



FINAL DRAFT MINUTES

August 18, 2022 Standards Committee Meeting

(Changes to the Agenda by the Action of the Committee shown as highlighted in yellow and based on comments received in green)

September 9, 2022 (added change on pg 30)

TO: Standards Committee

FROM: Scott Trammell, Secretary

RE: Minutes from the August 18, 2022 Standards Committee Meeting

The Standards Committee meeting was called to order by Mr. Pankow, Chair, at 09:01 a.m. on August 18, 2022, and was held virtually via *Teams* (Microsoft application). The meeting was adjourned at 9:42 a.m.

The following committee members were in attendance:

Gregory Pankow, Chairman, Director, Construction Management
Anne Rearick, Engineering and Asset Management
Dave Boruff, Traffic Engineering
Jim Reilman, Division of Materials and Tests
John Wooden, Division of Contract Administration
Joseph Novak, Construction Management
Kumar Dave, Pavement Engineering
Kurt Pelz, Construction Technical Support
Mark Orton, Highway Engineering
Melissa Cool*, District Construction, Fort Wayne District
Peter White, Bridge Engineering
*Proxy for Michael Koch

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

Bazlamit, Subhi M, INDOT
Beeson, Matthew, INDOT
Bowen, John, INDY.gov

Hailat, Mahmoud, INDOT
Jacobs, David L, INDOT
Kachler, Mischa, INDOT

Corrice, Zachariah, INDOT
Dan Osborn, ICI
Distler, Jeff, Prestress Services Industries
Duncan, Steve, INDOT
Duncan, Thomas, FHWA
Fisher, Steve, INDOT

Leckie, John, IRMCA
Mouser, Elizabeth, INDOT
Sharp, Matt, (guest)
Smutzer, Katherine, INDOT
Tompkins, Bill, INDOT
Trammell, Scott, INDOT

The following items were discussed:

A. GENERAL BUSINESS ITEMS

Approval of the Minutes from the [June 16, 2022](#) meeting

Mr. Pankow requested a motion to approve the Minutes from the June 16, 2022 meeting.

Motion: Mr. Novak
Second: Mr. Dave
Ayes: 10
Nays: 0

ACTION:

PASSED AS SUBMITTED

B. CONCEPTUAL PROPOSAL ITEMS

[Preparation of the 2024 Standard Specifications for publishing \(K. Pelz\) pg. 4](#)

C. STANDARD SPECIFICATIONS, DRAWINGS, AND SPECIAL PROVISIONS ITEMS

[Item No. 1 \(2022 SS\)](#) [Mr. Novak](#) [pg. 15](#)

Recurring Special Provision:
401-R-577

INERTIAL PROFILER WITH SMOOTHNESS
PAY ADJUSTMENTS FOR HMA, FIXED
INTERVAL

ACTION:

PASSED AS REVISED

[Item No. 2 \(2022 SS\)](#) [Mr. Novak](#) [pg. 23](#)

Recurring Special Provision:
501-R-752

INERTIAL PROFILER WITH SMOOTHNESS PAY
ADJUSTMENTS FOR PCCP, FIXED INTERVAL

ACTION:

PASSED AS REVISED

Item No. 3 (2022 SS) Mr. Novak pg. 32

2022 Standard Specifications:

305.03	New PCC Base
306.03(d)	Straightedge
409.03(f)	Smoothness Equipment
410.22	Basis of Payment
414.13	Smoothness
506.11	Placing Concrete
508.09	Testing Facility and Equipment

ACTION:

PASSED AS REVISED

Item No. 4 (2022 SS) Mr. White pg. 38

2022 Standard Specifications:

711.31	Peening Welds by Means of Ultrasonic Impact Treatment, UIT
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ACTION:

PASSED AS SUBMITTED

Item No. 5 (2022 SS) Mr. Wooden pg. 42

Recurring Special Provision:

201-C-052	INITIAL PAYMENT FOR CLEARING RIGHT-OF-WAY
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ACTION:

PASSED AS SUBMITTED

cc: Committee Members
FHWA
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CONCEPTUAL PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: INDOT Standard Specifications have been in circulation since 1934 and have been regularly updated by adding new or revising existing statements, work procedures, materials, methods, etc.

Prior to publishing a 2024 Standard Specifications book (effective September 1, 2023), the review of the current edition is underway and a summary of proposed edits to the Division 300 AGGREGATE PAVEMENT AND BASES is shown.

PROPOSED SOLUTION (conceptual): Continue to review of all Divisions (100 thru 900) of the 2024 (draft) Standard Specifications and to make editorial (grammar) corrections as found necessary. Inform offices on questionable or outdated information and seek any necessary corrective action. Statements that are not clearly formulated or their written intentions are hard to follow have been rewritten, grammatical errors have been corrected and are proposed here for your review. Proposed revisions to Division 300 were made with this concept in mind and are shown here for your review.

APPLICABLE STANDARD SPECIFICATIONS: 2022 Standard Specifications and approved RSPs

APPLICABLE STANDARD DRAWINGS: n/a

APPLICABLE DESIGN MANUAL SECTION: n/a

APPLICABLE SECTION OF GIFE: n/a

APPLICABLE RECURRING SPECIAL PROVISIONS: various RSPs (if affected)

PAY ITEMS AFFECTED: n/a

APPLICABLE SUB-COMMITTEE ENDORSEMENT: ad-hoc Specification's review group: Kurt Pelz, Scott Trammell, Lana Podorvanova

IMPACT ANALYSIS (attach report): n/a

Submitted By: Kurt Pelz

Title: Construction Management Technical Support

Organization: INDOT

Phone Number: 317-691-4800

Date: 8/2/2022

(Note: Proposed changes shown highlighted teal)

[DIVISION 300, EDITS BEGIN HERE]

305.01 Description

This work shall consist of constructing a PCC base on a prepared surface or preparing an existing concrete surface for use as a base ~~all~~ in accordance with 105.03.

305.03 New PCC Base

Construction of new PCC bases shall be in accordance with 502, except for 502.14 ~~and~~ and 502.20. The CMDS shall be in accordance with 502.03 ~~except~~ utilization of the Department provided spreadsheet is not required. The surface shall be finished with wet burlap or by wood floats. Smoothness of the base will be controlled with a 16 ft long straightedge longitudinally and a 10 ft long straightedge transversely.

[305.04] A joint shall be saw cut full depth or load transfer devices shall be severed at an existing joint on ramps or mainline where the rubblizing abuts concrete pavement ~~which is~~ to remain in place.

[305.05] ~~When the widening is not open to traffic prior to placing an overlay, liquid membrane compounds shall not be used and an alternative curing option shall be used. When the widening is closed to traffic prior to placing the overlay, liquid membrane compounds shall not be used and an alternative curing option shall be used.~~ Tack coat in accordance with 406 may be used as a curing option.

305.06 Method of Measurement

Compacted aggregate will be measured by the ton in accordance with 109.01(b) for the type specified. Retrofit load transfer will be measured in accordance with 507.09. Surface milling will be measured in accordance with 306.10. PCC base, PCC base patching, and widening with PCC base will be measured by the square yard of the thickness specified. The area of PCC will be the planned width of the base, patching ~~or~~ widening multiplied by the measured length ~~or~~ as directed in writing. The planned width of the base, patching and widening will be as shown on the typical cross sections ~~of~~ the plans.

[306.02] Castings located in milling areas that are not to be adjusted may remain in place during the milling ~~or~~ may be removed and replaced at the Contractor's option.

307.01 Description

This work shall consist of pulverizing and stabilizing an existing asphalt pavement along with existing base and subgrade materials to construct an ~~reclaimed base course, RBC,~~ to the approved design properties in accordance with 105.03.

[307.02] The Contractor shall provide a JITT instructor experienced in the construction methods, materials ~~and~~ test methods associated with cement stabilized FDR. A copy of the course syllabus, handouts ~~and~~ presentation materials shall be submitted to the Engineer at least five business days before the course is to be taught.

307.03 Quality Control *(requirements shown as a bulleted list)*

A **quality control plan**, QCP, shall be submitted to the Engineer a minimum of five calendar days prior to the JITT.

The QCP shall include the **following**:

- (a) **the** proposed FDR mix design,
- (b) a start to finish process description including discussion on corrective action measures,
- (c) a list of proposed equipment,
- (d) a list of proposed QC tests and testing frequencies,
- (e) the curing methods applied to the cement stabilized RBC and
- (f) the stabilization process applied to the RBC and subgrade after a failed proofroll.

All QC test results and responses to test results shall be maintained during the duration of the contract and made available to the Engineer upon request.

307.04 Materials

RBC shall consist of a homogenous blend of **reclaimed asphalt pavement**, RAP, base, and subgrade materials that are combined with cement, water, and when required, recycling additives such as corrective aggregate. The cement may be dry powder or slurry with a minimum dry solids content of 60%. The actual materials used are dependent on the FDR mix design and project requirements.

307.05 Mix Design

The FDR mix design shall be in accordance with ITM 595 and comprised of existing RAP, existing base and subgrade materials, cement and **any if necessary**, recycling additives. The 7-day unconfined strength **of the overlay FDR mix design** shall be based on the **HMA** overlay lay rate **specified shown** on the plans.

[307.05] The mix design and all associated testing shall be performed using samples of the existing pavement, base, and subgrade material from the project site representing the reclaiming depth. Sampling, testing, and the mix design shall be performed by a design laboratory that is AASHTO re:source **(formerly AMRL)** accredited for soil, aggregates, and concrete.

[307.05] **The mix design, or designs, Mix designs** shall be submitted for approval at least five calendar days prior to the JITT and shall include all test results performed.

