



FIRST DRAFT MINUTES

March 20, 2014 Standards Committee Meeting

(Changes to the Agenda items by the Action of the Committee
shown as highlighted **yellow**)

MEMORANDUM

March 21, 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 | Tom Duncan, FHWA |
| Jim Reilman, INDOT | Scott Trammell, INDOT |
| Kyle Smith, INDOT | Lalit Garg, INDOT |
| Lana Podorvanova, INDOT | Yuhui Hu, INDOT |
| Paul Berebitsky, ICA | 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

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

ACTION:

PASSED AS REVISED

| | | | |
|-----------------------------|-----------------------------------|------------------------------------------------------------|-----------------------|
| Item No. 02 | 3/20/14 (2014 SS) | Mr. Boruff | pg 09 |
| 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 | |

~~802-SNCP-06~~
~~802-SNCP-07~~

802-SNGP-10A06
~~802-SNCS-12SNGP-07~~
~~802-SNCP-11SNDH-01~~

~~802-SNCP-12~~
~~802-SNCP-13SNDH-02~~

~~802-SNCP-14~~

~~SIGN DATA TABLES~~
~~WIDE FLANGE SIGN POST SUPPORT~~
~~FOUNDATION DATA~~
PANEL SIGN POST CLIP
WIDE FLANGE POST SELECTION TABLE
SIGN PLACEMENT *DIVIDED HIGHWAY*
INTERSECTION MEDIAN WIDTH < 30 FT
~~SIGN PLACEMENT~~
SIGN PLACEMENT *DIVIDED HIGHWAY*
INTERSECTION MEDIAN WIDTH ≥ 30 FT
~~SIGN PLACEMENT~~

ACTION:

PASSED AS REVISED

cc: Committee Members
FHWA
ICA

FIRST DRAFT MINUTES

Mr. Pankow
Date: 3/20/14

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

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

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

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.

FIRST DRAFT 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.

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

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

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

(continued)

