INDIANA DEPARTMENT OF TRANSPORTATION

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Eric Holcomb, Governor
Joe McGuinness, Commissioner

FINAL DRAFT MINUTES

January 21, 2021 Standards Committee Meeting

(Changes to the Agenda by the Action of the Committee shown as highlighted in yellow.
No changes to the First Draft Minutes.)

February 15, 2021

TO: Standards Committee

FROM: Scott Trammell, Secretary

RE: Minutes from the January 21, 2021 Standards Committee Meeting

The Standards Committee meeting was called to order by Mr. Pankow, Chair, at 09:03 a.m. on January 21, 2021 via *Teams* (Microsoft application). The meeting was adjourned at 10:28 a.m.

The following committee members were in a virtual attendance:

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

Also, virtual presence was captured by *Microsoft Teams* of the following:

Duncan, Thomas, FHWA
Osborn, Dan, ICI
Susong, John, Rinker Materials
Leckie, John, ACPA
Beeson, Matt, INDOT
Blanchard, Jacob, INDOT
Corrice, Zachariah, INDOT
Pfeiffer, Nate, INDOT
Podorvanova, Lana, INDOT
Smutzer, Katherine, INDOT
Trammell, Scott, INDOT
Harris, Tom, INDOT
Patterson, Patrick, INDOT
Siddiki, Nayyar, INDOT

White, Peter, INDOT
Bruno, Joseph, INDOT
Frederick, Jared, INDOT
Awwad, Nathan, INDOT
Fegan, Roland, INDOT
Kachler, Mischa, INDOT
Nelson, Mike, INDOT
Smart, Steve, guest
Hauser, Derrick
Tull, Christopher R., guest
Mouser, Elizabeth, INDOT
Russell, Melissa, INDOT
Seef, Erik, INDOT

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 December 17, 2020 meeting

DISCUSSION: Mr. Pankow requested a motion to approve the Minutes from the December 17, 2020 meeting, as revised. Mr. Reilman explained the minor editorial revisions that were made for clarification and consistency.

Motion: Mr. Reilman
Second: Mr. Boruff
Ayes: 9
Nays: 0

ACTION: PASSED AS REVISED

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

(No items were listed)

NEW BUSINESS

Item No. 1 (2020 SS)	Mr. Reilman	pg 5
2020 Standard Specifications:		
SECTION 501	QC/QA PORTLAND CEMENT CONCRETE PAVEMENT, PCCP *(various sections)*	
ACTION:	PASSED AS REVISED	
Item No. 2 (2020 SS)	Mr. Reilman	pg 22
2020 Standard Specifications:		
502.02	Materials	
502.03	Concrete Mix Design	
502.04	Concrete Mix Criteria	
ACTION:	PASSED AS SUBMITTED	
Item No. 3 (2020 SS)	Mr. Reilman	pg 27
2020 Standard Specifications:		
506.02	Materials	
506.03	Concrete Mix Design	
506.04	Concrete Mix Criteria	
ACTION:	PASSED AS SUBMITTED	
Item No. 4 (2020 SS)	Mr. Reilman	pg 32
2020 Standard Specifications:		
702.03	Materials	
702.05	Proportioning	
ACTION:	PASSED AS SUBMITTED	
Item No. 5 (2020 SS)	Mr. Reilman	pg 37
2020 Standard Specifications:		
401.10	General	
401.15	Joints	
410.10	General	
ACTION:	PASSED AS SUBMITTED	
Item No. 6 (2020 SS)	Mr. Reilman	pg 41
2020 Standard Specifications:		
907.10	Drain Tile	
ACTION:	PASSED AS SUBMITTED	

Item No. 7 (2020 SS)	Mr. Reilman	pg 45

2020 Standard Specifications:

909.05	White and Yellow Waterborne Traffic Paint

ACTION: PASSED AS SUBMITTED

Item No. 8 (2020 SS)	Mr. Reilman	pg 51

2020 Standard Specifications:

917.01	General Requirements

ACTION: PASSED AS SUBMITTED

Item No. 9 (2020 SS)	Mr. Orton	pg 55

2020 Standard Specifications:

711.68	Structural Steel Cutting, Rivet and Bolt Removal, and Drilled Bolt Holes in Repair Projects

ACTION: PASSED AS REVISED

Item No. 10 (2020 SS)	Mr. Novak	pg 59

2020 Standard Specifications:

801.18	Basis of Payment

ACTION: PASSED AS REVISED

Item No. 11 (2020 SS)	Mr. Orton	pg 63

2020 Standard Specifications:

701.07	Piling Length
701.14	Method of Measurement
701.15	Basis of Payment

ACTION: PASSED AS REVISED

cc: Committee Members
FHWA
ICI

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Section 501 QC/QA PCCP does not require the use of pozzolans in the concrete. Also, the aggregate gradation specified is not optimal. Other minor changes are also needed.

PROPOSED SOLUTION: Incorporate indicated changes into 501 section.

APPLICABLE STANDARD SPECIFICATIONS: 501

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE:

APPLICABLE RECURRING SPECIAL PROVISIONS: create new 501 RSP

PAY ITEMS AFFECTED: None

APPLICABLE SUB-COMMITTEE ENDORSEMENT: ACPA-Indiana

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman

Title: State Materials Engineer

Organization: INDOT

Phone Number: 317-522-9692

Date: 12/18/2020

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? 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? Yes
- Asset preservation? Yes
- Design process? N/A

Will this change provide the contractor more flexibility? Yes

Will this proposal provide clarification for the Contractor and field personnel? N/A

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

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:

(**Note:** Approved changes by the Standards Committee at various meetings to **section 501** are shown in Recurring special provision 501-R-712 QC/QA PORTLAND CEMENT CONCRETE PAVEMENT, PCCP Only proposed new changes shown highlighted gray.)

The Standard Specifications are revised as follows:

SECTION 501, BEGIN LINE 1, DELETE AND INSERT AS FOLLOWS:

SECTION 501 – QC/QA PORTLAND CEMENT CONCRETE PAVEMENT, PCCP

501.01 Description

This work shall consist of QC/QA portland cement concrete pavement, PCCP, placed on a prepared subgrade or subbase in accordance with 105.03.

501.02 Quality Control

The mixture for PCCP shall be produced by an approved plant in accordance with ITM 405, transported, and placed according to a ~~Quality Control Plan,~~ QCP~~,~~ prepared and submitted by the Contractor in accordance with ITM 803, for PCCP. *The QCP shall contain a plan for placing PCCP in cold weather, as defined in 501.15. The cold weather plan shall, at a minimum, provide details to address changes in materials, concrete batching and mixing processes, construction methods, curing, temperature monitoring, and protection of in-situ PCCP. Temperature monitoring shall consist of monitoring the surface temperature of the PCCP by use of a thermometer. The thermometer shall be capable of recording and maintaining a record of the day, time, and temperature every 15 minutes around the clock. The thermometer shall be located 6 in. in from the edge of the PCCP.* The QCP shall be submitted to the Engineer at least 15 days prior to commencing PCCP paving operations.

An American Concrete Institute certified concrete field testing technician, grade I, shall be on site to direct all sampling and testing.

A common testing facility shall be provided for both production control and acceptance testing.

MATERIALS

501.03 Materials

Materials shall be in accordance with the following:

Admixtures 912.03
Concrete Coarse Aggregate, Class AP~~, Size No. 8*~~..... *ITM 226,* 904
Fine Aggregate, Size No. 23~~*~~.....904
Fly Ash 901.02
~~Ground Granulated Blast Furnace Slag.....901.03~~
Portland Cement ..... 901.01(b)*

Rapid Setting Patch Materials 901.07
Silica Fume.....*901.04*
Slag Cement.....*901.03*
Water.....913.01
* ~~Or gradation as identified in the QCP~~*Type IS-A and Type IP-A blended cements shall not be used.*

501.04 Concrete Mix Design

A concrete mix design submittal, CMDS, shall be in accordance with 501.05. The CMDS shall be submitted to and approved by the DTE. The CMDS shall be submitted a minimum of seven calendar days prior to the trial batch utilizing the Department provided spreadsheet and shall include the following:

(a) a list of all ingredients
(b) the source of all materials
(c) the fine to total aggregate ratio
(d) the gradation of the aggregates
(e) the absorption of the aggregates
(f) the SSD bulk specific gravity of the aggregates
(g) the specific gravity of ~~pozzolan~~*each supplementary cementitious material, SCM,*
(h) the batch weights
(i) the names of all admixtures
(j) the admixture dosage rates and the manufacturer's recommended range.

The aggregate blend submitted on the CMDS shall produce an optimized aggregate gradation in accordance with ITM 226 sections 6.2.1 and 6.3. The aggregate blend shall consist of, at a minimum, one concrete coarse aggregate and one fine aggregate, size No. 23. One additional class A intermediate-sized coarse aggregate may be included if approved by the Engineer.

The CMDS is used to conduct a trial batch in accordance with 501.06. Upon completion of the trial batch, the Contractor shall submit the concrete mix design for production, CMDP. The CMDP shall be submitted to the DTE utilizing the Department furnished spreadsheet a minimum of three work days prior to production. Production shall not commence without an approved CMDP. Both the Contractor's and the Engineer's test results from the trial batch will be included in the CMDP submittal.

A CMDP may be changed or adjusted in accordance with the following:

(a) Change in Materials

A change in a previously approved CMDP, for a given contract, to any of the following shall be submitted to the DTE as a CMDS, referencing the original CMDP.

1. cement source or type
2. ~~pozzolan~~*SCM* source or type
3. coarse aggregate source or type
4. admixture type.

A trial batch shall be conducted in accordance with 501.06, or verification of the new CMDS may be made during the first day of production by tests conducted by the Contractor and the Engineer. Acceptance test results may be used for the Engineer's verification tests. Production may continue until flexural strength tests are completed, provided all other properties are in accordance with 501.06. The test results shall be submitted to the DTE utilizing the Department spreadsheet no later than one day after the flexural strength test results are complete. If the ~~flexural strength~~*test beams indicate a modulus of rupture that* is not in accordance with 501.06, production shall stop and all PCCP constructed with the new CMDS will be adjudicated as a failed material in accordance with normal Department practice as listed in 105.03.

(b) Adjustments to Materials

An adjustment in a previously approved CMDP, for a given contract, to any of the following shall be submitted to the DTE as a CMDS, referencing the original CMDP.

1. admixture source
2. admixture product of the same type and from the same source designated in the original CMDP
3. fine aggregate source
4. target unit weight due to change in aggregate properties
5. fine to total aggregate ratio in excess of ±3% from the value designated by the original CMDP
6. ~~increase in cement content from the amount designated in the original CMDP.~~

The new CMDS shall be submitted to the DTE utilizing the Department spreadsheet a minimum of one work day prior to production. A trial batch or verification testing is not required for approval. Production shall not commence without an approved CMDP.

