INDIANA DEPARTMENT OF TRANSPORTATION

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Eric Holcomb, Governor
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FINAL DRAFT MINUTES

May 21, 2020 Standards Committee Meeting

(Changes to the Agenda and First Draft Minutes by the Action of the Committee shown as highlighted in yellow)

June 12, 2020

TO: Standards Committee

FROM: Scott Trammell, Secretary

RE: Minutes from the May 21, 2020 Standards Committee Meeting

The Standards Committee meeting was called to order by Mr. Pankow, Chair, at 09:03 a.m. on May 21, 2020. This meeting was conducted virtually via Microsoft Teams Live Event. The meeting was adjourned at 11:13 a.m.

The following committee members were in attendance:

Gregory Pankow, Chairman, Director, Construction Management
John Wooden, Contract Administration Division
Dave Boruff, Traffic Engineering
Elizabeth Phillips*, Bridge Design Division
Joseph Novak, Construction Management
Kumar Dave, Pavement Engineering, Highway Design
Jim Reilman, Materials Management
Michael Koch, District Construction, Fort Wayne District
Elena Veksler, Highway Design and Technical Support
Kurt Pelz, Construction Technical Support
Louis Feagans, Statewide Technical Services Director
* *Proxy* for Mark Orton

Also, in attendance were the following:

Michael Pelham, INDOT
James D. Culbertson, INDOT
Dan Osborn, ICI
Derrick Hauser, INDOT
Nate Pfeiffer, INDOT
Roland Fegan, INDOT
Zach Corrice, INDOT
Steve Fisher, INDOT
Joseph Bruno, INDOT
Steve Duncan, INDOT
Matt Beeson, INDOT
John Leckie, IRMCA
Nathan Awwad, INDOT
Tom Duncan, FHWA
Nelson Mike, INDOT
Lana Podorvanova, INDOT

Tom Harris, INDOT
Mark Orton, INDOT
Kenneth Gootee, INDOT
Joseph Rogers, ADS Pipe
Steve Smart, Rinker Pipe
Darren Schmidt, Forterra BP
Jeremy Hunter, INDOT
Jacob Blanchard, INDOT
Rebecca Sumner, INDOT
Scott Trammell, INDOT
John Susong, Rinker Pipe
Kirsten Pauley, Asphalt Indiana
Patrick Long, IRMCA

The following items were listed for consideration:

A. GENERAL BUSINESS ITEMS

OLD BUSINESS

(No items were listed)

NEW BUSINESS

1. *Approval of the Minutes from the February 20, 2020 meeting*

The meeting minutes from the February 20, 2020 meeting were approved electronically and posted on April 23, 2020.

B. CONCEPTUAL PROPOSAL ITEMS

OLD BUSINESS

(No items were listed)

NEW BUSINESS

(No items were listed)

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

OLD BUSINESS

Item No. 2 (02/20/20) Mr. Reilman pg 5

Special Provisions (proposed new):

401-R-xxx	*HMA SPRAY PAVER AND ASPHALT EMULSION FOR TACK COAT (2020 SS)*
410-R-xxx	*SMA SPRAY PAVER AND ASPHALT EMULSION FOR TACK COAT (2020 SS)*

ACTION: PASSED AS SUBMITTED

NEW BUSINESS

Item No. 1	Mr. Reilman	pg 16
715.09	Backfilling	

ACTION: WITHDRAWN

Item No. 2	Mr. Reilman	pg 22
619.13	Painting Existing Steel Bridges	
711.31	Peening Welds by Means of Ultrasonic Impact Treatment, UIT	
711.48	Shop Cleaning and Storage of Weathering Steel	
711.70	Field Cleaning and Storage of Weathering Steel	
805.04	Pole Installation	
807.13	Luminaires	

Special Provision:

729-B-204	HEAT STRAIGHTENING OF STEEL MEMBERS IN THE FIELD

ACTION: PASSED AS SUBMITTED

Item No. 3	Mr. Pelz	pg 31

Special Provisions:

108-x-xxx	*CRITICAL PATH METHOD SCHEDULING AND FLOAT*
~~108-C-215~~	~~CRITICAL PATH METHOD SCHEDULE~~ (*TO DISCONTINUE USE*)

ACTION: WITHDRAWN

Item No. 4	Mr. Reilman	pg 47

Special Provision (proposed new):

619-X-XXX	*ALTERNATE FINISH COAT FOR PARTIAL PAINT SYSTEM*

ACTION: PASSED AS REVISED

Item No. 5	Mr. Reilman	pg 54
708.02	Materials	
910.01	Reinforcing Bars, Dowel Bars and WWR	

ACTION: PASSED AS SUBMITTED

Item No. 6	Mr. Pelz	pg 58

Special Provision (proposed new):

206-X-XXX *DEWATERING*

ACTION: PASSED AS REVISED

Item No. 7	Mr. Novak	pg 63
105.14	Failure to Maintain Roadway, Structures, Barricades, and Construction Signs	
109.05.1	Quality Adjustments	
801.03	General Requirements	
801.12	Temporary Pavement Marking	
801.18	Basis of Payment	

ACTION: WITHDRAWN

Item No. 8	Mr. Novak	pg 70

Special Provision (proposed new):

801-T-XXX *PROMPT PLACEMENT OF EDGE LINES*

ACTION: WITHDRAWN

Item No. 9	Mr. Reilman	pg 74
912.01	Curing Materials	

ACTION: PASSED AS REVISED

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cc: Committee Members
FHWA
ICI

Mr. Reilman
Date: 5/21/20
OLD BUSINESS ITEM

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS RECURRING SPECIAL PROVISIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Current tack coat and bonding techniques often do not correctly and fully create a bond in between asphalt layers.

PROPOSED SOLUTION: Achieve bonding through the use of a spray paver which allows increased shot rates, eliminates tracking and allows the use of polymer modified emulsions.

APPLICABLE STANDARD SPECIFICATIONS: 401,410

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: Figure 17-4A?? If converted to spec book?

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

PAY ITEMS AFFECTED: N/A

APPLICABLE SUB-COMMITTEE ENDORSEMENT: OMM/Pavement Committee, APAI Steering Committee

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman

Title: State Materials Engineer

Organization: INDOT

Phone Number: 317-522-9692

Date: 3/20/2020

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS RECURRING SPECIAL PROVISIONS

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? N

Will approval of this item affect the Approved Materials List? N

Will this proposal improve:

- Construction costs? N
- Construction time? Y
- Customer satisfaction? Y
- Congestion/travel time? N
- Ride quality? Y

Will this proposal reduce operational costs or maintenance effort? Y

Will this item improve safety:

- For motorists? N
- For construction workers? N

Will this proposal improve quality for:

- Construction procedures/processes? Y
- Asset preservation? Y
- Design process? Y

Will this change provide the contractor more flexibility? Y
Will this proposal provide clarification for the Contractor and field personnel? Y
Can this item improve/reduce the number of potential change orders? N
Is this proposal needed for compliance with:

- Federal or State regulations? N
- AASHTO or other design code? N

Is this item editorial? N
Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda: Would like to make these an RSP but insert manually with approval of OMM until a better BFU is established by the Department. This is not to become part of the spec book, but to lock it down so Department has better control on its insertion and use.

(Note: Proposed changes shown highlighted gray)

401-R-xxx HMA SPRAY PAVER AND EMULSION (2020 SS)

(Adopted xx-xx-20)

The Standard Specifications are revised as follows:

SECTION 401, BEGIN LINE 21, INSERT AS FOLLOWS:

401.03 Materials

Materials shall be in accordance with the following:

Asphalt Emulsion.....*902.01(b)2*
Asphalt Materials
PG Binder.....902.01(a)
Coarse Aggregates 904
Base Mixtures – Class D or Higher
Intermediate Mixtures – Class C or Higher
Surface Mixtures* – Class B or Higher
Fibers.....AASHTO M 325
Fine Aggregates 904
*Surface aggregate requirements are listed in 904.03(d).

SECTION 401, BEGIN LINE 360, DELETE AND INSERT AS FOLLOWS:

Rubblized concrete pavements shall be primed in accordance with 405. PCCP, milled asphalt surfaces, and ~~asphalt surfaces~~*new and existing asphalt surfaces* shall be tacked in accordance with 406*, except surfaces shall be tacked in accordance with 401.14 when mixture is placed with paving equipment in accordance with 409.03(c)4.* Contact surfaces of curbing, gutters, manholes, and other structures shall be tacked in accordance with 406.

SECTION 401, BEGIN LINE 381, INSERT AS FOLLOWS:

401.14 Spreading and Finishing

The mixture placed on a shoulder, approach, taper or gore area shall be placed by means of laydown equipment in accordance with 409.03(c)1, 409.03(c)2, or 409.03(c)3 and tacked in accordance with 406 and 409.03(a). No additional payment will be made if the Contractor elects to use equipment and materials in accordance with 409.03(c)4 and 902.01(b)2.

The mixture *placed on all travel lanes, turn lanes, auxiliary lanes and ramps* shall be placed upon an approved surface by means of laydown equipment in accordance with 409.03(c)*4.*

The spray paver emulsion, in accordance with 902.01(b)2, shall be applied at a temperature recommended by the emulsion supplier and applied uniformly across the entire width of pavement to be overlaid. Equipment shall not operate on the applied emulsion before the asphalt mix is placed.

The asphalt emulsion spray bar affixed to the spray paver shall not be turned off while applying the HMA except when passing over the plate sampling area. The plate sampling area shall be defined as 3.0 ft or less from the first edge of the plate sample encountered going upstream and continuing to 3.0 ft or less from the last edge of the plate sample encountered going upstream. This shall include any contractor plate samples. Tack coat will not be required in the plate sampling area.

The application rates of the spray paver emulsion are shown in the table below.

Spray Paver Emulsion Application Rate and Adjustment Factors for Surface Conditions			
Mixture Designation	*19.0 mm or 25.0 mm*	*12.5 mm*	*9.5 mm*
Tack Emulsion Application Rate, gal./sq yd	*0.25*	*0.20*	*0.17*
Existing Surface Condition	*Adjustment to application rate, gal./sq yd*		
PCCP, smooth or polished	*-0.03*	*-0.03*	*-0.03*
PCCP, broomed or textured	*0*	*0*	*0*
Flushed asphalt concrete surface	*-0.02*	*-0.03*	*-0.03*
Dense, unaged asphalt concrete surface	*0*	*0*	*0*
Open textured, dry, aged or oxidized asphalt concrete surface	*+0.02*	*+0.01*	*+0.01*
Milled asphalt concrete surface	*+0.02*	*+0.01*	*+0.01*

A pre-paving meeting between the Engineer and the Contractor shall be held on-site prior to beginning work. The following shall be reviewed:

(a) work schedule
(b) traffic control plan
(c) equipment calibrations and adjustments
(d) inspection and evaluation of the condition and adequacy of equipment, including units for transport of materials
(e) design mix formula
(f) the Contractor's proposed emulsion and mix application rates
(g) QCP in accordance with ITM 803
(h) the Contractor's authorized representative.

Prior to paving, both the planned quantity and lay rate shall be adjusted by multiplying by the MAF. When mixture is produced from more than one DMF for a given pay item, the MAF will be applied to the applicable portion of the mixture for each. The temperature of each mixture at the time of spreading shall be less than 315°F whenever PG 64-22 or PG 70-22 binders are used or not more than 325°F whenever PG 76-22 binder is used. *No mixture shall be placed on a previously paved course that has not cooled to below 175°F. For mixtures compacted in accordance with 402.15, the temperature of each mixture at the time of spreading shall not be less than 245°F.*

SECTION 401, AFTER LINE 404, INSERT AS FOLLOWS:

HMA mainline and HMA shoulders which are 8 ft or more in width shall be placed with paving equipment in accordance with 409.03(c)1 *or 409.03(c)4*.

SECTION 401, AFTER LINE 869, INSERT AS FOLLOWS:

Spray paver emulsion will be measured by the ton.

SECTION 401, AFTER LINE 886, INSERT AS FOLLOWS:

The accepted quantities of spray paver emulsion will be paid for at the contract unit price per ton, complete in place.

Payment will be made under:

Pay Item	**Pay Unit Symbol**
Joint Adhesive, _____ (course type)	LFT
Spray Paver Emulsion	*TON*
Liquid Asphalt Sealant	LFT
Profilograph, HMA	LS
QC/QA-HMA, _____, _____, _____, _____mm (ESAL[(1)]) (PG[(2)]) (Course[(3)]) (Mix[(4)])	TON

SECTION 409, AFTER LINE 84, INSERT AS FOLLOWS:

4. Spray Paver

The paver shall be in accordance with 409.03(c)1 except as follows:

(a) The paver shall be self-priming, designed and built for applying the HMA and the asphalt emulsion simultaneously. The paver shall have a receiving hopper, feed system, asphalt emulsion storage tank, a calibrated metering system for measuring the emulsion volume applied, spray bar and a heated, variable width, combination vibratory screed or a combination vibratory-tamping bar screed.

REVISION TO STANDARD SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS

401-R-xxx HMA SPRAY PAVER AND EMULSION (2020 SS)
410-R-xxx SMA SPRAY PAVER AND EMULSION (2020 SS)

(b) The paver shall be capable of spraying the asphalt emulsion, applying the asphalt mix and leveling the surface of the mat in one pass.

410-R-xxx SMA SPRAY PAVER AND EMULSION (2020 SS)

(Adopted xx-xx-20)

The Standard Specifications are revised as follows:

SECTION 410, BEGIN LINE 22, INSERT AS FOLLOWS:

Materials shall be in accordance with the following:

Asphalt Emulsion .....902.01(b)2
Asphalt Materials
PG Binder, PG 76-22, PG 70-22.....902.01(a)
Coarse Aggregates, Class AS.....904
Fibers.....AASHTO M 325
Fine Aggregates (sand, mineral filler) 904

SECTION 410, BEGIN LINE 238, DELETE AND INSERT AS FOLLOWS:

Milled asphalt surfaces and asphalt surfaces shall be tacked in accordance with 406, *except surfaces shall be tacked in accordance with 401.14 when mixture is placed with paving equipment in accordance with 409.03(c)4.* Contact surfaces of curbing, gutters, manholes, and other structures shall be tacked in accordance with 406.