Submitted By: David Boruff

Title: Manager, Office of Traffic Administration

Organization: INDOT

Phone Number: 317-234-7975

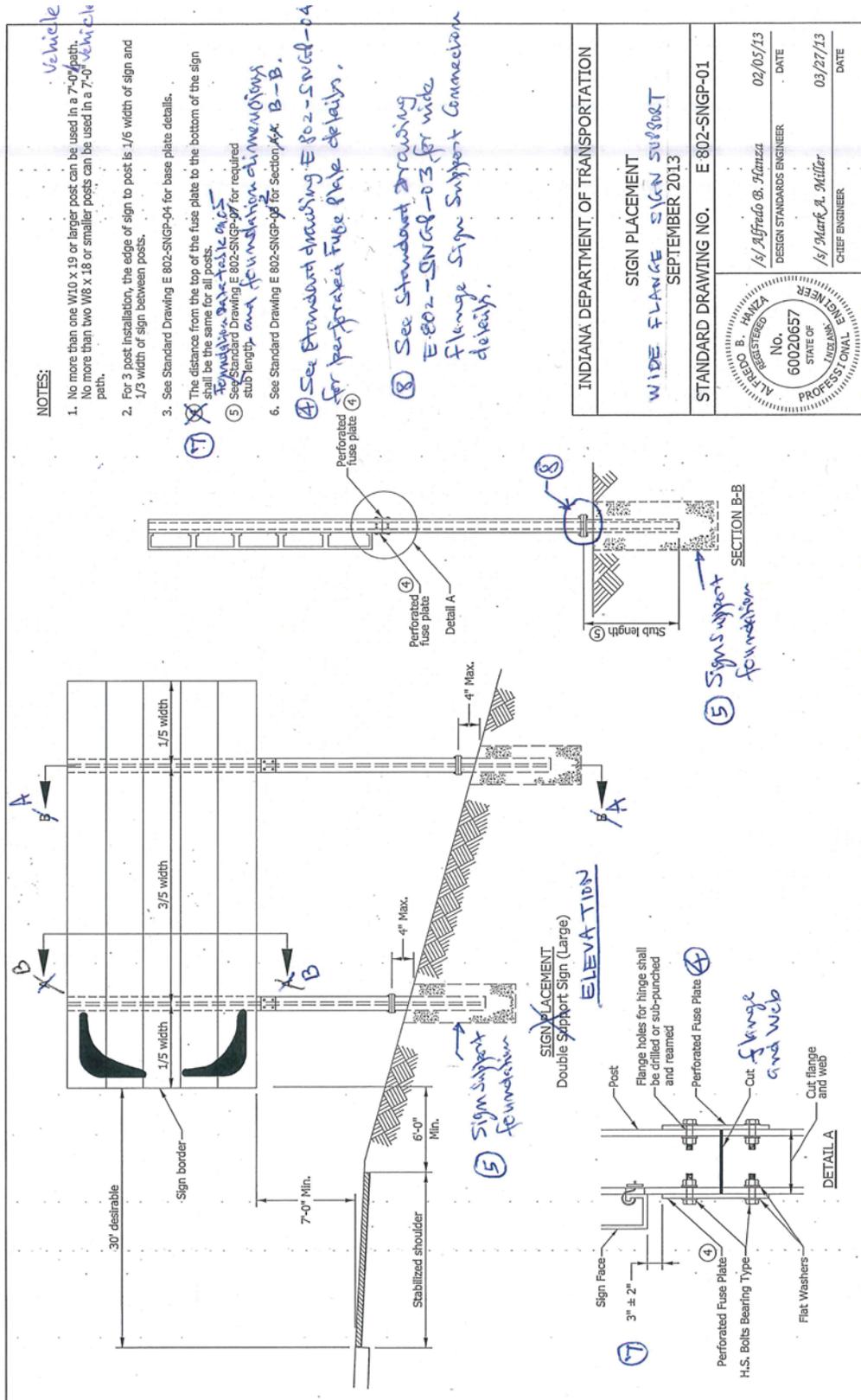
Date: 2-24-2014

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

FIRST DRAFT MINUTES

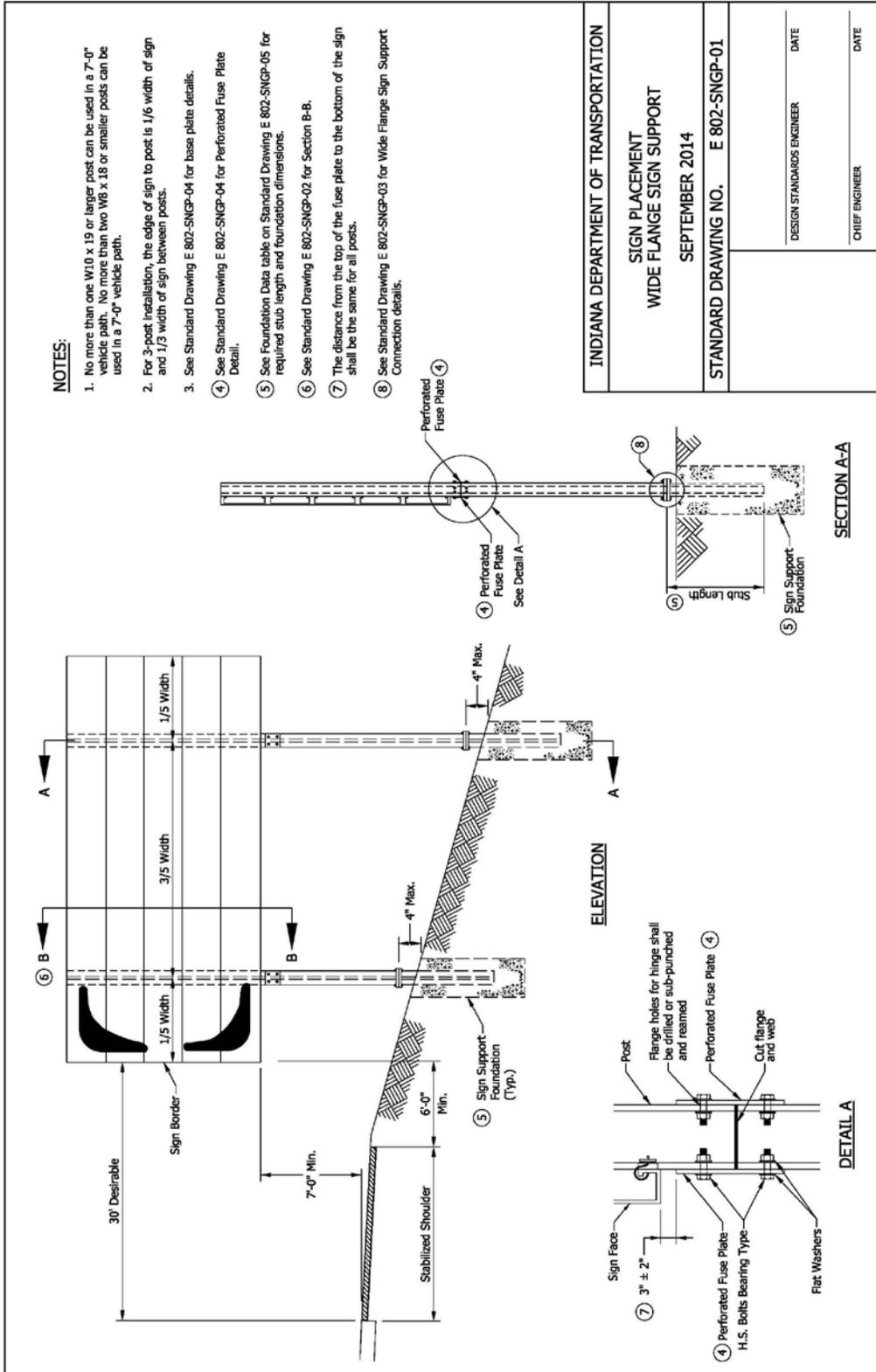
REVISION TO STANDARD DRAWINGS

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



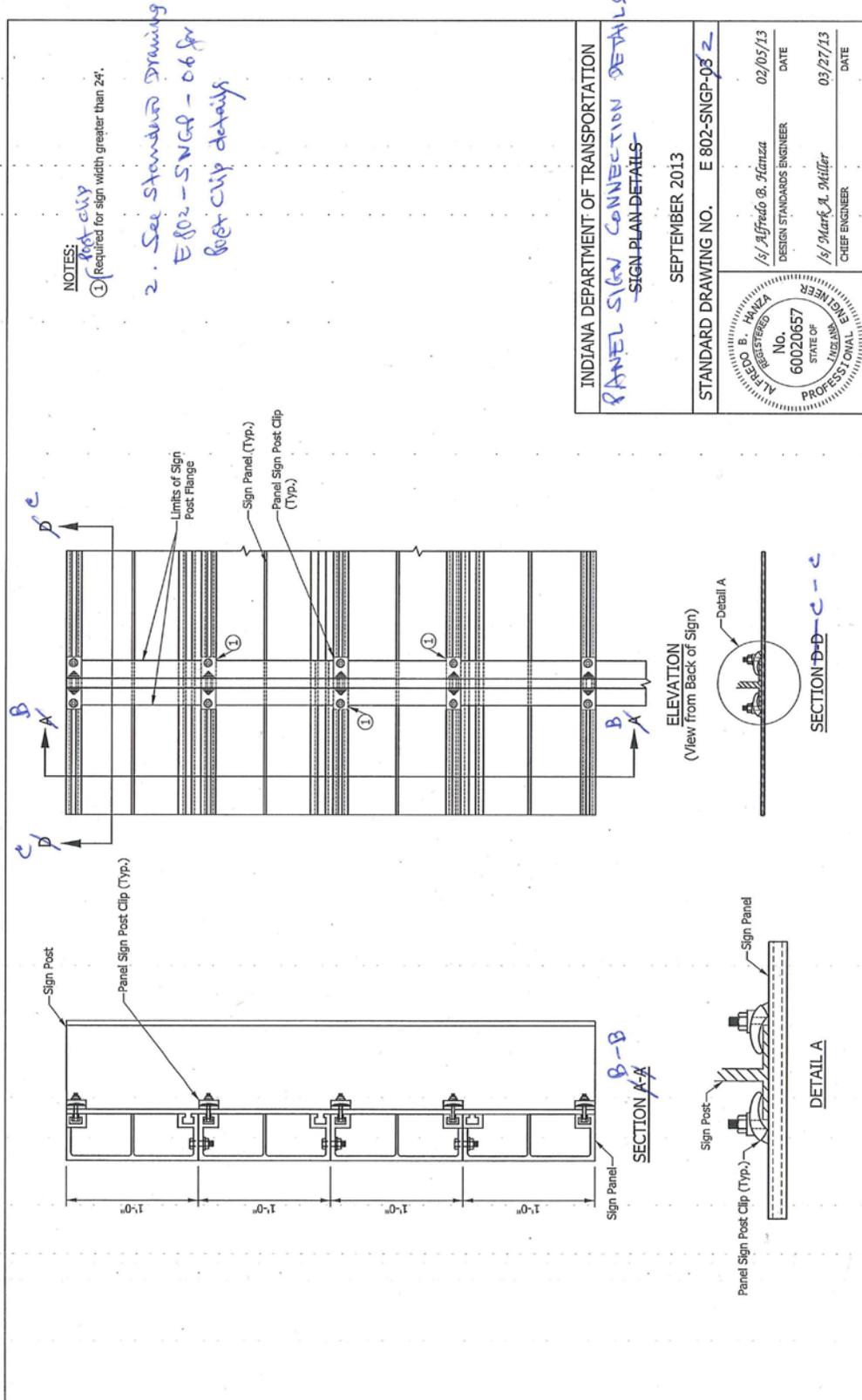
REVISION TO STANDARD DRAWINGS

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



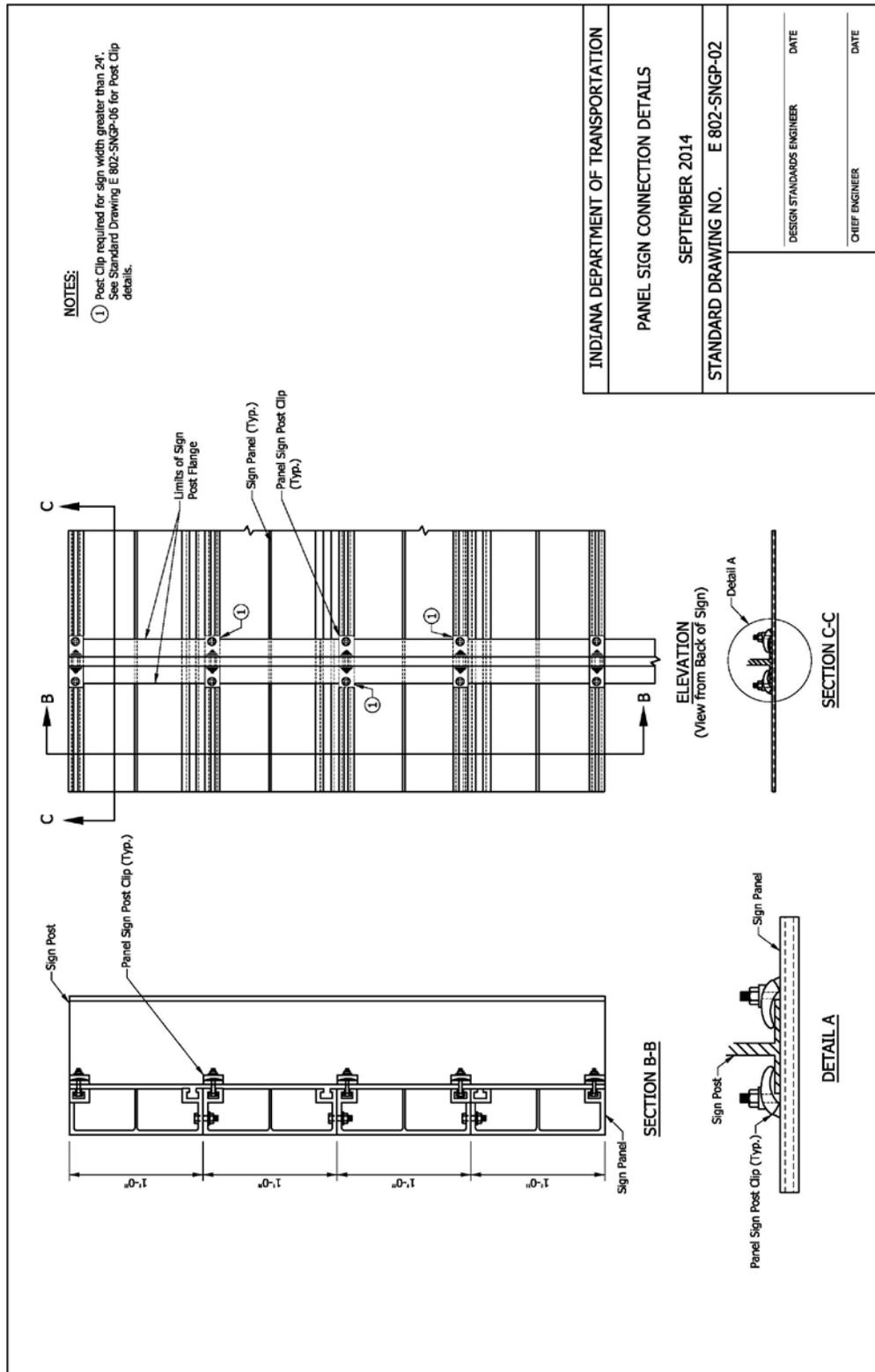
