INDIANA DEPARTMENT OF TRANSPORTATION

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Eric Holcomb, Governor
Joe McGuinness, Commissioner

AGENDA

June 20, 2019 Standards Committee Meeting

MEMORANDUM

June 3, 2019

TO: Standards Committee

FROM: Scott Trammell, Secretary

RE: Agenda for the June 20, 2019 Standards Committee Meeting

A Standards Committee meeting is scheduled for 09:00 a.m. on June 20, 2019 in the IGCS Building Conference Room 4&5.

The following items are listed for consideration:

A. GENERAL BUSINESS ITEMS

OLD BUSINESS

(No items on this agenda)

NEW BUSINESS

1. Approval of the Minutes from the April 18, 2018 meeting

B. CONCEPTUAL PROPOSAL ITEMS

OLD BUSINESS

(No items on this agenda)

NEW BUSINESS

(No items on this agenda)

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

OLD BUSINESS

(No items on this agenda)

NEW BUSINESS

Item No. 1	(2020 SS)	Mr. Boruff	pg 3
Recurring Special Provisions:			
	922-T-196	CONTROLLER CELLULAR MODEM	
Item No. 2	(2020 SS)	Mr. Beeson	pg 8
	203.24	Method of Making Strength, Stiffness and Density Tests	
	301.03	Preparation of Subgrade	
	301.05	Spreading	
	301.06	Compacting	
	302.05	Spreading	
	303.05	Spreading	
	303.06	Compacting	
Item No. 3	(2020 SS)	Mr. Orton	pg 19
Recurring Special Provisions:			
	724-X-XXX	*PRE-COMPRESSED FOAM JOINT*	
Item No. 4	(2020 SS)	Mr. Beeson	pg 26
	201.02	Materials	
	207.03	Construction Requirements	
	207.04	Subgrade Treatment Types	
	207.05	Method of Measurement	
	207.06	Basis of Payment	
Item No. 5	(2020 SS)	Mr. Beeson	pg 32
	909.05	White and Yellow Waterborne Traffic Paint	
Item No. 6	(2020 SS)	Mr. Beeson	pg 36
	702.05	Proportioning	
	702.07	Mixing	
	702.12	Consistency	

cc: Committee Members
FHWA
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STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO SPECIAL PROVISIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The RSP for cell modems at signal controllers has become outdated. The Airlink GX440 (4G) is no longer manufactured and the model has been removed from the Department's approved list of Traffic Signal and ITS Control Equipment.

PROPOSED SOLUTION: Update the RSP and have it refer back to the approved materials list to minimize the need for future changes.

APPLICABLE STANDARD SPECIFICATIONS: 922.02(f)

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: 502-3.05

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: RSP 922-T-196

PAY ITEMS AFFECTED: No (relevant item is 805-08244, cellular modem kit)

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Yes, Traffic Standards Subcommittee

IMPACT ANALYSIS (attach report): Yes

Submitted By: Joe Bruno on behalf of Dave Boruff

Title: Sr. Engineer of Signals & Markings

Organization: INDOT Traffic Administration

Phone Number: (317) 234-7949

Date: 5/28/19

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO SPECIAL PROVISIONS

IMPACT ANALYSIS REPORT CHECKLIST

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

Does this item appear in any other specification sections? 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? N/A

Will this proposal reduce operational costs or maintenance effort? No

Will this item improve safety:

- For motorists? No
- For construction workers? No

Will this proposal improve quality for:

- Construction procedures/processes? Yes
- Asset preservation? No
- Design process? Yes

Will this change provide the contractor more flexibility? 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: No

REVISION TO SPECIAL PROVISIONS
922-T-196 CONTROLLER CELLULAR MODEM

(Note: Proposed changes shown highlighted gray)

922-T-196 CONTROLLER CELLULAR MODEM

(Revised 05-02-19)

The Standard Specifications are revised as follows:

SECTION 922, AFTER LINE 520, INSERT AS FOLLOWS:

8. Cellular Modems

a. Service Provider

All data, power and antenna cables, and all supplemental hardware shall be provided. The modem shall be compatible with the Department's current cellular carriers/providers, ~~(Verizon as of 07/2007)~~ ~~and~~ the traffic control device communications software, and the closed loop communications software that it is supplied for.

b. Modem Hardware

Cell modems shall be ~~Airlink GX440 (4G) or similar modem with the following specifications: The cellular modem shall be capable operating in CDMA dual mode (both 800MHz cellular and 1.9GHz PCS bands), supporting both circuit switched and 1XRTT packet switched services. The operating voltage range shall include 12V and 24V DC and shall draw less than 250mA while transmitting and receiving at 12V DC. The modem shall have LED indications for power, signal status/strength, and TX/RX either separately or combined. The serial interface shall be RS232 with a DB9 (male or female) connector~~ selected from the Department's list of approved Traffic Signal and ITS Control Equipment.

c. Modem Antenna

~~The RF antenna connection shall be a 50Ω TNC connector. The antenna shall be a low profile, puck style, flat mount dual band, (800 and 1900MHz) with low loss RG58 cable and TNC connector.~~ The modem antenna shall be selected from the Department's list of approved Traffic Signal and ITS Control Equipment. The antenna connectors for cellular service, GPS, and WiFi shall be configured to connect to the cellular modem.

d. Modem Software

The modem configuration shall be editable and viewable with MS-Windows provided software or with proprietary software that is included and designed to run on a MS-Windows operating system. The software shall auto-detect connection parameters and display settings when connected.

e. Installation and Support

The Department will supply the SIM card for the cellular modem.

~~Service and activation shall be requested or confirmed for each cellular device to be installed prior to installation.~~ The ~~ESN~~ serial number ~~and 10-digit phone number~~ shall be clearly labeled on the exterior of the modem. The cellular modem shall be installed,

REVISION TO SPECIAL PROVISIONS

922-T-196 CONTROLLER CELLULAR MODEM

configured, and tested to allow data communication ~~from the central closed loop software to the field master and subsequent secondary controllers, or~~ directly to a secondary controller ~~per the design~~. All data, power and antenna cables, and all supplemental mounting hardware shall be installed. The modem shall be powered by the cabinet power supply from a terminal location on the cabinet back panel or the power distribution panel. The ~~A low profile~~ antenna shall be mounted externally and the mounting location shall include~~s~~ a watertight seal. ~~The antenna shall have no more than 3 ft excess RG58 cable in the cabinet.~~

Three years of product support by the manufacturer shall be provided with the cellular modem. The cellular modem shall be preloaded onto the Department's Traffic Management Enterprise Cloud Manager, ECM, account.

