



# INDIANA DEPARTMENT OF TRANSPORTATION

*Driving Indiana's Economic Growth*

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Indianapolis, Indiana 46204

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**Mitchell E. Daniels, Jr., Governor**  
**Michael B. Cline, Commissioner**

## FIRST DRAFT MINUTES

**October 20, 2011 Standards Committee Meeting**  
**(Changes by the Action of the Committee and revisions**  
**are shown highlighted in yellow)**

MEMORANDUM

October 28, 2011

TO: Standards Committee

FROM: Scott Trammell, Secretary

RE: Minutes for the October 20, 2011 Standards Committee Meeting

The Standards Committee meeting was called to order by Mr. Pankow, sitting in for Mr. Miller, at 9:06 a.m. on October 20, 2011 in the N955 Bay Window Conference Room. The meeting was adjourned at 10:48 a.m.

The following committee members were in attendance:

Greg Pankow\*, Chairman  
Dave Boruff, Traffic Admin.  
Ron Walker, Materials Mgmt.  
Bob Cales, Contr. Admin.  
Brian Zafar\*\*\*, Roadway Serv.

Dave Andrews, Pvmt. Eng.  
Jim Reilman\*\*, Fort Wayne Dist.  
Randy Strain, Str. Services  
Tom Caplinger, Prod. Crawford. Dist.

\*Proxy for Mark Miller  
\*\*Proxy for Jim Keefer  
\*\*\*Proxy for John Wright

Also in attendance were the following:

Bren George, FHWA  
Scott Trammell, Secretary  
Paul Berebitsky, ICA  
Blake Jeffery, INCMA  
Lana Podorvanova, INDOT

Tony Uremovich, INDOT  
Mohammad Hajeer, FHWA  
Wendy Chiles, INDOT  
Douglas Zabonick, Keramida for INCMA

The following agenda items were considered:

A. GENERAL BUSINESS ITEMS

OLD BUSINESS

It was mentioned that Standards Committee Meeting has been rescheduled for Wednesday, November 16, 2011, due to the CEPDS at Purdue on Thursday, November 17, 2011.

NEW BUSINESS

1. Approval of Minutes from September 15, 2011 meeting

Motion: Mr. Andrewski  
Second: Mr. Boruff  
Ayes: 8  
Nays: 0

ACTION: Approved as Submitted

B. CONCEPTUAL PROPOSAL ITEMS

OLD BUSINESS

(No items were listed for consideration)

NEW BUSINESS

(No items were listed for consideration)

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

OLD BUSINESS

(No items were listed for consideration)

NEW BUSINESS

<u>Item No. 01</u>	<u>10/20/11 (2012 SS)</u>	<u>Mr. Wright</u>	<u>pg 04</u>
910.05		Castings	
910.05(a)		Steel Castings	
910.05(b)		Iron Castings	

ACTION: WITHDRAWN

<u>Item No. 02</u>	<u>10/20/11 (2012 SS)</u>	<u>Mr. Walker</u>	<u>pg 07</u>
Recurring Special Provision			
707-B-XXX		DETENSIONING PRECAST PRESTRESSED	
		STRUCTURAL MEMBERS	

ACTION: PASSED AS SUBMITTED

Item No. 03 10/20/11 (2012 SS) Mr. Strain pg 10  
Recurring Special Provision  
737-B-188 WELDED WIRE REINFORCEMENT

ACTION: WITHDRAWN

Item No. 04 10/20/11 (2012 SS) Mr. Boruff pg 16  
808.07(a) Traffic Paint  
808.07(b) Preformed Plastic and Extended  
Warranty Preformed Plastic  
808.13 Basis of Payment  
921.02(e) Pavement Marking Beads

ACTION: PASSED AS SUBMITTED

Item No. 05 10/20/11 (2012 SS) Mr. Pankow pg 21  
Recurring Special Provision  
619-X-XXX CLEANING BRIDGE STEEL

ACTION: PASSED AS SUBMITTED

Item No. 06 10/20/11 (2012 SS) Mr. Strain pg 24  
706.01 Description  
706.02 Materials  
706.05.1 **Pedestrian** Bridge Railing **Pedestrian**  
Fence  
910.18(b)5 **Pedestrian** Bridge Railing **Pedestrian**  
Fence

Standard Drawing:  
706-BRPF-01 BRIDGE RAILING PEDESTRIAN FENCE

ACTION: PASSED AS REVISED

Item No. 07 10/20/11 (2012 SS) Mr. Walker pg 33  
Recurring Special Provision  
200-R-401 RECYCLED FOUNDRY SAND

ACTION: PASSED AS REVISED

Item No. 08 10/20/11 (2012 SS) Mr. Walker pg 43  
Recurring Special Provision  
910-X-XXX WELDED WIRE REINFORCEMENT MATERIALS

ACTION: ~~PASSED AS SUBMITTED~~ WITHDRAWN  
(See Comments and Action)

cc: Committee Members (11)  
FHWA (3)  
ICA (1)

SPECIFICATION REVISIONS  
REVISION TO STANDARD SPECIFICATIONS

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PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: A foundry company that produces castings that are used on INDOT construction projects has claimed that similar castings produced by another foundry company, which also supplies castings that are used on INDOT projects, do not meet the INDOT weight requirements set forth in Standard Specifications Section 910.05(b).

The Specifications do not state a specific common weight that each similar type of casting should use as a basis for comparison of all casting producers' products. The statement regarding casting weight in the Specifications refers to the allowable weight variations of all of the same type of casting produced by each individual producer, not the common allowable weight variation for each similar type of casting produced by all the different casting producers.

PROPOSED SOLUTION: Revise Section 910.05 as attached.

APPLICABLE STANDARD SPECIFICATIONS: 910

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: N/A

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

Submitted By: John Wright

Title: Highway Design and Technical Support Director

Organization: INDOT

Phone Number: 232-5147

Date: September 9, 2011

APPLICABLE SUB-COMMITTEE ENDORSEMENT?

REVISION TO STANDARD SPECIFICATIONS

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SECTION 910 - METAL MATERIALS

910.05 CASTINGS

910.05(a) STEEL CASTINGS

910.05(b) IRON CASTINGS

The Standard Specifications are revised as follows:

SECTION 910, BEGIN LINE 376, DELETE AND INSERT AS FOLLOWS:

**910.05 Castings**

The casting design shall be proof loaded to 40,000 *lbs* (178 kN) in accordance with ~~Federal Specifications FF-F-621~~ *AASHTO M 306*. Castings shall be in accordance with the plan dimensions and to the following requirements for the designated materials. A certified inspection report shall be submitted by the manufacturer with each shipment of castings, except as otherwise provided herein. Inspection and testing shall be done by the manufacturer. The certified inspection report shall list the casting date, casting number, and the type of material, such as gray iron, ductile iron, etc. It shall state that inspection and testing has been performed, that all parts shipped meet the pertinent specification requirements, and that all component parts fit. The supporting test results, including proof load data, shall be retained and be available on request for a period of 7 years. All castings shall have the manufacturer's identification and the date of manufacture cast on an exposed surface. Acceptance of castings will be based on the certified inspection report, visual inspection, and check measurements.

**(a) Steel Castings**

Chromium alloy steel castings shall be in accordance with ASTM A 743 (A 743M). Grade CA 15 shall be furnished unless otherwise specified.

**(b) Iron Castings**

Iron casting shall be gray iron castings in accordance with ASTM A 48, class No. 35B, unless otherwise specified. Tension tests will be required for all castings including drainage castings.

Castings shall be true to pattern in form and dimensions. A tolerance of  $\pm 1/8$  in. ( $\pm 3$  mm) in general dimensions as shown on the plans will be permitted with the exception that the tolerance in the dimensions of grates or covers and the openings into which they fit shall be limited to  $\pm 1/16$  in. (2 mm). ~~Each~~ castings shall weigh at least 95% of the ~~specified~~ weight (mass) ~~of that type stated by the manufacturer~~ cast to the ~~exact~~ dimensions shown on the plans. They shall be free from sponginess, cracks, blowholes, warping, sand inclusions, cold shots, cold shuts, chilled iron shrinks, or any defects which would affect the strength and value for the intended purpose. The castings shall completely fill the molds and shall not be removed until properly cooled. The casting date and a casting code number shall be cast on each casting.

All corners of the castings shall be filleted and outside corners and edges shall be rounded to a radius of not less than 1/8 in. (3 mm). All contact surfaces between different castings shall present a firm and even bearing without rattling or rocking. The lid frame bearing surfaces on all round castings shall be machine milled to provide true bearings around the entire circumference. All other contact surfaces shall be ground.

All castings shall be cleaned of molding or core sand, rust, scale, and foreign material just prior to shipment. Iron castings shall be delivered unpainted.

COMMENTS AND ACTION

910.05 CASTINGS  
 910.05(a) STEEL CASTINGS  
 910.05(b) IRON CASTINGS

DISCUSSION: This item was introduced and presented by Mr. Zafar, who was sitting in for Mr. Wright, and explained the intention of this proposal as set forth on the proposal sheet.

Mr. Zafar also presented a proposed revision to part (a) regarding the ASTM reference.

Mr. Reilman inquired as to the proposed revision and Mr. Zafar concurred that it will take further investigation to verify the information.

Mr. Zafar also addressed the 95% weight criteria for identical castings. Mr. Cales argued that the issue behind the intention is unclear. Mr. Zafar clarified that it stems from a discrepancy between two manufacturers making similar castings.

Following a brief discussion, Mr. Zafar agreed to withdraw this item at this time pending further review.