SECTION 410, BEGIN LINE 251, INSERT AS FOLLOWS:

410.14 Spreading and Finishing

The mixture placed on a shoulder, approach, taper or gore area shall be placed by means of laydown equipment in accordance with 409.03(c)1, 409.03(c)2, or 409.03(c)3 and tacked in accordance with 406 and 409.03(a). No additional payment will be made if the Contractor elects to use equipment and materials in accordance with 409.03(c)4 and 902.01(b)2.

The mixture *placed on all travel lanes, turn lanes, auxiliary lanes and ramps* shall be placed upon an approved surface by means of laydown equipment in accordance with 409.03(c)*4.*

The spray paver emulsion, in accordance with 902.01(b)2, shall be applied at a temperature recommended by the emulsion supplier and applied uniformly across the entire width of pavement to be overlaid. Equipment shall not operate on the applied emulsion before the asphalt mix is placed.

The asphalt emulsion spray bar affixed to the spray paver shall not be turned off while applying the HMA except when passing over the plate sampling area. The plate sampling area shall be defined as 3.0 ft or less from the first edge of the plate sample encountered going upstream and continuing to 3.0 ft or less from the last edge of the plate

sample encountered going upstream. This shall include any contractor plate samples. Tack coat will not be required in the plate sampling area.

The application rates of the spray paver emulsion are shown in the table below.

Spray Paver Emulsion Application Rate and Adjustment Factors for Surface Conditions			
Mixture Designation	*19.0 mm*	*12.5 mm*	*9.5 mm*
Tack Emulsion Application Rate, gal./sq yd	*0.25*	*0.20*	*0.17*
Existing Surface Condition	*Adjustment to application rate, gal./sq yd*		
PCCP, smooth or polished	*-0.03*	*-0.03*	*-0.03*
PCCP, broomed or textured	*0*	*0*	*0*
Flushed asphalt concrete surface	*-0.02*	*-0.03*	*-0.03*
Dense, unaged asphalt concrete surface	*0*	*0*	*0*
Open textured, dry, aged or oxidized asphalt concrete surface	*+0.02*	*+0.01*	*+0.01*
Milled asphalt concrete surface	*+0.02*	*+0.01*	*+0.01*

A pre-paving meeting between the Engineer and the Contractor shall be held on-site prior to beginning work. The following shall be reviewed:

(a) work schedule
(b) traffic control plan
(c) equipment calibrations and adjustments
(d) inspection and evaluation of the condition and adequacy of equipment, including units for transport of materials
(e) design mix formula
(f) the Contractor's proposed emulsion and mix application rates
(g) QCP in accordance with ITM 803
(h) the Contractor's authorized representative.

Mixtures in areas inaccessible to mechanical devices may be placed by other methods. The temperature of mixture at the time of spreading shall be no more than 315°F whenever PG 70-22 binder is used or no more than 325°F whenever PG 76-22 binder is used. *The temperature of each mixture shall not be less than 245°F at the time of spreading when placed with paving equipment in accordance with 409.03(c)2 or 409.03(c)3. No mixture shall be placed on a previously paved course that has not cooled to less than 175°F.*

SECTION 410, AFTER LINE 488, INSERT AS FOLLOWS:

Spray paver emulsion will be measured by the ton.

REVISION TO STANDARD SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS

401-R-xxx HMA SPRAY PAVER AND EMULSION (2020 SS)
410-R-xxx SMA SPRAY PAVER AND EMULSION (2020 SS)

SECTION 410, AFTER LINE 497, INSERT AS FOLLOWS:

The accepted quantities of spray paver emulsion will be paid for at the contract unit price per ton, complete in place.

Adjustments to the contract payment with respect to mixture, density, and smoothness for mixture produced will be included in a quality assurance adjustment pay item. The unit price for this pay item will be $1.00 and the quantity will be in units of dollars. The quantity is the total calculated in accordance with 410.19. A change order developed in accordance with 109.05 will be prepared to reflect contract adjustments.

Payment will be made under:

Pay Item	**Pay Unit Symbol**
Joint Adhesive, _____ (course type)	LFT
Spray Paver Emulsion	*TON*
QC/QA-HMA, _____, _____, _____, _____ mm, - SMA (ESAL[(1)])(PG[(2)])(Course[(3)])(Mix[(4)])	TON
Quality Assurance Adjustment	DOL

SECTION 409, AFTER LINE 84, INSERT AS FOLLOWS:

4. Spray Paver

The paver shall be in accordance with 409.03(c)1 except as follows:

(a) The paver shall be self-priming, designed and built for applying the HMA and the asphalt emulsion simultaneously. The paver shall have a receiving hopper, feed system, asphalt emulsion storage tank, a calibrated metering system for measuring the emulsion volume applied, spray bar and a heated, variable width, combination vibratory screed or a combination vibratory-tamping bar screed.

(b) The paver shall be capable of spraying the asphalt emulsion, applying the asphalt mix and leveling the surface of the mat in one pass.

COMMENTS AND ACTION
REVISION TO STANDARD SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS

401-R-xxx HMA SPRAY PAVER AND EMULSION (2020 SS)
410-R-xxx SMA SPRAY PAVER AND EMULSION (2020 SS)

DISCUSSION:

This item was introduced and presented by Mr. Reilman, along with Mr. Awwad, who stated that current tack coat and bonding techniques often do not correctly and fully create a bond in between asphalt layers. Mr. Reilman proposed these items with the intention to achieve bonding through the use of a spray paver which allows increased shot rates, eliminates tracking and allows the use of polymer modified emulsions.

Mr. Koch mentioned that the titles of the 401.03 materials do not always match the title of the 900 section material but in general we use the pay item name throughout to provide clear direction. Mr. Koch asked if the 401.03 reference should be changed from 'asphalt emulsion' to 'spray paver emulsion'? Or perhaps label both 'asphalt emulsion for spray paver' which would follow current naming practices? Mr. Awwad suggested leaving the terminology as is, since it mimics what is currently shown in 406.

Mr. Dave asked who will be in charge of project selection for this paving technique. Mr. Awwad admitted that it will be him. Mr. Dave mentioned that not every contractor has this equipment, so cost may be an issue. Mr. Reilman agreed that this may be costly initially, but retrofit equipment is available for existing paving equipment.

Ms. Phillips asked about how the process will work in selecting projects and the feasibility concerning all costs involved. Mr. Reilman answered that the projects will be carefully selected with the help of the Districts. Further explanation was provided by Mr. Reilman and Mr. Awwad.

Mr. Awwad answered Mr. Boruff's inquiry by explaining that other states have implemented this technique and that a slightly modified UBWC machine can be used.

Mr. Reilman explained that he would like to make these an RSP, but that it be inserted manually with the approval of OMM until a better BFU is established by the Department. This is not to become part of the spec book, but to lock it down so the Department has better control on its insertion and use.

There was no further discussion and this item passed as submitted.

COMMENTS AND ACTION
REVISION TO STANDARD SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS

401-R-xxx HMA SPRAY PAVER AND EMULSION (2020 SS)
410-R-xxx SMA SPRAY PAVER AND EMULSION (2020 SS)

[continued]

Motion: Mr. Reilman Second: Mr. Mr. Koch Ayes: 10 Nays: 0 FHWA Approval: YES	Action: X Passed as Submitted ___ Passed as Revised ___ Withdrawn
Standard Specifications Sections referenced and/or affected: 401 pg 287 - 312; 410 pg 336 - 350 Recurring Special Provision references in: 401-R-701 QC/QA HMA PAVEMENT 410-R-703 QC/QA HMA - SMA PAVEMENT Standard Drawing affected: NONE Design Manual Sections affected: Figure 17-4A?? If converted to spec book? GIFE Sections cross-references: NONE	___ 2022 Standard Specifications X Revise Pay Items List X Create RSP(s) (No. 401-R-xxx and 410-R-xxx) Effective: December 1, 2020 RSP Sunset Date: ___ Revise RSP (No.___) Effective: RSP Sunset Date: ___ Standard Drawing Effective: ___ Create RPD (No. ___) Effective: X GIFE Update ___ SiteManager Update

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: In 715.09, it seems that the installed pipe materials or finished product may not be within reasonably close conformance to the plans and specifications and it appears that the Department is obligated to accept it based on a third party ruling.

PROPOSED SOLUTION: Incorporate the proposed changes to 715.09 to enable the Department to have final say on the disposition of a deficient pipe.

APPLICABLE STANDARD SPECIFICATIONS: 715.09

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE: 4.11.2

APPLICABLE RECURRING SPECIAL PROVISIONS: None

PAY ITEMS AFFECTED: None

APPLICABLE SUB-COMMITTEE ENDORSEMENT: INDOT Pipe Committee

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman

Title: State Materials Engineer

Organization: INDOT, Office of Materials & Tests

Phone Number: 317-522-9692

Date: 2/24/20

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No
Will approval of this item affect the Approved Materials List? No
Will this proposal improve:

Construction costs? N/A

Construction time? N/A

Customer satisfaction? Yes

Congestion/travel time? N/A

Ride quality? Yes

Will this proposal reduce operational costs or maintenance effort? Yes

Will this item improve safety:

For motorists? N/A

For construction workers? N/A

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? Yes

Design process? N/A

Will this change provide the contractor more flexibility? No

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? N/A

Is this proposal needed for compliance with:

Federal or State regulations? N/A

AASHTO or other design code? N/A

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda:

REVISION TO STANDARD SPECIFICATIONS

SECTION 715 - PIPE CULVERTS, AND STORM AND SANITARY SEWERS
715.09 Backfilling

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 715, BEGIN LINE 336, DELETE AND INSERT AS FOLLOWS:

715.09 Backfilling

All pipe trenches shall be backfilled with structure backfill or flowable backfill. Structure backfill shall be placed in accordance with 211. Flowable backfill shall be placed in accordance with 213.07 as shown on the plans or as directed.

Prior to placing flowable backfill, all standing water shall be removed from the trench. If the water cannot be removed from the trench, structure backfill shall be used in lieu of flowable backfill to an elevation 2 ft above the groundwater. The remainder of the trench shall be backfilled as shown on the plans.

All pipes, except underdrains, will be visually inspected for acceptance a minimum of 30 days after the completion of backfill operations. Pipes that cannot be visually inspected shall be video inspected for acceptance using equipment in accordance with 718.07. The Engineer will determine the sections of pipe to be video inspected.

For pipes that were video inspected, a copy of the video inspection shall be provided in a format acceptable to the Engineer. The video inspection shall be provided prior to performing the mandrel testing or if mandrel testing is not required, prior to acceptance of the pipe.

For pipe not requiring mandrel testing that is determined to be unacceptable by the Engineer, the unacceptable pipe shall be replaced between the nearest pipe joints or to the nearest structure, or a remediation plan shall be prepared by a professional engineer and submitted to the Engineer for final determination.

After the visual or video inspection, the Contractor shall check pipe deflection by performing a mandrel test as directed on pipes manufactured from materials listed in the following table. The Engineer will determine the runs of pipe installations to be mandrel tested with a minimum of 10% of the total length of each material to be inspected.

Pipes Required to Be Mandrel Tested	
Pipe Material	Standard Specifications
Corrugated Polyethylene Pipe	907.17(b)
Corrugated Polypropylene Pipe	907.19
Profile Wall Polyethylene Pipe	907.20
Smooth Wall Polyethylene Pipe	907.21
Profile Wall PVC Pipe	907.22
Smooth Wall PVC Pipe	907.23

The mandrel shall have a minimum of nine arms or prongs and a diameter that is

95% of the nominal pipe diameter. The Contractor shall provide a proving ring that is 95% of the nominal pipe diameter for each mandrel.

The Contractor shall pull the mandrel through the pipe by hand. If the mandrel does not pass through the pipe, the Contractor shall measure and report the minimum diameter of the deficient pipe to the Engineer.

If the minimum diameter of the deficient pipe is between 92.5% and 95.0% of the nominal pipe diameter, ~~the Contractor shall provide an evaluation of the deficient pipe prepared by a professional engineer. The evaluation shall consider the severity of the deflection and its effects on structural integrity, environmental conditions, and the design service life of the pipe. A report summarizing the evaluation and including the professional engineer's recommendation for acceptance, remediation, or replacement of the pipe shall be submitted to the Engineer for final determination~~*the deficient pipe will be adjudicated as a failed material in accordance with 105.03. The deficient pipe shall not be re-rounded.*

If the minimum diameter of the deficient pipe is equal to or less than 92.5% of the nominal pipe diameter, the deficient pipe shall ~~either~~ be replaced ~~or a remediation plan shall be prepared by a professional engineer and submitted to the Engineer for final determination~~.

~~The deficient pipe shall be replaced if the professional engineer's remediation plan recommends replacement of the pipe or if the pipe has been damaged.~~

Deficient pipe shall at a minimum be replaced between the nearest pipe joints or to the nearest structure. Replaced or remediated pipe sections shall be mandrel tested a minimum of 30 days after the completion of backfill operations.

Commercial and private drive pipes are excluded from the mandrel testing and video inspection requirements.

Where material other than structure backfill or flowable backfill is allowed and used for backfilling, it shall be of such nature that compacts readily. That portion around and for 6 in. above the top of the pipe shall be free from large stones. This material shall be placed in layers not to exceed 6 in., loose measurement, and each layer compacted thoroughly by means of mechanical tamps. Where coarse aggregate is used for structure backfill, geotextile shall be installed.

An adequate earth cover, as shown on the plans, shall be placed over the structure before heavy equipment is operated over it.

Backfill for slotted drain pipe and slotted vane drain pipe shall consist of class A concrete on both sides of the pipe. During the backfilling and paving operations, the slot shall be covered to prevent infiltration of material into the pipe.

