



INDIANA DEPARTMENT OF TRANSPORTATION

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Eric Holcomb, Governor
Joe McGuinness, Commissioner

AGENDA

August 20, 2020 Standards Committee Meeting

MEMORANDUM

August 3, 2020

TO: Standards Committee

FROM: Scott Trammell, Secretary

RE: Agenda for the August 20, 2020 Standards Committee Meeting

A Standards Committee meeting is scheduled for 09:00 a.m. on August 20, 2020 will be held virtually via *Teams* (Microsoft application). Please contact Scott Trammell (stammell@indot.in.gov) for instructions on how to join this event.

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 July 16, 2020 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

[Item No. 2 \(7/16/20\)](#) [Mr. Reilman](#) [pg 3](#)

2020 Standard Specifications:

105.02 Plans and Working Drawings

NEW BUSINESS

[Item No. 1](#) [Mr. Reilman](#) [pg 8](#)

2020 Standard Specifications:

502.10 Concrete Mixing and Transportation

504.04(d) Straw

[Item No. 2](#) [Mr. Norton](#) [pg 13](#)

2020 Standard Specifications:

915.04 Elastomeric Bearings

915.05 Bearing Assemblies with
Polytetrafluoroethylene, PTFE, Sliding
Surfaces

cc: Committee Members
FHWA
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PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: There have been occurrences where it has been apparent that design calculations that accompany working drawings have not been reviewed by another individual.

PROPOSED SOLUTION: Require an independent review of design calculations for working drawings by a second, qualified individual.

APPLICABLE STANDARD SPECIFICATIONS: 105.02

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE: section 29

APPLICABLE RECURRING SPECIAL PROVISIONS: None

PAY ITEMS AFFECTED: None

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc: Jim Reilman, Pete White

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman

Title: State Materials Engineer

Organization: INDOT, Office of Materials & Tests

Phone Number: 317-522-9692

Date: 6/12/2020

IMPACT ANALYSIS REPORT CHECKLIST

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

Does this item appear in any other specification sections? No

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

Will this proposal improve:

Construction costs? N/A

Construction time? N/A

Customer satisfaction? N/A

Congestion/travel time? N/A

Ride quality? N/A

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

Will this item improve safety:

For motorists? N/A

For construction workers? N/A

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? N/A

Design process? Yes

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:

SECTION 105 - CONTROL OF WORK

105.02 Plans and Working Drawings

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 105, BEGIN LINE 17, INSERT AS FOLLOWS:

105.02 Plans and Working Drawings

Road plans will show in detail structures of up to and including 20 ft spans, lines, grades, typical cross sections of the improvement, and general cross sections. They may also show general features of bridges. Bridge plans will show general plans and details of bridges.

Working drawings as defined in 101.74 shall be furnished.

All working drawings and design calculations shall include the contract number, the Contractor's name, and contact person.

Working drawings ~~required for approval for construction purposes~~ shall be submitted as soon as practical after contract award in a format acceptable to the Engineer. Working drawings will be reviewed for design features only. The Contractor shall be responsible for dimensions, accuracy, and fit of work. Welding symbols used on working drawings shall be those shown in AWS A2.4 standards.

Design calculations required for approval for construction purposes shall be submitted as soon as practical after contract award in a format acceptable to the Engineer. When requested, a longhand example of the design methodology shall be furnished if the design calculations are in a computer-printout format.

Working drawings and design calculations *for permanent work items* shall be signed by and shall bear the seal of a professional engineer. ~~All working drawings and design calculations shall include the contract number, the Contractor's name, and contact person~~ *Design calculations and drawings shall be checked for accuracy by a second qualified individual. This individual shall include their initials on the drawings and calculations. The qualifications of the checker shall be commensurate with the items being reviewed.*

Working drawings for temporary work items shall be signed by and shall bear the seal of a professional engineer.

Working drawings shall be furnished for commercially available patented devices that appear on an approved list as published by the Department. Drawings shall be signed by and shall bear the seal of a licensed professional engineer. However, the professional engineer signing and stamping these drawings may be licensed in any state. Manufacturer's installation manuals shall be provided with the working drawings and will remain the property of the Department.

SECTION 105 - CONTROL OF WORK

105.02 Plans and Working Drawings

Working drawings and design calculations will be returned either approved or showing changes or corrections required within 14 calendar days of receipt. If required to be changed or corrected, the drawings shall be resubmitted until they receive approval.