Motion: Mr. Zafar Second: Mr. Boruff Ayes: Nays:	Action: <input type="checkbox"/> Passed as Submitted <input type="checkbox"/> Passed as Revised <input checked="" type="checkbox"/> Withdrawn
Standard Specifications Sections affected:  910.05 pg 879 and 880.	<input type="checkbox"/> 20 Standard Specifications Book <input type="checkbox"/> Revise Pay Items List
Recurring Special Provision affected:  NONE	<input type="checkbox"/> Create RSP (No. ___) Effective ___ Letting RSP Sunset Date: ___
Standard Sheets affected:  NONE	<input type="checkbox"/> Revise RSP (No. ___) Effective ___ Letting RSP Sunset Date: ___
Design Manual Sections affected:  NONE	Standard Drawing Effective ___ <input type="checkbox"/> Create RPD (No. ___) Effective ___ Letting
GIFE Sections cross-references:  NONE	<input type="checkbox"/> Technical Advisory GIFE Update Req'd.? Y ___ N ___ By ___ Addition or ___ Revision  Frequency Manual Update Req'd? Y ___ N ___ By ___ Addition or ___ Revision  Received FHWA Approval? ___

SPECIFICATION REVISIONS  
REVISION TO SPECIAL PROVISIONS

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PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: When accelerated curing is used, the detensioning of the prestressed structural members is done once the minimum required compressive strength is obtained and while the structural member is still warm and moist. This procedure reduces the likelihood of shrinkage cracking and provides safe working conditions for the Fabricator personnel. Although this procedure is currently required by 707.07(b), clarification of these procedures is needed.

PROPOSED SOLUTION: Revise the specification to clarify that the detensioning of the prestressing strands is required while the structural member is still warm and moist, as recommended by PCI.

APPLICABLE STANDARD SPECIFICATIONS: 707.07(b)

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE: None

APPLICABLE RECURRING SPECIAL PROVISIONS: make a new 707-B-xxx provision

PAY ITEMS AFFECTED: None

Submitted By: Ron Walker

Title: Manager, Office of Materials Management

Organization: INDOT

Phone Number: 317-610-7251 x 204

Date: September 28, 2011

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc committee consisting of: Mark Miller, Jim Reilman, Ron Walker, Tony Zander.

REVISION TO SPECIAL PROVISIONS

PROPOSED NEW 707-B-XXX DETENSIONING PRECAST PRESTRESSED STRUCTURAL MEMBERS

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707-B-XXX DETENSIONING PRECAST PRESTRESSED STRUCTURAL MEMBERS

(Adopted XXX-X-XXX)

The Standard Specifications are revised as follows:

SECTION 707, BEGIN LINE 380, DELETE AND INSERT AS FOLLOWS:

The curing temperature shall be sustained until the concrete has reached the minimum required *compressive* strength for detensioning the structural members. *Once the concrete has achieved the required compressive strength, detensioning shall be performed while the concrete is still warm and moist. Detensioning operations shall not interfere with the curing of the structural member.*

As the application of heat is discontinued, the concrete temperature shall decrease at a rate not to exceed 50°F/h (28°C/h). When the concrete temperature has reached 40°F (22°C) or less above the ambient temperature outside the curing enclosure, accelerated curing is considered to have concluded. ~~Detensioning shall be performed after accelerated curing has concluded, provided the compressive strength of the concrete in the structural member has met or exceeded the specified release strength.~~ A thermometer shall be provided to monitor ambient air temperatures. This thermometer does not have to have recording capabilities.

COMMENTS AND ACTION

707-B-XXX DETENSIONING PRECAST PRESTRESSED STRUCTURAL MEMBERS

DISCUSSION: This item was introduced and presented by Mr. Walker who explained that the detensioning can occur once the concrete has reached its compressive strength, and also maintain safety for personnel. Mr. Reilman concurred with the proposal as presented. Mr. Reilman also added that the curing process in regard to temperature needs to be controlled to ensure a quality product.

<p>Motion: Mr. Walker          Second: Mr. Strain          Ayes: 8          Nays: 0</p>	<p>Action:  <input checked="" type="checkbox"/> Passed as Submitted  <input type="checkbox"/> Passed as Revised  <input type="checkbox"/> Withdrawn</p>
<p>Standard Specifications Sections affected:</p>	<p><input checked="" type="checkbox"/> 2014 Standard Specifications Book  <input type="checkbox"/> Revise Pay Items List</p>
<p>707.07 pg 536 and 537</p>	<p><input checked="" type="checkbox"/> Create RSP (No. 707-B-191)          Effective March 2012 Letting          RSP Sunset Date: 2014 book</p>
<p>Recurring Special Provision affected:</p>	<p><input type="checkbox"/> Revise RSP (No. ____)          Effective ____ Letting          RSP Sunset Date: ____</p>
<p>NONE</p>	<p>Standard Drawing Effective ____</p>
<p>Standard Sheets affected:</p>	<p><input type="checkbox"/> Create RPD (No. ____)          Effective ____ Letting</p>
<p>NONE</p>	<p><input type="checkbox"/> Technical Advisory</p>
<p>Design Manual Sections affected:</p>	<p>GIFE Update Req'd? Y ____ N ____</p>
<p>NONE</p>	<p>By ____ Addition or ____ Revision</p>
<p>GIFE Sections cross-references:</p>	<p>Frequency Manual Update Req'd? Y ____ N ____</p>
<p>NONE</p>	<p>By ____ Addition or ____ Revision</p>
	<p>Received FHWA Approval? Yes</p>

SPECIFICATION REVISIONS  
REVISION TO SPECIAL PROVISIONS

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PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The Department is interested in procedures and materials that will accelerate the process of construction. A product which can aid the Department in this endeavor is Welded Wire Reinforcement (WWR). This product has been used in other states in prestressed concrete beams and bridge decks.

PROPOSED SOLUTION: Add a special provision for WWR to permit its substitution for reinforcing bars in bridge superstructures, reinforced concrete bridge approaches, crashwalls, and retaining walls. WWR can be used where methods of accelerating construction are desired. Suggested basis for use: pay item for reinforcing bars in work addressed in Std Spec Sections 609, 704, 706, and 707.

APPLICABLE STANDARD SPECIFICATIONS: New 737, revised 910.01(b)5 and 6

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE: None

APPLICABLE RECURRING SPECIAL PROVISIONS: New 737-B-xxx provision

PAY ITEMS AFFECTED: Reinforcing bars

Submitted By: Randy Strain

Title: Bridge Standard & Policy Engineer

Organization: INDOT Technical Support

Phone Number: 232-33390-7251

Date: September 23, 2011

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc committee consisting of Kenny Anderson, Jim Reilman, Randy Strain, Tony Uremovich, and Todd Hawkinson representing the WWR industry.

REVISION TO SPECIAL PROVISIONS  
PROPOSED NEW 737-B-188 WELDED WIRE REINFORCEMENT

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737-B-188 WELDED WIRE REINFORCEMENT

(Adopted XX-XX-11)

The Standard Specifications are revised as follows:

SECTION 737, BEGIN LINE 1, INSERT AS FOLLOWS:

**SECTION 737 - WELDED WIRE REINFORCEMENT**

**737.01 Description**

*This work shall consist of furnishing and placing WWR as an alternative to furnishing and placing reinforcing bars in concrete structural members, bridge decks, bridge railings, reinforced concrete bridge approaches, crash walls, and cast-in-place retaining walls in accordance with 105.03.*

**MATERIALS**

**737.02 Materials**

*Materials shall be in accordance with the following:*

<i>Steel WWR, Deformed.....</i>	<i>910.01(b)6</i>
<i>Steel WWR, Smooth.....</i>	<i>910.01(b)5</i>

**CONSTRUCTION REQUIREMENTS**

**737.03 Design Requirements**

*The nominal yield strength shall be the minimum as specified for the grade of steel selected, except that the maximum nominal yield strength used for design purposes shall not exceed 75 ksi (520 MPa). The nominal yield strength shall not be less than 65 ksi (450 MPa) for smooth WWR and 70 ksi (480 MPa) for deformed WWR. The area of steel in the longitudinal and transverse directions may be reduced in proportion to the nominal yield strength specified for the grade of steel up to the maximum allowable. For purposes of crack control, spacing of reinforcement in the WWR sheet shall not be greater than 8 in. (200 mm) in either direction.*

*If the plans show uncoated reinforcing bars, the Contractor shall use uncoated WWR. If the plans show epoxy coated reinforcing bars, the Contractor may elect to supply either epoxy coated or galvanized WWR.*

**737.04 Working Drawings**

*Working drawings shall be submitted for approval in accordance with 105.02. Fabrication shall not begin until the working drawings are approved.*

**737.05 Fabrication**

*WWR shall be cut and bent to the shapes shown on the working drawings. All WWR shall be cold bent, unless otherwise permitted by the Engineer. Hook dimensions and diameters of*

REVISION TO SPECIAL PROVISIONS

PROPOSED NEW 737-B-188 WELDED WIRE REINFORCEMENT

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*bends shall be as shown on the working drawings. WWR partially embedded in concrete shall not be field bent, except as shown on the approved working drawings or permitted by the Engineer. Coated WWR shall not be field cut, unless permitted by the Engineer. If permitted, field cutting of coated WWR shall be performed using hydraulic-powered or friction cutting tools to minimize coating damage and field touch-up. Field cut coated WWR shall be repaired with compatible patching material that is deemed suitable for repairs in the field. Flame cutting of coated WWR will not be permitted.*

**737.06 Handling and Storage**

*All WWR shall be handled and stored by methods that will not damage the coating or WWR, and in accordance with the applicable requirements of 703.04. Bundles shall not be dropped or dragged. WWR shall be transported and stored so as to not damage the applied coating. The coated WWR shall not be exposed to fire or flame.*

*Prior to placement of concrete, all WWR shall be free from dirt, loose rust or scale, mortar, paint, grease, oil, or other materials that can reduce bond. Coated WWR shall be free from cracks or laminations. For non-coated WWR, bonded rust, surface irregularities, or mill scale will not be cause for rejection, provided the minimum dimensions, cross sectional area, and tensile properties of the WWR specimen satisfy the physical requirements for the size and grade of WWR specified.*