COMMENTS AND ACTION

715.09 Backfilling

DISCUSSION:

Mr. Reilman introduced and presented this item stating that in the language presented in 715.09, it seems that the installed pipe materials or finished product may not be within reasonably close conformance to the plans and specifications and it appears that the Department would be obligated to accept it based on a third party ruling.

Mr. Reilman therefore proposes to incorporate the above proposed changes to 715.09 to enable the Department to have final say on the disposition of a deficient pipe.

Mr. Koch stated that by striking the language shown, we would be assuming liability if the Failed Materials Committee decides to accept 92.5 – 95.0% pipe or if our recommendation forces a specific corrective action. Mr. Koch favors requiring the Contractor to propose a corrective action plan, stamped by PE, which is reviewed per 105.02. Our Shop Drawing Construction Memo would need to be amended to include proper direction. This could allow for more timely resolution yet still allow us to maintain control and not overload the FMC. Mr. Koch also suggested extending the concept to all pipes with less than 95%. For 95 – 92.5% pipe, Mr. Koch mentioned that the language could state that if the corrective action plans is not acceptable to the Engineer, the deficient pipe shall be removed & replaced, prior to involving the FMC.

Mr. Pankow offered that no matter which way we go that a corrective action plan from a professional engineer will be needed, and that the fastest way would be to require that the plan be submitted that goes to the EOR for approval. Then if an approved plan cannot be reached it should be removed and replaced. We should strive to get answers as soon as we can in order to closeout contracts in a timely manner. Mr. Pankow also stated that he has no problem with the language we currently have in the standard specifications.

Mr. Reilman stated that the current language borders on contractor acceptance of the work and it needs to be changed in order to encourage improved workmanship to get it right the first time. The main issue has been with flexible pipe and poor backfill practices. Perhaps this revision will encourage the contractor to provide a better finished product. Mr. Koch stated that he still favors a shop drawing process where the contractor proposes a solution subject to INDOT approval, allowing the Department to maintain control while moving the issue along without undue delay.

Mr. Pankow suggested this item be withdrawn pending further review and discussion of all concerns addressed.
Mr. Reilman agreed that outside discussions are needed and agreed to withdraw this item at this time.

COMMENTS AND ACTION

715.09 Backfilling

[continued]

Motion: Mr. Reilman Second: Mr. Dave Ayes: Nays: FHWA Approval:	Action: ___ Passed as Submitted ___ Passed as Revised _X_ Withdrawn
Standard Specifications Sections referenced and/or affected: 715.09 pg 697 Recurring Special Provision references in: NONE Standard Drawing affected: NONE Design Manual Sections affected: 4.11.2 GIFE Sections cross-references: NONE	___ 2022 Standard Specifications ___ Revise Pay Items List ___ Create RSP (No.__) Effective: RSP Sunset Date: ___ Revise RSP (No.___) Effective: RSP Sunset Date: ___ Standard Drawing Effective: ___ Create RPD (No. ___) Effective: ___ GIFE Update ___ SiteManager Update

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: updates were made to the 619 cleaning bridge steel requirements but were inadvertently not updated in other spec sections

PROPOSED SOLUTION: incorporate the attached updates into RSP 619-B-312

APPLICABLE STANDARD SPECIFICATIONS: 619

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE: None

APPLICABLE RECURRING SPECIAL PROVISIONS: RSP 619-B-312

PAY ITEMS AFFECTED: None

APPLICABLE SUB-COMMITTEE ENDORSEMENT: none

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman

Title: State Materials Engineer

Organization: INDOT, Office of Materials & Tests

Phone Number: 317-522-9692

Date: 3/12/2020

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No
Will approval of this item affect the Approved Materials List? No
Will this proposal improve:

- Construction costs? N/A
- Construction time? N/A
- Customer satisfaction? N/A
- Congestion/travel time? N/A
- Ride quality? N/A

Will this proposal reduce operational costs or maintenance effort? N/A

Will this item improve safety:

- For motorists? N/A
- For construction workers? N/A

Will this proposal improve quality for:

- Construction procedures/processes? Yes
- Asset preservation? N/A
- Design process? N/A

Will this change provide the contractor more flexibility? N/A

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? Yes

Is this proposal needed for compliance with:

- Federal or State regulations? No
- AASHTO or other design code? No

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda:

REVISION TO STANDARD SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS

SECTION 619 - PAINTING STEEL BRIDGE
619.13 Painting Existing Steel Bridges
SECTION 711 - STEEL STRUCTURES
711.31 Peening Welds by Means of Ultrasonic Impact Treatment, UIT
711.48 Shop Cleaning and Storage of Weathering Steel
711.70 Field Cleaning and Storage of Weathering Steel
SECTION 805 - TRAFFIC SIGNALS
805.04 Pole Installation
SECTION 807 - HIGHWAY ILLUMINATION
807.13 Luminaires
729-B-204 HEAT STRAIGHTENING OF STEEL MEMBERS IN THE FIELD

(Note: Only proposed changes shown highlighted gray. Changes to 619.13 were approved on October 17, 2019 meeting and are shown in RSP 619-B-312 PAINTING BRIDGE STEEL)

The Standard Specifications are revised as follows:

SECTION 613, BEGIN LINE 586, DELETE AND INSERT AS FOLLOWS:

619.13 Painting Existing Steel Bridges

The surfaces to be cleaned and painted shall include the surfaces of all steel members of the superstructure, substructure, floor beams, stringers, plates, castings, bearing assemblies, ornamental handrails, lattice work, and other steel appurtenances. When shear connectors have been specified, the top of the top flange shall not be painted.

If the contract specifies clean steel bridge, the bridge steel shall be cleaned in accordance with 619.08(a)~~, 619.08(b),~~ and either 619.08(~~e~~*d*) or 619.08(~~j~~*i*). The structural steel paint system in accordance with 619.09(a) shall be used for painting.

If the contract specifies clean steel bridge, partial, the bridge steel shall be cleaned in accordance with 619.08(a)~~, 619.08(b),~~ and either 619.08(~~e~~*d*), or 619.08(h~~g~~)~~, or 619.08(j)~~. The partial paint system in accordance with 619.09(b) shall be then used for painting.

SECTION 711, BEGIN LINE 438, DELETE AND INSERT AS FOLLOWS:

711.31 Peening Welds by Means of Ultrasonic Impact Treatment, UIT

This work shall consist of removing existing paint, repairing existing cracked welds, peening existing and repaired welds, and painting in accordance with 105.03.

Equipment operators shall be American Society for Nondestructive Testing, ASNT, Level II technicians, trained in the use of the equipment for peening by ultrasonic impact methods. Proof of certification shall be furnished two weeks prior to commencing work.

All welding shall be in accordance with the applicable section of the Bridge Welding Code. All welding shall be performed by AWS certified welders. Weld repair shall be in accordance with Bridge Welding Code section 3.7.

Paint removal shall be in accordance with 619.08(~~b~~*a*) and 619.08(~~h~~*i*). ~~However, pressure washing will not be required.~~ Painting shall be in accordance with 619.09 and

REVISION TO STANDARD SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS

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619.10.

Prior to beginning the peening process, all welds shall be inspected with a 10x magnifying glass and with either ultrasonic or magnetic particle non-destructive testing equipment. Welds needing repair shall be ground and repaired in accordance with the Bridge Welding Code. Peening using ultrasonic impact treatment methods shall be applied to all repaired welds in addition to the welds shown on the plans.

UIT shall be performed along the toe of the weld to cause the center of the treatment groove to be at the weld toe. UIT shall be performed to result in a uniform groove with a bright, metallic surface. All non-uniform areas shall be retreated.

SECTION 711, BEGIN LINE 769, DELETE AND INSERT AS FOLLOWS:

711.48 Shop Cleaning and Storage of Weathering Steel

The fabricator shall protect bare steel sections and sub-assemblies so as not to damage or stain them. The use of paints, crayons, or other materials used for identification purposes shall be avoided on bare steel sections. Storage shall be such to enable free drainage to avoid moisture pockets.

A sound uniform surface for the formation of a protective oxide coating on all surfaces shall be prepared as follows.

(a) Hot Rolled Products

The entire length and perimeter of each fascia beam or girder shall be cleaned in accordance with 619.08(~~e~~*e*). The entire length and perimeter of each interior beam or girder shall be cleaned in accordance with 619.08(d). Unless otherwise specified, all components such as, but not limited to, diaphragms, cross frames, stiffeners, bearing assemblies, and sway bracing that are permanently incorporated into the structure shall be cleaned in accordance with 619.08(d). Contamination from grease, oil, or shop marking shall be avoided. If such contamination is unavoidable, such surfaces shall be cleaned in accordance with 619.08(~~b~~*a*).

(b) Welded Area

All exposed welds on fascia surfaces shall be prepared by means of power grinding in accordance with 619.08(~~h~~*i*) or blast cleaning in accordance with 619.08(~~e~~*e*) to remove welding flux, slag, scale, or spatter.

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SECTION 711, BEGIN LINE 1133, DELETE AND INSERT AS FOLLOWS:

711.70 Field Cleaning and Storage of Weathering Steel

Cleaning of structural steel specified to be left unpainted shall be in accordance with 619.08(~~b~~*a*) or 619.08(~~c~~*c*) or as determined by the Engineer, depending on the severity of the soilage. Foreign matter which adheres to the steel after it has been blasted, and which inhibits formation of the oxide film shall be removed as soon as practical. The use of acids to remove scale and stains will not be allowed.

Storage shall be such to enable free drainage to avoid moisture pockets.

SECTION 805, BEGIN LINE 158, DELETE AND INSERT AS FOLLOWS:

805.04 Pole Installation

Working drawings for strain poles or cantilever structures shall be provided in accordance with 105.02. Metal poles shall be erected on concrete foundations and shall be reasonably plumb after installation of signal heads. The handhole side of the pole shall be at right angles to the direction of the signal cantilever arm or span, catenary, and tether. Signal cables shall be brought up inside the poles. Any steel pole, signal cantilever arm, or hardware not galvanized shall be painted with structural steel coating system in accordance with 619.09(a). The surface shall be prepared in accordance with 619.08(a)~~, 619.08(b)~~ and 619.08(d). Paint shall be applied in accordance with 619. All rust, scale, and dirt shall be cleaned from the metal surface so that paint adheres to the surface.

The construction of concrete foundations shall be in accordance with 805.13. Timber poles shall be set a minimum of 7 ft in the ground and raked 12 in.

SECTION 807, BEGIN LINE 526, DELETE AND INSERT AS FOLLOWS:

807.13 Luminaires

(a) Installation

Luminaire installation shall consist of the physical placing of the luminaire. Each installation shall include the furnishing and placing of the light source as designated. Luminaires shall be compatible with other lighting materials as specified in 920.01.

1. Roadway Luminaires

Each luminaire shall be leveled in both directions in the horizontal plane after the light standard has been erected and adjusted. Rotary adjustment of the mast arm and vertical adjustment of roadway luminaires to obtain an installed level position in both directions shall be accomplished by means of the bolted saddle arrangement used to attach

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the luminaires to the mast arm. Lamp socket positions may be shown on the plans by type of Illuminating Engineering Society of North American, IES, and light pattern. The specified lamp socket position or comparable arrangement of LEDs shall be used to obtain the desired light pattern delivery. Proper connections shall be made to provide operation at the voltage being supplied. Replacements needed because of faulty or incorrect voltage connections shall be made with no additional payment. All roadway luminaires provided for an intersection, interchange, or contiguous highway segment shall be the same model.

2. Sign Luminaires

Connections in which plain and galvanized steel are in contact shall be protected such that aluminum surfaces shall receive one coat of zinc chromate primer. Steel surfaces shall be prepared in accordance with 619.08(a)~~, 619.08(b)~~ and 619.08(d), and painted with ~~a~~*the* structural steel *paint* system in accordance with 619.09(a). All paint shall be allowed to cure before assembly. Conduit fittings, if required, shall be watertight. Required conduit shall be either rigid or flexible as necessary. Conduit shall not be clamped to a sign panel.

REVISION TO STANDARD SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS

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729-B-204 HEAT STRAIGHTENING OF STEEL MEMBERS IN THE FIELD

(Adopted 09-19-13)

(Note: Only affected section is shown)

[-----]

729.06 Surface Preparation of Area to be Heated

Before cutting or heating any steel member, paint shall be removed from inside the limits of the heat straightening area. Surface preparation shall be in accordance with 619.08(a)~~, 619.08(b),~~ and either 619.08(d) or 619.08(~~g~~*h*). Hand tool cleaning or brush-off blast cleaning shall not be used.

[-----]

COMMENTS AND ACTION

619.13 Painting Existing Steel Bridges
711.31 Peening Welds by Means of Ultrasonic Impact Treatment, UIT
711.48 Shop Cleaning and Storage of Weathering Steel
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729-B-204 HEAT STRAIGHTENING OF STEEL MEMBERS IN THE FIELD

DISCUSSION:

This item was introduced and presented by Mr. Reilman who explained that even though updates were made to the 619 cleaning bridge steel requirements, those revisions were not reflected in other spec sections. Mr. Reilman therefore proposes that the above shown editorial revisions be incorporated into RSP 619-B-312.

Mr. Koch pointed out that the recently passed 619-R-312 appears to have already struck/modified as what is being proposed for 619.13. Is the proposal for item #2 correct?

Mr. Reilman responded that the change in proposal item #2 for 619.13 is in the third paragraph and changes 619.08(g) back to 619.08(h). The other highlighted changes were incorporated into 619-R-312 and should not have been shown in gray highlight under this proposal.

Mr. Koch also asked about pressure washing and if that language needs to be updated. Mr. Reilman said that pressure washing is no longer required to be done on steel surfaces. The only places pressure washing is required is on pier and abutment caps.

There was no further discussion and this item passed as submitted.

