INDIANA DEPARTMENT OF TRANSPORTATION

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Indianapolis, Indiana 46204

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Michael R. Pence, Governor
Brandye L. Hendrickson, Commissioner

APPROVED MINUTES

August 20, 2015 Standards Committee Meeting

December 28, 2015

TO: Standards Committee

FROM: Scott Trammell, Secretary

RE: Minutes from the August 20, 2015 Standards Committee Meeting

The Standards Committee meeting was called to order by Mr. Miller at 09:00 a.m. on August 20, 2015 in the N955 Bay Window Conference Room. The meeting was adjourned at 12:26 p.m.

The following committee members were in attendance:

Mark Miller, Chairman, Construction Management Director
Bob Cales, Contract Administration Division
Dave Boruff, Traffic Engineering Division
Elizabeth Phillips, Bridges Division
Greg Pankow, State Construction Engineer
Kumar Dave, pavement Engineering, Highway Design
Michael Koch, Fort Wayne District Area Engineer
Peter Yao, Road Services
Rob Goldner, Construction Technical Support

Also in attendance were the following:

Hannah Ogburn, 3M
Dan Osborn, ICA
Josh Coulter, The Hoosier Co.
Scott Trammell, INDOT
Naveed Burki, INDOT
Rick P. Smith, ATSSA-RoadSafe,
Lana Podorvanova, INDOT
Joe Bruno, INDOT
Steve Smart, County Materials
Steve Fisher, INDOT
Kenny Kolberg, Plastic Safety System
John Susong, Rinker Materials
Richard Phillabaum, INDOT
Joel Salinas, INDOT
Tommy Nantung, INDOT
Tom Duncan, FHWA
Jusang Lee, INDOT
Kurt Pelz, INDOT
Shawn Slaymon, INDOT
Dana Plather, INDOT
Sam Sarvis, INDOT

The following items were listed for consideration:

A. GENERAL BUSINESS ITEMS

OLD BUSINESS

(No items were listed)

NEW BUSINESS

1. Approval of the Minutes from the June 18, 2015 meeting

DISCUSSION: Mr. Miller requested a motion to approve the minutes from the June 18, 2015 meeting.

Motion: Mr. Cales
Second: Ms. Phillips
Ayes: 8
Nays: 0

ACTION: PASSED AS SUBMITTED

B. CONCEPTUAL PROPOSAL ITEMS

OLD BUSINESS

(No items were listed)

NEW BUSINESS

(No items were listed)

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

OLD BUSINESS

(No items on this agenda)

NEW BUSINESS

Item No. 01 (2016 SS) Ms. Phillips pg 04
Recurring Special Provision:
738-B-297 POLYMERIC CONCRETE BRIDGE DECK OVERLAY

ACTION: PASSED AS REVISED

Item No. 02 (2016 SS) Mr. Pankow pg 15
Recurring Special Provision:
629-R-xxx *PLANT GROWTH LAYER*

ACTION: PASSED AS REVISED

Item No. 03 (2016 SS) Mr. Pankow pg 22
Recurring Special Provision:
914-R-xxx *TOPSOIL AND SOIL AMENDMENTS*

ACTION: PASSED AS SUBMITTED

Item No. 04 (2016 SS)	Mr. Goldner	pg 29
Recurring Special Provisions:		
914-R-xxx	*FABRIC STAPLES*	
205-R-261	QUALITY CONTROL TEMPORARY EROSION AND SEDIMENT CONTROL	
ACTION:	PASSED AS SUBMITTED	

Item No. 05 (2016 SS)	Ms. Phillips	pg 36
714.04(c)	Working Drawings	
723.04(c)	Working Drawings	
Recurring Plan Details:		
700-R-xxxd	*LOAD RATING SUMMARY*	
ACTION:	PASSED AS REVISED	

Item No. 06 (2016 SS)	Mr. Boruff	pg 46
Recurring Special Provision:		
801-T-XXX	*TEMPORARY PORTABLE RUMBLE STRIPS*	
Recurring Plan Details:		
801-T-xxxd	*TEMPORARY PORTABLE RUMBLE STRIP INSTALLATION*	
ACTION:	PASSED AS REVISED	

Item No. 07 (2016 SS)	Mr. Boruff	pg 53
Recurring Special Provision:		
808-T-XXX	*GROOVING FOR DURABLE PAVEMENT MARKINGS*	
ACTION:	PASSED AS REVISED	

Item No. 08 (2016 SS)	Mr. Boruff	pg 71
Recurring Plan Details:		
801-R-622d (sheet 21 only)	TRAFFIC CONTROL SIGNS, DEVICES, AND NOTES	
ACTION:	PASSED AS SUBMITTED	

Item No. 09 (2016 SS)	Mr. Goldner	pg 78
103.01(c)	Goal	
108.04	Prosecution of the Work	
ACTION:	PASSED AS SUBMITTED	

cc: Committee Members
FHWA
ICA

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO SPECIAL PROVISION

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Vendor's request to include their EPX 50-Overlay product in RSP 738-B-297- Polymeric Concrete Overlay.

PROPOSED SOLUTION: Review and consider the presented information for inclusion of the product.

APPLICABLE STANDARD SPECIFICATIONS: None

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE: None

APPLICABLE RECURRING SPECIAL PROVISIONS: RSP 738-B-297

PAY ITEMS AFFECTED: None

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Adhoc committee of Elizabeth Phillips and Naveed Burki. Additional comments solicited from Greg Pankow, Tony Zander, and Tommy Nantung.

IMPACT ANALYSIS (attach report): Yes

Submitted By: Naveed Burki

Title: Senior Standards Engineer

Organization: INDOT Bridge Standards and Policy

Phone Number: 317-233-2057

Date: 7/15/2015

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO SPECIAL PROVISION

IMPACT ANALYSIS REPORT CHECKLIST

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

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

Will this proposal improve:

Construction costs? Possibly

Construction time? No

Customer satisfaction? Possibly

Congestion/travel time? No

Ride quality? No

Will this proposal reduce operational costs or maintenance effort? No

Will this item improve safety:

For motorists? No

For construction workers? No

Will this proposal improve quality for:

Construction procedures/processes? No

Asset preservation? No

Design process? No

Will this change provide the contractor more flexibility? Yes

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

Can this item improve/reduce the number of potential change orders? No
Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda: EChem submitted the material test results instructed. The materials met the requirements in all categories. EChem provided DOT contacts for establishing a performance history. The DOTs of Nebraska, Wisconsin and Wyoming, were contacted and expressed satisfaction with the product and vendor services.

738-B-297 POLYMERIC CONCRETE BRIDGE DECK OVERLAY

(Adopted 02-20-14)

Description

The polymeric concrete bridge deck overlay shall consist of an epoxy polymer that acts together with special aggregate to form an overlay system that adheres to the substrate deck concrete to prevent water and chloride intrusion. This work shall consist of preparing the surface to be treated and furnishing and placing the polymeric concrete bridge deck overlay in accordance with 105.03.

Materials

All material certifications shall be in accordance with 916 for the type specified and shall be submitted to the Engineer at least 14 calendar days prior to applying the materials. A Type C certification shall be submitted for the epoxy polymer and shall include the product trade name and manufacture. A Type A certification shall be submitted for the aggregate. The material requirements are as follows:

(a) Epoxy Polymer

The epoxy polymer used in the overlay shall be a two component system consisting of a resin base and a hardener. The epoxy polymer shall be one of the following products:

1. Pro-Poxy Type III DOT, manufactured by Unitex, Dayton Superior

2. E-Bond 526, manufactured by E-Bond Epoxies, Inc. with Indiana marketing rights owned by Transpo Industries, Inc.

3. Mark-163 Flexogrid, manufactured by Poly-Carb, Inc.

4. EPX 50-Overlay, manufactured by E-Chem.

The Contractor shall provide technical literature with instructions on storing, mixing, applying the epoxy polymer, clean up, and disposing of excess materials. The epoxy polymer shall be stored according to the manufacturer’s recommendations.

(b) Aggregate

The aggregate shall be in accordance with 917.01, and the SMA requirements of 904.02, with the exception that limestone or crushed gravel be from an approved polish-resistant aggregate, PRA, source, and ACBF will not be allowed. Alternate aggregate recommended by the manufacturer of the polymeric concrete bridge deck overlays may come from a non-CAPP source provided the material requirements are met and approved by the Engineer. The aggregate shall be dry to a maximum moisture content of 0.2% by weight in accordance with AASHTO T 255. All aggregate shall be delivered to the project site in sealed containers.

Aggregate gradation shall be:

REVISION TO SPECIAL PROVISION

738-B-297 POLYMERIC CONCRETE BRIDGE DECK OVERLAY

Sieve Size	Passing by Weight
#4 (4.75 mm)	100%
#8 (2.36 mm)	30 to 75%
#16 (1.18 mm)	5% max.
#30 (0.6 mm)	1% max.

(c) Patching Materials

Material for partial depth bridge deck patching shall be one of the following. The material selected shall have written approval by the manufacturer of the epoxy used for the polymeric overlay and such approval shall be prior to the patching:

1. Rapid Setting Patch material in accordance with 901.07; except that materials containing magnesium phosphate shall not be used.

2. Epoxy mortar using the same materials as the polymeric overlay and proportioned according to the instructions provided by the manufacture of the epoxy.

Material for full depth bridge deck patching shall be one of the following:

1. Rapid setting patch material meeting the same requirements as stated previously for partial depth patches.

2. Bridge deck patching concrete in accordance with 722.04.

Construction Requirements

(a) Weather Limitations

Polymeric concrete overlays will not be allowed to be applied between October 15 and April 1. Materials shall not be placed when ambient air temperatures are below 55°F or above 90°F or when deck temperature is below 60°F or above 100°F. Materials shall not be placed on a wet surface, or when other weather conditions would adversely affect the performance of the polymeric bridge deck overlay system. The level of capillary moisture in the concrete will be measured as stated in sub-section(e).

(b) Equipment

Equipment, at a minimum, shall consist of a polymer distribution system, aggregate spreader, *metered* application squeegee and oil-free compressed air, and a source of lighting if work will be performed at night. The distribution system, or distributor, shall blend the polymer materials at the manufacturer’s required proportioning and apply the materials to the work area at the proper rate to cover the entire bridge deck. The aggregate shall be applied in a uniform manner.

The equipment used to perform the Surface Preparation Test and Final Coat Test shall be in accordance with ITM 407. The test equipment will be approved by the Engineer prior to use. Test equipment shall include all miscellaneous equipment and materials to perform the tests and clean the equipment.

REVISION TO SPECIAL PROVISION

738-B-297 POLYMERIC CONCRETE BRIDGE DECK OVERLAY

(c) Inspection and Repair of Existing Deck

Prior to the installation of the polymeric concrete bridge deck overlay on any deck section, the Engineer will sound the entire surface. The sounding is to identify any areas of deck that are in need of repair before applying the system. These areas include any delamination in the concrete deck, spalling, and breakouts. These areas shall be properly marked and repaired using the appropriate material specified for partial or full depth patching. Full depth bridge deck repairs using concrete meeting the requirements of 722.04 shall be placed a minimum of 28 days before the polymeric treatment installation can begin. The repair shall be in accordance with 722.06.

(d) Preparation of Concrete Surfaces

Full depth patching and partial depth patching of the bridge floor shall be in accordance with 722.06 using the materials defined in this specification. Before placement of the polymeric concrete surface treatment, the entire concrete bridge deck shall be thoroughly cleaned by steel shot blasting to ensure proper bonding between the treatment system and concrete substrate. A final shot blast texture meeting the International Concrete Repair Institute Levels 5 through 7 shall be achieved.

The surface shall be free of asphalt material, oil, dirt, rubber, curing compounds, paint carbonation, laitance, weak surface mortar and other potentially detrimental materials, which may interfere with the bonding or curing of the treatment system. Loosely bonded patches shall be removed and repaired. Traffic marking materials within the application area shall be removed. Compressed air shall be used to remove all dust and other loose material. Mechanical brooms, without water or vacuuming, may be used in certain applications to remove any residual dust that adheres to the prepared surface after it has been blown off with compressed air. The surface must then be blown again with compressed air after brooming to remove all loose residual dust. Compressed air used for shot blasting and other surface preparation shall be moisture and oil free in accordance with ASTM D 4285.

Pretreatment for cracks per the manufacturer’s recommendation shall be incorporated in the polymeric concrete bridge deck overlay installation. The pretreatment polymer material shall be in accordance with the manufacturer’s specifications.

To provide assurance that the cleaning procedure, materials, installation procedure, and curing period provide the desired treatment system, test patches shall be installed with the same materials, equipment, personnel, timing, sequence of operations, and curing period to be used for the installation of the overlay as required by section (e), entitled application.

After completion of the test patches, the Contractor shall perform the Surface Preparation Test. Each test patch shall 1 1/2 ft. by 3 ft. in area, and shall be installed to represent each bridge span or 600 sq yds, whichever is smaller. Test patches shall be placed in wheel paths, between wheel paths or in other areas that represent the worst surface conditions as determined by the Engineer. Three pull off

tests shall be performed in each test patch. The center to center distance of adjacent pull-off tests within a patch shall be at least 6 inches. The distance from the center of a pull-off test and the edge of the patch shall be at least 4 in. If the concrete cover is less than 3/4 in., pull-off testing is not to be done directly over the uppermost bar of the mat of steel reinforcement.

The pull off test shall be performed in accordance with ITM 407. Each single pull off test shall have tensile bond strength greater than or equal to 250 psi in order for the results to be considered passing. In the case of a lower tensile bond strength, the mode of failure shall be visually examined.

If it is determined that the mode of failure involves a fracture depth at least 1/4 in. into the base concrete and the fractured concrete covers at least 50% of the pull-off test area, the test will be given a pass designation. All three tensile pull off tests must pass in order for the test area to be considered passing.

The cleaning method, materials, and installation procedure will be approved if all test patches pass the surface preparation tests.

If a test patch fails, the shot blasting method shall be adjusted for the area represented by the failing test patch. Surface preparation testing shall be repeated until satisfactory results are attained. Once an acceptable shot blasting procedure is established, it shall be continued for the balance of the work. The Contractor may, with written permission of the Engineer, change the shot blasting procedure or equipment, in which case additional surface preparation testing shall be required.

If the Engineer determines that an approved cleaning method has changed prior to the completion of the job, the Contractor shall return to the approved cleaning methods and re-clean the suspect areas or verify through tests that the altered method is acceptable.

All test patches for tensile pull off must be removed by a method approved by the Engineer. All damage to the deck surface caused by removal shall be repaired by an approved method with no additional payment.

(e) Application

Patching and cleaning operations shall be inspected and approved prior to placing each layer of the treatment system. Any contamination of the deck or intermediate courses, after initial cleaning, shall be removed. Both courses shall be applied within 24 hours following the final cleaning and prior to opening the area to traffic.

There shall be no visible moisture present on the surface of the original deck concrete or patch material at the time of application of the polymeric concrete bridge deck overlays. The presence of capillary moisture will be determined in accordance with ASTM D 4263, except that no such test is required for partial depth repairs utilizing epoxy mortar. Compressed air in accordance with ASTM D 4285 may be used to dry the deck surface.

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738-B-297 POLYMERIC CONCRETE BRIDGE DECK OVERLAY

Handling and mixing of the epoxy polymer resin and hardening agent shall be performed in a manner to achieve the desired results in accordance with these specifications, and the manufacturer's recommendations as approved or directed by the Engineer. Polymeric concrete bridge deck overlay materials shall not be placed when weather or surface conditions are such that the material cannot be properly handled, placed, spread and cured within the specified requirements of traffic control.

The polymeric overlay system shall be applied in two separate courses in accordance with the following rate of application, and the total of the two applications shall not be less than 7.5 gal./100 sq ft.

Course	**Rate, Gal./100 sq ft**	**Aggregate, lbs/sq yd***
1	No less than 2.5	No less than 10
2	No less than 5.0	No less than 14

* Application of aggregate shall be of sufficient quantity to completely cover the epoxy.

After the epoxy polymer mixture has been prepared for the polymeric concrete bridge deck overlay, it shall be immediately and uniformly applied to the surface of the bridge deck with a *metered* squeegee. The temperature of all epoxy polymer components shall be 70°F or above at the time of application. The treatment system materials shall not be applied if the air temperature is expected to drop below 55°F within 8 hours after application, or the gel time is less than 10 minutes.

The dry aggregate shall be applied in such a manner as to cover the polymer mixture completely within 5 minutes. Each course of polymeric overlay system shall be cured until vacuuming or brooming can be performed without tearing or damaging the surface.

