



**INDIANA DEPARTMENT OF TRANSPORTATION**  
*Driving Indiana's Economic Growth*

100 North Senate Avenue  
Room N925  
Indianapolis, Indiana 46204

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**Michael R. Pence, Governor**  
**Karl B. Browning, Commissioner**

# APPROVED MINUTES

## March 20, 2014 Standards Committee Meeting

### MEMORANDUM

May 23, 2014

TO: Standards Committee

FROM: Scott Trammell, Secretary

RE: Minutes from the March 20, 2014 Standards Committee Meeting

The Standards Committee meeting was called to order by Mr. Miller at 09:02 a.m. on Thursday, March 20, 2014 in the N955 Bay Window Conference Room. The meeting was adjourned at 9:29 a.m.

The following committee members were in attendance:

Mark Miller, Chairman, Construction Management Director  
Dave Boruff, Traffic Engineering Division  
Elizabeth Phillips, Bridges Division  
Greg Pankow, State Construction Engineer  
Jim Keefer, Fort Wayne District Construction Director  
Michael Buening, Pavement Engineering  
Michelle Gottschalk, Construction Technical Support  
Mike Beuchel\*, Contract Administration Division  
Richard Vancleave, Highway Design and Technical Support Division  
Ron Walker, Materials Management

\*Proxy for Bob Cales

Also in attendance were the following:

Athar A. Khan, INDOT  
Jim Reilman, INDOT  
Kyle Smith, INDOT  
Lana Podorvanova, INDOT  
Paul Berebitsky, ICA

Tom Duncan, FHWA  
Scott Trammell, INDOT  
Lalit Garg, INDOT  
Yuhui Hu, INDOT  
Wendy Chiles, INDOT

The following items were listed for consideration:

A. GENERAL BUSINESS ITEMS

OLD BUSINESS

(No items on this agenda)

NEW BUSINESS

*1. Approval of the Minutes from the February 20, 2014 meeting*

DISCUSSION: Mr. Miller requested a motion to approve the minutes from the February 20, 2014 meeting.

Motion: Mr. Boruff  
Second: Mr. Walker  
Ayes: 7  
Nays: 0

ACTION:

PASSED AS SUBMITTED

B. CONCEPTUAL PROPOSAL ITEMS

OLD BUSINESS

(No items on this agenda)

NEW BUSINESS

(No items on this agenda)

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

OLD BUSINESS

(No items on this agenda)

NEW BUSINESS

<u>Item No. 01</u>	<u>3/20/14 (2014 SS)</u>	<u>Mr. Pankow</u>	<u>pg 04</u>
910.07(a)		Backing Mats, Clevis Connector,	
		Connector Bar, and Wire-Facing	
910.07(b)		Ground Reinforcement	

ACTION:

PASSED AS REVISED

<u>Item No. 02</u>	<u>3/20/14 (2014 SS)</u>	<u>Mr. Boruff</u>	<u>pg 09</u>
802-SNGP-01		SIGN PLACEMENT WIDE FLANGE SIGN	
		SUPPORT	
802-SNGP-0302		SIGN PLAN DETAILS PANEL SIGN	
		CONNECTION DETAILS	
802-SNGP-0203		WIDE FLANGE SIGN SUPPORT BASE	
		CONNECTION	
802-SNGP-04		SIGN DETAILS PLATE AND SHIM DETAILS	
802-SNGP-05		SIGN DATA TABLES WIDE FLANGE SIGN	
		POST SUPPORT DATA TABLES	

(continued)

~~802-SNCP-06~~

~~SIGN DATA TABLES~~

~~802-SNCP-07~~

~~WIDE FLANGE SIGN POST SUPPORT~~

~~FOUNDATION DATA~~

~~802-SNGP-10A06~~

~~PANEL SIGN POST CLIP~~

~~802-SNGS-12SNGP-07~~

~~WIDE FLANGE POST SELECTION TABLE~~

~~802-SNCP-11SNDH-01~~

~~SIGN PLACEMENT *DIVIDED HIGHWAY*~~

~~*INTERSECTION MEDIAN WIDTH < 30 FT*~~

~~802-SNCP-12~~

~~SIGN PLACEMENT~~

~~802-SNCP-13SNDH-02~~

~~SIGN PLACEMENT *DIVIDED HIGHWAY*~~

~~*INTERSECTION MEDIAN WIDTH  $\geq$  30 FT*~~

~~802-SNCP-14~~

~~SIGN PLACEMENT~~

ACTION:

PASSED AS REVISED

cc: Committee Members  
FHWA  
ICA

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

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PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The current 910 material specification for ground reinforcement for MSE wall components allows galvanizing in accordance with ASTM B 695. This is not in accordance with AASHTO.

PROPOSED SOLUTION: Delete the reference to ASTM B 695

APPLICABLE STANDARD SPECIFICATIONS: 910.07

APPLICABLE STANDARD DRAWINGS: none

APPLICABLE DESIGN MANUAL SECTION: none

APPLICABLE SECTION OF GIFE: none

APPLICABLE RECURRING SPECIAL PROVISIONS:

PAY ITEMS AFFECTED: none

Submitted By: Greg Pankow

Title: State Construction Engineer

Organization: INDOT

Phone Number: 2-5502

Date: February 13, 2014

APPLICABLE SUB-COMMITTEE ENDORSEMENT: None



REVISION TO STANDARD SPECIFICATIONS

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SECTION 910 - METAL MATERIALS

910.07(a) BACKING MATS, CLEVIS CONNECTOR, CONNECTOR BAR, AND WIRE-FACING

910.07(b) GROUND REINFORCEMENT

The Standard Specifications are revised as follows:

SECTION 910, BEGIN LINE 454, DELETE AND INSERT AS FOLLOWS:

**2. Clevis Connector**

Clevis connectors, if used, shall be attached to the alignment templates using the bars provided with the forms. The vertical and horizontal alignment of the connectors shall be  $\pm 1/8$  in. The holes inside the loops shall be free of all concrete and debris, loose or otherwise.

The clevis connector shall be fabricated of cold-drawn steel wire in accordance with ASTM A 1064. Loops shall be galvanized in accordance with ASTM A 153 class B-3, ASTM A 123, coating grade 55, ~~or ASTM B 695 class 55.~~

A type A certification in accordance with 916 shall be furnished for the clevis connector. The results of the tension, bend, and coating adhesion tests, and measurements of coating thickness and average weight of the coating, shall be included on the certification for the clevis connector.

**3. Connector Bar**

The connector bar, if used, shall be fabricated of cold-drawn steel wire in accordance with ASTM A 1064, and galvanized, if so shown on the plans, in accordance with ASTM A 123, coating grade 55, ~~or ASTM B 695 class 55.~~

A type A certification in accordance with 916 shall be furnished for the connector bars. The results of the coating adhesion test and the measurements of coating thickness, average weight of the coating, and coating flexibility, shall be included on the certification for the connector bar.

SECTION 910, BEGIN LINE 502, DELETE AND INSERT AS FOLLOWS:

Ground-reinforcement units shall be hot rolled from bars to the required shape and dimensions. Physical and mechanical properties of the units shall be in accordance with ASTM A 572, grade 65. Tie strips shall be shop fabricated with hot-rolled steel in accordance with the minimum requirements of ASTM A 1011, grade 50. Galvanization for ground-reinforcing units and tie strips shall be in accordance with ASTM A 123, coating grade 85 ~~or ASTM B 695, class 80,~~ *for strip-type reinforcements or ASTM A 641, class 5 or class C, for bar mat or grid-type reinforcements.* All ground-reinforcement units and tie strips will be inspected to ensure that they are true to size and free from defects which can impair their strength and durability.

A type A certification in accordance with 916 shall be furnished for ground reinforcement prior to use of the materials. The results of the yield strength, coating thickness, and coating adhesion tests shall be shown on the certification.

REVISION TO STANDARD SPECIFICATIONS

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SECTION 910 - METAL MATERIALS

910.07(a) BACKING MATS, CLEVIS CONNECTOR, CONNECTOR BAR, AND WIRE-FACING

910.07(b) GROUND REINFORCEMENT

**(c) Fasteners**

Fasteners shall consist of 1/2 in. diameter, bolts, nuts, and washers and shall otherwise be in accordance with 910.02(g)1 with the exception that the hardware shall be coated in accordance with ASTM A 153, class C ~~or ASTM B 695, class 55.~~

The supplier shall provide a certificate of compliance with all requirements for high strength bolts, nuts, and washers used in the assembly of MSE retaining walls. The certification, in addition to complying with the applicable requirements of 916, shall include the lot number and heat number on the shipping package and indicate when or where all testing was performed.

APPROVED MINUTES

COMMENTS AND ACTION

SECTION 910 - METAL MATERIALS

910.07(a) BACKING MATS, CLEVIS CONNECTOR, CONNECTOR BAR, AND WIRE-FACING

910.07(b) GROUND REINFORCEMENT

DISCUSSION: Mr. Pankow introduced and presented this item as described on the proposal sheet. Mr. Pankow also handed out an extra sheet where these revisions should be incorporated further in the 910 materials section, with regard to Clevis Connectors, Connector Bars, and Fasteners. Further clarification was provided by Mr. Reilman.

Mr. Pankow revised his motion.