[307.07] Spreaders or distributors used to apply dry powder additives shall be non-pressurized mechanical vane-feed, cyclone or screw type capable of providing a consistent, accurate and uniform distribution of material while minimizing dust during construction. Corrective aggregate, when required, may be placed by a mechanical spreader, a conventional paver, or by tailgating with end dump trucks and spread to a uniform thickness with a motor grader.

[307.07] (c) Mixing and Reclaiming Equipment

Only self-propelled, high powered, minimum 500 hp rotary mixers or reclaimers capable of mixing in-place to the depth specified shall be used. The minimum cutting drum width shall be 7 ft and fitted with cutting teeth capable of trimming earth, aggregate, and HMA and be so designed that they may to allow the cutting teeth to be accurately adjusted vertically and held in-place. The machine shall not weigh less than 25,000 lb and shall have the strength and rigidity so that it shall not develop a center deflection of more than 1/8 in a minimum weigh of 25,000 lb, and shall have the strength and rigidity to allow a center deflection of not more than 1/8 in.

(d) Motor Grader

A motor grader for pre-shaping, aerating, spreading, and final shaping of the material shall be utilized. The motor grader shall have a cross slope indicator.

(e) Compaction Equipment

The RBC shall be compacted using self-propelled rollers. The number, weight, and types of rollers shall be as necessary to obtain the required compaction throughout the entire RBC thickness. The rollers may be used in any combination and may include a pneumatic tire roller, an 84 in. wide drum vibratory pad-foot roller equipped with a knockdown blade, or a 10 t minimum single or double drum vibratory steel roller.

307.09 Pulverization

The existing pavement shall be pulverized and stabilized in separate operations. Corrective aggregate, when required, shall be spread onto the existing surface in accordance with 307.07(a). The pre-determined full depth of asphalt pavement, base, and subgrade materials shall be pulverized, along with the corrective aggregate, to a homogenous mixture. The mixture may be brought to the desired moisture content during this process by means of surface application or through the mixing or reclaiming equipment's integrated fluid injection system for dust control. The base course shall not contain roots, sod, topsoil, weeds, wood, or any material deleterious to its reaction with the cement stabilizer.

307.10 Stabilization

The cement used to stabilize the RBC may be dry powder or slurry. The Contractor shall address the application methods and fugitive dust control procedures in the QCP when dry powder materials are used. The pulverized surface shall be scarified or knifed prior to applying materials in slurry form to prevent runoff or ponding. Any dry additives used shall be spread onto the pulverized surface using a mechanical spreader. The pulverized material shall be mixed with the stabilizer and additives, as required by the mix design, to create a homogeneous RBC.

[307.11] (a) demonstrate that the equipment, materials, and processes proposed can produce an RBC layer in accordance with specification requirements;

Intermediate and final compaction shall be applied to the bladed and shaped RBC using either a pneumatic tire roller, a single or double drum vibratory steel roller, or a combination of the two. Finish rolling shall not be performed in vibratory mode. The compaction operation shall be performed while the RBC remains in a workable condition and continued until roller marks no longer appear.

Any type of rolling effort that causes cracking, displacement, or other type of pavement distress shall be discontinued until such time as the problem can be resolved as approved by the Engineer.

307.12 Opening to Traffic *(this section moved in front of 307.19)*

~~Opening to traffic shall occur after sufficient cure time has been applied to the RBC so traffic will not initiate raveling or permanent deformation. All loose particles that may develop on the pavement surface shall be removed by a rotary power broom in accordance with 409.~~

~~After opening to traffic, the surface of the RBC shall be maintained in a condition suitable for the safe movement of traffic.~~

307.132 Maintenance

The Contractor shall maintain the RBC until the surface course has been constructed.

Any damage to the completed recycled material shall be repaired by the Contractor prior to the placement of new HMA or final surface sealing. Patching shall be in accordance with 304. The excavated patch areas shall be filled and compacted with HMA or RBC material as directed by the Engineer. No direct payment will be made for damage or repair unless approved by the Engineer.

[307.154] The Contractor shall rework the areas that failed in proofrolling by re-pulverizing and re-stabilizing the RBC in-place at no additional cost or by removing the RBC and stabilizing the subgrade with subgrade treatment Type IC in accordance with 207.

307.165 Milling

The entire surface of the cement stabilized RBC shall be scarified in accordance with 306.04 in preparation for the overlay, except liquidated damages will not apply. Construction engineering in accordance with 105.08(b) shall be provided.

307.176 Underdrain Installation

Underdrain installation in accordance with 718, when required, shall begin after having completed the proofrolling *has been completed*.

307.187 RBC Overlay

The overlay atop the RBC shall be as shown on the plans. The overlay shall be placed after having completed the proofrolling *has been completed*.

307.128 Opening to Traffic *(moved from 307.12 to 307.18)*

Opening to traffic shall occur after sufficient cure time, *in accordance with 307.14*, has been applied to the RBC so traffic will not initiate raveling or permanent deformation. All loose particles that may develop on the pavement surface shall be removed by a rotary power broom in accordance with 409.

After opening to traffic, the surface of the RBC shall be maintained ~~in a condition suitable~~ for the safe movement of traffic.

307.19 Method of Measurement

The RBC will be measured by the square yard, complete in place. Cement, used as stabilizing material, will be measured by the ton. Subgrade treatment will be measured in accordance with 207.05. Corrective aggregate to adjust the RBC gradation will be measured by the ton of material used. HMA patching, type B will be measured in accordance with 304.06. Milling will be measured in accordance with 306.10. Re-established monuments will be measured in accordance with 615.13. Removal of snowplowable raised pavement markers will be measured in accordance with 808.12.

307.20 Basis of Payment

The RBC will be paid for as full depth reclamation at the contract unit price per square yard, complete in place. Cement, used as stabilizing material, will be paid for at the contract unit price per ton, complete in place. Subgrade treatment will be paid for in accordance with 207.06. Corrective aggregate used to adjust the RBC gradation will be paid for at the contract unit price per ton, complete in place. HMA patching, type B will be paid for in accordance with 304.07, ~~off~~ for the thickness ~~specified~~ shown on the plans. Milling will be paid for in accordance with 306.11. Re-established monuments will be paid for in accordance with 615.14. Removal of snowplowable raised pavement markers will be paid for in accordance with 808.13.

[307.20] The costs associated with pulverizing, stabilizing, compacting, curing, and maintenance of the RBC shall be included in the cost of the full depth reclamation.

The cost associated with aggregate, when used to supplement material volume, shall be included in the cost of the corrective aggregate pay item.

The cost associated with aggregate, when used to adjust the RBC gradation, shall be included in the cost of the corrective aggregate pay item.

308.01 Description

This work shall consist of pulverizing and stabilizing an existing asphalt pavement and base material, excluding subgrade, to construct an ~~reclaimed base course, RBC,~~ to the approved design properties in accordance with 105.03.

308.02 Just-in-Time Training, JITT

The Engineer and Contractor are required to attend a JITT course regarding FDR and both shall mutually agree on the course instructor, course content, and training site.

[308.03] *(requirements shown in a bulleted list)* The QCP shall include the following:

- (a) the proposed FDR mix design,
- (b) a start to finish process description including discussion on corrective action measures,
- (c) a list of proposed equipment,

- (d) a list of proposed QC tests and testing frequencies,
- (e) the curing methods applied to the asphalt emulsion stabilized RBC and
- (f) the stabilization process applied to the RBC and subgrade after a failed proofroll.

308.05 Mix Design

The FDR mix design shall be in accordance with ITM 594 and comprised of existing RAP, existing base material, asphalt emulsion, and if necessary, recycling additives. The mix design and all associated testing shall be performed using samples of the existing pavement and base material from the project site representing the reclaiming depth. Sampling, testing, and the mix design shall be performed by a design laboratory that is AASHTO re:source (formerly AMRL) accredited for soil, aggregates, HMA, and asphalt emulsion.

[308.05] ~~The mix design, or designs,~~ *Mix designs* shall be submitted for approval at least five calendar days prior to the JITT and shall include all test results performed. If new materials are added, a new mix design, including the revised test results, shall be submitted at least one day prior to implementation.

[308.06] Grade adjustments of existing structures shall be made in accordance with 720.04, except existing structures shall be lowered prior to FDR operations, properly covered and filled with material compatible with the FDR mix design to maintain traffic.

All areas of soft or yielding subgrade, as shown on the plans *or as directed*, shall be corrected prior to pulverization operations.

308.07 Equipment

The equipment shall be capable of pulverizing the existing asphalt pavement and base materials. The equipment used for mixing the pulverized materials with asphalt emulsion, water, additives, and corrective aggregate, when required, shall be capable of producing a homogenous and uniformly blended RBC. The equipment used for placement of the RBC shall be capable of placement in accordance with 105.03.

~~The equipment shall consist of the following major components:~~

~~(a) Spreaders and Distributors~~

~~Spreaders or distributors used to apply dry powder additives shall be non-pressurized mechanical vane feed, cyclone or screw type capable of providing a consistent, accurate and uniform distribution of material while minimizing dust during construction. Corrective aggregate, when required, may be placed by a mechanical spreader, a conventional paver or by tailgating with end dump trucks and spread to a uniform thickness with a motor grader.~~

Spreaders or distributors used to apply dry powder additives, additive slurry storage and supply equipment, motor grader, compaction equipment, and water tracks shall be in accordance with 307.07.