Traffic or equipment shall not be allowed on the treatment system surface during the curing period. After the first course curing period, all loose aggregate shall be removed by vacuuming or brooming and the next treatment system course applied to completion.

The minimum curing periods shall be as follows:

Course	**Minimum temperature of deck surface, °F**					
	60-64	65-69	70-74	75-79	80-84	>85
1	4 hours	3 hours	2.5 hours	2 hours	1.5 hours	1 hour
2	6.5 hours*	5 hours	4 hours	3 hours	3 hours	3 hours

* Course 2 shall be cured for 8 hours if the air temperature drops below 60°F during the curing period.

The Contractor shall plan and prosecute the work to provide the minimum curing periods as specified herein, or other longer minimum curing periods as prescribed by the manufacturer prior to opening to public or construction traffic, unless otherwise allowed. The first course applications shall not be opened to traffic.

REVISION TO SPECIAL PROVISION

738-B-297 POLYMERIC CONCRETE BRIDGE DECK OVERLAY

Unless otherwise specified by the Engineer, the polymeric concrete bridge deck overlay shall not be applied over the expansion joints of a bridge deck. The expansion joints shall be coated with a bond breaker or covered using an approved tape that can adequately seal the joints from the polymer. Duct tape may also be used to delineate application areas. All taped areas or bond breakers shall be removed before the polymer fully cures.

In the event the operation damages or mars the epoxy treatment system, damaged areas shall be removed by saw cutting in rectangular sections to the top of the deck surface and replacing the course in accordance with this specification.

For all materials provided, the Contractor shall maintain and provide records including but not limited to, the following:

1. Batch numbers and sizes;
2. Location of batches as placed on deck, referenced by stations;
3. Batch time, gel time; temperature of the air, deck surface, polymer adhesive components, including aggregates;
4. Loose aggregate removal time; and time open to traffic.

Prior to construction of the polymeric concrete bridge deck overlay, the Contractor shall submit to the Engineer for approval a QCP for constructing the treatment system. The QCP shall include, but not be limited to, the materials, equipment, procedures and minimum and maximum air and deck surface temperatures; anticipated schedule for traffic control, patching, crack repair, surface preparation, and placement of the treatment system; and test reports, documentation, explanation, and justification to support the proposed QCP. The QCP shall also meet the approval of the manufacturer of the polymer materials. Any deviations from the application prescribed by this specification shall be explained to, and approved by, the Engineer before such deviation.

The Contractor shall plan and prosecute the work to provide the minimum curing periods as specified herein, or other longer minimum curing periods as prescribed by the manufacturer prior to opening to public or construction traffic.

(f) Final Coat Testing

Tensile Bond Pull-Off Tests in accordance with ITM 407 shall be performed after the final coat of the polymeric concrete surface treatment is cured and excess aggregate is removed to verify adequate bond strength of the epoxy to the cover aggregate and concrete substrate. Locations of the tensile pull-off test will be determined by the Engineer and shall be spaced at intervals of 75 lft for polymeric treatment widths of 24 ft. Final coat testing shall be performed prior to opening to traffic. Tensile pull-off testing shall not be performed when the surface temperature is at or above 90°F.

REVISION TO SPECIAL PROVISION

738-B-297 POLYMERIC CONCRETE BRIDGE DECK OVERLAY

Damage resulting from the tensile bond pull-off testing shall be repaired using a small amount of the epoxy and aggregate used in the polymeric concrete bridge deck overlay.

All individual tensile bond pull-off tests which do not achieve a passing designation as previous defined for surface preparation shall have further testing performed according to the type of failure. Additional testing will determine the limits of further remedial action. If the pull off assembly does not achieve a load of 250 psi and detaches from the treated surface at the adhesive-aggregate interface, the test will not be valid. In such a case, the Contractor shall perform additional tests at 1 ft intervals until a valid test result, either pass or fail, is determined. In the case of a failing tensile pull off test, additional testing shall be performed to determine the limits of further remedial action under the following conditions.

1. Concrete failure. If the mode of failure for the tensile pull-off test involves a fracture depth ~~at~~ less than 1/4 in. into the base concrete or the fractured concrete covers less than 50% of the test area, the tensile pull off test will be given a failing designation. Additional tensile pull-off tests shall be conducted at 1 ft intervals in each direction from the failing result to determine the length and width of remedial action. The deficient area shall be repaired in accordance with the Construction Requirements (d) with the exception that a test patch is not required. Once the area is repaired and the polymeric concrete bridge deck overlay is applied, final coat testing will be performed on the repaired area.

2. Epoxy or Aggregate failure. Separation of the polymeric concrete surface treatment from the concrete surface or pull-off of the aggregate from the epoxy will be considered a failure. The Contractor shall perform at least two additional pull-off tests. One test shall be performed between 10 ft and 15 ft back from the failing test and one test shall be performed between 10 ft and 15 ft ahead of the failing test. The polymeric concrete surface treatment shall be removed and replaced at the Contractor’s expense. The limits of polymeric surface treatment removal shall be defined 1/2 the distance back and 1/2 the distance ahead of the adjacent passing tests for the entire width of original placement.

(g) Pavement Markings

Heat bonded pavement markings shall not be allowed on the polymeric concrete bridge deck overlay.

Method of Measurement

The accepted quantities of the polymeric concrete bridge deck overlay will be measured by the square yard. Full depth patching and partial depth patching will be measured in accordance with 722.14. The bridge deck patching concrete used in full depth or partial depth patching will not be measured.

REVISION TO SPECIAL PROVISION

738-B-297 POLYMERIC CONCRETE BRIDGE DECK OVERLAY

Basis of Payment

Full depth patching and partial depth patching will be paid for in accordance with 722.15. Polymeric concrete bridge deck overlay will be paid for at the contract unit price per square yard.

Payment will be made under:

Pay Item	**Pay Unit Symbol**
Polymeric Concrete Bridge Deck Overlay.....	SYS

The cost of hand-chipping, removal of unsound concrete, preparation of cavity surfaces, furnishing and applying bond coat or epoxy resin adhesive as required, furnishing and placing patching material, and necessary incidentals shall be included in the cost of bridge deck patching, full depth, or bridge deck patching, partial depth.

The cost of all re-cleaning suspect areas or verification through tests that the altered cleaning method is acceptable shall be included in the cost of the polymeric concrete bridge deck overlay pay item.

All costs of cleaning the bridge deck by shot blasting or other approved methods, the tensile bond pull-off tests, removal of any crack sealants, removal of excess aggregate, test patch removal, removal and disposal of all waste materials, and furnishing all equipment, labor, materials, and incidentals to perform the work described herein shall be included in the cost of the polymeric concrete bridge deck overlay pay item.

COMMENTS AND ACTION

738-B-297 POLYMERIC CONCRETE BRIDGE DECK OVERLAY

DISCUSSION:

This item was introduced and presented by Ms. Phillips who asked for committee approval to allow the EPX 50-Overlay product for work pertaining to the requirements of RSP 738-B-297.

Mr. Miller asked if we are now ready to create an approved materials list for this work since we now have four products listed. Mr. Nantung concurred, and provided further explanation for these approved materials to be used. Further discussion ensued as to who will be the contact person at Materials and Testing to coordinate these approved materials. Ms. Phillips will find out.

Minor editorial revisions were also incorporated as shown highlighted above.

Ms. Phillips revised her motion to approve this item. There was additional discussion concerning surface preparation and finishing in an effort to make sure snow plows don't catch the finished product and pull it up. Another consideration is the thickness of the overlay. Mr. Nantung explained the effects associated with the size of the aggregates used in relation to the thickness of the overlay. Mr. Miller suggested making sure the Contractor provides the finished product of the same profile as existing. Mr. Pankow and Mr. Dave agreed that the transitions at the ends of the bridge decks especially need to match what was existing.

This item may be considered for the 2018 spec book in the future provided that the materials shown become a part of an approved materials list and this RSP is revised accordingly.

Motion: Ms. Phillips Second: Mr. Cales Ayes: 8 Nays: 0 FHWA Approval: YES	Action: ____ Passed as Submitted _X_ Passed as Revised __ __ Withdrawn
Standard Specifications Sections referenced and/or affected: NONE Recurring Special Provision affected: 738-B-297 POLYMERIC CONCRETE BRIDGE DECK OVERLAY Standard Drawing affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	_____ 2018 Standard Specifications _____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: _X_ Revise RSP (No.738-B-297) Effective Jan. 01, 2016 Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Existing soils encountered on contracts are not supporting growth of the seed and sod placed. Notice of Termination time lines have been extended well beyond expected. The proposed Plant Growth Layer specification has been developed to promote a better topsoil structure for the development of the seed and sod placed and will help reduce the time lines for the NOT.

PROPOSED SOLUTION: Addition of Plant Growth Layer specification.

Referenced ITM 515 Determination of the Quality of the Soil Plant Growth Layer has been written and available at: http://www.in.gov/indot/div/mt/itm/itm.htm

APPLICABLE STANDARD SPECIFICATIONS: 629 (New)

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: N/A

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: 629-R-630 (New)

PAY ITEMS AFFECTED: Plant Growth Layer (New)

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Adhoc

IMPACT ANALYSIS (attach report):

Submitted By: Greg Pankow

Title: State Construction Engineer

Organization: Construction Management and District Support

Phone Number: 317-232-0676

Date: July 20, 2015

Mr. Pankow
Date: 8/20/15

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

IMPACT ANALYSIS REPORT CHECKLIST

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

Does this item appear in any other specification sections? No

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

Will this proposal improve:

Construction costs? No

Construction time? Yes

Customer satisfaction? Yes

Congestion/travel time? No

Ride quality? No

Will this proposal reduce operational costs or maintenance effort? Yes

Will this item improve safety:

For motorists? No

For construction workers? No

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? Yes

Design process? Yes

Will this change provide the contractor more flexibility? Yes

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

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

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

Is this item editorial? No

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

REVISION TO STANDARD SPECIFICATIONS

SECTION 629 – PLANT GROWTH LAYER

629-R-xxx PLANT GROWTH LAYER

(Adopted xx-xx-15)

The Standard Specifications are revised as follows:

SECTION 629, BEGIN LINE 1, INSERT AS FOLLOWS:

SECTION 629 – PLANT GROWTH LAYER

629.01 Description

This work shall consist of developing, furnishing, and placing an approved plant growth layer suitable for supporting the growth of permanent vegetation in accordance with 105.03.

MATERIALS

629.02 Materials

Materials shall be in accordance with the following:

Clay	*903.01*
Compost	*914.03(b)*
Fertilizer	*As Defined**
Lime	*913.04(b)1*
Sand	*903.01*
Silt	*903.01*
Topsoil	*914.01*
Water	*913.01*

* *Fertilizer shall be a blend of commercially available materials such that when used, the requirements for phosphorus and potassium are in accordance with 914.01(a), Table 1.*

Soils for the plant growth layer shall be obtained from one or more of the following approved sources:

(a) existing soils within the construction limits;

(b) commercial sources;

(c) project specific borrow pits.

The plant growth material shall be a fertile, friable and loamy soil of uniform quality in accordance with 914.01. The pH requirements for compost shall be in accordance with 914.03(b). The materials used shall be free from any objectionable plant material or undesirable

vegetative debris which would be harmful to plant life or may prevent the formation of a suitable seedbed.

All material used for the plant growth layer shall be stored in a manner that minimizes the potential for erosion.

The Contractor shall provide all necessary components for the plant growth layer.

CONSTRUCTION REQUIREMENTS

629.03 General Requirements

The plant growth layer shall consist of materials suitable for the healthy growth of permanent vegetation in accordance with 327 IAC 15-5. Growth layer components shall be blended in accordance with 914.01. If necessary, prior to placement, growth layer materials shall be treated with a broad spectrum herbicide with no residual effect in a manner that assures that all noxious weeds and invasive plants are killed.

629.04 Process Control

An estimate of the existing top soil profile conditions ~~will~~ shall be ~~as shown on the plans~~obtained from the geotechnical report. The Contractor shall be responsible for all tests required to determine the recommended component type and content for the growth layer. Prior to installation, the Contractor shall prepare and submit to the Engineer a list of all proposed growth layer components, their application rates, their material sources, and an installation timeline. This list shall provide specifics describing all components necessary to bring the plant growth layer into compliance with 914.01. The list shall be specific to the contract, and be signed and dated by the Contractor.

629.05 Installation and Finishing

When modifications are necessary for the existing surface to meet the requirements of 914.01, the plant growth layer shall be installed uniformly in the locations shown on the plans. The area on which the plant growth layer is to be placed shall be free of all loose and foreign material greater than 1 in. in diameter.

Prior to placement of the growth layer, the existing surface shall be scarified to a nominal depth of 3 in. to ensure bonding of the growth layer with the existing surface.

The Contractor shall have the option of placing the plant growth layer for any designated area using one of the following methods:

(a) Placement of the necessary components directly on the existing scarified soil then tilling to produce a minimum uniformly consistent 6 in. depth of plant growth layer.

(b) Placement of 3 in. of prepared growth layer material on the existing scarified soil and tilling to thoroughly mix the soils. The Contractor shall then spread 2 in. of comparably prepared growth layer material over the tilled soil in a uniform manner.

(c) If existing soils are found to meet the requirements of 914.01 without adding additional components, the soils shall be tilled to produce a minimum uniformly consistent 6 in. depth.

Within 24 h after final tilling, acceptance samples shall be taken in accordance with ITM 515. All acceptance testing of growth layer materials shall be performed by a Department approved geotechnical lab. The growth layer shall then be lightly compacted in order to produce a uniform final graded surface conducive to plant growth. Seeding or sodding shall take place within seven calendar days after final growth layer compaction. Seeding of the growth layer shall be in accordance with 621.05(b) and 621.05(c). Sodding of the growth layer shall be in accordance with 621.09.

629.06 Method of Measurement

Plant growth layer will be measured by the square yard, complete in place.

629.07 Basis of Payment

The accepted quantity of the plant growth layer will be paid for at the contract unit price per square yard, complete in place.

Payment will be made under:

Pay Item	***Pay Unit Symbol***
Plant Growth Layer	*SYS*

The cost of all soil sampling, testing, component recommendations, preparation of the growth layer component list, placing, tilling, compaction, and final grade preparation shall be included in the cost of the plant growth layer.

The cost of furnishing of all materials and equipment, and all necessary incidentals shall be included in the costs of plant growth layer.

Erosion control methods used for the protection of stockpiled plant growth layer materials will not be measured for payment and shall be included in the cost of plant growth layer.

BACKUP 01.

REVISION TO THE FREQUENCY MANUAL ENTRY

Frequency Manual Entry

REF	SUB REF.	SPEC REFERENCE	ITEM	JOB CONTROL LOCATION	JOB CONTROL NOTES	JOB CONTROL FREQUENCY	ACCEPTANCE TEMPLATES
37	01 of 02	914.01	TOPSOIL	SOURCE	Visually inspect for material detrimental to proper development of ground vegetation	~~For <= 60 cyd, no sampling required. Visual Inspection~~ *One 5lb sample per source for pH testing*	~~No Sample ID required.~~ *SM6009*
37	02 of 02	914.01	~~TOPSOL~~*PLANT GROWTH LAYER*	~~SOURCE~~*JOBSITE*	*Visually i*~~I~~nspect for material detrimental to proper development of ground vegetation.	~~For > 60 cyd, one 5 lb sample per source for pH testing~~*Certification Type A. One 5 U.S. cup sample (1 pound minimum) for each 10,000 square yards installed.*	~~SM6009~~*SM9003*
39	01 of ~~01~~*02*	*629,* 914.03	FERTILIZER	JOBSITE	ALL USES. BAGGED, BULK, OR LIQUID. Analysis from bag or weigh ticket. ~~must be 12-12-12.~~	Visual inspection	No Sample ID required
39	*02 of 02*	*914.03*	*COMPOST*	*SUPPLIER*	*ALL USES*	*Certification Type C*	*SM9003*

COMMENTS AND ACTION

SECTION 629 – PLANT GROWTH LAYER

DISCUSSION:

Mr. Pankow introduced and presented this item, with further clarification from Mr. Pelz. Mr. Pelz explained that existing soils encountered on contracts are not supporting growth of the seed and sod placed, and that Notice of Termination time lines have been extended well beyond expected. The proposed Plant Growth Layer specification, shown above, has been developed to promote a better topsoil structure for the development of the seed and sod placed and will help reduce the time lines for the NOT. Mr. Pelz also reiterated Mr. Miller's statement that this RSP will be used on a select basis.

Mr. Pankow explained the details behind this proposal and that the topsoil revisions are in a separate proposal. Mr. Miller clarified that this spec allows the Contractor to provide their expertise to provide a better product. Ms. Phillips asked where the borings will be taken and how that is determined. Mr. Pankow and Mr. Pelz clarified that those locations will be determined by the geotechnical report.

