



## INDIANA DEPARTMENT OF TRANSPORTATION

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**Eric Holcomb, Governor**  
**Joe McGuinness, Commissioner**

# APPROVED MINUTES

**January 18, 2018 Standards Committee Meeting**

March 23, 2018

TO: Standards Committee

FROM: Scott Trammell, Secretary

RE: Minutes from the January 18, 2018 Standards Committee Meeting

The Standards Committee meeting was called to order by Mr. Leckie, Chair, at 09:00 a.m. on January 18, 2018 in the N955 Bay Window Conference Room. The meeting was adjourned at 10:30 a.m.

The following committee members were in attendance:

John Leckie, Chairman, Construction and Materials Management  
Michael Beuchel, Contract Administration Division  
Joe Bruno\*, Traffic Engineering Division  
Mark Orton, Bridges Division  
Greg Pankow, Construction Management Division  
Kumar Dave, Pavement Engineering, Highway Design  
Matthew Beeson, Office of Materials Management  
Michael Koch, District Construction, Fort Wayne District  
Elena Veksler, Highway Design and Technical Support  
Rob Goldner, Construction Technical Support

\* Proxy for Dave Boruff

Also in attendance were the following:

Andrew Pangallo, INDOT  
Elizabeth Phillips, INDOT  
John Crist, EJ  
Kurt Pelz, INDOT  
Nayyar Siddiki, INDOT  
Paul Thibaudeau, EJ  
Steve Fisher, INDOT  
Tom Duncan, FHWA  
Tom Harris, INDOT

Kirk Frederick, INDOT  
Michael Beuchel, INDOT  
Ting Nahrwold, INDOT  
Melinda Gentry, INDOT  
Dan Osborn, ICI  
Steve Duncan, INDOT  
Derrick Hauser, INDOT  
Scott Trammell, 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 November 15, 2017 meeting

DISCUSSION: Mr. Leckie requested a motion to approve the minutes from the November 15, 2017 meeting.

Motion: Mr. Pankow

Second: Mr. Koch

Ayes: 9

Nays: 0

ACTION:

PASSED AS SUBMITTED

B. CONCEPTUAL PROPOSAL ITEMS

OLD BUSINESS

(No items were listed)

NEW BUSINESS

1. Effective Letting Dates for RSPs

Ms. Phillips

DISCUSSION: The chart was presented and explained by Ms. Phillips. Following a brief discussion where Ms. Phillips provided clarification behind the intentions of the chart, the committee agreed to the implementation of those guidelines.

C. STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

PROPOSED ITEMS

OLD BUSINESS

Item No. 6 11/15/17 (2018 SS)

Mr. Beeson

pg 4

401.09

Acceptance of Mixtures

401.16

Density

xxx-x-xxx

QC/QA ACCEPTANCE EXCEPTION TABLE

ACTION:

WITHDRAWN

NEW BUSINESS

<u>Item No. 1 (2018 SS)</u>	Mr. Beeson	pg 9
902.01(b)	Asphalt Emulsions	
ACTION:	PASSED AS REVISED	
<u>Item No. 2 (2018 SS)</u>	Mr. Beeson	pg 13
SECTION 918	GEOSYNTHETIC MATERIALS	
ACTION:	PASSED AS REVISED	
<u>Item No. 3 (2018 SS)</u>	Mr. Boruff	pg 23
Recurring Special Provision: 805-T-173	WIRELESS VEHICLE DETECTION SYSTEM	
ACTION:	PASSED AS REVISED	
<u>Item No. 4 (2018 SS)</u>	Mr. Boruff	pg 28
Standard Drawing: 805-TSCS-02	TRAFFIC SIGNAL CANTILEVER STRUCTURE SINGLE SIGNAL ARM POLE ELEVATION, DIMENSIONS, AND BASE PLATE WELD DETAIL	
ACTION:	PASSED AS SUBMITTED	
<u>Item No. 5 (2018 SS)</u>	Mr. Boruff	pg 33
Standard Drawing: 805-SGCF-03	SIGNAL PEDESTAL POLE FOUNDATION, TYPE -A 24 IN. X 24 IN. X 36 IN.	
ACTION:	PASSED AS SUBMITTED	

cc: Committee Members  
FHWA  
ICI

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS  
REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED:

Bundled Contracts have caused concerns with the minimum tonnage limits for QC/QA HMA specifications to be in effect. The current spec is written to require only contract pay item quantities greater than 300 t to be accepted by QC/QA. This was written prior to bundling of contracts. The intent was that the quantities would be all at the same location. With bundling this may not be the case.

PROPOSED SOLUTION:

Leave the standard specifications the same, but create a USP to be inserted on bundled contracts that will include a “QC/QA HMA Exception Table” to be filled out by the designer and approved by INDOT Materials or District Testing. Locations listed on that table would be exempted from QC/QA acceptance.

APPLICABLE STANDARD SPECIFICATIONS: 401.09, 401.16

APPLICABLE STANDARD DRAWINGS: none

APPLICABLE DESIGN MANUAL SECTION: none

APPLICABLE SECTION OF GIFE: none

APPLICABLE RECURRING SPECIAL PROVISIONS: 401-R-661

PAY ITEMS AFFECTED: none

APPLICABLE SUB-COMMITTEE ENDORSEMENT: INDOT/APAI Technical Committee

IMPACT ANALYSIS (attach report):

Submitted By: Matt Beeson

Title: State Materials Engineer

Organization: INDOT Office of Materials Management

Phone Number: 317-610-7251 x 204

Date: 10/23/17

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS  
REVISION TO STANDARD SPECIFICATIONS

IMPACT ANALYSIS REPORT CHECKLIST

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

Does this item appear in any other specification sections? No

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

Will this proposal improve:

Construction costs? N/A

Construction time? N/A

Customer satisfaction? Yes

Congestion/travel time? N/A

Ride quality? Yes

Will this proposal reduce operational costs or maintenance effort? Yes

Will this item improve safety:

For motorists? N/A

For construction workers? N/A

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? Yes

Design process? N/A

Will this change provide the contractor more flexibility? No

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

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

REVISION TO STANDARD SPECIFICATIONS

(OLD BUSINESS ITEM)

SECTION 401 - QUALITY CONTROL/QUALITY ASSURANCE, QC/QA, HOT MIX

ASPHALT, HMA, PAVEMENT

401.09 ACCEPTANCE OF MIXTURES

401.16 DENSITY

PROVISIONS FOR QC/QA HMA ON BUNDLED CONTRACTS

The Standard Specifications are revised as follows:

SECTION 401, BEGIN LINE 197, DELETE AND INSERT AS FOLLOWS:

**401.09 Acceptance of Mixtures**

Acceptance of mixtures of VMA at  $N_{des}$ , and air voids at  $N_{des}$  for each lot will be based on tests performed by the Engineer for dense graded 9.5 mm, 12.5 mm, 19.0 mm, and 25.0 mm mixtures ~~with original contract pay item quantities greater than or equal to 300t. except for locations indicated in the QC/QA Acceptance Exception table.~~

Acceptance of mixtures for binder content and air voids at  $N_{des}$  will be based on a Type D Certification in accordance with 402.09 for dense graded mixtures ~~with original contract pay item quantities less than 300t. at locations indicated in the QC/QA Acceptance Exception table.~~ Acceptance of mixtures for binder content and air voids at  $N_{des}$  for each lot will be based on a type D certification in accordance with 402.09 for dense graded 4.75 mm mixtures.

