management

FROM: Mark A. Miller, Director ***[SIGNED]***
Division of Construction Management

SUBJECT: Payment for Stockpiled Dowel Bar Assemblies

The 2012 Standard Specifications Section 111.04 allows for payment for stockpiled dowel assemblies if the materials are stockpiled within the project limits or at a storage facility adjacent to the project site and if the remaining requirements of section 111 are met.

Due to the large quantity of PCCP paving that is scheduled with I-69, US 31, SR 25, and other corridors currently under construction, manufacturers of dowel bar assemblies have been forced to fabricate these assemblies well in advance of the paving operation taking place. As a result, it has been necessary for Contractors to acquire the assemblies earlier and in many situations there are no locations within the project limits or storage facilities available for stockpiling adjacent to the project site. Therefore, a recurring special provision has been developed for future contracts that will allow dowel bar assemblies to be stockpiled at an approved location.

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In addition, District Construction personnel should consider Contractor requests for proposed stockpile locations at sites other that within the project limits or at storage facilities adjacent to the project regardless of whether or not the contract permits dowel bar assembly stockpiles at an approved location. In situations where the contract does not include approved stockpile location language, this Construction Memo should be attached to the change order that pays for the stockpiled dowel assemblies as authorization for allowing for an approved stockpile location.

When evaluating a Contractor request for an alternate stockpile location, District Construction personnel should consider the following:

- Is the address of the proposed stockpile location included in the request?
- Are there currently other materials for the contract or other contracts being stockpiled at the proposed location? If so, does the Contractor have ability to dedicate a specific location to the proposed dowel basket assembly stockpile that is separate from other stockpiles?
- Does the Contractor request include a contact for facilitating INDOT inspection of the stockpile location?

If the request addresses all of the above issues in a satisfactory manner, District Construction personnel should approve the location and pay for the stockpiled materials in accordance with 111.09 and 111.11.

For active contracts that do not include a special provision that includes language that allows stockpiled dowel basket assemblies at approved locations, District Construction personnel should review Contractor proposals for alternate stockpile locations in the manner described above. This Construction Memo should be attached to the change order that adds the dowel basket assembly stockpiled materials pay item to the contract to authorize stockpiling these materials at locations not authorized by 111.

MAM/jgj

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PAYMENT FOR STOCKPILED DOWEL BAR ASSEMBLIES GENERAL BUSINESS ITEM

BACKUP 02. SPECIAL PROVISION 111-R-594 DOWEL BAR ASSEMBLY STOCKPILED MATERIAL REQUIREMENTS *(issued and in effect 03-01-12)*

111-R-594 DOWEL BAR ASSEMBLY STOCKPILED MATERIAL REQUIREMENTS

*(Adopted 12-05-11)*

The Standard Specifications are revised as follows:

SECTION 111, BEGIN LINE 40, DELETE AND INSERT AS FOLLOWS:

**111.04 Dowel Bar Assemblies**

Partial payment made under the requirements herein will be the delivered cost of the dowel bar assemblies stored within the project limits, ~~or~~ at a storage facility adjacent to the project site, *or at a location approved by the Engineer*. Basis of payment for the dowel bar assemblies shall be the paid invoices furnished by the Contractor. Prior to authorizing partial payment, verification will be obtained that the dowel bars have been tested and are acceptable.

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Mr. Cales
Date: 01/19/12

SPECIFICATIONS, SPECIAL PROVISIONS AND DRAWINGS

REVISION TO SPECIAL PROVISIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Maintenance has monthly material bids for hot mix. However, it often happens that unplanned for situations develop requiring hot mix, when the plant that has our bid is not making the material we need.

PROPOSED SOLUTION:

Add the attached recurring special provision to the 105 section of the spec book. This would allow maintenance to obtain material bid on a contract at the contract price, with the restrictions spelled out in the provision.

This would allow additional options for maintenance to acquire hot mix.
Proposed Basis for Use: Any 401 or 402 HMA Base, Intermediate, or Surface item.

APPLICABLE STANDARD SPECIFICATIONS: 105

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: N/A

APPLICABLE SECTION OF GIFE: Unknown

APPLICABLE RECURRING SPECIAL PROVISIONS: Proposed new RSP 105-R-XXX.

Submitted By: Todd Shields for Bob Cales

Title: Manager, Office of Technical Services

Organization: INDOT

Phone Number: 317-233-4726

Date: October 17, 2011

APPLICABLE SUB-COMMITTEE ENDORSEMENT? Ad hoc (HMA tech committee, FHWA)

FIRST DRAFT MINUTES

REVISION TO SPECIAL PROVISIONS

PROPOSED NEW 105-R-XXX HMA ITEM CONTRACT PRICE EXTENSION TO INDOT MAINTENANCE

105-R-XXX HMA ITEM CONTRACT PRICE EXTENSION TO INDOT MAINTENANCE

*(Adopted XX-XX-12)*

The Standard Specifications are revised as follows:

SECTION 105, BEGIN LINE 832, INSERT AS FOLLOWS:

***105.17 HMA Item Contract Price Extension to INDOT Maintenance***

*The Contractor shall extend the unit price for all HMA items bid to INDOT Maintenance forces. This price extension shall only apply when the certified HMA plant is producing HMA for this contract, and the HMA is being produced at the time of pickup. INDOT will pick up the material at the hot mix plant utilizing INDOT equipment.*

*The amount of HMA provided to INDOT Maintenance forces shall be limited to 25 tons per day.*

*In the event that the plant is producing HMA mixture for multiple INDOT contracts at the same time, the price extension will apply to the lowest price. The Contractor shall weigh and invoice the material separate from this contract, and submit the invoice to the specified INDOT Subdistrict office.*

*Compliance with this provision shall in no way impact the terms of this contract, and shall not be used as a basis for delays, change orders or cost overruns.*

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COMMENTS AND ACTION

105-R-XXX HMA ITEM CONTRACT PRICE EXTENSION TO INDOT MAINTENANCE

DISCUSSIONS:

This item has been withdrawn at this time.

| | |
|---|---|
| Motion:<br>Second:<br>Ayes:<br>Nays: | Action:<br>_____ Passed as Submitted<br>_____ Passed as Revised<br>__X__ Withdrawn |
| Standard Specifications Sections affected:<br><br>Section 105 pg 55.<br><br>Recurring Special Provision affected:<br><br>NONE<br><br>Standard Sheets affected:<br><br>NONE<br><br>Design Manual Sections affected:<br><br>NONE<br><br>GIFE Sections cross-references:<br><br>NONE | ____ 20__ Standard Specifications Book<br>____ Revise Pay Items List<br><br>____ Create RSP (No.____)<br>Effective ____ Letting<br>RSP Sunset Date: ____<br><br>____ Revise RSP (No.____)<br>Effective ____ Letting<br>RSP Sunset Date: ____<br><br>Standard Drawing Effective ____<br>____ Create RPD (No. ____)<br>Effective ____ Letting<br>____ Technical Advisory<br><br>GIFE Update Req'd.? Y ___ N ___<br>By ____ Addition or ____ Revision<br><br>Frequency Manual Update Req'd? Y___N___<br>By ____ Addition or ____ Revision<br><br>Received FHWA Approval? ____ |

FIRST DRAFT MINUTES

SPECIFICATIONS, SPECIAL PROVISIONS AND DRAWINGS

REVISION TO SPECIAL PROVISIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: There has been confusion and inconsistency regarding method of measurement, basis of payment, and pay items for removal of reinforced concrete bridge approach slabs.

PROPOSED SOLUTION: Incorporate the attached changes into the specification.

APPLICABLE STANDARD SPECIFICATIONS: 101.01 & 202.05

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION:

APPLICABLE SECTION OF GIFE: None

APPLICABLE RECURRING SPECIAL PROVISIONS: Create new 202-X-XXX recurring special provision

PAY ITEMS AFFECTED: None

Submitted By: Greg Pankow

Title: State Construction Engineer

Organization: INDOT

Phone Number: 2-5502

Date: December 2, 2011

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc committee consisting of: Greg Carleton, Kirk Frederick, and Jim Reilman

FIRST DRAFT MINUTES

REVISIONS TO SPECIAL PROVISIONS

PROPOSED NEW 202-X-XXX REMOVAL OF RCBA AND REINFORCED CONCRETE MOMENT SLABS

202-X-XXX REMOVAL OF RCBA AND REINFORCED CONCRETE MOMENT SLABS

*(Adopted XX-XX-12)*

The Standards Specifications are revised as follows:

SECTION 101, AFTER LINE 93, INSERT AS FOLLOWS:

RAP recycled asphalt pavement
*RCBA reinforced concrete bridge approaches*
RCRA Resource Conservation and Recovery Act

SECTION 202, BEGIN LINE 200, INSERT AS FOLLOWS:

**202.05 Removal of PCCP, Sidewalks, Curbs, ~~etc.~~*RCBA, and Reinforced Concrete Moment Slabs***

All *unreinforced* PCCP, sidewalks, curbs, gutters, ~~etc.,~~*and other unreinforced concrete elements* designated for removal shall be:

(a) broken into pieces and used for riprap on the project; or

(b) broken into pieces, the maximum weight of which shall be 150 lb ~~(68 kg)~~, and incorporated into the work as directed; or

(c) otherwise disposed of in accordance with 202.02.

*RCBA, reinforced concrete moment slabs, and other concrete containing reinforcement ~~and reinforced concrete moment slabs~~ designated for removal shall be disposed of in accordance with 202.02.*

Pavement removal shall consist of the removal and satisfactory disposal of *RCBA, reinforced concrete moment slabs, reinforced or unreinforced* PCCP, PCC resurface with its base, or the total of any combination of HMA base, intermediate, and surface course of any pavement on a PCC, *RCBA, or reinforced concrete moment slab* base, including the base. Pavement removal shall include only the removal and disposal of existing public road, street, and alley pavement as required for the planned construction. Curb removal shall include curb that is separate from the pavement or removed separately. Integral curb that is removed with the adjacent pavement shall be paid for as pavement removal. Prior to performing the work of pavement removal at locations shown on the plans or where directed, cement concrete pavement to be removed shall be cut with a power driven concrete saw along designated lines. Sawing shall be such that any portion of the pavement to remain in place will not be damaged. Any portion that is damaged or removed outside the designated lines shall be replaced with no additional payment. Sawing of pavement to be removed will not be paid for directly, but shall be included in the cost of pavement removal.

FIRST DRAFT MINUTES

COMMENTS AND ACTION

202-X-XXX REMOVAL OF RCBA AND REINFORCED CONCRETE MOMENT SLABS

DISCUSSIONS: This item was introduced and presented by Mr. Reilman.

Mr. Reilman explained the reasoning behind the need for this RSP to include the removal of Reinforced Concrete Bridge Approaches and Reinforced Concrete Moment Slabs. No pay items are affected by this revision.

Mr. Heustis recommended inserting language to address reinforced concrete pavements. This added language would be editorial.