With assistance from Ms. Phillips, further language clarification for estimating the existing topsoil profile conditions is shown, *see* 629.04. Other minor editorial revisions were also incorporated.

The Basis for Use for this RSP needs to be controlled and will be as approved or selected by Mr. Miller and Mr. Wright.

Motion: Mr. Pankow Second: Mr. Boruff Ayes: 8 Nays: 0 FHWA Approval: YES	Action: ____ Passed as Submitted _X_ Passed as Revised __ __ Withdrawn
Standard Specifications Sections referenced and/or affected: PROPOSED NEW Recurring Special Provision affected: PROPOSED NEW Standard Drawing affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	_____ 2018 Standard Specifications _X_ Revise Pay Items List, new 629-12029 _X_ Create RSP (No.629-R-630) Effective Jan. 01, 2016 Letting RSP Sunset Date: _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update

Mr. Pankow
Date: 8/20/15

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Existing topsoil material specifications do not currently identify many requirements to effectively promote the growth of permanent vegetation for contracts. The new proposed specifications will include a broader spectrum of requirements to aid in the development of a more beneficial material for the growth of permanent vegetation.

PROPOSED SOLUTION: Modifications and additions to Section 914

APPLICABLE STANDARD SPECIFICATIONS: 914.01, 914.03

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: N/A

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: 914-xx-xxx

PAY ITEMS AFFECTED: Plant Growth Layer (New), Topsoil, Fertilizer, Compost (New)

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Adhoc

IMPACT ANALYSIS (attach report):

Submitted By: Greg Pankow

Title: State Construction Engineer

Organization: Construction Management and District Support

Phone Number: 317-232-0676

Date: July 20, 2015

Mr. Pankow
Date: 8/20/15

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

IMPACT ANALYSIS REPORT CHECKLIST

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

Does this item appear in any other specification sections? Yes

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

Will this proposal improve:

Construction costs? No

Construction time? Yes

Customer satisfaction? Yes

Congestion/travel time? No

Ride quality? No

Will this proposal reduce operational costs or maintenance effort? Yes

Will this item improve safety:

For motorists? No

For construction workers? No

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? Yes

Design process? Yes

Will this change provide the contractor more flexibility? Yes

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

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

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

Is this item editorial? No

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

REVISION TO STANDARD SPECIFICATIONS

SECTION 914 – ROADSIDE DEVELOPMENT MATERIALS
914.01 SPECIAL TOPSOIL FOR ROADSIDE DEVELOPMENT
914.03 FERTILIZER

914-R-xxx TOPSOIL AND SOIL AMENDMENTS

(Adopted xx-xx-15)

The Standard Specifications are revised as follows:

SECTION 914, BEGIN LINE 3, DELETE AND INSERT AS FOLLOWS:

914.01 ~~Special~~ Topsoil for Roadside Development

~~This topsoil shall consist of loose friable soil, free of refuse, stumps, large roots, rocks over 2 in. in diameter, brush, weeds, or other material which would be detrimental to the proper development of vegetative growth. It shall be capable of supporting normal vegetation as demonstrated by the growth of healthy vegetation on it. It shall not be taken from a source known to contain any of the noxious weeds defined as such in the Indiana State Seed Law, IC 15-4-1.~~

~~Topsoil shall have a pH value of 6.2 to 7.4. Testing for pH value shall be performed in accordance with AASHTO T 289. Agricultural limestone may be added to topsoil in order to raise the pH to meet specification requirements. The addition of agriculture limestone shall be determined based on tests performed by a laboratory approved by the Office of Geotechnical Services. Topsoil shall not be incorporated into the work until it is approved.~~

All material shall be limited to loose friable soil, free from refuse, stumps, large roots, rocks over 1 in. in diameter, brush, asphalt, concrete, heavy clay clumps, toxic substances, weeds or other material which would be detrimental to plant establishment. All materials shall be capable of supporting the required vegetation in accordance with 327 IAC 15-5 as demonstrated by the growth of installed, healthy vegetation. All materials used shall be free of known weeds and productive plant parts classified in the IC 15-16-7-2 as a noxious weed species, and any plants listed on the Indiana Invasive Species Council Invasive Plant List under the high invasive rank category.

(a) Topsoil Requirements

The clay, silt and sand components may be composed of existing materials from the construction site, commercial source materials, or an approved composition of existing and manufactured materials. Topsoil shall meet the requirements shown in Table 1 below. All acceptance testing shall be performed by a Department approved geotechnical lab.

TOPSOIL REQUIREMENTS AFTER INSTALLATION			
Requirement	*Measurement*	*Range*	*Test Method*
pH		*6.0 - 7.3*	*AASHTO T 289*
Clay	*Weight*	*5% - 30%*	*AASHTO T 88 and T 89*

REVISION TO STANDARD SPECIFICATIONS

SECTION 914 – ROADSIDE DEVELOPMENT MATERIALS
914.01 SPECIAL TOPSOIL FOR ROADSIDE DEVELOPMENT
914.03 FERTILIZER

Silt	*Weight*	*30% - 80%*	*AASHTO T 88 and T 89*
Sand	*Weight*	*5% - 50%*	*AASHTO T 88 and T 89*
Organic Material	*Weight*	*3% - 10%***	*AASHTO T 267 and AASHTO T 21***
Phosphorus	*Weight*	*15-110 ppm**	*North Central Regional Research Publication 221, Chapter 6, Bray P-1*
Potassium	*Weight*	*105-250 ppm***	*North Central Regional Research Publication 221, Chapter 7*

* *Alternatively 30-220 lb/ac*
** *Alternatively 210-500 lb/ac*
*** *In the counties of Daviess, Gibson, Knox, Pike, Posey, and Vanderburgh AASHTO T 21 shall also be performed and the organic material content shall be from 4% -10%*

Table 1

(b) Certification

Topsoil furnished under this specification shall be covered by a type A certification in accordance with 916.

914.02 Temporary Seed

Temporary seed will be approved for use by visual inspection of the Engineer. Temporary seed may be purchased from any commercial source provided the seed's package is clearly marked and labeled by the manufacturer as to its content and weight.

914.03 ~~Fertilizer~~*Soil Amendments*

(a) Fertilizer

Fertilizer shall be standard commercial fertilizer with an analysis of 12-12-12.

Tests will not be required, but fertilizer standards shall be governed by the rulings of the Indiana State Seed Commissioner.

(b) Compost

Compost shall be well decomposed, stable organic matter. It shall be derived from agricultural, food, or industrial residuals; bio-solids including treated sewage sludge, yard trimmings, vegetable matter or source-separated or mixed solid waste. The product shall contain no substances toxic to plants and shall be well composted so as not to possess objectionable odors or resemble the raw material from which it was derived. Compost shall be 98% free of any inert objects such as textiles, glass, plastics, and metal objects. Compost used shall be free of known weeds and productive plant parts classified in the IC 15-16-7-2 as a noxious weed

REVISION TO STANDARD SPECIFICATIONS

SECTION 914 – ROADSIDE DEVELOPMENT MATERIALS
914.01 SPECIAL TOPSOIL FOR ROADSIDE DEVELOPMENT
914.03 FERTILIZER

species, and any plants listed on the Indiana Invasive Species Council Invasive Plant List under the high invasive rank category.

Compost shall have a pH range of 5.5 to 8.0. Compost shall have a minimum of 30% organic matter in accordance with AASHTO T 267. The moisture content shall range from 30 to 60% by dry weight in accordance with AASHTO T 265. Compost particle size shall have 98% passing the 3/4 in. sieve.

All bio-solids, industrial and yard waste compost suppliers shall be IDEM certified. Certification of compost suppliers shall be as follows:

1. *Bio-solids and industrial waste compost suppliers shall possess an IDEM Marketing and Distribution Permit.*

2. *Yard waste compost suppliers shall be an IDEM Registered Yard Waste facility.*

All bio-solids shall be in accordance with 40 CFR Part 503 and 327 IAC 6.1.

BACKUP 01.

REVISION TO THE FREQUENCY MANUAL ENTRY

Frequency Manual Entry

REF	SUB REF.	SPEC REFERENCE	ITEM	JOB CONTROL LOCATION	JOB CONTROL NOTES	JOB CONTROL FREQUENCY	ACCEPTANCE TEMPLATES
37	01 of 02	914.01	TOPSOIL	SOURCE	Visually inspect for material detrimental to proper development of ground vegetation	~~For <= 60 cyd, no sampling required. Visual Inspection~~ *One 5 lb sample per source for pH testing.*	~~No Sample ID required.~~ *SM6009*
37	02 of 02	914.01	~~TOPSOL~~*PLANT GROWTH LAYER*	~~SOURCE~~*JOBSITE*	*Visually i*~~I~~nspect for material detrimental to proper development of ground vegetation.	~~For > 60 cyd, one 5 lb sample per source for pH testing~~*Certification Type A. One 5 U.S. cup sample (1 pound minimum) for each 10,000 square yards installed.*	~~SM6009~~*SM9003*
39	01 of ~~01~~*02*	*629,* 914.03	FERTILIZER	JOBSITE	ALL USES. BAGGED, BULK, OR LIQUID. Analysis from bag or weigh ticket. ~~must be 12-12-12.~~	Visual inspection	No Sample ID required
39	*02 of 02*	*914.03*	*COMPOST*	*SUPPLIER*	*ALL USES*	*Certification Type C*	*SM9003*

COMMENTS AND ACTION

914.01 SPECIAL TOPSOIL FOR ROADSIDE DEVELOPMENT
914.03 FERTILIZER

DISCUSSION:

This item was introduced and presented by Mr. Pankow. Mr. Pelz stated that the existing topsoil material specifications in 914 do not currently identify many requirements to effectively promote the growth of permanent vegetation for contracts. The new proposed specifications above include a broader spectrum of requirements to aid in the development of a more beneficial material for the growth of permanent vegetation. Mr. Pelz also clarified the revisions concerning describing compost and fertilizer. Further clarification was also provided regarding organic content for select counties. There was also discussion concerning the pH levels specified.

Basis for Use is to only allow this use with RSP 629-R-630.

Motion: Mr. Pankow Second: Mr. Cales Ayes: 8 Nays: 0 FHWA Approval: YES	Action: __X__ Passed as Submitted _____ Passed as Revised __ __ Withdrawn
Standard Specifications Sections referenced and/or affected: Sections 205, 621, and 622. Recurring Special Provision affected: 205-R-261 QUALITY CONTROL TEMPORARY EROSION AND SEDIMENT CONTROL Standard Drawing affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	_____ 2018 Standard Specifications _____ Revise Pay Items List __X__ Create RSP (No.629-R-630) Effective Jan. 01, 2016 Letting RSP Sunset Date: _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update; __X__(Sitemanager)

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISION

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Other DOTs specify the use of biodegradable staples that conform to ASTM D6400 - *Standard Specifications for Biodegradable Materials.*
Also they call for a biodegradable staple to be 4 in. or longer with a head suitable for securing the fabric. The biodegradable staple is a safer and more environmentally friendly alternative to metal staples for pinning erosion matting.

INDOT does not maintain a qualified products list for most erosion control and landscaping products as there are so many in the market. Our only requirement is for the product to meet our specifications and be furnished with a manufacturer's certification.

Currently our specification only refers to wire staples.

PROPOSED SOLUTION: Revise the standard specifications to allow the use of biodegradable staples for use with erosion control applications.

APPLICABLE STANDARD SPECIFICATIONS: 205, 621, 914

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: N/A

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: RSP 205-R-261

PAY ITEMS AFFECTED: None

IMPACT ANALYSIS (attach report): Yes

Submitted By: Robert Goldner

Title: Construction Technical Support Manager

Organization: Indiana Department of Transportation

Phone Number: 317-232-7758

Date: July 21, 2015

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc

Mr. Goldner
Date: 8/20/15

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISION

IMPACT ANALYSIS REPORT CHECKLIST

Please explain the business case as to why this item should be presented to the Standards Committee for approval.

Please answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? Yes, listed above.

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

Will this proposal improve:

- Construction costs? Possibly
- Construction time? No
- Customer satisfaction? Possibly
- Congestion/travel time? N/A
- Ride quality? 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 proposal provide clarification for the Contractor and field personnel? Some.

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

Is this item editorial? Yes.

Please provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda: The biodegradable staple is a safer & more environmental alternative to metal staples for pinning erosion matting.

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISION

SECTION 205 – TEMPORARY EROSION AND SEDIMENT CONTROL
205.02 MATERIALS
205.04(b)3 TYPE C
SECTION 621 – SEEDING AND SODDING
621.02 MATERIALS
621.05(c)4 METHOD D
621.05(d) EXCELSIOR BLANKETS
621.05(e) PAPER MAT
914.09(f) STAPLES

914-R-xxx FABRIC STAPLES

(Adopted xx-xx-xx)

The Standard Specifications are revised as follows:

SECTION 205, BEGIN LINE 25, DELETE AS FOLLOWS:

Water .....914.09(a)
~~Wire~~ Staples .....914.09(f)

SECTION 205, BEGIN LINE 146, DELETE AS FOLLOWS:

3. Type C

The mulch shall be held in place with a polymeric plastic net. The plastic net shall be unrolled such that it lays out flat, evenly, and smoothly, without stretching the material. The plastic net shall be held in place by means of ~~wire~~ staples. The ~~wire~~ staples shall be driven at a 90° angle to the plane of the soil slope. Staples shall be spaced not more than 4 ft apart with rows alternately spaced. The plastic net shall be secured along the top and bottom of the soil slope with staples spaced not more than 1 ft on center. The ends and edges of the plastic net shall be overlapped approximately 4 in. and stapled. Overlaps running parallel to the slope shall be stapled 1 ft on center and overlaps running perpendicular to the slope shall be stapled at least 3 ft on center. The plastic net shall be placed with the length running from top of slope to toe of slope, or the plastic net shall be placed with the length running horizontally or parallel to the contour.

On a slope of 2:1 or steeper, or where specified, a manufactured surface protection product shall be used.

SECTION 621, BEGIN LINE 22, DELETE AS FOLLOWS:

Water .....914.09(a)
~~Wire~~ Staples .....914.09(f)

SECTION 621, BEGIN LINE 127, DELETE AS FOLLOWS:

4. Method D

The mulch may be held in place with a polymeric plastic net. The plastic net shall be unrolled such that it lays out flat, evenly, and smoothly, without stretching the material. The plastic net shall be held in place by means of ~~wire~~ staples. The wire staples shall be driven at a 90° angle to the plane of the soil slope. Staples shall be spaced not more than 4 ft apart with rows alternately spaced. The plastic net shall be secured along

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISION

SECTION 205 – TEMPORARY EROSION AND SEDIMENT CONTROL
205.02 MATERIALS
205.04(b)3 TYPE C
SECTION 621 – SEEDING AND SODDING
621.02 MATERIALS
621.05(c)4 METHOD D
621.05(d) EXCELSIOR BLANKETS
621.05(e) PAPER MAT
914.09(f) STAPLES

the top and bottom of the soil slope with staples spaced not more than 1 ft on center. The ends and edges of the plastic net shall be overlapped approximately 4 in. and stapled. Overlaps running parallel to the slope shall be stapled 1 ft on center and overlaps running perpendicular to the slope shall be stapled at least 3 ft on center. The plastic net shall be placed with the length running from top of slope to toe of slope, or the plastic net shall be placed with the length running horizontally or parallel to the contour.

SECTION 621, BEGIN LINE 145, DELETE AS FOLLOWS:

(d) Excelsior Blankets

Excelsior blankets may be used where mulched seeding is specified or where erosion control blanket is specified. Excelsior blankets shall be placed within 24 h after seeding operations have been completed. The ground shall be prepared in accordance with 621.04. After the area has been properly shaped, fertilized, and seeded, the blanket shall be laid out flat, evenly, and smoothly, without stretching the material. Excelsior blankets shall be held in place by means of ~~wire~~ staples. The staples shall be driven at a 90° angle to the plane of the soil slope. Staples shall be spaced not more than 5 ft apart in three rows for each strip, with a row along each edge and one row alternately spaced in the middle. The upslope edge shall be fastened by staples spaced 12 in. apart. The ends and edges of the blankets shall be tightly butted together, but not lapped. When excelsior blanket is used, the blanket shall be placed with the length running from top of slope to toe of slope, or the blanket shall be placed with the length running horizontally or parallel to the contour. The staples used for stapling shall be in accordance with 914.09(f).