SECTION 401, BEGIN LINE 493, DELETE AND INSERT AS FOLLOWS:

Compaction of mixtures ~~with original contract pay item quantities less than 300 tons at locations indicated in the QC/QA Acceptance Exception table~~ shall be in accordance with 402.15.

### QC/QA Acceptance Exception Table

This ~~table~~ form will be completed by the Engineer prior to letting. *Copies of this completed form will be provided to the Office of Materials Management.*

The mixture quantities at the locations listed below shall ~~will~~ have less than 300 tons of hot mix asphalt *surface*, or be in a location where construction of the mixture will be split into phases of less than 300 tons.

Contract \_\_\_\_\_

DES Number: \_\_\_\_\_

Route Number: \_\_\_\_\_

Location: \_\_\_\_\_

Work Category: \_\_\_\_\_

CLN: \_\_\_\_\_

Pay Item Description: \_\_\_\_\_

Estimated Tonnage: \_\_\_\_\_

DES Number: \_\_\_\_\_

Route Number: \_\_\_\_\_

Location: \_\_\_\_\_

Work Category: \_\_\_\_\_

CLN: \_\_\_\_\_

Pay Item Description: \_\_\_\_\_

Estimated Tonnage: \_\_\_\_\_

DES Number: \_\_\_\_\_

Route Number: \_\_\_\_\_

Location: \_\_\_\_\_

Work Category: \_\_\_\_\_

CLN: \_\_\_\_\_

Pay Item Description: \_\_\_\_\_

Estimated Tonnage: \_\_\_\_\_

Form completed by: \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_  
Signature: \_\_\_\_\_

Form approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
\_\_\_\_\_  
INDOT Office of Materials Management

\_\_\_\_\_  
Signature: \_\_\_\_\_

## COMMENTS AND ACTION

## (OLD BUSINESS ITEM)

401.09 ACCEPTANCE OF MIXTURES

401.16 DENSITY

QC/QA ACCEPTANCE EXCEPTION TABLE

DISCUSSION:

Mr. Beeson reintroduced and presented the revised item No. 6 from the November 2017 meeting and explained that bundled contracts have caused concerns with the minimum tonnage limits for QC/QA HMA specifications to be in effect. The current spec is written to require only contract pay item quantities greater than 300 t to be accepted by QC/QA. This was written prior to bundling of contracts. The intent was that the quantities would be all at the same location. With bundling this may not be the case.

Mr. Beeson therefore proposes to leave the standard specifications language the same, but create a special provision to be inserted on bundled contracts that will include a "QC/QA HMA Acceptance Exception Table" to be filled out by the Engineer and approved by the Department's Office of Materials Management. Locations listed on that table would be exempted from QC/QA acceptance.

Mr. Koch offered that the designers should fill out the form and that signatures are not necessary. Mr. Koch believes that only the bidders and field personnel need to know which locations are excluded.

Further discussion ensued concerning language and meaning and coordination of the form and the particular items that need to be addressed on the form. Mr. Beeson withdrew this item at this time, pending further review and revisions.

Motion: Mr. Beeson Second: Mr. Koch Ayes: Nays: FHWA Approval:	Action:  <input type="checkbox"/> Passed as Submitted <input type="checkbox"/> Passed as Revised <input checked="" type="checkbox"/> Withdrawn
Standard Specifications Sections referenced and/or affected:  401.09 pg 263 and 401.16 pg 270.	<input type="checkbox"/> 2020 Standard Specifications <input type="checkbox"/> Revise Pay Items List
Recurring Special Provision possibly affected:  401-R-661 QC/QA HOT MIX ASPHALT, HMA, PAVEMENT	<input type="checkbox"/> Create RSP (No. <u>      </u> ) Effective <u>      </u> Letting RSP Sunset Date:
Standard Drawing affected:  NONE	<input type="checkbox"/> Revise RSP (No. <u>      </u> ) Effective <u>      </u> Letting RSP Sunset Date:
Design Manual Sections affected:  NONE	<input type="checkbox"/> Standard Drawing Effective
GIFE Sections cross-references:  NONE	<input type="checkbox"/> Create RPD (No. <u>      </u> ) Effective <u>      </u> Letting  <input type="checkbox"/> GIFE Update <input type="checkbox"/> SiteManager Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS  
REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: There is little to no oversight in our current emulsion acceptance procedures.

PROPOSED SOLUTION: Implement ITM 593 which is already in place and mimics our current approved binder supplier program.

APPLICABLE STANDARD SPECIFICATIONS: 902.01 (a and b)

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: N/A

APPLICABLE SUB-COMMITTEE ENDORSEMENT: INDOT emulsion subcommittee (all major emulsion suppliers represented).

IMPACT ANALYSIS (attach report): yes

Submitted By: Matt Beeson

Title: State Materials Engineer

Organization: INDOT

Phone Number: 317-610-7251 x 204

Date: 11/07/17

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? N

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

Will this proposal improve:

Construction costs? N

Construction time? N

Customer satisfaction? N

Congestion/travel time? N

Ride quality? N

Will this proposal reduce operational costs or maintenance effort? N

Will this item improve safety:

For motorists? N

For construction workers? N

Will this proposal improve quality for:

Construction procedures/processes? N

Asset preservation? N

Design process? N

Will this change provide the contractor more flexibility? N

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

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

N

Is this proposal needed for compliance with:

Federal or State regulations? N

AASHTO or other design code? N

Is this item editorial? N

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

REVISION TO STANDARD SPECIFICATIONS

SECTION 902 - ASPHALT MATERIALS  
902.01(b) ASPHALT EMULSIONS

The Standard Specifications are revised as follows:

SECTION 902, BEGIN LINE 70, DELETE AND INSERT AS FOLLOWS:

**(b) Asphalt Emulsions**

~~Asphalt emulsions shall be supplied by an approved supplier in accordance with ITM 593.~~

Asphalt emulsions *shall be supplied by an approved supplier in accordance with ITM 593 and* shall be composed of an intimate homogeneous suspension of a base asphalt, an emulsifying agent, and water. Asphalt emulsions may contain additives to improve handling and performance characteristics. Failure of an emulsion to perform satisfactorily in the field shall be cause for rejection, even though it passes laboratory tests. The grade used shall be in accordance with the table for asphalt emulsions as shown herein. A *type A* certification for the asphalt emulsion shall be furnished in accordance with ITM 804.

## COMMENTS AND ACTION

902.01(b) ASPHALT EMULSIONSDISCUSSION:

Mr. Beeson introduced and presented this item stating that there is little to no oversight in our current emulsion acceptance procedures. Mr. Beeson proposes to implement ITM 593 which is already in place and mimics our current approved binder supplier program.

Mr. Koch suggested revising some of the language in 902.01(b) for clarification purposes. Those revisions are as shown above.

There was no further discussion and this item passed as revised.

Motion: Mr. Beeson Second: Mr. Koch Ayes: 9 Nays: 0 FHWA Approval: <u>YES</u>	Action:  <input type="checkbox"/> Passed as Submitted <input checked="" type="checkbox"/> Passed as Revised <input type="checkbox"/> Withdrawn
Standard Specifications Sections referenced and/or affected:  902 pg 868.	<input checked="" type="checkbox"/> 2020 Standard Specifications <input type="checkbox"/> Revise Pay Items List
Recurring Special Provision affected:  NONE	<input type="checkbox"/> Create RSP (No. <u>902-R-674</u> ) Effective <u>June 01, 2018</u> RSP Sunset Date:
Standard Drawing affected:  NONE	<input type="checkbox"/> Revise RSP (No. <u>      </u> ) Effective <u>      </u> Letting RSP Sunset Date:
Design Manual Sections affected:  NONE	<input type="checkbox"/> Standard Drawing Effective
GIFE Sections cross-references:  NONE	<input type="checkbox"/> Create RPD (No. <u>      </u> ) Effective <u>      </u> Letting <input type="checkbox"/> GIFE Update <input type="checkbox"/> SiteManager Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS  
REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Sec 918 is not clear enough regarding the Approved Material List and ITM 806. Also, minor revisions to the properties are needed to expand the current Approved Material List.