COMMENTS AND ACTION

922-T-196 CONTROLLER CELLULAR MODEM

DISCUSSION:

Motion: Second: Ayes: Nays: FHWA Approval:	Action: _____ Passed as Submitted _____ Passed as Revised _____ Withdrawn
Standard Specifications Sections referenced and/or affected: 922.02(f) pg 1104 Recurring Special Provision affected: 922-T-196 CONTROLLER CELLULAR MODEM Standard Drawing affected: NONE Design Manual Sections affected: 502-3.05 GIFE Sections cross-references: NONE	_____ 2022 Standard Specifications _____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update _____ SiteManager Update

Mr. Beeson
Date: 6/20/19

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEMS(S) ENCOUNTERED: Section 203.24 has been revised numerous times due to revisions in DCP and LWD testing. In addition, these revisions were performed without reviewing the complete section which results in confusion. Maximum deflection of aggregate over soils is performed with the test section, which is cumbersome.

PROPOSED SOLUTION: Specifications are organized and new tables are added for maximum average deflection for various aggregate thickness over soils. Since these changes affect sections 301, 302, and 303 also, we revised to accommodate the change.

APPLICABLE STANDARD SPECIFICATIONS: 203.24, 301, 302, and 303

APPLICABLE STANDARD DRAWINGS: NA

APPLICABLE DESIGN MANUAL SECTION: NA

APPLICABLE SECTION OF GIFE: Yes

APPLICABLE RECURRING SPECIAL PROVISIONS: Yes, create new RSP

PAY ITEMS AFFECTED: NA

APPLICABLE SUB-COMMITTEE ENDORSEMENT: JTRP and District material Engineers group

IMPACT ANALYSIS (attach report): NA

Submitted by: Matt Beeson for Nayyar Siddiki

Title: State Materials Engineer

Organization: Office of Materials Management and Geotechnical Services Section

Phone Number: 317-522-9662

Date: 05/31/2019

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

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: No

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? No

For construction workers? N/A

Will this proposal reduce operational costs or maintenance effort? yes

Will this item improve safety:

For motorists? No

For construction workers? N/A

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? N/A

Design process? Yes

Will this change provide the contractor more flexibility? Yes

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

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

Is this proposal needed for compliance with:

Federal or State regulations:

AASHTO or other design code:

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 203 – EXCAVATION AND EMBANKMENT
203.24 METHOD OF MAKING STRENGTH, STIFFNESS AND DENSITY TESTS
SECTION 301 – AGGREGATE BASE
301.03 PREPARATION OF SUBGRADE
301.05 SPREADING
301.06 COMPACTING
SECTION 302 – SUBBASE
302.05 SPREADING
SECTION 303 – AGGREGATE PAVEMENTS OR SHOULDERS
303.05 SPREADING
303.06 COMPACTING

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 203, BEGIN LINE 1125, DELETE AND INSERT AS FOLLOWS:

203.24 Method of Making Strength, Stiffness and Density Tests

The strength of *chemically modified or* compacted soils will be determined by DCP in accordance with ITM 509. ~~and t~~*T*he stiffness of *chemically modified soils or* aggregates will be determined by the ~~Light Weight Deflectometer,~~ LWD~~,~~ in accordance with ITM 508. The *density of soils and aggregates, as a* percent of compaction, ~~shall~~*will* be based on the maximum dry densities unless otherwise specified or directed. ~~F~~*DCP f*ield compaction tests will be performed in accordance with 203.23. *LWD and density field compaction tests will be performed in accordance with this section.* ~~and t~~*T*he required compaction *shall be* obtained before additional material is placed.

(a) Laboratory

The DCP criteria will be established on representative soils by performing ASTM D 1140, AASHTO T 88, AASHTO T 89, AASHTO T 90, and AASHTO T 99 using Method A for soils and Method C for granular materials.

The optimum moisture content, maximum dry density, and gradation of aggregates will be determined by performing AASHTO T 99 Method C, AASHTO T 11, and AASHTO T 27 on representative samples of the aggregates.

(b) Field

The soil strength of compacted soils or compacted chemically modified soils will be determined by DCP in accordance with ITM 509 and the stiffness of chemically modified soils or aggregates will be determined by LWD in accordance with ITM 508. The moisture content will be determined in accordance with ITM 506 *or AASHTO T 255*.

~~The~~*As an alternative, in situ* field density ~~determination shall be made~~*may be determined* in accordance with AASHTO T 191*, except as listed below. The maximum dry density of the soil shall be determined by* ~~or~~ ITM 512. ~~except as follows:~~

1. If AASHTO T 191 is used, the sand used for the test shall be silica sand in accordance with the gradation as follows:

REVISION TO STANDARD SPECIFICATIONS

SECTION 203 – EXCAVATION AND EMBANKMENT
203.24 METHOD OF MAKING STRENGTH, STIFFNESS AND DENSITY TESTS
SECTION 301 – AGGREGATE BASE
301.03 PREPARATION OF SUBGRADE
301.05 SPREADING
301.06 COMPACTING
SECTION 302 – SUBBASE
302.05 SPREADING
SECTION 303 – AGGREGATE PAVEMENTS OR SHOULDERS
303.05 SPREADING
303.06 COMPACTING

Passing the No. 20 (850 µm) sieve - 98 to 100%
Passing the No. 40 (425 µm) sieve - 0 to 35%
Passing the No. 70 (212 µm) sieve - 0 to 2%

Sand such as Wedron Silica Sand No. 4075 or Ottawa 2.8 Blasting Sand has been found to be acceptable.

2. If particles larger than those that can pass through a No. 4 (4.75 mm) sieve for soil and a 3/4 in. (19 mm) sieve for granular material are encountered, corrections shall be made so that the density obtained is for the minus No. 4 (4.75 mm) or 3/4 in. (19 mm) only. After the densities are determined, the degree of compaction shall be computed by the following formula:

$$\text{Percent Compaction} = \frac{\text{In Place Density, pcf}}{\text{Maximum Density, pcf}} \text{ x } 100$$

3. Other approved types of field density tests may be used for control purposes after density values corresponding to those obtained by either of the methods set out above have been established.