(b) Additive Slurry Storage and Supply Equipment

Slurry shall be produced using a batch or continuous flow type stationary mixer equipped with calibrated metering and feeding devices that introduce the cement, water and additives into the mixer in the specified quantities. Additive slurry storage and supply equipment shall have agitators or similar equipment to keep the slurry in suspension when held in the slurry batch or storage tanks. Slurry shall be kept in suspension during transport using agitator equipment.

(c) Mixing and Reclaiming Equipment

Only self-propelled, high powered, minimum 500 hp rotary mixers or reclaimers capable of mixing in place to the depth specified shall be used. The minimum cutting drum width shall be 7 ft and fitted with cutting teeth capable of trimming earth, aggregate and HMA and be so designed that they may be accurately adjusted vertically and held in place. The machine shall not weigh less than 25,000 lb and shall have the strength and rigidity so that it shall not develop a center deflection of more than 1/8 in.

Mixing and reclaiming equipment shall be in accordance with 307.07(c), except that the mixer or reclaimer shall be fitted with an integrated water and asphalt emulsion injection system capable of introducing both materials into the cutting drum during the mixing process. The metering device shall be capable of automatically adjusting the flow of material to compensate for any variation in the amount of reclaimed material introduced into the mixing chamber. The water or asphalt emulsion shall be calculated on a volumetric basis tied to a speed gauge, ft/min, using a calibrated meter that is capable of accurately measuring the amount of material to within 0.5% of the rate required. Automatic digital readings shall be displayed for both the flow rate and total amount of reclaimed material in appropriate units of weight and time.

(d) Motor Grader

A motor grader for pre-shaping, aerating, spreading and final shaping of the material shall be utilized. The motor grader shall have a cross slope indicator.

(e) Compaction Equipment

The RBC shall be compacted using self-propelled rollers. The number, weight and types of rollers shall be as necessary to obtain the required compaction throughout the entire RBC thickness. The rollers may be used in any combination and may include a pneumatic tire roller, an 84 in. wide drum vibratory pad-foot roller equipped with a knockdown blade or a 10 t minimum single or double drum vibratory steel roller.

(f) Water Trucks

A water truck shall be used for supplying water to the reclaimer or roadway for the addition of moisture during the reclaiming operation. The water truck shall be capable of providing a controlled and consistent spray without eroding or otherwise damaging the compacted RBC.

308.09 Pulverization

The existing pavement shall be pulverized and stabilized in separate operations. Corrective aggregate, when required, shall be spread onto the existing surface in accordance with 308.07(a). The pre-determined full depth of asphalt pavement and base materials shall be pulverized, along with the corrective aggregate, to a homogenous mixture. The mixture may be brought to the desired

moisture content during this process by means of surface application or through the mixing or reclaiming equipment's integrated fluid injection system for dust control. The base course shall not contain subgrade, roots, sod, topsoil, weeds, wood or any material deleterious to its reaction with the asphalt emulsion.

[308.09] When a paving fabric is encountered during the pulverization operation, the Contractor shall make the necessary changes in equipment or operations so that incorporation of shredded fabric into the RBC does not affect the performance parameters or inhibit placement or compaction of the RBC. The Contractor shall be required to remove and properly dispose of oversized pieces of paving fabric. The Contractor shall make the necessary adjustments in equipment or operations so that the shredded fabric in the recycled material is no more than 5 sq in. No fabric piece shall have a dimension exceeding a length of 4 in.

[308.11] Compaction equipment shall be in accordance with 3087.07(e). Initial compaction shall be within 500 ft of the reclaiming unit using either a vibratory pad-foot roller, a pneumatic tire roller or a combination of the two. The pass counts shall continue to increase until the cleat indentations from the pad-foot roller are no more than 3/16 in. in depth and light can be seen between the pad-foot and RBC interface or there are no wheel impressions from the pneumatic tire roller remaining in the RBC.

The asphalt emulsion stabilized material shall be bladed and shaped by a motor grader in accordance with 3087.07(d) to remove any remaining roller marks or indentations then leveled in accordance with 301.07. The profile grade and cross section of the RBC shall be finished within a tolerance of $\pm 1/2$ in. from the plan RBC elevation prior to profile milling.

Intermediate and final compaction shall be applied to the bladed and shaped RBC using either a pneumatic tire roller, a single or double drum vibratory steel roller, or a combination of the two. Finish rolling shall not be performed in vibratory mode. The compaction operation shall be performed while the RBC remains in a workable condition and continued until roller marks no longer appear.

Any type of rolling effort that causes cracking, displacement, or other type of pavement distress shall be discontinued until such time as the problem can be resolved and approved by the Engineer.

[308.11] Compaction equipment shall be in accordance with 3087.07(e). Initial compaction shall be within 500 ft of the reclaiming unit using either a vibratory pad-foot roller, a pneumatic tire roller or a combination of the two. The pass counts shall continue to increase until the cleat indentations from the pad-foot roller are no more than 3/16 in. in depth and light can be seen between the pad-foot and RBC interface or there are no wheel impressions from the pneumatic tire roller remaining in the RBC.

The asphalt emulsion stabilized material shall be bladed and shaped by a motor grader in accordance with 3087.07(d) to remove any remaining roller marks or indentations then leveled in accordance with 301.07. The profile grade and cross section of the RBC shall be finished within a tolerance of $\pm 1/2$ in. from the plan RBC elevation prior to profile milling.

308.12 Opening to Traffic *(moved to be before 308.19 Method of Measurements and renumbered to 308.18)*

~~Opening to traffic shall occur after sufficient cure time has been applied to the RBC so traffic will not initiate raveling or permanent deformation. All loose particles that may develop on the pavement surface shall be removed by a rotary power broom in accordance with 409.~~

~~After opening to traffic, the surface of the RBC shall be maintained in a condition suitable for the safe movement of traffic.~~

308.132 Maintenance

The Contractor shall maintain the RBC ~~in a satisfactory manner~~ until the surface course has been constructed.

~~[308.132]~~ Any damage to the completed recycled material shall be repaired by the Contractor prior to the placement of new asphalt concrete or final surface sealing. Patching shall be in accordance with 304. The excavated patch areas shall be filled and compacted with HMA or RBC material as directed by the Engineer. No ~~direct~~ payment will be made for damage or repair unless approved by the Engineer.

~~[308.154]~~ The Contractor shall rework the areas ~~that failed in~~ proofrolling by re-pulverizing and re-stabilizing the RBC in-place at no additional cost or by removing the RBC and stabilizing the subgrade with subgrade treatment Type IC in accordance with 207.

~~[308.154]~~ In locations of failing subgrade, the RBC shall be removed and subgrade treatment Type IC shall be placed in accordance with 207. HMA patching, type B shall be placed in accordance with 304 in place of the RBC.

308.165 Milling

The entire surface of the asphalt emulsion stabilized RBC shall be scarified in accordance with 306.04 in preparation for the overlay, ~~except~~ ~~LI~~ liquidated damages will not apply. Construction engineering in accordance with 105.08(b) shall be provided.

308.176 Underdrain Installation

Underdrain installation in accordance with 718, when required, shall begin after ~~having completed the~~ proofrolling *has been completed*.

308.187 RBC Overlay

The overlay atop the RBC shall be as shown on the plans. The overlay shall be placed after ~~having completed the~~ proofrolling *has been completed*.

308.128 Opening to Traffic *(moved from 308.12)*

Opening to traffic shall occur after sufficient cure time *in accordance with 308.14* has been applied to the RBC so traffic will not initiate raveling or permanent deformation. All loose particles that may develop on the pavement surface shall be removed by a rotary power broom in accordance with 409.

After opening to traffic, the surface of the RBC shall be maintained ~~in a condition suitable~~ for the safe movement of traffic.

308.19 Method of Measurement

The RBC will be measured by the square yard, complete in place. Asphalt emulsion will be measured by the ton. Subgrade treatment will be measured in accordance with 207.05.

[308.20] Corrective aggregate used to adjust the RBC gradation will be paid for at the contract unit price per ton, complete in place. HMA patching, type B will be paid for in accordance with 304.07, ~~of~~ for the thickness ~~specified~~ shown on the plans.

[308.20] The costs associated with pulverizing, stabilizing, compacting, curing, and maintenance of the RBC shall be included in the cost of the full depth reclamation.

[308.20] The cost associated with aggregate, when used to supplement material volume, shall be included in the cost of the corrective aggregate pay item.

[308.20] The cost associated with aggregate, when used to adjust the RBC gradation, shall be included in the cost of the corrective aggregate pay item.

[EDITS END HERE]

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Current RSP 401-R-577 INERTIAL PROFILER WITH SMOOTHNESS PAY ADJUSTMENTS FOR HMA requires the Contractor to provide and operate a 16ft straightedge instead of the Department. The specification does not stipulate equipment or operating requirements.

PROPOSED SOLUTION: Add equipment and operating requirements to the specification.

APPLICABLE STANDARD SPECIFICATIONS: 401.18

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: N/A

APPLICABLE SECTION OF GIFE: 5.16, 8.13, 13.4, 13.17

APPLICABLE RECURRING SPECIAL PROVISIONS: 401-R-577

PAY ITEMS AFFECTED: None

APPLICABLE SUB-COMMITTEE ENDORSEMENT: n/a

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE:
Unchanged from current.

IMPACT ANALYSIS (attach report): Attached

Submitted By: Joe Novak

Title: State Construction Engineer

Organization: INDOT Construction Management

Phone Number: 317-501-7805

Date: 7/25/22

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/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? 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: N/A

REVISION TO RECURRING SPECIAL PROVISION

401-R-577 INERTIAL PROFILER WITH SMOOTHNESS PAY ADJUSTMENTS FOR HMA, FIXED INTERVAL

(Note: Proposed changes shown highlighted gray)

401-R-577 INERTIAL PROFILER WITH SMOOTHNESS PAY ADJUSTMENTS FOR HMA,
FIXED INTERVAL

(Revised 10-21-21)

The Standard Specifications are revised as follows:

SECTION 401, DELETE LINES 593 THROUGH 705.