**737.07 Placing and Securing**

*WWR shall be placed as shown on the approved working drawings and held in position during the placing and finishing of concrete. WWR shall be lapped and tied around the perimeter of each sheet in order to maintain proper positioning of the WWR. Lap splices shall have a minimum of two ties per spliced length. Unless otherwise shown on the approved working drawings, WWR sheets shall overlap a minimum of 8 in. (200 mm) in each direction to make a splice. Plastic or wire bar supports, such as chairs and bolsters, shall be in accordance with the requirements herein and industry practice as described in the Wire Reinforcing Institute, WRI, WWR-500, Manual of Standard Practice, or TF 702, – Supporting WWR. All metal bolsters or chairs which bear against the forms for exposed surfaces shall be equipped with snug fitting, high density, polyethylene tips which provide 1/2 in. (13 mm) minimum clearance between the metal and an exposed surface. The spacing of slab bolster rows and high chair rows for deck slabs shall be as described in the WRI WWR-500, Manual of Standard Practice, or TF 702, Supporting WWR unless otherwise directed. For epoxy-coated WWR, tie wires, chair and bar supports, and metal clips shall be epoxy, plastic, or nylon coated. For galvanized WWR, tie wires, chair and bar supports, and metal clips shall be plastic coated or hot dipped galvanized after fabrication in accordance with ASTM A 1060. Tie-down bars shall be placed as shown on the approved working drawings. With the exception of tie-down bars, tack welding will not be permitted, unless shown on the approved working drawings.*

*WWR shall be supported in its specified position by use of plastic or wire bar supports, supplementary tie-down bars, side-form spacers, or other approved devices. Such devices shall be placed at intervals so as to maintain the WWR cover as shown on the approved working*

REVISION TO SPECIAL PROVISIONS  
PROPOSED NEW 737-B-188 WELDED WIRE REINFORCEMENT

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*drawings. Platforms for the support of workers and equipment during concrete placement shall be supported directly by the forms and shall not alter the positioning of the WWR.*

**737.08 Repair of Coated WWR**

*All damaged, cut, or otherwise compromised areas of the coating shall be repaired.*

**(a) Epoxy-Coated**

*In addition to the requirements of ASTM D 3963, all visible damage, i.e., scratches, nicks, cracks, to the epoxy coating caused during shipment, storage, or placement shall be repaired on the project site with approved patching material. Ends of WWR that have been sheared, sawed, or cut by other means shall be coated with approved patching material. Areas on the WWR sheets and tie-down bars damaged due to welding shall be repaired with approved patching material. Patching of damaged areas shall be performed in accordance with the patching material manufacturer's recommendations. If the damaged surface area exceeds 10% of the total WWR sheet surface area, the sheet shall be removed and replaced with an acceptable sheet. All patching material shall be fully cured prior to placing concrete. Patching material shall be compatible with the epoxy coating, deemed inert in concrete, and deemed suitable for repairs in the field. Patching material shall be identified on the container as satisfying ASTM D 3963, Annex A1, or shall be accompanied by a type C certification in accordance with 916 certifying that the material satisfies or exceeds the requirements of Annex A1.*

**(b) Galvanized**

*All visible damage, i.e., scratches, nicks, cracks, to the galvanized coating caused during shipment, storage, or placement shall be repaired on the project site in accordance with ASTM A 1060. Ends of WWR that have been sheared, sawed, or cut by other means shall be coated. Areas on the WWR sheets and tie-down bars damaged due to welding shall be repaired and recoated. Field coating of damaged areas shall be performed in accordance with the coating manufacturer's recommendations. Zinc coating shall be in accordance with ASTM A 1060. It shall be applied to achieve a dry film equal to or exceeding that designated in ASTM A 1060. All touchup coating material shall be fully cured prior to placing concrete.*

**737.09 Final Inspection**

*After being placed, WWR shall be subject to approval of the Engineer before beginning concrete placement. Concrete placed prior to approval of the WWR will be subject to rejection and removal.*

**737.10 Method of Measurement**

*This work will not be measured for payment.*

**737.11 Basis of Payment**

*The accepted quantity for payment will be the quantity for reinforcing bars or epoxy-coated reinforcing bars shown on the plans. This work will be paid for as reinforcing bars or epoxy-coated reinforcing bars in accordance with 703.08, regardless of whether the WWR design results in a reinforcement weight (mass) that is different from that shown on the plans.*

REVISION TO SPECIAL PROVISIONS

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PROPOSED NEW 737-B-188 WELDED WIRE REINFORCEMENT

*If reinforcing bars or epoxy-coated reinforcing bars are not paid for separately, but instead included in the cost of a pay item, and WWR is substituted for reinforcing bars or epoxy-coated reinforcing bars, the WWR will not be paid separately, but shall be included in the cost of the pay item.*

*If galvanized WWR is supplied, it will be paid for as epoxy-coated reinforcing bars.*

*The cost of tie wires, chair and bar supports, metal clips, spacers, or other mechanical means used for fastening or holding WWR in place, and laps shall be included in the cost of WWR. The cost of epoxy-coating materials or galvanizing materials and repair of damaged or removed coating materials on WWR and on tie wires, chair and bar supports, metal clips, spacers, or other mechanical means used for fastening or holding WWR in place, and laps shall be included in the cost of WWR.*

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FIRST DRAFT MINUTES

COMMENTS AND ACTION

737-B-188 WELDED WIRE REINFORCEMENT

DISCUSSION: Mr. Strain introduced this item and explained that FHWA would like to put this off one more month.

Mr. Cales inquired as to the pay item in that it is the same as reinforcing bars. Mr. Reilman explained that this gives the Contractor an option, even though there is no cost savings to the Department.

Mr. Strain and Mr. Reilman also clarified that this is being used in other states as well.

This item was withdrawn at this time to be presented at a later date.

<p>Motion:          Second:          Ayes:          Nays:</p>	<p>Action:  <input type="checkbox"/> Passed as Submitted  <input type="checkbox"/> Passed as Revised  <input checked="" type="checkbox"/> Withdrawn</p>
<p>Standard Specifications Sections affected:          NONE</p>	<p><input type="checkbox"/> 20__ Standard Specifications Book  <input type="checkbox"/> Revise Pay Items List  <input type="checkbox"/> Create RSP (No.____)          Effective ____Letting          RSP Sunset Date: ____</p>
<p>Recurring Special Provision affected:          NONE</p>	<p><input type="checkbox"/> Revise RSP (No.____)          Effective ____Letting          RSP Sunset Date: ____</p>
<p>Standard Sheets affected:          NONE</p>	<p>Standard Drawing Effective ____  <input type="checkbox"/> Create RPD (No. ____)          Effective ____Letting  <input type="checkbox"/> Technical Advisory</p>
<p>Design Manual Sections affected:          SECTION 404 and 406</p>	<p>GIFE Update Req'd.? Y __ N __          By ____ Addition or ____ Revision</p>
<p>GIFE Sections cross-references:          NONE</p>	<p>Frequency Manual Update Req'd? Y__N__          By ____ Addition or ____ Revision          Received FHWA Approval? ____</p>

SPECIFICATION REVISIONS  
REVISION TO STANDARD SPECIFICATIONS

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PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Under the current specifications paint markings often cannot be applied after October/before April leading to delay of contract completions. Also, the spec on performance based pavement markings needs clarification/updating on a couple of other points.

PROPOSED SOLUTION:

Revisions to 808 performance based marking specification.

1. Lowering the minimum temperature for paint from 50 to 3540. We are aware of at least 3 different products that will meet this. Will allow greater flexibility for late season marking applications.
2. Altering min temperature for preformed plastic. If “inlay” method is used (placing the tape on hot asphalt prior to the last roller pass), it doesn’t matter what the air temperature is.
3. Clarify pay level when retro testing is not performed.
4. Revised 921.02(e) (beads) to reflect new AASHTO M247 types.

APPLICABLE STANDARD SPECIFICATIONS: 808, 921

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: N/A

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

Submitted By: David Boruff on behalf of Todd Shields  
Title: Traffic Administration Section Supervisor  
Organization: INDOT  
Phone Number: 317-234-7975 (Mr. Boruff); 317-233-4726 (Mr. Shields)  
Date: September 23, 2011

APPLICABLE SUB-COMMITTEE ENDORSEMENT? Ad hoc (Todd Tracy, Mark Miller, Dana Plattner, Joe Novak). Also submitted for comment to marking contractors.

REVISION TO STANDARD SPECIFICATIONS

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SECTION 808 - PAVEMENT TRAFFIC MARKINGS

808.07(a) TRAFFIC PAINT

808.07(b) PREFORMED PLASTIC AND EXTENDED WARRANTY PREFORMED PLASTIC

808.13 BASIS OF PAYMENT

The Standard Specifications are revised as follows:

SECTION 808, BEGIN LINE 194, DELETE AND INSERT AS FOLLOWS:

**(a) Traffic Paint**

**1. Application**

~~Waterborne~~ Traffic paint shall be applied only when the ambient air and pavement temperature is ~~50~~40°F (10~~4~~5°C) or higher and will remain ~~50~~40°F (10~~4~~5°C) or higher for 2 h after application. ~~Traffic paints which are not waterborne shall be applied only when the ambient air and pavement temperature is 40° F (5° C) or higher and will remain 40° F (5° C) 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 (380 µm). Painted lines and markings shall be immediately reflectorized by applying beads at a uniform minimum rate of 6 lb/gal. (0.7 kg/L) of traffic paint. Only standard or modified standard beads shall be used for paint markings.

SECTION 808, BEGIN LINE 293, DELETE AND INSERT AS FOLLOWS:

**2. 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 (3 mm) in depth or 1 in. (25 mm) 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.

~~Unless markings are installed using the inlay method, There is no minimum temperature requirement for preformed plastic installed by the inlay method. When installed by other methods,~~ The markings shall be applied when the air temperature is a minimum of 60°F (16°C) and rising, and the pavement temperature is a minimum of 70°F (21°C). The markings shall not be applied if the ambient air temperature is expected to drop ~~to~~ below 40°F (5°C) within 24 h after application. The pavement surface shall be primed with a binder material in accordance with the manufacturer's recommendations.