4. All references to soils in these methods of tests shall be interpreted to mean either or both soil and granular materials.

~~The compaction~~*Acceptance testing* of chemically modified soils and coarse aggregates will be determined by LWD testing in accordance with ITM 508. ~~The moisture content will be determined in accordance with AASHTO T 255 or ITM 506.~~*The maximum allowable deflection will be determined from a test section or will be specified.* The compaction procedures *for coarse aggregates* shall be in accordance with 203.23, 215, 301, 302, and 303. ~~Compaction of aggregate shall not occur if the moisture content of the aggregate is greater than 6.0%.~~*Proofrolling of compacted aggregate shall be performed in accordance with 203.26 to cover the whole grade for sections 100 ft long and 8 ft wide or more.*

~~The maximum allowable deflection will be determined from a test section or will be specified. Acceptance testing with a LWD will be in accordance with ITM 508. The optimum moisture content and gradation will be determined by performing AASHTO T 99~~

REVISION TO STANDARD SPECIFICATIONS

SECTION 203 – EXCAVATION AND EMBANKMENT
203.24 METHOD OF MAKING STRENGTH, STIFFNESS AND DENSITY TESTS
SECTION 301 – AGGREGATE BASE
301.03 PREPARATION OF SUBGRADE
301.05 SPREADING
301.06 COMPACTING
SECTION 302 – SUBBASE
302.05 SPREADING
SECTION 303 – AGGREGATE PAVEMENTS OR SHOULDERS
303.05 SPREADING
303.06 COMPACTING

~~Method C, AASHTO T 11, and AASHTO T 27 on representative samples of the aggregates.~~

The moisture content of the aggregate shall be between 4% and the optimum moisture content when the aggregate is delivered to the project. Water shall not be added to the aggregate on the grade. Samples for moisture content testing will be taken on the grade from the first truck of the day. The frequency of the moisture content test for aggregates will be a minimum of one test for each day of aggregate placement.

The maximum allowable deflection for chemically modified soils and aggregate over chemically modified *and untreated* soils shall be in accordance with the following:

Table 1. Maximum Allowable Average Deflection for Chemically Modified Soils and Aggregate over Chemically Modified Soils

Material Type	~~Maximum~~ Allowable *Average* Deflection (mm)	*Maximum Allowable Deflection at a Single Test Location (mm)*
Lime Modified Soil	≤ 0.30	*0.35*
Cement Modified Soil	≤ 0.27	*0.31*
Aggregate over Lime Modified Soil	≤ 0.30	*0.35*
Aggregate over Cement Modified Soil	≤ 0.27	*0.31*

~~Table 1~~

Table 2. Large Areas of Aggregate over Untreated Soils: Where Proofrolling Can Be Performed

Material Thickness	*Allowable Average Deflection (mm)*	*Maximum Allowable Deflection at a Single Test Location (mm)*
6 in. Thick Coarse Aggregate No. 53	*≤ 0.51*	*0.57**
12 in. Thick Coarse Aggregate No. 53	*≤ 0.34*	*0.40***
18 in. Thick Coarse Aggregate No. 53	*≤ 0.31*	*0.35***

* *When allowable deflection exceeds this value, the Contractor shall undercut 12 in. and replace with coarse aggregate No. 53. The failed area shall be delineated prior to excavation. Deflection will be measured based on 6 in. thick coarse aggregate No 53.*
** *Recompaction*

REVISION TO STANDARD SPECIFICATIONS

SECTION 203 – EXCAVATION AND EMBANKMENT
203.24 METHOD OF MAKING STRENGTH, STIFFNESS AND DENSITY TESTS
SECTION 301 – AGGREGATE BASE
301.03 PREPARATION OF SUBGRADE
301.05 SPREADING
301.06 COMPACTING
SECTION 302 – SUBBASE
302.05 SPREADING
SECTION 303 – AGGREGATE PAVEMENTS OR SHOULDERS
303.05 SPREADING
303.06 COMPACTING

Table 3. Small Areas of Aggregate over Untreated Soils: Where Proofrolling Cannot be Performed

Material Thickness	*Allowable Average Deflection (mm)*	*Maximum Allowable Deflection at a Single Test Location (mm)*
6 in. Thick Coarse Aggregate No. 53	*≤ 0.60*	*0.65**
12 in. Thick Coarse Aggregate No. 53	*≤ 0.47*	*0.52***
18 in. Thick Coarse Aggregate No. 53	*≤ 0.44*	*0.49***

* *When allowable deflection exceeds this value, the Contractor shall undercut 12 in. and replace with coarse aggregate No. 53. The failed area shall be delineated prior to excavation. Deflection will be measured based on 6 in. thick coarse aggregate No 53.*

** *Recompaction*

Notes:

1. *The Contractor shall perform the moisture test on in-situ soils prior to placement of coarse aggregate. If the result of the moisture test is > 13%, the Engineer will contact the Geotechnical Section.*

Test sections shall be constructed in accordance with ITM 514 in the presence of a representative of the Office of Geotechnical Services for other materials not included in *the* Table~~s 1~~ to determine the maximum allowable deflection.

Acceptance of the compaction of chemically modified soils or aggregate will be determined by averaging three LWD tests obtained at a random station determined in accordance with ITM 802, for each 1,500 ft length of chemically modified soil for each two-lane pavement section, or for each 800 t of compacted aggregate. Where the construction area is 8 ft wide or more, the location of the three tests will be at 2 ft from each edge of the construction area and at 1/2 of the width of the construction area. Where the construction area is less than 8 ft wide, the location of the three LWD tests will be spaced at 1/2 of the width of the construction area and spaced 5 ft apart in the longitudinal direction. The average deflection shall be equal to or less than the maximum allowable *average* deflection allowed in *the* Table*s above* ~~1~~ or determined by the test section.

If the average deflection is not equal to or less than the maximum allowable deflection for aggregates, a sample of the aggregate shall be obtained in accordance with AASHTO T 2 and a moisture content test shall be performed in accordance with AASHTO T 255 *or ITM 506* to determine if the moisture content is within the acceptable limits. If the moisture content is not within the acceptable limits, additional LWD tests may be taken at the same locations after 24 h if the moisture content is within the acceptable limits at the time of testing. The aggregate will be accepted if the LWD tests are equal to or less than the maximum allowable deflection.