Motion: Mr. Pankow Second: Mr. Buening Ayes: 7 Nays: 0	Action: <input type="checkbox"/> Passed as Submitted <input checked="" type="checkbox"/> Passed as Revised <input type="checkbox"/> Withdrawn
Standard Specifications Sections affected: 910.07(b) pg 909	<input checked="" type="checkbox"/> 2016 Standard Specifications Book <input type="checkbox"/> Revise Pay Items List
Recurring Special Provision affected: 731-B-205 MSE RETAINING WALL REQUIREMENTS	<input type="checkbox"/> Create RSP (No. _____) Effective _____ Letting RSP Sunset Date: _____ <input checked="" type="checkbox"/> Revise RSP (No. 731-B-205) Effective Sept.01, 2014 Letting RSP Sunset Date: Sept.01, 2015
Standard Sheets affected: NONE	Standard Drawing Effective _____ <input type="checkbox"/> Create RPD (No. _____) Effective _____ Letting <input type="checkbox"/> Technical Advisory
Design Manual Sections affected: NONE	GIFE Update Req'd.? Y ___ N <input checked="" type="checkbox"/> By _____ Addition or _____ Revision
GIFE Sections cross-references: NONE	Frequency Manual Update Req'd? Y ___ N ___ By _____ Addition or _____ Revision
	Received FHWA Approval? <u>YES</u>

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

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PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Standard Drawings 802-SNGP-13 and 802-SNGP-14 showing Sign Placement for divided highway intersections with medians 30 ft or wider do not include the ONE WAY signs in the median that are required by the 2011 IMUTCD.

Additionally there is an opportunity to reduce the number of drawings in this series as:

1. 802-SNGP-11 and 802-SNGP-12 show identical signing
2. 802-SNGP-13 and 802-SNGP-14 also show identical signing
3. 802-SNGP-05, 802-SNGP-06, 802-SNGP-07 which show sign post and foundation data can be condensed.

Lastly, 802-SNGP-11 thru -14 concern sheet signs only while the remainder of the drawings in the series detail panel signs and panel sign (wide flange) supports. At the same time 802-SNGS-12, containing the wide flange support selection chart, is the only panel sign related drawing in the 802-SNGS series which otherwise consists of sheet sign details.

PROPOSED SOLUTION: Revise Standard Drawing 802-SNGP-13 and place in a new series, 802-SNDH. Also move 802-SNGP-11 into the new series and eliminate 802-SNGP-12 and 802-SNGP-14.

Condense 802-SNGP-05 thru -07 into one drawing.

Move 802-SNGS-12 to the 802-SNGP panel sign series.

APPLICABLE STANDARD SPECIFICATIONS: N/A

APPLICABLE STANDARD DRAWINGS: 802-SNGP-01 through 14. Standard drawing 802-SNGS-12

APPLICABLE DESIGN MANUAL SECTION: N/A

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

PAY ITEMS AFFECTED: N/A

Mr. Boruff  
Date: 3/20/14

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

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(continued)

Submitted By: David Boruff

Title: Manager, Office of Traffic Administration

Organization: INDOT

Phone Number: 317-234-7975

Date: 2-24-2014

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Standard Sub Committee for Traffic Control Devices and the Standards and Policy Office.