SECTION 401, AFTER LINE 705, INSERT AS FOLLOWS:

401.18 Pavement Smoothness

Pavement smoothness will be accepted by means of an inertial profiler, a 16 ft long straightedge, or a 10 ft long straightedge as described below. ~~The 10 ft long straightedge will be used to check transverse slopes, across travel lanes and shoulders, approaches, and crossovers. When the 10 ft straightedge is used, the pavement variations shall be corrected to 1/8 in. or less.~~

(a) Inertial Profiler with Smoothness Pay Adjustments

When a pay item for Inertial Profiler, HMA is included in the contract, the Contractor shall furnish, calibrate, and operate an approved inertial profiler in accordance with ITM 917 for the acceptance of longitudinal smoothness on the mainline traveled way, including adjacent acceleration or deceleration lanes, where all of the following conditions are met:

- 1. The posted speed is greater than 45 mph.*
- 2. The traveled way width and slope are constant and is at least 0.5 mi in length.*
- 3. The HMA is placed on a milled surface and the planned lay rate for a single lift is 165 lb/sq yd or greater, or the total combined planned lay rate of surface, intermediate, and base courses is 385 lb/sq yd or greater.*

The profiles, International Roughness Index, IRI, results including areas of localized roughness, and fixed interval IRI results produced shall become the property of the Department. The inertial profiler shall remain the property of the Contractor.

The project area will be divided into individual smoothness sections measuring 0.1 mi in length for each lane. The paving exceptions and areas exempt from inertial profiler operation will be in accordance with ITM 917.

If the posted speed limit for an entire smoothness section is less than or equal to 45 mph, the section will be exempt from Inertial Profiler operation and the smoothness within the section will be accepted in accordance with 401.18(b).

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401-R-577 INERTIAL PROFILER WITH SMOOTHNESS PAY ADJUSTMENTS FOR HMA, FIXED INTERVAL

If the posted speed limit is greater than 45 mph for a portion of a smoothness section and is less than or equal to 45 mph for the remainder, the section smoothness acceptance will be as follows:

- 1. By inertial profiler for the portion of the section with a posted speed limit greater than 45 mph.*
- 2. In accordance with 401.18(b) for the portion of the section with a posted speed limit less than or equal to 45 mph.*

At locations where the inertial profiler is required, it shall be used on the surface course and on any dense graded intermediate course immediately below the surface course.

(b) 16 ft Straightedge

The Contractor shall furnish and operate a 16 ft straightedges in accordance with 306.03(d) and as described below. The 16 ft straightedge shall be used to ~~accept~~ measure smoothness along the direction of mainline traffic.

Locations on the pavement surface scraped by the straightedge shall be marked. The pavement shall be corrected in accordance with 401.18(e) to meet the required tolerance. For existing utility and manhole castings that required no grade adjustment, the tolerance may be adjusted after being reviewed and approved by the Engineer.

For contracts which include the Inertial Profiler, HMA pay item, the 16 ft long straightedge or the Inertial Profiler simulating the 16 ft long straightedge shall be used to ~~accept~~ measure longitudinal smoothness on surface courses at the following locations:

- 1. All mainline traveled way lanes shorter than 0.5 mi.*
- 2. All mainline traveled way lanes at locations exempted from inertial profiler operation in accordance with ITM 917.*
- 3. All mainline traveled way lanes within smoothness sections with posted speed limits less than or equal to 45 mph throughout the entire section length.*
- 4. All tapers.*
- 5. All ramps.*
- 6. All turn lanes, including bi-directional left turn lanes shorter than 0.5 mi.*

REVISION TO RECURRING SPECIAL PROVISION

401-R-577 INERTIAL PROFILER WITH SMOOTHNESS PAY ADJUSTMENTS FOR HMA, FIXED INTERVAL

7. *All acceleration and deceleration lanes associated with ramps with posted speeds of 45 mph or less.*
8. *All shoulders.*
9. *All intersections with significant change in cross slope.*

For contracts where the inertial profiler is not used for smoothness acceptance, the 16 ft straightedge will shall be used to accept measure longitudinal smoothness on all dense graded surface courses, and on any dense graded intermediate course immediately below the surface course. Measurement with the 16ft straightedge shall include at, the above locations, and on all mainline traveled way lanes and ramps with posted speeds greater than 45 mph. Smoothness acceptance, and, Smoothness acceptance on ramp acceleration or deceleration lanes will also be based on operation of the 16 ft straightedge.

(c) 10 ft Straightedge

The 10 ft straightedge will be in accordance with 306.03(d). The 10 ft straightedge will be used to check transverse slopes, across travel lanes and shoulders, approaches, and crossovers. When the 10 ft straightedge is used, the pavement variations shall be corrected to 1/8 in. or less.

(ed) Areas of Localized Roughness, ALR

At locations where the inertial profiler is being used on an intermediate course, all areas having a localized roughness in excess of 160 in./mi utilizing continuous IRI with a 25 ft window shall be corrected subject to review approval by the Engineer.

At locations where the inertial profiler is being used on a surface course, all areas under category Type A, as defined in 401.19(c), having a localized roughness in excess of 160 in./mile or category Type B in excess of 170 in./mile utilizing continuous IRI with a 25 ft window shall be corrected subject to review approval by the Engineer. After ALR's have been identified, a grinding simulation shall be performed to estimate whether the ALR can be corrected to an IRI value of less than 160 in./mi with no more than a 1/4 in. max grind depth at any spot. If such correction is not possible, then an ALR with an IRI value of less than 190 in./mi can remain uncorrected if approved by the Engineer, and an ALR with an IRI value greater than 190 in./mi shall require full depth removal and replacement of the surface course of sufficient area to meet specifications.

In addition, if there is only one ALR in any two lane mile section, then no smoothness correction will be required if the ALR does not exceed 190 in./mi and the overall smoothness in accordance with 401.18(d) of the two lane mile section does not require any corrective action. A two lane mile section will start one mile before the ALR and end one mile after the ALR in order that all two lane mile sections will have, at most, one ALR each.

(de) Smoothness Section Correction

The width of the corrected area may be partial or full lane width, depending on the

REVISION TO RECURRING SPECIAL PROVISION

401-R-577 INERTIAL PROFILER WITH SMOOTHNESS PAY ADJUSTMENTS FOR HMA, FIXED INTERVAL

respective wheel path profiles. Underlying courses that are exposed by corrective action shall be milled to a depth of 1 1/2 in. and replaced with surface course. After the corrective action is taken on a surface course, the inertial profiler 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.

If grinding of an intermediate course is used for pavement smoothness corrections, the grinding shall not precede the surface placement by more than 30 calendar days if open to traffic.

SECTION 401, DELETE LINES 805 THROUGH 843.

SECTION 401, AFTER LINE 843, INSERT AS FOLLOWS:

(c) Smoothness

Smoothness pay adjustments will only be applied when the smoothness is measured by an inertial profiler in accordance with 401.18(a).

The Mean Roughness Index, MRI, will be determined for each lane for each 0.1 mile section of paving. The MRI for a 0.1 mile section will be the average of the IRI of the two wheel paths. Categorized segments shall be as follows:

1. *Type A. Pavement on a non-interstate with more than a single opportunity to achieve a smooth ride or asphalt pavement on an interstate with a single opportunity or more. The following operations, if performed on the contract, will be considered opportunities.*
 - a. *A layer of HMA base, intermediate, and surface; each layer is an opportunity. Wedge and level will not be considered an opportunity.*
 - b. *Profile milling to correct cross slope is considered an opportunity prior to placing base, intermediate, or surface HMA.*
2. *Type B. Pavement that is not included in the description above under Type A.*

At locations where an inertial profiler is used to accept smoothness, a quality assurance adjustment will be determined for each lane. This adjustment will be applied to all QC/QA HMA pay items within the pavement section. The adjustment will be calculated using the following formula:

REVISION TO RECURRING SPECIAL PROVISION

401-R-577 INERTIAL PROFILER WITH SMOOTHNESS PAY ADJUSTMENTS FOR HMA, FIXED INTERVAL

$$q_s = (PF_s - 1.00) \sum_{i=1}^n \left(A \times \frac{S}{T} \times U \right)$$

where:

- q_s = quality assurance adjustment for smoothness for one section
 PF_s = pay factor for smoothness
 n = number of layers
 A = area of the section, sq yd
 S = planned spread rate for material, lb/sq yd
 T = conversion factor: 2,000 lb/ton
 U = unit price for the material, \$/ton.

The quality assurance adjustment for smoothness, Q_s , for the contract will be the total of the quality assurance adjustments for smoothness, q_s , on each section by the following formula:

$$Q_s = \sum q_s$$

When smoothness is measured by an inertial profiler, payment adjustments will be made for any 0.1 mile section based on initial MRI generated on the surface course only and in accordance with the following table. Smoothness correction, if required, shall be in accordance with 401.18(ee). The MRI pay factors for smoothness will be determined prior to any required smoothness correction.

PAY FACTORS FOR SMOOTHNESS Posted Speed greater than 45 mph	
MRI, in./mi.	Pay Factor, PFs
over 0 to 35	1.06
over 35 to 40	1.05
over 40 to 45	1.04
over 45 to 50	1.03
over 50 to 55	1.02
over 55 to 60	1.01
over 60 to 70	1.00
over 70 to 75	0.99
over 75 to 80	0.98
over 80 to 85	0.96
over 85 to 90	0.95
over 90	For Type A, the pay factor PFs will be 0.95 and the section shall be corrected to 70 or less.
over 90 to 110	For Type B, the pay factor PFs will be 0.95 and the section does not require correction.