After much discussion, editorial revisions were made as shown, in regards to including reinforced concrete pavements.

| | |
|---|---|
| Motion: Mr. Reilman<br>Second: Mr. Boruff<br>Ayes: 8<br>Nays: 0 | Action:<br>____ Passed as Submitted<br>__X__ Passed as Revised<br>____ Withdrawn |
| Standard Specifications Sections affected:<br><br>Section 101.01 pg 03; 202.05 pg 126.<br><br>Recurring Special Provision affected:<br><br>NONE<br><br>Standard Sheets affected:<br><br>NONE<br><br>Design Manual Sections affected:<br><br>NONE<br><br>GIFE Sections cross-references:<br><br>NONE | __X__ 2014 Standard Specifications Book<br>____ Revise Pay Items List<br><br>__X__ Create RSP (No.202-R-596)<br>Effective Sept. 01, 2012 Letting<br>RSP Sunset Date: Sept. 01, 2013<br><br>____ Revise RSP (No.____)<br>Effective ____ Letting<br>RSP Sunset Date: ____<br><br>Standard Drawing Effective ____<br>____ Create RPD (No. ____)<br>Effective ____ Letting<br>____ Technical Advisory<br><br>GIFE Update Req'd.? Y ___ N ___<br>By ____ Addition or ____ Revision<br><br>Frequency Manual Update Req'd? Y___N___<br>By ____ Addition or ____ Revision<br><br>Received FHWA Approval? YES |

FIRST DRAFT MINUTES

SPECIFICATIONS, SPECIAL PROVISIONS AND DRAWINGS

REVISION TO SPECIAL PROVISIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: There is confusion regarding finishing machine minimum rate of progress for bridge deck pours.

PROPOSED SOLUTION: Add language to the 704 section to better explain the finishing machine minimum rate of progress for bridge deck pours.

APPLICABLE STANDARD SPECIFICATIONS: 704.04

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE:

APPLICABLE RECURRING SPECIAL PROVISIONS: create new 704 recurring special provision

PAY ITEMS AFFECTED: None

Submitted By: Greg Pankow

Title: State Construction Engineer

Organization: INDOT

Phone Number: 2-5502

Date: December 5, 2011

APPLICABLE SUB-COMMITTEE ENDORSEMENT:

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REVISIONS TO SPECIAL PROVISIONS

PROPOSED NEW 704-X-XXX PLACING REINFORCEMENT AND CONCRETE

704-X-XXX PLACING REINFORCEMENT AND CONCRETE

*(Adopted XX-XX-12)*

The Standard Specifications are revised as follows:

SECTION 704, BEGIN LINE 32, DELETE AND INSERT AS FOLLOWS:

**704.04 Placing Reinforcement and Concrete**

Applicable provisions of 703 shall apply to placing reinforcing bars. No concrete shall be placed until the reinforcement is entirely and securely in place and has been inspected and approved. Walkways shall be in accordance with 702.20(a). Placing of reinforcement during placing of concrete will not be permitted without prior written approval. Splices, when permitted, shall be at locations of least tension in the steel.

The concrete deck pour sequence and procedure shall be submitted *a minimum of 14 days prior to the planned deck pour* for approval. ~~The minimum pour rate is that which permits the finishing machine to progress at a rate of at least 25 ft/h (7.6 m/h). If this rate is not achieved, placement of transverse construction joints may be directed. The addition of construction joints shall be performed with no additional payment. Placement of concrete, when once started, shall be continuous between joints. Horizontal joints will not be permitted.~~ *The submittal shall include the contract number, the Contractor's name, bridge file number, original pour sequence, proposed pour rate, approved concrete mix design, and driving time from the concrete batching location to the jobsite.*

*If the Contractor proposes to follow the deck pour sequence shown on the plans, the minimum pour rate is that rate which results in the finishing machine progressing at least 25 ft/h along the bridge deck.*

*If the Contractor proposes to eliminate the transverse construction joints shown in the pour sequence on the plans or to pour the bridge deck in a sequence different from that shown on the plans, a request to revise the pour sequence from that shown on the plans shall be submitted in writing to the Engineer. In addition to the submittal requirements above, these requests shall also include the proposed alternate pour sequence and pour rate. For revised pour sequences, the minimum pour rate will be determined by considering the items listed below.*

*(a) A water-reducing retarding admixture or appropriate admixture system shall be used in the concrete to delay the initial set as required and approved.*

*(b) Concrete shall be placed for the full width of the structure, unless otherwise approved.*

*(c) For decks on concrete structural members, the concrete on 2 adjacent spans shall be placed within a period of time which is less than the time for the initial set of the concrete section over the pier common to the 2 spans.*

FIRST DRAFT MINUTES

REVISIONS TO SPECIAL PROVISIONS

PROPOSED NEW 704-X-XXX PLACING REINFORCEMENT AND CONCRETE

*For decks on steel structural members, the concrete on 2 adjacent spans shall be placed within a period of time which is less than the time for the initial set of the concrete placed at the beginning of the 2 adjacent spans.*

*(d) Other project-specific conditions, if applicable.*

*If, during the pour, the approved pour rate is not achieved, placement of transverse construction joints may be directed. Placement of concrete, when once started, shall be continuous between joints. Horizontal joints will not be permitted.*

Floor drains shall be placed in gutters at locations shown on the plans and fastened securely before placing the surrounding concrete. The tops of the floor drains shall be no more than 1/2 in. ~~(13 mm)~~ below the adjacent gutter grade. The drains shall be constructed so drainage water is not discharged against portions of the structure.

Expansion joints shall be constructed as shown on the plans and the material shall be in accordance with 906.01.

~~Transverse construction joints as shown on the plans for the floor slab of prestressed concrete beam structures may be eliminated by written approval under the condition as follows:~~

~~(a) A retarding or a water-reducing retarding admixture shall be used in the concrete to delay set as required and approved.~~

~~(b) Concrete shall be placed for the full width of the structure, unless otherwise approved.~~

~~(c) It is determined that the concrete on 2 adjacent spans can be placed within a period of time which is less than the time for the initial set of the concrete section over the pier common to the 2 spans.~~

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COMMENTS AND ACTION

704-X-XXX PLACING REINFORCEMENT AND CONCRETE

DISCUSSIONS: This item was introduced and presented by Mr. Reilman who explained the need for clarification in regards to the rate of progress in placing the concrete pavements.

Mr. Strain mentioned that, according to the Design Manual, if the pour is less than 260 cubic yards for bridge decks, then a pouring sequence is not required.

Mr. Strain also commented that there is some language that is not matching up with what is being accomplished in the field. Considerable discussion ensued involving various members of the committee in relation to pour sequencing and placement techniques.

Mr. Pankow asked if this should be shelved for now so this can be addressed next month. Mr. Strain also suggested bringing this back later to make sure it is in line with the Design Manual. This item was therefore withdrawn at this time.

| | |
|---|---|
| Motion: Mr. Reilman<br>Second: Mr. Cales<br>Ayes:<br>Nays: | Action:<br>_____ Passed as Submitted<br>_____ Passed as Revised<br>__X__ Withdrawn |
| Standard Specifications Sections affected:<br><br>702.05 pg 489; 704.04 pg 520 and 521.<br><br>Recurring Special Provision affected:<br><br>NONE<br><br>Standard Sheets affected:<br><br>NONE<br><br>Design Manual Sections affected:<br><br>NONE<br><br>GIFE Sections cross-references:<br><br>Section 5.16 | ____ 20__ Standard Specifications Book<br>____ Revise Pay Items List<br><br>____ Create RSP (No.____)<br>Effective ____ Letting<br>RSP Sunset Date: ____<br><br>____ Revise RSP (No.____)<br>Effective ____ Letting<br>RSP Sunset Date: ____<br><br>Standard Drawing Effective ____<br>____ Create RPD (No. ____)<br>Effective ____ Letting<br>____ Technical Advisory<br><br>GIFE Update Req'd.? Y ___ N ___<br>By ____ Addition or ____ Revision<br><br>Frequency Manual Update Req'd? Y___N___<br>By ____ Addition or ____ Revision<br><br>Received FHWA Approval? ____ |

FIRST DRAFT MINUTES

SPECIFICATIONS, SPECIAL PROVISIONS AND DRAWINGS

REVISION TO SPECIAL PROVISIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Minor changes are necessary to the field welding and basis of payment sections of the Structural Steel section.

PROPOSED SOLUTION: Incorporate the attached changes into the specification.

APPLICABLE STANDARD SPECIFICATIONS: 711

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE: None

APPLICABLE RECURRING SPECIAL PROVISIONS: create new 711-x-xxx recurring special provision

PAY ITEMS AFFECTED: None

Submitted By: Greg Pankow

Title: State Construction Engineer

Organization: INDOT

Phone Number: 2-5502

Date: December 6, 2011

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc committee consisting of: Kevin Day, Jim Reilman, Mike Rumer

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REVISIONS TO SPECIAL PROVISIONS

PROPOSED NEW 711-X-XXX STRUCTURAL STEEL, GENERAL

711-B-XXX STRUCTURAL STEEL, GENERAL

*(Adopted XX-XX-12)*

The Standard Specifications are revised as follows:

SECTION 711, BEGIN LINE 402, DELETE AND INSERT AS FOLLOWS:

**711.32 Welds**

Welding of steel shall be done only as shown on the plans or as specified and only with specific approval. Welding may be done to remedy minor defects, if approved. No temporary or permanent welds, if not shown on the plans or otherwise specified, shall be made without specific written authorization.

**(a) AWS Requirements**

Welding of steel structures, when authorized, shall be performed in accordance with the following AWS Specifications.

| | |
|---|---|
| A5.1 | Mild Steel Covered Arc-Welding Electrodes. |
| A5.5 | Low-Alloy Steel Covered Arc-Welding Electrodes. |
| A5.17 | Bare Mild Steel Electrodes and Fluxes for Submerged Arc Welding. |
| A5.18 | Mild Steel Electrodes for Gas Metal-Arc Welding. |
| A5.20 | Mild Steel Electrodes for Flux-Cored Arc Welding. |
| D1.5 | ~~(~~AASHTO/AWS~~)~~, *hereinafter referred to as the* Bridge Welding Code. |

Welders, welder operators, and tack welders shall be qualified in accordance with ~~AWS D1.5~~*the Bridge Welding Code*, Chapter 5, Part B.

SECTION 711, BEGIN LINE 423, DELETE AND INSERT AS FOLLOWS:

**(b) Edge Blocks**

Edge blocks shall be used when radiographing flange butt shop welds of greater than 1/2 in. ~~(13 mm)~~ thickness. The edge blocks shall have the dimensions shown on the plans. The edge block shall be centered on the weld with a snug fit against the plate being radiographed, with the maximum gap shown on the plans. Edge blocks shall not be tack welded. Edge blocks shall be made of radiographically clean steel. The surface shall have an ANSI finish of 0.125 mil ~~(3 µm)~~ or smoother.