REVISION TO STANDARD DRAWINGS

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



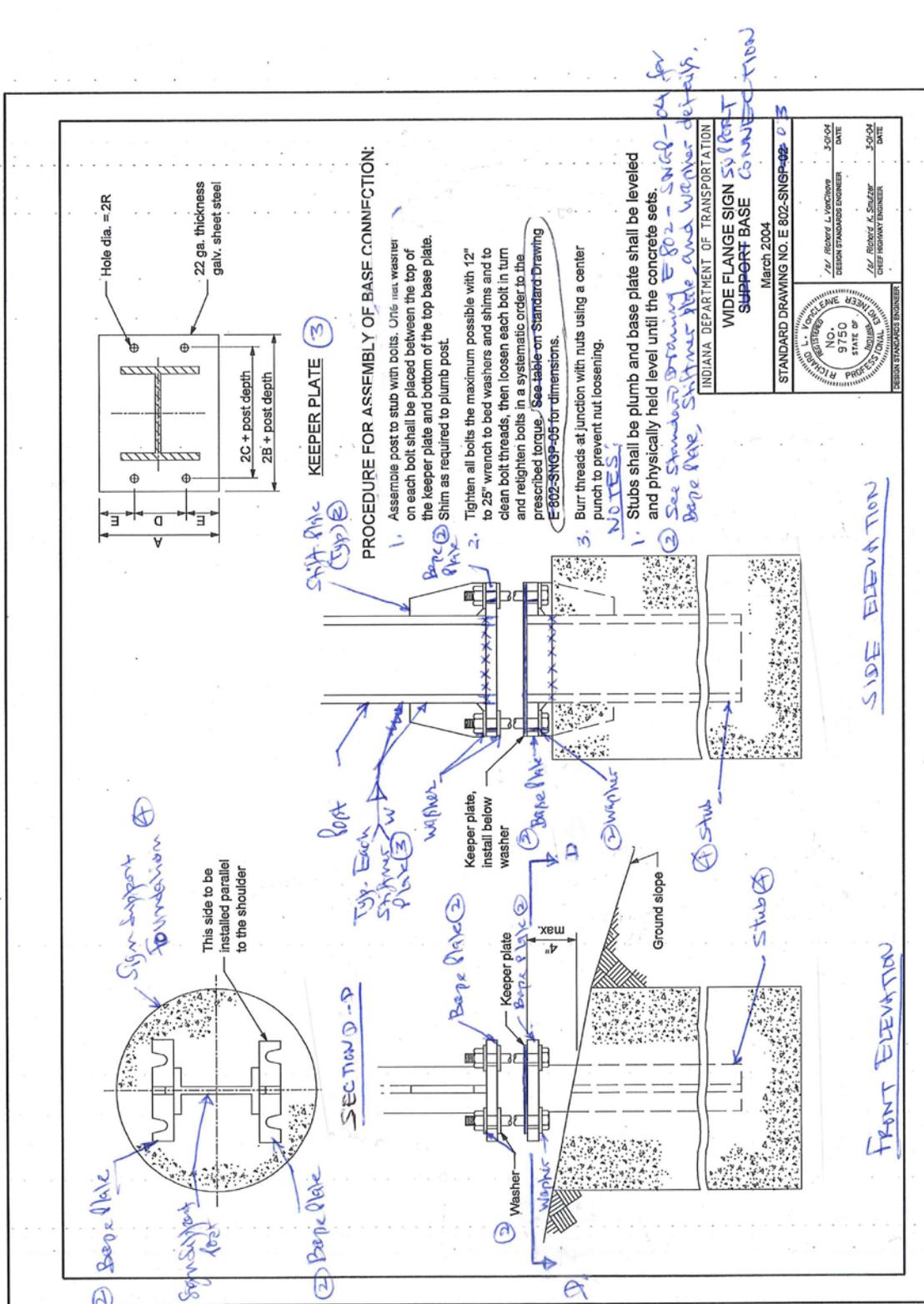
REVISION TO STANDARD DRAWINGS

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



REVISION TO STANDARD DRAWINGS

802-SNGP-02 WIDE FLANGE SIGN SUPPORT BASE (WITH MARKUPS)

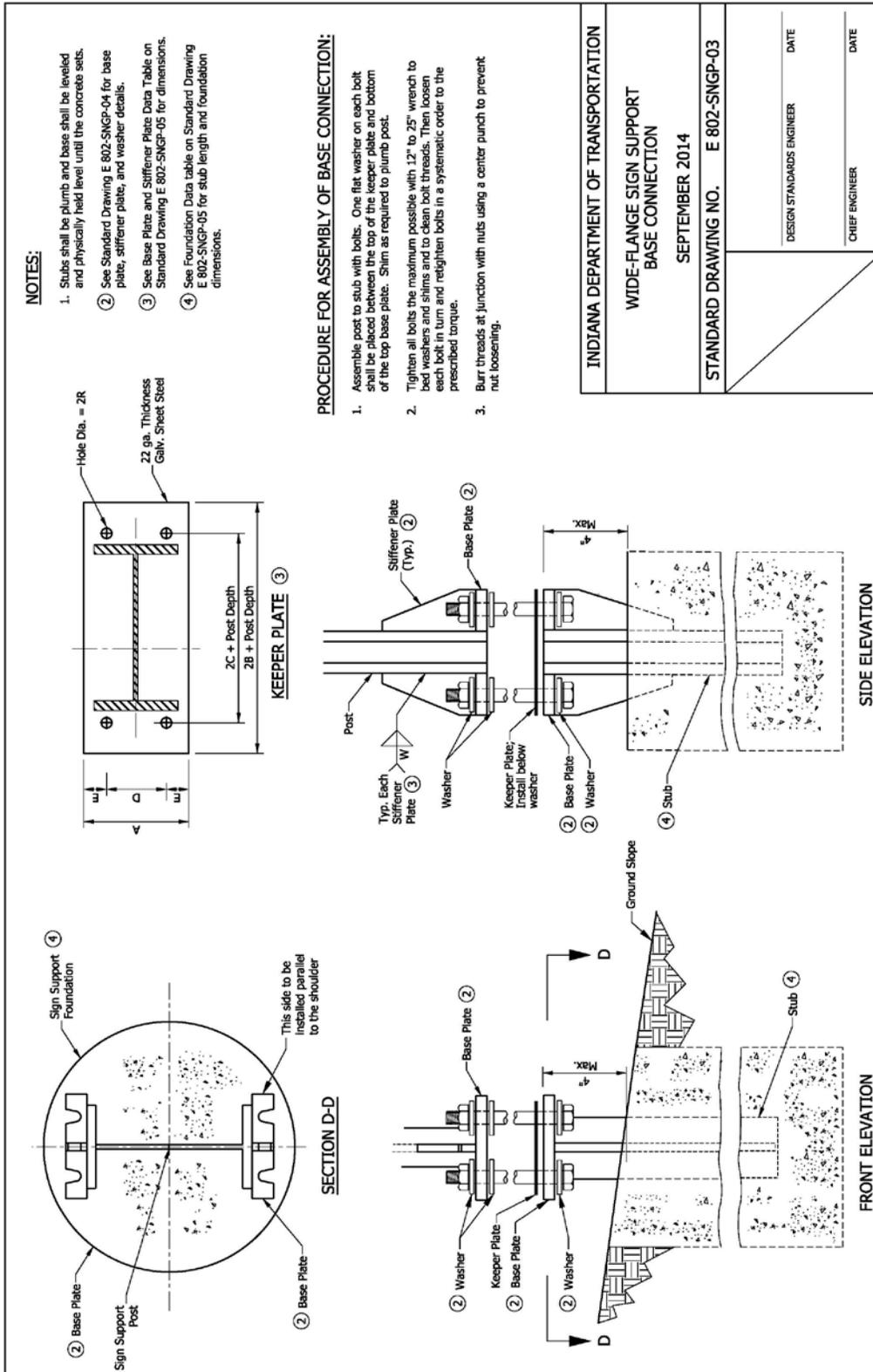


(A) See foundation data table on Standard Drawing E-802-SNGP-05 for stub length & foundation dimensions.

(3) See Base Plate and Stiffener Plate Data Table on Standard Drawing E-802-SNGP-05 for dimensions.