(c) Other Adjustments

Other adjustments in an approved CMDP, for a given contract, to any of the following will be allowed and DTE notification and approval prior to use is not required.

1. admixture dosage rate
2. fine aggregate to total aggregate ratio within ±3% of the value designated by the original CMDP.

An approved CMDP from a previous contract may be used on additional contracts. The CMDP shall be submitted to the DTE for review and approval prior to use.

501.05 Concrete Mix Criteria

The CMD shall *contain at least one, but not more than two SCM's, and* produce workable concrete mixtures having the following properties:

Minimum ~~portland cement~~*total cementitious* content
~~*defined by CMDP*~~ ..... ~~400~~*450* lb/cu yd
Allowable amount of single SCM ~~*defined by CMDP*~~,
% of total cementitious, by weight .....*25.0 - 40.0%**
Allowable amount of two SCM's ~~*defined by CMDP*~~,
*% of total cementitious, by weight... .....25.0 – 40.0%***
Minimum portland cement content ~~*defined by CMDP*~~ ..... *275 lb/cu yd*
Allowable amount of silica fume as SCM ~~*defined by CMDP*~~,
*% of total cementitious content.....3.0 – 7.0%***
Maximum *allowable* water/cementitious ratio *of concrete mixture*
with fly ash as SCM.....~~0.450~~*0.440*
Maximum allowable water/cementitious ratio of concrete mixture
with slag cement as SCM.....*0.450*
~~Minimum portland cement/fly ash ratio ..... 3.2 by weight~~
~~Minimum portland cement/GGBFS ratio ..... 2.3 by weight~~
Target air content ~~*defined by CMDP*~~ ..... ~~6.5~~*7.0%*
Minimum ~~flexural strength, third point loading~~*modulus of*
rupture ..... 570 psi at 7 days

**Binary binder systems shall contain either fly ash or slag cement combined with a cement. If blended cement is used, it shall be either a Type IP (25≤X≤40) or Type IS (25≤X≤40) or Type IL. Blended cements, except for Type IL, shall not be combined with plant added slag cement or fly ash to create a binary binder system. When using a Type IL blended cement, plant addition of fly ash or slag cement will be allowed. The limestone dust in Type IL cement will not be considered in calculating the amount of SCM.*

***Ternary binder systems shall contain two SCM's such as fly ash and slag cement, or fly ash and silica fume, or slag cement and silica fume, combined with a cement. If a blended cement is used, it shall not be combined with a plant added SCM of the same type of pozzolan to create a ternary system. For example: a Type IP shall not be combined with plant-added fly ash and slag cement. When using a Type IL blended cement, the plant addition of both fly ash and slag cement will be allowed. The limestone dust in Type IL cement will not be considered in calculating the amount of SCM. Silica fume shall only be a SCM component of a ternary binder system. If a blended cement is used, silica fume shall only be an SCM component of the ternary system.*

~~The Contractor may elect to use fine and coarse aggregates in accordance with 904, or may propose the use of alternate gradations. If alternate gradations are proposed, the QCP shall specify the tolerances of material passing each sieve. In either case, 100% of the coarse aggregate shall pass the 1 in. (25 mm) sieve. The combined amount of fine and coarse aggregates passing the No. 200 (75 µm) sieve shall be from 0% to 2.0% for fine aggregate and gravel, and from 0% to 2.5% for fine aggregate and crushed stone or crushed slag.~~

~~The fine aggregate shall be at least 35% but not more than 50% of the total weight of the aggregate in each cubic yard. Proportions will be based upon saturated surface dry aggregates.~~

Absorption tests shall be performed on the fine aggregate in accordance with AASHTO T 84 and on the coarse aggregate in accordance with AASHTO T 85. Absorption test results for a particular size of aggregate that differ by more than 1.0 percentage point from the Department's source value shall be investigated. The Contractor shall report any differences that exceed 1.0% to the Department. The Contractor's results shall be used when calculating the water/cementitious ratio.

~~Fly ash or GGBFS used as an additive, or blended cements may only be incorporated in the concrete mix between April 1 and October 15 of the same calendar year. If type IP, type IP-A, type IS or type IS-A cements are to be used, the minimum portland cement content shall be increased to 500 lbs/cu yd. The use of fly ash or GGBFS as an additive will not be allowed when blended cement types IP, IP-A, IS, or IS-A are used.~~ *Hand placed paving operations meeting the requirements of 508.04(c) shall utilize concrete having a ternary binder system that contains silica fume as one of the SCM's when the ambient temperature is below 50°F during placement or when the ambient temperature will fall below 50°F before the opening to traffic strength is attained. Concrete with a ternary binder system containing silica fume as one of the SCM's, may be used in any approved method of pavement placement without restriction. Placement operations that involve form riding equipment in accordance with 508.04(b), may utilize an approved binary CMDP, without restriction.*

Water reducing admixture type A, or water reducing and retarding admixture type D, may be used in PCCP. However, admixture type A shall not be used in conjunction with admixture type D.

501.06 Trial Batch

A trial batch shall be produced and tested by the Contractor's certified technician to verify that the CMDS meets the concrete mix criteria. Concrete produced at a plant shall be batched within the proportioning tolerances of 508.02(b). Concrete batched in a laboratory shall be in accordance with ASTM C 192. The Engineer will test the trial batch and provide the Contractor with the results. The trial batch shall be of sufficient quantity to allow the Contractor and the Engineer to perform all required tests from the same batch. Trial batch concrete shall not be used for more than one test, except the concrete used for the unit weight may be used to conduct the air content test. The air content shall be ~~5.0~~*5.5*% to 10.0%. The plastic unit weight shall be within ±3.0% from the target plastic unit weight of the CMDS. The water/cementitious ratio shall be within ±~~0.030~~*0.015* of the target value of the CMDS and shall not exceed ~~0.450~~*the maximum amount allowed for the appropriate mix in accordance with 501.05*. The flexural strength shall be determined by averaging a minimum of two beam breaks and shall be a minimum of 570 psi.

Test results shall be added to the Department spreadsheet and submitted to the DTE in accordance with 501.04. Adjustments to the target unit weight and the target water/cementitious ratio may be made.

~~A trial batch is not required for a CMDS that has any of the following criteria:~~

~~(a) minimum cement content of 564 lbs/cu yd and a target water/cementitious ratio of 0.420~~

~~(b) class C concrete in accordance with 702 using Class AP coarse aggregate.~~

501.07 Lots and Sublots

Lots will be defined as 7,200 sq yd of PCCP. Lots will be further subdivided into sublots of 2,400 sq yd of PCCP within a lot. Partial sublots of 480 sq yd or less will be added to the previous sublot. Partial sublots greater than 480 sq yd constitute a full sublot. Partial lots of one or two sublots constitute a full lot.

Lots and sublots will be numbered and tested for a given pay item regardless of the number of CMD's used and will be closed out at the end of the paving season or construction phase.

501.08 Acceptance

Acceptance of PCCP ~~for flexural strength~~*will be based on the results of modulus of rupture*, air content, unit weight, water/cementitious ratio, and thickness ~~will be determined on the basis of tests performed~~*measurements obtained* by the Engineer in accordance with 505. The Engineer will randomly select the location within each sublot for sampling in accordance with ITM 802.

The random sample per sublot shall be of sufficient quantity to perform all required tests and obtained in accordance with AASHTO R 60. Concrete and necessary labor for sampling shall be furnished as required by the Engineer. The test results of the sublots for each lot will be averaged and shall be in accordance with 501.05 and 501.06, except the lot average for thickness shall be in accordance with 501.26. Test results are to be shared in a timely manner.

Test or Determination	Frequency	Test Method	Precision
7-Day Flexural Strength	two beams per sublot	AASHTO T 97	~~1~~*modulus of rupture, rounded to the nearest 5* psi
Air Content	one *test* per sublot	AASHTO T 152 or ASTM C 173	0.1%
Unit Weight	one per sublot	AASHTO T 121	~~1~~*0.1 lb/cu ft*
Water/Cementitious Ratio	one per two lots	ITM 403	0.001
Thickness	two per sublot	ITM 404	0.1 *in.*

Rounding will be in accordance with 109.01(a).

In the event that an acceptance sample is not available to represent a sublot, all test results of the previous sublot will be used for acceptance. If the previous sublot is not available, the subsequent sublot will be used for acceptance.

SECTION 501, BEGIN LINE 288, DELETE AND INSERT AS FOLLOWS:

501.15 Weather Limitations

~~PCCP shall not be placed on frozen subgrade or subbase. PCCP shall be placed when the ambient temperature is 35°F and above, unless procedures outlined in the QCP for lower temperatures are followed. Prior to attaining opening to traffic strengths in accordance with 501.23, sufficient means shall be taken to prevent the PCCP from freezing.~~*PCCP shall be placed ~~on dry subbase~~ when the ambient temperature is 32°F or rising. It shall not be placed on frozen subgrade or subbase.*

When the ambient temperature is at or below 40°F during PCCP placement, the cold weather plan shall be followed as outlined in the QCP in accordance with 501.02.

Continuous temperature monitoring and recording shall be initiated for the day's production when the ambient temperature is at or below 38°F at any time during placement for that day. Once monitoring has started, it shall continue uninterrupted until the opening to traffic strength, in accordance with 501.23, has been achieved. A record of the temperature monitoring shall be furnished to the Engineer when the opening to traffic strength has been achieved.

Prior to attaining opening to traffic strengths in accordance with 501.23, sufficient means shall be taken to prevent the PCCP from freezing.

SECTION 501, BEGIN LINE 350, DELETE AND INSERT AS FOLLOWS:

501.23 Opening to Traffic

The Contractor shall be responsible for controlling the opening of the PCCP to construction and non-construction traffic and include the procedures in the QCP. Pavement inspection will be completed in accordance with 501.22.

~~(a) Construction~~

~~Construction vehicles or equipment will be allowed on the PCCP after 10 days or when flexural tests indicate a modulus of rupture of 550 psi or greater. ITM 402 may be used as an alternate method to determine the flexural strength. All construction vehicles or equipment that may damage the PCCP shall not be used on the PCCP unless adequate protection is provided. Approved joint cutting saws may be operated on the PCCP.~~

~~(b) Non-Construction~~

~~PCCP may be opened to traffic after 14 days. The~~ PCCP may be opened ~~earlier if the test beams of ITM 402 indicate~~*to construction vehicles, equipment, and traffic when the flexural strength of the* test beams ~~or ITM 402~~ indicate a modulus of rupture of 550 psi

or greater. *ITM 402 may be used as an alternate method to determine the flexural strength.* If adequate strengths are not ~~met within 14 days~~*achieved*, an investigation by the Engineer and Contractor will be conducted to determine if the PCCP is deficient. Resolutions for all deficiencies will be developed at the completion of the investigation. Cracks and joints shall be sealed in accordance with 503.05 and the PCCP cleaned prior to opening to traffic.