Fabrication or construction shall not start on an item of work before working drawings are approved. Authorized alterations will be endorsed on approved plans or shown on supplementary sheets. All work done or material ordered prior to the approval of such plans and drawings shall be at the risk of the Contractor. Department approval of working drawings will not release the Contractor from the responsibility for errors, adequacy or safety of falsework, cofferdams, or other temporary work or risk in connection with the work. Prior to final acceptance the Contractor shall provide a copy of all approved working drawings, including all approved modifications.

COMMENTS AND ACTION

OLD BUSINESS ITEM

105.02 Plans and Working Drawings

DISCUSSION:

<p>Motion: Second: Ayes: Nays: FHWA Approval:</p>	<p>Action: ___ Passed as Submitted ___ Passed as Revised ___ Withdrawn</p>
<p>Standard Specifications Sections referenced and/or affected: 105.02 pg 44.</p>	<p>___ 2022 Standard Specifications ___ Revise Pay Items List</p>
<p>Recurring Special Provision references in: NONE</p>	<p>___ Create RSP (No. __) Effective: RSP Sunset Date:</p>
<p>Standard Drawing affected: NONE</p>	<p>___ Revise RSP (No. __) Effective: RSP Sunset Date:</p>
<p>Design Manual Sections affected: NONE</p>	<p>___ Standard Drawing Effective:</p>
<p>GIFE Sections cross-references: SECTION 29</p>	<p>___ Create RPD (No. __) Effective: ___ GIFE Update ___ SiteManager Update</p>

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: A sentence in 502 and a subsection in 504 that are no longer relevant.

PROPOSED SOLUTION: incorporate the proposed deletions into the next *Standard Specifications* book

APPLICABLE STANDARD SPECIFICATIONS: 502, 504

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: Mike Nelson, Nate Pfeiffer, Jim Reilman

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman

Title: State Materials Engineer

Organization: INDOT

Phone Number: 317-522-9692

Date: 7/23/2020

IMPACT ANALYSIS REPORT CHECKLIST

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

Does this item appear in any other specification sections? No

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

Will this proposal improve:

Construction costs? N/A

Construction time? N/A

Customer satisfaction? N/A

Congestion/travel time? N/A

Ride quality? N/A

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

Will this item improve safety:

For motorists? N/A

For construction workers? N/A

Will this proposal improve quality for:

Construction procedures/processes? 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? 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

502.10 Concrete Mixing and Transportation

SECTION 504 - PCCP FINISHING AND CURING

504.04(d) Straw

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 502, BEGIN LINE 195 DELETE AS FOLLOWS:

502.10 Concrete Mixing and Transportation

Concrete mixing and transportation shall be completed by central mixed, shrink mixed, or transit mixed methods. The minimum batch of concrete shall be 2 cu yd. When the concrete temperature is 90°F or above, discharge from non-agitating equipment shall be completed within 30 minutes of mixing the water, cement, and aggregates. For concrete temperature below 90°F, discharge from non-agitating equipment shall be completed within 45 minutes of mixing the water, cement, and aggregates. The concrete temperature will be measured in accordance with ASTM C 1064 at the point of delivery. Discharge from a truck agitator or a truck mixer shall be completed within 90 minutes of mixing the water, cement, and aggregates.

Concrete shall be uniformly mixed when delivered to the job site. Batch tickets for each load of PCC shall indicate the weight of cement, pozzolan, and aggregates, volume or weight of water, and the type and volume of admixtures. The weight of the cement shall be within 1% of the CMDP, the saturated surface dry weight of the aggregates shall be within 2% of the CMDP, and the volume or weight of water shall be within 1% of the required amount.

The Engineer may conduct additional testing to verify uniformity of the mixture. Additional testing will consist of slump tests taken in accordance with AASHTO T 119 at approximately the 1/4 and 3/4 points of a load. If the slumps differ by more than 1 in. when the average slump is 3 in. or less, or by more than 2 in. when the average slump is greater than 3 in., paving operations may be suspended while the mixing process is jointly reviewed and problems resolved by the Engineer and the Contractor.

Wash water shall not be used as a portion of the mixing water.