REVISION TO STANDARD SPECIFICATIONS

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SECTION 808 - PAVEMENT TRAFFIC MARKINGS

808.07(a) TRAFFIC PAINT

808.07(b) PREFORMED PLASTIC AND EXTENDED WARRANTY PREFORMED PLASTIC

808.13 BASIS OF PAYMENT

SECTION 808, BEGIN LINE 628, DELETE AND INSERT AS FOLLOWS:

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, no payment will be made for retro-reflectivity testing and payment for the marking items will be made at ~~0.70 of the required minimum level, per 808.07(e).~~ *70% of the unit price.*

FIRST DRAFT MINIMUM

REVISION TO STANDARD SPECIFICATIONS

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SECTION 921 - PAVEMENT MARKING MATERIALS  
921.02 (e) PAVEMENT MARKING BEADS

SECTION 921, BEGIN LINE 107 DELETE AND INSERT AS FOLLOWS:

**(e) Pavement Marking Beads**

A type C certification in accordance with 916 shall be furnished for the beads.

**1. Standard Beads**

Beads shall be glass in accordance with AASHTO M 247, Type ~~I~~. The beads shall have a moisture resistant coating.

**2. Modified Standard Beads**

The modified standard beads shall be glass in accordance with AASHTO M 247, Type ~~IM~~2. These beads shall have a moisture resistant coating and may ~~a~~ have an adhesion promoting coating.

**3. Supplemental Beads**

The supplemental beads shall be glass in accordance with AASHTO M 247 *Type 4* except the beads shall have a minimum roundness of 80% ~~percent~~ by weight. ~~and the gradation shall be as follows:~~

Sieve Size	Percent Passing by Weight
No. 10 (2.0 mm)	100
No. 12 (1.7 mm)	95—100
No. 14 (1.4 mm)	80—95
No. 16 (1.18 mm)	10—40
No. 18 (1.0 mm)	0—5
No. 20 (850 $\mu$ m)	0—2

These beads shall have a moisture resistant coating and may have an adhesion promoting coating.

COMMENTS AND ACTION

808.07(a) TRAFFIC PAINT

808.07(b) PREFORMED PLASTIC AND EXTENDED WARRANTY PREFORMED PLASTIC

808.13 BASIS OF PAYMENT

921.02(e) PAVEMENT MARKING BEADS

DISCUSSION: Mr. Boruff introduced and presented this item and explained the reasoning behind the reduction in the temperature requirement since there exists products now that can accommodate the reduced temperatures. Mr. Boruff then explained the proposed revisions in that they are mostly editorial in order to meet AASHTO requirements.

Further discussion ensued as to the language using the word "unless" regarding the inlay method, but then the committee agreed that the paragraph will work as it is written.

<p>Motion: Mr. Boruff                  Second: Mr. Walker                  Ayes: 8                  Nays: 0</p>	<p>Action:  <input checked="" type="checkbox"/> Passed as Submitted  <input type="checkbox"/> Passed as Revised  <input type="checkbox"/> Withdrawn</p>
<p>Standard Specifications Sections affected:                  808.07(a) pg 770 and 771;                  808.07(b)2 pg 773;                  921.02(e) pg 979.</p>	<p><input checked="" type="checkbox"/> 2014 Standard Specifications Book  <input type="checkbox"/> Revise Pay Items List  <input checked="" type="checkbox"/> Create RSP (No. 808-T-178)                  Effective March 2012 Letting                  RSP Sunset Date: 2014 book</p>
<p>Recurring Special Provision affected:                  NONE</p>	<p><input type="checkbox"/> Revise RSP (No.____)                  Effective ____ Letting                  RSP Sunset Date: ____</p>
<p>Standard Sheets affected:                  NONE</p>	<p>Standard Drawing Effective ____  <input type="checkbox"/> Create RPD (No. ____)                  Effective ____ Letting  <input type="checkbox"/> Technical Advisory</p>
<p>Design Manual Sections affected:                  NONE</p>	<p>GIFE Update Req'd.? Y __ N __                  By ____ Addition or ____ Revision</p>
<p>GIFE Sections cross-references:                  NONE</p>	<p>Frequency Manual Update Req'd? Y __ N __                  By ____ Addition or ____ Revision                  Received FHWA Approval? Yes</p>

SPECIFICATION REVISIONS  
REVISION TO SPECIAL PROVISIONS

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PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The new 619 specification requires grinding and limits the abrasive blast media to only one option. This will unnecessarily increase costs to the Department.

PROPOSED SOLUTION: Change the specification to eliminate the grinding and open up the allowable options for abrasive blast media.

APPLICABLE STANDARD SPECIFICATIONS: 619

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE: None

APPLICABLE RECURRING SPECIAL PROVISIONS: make a new 619-x-xxx provision

PAY ITEMS AFFECTED: None

Submitted By: Greg Pankow

Title: State Construction Engineer

Organization: INDOT

Phone Number: 232-5502

Date: September 23, 2011

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc committee consisting of: Steve Bates, John Campbell, Mark Miller, Greg Pankow, Jim Reilman, Todd Tracy. The painting contractors are also in favor of this provision.

REVISION TO SPECIAL PROVISIONS

PROPOSED NEW RSP 619-X-XXX CLEANING BRIDGE STEEL

619-X-XXX CLEANING BRIDGE STEEL

(Adopted XX-XX-XX)

The Standard Specifications are revised as follows:

SECTION 619, BEGIN LINE 316, DELETE AND INSERT AS FOLLOWS:

~~On existing bridges when abrasive blast cleaning is used, clean, dry, uniformly graded steel grit or a recyclable steel grit, in accordance with SSPC-AB 3 or SSPC-AB 2, shall be used. The steel grit used shall produce an angular profile that is free of oil, soluble salts, and other similar substances which can contaminate the blasted surface. The recycling equipment shall be capable of separating the blasting abrasive from the paint debris.~~

The surface profile of cleaned new steel surfaces and cleaned existing steel surfaces shall not be less than 1.51 mil (3825  $\mu\text{m}$ ) and not greater than 3.53 mil (8975  $\mu\text{m}$ ).

SECTION 619, BEGIN LINE 357, DELETE AS FOLLOWS:

~~Upon completion of cleaning operations, and prior to beginning painting operations, the Contractor shall remove all sharp fins, burrs, slivers, thermal cutting residue, abrupt deformities, corners more acute than a 1/32 in. (1 mm) radius, and other impediments to uniform coating application and performance by grinding. After completion of the grinding operation, the Contractor shall vacuum or blow off under full containment any residual dust remaining from the cleaning or grinding operation.~~

The Engineer will check the prepared surface for dust prior to the Contractor beginning painting operations. ~~This work will not have any weather or temperature restrictions.~~

SECTION 619, BEGIN LINE 629, DELETE AS FOLLOWS:

**619.17 Method of Measurement**

~~Cleaning and painting will not be measured for payment. Grinding to remove sharp edges of all beams and girders, all fins, burrs, slivers, thermal cutting residue, and abrupt deformities will not be measured for payment.~~

SECTION 619, BEGIN LINE 768, DELETE AS FOLLOWS:

~~The cost of all grinding shall be included in the cost of clean steel bridge, or clean steel bridge, partial.~~

COMMENTS AND ACTION

619-X-XXX CLEANING BRIDGE STEEL

DISCUSSION: Mr. Pankow introduced this item which was then presented and explained by Mr. Reilman who said this is for adjustments to the 619 section of the spec book.

Mr. Reilman also explained that this will help reduce costs to the Department and generate less waste. Mr. Reilman also stated that this will also require a substantial equipment upfront cost. Mr. Reilman further explained the revisions and edits, as shown, that were made to enable the Contractor to have options in completing this work and be of most benefit to the Department.

<p>Motion: Mr. Reilman                  Second: Mr. Cales                  Ayes: 8                  Nays: 0</p>	<p>Action:  <input checked="" type="checkbox"/> Passed as Submitted  <input type="checkbox"/> Passed as Revised  <input type="checkbox"/> Withdrawn</p>
<p>Standard Specifications Sections affected:                  619.08 pg 414; 619.08(h) pg 415;                  619.17 pg 421.</p>	<p><input checked="" type="checkbox"/> 2014 Standard Specifications Book  <input type="checkbox"/> Revise Pay Items List  <input checked="" type="checkbox"/> Create RSP (No. 619-B-192)                  Effective March 2012 Letting                  RSP Sunset Date: 2014 book</p>
<p>Recurring Special Provision affected:                  NONE</p>	<p><input type="checkbox"/> Revise RSP (No. ___)                  Effective ___ Letting                  RSP Sunset Date: ___</p>
<p>Standard Sheets affected:                  NONE</p>	<p>Standard Drawing Effective ___  <input type="checkbox"/> Create RPD (No. ___)                  Effective ___ Letting</p>
<p>Design Manual Sections affected:                  NONE</p>	<p><input type="checkbox"/> Technical Advisory</p>
<p>GIFE Sections cross-references:                  NONE</p>	<p>GIFE Update Req'd.? Y ___ N ___                  By ___ Addition or ___ Revision                  Frequency Manual Update Req'd? Y ___ N ___                  By ___ Addition or ___ Revision</p>
	<p>Received FHWA Approval? Yes</p>

SPECIFICATION REVISIONS  
REVISION TO SPECIAL PROVISIONS

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PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Pedestrian bridge-railing fences are being designed and detailed without uniformity or consistency. Such fences are specified when required by the owner of a facility that an INDOT structure is overpassing.

PROPOSED SOLUTION: Develop standard details, complementary Standard Specifications, and a design policy.