PROPOSED SOLUTION: Sec. 918 been revised to include ITM 806 references to help Vendors provide correct documents for material approval. Minor revisions to the properties are included to expand the Approved Material List.

APPLICABLE STANDARD SPECIFICATIONS: 918

APPLICABLE STANDARD DRAWINGS: NA

APPLICABLE DESIGN MANUAL SECTION: NA

APPLICABLE SECTION OF GIFE: NA

APPLICABLE RECURRING SPECIAL PROVISIONS: yes

PAY ITEMS AFFECTED: NA

APPLICABLE SUB-COMMITTEE ENDORSEMENT: NA

IMPACT ANALYSIS (attach report): NA

Submitted By: Matt Beeson & Nayyar Siddiki

Title: State Materials Engineer

Organization: Office of Materials Management and Office of Geotechnical Services

Phone Number: 317-610-7251 x 204

Date: 11/27/17

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS  
REVISION TO STANDARD SPECIFICATIONS

IMPACT ANALYSIS REPORT CHECKLIST

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

Does this item appear in any other specification sections? No

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

Will this proposal improve:

Construction costs? Na

Construction time? Na

Customer satisfaction? Yes

Congestion/travel time? Na

Ride quality? Na

Will this proposal reduce operational costs or maintenance effort? No

Will this item improve safety:

For motorists? No

For construction workers? NA

Will this proposal improve quality for:

Construction procedures/processes? yes

Asset preservation? NA

Design process? Yes

Will this change provide the contractor more flexibility? yes

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

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

Is this proposal needed for compliance with:

Federal or State regulations?

AASHTO or other design code?

Is this item editorial?

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

REVISION TO STANDARD SPECIFICATIONS  
SECTION 918 GEOSYNTHETIC MATERIALS

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The Standard Specifications are revised as follows:

SECTION 918, BEGIN LINE 1, DELETE AND INSERT AS FOLLOWS:

**SECTION 918 – GEOSYNTHETIC MATERIALS**

**918.01 General Requirements**

Geosynthetics are polymer based products used for separation, filtration, reinforcement, liquid containment, soil and aggregate confinement and many other soil related purposes within many conventional ~~engineered~~ civil engineering structures. When appropriate, the Department will require the use of geosynthetics meeting the categories and characteristics indicated below.

*A manufacturer requesting that a geosynthetic be added to the approved materials list shall submit the required documents in accordance with ITM 806 to the Office of Materials Management.*

**918.02 Geotextile**

The geotextile shall be either non-woven or woven and consist of at least 85% long-chain synthetic polymers. The geotextile shall contain stabilizers or inhibitors added to the base polymer mix to make the filaments and yarns resistant to deterioration caused by ultraviolet radiation exposure. The geotextile shall be produced such that the yarns and fibers retain their relative positions. The non-woven geotextile shall be needle punched, heat bonded or resin bonded.

All damaged geotextile shall be replaced for the entire width of the roll. The Contractor shall furnish the product labeled that clearly indicates the manufacturer's or supplier's name, product identification, lot number, manufactured date and roll dimensions. Geotextiles used for Department projects shall be NTPEP listed and shall be in accordance with AASHTO M 288 and the Department's ~~A~~pproved ~~M~~aterials ~~L~~ist. *Geotextiles will be placed and maintained on the Department's list and shall meet the requirements of* ~~in~~ accordance with ITM 806.

~~Geotextiles shall meet the requirements of ITM 806. Geotextiles may be added to the approved list by completing the requirements in ITM 806, Procedure S.~~

The geotextile shall meet the following requirements:

## REVISION TO STANDARD SPECIFICATIONS

## SECTION 918 GEOSYNTHETIC MATERIALS

**(a) Geotextile Properties for Riprap and Revetment Applications**

TEST	METHOD, ASTM	REQUIREMENTS <sup>(1)</sup>				
		Type 1A	Type 1B	Type 2A	Type 2B	Type 3
Grab Tensile Strength, min.	D 4632	200 lbs	200 lbs	250 lbs	300 lbs	250 lbs
Grab Elongation	D 4632	$\geq 50\%$	$< 50\%$	$\geq 50\%$	$< 50\%$	$< 50\%$
CBR Puncture Strength, min.	D 6241	500 lbs	600 lbs	700625 lbs	1000 lbs	950875 lbs
Trapezoid Tear Strength, min.	D 4533	80 lbs	75 lbs	100 lbs	150 lbs	60 lbs
UV Degradation Resistance 500 hrs, min.	D 4355 D 6637	70%	70%	70%	70%	90%
Apparent Opening Size, AOS, min.	D 4751	$\leq$ No. 80 sieve, for soils $\geq$ 40% passing the No. 200 sieve; $\leq$ No. 80 sieve	$\leq$ No. 40 sieve, for soils $<$ 40% passing the No. 200 sieve; $\leq$ No. 40 sieve	$\leq$ No. 100 sieve, for soils $\geq$ 40% passing the No. 200 sieve; $\leq$ No. 70 sieve	$\leq$ No. 40 sieve, for soils $<$ 40% passing the No. 200 sieve; $\leq$ No. 40 sieve	$\leq$ No. 70 sieve
Permittivity, min.	D 4491	$\geq 1.2 \text{ sec}^{-1}$	$\geq 2.1 \text{ sec}^{-1}$	$\geq 4.20.80 \text{ sec}^{-1}$	$\geq 0.90 \text{ sec}^{-1}$	$0.28 \text{ sec}^{-1}$

Note:

<sup>(1)</sup> All values are minimum average roll values (MARV) as determined in accordance with ASTM D 4354 in the weaker principal direction, except AOS size is based on maximum average roll value.

## REVISION TO STANDARD SPECIFICATIONS

## SECTION 918 GEOSYNTHETIC MATERIALS

**(b) Geotextile Properties for Underdrains and Drainage Applications**

TEST	METHOD, ASTM	REQUIREMENTS <sup>(1)(2)</sup>				
		Type 1A	Type 1B	Type 2A	Type 2B	Type 3
Grab Tensile Strength, min.	D 4632	80 lbs	200 lbs	160 lbs	200 lbs	300200 lbs
Grab Elongation	D 4632	$\geq 50\%$	$< 50\%$	$\geq 50\%$	$< 50\%$	$< 50\%$
CBR Puncture Strength, min.	D 6241	175 lbs	600 lbs	410 lbs	1000750 lbs	1100 lbs
UV Degradation Resistance 500 hrs, Retained, min.	D 4355 D 6637	70%	70%	70%	70%	90%
Apparent Opening Size, AOS, min.	D 4751	$\leq$ No. 50 sieve, for soils $\geq$ 40% passing the No. 200 sieve; $\leq$ No. 70 sieve	$\leq$ No. 40 sieve, for soils $<$ 40% passing the No. 200 sieve; $\leq$ No. 40 sieve	$\leq$ No. 70 sieve, for soils $\geq$ 40% passing the No. 200 sieve; $\leq$ No. 70 sieve	$\leq$ No. 30 sieve, for soils $<$ 40% passing the No. 200 sieve; $\leq$ No. 40 sieve	$\leq$ No. 40 sieve
Permittivity, min.	D 4491	$\geq 1.2 \text{ sec}^{-1}$	$\geq 2.1 \text{ sec}^{-1}$	$\geq 1.20.8 \text{ sec}^{-1}$	$\geq 1.5 \text{ sec}^{-1}$	$0.90 \text{ sec}^{-1}$

Notes:

(1) All values are minimum average roll values (MARV) as determined in accordance with ASTM D 4354 *in the weaker principal direction, except AOS size is based on maximum average roll value.*

(2) Type 3 value is a maximum average roll value (Max ARV) as determined in accordance with ASTM D 4354.