COMMENTS AND ACTION

619.13 Painting Existing Steel Bridges
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[continued]

Motion: Mr. Reilman Second: Mr. Dave Ayes: 10 Nays: 0 FHWA Approval: YES	Action: X Passed as Submitted __ Passed as Revised __ Withdrawn
Standard Specifications Sections referenced and/or affected: 619 pg 515; 711 pg 652, 659, and 667; 805 pg 855; 807 pg 881. Recurring Special Provision references in: 619-B-312 PAINTING BRIDGE STEEL 729-B-204 HEAT STRAIGHTENING OF STEEL MEMBERS IN THE FIELD Standard Drawing affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	X 2022 Standard Specifications __ Revise Pay Items List __ Create RSP (No.__) Effective: RSP Sunset Date: X Revise RSP (No.TBD) Effective: December 1, 2020 RSP Sunset Date: __ Standard Drawing Effective: __ Create RPD (No. __) Effective: __ GIFE Update __ SiteManager Update

PROPOSAL TO THE STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Unique Special Provisions are intended for a single use on a specific contract for a specific situation on the contract that is not already covered by the Standard Specification or a Special Provision. However, this USP has been utilized quite frequently on numerous contracts, and has become somewhat "standard", replacing RSP 108-C-215.

PROPOSED SOLUTION: The proposed solution for this USP is to convert it to a Recurring Special Provision in order to expedite the process of implementing this Special Provision into future contracts, while eliminating the need for further review. Converting this special provision into an RSP would make the current RSP 108-C-215 obsolete.

APPLICABLE STANDARD SPECIFICATIONS: 108

APPLICABLE STANDARD DRAWINGS:

APPLICABLE DESIGN MANUAL SECTION:

APPLICABLE SECTION OF GIFE:

APPLICABLE RECURRING SPECIAL PROVISIONS:

PAY ITEMS AFFECTED: Construction Engineering

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Scott Trammell, Construction Specifications Engineer, and the USP Review Process, et al.

IMPACT ANALYSIS (attach report): Yes

Submitted By: Kurt Pelz,
Title: Technical Services Manager
Organization: Construction Management
Phone Number: 317-234-7726

Date: April 24, 2020

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No, just 108.
Will approval of this item affect the Approved Materials List? No
Will this proposal improve:

Construction costs? Yes

Construction time? Yes

Customer satisfaction? Yes

Congestion/travel time? N/A

Ride quality? N/A

Will this proposal reduce operational costs or maintenance effort? Yes

Will this item improve safety:

For motorists? N/A

For construction workers? N/A

Will this proposal improve quality for:

Construction procedures/processes? N/A

Asset preservation? N/A

Design process? N/A

Will this change provide the contractor more flexibility? N/A

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? Yes

Is this proposal needed for compliance with:

Federal or State regulations? Yes

AASHTO or other design code? N/A

Is this item editorial? No
Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda: For ease of use for implementation and to improve the USP Review Process flow capacity.

108-x-xxx CRITICAL PATH METHOD SCHEDULING AND FLOAT

(Adopted xx-xx-20)

The Contractor shall provide a project schedule using the critical path method, CPM, in place of the bar graph type schedule required in accordance with 108.04 for acceptance at the pre-construction conference. Computer software designed for the production of such schedules shall be used. No work shall commence prior to receipt of the schedule. The schedule shall indicate the order and interdependence of activities and the sequence for accomplishing the work. The schedule shall include activities for all work to be performed by the Contractor and subcontractors. The schedule shall also include activities specific to the project to be performed by the Department, other units of government, regulatory agencies, utilities and any other parties necessary to complete the work. The schedule shall reflect the scope of work, construction phasing, maintenance of traffic requirements, environmental requirements, utility and railroad coordination, coordination with other contractors, and any other work included in the contract. The schedule shall include activities for working drawing preparation, Contractor submittals, submittal review time by the Engineer, material procurement and fabrication, and the delivery of materials, plant, and equipment and other similar activities.

Float for each intermediate and contract completion dates shall be included in the controlling operation and critical path of the master schedule in the amount of ___ days per _____ for sole use by the Department. The first ___ days of excusable delay shall be absorbed by this float without an extension of time to _____. Float on non-critical path items belongs to the project and shall be shared between the Contractor and the Department on a first come first served basis until it is depleted.

The Department and the Contractor shall meet at least twice each month to review actual and proposed schedules. Printed schedules shall be provided in a format acceptable to the Engineer and shall be in color on paper measuring 11 in. by 17 in. If the project is two weeks or more behind schedule, the Contractor shall submit a recovery schedule at the next meeting.

All necessary costs associated with this work shall be included in the cost of construction engineering.

BACKUP 1

108-C-215 CRITICAL PATH METHOD SCHEDULE (PROPOSED TO DISCONTINUE USE)

(Note: Proposed TO DISCONTINUE USE)

108-C-215 CRITICAL PATH METHOD SCHEDULE

(Revised 05-02-19)

The Standard Specifications are revised as follows:

SECTION 108, AFTER LINE 171, INSERT AS FOLLOWS:

108.04.1 Critical Path Method Schedule

(a) General Requirements

The Contractor shall provide a project schedule using the critical path method, CPM, in place of the bar graph type schedule required in accordance with 108.04. In addition to the submittals required herein, the CPM schedule shall be used to develop all schedules provided by the Contractor at scheduling meetings held in accordance with 108.04.

The CPM schedule shall show the various activities of work in sufficient detail to demonstrate a reasonable and workable plan to complete the work in the specified contract time.

The Contractor shall be responsible for ensuring that all work sequences are logical and that the schedule reflects a coordinated plan. The CPM schedule shall indicate the order and interdependence of activities and the sequence for accomplishing the work.

The CPM schedule shall include sufficient detail to allow the Engineer to readily identify the work and evaluate the progress of each activity. The CPM schedule shall include activities for all work to be performed by the Contractor and subcontractors. The schedule shall also include activities specific to the project to be performed by the Department, other units of government, regulatory agencies, utilities and any other parties necessary to complete the work. The schedule shall reflect the scope of work, construction phasing, maintenance of traffic requirements, environmental requirements, utility and railroad coordination, coordination with other contractors, and any other work included in the contract. The schedule shall include activities for working and shop drawing preparation, Contractor submittals, submittal review time by the Engineer, material procurement and fabrication, and the delivery of materials, plant, and equipment and other similar activities.

Failure by the Contractor to include any element of work or to accurately reflect the relationships among the work activities required for performance of the Contract does not excuse the Contractor from completing all required work within the specified time.

(b) Definitions

The following definitions shall be applied to the terms used in this specification and shall not be taken to modify in any way the definitions in 101.02 through 101.74.

Activity *– A discrete, identifiable task or operation that takes time, has a definable start and stop date, furthers the work's progress, and can be used to plan, schedule, and monitor a project.*

Activity Calendar *– A set of days assigned to a specific activity on which work for the activity may be scheduled.*

Activity Calendar Day *– A day on which work is scheduled to be performed on a specific activity.*

Activity Identification (ID) Number *– A unique, alphanumeric identification code assigned to a specific activity.*

Activity Network Diagram *– A graphic representation of a CPM schedule, including a timescale, which shows the relationships among activities.*

Bar Chart *– A graphic representation of a schedule without relationship lines displayed. A timescale appears along the horizontal axis.*

Baseline CPM Schedule *– An accepted CPM schedule showing the original plan to complete the entire project.*

Calendar ID – *An alphanumeric identification code assigned to an activity calendar.*

Closure Period – *The original or revised maximum duration specified in the contract for the closure of a road, ramp, bridge, or other facility.*

Constraint *– A restriction imposed on the start or finish dates of an activity that modifies or overrides the activity's logic relationships.*

Contract Completion Date *– The original date or revised date specified in the contract for completion of the project.*

Controlling Activity *– The first incomplete activity on the Critical Path.*

Critical Activity *– Any activity on the critical path.*

Critical Path *– The longest path of activities which determines the scheduled completion date of the project.*

Data Date *– The first day in a baseline CPM schedule or the first day for performance of the remaining work in a monthly update CPM schedule. For a final CPM schedule, it is the date that the last activity was completed.*

Delayed Start Date – *The original or revised date specified in the contract prior to which work on the project is prohibited.*

Final CPM Schedule *– The last CPM schedule containing actual start and finish dates for every activity.*

Free Float *– The amount of time an activity can be delayed and not delay a successor.*

Incentive/Disincentive, I/D, Date – *The original or revised date specified in the contract for completion of a specified portion of the project. Completion of the specified work prior to the I/D date may entitle the Contractor to additional compensation. Completion of the specified work after the I/D date may result in a credit to the Department.*

Intermediate Completion Date *– The original or revised date specified in the contract for completion of an interim milestone, phase or other portion of the project.*

Milestone *– An activity with no duration that is typically used to represent the beginning or end of the project or an interim phase. Includes, but is not limited to, intermediate completion dates and the contract completion date.*

Monthly Update CPM Schedule *– A CPM schedule produced by incorporating the project's actual progress into the baseline CPM schedule.*

Open End *– The condition that exists when an activity has either no predecessor or no successor, or when an activity's only predecessor relationship is a finish-to-finish or only successor relationship is a start-to-start.*

Original Duration *– The estimated time, expressed in activity calendar days, required to perform an activity.*

Predecessor *– An activity that is defined by schedule logic to precede another activity. A predecessor may control the start or finish date of its successor.*

Relationship *– The interdependence among activities. Relationships link an activity to predecessors and successors.*

Remaining Duration *– The estimated time, expressed in activity calendar days, required to complete an activity.*

Schedule *– Activities organized by relationships to depict the plan for execution of a project.*

Scheduled Completion Date *– The completion date forecast by the CPM schedule. The schedule may also forecast intermediate completion dates or durations for milestones, phases, or other portions of the project.*

Successor *– An activity that is defined by schedule logic to succeed another activity. The start or finish date of a successor may be controlled by its predecessor.*

Total Float *– The amount of time an activity can be delayed and not delay the contract completion date.*

(c) Required CPM Schedule Submissions

1. Baseline CPM Schedule

The baseline CPM schedule submittal shall consist of a CPM schedule in accordance with 108.04.1(d) and a narrative report in accordance with 108.04.1(e). The baseline CPM schedule data date shall be the date of the notice to proceed and the CPM shall not include any actual start or actual finish dates for any activity. The baseline CPM schedule submittal shall be made no later than the date of the preconstruction conference.

If the Contractor fails to submit the baseline CPM schedule by the date of the preconstruction conference, the Department will withhold progress estimates until the baseline CPM schedule is submitted.

2. Monthly Update CPM Schedule

The monthly update CPM schedule submittal shall consist of a CPM schedule in accordance with 108.04.1(d) and a narrative report in accordance with 108.04.1(e). The first monthly update CPM schedule shall be submitted by the 7th of the month following acceptance of the baseline CPM schedule. Each succeeding monthly update CPM schedule shall be submitted by the 7th of each succeeding month. The CPM schedule data date shall be the last date of the month prior to submittal. The CPM shall not include any actual start or actual finish dates later than the data date for any activity.

If the 7th day of an individual month is a Saturday, Sunday, or a holiday on which work has been suspended, the monthly update CPM schedule shall be submitted by the first business day following the 7th.

If the Contractor fails to submit a monthly update CPM schedule by the required date, the Department will withhold progress estimates until the monthly update CPM schedule submittal is made.

3. Final CPM Schedule

The final CPM schedule shall consist of a CPM schedule in accordance with 108.04.1(d). The final CPM schedule shall be submitted no later than 30 calendar days after final acceptance. The final CPM schedule shall depict the actual start and finish dates

for each activity. The data date of the final CPM schedule shall be the date of final acceptance. If the Contractor fails to submit the final CPM schedule by the required date, the Department will withhold progress estimates until the final CPM schedule is submitted.

4. Acceptance of Schedules

The Engineer will provide written notice within 14 calendar days of receipt of a baseline, monthly update, or final CPM schedule that the schedule is either accepted or rejected. If the notice indicates that a schedule is rejected, the contractual basis for rejection will be identified. If the Engineer does not respond in writing to the submittal of a schedule within the allotted time, the schedule shall be considered to be accepted.

The Engineer's written notice of acceptance or rejection may include questions, comments, or request additional information. The next CPM schedule submittal's narrative report shall address all questions, comments, or additional information requested by the Engineer.

Rejected baseline CPM schedules shall be resubmitted until accepted by the Engineer. If acceptance of a baseline CPM schedule is not obtained within 45 calendar days of the date of the preconstruction conference, the Department will withhold progress estimates until the baseline CPM schedule is accepted.

A rejected monthly update CPM schedule which immediately follows an accepted baseline or monthly update CPM schedule will not require resubmittal. Monthly update CPM schedules that are rejected for a second consecutive month shall be resubmitted within 14 days of the date of the rejection notification. Subsequent rejections will require additional submittals until acceptance. If the Contractor fails to submit a monthly update CPM schedule requiring resubmittal by the required date, the Department will withhold progress estimates until the monthly update CPM schedule is submitted.

Rejected final CPM schedules shall be resubmitted until accepted by the Engineer. Resubmittal of a final CPM schedule shall be made within 14 calendar days of receipt of rejection notification. If the Contractor fails to resubmit a rejected final CPM schedule by the required date, the Department will withhold progress estimates until the final CPM schedule is submitted.

The Engineer's review of a submitted schedule will be for compliance with the specifications. Acceptance by the Engineer does not relieve the Contractor of responsibility for the accuracy or feasibility of the schedule. Acceptance of a schedule does not constitute a modification of the contract or endorsement or validation of the Contractor's logic, activity durations, or assumptions in creating the schedule. Acceptance of a schedule does not guarantee that the project can be performed or completed as scheduled. Omissions and errors in a CPM schedule shall be corrected in the next CPM schedule submittal and will not entitle the Contractor to a contract adjustment.

5. Float and Scheduled Completion

Total float belongs to the project and shall be a shared commodity between the Contractor and the Department. Float is not for the exclusive use or benefit of either party. Either party has full use of float until is it depleted.