REVISION TO RECURRING SPECIAL PROVISION

401-R-577 INERTIAL PROFILER WITH SMOOTHNESS PAY ADJUSTMENTS FOR HMA, FIXED INTERVAL

<i>over 110</i>	<i>For Type B, the pay factor PFs will be 0.95 and the section shall be corrected to 90 or less.</i>
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SECTION 401, BEGIN LINE 916, DELETE AND INSERT AS FOLLOWS:

401.22 Basis of Payment

The accepted quantities for this work will be paid for at the contract unit price per ton for QC/QA-HMA, of the type specified, complete in place.

Payment for furnishing, calibrating, and operating the ~~profilograph inertial profiler~~, and furnishing ~~IRI~~ profile information will be made at the contract lump sum price for ~~profilograph inertial profiler~~, HMA.

Furnishing and operating the 16 ft straightedge shall be included in the cost of other pay items within this section.

Adjustments to the contract payment with respect to mixture, density, and smoothness for the mixture produced will be included in a quality adjustment pay item in accordance with 109.05.1.

SECTION 401, BEGIN LINE 940, DELETE AND INSERT AS FOLLOWS:

~~Profilograph~~ Inertial Profiler, HMA..... LS

SECTION 401, BEGIN LINE 964, DELETE AND INSERT AS FOLLOWS:

The price for ~~Profilograph~~ Inertial Profiler, HMA will be full compensation regardless of how often the ~~profilograph inertial profiler~~ is used or how many ~~profilographs~~ are produced ~~often the IRI is determined~~.

SECTION 402, BEGIN LINE 344, DELETE AND INSERT AS FOLLOWS:

402.18 Pavement Smoothness

Pavement smoothness will be in accordance with 401.18 except ~~profilograph inertial profiler~~ requirements will not apply.



FINAL DRAFT

COMMENTS AND ACTION

401-R-577 INERTIAL PROFILER WITH SMOOTHNESS PAY ADJUSTMENTS FOR HMA, FIXED INTERVAL

DISCUSSION:

This item was introduced and presented by Mr. Novak who explained that the current RSP 401-R-577 INERTIAL PROFILER WITH SMOOTHNESS PAY ADJUSTMENTS FOR HMA requires the Contractor to provide and operate a 16ft straightedge instead of the Department. The specification does not stipulate equipment or operating requirements.

Mr. Novak therefore proposed to add equipment and operating requirements to the specification for clarification.

Prior to the meeting, Mr. Koch asked about clarifications concerning the use of the 16 ft straightedge and who will be responsible for the use. Following a brief discussion, Mr. Novak and Mr. Blanchard offered the above revisions shown highlighted in yellow.

There were no further questions or comments, and this item passed as revised.

<p>Motion: Mr. Novak Second: Mr. Pelz Ayes: 10 Nays: 0 FHWA Approval: YES</p>	<p>Action:</p> <p><input type="checkbox"/> Passed as Submitted <input checked="" type="checkbox"/> Passed as Revised <input type="checkbox"/> Withdrawn</p>
<p>2022 Standard Specifications Sections referenced and/or affected: 401.18 begin pg 315.</p> <p>Recurring Special Provisions or Plan Details: 401-R-577 INERTIAL PROFILER WITH SMOOTHNESS PAY ADJUSTMENTS FOR HMA, FIXED INTERVAL</p>	<p><input checked="" type="checkbox"/> 2024 Standard Specifications Revise Pay Items List</p> <p><input type="checkbox"/> Create RSP (No. __) Effective:</p> <p><input checked="" type="checkbox"/> Revise RSP (No. 401-R-577) Effective: March 1, 2023</p>
<p>Standard Drawing affected: NONE</p>	<p><input type="checkbox"/> Standard Drawing Effective:</p>
<p>Design Manual Sections affected: NONE</p>	<p><input type="checkbox"/> Create RPD (No. __) Effective:</p>
<p>GIFE Sections cross-references: 5.16, 8.13, 13.4, 13.17</p>	<p><input checked="" type="checkbox"/> GIFE Update <input type="checkbox"/> Frequency Manual Update <input type="checkbox"/> SiteManager Update</p>

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Current RSP 501-R-xxx INERTIAL PROFILER WITH SMOOTHNESS PAY ADJUSTMENTS FOR PCCP requires the Contractor to provide and operate a 16ft straightedge instead of the Department. The specification does not stipulate equipment or operating requirements.

PROPOSED SOLUTION: Add equipment and operating requirements to the specification.

APPLICABLE STANDARD SPECIFICATIONS: 501.25

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: N/A

APPLICABLE SECTION OF GIFE: 5.16, 8.13, 13.4, 13.17

APPLICABLE RECURRING SPECIAL PROVISIONS: 501-R-xxx

PAY ITEMS AFFECTED: None

APPLICABLE SUB-COMMITTEE ENDORSEMENT: n/a

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE:
Unchanged from current.

IMPACT ANALYSIS (attach report): Attached

Submitted By: Joe Novak

Title: State Construction Engineer

Organization: INDOT Construction Management

Phone Number: 317-501-7805

Date: 7/25/22

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/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? 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: N/A

REVISION TO SPECIAL PROVISION

501-R-752 INERTIAL PROFILER WITH SMOOTHNESS PAY ADJUSTMENTS FOR PCCP, FIXED INTERVAL

(Note: Proposed changes shown highlighted gray)

501-R-752 INERTIAL PROFILER WITH SMOOTHNESS PAY ADJUSTMENTS FOR PCCP,
FIXED INTERVAL

(Adopted 04-21-22)

The Standard Specifications are revised as follows:

SECTION 501, DELETE LINES 409 THROUGH 514.

SECTION 501, AFTER LINE 514, INSERT AS FOLLOWS:

501.25 Pavement Smoothness

Pavement smoothness will be accepted by means of an inertial profiler, a 16 ft long straightedge, or a 10 ft long straightedge as described below. ~~The 10 ft long straightedge will be used to check transverse slopes across travel lanes and shoulders, approaches, and crossovers. When the 10 ft straightedge is used, the pavement variations shall be corrected to 1/8 in. or less.~~

(a) Inertial Profiler with Smoothness Pay Adjustments

When a pay item for Inertial Profiler, PCCP is included in the contract, the Contractor shall furnish, calibrate, and operate an approved inertial profiler in accordance with ITM 917 for the acceptance of longitudinal smoothness on the mainline traveled way, including adjacent acceleration or deceleration lanes, where both of the following conditions are met:

- 1. The posted speed is greater than 45 mph.*
- 2. The traveled way width and slope are constant and is at least 0.5 mi in length.*

The profiles International Roughness Index, IRI, results including areas of localized roughness, and fixed interval IRI results shall become the property of the Department. The inertial profiler shall remain the property of the Contractor.

The paving exceptions and areas exempt from inertial profiler operation will be in accordance with ITM 917.

If the posted speed limit for an entire smoothness section is less than or equal to 45 mph, the section will be exempt from inertial profiler operation and the smoothness within the section will be accepted in accordance with 501.25(b).

If the posted speed limit is greater than 45 mph for a portion of a smoothness section and is less than or equal to 45 mph for the remainder, the section smoothness acceptance will be as follows:

REVISION TO SPECIAL PROVISION

501-R-752 INERTIAL PROFILER WITH SMOOTHNESS PAY ADJUSTMENTS FOR PCCP, FIXED INTERVAL

1. *By inertial profiler for the portion of the section with a posted speed limit greater than 45 mph.*
2. *In accordance with 501.25(b) for the portion of the section with a posted speed limit less than or equal to 45 mph.*

(b) 16 ft Straightedge

The Contractor shall furnish and operate a 16 ft straightedges in accordance with 306.03(d) and as described below. The 16 ft straightedge ~~is~~ shall be used to ~~accept~~measure smoothness along the direction of mainline traffic.

Locations on the pavement surface scraped by the straightedge shall be marked. The pavement shall be corrected in accordance with 501.25(e) to meet the required tolerance. For existing utility and manhole castings that required no grade adjustment, the tolerance may be adjusted after being reviewed and approved by the Engineer.

For contracts which include the Inertial Profiler, PCCP pay item, the 16 ft long straightedge or the Inertial Profiler simulating the 16 ft long straightedge shall be used to ~~accept~~measure longitudinal smoothness at the following locations:

1. *All mainline traveled way lanes shorter than 0.5 mi.*
2. *All mainline traveled way lanes at locations exempted from inertial profiler operation in accordance with ITM 917.*
3. *All mainline traveled way lanes within smoothness sections with posted speed limits less than or equal to 45 mph throughout the entire section length.*
4. *All tapers.*
5. *All ramps.*
6. *All turn lanes, including bi-directional left turn lanes shorter than 0.5 mi.*
7. *All acceleration and deceleration lanes associated with ramps with posted speeds of 45 mph or less.*
8. *All shoulders.*
9. *All intersections with significant change in cross slope.*

For contracts where the inertial profiler is not used for smoothness acceptance, the 16 ft straightedge ~~will~~shall be used to ~~accept~~measure longitudinal smoothness at the above

REVISION TO SPECIAL PROVISION

501-R-752 INERTIAL PROFILER WITH SMOOTHNESS PAY ADJUSTMENTS FOR PCCP, FIXED INTERVAL

locations, ~~and on all mainline traveled way lanes and ramps with posted speeds greater than 45 mph. Smoothness acceptance, and on ramp acceleration or deceleration lanes will also be based on the 16 ft straightedge.~~

(c) 10 ft Straightedge

The 10 ft straightedge will be in accordance with 306.03(d). The 10 ft straightedge will be used to check transverse slopes across travel lanes and shoulders, approaches, and crossovers. When the 10 ft straightedge is used, the pavement variations shall be corrected to 1/8 in. or less.