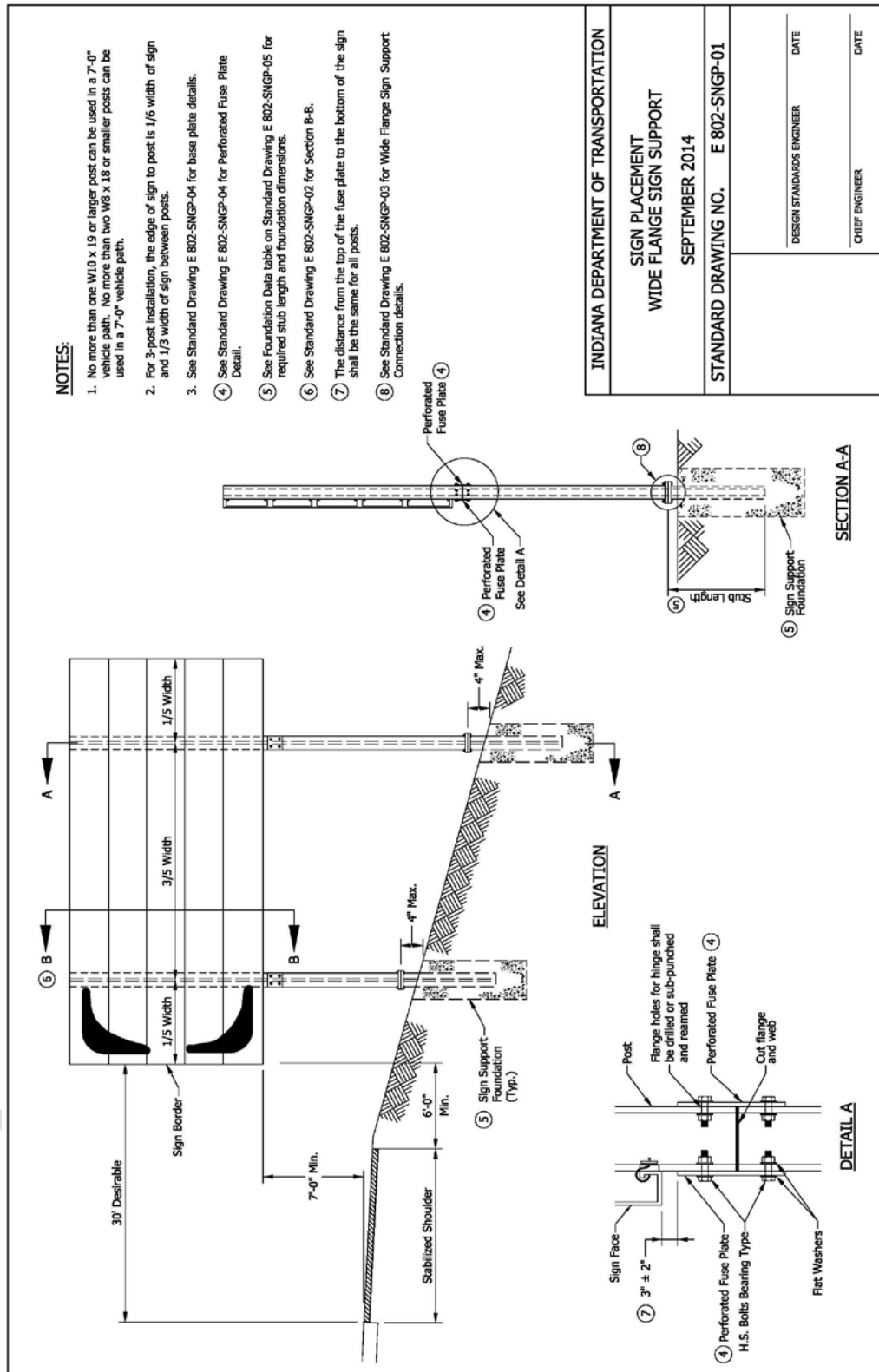
APPROVED MINUTES

## 802-SNGP-01 SIGN PLACEMENT (WITH REVISED MARKUPS)



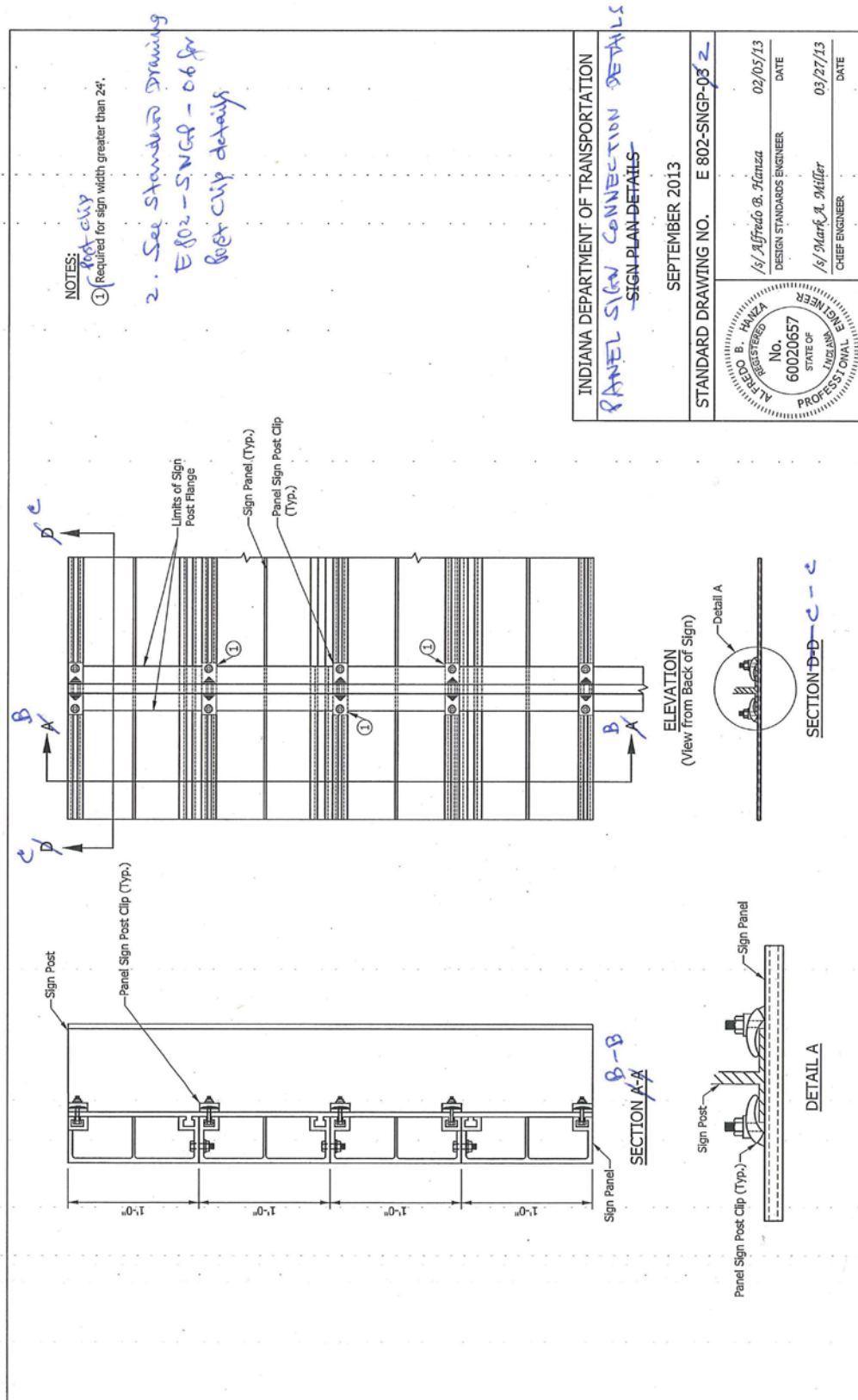
## REVISION TO STANDARD DRAWINGS

## 802-SNGP-01 SIGN PLACEMENT WIDE FLANGE SIGN SUPPORT (REVISED DRAFT)



REVISION TO STANDARD DRAWINGS

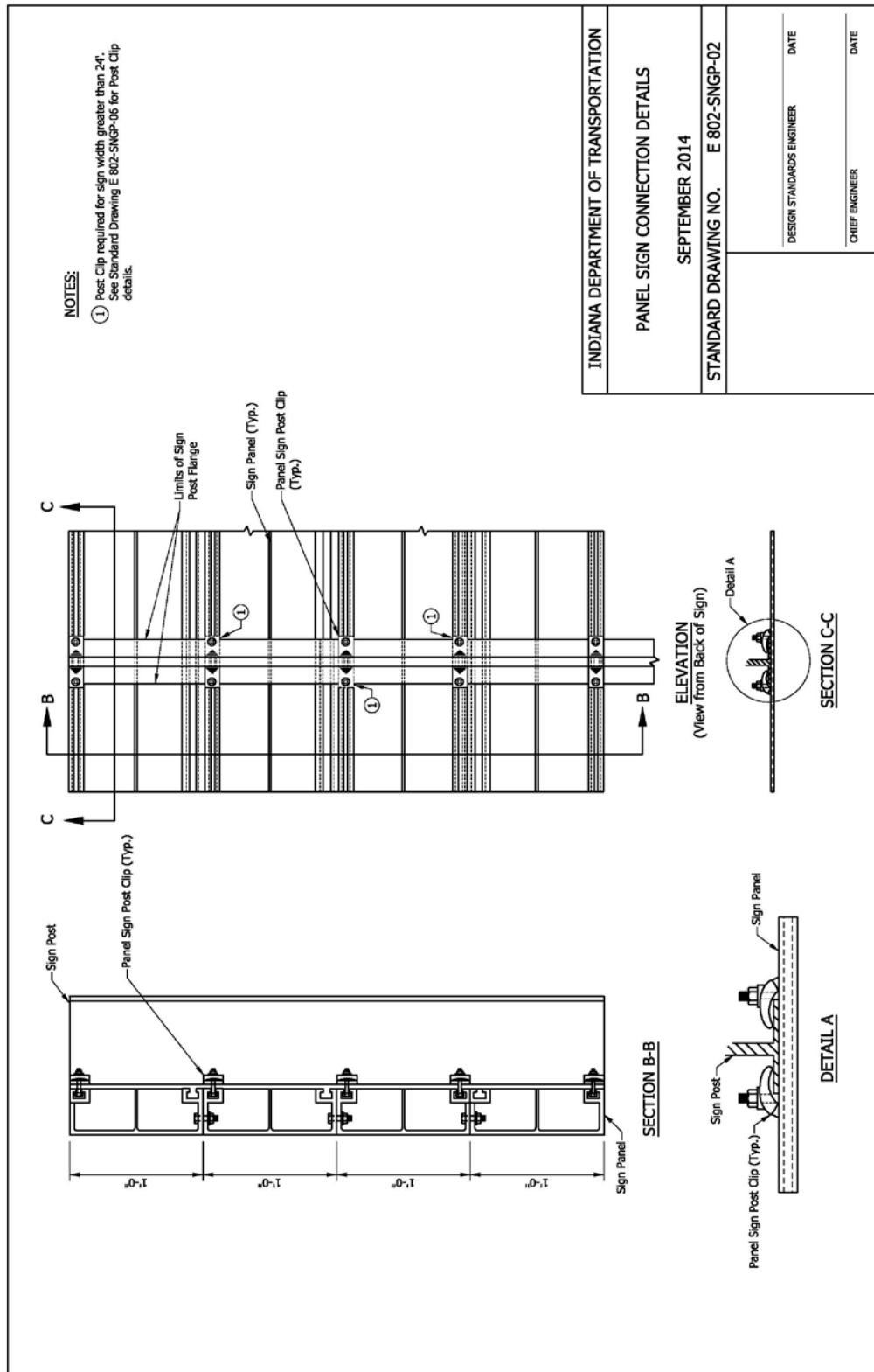
802-SNGP-03 SIGN PLAN DETAILS (WITH MARKUPS)

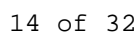




REVISION TO STANDARD DRAWINGS

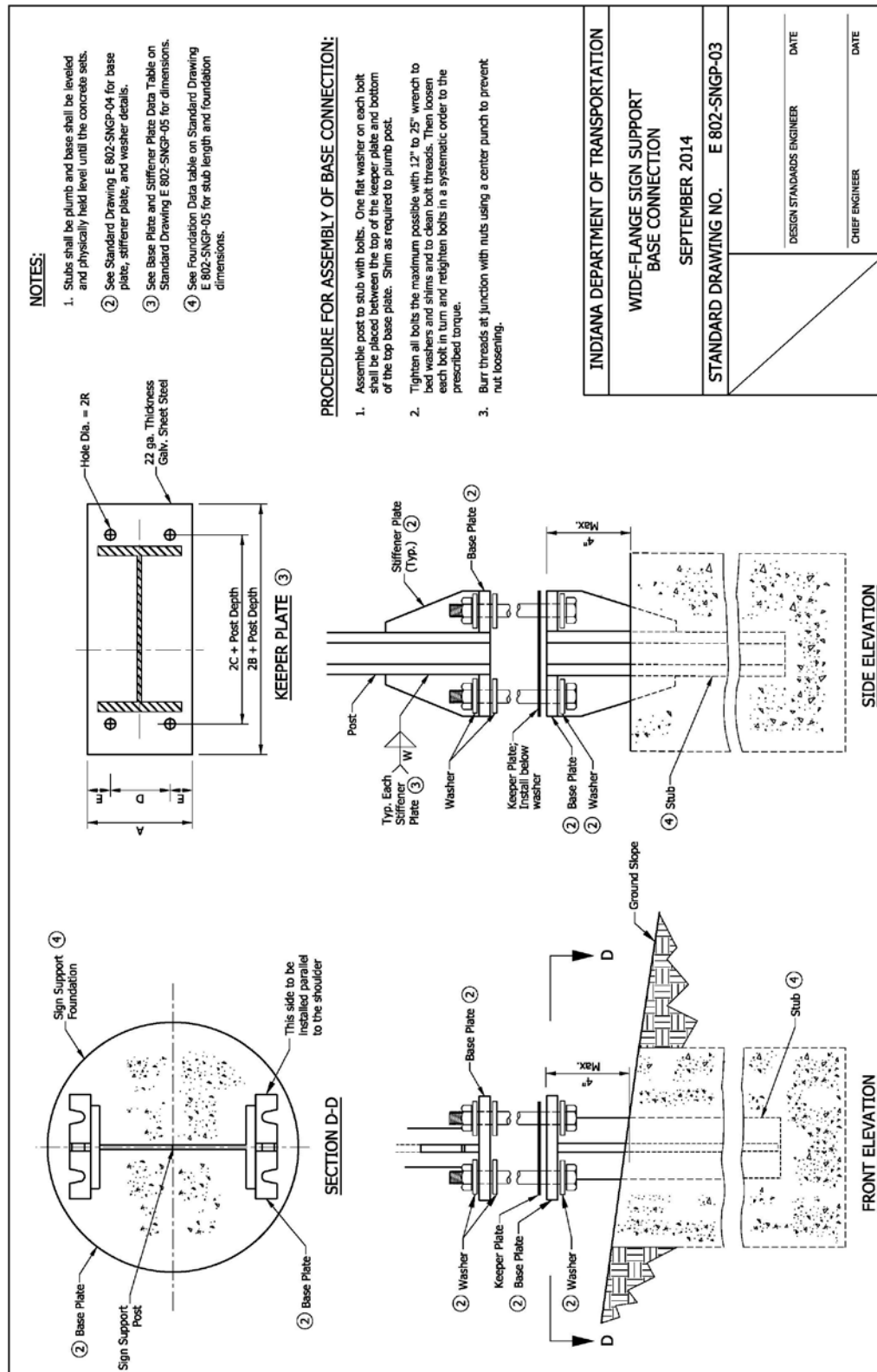
802-SNGP-02 PANEL SIGN CONNECTION DETAILS (DRAFT)