Float generated during the course of the project due to the efficiencies of either party shall be considered to be part of total float.

Float generated during the course of the project due to favorable weather within a calendar month, where the number of days of inclement weather is less than the normal inclement weather days for the month, shall be considered to be part of total float.

Negative float generated during the course of the project due to factors within the control of the Contractor will not be a basis for requesting time extensions. Time extension requests shall be developed in accordance with 108.04.1(f).

A CPM schedule may indicate a scheduled completion date in advance of the contract completion date or scheduled completion of work associated with an intermediate completion date, I/D date, or closure period prior to the corresponding contract date or period. However, the Department shall not be liable in any way for the Contractor's failure to complete the project prior to the contract completion date or complete work associated with any intermediate contract date or period prior to the original or revised date or period. Any costs incurred by the Contractor as a result of such a failure shall be the responsibility of the Contractor. The Contractor will not be entitled to claim or recover any such cost from the Department.

An accepted schedule that indicates a scheduled completion date in advance of the contract completion date will be considered to have total float equal to the time between the scheduled completion date and the contract completion date.

(d) CPM Schedule Technical Requirements

The CPM schedule shall be generated using software completely compatible with Primavera Contractor 5.0 by Primavera Systems Inc., Bala Cynwyd, PA.

Each CPM schedule submittal shall include the following:

1. *A letter of transmittal identifying the schedule submittal and contents.*

2. *A narrative report in accordance with 108.04.1(e). No narrative report is required for the final CPM schedule.*

3. *An electronic file of the schedule in Primavera .XER format that is completely compatible with and may be directly imported into Primavera Contractor 5.0 without any loss or modification of data or need for any conversion or other software. Any electronic schedule file*

submitted by the Contractor that is not completely compatible with the Department's Primavera Contractor 5.0 software will be rejected.

4. *A copy of the critical path gantt chart, including lines representing relationships between activities, measuring 11" x 17" or larger. This item is not required for a final CPM schedule.*

The CPM schedule shall meet the following requirements:

1. *The first activity on a schedule shall be a milestone for the notice to proceed. The last activity on a schedule shall be a milestone for the contract completion date and shall reflect the date of notice of presumptive completion of the entire contract in accordance with 105.15(b). The schedule shall not include activities related to the final inspection, performance of punchlist work, or removal of construction signs.*

2. *All intermediate completion dates or I/D dates shall be shown in the schedule as milestones.*

3. *Baseline CPM schedules shall indicate that milestones associated with the contract completion date, all intermediate completion dates, all I/D dates, and all closure periods meet contract requirements.*

4. *Monthly update CPM schedules shall indicate that milestones associated with the contract completion date, all intermediate completion dates, all I/D dates, and all closure periods meet contract requirements unless the narrative report indicates that there is an unresolved delay situation which is beyond the control of the Contractor.*

5. *Codes for phase, location and responsibility shall be assigned for each activity. Additional activity codes may be used if approved by the Engineer.*

6. *Activities associated with work performed on a closed facility during a closure period shall be assigned a distinct activity phase code to allow a comparison of the scheduled closure period to the contract closure period.*

7. *Each activity shall have a unique description and activity identification number which shall not be modified or re-assigned after acceptance of the baseline CPM schedule.*

8. *Each activity description shall generally describe the work type and location and shall be associated with only one operation.*

9. *Each construction related activity shall have an original duration not to exceed 20 activity calendar days unless approved by the Engineer. It is permissible for activities related to fabrication, utility relocation, permit acquisition, and other non-construction activities to have longer original durations.*

10. *Activities for submittal reviews by the Department shall allow reasonable durations, but in no case less than 14 calendar days unless otherwise specified or approved by the Engineer.*

11. *Each activity, except the first activity, shall have at least one predecessor.*

12. *Each activity, except the last activity, shall have at least one successor.*

13. *No start-to-finish activity relationships shall be used. Activity finish-to-start relationships shall include no lags. Finish-to-finish or start-to-start activity relationships may use lags that include fewer days than the original duration of the predecessor activity.*

14. *The use of lags with a negative value shall not be used for any activity relationship type.*

15. *All activities shall have their start and finish tied to the logic of the schedule.*

16. *Activities shall not be constrained unless noted herein or approved by the Engineer. The contract completion date, intermediate completion dates, and I/D dates shall be constrained using a finish on or before constraint. Delayed start dates shall be constrained using a start on or after constraint.*

17. *Each activity shall be assigned to an activity calendar. A CPM schedule may utilize more than one activity calendar, but only one activity calendar shall be assigned to each activity. All activity calendars shall be project calendars as classified by Primavera.*

18. *Activity calendars associated with construction activities shall include a minimum number of non-work days for the months of April through November, inclusive, equal to the number of above normal inclement weather days shown in 101.02. However, the number of non-work days included in calendars associated with bridge, traffic, and road*

construction activities shall be equal to or greater than the tabulated value related to B, T, or R contracts respectively, regardless of the type of contract involved.

19. *Activity calendars for non-work activities, including but not limited to submittals, reviews, procurement, fabrication, cure times, and utility relocations performed by others shall not show any non-work days.*

20. *Seasonal weather conditions and Contractor scheduled shut down periods shall be considered and included in the activity calendars for all work scheduled from December 1 through March 31.*

21. *CPM schedule calculations shall be performed using the following settings: retained logic; contiguous activity durations for individual activities; critical path based on longest path; and total float based on activity finish dates.*

(e) Narrative Reports

The Contractor shall submit a narrative report with each baseline CPM and monthly update CPM schedule submittal to describe and elaborate on the work identified in the CPM schedule. Conflicting information between the narrative report and associated CPM schedule will be cause for rejection of a baseline or monthly update CPM schedule.

Information included in narrative reports will not be considered to meet the requirements for contractual notice of a changed condition in accordance with 105.16 or requests for additional contract time in accordance with 108.04.1(f). Separate correspondence meeting the applicable requirements shall be submitted by the Contractor to serve as notice of a changed condition or a request for additional contract time.

For the baseline CPM schedule submittal, the narrative report shall include the following:

1. *An explanation of the overall plan to complete the project, including where the work will begin and how the work and crews will progress through the project.*

2. *Statements comparing the scheduled completion date or duration to the contract completion date, all intermediate completion dates, all I/D dates, and all closure periods.*

3. *An explanation of the planned work schedule, including the planned number of workdays per week, planned number of shifts per day, whether night shifts are planned, number of hours planned per shift, holidays planned to be observed, extent of work planned for the winter months, and how the schedule calendars accommodate the required*

number of adverse weather days for each month. If multiple crews are planned, the above information shall be provided for each crew.

4. *Description of the work to be completed each construction season and during each winter for multi-year projects.*

5. *A detailed description of any unresolved actual or anticipated problems or issues. If a contractual notice of a changed condition or a claim in accordance with 105.16 has been submitted and the Department response is pending, the description shall indicate dates associated with each Contractor submittal.*

6. *A description of any unresolved actual or anticipated delays, including identification of the type of delay, the cause of the delay, responsibility for the delay, identification of all delayed critical activities, the effect of the delay on other activities and project milestones and identification of actions required to mitigate the delay. If the Contractor has submitted a request for additional contract time in accordance with 108.04.1(f) and the Department response is pending, the description shall indicate the date of the Contractor submittal.*

7. *A detailed description of the critical path.*

8. *An explanation of the use of any constraints, including the reason and purpose for each constraint.*

9. *A statement describing the status of any required permits.*

10. *A statement describing the reason for the use of each lag.*

11. *A list of all proposed exceptions to this specification included in the schedule that require approval by the Engineer along with an explanation of why the exception is appropriate.*

For each monthly update CPM schedule submittal, the narrative report shall include the following:

1. *A statement comparing the scheduled completion date to the contract completion date and any change in the scheduled completion date from the previous accepted submittal.*

2. *An explanation if the scheduled completion date is projected to occur after the contract completion date.*

3. *A statement comparing the scheduled completion of work associated with each intermediate completion date, I/D date, or closure period in the contract as well as any changes in these scheduled dates or closure periods from the previous accepted submittal.*

4. *An explanation if work associated with any contract milestone date or closure period is projected to occur after the dates or projected to require a longer duration than set out in the contract.*

5. *A list of activities that have been added or deleted from the schedule since the last accepted submittal and an explanation for the addition or deletion.*

6. *A list of all changes in activity relationships, predecessors, or successors since the last accepted submittal and an explanation for each change.*

7. *A list of activities with original durations that have been changed since the last accepted submittal along with an explanation regarding how the change is planned to be accomplished.*

8. *A description of the work performed since the last accepted submittal.*

9. *A description of and explanation for any changes between the work performed since the last accepted submittal and the work planned at the time that submittal was made.*

10. *A detailed description of any unresolved problems that are anticipated or that have been encountered. If a contractual notice of a changed condition or a claim in accordance with 105.16 has been submitted and the Department response is pending, the description shall indicate the date of the notice or claim submittal.*

11. *A statement that identifies any unresolved actual and anticipated delays. The statement should include identification of the delayed activity, the party apparently responsible for the delay, the type of delay, the cause of the delay, the effect of the delay on other activities and project milestones and identification of actions required to mitigate the delay. If the Contractor has submitted a request for additional contract time in accordance with 108.04.1(f) and the Department response is pending, the statement shall indicate the date of the Contractor request.*

12. *A detailed description of the critical path.*

BACKUP 1

108-C-215 CRITICAL PATH METHOD SCHEDULE (PROPOSED TO DISCONTINUE USE)

13. A list of activities which have become critical since the last accepted submittal.

(f) Extension of Contract Time

If the Contractor believes work on the contract has been delayed for reasons beyond its control, a written request for extension of contract time may be submitted in accordance with 108.08. The Contractor's request for extension of time shall be submitted in conjunction with the first monthly update CPM schedule submittal that is made after the delay mitigation work is complete. A monthly update CPM schedule which accompanies a time extension request shall utilize a data date which is the date that the delay mitigation work is complete.

The determination of contract time extension will be based solely on the Engineer's comparison of the monthly update CPM schedule submittal associated with the time extension request and the last accepted schedule prior to the beginning of the delay event.

Delays or suspensions of work due to the Contractor's failure to comply with the specifications will not be cause for additional compensation or extension of contract time.

(g) Method of Measurement

Baseline, monthly update, and final CPM schedules will not be measured for payment.

(h) Basis of Payment

Baseline, monthly update, and final CPM schedules will be paid for at the contract unit price for lump sum for CPM Schedule. Payment for CPM Schedule will be made on the 1st estimate after acceptance of the baseline CPM schedule.

Payment will be made under:

Pay Item	***Pay Unit Symbol***
CPM Schedule	*LS*

All costs necessary to provide baseline, monthly update, and final CPM schedules, as well as all schedules provided at scheduling meetings shall be included in the cost of the pay item for CPM Schedule.

COMMENTS AND ACTION

108-x-xxx CRITICAL PATH METHOD SCHEDULING AND FLOAT
108-C-215 CRITICAL PATH METHOD SCHEDULE (TO DISCONTINUE USE)

DISCUSSION:
Mr. Pelz introduced and presented this item stating that this USP has been utilized quite frequently on numerous contracts, and has become somewhat "standard", replacing RSP 108-C-215.

Mr. Pelz proposes to convert this USP to a Recurring Special Provision in order to expedite the process of implementing this Special Provision into future contracts, while eliminating the need for further review. Converting this special provision into an RSP would make the current RSP 108-C-215 obsolete.

Mr. Pelz said he'd like to withdraw this item and revisit it at a later time.

Motion: Mr. Pelz Second: Mr. Ayes: Nays: FHWA Approval:	Action: ___ Passed as Submitted ___ Passed as Revised _X_ Withdrawn
Standard Specifications Sections referenced and/or affected: SECTION 108 Recurring Special Provision has references and/or possibly affected: 108-C-215 CRITICAL PATH METHOD SCHEDULE Standard Drawing affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	___ 2022 Standard Specifications ___ Revise Pay Items List ___ Create RSP (No.___) Effective: RSP Sunset Date: ___ Revise RSP (No.___) Effective: RSP Sunset Date: ___ Standard Drawing Effective: ___ Create RPD (No. ___) Effective: ___ GIFE Update ___ SiteManager Update

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Contractors have reported that some of the manufacturers of waterborne paint used in INDOT's partial paint system are no longer making that paint.

PROPOSED SOLUTION: Allow the polyurethane used in the finish coat for the three coat system to be an alternate finish coat for the partial paint system.

APPLICABLE STANDARD SPECIFICATIONS: 619.09(b) and 909.02

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE: None

APPLICABLE RECURRING SPECIAL PROVISIONS: create new 619 RSP

PAY ITEMS AFFECTED: None

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad Hoc: Kelly Cummins & Jim Reilman

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman

Title: State Materials Engineer

Organization: INDOT, Office of Materials & Tests

Phone Number: 317-522-9692

Date: 5/21/20

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No
Will approval of this item affect the Approved Materials List? No
Will this proposal improve:

Construction costs? N/A

Construction time? Yes

Customer satisfaction? N/A

Congestion/travel time? N/A

Ride quality? N/A

Will this proposal reduce operational costs or maintenance effort? N/A

Will this item improve safety:

For motorists? N/A

For construction workers? N/A

Will this proposal improve quality for:

Construction procedures/processes? N/A

Asset preservation? N/A

Design process? N/A

Will this change provide the contractor more flexibility? Yes

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? Yes

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

Is this item editorial? No
Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda:

REVISION TO SPECIAL PROVISIONS

619-X-XXX ALTERNATE FINISH COAT FOR PARTIAL PAINT SYSTEM (PROPOSED NEW)

(Note: Proposed changes shown highlighted gray)

619-x-xxx ALTERNATE FINISH COAT FOR PARTIAL PAINT SYSTEM

(Adopted xx-xx-20)

The Standard Specifications are revised as follows:

SECTION 619, AFTER LINE 370, INSERT AS FOLLOWS:

619.09 Paint Systems

Paint systems shall be applied in accordance with the manufacturer's recommendations. The dry film thickness of a paint coating will be measured with a calibrated film thickness gauge in accordance with SSPC PA 2. All paint coatings shall have a dry film thickness not less than 80% of the required dry film thickness.