SECTION 501, BEGIN LINE 462, DELETE AND INSERT AS FOLLOWS:

(c) Smoothness Correction

Pavement smoothness variations outside specified tolerances shall be corrected by grinding with a groove type cutter or by replacement. Grinding will not be allowed until the PCCP is 10 days old ~~or~~*and* ~~the~~ flexural strength test*ing yields a modulus of rupture of* ~~is~~ 550 psi or greater. The grinding of the pavement to correct the profile shall be accomplished in either the longitudinal or the transverse direction. The PCCP texture after grinding shall be uniform. If the grinding operation reduces the tining grooves to a depth of less than 1/16 in. and the longitudinal length of the removal area exceeds 15 ft, or two or more areas are within 30 ft of each other, the PCCP shall be re-textured in accordance with 504.03.

At locations where the profilograph is used, all areas having a high or low point deviation in excess of 0.30 in. shall be corrected. In addition, smoothness sections with a deficient profile index in accordance with 501.28(d) shall be corrected. After the corrective action is complete, the profilograph shall be operated throughout the entire affected smoothness section to verify the adequacy of the corrective action.

At locations where the 16 ft straightedge is used, the pavement variations shall be corrected to 1/4 in. or less. At locations where the 10 ft straightedge is used, the pavement variations shall be corrected to 1/8 in. or less.

501.26 Pavement Thickness

PCCP thickness shall be determined after all corrective grinding. The Contractor shall obtain cores at the locations determined by the Engineer in accordance with ITM 802. Cores, 4 in. in diameter, shall be taken in the presence of the Engineer for the full depth of the PCCP. The Engineer will take immediate possession of the cores. Cores shall not be taken within 6 in. of the edge of pavement, within 3 in. of longitudinal joints, within 2 ft of D-1 contraction joints, or within 5 ft of a transverse construction joint. Cores shall be taken and measured in accordance with ITM 404. All core holes shall be filled with PCC or rapid setting patch material within 24 h of drilling.

The width of adjudicated PCCP shall be the width of pavement lane in which the deficiency occurs. Pavement that has been replaced shall be investigated for thickness.

The thickness of the PCCP for each sublot shall be the average lengths of both cores from the sublot. Calculations shall be to the nearest 0.1 in.

501.27 Tolerance

Plastic unit weight, water/cementitious ratio, ~~flexural beam~~*modulus of rupture*, and air content ~~tests~~*measurements* will be performed during PCCP operations.

(a) Plastic Unit Weight

Sublots shall not vary by more than ±3.0% from the target unit weight. A stop paving order will be issued if the plastic unit weight exceeds ±3.0% from the target plastic unit weight. Paving operations shall not resume until satisfactory changes are made or an alternate CMDP is used.

Calculations for the plastic unit in lbs/cu yd will be made and reported to the nearest figure in the tenth.

(b) Water to Cementitious Ratio

The weekly water to total cementitious materials ratio shall not vary more than ± 0.030 of the target value or exceed ~~0.450~~*the maximum allowed for the appropriate mixture in accordance with 501.05*. A stop paving order will be issued if the test results exceed these values. Paving operations shall not resume until satisfactory changes are made or an alternate CMDP is used.

Calculations for water to cementitious ratio will be made and reported to the nearest figure in the third decimal place.

(c) Flexural Strength

Average lot values *for modulus of rupture* of 570 psi and above shall be achieved. Price adjustments for values outside the tolerance limits will be in accordance with 501.28.

Calculations for ~~flexural strength~~*modulus of rupture* in psi will be made and reported to the nearest ~~whole unit~~*5.0 psi*.

(d) Air Content

The average lot air content values shall not vary more than - ~~0.8~~*1.2*% to + ~~2.4~~*2.2*% from the ~~6.5~~*7.0*% target air content. The range of sublot air content values shall not exceed 2.5%. Price adjustments for values outside the tolerance limits or range will be in accordance with 501.28.

Calculations for air content percentage will be made and reported to the nearest figure in the first decimal place.

501.28 Pay Factors

When the PCCP ~~test results~~*measurements* for ~~flexural strength,~~ air content, air content range, *modulus of rupture,* smoothness, and thickness exceed the allowable tolerances, pay factors will be determined. The pay factors will be used to calculate a quality assurance adjustment quantity for the lot.

The adjustment for ~~flexural strength~~*modulus of rupture*, air content, air content range, thickness, and smoothness will be calculated as follows:

$$q = L \times U \times (P - 1.00)$$

where:

q = quality assurance adjustment quantity
L = lot quantity
U = unit price for QC/QA-PCCP, $/sq yd
P = pay factor.

For sublot thickness determination:

$$q_T = l_T \times U \times (P - 1.00)$$

where:

q_T = quality assurance adjustment quantity
l_T = sublot quantity for thickness
U = unit price for QC/QA-PCCP, $/sq yd
P = pay factor.

The quality assurance adjustment points for smoothness, Qs, will be calculated in accordance with 501.28(d).

The total quality assurance adjustments will be calculated as follows:

$$Q_T = \Sigma (q_{T1} + q_{T2} + q_{T3}), \text{ and}$$

$$Q = \Sigma (q_F + q_A + q_R + Q_T) + Q_S$$

where:

Q = total quality assurance adjustment quantity
Q_S = quality assurance adjustment for smoothness
q_F = lot quality assurance adjustments for *modulus of rupture from* flexural strength *testing*
Q_T = lot quality assurance adjustments for thickness
q_A = lot quality assurance adjustments for air content
q_R = lot quality assurance adjustments for range.

If the Contractor is not required to remove the pavement or take other corrective actions, quality assurance adjustments of the lot will be assessed as determined by the *Department's Division* ~~Office~~ of Materials ~~Management~~*and Tests*.

(a) ~~Flexural Strength~~*Modulus of Rupture*

When test results for *modulus of rupture from* flexural strength *testing* exceed the allowable tolerance, a pay factor will be assessed as follows:

1. Lots

Lot Average ~~Flexural Strength~~*Modulus of Rupture*	
Psi	Pay Factors
570 and above	1.00
565 – 569	0.98
560 – 564	0.96
555 – 559	0.94
550 – 554	0.92
545 – 549	0.89
540 – 544	0.86
535 – 539	0.83
525 – 534	0.78
515 – 524	0.72
514 or less	*
* The PCCP will be adjudicated as a failed material in accordance with normal Department practice as listed in 105.03. The PCCP may be subject to removal and replacement or left in place with reduced or no payment.	

2. Sublots

If a*n individual* sublot value is less than 500 psi, the PCCP will be adjudicated as a failed material in accordance with normal Department practice as listed in 105.03. For a sublot completely removed, the sublot test value from the replacement sublot will replace the original test value.

(b) Air Content

When test results for air content exceed the allowable tolerance or range, a pay factor will be assessed as follows:

1. Lots

Lot Average Air Content	
Percent, %	Pay Factors
> 9.8	*
9.7 – 9.8	~~0.80~~*0.85*
9.5 – 9.6	~~0.90~~*0.95*
9.3 – 9.4	~~0.95~~*0.99*
~~9.0~~*5.8* – 9.2	~~0.99~~*1.00*
5.7 ~~– 8.9~~	~~1.00~~*0.93*
5.6	~~0.93~~*0.90*
5.5	~~0.90~~*0.85*
5.4	~~0.85~~*0.79*

~~5.3~~	~~0.79~~
< ~~5.3~~*5.4*	*
* The PCCP will be adjudicated as a failed material in accordance with normal Department practice as listed in 105.03. The PCCP may be subject to removal and replacement or left in place with reduced or no payment.	

Lot Range for Air Content	
Percent, %	Pay Factors
0.0 – 2.5	1.00
2.6 – 3.0	0.99
3.1 – 3.5	0.97
> 3.5	*
* The PCCP will be adjudicated as a failed material in accordance with normal Department practice as listed in 105.03. The PCCP may be subject to removal and replacement or left in place with reduced or no payment.	

2. Sublots

If a sublot value is less than ~~5.0~~*5.5%* or greater than 10.0%, the PCCP will be adjudicated as a failed material in accordance with normal Department practice in accordance with 105.03. For a sublot completely removed, the sublot test value from the replacement sublot will replace the original test value.

SECTION 501, BEGIN LINE 628, DELETE AND INSERT AS FOLLOWS:

501.29 Appeals

If the Contractor does not agree with the acceptance test results, a request may be made in writing for additional tests for a sublot or lot. The basis of the appeal shall include applicable QC test results showing acceptable quality results and shall be submitted within five calendar days of receipt of the Department's written results for that lot. Upon review of the appeal, the Engineer may accept the PCCP in accordance with 105.03 or accept the appeal.

(a) ~~Flexural Strength~~*Modulus of Rupture*

Appeals will not be considered unless QC test results *for modulus of rupture obtained from flexural strength testing* indicate greater than a 50 psi difference between the Department's and the Contractor's test~~s~~ *results*. Upon approval for the additional testing, the Contractor shall obtain cores, as directed, in the presence of the Engineer.

The Engineer will determine the location of the cores within the appealed and adjacent sublots using the same CMD. The location of the cores will be at the center of a lane at the acceptance sample location. Cores shall not be taken over dowels or within 5 ft of a header. Two cores shall be taken in each sublot for the full depth of pavement and shall be 4 in. in diameter. All core holes shall be filled with portland cement concrete within 24 h of drilling. If adjacent sublots were produced using different CMDs, the matter will be adjudicated as a failed material in accordance with normal Department practice.

Each core will be tested for split tensile strength in accordance with ASTM C 496. The cores will be submerged in lime saturated water prior to testing for a minimum of 40 h.

The average core split tensile strength will be determined for the appealed and adjacent sublots. ~~Flexural strength~~*Modulus of rupture* will be calculated as follows:

$$F_D = S_D \text{ x } \left[\frac{F_{A1}}{2S_{A1}} + \frac{F_{A2}}{2S_{A2}} \right]$$

where:

F_D = ~~flexural strength~~*modulus of rupture* of the appealed sublot
F_{A1} = ~~flexural strength~~*modulus of rupture* of the previous adjacent sublot
F_{A2} = ~~flexural strength~~*modulus of rupture* of the subsequent adjacent sublot
S_D = split tensile strength of the appealed sublot
S_{A1} = split tensile strength of the previous adjacent sublot
S_{A2} = split tensile strength of the subsequent adjacent sublot.

(b) Air Content

Appeals will not be considered unless QC test results indicate greater than a 0.5% difference between the Department's and the Contractor's tests. Upon approval for the additional testing, the Contractor shall obtain core as directed in the presence of the Engineer.