SECTION 621, BEGIN LINE 167, DELETE AS FOLLOWS:

After the area has been properly shaped, fertilized, and seeded, two anchor trenches shall be dug, one along the foot of the slope and the other 1 ft back from the crown of the slope. These anchor trenches shall be 4 in. deep and at least 6 in. wide. One edge of the paper mat shall be placed into the top trench and stapled 9 in. on center. The trench shall then be filled with soil. The paper mat shall then be unrolled such that it lays out flat, evenly, and smoothly, without stretching the material. Paper mat shall be held in place by means of ~~wire~~ staples. The staples shall be driven at a 90° angle to the plane of the soil slope. Staples shall be placed not more than 3 ft apart with rows alternately spaced. The paper mat shall be secured in the bottom anchor trench in the same manner as it was secured in the upper anchor trench. The ends and edges of the mat shall be overlapped at least 4 in. and stapled.

SECTION 914, BEGIN LINE 492, DELETE AND INSERT AS FOLLOWS:

(f) Staples

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISION

SECTION 205 – TEMPORARY EROSION AND SEDIMENT CONTROL
205.02 MATERIALS
205.04(b)3 TYPE C
SECTION 621 – SEEDING AND SODDING
621.02 MATERIALS
621.05(c)4 METHOD D
621.05(d) EXCELSIOR BLANKETS
621.05(e) PAPER MAT
914.09(f) STAPLES

Wire ~~S~~staples shall be made from No. 11 gage (3 mm) or heavier wire, 1 or 2 in. wide at the throat and 6 in. from top to bottom after bending. *Biodegradable staples shall be in accordance with ASTM D 6400 and be 4 in. or longer with a head suitable for securing the fabric in place.* The staples shall be packaged in cartons.

REVISION TO STANDARD SPECIFICATIONS AND RECURRING PROVISION

205-R-261 QUALITY CONTROL TEMPORARY EROSION AND SEDIMENT CONTROL

(Excerpts from the recurring special provision 205-R-261)

205-R-261 QUALITY CONTROL TEMPORARY EROSION AND SEDIMENT CONTROL

(Revised 05-01-15)

SECTION 205.02 MATERIALS, DELETE AS FOLLOWS:

Water .....914.09(a)
~~*Wire*~~ *Staples* .....914.09(f)

SECTION 205.04(b)3 TYPE C, DELETE AS FOLLOWS:

3. Type C

The mulch shall be held in place with a polymeric plastic net. The plastic net shall be unrolled such that it lays out flat, evenly, and smoothly, without stretching the material. The plastic net shall be held in place by means of ~~*wire*~~ *staples. The* ~~*wire*~~ *staples shall be driven at a 90° angle to the plane of the soil slope. Staples shall be spaced not more than 4 ft apart with rows alternately spaced. The plastic net shall be secured along the top and bottom of the soil slope with staples spaced not more than 1 ft on center. The ends and edges of the plastic net shall be overlapped approximately 4 in. and stapled. Overlaps running parallel to the slope shall be stapled 1 ft on center and overlaps running perpendicular to the slope shall be stapled at least 3 ft on center. The plastic net shall be placed with the length running from top of slope to toe of slope, or the plastic net shall be placed with the length running horizontally or parallel to the contour.*

COMMENTS AND ACTION

205.02 MATERIALS
205.04(b)3 TYPE C
621.02 MATERIALS
621.05(c)4 METHOD D
621.05(d) EXCELSIOR BLANKETS
621.05(e) PAPER MAT
914.09(f) STAPLES
205-R-261 QUALITY CONTROL TEMPORARY EROSION AND SEDIMENT CONTROL

DISCUSSION:

Mr. Goldner introduced and presented this item stating the need to revise the standard specifications to allow the use of biodegradable staples for use with erosion control applications. There was not much discussion and the item passed as submitted.

Ms. Phillips would like to mandate biodegradable staples only, in the near future.

Motion: Mr. Goldner Second: Mr. Pankow Ayes: 8 Nays: 0 FHWA Approval: YES	Action: __X__ Passed as Submitted _____ Passed as Revised __ __ Withdrawn
Standard Specifications Sections referenced and/or affected: 205.02 pg 180; 205.04 pg 183; 621.02 pg 462; 621.05 pg 464 and 465; 914.09 pg 986. Recurring Special Provision affected: 205-R-261 QUALITY CONTROL TEMPORARY EROSION AND SEDIMENT CONTROL Standard Drawing affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	__X__ 2018 Standard Specifications _____ Revise Pay Items List __X__ Create RSP (No.914-R-631) Effective Jan.01, 2016 Letting RSP Sunset Date: Sep. 01, 2017 __X__ Revise RSP (No.205-R-261) Effective Jan.01, 2016 Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Bridge Owners are responsible for ensuring new bridges meet load rating requirements of the AASHTO Manual for Bridge Evaluation (MBE) prior to opening to public traffic. Typically a load rating evaluation is performed after the bridge design is complete (Stage 3) and any necessary revisions made prior to Final Tracings. Underfill structures (box culverts and 3-sided structures) whose span measured along the roadway centerline is greater than 20-ft are classified as bridges and must meet the load rating requirements. Underfill structures are typically supplied by a precaster and designed after letting. However, a formal process to receive and document the load rating has not been established.

Section 723 of the Standard Specifications requires "An analysis of the precast segment modeled as a simple span and designed in accordance with AASHTO LRFD Bridge Design Specifications Section 5.7.3. This analysis shall demonstrate that the precast segment is designed to withstand the forces of erection." There has been confusion regarding the implementation of this requirement. In lieu of designing the structure as a simple span, it is acceptable to provide mechanical connections that the tie the legs of a 3-sided structure together until the backfill has been placed.

PROPOSED SOLUTION: Revise section 714 and 723 in the Standard Specifications to require load rating documentation as part of the shop drawing submittal, when required.

Revise Section 723 of the Standard Specifications to require details for horizontal restraint for 3-sided structures unless design calculations are provided that indicate such restraint details are unnecessary.

APPLICABLE STANDARD SPECIFICATIONS: 714.04, 723.04

APPLICABLE STANDARD DRAWINGS: n/a

APPLICABLE DESIGN MANUAL SECTION: 14-1.02(09)

APPLICABLE SECTION OF GIFE: 29 – shop drawings. Construction Memo 13-13 should also be revised to indicate the change

APPLICABLE RECURRING SPECIAL PROVISIONS: n/a

PAY ITEMS AFFECTED: n/a

APPLICABLE SUB-COMMITTEE ENDORSEMENT: none

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

IMPACT ANALYSIS (attach report): yes

Submitted By: Elizabeth Phillips

Title: Office of Standards and Policy Manager

Organization: Bridges Division

Phone Number: 232-6775

Date: 7/20/2015

IMPACT ANALYSIS REPORT CHECKLIST

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

Does this item appear in any other specification sections? no

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

Will this proposal improve:

- Construction costs? no
- Construction time? maybe
- 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? n/a
- For construction workers? n/a

Will this proposal improve quality for:

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

Will this change provide the contractor more flexibility? no

Ms. Phillips
Date: 8/20/15

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

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

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

Is this proposal needed for compliance with:

Federal or State regulations? yes

AASHTO or other design code? yes

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 714 – REINFORCED CONCRETE BOX STRUCTURES
714.04(c) WORKING DRAWINGS

The Standard Specifications are revised as follows:

SECTION 714, BEGIN LINE 137, INSERT AS FOLLOWS:

(c) Working Drawings

Working drawings shall be submitted in accordance with 105.02 for fabrication of a precast reinforced concrete box structure greater than 12 ft span, a box structure of a size not described in ASTM C 1577, headwalls, wingwalls, and footings. Design calculations shall be submitted with the working drawings. Detailed plans for falsework and centering will not be required. Working drawings shall include all details, dimensions, and quantities necessary to construct the structure, headwalls, wingwalls, or footings and shall include, but not be limited to, the following information.

1. Structure span and rise.

2. Structure section details showing all concrete dimensions and reinforcement requirements.

3. Headwall details, showing all concrete dimensions, elevations, reinforcing bar sizes, reinforcing bar bending diagrams, lengths, spacings, and anchorage details. Headwall elevation and section views shall be provided.

4. Wingwall design calculations and details showing all concrete dimensions, elevations, reinforcement sizes, bending diagrams, lengths, spacings, and anchorage details. Wingwall plan, elevation, and section views shall be provided.

5. Wingwall backfill type and limits.

6. Footing details showing all concrete dimensions, elevations, reinforcing bar sizes, reinforcing bar bending diagrams, lengths, and spacings indicated. Footing plan and section views shall be provided. The actual soil bearing pressure shall be shown on the footing detail sheets.

7. Structure backfill type and limits for the structure and wingwalls.

8. Minimum concrete strength for all concrete portions of the structure.

9. *Bridge load rating calculations and load rating summary shall be submitted with the working drawings where the structure span length measured along the roadway centerline is greater than 20 ft, except where the height of cover is greater than 8 ft and exceeds the perpendicular span length. The structure shall load rate greater than*

REVISION TO STANDARD SPECIFICATIONS

SECTION 714 – REINFORCED CONCRETE BOX STRUCTURES
714.04(c) WORKING DRAWINGS

1.0 for the loading described herein or as shown on plans. The load rating methodology shall be in accordance with the AASHTO Manual of Bridge Evaluation using the LRFR methodology.

REVISION TO STANDARD SPECIFICATIONS

SECTION 723 – REINFORCED CONCRETE THREE-SIDED STRUCTURES
723.04(c) WORKING DRAWINGS

The Standard Specifications are revised as follows:

SECTION 723, BEGIN LINE 162, INSERT AS FOLLOWS:

(c) Working Drawings

Working drawings shall be submitted in accordance with 105.02 for fabrication of a precast or cast-in-place reinforced concrete three-sided structure, precast or cast-in-place reinforced concrete three-sided structure extension, precast or cast-in-place headwalls, precast or cast-in-place wingwalls, and precast or cast-in-place spandrel walls. The working drawings shall include all details, dimensions, and quantities necessary to construct the structure, headwalls, wingwalls, or spandrel walls and shall include, but not be limited to, the following information.

1. Structure span and rise.

2. Structure section details showing all concrete dimensions and reinforcement requirements. An analysis of the precast segment modeled as a simple span and designed in accordance with AASHTO LRFD Bridge Design Specifications Section 5.7.3. This analysis shall demonstrate that the precast segment is designed to withstand the forces of erection. *Details for providing horizontal restraint of the structure legs during installation until after the completion of backfill placement shall be included unless the analysis indicates such details are not needed.*

3. Headwall details showing all concrete dimensions, elevations, reinforcing bar sizes, reinforcing bar bending diagrams, lengths, spacings, and anchorage details. Headwall elevation and section views shall be provided.

4. Wingwall design calculations and details showing all concrete dimensions, elevations, reinforcement sizes, bending diagrams, lengths, spacings, and anchorage details. Wingwall plan, elevation, and section views shall be provided.

5. Spandrel wall details showing all concrete dimensions, elevations, reinforcement sizes, bending diagrams, lengths, spacings, and anchorage details. Spandrel wall elevation and section views shall be provided.

6. Footing design calculations and details showing all concrete dimensions, elevations, reinforcing bar sizes, reinforcing bar bending diagrams, lengths, and spacings indicated. Footing plan and section views shall be provided. If a pile footing is required, the pile layout

REVISION TO STANDARD SPECIFICATIONS

SECTION 723 – REINFORCED CONCRETE THREE-SIDED STRUCTURES
723.04(c) WORKING DRAWINGS

shall be shown. The actual soil bearing pressure shall be shown on the footing detail sheets.

7. Design calculations and details for pedestals or closure pours, if required.

8. Structure backfill type and limits for the structure and wingwalls.

9. Minimum concrete strength for all concrete portions of the structure.

10. *Bridge load rating calculations and load rating summary shall be submitted with the working drawings where the structure span length measured along the roadway centerline is greater than 20 ft, except where the height of cover is greater than 8 ft and exceeds the perpendicular span length. The structure shall load rate greater than 1.0 for the loading described herein or as shown on plans. The load rating methodology shall be in accordance with the AASHTO Manual of Bridge Evaluation using the LRFR methodology.*

REVISION TO STANDARD SPECIFICATIONS

PROPOSED NEW RPD 700-X-xxxd LOAD RATING SUMMARY

700-R-xxxd LOAD RATING SUMMARY

(Adopted xx-xx-15)

Complete this form and include it with the load rating calculations as part of working drawings submittal.

Des. No.: _____ County: _____
Contract No.: _____ District: _____
Structure #: _____ Reference Post: _____
NBI #: _____

At least one of the following must be a registered professional engineer.
Load Rated By & Date: _____
Checked By & Date: _____

Bridge Information

Structure Type: material, single or multi cell, box culvert or 3-sided structure (arch or flat top)
Year Built: _____
Skew (degrees, L/R): _____
Span (ft, measured along roadway centerline): _____
Paved Roadway Width (ft, including shoulders): _____
Reinforcement: rebar size or WWR grid dimensions

Load Rating Information

Load Rating Method: LRFR
Load Rating Program: AASHTOWARE, CANDE, SmartCulvert, ET Culvert
Design Loading*: _____

**For Toll Road Live Load, a single truck with design lane load shall be used in each design lane. This loading shall be investigated under the Strength II Limit State. For Michigan Train Live Load, a single truck with design lane load shall be limited to one design lane located so as to cause extreme force effects, while the other design lanes are occupied by regular design loads. This loading shall be investigated under the Strength II Limit State.*

Design Loading	Inventory Rating	Operating Rating
HL-93		
Toll Road (~~90~~*89.6* kip) - required within 15 miles of an Indiana Toll Road gate.		

REVISION TO STANDARD SPECIFICATIONS

PROPOSED NEW RPD 700-X-xxxd LOAD RATING SUMMARY

(CONTINUED)

Toll Road (90 kip) - required within 15 miles of an Indiana Toll Road gate.		
Toll Road (126 kip) - required within 15 miles of an Indiana Toll Road gate.		
Michigan Train #5 (134 kip) - required on Indiana Extra Heavy Duty Highway System		
Michigan Train #8 (134 kip) - required on Indiana Extra Heavy Duty Highway System		

COMMENTS AND ACTION

714.04(c) WORKING DRAWINGS
723.04(c) WORKING DRAWINGS
700-X-xxxd LOAD RATING SUMMARY

DISCUSSION:

Ms. Phillips introduced this item and proposed to revise standard specification sections 714 and 723 to require load rating documentation as part of the working drawing submittal, when required. Ms. Phillips also proposed to revise 723 to require details for horizontal restraint for three-sided structures unless design calculations are provided that indicate that such restraint details are not necessary.

Ms. Phillips revised information on the table, as shown. Mr. Cales clarified the toll road weight requirements.

Motion: Ms. Phillips Second: Mr. Boruff Ayes: 8 Nays: 0 FHWA Approval: YES	Action:	
	___	Passed as Submitted
	X	Passed as Revised
	___	Withdrawn
Standard Specifications Sections referenced and/or affected: 714 pg 623 and 624; 723 pg 684 and 685.	X	2018 Standard Specifications, except RPD
	___	Revise Pay Items List
Recurring Special Provision affected: NONE	X	Create RSP (No.714-B-299) Effective Jan.01, 2016 Letting RSP Sunset Date: Sep. 01, 2017
Standard Drawing affected: NONE	X	Create RSP (No.723-B-300) Effective Jan.01, 2016 Letting RSP Sunset Date: Sept. 01, 2017
Design Manual Sections affected: 14-1.02(09)	___	Standard Drawing Effective
	X	Create RPD (No. 700-B-301d) Effective Jan. 01, 2016 Letting
GIFE Sections cross-references: NONE	X	GIFE Update and (SiteManager)

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS, SPECIAL PROVISION AND PLAN DETAILS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: During freeway lane closures, the potential for a fatal end of queue collision is significant due to inattentive driving. Crash records indicate that often these drivers had missed numerous construction warning signs and changeable message signs that were warning of the impending lane closure and the possibility of slow or stopped traffic ahead.

PROPOSED SOLUTION: For contracts that involve a lane closure on a freeway, include a recurring plan detail and special provision to incorporate portable rumble strips into the MOT plan so that inattentive drivers can be given an audible and vibratory warning prior to reaching the work zone queue.

APPLICABLE STANDARD SPECIFICATIONS: 801.12

APPLICABLE STANDARD DRAWINGS: N/A (the buzz strips in 801-TCDV-09 are not portable)

APPLICABLE DESIGN MANUAL SECTION: 83-4.0

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

PAY ITEMS AFFECTED: N/A

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Yes, Traffic Standards Subcommittee

IMPACT ANALYSIS (attach report): Yes, attached.