(ed) Areas of Localized Roughness, ALR

At locations where the inertial profiler is used, all areas having a localized roughness in excess of 160 in./mi utilizing continuous IRI with a 25 ft window shall be corrected subject to approval by the Engineer. After ALRs have been identified, a grinding simulation shall be performed to estimate whether the ALR can be corrected to an IRI value of less than 160 in./mi with no more than 1/4 in. grind depth at any spot. If such correction is not possible, then an ALR with an IRI value less than 190 in./mi can remain uncorrected if approved by the Engineer and ALR with an IRI value greater than 190 in./mi shall require full depth removal and replacement of sufficient area to meet specifications.

In addition, if there is only one ALR in any two-lane mile section, then no smoothness correction will be required if the ALR does not exceed 190 in./mi and the overall smoothness in accordance with 501.25(d) of the two-lane mile section does not require any corrective action. A two-lane mile section will start one mile before the ALR and end one mile after the ALR in order that all two-lane mile sections will have, at most, one ALR each.

(de) 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 and flexural strength testing yields a modulus of rupture of 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.

The width of the corrected area may be partial or full lane width, depending on the respective wheel path profiles. After the corrective action is complete, the inertial profiler 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.

REVISION TO SPECIAL PROVISION

501-R-752 INERTIAL PROFILER WITH SMOOTHNESS PAY ADJUSTMENTS FOR PCCP, FIXED INTERVAL

SECTION 501, AFTER LINE 657, INSERT AS FOLLOWS:

(d) Smoothness

Smoothness pay adjustments will only be applied when the smoothness is measured by an inertial profiler in accordance with 501.25(a).

When the pavement smoothness is tested with an inertial profiler, payment will be based on the Mean Roughness Index, MRI, for each lane for each 0.1-mile section of paving. The MRI for a 0.1-mile section is the average of the IRI of the two-wheel paths. A Quality Assurance Pay Factor, PF_s , for smoothness will apply to the planned thickness of the PCCP. The quality assurance adjustment for each section will be calculated by the following formula:

$$q_s = (PF_s - 1.00) \times A \times U$$

where:

- q_s = quality assurance adjustment for smoothness for one section
- PF_s = pay factor for smoothness
- A = area of the section, sq yd
- U = unit price for the material, \$/sq yd.

The quality assurance adjustment for smoothness, Q_s , for the contract will be the total of the quality assurance adjustments for smoothness, q_s , on each section by the following formula:

$$Q_s = \sum q_s$$

When smoothness is measured by an inertial profiler, payment adjustments will be made for any 0.1-mile section based on the initial MRI generated and in accordance with the following table. The MRI pay factors for smoothness will be determined prior to any required smoothness correction in accordance with 510.25(d). Smoothness correction if required shall be in accordance with 501.25(ed). For any 0.1-mile sections containing transverse construction joints that are required as per the planned maintenance of traffic, the pay factors for smoothness may be determined after corrective action at the discretion of the Contractor. Regardless of the tabulated value, the maximum pay factor for a smoothness section where corrective action has been performed will be 1.00.

<i>PAY FACTORS FOR SMOOTHNESS</i>	
<i>Posted Speed greater than 45 mph</i>	
<i>MRI, in./mi</i>	<i>Pay Factor, PF_s</i>
<i>over 0 to 35</i>	<i>1.08</i>
<i>over 35 to 40</i>	<i>1.07</i>
<i>over 40 to 45</i>	<i>1.05</i>
<i>over 45 to 50</i>	<i>1.03</i>
<i>over 50 to 55</i>	<i>1.02</i>

REVISION TO SPECIAL PROVISION

501-R-752 INERTIAL PROFILER WITH SMOOTHNESS PAY ADJUSTMENTS FOR PCCP, FIXED INTERVAL

<i>over 55 to 60</i>	<i>1.01</i>
<i>over 60 to 70</i>	<i>1.00</i>
<i>over 70 to 75</i>	<i>0.99</i>
<i>over 75 to 80</i>	<i>0.98</i>
<i>over 80 to 85</i>	<i>0.96</i>
<i>over 85 to 90</i>	<i>0.95</i>
<i>over 90</i>	<i>PF_s will be 0.95 and the section shall be corrected to 90 or less.</i>

SECTION 501, BEGIN LINE 719, 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.

Furnishing and operating the 16 ft straightedge shall be included in the cost of other pay items within this section.

Payment for furnishing, calibrating, and operating the ~~profilograph~~ *inertial profiler*, and furnishing ~~profile~~ *IRI profile*¹ information will be made at the contract lump sum price for ~~profilograph~~ *Inertial Profiler, PCCP*.

SECTION 501, BEGIN LINE 746, DELETE AND INSERT AS FOLLOWS:

~~Profilograph~~ *Inertial Profiler, PCCP* LS

SECTION 501, BEGIN LINE 752, DELETE AND INSERT AS FOLLOWS:

The price of ~~profilograph~~ *Inertial Profiler, PCCP* will be full compensation regardless of how often the ~~profilograph~~ *inertial profiler* is used or how ~~many profilograms are produced~~ *often the IRI is determined*.

SECTION 502, BEGIN LINE 358, DELETE AND INSERT AS FOLLOWS:

502.20 Pavement Smoothness

Pavement smoothness will be in accordance with 501.25 except ~~profilograph~~ *inertial profiler* requirements will not apply.

¹ added 9/9/22

COMMENTS AND ACTION

501-R-752 INERTIAL PROFILER WITH SMOOTHNESS PAY ADJUSTMENTS FOR PCCP, FIXED INTERVAL

DISCUSSION:

This item was introduced and presented by Mr. Novak who explained that the current RSP 501-R-752 INERTIAL PROFILER WITH SMOOTHNESS PAY ADJUSTMENTS FOR PCCP requires the Contractor to provide and operate a 16ft straightedge instead of the Department. The specification does not stipulate equipment or operating requirements.

Mr. Novak therefore proposed to add equipment and operating requirements to the specification for clarification.

Prior to the meeting, Mr. Koch asked about clarifications concerning the use of the 16 ft straightedge and who will be responsible for the use. Following a brief discussion, Mr. Novak and Mr. Blanchard offered the above revisions shown highlighted in yellow.

There were no further questions or comments, and this item passed as revised.

<p>Motion: Mr. Novak Second: Mr. Pelz Ayes: 10 Nays: 0 FHWA Approval: YES</p>	<p>Action:</p> <p><input type="checkbox"/> Passed as Submitted <input checked="" type="checkbox"/> Passed as Revised <input type="checkbox"/> Withdrawn</p>
<p>2022 Standard Specifications Sections referenced and/or affected: 501.29, begin pg 419.</p> <p>Recurring Special Provisions or Plan Details: 501-R-752 (projected adding to the MenuBFU August 5, 2022)</p> <p>Standard Drawing affected: NONE</p> <p>Design Manual Sections affected: NONE</p> <p>GIFE Sections cross-references: 5.16, 8.13, 13.4, 13.17</p>	<p><input checked="" type="checkbox"/> 2024 Standard Specifications Revise Pay Items List</p> <p><input type="checkbox"/> Create RSP (No. __) Effective:</p> <p><input checked="" type="checkbox"/> Revise RSP (No. 501-R-752) Effective: March 1, 2023</p> <p><input type="checkbox"/> Standard Drawing Effective:</p> <p><input type="checkbox"/> Create RPD (No. __) Effective:</p> <p><input checked="" type="checkbox"/> GIFE Update <input type="checkbox"/> Frequency Manual Update <input type="checkbox"/> SiteManager Update</p>

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: SS 401 and 501 have recently transferred the requirement to furnish and operate the 16ft straightedge from the Department to the Contractor. It is unclear who must provide and operate the straightedge in SS 305 but SS 306 seems to be the Contractor and SS 414 the Department. So there is inconsistency throughout the specifications on this responsibility. Currently the Standard Specifications has identical equipment requirements for the 16ft and 10ft straightedges in multiple locations.

There are some editorial corrections needed as a result of the specifications recently changing from the profilograph to the inertial profiler.

PROPOSED SOLUTION: Clearly allocate the responsibility to furnish and operate the 16ft straightedge to the Contractor consistently in all specifications. Clearly allocate the responsibility to furnish and operate the 10ft straightedge to the Department. Update language for equipment requirements and add operating instructions as needed for the 16ft straightedge.

Reduce the locations of the straightedge equipments specifications by using references.

Make editorial corrections as need for the replacement of the profilograph with the inertial profiler.

APPLICABLE STANDARD SPECIFICATIONS: 305.03, 306.03, 402.18, 409.03, 410.22, 414.13, 502.20, 506.11, 508.09

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: N/A

APPLICABLE SECTION OF GIFE: 5.16, 8.13, 13.4, 13.17

APPLICABLE RECURRING SPECIAL PROVISIONS: none

PAY ITEMS AFFECTED: None

APPLICABLE SUB-COMMITTEE ENDORSEMENT: n/a

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

Required for all contracts with 401 or 501 pay items.