REVISION TO STANDARD SPECIFICATIONS  
 SECTION 918 GEOSYNTHETIC MATERIALS

**(c) Geotextile Properties for Pavement or Subgrade Stabilizations**

TEST	METHOD, ASTM	REQUIREMENTS <sup>(1)</sup>			
		Type 1A	Type 1B	Type 2A	Type 2B
Grab Tensile Strength, min.	D 4632	200 lbs	300 lbs	350 lbs	440400 lbs
Wide Width Tensile, @ 5% Strain	D 4595	n/a	n/a	1200	2400
Grab Elongation, min	D 4632	15 $\geq$ <50%	15<50%	n/a $\geq$ < 50%	n/a<50%
CBR Puncture Strength, min.	D 6241	700175 lbs	900600 lbs	1000410 lbs	2000750 lbs
Trapezoid Tear Strength, min.	D 4533	75 lbs	110 lbs	n/a	n/a
UV Degradation Resistance 500 hrs, min.	D 4355 D 6637	70% retained	70% retained	n/a70% retained	n/a70% retained
Apparent Opening Size, AOS, min.	D 4751	use sieve No. 4050	use sieve No. 40	use sieve No. 30	use sieve No. 30
Soil Retention, Pore Size, $O_{50}/O_{95}$ , min	D 6767	n/a	n/a	290/380	320/460
Permittivity, min.	D 4491	0.05 sec <sup>-1</sup>	0.050 sec <sup>-1</sup>	0.60 sec <sup>-1</sup>	0.40 sec <sup>-1</sup>

Notes:

<sup>(1)</sup> All values are minimum average roll values (MARV) as determined in accordance with ASTM D 4354 in the weaker *principal* direction, *except AOS size is based on maximum average roll value.*

REVISION TO STANDARD SPECIFICATIONS  
 SECTION 918 GEOSYNTHETIC MATERIALS

**(d) Geotextile Properties for Silt Fence**

TEST	METHOD, ASTM	REQUIREMENTS <sup>(1)</sup>	
		Wire Fence Supported	Self Supported
Grab Strength	D 4632	90 lbs	90 lbs
Elongation @ 45 lbs	D 4632		50% max.
Apparent Opening Size <sup>(2)</sup>	D 4751	No. 20 sieve	No. 20 sieve
Permittivity <sup>(2)</sup>	D 4491	0.01 sec <sup>-1</sup>	0.01 sec <sup>-1</sup>
Ultraviolet Degradation at 500 hrs	D 4355	70% strength retained	70% strength retained

(<sup>1</sup>) The value in the weaker principal direction shall be used. All numerical values will represent the minimum average roll value. Test results from a sampled roll in a lot shall be in accordance with or shall exceed the minimum values shown in the above table. The stated values are for non-critical, non-severe conditions. Lots shall be sampled in accordance with ASTM D 4354.

(<sup>2</sup>) The values reflect the minimum criteria currently used. Performance tests may be used to evaluate silt fence performance if deemed necessary by the Engineer.

Note:

1. All values are minimum average roll values (MARV) as determined in accordance with ASTM D 4354.

~~Material furnished under this specification shall be covered by the type of certification specified in the Frequency Manual and in accordance with 916.~~

**918.03 Geomembrane**

This material shall consist of a geomembrane fabricated from high density polyethylene, HDPE, consisting of strong, rot resistant, chemically stable long-chain synthetic polymer materials, dimensionally stable with distinct and measurable openings. The manufacturers shall submit the tests for the intended use to the Department.

~~Geomembrane shall be selected from the Department's approved materials list. Geomembrane will be placed and maintained on the Department's list and shall meet the requirements of in accordance with ITM 806. Geomembrane may be added to the approved list by completing the requirements in ITM 806, Procedure S.~~

The geomembrane shall be meet the following requirements:

REVISION TO STANDARD SPECIFICATIONS  
 SECTION 918 GEOSYNTHETIC MATERIALS

TEST	METHOD	REQUIREMENTS
Density, min.	ASTM D 1505	55 pcf
Sheet Thickness	ASTM D 5199	30 mils
Tear Resistance	ASTM D 1004	22 lbs
Resistance Soil Burial	ASTM D 3083	90% retained
pH	AASHTO T 289	Durability between 3 to 12
Roll Width	Calibered	20 ft

Material furnished under this specification shall be covered by the type of certification specified in the Frequency Manual and in accordance with 916.

#### 918.04 Geocell Confinement System

Geocell confinement system is a lightweight, flexible mat that consists of high density polyethylene strips. The mat shall be perforated and the strips shall be ultrasonic bonded together to form a strong configuration. Cell seam strength shall be uniform over full depth.

*Geocell shall be selected from the Department's approved materials list. Geocell will be placed and maintained on the Department's list and shall meet the requirements of in accordance with ITM 806. Geocell may be added to the approved list by completing the requirements in ITM 806, Procedure S.*

The geocell shall meet the following requirements:

MECHANICAL PROPERTIES	MATERIAL/TEST METHOD	UNIT	*MD x CD VALUE
Grab Tensile Strength	ASTM D 4632	lbs	365 x 200
Grab Tensile Strength	ASTM D 4632	%	24 x 10
Trapezoidal Tear Strength	ASTM D 4533	lbs	115 x 75
CBR Puncture Strength	ASTM D 6241	lbs	675
Sheet Thickness	ASTM D 5199	mils	50
Environmental Stress Crack Reduction, min.	ASTM D 1693	hours	3500

Item No. 2 01/18/18 (2018 SS) (contd.)  
Mr. Beeson  
Date: 01/18/18

REVISION TO STANDARD SPECIFICATIONS  
SECTION 918 GEOSYNTHETIC MATERIALS

<i>Short-Term Seam Peel Strength for 4 in. depth</i>	ASTM D 6392	lbs/ft	350
Percent Open Area	COE-02215	%	12.6
Nominal Expanded Cell Size	Calibered	in.	12.6 x 11.3
Notes:			
* MD Machine direction x Cross direction.			
1. Carbon Black shall be minimum 1.5% by weight in accordance with ASTM 5199.			
2. Short term peel strength shall be 640 lbs for 6 in. depth cell.			

~~Material furnished under this specification shall be covered by the type of certification specified in the Frequency Manual and in accordance with 916.~~

## COMMENTS AND ACTION

## SECTION 918 GEOSYNTHETIC MATERIALS

DISCUSSION:

This item was introduced and presented by Mr. Beeson who stated that the language in 918 is currently not clear enough regarding the approved materials list and ITM 806. As illustrated above, Mr. Siddiki pointed out that the language in 918 has been revised to include ITM 806 references to help vendors provide correct documents for material approval. Further, minor revisions to the properties are also included to expand the Approved Materials List.

Mr. Koch asked about revising the terminology of the Geosynthetic approved list or combining all three listings that appear in 918.02, 918.03, and 918.05. Mr. Koch also asked if the reference to the Frequency Manual should be struck out? And, do we need an approved list for silt fence or is a type C certification still okay? Mr. Siddiki said he would like to keep the clarifications on geocell items. Mr. Pankow stated that we should rely on the approved list and not also require certs. Mr. Siddiki agreed to keep the approved list and remove the language requiring certs, and also to remove the language regarding the frequency manual. Mr. Siddiki agreed with revising the proposed language.