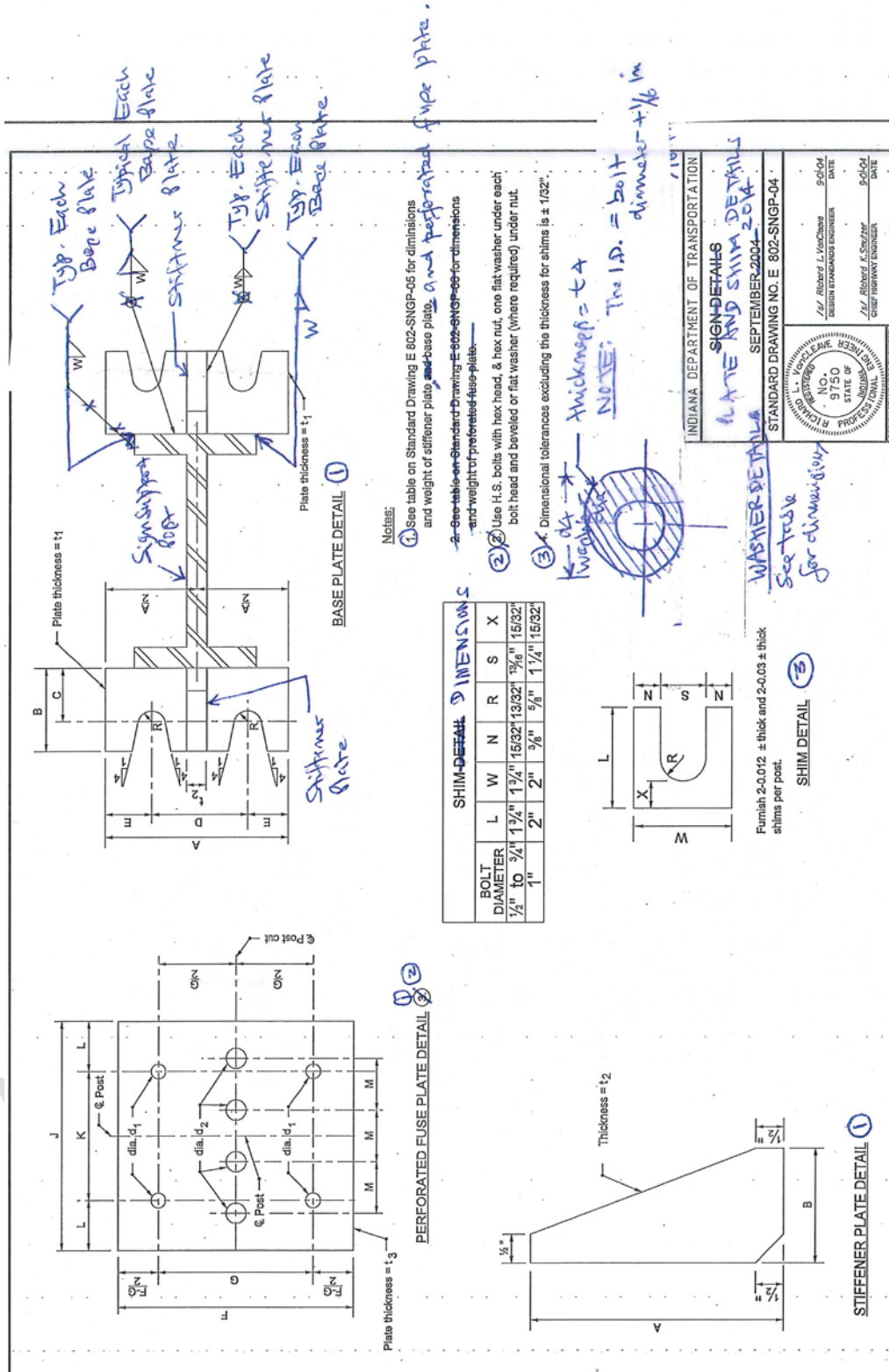
## REVISION TO STANDARD DRAWINGS

## 802-SNGP-03 WIDE-FLANGE SIGN SUPPORT BASE CONNECTION (DRAFT)



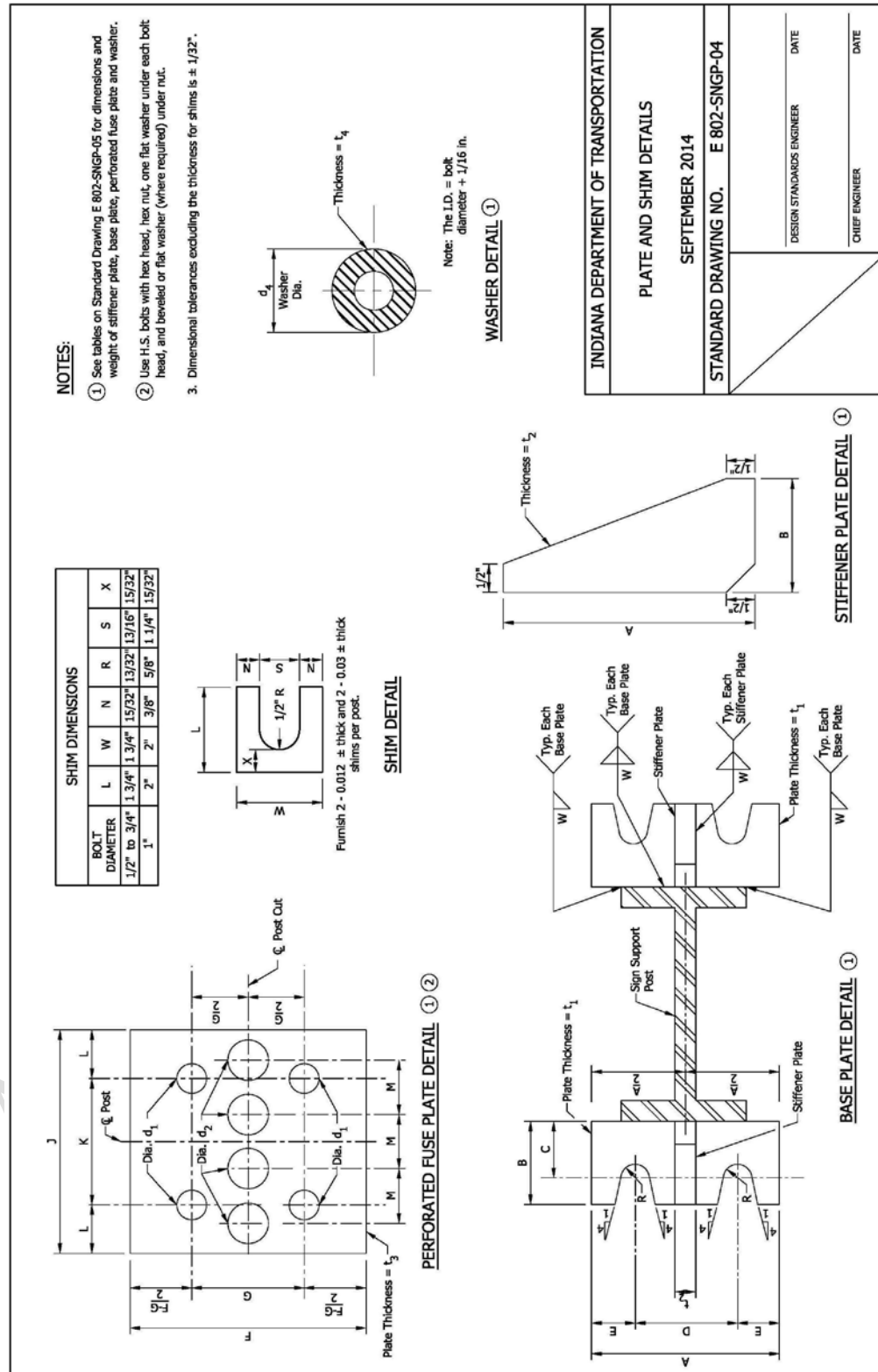
## REVISION TO STANDARD DRAWINGS

## 802-SNGP-04 SIGN DETAILS (WITH REVISED MARKUPS)



## REVISION TO STANDARD DRAWINGS

## 802-SNGP-04 PLATE AND SHIM DETAILS (REVISED DRAFT)




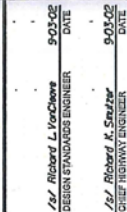
## REVISION TO STANDARD DRAWINGS

802-SNGP-05 SIGN DATA TABLES (WITH REVISED MARKUPS)

BASE PLATE & STIFFENER PLATE DATA TABLE												
Post Size	Bolt Size	Torque in. - lb	Wt. of 4 Plates (One Post), lb	Wt. of 4 Stiffeners (One Post), lb	A	B	C	D	E	R	d4	t1
W6 x 9	1/2" $\phi$ x 2 1/4"	140	5.10	3.33	4 1/2"	2"	1 3/8"	2 1/2"	1"	9/32"	1 3/8"	1/2"
W8 x 10	5/8" $\phi$ x 2 1/2"	300	6.38	4.07	5"	2 1/4"	1 1/2"	2 7/8"	1 1/8"	11/32"	1 1/2"	1/2"
W8 x 13	3/4" $\phi$ x 3"	500	12.6	7.97	6"	2 1/2"	1 3/4"	3 1/8"	1 3/8"	13/32"	1 3/4"	3/4"
W8 x 15	3/4" $\phi$ x 3"	500	12.6	7.97	6"	2 1/2"	1 3/4"	3 1/8"	1 3/8"	13/32"	1 3/4"	3/4"
W8 x 18	3/4" $\phi$ x 3"	500	12.6	7.97	6"	2 1/2"	1 3/4"	3 1/8"	1 3/8"	13/32"	1 3/4"	3/4"
W10 x 19	1" $\phi$ x 3 1/4"	700	14.04	8.66	6"	2 3/4"	1 1/2"	3 5/8"	1 3/8"	17/32"	2 1/4"	3/4"