~~***(c) Field Welding***~~

~~Field welding shall be *by the shielded metal arc welding, SMAW, process and shall be* in accordance with the requirements herein,. except where *Magnetic particle testing will not be required on* welded connections *that* do not carry calculated stresses. Magnetic particle inspection will not be required, so ANSI/AASHTO/AWS D1.5-88 Table 4.4 "Minimum Preheat and Interpass Temperature" as it refers to thicknesses to 3/4 in. (19 mm) inclusive, shall read "None". *All field welding shall be preheated per the Bridge Welding Code, table 4.3.* Electrodes with a low hydrogen classification will not be required*shall be used*.~~

FIRST DRAFT MINUTE

REVISIONS TO SPECIAL PROVISIONS

PROPOSED NEW 711-X-XXX STRUCTURAL STEEL, GENERAL

**(~~c~~*d*c) Welding of High Performance Steel**

All welding on high performance steel shall be in accordance with the ~~ANSI/AASHTO/AWS D1.5M/D1.5 Bridge Welding Code, hereinafter referred to as the~~ Bridge Welding Code, except as modified herein and by the AASHTO Guide Specification~~s~~ for Highway Bridge Fabrication with HPS 70W Steel, an addendum to the ~~2002 Edition of the~~ Bridge Welding Code, *hereinafter referred to as the Guide*.

Only submerged arc welding, SAW, and shielded metal arc welding, SMAW, processes will be permitted. Consumable handling requirements shall be in accordance with the Bridge Welding Code, Section*s* 12.6.5 and 12.6.6, when using reduced preheat as described in Table 3 of the Guide, except that SAW consumables for matching weld metal shall meet the hydrogen control level of H4 in accordance with Section 12, Article 12.6.2. Consumable handling requirements shall meet the provisions of ~~T~~*t*he Bridge Welding Code, Section 4, when using the preheat requirements of ~~Table 4.4~~*Section 4*, except that the diffusible hydrogen level must never exceed H8. SMAW consumables may meet diffusible hydrogen levels of either H4 or H8 except the higher preheat and interpass temperatures as noted in Table 3 of the ~~AASHTO~~ Guide ~~Specifications for Highway Bridge Fabrication with HPS 70W Steel~~ shall apply to H8 conditions.

SECTION 711, BEGIN LINE 520, INSERT AS FOLLOWS:

***(d) Field Welding***

*Field welding shall be by the shielded metal arc welding, SMAW, process and shall be in accordance with the requirements herein. Magnetic particle testing will not be required on welded connections that do not carry calculated stresses. All field welding shall be preheated per Section 4 of the Bridge Welding Code. The Contractor shall provide a copy of the minimum preheat and interpass temperature table to the Engineer prior to beginning welding. Electrodes with a low hydrogen classification shall be used.*

SECTION 711, BEGIN LINE 1226, INSERT AS FOLLOWS:

The cost of drilling holes for anchor bolts, elastomeric bearings, bridge bearing pads, fabrication, *painting*, erecting falsework, welding material, Charpy V-Notch toughness tests, and necessary incidentals shall be included in the cost of the pay items in this section.

FIRST DRAFT

COMMENTS AND ACTION

711-R-XXX STRUCTURAL STEEL, GENERAL

DISCUSSIONS: Mr. Reilman presented this item and explained the need to clarify the field welding item, as shown.

Mr. Reilman also suggested removing the reference to the AWS table since the numbers are subject to change.

The proposed revisions are shown in these minutes.

| | |
|---|---|
| Motion: Mr. Reilman<br>Second: Mr. Cales<br>Ayes: 8<br>Nays: 0 | Action:<br>____ Passed as Submitted<br>__X__ Passed as Revised<br>____ Withdrawn |
| Standard Specifications Sections affected:<br><br>711.32 pg 561.<br><br>Recurring Special Provision affected:<br><br>NONE<br><br>Standard Sheets affected:<br><br>NONE<br><br>Design Manual Sections affected:<br><br>NONE<br><br>GIFE Sections cross-references:<br><br>NONE | __X__ 2014 Standard Specifications Book<br>____ Revise Pay Items List<br><br>__X__ Create RSP (No.711-B-195)<br>Effective Sept. 01, 2012 Letting<br>RSP Sunset Date: Sept. 01, 2013<br><br>____ Revise RSP (No.____)<br>Effective ____ Letting<br>RSP Sunset Date: ____<br><br>Standard Drawing Effective ____<br>____ Create RPD (No. ____)<br>Effective ____ Letting<br>____ Technical Advisory<br><br>GIFE Update Req'd.? Y ___ N ___<br>By ____ Addition or ____ Revision<br><br>Frequency Manual Update Req'd? Y___N___<br>By ____ Addition or ____ Revision<br><br>Received FHWA Approval? YES |

FIRST DRAFT MINUTES

SPECIFICATIONS, SPECIAL PROVISIONS AND DRAWINGS

REVISION TO SPECIAL PROVISIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The following revisions are proposed to the recurring special provision 203-R-360 for embankment construction using coal ash:

1. RSP 203-R-360 was re-formatted to be consistent with the RSP 200-R-401 for recycled foundry sand

2. Definitions of fly ash and bottom ash were added. Boiler slag was removed as this is not used for this application. There are no limits on the amount of fly ash, bottom ash, or a combination of the two that may be used for borrow.

3. Compaction by the dynamic cone penetrometer (DCP) was added as we are now requiring this device on numerous projects instead of the nuclear gauge. The number of blows with the DCP is specified for fly ash and bottom ash. A combination of fly ash and bottom ash will require the office of geotechnical services to determine the DCP criteria.

4. The coal ash side slopes are required to be encased with cohesive soil. The amount of cohesive soil for this application is dependent on the depth of the embankment. Embankments other than side slopes not completed in a calendar year will require a minimum of 1 ft of cohesive soil. This requirement is intended to prevent leachate problems from occurring.

PROPOSED SOLUTION: The following revisions are recommended to the Embankment Construction Using Coal Ash Recurring Special Provision:

1. Include definitions of fly ash and bottom ash, remove boiler slag, and remove the limitations of quantities of coal ash and bottom ash that may be used for embankments.

2. Require compaction with the DCP

3. Require encasement of the coal ash side slopes with cohesive soils

4. Require encasement of the coal ash embankment other than the side slopes with a minimum of 1 ft of cohesive soil if not completed within a calendar year.

APPLICABLE STANDARD SPECIFICATIONS:

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION:

APPLICABLE SECTION OF GIFE:

FIRST DRAFT MINUTES

SPECIFICATIONS, SPECIAL PROVISIONS AND DRAWINGS

REVISION TO SPECIAL PROVISIONS

APPLICABLE RECURRING SPECIAL PROVISIONS: RSP 203-R-360

Submitted By: Ron Walker

Title: Manager, Office of Materials Management

Organization: INDOT

Phone Number: 317-610-7251 x 204

Date: 1-6-12

APPLICABLE SUB-COMMITTEE ENDORSEMENT? These specification revisions are recommended by Materials Management and Geotechnical Engineering.

FIRST DRAFT MINUTES

REVISION TO SPECIAL PROVISION

203-R-360 *EMBANKMENT CONSTRUCTION USING COAL ASH*
(REVISED AND REFORMATTED 203-R-360 EMBANKMENTS CONSTRUCTED OF COAL COMBUSTION BY PRODUCTS)

(Existing RSP 203-R-360 shown as a backup 01 for this item.
Basis for Use: "Required for all pay items of 5,000CYS (3, 800m$^3$) or more of Borrow".)

203-R-360 EMBANKMENT CONSTRUCTION USING COAL ASH

*(Revised XX-XX-12)*

**Description**

Coal ash is solid residue product remaining from combustion of coal in electric power generating plants. Coal ash consists of fly ash, bottom ash, or the mixture of both. The Contractor shall have the option of incorporating coal ash into applicable operations in accordance with 105.03.

**Materials**

Coal ash may be substituted for Borrow (203) upon approval from the Office of Geotechnical Services.

Fly Ash is defined as that portion of coal ash with 70% or less passing the No. 200 (75µm) sieve. Bottom ash is defined as that portion of coal ash with 20% or less passing the No. 200 (75µm) sieve and 10% or less retained on the No. 10 (2.00 mm) sieve.

Coal ash shall not contain boiler tube scaling containing high concentrations of arsenic and selenium. Boron levels shall be less than 5 ppm as determined using the Indiana Neutral Leachate Testing, INLT, methodology.

The Contractor shall provide a copy of the Indiana Department of Environmental Management, IDEM, waste classification certification for Type III or Type IV for coal ash prior to use. The IDEM certification shall identify the size and geographical location of the stockpiles.

The Contractor shall provide the Engineer with a type A certification in accordance with 916 prior to use of the materials. The gradation, Aterberg limit, and standard Proctor test shall be performed in accordance with AASHTO T 88, AASHTO T 89, AASHTO T 90, and AASHTO T 99, respectively, and the test results shall be included in the type A Certification. The type A Certification shall also include the following:

1. Name and location of the laboratory performing the tests
2. Date the samples were obtained
3. Date the samples were tested
4. Frequency of sampling
5. Stockpile sampling locations including depth and available historical testing results

Consultants on the Department list of approved Geotechnical Consultants shall perform the testing of the coal ash.

FIRST DRAFT MINUTES

REVISION TO SPECIAL PROVISION

203-R-360 *EMBANKMENT CONSTRUCTION USING COAL ASH*
(REVISED AND REFORMATTED 203-R-360 EMBANKMENTS CONSTRUCTED OF COAL COMBUSTION BY PRODUCTS)

Any processes and stockpiles of the power plant associated with the production of coal ash may be inspected and tested by INDOT. Any non-conforming coal ash shall be removed from the project at no cost to INDOT.

Coal ash shall not be placed in the following locations:

1. Below the seasonal high water table
2. Within 100 ft, horizontally, of a stream, river, lake, reservoir, wetland or any other protected environmental resource area
3. Within 150 ft, horizontally, of a well, spring, or other ground source of potable water
4. MSE wall applications
5. Encasement material
6. Subgrades
7. Adjacent to metallic structures
8. Landslide, sinkhole or other geological problematic areas

**Construction Requirements**

Coal ash shall be incorporated into the embankment through placement, compaction, and encasement upon delivery. Coal ash delivery will be planned and scheduled by the Supplier and the Contractor to ensure delivery in accordance with the project schedule. The placement and compaction of coal ash shall be performed in accordance with 203.23 unless otherwise approved in writing. Compaction of each lift of coal ash shall begin at the outer edge and progress towards the center of the embankment. Compaction will be done with a 10 t smooth drum vibratory roller and a static roller. Adequate measures shall be taken during construction operations to control the release of fugitive dust from the coal ash. Coal ash shall not be applied when wind conditions result in problems in adjacent areas or result in a hazard to traffic on any adjacent roadway.

Compaction will be determined by the Dynamic Cone Penetrometer, DCP, in accordance with ASTM D 6951 using a 17.5-lb hammer. Nuclear density testing of coal ash will not be allowed. The moisture content shall be controlled within -2 and +2 percentage points of the optimum moisture content determined in accordance with AASHTO T 99. The DCP criteria shall be as follows:

1. Fly ash shall have a minimum of 7 blows for a 6 in compacted lift.
2. Bottom ash shall have a minimum of 16 blows for a 12 in compacted lift. The 12 in. lift shall consist of 2 compacted 6 in. lifts.
3. If a mixture of fly ash and bottom ash is used, the Contractor shall coordinate with the Office of Geotechnical Services to determine the DCP criteria.

If compaction operations are insufficient, the Contractor shall coordinate with the Office of Geotechnical Services to develop and conduct alternative compaction procedures of the coal ash.