The Engineer will determine the location of the core within the appealed sublot. The location of the core will be at the center of a lane at the acceptance sample location. A core shall not be taken over dowels or within 5 ft of a header. One 4 in. diameter full depth core shall be taken from the pavement for each sublot appealed. All core holes shall be filled with PCC or rapid setting patch material within 24 h of drilling.

The air content for a sublot will be the hardened concrete air content determined from the core in accordance with ITM 401. When ACBF aggregates are used, the hardened concrete air content will be determined in accordance with ASTM C457.

SECTION 501, BEGIN LINE 688, DELETE AND INSERT AS FOLLOWS:

501.31 Basis of Payment

The accepted quantities of QC/QA-PCCP will be paid for at the contract unit price per square yard for the thickness specified, complete in place.

Payment for furnishing, calibrating, and operating the profilograph, and furnishing profile information will be made at the contract lump sum price for profilograph, PCCP.

Adjustments to the contract payment ~~with respect~~*due* to ~~flexural strength~~*measurements for modulus of rupture*, thickness, air content, range and smoothness will be included in a quality assurance adjustment pay item in accordance with 109.05.1.

Milled pavement corrugations will be paid for in accordance with 606.03.

Payment for pavement thickness determinations will be made at the contract lump sum price for coring, PCCP. A change order in accordance with 109.05 will be developed to adjust the cost of coring when the final QC/QA-PCCP quantity differs from the bid quantity by more than 2,400 sq yd. This adjustment covers the cost of cores for the adjusted quantity of QC/QA-PCCP. The adjustment, plus or minus, will be based on the difference in the number of sublots, rounded to the nearest full sublots, times $100.

Payment will be made under:

Pay Item	**Pay Unit Symbol**
Coring, PCCP	LS
Profilograph, PCCP	LS
QC/QA-PCCP, _____ in. thickness	SYS

The cost of trial batch demonstrations shall be included in the cost of PCCP.

The price of profilograph, PCCP will be full compensation regardless of how often the profilograph is used or how many profilograms are produced.

The cost of corrections for pavement smoothness and re-texturing shall be included in the cost of QC/QA-PCCP.

The cost of coring and refilling of the pavement holes for appeals shall be included in the cost of QC/QA-PCCP.

The cost of temperature monitoring and recording during cold weather placement shall be included in the cost of QC/QA-PCCP.

Traffic control for appeals shall be supplied with no additional payment.

Removal and replacement of QC/QA-PCCP damaged by freezing shall be with no additional payment.

COMMENTS AND ACTION

SECTION 501 - QC/QA PORTLAND CEMENT CONCRETE PAVEMENT, PCCP (various sections)

DISCUSSION:

This item was introduced and presented by Mr. Reilman who explained that Section 501 QC/QA PCCP does not require the use of pozzolans in the concrete. Also, the aggregate gradation specified is not optimal, and that other minor changes are also needed.

Mr. Reilman proposed to incorporate the revisions into 501 as shown above.

Following much discussion, prior to the meeting, with Mr. Koch, Mr. Reilman, Mr. Beeson and Mr. Nelson, the revisions shown highlighted in yellow above have been incorporated. Mr. Nelson explained that ITM 226 is still in work and that Mr. Beeson has been in communication with industry, so they are aware of what is going on.

Mr. Reilman revised his motion, which was seconded by Mr. Dave.

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

Motion: Mr. Reilman Second: Mr. Dave Ayes: 10 Nays: 0 FHWA Approval: Yes	Action: ___ Passed as Submitted _X_ Passed as Revised ___ Withdrawn
Standard Specifications Sections referenced and/or affected: 501 begin pg. 387	_X_ 2022 Standard Specifications ___ Revise Pay Items List
Recurring Special Provision references in: 501-R-712 QC/QA PORTLAND CEMENT CONCRETE PAVEMENT, PCCP	___ Create RSP (No.___) Effective: RSP Sunset Date:
Standard Drawing affected: NONE	___ Revise RSP (No.___) Effective: 2022 Book 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: The aggregate gradation specified for concrete in 502 is not optimal.

PROPOSED SOLUTION: Incorporate the proposed 502 changes.

APPLICABLE STANDARD SPECIFICATIONS: None

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE:

APPLICABLE RECURRING SPECIAL PROVISIONS: 502-R-713

PAY ITEMS AFFECTED: None

APPLICABLE SUB-COMMITTEE ENDORSEMENT: ACPA of Indiana

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman

Title: State Materials Engineer

Organization: INDOT

Phone Number: 317-522-9692

Date: 12/18/2020

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, 501, 506, & 702

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? Yes

Will this proposal provide clarification for the Contractor and field personnel? N/A

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

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 502 - PORTLAND CEMENT CONCRETE PAVEMENT, PCCP
502.02 Materials
502.03 Concrete Mix Design
502.04 Concrete Mix Criteria

(**Note:** Approved changes by the Standards Committee at various meetings to **section 502** are shown in Recurring special provision 502-R-713 PORTLAND CEMENT CONCRETE PAVEMENT, PCCP Only proposed new changes shown highlighted gray.)

The Standard Specifications are revised as follows:

SECTION 502, BEGIN LINE 7, DELETE AND INSERT AS FOLLOWS:

MATERIALS

502.02 Materials

Materials shall be in accordance with the following:

Admixtures	912.03
Concrete Coarse Aggregate, Class AP~~, Size No. 8~~	*ITM 226,* 904
Fine Aggregate, Size No. 23	904
Fly Ash	901.02
~~Ground Granulated Blast Furnace Slag~~	~~901.03~~
Portland Cement	901.01(b)
Rapid Setting Patch Materials	901.07
Silica Fume	*901.04*
Slag Cement	*901.03*
Water	913.01

502.03 Concrete Mix Design

A concrete mix design submittal, CMDS, shall be in accordance with 502.04. The CMDS shall be submitted ~~one week prior to production and approved by the Engineer~~*to the DTE*. The CMDS shall be submitted ~~utilizing~~*a minimum of seven calendar days prior to production. The CMDS shall use* the Department provided spreadsheet and shall include the following:

(a) a list of all ingredients
(b) the source of all materials
(c) the fine to total aggregate ratio
(d) the absorption of the aggregates
(e) the SSD bulk specific gravity of the aggregates
(f) the specific gravity of pozzolan
(g) the batch weights
(h) the names of all admixtures
(i) the admixture dosage rates and the manufacturer's recommended range.

The aggregate blend submitted on the CMDS shall produce an optimized aggregate gradation in accordance with ITM 226 sections 6.2.1 and 6.3. The aggregate blend shall

consist of, at a minimum, one Concrete Coarse Aggregate and one fine aggregate, No. 23. One additional class A or higher intermediate-sized coarse aggregate may be included if approved by the Engineer.

The absolute volume of the mix design shall be 27.0 cu ft at the design air content of 6.5%.

Production ~~may commence once the DTE approves the submission as a CMDP.~~*shall not commence until the DTE has assigned a mix number to the CMDS. The mix design will henceforth be identified as a concrete mix design for production, CMDP.*

Any of the following changes or adjustments to an existing CMDP shall require a new CMDS to be submitted to the DTE.

(a) cement source or type
(b) pozzolan source or type
(c) aggregate source or type
(d) admixture source or type
(e) addition or deletion of an admixture
(f) proportioning of the concrete in accordance with 502.04 as follows:

1. cement content or cement reduction
2. pozzolan to cement substitution ratio
3. target water/cementitious ratio
4. proportion of aggregate by weight exceeding ±2%.

A CMDP in accordance with 501.05 or a CMDP in accordance with 502.04 from a previous contract may be submitted for *review for* use ~~upon the approval~~*on the current contract* to the DTE. *The DTE will notify the Contractor when the review is complete and whether or not the previously used CMDP can be used on the current contract.*

502.04 Concrete Mix Criteria

Chemical admixtures type A, type B, type C, type D, type E, and type F may be allowed if shown on the CMDP. The supplied concrete mix shall include one of the following water reducing admixtures: type A, type D, type E, or type F.

~~The fine aggregate shall be at least 35~~*40*~~% but not more than 45% of the total weight of the aggregate in each cubic yard. Proportions will be based upon saturated surface dry aggregates.~~

COMMENTS AND ACTION

502.02 Materials
502.03 Concrete Mix Design
502.04 Concrete Mix Criteria

DISCUSSION:
Mr. Reilman introduced and presented this item stating that the aggregate gradation specified for concrete in 502 is not optimal.

Mr. Reilman proposed to incorporate the proposed 502 changes as shown above.

There was no 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: 502 begin pg. 405. Recurring Special Provision references in: 502-R-713 PORTLAND CEMENT CONCRETE PAVEMENT, PCCP 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: ___ 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: The aggregate gradation specified for concrete in 506 is not optimal.

PROPOSED SOLUTION: Incorporate the proposed 506 changes.

APPLICABLE STANDARD SPECIFICATIONS: None

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE:

APPLICABLE RECURRING SPECIAL PROVISIONS: revise 506-R-716

PAY ITEMS AFFECTED: None

APPLICABLE SUB-COMMITTEE ENDORSEMENT: ACPA of Indiana

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman

Title: State Materials Engineer

Organization: INDOT

Phone Number: 317-522-9692

Date: 12/18/2020

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, 501, 502, & 702

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? Yes

Will this proposal provide clarification for the Contractor and field personnel? N/A

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

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 506 - PCCP PATCHING
506.02 Materials
506.03 Concrete Mix Design
506.04 Concrete Mix Criteria

(**Note:** Approved changes by the Standards Committee at various meetings to **section 506** are shown in Recurring special provision 506-R-716 PCCP PATCHING.
Only proposed new changes shown highlighted gray.)

The Standard Specifications are revised as follows:

SECTION 506, BEGIN LINE 9, DELETE AND INSERT AS FOLLOWS:

506.02 Materials

Materials shall be in accordance with the following:

Admixtures	912.03
Calcium Chloride, Type L	913.02
Chemical Anchor System	901.05
Coarse Aggregate, Class A or Higher, Size No. 11	904
Concrete Coarse Aggregate, Class AP~~, Size No. 8~~	*ITM 226,* 904
Dowel Bars	910.01(b)10
Dowel Bar Assemblies	*503.04*
Fine Aggregate, Size No. 23	904
Fly Ash	*901.02*
Joint Fillers	*906.01*[A]
Joint Sealing Materials	*906.02(a)2*
Portland Cement	901.01(b)
Rapid Hardening Hydraulic Cement	*901.01(d)*
Silica Fume	*901.04*
Slag Cement	*901.03*
Water	913.01

[A] *A flexible foam expansion joint material meeting the requirements of ASTM D 5249, type 2 may also be used for the retrofit pressure relief joint. If the flexible foam expansion joint is used, the basis for use will be a type C certification in accordance with 916.*

Coarse aggregate for partial depth patching shall be size No. 11. Coarse aggregate for full depth patching shall be size No. 8. Coarse aggregate for patch~~ing~~*es* shall be *dolomite, lime*stone, or gravel.