Revisions are as shown. Further minor editorial revisions by Mr. Siddiki may occur after the meeting.

Motion: Mr. Beeson Second: Mr. Koch Ayes: 9 Nays: 0 FHWA Approval: <u>YES</u>	Action:  <input type="checkbox"/> Passed as Submitted <input checked="" type="checkbox"/> Passed as Revised <input type="checkbox"/> Withdrawn
Standard Specifications Sections referenced and/or affected:  Section 918 begin pg 1020.	<input checked="" type="checkbox"/> 2020 Standard Specifications <input type="checkbox"/> Revise Pay Items List
Recurring Special Provision affected:  NONE	<input type="checkbox"/> Create RSP (No. <u>918-R-675</u> ) Effective <u>June 01, 2018</u> RSP Sunset Date:
Standard Drawing affected:  NONE	<input type="checkbox"/> Revise RSP (No. <u>      </u> ) Effective <u>      </u> Letting RSP Sunset Date:
Design Manual Sections affected:  NONE	<input type="checkbox"/> Standard Drawing Effective
GIFE Sections cross-references:  NONE	<input type="checkbox"/> Create RPD (No. <u>      </u> ) Effective <u>      </u> Letting  <input type="checkbox"/> GIFE Update <input type="checkbox"/> SiteManager Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS  
REVISION TO RECURRING SPECIAL PROVISION

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Currently the repeaters and receiver processors for wireless vehicle detection systems cannot be mounted on a sign post. Some cost savings could be realized if sign posts were allowed to support these devices. In addition, the sign posts are much easier to move if the repeaters need to be relocated after a speed limit change or as tree growth begins to interfere with the wireless communication signal strength.

PROPOSED SOLUTION: Revise the recurring special provision for wireless vehicle detection systems to allow a receiver processor or a repeater to be mounted on a sign post.

APPLICABLE STANDARD SPECIFICATIONS: 805 (no change proposed)

APPLICABLE STANDARD DRAWINGS: No

APPLICABLE DESIGN MANUAL SECTION: No

APPLICABLE SECTION OF GIFE: No

APPLICABLE RECURRING SPECIAL PROVISIONS: 805-T-173

PAY ITEMS AFFECTED: No

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc review by Dave Boruff, Tim Watson, Prakash Patel, and John McGregor

IMPACT ANALYSIS (attach report): Yes, attached.

Submitted By: Joe Bruno on behalf of Dave Boruff

Title: Traffic Administration Engineer

Organization: INDOT

Phone Number: (317) 234-7949

Date: 12/22/2017

[rev. 12/2014]

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS  
REVISION TO RECURRING 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? Yes

Construction time? No

Customer satisfaction? No

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? 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: N/A

**REVISION TO RECURRING SPECIAL PROVISION**

**805-T-173 WIRELESS VEHICLE DETECTION SYSTEM**

**805-T-173 WIRELESS VEHICLE DETECTION SYSTEM**

*(Revised 07-17-14)*

**Description**

This work shall consist of furnishing and installing wireless vehicle detection systems for vehicle detection at traffic signals.

**Materials**

The wireless vehicle detection system, WVDS, is comprised of wireless magnetometer detectors, contact closure cards, receiver processors, and wireless repeaters installed for a signalized intersection. The system shall be capable of monitoring vehicles on a roadway via detection of changes in inductance caused by the presence or passage of a vehicle and shall provide detector outputs to a traffic signal controller.

The WVDS shall include magnetometer detectors, a minimum of two receiver processors, the required mounting equipment, cables, rack mounted cards, set-up and operating software, all connectors, and miscellaneous equipment necessary for the installation and operation of the system. If required, the WVDS shall also include wireless repeaters.

Only models from the Department's approved materials list for traffic signal control equipment shall be used.

Ethernet cable for wireless vehicle detectors shall be outdoor rated and UV shielded.

**Construction Requirements**

Prior to the installation, the Contractor shall test all wireless magnetometer detectors and demonstrate proper operation and communication between the wireless magnetometer detectors and the receiver processor and wireless repeater, if required.

Prior to the installation, the Contractor shall demonstrate that each wireless magnetometer detector is within range of its corresponding receiver processor, using wireless repeaters as necessary. All wireless magnetometer detectors assigned to either a receiver processor or wireless repeater shall be located within a 120° arc measured from the receiver processor or wireless repeater.

The Contractor shall install each wireless magnetometer detector in the roadway according to the manufacturer's recommendations with one wireless magnetometer detector programmed to count vehicles for each through travel lane. Holes cored in the pavement shall be cleaned and dried before installing wireless magnetometer detectors. The cored pavement shall be backfilled according to the manufacturer's recommendations.

Receiver processors and wireless repeaters shall be mounted on traffic signal steel strain, pedestal, ~~or cantilever poles, or signal pedestals on type A foundations~~ square steel sign posts. If a square steel sign post is used, it shall have a length of no more than 24 ft and a

**REVISION TO RECURRING SPECIAL PROVISION**

**805-T-173 WIRELESS VEHICLE DETECTION SYSTEM**

*Type 3 object marker shall be installed on the post, with a mounting height of 4 ft, measured from the edge of the traveled way to the bottom of the object marker. The mounting height of receiver processors above the pavement surface shall be between 20 ft and 35 ft. The mounting height of wireless repeaters above the pavement surface shall be between 13 ft and 35 ft.*

The minimum distance between a receiver processor and wireless repeater mounted on the same structure shall be 2 ft. This distance may be increased to enable better communication between the devices.

After installation, the Contractor shall demonstrate successful communication between each wireless magnetometer detector, receiver processor, and wireless repeater to the Engineer.

**Method of Measurement**

Wireless magnetometer detectors, contact closure cards, receiver processors and wireless repeaters will be measured by the number of units installed.

**Basis of Payment**

Wireless magnetometer detectors, contact closure cards, receiver processors and wireless repeaters will be paid for at the contract unit price per each.

**Pay Item**

**Pay Unit Symbol**

Contact Closure Card.....	EACH
Receiver Processor.....	EACH
Wireless Magnetometer Detector.....	EACH
Wireless Repeater.....	EACH

The cost of coring the pavement, sealant, and all work necessary for proper installation and operation of the wireless magnetometer detectors shall be included in the cost of the wireless magnetometer detector.

The cost of cables, connectors, set-up and operating software, access boxes, rack mounted expansion cards, and all hardware necessary to complete the installation shall be included in the cost of the contact closure cards.

The cost of required mounting equipment, cables, connectors, and miscellaneous equipment necessary for proper installation and operation of the receiver processors shall be included in the cost of the receiver processors.

The cost of required mounting equipment, connectors, and miscellaneous equipment necessary for proper installation and operation of the wireless repeaters shall be included in the cost of the wireless repeaters.

## COMMENTS AND ACTION

## 805-T-173 WIRELESS VEHICLE DETECTION SYSTEM

DISCUSSION:

This item was introduced and presented by Mr. Bruno, sitting in for Mr. Boruff, who explained that currently the repeaters and receiver processors for wireless vehicle detection systems cannot be mounted on a sign post. Some cost savings could be realized if sign posts were allowed to support these devices. In addition, the sign posts are much easier to move if the repeaters need to be relocated after a speed limit change or as tree growth begins to interfere with the wireless communication signal strength. Mr. Bruno therefore proposes to revise the recurring special provision for wireless vehicle detection systems to allow a receiver processor or a repeater to be mounted on a sign post.