REVISION TO STANDARD SPECIFICATIONS

SECTION 203 – EXCAVATION AND EMBANKMENT
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301.05 SPREADING
301.06 COMPACTING
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302.05 SPREADING
SECTION 303 – AGGREGATE PAVEMENTS OR SHOULDERS
303.05 SPREADING
303.06 COMPACTING

SECTION 301, BEGIN LINE 17, DELETE AND INSERT AS FOLLOWS:

301.03 Preparation of Subgrade

Subgrade shall be compacted in accordance with 207.04. In areas of ~~500~~*100* ft or less in length, or for temporary runarounds, proofrolling will not be required. Proofrolling will not be required in trench sections where proofrolling equipment cannot be used.

301.04 Temperature Limitations

Aggregate shall not be placed when the air temperature is less than 35°F. Aggregate shall not be placed on a frozen subgrade. Frozen aggregate shall not be placed.

301.05 Spreading

~~The moisture content of dense graded aggregate shall be between 4% and the optimum moisture content prior to placement when the aggregate is delivered to the project. Unless otherwise directed, water shall not be added to the aggregate on the grade.~~ The aggregate shall be spread in uniform lifts with a spreading and leveling device approved by the Engineer. The spreading and leveling device shall be capable of placing aggregate to the depth, width, and slope specified. The compacted depth of each lift shall be a minimum of 3 in. and a maximum of 6 in. The aggregate shall be handled and transported to minimize segregation and the loss of moisture. In areas inaccessible to mechanical equipment, approved hand spreading methods may be used.

301.06 Compacting

Dense graded aggregate shall be compacted to achieve the maximum allowable *average* deflection as determined with ~~the Light Weight Deflectometer,~~ LWD~~,~~ testing in accordance with ~~ITM 508~~*203.24(b)*. ~~Compaction shall not occur if the moisture content of the aggregate is greater than 6.0%. The maximum allowable deflection will be determined from a test section or will be specified. Test sections shall be constructed in accordance with ITM 514 for other materials not included in Table 1 to determine the maximum allowable deflection. The optimum moisture content will be determined in accordance with 203.24(a).~~

Samples for moisture content testing shall be taken on the grade from the first truck of the day. The frequency of the moisture content test for aggregates will be one test for each day of aggregate placement. The maximum allowable *average* deflection for aggregate over *the* chemically modified *and untreated* soils shall be in accordance with the ~~following:~~*tables shown in 203.24(b).*

REVISION TO STANDARD SPECIFICATIONS

SECTION 203 – EXCAVATION AND EMBANKMENT
203.24 METHOD OF MAKING STRENGTH, STIFFNESS AND DENSITY TESTS
SECTION 301 – AGGREGATE BASE
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SECTION 303 – AGGREGATE PAVEMENTS OR SHOULDERS
303.05 SPREADING
303.06 COMPACTING

~~Material Type~~	~~Maximum Allowable Deflection (mm)~~
~~Aggregate over Lime Modified Soil~~	~~0.30~~
~~Aggregate over Cement Modified Soil~~	~~0.27~~

~~Table 1~~

REVISION TO STANDARD SPECIFICATIONS

SECTION 203 – EXCAVATION AND EMBANKMENT
203.24 METHOD OF MAKING STRENGTH, STIFFNESS AND DENSITY TESTS
SECTION 301 – AGGREGATE BASE
301.03 PREPARATION OF SUBGRADE
301.05 SPREADING
301.06 COMPACTING
SECTION 302 – SUBBASE
302.05 SPREADING
SECTION 303 – AGGREGATE PAVEMENTS OR SHOULDERS
303.05 SPREADING
303.06 COMPACTING

SECTION 302, BEGIN LINE 32, DELETE AND INSERT AS FOLLOWS:

302.05 Spreading

~~The moisture content of the aggregate shall be between 4% and the optimum moisture content prior to placement when the aggregate is delivered to the project. Unless otherwise directed, water shall not be added to the aggregate on the grade.~~ The aggregate shall be spread in uniform lifts with a spreading and leveling device approved by the Engineer. The spreading and leveling device shall be capable of placing aggregate to the depth, width, and slope specified. The compacted depth of each lift shall be a minimum of 3 in. and a maximum of 6 in. The aggregate shall be handled and transported to minimize segregation and the loss of moisture. In areas inaccessible to mechanical equipment, approved hand spreading methods may be used.

REVISION TO STANDARD SPECIFICATIONS

SECTION 203 – EXCAVATION AND EMBANKMENT
203.24 METHOD OF MAKING STRENGTH, STIFFNESS AND DENSITY TESTS
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301.03 PREPARATION OF SUBGRADE
301.05 SPREADING
301.06 COMPACTING
SECTION 302 – SUBBASE
302.05 SPREADING
SECTION 303 – AGGREGATE PAVEMENTS OR SHOULDERS
303.05 SPREADING
303.06 COMPACTING

SECTION 303, BEGIN LINE 18, DELETE AND INSERT AS FOLLOWS:

303.03 Preparation of Subgrade

Subgrade shall be compacted in accordance with 207.04. In areas of ~~500~~*100* ft or less in length, or for temporary runarounds, proofrolling will not be required. Proofrolling will not be required in trench sections where proofrolling equipment cannot be used.

303.04 Temperature Limitations

Aggregate shall not be placed when the air temperature is less than 35°F. Aggregate shall not be placed on a frozen subgrade. Frozen aggregate shall not be placed.

303.05 Spreading

~~The moisture content of the aggregate shall be between 4% and the optimum moisture content prior to placement when the aggregate is delivered to the project. Unless otherwise directed, water shall not be added to the aggregate on the grade.~~ The aggregate shall be spread in uniform lifts with a spreading and leveling device approved by the Engineer. The spreading and leveling device shall be capable of placing aggregate to the depth, width, and slope specified. The compacted depth of each lift shall be a minimum of 3 in. and a maximum of 6 in., except where utilized as a shoulder. The compacted depth of a lift for a shoulder shall be a minimum of 3 in. and a maximum of 9 in. The aggregate shall be handled and transported to minimize segregation and the loss of moisture. In areas inaccessible to mechanical equipment, approved hand spreading methods may be used.

303.06 Compacting

Compaction shall be in accordance with ~~301.06~~*203.24(b)*.