APPLICABLE STANDARD SPECIFICATIONS: 706 including new Section 706.05.1, and new Section 910.18(b)5

APPLICABLE STANDARD DRAWINGS: New drawing 706-BRPF-01

APPLICABLE DESIGN MANUAL SECTION: New Section 61-6.07

APPLICABLE SECTION OF GIFE: none

Submitted By: Randy Strain

Title: Bridge Policy and Standards Engineer, of  
Bridge Design, Inspection, Hydraulics, and Technical Support Division

Organization: INDOT

Phone Number: 232-3339

Date: 9-27-11

REVISION TO STANDARD SPECIFICATIONS AND STANDARD DRAWINGS

SECTION 706 - BRIDGE RAILINGS

706.01 DESCRIPTION

706.05.1 ~~PEDESTRIAN~~ BRIDGE RAILING ~~PEDESTRIAN~~ FENCE

706.02 MATERIALS

The Standard Specifications are revised as follows:

SECTION 706, AFTER LINE 2, DELETE AND INSERT AS FOLLOWS:

**706.01 Description**

This work shall consist of the furnishing and placing of concrete or steel railings on bridges, or on top of or aside wingwalls and retaining walls, *furnishing and placing pedestrian bridge railing pedestrian fences on new or existing bridge railings*, and furnishing and placing reinforced concrete moment slabs in accordance with 105.03.

**706.02 Materials**

Materials shall be in accordance with the following:

Barrier Delineators .....	926.02(c)
Coarse Aggregate, Class B or Higher, Size No. 8 or 9 .....	904
Concrete, Class C .....	702
Dowel Bars .....	910.01(b)10
Joint Materials .....	906
Organic Zinc Primer .....	909.02(a)2
<del>Pedestrian</del> Bridge Railing <del>Pedestrian</del> Fence .....	910.18(b)5
Polyurethane Finish Coat .....	909.02(c)
Reinforcing Bars, Epoxy Coated .....	910.01
Steel Bridge Railing Components .....	910.20

SECTION 706, AFTER LINE 104, INSERT AS FOLLOWS:

**706.05.1 ~~Pedestrian~~ Bridge Railing ~~Pedestrian~~ Fence**

*Posts shall be installed plumb. They may be shimmed with an approved metallic shim. Base plate anchor bolts shall be galvanized, positioned as shown on the plans, and shall be anchored by means of epoxy adhesive.*

*The fabric shall be connected to the tension bar with brace bands and tension bands as shown on the plans.*

*The top and bottom fabric selvages shall be knuckled. If the coating is damaged during handling or placement, such portion of the fabric shall be replaced.*

SECTION 706, BEGIN LINE 105, INSERT AS FOLLOWS:

**706.06 Method of Measurement**

Concrete railing, including all concrete work above the top of curb, will be measured by the linear foot (meter) or by the cubic yard (cubic meter) in accordance with the dimensions shown on the plans. No deductions will be made for reinforcing bars or joints. Concrete bridge railing transition will be measured per each for the type specified.

REVISION TO STANDARD SPECIFICATIONS AND STANDARD DRAWINGS

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SECTION 706 - BRIDGE RAILINGS

706.01 DESCRIPTION

706.05.1 ~~PEDESTRIAN~~ BRIDGE RAILING ~~PEDESTRIAN~~ FENCE

706.02 MATERIALS

~~Pedestrian~~ ~~b~~ Bridge railing ~~pedestrian~~ fence will be measured by the linear foot (meter) along the bottom of the fence, from center to center of end posts.

SECTION 706, BEGIN LINE 127, INSERT AS FOLLOWS:

**706.07 Basis of Payment**

The accepted quantities of concrete railing will be paid for at the contract price per linear foot (meter) or cubic yard (cubic meter), for railing, concrete, of the type specified. Steel railing will be paid for at the contract unit price per linear foot (meter) of the type specified. Concrete bridge railing transitions will be paid for at the contract unit price per each for the type specified. ~~Pedestrian~~ ~~b~~ Bridge railing ~~pedestrian~~ fence will be paid for at the contract unit price per linear foot (meter). Reinforced concrete moment slabs will be paid for at the contract unit price per square yard (square meter) for the thickness specified, complete in place. Underdrains for MSE walls placed under moment slabs will be paid for in accordance with 718.10. Type D-1 contraction joints will be paid for in accordance with 503.08. Reinforcing bars for concrete railings and concrete bridge railing transitions will be paid for in accordance with 703.08. Barrier delineator will be paid for in accordance with 602.06.

SECTION 706, AFTER LINE 146, INSERT AS FOLLOWS:

~~Pedestrian~~ Bridge Railing ~~Pedestrian~~ Fence..... LFT (m)

SECTION 706, AFTER LINE 159, INSERT AS FOLLOWS:

The cost of all miscellaneous hardware including anchor bolts, base plates, fence post caps, horizontal rail end cups, fence post loop caps, tension bars, tension bands, brace bands, and fabric ties, and replacement fence due to damaging coating during handling or placement shall be included in the cost of ~~pedestrian~~ bridge railing ~~pedestrian~~ fence.

REVISION TO STANDARD SPECIFICATIONS AND STANDARD DRAWINGS

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SECTION 910 - METAL MATERIALS

910.18(b) 5 **PEDESTRIAN** BRIDGE RAILING **PEDESTRIAN** FENCE

SECTION 910, AFTER LINE 1188, INSERT AS FOLLOWS:

**5. **PEDESTRIAN** Bridge Railing **PEDESTRIAN** Fence**

*Fence posts and horizontal rails shall be in accordance with 910.13(b)1. The zinc-coating weight shall not be less than 2 oz/sq ft (600 g/m<sup>2</sup>).*

*Base plates shall be steel in accordance with ASTM A 709, grade 36 or 50 (A 709M grade 250 or 345). Galvanization shall be in accordance with AASHTO M 111. The zinc-coating weight shall not be less than 2 oz/sq ft (600 g/m<sup>2</sup>).*

*The chain link fabric shall be coated wire of 9 gage (3.76 mm), with a mesh size of 2 in. (50 mm). The zinc-coating weight of fabric shall not be less than 2 oz/sq ft (600 g/m<sup>2</sup>). The zinc-coating weight of brace bands, fabric ties, **linefence** post loop caps, **fence** post caps, **horizontal** rail end cups, **tension bands**, and tension bars shall not be less than 1.2 oz/sq ft (355 g/m<sup>2</sup>).*

FIRST DRAFT MINUTES

REVISION TO STANDARD SPECIFICATIONS AND STANDARD DRAWINGS  
BACKUP 1 DESIGN MEMORANDUM No.11-\_\_ (DRAFT)



# **INDIANA DEPARTMENT OF TRANSPORTATION**

*Driving Indiana's Economic Growth*

## **Design Memorandum No. 11-\_\_ Policy Change**

September 14, 2011 DRAFT

**TO:** All Design, Operations, and District Personnel, and Consultants

**FROM:** \_\_\_\_\_  
Anthony L. Uremovich  
Manager, Office of Bridge Standards and Policy  
Bridge Design, Inspection, Hydraulics, and Technical Support Division

**SUBJECT:** Pedestrian Fencing on Bridge Railing

**ADDS:** *Indiana Design Manual Section 61-6.07*

**EFFECTIVE:** ?????????, 2011, Letting

The purposes of a pedestrian fence on an overpass are to provide for the security of pedestrians, or to discourage the throwing or dropping of objects from the overpass onto a lower roadway, railroad, occupied property, or navigable waterway.

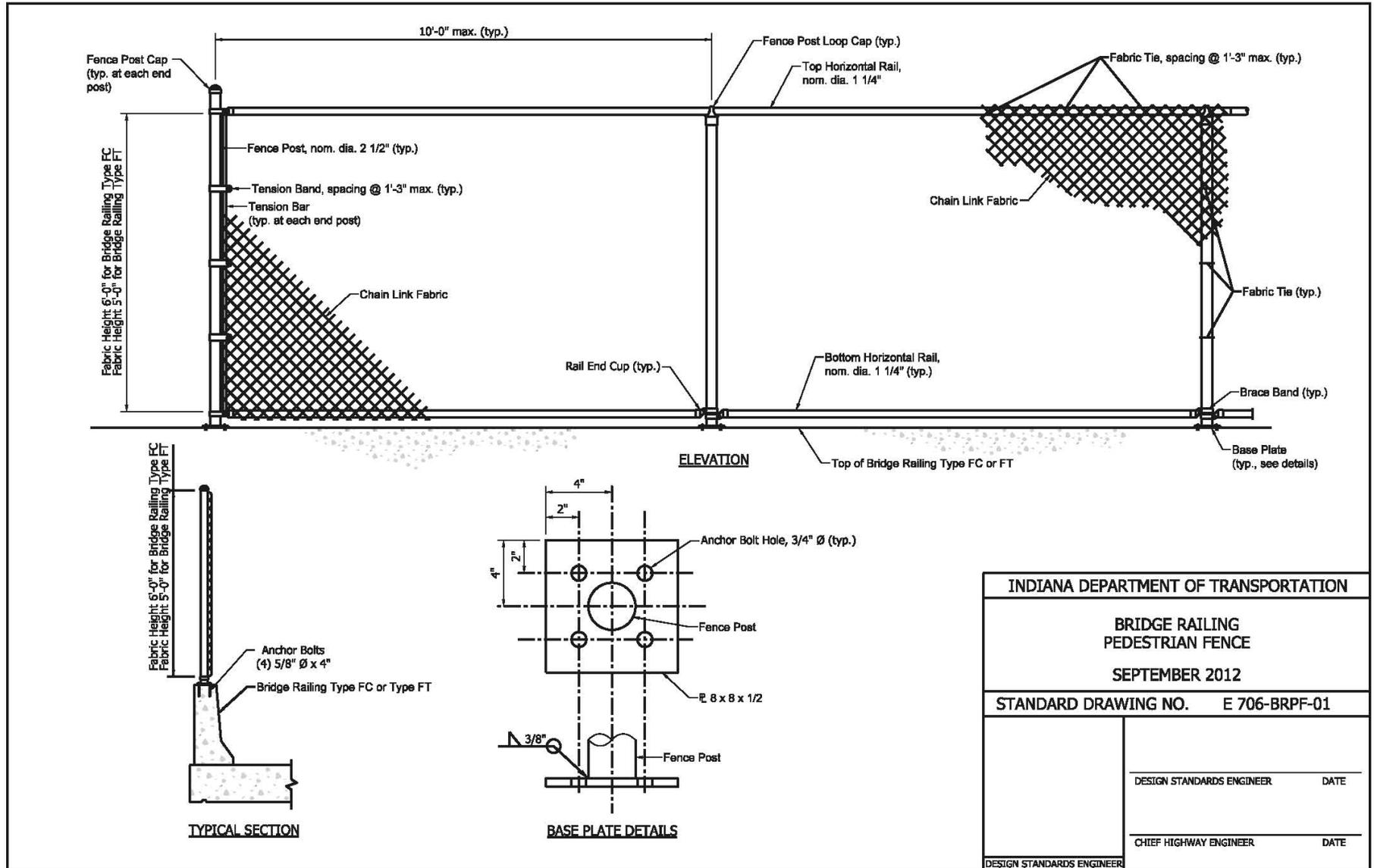
A pedestrian fence should be considered for an overpass that does not carry a freeway or expressway, and only if required by the owner of the facility being overpassed. It should be used only with bridge-railing type FC or FT.