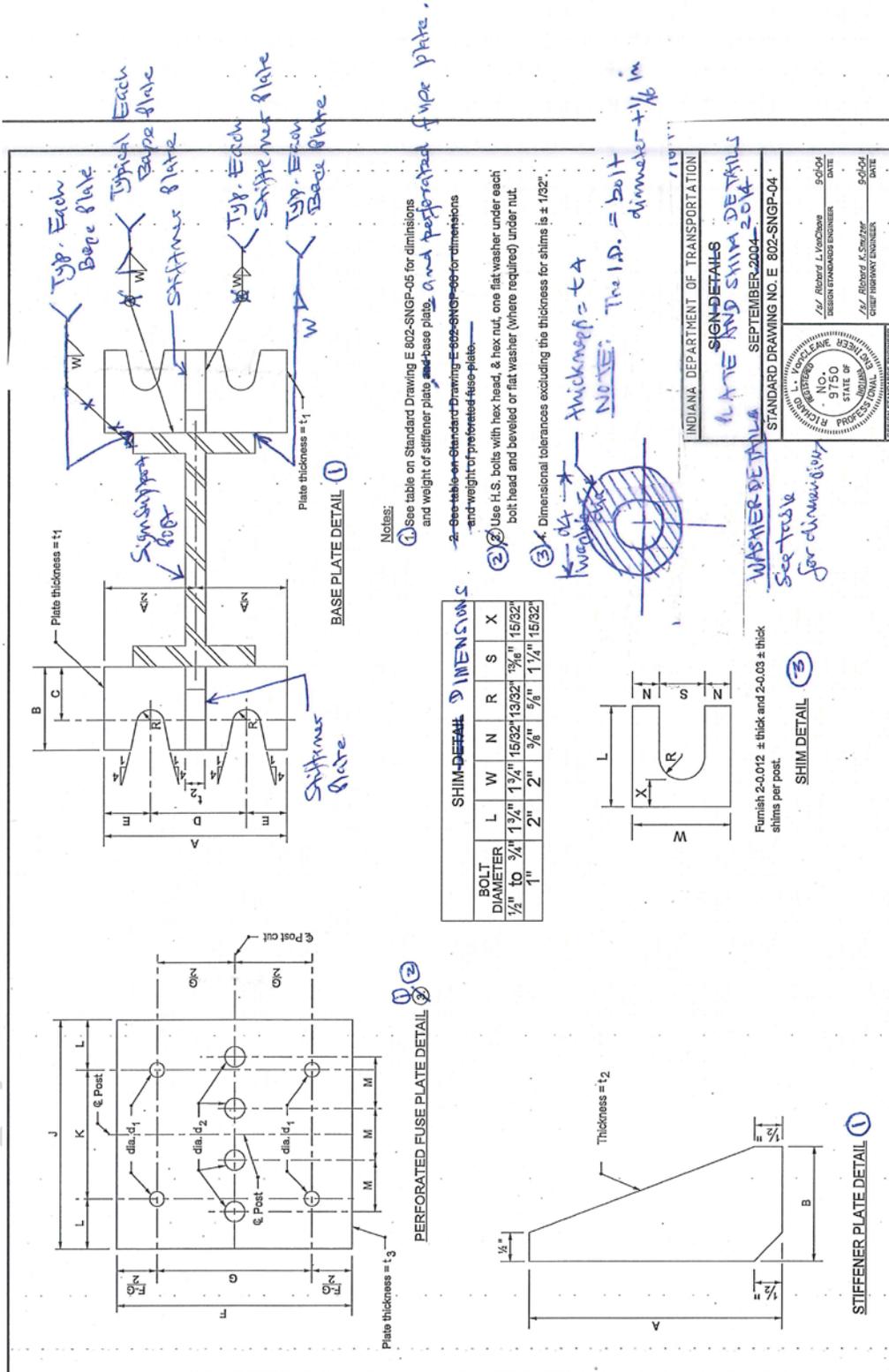
REVISION TO STANDARD DRAWINGS

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



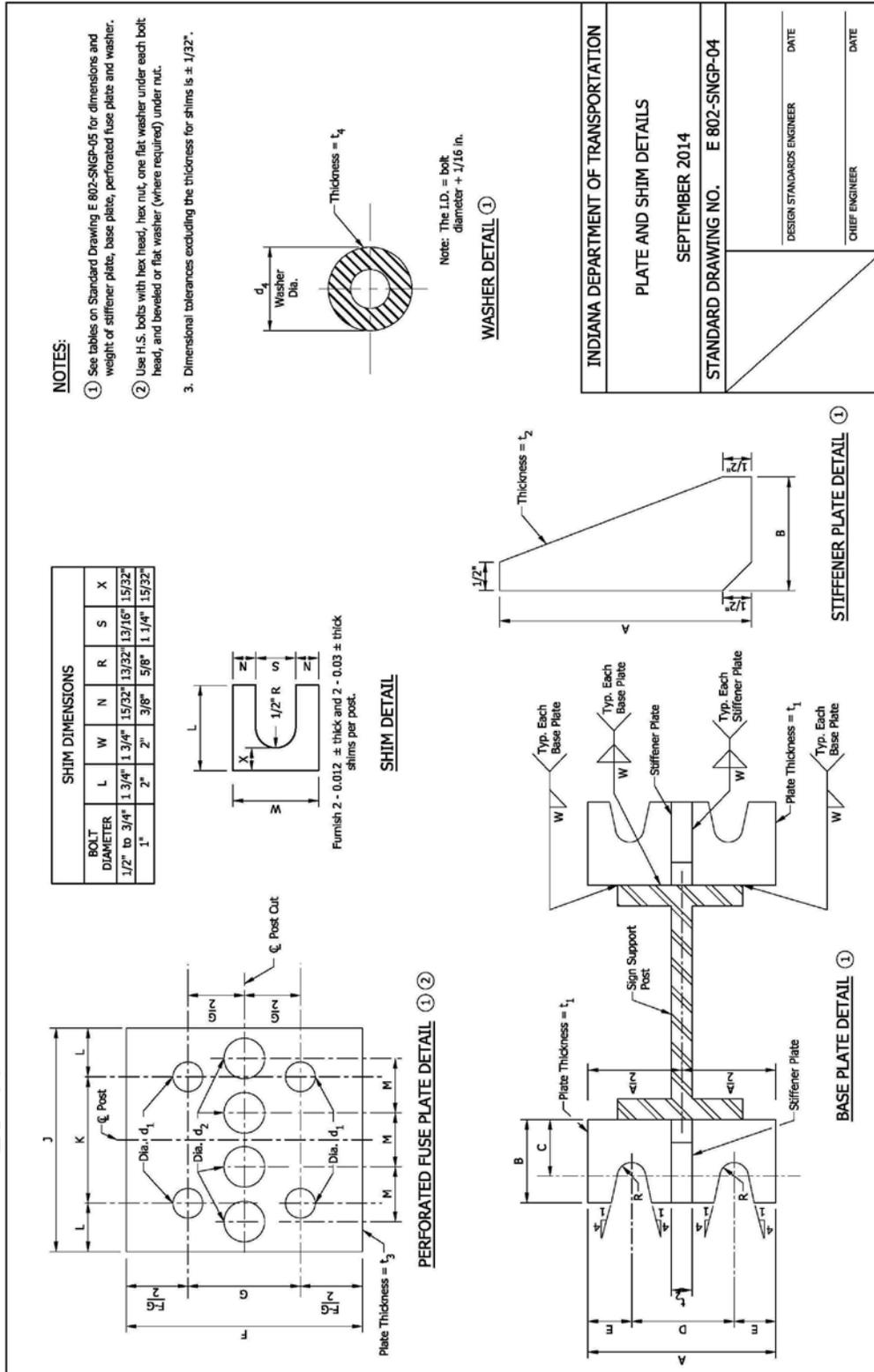
REVISION TO STANDARD DRAWINGS

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 | t2 | W | t4 | |
| W6 x 9 | 1/2" ϕ x 2 1/4" | 140 | 5.10 | 3.33 | 4 1/2" | 2" | 1 3/8" | 2 1/2" | 1" | 9/28" | 1 3/8" | 1/2" | 1/2" | 3/16" | 3/8" | t4 |
| W8 x 10 | 5/8" ϕ x 2 1/2" | 300 | 6.38 | 4.07 | 5" | 2 1/4" | 1 1/2" | 2 7/8" | 1 3/8" | 11/32" | 1 1/2" | 1/2" | 1/2" | 3/16" | 3/8" | 3/8" |
| W8 x 13 | 3/4" ϕ x 3" | 500 | 12.6 | 7.97 | 6" | 2 1/2" | 1 1/2" | 3 1/8" | 1 7/8" | 13/32" | 1 3/4" | 3/4" | 3/4" | 1/4" | 3/8" | 3/8" |
| W8 x 15 | 3/4" ϕ x 3" | 500 | 12.6 | 7.97 | 6" | 2 1/2" | 1 1/2" | 3 1/8" | 1 7/8" | 13/32" | 1 3/4" | 3/4" | 3/4" | 1/4" | 3/8" | 3/8" |
| W8 x 18 | 3/4" ϕ x 3 1/4" | 500 | 12.6 | 7.97 | 6" | 2 1/2" | 1 1/2" | 3 1/8" | 1 7/8" | 13/32" | 1 3/4" | 3/4" | 3/4" | 5/16" | 3/8" | 3/8" |
| W10 x 19 | 1" ϕ x 3 1/4" | 700 | 14.04 | 8.66 | 6" | 2 3/4" | 1 1/2" | 3 5/8" | 1 3/4" | 17/32" | 2 1/4" | 3/4" | 3/4" | 5/16" | 3/8" | 3/8" |

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

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

INDIANA DEPARTMENT OF TRANSPORTATION
SIGN DATA TABLES

SEPTEMBER 2002-2014
STANDARD DRAWING NO. E 802-SNGP-05

L. VOGLMEYER
NO. 9750
STATE OF INDIANA
REGISTERED PROFESSIONAL ENGINEER

RICHARD L. VORCIK
DESIGN STANDARDS ENGINEER
DATE

RICHARD F. STAFFA
CHIEF HIGHWAY ENGINEER
DATE

REVISION TO STANDARD DRAWINGS

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

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

PERFORATED FUSE PLATE DATA TABLE

| Post Size | BOLT SIZE | Wt. of Plates* (One Post), lb | F | G | J | K | L | M | d ₁ | d ₂ | t ₃ | 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 3/4" | 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 L. Vancleave
DESIGN STANDARDS ENGINEER
DATE 09/02/08

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

DESIGN STANDARDS ENGINEER

REVISION TO STANDARD DRAWINGS

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

Move this table to St. Dr. 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

| | |
|--------------------------------------------------------------|----------------|
| <i>/s/ Richard L. Vorchione</i> DESIGN STANDARDS ENGINEER | 3-0-04 DATE |
| <i>/s/ Richard K. Szulzer</i> CHIEF HIGHWAY ENGINEER | 3-0-04 DATE |