Mr. Koch suggested minor revisions for clarification (striking the word "or" (as shown) and also mentioned that sign posts longer than 13 ft can become rather wobbly. Mr. Koch suggested limiting the height of the post since a maximum of 35 ft seems way too high.

Mr. Bruno agreed with striking the "or", and suggested a maximum length of 24 ft for the posts.

Revisions are as shown and this item passed as revised.

Motion: Mr. Bruno Second: Mr. Dave Ayes: 9 Nays: 0 FHWA Approval: <u>YES</u>	Action:  <input type="checkbox"/> Passed as Submitted <input checked="" type="checkbox"/> Passed as Revised <input type="checkbox"/> Withdrawn
Standard Specifications Sections referenced and/or affected:  Section 805 begin pg 791.	<input type="checkbox"/> 2020 Standard Specifications <input type="checkbox"/> Revise Pay Items List
Recurring Special Provision affected:  805-T-173 WIRELESS VEHICLE DETECTION SYSTEM	<input type="checkbox"/> Create RSP (No. _____) Effective _____ Letting RSP Sunset Date:  <input checked="" type="checkbox"/> Revise RSP (No.805-T-173) Effective <u>June 01, 2018</u> RSP Sunset Date:
Standard Drawing affected:  NONE	<input type="checkbox"/> Standard Drawing Effective
Design Manual Sections affected:  NONE	<input type="checkbox"/> Create RPD (No. _____) Effective _____ Letting
GIFE Sections cross-references:  NONE	<input type="checkbox"/> GIFE Update <input type="checkbox"/> SiteManager Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS  
REVISION TO STANDARD DRAWING

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Two of the dimensions in the standard drawing for a single arm traffic signal cantilever structure are incorrect. The signal arm mounting height can exceed 22 ft but hand hole B must be 6 in. from the top cover.

PROPOSED SOLUTION: Correct the dimensions on the standard drawing relating to the signal arm mounting height and hand hole B.

APPLICABLE STANDARD SPECIFICATIONS: 805 (no change proposed)

APPLICABLE STANDARD DRAWINGS: 805-TSCS-02

APPLICABLE DESIGN MANUAL SECTION: No

APPLICABLE SECTION OF GIFE: No

APPLICABLE RECURRING SPECIAL PROVISIONS: No

PAY ITEMS AFFECTED: No

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc review by Dave Boruff, Prakash Patel, and John McGregor

IMPACT ANALYSIS (attach report): Yes, attached.

Submitted By: Joe Bruno on behalf of Dave Boruff

Title: Traffic Administration Engineer

Organization: INDOT

Phone Number: (317) 234-7949

Date: 12/22/2017

[rev. 12/2014]

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS  
REVISION TO STANDARD DRAWING

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

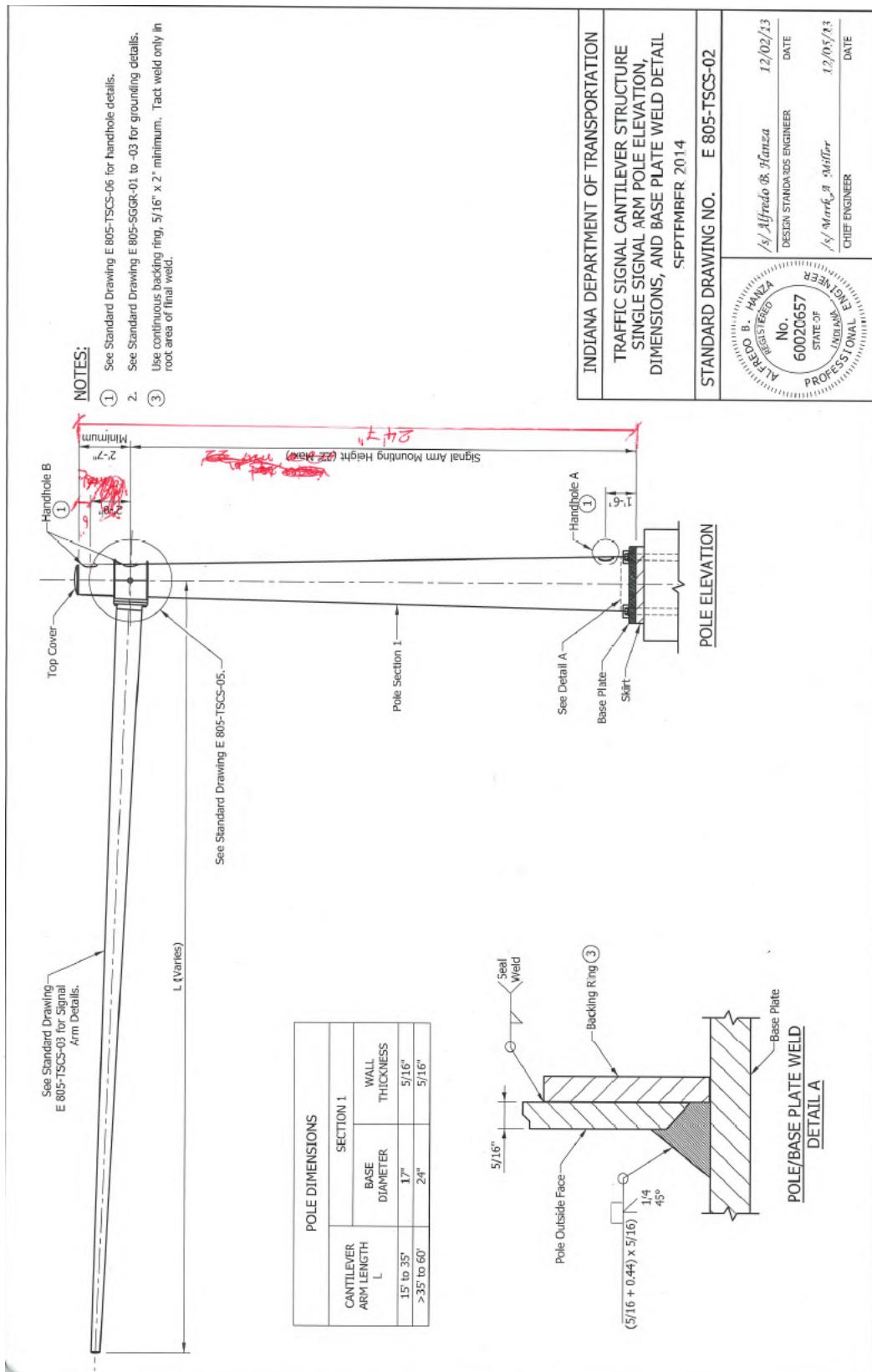
AASHTO or other design code? No

Is this item editorial? No (almost)