All displacement or rutting of the compacted aggregate shall be repaired prior to placing subsequent material.

COMMENTS AND ACTION

203.24 METHOD OF MAKING STRENGTH, STIFFNESS AND DENSITY TESTS
301.03 PREPARATION OF SUBGRADE
301.05 SPREADING
301.06 COMPACTING
302.05 SPREADING
303.05 SPREADING
303.06 COMPACTING

DISCUSSION:

Motion: Second: Ayes: Nays: FHWA Approval:	Action: _____ Passed as Submitted _____ Passed as Revised _____ Withdrawn
Standard Specifications Sections referenced and/or affected: 203.24 pg 176-179, 301 pg 249-250, 302 pg 252, and 303 pg 254. Recurring Special Provision affected: NONE Standard Drawing affected: NONE Design Manual Sections affected: NONE GIFE Sections affected: SECTION 7	_____ 2022 Standard Specifications _____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update _____ SiteManager Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO SPECIAL PROVISIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Pre-compressed foam joints are being used more frequently in bridge contracts. This joint type is also proposed to be used in the new terminal joint standard drawings. Unique special provisions are currently being used as the specification requirement for these joints, which causes inconsistency in the materials, construction requirements, and payment of these joints.

PROPOSED SOLUTION: A new recurring special provision will be used to provide better control of the joint specifications.

APPLICABLE STANDARD SPECIFICATIONS: 724 – Structural Expansion Joints

APPLICABLE STANDARD DRAWINGS: E 724-PCFJ-01, E 503-BATJ-01 & 02 (New terminal joint drawings being proposed separately but utilizing pre-compressed foam joints)

APPLICABLE DESIGN MANUAL SECTION: 404-2.06(03) Expansion Joints, 402-7.02(03) Integral End Bent & 409-2.04(01) General Requirements (for terminal joint reference, which is being proposed separately)

APPLICABLE SECTION OF GIFE: 5.20 Expansion Joints (no change required), 8.7.4 Expansion Joints (terminal joints; no change required), Section 29 – Shop Plans & Falsework Drawings (do we need to specify who reviews, since standard specs already cover working drawings?)

APPLICABLE RECURRING SPECIAL PROVISIONS:

PAY ITEMS AFFECTED: 724-12461 Concrete for patching structural expansion joint (SFT) (new pay item related to the proposed specification), 724-12103 Pre-compressed foam joint (LFT) (will need to have current type of 'U' changed to 'R')

APPLICABLE SUB-COMMITTEE ENDORSEMENT: INDOT/ASCE Structures Committee has revised previous versions of the specification. The specification has also been reviewed by Jim Reilman (OMM), Derrick Hauser (Construction), and Elizabeth Phillips (Standards and Policy).

IMPACT ANALYSIS (attach report): yes

Submitted By: Peter White for Mark Orton
Title: Standards Engineer
Organization: Bridge, Bridge Design
Phone Number: 317-467-3461

Date: 5/16/19

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO SPECIAL PROVISIONS

IMPACT ANALYSIS REPORT CHECKLIST

Does this item appear in any other specification sections? It will appear in the E 503-BATJ-01 & 02 Standard Drawings that are currently being proposed separately

Will approval of this item affect the Approved Materials List? Not at this time. An approved material list will need to be implemented if this is eventually submitted as a standard specification.

Will this proposal improve:

Construction costs? Yes (patching is quantified which reduces contractor risk)

Construction time? No

Customer satisfaction? No

Congestion/travel time? No

Ride quality? No

Will this proposal reduce operational costs or maintenance effort? Yes (this joint type appears to perform better than the Expansion Joint Sealing System)

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? Yes

Will this change provide the contractor more flexibility? Yes

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

Can this item improve/reduce the number of potential change orders? 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 joint type is being used fairly frequently on bridge rehabilitation projects (46 instances of the new pay item being used in contracts through February 2019) and it will be used even more frequently once the new terminal joint standards are implemented. By creating a recurring special provision INDOT will be able to better control the implementation of this product.

REVISION TO SPECIAL PROVISIONS

PROPOSED NEW 724-X-XXX PRE-COMPRESSED FOAM JOINT

724-X-XXX PRE-COMPRESSED FOAM JOINT

(Adopted xx-xx-19)

Description

This work shall consist of removal of the existing expansion joint, if applicable, and furnishing and placing the new pre-compressed foam joint as shown on the plans and in accordance with 105.03.

Materials

Materials shall be in accordance with the following:

Bridge Deck Patching Concrete.....722
Rapid Set Patching Materials.....901.07

Pre-compressed foam joint and ancillary items associated with this item shall be supplied by one of the following:

EMSEAL
25 Bridle Lane
Westborough, MA 01581
www.emseal.com

LymTal International, Inc.
4150 South Lapeer Road
Lake Orion, MI 48359
www.lymtal.com

Silicone Specialties, Inc.
P.O. Box 50009
Tulsa, OK 74150
www.ssicm.com

Watson Bowman Acme Corporation
95 Pineview Drive
Amherst, NY 14228
www.wbacorp.com

Willseal, LLC
34 Executive Drive
Hudson, NH 03051
www.willseal.com

The joint shall be a micro cell, UV stable, hydrophobic or acrylic impregnated foam seal factory coated with traffic grade, fuel resistant silicone. The joint shall be rated as stable, per ASTM A 711, through a temperature range of -40˚F to 185˚F. The compatibility of the joint materials and the substrate materials shall be certified by the joint manufacturer.

The joint seal shall be sized to accommodate the anticipated thermal movement range shown on the plans. The nominal joint size shall meet or exceed the existing joint mean opening size at 60˚F as shown on the plans.

REVISION TO SPECIAL PROVISIONS

PROPOSED NEW 724-X-XXX PRE-COMPRESSED FOAM JOINT

The joint seal epoxy adhesive and silicone sealant shall be in accordance with the joint seal manufacturer's recommendations.

A Type C certification in accordance with 916, including the vendor name, product names, and a statement certifying the compatibility of the joint material and the substrate, shall be furnished for the joint.