Retrofitted tie bars shall be No. 5 or No. 6 epoxy coated reinforcing bars in accordance with 910.01(b)9.

The rapid hardening hydraulic cement or calciumsulfoaluminate, CSA, cement type selected shall be a type shown in ASTM C 1600 that will enable opening to traffic in accordance with the contract requirements. Food grade citric acid may be used as an organic retarding admixture in concrete utilizing CSA cement. The use and strength of food grade citric acid, or any other admixture, shall be approved in writing by the

manufacturer of the CSA cement. The basis for use for the food grade citric acid will be visual inspection.

A bonding agent shall be selected from the Department's list of approved Non-Vapor Barrier Type Bonding Agents.

~~Dowel bars and dowel bar assemblies shall be in accordance with 503.04.~~

506.03 Concrete Mix Design

A concrete mix design submittal, CMDS, shall be in accordance with 506.04. The CMDS shall be submitted to ~~and approved by~~ the DTE. The CMDS shall be submitted a minimum of seven calendar days prior to the trial batch. ~~utilizing~~*The CMDS shall use* the Department provided spreadsheet and shall include the following:

(a) a list of all ingredients*, including the type of CSA cement, if applicable*
(b) the source of all materials
(c) the fine to total aggregate ratio
(d) the absorption of the aggregates
(e) the SSD bulk specific gravity of the aggregates
(f) the specific gravity of pozzolan
~~(f)~~*(g)* the batch weights
~~(g)~~*(h)* the names of all admixtures
~~(h)~~*(i)* the admixture dosage rates and the manufacturer's recommended range.

The aggregate blend submitted on the CMDS shall produce an optimized aggregate gradation in accordance with ITM 226, sections 6.2.1 and 6.3. The aggregate blend shall consist of, at a minimum, one Concrete Coarse Aggregate and one fine aggregate, No. 23. One additional class A or higher intermediate-sized coarse aggregate may be included if approved by the Engineer.

SECTION 506, BEGIN LINE 107, DELETE AND INSERT AS FOLLOWS:

506.04 Concrete Mix Criteria

The design flexural strength of each CMDP shall be set such that the minimum opening to traffic strength is achieved at an age consistent with the work schedule, including any lane closure restrictions.

~~The fine aggregate shall be at least 35~~*40*% ~~but not more than 45% of the total weight of the aggregate in each cubic yard. Proportions will~~*shall* be based upon SSD aggregates.

COMMENTS AND ACTION

506.02 Materials
506.03 Concrete Mix Design
506.04 Concrete Mix Criteria

DISCUSSION:
Mr. Reilman introduced and presented this item stating that the aggregate gradation specified for concrete in 506 is not optimal.

Mr. Reilman prosed to incorporate the proposed 506 changes as shown above.

There was no 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: 506 begin pg 426. Recurring Special Provision references in: 506-R-716 PCCP PATCHING 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: ___ 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: The aggregate gradation specified for concrete in 702 is not optimal.

PROPOSED SOLUTION: Incorporate the proposed 702 changes.

APPLICABLE STANDARD SPECIFICATIONS: None

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE:

APPLICABLE RECURRING SPECIAL PROVISIONS: 702-R-691

PAY ITEMS AFFECTED: None

APPLICABLE SUB-COMMITTEE ENDORSEMENT: IRMCA

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman

Title: State Materials Engineer

Organization: INDOT

Phone Number: 317-522-9692

Date: 12/18/2020

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, 501, 502, & 506

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? Yes

Will this proposal provide clarification for the Contractor and field personnel? N/A

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

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 702 - STRUCTURAL CONCRETE
702.03 Materials
702.05 Proportioning

(**Note:** Approved changes by the Standards Committee at various meetings to section 702 are shown in Recurring special provision 702-R-691 STRUCTURAL CONCRETE. Only proposed new changes shown highlighted gray.)

The Standard Specifications are revised as follows:

SECTION 702, BEGIN LINE 21, DELETE AND INSERT AS FOLLOWS:

702.03 Materials

Materials shall be in accordance with the following:

Admixtures for Use in Concrete	912.03
Castings	910.05
Concrete Coarse Aggregate	
For exposed concrete, Class A or Higher, ~~Size No. 8~~	*ITM 226,* 904
For non-exposed concrete, Class B or Higher, ~~Size No. 8~~	*ITM 226,* 904
Curing Materials	912.01
Curing-Sealing Materials	912.02
Elastomeric Bearings	915.04
Fabric for Waterproofing	~~918.01~~*918.06*
Fine Aggregate Size No. 23	904
Fly Ash	901.02
Geotextile for Use With Underdrains	918.03
Ground Granulated Blast Furnace Slag	901.03
High Density Bearing Strips	906.08
Permanent Metal Forms	910.03
Polychloroprene Joint Membrane and Adhesive	906.02(a)4
Preformed Expansion Joint Filler	*906.03*
Portland Cement	901.01(b)
Silica Fume	*901.04*
Slag Cement	*901.03*
Utility Asphalt, UA-1	902.01(d)
Water	913.01

Drainage pipe through concrete masonry shall be in accordance with 715.

Grout material for field drilled holes shall be either a high-strength, non-shrink, non-metallic, cementitious grout in accordance with U.S. Army Corps of Engineers Specification CRD-C 621 or an approved 100% solids chemical anchor system.

SECTION 702, BEGIN LINE 61, DELETE AND INSERT AS FOLLOWS:

702.05 Proportioning

Control of PCC for air content, slump, or relative yield will be determined on the basis of tests performed by the Engineer. Concrete and necessary labor for sampling shall

be furnished by the Contractor as required by the Engineer. Testing will be in accordance with the Frequency Manual.

A CMDS shall be submitted seven calendar days prior to production and be approved by the Engineer ~~except utilization of~~*on* the Department provided spreadsheet ~~is not required for the CMDS~~. The absolute volume of the mix design shall be 27.0 cu ft at the design air content of 6.5%.

The aggregate blend submitted on the CMDS shall produce an optimized aggregate gradation in accordance with ITM 226 sections 6.2.1 and 6.3. The aggregate blend shall consist of, at a minimum, one concrete coarse aggregate and one fine aggregate, No. 23. One additional class A or higher for exposed or class B or higher for non-exposed intermediate-sized coarse aggregate may be included if approved by the Engineer.

The proportion of ingredients of each batch shall be within the following limits, and shall be approved.

SECTION 702, BEGIN LINE 103, DELETE AS FOLLOWS:

~~Fine aggregate shall be no less than 35% nor more than 45% of the total weight of aggregates used, except the limit may be increased to 50% when slag coarse aggregate is used. The aggregates shall be proportioned to use the maximum amount of coarse aggregate which produces a workable mix.~~

COMMENTS AND ACTION

702.03 Materials
702.05 Proportioning

DISCUSSION:
This item was introduced and presented by Mr. Reilman who stated that the aggregate gradation specified for concrete in 702 is not optimal.

Mr. Reilman proposed to incorporate the proposed 702 changes as illustrated above.

Mr. Dave asked which properties will improve. Mr. Reilman and Mr. Nelson responded that it involves particle packing, where you can get the same strengths with better workability with less paste content.

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

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: 702 begin pg 576. Recurring Special Provision references in: 702-R-691 STRUCTURAL CONCRETE 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: ___ 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: Specifications say to wait 5 days after applying joint sealant. It is unnecessary if pavement markings are grooved. Sections 401 and 410 have conflicting language on flushing pavement.

PROPOSED SOLUTION: Update 401.10 and 410.10. Update 401.15 to exempt the 5 day cure if markings are grooved.

APPLICABLE STANDARD SPECIFICATIONS: 401, 410

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: NA

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

PAY ITEMS AFFECTED: N/A

APPLICABLE SUB-COMMITTEE ENDORSEMENT: APAI Steering Committee (joint changes).

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman

Title: State Materials Engineer

Organization: INDOT

Phone Number: 317-522-9692

Date: 12/18/2020

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? 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? N

Will this proposal reduce operational costs or maintenance effort? N

Will this item improve safety:

- For motorists? N
- For construction workers? N

Will this proposal improve quality for:

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

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:

Pending construction memo regarding the grooved markings.

REVISION TO STANDARD SPECIFICATIONS

SECTION 401 - QC/QA HMA PAVEMENT
401.10 General
401.15 Joints
SECTION 410 - QC/QA HMA-SMA PAVEMENT
410.10 General

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 401, BEGIN LINE 340, DELETE AND INSERT AS FOLLOWS:

~~Segregation or flushing or bleeding of~~ HMA mixtures ~~will not be allowed~~*shall not exhibit segregation, flushing, or bleeding*. Corrective action shall *immediately* be taken to prevent continuation of these conditions. Segregated, ~~or~~ flushed, or bleeding HMA mixtures ~~shall be removed if directed~~*will be referred to the Department's Division of Materials and Tests for adjudication as a failed material in accordance with 105.03*. ~~All areas showing an excess or deficiency of binder shall be removed and replaced.~~

All mixtures that become loose and broken, mixed with dirt, or ~~is~~*are* in any way defective shall be removed and replaced *in accordance with 105.03*.

SECTION 401, BEGIN LINE 465, INSERT AS FOLLOWS:

Temporary pavement markings in accordance with 801.12 shall be offset a sufficient distance from the longitudinal joint so as not to obstruct the installation of the pavement corrugations or the application of the liquid asphalt sealant. The sealant shall be cured a minimum of five days prior to applying the permanent pavement traffic markings in accordance with 808. *Where pavement markings are to be grooved in accordance with 808.07(b)1, the minimum cure of five days for the sealant shall not apply.*

SECTION 410, BEGIN LINE 225, DELETE AND INSERT AS FOLLOWS:

~~Segregation, flushing or bleeding of~~ SMA mixtures ~~will not be allowed~~*shall not exhibit segregation, flushing, or bleeding*. Corrective action shall *immediately* be taken to prevent continuation of these conditions. Segregated, flushed, or bleeding of SMA mixtures ~~shall be removed if directed~~*will be referred to the Department's Division of Materials and Tests for adjudication as a failed material in accordance with 105.03*. ~~All areas showing an excess or deficiency of binder shall be removed and replaced.~~

All mixtures that become loose and broken, mixed with dirt, or ~~is~~*are* in any way defective shall be removed and replaced *in accordance with 105.03*.

COMMENTS AND ACTION

401.10 General
401.15 Joints
410.10 General

DISCUSSION:
This item was introduced and presented by Mr. Reilman who explained that the specifications say to wait 5 days after applying joint sealant. It is unnecessary if pavement markings are grooved. Sections 401 and 410 have conflicting language on flushing pavement.