Details are shown on the INDOT *Standard Drawings*.

alu  
Attachments

REVISION TO STANDARD SPECIFICATIONS AND STANDARD DRAWINGS

REVISED PROPOSED NEW STANDARD DRAWING 706-BRPF-01 BRIDGE RAILING PEDESTRIAN FENCE



INDIANA DEPARTMENT OF TRANSPORTATION	
BRIDGE RAILING PEDESTRIAN FENCE	
SEPTEMBER 2012	
STANDARD DRAWING NO.	E 706-BRPF-01
DESIGN STANDARDS ENGINEER	DATE
CHIEF HIGHWAY ENGINEER	DATE
DESIGN STANDARDS ENGINEER	

REVISION TO STANDARD SPECIFICATIONS AND STANDARD DRAWINGS

REVISED PROPOSED NEW STANDARD DRAWING 706-BRPF-01 BRIDGE RAILING PEDESTRIAN FENCE

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FIRST DRAFT MINUTES

COMMENTS AND ACTION

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706.01 DESCRIPTION

706.05.1 PEDESTRIAN BRIDGE RAILING PEDESTRIAN FENCE

706.02 MATERIALS

910.18(b)5 PEDESTRIAN BRIDGE RAILING PEDESTRIAN FENCE

706-BRPF-01 BRIDGE RAILING PEDESTRIAN FENCE

DISCUSSION: This item was introduced and presented by Mr. Strain who stated that it has become necessary to include a fence on some bridges and overpasses. Mr. Strain stated that substantial research was done along with addressing concerns from industry in putting together this proposal.

Mr. Pankow asked if there are any questions concerning the specs as presented. There were none. As for the drawings, Mr. Reilman pointed out inconsistencies in the terminology and descriptions in that the posts should all be called "fence posts" rather than "line posts" or "end posts". Mr. Reilman also mentioned that the tension *bands* should be labeled as tension *bars* to be consistent with standard fence drawings. Further minor details were also discussed and Mr. Strain and Mr. Uremovich will incorporate those changes to the drawing.

Mr. Zafar suggested further research into various manufacturers and safety. Mr. Strain answered that this system is standard and that we trying to meet the requests made for this type of system.

Mr. Strain further explained that this has gone from being a unique item to a standard item by improving the quality and design of the fence and its materials, and this should also reduce Department liability. Mr. Strain also mentioned that the railroad has mainly been the ones requesting such a standard, in order to protect their train engineers from falling or thrown debris.

Mr. Reilman also addressed some editorial revisions to the pay item description and will work with Mr. Strain to make it happen.

FIRST DRAFT

COMMENTS AND ACTION

706.01 DESCRIPTION  
 706.05.1 PEDESTRIAN BRIDGE RAILING PEDESTRIAN FENCE  
 706.02 MATERIALS  
 910.18(b)5 PEDESTRIAN BRIDGE RAILING PEDESTRIAN FENCE  
 706-BRPF-01 BRIDGE RAILING PEDESTRIAN FENCE

(continued)

<p>Motion: Mr. Strain          Second: Mr. Reilman          Ayes: 7          Nays: 1 (Mr. Zafar)</p>	<p>Action:  <input type="checkbox"/> Passed as Submitted  <input checked="" type="checkbox"/> Passed as Revised  <input type="checkbox"/> Withdrawn</p>
<p>Standard Specifications Sections affected:          706.01 pg 525; 706.02 pg 525;          910.18 pg 497.</p>	<p><input checked="" type="checkbox"/> 2014 Standard Specifications Book  <input checked="" type="checkbox"/> Revise Pay Items List  <input checked="" type="checkbox"/> Create RSP (No. 706-B-193)          Effective July 01, 2012 Letting          RSP Sunset Date: 2014 book</p>
<p>Recurring Special Provision affected:          NONE</p>	<p><input type="checkbox"/> Revise RSP (No.____)          Effective ____ Letting          RSP Sunset Date: ____</p>
<p>Standard Sheets affected:          NONE</p>	<p>Standard Drawing Effective Sep. 01, 2012  <input checked="" type="checkbox"/> Create RPD (No. 706-B-193d)          Effective July 01, 2012 Letting  <input type="checkbox"/> Technical Advisory</p>
<p>Design Manual Sections affected:          SECTION 61</p>	<p>GIFE Update Req'd.? Y ___ N ___          By ___ Addition or ___ Revision</p>
<p>GIFE Sections cross-references:          NONE</p>	<p>Frequency Manual Update Req'd? Y ___ N ___          By ___ Addition or ___ Revision          Received FHWA Approval? Yes</p>

SPECIFICATION REVISIONS  
REVISION TO SPECIAL PROVISIONS

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PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The following revisions are proposed to Recurring Special Provision 200-R-401 for Recycled Foundry Sand:

1. The MSDS requirement for the foundry sand has been removed. A MSDS is not required for other recycled materials such as coal combustion by-products and is not necessary for this application.
2. The Microtox test was removed as a testing requirement. This is an expensive test and very few laboratories are capable of conducting this test. The TCLP and neutral leachate tests were added to replace the Microtox test. IDEM uses the TCLP and neutral leachate tests to determine waste classification for solid wastes.
3. The permeability test was removed because this test is not required for B borrow or borrow materials.
4. Compaction by the DCP was added as we are now requiring this device on numerous projects instead of the nuclear gauge. A test section is required to determine the DCP criteria by comparing the DCP results to sand cone testing. Nuclear gauge testing is not allowed on this material.
5. All Recycled Foundry Sand is required to be encased by a minimum of 1 ft of borrow material prior to the completion of construction operations in a calendar year. This requirement is intended to prevent leachate problems from occurring.

PROPOSED SOLUTION: The following revisions are recommended to the Recycled Foundry Sand Recurring Special Provision:

1. Remove the requirement for a MSDS
2. Remove the Microtox test and replace this test with the TCLP and neutral leachate tests
3. Remove the permeability test
4. Require compaction with the DCP and verification with a test section and sand cone testing.
5. Require encasement of all Recycled Foundry Sand

APPLICABLE STANDARD SPECIFICATIONS:

SPECIFICATION REVISIONS  
REVISION TO SPECIAL PROVISIONS

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(continued)

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION:

APPLICABLE SECTION OF GIFE:

APPLICABLE RECURRING SPECIAL PROVISIONS: 200-R-401

Submitted By: Ron Walker

Title: Manager, Office of Materials Management

Organization: INDOT

Phone Number: 317-610-7251 x 204

Date: 9-28-11

APPLICABLE SUB-COMMITTEE ENDORSEMENT? These specification revisions are recommended by Materials Management and Geotechnical Engineering.

FIRST DRAFT MINUTES

REVISION TO SPECIAL PROVISION  
200-R-401 RECYCLED FOUNDRY SAND (ATTACHMENT B)

(Proposed changes shown as highlighted in gray.  
Basis for Use: "Required for all pay items of Borrow or B Borrow")

200-R-401 RECYCLED FOUNDRY SAND

(Revised XX-X-11)

**Description**

Recycled foundry sand, RFS, consists of a mixture of residual materials used from ferrous or non-ferrous metal castings and natural sands. The Contractor shall have the option of incorporating RFS into applicable operations in accordance with 105.03.

**Materials**

RFS sources are to be selected from the Department's list of approved Foundry Sand Sources. RFS may be substituted for B borrow (211) or Borrow (203) upon the approval of the Department's Geotechnical Section.

The Contractor shall provide ~~the Engineer with a copy of the Material Safety Data Sheet, MSDS and~~ a copy of the Indiana Department of Environmental Management's, IDEM, waste classification certification for Type III or IV residual sands prior to use. ~~The IDEM certification and MSDS shall clearly identify the stockpiles with regard to their extent and geographical location.~~

The Contractor shall provide the Engineer with a type A certification in accordance with 916 for RFS prior to use of the materials. The type A certification shall consist of applicable laboratory tests results of gradation ~~and permeability~~. Consultants on the Department's list of approved Geotechnical Consultants shall perform the testing of RFS materials.

RFS use is restricted to the following additional requirements:

1. RFS derived from Type III residual sand shall not be permitted within 100 ft (30 m) horizontally, of a stream, river, lake, reservoir, wetland or any other protected environmental resource area.
2. RFS derived from Type III or Type IV residual sand shall not be placed within 150 ft (50 m), horizontally, of a well, spring, or other ground source of potable water.
3. RFS shall not be permitted adjacent to metallic pipes, or other metallic structures.
4. RFS shall not be used as encasement material.
5. RFS shall not be used in MSE wall applications.

If RFS is used in embankment, excavation and replacement operations as a replacement for B borrow or borrow, the following additional ~~requirements restrictions shall~~ **will** be ~~considered~~ **required**.

1. Borrow: RFS shall be in accordance with ~~9203~~.
2. B borrow: RFS shall be in accordance with 211.

REVISION TO SPECIAL PROVISION  
200-R-401 RECYCLED FOUNDRY SAND (ATTACHMENT B)

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**Construction Requirements**

RFS shall be transported in a manner that prevents the release of fugitive dust and loss of material. Adequate measures shall be taken during construction operations to control fugitive dust from RFS. RFS shall not be applied when wind conditions ~~create result in~~ problems in adjacent areas or ~~create result in~~ a hazard to traffic on any adjacent roadway. The spreading of RFS shall be limited to an amount that ~~can~~ shall be encased within the same workday. If weather causes stoppage of work or exposes the RFS to washing or blowing, additional RFS may be spread when the work resumes. Spraying with water, limewater, or other sealing type sprays will be considered to be acceptable methods for dust control.