ADD PERFORATED FUSE PLATE DATA TABLE HERE FROM ST. DR. 802-SNGP-06

ADD FOUNDATION DATA HERE FROM ST. DR. 802-SNGP-07

INDIANA DEPARTMENT OF TRANSPORTATION	
SIGN DATA TABLES	
SEPTEMBER 2002-2014	
STANDARD DRAWING NO. E 802-SNGP-05	
	L. Voelckle DESIGN STANDARDS ENGINEER DATE 9/02/02
	R. Richard K. Smith CHIEF HIGHWAY ENGINEER DATE 9/02/02



## REVISION TO STANDARD DRAWINGS

## 802-SNGP-06 SIGN DATA TABLES (WITH MARKUPS)

Move this table to ST-DW. 802-SNGP-05

Post Size	BOLT SIZE	Wt. of Plate* (One Post), lb	F	G	J	K	L	M	d <sub>1</sub>	d <sub>2</sub>	t <sub>3</sub>	Bolt Tension, lbs
W6 x 9	1/2" x 1 1/2"	1.01	4 1/4"	2"	4"	2 1/4"	7/8"	1"	9/16"	3/4"	1/4"	12000
W8 x 10	1/2" x 1 1/2"	1.01	4 1/4"	2"	4"	2 1/4"	7/8"	1"	9/16"	3/4"	1/4"	12000
W8 x 13	1/2" x 1 1/2"	1.01	4 1/4"	2"	4"	2 1/4"	7/8"	1"	9/16"	3/4"	1/4"	12000
W8 x 15	5/8" x 2 1/4"	1.72	5"	2 1/2"	4"	2 1/4"	7/8"	1"	1 1/16"	3/4"	3/8"	19000
W8 x 18	5/8" x 2 1/4"	2.27	5"	2 1/2"	5 1/4"	2 1/4"	1 1/4"	1 1/4"	1 1/16"	1 1/16"	3/8"	19000
W10 x 19	5/8" x 2 1/4"	1.72	5"	2 1/2"	4"	2 1/4"	7/8"	1"	1 1/16"	3/4"	3/8"	19000

\* Gross weight with holes deducted from weight. Incidental weights of bolts and washers are not included in plan quantities.

**NOTES:**

- See Standard Drawing E 802-SNGP-01 through 07 for details and notes for posts, bolts, washers, etc.

INDIANA DEPARTMENT OF TRANSPORTATION

SIGN DATA TABLES

SEPTEMBER 2008

STANDARD DRAWING NO. E 802-SNGP-06

/s/ Richard C. VanCleave 09/02/08  
DESIGN STANDARDS ENGINEER DATE

/s/ Mark A. Miller 09/02/08  
CHIEF HIGHWAY ENGINEER DATE

Item No.02 03/20/14 (2014 SS) (contd.)  
 Mr. Boruff  
 Date: 3/20/14

REVISION TO STANDARD DRAWINGS

802-SNGP-07 WIDE FLANGE SIGN POST SUPPORT FOUNDATION DATA (WITH MARKUPS)

Move this table to ct. 802-SNGP-05


FOUNDATION DATA				
Type	Post Size	Stub Length	Dia.	Depth
VII	W6 x 9	2'-0	20"	5'
VIII	W8 x 10	2'-0	20"	5'
IX	W8 x 13	2'-0	20"	5'
X	W8 x 15	2'-6	24"	6'
XI	W8 x 18	2'-6	24"	6'
XII	W10 x 19	2'-6	24"	7'

INDIANA DEPARTMENT OF TRANSPORTATION

**WIDE FLANGE SIGN POST SUPPORT FOUNDATION DATA**

MARCH 2004

STANDARD DRAWING NO. 802-SNGP-07



DESIGN STANDARDS ENGINEER

DESIGN STANDARDS ENGINEER

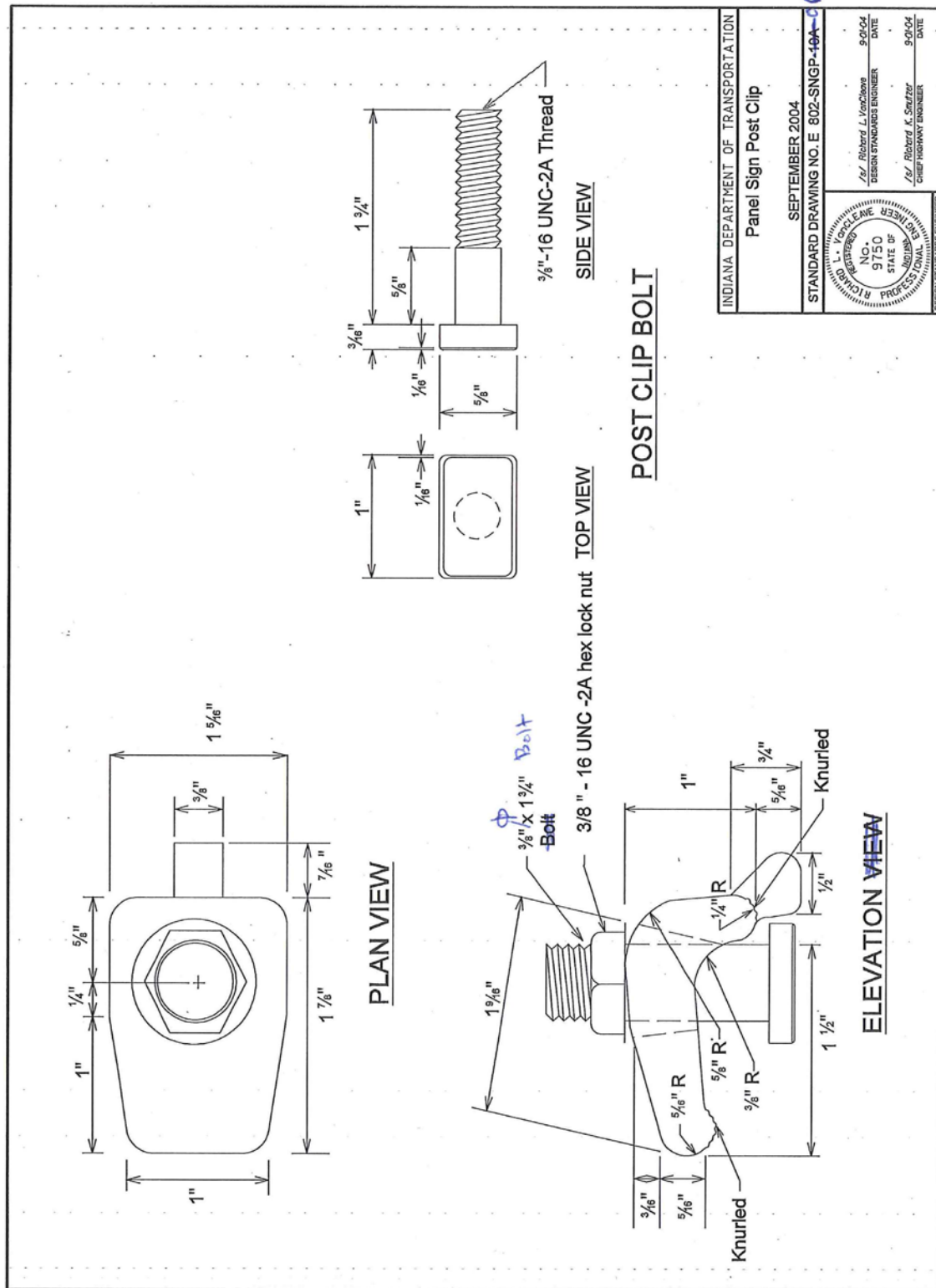
DESIGN STANDARDS ENGINEER



INDIANA DEPARTMENT OF TRANSPORTATION	WIDE FLANGE SIGN SUPPORT DATA TABLES	SEPTEMBER 2014	STANDARD DRAWING NO. E 802-SNGP-05
			DESIGN STANDARDS ENGINEER
			DATE
			CHIEF ENGINEER
			DATE