Construction Requirements

The location and general appearance of the installed joint shall be as shown on the plans. The joint manufacturer shall prepare and submit working drawings in accordance with 105.02. Where bridge joint nosing is required, working drawings shall be submitted concurrently with the nosing working drawings. The working drawing shall include details of the assembly, installation details, manufacturer's joint and adhesive specifications, and joint setting widths for ambient temperatures between 40° F and 100° F. For joints constructed in phases, the joint width for the initial phase shall be established in accordance with the joint setting table. The joint width for each subsequent phase shall be equal to the field measurement of the joint constructed in the initial phase taken at the time of the subsequent phase joint construction.

A qualified representative of the joint manufacturer shall be present at the beginning of the work to ensure adequate workmanship and inspection of the joint installation.

Where an existing joint is to be replaced, the existing joint and adjacent concrete shall be removed to the limits shown on the plans. Additional concrete removal to ensure sound concrete adjacent to the joint area shall be as directed with no additional payment. Patching of adjacent concrete shall use bridge deck patching concrete or rapid setting patching materials.

The Contractor shall measure the existing opening perpendicular to the centerline of the joint to determine the installation opening. Using this information and movement and mean opening size from the plans, the manufacturer shall select a specific joint model for the size.

The joint area shall be cleaned as specified herein and in accordance with the manufacturer's guidance. Existing surfaces that will be in contact with the new joint shall be sandblasted and cleaned of all old joint seals, old materials or devices, bituminous material, dirt, grease, and all other deleterious material over the total area of the opening to receive the new joint in accordance with the manufacturer's recommendations. All areas to be in contact with the new joint shall be sound, clean, dry, and frost free. The use of heat will not be allowed to dry the adjacent surfaces.

The joint shall be sealed to the substrate with a field applied epoxy adhesive. Adhesives shall be used in accordance with the joint manufacturer's recommendations. All excess adhesive shall be removed before it has set. The epoxy material shall be stored, mixed, and placed in accordance with the manufacturer's recommendations. As a witness point, one set of the manufacturer's installation instructions shall be provided to the Engineer not less than one week prior to the beginning of joint placement.

REVISION TO SPECIAL PROVISIONS

PROPOSED NEW 724-X-XXX PRE-COMPRESSED FOAM JOINT

Joints shall be inspected for proper depth, width, alignment and preparation as shown on the plans. The joint shall be installed when the temperature is within the allowable range stated in the manufacturer's instructions, but not less than 40°F. Final adjustment of the seal shall be made as directed at the time of installation. All movement due to such factors as shrinkage, creep and deflection shall be accounted for prior to this final adjustment.

Prior to the epoxy curing, the Contractor shall force the tip of the silicone sealant between the substrate and the joint, and inject a corner bead of silicone sealant along the entire length of the joint. The Contractor shall tool the silicone sealant to blend with the substrate and silicone coating of the joint.

Method of Measurement

The pre-compressed foam joint will be measured by the linear foot along the joint. Patching of existing concrete as shown on the plans and as required by the Engineer will be measured by the square foot of actual surface area of patching. Individual areas of less than 1 sq ft in area will be considered as 1 sq ft. Areas greater than 1 sq ft will be recorded as the actual measurement of the repaired area to the nearest 0.1 sq ft.

Removal of the existing joint, removal of the concrete adjacent to the joint, epoxy adhesive, silicone sealant, and all other materials used in the installation of the joint will not be measured for payment.

Basis of Payment

The accepted quantities of pre-compressed foam joint will be paid for at the contract unit price per linear foot, complete in place. The cost of concrete for patching structural expansion joint areas as shown on the plans and as directed by the Engineer will be paid for at the contract unit price per square foot.

Payment will be made under:

Pay Item	**Pay Unit Symbol**
Concrete for Patching Structural Expansion Joint	SFT
Pre-Compressed Foam Joint	LFT

Areas where patching concrete structures exceeds an average of 4 in. in depth will be paid for at a price calculated by means of multiplying the contract unit price for the respective item by the following factors:

(a) for portions thereof whose average depth is greater than 4 in. but less than 6 in. 1.25

(b) for portions thereof whose average depth is greater than or equal to 6 in. but less than 8 in. 1.50

(c) for portions thereof whose average depth is greater than or equal to 8 in. but less than 10 in. 1.75

REVISION TO SPECIAL PROVISIONS

PROPOSED NEW 724-X-XXX PRE-COMPRESSED FOAM JOINT

(d) for portions thereof whose average depth is greater than or equal to 10 in. but less than 12 in...2.00

(e) for all portions thereof whose average depth is greater than or equal to 12 in., the work shall be done as extra work. Payment will be made in accordance with 104.03.

The cost of existing joint removal, epoxy adhesive, silicone sealant, and all other materials shall be included in the cost of the pre-compressed foam joint pay item.

The cost of removing the existing concrete, furnishing, hauling, and placing all materials, preparing the surface, and all necessary incidentals shall be included in the pay items in this section.

The cost of replacing damaged reinforcement shall be included in the cost of patching concrete structures. The cost of supplemental reinforcing bars and mechanical anchors shall be included in the pay items in this section.

COMMENTS AND ACTION

724-X-XXX PRE-COMPRESSED FOAM JOINT

DISCUSSION:

Motion: Second: Ayes: Nays: FHWA Approval:	Action: _____ Passed as Submitted _____ Passed as Revised _____ Withdrawn
Standard Specifications Sections referenced and/or affected: SECTION 724 pg 760. Recurring Special Provision affected: NONE Standard Drawing affected: E 724-PCFJ-01, E 503-BATJ-01 and -02. Design Manual Sections affected: NONE GIFE Sections cross-references: 5.20 Expansion Joints (no change required), 8.7.4 Expansion Joints (terminal joints; no change required), Section 29 – Shop Plans & Falsework Drawings.	_____ 2022 Standard Specifications _____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update _____ SiteManager Update

Mr. Beeson
Date: 6/20/19

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Coarse aggregate No. 53 compaction is problematic when soils moisture is above the optimum moisture content. This causes deeper excavation for subgrade foundation. This results in numerous change orders in subgrade construction.

PROPOSED SOLUTION: Foundation moisture results in the instability in No. 53 compaction which we are solving by breaking 12 in. of No. 53 into 9 in. No. 53 over 3 in. of No. 5 or No. 8 with geotextile. This provides capillary water break and coarse aggregate No. 53 can be compacted. We have been using this USP on numerous projects.