When RFS is used as borrow or B borrow, compaction of the materials shall be in accordance with ~~the respective uses in~~ 203. ~~Compaction will be determined by dynamic cone penetrometer, DCP, testing in accordance with ASTM D 6951 using a 17.6-lb (8-kg) hammer. The moisture content shall be controlled within -3 and +2 percentage points of the optimum moisture content determined in accordance with AASHTO T 99. The DCP criteria will be determined from a test section using the DCP and a sand cone in accordance with AASHTO T 191.~~ If compaction operations are deemed to be insufficient, the Contractor shall ~~arrange coordinate~~ with the Department's Geotechnical Section, to develop and conduct alternative compaction ~~means~~ procedures for the material. Nuclear density testing of RFS ~~is~~ will not be allowed.

When RFS is used in embankment construction, the sideslopes of the RFS shall be encased with 1 ft (0.3 m) of **non-RFS** borrow materials. ~~All RFS shall be encased with a minimum of 1 ft of non-RFS borrow materials prior to the completion of construction operations in a calendar year.~~ The encasement materials shall be placed and compacted concurrently with the RFS lifts. Encasement materials not meeting the AASHTO M 145 Classifications of ~~A-4, A-5,~~ A-6, and A-7 shall be submitted to the Department's Geotechnical Section for approvals.

**Method of Measurement**

RFS applications will be measured in accordance to the respective uses for borrow or B borrow.

**Basis of Payment**

RFS will be paid for at the contract unit price in accordance ~~to~~ with the respective uses for borrow or B borrow.

No payment will be made for the transportation, handling, or any special construction requirements such as alternative compaction means or encasement activities, when using RFS materials.

The cost of the use of water, limewater, sprays, or other activities necessary for dust control, shall be included in the cost of the respective pay item.

The cost of geotechnical testing for the use of RFS materials shall be included in the cost of the respective pay item.

REVISION TO SPECIAL PROVISION  
200-R-401 RECYCLED FOUNDRY SAND

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RECYCLED FOUNDRY SAND SOURCES APPROVAL CRITERIA

The following procedures covers the requirements for Foundry Sand source approvals or otherwise prescribed subject matter to be added, maintained and removed from a Department's approved list.

~~Products covered by the procedures~~ *The procedures for approval* may involve hazardous materials, operations, and equipment. These procedures do not purport to address all of the safety problems associated with the use of the product. The source's responsibility is to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

**General Requirements**

1. A source, requesting approval for addition to a Department's list, shall provide to the Office of Materials Management the following:
  - (a) Name and location of source or manufacturer,
  - (b) List of material and specification reference for the material that the approval is being requested,
  - (c) Average monthly production of the material by size, type or grade,
  - (d) Name, address, and telephone number of responsible contact person,
  - (e) Facility layout or production process of the material,
  - (f) Quality parameters of the material,
  - (g) Raw material sampling and testing frequency,
  - (h) Procedures for conforming materials which provides a positive linkage between the furnished materials and the quality control test data,
  - (i) Procedures for non-conforming materials,
  - (j) Procedures for marking and tracking materials,
  - (k) Procedures for documentation maintenance,
  - (l) Finished material sampling and testing frequency,
  - (m) Procedures for reviewing and updating the source operations,
  - (n) Testing laboratory quality system,
  - (o) Names, titles and qualifications of sampling and testing personnel,
  - (p) Location and telephone number of the laboratory testing office,
  - ~~(q) Laboratory equipment and calibration frequency,~~
  - ~~(r) Test methods, procedures and laboratory equipment used for each type of material,~~
  - ~~(qs)~~ Sample management describing procedures for samples identification, maintenance of the samples prior to testing, sample retention and disposal of samples,
  - ~~(rt)~~ Testing report procedures,
  - ~~(su)~~ Methods used to identify improper test results and procedures followed when testing deficiencies occur,
  - ~~(tv)~~ Statistical analysis of test results, and
  - ~~(uw)~~ Maintenance of test records.

REVISION TO SPECIAL PROVISION  
200-R-401 RECYCLED FOUNDRY SAND

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The application shall be signed and dated by the source's or manufacturer's representative at the time ~~it~~ ~~the application~~ is submitted for acceptance. The application shall be maintained to reflect the current status and revisions shall be provided to the Department in writing.

2. Testing may be required which will be performed outside the Department's laboratories. A recognized laboratory shall be the following:

- (a) A State transportation agency testing laboratory,
- (b) A testing laboratory regularly inspected by the AMRL, or
- (c) A testing facility approved by the Department.

**Approval Requirements**

In addition to the general requirements, the source shall also submit the following to the Office of Materials Management.

- ~~(a) A current MSDS and summary of results of all specified tests for the previous year's production shall be submitted. No test results shall be more than 2 years old at time of submission.~~
- (ab) Name of Testing Facility
- (be) Dates Samples were obtained
- (cd) Dates Samples were tested
- (de) Test method used for IDEM classification
- (ef) Letter from IDEM indicating the waste classification of the materials
- (fg) Test results for *TCLP and neutral* Leachate
- ~~(h) Test results for Microtox™ in accordance with ITM 215~~
- (gi) Stockpile sampling locations, including depths and available historical testing results
- (hj) Gradation test results
- ~~(k) Hydraulic conductivity (permeability) test results~~
- (i) Recycled Foundry Sand Source Certification

The Recycled Foundry Sand source certification is included as Attachment A. A new approval submission shall be required when re-sampling is required in accordance with 329 IAC 10-9-4(e) ~~(32)~~. (In accordance with 329 IAC 10-9-4 (e) ~~(32)~~ for foundry waste, re-sampling is conducted: at two year intervals, whenever the process changes, or according to a schedule for re-sampling by the IDEM Commissioner based on variability noted in previous sampling and other factors affecting the predeatability of waste characteristics.)

When metal concentration of the Type III residual sand exceeds 80% of the allowable limits within IDEM classification, an indemnification clause is required. ~~and a~~ ~~The~~ "Recycled Foundry Sand (RFS) Indemnification Clause" is included as Attachment B. ~~Residual sand shall be analyzed for metal concentration using Microtox™ (ITM 215) test criteria.~~

**Maintaining Approval**

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200-R-401 RECYCLED FOUNDRY SAND

Test reports shall be generated in accordance with specification requirements for the material and submitted monthly to the Office of Materials Management. If the material is not produced by the source in a given month, the monthly submittal shall state:

"No \_\_\_\_\_ was manufactured during \_\_\_\_\_."  
Material month/year

Samples of material may be obtained randomly for verification at the source or at the point of incorporation into the work in accordance with 106.02.

The source shall provide written notification of any changes, revisions or updates of their operations, ~~MSDS~~, source name or address, contact person or product name to the Office of Materials Management.

To maintain approval, a summary of new stockpile test results for ~~Microtox™ testing in accordance with ITM 215, and the acceptance analysis will shall~~ be submitted monthly indicating testing ~~every 2000 t (2000 Mg) on a lot-by-lot basis~~. Tested and approved RFS stockpiles shall be properly signed for easy identification. If no new stockpiles are created in a given month, a letter indicating, "no new RFS stockpiles for month/year were created" shall be submitted to the Office of Materials Management.

**Removal From Approved List**

A source will be removed from the approved list for the following, but not limited to, reasons:

- (a) Test failures determined by Department verification sampling,
- (b) Monthly test reports not provided for three consecutive months,
- (c) Test reports generated by the source which ~~show indicate~~ non-compliance with specification requirements, ~~and or~~
- (d) Performance of product no longer meets ~~the~~ intended purpose.

REVISION TO SPECIAL PROVISION  
200-R-401 RECYCLED FOUNDRY SAND (ATTACHMENT A)

Attachment A

RECYCLED FOUNDRY SAND (RFS) SOURCE CERTIFICATION

This is to certify recycled foundry sand (RFS) stockpiles geographically located as follows:

RFS \_\_\_\_\_  
\_\_\_\_\_

RFS was produced by the \_\_\_\_\_  
Company located in \_\_\_\_\_ (City), and \_\_\_\_\_  
(State) and was shipped for use on Indiana Department of Transportation projects is Type \_\_\_\_\_ (III or IV) material according to IDEM's restricted waste criteria ~~and that the material has passed Microtox™ (ITM 215) test criteria.~~ If any metal concentration exceeds 80% of the allowable limits for a Type III ~~material~~ the foundry shall provide the Department with an acceptable indemnification clause. The \_\_\_\_\_ RFS source also agree that processes and stockpiles associated with the production of such RFS may be inspected and sampled at regular intervals by properly identified representatives of the Department or a duly assigned representative.

\_\_\_\_\_ (Date of Signing) \_\_\_\_\_ (RFS Producer)

\_\_\_\_\_ (Title)

\_\_\_\_\_ (Signature)

State of \_\_\_\_\_ ) SS:

County of \_\_\_\_\_ )

Subscribed and sworn to before me by \_\_\_\_\_  
of the firm of \_\_\_\_\_ this \_\_\_\_\_ day of  
\_\_\_\_\_ 20\_\_.