Submitted By: Dave Boruff

Title: Manager, Office of Traffic Administration

Organization: INDOT

Phone Number: (317) 234-7975

Date: 7/23/15

Mr. Boruff
Date: 8/20/15

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS, SPECIAL PROVISION AND PLAN DETAILS

IMPACT ANALYSIS REPORT CHECKLIST

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

Does this item appear in any other specification sections? No

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

Will this proposal improve:

- Construction costs? No
- Construction time? No
- Customer satisfaction? Yes
- Congestion/travel time? Yes
- Ride quality? No

Will this proposal reduce operational costs or maintenance effort? No

Will this item improve safety:

- For motorists? Yes
- For construction workers? No

Will this proposal improve quality for:

- Construction procedures/processes? 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? No

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

Is this proposal needed for compliance with:

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

Is this item editorial? No

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

REVISION TO STANDARD SPECIFICATIONS, SPECIAL ROVISION, AND PLAN DETAILS

PROPOSED NEW RSP 801-T-XXX TEMPORARY PORTABLE RUMBLE STRIPS

801-T-XXX TEMPORARY PORTABLE RUMBLE STRIPS

(Adopted xx-xx-15)

The Standard Specifications are revised as follows:

SECTION 801, AFTER LINE 27, INSERT AS FOLLOWS:

Temporary Portable Rumble Strips 923.05

SECTION 801, AFTER LINE 640, INSERT AS FOLLOWS:

5. Temporary Portable Rumble Strips

~~*Temporary portable rumble strips shall only be used on roadways with worksite or work zone speed limits of 60 mph or less.*~~

Temporary portable rumble strips shall be placed as shown on the plans or as directed by the Engineer. Each strip, whether comprised of one segment or interlocking segments, shall extend to within 12 in. of the full lane width and be arranged in an array consisting of three complete strips spaced and configured in accordance with the manufacturer's recommendations, or as shown on the plans.

The Contractor shall verify placement with the Engineer prior to installation. Temporary portable rumble strips shall be removed from the roadway when no lane restrictions exist or as directed by the Engineer. When approved or directed by the Engineer, ~~T~~the temporary portable rumble strips shall be secured to the pavement, in accordance with the manufacturer's recommendations~~, when approved or directed by the Engineer~~.

Prior to placement of the rumble strip, the roadway shall be cleaned to remove dust, sand, and other debris. The minimum roadway temperature at the time of installation shall be in accordance with manufacturer recommendations.

The ~~maximum calculated~~ queue length for initial rumble strip placement ~~is _____ ft~~shall be as shown on the plans.~~ If the queue length is unknown, for the purposes of initial set-up, a maximum queue length of 1.5 miles shall be used. In cases where the maximum queue length is known but less than 1.5 miles, the initial set-up shall be made using a maximum queue length of 1.5 miles. The set-up shall never be altered to place the rumble strips less than 1.5 miles before a taper.~~

The C~~c~~ontractor shall confirm the location of the maximum queue each day during the first three days following the initial installation of the temporary portable rumble strips or following a MOT phase change. Based on the preceding days observation and at the direction of the Engineer, the C~~c~~ontractorshall adjust placement of the rumble strip arrays and associated signs as detailed on the plans to obtain optimal placement for the prevailing traffic conditions. This relocation work shall not be performed during peak hour traffic periods.

REVISION TO STANDARD SPECIFICATIONS, SPECIAL ROVISION, AND PLAN DETAILS

PROPOSED NEW RSP 801-T-XXX TEMPORARY PORTABLE RUMBLE STRIPS

The Contractor shall ensure that the rumble strips are perpendicular to the lane and that the correct spacing between rumble strips is maintained. Positioning of the rumble strips shall be corrected if any strip moves by more than 6 in. during the work period. If any strip comes out of alignment, it shall be cleaned on both sides, and reset onto a clean roadway surface.

SECTION 801, AFTER LINE 893, INSERT AS FOLLOWS:

Temporary portable rumble strips will be measured by the number of calendar days each array is used.

SECTION 801, AFTER LINE 977, INSERT AS FOLLOWS:

Temporary portable rumble strips will be paid for at the contract unit price per day per each array. Payment will be made only once regardless of how many times the strips are moved or adjusted.

SECTION 801, AFTER LINE 1050, INSERT AS FOLLOWS:

Temporary Portable Rumble Strips .....DAY

SECTION 801, AFTER LINE 1101, INSERT AS FOLLOWS:

The cost of furnishing, installing, moving, maintaining, cleaning the existing pavement and removing the temporary portable rumble strips shall be included in the pay item.

SECTION 923, AFTER LINE 201, INSERT AS FOLLOWS:

923.05 Temporary Portable Rumble Strips

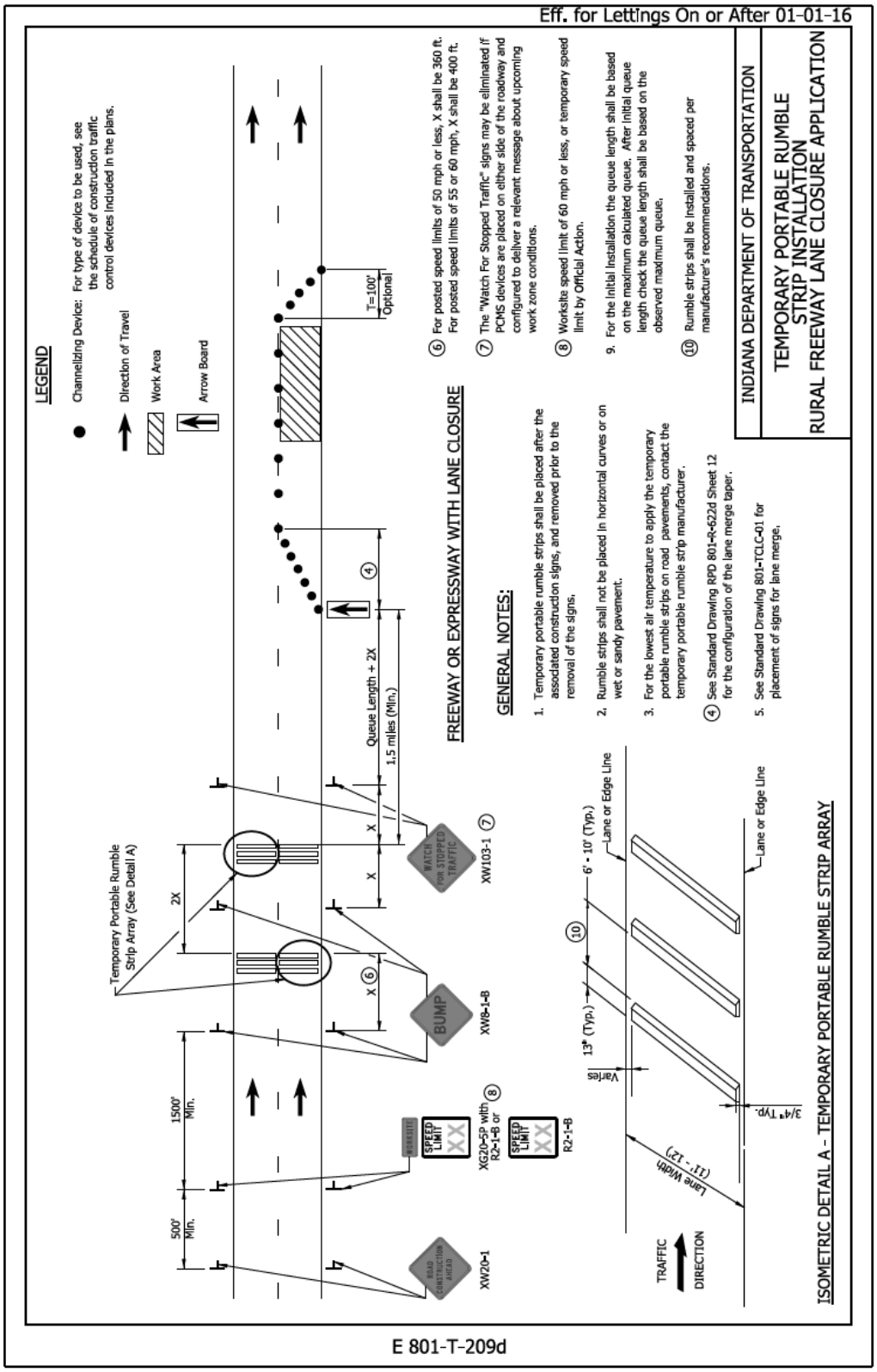
The temporary portable rumble strips shall consist of thermoset cast urethane, engineered polymers, or rubber materials. The temporary portable rumble strips shall be manufactured for use at ambient temperatures from 0 to 110°F and able to withstand vehicles up to 80,000 lbs with minimal movement. The temporary portable rumble strip shall be less than 1 in. in height and consists of a single collapsible segment or be comprised of interlocking sections that shall extend to within 1 ft of the full lane width.

Each rumble strip shall be capable of being installed without adhesives or bolts~~, and shall have a maximum total weight of 120 lbs~~. The face of the rumble strip shall be a non-slip textured surface. The colors of the temporary rumble strip materials may vary and are subject to approval by the Engineer prior to use.

A type C certification in accordance with 916 shall be provided.

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISION

PROPOSED NEW RPD 801-T-XXXd TEMPORARY PORTABLE RUMBLE STRIP INSTALLATION (REVISED DRAFT)



BACKUP 01.

PROPOSED REVISION TO IDM 503/82-4.05(05) FLAGGING OPERATIONS AND LANE MERGES – USE OF RUMBLE STRIPS

503/82-4.05(05) ***Flagging Operations and Lane Merges- Use of Rumble Strips***

When it is determined that flagging or a lane merge will be part of the TTCP, consideration should be given to specifying temporary rumble strips as a means of alerting drivers to the potentially unexpected condition. This measure can be particularly beneficial where speeds are high (greater than 40 mph), the peak-hour volume-to-capacity ratio approaches or is greater than 1, or if sight distance to the flagger or merge taper is restricted. This potential plan need should be discussed with the District no later than the preliminary field check.

Rumble strips should be the portable type if used for freeway and expressway work zones to alert drivers to potential queuing ~~or with flagging operations~~. A recurring special provision and plan detail have been adopted for this particular application. The designer should provide the maximum calculated queue length on the plans for each phase of construction or for each segment in which a lane closure will occur ~~in the recurring special provision~~ this estimate will be used to establish the initial location of the devices. Portable rumble strips may only when the posted work zone or worksite speed limit is 60 mph or less. The portable type of rumble strips may also be advantageous for flagging operations.

For other long term stationary duration work zone applications pavement marking material should be specified.

For non freeway/expressway applications of rumble strips, such as with flagging operations, a unique plan detail/special provision should be developed.

Section 503-7.03(01) provides additional information related to rumble strips.

COMMENTS AND ACTION

801-T-XXX TEMPORARY PORTABLE RUMBLE STRIPS
801-T-XXXd TEMPORARY PORTABLE RUMBLE STRIP INSTALLATION

DISCUSSION:

Mr. Boruff introduced and presented this item. For contracts that involve a lane closure on a freeway, Mr. Boruff proposed to include a recurring plan detail and special provision to incorporate temporary portable rumble strips into the Maintenance of Traffic plan so that inattentive drivers can be given an audible and vibratory warning prior to reaching the work zone queue. Mr. Boruff explained the reasoning behind the proposal in relation to the information shown on the drawings.

Discussion ensued concerning strips being stolen. There was further discussion involving the strips being secured or picked up and the ability to be able to move them as required.

Following discussions about queue lengths, the language was removed, as shown, and will be moved to the drawing. Mr. Cales offered that the queues will be as determined by the designer. Further revisions to the drawings were also discussed and will be incorporated by Mr. Boruff.

Mr. Boruff revised his motion.

Motion: Mr. Boruff Second: Ms. Phillips Ayes: 8 Nays: 0 FHWA Approval: YES	Action: ____ Passed as Submitted _X_ Passed as Revised __ __ Withdrawn
Standard Specifications Sections referenced and/or affected: SECTION 801 begin 742; proposed new 923.05. Recurring Special Provision affected: NONE Standard Drawing affected: NONE Design Manual Sections affected: SECTION 83-4.0 GIFE Sections cross-references: NONE	_____ 2018 Standard Specifications _X_ Revise Pay Items List, new 801-12031 _X_ Create RSP (No.801-T-209) Effective Jan.01, 2016 Letting RSP Sunset Date: _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _X_ Create RPD (No. 801-T-209d) Effective Jan.01, 2016 Letting _____ GIFE Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISION

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Until 2010, INDOT's specifications for pavement marking materials were based on adherence to material requirements, and contractors were required to send samples to INDOT Materials & Tests for acceptance prior to installation. The process was inefficient, so the acceptance criteria changed in 2010 so that samples were no longer required and instead the pavement markings must adhere to minimum performance standards, including standards for retro-reflectivity. However, the performance results for thermoplastic and multi-component markings have not been satisfactory in part due snow plows removing the retroreflective glass beads or perhaps the entire marking. The issue has been made worse by the application of liquid asphalt sealants which are applied to longitudinal HMA pavement joints. This process has decreased the likelihood that proper bonding will be achieved between marking and pavement.

Also, adjustments are needed to the specs regarding parking lines, the minimum ambient temperature for thermoplastic installation and preformed plastic markings, and the method of measurement of yield lines.

PROPOSED SOLUTION: Amend the standard specifications for pavement markings so that longitudinal durable markings (thermoplastic, multi-component, and preformed plastic) are placed in a groove. This practice will protect the additional investment were making in durable markings when compared to paint. The threshold for using durable markings would increase from 2,000 AADT to 10,000 AADT to neutralize impacts to the construction budget.

The amendment also provides clarification regarding parking lines, minimum temperature for thermoplastic and preformed plastic markings, and the method of measurement of yield lines.

APPLICABLE STANDARD SPECIFICATIONS: 808

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: 502-2.01(03)

APPLICABLE SECTION OF GIFE: Yes

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

PAY ITEMS AFFECTED: Transverse Marking, _____, _____, _____ in. .....LFT
material color width

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Yes, Traffic Standards Subcommittee

IMPACT ANALYSIS (attach report): Yes, attached.

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISION

Submitted By: Dave Boruff
Title: Manager, Office of Traffic Administration
Organization: INDOT
Phone Number: (317) 234-7975
Date: 7/23/15

IMPACT ANALYSIS REPORT CHECKLIST

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

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

- Construction costs? No
- Construction time? No
- Customer satisfaction? Yes
- Congestion/travel time? No
- Ride quality? No

Will this proposal reduce operational costs or maintenance effort? Yes
Will this item improve safety:

- For motorists? Yes
- For construction workers? No

Will this proposal improve quality for:

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

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

REVISION TO TANDARDS SPECIFICATIONS AND SPECIAL PROVISION
808-T-XXX GROOVING FOR DURABLE PAVEMENT MARKINGS

808-T-XXX GROOVING FOR DURABLE PAVEMENT MARKINGS

(Adopted XX-XX-XX)

The Standard Specifications are revised as follows:

SECTION 808, BEGIN LINE 17, DELETE AS FOLLOWS:

~~Extended Warranty Preformed Plastic.....921.02(b)~~

SECTION 808, BEGIN LINE 114, INSERT AS FOLLOWS:

808.05 Transverse Markings *and Pavement Message Markings*

(a) Transverse Markings

~~(a)~~ Transverse marking lines shall be used as specified or directed to delineate channelizing lines, stop lines, crosswalk lines, and parking ~~limit~~ lines. *Parking lines for disability parking spaces shall be 4 in. wide and blue in color. Unless otherwise specified or directed, all other parking lines shall be 4 in. wide and white in color. All other transverse* ~~The~~ markings shall consist of all necessary lines, of the width specified or directed and shall be in accordance with the MUTCD.

(b) Pavement Message Markings

~~(b)~~ Pavement message marking shall be used as specified or directed for railroad crossing approaches, intersection approaches, crosswalk approaches, ~~handicap parking spaces~~*~~the disability~~ADA accessible parking space* ~~*symbol*~~, and other messages applied to the pavement with pavement marking material. The markings shall consist of all necessary lines, words, and symbols as specified or directed, and shall be in accordance with the MUTCD.

SECTION 808, BEGIN LINE 135, DELETE AND INSERT AS FOLLOWS:

808.07 Pavement Marking Material Application, Equipment, and Performance Requirements

All double line markings, such as a no passing zone or the center line of an undivided multi-lane roadway, shall be applied in one pass. When a hand propelled machine is used, the single pass application of double line markings will not be required and control points shall be spaced at a maximum of 10 ft longitudinally.