APPLICABLE STANDARD SPECIFICATIONS: 207

APPLICABLE STANDARD DRAWINGS: NA

APPLICABLE DESIGN MANUAL SECTION: NA

APPLICABLE SECTION OF GIFE: Yes

APPLICABLE RECURRING SPECIAL PROVISIONS: yes, create a new RSP

PAY ITEMS AFFECTED: NO

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Geotechnical group and Pavement engineering

IMPACT ANALYSIS (attach report):

Submitted By: Matt Beeson for Nayyar Siddiki

Title: State Materials Engineer

Organization: Office of Materials Management and Office of Geotechnical Services

Phone Number: 317 522 9662

Date: 05/22/19

Mr. Beeson
Date: 6/20/19

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

IMPACT ANALYSIS REPORT CHECKLIST

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

Does this item appear in any other specification sections? No

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

Will this proposal improve:

Construction costs? Yes

Construction time? Na

Customer satisfaction? Yes

Congestion/travel time? Na

Ride quality? Na

Will this proposal reduce operational costs or maintenance effort? yes

Will this item improve safety:

For motorists? No

For construction workers? NA

Will this proposal improve quality for:

Construction procedures/processes? yes

Asset preservation? NA

Design process? Yes

Will this change provide the contractor more flexibility? yes

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

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

REVISION TO STANDARD SPECIFICATIONS

SECTION 207 - SUBGRADE
201.02 MATERIALS
207.03 CONSTRUCTION REQUIREMENTS
207.04 SUBGRADE TREATMENT TYPES
207.05 METHOD OF MEASUREMENT
207.06 BASIS OF PAYMENT

(Note: Proposed changes shown highlighted gray)

SUBGRADE TREATMENT TYPE ID

The Standard Specifications are revised as follows:

SECTION 207, BEGIN LINE 9, INSERT AS FOLLOWS:

207.02 Materials

Materials shall be in accordance with the following:

Chemical Modifiers	215.02
Coarse Aggregate, Class D or Higher, Size No. 5, 8, 43, 53, or 73	904
Geogrid, Type IB	918.05
Geocell Confining System	214
Geotextile for Pavement and Subgrade	*918.02(c)*
Water	913.01

Air-cooled blast furnace slag shall not be used.

SECTION 207, BEGIN LINE 31, INSERT AS FOLLOWS:

207.03 Construction Requirements

(a) Subgrade Construction Methods

The subgrade shall be constructed uniformly transversely across the width of the pavement including shoulders or curbs unless shown otherwise on the plans, by one of the following methods:

(a) chemical modification in accordance with 215;

(b) aggregate No. 53 in accordance with 301;

(c) geogrid in accordance with 214 placed under aggregate No. 53 in accordance with 301, or

(d) soil compaction to 100% of maximum dry density~~.~~;

(e) geotextile in accordance with 214 placed under aggregate No. 5, 8, and 53 in accordance with 301.

REVISION TO STANDARD SPECIFICATIONS

SECTION 207 - SUBGRADE
201.02 MATERIALS
207.03 CONSTRUCTION REQUIREMENTS
207.04 SUBGRADE TREATMENT TYPES
207.05 METHOD OF MEASUREMENT
207.06 BASIS OF PAYMENT

Longitudinally, the treatment may vary depending on the method of construction.

SECTION 207, BEGIN LINE 71, INSERT AS FOLLOWS:

207.04 Subgrade Treatment Types

The subgrade treatment type shall be as specified on the contract plans. If required, the subgrade foundation shall be corrected as directed by the Engineer prior to subgrade treatment.

Type	Subgrade Description
I	24 in. of soil compacted in accordance with 203.23
IA	[blank]
IB	14 in. chemical soil modification
IC	12 in. coarse aggregate No. 53 in accordance with 301
ID	*12 in. of coarse aggregate with a geotextile in accordance with 918.02(c)*
II	6 in. coarse aggregate No. 53 in accordance with 301
IIA	8 in. chemical soil modification
III	In-place compaction in accordance with 203.23
IV	12 in. coarse aggregate No. 53 with Type IB geogrid in accordance with 214
IVA	12 in. coarse aggregate with Geocell confining system in accordance with 214
V	3 in. of subgrade excavated and replaced with 3 in. coarse aggregate No. 53

Type ID subgrade treatment shall be constructed with 9 in. of coarse aggregate No. 53 over 3 in. of coarse aggregate No. 5 or No. 8. A geotextile in accordance with 918.02(c) shall be placed above and below the layer of No. 5 or No. 8 coarse aggregate.

In areas where shallow utilities are encountered or chemical modification is not allowed, the Contractor may submit a request to the Engineer to substitute Type IC for Type IB.

SECTION 207, BEGIN LINE 107, INSERT AS FOLLOWS:

207.05 Method of Measurement

Subgrade treatment will be measured in both cut and fill areas by the square yard per type. Chemicals for modification, excavation, aggregates, *geotextile,* and geogrid materials will not be measured.

The undercutting of rock, where encountered, will be measured in accordance with 203.27(b).

SECTION 207, BEGIN LINE 124, INSERT AS FOLLOWS:

Payment will be made under:

REVISION TO STANDARD SPECIFICATIONS

SECTION 207 - SUBGRADE
201.02 MATERIALS
207.03 CONSTRUCTION REQUIREMENTS
207.04 SUBGRADE TREATMENT TYPES
207.05 METHOD OF MEASUREMENT
207.06 BASIS OF PAYMENT

Pay Item	**Pay Unit Symbol**
Subgrade Treatment, Type _____	SYS

The cost of subgrade treatments including testing, sampling, aggregates, chemicals for modification, geogrid, geotextile and geocell confining system, coarse aggregate for subgrade Type IC, *Type ID,* Type II, Type IV, Type IVA, Type V, water, and the excavation required, shall be included in the cost of the pay item.

COMMENTS AND ACTION

201.02 MATERIALS
207.03 CONSTRUCTION REQUIREMENTS
207.04 SUBGRADE TREATMENT TYPES
207.05 METHOD OF MEASUREMENT
207.06 BASIS OF PAYMENT

DISCUSSION:

Motion: Second: Ayes: Nays: FHWA Approval:	Action: _____ Passed as Submitted _____ Passed as Revised _____ Withdrawn
Standard Specifications Sections referenced and/or affected: SECTION 207 begin pg 218. Recurring Special Provision affected: NONE Standard Drawing affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	_____ 2022 Standard Specifications _____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update _____ SiteManager Update

Mr. Beeson
Date: 6/20/19

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: When editing the 909.05 section from February 2019's meeting, the deletion of a subsection was missed.