FIRST DRAFT MINUTES

REVISION TO SPECIAL PROVISION

203-R-360 *EMBANKMENT CONSTRUCTION USING COAL ASH*
(REVISED AND REFORMATTED 203-R-360 EMBANKMENTS CONSTRUCTED OF COAL COMBUSTION BY PRODUCTS)

Coal ash shall be encased with cohesive soils of which the upper 6 in. is suitable for the growth of seeding and vegetation in accordance with 621. The cohesive soil shall be a silty loam, sandy clay, silty clay, sandy clay loam, clay, or a silty clay loam in accordance with 903.02. All cohesive soils shall have a minimum clay content of 10 %.

The side slope encasement shall be as follows:

| Embankment Height | Side Slope Encasement |
|---|---|
| < 10 ft | 2 ft |
| 10 - 20 ft | 3 ft |
| > 20 ft | 4 ft |

The encasement materials shall be placed and compacted concurrently with the coal ash lifts and shall be well drained by installing pipe-type lateral drains at the toe of the embankment.

All coal ash embankment surfaces other than the side slopes shall be encased with a minimum of 1 ft of borrow material prior to the completion of construction operations in a calendar year. The encasement materials shall be placed and compacted concurrently with the coal ash lifts.

**Method of Measurement**
Coal ash applications will be measured in accordance with 203.27.

**Basis of Payment**
Coal ash will be paid for at the contract unit price in accordance with 203.28.

No payment will be made for the transportation, handling, or any special construction requirements such as alternative compaction means or encasement activities when using coal ash materials.

The cost of the use of water, limewater, sprays, or other activities necessary for dust control shall be included in the cost of the respective pay item.

The cost of geotechnical testing for the use of coal ash materials shall be included in the cost of the respective pay item.

FIRST DRAFT MINUTES

REVISION TO SPECIAL PROVISION

203-R-360 *EMBANKMENT CONSTRUCTION USING COAL ASH*
ATTACHMENT A COAL ASH CERTIFICATION

**ATTACHMENT A**

**COAL ASH SOURCE CERTIFICATION**

This is to certify that coal ash produced by the _____ Power Plant of _____ located in _____ (City), _____(State), shipped for use on the Indiana Department of Transportation contract _____ is Type _____ (III or IV) material according to IDEM's restricted waste criteria with further restrictions that the coal ash does not contain boiler tube scalings containing high concentrations of arsenic and selenium and the boron level is less than 5 ppm determined by using the INLT methodology. The _____ coal ash source also agrees that processes and stockpiles associated with the production of such coal ash may be inspected and sampled at regular intervals by properly identified representatives of the Department or a duly assigned representative.

_____ (Date)

_____ (Company)

_____ (Signature)

FIRST DRAFT MINUTES

REVISION TO SPECIAL PROVISION

BACKUP 01 203-R-360 EMBANKMENTS CONSTRUCTED OF COAL COMBUSTION BY-PRODUCTS (EXISTING RSP)

203-R-360 EMBANKMENTS CONSTRUCTED OF COAL COMBUSTION BY-PRODUCTS

*(Revised 09-01-05)*

**Description**

The Contractor shall have the option of using coal combustion by-products (C.C.B.P.) as borrow or as B borrow. C.C.B.P. shall not be used as backfill for MSE walls nor within 1 ft (0.3 m) of subsurface drain trenches unless otherwise approved. Adherence to the provisions herein does not preclude applicability of local, state or federal regulations and laws.

**Materials**

C.C.B.P. include fly ash, bottom ash, or boiler slag or combinations of these materials produced by coal-fired electrical or steam generating units. These by-products shall be type III or type IV materials per IDEM's restricted waste typing criteria. Current production materials shall not contain boiler tube scalings containing high concentrations of arsenic and selenium. C.C.B.P. shall be in accordance with 203.08 for borrow or 211 for B borrow unless otherwise stated herein.

The maximum fly ash content for C.C.B.P. mixtures shall be limited to 40%, dry unit weight (mass) unless otherwise approved. Fly ash is defined as that portion of C.C.B.P. passing the #200 (75 µm) sieve.

C.C.P.B. shall be supplied dry or in a moist condition and transported to the project in a manner that prevents the release of dust and loss of material.

The Contractor shall provide the Engineer with a certification stating the typing of the material and that the C.C.B.P. test at less than 5 ppm of boron as determined by the Indiana Neutral Leachate Testing methodology (INLT). The form of the certification shall be as follows:

**C.C.B.P. SOURCE CERTIFICATION**

This is to certify that all C.C.B.P. produced by the _____ Power Plant of _____ located in _____, _____, shipped for use on the Indiana
(City) (State)
Department of Transportation project _____ is type _____ material according to IDEM's restricted waste typing
(III or IV)
criteria with further restrictions that the boron levels test at less than 5 ppm (INLT methodology) and current production materials do not contain boiler tube scalings. _____ also agrees that
(Company)
any part of the named power plant associated with the production of such C.C.B.P. may be checked at regular intervals by properly identified representatives of the Indiana Department of Transportation.

FIRST DRAFT MINUTES

REVISION TO SPECIAL PROVISION

BACKUP 01 203-R-360 EMBANKMENTS CONSTRUCTED OF COAL COMBUSTION BY-PRODUCTS (EXISTING RSP)

_____ _____
(Date) (Company)

_____
(Signature)

The Contractor shall, if requested, furnish the Engineer with a copy of the most recent testing results upon which the certification is based. This information shall include the following information:

a. entity performing the test,
b. date samples were obtained,
c. date samples tested,
d. test methods used,
e. frequency of sampling, and
f. stockpile sampling locations including depths and available historical testing results.

The Department reserves the right to conduct independent quality assurance testing at any time and may reject non-conforming material.

**CONSTRUCTION REQUIREMENTS**

C.C.B.P. not incorporated into the contract through placement, compaction, and encasement within 5 calendar days will be considered to be in storage. Prior to storing C.C.B.P. within the contract limits the Contractor shall have an approved erosion control plan to prevent C.C.B.P. runoff and erosion. Total C.C.B.P. in storage shall not exceed 9,200 cu yd (7,000 $m^3$) and the maximum time in storage shall be 180 calendar days.

Adequate measures shall be taken during construction to control dust. Spraying with water, lime water, bituminous sprays, or other sealing sprays will be considered to be acceptable methods for dust control.

Type III C.C.B.P. shall not be placed as follows:

a. Below the seasonal high water table
b. Within 100 horizontal feet (30 m) of a perennial stream/river and lake/reservoir
c. Within 150 horizontal feet (46 m) of a well, spring, or other ground water source of potable water
d. Adjacent to a wetland or other protected environmental resource area.

It will be the Contractor’s responsibility to prepare bids for this item by anticipating placement limits and estimating quantities of C.C.B.P. by referencing to the restrictions set out by a. through d.

The placement and compaction of C.C.B.P. shall be performed in accordance with 203.23 except that unless otherwise approved in writing, the Contractor shall arrange to conduct test strips to determine

FIRST DRAFT MINUTES

REVISION TO SPECIAL PROVISION

BACKUP 01 203-R-360 EMBANKMENTS CONSTRUCTED OF COAL COMBUSTION BY-PRODUCTS (EXISTING RSP)

appropriate compaction methods and moisture control limits. The construction of these test strips shall be as directed by the Department's Office of Materials Management.

C.C.B.P. shall be placed in 8 in. (200 mm) loose lifts.

They shall be compacted using a vibratory steel wheel roller unless otherwise approved. The minimum total compactive effort shall be 47,000 lb (21,338 Kg). If the manufacturer's charts do not list the static weight (mass) acting upon the compaction drum, the roller shall be weighed. The weight (mass) shall be added to the centrifugal force and the roller rated in accordance with the Construction Industry Manufacturer's Association. The roller shall not exceed 3 mph (4.5 km/h).

Compaction shall start at the edges and progress towards the center of the embankment.

Based on the results of the test strips the Department's Office of Materials Management will determine appropriate compaction and moisture control criteria. Nuclear gauges shall not be used to measure moisture or density unless a new calibration curve is made for C.C.B.P. and approved by the Office of Materials Management.

Areas of C.C.B.P. adjoining dissimilar materials, excluding encasement, shall be benched to prevent slope failures and control differential settlement.

If the Contractor elects to place C.C.B.P. with a high hydraulic conductivity (e.g. bottom ash), a drainage plan to alleviate hydraulic pressure within the fill shall be submitted to the Engineer. Embankment construction shall not commence until the Engineer approves the plan.

While type III C.C.B.P. will not be considered as corrosive to metal structures the Department reserves the right to conduct appropriate tests (e.g. pH) and direct the Contractor to take reasonable protective measures if a pH less than 6 is detected. Such measures may include the substitution of natural soil borrow for C.C.B.P. in areas of concern.

Encasement shall be soil in accordance with 203.08. C.C.B.P. shall not be used as encasement. C.C.B.P. shall be covered with a minimum of 1 ft (0.3 m) of soil. Soil encasement shall be placed and compacted at the same time as the C.C.B.P. lifts. All cover materials shall be appropriately seeded and vegetated in accordance with 621.

**Method of Measurement**

C.C.B.P., including encasement, will be measured by the cubic yard (cubic meter).

**Basis of Payment**

C.C.B.P. embankments will be paid for as borrow at the contract unit price per cubic yard (cubic meter) placed and compacted.

FIRST DRAFT MINUTES

REVISION TO SPECIAL PROVISION

BACKUP 01 203-R-360 EMBANKMENTS CONSTRUCTED OF COAL COMBUSTION BY-PRODUCTS (EXISTING RSP)

Payment will be made under:

| **Pay Item** | **Pay Unit Symbol** |
|---|---|
| Borrow | CYS (m3) |

The cost of the construction of test strips, drainage systems necessary to alleviate hydraulic pressure, water, lime water, bituminous sprays, or other sealing sprays necessary for dust control, or for moisture content will be included in the cost of the pay item.

FIRST DRAFT MINUTES

COMMENTS AND ACTION

203-R-360 *EMBANKMENT CONSTRUCTION USING COAL ASH*

DISCUSSIONS: This item was introduced and presented by Mr. Walker, as described in the proposal. Mr. Walker explained the contents of the provisions shown, and the reasoning behind the information contain therein.

Mr. Khan recommended a revision in removing the last sentence of the paragraph preceding the Method of Measurement section.

Further discussion developed on the consistency concerning the time period regarding erosion control. Mr. Heustis reminded the group that the Contractor is still responsible for erosion control measures. Mr. Miller reiterated that the Contractor is to be aware of the need to encase the top of the embankment. Mr. Heustis mentioned that the material the Contractor wants to use should be submitted for approval. Mr. Miller suggested the erosion control plan language should be added to this provision.

Mr. Miller recommended reviewing this provision for formatting and wording and have a separate committee review the details concerning reference to calendar days vs. calendar year. Mr. Pankow recommended referencing 203 in regards to method of Measurement and Basis of Payment rather than specifically calling out Borrow.

Further discussion ensued as to how to determine the seasonal high water table.

This item has been withdrawn so it may be revised and revisited at next month’s meeting.