INDIANA DEPARTMENT OF TRANSPORTATION
 RICHARD L. VORCHIONE
 NO. 9750
 STATE OF INDIANA
 PROFESSIONAL ENGINEER
 DESIGN STANDARDS ENGINEER

REVISION TO STANDARD DRAWINGS

802-SNGP-05 WIDE FLANGE SIGN POST SUPPORT DATA TABLES (REVISED DRAFT)

BASE PLATE AND 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 | d ₁ | t ₁ | t ₂ | W | t ₄ |
|-----------|-----------------|-----------------|-------------------------------|-----------------------------------|--------|--------|--------|--------|---------|--------|----------------|----------------|----------------|-------|----------------|
| W6 x 9 | 1/2" Ø 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" | 1/2" | 3/16" | 3/8" |
| W8 x 10 | 5/8" Ø x 2 1/2" | 300 | 6.38 | 4.07 | 5" | 2 1/4" | 1 1/2" | 2 7/8" | 1 1/16" | 11/32" | 1 1/2" | 1/2" | 1/2" | 3/16" | 3/8" |
| W8 x 13 | 3/4" Ø x 3" | 500 | 12.6 | 7.97 | 6" | 2 1/2" | 1 1/2" | 3 1/8" | 1 7/16" | 13/32" | 1 3/4" | 3/4" | 3/4" | 1/4" | 3/8" |
| W8 x 15 | 3/4" Ø x 3" | 500 | 12.6 | 7.97 | 6" | 2 1/2" | 1 1/2" | 3 1/8" | 1 7/16" | 13/32" | 1 3/4" | 3/4" | 3/4" | 1/4" | 3/8" |
| W8 x 18 | 3/4" Ø x 3" | 500 | 12.6 | 7.97 | 6" | 2 1/2" | 1 1/2" | 3 1/8" | 1 7/16" | 13/32" | 1 3/4" | 3/4" | 3/4" | 5/16" | 3/8" |
| W10 x 19 | 1" Ø x 3 1/4" | 700 | 14.04 | 8.66 | 6" | 2 3/4" | 1 1/2" | 3 5/8" | 1 3/16" | 17/32" | 2 1/4" | 3/4" | 3/4" | 5/16" | 3/8" |

PERFORATED FUSE PLATE DATA TABLE

| Post Size | Bolt Size | Wt of Plates* (One Post), lb | F | G | J | K | L | M | d ₁ | d ₂ | t ₂ | Bolt Tension, lbs |
|-----------|-----------------|------------------------------|--------|--------|--------|--------|--------|--------|----------------|----------------|----------------|-------------------|
| W6 x 9 | 1/2" Ø 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" Ø 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" Ø 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" Ø x 2 1/4" | 1.72 | 5" | 2 1/2" | 4" | 2 1/4" | 7/8" | 1" | 11/16" | 3/4" | 3/8" | 19000 |
| W8 x 18 | 5/8" Ø x 2 1/4" | 2.27 | 5" | 2 1/2" | 5 1/4" | 2 3/4" | 1 1/4" | 1 1/4" | 11/16" | 1 1/16" | 3/8" | 19000 |
| W10 x 19 | 5/8" Ø x 2 1/4" | 1.72 | 5" | 2 1/2" | 4" | 2 1/4" | 7/8" | 1" | 11/16" | 3/4" | 3/8" | 19000 |

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

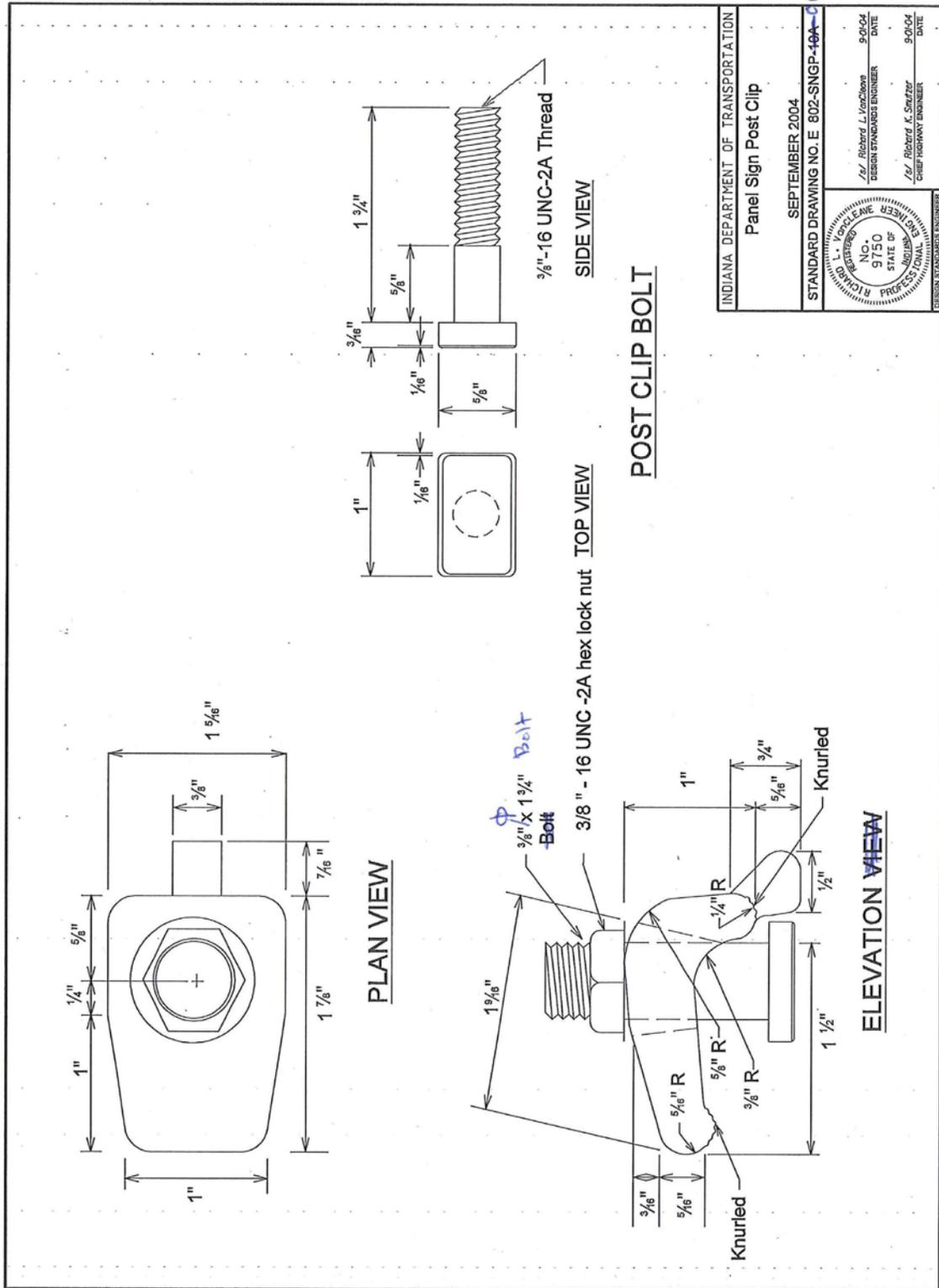
FOUNDATION DATA

| 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 SUPPORT DATA TABLES |
| SEPTEMBER 2014 |
| STANDARD DRAWING NO. E 802-SNGP-05 |
| DESIGN STANDARDS ENGINEER _____ DATE _____ CHIEF ENGINEER _____ DATE _____ |