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

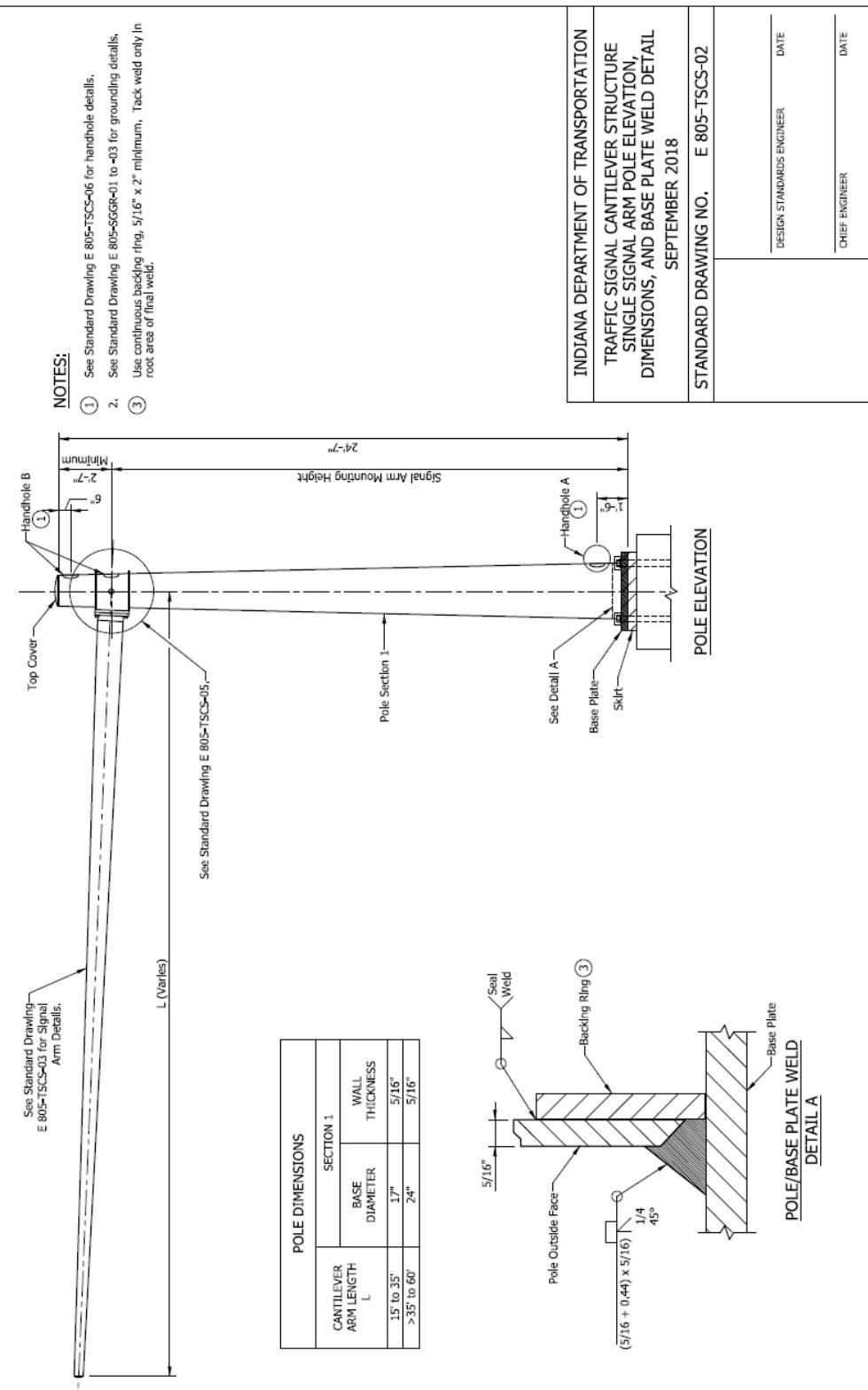
## REVISION TO STANDARD DRAWING

## 805-TSCS-02 TRAFFIC SIGNAL CANTILEVER STRUCTURE SINGLE SIGNAL ARM POLE ELEVATION, DIMENSIONS, AND BASE PLATE WELD DETAIL (WITH MARKUPS)



## REVISION TO STANDARD DRAWING

## 805-TSCS-02 TRAFFIC SIGNAL CANTILEVER STRUCTURE SINGLE SIGNAL ARM POLE ELEVATION, DIMENSIONS, AND BASE PLATE WELD DETAIL (DRAFT)



**COMMENTS AND ACTION**

805-TSCS-02 TRAFFIC SIGNAL CANTILEVER STRUCTURE SINGLE SIGNAL ARM POLE ELEVATION, DIMENSIONS, AND BASE PLATE WELD DETAIL

**DISCUSSION:**

Mr. Bruno introduced and presented this item stating that two of the dimensions in the standard drawing for a single arm traffic signal cantilever structure are incorrect. The signal arm mounting height can exceed 22 ft but hand hole B needs to be 6 in. from the top cover.

Mr. Bruno therefore proposes to correct the dimensions on the standard drawing relating to the signal arm mounting height and hand hole B, as shown.

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

Motion: Mr. Bruno Second: Mr. Dave Ayes: 9 Nays: 0 FHWA Approval: <u>YES</u>	Action:  <input checked="" type="checkbox"/> Passed as Submitted <input type="checkbox"/> Passed as Revised <input type="checkbox"/> Withdrawn
Standard Specifications Sections referenced and/or affected:  Section 805 begin pg. 791.	  <input type="checkbox"/> 2020 Standard Specifications <input type="checkbox"/> Revise Pay Items List
Recurring Special Provision affected:  NONE	  <input type="checkbox"/> Create RSP (No. _____) Effective _____ Letting RSP Sunset Date:
Standard Drawing affected:  805-TSCS-02 TRAFFIC SIGNAL CANTILEVER STRUCTURE SINGLE SIGNAL ARM POLE ELEVATION, DIMENSIONS, AND BASE PLATE WELD DETAIL	  <input type="checkbox"/> Revise RSP (No. _____) Effective _____ Letting RSP Sunset Date:  <input checked="" type="checkbox"/> Standard Drawing 805-TSCS-02 Effective <u>September 01, 2018</u>
Design Manual Sections affected:  NONE	  <input type="checkbox"/> Create RPD (No. _____) Effective _____ Letting
GIFE Sections cross-references:  NONE	  <input type="checkbox"/> GIFE Update <input type="checkbox"/> SiteManager Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS  
REVISION TO STANDARD DRAWING

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The standard pay items for the signal pole foundations are now based on the size of the foundation. However, the standard drawing for the signal pedestal pole foundation refers to it as a type A foundation.

PROPOSED SOLUTION: Change the title of the standard drawing and add a note to reference the older terminology.

APPLICABLE STANDARD SPECIFICATIONS: 805.16 (no change proposed)

APPLICABLE STANDARD DRAWINGS: 805-SGCF-03

APPLICABLE DESIGN MANUAL SECTION: No

APPLICABLE SECTION OF GIFE: No

APPLICABLE RECURRING SPECIAL PROVISIONS: No

PAY ITEMS AFFECTED: 805-02645 Signal Pedestal Foundation, A

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc review by Dave Boruff, Prakash Patel, and John McGregor

IMPACT ANALYSIS (attach report): Yes, attached.