For contracts with completion dates when conditions do not enable application of the specified marking materials, *or grooving for durable marking materials*, other materials may be substituted with an appropriate unit price adjustment if approved by the Engineer.

Markings shall be installed in accordance with the manufacturer's recommendations, except that the minimum requirements stated herein shall also apply. Products specifically designed for application temperatures below the stated minimums herein are not required but may be used if approved by the Engineer. When directed, the Contractor shall provide the Department with original copies of all necessary current

manufacturer's installation manuals prior to beginning installation work, and no installation work shall begin prior to the Department's receipt of these manuals. These manuals shall become the property of the Department.

The markings shall be protected from traffic until dry to eliminate tracking.

The markings shall meet or exceed the following performance criteria:

1. Color. The daytime and nighttime color of the applied markings shall be in accordance with ASTM D 6628 when determined in accordance with ASTM E 811 and E 1349.

2. Durability. The pavement markings shall have a minimum resistance to wear of 97% in accordance with ASTM D 913.

3. Retro-reflectivity. Contracts with 50,000 lft or more of longitudinal paint line or 10,000 lft or more *for each type of* longitudinal durable marking line *applied* shall have retro-reflectivity measured, *except markings placed on seal coat pavements placed in accordance with 404*. Longitudinal lines shall meet required minimum initial and retained average retro-reflectivity measurements. All other contracts and markings, *except parking lines*, shall meet the required longitudinal line minimum measurements and will be measured by the Department at the discretion of the Engineer, except that quality adjustments will not apply. Retained retro-reflectivity is the value at the time of the warranty expiration in accordance with 808.09 and will be measured by the Department at the discretion of the Engineer.

Retro-reflectivity testing equipment shall be furnished, calibrated, and operated in accordance with ITM 931. The markings shall be tested in a period of not less than 14 days to not more than 30 days after the materials are applied. The retro-reflectivity equipment shall remain the property of the Contractor. The measurement of retro-reflectivity shall be supervised or performed at all times by an operator trained and certified by the unit's manufacturer. A report as described in the ITM and including the specified test results and calculations shall be prepared and provided to the Engineer within three days of each day of testing.

Quality adjustments will be applied to the payment of markings ~~which fail to meet the required minimum initial average retro-reflectivity values~~*as indicated in the table below*. The required minimum initial and retained average retro-reflectivity values for longitudinal line measured in mcd/m²/lx are as follows:

Material Type	White	Yellow	Quality Adjustment*	Retained White	Retained Yellow
Paint	≥ 250	≥ 175	1.00	N/A	N/A

Required Minimum	150 to 249	125 to 174	0.70		
Thermoplastic	≥ 300	≥ 200	1.00	~~200~~*See 808.09*	~~150~~*See 808.09*
Required Minimum	250 to 299	150 to 199	0.70		
Multi-Component	≥ 300	≥ 200	1.00	~~200~~*See 808.09*	~~150~~*See 808.09*
Required Minimum	250 to 299	150 to 199	0.70		
Preformed Plastic	≥ ~~300~~*650*	≥ ~~200~~*450*	1.00	~~200~~*See 808.09*	~~150~~*See 808.09*
Required Minimum	~~250 to 299~~ *550 to 649*	~~150 to 199~~ *350 to 449*	0.70		
~~Extended Warranty Preformed Plastic~~	~~≥ 650~~	~~≥ 450~~	~~1.00~~	~~See 808.09.1~~	~~See 808.09.1~~
~~Required Minimum~~	~~550 to 649~~	~~350 to 449~~	~~0.70~~		

* Quality Adjustments do not apply to the retained retro-reflectivity values

(a) Traffic Paint

1. Application

Traffic paint shall be applied only when the ambient air and pavement temperature is 40ºF or higher and will remain 40ºF or higher for 2 h after application.

The markings shall be protected from traffic until dry to eliminate tracking.

The wet film thickness of the traffic paint shall be a minimum of 15 mils. Painted lines and markings shall be immediately reflectorized by applying beads at a uniform minimum rate of 6 lb/gal. of traffic paint. Only standard or modified standard beads shall be used for paint markings.

2. Equipment

Traffic paint shall be applied with a spray type machine capable of applying the traffic paint under pressure through a nozzle directly onto the pavement. The truck-mounted machine shall be equipped with the following:

a. air blast device for cleaning the pavement ahead of the application;
b. guide pointer to keep the machine on an accurate line;
c. spray guns which can be operated individually or simultaneously;
d. agitator or recirculation system as appropriate;
e. control device to maintain uniform flow and application;
f. capability of heating the material to application temperatures;
g. automatic device which will provide a line of the required pattern; and
h. automatic bead dispenser which is synchronized with the marking application.

A hand propelled machine may be used to apply markings. A brush may be used if approved to apply some markings.

3. Performance Requirements

The color and durability requirements shall be met for a minimum of 90 days after application.

Pavement marking segments which are found to have an average retro-reflectivity reading below the minimum required shall be re-striped with no additional payment. Pavement markings segments which have more than five of 20 individual readings below the minimum required shall be re-striped with no additional payment. The re-striping shall begin within 14 calendar days of the completion of the retro-reflectivity measurement. Line segments may be re-striped with no additional payment. Following each re-striping, additional retro-reflectivity measurements shall be made with no additional payment. Quality adjustments will be based on the final retro-reflectivity measurements. The alignment of all re-striped pavement markings shall be placed within ±1/4 in. in width and ±2 in. in length of the original placed markings. Re-striping will not be allowed more than two times, after which removal and replacement of the markings will be required.

(b) Durable Pavement Marking Material

Durable pavement marking material consists of thermoplastic, preformed plastic or multi-component markings. *Durable pavement marking materials used for center lines, lane lines, or edge lines shall be installed within a groove in the pavement unless otherwise indicated on the plans. Durable pavement marking materials used for barrier lines, and transverse markings shall be surface applied unless otherwise indicated on the plans.*

1. Grooving for Durable Pavement Markings

a. Application

The pavement shall be grooved prior to the placement of longitudinal durable pavement markings, excluding bridge decks and approach slabs. The groove or recess shall be installed in a single pass using dry cut equipment that utilizes diamond cutting blades and that is approved by the pavement marking manufacturer. If there are no markings on the pavement, a guide line shall be placed using paint without glass beads as a template for the grooving operation. The groove shall be at least 1 in. and no more than 2 in. wider than the pavement marking to be placed. The Contractor may leave a gap in the grooving for longitudinal lines that delineate the radii of driveways or intersections.

The depth of the groove shall be in accordance with the manufacturer's recommendations and shall be at minimum 5 mils greater than the thickness of the marking material including exposed glass beads, up to a maximum allowable depth of 150 mils. A continuous groove shall not be allowed for lane lines. The groove may extend

up to 3 in. at either end of a lane line. Grooves shall be no closer than 2 in to the edge of a longitudinal joint.

b. Groove Finish and Cleaning

The grooved surface shall be cleaned with self-vacuuming equipment attached to the same machine installing the groove. The surface shall be visibly dry prior to pavement marking installation. The finished groove surface shall have a fine corduroy-like appearance with a maximum variation in depth of 10 mils.

~~1~~*2*. Thermoplastic

a. Application

Thermoplastic marking shall be applied in molten form by conventional extrusion when the pavement and ambient air temperatures are *a minimum of* 50°F ~~or above~~*and rising*; or by ribbon type extrusion or spray when the pavement and ambient air temperatures are a minimum of ~~*60°F*~~*50°F* ~~or above~~*and rising*. Heat bonded preformed thermoplastic may be used for transverse or message markings. The average final thickness of each 36 in. length of thermoplastic marking shall be no less than 90 mil*s* and no more than 125 mil*s*. Immediately following the application of the thermoplastic markings, additional retro-reflectorization shall be provided by applying beads to the surface of the molten material at a uniform minimum rate of 8 lb/100 sq ft of marking. Individual passes of markings shall not overlap or be separated by gaps greater than 1/4 in. longitudinally.

b. Equipment

The equipment used for the application of thermoplastic markings shall consist of a kettle for melting the material and an applicator for applying the markings. All of the equipment required for melting and applying the material shall maintain a uniform material temperature within the manufacturer specified limits, without scorching, discoloring or overheating any portion of the material.

A truck-mounted machine shall be equipped with the following: an air blast device for cleaning the pavement ahead of the marking operation; a guide pointer to keep the machine on an accurate line; at least two spray guns which can be operated individually or simultaneously; agitators; a control device to maintain uniform flow and application; an automatic device which will provide a broken line of the required length; and an automatic bead dispenser which is synchronized with the marking application.

A hand-propelled machine may be used to apply markings.

The equipment for applying heat bonded preformed plastic shall be in accordance with the manufacturer's recommendations. An open flame shall not come into direct contact with the pavement.

c. Performance Requirements

When the initial average retro-reflectivity measurement is below the required minimum the segment of line shall be removed and replaced with no additional payment. Pavement markings segments which have more than five of 20 individual readings below the minimum required shall be removed and replaced with no additional payment.

~~2~~*3*. Preformed Plastic ~~and Extended Warranty Preformed Plastic~~

a. Application

~~The installation method for extended warranty preformed plastic markings shall be the overlay method for PCCP and the inlay or overlay method for HMA. The overlay method is defined as placement of preformed plastic markings on the finished pavement surface. The inlay method is defined as placing preformed plastic markings on newly placed HMA immediately prior to the last roller pass. The pavement shall be grooved prior to the placement using the overlay method. This groove shall not exceed 110 mils in depth or 1 in. wider than the pavement marking to be placed. The equipment used for grooving shall not damage pavement joints.~~

~~For non-extended warranty preformed plastic, the overlay installation method is acceptable for both HMA and PCCP pavements, and no grooving is required.~~

~~There is no minimum temperature requirement for preformed plastic installed by the inlay method. When installed by other methods, t~~*T*he markings shall be applied when the air temperature is a minimum of ~~60~~*40*°F and rising~~, and the pavement temperature is a minimum of 70°F~~. ~~The markings shall not be applied if the ambient air temperature is expected to drop below 40°F within 24 h after application~~ *A primer is required if the ambient air temperature is below 50°F.* The pavement surface shall be primed with a binder material in accordance with the manufacturer's recommendations.

If there is a dispute regarding installation, the manufacturer shall provide a trained representative to ensure that the installation is properly performed.

b. Performance Requirements

When the initial average retro-reflectivity measurement is below the required minimum the segment of line shall be removed and replaced with no additional payment. Pavement markings segments which have more than five of 20 individual readings below the minimum required shall be removed and replaced with no additional payment.

~~3~~*4*. Multi-Component

a. Application

This material shall be applied only when the pavement and ambient air temperatures are 40°F or above. The wet film thickness of the marking material shall be a minimum of 20 mils. Immediately following the application of the markings, additional reflectorization shall be provided by applying beads to the surface of the wet marking at a uniform minimum rate of 20 lb/gal. of marking.

REVISION TO TANDARDS SPECIFICATIONS AND SPECIAL PROVISION
808-T-XXX GROOVING FOR DURABLE PAVEMENT MARKINGS

b. Equipment

The machine used to apply the marking material shall precisely meter each component, and produce and maintain the necessary mixing head temperature within the required tolerances. The machine shall be equipped in accordance with 808.07(a)2.

c. Performance Requirements

Pavement marking segments which are found to have an average retroreflectivity reading below the required minimum shall be re-striped with no additional payment. Pavement markings segments which have more than five of 20 individual readings below the minimum required shall be re-striped with no additional payment. The re-striping shall begin within 14 calendar days of the completion of the retro-reflectivity measurement. Line segments may be re-striped with no additional payment. Following each re-striping, additional retro-reflectivity measurements shall be made with no additional payment. Quality adjustments will be based on the final retro-reflectivity measurements. The alignment of all re-striped markings shall be placed within ±1/4 in. in width and ±2.0 in. in length of the original placed markings. Re-striping will not be allowed more than two times, after which removal and replacement of the markings will be required.

SECTION 808, BEGIN LINE 417, DELETE AND INSERT AS FOLLOWS:

808.09 Warranty for Durable Pavement Marking Material

Durable pavement marking material shall be warranted against failure resulting from material defects or method of application, or the result of snowplowing and deicing activities. The material shall be warranted to retain its color, ~~retroreflectivity, durability~~ *adherence to the pavement*, and shall be free of other obvious defects or failures. *Grooved durable pavement markings shall also be warranted to retain retroreflectivity as specified below*.

All pavement traffic markings which have failed to meet the warranted conditions shall be replaced with no additional payment.

For the terms of the warranty a unit shall be defined as a 1,000 ft section of line of specified width in any combination or pattern.

(a) Surface Applied Durable Pavement Marking Warranty

The warranty period *for surface applied durable markings* shall be 180 days beginning with the substantial completion date for the contract as defined in 101.59, but not prior to November 1 of the calendar year in which the last pavement markings were installed. If more than 3% of a unit or 3% of the total of any one intersection or set of transverse markings fails, the failed portion shall be replaced. All pavement markings required to be replaced under the terms of this warranty shall be replaced within 60 days of the notification of failure.

(b) Grooved Durable Pavement Marking Warranty

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The warranty period for durable markings placed in a groove shall be 2 years beginning with the substantial completion date for the contract as defined in 101.59, but not prior to November 1 of the calendar year in which the last pavement markings were installed. The retained retro-reflectivity, mcd/m^2/lx, as determined by ITM 931 shall meet or exceed the minimum values at all times during the warranty period as follows:

Material	*Year*	*White*	*Yellow*
Thermoplastic	*1*	*225*	*150*
	2	*175*	*125*
Multi-Component	*1*	*225*	*150*
	2	*175*	*125*
Preformed Plastic	*1*	*400*	*300*
	2	*300*	*200*

If more than 5% of a unit or 5% of the total fails, the failed portion shall be replaced. All pavement markings required to be replaced under the terms of this warranty shall be replaced within 60 days of the notification of failure.

~~**808.09.1 Extended Warranty for Preformed Plastic Pavement Marking Material**~~

~~Extended warranty markings shall be warranted for a period of two years beginning with the substantial completion date for the contract as defined in 101.59. The markings will be subject to snowplowing and deicing chemicals. The material shall be warranted to retain its color, retro-reflectivity, and durability and shall be free of other obvious defects or failures.~~

~~For the terms of the warranty a unit shall be defined as a 1,000 ft section of line of specified width in any combination or pattern.~~

~~The retained retro-reflectivity, mcd/m^2/lx, as determined by ITM 931 shall meet or exceed the minimum values at all times during the warranty period as follows:~~

~~Year~~	~~White~~	~~Yellow~~
~~1~~	~~400~~	~~300~~
~~2~~	~~300~~	~~200~~

~~When a unit of markings is found to have an average retro-reflectivity reading below the required value, the entire unit of markings shall be removed and replaced. If more than 5% of a unit of markings fails due to color or durability, the entire unit shall be removed and replaced.~~

~~All pavement markings required to be replaced under the terms of this warranty shall be replaced within 60 days of the notification of failure.~~

SECTION 808, BEGIN LINE 572, DELETE AND INSERT AS FOLLOWS:

REVISION TO TANDARDS SPECIFICATIONS AND SPECIAL PROVISION

808-T-XXX GROOVING FOR DURABLE PAVEMENT MARKINGS

~~Transverse~~*Except as otherwise specified, transverse* marking lines will be measured as the total distance in linear feet of lines placed or removed. *Transverse marking yield lines will be measured transversely including the entire extent of the marking line and gaps*. Curb markings will be measured by the linear feet along the front face of the curb. *Grooving for pavement markings will be measured as the total distance of grooving for each pavement marking line in linear feet~~, including gaps that are 20 ft or less~~*. Pavement message markings will be measured by the total number of each type placed. A railroad crossing pavement message marking shall include the two R's, the X, and the three stop lines per traffic lane. Railroad crossing pavement message markings will be measured by the total number of each marking place. Lane indication arrow pavement message markings will be measured by the number of lane indication arrowheads placed. Removal of pavement message markings will be measured in square yards using areas shown in the following table. The material will not be considered when measuring such markings for pavement.

Pavement Message Markings Table

Description	**Area**
"Ahead"	3.1 SYS
Combo Arrow	3.1 SYS
"Exit"	2.5 SYS
"Left"	2.5 SYS
"Only"	2.5 SYS
Railroad "R"	0.6 SYS
"Right"	3.2 SYS
"RXR"	7.7 SYS
"School"	3.9 SYS
"Stop"	2.6 SYS
Straight Arrow	1.4 SYS
"Turn"	2.6 SYS
Turn Arrow	1.7 SYS
"XING"	2.5 SYS

SECTION 808, BEGIN LINE 608, DELETE AND INSERT AS FOLLOWS:

808.13 Basis of Payment

Lines and transverse markings placed will be paid for at the contract unit price per linear foot for the material, type, color, and width specified. *Grooving for pavement markings will be paid for at the contract unit price per linear foot.* Curb markings will be paid for at the contract unit price per linear foot for curb painting, of the color specified. Pavement message markings placed will be paid for at the contract unit price per each, for the material and message specified. Lines and transverse markings removed will be paid for at the contract unit price per linear foot. Pavement message markings removed will be paid for at the contract unit price per square yard.