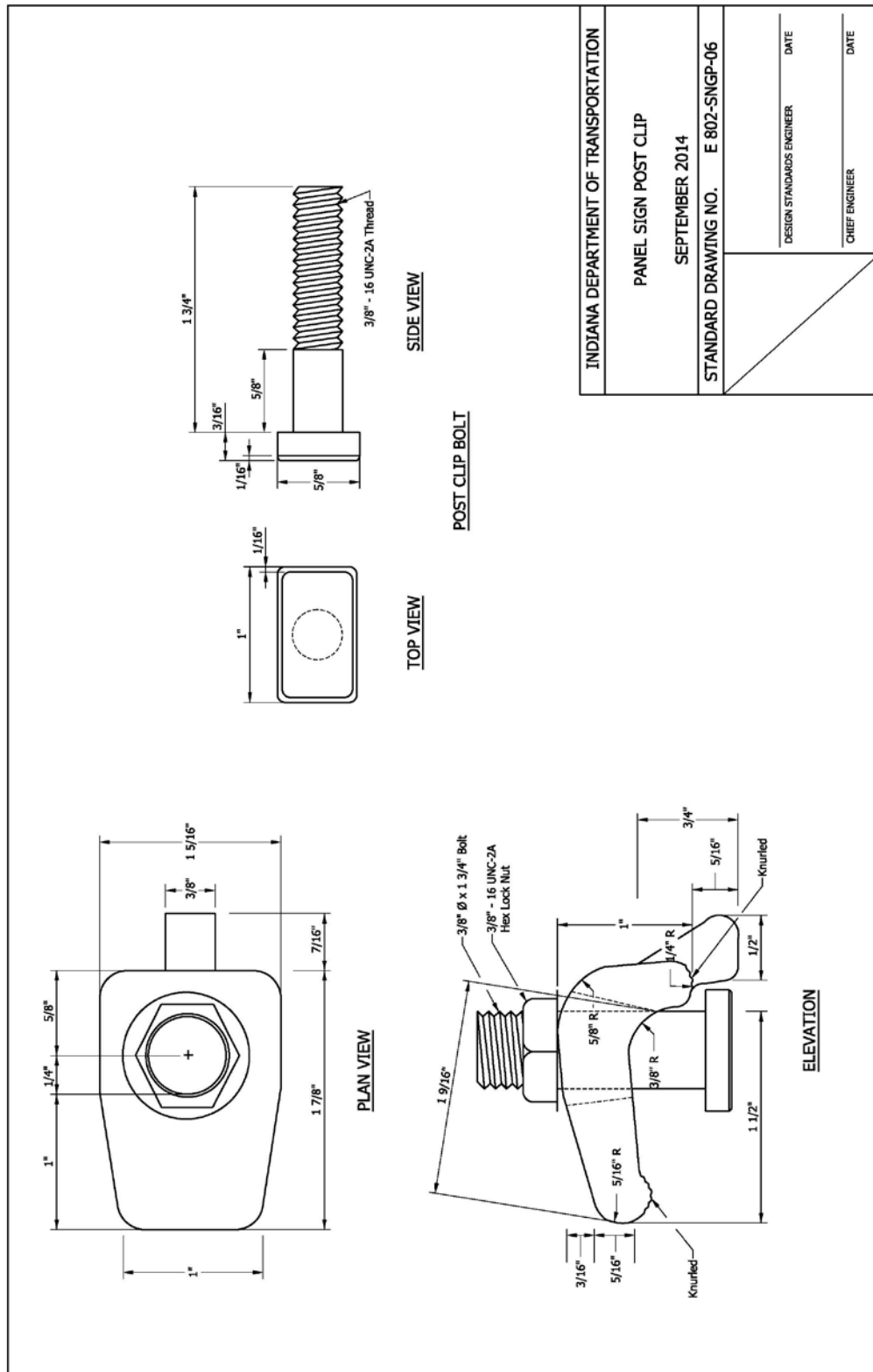
REVISION TO STANDARD DRAWINGS

802-SNGP-10A PANEL SIGN POST CLIP (WITH MARKUPS)



REVISION TO STANDARD DRAWINGS

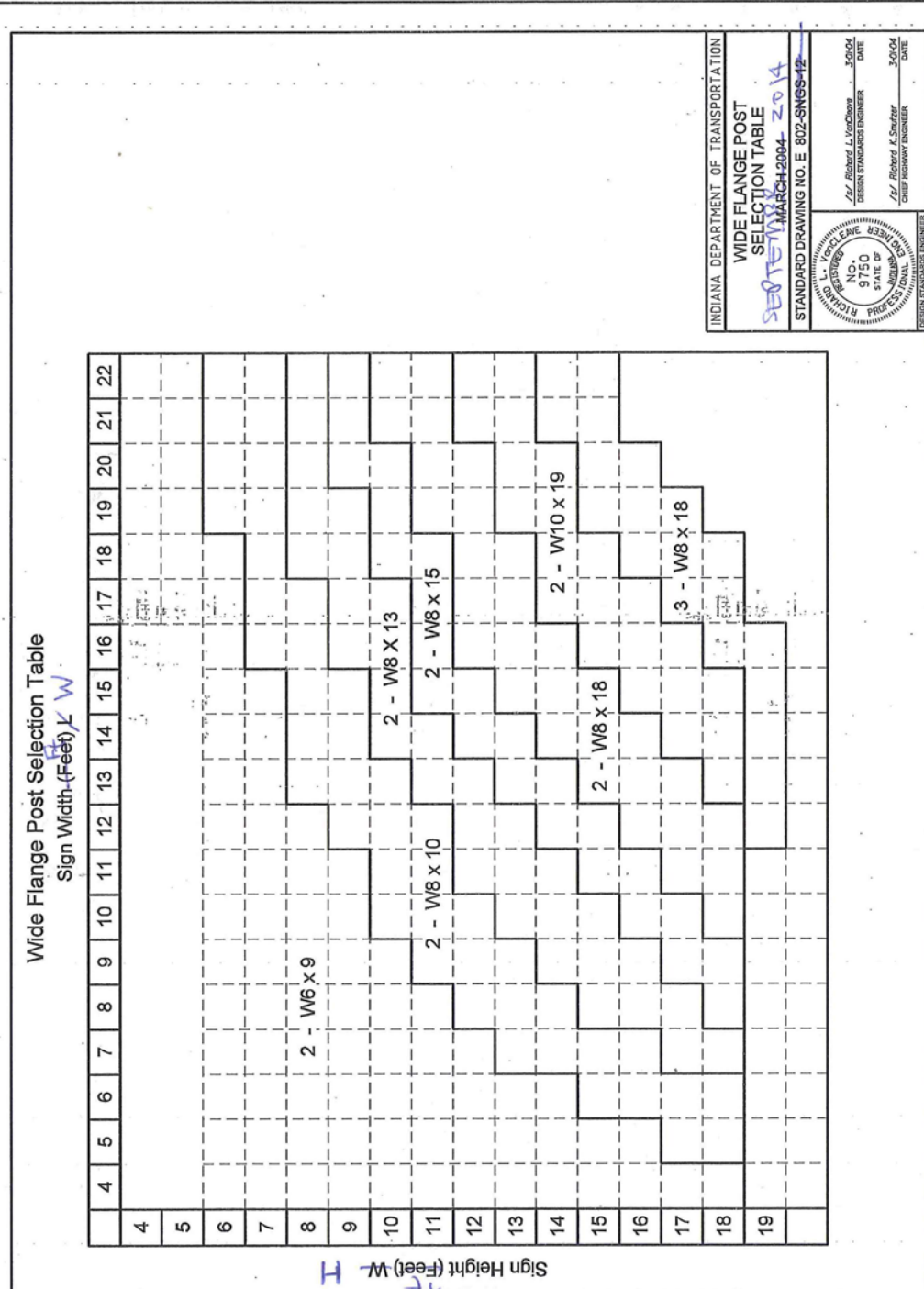
802-SNGP-06 PANEL SIGN POST CLIP (DRAFT)



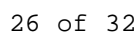
Item No.02 03/20/14 (2014 SS) (contd.)  
 Mr. Boruff  
 Date: 3/20/14

REVISION TO STANDARD DRAWINGS

802-SNGS-12 WIDE FLANGE POST SELECTION TABLE (WITH MARKUPS)