Mr. Reilman proposed to update 401.10 and 410.10 as shown above. Mr. Reilman also proposed to update 401.15 to exempt the 5 day cure if markings are grooved.

There was no discussion and this item passed as submitted.

Motion: Mr. Reilman Second: Mr. Boruff Ayes: 10 Nays: 0 FHWA Approval: Yes	Action:	
	X	Passed as Submitted
	___	Passed as Revised
	___	Withdrawn
Standard Specifications Sections referenced and/or affected: 401.10 pg. 296; 401.15 pg. 298; 410.10 pg. 342.	X	2022 Standard Specifications
	___	Revise Pay Items List
Existing Recurring Special Provisions: 401-R-701 QC/QA HMA PAVEMENT 410-R-418 SMA SPRAY PAVER AND EMULSION 410-R-703 QC/QA HMA - SMA PAVEMENT	___	Create RSP (No.___) Effective: RSP Sunset Date:
	___	Revise RSP (No.___) Effective: RSP Sunset Date:
Standard Drawing affected: NONE		
Design Manual Sections affected: NONE	___	Standard Drawing Effective:
	___	Create RPD (No. ___) Effective:
GIFE Sections cross-references: NONE	X	GIFE Update
	___	SiteManager Update

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Concrete drain tile is not required to be from a certified precaster.

PROPOSED SOLUTION: Require concrete drain tile to be produced from a certified precast concrete producer in accordance with ITM 813.

APPLICABLE STANDARD SPECIFICATIONS: 907.10

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: none

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman

Title: State Materials Engineer

Organization: INDOT

Phone Number: 317-522-9692

Date: 12/18/2020

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

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? 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? Yes

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? N/A

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 907 - CONCRETE, CLAY, AND PLASTIC DRAINAGE COMPONENTS
907.10 Drain Tile

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 907, BEGIN LINE 159, DELETE AND INSERT AS FOLLOWS:

907.10 Drain Tile

This pipe shall be in accordance with AASHTO M 178 for concrete or ASTM C4 for clay for the specified material, diameters, and quality classes. *Precast concrete units shall be from a source listed on the Department's List of Certified Precast Concrete Producers, in accordance with ITM 813.* Standard quality drain tile shall not be used. When specified, the pipe spigot shall have integral spacer lugs to provide for an annular opening and self centering feature. ~~Material~~*Clay drain tile* furnished under this specification shall be covered by a type C certification in accordance with 916.

COMMENTS AND ACTION

907.10 Drain Tile

DISCUSSION:
Mr. Reilman introduced and presented this item stating that concrete drain tile is currently not required to be from a certified precaster.

Mr. Reilman proposed to require concrete drain tiles to be produced from a certified precast concrete producer in accordance with ITM 813, as illustrated above.

There was no 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: 907.10 pg. 969. Recurring Special Provision references in: NONE 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: ___ 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: The VOC limits on waterborne traffic paint are not current with the Indiana Administrative Code (IAC).

PROPOSED SOLUTION: Incorporate the proposed changes to reflect the VOC limits depending on the calendar date (whether or not you're in ozone season, as defined in the IAC).

APPLICABLE STANDARD SPECIFICATIONS: 909

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE:

APPLICABLE RECURRING SPECIAL PROVISIONS: None

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

Phone Number: (317) 522-9692

Date: 12/18/2020

[rev. 12/2014]

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? 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? N/A

Is this proposal needed for compliance with:

- Federal or State regulations? Yes
- 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:

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 909, BEGIN LINE 272, DELETE AND INSERT AS FOLLOWS:

909.05 White and Yellow Waterborne Traffic Paint

White and yellow waterborne traffic paints shall consist of an emulsion of pigmented binder.

When glass beads are induced into the paint lines, the paint shall provide capillary action in the interstices and voids between the glass beads sufficient to cause the level of paint to raise approximately 2/3 the diameter of the glass beads. This capillary action shall not cause complete envelopment of the glass beads. The paint as furnished shall not contain glass beads. The paint shall be ground to a uniform consistency, and it shall enable satisfactory application by the pressure-spray type of painting equipment. The painting equipment shall use a pressurized bead application method that is designed to apply 4 to 6 in. reflectorized paint lines at paint temperature up to 150°F. The paint shall be capable of being applied at speeds of 10 to 15 mph.

The paint shall not darken under the heating conditions of application, or show appreciable discoloration due to sunlight exposure and aging of the paint lines. The paint shall be furnished ready for use without thinning, screening, or other modifications and shall not settle, cake, curdle, liver, gel, or have an excessive change in viscosity in the container during a period of one year after manufacture. The paint shall be capable of being stirred to a uniform consistency. The paint shall be able to withstand variations of temperatures when stored outside in the containers as delivered, and in an environment above 40°F. All paint furnished under these specifications will be rejected if it contains skins, thickened or jelly-like layers, lumps, coarse particles, dirt, or other foreign materials which prevent the proper application of the paint, or produces a non-uniform paint line. All paint which cannot be transferred by pumps on the paint equipment from the shipping containers and through the paint equipment due to excessive clogging of screens, filters, or paint guns will be rejected.

The paint shall dry to a no-tracking condition in less than 60 s. The no tracking condition shall be determined by actual application of the paint on the pavement at a wet film thickness of 15 mils with glass beads at a rate of 6 lb/gal. The paint lines for the determination of no-tracking condition shall be applied with the specialized painting equipment operated so as to have the paint at application temperatures up to 140°F at the spray guns. This maximum no tracking time shall not be exceeded when the pavement temperature varies from 50 to 120°F, and with all relative humidity conditions providing that the pavement is dry. The no tracking time shall be determined by passing over the paint line 60 s after the paint application, in a simulated passing maneuver at a constant speed of 30 to 40 mph with a passenger car. A paint line with no visual deposition of the paint to the pavement surface when viewed from a distance of approximately 50 ft from

the point where the vehicle crossed the paint line shall be considered as showing a condition of no tracking and being in accordance with the requirement.

1. Composition Requirements

The exact composition of the waterborne traffic paint shall be left to the discretion of the manufacturer, provided that the finished product is in accordance with all of the specification requirements.

The pigment portion of these paints shall be a combination of prime and extender pigments as required to produce either white or yellow waterborne traffic paint in accordance with the color and other requirements of the finished product. The yellow waterborne traffic paint pigment shall contain pigment yellow Color Index No. 65, or 74, or 75 or a combination of each. The white waterborne traffic paint pigment shall contain titanium dioxide in accordance with ASTM D476. The non-volatile portion of the vehicle shall be composed of a 100% acrylic polymer.

The cured film of waterborne traffic paint shall not contain any toxic heavy metals above the limits of the regulatory levels of 40 CFR 261.24, Table 1 or contain any other material which will require characterization as a hazardous waste for the disposal of the dried film.

2. Specific Requirements

	Min.	Max.
Volume solids, ASTM D2697, %	58.0	--
Total solids by mass, ASTM D3723, %	73.0	--
Pigment by mass, ASTM D3723, %	45.0	57.0
Vehicle solids by mass of the vehicle, %	44.0	--
Viscosity, ASTM D562, Krebs Units	75	95
Weight/volume, ASTM D1475, 25°C, kg/L	1.498	--
Weight/volume @ 25°C, variation from the manufacturer's initially approved batch, ASTM D1475, kg/L.	--	0.024
Dry time, ASTM D711, 15 mils wet film thickness, airflow of less than 50 cu ft/min, without glass beads	--	10 min
Reflectance Factor, Y, C.I.E. illuminant, C, 2° standard observer, ASTM E1349, 15 mils wet film thickness, air dried a minimum of 16 h, % White..... Yellow.....	 84 50	 -- 57
Color, yellow only, x - y C.I.E. Coordinates for the strong limits of FHWA color chart PR1, 15 mils wet film thickness, air dried a minimum of 16 h, measured on white background, C.I.E. illuminant, C, 2° standard observer, % deviation	Match the strong limits	±6.00
Coarse material retained on a No. 30 sieve, ASTM D185, %	--	0.05

Bleeding ratio, Federal Specifications TT-P-1952B, except asphalt saturated felt paper shall be in accordance with ASTM D226, Type I	0.97	--
Contrast ratio, ASTM D2805, 10 mils wet film thickness on Leneta Form 2A or 2C, air dried a minimum of 16 h	0.96	--
Volatile organic compounds, ASTM D3960~~, g/L~~ *from May 1 thru September 30, g/L*..... *from October 1 thru April 30, g/L*	~~--~~ -- --	~~150~~ *105* *150*
Abrasion resistance, Federal Specifications TT-P-1952B, L	190	--
Freeze-thaw stability, Federal Specifications TT-P-1952B, change in consistency, Krebs Units	--	10
Heat stability, Federal Specifications TT-P-1952B, change in consistency, Krebs Units	--	10
Scrub resistance, ASTM D2486, with abrasive medium and shims, cycles	300	--
Water resistance, Federal Specification TT-P-1952B	Film shall not soften, blister, wrinkle, or lose adhesion	
Flexibility, Federal Specifications TT-P-1952B	No cracking or flaking of film	
Infrared spectrum of the vehicle ASTM D3168	Shall match spectrum of manufacturer's previously submitted samples	

Dilution test shall be capable of dilution with water at all levels without curdling or precipitation such that wet paint can be cleaned up with water only.

COMMENTS AND ACTION

909.05 White and Yellow Waterborne Traffic Paint

DISCUSSION:

This item was introduced and presented by Mr. Reilman who stated that the VOC limits on waterborne traffic paint are not current with the Indiana Administrative Code, IAC.

Mr. Reilman proposed to incorporate the proposed changes to reflect the VOC limits depending on the calendar date, whether or not you're in ozone season, as defined in the IAC.

Mr. Boruff mentioned that there is a reference in 808 that relates to this change. Mr. Reilman confirmed that this will also apply for the Contractors performing this work.

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

Motion: Mr. Reilman Second: Mr. Boruff Ayes: 10 Nays: 0 FHWA Approval: Yes	Action: X Passed as Submitted __ Passed as Revised __ Withdrawn
Standard Specifications Sections referenced and/or affected: 909.05 pg. 986. Recurring Special Provision references in: 909-M-049 WHITE AND YELLOW WATERBORNE TRAFFIC PAINT 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: __ Revise RSP (No.__) Effective: RSP Sunset Date: __ Standard Drawing Effective: __ Create RPD (No. __) Effective: __ GIFE Update X SiteManager Update

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The referenced manual, Inspection and Sampling Procedures for Fine and Coarse Aggregates manual, is obsolete.

PROPOSED SOLUTION: Incorporate the proposed language so that the current manual is referenced.