REVISION TO TANDARDS SPECIFICATIONS AND SPECIAL PROVISION
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Snowplowable raised pavement markers, furnished and installed, or removed will be paid for at the contract unit price per each. Prismatic reflectors will be paid for at the contract unit price per each. Each two-way prismatic reflector will be paid for as one reflector.

Payment for furnishing, calibrating, and operating retro-reflectivity testing equipment will be paid for at the contract price for lump sum. The cost of report preparation shall be included in the cost of retro-reflectivity testing. Adjustments to the contract payment with respect to retro-reflectivity of performance based pavement markings will be included in a quality adjustment in accordance with 109.05.1. The Engineer may waive retro-reflectivity testing due to weather limitations. Retro-reflectivity testing will be waived for markings applied after October 31 and before April 1. If retro-reflectivity testing is waived, no payment will be made for retro-reflectivity testing ~~and no quality adjustment for retro-reflectivity will be made~~. If retro-reflectivity testing ~~is not performed and~~ is not waived by the Engineer due to weather *or waived by the seasonal time restriction and retro-reflectivity testing is not performed*, no payment will be made for retro-reflectivity testing and payment for the marking items will be made at 70% of the unit price.

Payment will be made under:

Pay Item	**Pay Unit Symbol**
Curb Painting, _____ (color)	LFT
Grooving for Pavement Markings	*LFT*
Line, _____, _____, _____, _____ in. (material, type, color, width)	LFT
Line, Remove	LFT
Pavement Message Marking, _____, _____ (material, message)	EACH
Pavement Message Marking, Remove	SYS
Prismatic Reflector	EACH
Retro-Reflectivity Testing	LS
Snowplowable Raised Pavement Marker	EACH
Snowplowable Raised Pavement Marker, Remove	EACH
Transverse Marking, _____, _____,. _____, _____ in. . (material, *type*, color, width)	LFT
Transverse Marking, Remove	LFT

No additional payment will be made for the removal and or replacement of markings that fail to meet the performance or warranty conditions of 808.07 and 808.09.

The cost of removal of existing prismatic reflectors shall be included in the cost of prismatic reflectors.

REVISION TO TANDARDS SPECIFICATIONS AND SPECIAL PROVISION

808-T-XXX GROOVING FOR DURABLE PAVEMENT MARKINGS

Beads, binder material for thermoplastic and preformed plastic, adhesive for snowplowable markers, patching material for snowplowable marker removal, *guide lines for grooving operations*, pavement cleaning and surface preparation, and all necessary incidentals shall be included in the cost of the pay items.

~~The cost of grooving prior to placing extended warranty preformed plastic shall be included in the cost of the pay item.~~

SECTION 921, BEGIN LINE 27, DELETE AS FOLLOWS:

(b) Preformed Plastic~~ and Extended Warranty Preformed Plastic~~

BACKUP 1.

PROPOSED REVISION TO IDM 502-2.01(03) MATERIALS AND APPLICATIONS AND FIGURE 502-2C

502-2.01(03) Materials and Application

The pavement marking materials and applications are described on Figure 502-2C. See the INDOT *Standard Specifications* for materials properties and application requirements during construction. The following provides additional guidance regarding the materials.

1. Paint. Paint-applied markings are less expensive than other materials. They are used where the additional cost of durable pavement markings cannot be justified. A disadvantage of paint is that it can be quickly worn away on a high-traffic-volume roadway. Therefore it often needs to be reapplied more than once a year. ~~Paint should be used only where it can provide satisfactory, year-round visibility.~~

   Paint should be used as follows:

   a. where the AADT is less than 10000 vehicles ~~per lane~~;
   b. where the remaining surface life of the pavement is less than ~~three~~*five* years, or where the pavement is scheduled for resurfacing within ~~three~~*five* years; or
   c. for marking non-mountable islands and raised curbs.
   d. where rumble stripes are specified (either edge line, center line, or both)
   e. on pavement surface treatments with a depth of less than 1.5 in. (e.g. Micro-surface, UBWC, 4.75 mm HMA Overlay, etc.).

2. Durable Marking Materials. Durable marking materials provide enhanced retroreflectivity and a longer service life. INDOT Standard Specifications require that all durable markings be grooved. This serves to protect the additional investment in durable markings from the effects of snow plowing. INDOT uses the following types of durable markings:

   a. Thermoplastic. Hydrocarbon and alkyd thermoplastic markings may be used on asphalt pavement under the following conditions.

      i. Longitudinal Lines. These may be used for the center line, edge lines, or lane lines at a location that is not proposed or scheduled for resurfacing within the next three years and where the AADT is in excess of 10000 vehicles ~~per lane~~.

         The use of thermoplastic should not be specified with longitudinal rumple stripes unless directed by the district traffic engineer.

BACKUP 1.

PROPOSED REVISION TO IDM 502-2.01(03) MATERIALS AND APPLICATIONS AND FIGURE 502-2C

ii. Transverse Markings. These may be used for transverse markings as shown in Figure 502-2C.

iii. Painting Cycles. These may be used on a road that requires two or more applications of paint lines per year.

iv. Decision Point. These may be used where there is a need for more-positive lane identification because of alignment, transitions, or channelization.

b. Multi-Component. Multi-component markings may be used for the center line, lane lines, or edge lines. They are not used for transverse markings or for marking a non-mountable island or raised curb because of problems that can develop with the intermittent application and dry time. Multi-component markings may be used as follows:

i. Longitudinal Lines. These may be used for the center line, edge line, or lane lines at a location that is not proposed or scheduled for resurfacing within the next three years.

ii. Transverse Markings. These may be used for all transverse markings.

iii. Painting Cycles. These may be used on a road that requires two or more applications of paint lines per year.

iv. Decision Point. These may be used where there is a need for more-positive lane identification because of alignment, transitions, or channelization.

4. Preformed Plastic ~~and Extended-Warranty Preformed Plastic~~. The criteria for multi-component markings are also applicable for permanent applications of preformed plastic markings. They are also permitted on a bridge-deck overlay project. Temporary preformed plastic markings are used in a construction zone. Temporary preformed plastic markings should not be used for permanent applications.

Extended-warranty preformed plastic markings are more durable, and have retained retro-reflectivity, increased detection distance, and wet retro-reflectivity characteristics. However, these markings are more expensive due to material and

installation costs. To take advantage of the performance properties, the material is installed either inlayed into HMA during finish rolling or overlaid into HMA or PCCP which is grooved to receive the marking. An application is for lane lines on a divided highway to have competitive life-cycle cost.

5. Raised Pavement Markers. See Section 502-2.02(12) through 502-2.02(15) for information about the use of raised pavement markers.

Application[1]	Material Type					
	Paint	Thermoplastic	Multi-Component	~~Preformed~~ ~~Plastic~~	~~Ext. Warranty~~ Preformed Plastic	Raised Pavement Markers[2]
*A*ADT ~~per lane~~	< 10000	≥ 10000	≥ 10000	~~≥ 1000~~	≥ ~~6000~~ *20000*	≥ ~~2500, 2-lane~~ ≥ *5000, 2-lane* ≥ ~~6000, 4-~~
Pavement Surface Life	<~~3~~ 8 Years	≥ ~~3~~ *8* Years	≥ ~~3~~ *8* Years	~~≥ 3 Years~~	≥ ~~4~~ *8* Years	≥ 4 Years
Edge Lines	X	X	X	~~X~~	X	~~X~~
Center Lines	X	X	X	~~X~~	X	X
Transverse Markings	X	X		~~X~~		
Concrete Pavement	X		X	~~X~~	X[~~2~~]	X
Asphalt Pavement	X	X	*X*	~~X~~	X[~~2~~]	X

Notes:

1 *Other applications or restrictions may apply; see Section 502-3.01 for additional information.*

2 ~~*Broken lines only.*~~

~~*3*~~*2 For guidance on the use of milled longitudinal rumble stripes in place of raised pavement markers, see Section 502-2.09.*

3 Snowplowable RPM's should be used to supplement lane lines on roadways with a functional classification of interstate (1), freeway or expressway (2), or other principal arterial (3).

RECOMMENDED PAVEMENT-MARKING APPLICATIONS

Figure 502-2C

BACKUP 02.

PROPOSED NEW GIFE SECTION: DURABLE PAVEMENT MARKINGS

SECTION 26 – TRAFFIC CONTROL DEVICES AND LIGHTING

26.X DURABLE PAVEMENT MARKINGS *(Adop. xx-xx-15)*

*As the final, permanent pavement markings are one of the last items to be installed, with most projects they are installed in late fall, if durable markings are specified and the markings will be installed during cold weather the PE/PS should be willing to consider alternative materials that are ~~more suitable for installing during cold weather~~better suited for the prevailing conditions. The District Traffic Office should be consulted before a change of marking material is approved. The PE/PS should also keep in mind that the pavement surface needs to be dry for successful application of **any** marking material. The standard specifications require that the surface be visibly dry but the contractor may also want to perform a pavement moisture test (ASTM D 1461) to verify.*

Alternatives that may be substituted for durable markings in late season, cold weather conditions include, but are not limited to, methyl methacrylate (MMA) , low temperature water-borne paint, cold weather thermoplastic. Price adjustment, either up (e.g. for MMA) or down (e.g. paint), may be needed with a substitute material.

Consideration may also be given to installing temporary markings (paint, type I tape, 40 mil thermoplastic) and postponing the installation of the final markings until weather conditions are acceptable.

COMMENTS AND ACTION

808-T-XXX GROOVING FOR DURABLE PAVEMENT MARKINGS

DISCUSSION:

This item was introduced and presented by Mr. Boruff who proposes to amend the standard specifications for pavement markings so that longitudinal durable markings consisting of thermoplastic, multi-component, and preformed plastic, are placed in a groove. This practice will protect the additional investment we're making in durable markings when compared to paint. Mr. Bruno added that the threshold for using durable markings would increase from 2,000 AADT to 10,000 AADT to neutralize impacts to the construction budget.

Mr. Boruff further stated that the amendment will also provide clarification regarding parking lines, minimum temperature for thermoplastic and preformed plastic markings, and the method of measurement of yield lines.

Mr. Koch inquired as to the weather limitations on the retroreflectivity testing. Clarifications of considerations were provided by Mr. Bruno and Mr. Boruff who stated it would be case, and weather, specific depending on the kind of winter we are experiencing a that time.

Further discussion ensued regarding grooving for bridge decks, and that we do not want to groove the bridge decks. The language was therefore revised as shown highlighted above.

Mr. Boruff revised his motion.

Motion: Mr. Boruff Second: Mr. Cales Ayes: 8 Nays: 0 FHWA Approval: YES	Action: ____ Passed as Submitted _X_ Passed as Revised __ __ Withdrawn
Standard Specifications Sections referenced and/or affected: SECTION 808 pg 821 thru 833. Recurring Special Provision affected: NONE Standard Drawing affected: NONE Design Manual Sections affected: 502-2.01(03) GIFE Sections cross-references: PROPOSED NEW	_____ 2018 Standard Specifications _X_ Revise Pay Items List, new 808-12032 _X_ Create RSP (No.808-T-210) Effective Jan. 01, 2016 Letting RSP Sunset Date: _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _X_ GIFE Update (SiteManager)

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISION

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The notes for worksite speed limit sign placement do not provide clear guidance for single lane or undivided highways. Also, the sign spacing shown is only applicable to freeway conditions.

PROPOSED SOLUTION: Revise note 1 to provide guidance on sign placement for single lane and undivided highways; as well as adding a note that the sign spacing may be reduced per the MUTCD. A related revision has been made to Construction Memorandum 14-06.

APPLICABLE STANDARD SPECIFICATIONS: 801.15(c)

APPLICABLE STANDARD DRAWINGS: 801-TCDV-12

APPLICABLE DESIGN MANUAL SECTION: 503-7.03(01) / 83-2.03(01)

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: 801-R-622d (Sheet 21)

PAY ITEMS AFFECTED: N/A

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc review by INDOT Construction Management, Work Zone Safety, and Traffic Administration offices.

IMPACT ANALYSIS (attach report): Yes, attached.

Submitted By: Dave Boruff

Title: Manager, Office of Traffic Administration

Organization: INDOT

Phone Number: (317) 234-7975

Date: 8/3/15

Mr. Boruff
Date: 8/20/15

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISION

IMPACT ANALYSIS REPORT CHECKLIST

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

Does this item appear in any other specification sections? No

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

Will this proposal improve:

Construction costs? No

Construction time? No

Customer satisfaction? No

Congestion/travel time? No

Ride quality? No

Will this proposal reduce operational costs or maintenance effort? No

Will this item improve safety:

For motorists? No

For construction workers? No

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? 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

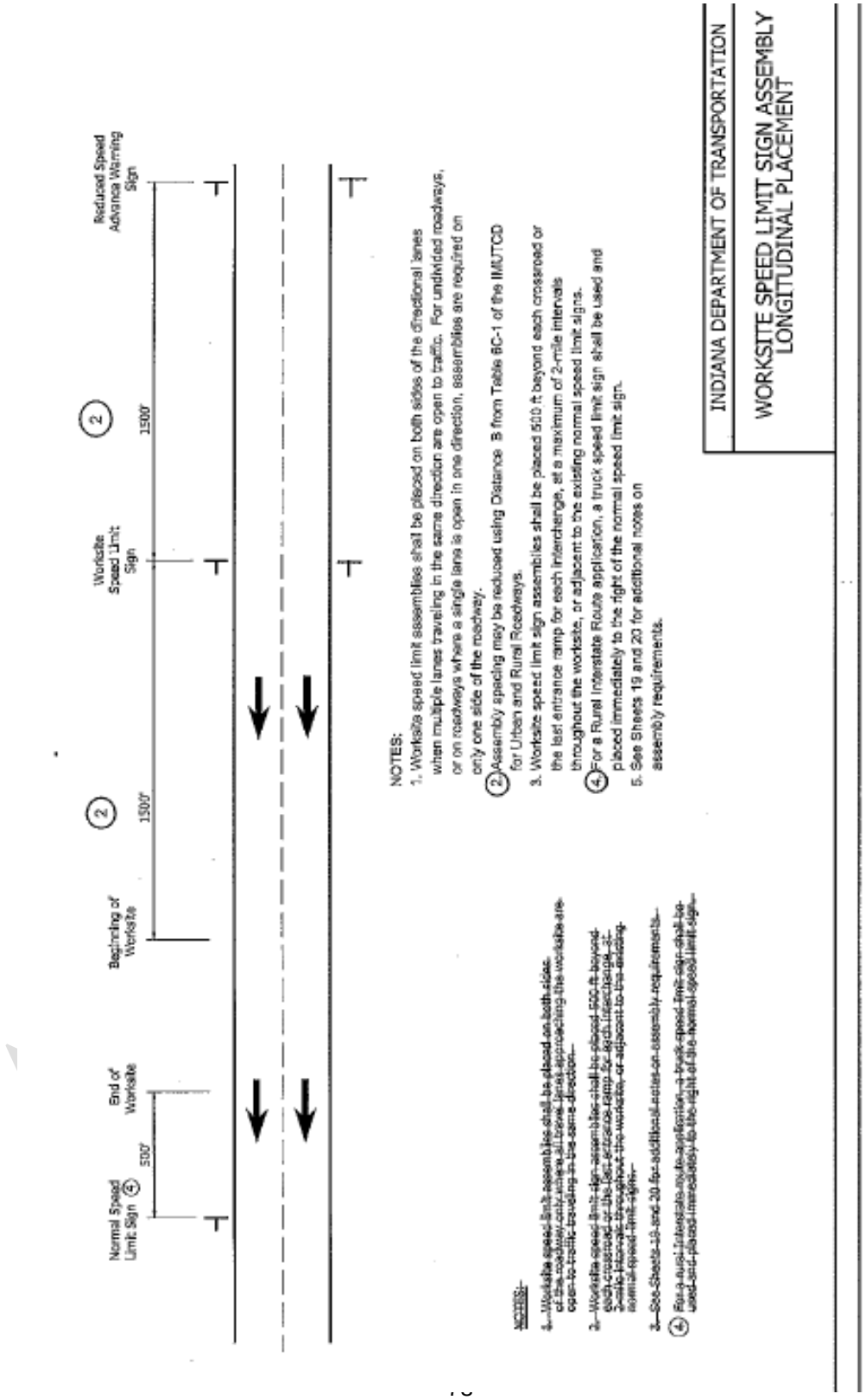
AASHTO or other design code? No

Is this item editorial? Yes

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

REVISION TO STANDARD DRAWINGS AND RECURRING PLAN DETAILS

801-R-622d TRAFFIC CONTROL SIGNS, DEVICES, AND NOTES
(SHEET 21 OF 22) WORKSITE SPEED LIMIT SIGN ASSEMBLY LONGITUDINAL PLACEMENT (SHOWN MARKUPS)