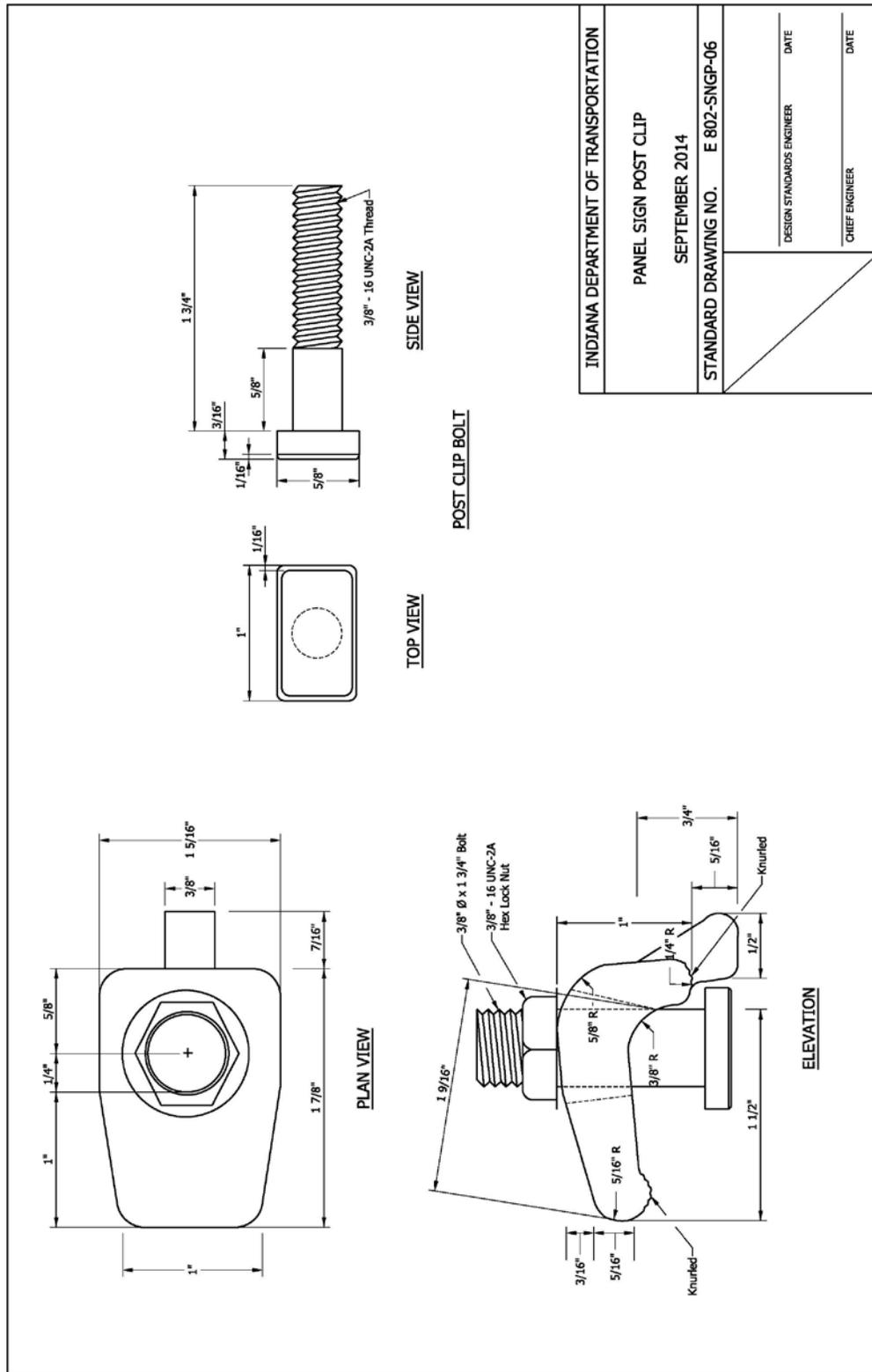
REVISION TO STANDARD DRAWINGS

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



| | |
|-------------------------------------------------------------------------------------------|-----------------|
| INDIANA DEPARTMENT OF TRANSPORTATION | |
| Panel Sign Post Clip | |
| SEPTEMBER 2004 | |
| STANDARD DRAWING NO. E 802-SNGP-10A-C6 | |
| DESIGNED BY RICHARD L. VANCE N.C. 9130 STATE OF INDIANA PROFESSIONAL ENGINEER | DATE 9-01-04 |
| CHECKED BY RICHARD K. SMITZER INDIANA CREW HIGHWAY ENGINEER | DATE 9-01-04 |
| DESIGN STANDARDS ENGINEER | |

REVISION TO STANDARD DRAWINGS
 802-SNGP-06 PANEL SIGN POST CLIP (DRAFT)



REVISION TO STANDARD DRAWINGS

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

SINGR-07

| | | Wide Flange Post Selection Table | | | | | | | | | | | | | | | | | | |
|------------------------|---|----------------------------------|---|---|---|------------|----|----|----|----|----|----|-------------|----|----|----|----|----|----|--|
| | | Sign Width (Feet) L W | | | | | | | | | | | | | | | | | | |
| Sign Height (Feet) H | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | |
| | 4 | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | 2 - W6 x 9 | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | 2 - W8 X 13 | | | | | | | |
| 11 | | | | | | | | | | | | | 2 - W8 x 10 | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | 2 - W8 x 18 | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |

INDIANA DEPARTMENT OF TRANSPORTATION
 WIDE FLANGE POST SELECTION TABLE
 MARCH 2004 - 2014
 STANDARD DRAWING NO. E 802-SNGS-12

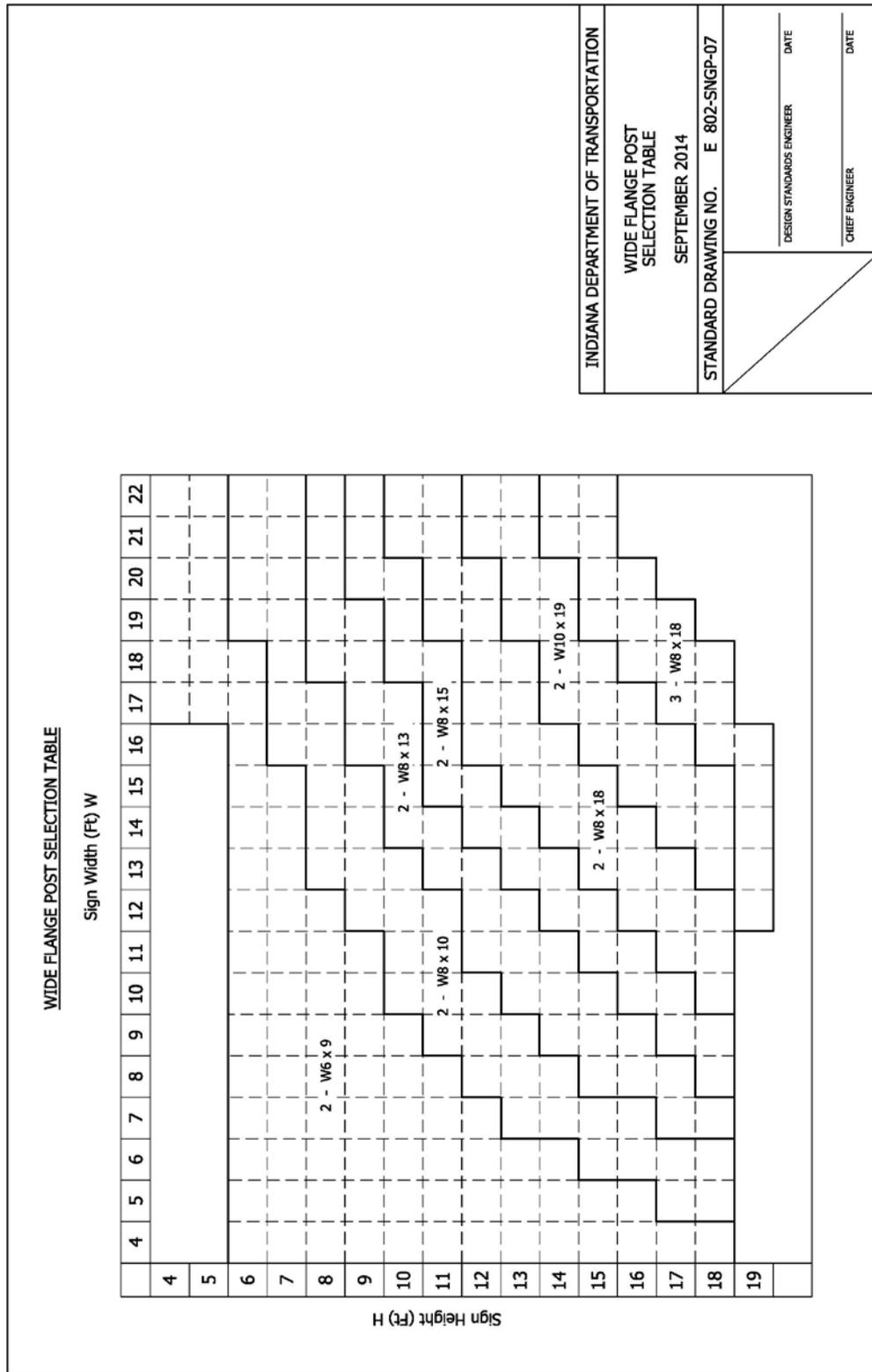
NO. 9150
 RICHARD L. VORLAW
 PROFESSIONAL ENGINEER