APPLICABLE STANDARD SPECIFICATIONS: 917

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE:

APPLICABLE RECURRING SPECIAL PROVISIONS: None

PAY ITEMS AFFECTED: None

APPLICABLE SUB-COMMITTEE ENDORSEMENT:

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman

Title: State Materials Engineer

Organization: INDOT

Phone Number: (317) 522-9692

Date: 12/18/2020

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? Yes

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? 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? N/A

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

Is this item editorial? almost

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

REVISION TO STANDARD SPECIFICATIONS

SECTION 917 – QUALITY ASSURANCE AGGREGATE CERTIFICATION
917.01 General Requirements

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 917, BEGIN LINE 3, DELETE AND INSERT AS FOLLOWS:

917.01 General Requirements

An aggregate source will be authorized to ship products in the status of a Certified Aggregate Producer who is in accordance with the required standards of ITM 211. This will consist of a program which will require the aggregate source to make a commitment to product quality management. Approval to participate in the program will be based on the following criteria.

(a) existence of suitable materials in the deposit being mined;

(b) facilities capable of consistently processing uniform materials in accordance with the specification requirements; and

(c) a source Quality Control Plan which will ensure that the mineral aggregates have a 95% assurance of being in accordance with the Department's quality and uniformity requirements.

Specific details of ~~this program~~*the CAPP* are contained in ITM 211. ~~Sampling and testing details are found in the Inspection and Sampling Procedures for Fine and Coarse Aggregates manual~~*Additional details about the program are included in the CAPP Training Manual for Producer Technicians*. A Certified Aggregate Producer shall operate in accordance with ~~the requirements of~~ both *of these* publications.

COMMENTS AND ACTION

917.01 General Requirements

DISCUSSION:

Mr. Reilman introduced and presented this item, stated that the referenced manual, Inspection and Sampling Procedures for Fine and Coarse Aggregates, is obsolete.

Mr. Reilman proposed to incorporate the proposed language so that the current manual is referenced.

There was no discussion and this item passed as submitted.

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: 917.01 pg 1067. Recurring Special Provision references in: NONE 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: ___ 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: Field cutting of structural steel by flame cutting may leave brittle or rough edges that can lead to long term fatigue concerns in certain applications. Repair projects often require field cutting, but section 711.68 doesn't currently specify if flame cutting is allowed.

PROPOSED SOLUTION: Section 711.68 will be revised to exclude flame cutting unless approved by the Engineer.

APPLICABLE STANDARD SPECIFICATIONS: 711.68

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: N/A

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

PAY ITEMS AFFECTED: N/A

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc committee including Jacob Blanchard, Karl Hougland, Joe Novak, Bart Mueller, Nate Pfeiffer, Clint Scherzer, Donald Shaw, Corey Beck

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE:
Contracts that contain 711 pay item numbers.

IMPACT ANALYSIS (attach report):

Submitted By: Pete White for Mark Orton

Title: Standards Engineer

Organization: INDOT Standards and Policy

Phone Number: 317-233-3840

Date: Dec. 28, 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? 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? Yes

Design process? No

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: This RSP is intended to clarify the acceptable of flame cutting on steel repair projects until more comprehensive revisions to 711 are proposed.

REVISION TO STANDARD SPECIFICATIONS

SECTION 711 - STEEL STRUCTURES
711.68 Structural Steel Cutting, Rivet and Bolt Removal, and Drilled Bolt Holes in Repair Projects

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 711, BEGIN LINE 1017, INSERT AS FOLLOWS:

711.68 Structural Steel Cutting, Rivet and Bolt Removal, and Drilled Bolt Holes in Repair Projects

Field cutting of structural steel shall be done as shown on the plans or as directed. *Flame cutting shall not be performed unless approved by the Engineer in coordination with ~~INDOT~~the Department's Bridge Engineering section at Bridgedesignoffice@indot.IN.gov. Approval will be based on a review of the Contractor's proposed flame cutting methods, which ~~must~~shall include written descriptions of the specific methods to be used and measures to be taken to ensure there are no heat affected zones or rough edges ~~which would cause long term detrimental effects to structural members and connections~~.*

Rivets or bolts connecting steel at locations shown on the plans or as directed shall be removed. This work shall be done in a manner that does not damage the surrounding steel. If necessary, such work shall be done by drilling.

Bolt holes shall be drilled as directed in the field. A bolt hole is a hole required for one bolt drilled through any number and thicknesses of metal plates.

COMMENTS AND ACTION

711.68 Structural Steel Cutting, Rivet and Bolt Removal, and Drilled Bolt Holes in Repair Projects

DISCUSSION:

This item was introduced and presented by Mr. Orton, assisted by Mr. White, who explained that field cutting of structural steel by flame cutting may leave brittle or rough edges that can lead to long term fatigue concerns in certain applications. Repair projects often require field cutting, but 711.68 doesn't currently specify if flame cutting is allowed.

Mr. Orton proposed to revise 711.68 to exclude flame cutting unless approved by the Engineer.

Minor editorial revisions are as shown.

Mr. Reilman asked about clarification of the intentions behind this revision, which was confirmed by Mr. White, concerning when flame cutting is okay, and when it is not.

Mr. Orton revised his motion, which was seconded by Mr. Novak.

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

Motion: Mr. Orton 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: 711.68 pg. 667. Existing Recurring Special Provision for 711: 711-B-315 STEEL STRUCTURES 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: _X_ Revise RSP (No. 711-B-315) Effective: June 1, 2021 RSP Sunset Date: ___ Standard Drawing Effective: ___ Create RPD (No. ___) Effective: ___ GIFE Update ___ SiteManager Update

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Current INDOT specifications call for payment for the maximum number of construction signs that are used on the contract at any one time. On multilocation contracts there can be some question on the final pay quantity for construction signs depending on if the signs are moved from 1 location to another or all locations are worked at the same time.

PROPOSED SOLUTION: Designate and define each project location and pay for the total number of signs used at each location.

APPLICABLE STANDARD SPECIFICATIONS: 101.40 and 801.18

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: Section 503-7.01

APPLICABLE SECTION OF GIFE: Section 2.8

APPLICABLE RECURRING SPECIAL PROVISIONS: None effected

PAY ITEMS AFFECTED: Construction Sign ____(Type)

APPLICABLE SUB-COMMITTEE ENDORSEMENT: This proposal has been reviewed by ICI and Indiana ATSSA

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE: All contracts with the pay item Construction Sign ____ Type

IMPACT ANALYSIS (attach report): Yes

Submitted By: Joe Novak

Title: State Construction Engineer

Organization: INDOT

Phone Number: 317-501-7805
Date: December 18, 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? 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? 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? 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: This proposal will help clarify the number of construction signs that will be paid on a contract.

REVISION TO STANDARD SPECIFICATIONS

SECTION 801 - TRAFFIC CONTROL DEVICES AND LIGHTING
801.18 Basis of Payment

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 801, BEGIN LINE 1180, INSERT AS FOLLOWS:

Each construction sign, barricade, temporary worksite speed limit sign assembly, road closure sign assembly, or flashing arrow sign will be paid only once regardless of how many times each is moved, replaced, or how many times each is altered to change the sign message *within a Project Work Zone. Payment will be made for* ~~*S*~~*signs placed in, or relocated to, a separate Project Work Zone* ~~*will be measured and paid for*~~*. A Project Work Zone is defined as a segment of highway from the "Road Construction Ahead" sign to the "End Construction"* ~~*first to the last construction warning*~~ *sign.*

Payment will not be made for signs or barricades used for the convenience of the Contractor.

COMMENTS AND ACTION

801.18 Basis of Payment

DISCUSSION:

This item was introduced and presented by Mr. Novak who explained that current 801.18 language calls for payment for the maximum number of construction signs that are used on the contract at any one time. On multilocation contracts, there can be some question on the final pay quantity for construction signs depending on if the signs are moved from one location to another, or all locations are worked at the same time.

Mr. Novak proposed to revise the language, as shown, to designate and define each project location and pay for the total number of signs used at each location. Further revisions, as shown highlighted above in yellow, were incorporated as described by Mr. Harris.

Further discussions ensued resulting the minor editorial revisions shown.

Mr. Novak revised his motion, seconded by Mr. Koch. Mr. Novak asked for an RSP since they'd like this available as soon as possible.

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

Motion: Mr. Novak Second: Mr. Koch Ayes: 10 Nays: 0 FHWA Approval: Yes	Action: ___ Passed as Submitted _X_ Passed as Revised ___ Withdrawn
Standard Specifications Sections referenced and/or affected: 801.18 pg. 836.	_X_ 2022 Standard Specifications ___ Revise Pay Items List
Recurring Special Provision references in: NONE	_X_ Create RSP (No.801-T-229) Effective: June 1, 2021 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 STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Concrete encasement for exposed H pile bents is currently included in the cost of reinforced concrete encased H pile, which is paid for by linear foot installed. The length of installed piling can vary significantly from the estimated lengths shown on the schedule of pay items. The limits of concrete encasement is shown on the plans and doesn't vary based on the amount of piling driven. Therefore, when the length of piling driven exceeds the estimated length, the State is essentially paying for more concrete encasement than is actually installed. When the length of piling driven is less than the estimated length, the Contractor is providing concrete encasement that wasn't included in their bid price.

The measurement and payment for the epoxy coated portion of piling is currently unclear and may lead to confusion.

PROPOSED SOLUTION: The concrete encasement will be separated from the H piles for measurement and payment. This will allow for more consistent and equitable costs of the concrete encasement.

The measurement and payment for the epoxy coated portion of piling will be clarified.

APPLICABLE STANDARD SPECIFICATIONS: 701

APPLICABLE STANDARD DRAWINGS: E 701-BPIL (no changes required)

APPLICABLE DESIGN MANUAL SECTION: 17-5.03(02)

APPLICABLE SECTION OF GIFE: 5.7 Driven Piling (no changes required)

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

PAY ITEMS AFFECTED: 701-02945 PILE, STEEL H, REINFORCED CONCRETE ENCASED, HP 12 X 74, 701-97805 PILE, STEEL H, REINFORCED CONCRETE ENCASED, HP 10 X 42, 701-97874 PILE, STEEL H, REINFORCED CONCRETE ENCASED, HP, 12 X 53, 701-XXXXX Reinforced Concrete Encasement for H Piles [new pay item]

[CONTINUED]

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc committee including Mir Zaheer, Aamir Turk, Mahmoud Hailat, Jim Reilman, Derrick Hauser, Zachariah Corrice, and Katherine Smutzer.

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE:

IMPACT ANALYSIS (attach report):

Submitted By: Pete White for Mark Orton

Title: Standards Engineer

Organization: INDOT Standards and Policy

Phone Number: 317-233-3840

Date: Dec. 30, 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? 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? 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? 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: These changes will lead to more equitable payment for concrete encasement for H piles and clarification for the payment of epoxy coated piles.