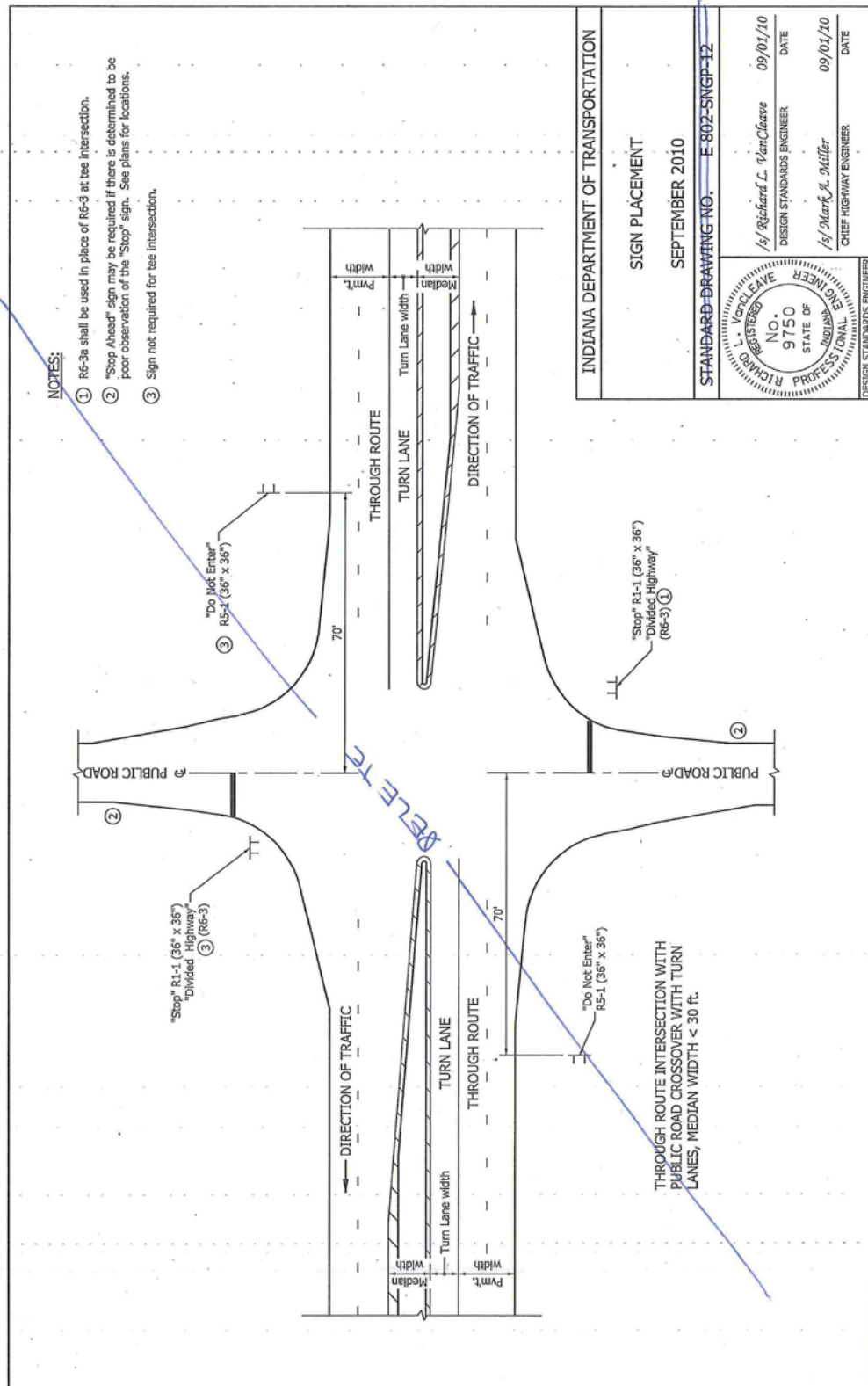






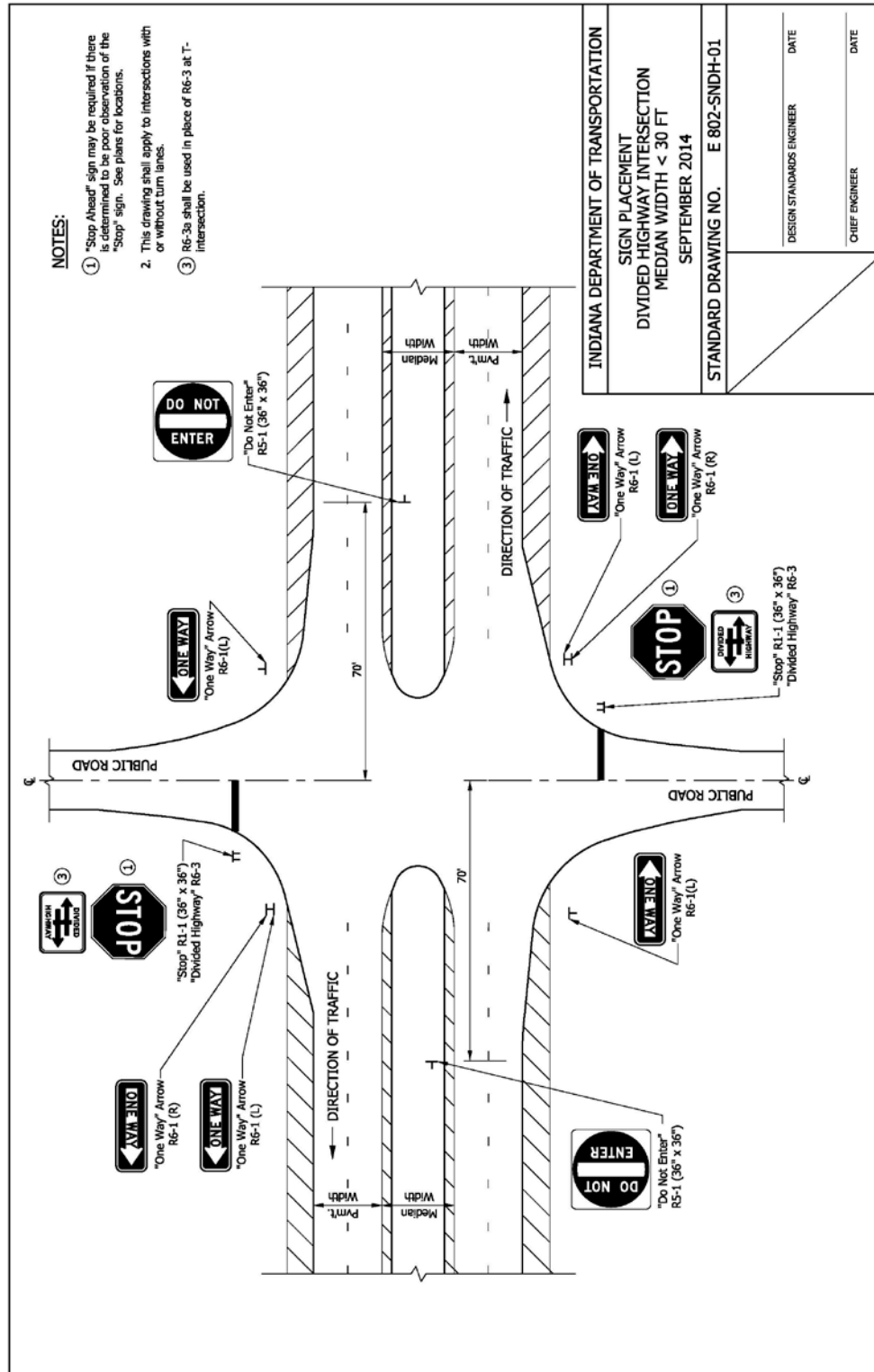
## REVISION TO STANDARD DRAWINGS

## 802-SNGP-12 SIGN PLACEMENT (WITH MARKUPS)



REVISION TO STANDARD DRAWINGS

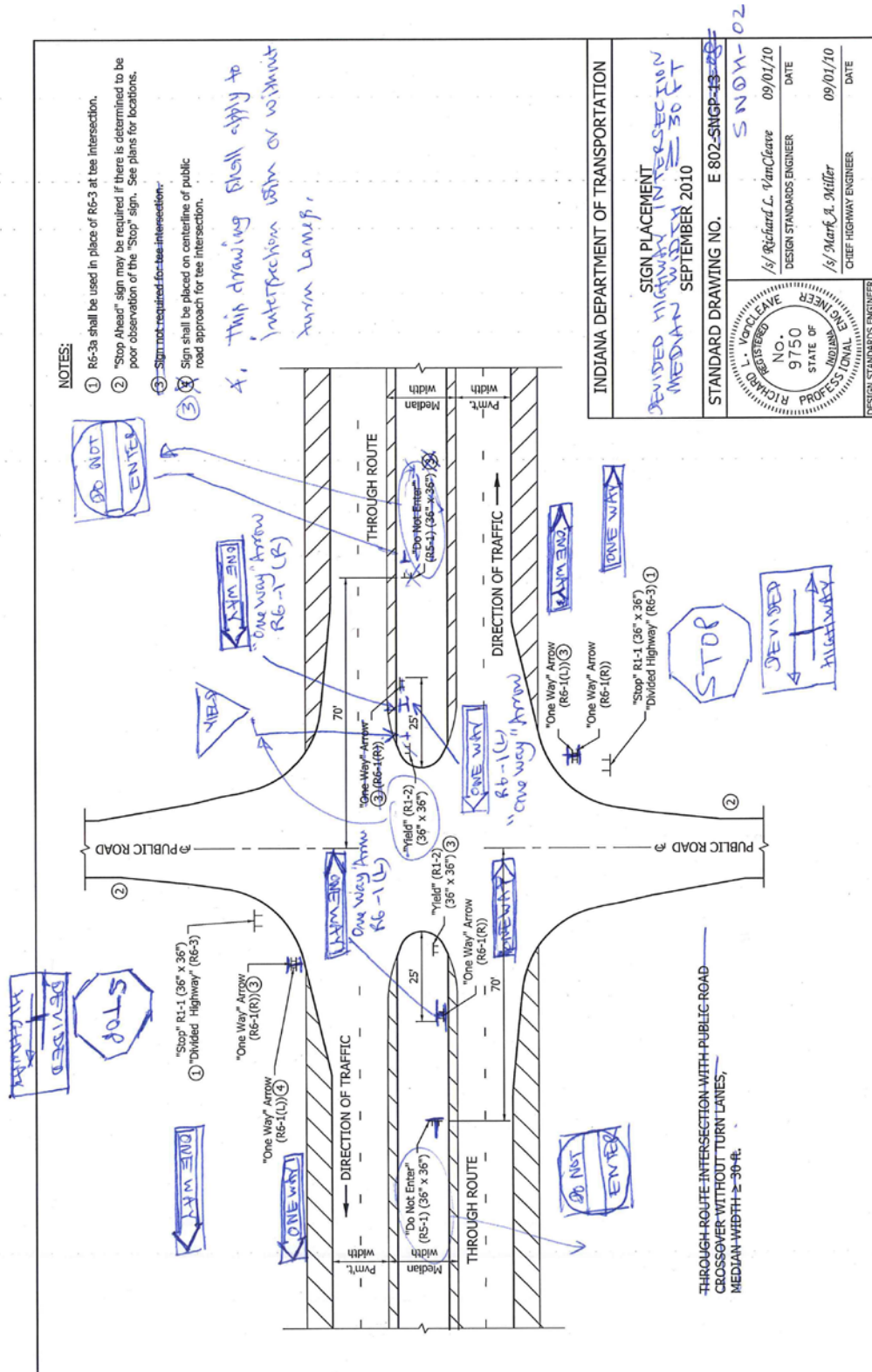
802-SNDH-01 SIGN PLACEMENT DIVIDED HIGHWAY INTERSECTION MEDIAN WIDTH < 30 FT (DRAFT)