When concrete is delivered in transit mixers, additional water to increase the workability of a load may be added within 45 minutes of initial mixing. Any addition of water shall be noted on the batch ticket and shall not occur as a continuing operation.

Stationary mixers shall be operated at the manufacturer's recommended drum speed. Batches shall not exceed the nominal capacity of the mixer. ~~A maximum overload of 10% may be allowed provided strength and consistency remain satisfactory and no spillage of concrete takes place.~~

(a) Central Mixed Concrete

Central mixed concrete shall be completely mixed in a stationary mixer and transported in a truck agitator, truck mixer at agitating speed, or non-agitating equipment.

REVISION TO STANDARD SPECIFICATIONS

SECTION 502 - PORTLAND CEMENT CONCRETE PAVEMENT, PCCP

502.10 Concrete Mixing and Transportation

SECTION 504 - PCCP FINISHING AND CURING

504.04(d) Straw

Mixing for central mixed concrete shall be no less than 60 s per batch. The mixing time shall be measured from the time all cement and aggregates are in the drum. The batch shall be so discharged into the mixer that some of the water enters in advance of the cement and aggregates. All required water shall be in the drum by the end of the first quarter of the specified mixing time.

If a truck mixer or truck agitator is used for transportation, the concrete shall be agitated at the agitation speed designated by the manufacturer.

SECTION 504, BEGIN LINE 106 DELETE AS FOLLOWS:

(d) Straw

~~The PCCP shall be covered with wet burlap, laid directly on the surface, that is kept wet with a fine spray of water. The burlap shall be removed by 9:00 a.m. the day following its placement and the surface immediately covered with straw no less than 3 in. deep. The straw shall be thoroughly saturated immediately after being placed, and kept wet for the required curing period. After the cure period, the straw shall be removed from the pavement and disposed of properly.~~

~~Straw curing shall not be used in cities or towns unless written permission is obtained.~~

504.05 Method of Measurement

Finishing and curing operations will not be measured for payment.

COMMENTS AND ACTION

502.10 Concrete Mixing and Transportation

504.04(d) Straw

DISCUSSION:

<p>Motion:</p> <p>Second:</p> <p>Ayes:</p> <p>Nays:</p> <p>FHWA Approval:</p>	<p>Action:</p> <p>___ Passed as Submitted</p> <p>___ Passed as Revised</p> <p>___ Withdrawn</p>
<p>Standard Specifications Sections referenced and/or affected:</p> <p style="padding-left: 40px;">502.10 pg 409; 504.04 pg 424.</p>	<p>___ 2022 Standard Specifications</p> <p>___ Revise Pay Items List</p>
<p>Recurring Special Provision:</p> <p style="padding-left: 40px;">NONE</p>	<p>___ Create RSP (No. __)</p> <p>Effective:</p> <p>RSP Sunset Date:</p>
<p>Standard Drawing affected:</p> <p style="padding-left: 40px;">NONE</p>	<p>___ Revise RSP (No. __)</p> <p>Effective:</p> <p>RSP Sunset Date:</p>
<p>Design Manual Sections affected:</p> <p style="padding-left: 40px;">NONE</p>	<p>___ Standard Drawing</p> <p>Effective:</p>
<p>GIFE Sections cross-references:</p> <p style="padding-left: 40px;">NONE</p>	<p>___ Create RPD (No. __)</p> <p>Effective:</p> <p>___ GIFE Update</p> <p>___ SiteManager Update</p>

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Elastomeric bearings that aren't secured in place mechanically have shifted while in service at several bridges. The most common method of securing an elastomeric bearing is to vulcanize the pad to a steel load plate during fabrication. The Standard Specifications don't require vulcanization, so we currently rely on Designers to add notes to the plans for this requirement. We've had several cases where the plans didn't require vulcanization and bearings shifted out of position while in service.

PROPOSED SOLUTION: Require that elastomeric bearing pads be vulcanized to the load plate when a load plate is shown on the plans.