FIRST DRAFT MINUTES

COMMENTS AND ACTION

203-R-360 *EMBANKMENT CONSTRUCTION USING COAL ASH*

(CONTINUED)

| | |
|---|---|
| Motion: Mr. Walker<br>Second: Mr. Cales<br>Ayes:<br>Nays: | Action:<br>____ Passed as Submitted<br>____ Passed as Revised<br>_X_ Withdrawn |
| Standard Specifications Sections affected:<br><br>NONE<br><br>Recurring Special Provision affected:<br><br>203-R-360 EMBANKMENTS CONSTRUCTED OF COAL COMBUSTION BY-PRODUCTS<br><br>Standard Sheets affected:<br><br>NONE<br><br>Design Manual Sections affected:<br><br>NONE<br><br>GIFE Sections cross-references:<br><br>NONE | _____ 20__ Standard Specifications Book<br>____ Revise Pay Items List<br><br>_____ Create RSP (No.____)<br>Effective ____Letting<br>RSP Sunset Date: _____<br><br>____ Revise RSP (No.____)<br>Effective ____Letting<br>RSP Sunset Date: _____<br><br>Standard Drawing Effective _____<br>____ Create RPD (No. ____)<br>Effective ____Letting<br>____ Technical Advisory<br><br>GIFE Update Req'd.? Y ___ N ___<br>By _____ Addition or _____ Revision<br><br>Frequency Manual Update Req'd? Y___N___<br>By _____ Addition or _____ Revision<br><br>Received FHWA Approval? _____ |

FIRST DRAFT MINUTES

SPECIFICATIONS, SPECIAL PROVISIONS AND DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: JTRP 3005, "Classification of Organic Soils", was initiated to derive a better procedure for classifying organic soils in Indiana. The result of the study was a recommendation to revise the classification system of 903.05. Also, ITM 507 was added as a procedure to determine the percentage of calcium carbonate in soils using the Loss on Ignition test. Results of this test procedure are used to classify marly soils with calcium and magnesium carbonate in 903.06.

PROPOSED SOLUTION: The following revisions are recommended for 903.05 (Organic Soils) and 903.06 (Marly Soils):

1. Organic Soils - Reference AASHTO T 21 as a procedure to classify organic soils and revise the table to include more definitive limits for the organic content. Soils defined in 903.02 shall be further classified as "with organic matter" or as "organic soil".

2. Marly Soils - Add ITM 507 as the procedure for determining the classification system for marly soils. Soils defined in 903.02 shall be further classified as "with trace marl", "with little marl", "with some marl", "marly soil", or "marl".

APPLICABLE STANDARD SPECIFICATIONS: 903.05 and 903.06

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION:

APPLICABLE SECTION OF GIFE:

APPLICABLE RECURRING SPECIAL PROVISIONS:

Submitted By: Ron Walker

Title: Manager, Office of Materials Management

Organization: INDOT

Phone Number: 317-610-7251 x 204

Date: 1-6-12

APPLICABLE SUB-COMMITTEE ENDORSEMENT?
These specification revisions are recommended by Geotechnical Engineering.

FIRST DRAFT MINUTES

REVISION TO THE SPECIFICATIONS

SECTION 903 – CLASSIFICATION OF SOILS
903.05 ORGANIC SOILS
903.06 MARLY SOILS

The Standard Specifications are revised as follows:

SECTION 903, BEGIN LINE 31, DELETE AND INSERT AS FOLLOWS:

**903.05 Organic Soils**

The following classification system shall be used for organic soils in accordance with *AASHTO T 21 and* AASHTO T 267

| Classification | *Organic Content, %* ~~Percentage~~ |
|---|---|
| ~~With Trace Organic Matter~~ | ~~1 to 6~~ |
| With ~~Little~~ Organic Matter* | ~~7 to 12~~ *4 - 15* |
| ~~With Some Organic Matter~~ | ~~13 to 18~~ |
| Organic Soil (A-8)* | ~~19 – 30~~ *16 - 30* |
| Peat (A-8) | More than 30 |

* *Soils classified in accordance with 903.02 shall also include this classification.*

**903.06 Marly Soils**

The following classification system shall be used for marly soils with calcium and magnesium carbonate content *in accordance with ITM 507.*

| Classification | Percentage |
|---|---|
| With Trace Marl* | 1 ~~to~~- 9 |
| With Little Marl* | 10 ~~to~~- 17 |
| With Some Marl* | 18 ~~to~~- 25 |
| Marly Soil (A-8) | 26 ~~to~~- 40 |
| Marl (A-8) | More than 40 |

* *Soil classified in accordance with 903.02 shall also include this classification.*

FIRST DRAFT MINUTES

COMMENTS AND ACTION

SECTION 903 – CLASSIFICATION OF SOILS
903.05 ORGANIC SOILS
903.06 MARLY SOILS

DISCUSSIONS: This item was introduced and presented by Mr. Walker.

Mr. Khan explained this item in regards to the language presented in the proposal sheet.

There were no questions and minimal discussion.

FIRST DRAFT MINUTES

| | |
|---|---|
| Motion: Mr. Walker<br>Second: Mr. Cales<br>Ayes: 9<br>Nays: 0 | Action:<br>X Passed as Submitted<br>____ Passed as Revised<br>____ Withdrawn |
| Standard Specifications Sections affected:<br><br>SECTION 903 pg 815 and 816.<br><br>Recurring Special Provision affected:<br><br>NONE<br><br>Standard Sheets affected:<br><br>NONE<br><br>Design Manual Sections affected:<br><br>NONE<br><br>GIFE Sections cross-references:<br><br>NONE | X 2014 Standard Specifications Book<br>____ Revise Pay Items List<br><br>X Create RSP (No.903-R-595)<br>Effective Sept. 01, 2012 Letting<br>RSP Sunset Date: Sept. 01, 2013<br><br>____ Revise RSP (No.____)<br>Effective ____Letting<br>RSP Sunset Date: ____<br><br>Standard Drawing Effective ____<br>____ Create RPD (No. ____)<br>Effective ____Letting<br>____ Technical Advisory<br><br>GIFE Update Req'd.? Y ___ N ___<br>By ____ Addition or ____ Revision<br><br>Frequency Manual Update Req'd? Y___N___<br>By ____ Addition or ____ Revision<br><br>Received FHWA Approval? Yes |

SPECIFICATIONS, SPECIAL PROVISIONS AND DRAWINGS

REVISION TO SPECIAL PROVISION

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The rate of application of asphalt material for fog seal refers to the rate shown on the plans, which has been a problem. Clarification of the required amount is necessary.

PROPOSED SOLUTION: Revise 412.06 of RSP 412-R-549 to indicate that the asphalt material shall be applied at the rate of 0.10 ± 0.02 gal/yd2 (0.45 ± 0.09 L/m2).

APPLICABLE STANDARD SPECIFICATIONS: None

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION:

APPLICABLE SECTION OF GIFE:

APPLICABLE RECURRING SPECIAL PROVISIONS: 412-R-549

Submitted By: Ron Walker

Title: Manager, Office of Materials Management

Organization: INDOT

Phone Number: 317-610-7251 x 204

Date: 1-6-12

APPLICABLE SUB-COMMITTEE ENDORSEMENT? These specification revisions are recommended by Materials Management.

FIRST DRAFT MINUTES

REVISION TO SPECIAL PROVISION
412-R-549 FOG SEAL

(Proposed changes shown highlighted in gray)

412-R-549 FOG SEAL

*(Revised XX-XX-12)*

The Standards Specifications are revised as follows:

SECTION 412, BEGIN LINE 1, INSERT AS FOLLOWS:

## *SECTION 412 – FOG SEAL*

***412.01 Description***

*This work shall consist of applying asphalt emulsion to the pavement surface in accordance with 105.03.*

## *MATERIALS*

***412.02 Materials***

*Materials shall be in accordance with the following:*

*Asphalt Emulsion, AE-F.....902.01(b)*
*Fine Aggregate.....904.02*

## *CONSTRUCTION REQUIREMENTS*

***412.03 Equipment***

*A distributor in accordance with 409.03(a) shall be used.*

***412.04 Weather Limitations***

*Fog seal operations shall not be conducted on a wet pavement, when the ambient air or pavement temperature is below 60°F ~~(16°C)~~, or when other unsuitable conditions exist, unless approved by the Engineer. Fog seal shall not be applied to travel or auxiliary lanes before May 1 or after October 1.*

***412.05 Preparation of Surface***

*Surfaces shall be clean and free of any foreign or loose material.*

*All castings, detector housings, and snowplowable raised pavement markers shall be covered to prevent coating with fog seal prior to application of the fog seal. These coverings shall be removed prior to opening to traffic.*

***412.06 Application of Asphalt Material***

*The asphalt material shall be applied uniformly at ~~a rate within ± 0.02 gal./sq yd (0.065 L/m$^2$) of the rate shown on the plans~~ the rate of 0.10 ± 0.02 gal./sq yd. Asphalt material shall be applied in such a way as to ensure even and uniform coverage to the pavement surface.*

FIRST DRAFT MINUTES

REVISION TO SPECIAL PROVISION

412-R-549 FOG SEAL

***412.07 Protection of Surface***

*Fine aggregate or other approved blotting material shall be applied to pedestrian crosswalks, driveways or other areas as directed by the Engineer. Brooming of ponded areas shall be required prior to opening to traffic on treated surfaces, as directed.*

*Traffic shall not be permitted on the freshly sealed surface until the asphalt material has sufficiently cured to prevent tracking.*

***412.08 Method of Measurement***

*Fog seal will be measured by the square yard ~~(square meter)~~ complete in place.*

***412.09 Basis of Payment***

*Fog seal will be paid for at the contract unit price per square yard ~~(square meter)~~.*

*Payment will be made under:*

| ***Pay Item*** | ***Pay Unit Symbol*** |
|---|---|
| *Fog Seal* ..... | *SYS ~~(m2)~~* |

*The costs of all asphalt materials, fine aggregate, surface preparation, and all other necessary incidentals shall be included in the cost of the pay item.*

FIRST DRAFT MINUTES

COMMENTS AND ACTION

412-R-549 FOG SEAL

DISCUSSIONS: Mr. Walker introduced this item, which was then explained by Mr. Prather.

Mr. Prather stated that the revisions shown are the product of lessons learned over the past few years of applying fog seals.

Mr. Heustis pointed out that in the next item, under Joint Adhesives, this Recurring Special Provision is referenced. Mr. Heustis also reminded the group that RSP's are not to be used as a reference, only Standard Specifications can be referenced, even in a RSP. There was much discussion on this issue. Mr. Cales stated that he would rather have a longer RSP than have a RSP that refers to another RSP.

This item was passed as submitted.

| | |
|---|---|
| Motion: Mr. Walker<br>Second: Mr. Cales<br>Ayes: 9<br>Nays: 0 | Action:<br>X Passed as Submitted<br>____ Passed as Revised<br>____ Withdrawn |
| Standard Specifications Sections affected:<br><br>NONE<br><br>Recurring Special Provision affected:<br><br>412-R-549 FOG SEAL<br><br>Standard Sheets affected:<br><br>NONE<br><br>Design Manual Sections affected:<br><br>NONE<br><br>GIFE Sections cross-references:<br><br>NONE | X 2014 Standard Specifications Book<br>____ Revise Pay Items List<br><br>____ Create RSP (No.____)<br>Effective ____Letting<br>RSP Sunset Date: ____<br><br>X Revise RSP (No.412-R-549)<br>Effective Sept. 01, 2012 Letting<br>RSP Sunset Date: Sept. 01, 2013<br><br>Standard Drawing Effective ____<br>____ Create RPD (No. ____)<br>Effective ____Letting<br>____ Technical Advisory<br><br>GIFE Update Req'd.? Y ___ N ___<br>By ____ Addition or ____ Revision<br><br>Frequency Manual Update Req'd? Y___N___<br>By ____ Addition or ____ Revision<br><br>Received FHWA Approval? Yes |

FIRST DRAFT MINUTES

SPECIFICATIONS, SPECIAL PROVISION AND STANDARD DRAWINGS

REVISION TO SPECIAL PROVISION

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The Joint Adhesive Unique Special Provision has successfully been placed on several contracts in 2011 and to obtain information on the cost of this application a Recurring Special Provision should be developed and placed in several contracts in 2012. Additionally a provision to require a fog seal after the application of the joint adhesive should be added to Recurring Special Provision to further seal the joint.