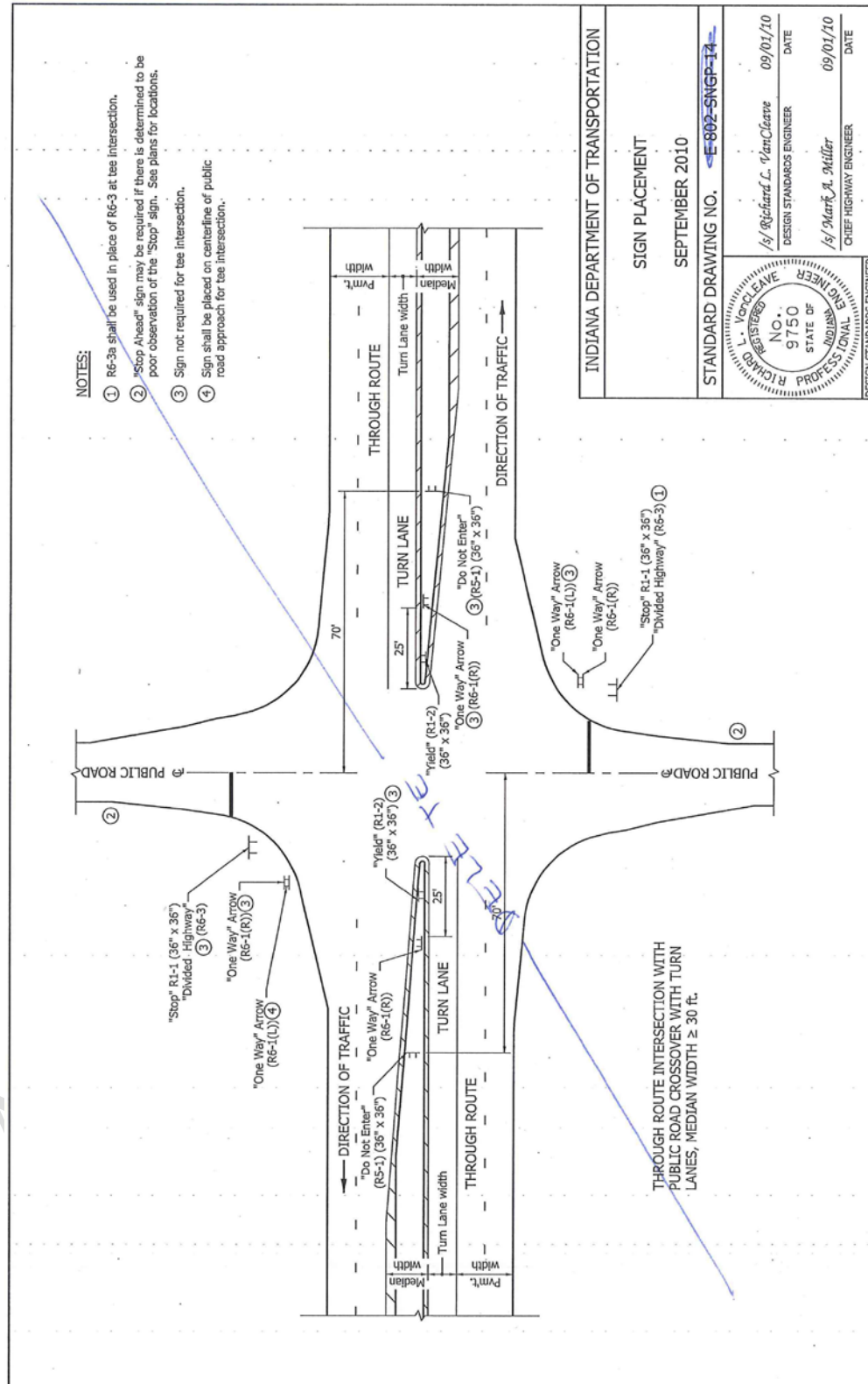
## REVISION TO STANDARD DRAWINGS

## 802-SNDH-13 SIGN PLACEMENT (WITH MARKUPS)



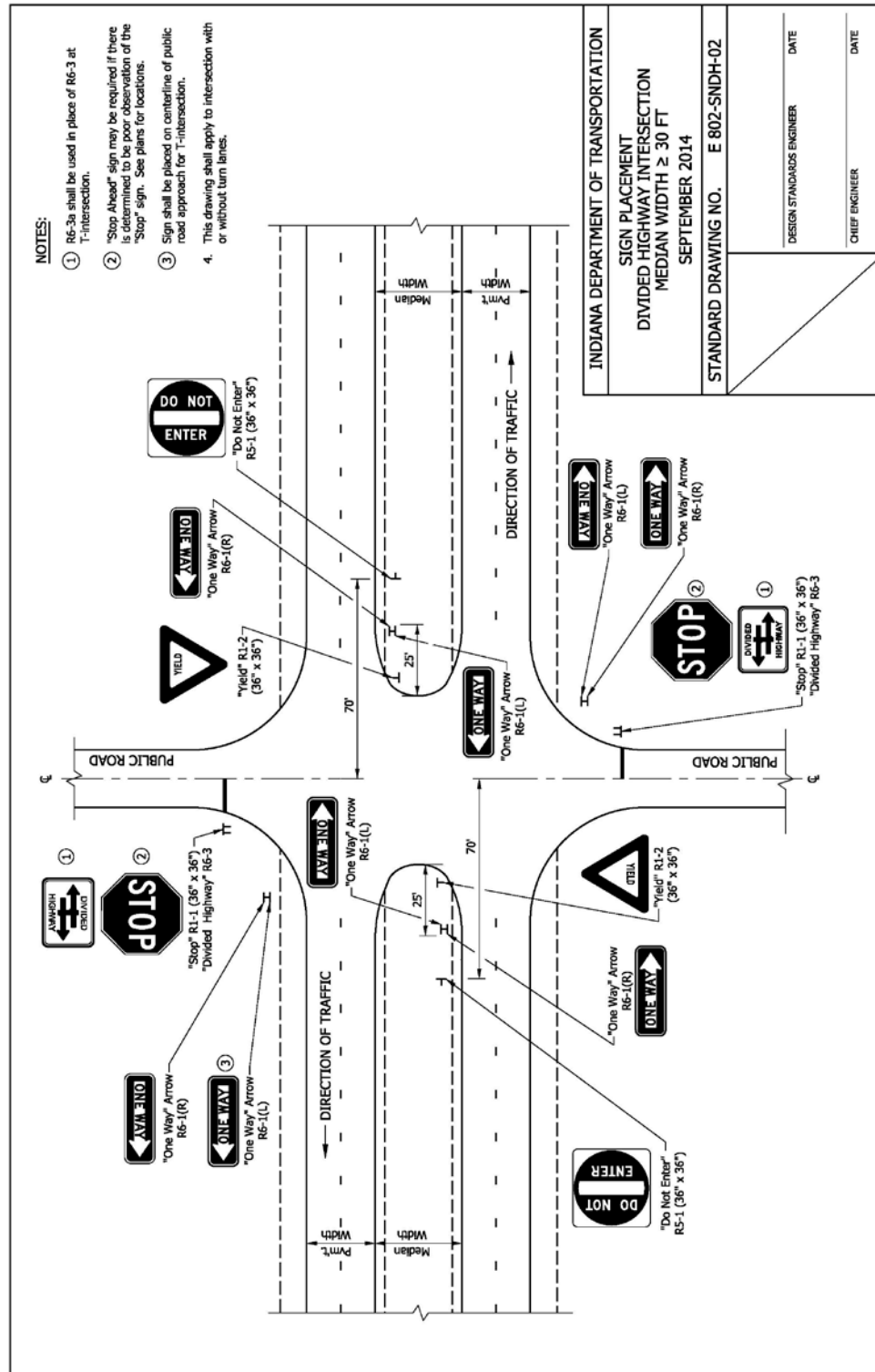
## REVISION TO STANDARD DRAWINGS

## 802-SNGP-14 SIGN PLACEMENT (WITH MARKUPS)



## REVISION TO STANDARD DRAWINGS

802-SNDH-02 SIGN PLACEMENT DIVIDED HIGHWAY INTERSECTION MEDIAN WIDTH  
 > 30 FT (DRAFT)



COMMENTS AND ACTION

STANDARD DRAWINGS 802-SNGP 01 THRU -14; 802-SNDH-01 AND -02

DISCUSSION: This item was introduced and presented by Mr. Boruff who stated the reasoning behind these standard drawing revisions, as shown on the proposal sheet. Mr. Boruff further explained some of the drawing revisions shown. Mr. Garg handed out revised drawings for E 802-SNGP-04 and -05 showing plate and shim details which clarify the washer type and thickness. Also revised is drawing E 802-SNGP-01, which clarifies Note 1 regarding the 7 ft wide vehicle path.

Mr. Miller asked about note 1 on sheet E 802-SNGP-01, concerning the distance between posts. Mr. Pankow offered clarification that there are to be no more than two posts within 7 ft of each other. Mr. Miller asked if that information should be in the design manual, instead of on the standard drawing, and if designed correctly, that note would not be necessary. Further discussion ensued concerning sign design and layout and placement. Following the discussion, it was determined to leave the note with adding a word "vehicle".

Mr. Boruff revised his motion. Mr. Vancleave seconded.

Motion: Mr. Boruff Second: Mr. Vancleave Ayes: 9 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 type="checkbox"/> 2016 Standard Specifications Book <input type="checkbox"/> Revise Pay Items List
Recurring Special Provision possibly affected: NONE	<input type="checkbox"/> Create RSP (No. _____) Effective _____ Letting RSP Sunset Date: _____
Standard Sheets affected: [see proposal sheet]	<input type="checkbox"/> Revise RSP (No. _____) Effective _____ Letting RSP Sunset Date: _____
Design Manual Sections affected: NONE	Standard Drawing Effective <u>Sep. 01, 2014</u> <input type="checkbox"/> Create RPD (No. _____) <input type="checkbox"/> Effective _____ Letting <input type="checkbox"/> Technical Advisory
GIFE Sections cross-references: NONE	GIFE Update Req'd.? Y <input type="checkbox"/> N <input checked="" type="checkbox"/> By _____ Addition or _____ Revision
	Frequency Manual Update Req'd? Y <input type="checkbox"/> N <input type="checkbox"/> By _____ Addition or _____ Revision
	Received FHWA Approval? <u>YES</u>