APR 2014
 DATE

APR 2014
 DATE

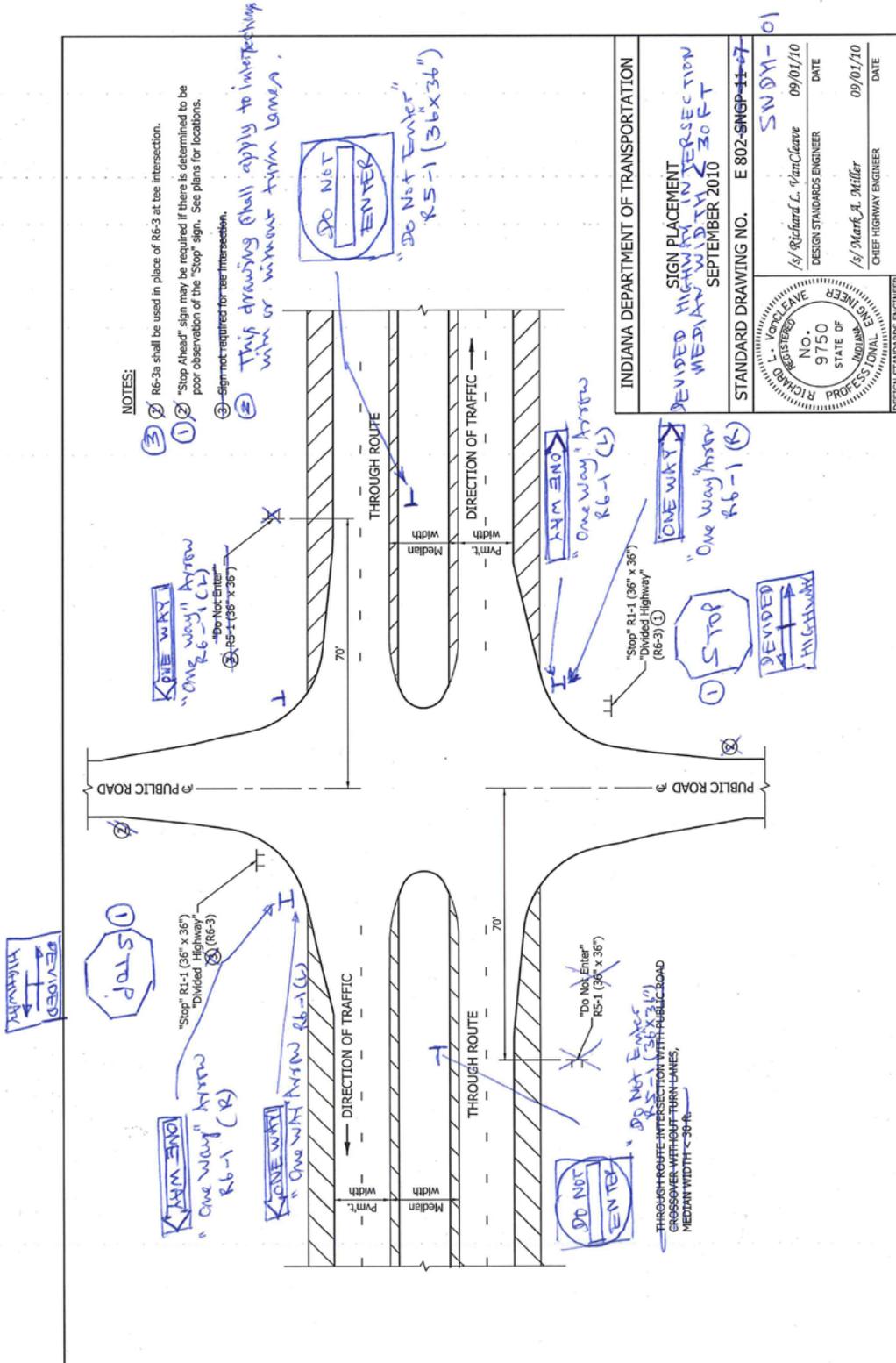
REVISION TO STANDARD DRAWINGS

802-SNGP-07 WIDE FLANGE POST SELECTION TABLE (DRAFT)



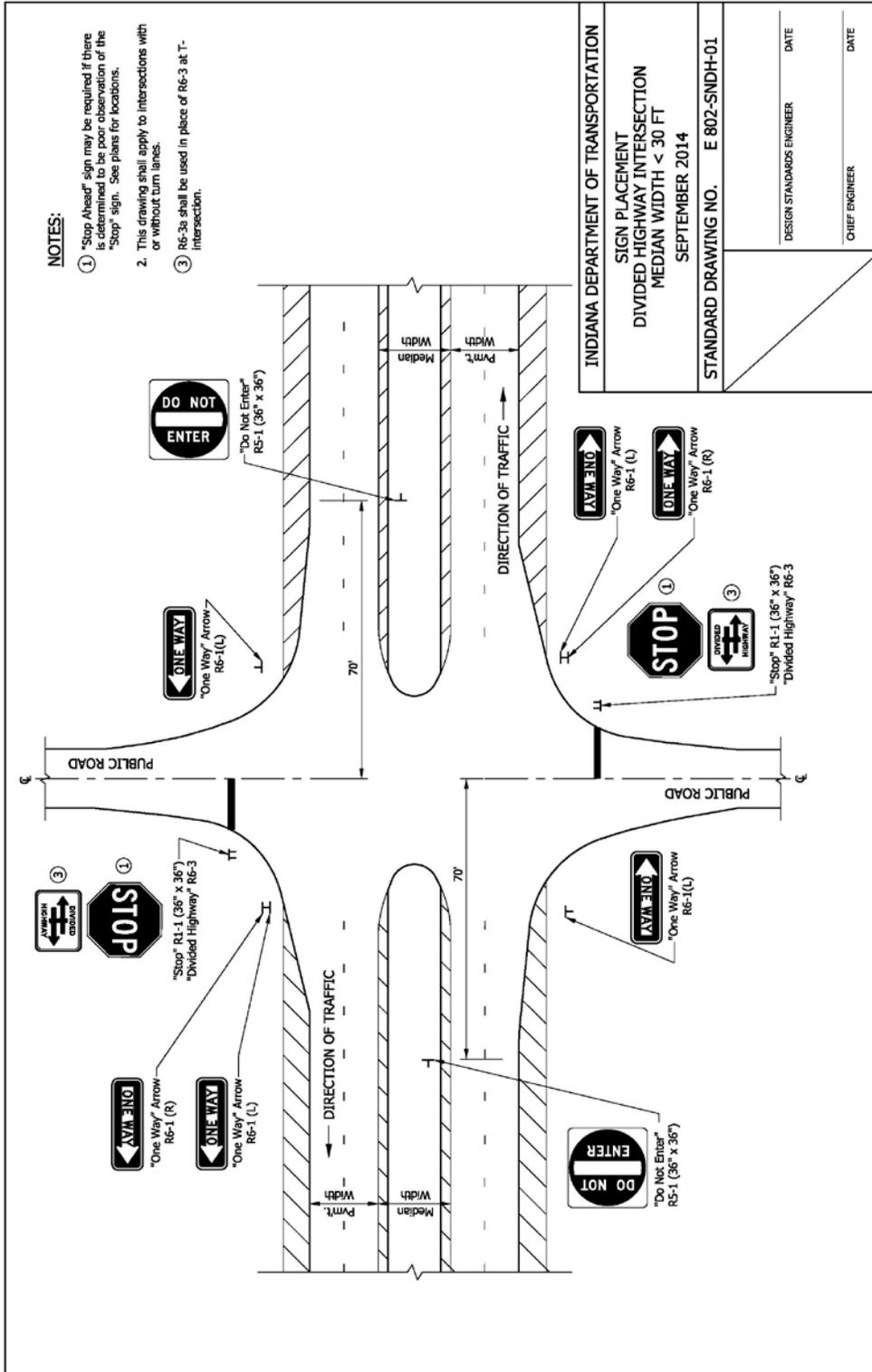
REVISION TO STANDARD DRAWINGS

802-SNGP-11 SIGN PLACEMENT (WITH MARKUPS)