PROPOSED SOLUTION: Make the Unique Special Provision for Joint Adhesive and Informational Cores into a Recurring Special Provision and revise the specifications as follows:

1.Move the joint adhesive description, testing, and acceptance requirements into section 906. There is more than one product available for this application that can meet the acceptance requirements.
2. Add a fog seal requirement to be applied after all density cores have been taken and the milled centerline corrugations, when specified, have been completed.
3. Add additional information on the application of the temporary pavement markings.

APPLICABLE STANDARD SPECIFICATIONS: 401 and 906

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION:

APPLICABLE SECTION OF GIFE:

APPLICABLE RECURRING SPECIAL PROVISIONS: 401-R-581

Submitted By: Ron Walker

Title: Manager, Office of Materials Management

Organization: INDOT

Phone Number: 317-610-7251 x 204

Date: 1-6-12

APPLICABLE SUB-COMMITTEE ENDORSEMENT? These specification revisions are recommended by INDOT/APAI Technical Committee.

FIRST DRAFT MINUTES

REVISION TO SPECIAL PROVISION

401-R-581 JOINT ADHESIVE ~~AND INFORMATIONAL CORES~~

(This provision (2010 SS) was approved on 09/16/10 Standards Committee Meeting and used only on selected projects as the Unique Special Provision. Proposed changes shown highlighted in gray.)

401-R-581 JOINT ADHESIVE ~~AND INFORMATIONAL CORES~~

*(Revised XX-XX-12)*

The Standard Specifications are revised as follows:

~~SECTION 401, AFTER LINE 8, INSERT AS FOLLOWS:~~

~~*Joint adhesive is a hot applied asphalt material that is used to seal the construction joint formed between the adjacent HMA pavement courses.*~~

~~SECTION 401, AFTER LINE 31, INSERT AS FOLLOWS:~~

~~*Joint adhesive shall meet the following material requirements.*~~

| ~~*Test*~~ | ~~*Method*~~ | ~~*Test Results*~~ |
|---|---|---|
| ~~*Softening Point, °F (°C)*~~ | ~~*AASHTO T 51*~~ | ~~*170 (77) minimum*~~ |
| ~~*Ductility @ 77 °F (25 °C) (5 cm/min)*~~ | ~~*AASHTO T 51*~~ | ~~*> 30*~~ |
| ~~*Ductility @ 39 °F (4 °C) (5 cm/min)*~~ | ~~*AASHTO T 51*~~ | ~~*> 30*~~ |
| ~~*Apparent Viscosity, cp, @ 400 °F (230°C)*~~ | ~~*ASTM D 2669*~~ | ~~*4,000 – 10,000*~~ |
| ~~*Asphalt Compatibility*~~ | ~~*AASHTO M 301*~~ | ~~*Pass*~~ |
| ~~*Cone Penetration, mm*~~ | ~~*AASHTO M 301*~~ | ~~*60.0 – 100.0*~~ |
| ~~*Flow, mm*~~ | ~~*AASHTO M 301*~~ | ~~*< 5*~~ |
| ~~*Resilience @ 77 °F (25 °C), %*~~ | ~~*AASHTO M 301*~~ | ~~*> 30*~~ |
| ~~*Tensile Adhesion @ 77 °F (25 °C)*~~ | ~~*AASHTO M 301*~~ | ~~*> 500*~~ |
| ~~*Flexibility @ 0 °F (-18 °C)*~~ | ~~*ASTM D 3111*~~ | ~~*Pass*~~ |
| ~~*Flash Point, °F (°C)*~~ | ~~*AASHTO T 48*~~ | ~~*> 410 (210)*~~ |

~~*The adhesive will be accepted by type A certification in accordance with 916 for each batch or lot of material furnished.*~~

SECTION 401, AFTER LINE ~~342~~*335*, INSERT AS FOLLOWS:

*Joint adhesive in accordance with 906 shall be applied to longitudinal joints constructed in the top course of dense graded intermediate mixtures and all surface mixture courses. This includes joints within the traveled way as well as between any of the following: traveled way and an auxiliary lane, traveled way and a paved shoulder, and auxiliary lane and a paved shoulder.*

*The material shall be heated in a jacketed, double boiler melting kettle. The kettle shall have an attached pressure feed wand system with applicator shoe.*

*The joint adhesive shall be applied to the face of the previously constructed edge at the joint using a wand applicator. Prior to application of the joint adhesive, the joint face shall be dry and free of loose material and foreign objects. The adhesive shall be*

FIRST DRAFT MINUTES

REVISION TO SPECIAL PROVISION

401-R-581 JOINT ADHESIVE ~~AND INFORMATIONAL CORES~~

*applied on the joint face 1/8 in. ~~(3 mm)~~ thick at the temperature recommended by the manufacturer. Excess joint adhesive shall not be allowed to pool on the top of the previously constructed pavement course or the pavement to be overlaid. The application of the adhesive shall be made within the same day, but at least 15 min prior to construction of the longitudinal joint.*

*All surface mixture longitudinal joints that have the joint adhesive applied shall be fog sealed in accordance with Recurring Special Provision 412-R-549 at an application rate of 0.06 ± 0.02 gal./sq yd. Fog sealing operations shall not begin until all density cores in accordance with 401.16 and 401.20 have been taken and the installation of milled centerline corrugations, when specified in accordance with Recurring Special Provision 606-R-563, has been completed.*

*Temporary pavement markings in accordance with 801.12 shall be offset a sufficient distance from the longitudinal joint so as to not impede installation of the milled centerline corrugations or the application of the fog seal. The fog seal shall be applied on either side of the joint line, except onto PCCP shoulders, a minimum width of 12 in. and a maximum width of 14 in.. The application width shall be extended a maximum of 4 in., when necessary, to provide coverage beyond the edge of the corrugation. The fog seal shall be permitted to cure a minimum of 5 work days prior to applying permanent pavement traffic markings in accordance with 808.*

~~SECTION 401, BEGIN LINE 362, DELETE AND INSERT AS FOLLOWS:~~

~~*Density acceptance by cores will be based on samples obtained from 2 random locations selected by the Engineer within each sublot in accordance with ITM 802. One core shall be cut at each random location in accordance with ITM 580. The transverse core location will be located so that the edge of the core will be no closer than 12 in. (300 mm) from the edge of the course being placed. The maximum specific gravity will be determined from the samples obtained in 401.09.*~~

~~*In addition, 2 informational cores shall be obtained at the same station as the density acceptance cores. The center of 1 core shall be located 6 in. (150 mm) from the left edge of the course being placed and the center of the other core shall be located 6 in. (150 mm) from the right edge of the course being placed. These informational cores will not be used in the density pay factor determination.*~~

SECTION 401, AFTER LINE ~~667~~*745*, INSERT AS FOLLOWS:

*Joint adhesive will be measured by the linear foot in accordance with 109.01(a).*

*Fog seal will be measured in accordance with recurring special provision 412-R-549.*

SECTION 401, AFTER LINE ~~681~~*759*, INSERT AS FOLLOWS:

*Joint adhesive will be paid for by the linear foot, complete in place.*

REVISION TO SPECIAL PROVISION

401-R-581 JOINT ADHESIVE ~~AND INFORMATIONAL CORES~~

*Fog seal will be paid for in accordance with recurring special provision 412-R-549.*

SECTION 401, AFTER LINE ~~685~~*763*, INSERT AS FOLLOWS:

*Joint Adhesive, _____ ..... LFT ~~(m)~~*
*course type*

SECTION 906, AFTER LINE 72, INSERT AS FOLLOWS:

***3. Hot Poured Joint Adhesive***

*Joint adhesive is a hot applied asphalt material that is used to seal the longitudinal construction joint formed between the adjacent HMA pavement courses.*

*Joint adhesive shall be in accordance with the following:*

| Test | Method | Test Results |
|---|---|---|
| Softening Point, $^oF$ ($^oC$) | AASHTO T 53 | > 170 (77) |
| Ductility @ 77 $^oF$ (25 $^oC$), mm | AASHTO T 51 | > 300 |
| Ductility @ 39 $^oF$ (4 $^oC$), mm | AASHTO T 51 | > 300 |
| Apparent Viscosity @ 400 $^oF$ (204°C), cp | ASTM D 2669 | 4,000 – 11,000 |
| Asphalt Compatibility | ASTM D 5329 | Pass |
| Cone Penetration @ 77 $^oF$ (25 $^oC$), mm | ASTM D 5329 | 50.0 – 100.0 |
| Flow @ 140 $^oF$ (60 $^oC$), mm | ASTM D 5329 | < 5 |
| Resilience @ 77 $^oF$ (25 $^oC$), % | ASTM D 5329 | > 30 |
| Tensile Adhesion @ 77 $^oF$ (25 $^oC$), mm | ASTM D 5329 | > 500 |
| Flexibility @ 0 $^oF$ (-18 $^oC$) | ASTM D 3111 | Pass |
| Flash Point, $^oF$ ($^oC$) | AASHTO T 48 | > 410 (210) |

*The joint adhesive shall be covered by type A certification in accordance with 916 for each batch or lot of material furnished.*

FIRST PROOF ONLY

COMMENTS AND ACTION

401-R-581 JOINT ADHESIVE ~~AND INFORMATIONAL CORES~~

DISCUSSIONS: Mr. Walker introduced and explained this item in relation to the proposal found above, since more than one material has been found for use.

Mr. Prather provided input regarding the three materials available for use and explained the benefits being realized in utilizing this technique, in regards to extending joint life. Mr. Prather also stated that the cost associated with this technique is very reasonable – approx $5k/mile.

Research is also showing tangible benefits in the use of the corrugations as well. Mr. Prather stated that he would like to have this included in the Standard Specifications, due to the benefits that have been realized. Mr. Walker offered that this also reduces maintenance costs.

Mr. Prather stated that he would be willing to create a Recurring Special Provision for the Joint Adhesive and to incorporate the use of the rumble strips. He also added that the adhesive needs to be used in conjunction with the corrugations, and then fog seal the corrugations. Mr. Keefer confirmed this with Mr. Prather. Industry commented that they are behind this and that it is worth the money spent to implement this technique.

Mr. Walker stated that they will remove the RSP references from this RSP and incorporate that specific language into this RSP.

At Mr. Pankow’s recommendation, the language for applying fog seal on both sides of the joint line will be revised, so it will be understood that the joint is covered and extend at least 12 inches on each side of the joint. There was further discussion on what to call this item, and that will be decided at another time.