REVISION TO STANDARD SPECIFICATIONS

SECTION 701 - DRIVEN PILING
701.07 Piling Length
701.14 Method of Measurement
701.15 Basis of Payment

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 701, BEGIN LINE 551, DELETE AS FOLLOWS:

701.07 Piling Length

The lengths of piles shown on the plans and in the Schedule of Pay Items are estimated lengths and are for bidding purposes only. The Contractor shall provide the actual length of piles necessary to obtain the nominal driving resistance and penetration depth required as determined from results obtained from driving representative test piles or other pertinent data. There will be expected variations in final tip elevations due to differences in nominal pile driving resistance. The final tip elevation of each pile will be determined during the driving operation. If minimum tip elevations are specified, the Contractor shall drive piles to a penetration depth that satisfies this requirement in addition to the nominal driving resistance. If no penetration depth or minimum tip elevation is specified, the pile shall be driven a minimum of 10 ft below the bottom of the footing elevation. The Contractor shall also furnish satisfactory evidence as to the identification, such as heat numbers for steel piles, of all portions of a built-up pile.

~~The limits of the epoxy coated steel pipe portion of the pile, and the limits of the reinforced concrete shall be as shown on the plans.~~

SECTION 701, BEGIN LINE 754, DELETE AND INSERT AS FOLLOWS:

701.14 Method of Measurement

The driven length of treated timber piles, untreated timber piles, steel pipe piles, steel H piles, and concrete piles will be measured by the linear foot to the nearest 0.1 ft. This includes piles used as indicator test piles, dynamic test piles, or static load test piles. Measurement will be made only for the actual number of linear feet of piling complete in place. For concrete piles, this length will not include extensions or the portion of the pile cutoff to make the extension.

Dynamic pile load test, static pile load test, indicator test pile restrike, dynamic test pile restrike, pile shoes, and conical pile tips will be measured per each.

The limits of the epoxy coated steel pipe portion of the pile will be measured by the linear foot to the nearest 0.1 ft as shown on the plans.~~*Epoxy coated piles will be measured by the linear foot complete in place. If the plans indicate that epoxy coating is only required on the upper portion of the piles, this portion will be measured by the limits shown on the plans, and the remaining uncoated portion below will be measured by the linear foot to the nearest 0.1 ft of driven length.*~~

~~Epoxy coated piles, p~~*P*rebored holes~~,~~ and cored holes in rock will be measured by the linear foot complete in place of the diameter specified.

REVISION TO STANDARD SPECIFICATIONS

SECTION 701 - DRIVEN PILING
701.07 Piling Length
701.14 Method of Measurement
701.15 Basis of Payment

~~Concrete encasement, c~~Class A concrete, reinforcing bars, epoxy coating, reaction piles if not used as production piles, splices, end plates, predrilling, cleaning of drilled holes, drilling fluids, sealing materials, casing, jetting, followers, spudding, or other methods used to facilitating pile driving will not be measured for payment.

Reinforced concrete encasement for steel H piles will be measured by the linear foot as shown on the plans ~~or as directed~~.

701.15 Basis of Payment

All treated timber piles, untreated timber piles, steel pipe piles, steel H piles, and concrete piles driven will be paid for by the linear foot. Payment will be made only for the actual number of linear feet of piling complete in place. Extensions for concrete piles will be paid for in accordance with 109.05.

Driven piles used as indicator test piles or dynamic test piles that are left in place and subsequently used as production piles will be paid for by the linear foot as either production indicator test piles or production dynamic test piles. Reaction piles used in a static pile load test that are left in place and subsequently used as a production pile will be paid for by the linear foot as the type of production pile they represent. Driven piles used as indicator test piles, dynamic test piles, or static load test piles that are not used as production piles will be paid for by the linear foot as non-production dynamic, indicator, or static test piles respectively.

If the quantity of driven piling is less than the plan quantity or the quantity as ordered by the Engineer, the Department will pay 50% of the cost to re-stock unused piling if the Contractor elects to re-stock piling and provides a paid invoice showing the re-stocking fee. Payment will be made for piling, restock.

The ~~E~~epoxy coated *portion of the* piles may be furnished and driven at lengths greater than those shown on the plans. These additional lengths of epoxy coated piles left in place and accepted will be paid for as ~~either steel pipe piles or steel H piles~~*the uncoated portion below the plan limits of required epoxy coating*.

Prebored holes and cored holes in rock will be paid for at the contract price in linear feet.

Payment will be made under:

Pay Item	**Pay Unit Symbol**
Conical Pile Tip, _____ pile size	EACH

REVISION TO STANDARD SPECIFICATIONS

SECTION 701 - DRIVEN PILING
701.07 Piling Length
701.14 Method of Measurement
701.15 Basis of Payment

Cored Hole in Rock, _____ in. ..... LFT
diameter
Dynamic Pile Load Test ..... EACH
Pile Shoe, _____ ..... EACH
pile size
Pile, Concrete _____ x _____ ..... LFT
size
Pile, Prestressed Concrete _____ x _____ ..... LFT
size
Pile, Steel H, Epoxy Coated, HP _____ x _____ ..... LFT
size
Pile, Steel H, HP _____ x _____ ..... LFT
size
~~Pile, Steel H, Reinforced Concrete~~
~~Encased, HP _____ x _____ ..... LFT~~
~~size~~
Pile, Steel Pipe, _____, _____ ..... LFT
pipe wall thickness diameter
Pile, Steel Pipe, Epoxy Coated, _____, _____ ..... LFT
pipe wall thickness diameter
Pile, Timber ..... LFT
Pile, Timber, Treated ..... LFT
Piling, Restock ..... LS
Prebored Hole, _____ in. ..... LFT
diameter
Reinforced Concrete Encasement for H Piles ..... LFT
Static Pile Load Test, _____ ..... EACH
pile size
Test Pile, Dynamic, _____, Non-Production ..... LFT
pile size
Test Pile, Dynamic, Production ..... LFT
Test Pile, Dynamic, Restrike ..... EACH
Test Pile, Indicator, _____, Non-Production ..... LFT
pile size
Test Pile, Indicator, Production ..... LFT
Test Pile, Indicator, Restrike ..... EACH
Test Pile, Static Load, _____, Non-Production ..... LFT
pile size

All costs associated with the dynamic pile load test except the cost of the test pile and test pile restrike shall be included in the cost of the dynamic pile load test.

REVISION TO STANDARD SPECIFICATIONS

SECTION 701 - DRIVEN PILING
701.07 Piling Length
701.14 Method of Measurement
701.15 Basis of Payment

All costs associated with the static pile load test except the cost of the test pile shall be included in the cost of the static pile load test. The cost of reaction piles used in the static load test and not incorporated into the work as production piles shall be included in the cost of the static load test.

The cost of furnishing and placing concrete, B borrow, or bentonite grout necessary to fill pilot holes, and all necessary incidentals shall be included in the cost of the pay items of this section.

The cost of the following shall be included in the cost of the piling.

(a) predrilling pilot holes;
(b) pile sleeves *for predrilling*;
(c) maintaining open holes during pile driving;
(d) broken, bent, damaged, or misplaced piles;
(e) concrete filling ~~or concrete encasement~~;
(f) corrective location or alignment measures;
(g) epoxy coating;
(h) splicing piles and jetted sites;
(i) modifying or replacing pile driving equipment;
(j) redriving piles which have heaved more than 1/4 in.;
(k) plain and epoxy coated reinforcing bars;
(l) repairing epoxy coating;
(m) replacing epoxy coated piling;
(n) restriking production piles not shown as test piles;
(o) piles which are not acceptable or damaged during driving;
(p) piles which were not driven in accordance with these specifications;
(q) piles driven with the tops lower than the cutoff elevation;
(r) spudding or jetting of piles;
(s) end plates for pipe piles;
(t) all straps on treated and untreated timber piling; and
(u) all labor, equipment, and necessary incidentals.

No additional payment will be made if the Contractor elects to furnish and drive thicker walled pipe piles than specified.

An increase in the size of a pile cap to satisfy edge distance clearance requirements, when approved, shall be at no additional cost to the Department.

If the method for driving the piles is specified as 701.05(b) and the contract is a local public agency contract, the Contractor shall include the cost of acquiring the PDA consultant in the cost of the Dynamic Pile Load Test.

REVISION TO STANDARD SPECIFICATIONS

SECTION 701 - DRIVEN PILING
701.07 Piling Length
701.14 Method of Measurement
701.15 Basis of Payment

The cost of mobilization and demobilization for pile driving operations shall be included in the cost of mobilization and demobilization in accordance with 110.04.

The cost to control sediment in water from jetting operations shall be included in the cost of the piling.

The cost of forms, falsework, class A concrete, reinforcing bars, and necessary incidentals shall be included in the cost of reinforced concrete encasement for H piles.

COMMENTS AND ACTION

701.07 Piling Length
701.14 Method of Measurement
701.15 Basis of Payment

DISCUSSION:

This item was introduced and presented by Mr. Orton, assisted by Mr. White, who explained that concrete encasement for exposed H pile bents is currently included in the cost of reinforced concrete encased H pile, which is paid for by linear foot installed. The length of installed piling can vary significantly from the estimated lengths shown on the schedule of pay items. The measurement and payment for the epoxy coated portion of piling is currently unclear and may lead to confusion.

Mr. Orton proposed to incorporate the above shown revisions so that the concrete encasement will be separated from the H piles for measurement and payment. This will allow for more consistent and equitable costs of the concrete encasement. This will provide clarification for the measurement and payment for the epoxy coated portion of piling.

Prior to the meeting, Mr. Koch stated that the proposed 701.14 language reads a bit open, and asked if the language in 701.07 is necessary and if it would be better in 701.14. Mr. Koch suggested moving the 701.07 language to 701.14. Mr. White agreed and the revised language and placement is as shown highlighted above. Mr. White also proposed to remove the "or as directed" language.

In response to Ms. Mouser's inquiry, the limits of the epoxy coating is shown on the standard drawings.

Mr. Orton revised his motion, which was seconded by Mr. Koch.

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

COMMENTS AND ACTION

701.07 Piling Length
701.14 Method of Measurement
701.15 Basis of Payment

[CONTINUED]

Motion: Mr. Orton Second: Mr. Koch Ayes: 10 Nays: 0 FHWA Approval: Yes	Action: ___ Passed as Submitted _X_ Passed as Revised ___ Withdrawn
Standard Specifications Sections referenced and/or affected: 701 pg. 573 thru 576. Recurring Special Provision references in: NONE Standard Drawing affected: E 701-BPIL (no changes required) Design Manual Sections: 17-5.03(02) GIFE Sections cross-references: 5.7 Driven Piling (no changes required)	_X_ 2022 Standard Specifications _X_ 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 _X_ SiteManager Update