(a) Structural Steel Paint System

The coating system shall consist of an inorganic zinc primer with a dry film thickness of 3 mil, an epoxy intermediate coat with a dry film thickness of 4 mil, and a polyurethane finish coat with a dry film thickness of 3 mil for the painting of steel bridges and other structural steel.

(b) Partial Paint System

The coating system shall consist of ~~organic zinc primer with a dry film thickness of 3 mil and a waterborne finish coat with a dry film thickness of 3 mil~~ *one of the following* for partial painting of steel bridges and other structural steel. ~~*Regardless of which system is selected, the organic zinc primer may be from one manufacturer and the finish coat may be from another manufacturer provided that the Contractor ensures that the selected primer and finish coat are compatible with each other*~~*The primer and finish coat may be from different manufacturers. The Contractor shall ensure that the primer and selected finish coat are compatible.*

1. *Organic zinc primer with a dry film thickness of 3 mil and a waterborne finish coat with a dry film thickness of 3 mil.*

2. *Organic zinc primer with a dry film thickness of 3 mil and a polysiloxane finish coat with a dry film thickness as noted below. The polysiloxane finish coat shall be one of those listed below.*

   a. *Carboxane 2000, 4 mil,*
   b. *Interfine 2700, 4 mil,*
   c. *Polysiloxane 1K, 2.5 mil,*
   d. *PSX 700, 4 mil,or*
   e. *Sher-Loxane, 4 mil.*

3. Organic zinc primer with a dry film thickness of 3 mil and a polyurethane finish coat with a dry film thickness of 3 mil. The polyurethane finish coat shall be one of those listed below.

a. Amercoat 450 HS,
b. Carbothane 134HS,
c. INDOT Acrylic Urethane or
d. Interthane 990HS.

Polyurethane finish coat used as a finish coat in the partial paint system shall be in accordance with 909.02(c) with the exception that the specular gloss shall be a minimum of 30 and the color of the dried paint film shall be in accordance with either 909.02(c)~~4~~, or the following.

Color Number	*Color*
23538	*Yellow*
23711	*Buff*
24260	*Green*
25488	*Light Blue*
27038	*Black*
27886	*White*

SECTION 909, BEGIN LINE 53, INSERT AS FOLLOWS:

2. Organic Zinc Primer

Organic zinc primer shall be a self-curing type primer. It shall be in accordance with SSPC Paint Specification No. 20, Type II. The organic zinc primer shall be compatible with inorganic zinc and finish coat paints already on the bridge. The color shall be able to produce a distinct contrast with blast cleaned metal surface and the finish coat. The cured organic zinc film shall be compatible with a top coating of *either* waterborne*, polysiloxane, or polyurethane* finish coat paint.

The organic zinc primer shall also be in accordance with the following requirements.

SECTION 909, BEGIN LINE 123, INSERT AS FOLLOWS:

(c) Polyurethane Finish Coat

Polyurethane finish coat shall be a two-component polyester or acrylic aliphatic polyurethane suitable for use as a finish coat over *either* epoxy intermediate paint *for the structural steel coating system or over organic zinc primer for partial painting of steel bridges*.

The mixed paint shall be in accordance with the following requirements.

SECTION 909, AFTER LINE 224, INSERT AS FOLLOWS:

REVISION TO SPECIAL PROVISIONS

619-X-XXX ALTERNATE FINISH COAT FOR PARTIAL PAINT SYSTEM (PROPOSED NEW)

(f) Polysiloxane Finish Coat

Polysiloxane finish coat shall be suitable for use as a finish coat over organic zinc primer for partial painting of steel bridges.

The mixed paint shall be in accordance with the following requirements.

Volatile organic compounds, ASTM D 3960, max. .....336 g/L
Volume solids, ASTM D 2697, min. 55%
Total solids ASTM D 2369, min. 65%
Specular gloss, 60°, ASTM D 523, min.....30
Contrast ratio, ASTM D 2805, 5 ±0.5 mils wet film thickness, dried 24 h on Leneta Form 2A or 2C, min. 0.95

The color of the dried paint film shall match the color number of SAE-AMS-STD-595 as follows:

Color Number	*Color*
23538	*Yellow*
23717	*Buff*
24227	*Green*
24466	*Light Green*
25526	*Light Blue*
27038	*Black*
27780	*White*

COMMENTS AND ACTION

619-X-XXX ALTERNATE FINISH COAT FOR PARTIAL PAINT SYSTEM

DISCUSSION:

Mr. Reilman introduced and presented this item stating that Contractors have reported that some of the manufacturers of waterborne paint used in INDOT's partial paint system are no longer making that paint.

Mr. Reilman's proposed solution is to allow the polyurethane used in the finish coat for the three-coat system to be an alternate finish coat for the partial paint system. Mr. Reilman explained the reasoning behind each product selected.

Mr. Koch asked if the proposed organic paint systems will be added to the approved materials list. Mr. Reilman stated that there are no plans to create an approved list for these materials at this time, and the intention is for this to remain an RSP so we can see how this goes.

Mr. Koch asked about the reference to 909.02(c)4, since it doesn't exist and asked if the correct tables are being referenced. Mr. Reilman responded that the '4' should not be there and confirmed that the tables shown are correct, and are to give the Contractor more flexibility in providing a satisfactory product.

Ms. Phillips asked if the intention in 619-09(b) can be conveyed in fewer words. Ms. Phillips suggested simply saying "The primer and finish coat may be from different manufacturers. The Contractor shall ensure that the primer and selected finish coat are compatible." Mr. Reilman agreed with this and the minor editorial revisions are as shown.
Ms. Phillips asked if Light Green is an option for polyurethane. Mr. Reilman replied that the green shown should be light enough.

Mr. Fisher asked if he needs a new template to add these colors. Mr. Reilman said he will provide them to him.
Mr. Culberson asked if this will effect bid prices, and Mr. Reilman said that it should not, but could result in a slight upcharge with the polysiloxane, but should be negligible.

Mr. Reilman revised his motion and this item passed as revised.

COMMENTS AND ACTION

619-X-XXX ALTERNATE FINISH COAT FOR PARTIAL PAINT SYSTEM

[continued]

Motion: Mr. Reilman Second: Mr. Novak Ayes: 10 Nays: 0 FHWA Approval: Yes	Action: ___ Passed as Submitted _X_ Passed as Revised ___ Withdrawn
Standard Specifications Sections referenced and/or affected: 619.09 pg 511 and 909 pg 981-985.	___ 2022 Standard Specifications ___ Revise Pay Items List
Recurring Special Provision referenced and/or affected: NONE	_X_ Create RSP (No. 619-x-xxx) Effective: December 1, 2020 RSP Sunset Date:
Standard Drawing affected: NONE	___ Revise RSP (No.___) Effective: RSP Sunset Date:
Design Manual Sections affected: NONE	___ Standard Drawing Effective:
GIFE Sections cross-references: NONE	___ Create RPD (No. ___) Effective: ___ GIFE Update _X_ SiteManager Update

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Section 708.02 sets out very specific size requirements for welded wire reinforcement (WWR) used with pneumatically placed mortar. WWR of the sizes specified is not readily available for purchase from manufacturers on INDOT's list of Certified WWR Fabricators.

PROPOSED SOLUTION: Allow for a wider range of sizes of WWR to be used with pneumatically placed mortar. Also, allow WWR used with pneumatically placed mortar to be accepted by a Type A certification rather than requiring it to be supplied by a fabricator on INDOT's approved list.

APPLICABLE STANDARD SPECIFICATIONS: 708.02 and 910.01(a)

APPLICABLE STANDARD DRAWINGS: none

APPLICABLE DESIGN MANUAL SECTION: none

APPLICABLE SECTION OF GIFE: none

APPLICABLE RECURRING SPECIAL PROVISIONS: none

PAY ITEMS AFFECTED: none

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad Hoc: Jim Reilman, Mike Pelham, Peter White, Andrew Blackburn

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman for Mike Pelham

Title: State Materials Engineer

Organization: INDOT Office of Materials Management

Phone Number: 317-522-9692

Date: 3/10/2020

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No
Will approval of this item affect the Approved Materials List? No
Will this proposal improve:

Construction costs? Yes

Construction time? Yes

Customer satisfaction? No

Congestion/travel time? No

Ride quality? No

Will this proposal reduce operational costs or maintenance effort? No

Will this item improve safety:

For motorists? No

For construction workers? No

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? No

Design process? Yes

Will this change provide the contractor more flexibility? Yes

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? No

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda:

REVISION TO STANDARD SPECIFICATIONS

SECTION 708 - PNEUMATICALLY PLACED MORTAR
708.02 Materials
SECTION 910 - METAL MATERIALS
910.01 Reinforcing Bars, Dowel Bars and WWR

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 708, BEGIN LINE 8, DELETE AND INSERT AS FOLLOWS:

708.02 Materials

Materials shall be in accordance with the following:

Deformed and Smooth Steel WWR	910.01(b)5
Fine Aggregate	904.02(d)
Fly Ash	901.02
Portland Cement	901.01(b)
Water	913.01

WWR shall consist of wire, size ~~W 1.5 or approximately No. 10 gage, spaced and welded at 3 in. intervals, or wire, size W 1 or approximately No. 12 gage, spaced and welded at 2 in. intervals~~*W 1 or approximately No. 12 gauge or larger, spaced and welded at intervals greater than or equal to 2 in., and no greater than 4 in.*

SECTION 910, BEGIN LINE 3, INSERT AS FOLLOWS:

910.01 Reinforcing Bars, Dowel Bars and WWR

(a) General

Unless otherwise specified, bars for concrete reinforcement shall be deformed billet steel, grade 60. Tie bar assemblies used in lieu of bent tie bars shall be in accordance with the minimum total ultimate strength and minimum total yield strength requirements specified for bent tie bars; bend test and elongation will not be required. Coiled reinforcing bars shall only be used for fabrication of spiral and ring reinforcement or for rectangular ties and stirrups. When approved by the Engineer, coiled reinforcing bars may also be used for supports in accordance with 703.06.

Reinforcing bars and WWR shall be furnished by selecting materials made by a manufacturer or fabricator on the list of Certified Uncoated Reinforcing Bar Manufacturers and WWR Fabricators in accordance with ITM 301, *except for WWR used for pneumatically placed mortar. WWR used for pneumatically placed mortar will be accepted by a Type A certification in accordance with 916.* When shipped to the project site, the reinforcing bars and WWR shall be accompanied by the type of certifications specified in ITM 301 and in accordance with 916.

COMMENTS AND ACTION

708.02 Materials
910.01 Reinforcing Bars, Dowel Bars and WWR

DISCUSSION:
Mr. Reilman introduced and presented this item, along with Mr. Pelham, who stated that Standard Specification Section 708.02 sets out very specific size requirements for welded wire reinforcement, WWR, used with pneumatically placed mortar. WWR of the sizes specified is not readily available for purchase from manufacturers on INDOT's list of Certified WWR Fabricators. Mr. Pelham added that this is an example of how some of our specs have gotten out of date and this is a good opportunity to get our specs up to date.

Mr. Reilman proposed to revise the language, as shown, to allow for a wider range of sizes of WWR to be used with pneumatically placed mortar. And also to allow WWR used with pneumatically placed mortar to be accepted by a Type A certification rather than requiring it to be supplied by a fabricator on INDOT's approved list.

There was no further discussion and this item passed as submitted.

Motion: Mr. Reilman Second: Mr. Novak Ayes: 10 Nays: 0 FHWA Approval: YES	Action:	
	X	Passed as Submitted
	___	Passed as Revised
	___	Withdrawn
Standard Specifications Sections referenced and/or affected: 708.02 pg 633;910.01 pg 990.	X	2022 Standard Specifications
	___	Revise Pay Items List
Recurring Special Provision referenced and/or affected: NONE	X	Create RSP (No. 708-x-xxx) Effective: December 1, 2020 RSP Sunset Date: 2022 SS book
Standard Drawing affected: NONE	___	Revise RSP (No.___) Effective: RSP Sunset Date:
Design Manual Sections affected: NONE	___	Standard Drawing Effective:
GIFE Sections cross-references: NONE	___	Create RPD (No. ___) Effective:
	___	GIFE Update
	___	SiteManager Update

PROPOSAL TO THE STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Unique Special Provisions are intended for a single use on a specific contract for a specific situation on the contract that is not already covered by the Standard Specification or a Special Provision. However, some USPs have been utilized quite frequently on numerous contracts, and have become somewhat "standard".

PROPOSED SOLUTION: The proposed solution for this USP is to convert it to a Recurring Special Provision in order to expedite the process of implementing this Special Provision into future contracts, while eliminating the need for further review.

APPLICABLE STANDARD SPECIFICATIONS: 206, 702, 715, 716, 720, and 734.

APPLICABLE STANDARD DRAWINGS:

APPLICABLE DESIGN MANUAL SECTION:

APPLICABLE SECTION OF GIFE:

APPLICABLE RECURRING SPECIAL PROVISIONS:

PAY ITEMS AFFECTED: None

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Scott Trammell, Construction Specifications Engineer, and the USP Review Process, et al.

IMPACT ANALYSIS (attach report): Yes

Submitted By: Kurt Pelz,

Title: Technical Services Manager

Organization: Construction Management

Phone Number: 317-234-7726

Date: January 24, 2020

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? Yes, several.
Will approval of this item affect the Approved Materials List? No
Will this proposal improve:

Construction costs? Yes

Construction time? Yes

Customer satisfaction? Yes

Congestion/travel time? Yes

Ride quality? N/A

Will this proposal reduce operational costs or maintenance effort? Yes

Will this item improve safety:

For motorists? Yes

For construction workers? Yes

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? Yes

Design process? Maybe

Will this change provide the contractor more flexibility? Yes

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? Yes

Is this proposal needed for compliance with:

Federal or State regulations? Yes

AASHTO or other design code? N/A

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda: For ease of use for implementation and to improve the USP Review Process flow capacity.