IMPACT ANALYSIS (attach report): Attached

Submitted By: Joe Novak

Title: State Construction Engineer

Organization: INDOT Construction Management

Phone Number: 317-501-7805

Date: 7/25/22

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/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? 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: N/A

REVISION TO STANDARD SPECIFICATIONS

SECTION 305 – CONCRETE BASES	305.03 New PCC Base
SECTION 306 – MILLING	306.03(d) Straightedge
SECTION 409 – EQUIPMENT	409.03(f) Smoothness Equipment
SECTION 410 – QC/QA HMA -SMA PAVEMENT	410.22 Basis of Payment
SECTION 414 – ULTRATHIN BONDED WEARING COURSE, WARRANTED	414.13 Smoothness
SECTION 506 – PCCP PATCHING	506.11 Placing Concrete
SECTION 508 – EQUIPMENT	508.09 Testing Facility and Equipment

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 305, BEGIN LINE 19, DELETE AND INSERT AS FOLLOWS:

305.03 New PCC Base

Construction of new PCC bases shall be in accordance with 502, except for 502.14, and 502.20. The CMDS shall be in accordance with 502.03 except utilization of the Department provided spreadsheet is not required. The surface shall be finished with wet burlap or by wood floats. Smoothness of the base ~~will~~ shall be controlled *by the Contractor* with a 16 ft long straightedge longitudinally and *will be controlled by the Department* ~~by~~ with a 10 ft long straightedge transversely ~~by the Department~~. *The 16 ft straightedge shall be in accordance with 306.03(d). The 10 ft straightedge will be in accordance with 306.03(d).*

SECTION 305, AFTER LINE 198, INSERT AS FOLLOWS:

Furnishing and operating the 16 ft straightedge shall be included in the cost of other pay items within this section.

SECTION 306, BEGIN LINE 59, DELETE AND INSERT AS FOLLOWS:

(d) Straightedge

1. Straightedge – 16 ft

~~A 16 ft straightedge shall be a rigid beam mounted on two solid wheels on axles 16 ft apart. The straightedge has a mounted push bar to facilitate propelling the device along or across the pavement. Tolerance points are located at the 1/4, 1/2, and 3/4 points and may be composed of threaded bolts capable of being adjusted to the tolerance required~~ *The straightedge shall be a walk behind, rigid beam device on two solid wheels on axles 16 feet apart with adjustable rods at the 1/4, 1/2, and 3/4 points. The adjustable rods shall be set to a 1/4 in clearance from the bottom of the rods to the bottom of the wheels when checked with a taut stringline running from wheel to wheel at each end of the straightedge. The straightedge shall be operated in the wheel path approximately 3 ft transversely from the edge line in the direction of traffic and parallel to the pavement centerline. The operator of the straightedge shall walk the equipment over the completed pavement surface while maintaining the alignment of the equipment in the presence of the Engineer.*

SECTION 306, AFTER LINE 267, INSERT AS FOLLOWS:

Furnishing and operating the 16 ft straightedge shall be included in the cost of other pay items within this section.

SECTION 409, BEGIN LINE 142, DELETE AND INSERT AS FOLLOWS:

(f) Smoothness Equipment

REVISION TO STANDARD SPECIFICATIONS

SECTION 305 – CONCRETE BASES	305.03 New PCC Base
SECTION 306 – MILLING	306.03(d) Straightedge
SECTION 409 – EQUIPMENT	409.03(f) Smoothness Equipment
SECTION 410 – QC/QA HMA -SMA PAVEMENT	410.22 Basis of Payment
SECTION 414 – ULTRATHIN BONDED WEARING COURSE, WARRANTED	414.13 Smoothness
SECTION 506 – PCCP PATCHING	506.11 Placing Concrete
SECTION 508 – EQUIPMENT	508.09 Testing Facility and Equipment

1. Profilograph Inertial Profiler

The ~~profilograph inertial profiler~~ shall be in accordance with ITM ~~912917~~.

2. Straightedge – 16 ft

~~A 16 ft straightedge shall be a rigid beam mounted on two solid wheels on axles 16 ft apart. The straightedge has a mounted push bar to facilitate propelling the device along or across the pavement. Tolerance points are located at the 1/4, 1/2, and 3/4 points and may be composed of threaded bolts capable of being adjusted to the tolerance required.~~

3. Straightedge – 10 ft

~~The 10 ft straightedge is the same as a 16 ft straightedge except that the wheels are mounted 10 ft apart. A handheld rigid beam may be substituted.~~

SECTION 410, BEGIN LINE 499, DELETE AND INSERT AS FOLLOWS:

Payment for furnishing, calibrating, ~~and~~ operating the ~~profilograph inertial profiler~~, and furnishing ~~IRI~~ profile information will be made in accordance with ~~401.22401.18~~.

Furnishing and operating the 16 ft straightedge shall be included in the cost of other pay items within this section.

SECTION 410, BEGIN LINE 538, DELETE AND INSERT AS FOLLOWS:

The price for ~~profilograph inertial p~~Profiler, HMA will be full compensation regardless of how often the ~~profilograph inertial profiler~~ is used or how ~~many~~ ~~profilograms~~ ~~files are produced~~ *often the IRI is determined.*

SECTION 414, BEGIN LINE 173, DELETE AND INSERT AS FOLLOWS

414.13 Smoothness

~~A straightedge in accordance with 409.03(f) will be used to determine smoothness. The 16 ft straightedge will be used to accept smoothness along the direction of mainline traffic and the 10 ft straightedge will be used to accept smoothness transverse to the direction of mainline traffic. Pavement smoothness shall be controlled by the Contractor with a 16 ft long straightedge longitudinally, and will be controlled~~ *by the Department with a 10 ft long straightedge transversely by the Department.* ~~The 16 ft straightedge shall be in accordance with 306.03(d). The 10 ft straightedge will be in accordance with 306.03(d). Smoothness correction shall be in accordance with 401.18(ee).~~

SECTION 506, BEGIN LINE 463, DELETE AND INSERT AS FOLLOWS:

For patches which are not to be overlaid and have a length greater than 20 ft, pavement smoothness will be in accordance with 501.25 except ~~profilograph inertial profiler~~ requirements will not apply.

REVISION TO STANDARD SPECIFICATIONS

SECTION 305 – CONCRETE BASES	305.03 New PCC Base
SECTION 306 – MILLING	306.03(d) Straightedge
SECTION 409 – EQUIPMENT	409.03(f) Smoothness Equipment
SECTION 410 – QC/QA HMA -SMA PAVEMENT	410.22 Basis of Payment
SECTION 414 – ULTRATHIN BONDED WEARING COURSE, WARRANTED	414.13 Smoothness
SECTION 506 – PCCP PATCHING	506.11 Placing Concrete
SECTION 508 – EQUIPMENT	508.09 Testing Facility and Equipment

SECTION 508, BEGIN LINE 282, DELETE AND INSERT AS FOLLOWS:

(c) ~~Profilograph~~Inertial Profiler

The ~~profilograph~~ *inertial profiler* shall be in accordance with ITM 912917.

(d) ~~Straightedge~~—16 ft

~~A 16 ft straightedge shall be a rigid beam mounted on two solid wheels on axles 16 ft apart. The straightedge has a mounted push bar to facilitate propelling the device along or across the pavement. Tolerance points are located at the 1/4, 1/2, and 3/4 points and may be composed of threaded bolts capable of being adjusted to the tolerance required.~~

(e) ~~Straightedge~~—10 ft

~~A 10 ft straightedge is the same as a 16 ft straightedge except that the wheels are mounted 10 ft apart. A handheld rigid beam may be substituted.~~

FINAL DRAFT MINUTIA

COMMENTS AND ACTION

305.03 New PCC Base
 409.03(f) Smoothness Equipment
 414.13 Smoothness
 508.09 Testing Facility and Equipment

306.03(d) Straightedge
 410.22 Basis of Payment
 506.11 Placing Concrete

DISCUSSION:

Mr. Novak introduced and presented this item stating that Standard Specification sections 401 and 501 have recently transferred the requirement to furnish and operate the 16 ft straightedge from the Department to the Contractor. It is unclear who must provide and operate the straightedge in 305 but 306 seems to be the Contractor and 414 will be the Department. So there is inconsistency throughout the specifications on this responsibility.

Currently the Standard Specifications has identical equipment requirements for the 16 ft and 10 ft straightedges in multiple locations. There are some editorial corrections needed as a result of the specifications recently changing from the profilograph to the inertial profiler.

Mr. Novak proposed to clearly allocate the responsibility to furnish and operate the 16 ft straightedge to the Contractor consistently in all specifications. And to clearly allocate the responsibility to furnish and operate the 10 ft straightedge to the Department. Mr. Novak also proposed to update the language for equipment requirements and add operating instructions as needed for the 16 ft straightedge. Mr. Novak further proposed to reduce the locations of the straightedge equipment specifications by using references, and to make editorial corrections as need for the replacement of the profilograph with the inertial profiler.

Prior to the meeting, Mr. Koch asked about clarifications concerning the use of the 16 ft straightedge and who will be responsible for the use. Following a brief discussion, Mr. Novak and Mr. Blanchard offered the above revisions shown highlighted in yellow.

There were no further questions or comments, and this item passed as revised.