REVISION TO STANDARD DRAWINGS AND RECURRING PLAN DETAILS

801-R-622d TRAFFIC CONTROL SIGNS, DEVICES, AND NOTES
(SHEET 21 OF 22) WORKSITE SPEED LIMIT SIGN ASSEMBLY LONGITUDINAL PLACEMENT (SHOWN MARKUPS)

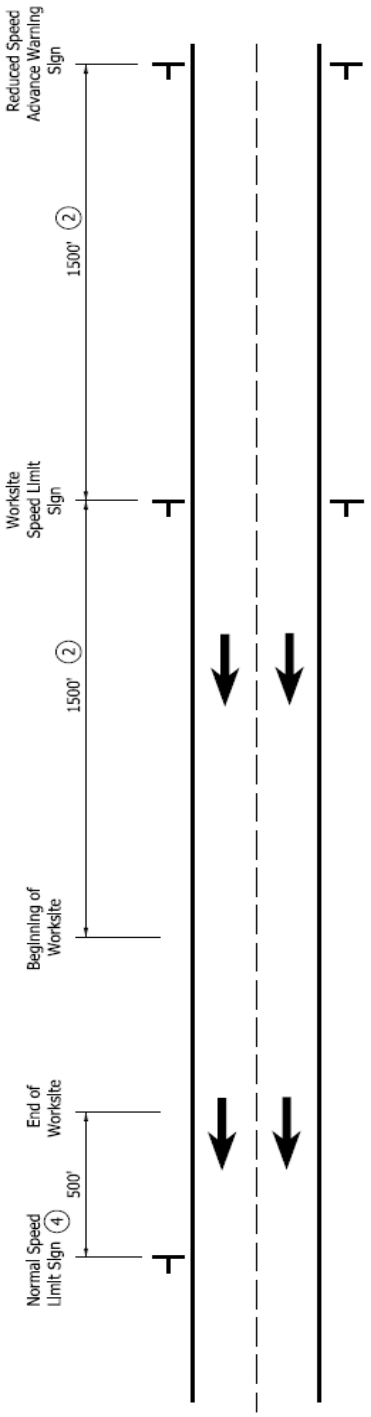
Notes on 801-R-622d (sheet 21).
Proposed to revise with new notes, see pg 76.

NOTES:

1. Worksite speed limit assemblies shall be placed on both sides of the roadway only where all travel lanes approaching the worksite are open to traffic traveling in the same direction.
2. Worksite speed limit sign assemblies shall be placed 500 ft beyond each crossroad or the last entrance ramp for each interchange, at 2-mile intervals throughout the worksite, or adjacent to the existing normal speed limit signs.
3. See Sheets 19 and 20 for additional notes on assembly requirements.
4. For a rural Interstate route application, a truck speed limit sign shall be used and placed immediately to the right of the normal speed limit sign.

REVISION TO STANDARD DRAWINGS AND RECURRING PLAN DETAILS

801-R-622d TRAFFIC CONTROL SIGNS, DEVICES, AND NOTES/SHEET 21 (DRAFT)



INDIANA DEPARTMENT OF TRANSPORTATION

WORKSITE SPEED LIMIT SIGN ASSEMBLY
LONGITUDINAL PLACEMENT

NOTES:

1. Worksite speed limit sign assemblies shall be placed on both sides of the directional lanes when multiple lanes traveling in the same direction are open to traffic. For undivided roadways, or on roadways where a single lane is open in one direction, assemblies are required on only one side of the roadway.

(2) Assembly spacing may be reduced using Distance B from Table 6C-1 of the IMUTCD for Urban and Rural Roadways.

3. Worksite speed limit sign assemblies shall be placed 500 ft beyond each crossroad or the last entrance ramp for each interchange, at a maximum of 2-mile intervals throughout the worksite, or adjacent to the existing normal speed limit signs.

(4) For a rural Interstate route application, a truck speed limit sign shall be used and placed immediately to the right of the normal speed limit sign.

5. See Sheets 19 and 20 for additional notes on assembly requirements.

REVISION TO STANDARD DRAWINGS AND RECURRING PLAN DETAILS

801-R-622d TRAFFIC CONTROL SIGNS, DEVICES, AND NOTES/SHEET 21 (DRAFT)

Proposed notes for 801-R-622d (sheet 21):

NOTES:

1. Worksite speed limit sign assemblies shall be placed on both sides of the directional lanes when multiple lanes traveling in the same direction are open to traffic. For undivided roadways, or on roadways where a single lane is open in one direction, assemblies are required on only one side of the roadway.

(2) Assembly spacing may be reduced using Distance B from Table 6C-1 of the IMUTCD for Urban and Rural Roadways.

3. Worksite speed limit sign assemblies shall be placed 500 ft beyond each crossroad or the last entrance ramp for each interchange, at a maximum of 2-mile intervals throughout the worksite, or adjacent to the existing normal speed limit signs.

(4) For a rural Interstate route application, a truck speed limit sign shall be used and placed immediately to the right of the normal speed limit sign.

5. See Sheets 19 and 20 for additional notes on assembly requirements.

COMMENTS AND ACTION

801-R-622d TRAFFIC CONTROL SIGNS, DEVICES, AND NOTES
(SHEET 21 OF 22) WORKSITE SPEED LIMIT SIGN ASSEMBLY LONGITUDINAL PLACEMENT

DISCUSSION:

Mr. Boruff introduced this item and stated that the notes for worksite speed limit sign placement on drawing 801-R-622d do not provide clear guidance for single lane or undivided highways. Also, the sign spacing shown is only applicable to freeway conditions. Mr. Boruff therefore proposed to revise note 1 to provide guidance on sign placement for single lane and undivided highways; as well as adding a note that the sign spacing may be reduced in accordance with the MUTCD. A related revision has been made to Construction Memorandum 14-06.

There was no discussion and this item passed as submitted.

Motion: Mr. Boruff Second: Mr. Cales Ayes: 8 Nays: 0 FHWA Approval: YES	Action: X Passed as Submitted ____ Passed as Revised ____ Withdrawn
Standard Specifications Sections referenced and/or affected: 801.15(c) pg 757. Recurring Special Provision affected: NONE Standard Drawing affected: 801-TCDV-12 Design Manual Sections affected: 503-7.03(01) / 83-2.03(01) GIFE Sections cross-references: NONE	____ 2018 Standard Specifications ____ Revise Pay Items List ____ Create RSP (No.____) Effective ____ Letting RSP Sunset Date: ____ Revise RSP (No.____) Effective ____ Letting RSP Sunset Date: ____ Standard Drawing Effective X Revise RPD (No. 801-R-622d) Effective Sep. 01, 2015 Letting, for contracts that are in-work. ____ GIFE Update

Mr. Goldner
Date: 8/20/15

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISION

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The Economic Opportunity Division has proposed contract amendments that they would like to have incorporated in order to reflect recent regulatory changes and to assist with their administrative oversight responsibilities.

PROPOSED SOLUTION: Revise 103.01 and 108.04 to incorporate those regulatory changes.

APPLICABLE STANDARD SPECIFICATIONS: 103.01, 108.04

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: N/A

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

PAY ITEMS AFFECTED: None

IMPACT ANALYSIS (attach report): Yes

Submitted By: Robert Goldner

Title: Construction Technical Support Manager

Organization: Indiana Department of Transportation

Phone Number: 317-232-7758

Date: July 21, 2015

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc

Mr. Goldner
Date: 8/20/15

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISION

IMPACT ANALYSIS REPORT CHECKLIST

Please explain the business case as to why this item should be presented to the Standards Committee for approval.

Please 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? Possibly
- Construction time? No
- Customer satisfaction? Possibly
- Congestion/travel time? N/A
- Ride quality? 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 proposal provide clarification for the Contractor and field personnel? Some.

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

Is this item editorial? Yes.

Please provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda: This revision is requested by the INDOT Economic Opportunity Division.

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISION

SECTION 103 – AWARD AND EXECUTION OF CONTRACT
103.01(c) GOAL
SECTION 108 – PROSECUTION AND PROGRESS
108.04 PROSECUTION OF THE WORK

(Proposed changes to 103.01(c) and 108.04 shown in currently active RSP 103-C-244 that was adopted on the June 18, 2015 Standards Committee meeting)

103-C-244 DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

(Adopted 06-18-15)

The Standard Specifications are revised as follows:

SECTION 103, BEGIN LINE 1, DELETE AND INSERT AS FOLLOWS:

SECTION 103 – AWARD AND EXECUTION OF CONTRACT

103.01 Disadvantaged Business Enterprise Program

This requirement will apply only to a federal aid contract.

(a) General Requirements

Failure to carry out the requirements set forth in 49 CFR 26, as outlined in the Department's DBE Program Manual, shall constitute a breach of contract and, after notification, may result in such contract sanctions as the Department or the Federal Highway Administration may determine to be appropriate, including, but not limited to: (a) withholding of payments to the Contractor under the contract until the Contractor complies, and/or (b) cancellation, termination or suspension of the contract, in whole or in part.

The above referenced CFR section requires the following policy and disadvantaged business enterprise obligation to be included in all subsequent agreements between the Contractor and all subcontractors as follows:

1. It will be the policy of the Department to create a level playing field on which DBE's can compete fairly for federally funded contracts. Consequently, the disadvantaged business enterprise requirements of 49 CFR Part 26, as outlined in the Department's DBE Program Manual, apply to this contract.

2. The Contractor shall not discriminate on the basis of race, color, national origin, *religion,* ~~or~~ sex, *sexual orientation or gender identity* in the award and performance of this contract. The Contractor shall carry out the applicable DBE requirements in the award and administration of federally funded contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract which may result in the termination of this contract or such other remedy as the Department or the Federal Highway Administration deems appropriate. The Contractor shall include language prohibiting discrimination on the basis of race, color, national origin, *religion,* ~~or~~ sex, *sexual orientation*

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISION

SECTION 103 – AWARD AND EXECUTION OF CONTRACT
103.01(c) GOAL
SECTION 108 – PROSECUTION AND PROGRESS
108.04 PROSECUTION OF THE WORK

or gender identity in the performance of this contract in all subcontracts.

SECTION 103, BEGIN LINE 95, DELETE AND INSERT AS FOLLOWS:

~~A written request for changes in utilization of race/gender conscious DBE firms listed in the Affirmative Action Certification shall be approved prior to start of listed services or purchase of listed materials. Requests to reduce or eliminate the services or material provided by a listed race/gender conscious DBE that include written approval by the DBE will be considered sufficient justification if the committed DBE utilization after the requested change will meet or exceed the contract goal or a lesser percentage approved prior to execution of the contract. If the committed DBE utilization after the change does not meet or exceed the contract goal or a lesser percentage approved prior to execution of the contract, or the listed race/gender conscious DBE does not approve the change, the Contractor shall submit documented evidence that the DBE is unable to perform successfully. Disposition of the request for change will be determined on the basis of the affirmative actions taken as required herein.~~

~~When a race/gender conscious DBE firm is removed from eligibility, the Contractor shall take the following steps:~~

1) ~~If a subcontract has not yet been executed, the Contractor shall not count work performed by the firm toward the contract goal. The Contractor will be directed to meet the contract goal with an eligible DBE firm or demonstrate that it has made a good faith effort to do so.~~

2) ~~If a subcontract has been executed before the firm has been declared ineligible, the Contractor shall continue to count work performed by the firm toward the contract goal.~~

The Contractor shall not terminate or reduce a commitment to a DBE, or an approved substitute DBE firm, that was listed on the Affirmative Action Certification without the prior written consent of the Department. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Unless the Department provides written consent, the Contractor shall not be entitled to any payment for work or materials unless it is performed or supplied by the listed DBE.

Written consent will only be provided by the Department if the Contractor has good cause to terminate or reduce its commitment to the DBE firm. Good cause shall consist of any of the following circumstances:

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISION

SECTION 103 – AWARD AND EXECUTION OF CONTRACT
103.01(c) GOAL
SECTION 108 – PROSECUTION AND PROGRESS
108.04 PROSECUTION OF THE WORK

1) *The listed DBE subcontractor fails or refuses to execute a written contract.*

2) *The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a manner consistent with normal industry standards, unless such failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the Contractor.*

3) *The listed DBE subcontractor fails or refuses to meet the Contractor's reasonable, nondiscriminatory bond requirements.*

4) *The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness.*

5) *The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant to CFR Parts 180, 215 and 1,200 or applicable state law.*

6) *The Department has determined that the listed DBE subcontractor is not a responsible contractor.*

7) *The listed DBE subcontractor voluntarily withdraws from the project and provides the Department written notice of its withdrawal.*

8) *The listed DBE is ineligible to receive DBE credit for the type of work required.*

9) *A DBE owner dies or becomes disabled with the result that the listed DBE contractor is unable to complete its work on the contract.*

10) *Other documented good causes, that the Department will determine, which compels the termination of the DBE subcontractor. Good cause does not exist, however, if the Contractor seeks to terminate a DBE it relied upon to obtain the contract so that it can self-perform the work for which the DBE contractor was engaged or so that the Contractor can substitute another DBE or non-DBE contractor after the contract has been awarded.*

Before transmitting to the Department its request to terminate or reduce a commitment made to a listed DBE, the Contractor shall give written notice to the affected DBE, with a copy to the Department, of its intent to request termination or reduction and

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISION

SECTION 103 – AWARD AND EXECUTION OF CONTRACT
103.01(c) GOAL
SECTION 108 – PROSECUTION AND PROGRESS
108.04 PROSECUTION OF THE WORK

the reasons for the request. The DBE shall be given five days to respond to the Contractor and the Department of the reasons, if any, why it objects to the proposed termination or reduction, and why the Department should not approve the Contractor's action. If required in a particular case, as a matter of public necessity and safety, the Department may specify a response period shorter than five days.

When a DBE subcontractor is terminated as specified herein or fails to complete its work on the contract for any reason, the Department will require the Contractor to make good faith efforts to find another DBE subcontractor to substitute for the original DBE. These good faith efforts shall be directed at finding another DBE to perform at least the same amount of work under the contract as the DBE that was terminated, to the extent needed to meet the contract goal the Department established for the contract.

In order to receive DBE credit for commitments made as part of the prime contract award process, a DBE firm shall be certified before the due date for bids on the prime contract. There may be situations after the award of the prime contract in which it is appropriate to count DBE credit for the use of a DBE firm. To be eligible to obtain DBE credit in these situations, the DBE firm shall be certified prior to participation on the contract.

If a non-DBE contractor joint ventures with a DBE contractor, the portion of the joint venture which is performed by a DBE may be utilized to achieve the DBE goal. Two types of DBE joint ventures are allowed and are defined as follows:

SECTION 108, BEGIN LINE 102, INSERT AS FOLLOWS:

During the progress of the work, the Engineer shall be notified at least 24 h in advance of undertaking construction operations. *This advance notification shall also apply anytime a DBE is scheduled to work on a project or deliver material or supplies to a project site.*

COMMENTS AND ACTION

103.01(c) GOAL
108.04 PROSECUTION OF THE WORK

DISCUSSION:

This item was introduced by Mr. Goldner who stated that the Economic Opportunity Division has proposed contract amendments that they would like to have incorporated in order to reflect recent regulatory changes and to assist with their administrative oversight responsibilities. The proposal shown is to revise 103.01 and 108.04 to incorporate those regulatory changes.

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

Motion: Mr. Goldner Second: Mr. Pankow Ayes: 8 Nays: 0 FHWA Approval: YES	Action: __X__ Passed as Submitted _____ Passed as Revised __ __ Withdrawn
Standard Specifications Sections referenced and/or affected: 103.01 pg 15; 108.04 pg 83. Recurring Special Provision affected: 103-C-244 DISADVANTAGED BUSINESS ENTERPRISE PROGRAM Standard Drawing affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	__X__ 2018 Standard Specifications _____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: __X__ Revise RSP (No.103-C-244) Effective Dec. 01, 2015 Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update