206-X-XXX DEWATERING

(Adopted x-xx-20)

Description

The Contractor shall design, furnish, install, test, operate, monitor, and maintain a dewatering system of sufficient scope, size, and capacity to prevent ground-water flow into excavations and allow water and construction operations to proceed on dry, stable subgrades.

Materials

Materials shall be as follows:

Sediment filter bags shall consist of nonwoven, needle punched polypropylene geotextile consisting of strong, rot resistant, chemically stable long-chain synthetic polymer materials which are dimensionally stable relative to each other including the selvedges. The plastic yarn or fibers used in the geotextile shall consist of at least 85% by weight of polyolefins, polyesters, or polyamides. The plastic yarn or fibers shall have stabilizers and inhibitors added to the base plastic to make the filaments resistant to deterioration due to ultraviolet and heat exposure.

The geotextile shall be in accordance with the physical requirements as follows:

TEST	METHOD	REQUIREMENTS*
Tensile Strength Grab Tensile Strength	ASTM D 4632	200 lb
Elongation Grab Tensile Strength	ASTM D 4632	15%
Mullen Burst	ASTM D 3786	350 psi
Seam Strength Grab Tensile Strength	ASTM D 4632	180 lb
Puncture Strength	ASTM D 4833	110 lb
Trapezoid Tear	ASTM C 4533	80 lb
Ultraviolet Degradation at 150 h	ASTM D 4355	70% strength retained
Apparent Opening Size (AOS)	ASTM D 4751	No. 80 standard sieve or filter
Flow Rate	ASTM D 4491	80 gal./min/sq ft

* Use value in weaker principal direction. All numerical values represent minimum average roll value and test results from any sampled roll in a lot shall meet or exceed the minimum values in the table. Lots shall be sampled according to ASTM D 4354.

The size of the filter bag shall be appropriate for the site conditions.

Construction Requirements

Dewatering operations shall be maintained to ensure stability of excavations and constructed slopes and that the excavation does not flood. Surface water shall be prevented from entering excavations by grading, dikes, or other means. Water from work area dewatering pumps shall be discharged through a sediment filter bag, or other approved device. The filter bag shall be located such that discharge water flows back into a stabilized area downstream of the work area. Dewatering shall be

REVISION TO SPECIAL PROVISIONS

206-X-XXX DEWATERING (PROPOSED NEW)

accomplished without damaging existing buildings or structures adjacent to excavation. The dewatering system shall be removed when no longer needed.

The Contractor shall comply with water disposal requirements of authorities having jurisdiction.

The operation of the dewatering pumps and the condition and efficiency of the sediment filter bags shall be closely monitored. Sediment filter bags which do not perform properly or reach their capacity shall be replaced immediately.

The Contractor shall dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Disposal of water shall not inconvenience others. Sumps, sedimentation tanks, flow-control devices, and temporary sediment and erosion control shall be provided in accordance with 205 and as required by authorities having jurisdiction. Sediment in filter bags shall be removed once it has accumulated to the design volume and be disposed of in accordance with 202.

Method of Measurement

Dewatering will not be measured, regardless of how many times the system is moved, replaced or relocated. Sediment filter bags will not be measured regardless of the number of times a day a filter bag may become filled and replaced.

Basis of Payment

Dewatering shall be considered incidental to the work being performed and shall be included in the cost of other items.

The cost of the pump, materials, installation, inspection, maintenance, sediment filter bags, filter stone, secondary containment, removal and proper disposal, and all necessary incidentals shall be included in the cost of other items.

COMMENTS AND ACTION

206-X-XXX DEWATERING (PROPOSED NEW)

DISCUSSION:

This item was introduced and presented by Mr. Pelz who stated that some USPs have been utilized quite frequently on numerous contracts and have become somewhat "standard". The USP for Dewatering is one of them.

Mr. Pelz therefore proposed that this USP be converted to a Recurring Special Provision in order to expedite the process of implementing this Special Provision into future contracts, while eliminating the need for further review.

A brief discussion ensued regarding the similarities with this and the pump around USP. Further discussion will occur outside of the meeting to determine the basis for use for this special provision.

Mr. Koch asked about filter stone and secondary containment. Mr. Pelz agreed that those items are necessary, and after a brief discussion, the applicable revisions are as shown.

Mr. Pelz revised his motion and this item passed as revised.

Motion: Mr. Pelz Second: Mr. Reilman Ayes: 10 Nays: 0 FHWA Approval: YES	Action: ___ Passed as Submitted _X_ Passed as Revised ___ Withdrawn
Standard Specifications Sections referenced and/or affected: 206, 702, 715, 716, 720, and 734.	___ 2022 Standard Specifications ___ Revise Pay Items List
Recurring Special Provision references in: NONE	_X_ Create RSP (No. 206-R-xxx) Effective: December 1, 2020 RSP Sunset Date:
Standard Drawing affected: NONE	___ Revise RSP (No.___) Effective: RSP Sunset Date:
Design Manual Sections affected: NONE	___ Standard Drawing Effective:
GIFE Sections cross-references: NONE	___ Create RPD (No. ___) Effective: ___ GIFE Update ___ SiteManager Update

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: During a recent review of INDOT's temporary pavement marking requirements, several sections of the temporary marking specifications were identified that need to be updated or clarified.

PROPOSED SOLUTION: This proposal clarifies the assessment of QA to include missing markings, updates the reference to the ATSSA manual for traffic markings and allows for a single pass application for temporary painted markings.

APPLICABLE STANDARD SPECIFICATIONS: 105.14, 109.05, 801.03, 801.12 and 801.18

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE: Chapter 2

APPLICABLE RECURRING SPECIAL PROVISIONS: None

PAY ITEMS AFFECTED: Potential increase in QA assessments, Increased use of Temporary Pavement Marking _____ in.

APPLICABLE SUB-COMMITTEE ENDORSEMENT: ad hoc group of Joe Novak and Tom Harris with the concurrence of the 801 subcommittee.

IMPACT ANALYSIS (attach report): Attached

Submitted By: Joe Novak

Title: State Construction Engineer

Organization: INDOT Construction Management

Phone Number: 317-232-5456

Date: 5/1/2020

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No
Will approval of this item affect the Approved Materials List? No
Will this proposal improve:

Construction costs? No

Construction time? No

Customer satisfaction? Yes

Congestion/travel time? No

Ride quality? No

Will this proposal reduce operational costs or maintenance effort? No

Will this item improve safety:

For motorists? Yes

For construction workers? No

Will this proposal improve quality for:

Construction procedures/processes? No

Asset preservation? No

Design process? No

Will this change provide the contractor more flexibility? No

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? No

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

Is this item editorial? No
Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda: none

REVISION TO STANDARD SPECIFICATIONS

SECTION 105 - CONTROL OF WORK
105.14 Failure to Maintain Roadway, Structures, Barricades, and Construction Signs
SECTION 109 - MEASUREMENT AND PAYMENT
109.05.1 Quality Adjustments
SECTION 801 - TRAFFIC CONTROLS FOR CONSTRUCTION AND MAINTENANCE OPERATIONS
801.03 General Requirements
801.12 Temporary Pavement Marking
801.18 Basis of Payment

The Standard Specifications are revised as follows:

SECTION 105, BEGIN LINE 531, INSERT AS FOLLOWS:

The Contractor may be assessed damages for failure to maintain the required traffic control devices *or markings*, except for construction warning lights, in accordance with 801.03. For each day, or portion thereof, during which a type of traffic control device *or marking* is in non-compliance, damages will be assessed at a rate of $40.00 for each day, per non-compliant unit within a device *or marking*. If the pay unit for a traffic device is per day, the damage assessment will equal twice the unit price.

SECTION 109, BEGIN LINE 821, DELETE AND INSERT AS FOLLOWS:

(c) Temporary Traffic Control Devices *and Markings*, TTCD

Quality adjustments ~~with respect to non-compliance with the ATSSA brochure titled Standards for Work Zone Traffic Control Devices~~ will be assessed when the device *or marking* is deemed to be in non-compliance in accordance with 801.03. Adjustments will be determined in accordance with 105.14.

SECTION 801, BEGIN LINE 131, DELETE AND INSERT AS FOLLOWS:

Except for construction warning lights and temporary signals, the ATSSA brochure titled "Quality ~~Standards~~*Guidelines* for Work Zone Traffic Control Devices *and Features"* will be used a guide to determine if temporary traffic control devices *and markings* are Acceptable, Marginal or Unacceptable ~~as defined in the brochure~~. Upon initial setup and phase changes of temporary traffic control devices, all individual devices shall be of the Acceptable classification. A device not completely covered or removed when the message does not apply or when directed, will be considered unacceptable.

A temporary traffic control device will be deemed to be in non-compliance when considered Unacceptable. A type of temporary control device will be deemed to be in non-compliance when 25% or more of the individual devices are considered Marginal. Damages may be assessed in accordance with 105.14 for non-compliance.

A temporary pavement marking will be deemed to be in non-compliance when considered Unacceptable or does not meet 808.07(a). A quality assurance unit for longitudinal temporary pavement marking shall be 500 lft on marked pavement in any combination or pattern, or portion thereof. A quality assurance unit for transverse marking, message, or symbol shall be each. Damages may be assessed in accordance with 105.14 for non-compliance.

REVISION TO STANDARD SPECIFICATIONS

SECTION 105 - CONTROL OF WORK
105.14 Failure to Maintain Roadway, Structures, Barricades, and Construction Signs
SECTION 109 - MEASUREMENT AND PAYMENT
109.05.1 Quality Adjustments
SECTION 801 - TRAFFIC CONTROLS FOR CONSTRUCTION AND MAINTENANCE OPERATIONS
801.03 General Requirements
801.12 Temporary Pavement Marking
801.18 Basis of Payment

SECTION 801, BEGIN LINE 550, DELETE AND INSERT AS FOLLOWS:

801.12 Temporary Pavement Marking

Temporary pavement markings shall be new materials placed in accordance with 808.04, ~~and~~ 808.05, *and 808.07(a)*. However, when temporary markings are to be in place for 14 calendar days or less the dashed line pattern used on center line and lane lines may be 4 ft line segments on 40 ft centers and gore areas shall be marked by outline only and may be 5 in. wide lines. No-passing zones on all undivided two-way roadways shall be identified with signs and centerline markings. All temporary markings shall be maintained and replaced until they are no longer applicable.

SECTION 801, BEGIN LINE 592, DELETE AND INSERT AS FOLLOWS:

(a) Temporary Pavement Marking Methods

Pavement markings shall be installed in accordance with 808.07 except ~~that~~ *as modified herein and* measurement of retro-reflectivity is not required by the Contractor and quality adjustments ~~*as per*~~*in accordance with 808.07(a)* will not apply. *Retro-reflectivity may be measured by the Department at the discretion of the Engineer*. All other performance measures shall apply.

1. Paint

~~Painted markings shall require a second application of paint and beads as soon as practical after the first application is dry~~*Temporary painted markings shall be waterborne traffic paint and protected from traffic until dry to eliminate tracking. Painted lines and markings shall be installed with a material application rate of 20 mils wet film thickness or 22 gal/mi. for solid lines and 5.5 gal/mi. for broken lines and shall be immediately reflectorized by applying glass beads at a uniform minimum rate of 6 lb/gal. of traffic paint.~~*meet the requirements of 808.07.* *The markings shall be maintained until the permanent markings are placed.*

SECTION 801, BEGIN LINE 642, DELETE AS FOLLOWS:

~~**(b) Quality Assurance Unit**~~

~~A quality assurance unit for longitudinal line shall be 500 lft on marked pavement in any combination or pattern, or portion thereof. A quality assurance unit for transverse marking shall be each. If a marking fails to be in accordance with the marginal standard as defined in the ATSSA Quality Standards for Work Zone Traffic Control Devices, the quality assurance assessment will be assessed in accordance with 801.03.~~

SECTION 801, BEGIN LINE 1164, DELETE AS FOLLOWS:

~~The cost of the second application of paint and beads for painted temporary markings shall be included in the cost of the first application of painted temporary pavement markings.~~

REVISION TO STANDARD SPECIFICATIONS

SECTION 105 - CONTROL OF WORK
105.14 Failure to Maintain Roadway, Structures, Barricades, and Construction Signs
SECTION 109 - MEASUREMENT AND PAYMENT
109.05.1 Quality Adjustments
SECTION 801 - TRAFFIC CONTROLS FOR CONSTRUCTION AND MAINTENANCE OPERATIONS
801.03 General Requirements
801.12 Temporary Pavement Marking
801.18 Basis of Payment

SECTION 808, BEGIN LINE 162, INSERT AS FOLLOWS:

(a) Pavement Marking Material Performance Requirements [note: all subsequent headings are to be given the next available letter]

COMMENTS AND ACTION

105.14 Failure to Maintain Roadway, Structures, Barricades, and Construction Signs
109.05.1 Quality Adjustments
801.03 General Requirements
801.12 Temporary Pavement Marking
801.18 Basis of Payment

DISCUSSION:

This item was introduced and presented by Mr. Novak who explained that during a recent review of the Department's temporary pavement marking requirements, several sections of the temporary marking specifications were identified that need to be updated or clarified.

Mr. Novak stated that this proposal clarifies the assessment of QA to include missing markings, updates the reference to the ATSSA manual for traffic markings and allows for a single pass application for temporary painted markings.

Mr. Koch inquired about referencing 808.07 for temporary markings and how difficult it will be to measure and enforce those requirements. Mr. Novak asked if we should keep the requirement for the second coat if needed to get through the winter months. Mr. Koch stated that for bidder consistency, we should always perform one or two applications exclusively. Also, when considered Unacceptable, the Contractor could argue 808.07, forcing us to test. Enforcement of the language could exhaust a lot of manpower and equipment.