APPLICABLE STANDARD SPECIFICATIONS: 915.04(c), 915.04(f), 915.05

APPLICABLE STANDARD DRAWINGS: 726-BEBP series (no changes proposed)

APPLICABLE DESIGN MANUAL SECTION: 409-7.03(03), 409-7.04, 409-7.05, Figs. 409-7F, 409-7J, 409-7K, 409-7L, 409-7M (all updated for vulcanization notes and other guidance)

APPLICABLE SECTION OF GIFE: 5.26 (no changes required)

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

PAY ITEMS AFFECTED: No changes to existing pay items

APPLICABLE SUB-COMMITTEE ENDORSEMENT: INDOT/ASCE Structures Committee and ad hoc committee including Mike Pelham, Derrick Hauser, and Elizabeth Mouser (Phillips)

IMPACT ANALYSIS (attach report):

Submitted By: Mark Orton, P.E.

Title: Standards Engineer

Organization: INDOT Standards and Policy

Phone Number: 317-233-3840

Date: July 14, 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? Sections 702, 707, 711, and 726 reference 915 for elastomeric bearing materials, but don't require any revisions

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? Yes

Design process? No

Will this change provide the contractor more flexibility? No

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

Can this item improve/reduce the number of potential change orders? 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 revision will reduce the risk of elastomeric bearings shifting out of position while in service.

REVISION TO STANDARD SPECIFICATIONS

SECTION 915 - BRIDGE PILES AND BEARINGS

915.04 Elastomeric Bearings

915.05 Bearing Assemblies with Polytetrafluoroethylene, PTFE, Sliding Surfaces

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 915, AFTER LINE 283, INSERT AS FOLLOWS:

Where load plates are shown on the plans, the bearing shall be vulcanized to the steel load plate during the primary molding process.

SECTION 915, BEGIN LINE 320, DELETE AND INSERT AS FOLLOWS:

In addition, one bearing pad from each type to be furnished for the structure will be required for laboratory testing. ~~However, if shapes A and B of a given type are required, only shape A need be furnished for testing.~~ *A type of bearing is defined by the length, width, and thickness of elastomer, and the number and thickness of internal shims. Bearings that differ by the dimensions of load plates vulcanized to similar elastomeric pads will also be considered different types.* The material may be sampled prior to shipment to the project, provided suitable arrangements can be made through the Office of Materials Management. Materials not previously sampled and approved for use shall be sampled after delivery to the project site. Samples shall be furnished at least 30 days before date of use.

SECTION 915, BEGIN LINE 344, DELETE AND INSERT AS FOLLOWS:

PTFE, where required, shall be bonded to grit blasted steel. The PTFE guides shall be bonded and mechanically fixed into place. ~~The bonding compound used to bond PTFE or elastomeric pads to steel plates shall be in accordance with ASTM D 429, Method B.~~ *The elastomeric pad shall be vulcanized to the steel load plate during the primary molding process. The stainless steel sliding plate shall be seal welded to the steel load plate.*

COMMENTS AND ACTION

915.04 Elastomeric Bearings

915.05 Bearing Assemblies with Polytetrafluoroethylene, PTFE, Sliding Surfaces

DISCUSSION:

<p>Motion:</p> <p>Second:</p> <p>Ayes:</p> <p>Nays:</p> <p>FHWA Approval:</p>	<p>Action:</p> <p>___ Passed as Submitted</p> <p>___ Passed as Revised</p> <p>___ Withdrawn</p>
<p>Standard Specifications Sections referenced and/or affected:</p> <p style="padding-left: 40px;">915.04(c), 915.04(f), 915.05.</p>	<p>___ 2022 Standard Specifications</p> <p>___ Revise Pay Items List</p>
<p>Recurring Special Provision references in:</p> <p style="padding-left: 40px;">NONE</p>	<p>___ Create RSP (No. __)</p> <p>Effective:</p> <p>RSP Sunset Date:</p>
<p>Standard Drawing affected:</p> <p style="padding-left: 40px;">726-BEBP series (no changes proposed)</p>	<p>___ Revise RSP (No. __)</p> <p>Effective:</p> <p>RSP Sunset Date:</p>
<p>Design Manual Sections affected:</p> <p style="padding-left: 40px;">409-7.03(03), 409-7.04, 409-7.05, Figs. 409-7F, 409-7J, 409-7K, 409-7L, 409-7M (all updated for vulcanization notes and other guidance).</p>	<p>___ Standard Drawing</p> <p>Effective:</p>
<p>GIFE Sections cross-references:</p> <p style="padding-left: 40px;">5.26 (no changes required)</p>	<p>___ Create RPD (No. __)</p> <p>Effective:</p> <p>___ GIFE Update</p> <p>___ SiteManager Update</p>