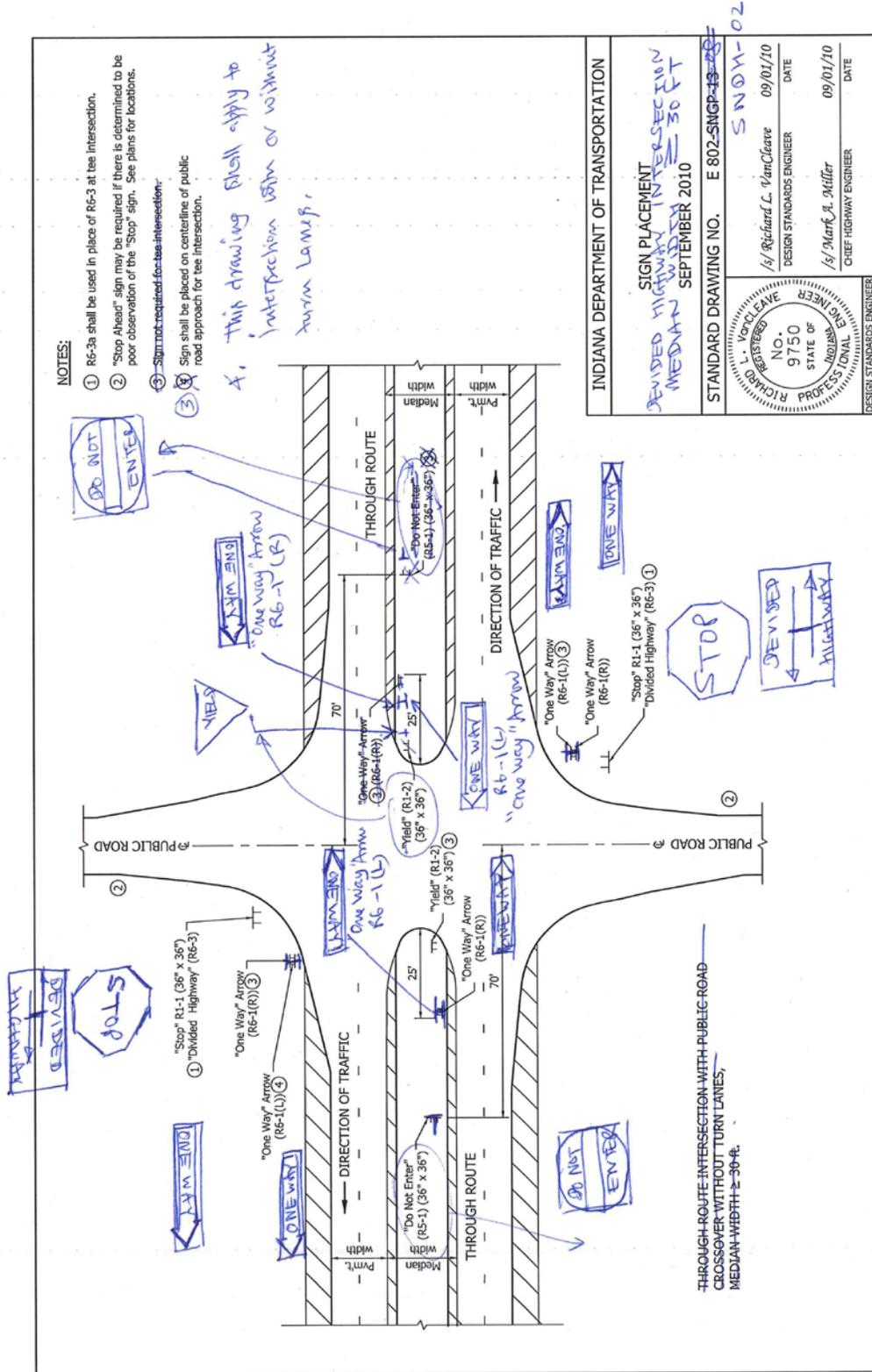
REVISION TO STANDARD DRAWINGS

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



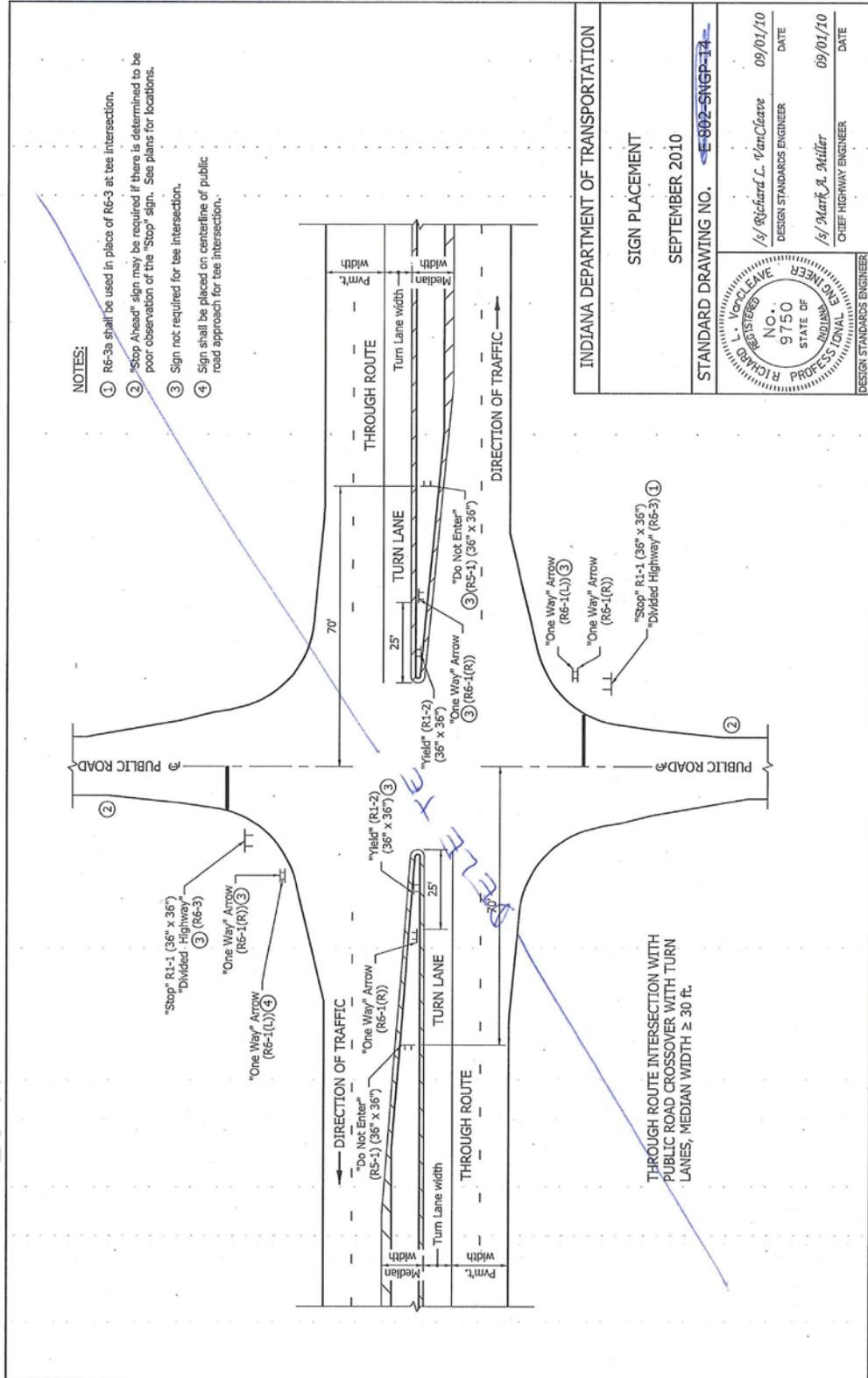
REVISION TO STANDARD DRAWINGS

802-SNDH-13 SIGN PLACEMENT (WITH MARKUPS)



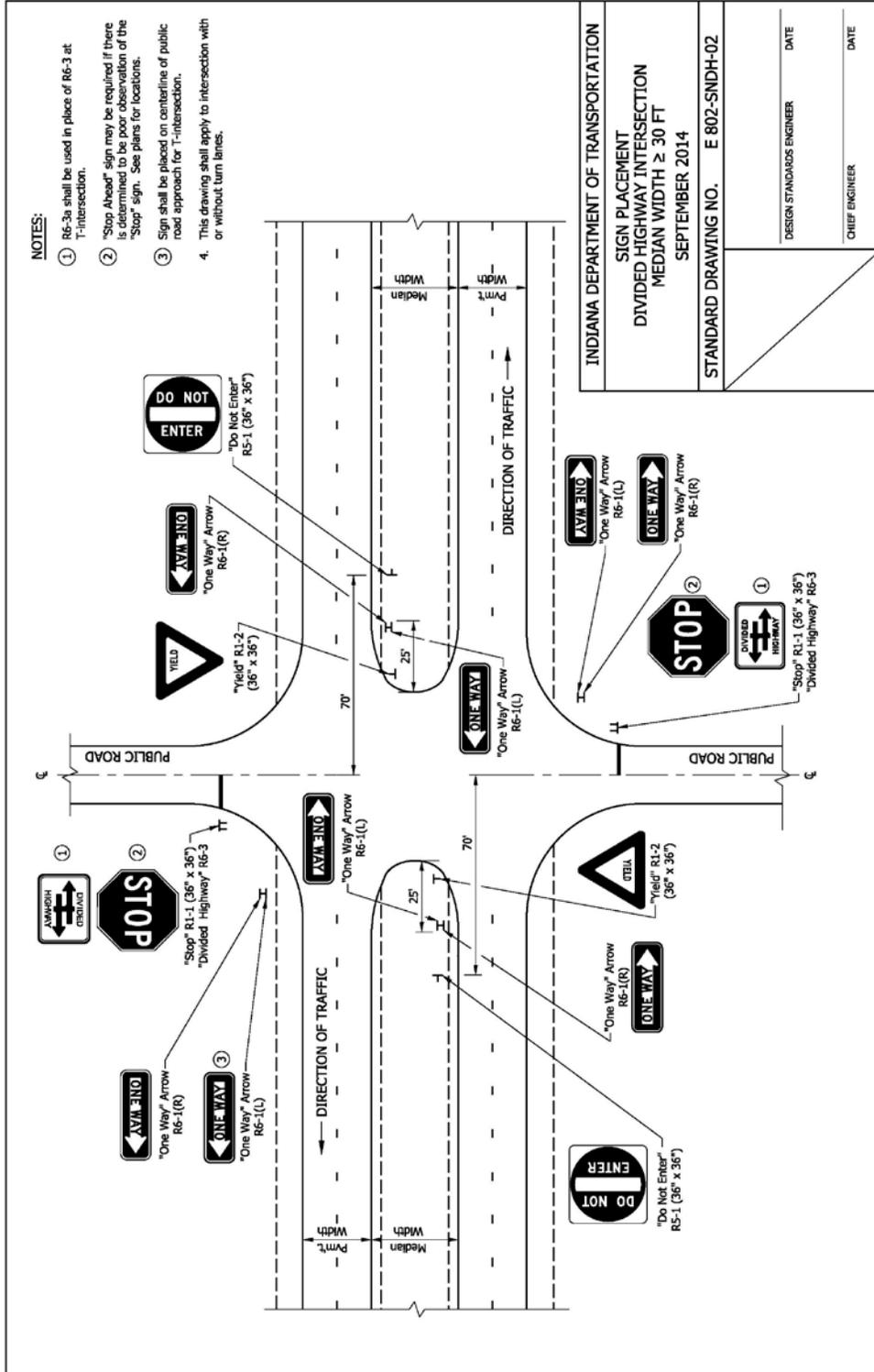
REVISION TO STANDARD DRAWINGS

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