Mr. Bruno suggested a few changes as shown highlighted above. Mr. Bruno recommends eliminating the requirement to apply two coats of paint for temporary markings but increase the minimum thickness to 20 mils, stating that it may result in better quality lines and have industry support.

Following a brief discussion, Mr. Novak decided to withdraw this item pending further review.

COMMENTS AND ACTION

105.14 Failure to Maintain Roadway, Structures, Barricades, and Construction Signs
109.05.1 Quality Adjustments
801.03 General Requirements
801.12 Temporary Pavement Marking
801.18 Basis of Payment

[continued]

Motion: Mr. Novak Second: Mr. Ayes: Nays: FHWA Approval:	Action: ___ Passed as Submitted ___ Passed as Revised _X_ Withdrawn
Standard Specifications Sections referenced and/or affected: 105.14 pg 55; 109.05.1 pg 117; 801.03 pg 813, 801.12 pg 823, 801.18 pg 836. Recurring Special Provision references in: NONE Standard Drawing affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	___ 2022 Standard Specifications ___ Revise Pay Items List ___ Create RSP (No.___) Effective: December 2020 RSP Sunset Date: ___ Revise RSP (No.___) Effective: RSP Sunset Date: ___ Standard Drawing Effective: ___ Create RPD (No. ___) Effective: ___ GIFE Update ___ SiteManager Update

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: During resurfacing operations roadways are open to traffic but without the permanent markings in place. The focus of this proposal is on the edge lines. With the additional work activities as part of HMA paving including fog seal, CL/EL rumbles, and grooved markings there is an extended time before the permanent markings can be placed. This increases the need for temporary pavement markings.

PROPOSED SOLUTION: Create an RSP requiring edge lines to be placed and maintained on selected newly constructed pavement. Allows for QA's to assessed for markings not placed within 14 days.

APPLICABLE STANDARD SPECIFICATIONS: 801.12

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: 503-7.03 and 503-703(01) Temporary Pavement Markings. Provides for a quantity of TPM to be included in contracts.

APPLICABLE SECTION OF GIFE: Chapter 2

APPLICABLE RECURRING SPECIAL PROVISIONS: None

PAY ITEMS AFFECTED: Increased use of Temporary Pavement Marking _____ in.

APPLICABLE SUB-COMMITTEE ENDORSEMENT: ad hoc group of Joe Novak and Tom Harris with the concurrence of the 801 subcommittee and ICI.

IMPACT ANALYSIS (attach report): attached

Submitted By: Joe Novak

Title: State Construction Engineer

Organization: INDOT Construction Management

Phone Number: 317-232-5456

Date: 5/1/2020

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No
Will approval of this item affect the Approved Materials List? No
Will this proposal improve:

Construction costs? No

Construction time? No

Customer satisfaction? Yes

Congestion/travel time? No

Ride quality? No

Will this proposal reduce operational costs or maintenance effort? No
Will this item improve safety:

For motorists? Yes

For construction workers? No

Will this proposal improve quality for:

Construction procedures/processes? No

Asset preservation? No

Design process? No

Will this change provide the contractor more flexibility? No

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? No

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda: This proposal will provide for edge line markings to be placed in a more timely manner. This should increase driver safety. The proposal will clarify the charge of LD's for defective and missing markings.

REVISION TO SPECIAL PROVISION

PROPOSED NEW 801-T-XXX PROMPT PLACEMENT OF EDGE LINES

801-T-xxx PROMPT PLACEMENT OF EDGE LINES

(Adopted xx-xx-20)

The Standard Specifications are revised as follows:

SECTION 801, AFTER LINE 143, INSERT AS FOLLOWS:

On HMA open to traffic, the temporary edge lines shall be placed and maintained until the next lift of HMA is placed or the permanent lines are placed. On PCCP open to traffic, the edge lines shall be placed and maintained until the permanent lines are placed. Edge lines shall be painted markings placed at the same location as the permanent markings. Edge lines not placed within 14 days of opening to traffic will be deemed in non-compliance. A quality assurance unit for edge lines will be 2,000 lft or a portion thereof. Damages may be assessed in accordance with 105.14 for non-compliance. Temporary edge lines, if used, will be paid for only once per each lift of HMA.

COMMENTS AND ACTION

801-T-XXX PROMPT PLACEMENT OF EDGE LINES

DISCUSSION:
Mr. Novak withdrew this item since it is dependent on passing of the previous item.

Mr. Novak had intended to present this item for the reasons stated on the proposal sheet, and although this item is withdrawn, is open to comments.

Mr. Koch stated that he isn't sure that this proposed language would be feasible without the Designer taking into consideration each site's unique situation and the corresponding MOT plan. Further, depending on the unique situation, the lines could be wavy or create a pinched traffic situation hindering paving of a passing lane. More confusion and difficulties could occur during interstate night work. Mr. Koch also inquired of the 2,000 ft QA unit and asked if we are defining the length of a traffic control device for the associated penalty? Since the language is in 105.14, do we need to mention it here?

Mr. Novak responded that what is not shown here is the proposed language for the Design Manual. It will only call for this on roads with =>10,000 ADT. It is already drafted and approved but is pending the approval of this RSP. And yes, this relies a bit on the passing of the spec change and establishes a $40 QA for each 2000 lft of marking not placed.

Motion: Mr. Novak Second: Mr. Ayes: Nays: FHWA Approval:	Action: ___ Passed as Submitted ___ Passed as Revised _X_ Withdrawn
Standard Specifications Sections referenced and/or affected: 801.03 pg 813, 801.12 pg 823 Recurring Special Provision references in: NONE Standard Drawing affected: NONE Design Manual Sections affected: 503-7.03 and 503-703(01) GIFE Sections cross-references: SECTION 2	___ 2022 Standard Specifications ___ Revise Pay Items List ___ Create RSP (No.___) Effective: RSP Sunset Date: ___ Revise RSP (No.___) Effective: RSP Sunset Date: ___ Standard Drawing Effective: ___ Create RPD (No. ___) Effective: ___ GIFE Update ___ SiteManager Update

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED:

Research and experience nationally have shown that poly-alpha-methylstyrene (PAMS) resin-based curing compounds provide superior moisture retention than traditional wax-based curing compounds. PAMS curing compounds also provide a longer lasting coating than wax-based compounds after being exposed to traffic. Overall the concrete hydrates more thoroughly which results in improved durability. PAMS curing compounds are ideally suited for pavement applications including thin concrete overlays and partial depth joint repairs where thin placements are at increased risk of moisture loss.

PROPOSED SOLUTION:

Add resin-based poly-alpha-methylstyrene (PAMS) curing compounds to the standard specification.

APPLICABLE STANDARD SPECIFICATIONS: 912.01(e)

APPLICABLE STANDARD DRAWINGS: none

APPLICABLE DESIGN MANUAL SECTION: none

APPLICABLE SECTION OF GIFE: none

APPLICABLE RECURRING SPECIAL PROVISIONS:

PAY ITEMS AFFECTED: none

APPLICABLE SUB-COMMITTEE ENDORSEMENT: INDOT-IRMCA working committee

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman

Title: State Materials Engineer

Organization: INDOT Office of Materials Management

Phone Number: 317-522-9692

Date: 4/29/20

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No

Will approval of this item affect the Approved Materials List? Yes, a new list will be created for Liquid Membrane Forming Curing Compounds

Will this proposal improve:

Construction costs? N/A

Construction time? N/A

Customer satisfaction? N/A

Congestion/travel time? N/A

Ride quality? N/A

Will this proposal reduce operational costs or maintenance effort? No

Will this item improve safety:

For motorists? N/A

For construction workers? N/A

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? Yes

Design process? N/A

Will this change provide the contractor more flexibility? No

Will this proposal provide clarification for the Contractor and field personnel? No

Can this item improve/reduce the number of potential change orders? No

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda: N/A

REVISION TO STANDARD SPECIFICATIONS

SECTION 912 - CONCRETE CURING MATERIALS AND ADMIXTURES
912.01 Curing Materials

The Standard Specifications are revised as follows:

SECTION 912, BEGIN LINE 21, DELETE AND INSERT AS FOLLOWS:

(e) Liquid Membrane Forming Compounds

~~These compounds shall be in accordance with ASTM C 309, type 2, except the drying time requirement will be determined on a glass surface~~*~~A list of approved~~ Materials ~~Liquid Membrane Forming Compounds will~~ shall be ~~maintained by~~selected from the Department's list of Liquid Membrane Forming Compounds. ~~Products may be added to the Department's list of approved materials by completing the requirements in ITM 806, Procedure F. Testing shall be performed by a recognized independent laboratory approved by NTPEP. All liquid membrane forming curing compounds shall be covered by a type A certification in accordance with 916. In order to maintain approval, the manufacturer shall submit an annual recertification letter to the Department by January 1 of each year. The manufacture shall also submit an internal certification for a single batch every four months.~~*

Storage of liquid membrane ~~curing~~forming compounds shall be in accordance with the manufacturer's recommendations. Compounds shall be kept from freezing and shall not be applied when the ambient temperature is less than 40°F. Compounds that are ~~over~~more-than ~~1~~ one year ~~passed~~past the date of manufacture shall not be used.

Products may be added to the Department's list of approved materials by completing the requirements in ITM 806, Procedure F. Testing shall be performed by a recognized independent laboratory approved by NTPEP. In order to maintain approval, the manufacturer shall submit an annual recertification letter to the Department by January 1 of each year. The manufacturer shall also submit a type A certification for a single batch every four months to the Office of Materials Management.

1. Wax-Based, White Pigmented

These compounds shall meet or exceed requirements of ASTM C 309, Type 2, Class A, when tested in accordance with ASTM C 156.

2. Resin-Based, White Pigmented

These compounds shall be in accordance with ASTM C 309, Type 2, Class B, 100% Poly-alpha-methylstyrene, PAMS, resin with the following exceptions:

PAMS Curing Compound Properties		
Physical Tests	*Specification*	*Requirement*
Total solids, % by weight of compound	*ASTM D 2369*	*≥ 42*
Reflectivity, % in 72 h	*ASTM E 1347*	*≥ 65*
Loss of water, kg/m² in 24 h	*ASTM C 156*	*≤ 0.15*

REVISION TO STANDARD SPECIFICATIONS

SECTION 912 - CONCRETE CURING MATERIALS AND ADMIXTURES
912.01 Curing Materials

Loss of water, kg/m² in 72 h	*ASTM C 156*	*≤ 0.40*
Infrared Spectrum, vehicle	*Match reference IR scan*	*100% poly-alpha-methylstyrene*
V.O.C. Content, g/L	*326 IAC 8-15*	*≤ 350*
Long-Term Settling Test, ml/100 ml in 72 h	*NTPEP*	*≤ 2.0*

Samples of PAMS curing compound may be obtained randomly for verification at the point of incorporation into the work in accordance with 106.02. Verification testing will include:

1. *Total Solids*
2. *Reflectance*
3. *Long-Term Settling Test*

COMMENTS AND ACTION

912.01 Curing Materials

DISCUSSION:

This item was introduced and presented by Mr. Reilman, along with Mr. Nelson, who explained that research and experience nationally have shown that poly-alpha-methylstyrene (PAMS) resin-based curing compounds provide superior moisture retention than traditional wax-based curing compounds. PAMS curing compounds also provide a longer lasting coating than wax-based compounds after being exposed to traffic. Overall, the concrete hydrates more thoroughly which results in improved durability. PAMS curing compounds are ideally suited for pavement applications including thin concrete overlays and partial depth joint repairs where thin placements are at increased risk of moisture loss.

Mr. Reilman therefore proposes to add resin-based poly-alpha-methylstyrene (PAMS) curing compounds to the standard specifications as illustrated above.

Mr. Koch asked if the materials are required to be on the Approved List or could other products be accepted by a Type A certification if they meet the requirements? Also, if only Approved list material is acceptable, could we strike the type A requirement? If both are material processes are acceptable, perhaps join both sentences by 'OR'?. Mr. Koch expressed that he would really like a clear understanding that one or the other is required for acceptance, and is worried that the material will need to be accepted by certification and approval number necessitating two material record entries, adding needless work for field personnel. Mr. Reilman revised the language accordingly and those revisions are as shown. Mr. Nelson asked if a type C cert is also needed, and Mr. Koch does not think it is necessary.

Following a brief discussion with Ms. Phillips and Mr. Nelson, Mr. Culberson offered that if the ITM and the cert both cover what is required, then we don't need both. Mr. Nelson and Mr. Reilman discussed updating Procedure F of the ITM and removing language from this proposal. Mr. Nelson stated that Procedure F is rather generic, so the proposed language should remain.

Further discussion ensued concerning the language as presented and how to provide better clarification. The resulting revisions are as shown above.

Mr. Fisher asked if new materials list codes will be needed, and Mr. Nelson responded that yes they will.

Mr. Reilman revised his motion and this item passed as revised.

COMMENTS AND ACTION

912.01 Curing Materials

[continued]

Motion: Mr. Reilman Second: Ms. Phillips Ayes: 10 Nays: 0 FHWA Approval: YES	Action:	
	___	Passed as Submitted
	X	Passed as Revised
	___	Withdrawn
Standard Specifications Sections referenced and/or affected: 912.01 pg 1032	X	2022 Standard Specifications
	___	Revise Pay Items List
Recurring Special Provision references in: NONE	X	Create RSP (No. 912-x-xxx) Effective: December 1, 2020 RSP Sunset Date: 2022 SS book
Standard Drawing affected: NONE	___	Revise RSP (No.___) Effective: RSP Sunset Date:
Design Manual Sections affected: GIFE Sections cross-references:	___	Standard Drawing Effective:
	___	Create RPD (No. ___) Effective:
	___	GIFE Update
	X	SiteManager Update