\_\_\_\_\_ Notary Public

My Commission Expires: \_\_\_\_\_

This certification has been reviewed and approved by:

\_\_\_\_\_ Date  
~~(Office of Materials Management~~ INDOT representative)

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200-R-401 RECYCLED FOUNDRY SAND (ATTACHMENT B)

Attachment B

**RECYCLED FOUNDRY SAND (RFS) INDEMNIFICATION CLAUSE**

\_\_\_\_\_ RFS producer shall indemnify, defend, exculpate, and hold harmless the State of Indiana, its officials, and employees from any liability of the State of Indiana for loss, damage, injury, or other casualty of whatever kind or to whomever caused, arising out of or resulting from a violation of the federal or Indiana Occupational Safety and Health Acts (OSHA), the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), or any other environmental law, regulation, ordinance, order or decree (collectively referred to hereinafter as "Environmental Laws"), as a result of the supply, testing, and application of residual sand or other materials supplied under this Contract by \_\_\_\_\_ source, whether due in whole or in part of the negligent acts or omissions of: (1) \_\_\_\_\_ Foundry, its agents, officers, or employees, or other persons engaged in the performance of the contract; or (2) the joint negligence of them and the State Of Indiana, its officials, agents, or employees.

This contract shall include, but not be limited to, indemnification from: (1) any environmental contamination liability due to the supply, testing, and application of residual sand in road base, embankments, or other projects designated by the Department as agreed to by the parties, and (2) any liability for the clean up or removal of residual sand, or materials incorporating such sand, pursuant to any Environmental Law.

The RFS producer also agrees to defend any such action on behalf of the State of Indiana, to pay all reasonable expenses and attorneys fees for such defense, and shall have the right to settle all such claims. Provided, however, that no liability shall arise for any such fees or expenses incurred prior to the time that \_\_\_\_\_ Foundry shall have first received actual and timely written notice of any claim against the State which is covered by this Indemnification Agreement. If timely written notice of any claim hereunder is not received by \_\_\_\_\_ Foundry, and \_\_\_\_\_ Foundry is thereby prejudiced in its ability to defend or indemnify, then to the extent of such prejudice, this Indemnification Agreement shall be void.

This Indemnification Agreement does not create any rights in any third party, and is solely for the benefit of the State Of Indiana and its agents, officials, and employees.

COMMENTS AND ACTION

200-R-401 RECYCLED FOUNDRY SAND

DISCUSSION: This item was introduced and presented by Mr. Walker who stated that the intention of this proposal is to clean up the spec. Mr. Walker explained the intentions as described on the proposal sheet.

Mr. Walker also addressed concerns from industry relating to wind conditions in that applying an exact number for wind speed would be difficult to determine.

Another concern involved encasement materials. The language "non-RFS" was added as shown. Mr. Reilman also suggested an editorial revision to the language, changing "shall" to "will", which is also shown.

Mr. Walker proposed to accept this as revised.

Motion: Mr. Walker Second: Mr. Cales Ayes: 8 Nays: 0	Action: <input type="checkbox"/> Passed as Submitted <input checked="" type="checkbox"/> Passed as Revised <input type="checkbox"/> Withdrawn
Standard Specifications Sections affected:  NONE	<input checked="" type="checkbox"/> 2014 Standard Specifications Book (except fillable part of the provision) <input type="checkbox"/> Revise Pay Items List
Recurring Special Provision affected:  200-R-401 RECYCLED FOUNDRY SAND	<input type="checkbox"/> Create RSP (No. ___) Effective ___ Letting RSP Sunset Date: ___
Standard Sheets affected:  NONE	<input checked="" type="checkbox"/> Revise RSP (No. 200-R-401) Effective March 2012 Letting RSP Sunset Date: 2014 book
Design Manual Sections affected:  NONE	Standard Drawing Effective ___ <input type="checkbox"/> Create RPD (No. ___) Effective ___ Letting <input type="checkbox"/> Technical Advisory
GIFE Sections cross-references:  NONE	GIFE Update Req'd.? Y ___ N ___ By ___ Addition or ___ Revision  Frequency Manual Update Req'd? Y ___ N ___ By ___ Addition or ___ Revision  Received FHWA Approval? Yes

Mr. Walker  
Date: 10/20/11

SPECIFICATION REVISIONS  
REVISION TO SPECIAL PROVISION

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PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: ASTMs A82, A185, A496 and A497 have been made obsolete by ASTM A1064. In addition, it has been decided to allow epoxy coated or galvanized WWR in some applications. These ASTMs have been referenced by 901.01(b)5 and 901.01(b)6.

PROPOSED SOLUTION: Create a new RSP effective for any contract. The material is referenced in 616, 708, 714, 723, 731, 734, 735 and the proposed 737 RSP. Changes to 901.01(b)5 and 901.01(b)6 will support the desired material for RSP 737 and make current the material specifications for WWR in the above sections of the Standard Specifications.

APPLICABLE STANDARD SPECIFICATIONS: 910.01(b)5, 910.01(b)6

APPLICABLE STANDARD DRAWINGS: None affected

APPLICABLE DESIGN MANUAL SECTION: None affected

APPLICABLE SECTION OF GIFE: None affected

APPLICABLE RECURRING SPECIAL PROVISIONS: None affected

PAY ITEMS AFFECTED: None affected

Submitted By: Ron Walker

Title: Manager, Office of Materials Management

Organization: INDOT

Phone Number: 317-610-7251 x204

Date: 10/5/2011

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc committee consisting of Kenny Anderson, Jim Reilman, Randy Strain, Tony Uremovich, and Todd Hawkinson representing the WWR industry.

REVISION TO SPECIAL PROVISION

PROPOSED NEW 910 X-XXX WELDED WIRE REINFORCEMENT MATERIALS

910-X-XXX WELDED WIRE REINFORCEMENT MATERIALS

(Adopted XX-XX-11)

The Standard Specifications are revised as follows:

SECTION 910, LINE 50, DELETE AND INSERT AS FOLLOWS:

**5. Steel ~~Welded Wire Reinforcement~~ *WWR*, Smooth**

Smooth steel ~~welded wire reinforcement~~ *WWR* shall be in accordance with ASTM-A 185 A 1064, except as follows:-

- a. The wire used in manufacturing the ~~welded wire reinforcement~~ *WWR* shall be as drawn, not galvanized, unless otherwise specified.
- b. ~~The welded wire reinforcement~~ *WWR* shall be furnished in flat sheets unless otherwise permitted or specified.
- c. ~~Weld shear tests of welded wire reinforcement shall be performed by the manufacturer on the test specimens obtained for testing tensile properties in accordance with the Frequency Manual. If there is weld shear failure, additional test specimens shall be tested in accordance with ASTM A 185.~~
- c. *If epoxy coated WWR is specified, it shall be coated and repaired or patched in accordance with ASTM A 884. The average coating thickness shall be 9 to 14 mils (225 to 350  $\mu$ m) after cure.*
- d. *If galvanized WWR is specified, it shall be coated and repaired or renovated in accordance with ASTM A 1060, grade 80.*

**6. Steel ~~Welded Wire Reinforcement~~ *WWR*, Deformed**

Deformed steel ~~welded wire reinforcement~~ *WWR* shall be in accordance with ASTM A 497 A 1064, except as follows:-

- a. The wire used in manufacturing the ~~welded wire reinforcement~~ *WWR* shall be in accordance with ~~ASTM A 496~~ drawn, not galvanized, unless otherwise specified.
- b. ~~The welded wire reinforcement~~ *WWR* shall be furnished in flat sheets unless otherwise specified or permitted.
- c. ~~Weld shear tests of welded wire reinforcement shall be performed by the manufacturer on the test specimens obtained for testing tensile properties in accordance with the Frequency Manual. If there is shear failure, additional test specimens shall be tested in accordance with ASTM A 497.~~

REVISION TO SPECIAL PROVISION

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PROPOSED NEW 910 X-XXX WELDED WIRE REINFORCEMENT MATERIALS

- c. If epoxy coated WWR is specified, it shall be coated and repaired or patched in accordance with ASTM A 884. The average coating thickness shall be 9 to 14 mils (225 to 350  $\mu\text{m}$ ) after cure.*
- d. If galvanized WWR is specified, it shall be coated and repaired or renovated in accordance with ASTM A 1060, grade 80.*

FIRST DRAFT MINUTES

COMMENTS AND ACTION

910-X-XXX WELDED WIRE REINFORCEMENT MATERIALS

DISCUSSION: Mr. Walker presented this item which was further presented by Mr. Reilman.

Mr. Reilman explained this proposal as illustrated on the proposal sheet. Mr. Berebitsky mentioned a discrepancy between the ASTM references for this proposal in relation to the earlier proposal in reference to coatings. Mr. Reilman and Mr. Strain explained that the difference lies in initial coatings verses repair work.

There were no other questions or discussion.

Note: This item was discussed and voted on by the Committee. The action on the item was "Passed as Submitted". After the meeting when trying to identify an appropriate Basis for Use for this provision, was realized that there are some unintended conflicts with other existing specification sections. As a result, the action on this item has been changed to "Withdrawn". This item will be resubmitted for November meeting.

Motion: Mr. Reilman Second: Mr. Cales Ayes: 8 Nays: 0	Action: <input type="checkbox"/> Passed as Submitted <input type="checkbox"/> Passed as Revised <input checked="" type="checkbox"/> Withdrawn
Standard Specifications Sections references:  Sections: 606 pg 382; 608 pg 385; 616 pg 402, 403, 406; 708 pg 542, 544; 703 pg 518, 519; 707 pg 540, 542; 714 pg 588; 723 pg 649, 650; 731 pg 676; 734 pg 687, 688; 735 pg 691; 910 pg 872, 881.	<input type="checkbox"/> 20 Standard Specifications Book <input type="checkbox"/> Revise Pay Items List  <input type="checkbox"/> Create RSP (No. _____) Effective _____ Letting RSP Sunset Date: _____  <input type="checkbox"/> Revise RSP (No. _____) Effective _____ Letting RSP Sunset Date: _____
Recurring Special Provision affected:  NONE	<input type="checkbox"/> Standard Drawing Effective _____ <input type="checkbox"/> Create RPD (No. _____) Effective _____ Letting <input type="checkbox"/> Technical Advisory
Standard Sheets affected:  NONE	GIFE Update Req'd.? Y ___ N ___ By ___ Addition or ___ Revision
Design Manual Sections affected:  NONE	Frequency Manual Update Req'd? Y ___ N ___ By ___ Addition or ___ Revision
GIFE Sections cross-references:  NONE	Received FHWA Approval? <b>Yes</b>