Mr. Walker asked to withdraw this item and bring it back, revised, next month.

FIRST DRAFT MINUTES

COMMENTS AND ACTION

401-R-581 JOINT ADHESIVE ~~AND INFORMATIONAL CORES~~

(CONTINUED)

| | |
|---|---|
| Motion: Mr. Walker<br>Second: Mr. Cales<br>Ayes:<br>Nays: | Action:<br>____ Passed as Submitted<br>____ Passed as Revised<br>X Withdrawn |
| Standard Specifications Sections affected:<br><br>401.14 pg 241; 401.21 pg 252; 401.22 pg 253;<br><br>Recurring Special Provision affected:<br><br>401-R-581 JOINT ADHESIVE AND INFORMATIONAL CORES<br><br>Standard Sheets affected:<br><br>NONE<br><br>Design Manual Sections affected:<br><br>NONE<br><br>GIFE Sections cross-references:<br><br>NONE | _____ 20__ Standard Specifications Book<br>____ Revise Pay Items List<br><br>_____ Create RSP (No.____)<br>Effective ____Letting<br>RSP Sunset Date: _____<br><br>____ Revise RSP (No.____)<br>Effective ____Letting<br>RSP Sunset Date: _____<br><br>Standard Drawing Effective _____<br>____ Create RPD (No. _____)<br>Effective ____Letting<br>____ Technical Advisory<br><br>GIFE Update Req'd.? Y ___ N ___<br>By _____ Addition or _____ Revision<br><br>Frequency Manual Update Req'd? Y___N___<br>By _____ Addition or _____ Revision<br><br>Received FHWA Approval? _____ |

FIRST DRAFT MINUTES

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The following HMA items require revisions to sections 105. 401, 402, 410, and 415:

1. Maintenance During Construction (105.13) -- Additional requirements for maintaining the pavement course or subgrade during construction is needed to include proofrolling a previously constructed course prior to placing a subsequent course. Pavement or subgrade that yields as a result of the proofroll shall be removed and replaced prior to placement of any subsequent course. The cost of this work shall be included in the cost of the other pay items. Proofrolling requirements of 402.12 and 402.20 are deleted because these requirements are now in 105.13.

2. Design Mix Formula (401.04, 402.4, 410.04) and DMF/JMF (401.08,402.04, 410.08) -- A maximum temperature of HMA is needed to prevent pavement cracking which has occurred when mixtures are produced at excessively high temperatures. Depending on the PG asphalt used, a maximum plant discharge temperature is required. Also, restrictions on the use of the water-injection foaming device should be removed because of the success we have had with this process.

3. Bulk Specific Gravity of HMA Specimens (401.05, 401.16, 401.20 (b), 402.16, 410.15, and 410.20 (c)) -- AASHTO T 166, Bulk Specific Gravity of Compacted HMA Using SSD Specimens, has been revised to allow T 275 (Parrafin-Coated method) or T 331 (Vacuum Sealing method) to be used when the sample contains open or interconnecting voids or absorbs more than 2.0 % of water by volume. We have conducted a study that indicates there is a significant difference between test values of these two test procedures on the same samples and designating only T 275 as the test method to be used is required. AASHTO will revise T 166 in 2013 based on our study and studies by other states.

4. Volumetric Mix Design (401.05) -- Recycled materials, to include RAP and RAS, should be allowed in open-graded mixtures to promote the greater use of these materials. Additional requirements for the binder type when fibers or reclaimed asphalt shingles are used are required.

5. Base Seal (401.11, 402.11) -- HMA mixtures placed below open graded mixtures should be sealed to prevent the penetration of moisture into the subgrade. Time limitations are required to allow density cores to be taken to assure that the base mixture is not exposed to moisture for any significant amount of time. Also, requirements for sealing the base mixture or placing a HMA mixture on the open graded mixture prior to the calendar year completion of construction operations is needed. A separate section (415) is required to designate the materials allowed for this application, the construction requirements, and basis of payment of the base seal.

FIRST DRAFT MINUTES

SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO SPECIFICATIONS

6. Job Mix Formula (402.06) -- Requirements for changes in the source and grade of the binder when 0 -15 % RAP is used in the mixture should be deleted because this requirement has been replaced by the binder replacement specification in 402.

PROPOSED SOLUTION: The following revisions are recommended:

1.Add proofrolling requirements for maintaining a pavement course or subgrade during construction

2. Add a maximum plant discharge temperature requirement for HMA

3. Require AASHTO T 275 when specimens contain open or interconnecting voids or absorb more than 2.0 % of water by volume.

4. Allow RAP and RAS in open graded mixtures

5. Require the base mixture placed below open graded mixtures to be sealed

APPLICABLE STANDARD SPECIFICATIONS: 105.13, 401.04, 401.05, 401.08, 401.11, 401.16, 401.20(b), 402.04, 402.06, 402.11, 402.16, 410.04, 410.08, 410.15, and 410.20(c)

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION:

APPLICABLE SECTION OF GIFE: Section 13

APPLICABLE RECURRING SPECIAL PROVISIONS:

Submitted By: Ron Walker

Title: Manager, Office of Materials Management

Organization: INDOT

Phone Number: 317-610-7251 x 204

Date: 1-6-12

APPLICABLE SUB-COMMITTEE ENDORSEMENT? These specification revisions are recommended by the INDOT/APAI Technical Committee.

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REVISION TO SPECIFICATIONS

SECTION 105 – CONTROL OF WORK
105.13 MAINTENANCE DURING CONSTRUCTION

The Standard Specifications are revised as follows:

SECTION 105, BEGIN LINE 532, INSERT AS FOLLOWS:

If the contract includes work for the placing of a course upon a course or subgrade which the Contractor has constructed previously, such previous course or subgrade shall be maintained during all construction operations. *The Engineer may direct proofrolling in accordance with 203.26 on a previously constructed course prior to placing a subsequent course. Pavement or subgrade that yields as a result of the proofroll shall be removed and replaced prior to the placement of the subsequent course.* The cost of maintaining this work *and the costs associated with the removal and replacement of the pavement or subgrade* shall be included in the cost of other pay items.

FIRST DRAFT MINUTES

REVISION TO SPECIFICATIONS

SECTION 401 – QUALITY CONTROL/QUALITY ASSURANCE, QC/QA, HOT MIX ASPHALT, HMA, PAVEMENT
401.04 DESIGN MIX FORMULA
401.05 VOLUMETRIC MIX DESIGN
401.08 JOB MIX FORMULA
401.09 ACCEPTANCE OF MIXTURES
401.11 PREPARATION OF SURFACES TO BE OVERLAID
401.16 DENSITY
401.20(d) BSG OF THE DENSITY CORE

The Standard Specifications are revised as follows:

SECTION 401, BEGIN LINE 48, DELETE AND INSERT AS FOLLOWS:

*The plant discharge temperature for any mixture shall not be more than 315°F whenever PG 58-28, PG 64-22, PG 64-28, or PG 70-22 binders are used or 325°F whenever PG 70-28 or PG 76-22 binders are used.* QC/QA HMA may be produced ~~as warm-mix asphalt, WMA, by~~ using a water-injection foaming device ~~for ESAL category 1, 2 and 3 mixtures~~. The DMF shall list the minimum *and maximum* plant discharge temperatures ~~for HMA and WMA~~ as applicable to the mixture.

SECTION 401, BEGIN LINE 79, DELETE AND INSERT AS FOLLOWS:

determined in water in accordance with AASHTO T 209. The bulk specific gravity of the gyratory specimens shall be determined in accordance with AASHTO T 166, Method A *or AASHTO T 275, if required,* for dense graded mixtures and AASHTO T 331 for open graded mixtures.

The percent draindown of open graded mixtures shall not exceed 0.30% in accordance with AASHTO T 305. Open graded mixtures may incorporate *recycled materials and* fibers. *The recycled materials shall be in accordance with 401.06, and the fiber type and minimum dosage rate shall be in accordance with AASHTO M 325.* The binder for open graded mixtures ~~containing fibers~~ may ~~be reduced by 1 temperature classification, 6°C, for the upper temperature classification. The fiber type and minimum dosage rate shall be in accordance with AASHTO M 325~~*have the upper temperature classification reduced by 6°C from the specified binder grade if fibers are incorporated into the mixture or if a minimum of 3.0% reclaimed asphalt shingles by weight of the total mixture are used.*

SECTION 401, BEGIN LINE 190, DELETE AND INSERT AS FOLLOWS:

A job mix formula, JMF, shall be developed by a certified HMA producer. A JMF used in the current or previous calendar year that was developed to $N_{des}$ will be allowed. The mixture compaction temperature shall be 300 ± 9°F ~~(150 ± 5 °C)~~ for dense graded mixtures and 260 ± 9 °F ~~(125 ± 5 °C)~~ for open graded mixtures. The JMF shall list the minimum *and maximum* plant discharge temperatures ~~for HMA and WMA~~ as applicable to the mixture. The JMF for each mixture shall be submitted to the Engineer and shall use the same MAF as the DMF.

SECTION 401, BEGIN LINE 222, INSERT AS FOLLOWS:

FIRST DRAFT MINUTES

REVISION TO SPECIFICATIONS

SECTION 401 – QUALITY CONTROL/QUALITY ASSURANCE, QC/QA, HOT MIX ASPHALT, HMA, PAVEMENT
401.04 DESIGN MIX FORMULA
401.05 VOLUMETRIC MIX DESIGN
401.08 JOB MIX FORMULA
401.09 ACCEPTANCE OF MIXTURES
401.11 PREPARATION OF SURFACES TO BE OVERLAID
401.16 DENSITY
401.20(d) BSG OF THE DENSITY CORE

The bulk specific gravity of gyratory specimens for dense graded mixtures will be determined in accordance with AASHTO T 166, Method A *or AASHTO T 275, if required*, except samples are not required to be dried overnight. The bulk specific gravity of gyratory specimens for open graded mixtures, OG19.0, OG25.0 will be determined in accordance with AASHTO T 331.

SECTION 401, AFTER LINE 310, INSERT AS FOLLOWS:

*Prior to placing an open graded mixture, the underlying HMA course shall have a full width base seal applied in accordance with 415. The base seal materials shall be applied within 3 work days after all density cores in accordance with 401.16 have been taken and before the calendar year completion of construction operations. All open graded mixtures shall be covered with the specified HMA course prior to the calendar year completion of construction operations.*

SECTION 401, BEGIN LINE 423, INSERT AS FOLLOWS:

The Engineer will determine the bulk specific gravity of the cores in accordance with AASHTO T 166, Method A *or AASHTO T 275, if required*. The maximum specific gravity will be mass determined in water in accordance with AASHTO T 209.

SECTION 401, BEGIN LINE 728, INSERT AS FOLLOWS:

**(d) BSG of the Density Core**

Additional cores shall be taken within 7 calendar days unless otherwise directed. Additional core locations will be determined by adding 1 ft ~~(0.3 m)~~ longitudinally of the cores tested using the same transverse offset. The appeal density cores will be dried in accordance with ITM 572 and tested in accordance with AASHTO T 166, Method A *or AASHTO T 275, if required*.