PROPOSED SOLUTION: Delete the 909.05 subsection shown in the attachment. The approved list has been deleted.

APPLICABLE STANDARD SPECIFICATIONS: 909.05

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE: None

APPLICABLE RECURRING SPECIAL PROVISIONS: None

PAY ITEMS AFFECTED: None

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

IMPACT ANALYSIS (attach report):

Submitted By: Matt Beeson for Jim Reilman

Title: State Materials Engineer

Organization: INDOT

Phone Number: 317-522-9662

Date: 5/23/19

Mr. Beeson
Date: 6/20/19

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

IMPACT ANALYSIS REPORT CHECKLIST

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

Does this item appear in any other specification sections? No

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

Will this proposal improve:

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

Will this proposal reduce operational costs or maintenance effort? NA

Will this item improve safety:

- For motorists? NA
- For construction workers? NA

Will this proposal improve quality for:

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

Will this change provide the contractor more flexibility? NA

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

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

Is this proposal needed for compliance with:

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

Is this item editorial? It could be considered editorial

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

REVISION TO STANDARD SPECIFICATIONS

SECTION 909 – PAINT AND LIQUID EPOXY
909.05 WHITE AND YELLOW WATERBORNE TRAFFIC PAINT

The Standard Specifications are revised as follows:

SECTION 909, BEGIN LINE 339, DELETE AS FOLLOWS:

~~**3. Formulation Approval**~~

~~The manufacturer shall obtain approval of the waterborne traffic paint formulation prior to furnishing the paints. Only waterborne traffic paints from the Department's list of approved Coating Formulations shall be used. Waterborne traffic paint formulations will be placed and maintained on the Department's list of approved Coating Formulations in accordance with ITM 606.~~

COMMENTS AND ACTION

909.05 WHITE AND YELLOW WATERBORNE TRAFFIC PAINT

DISCUSSION:

Motion: Second: Ayes: Nays: FHWA Approval:	Action: _____ Passed as Submitted _____ Passed as Revised _____ Withdrawn
Standard Specifications Sections referenced and/or affected: 909.05 pg 988.	_____ 2022 Standard Specifications _____ Revise Pay Items List
Recurring Special Provision affected: NONE	_____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date:
Standard Drawing affected: NONE	_____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date:
Design Manual Sections affected: NONE	_____ Standard Drawing Effective
GIFE Sections cross-references: NONE	_____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update _____ SiteManager Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED:

Recent changes to the specification allow a maximum slump of 6 inches for Class A concrete. In order to actually produce a concrete mix in a range from 4 inches to 6 inches and also remain under the maximum water-cement ratio of 0.450 a water reducing admixture must be used. This is a difficult situation to monitor for construction since water-cement ratio testing is not typically performed on Class A concrete. The standard specification only requires a water reducing admixture for Class C concrete.

PROPOSED SOLUTION:

Require a water reducing admixture in all Class A concrete

APPLICABLE STANDARD SPECIFICATIONS: 702.05, 702.07, 702.12 (revision was approved at 4/19/18 meeting and was shown in RSP 702-R-679. This RSP was incorporated into 2020 SS but the revision shown in 702.12 was unintentionally left out)

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: This proposal was reviewed by the INDOT-IRMCA working committee on 4/9/19.

IMPACT ANALYSIS (attach report):

Submitted By: Matt Beeson

Title: State Materials Engineer

Organization: INDOT Office of Materials Management

Phone Number: 317-522-9662

Date: 5/6/19

Mr. Beeson
Date: 6/20/19

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

IMPACT ANALYSIS REPORT CHECKLIST

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

Does this item appear in any other specification sections? No

Will approval of this item affect the Approved Materials List? No

Will this proposal improve:

Construction costs? N/A

Construction time? N/A

Customer satisfaction? Yes

Congestion/travel time? N/A

Ride quality? Yes

Will this proposal reduce operational costs or maintenance effort? NO

Will this item improve safety:

For motorists? N/A

For construction workers? N/A

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? Yes

Design process? N/A

Will this change provide the contractor more flexibility? No

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

REVISION TO STANDARD SPECIFICATIONS

SECTION 702 – STRUCTURAL CONCRETE
702.05 PROPORTIONING
702.07 MIXING
702.12 CONSISTENCY

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 702, BEGIN LINE 116, DELETE AND INSERT AS FOLLOWS:

Class A concrete shall contain a water-reducing admixture. Class C concrete shall contain either a water-reducing admixture or both a water-reducing admixture and a retarding admixture. The types used shall not be changed during any individual contiguous pour. *For class C concrete* ~~T~~*t*he types of admixtures to be used shall be selected based on the expected concrete or air temperature. When either temperature is expected to be 65°F or above, both a water-reducing admixture and a retarding admixture shall be used. A water-reducing admixture shall be used when both temperatures are expected to be below 65°F unless retardation is required due to the structure design or the proposed pour sequence such as the requirements for floor slab pours set out in 704.04. If class C concrete contains ground granulated blast furnace slag, the producer may propose an alternate temperature threshold for including a retarding admixture. Air-entraining cements will not be allowed in class C concrete.

SECTION 702, BEGIN LINE 237, INSERT AS FOLLOWS:

Concrete that is not within the specified slump limits at time of placement shall not be used. Except as required in 702.05 for *class A and* class C concrete, chemical admixtures type A, type B, type D, type F, and type G, may be used in the concrete. Chemical admixtures type C and type E will be allowed only with prior written permission.

SECTION 702, BEGIN LINE 525, DELETE AND INSERT AS FOLLOWS:

702.12 Consistency

Slump will be measured in accordance with 505 and shall be no less than 1 in. and no more than ~~4~~*6* in. except for concrete placed in foundation seals.

COMMENTS AND ACTION

702.05 PROPORTIONING
702.07 MIXING
702.12 CONSISTENCY

DISCUSSION:

Motion: Second: Ayes: Nays: FHWA Approval:	Action: _____ Passed as Submitted _____ Passed as Revised _____ Withdrawn
Standard Specifications Sections referenced and/or affected: 702 pg 579, 581, and 588. Recurring Special Provision affected: NONE Standard Drawing affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	_____ 2022 Standard Specifications _____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update _____ SiteManager Update