Submitted By: Joe Bruno on behalf of Dave Boruff

Title: Traffic Administration Engineer

Organization: INDOT

Phone Number: (317) 234-7949

Date: 12/22/2017

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS  
REVISION TO STANDARD DRAWING

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? Yes

Will this change provide the contractor more flexibility? No

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

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

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

Is this item editorial? No (almost)

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

## REVISION TO STANDARD DRAWING

## 805-SGCF-03 SIGNAL PEDESTAL FOUNDATION TYPE A (WITH MARKUPS)

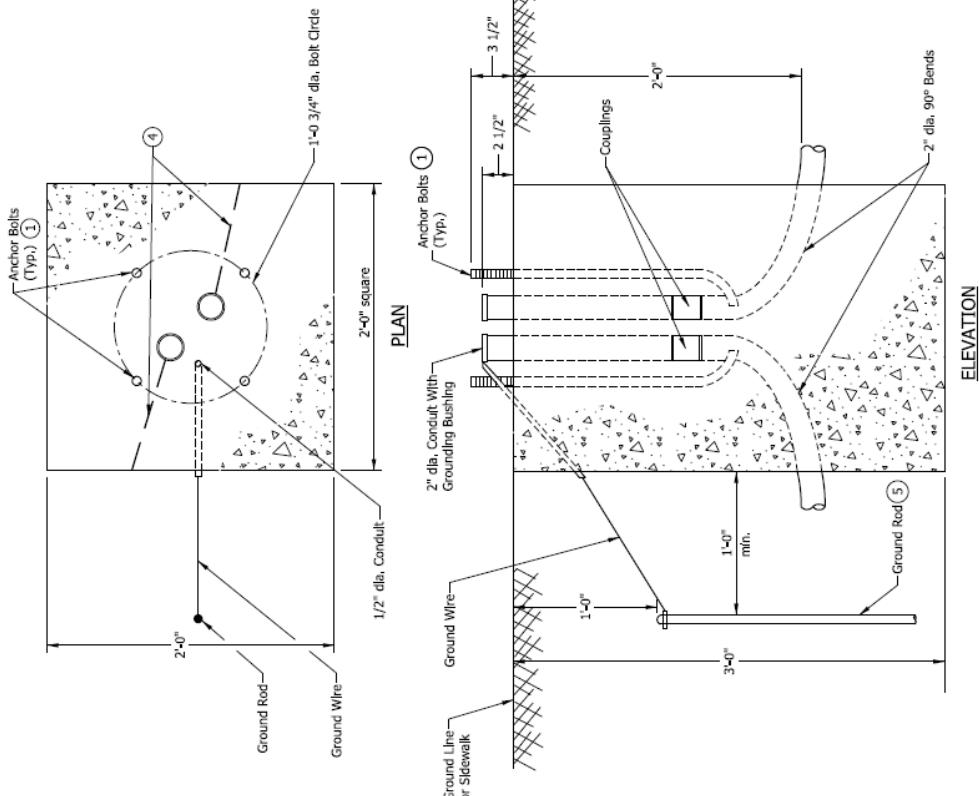
<p><b>GENERAL NOTES:</b></p> <p>(1) See Standard Drawing E 805-SGFB-01 for anchor bolt details.</p> <p>(2) A minimum of two 24 in. dia. conduit inlets shall be installed for each foundation.</p> <p>(3) Conduit inlets not used shall be capped below grade. More inlets shall be installed as required on plans.</p> <p>(4) Make a permanent line on top of the concrete foundation indicating the direction of the A-H, conduits, etc.</p> <p>(5) The ground rod has length 8 ft.</p> <p><b>6. The signal pole foundation, 24 in. x 24 in. x 36 in. is also known as a type A foundation.</b></p>													
<p><b>PLAN</b></p>													
<p><b>ELEVATION</b></p>													
<p><b>INDIANA DEPARTMENT OF TRANSPORTATION</b></p> <p><b>SIGNAL PEDESTAL POLE</b> <b>FOUNDATION TYPE A</b> <b>24 IN. x 24 IN. x 36 IN.</b> <b>SEPTEMBER 2013</b></p> <p><b>STANDARD DRAWING NO. E 805-SGCF-03</b></p> <table border="1"> <tr> <td><i>/s/ Alfredo B. Hanzal</i></td> <td>DESIGN STANDARDS ENGINEER</td> <td>DATE</td> </tr> <tr> <td>ALFREDO B. HANZAL REGISTERED ENGINEER No. 60020657</td> <td>STATE OF INDIANA PROFESSIONAL ENGINEER</td> <td>02/27/13</td> </tr> <tr> <td><i>/s/ Mark A. Miller</i></td> <td>CHIEF ENGINEER</td> <td>DATE</td> </tr> <tr> <td>MARK A. MILLER</td> <td>CHIEF ENGINEER</td> <td>03/27/13</td> </tr> </table>		<i>/s/ Alfredo B. Hanzal</i>	DESIGN STANDARDS ENGINEER	DATE	ALFREDO B. HANZAL REGISTERED ENGINEER No. 60020657	STATE OF INDIANA PROFESSIONAL ENGINEER	02/27/13	<i>/s/ Mark A. Miller</i>	CHIEF ENGINEER	DATE	MARK A. MILLER	CHIEF ENGINEER	03/27/13
<i>/s/ Alfredo B. Hanzal</i>	DESIGN STANDARDS ENGINEER	DATE											
ALFREDO B. HANZAL REGISTERED ENGINEER No. 60020657	STATE OF INDIANA PROFESSIONAL ENGINEER	02/27/13											
<i>/s/ Mark A. Miller</i>	CHIEF ENGINEER	DATE											
MARK A. MILLER	CHIEF ENGINEER	03/27/13											

## REVISION TO STANDARD DRAWING

805-SGCF-03 SIGNAL POLE FOUNDATION, 24 IN. X 24 IN. X 36 IN. (DRAFT)

## GENERAL NOTES:

- ① See Standard Drawing E 805-5GB-01 for anchor bolt details.
- ② A minimum of two 24-in. dia. conduct. Inlets shall be installed for each foundation.
- ③ Conduct. Inlets not used shall be capped below grade. More Inlets shall be installed as required on piers.
- ④ Make a permanent line on top of the concrete foundation indicating the direction of the 24-in. conduct. Inlets' exit.
- ⑤ The ground rod has length 8 ft.
- ⑥ The signal pole foundation, 24 in. x 24 in. x 36 in. is also known as a type A foundation.



INDIANA DEPARTMENT OF TRANSPORTATION

SIGNAL POLE FOUNDATION,  
24 IN. X 24 IN. X 36 IN.

SEPTEMBER 2018

STANDARD DRAWING NO. E 805-SGCF-03

DESIGN STANDARDS ENGINEER DATE

CHIEF ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

## COMMENTS AND ACTION

805-SGCF-03 SIGNAL POLE FOUNDATION, 24 IN. X 24 IN. X 36 IN.

## DISCUSSION:

Mr. Bruno introduced and presented this item stating that the standard pay items for the signal pole foundations are now based on the size of the foundation. However, the standard drawing for the signal pedestal pole foundation refers to it as a type A foundation. Mr. Bruno therefore proposes to revise the title of the standard drawing and add a note to reference the older terminology. These revisions are as shown above.

A brief discussion ensued concerning Note 6, and it was agreed that the note should remain.

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

Motion: Mr. Bruno Second: Mr. Dave Ayes: 9 Nays: 0 FHWA Approval: <u>YES</u>	Action:  <input checked="" type="checkbox"/> Passed as Submitted <input type="checkbox"/> Passed as Revised <input type="checkbox"/> Withdrawn
Standard Specifications Sections referenced and/or affected:  805.16 pg 805.	<input type="checkbox"/> 2020 Standard Specifications <input type="checkbox"/> Revise Pay Items List
Recurring Special Provision affected:  NONE	<input type="checkbox"/> Create RSP (No. <u>      </u> ) Effective <u>      </u> Letting RSP Sunset Date:
Standard Drawing affected:  805-SGCF-03 SIGNAL PEDESTAL FOUNDATION TYPE A.	<input type="checkbox"/> Revise RSP (No. <u>      </u> ) Effective <u>      </u> Letting RSP Sunset Date:
Design Manual Sections affected:  NONE	<input checked="" type="checkbox"/> Standard Drawing <u>805-SGCF-03</u> Effective <u>September 01, 2018</u>
GIFE Sections cross-references:  NONE	<input type="checkbox"/> Create RPD (No. <u>      </u> ) Effective <u>      </u> Letting  <input type="checkbox"/> GIFE Update <input type="checkbox"/> SiteManager Update