FIRST DRAFT MINUTES

REVISION TO SPECIFICATIONS

SECTION 402 – HOT MIX ASPHALT, HMA, PAVEMENT
402.04 DESIGN MIX FORMULA
402.06 JOB MIX FORMULA
402.11 PREPARATION OF SURFACES TO BE OVERLAID
402.16 LOW TEMPERATURE COMPACTION REQUIREMENTS
402.20 BASIS OF PAYMENT

The Standard Specifications are revised as follows:

SECTION 402, BEGIN LINE 39, DELETE AND INSERT AS FOLLOWS:

*The plant discharge temperature for any mixture shall not be more than 315°F whenever PG 58-28, PG 64-22, PG 64-28, or PG 70-22 binders are used or 325°F whenever PG 70-28 or PG 76-22 binders are used.* HMA may be produced ~~as warm-mix asphalt, WMA, by~~ using a water-injection foaming device ~~for temporary HMA mixtures and type A, B and C mixtures~~. The DMF shall list the minimum *and maximum* plant discharge temperatures ~~for HMA and WMA~~ as applicable to the mixture.

SECTION 402, BEGIN LINE 74, DELETE AS FOLLOWS:

~~For mixtures containing 0.0% to 15.0% RAP, changes in the source and grade of specified binders will be permitted; however, the high temperature grade shall meet the minimum requirements of 402.04.~~

SECTION 402, AFTER LINE 203, INSERT AS FOLLOWS:

*Prior to placing an open graded mixture, the underlying HMA course shall have a full width base seal applied in accordance with 415. The base seal materials shall be applied within three work days upon completion of paving and before the calendar year completion of construction operations. All open graded mixtures shall be covered with the specified HMA course prior to the calendar year completion of construction operations.*

SECTION 402, BEGIN LINE 220, DELETE AS FOLLOWS:

~~All partially completed sections of roadway that are 8 in. (200 mm) or less in thickness shall be proofrolled prior to the placement of additional materials the following spring. Proofrolling shall be accomplished in accordance with 203.26. The contact pressure shall be 70 to 80 psi (480 to 550 kPa). Soft yielding areas shall be removed and replaced.~~

SECTION 402, BEGIN LINE 380, INSERT AS FOLLOWS:

The Engineer will determine the bulk specific gravity of the cores in accordance with AASHTO T 166, Method A *or AASHTO T 275, if required.* The maximum specific gravity will be mass determined in water in accordance with AASHTO T 209. Density shall not be less than 92.0%.

SECTION 402, BEGIN LINE 431, DELETE AS FOLLOWS:

~~The cost of removing and replacing soft yielding areas discovered by proofrolling shall be included in the cost of other pay items in this section.~~

FIRST DRAFT MINUTES

REVISION TO SPECIFICATIONS

SECTION 410 – QUALITY CONTROL/QUALITY ASSURANCE, QC/QA, HMA SURFACE – SMA PAVEMENT
410.04 DESIGN MIX FORMULA
410.08 JOB MIX FORMULA
410.16 DENSITY
410.20(c) BSG OF THE DENSITY CORE

The Standard Specifications are revised as follows:

SECTION 410, AFTER LINE 43, INSERT AS FOLLOWS:

*The plant discharge temperature for any mixture shall not be more than 315°F whenever PG 58-28, PG 64-22, PG 64-28, or PG 70-22 binders are used or 325°F whenever PG 70-28 or PG 76-22 binders are used. SMA may be produced using a water-injection foaming device. The DMF shall list the minimum and maximum plant discharge temperatures as applicable to the mixture.*

SECTION 410, BEGIN LINE 153, INSERT AS FOLLOWS:

**410.08 Job Mix Formula**

A job mix formula, JMF, shall be developed by a certified HMA producer in accordance with ITM 583. A JMF used for SMA mixture the current or previous calendar year will be allowed. The mixture compaction temperature shall be 300 ± 9°F ~~(150 ± 5°C)~~. *The JMF shall list the minimum and maximum plant discharge temperatures as applicable to the mixture.* The JMF for each mixture shall be submitted to the Engineer.

SECTION 410, BEGIN LINE 344, DELETE AND INSERT AS FOLLOWS:

The Engineer will determine the ~~BSG~~ *bulk specific gravity* of the cores in accordance with AASHTO T 166, Method A *or AASHTO T 275, if required*. The target value for density of SMA mixtures of each sublot shall be 93.0%.

The Engineer will determine the bulk specific gravity of the cores in accordance with AASHTO T 166, Method A *or AASHTO T 275, if required*. The maximum specific gravity will be mass determined in water in accordance with AASHTO T 209. Density shall not be less than 92.0%.

SECTION 410, BEGIN LINE 465, INSERT AS FOLLOWS:

**(c) BSG of the Density Core**

Cores shall be taken within 7 calendar days unless otherwise directed. Additional core locations will be determined by adding 1 ft ~~(0.3m)~~ longitudinally of the cores tested using the same transverse offset. The cores will be dried in accordance with ITM 572 and tested in accordance with AASHTO T 166, Method A or AASHTO T 275, *if required*. The Contractor shall clean, dry, and refill the core holes with SMA or HMA surface materials within 1 work day of the coring operations.

FIRST DRAFT MINUTES

REVISION TO SPECIFICATIONS

PROPOSED NEW SECTION 415 – BASE SEAL

The Standards Specifications are revised as follows:

SECTION 415, BEGIN LINE 1, INSERT AS FOLLOWS:

## *SECTION 415 – BASE SEAL*

***415.01 Description***

*This work shall consist of applying asphalt emulsion to the pavement surface in accordance with 105.03.*

## *MATERIALS*

***415.02 Materials***

*Base seal materials shall be in accordance with the following:*

*Asphalt Emulsion, SS-1h, AE-NT.....902.01(b)*

## *CONSTRUCTION REQUIREMENTS*

***415.03 Equipment***

*A distributor in accordance with 409.03(a) shall be used.*

***415.04 Weather Limitations***

*Base sealing operations shall not be conducted on a wet pavement or when the ambient air or pavement temperature is below 32°F.*

***415.05 Preparation of Surface***

*Surfaces shall be clean and free of any foreign or loose material.*

***415.06 Application of Asphalt Material***

*The base seal materials shall be applied to the pavement surface uniformly with a distributor at an application rate of 0.22 ± 0.02 gal./sq yd.*

***415.07 Protection of Surface***

*The base seal materials shall cure a minimum of 2 hours after application before resuming paving operations.*

***415.08 Method of Measurement***

*The base seal will be measured by the ton complete in place.*

***415.09 Basis of Payment***

*The base seal will be paid for at the contract unit price per ton.*

*Payment will be made under:*

| ***Pay Item*** | ***Pay Unit Symbol*** |
|---|---|

FIRST DRAFT MINUTES

REVISION TO SPECIFICATIONS

PROPOSED NEW SECTION 415 – BASE SEAL

*Base Seal* ..... *TON*

*The costs of all asphalt materials, surface preparation and all other necessary incidentals shall be included in the cost of the pay item.*

FIRST DRAFT MINUTES

COMMENTS AND ACTION

105.13 MAINTENANCE DURING CONSTRUCTION
401.04 DESIGN MIX FORMULA
401.05 VOLUMETRIC MIX DESIGN
401.08 JOB MIX FORMULA
401.09 ACCEPTANCE OF MIXTURES
401.11 PREPARATION OF SURFACES TO BE OVERLAID
401.16 DENSITY
401.20(d) BSG OF THE DENSITY CORE
402.04 DESIGN MIX FORMULA
402.06 JOB MIX FORMULA
402.11 PREPARATION OF SURFACES TO BE OVERLAID
402.16 LOW TEMPERATURE COMPACTION REQUIREMENTS
402.20 BASIS OF PAYMENT
410.04 DESIGN MIX FORMULA
410.08 JOB MIX FORMULA
410.16 DENSITY
410.20(c) BSG OF THE DENSITY CORE
SECTION 415 – BASE SEAL

DISCUSSIONS: Mr. Walker introduced and explained this item. Mr. Prather offered clarifications in regards to proofrolling, as to why the language was moved to 105, which places the onus on the Prime Contractor. Mr. Keefer took issue with the new 105 language as written. Mr. Pankow asked why we used the word “may”. Mr. Heustis suggested taking that language from 402 and copying it into 401, to avoid any confusion and potential arguments. Much discussion ensued as to where to place this language and whether or not it is even needed. Mr. Miller said we need to put it where we need it, since very few people read the 105 section initially. The recommendation was made to add the word “shall” for proofrolling to remove all doubt and potential conflicts.

Mr. Miller suggested looking at the language that was removed form 402 regarding the 8 inch requirement, and incorporating it into 401 and not changing the 105 language.

Mr. Walker then moved on to explain the revisions to the remaining sections. Mr. Miller asked about going back to a 5D mix for the Base, and Mr. Prather explained that it had been considered but that using the Base Seal was a better way to go.

Some editorial revisions were suggested.

Discussion resumed on the Base concerning leaving it open during the winter. Shall it be proofrolled? Even if it was sealed? Mr. Pankow and Mr. Heustis recommended revising the proposed language to address all potential problems by making it apply to all bases. The potential is there for moisture to get into the subgrade if left to stand over the winter. Mr. Walker explained that if the Contractor could not complete the project before winter, then he has a way to protect the base, at no cost to INDOT.

Mr. Walker agreed to bring this back next time incorporating comments and suggestions for clarification.

This item was therefore withdrawn.

FIRST DRAFT MINUTES

COMMENTS AND ACTION

105.13 MAINTENANCE DURING CONSTRUCTION
401.04 DESIGN MIX FORMULA
401.05 VOLUMETRIC MIX DESIGN
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402.20 BASIS OF PAYMENT
410.04 DESIGN MIX FORMULA
410.08 JOB MIX FORMULA
410.16 DENSITY
410.20(c) BSG OF THE DENSITY CORE
SECTION 415 – BASE SEAL

(CONTINUED)

Motion: Mr. Walker
Second: Mr. Cales
Ayes:
Nays:

Action:
____ Passed as Submitted
____ Passed as Revised
X Withdrawn

Standard Specifications Sections affected:

105.13 pg 48; 401.04 pg 233, 234; 401.08 pg 238; 401.09 pg 238, 239;401.11 pg 240; 401.16 pg 243; 401.20 pg 252; 402.03 pg 255;402.06 pg 256; 402.11 pg 259; 402.12 pg 259; 402.16 pg 263; 402.20 pg 264; 410.04 pg 281; 410.08 pg 284; 410.16 pg 289.

Recurring Special Provision affected:

NONE

Standard Sheets affected:

NONE

Design Manual Sections affected:

NONE

GIFE Sections cross-references:

SECTION 13

____ 20__ Standard Specifications Book
____ Revise Pay Items List

____ Create RSP (No.____)
Effective ____Letting
RSP Sunset Date: ____

____ Revise RSP (No.____)
Effective ____Letting
RSP Sunset Date: ____

Standard Drawing Effective ____
____ Create RPD (No. ____)
Effective ____Letting
____ Technical Advisory

GIFE Update Req'd.? Y ___ N ___
By ____ Addition or ____ Revision

Frequency Manual Update Req'd? Y___N___
By ____ Addition or ____ Revision

Received FHWA Approval? ____

FIRST DRAFT MINUTES