Motion: Mr. Novak Second: Mr. Pelz Ayes: 10 Nays: 0 FHWA Approval: YES	<p>Action:</p> <p>— Passed as Submitted</p> <p><input checked="" type="checkbox"/> Passed as Revised</p> <p>— Withdrawn</p>
2022 Standard Specifications Sections referenced and/or affected: VARIOUS, SEE PROPOSAL	<p><input checked="" type="checkbox"/> 2024 Standard Specifications</p> <p>— Revise Pay Items List</p>
Recurring Special Provisions or Plan Details: TBD	<p><input checked="" type="checkbox"/> Create RSP (No. TBD)</p> <p>Effective: March 1, 2023</p>
Standard Drawing affected: NONE	<p>— Revise RSP (No. __)</p> <p>Effective:</p> <p>— Standard Drawing</p> <p>Effective:</p>
Design Manual Sections affected: NONE	<p>— Create RPD (No. __)</p> <p>Effective:</p>
GIFE Sections cross-references: TBD	<p><input checked="" type="checkbox"/> GIFE Update</p> <p>— Frequency Manual Update</p> <p>— SiteManager Update</p>

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Standard Specification Section 711.31, Peening Welds by Means of Ultrasonic Impact Treatment, UIT, indicates that equipment operators shall be certified as being trained by ASNT. It has come to our attention that such certification doesn't exist.

PROPOSED SOLUTION: The proposed changes require the Contractor to submit a quality control plan, QCP, which will include UIT equipment operator certification by the equipment manufacturer. The non-destructive testing, NDT, that is to be performed prior to the UIT operations will be covered by reference to Section 729, which provides thorough requirements for certification and reporting.

APPLICABLE STANDARD SPECIFICATIONS: 711.31

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: 412-3.03(06) (no updates required)

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A (711-B-315 includes revisions to Section 711.68, but 711.31)

PAY ITEMS AFFECTED: N/A (711-04702 PEENING WELD, UIT covers this work, but proposed changes don't affect MOM or BOP)

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc committee comprised of Jim Reilman and Stephanie Wagner

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE: Projects that include the pay item: 711-04702 PEENING WELD, UIT

IMPACT ANALYSIS (attach report):

Submitted By: Pete White

Title: Design Manager

Division: Bridge Engineering

E-mail: pewwhite@indot.in.gov

Date: July 22, 2022

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 Qualified Products List (QPL)? 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? No

Design process? No

Will this change provide the contractor more flexibility? No

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

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

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda: The current specification references a certification requirement that isn't feasible.

REVISION TO STANDARD SPECIFICATIONS

SECTION 711 – STEEL STRUCTURES

711.31 Peening Welds by Means of Ultrasonic Impact Treatment, UIT

(Note: Proposed changes shown as: ~~deletion~~ and *insertions*)

The Standard Specifications are revised as follows:

SECTION 711, BEGIN LINE 442, DELETE AND INSERT AS FOLLOWS:

711.31 Peening Welds by Means of Ultrasonic Impact Treatment, UIT

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

~~Equipment operators shall be American Society for Nondestructive Testing, ASNT, Level II technicians, trained in the use of the equipment for peening by ultrasonic impact methods.~~ *Personnel performing NDT shall meet the qualifications specified in 729.04(b).* Proof of certification shall be ~~furnished~~ *submitted to the Engineer at least two weeks prior to commencing work.*

UIT shall be performed in accordance with the QCP, which shall be prepared and submitted in accordance with ITM 803. The QCP shall include the Contractor's experience performing UIT within the last five years, and certification by the manufacturer of the UIT equipment that the personnel performing the work have received sufficient training on the operation of the equipment within the past 18 months. The QCP shall be submitted to the Engineer at least two weeks prior to commencing work.

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

Paint removal shall be in accordance with 619.08(a) and 619.08(i). Painting shall be in accordance with 619.09 and 619.10.

Prior to beginning the peening process, all welds shall be inspected ~~with a 10x magnifying glass and with either ultrasonic or magnetic particle non-destructive testing equipment~~ *in accordance with 729.04(a). The results of the inspection shall be submitted in accordance with 729.04(c).* Welds needing repair shall be ground and repaired in accordance with the Bridge Welding Code. Peening using ultrasonic impact treatment methods shall be applied to all repaired welds in addition to the welds shown on the plans.

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

COMMENTS AND ACTION

711.31 Peening Welds by Means of Ultrasonic Impact Treatment, UIT

DISCUSSION:

This item was introduced and presented by Mr. White who explained that Standard Specification Section 711.31, Peening Welds by Means of Ultrasonic Impact Treatment, UIT, indicates that equipment operators shall be certified as being trained by ASNT. It has come to our attention that such certification doesn't exist.

Mr. White stated that the proposed changes require the Contractor to submit a quality control plan, QCP, which will include UIT equipment operator certification by the equipment manufacturer. The non-destructive testing, NDT, that is to be performed prior to the UIT operations will be covered by reference to Section 729, which provides thorough requirements for certification and reporting. NDT definition will also be added to 101.

Mr. Reilman asked if it is more common in our spec book to say "at least" or "a minimum of". We'll look into that and make the necessary revisions for consistency.

There were no further questions or comments, and this item passed as submitted.

<p>Motion: Mr. White Second: Mr. Pelz Ayes: 10 Nays: 0 FHWA Approval: YES</p>	<p>Action:</p> <p><input checked="" type="checkbox"/> Passed as Submitted <input type="checkbox"/> Passed as Revised <input type="checkbox"/> Withdrawn</p>
<p>2022 Standard Specifications Sections referenced and/or affected: 711.31 pg 694.</p>	<p><input checked="" type="checkbox"/> 2024 Standard Specifications, also add abbreviation "NDT" to 101 <input type="checkbox"/> Revise Pay Items List</p>
<p>Recurring Special Provisions or Plan Details: NONE (711-B-315 includes revisions to Section 711.68, but 711.31)</p>	<p><input checked="" type="checkbox"/> Create RSP (No. TBD) Effective: March 1, 2023</p> <p><input type="checkbox"/> Revise RSP (No. __) Effective:</p>
<p>Standard Drawing affected: NONE</p>	<p><input type="checkbox"/> Standard Drawings Effective:</p>
<p>Design Manual Sections affected: 412-3.03(06) (no updates required)</p>	<p><input type="checkbox"/> Create RPD (No. __) Effective:</p>
<p>GIFE Sections cross-references: NONE</p>	<p><input type="checkbox"/> GIFE Update <input type="checkbox"/> Frequency Manual Update <input type="checkbox"/> SiteManager Update</p>

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Specifications defining initial clearing of right-of-way payment limits need to be updated accommodate automation improvements of the Contract Information Book (CIB) development process.

PROPOSED SOLUTION: Incorporate necessary changes into the existing RSP.

APPLICABLE STANDARD SPECIFICATIONS: SECTION 201 – CLEARING AND GRUBBING

201.07 Basis of Payment
(d) Clearing Right-of-Way

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE: None

APPLICABLE RECURRING SPECIAL PROVISIONS: RSP 201-C-052

PAY ITEMS AFFECTED: None

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad Hoc: Daniel Stickney & John Wooden

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE: unchanged from what it currently is for 201-C-052.

IMPACT ANALYSIS (attach report):

Submitted By: John P Wooden

Title: Estimating Administrator

Division: Contract Administration

E-mail: jwooden@indot.in.gov

Date: July 22, 2022

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 Qualified Products List (QPL)? 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? Yes

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: The proposed specification amendment is part of ongoing Contract Administration Division efforts to improve letting document generation process efficiencies and reduction of potential errors.

REVISION TO SPECIAL PROVISIONS

201-C-052 INITIAL PAYMENT FOR CLEARING RIGHT-OF-WAY

201-C-052 INITIAL PAYMENT FOR CLEARING RIGHT-OF-WAY

(Revised 05-02-19)

The Standard Specifications are revised as follows:

SECTION 201, AFTER LINE 147, INSERT AS FOLLOWS:

The initial payment for clearing right-of-way will be limited to ~~—~~% the percentage of the original total bid shown on the Proposal Page of the Contract Information Book. If the contract lump sum price for clearing right-of-way is greater than ~~—~~% the percentage shown of the original total bid, the amount over ~~—~~% the percentage will be paid when the contract work is 50% complete, or when the clearing work is complete, whichever is later.

FINAL DRAFT MINUTES

COMMENTS AND ACTION

201-C-052 INITIAL PAYMENT FOR CLEARING RIGHT-OF-WAY

DISCUSSION:

Mr. Wooden introduced and presented this item stating that the Standard Specifications defining initial clearing of right-of-way payment limits need to be updated accommodate automation improvements of the Contract Information Book, CIB, development process. Mr. Wooden added that the proposed specification amendment is part of ongoing Contract Administration Division efforts to improve letting document generation process efficiencies and the reduction of potential errors.

Mr. Wooden proposed to incorporate the necessary changes into the existing RSP, as shown above.

There were no questions or comments, and this item passed as submitted.

<p>Motion: Mr. Wooden Second: Mr. Novak Ayes: 10 Nays: 0 FHWA Approval: YES</p>	<p>Action:</p> <p><input checked="" type="checkbox"/> Passed as Submitted <input type="checkbox"/> Passed as Revised <input type="checkbox"/> Withdrawn</p>
<p>2022 Standard Specifications Sections referenced and/or affected: SECTION 201, begin pg 129</p> <p>Recurring Special Provisions or Plan Details: 201-C-052 INITIAL PAYMENT FOR CLEARING RIGHT-OF-WAY</p> <p>Standard Drawing affected: NONE</p> <p>Design Manual Sections affected: NONE</p> <p>GIFE Sections cross-references: NONE</p>	<p>2024 Standard Specifications Revise Pay Items List</p> <p>Create RSP (No. __) Effective:</p> <p><input checked="" type="checkbox"/> Revise RSP (No. 201-C-052) Effective: March 1, 2023</p> <p>Standard Drawing Effective:</p> <p>Create RPD (No. __) Effective:</p> <p>GIFE Update Frequency Manual Update SiteManager Update</p>