INDIANA DEPARTMENT OF TRANSPORTATION
Driving Indiana's Economic Growth

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Room N925
Indianapolis, Indiana 46204

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

AGENDA

September 20, 2012 Standards Committee Meeting

MEMORANDUM

September 04, 2012

TO: Standards Committee

FROM: Scott Trammell, Secretary

RE: Agenda for the September 20, 2012 Standards Committee Meeting

A Standards Committee meeting is scheduled for 09:00 a.m. on September 20, 2012 in the N955 Bay Window Conference Room. Please enter meeting through the double doors directly in front of the conference room.

The following agenda items are listed for consideration.

A. GENERAL BUSINESS ITEMS

(No items on this agenda)

B. CONCEPTUAL PROPOSAL ITEMS

OLD BUSINESS

(No items on this agenda)

NEW BUSINESS

1. Establishment of the Modular Block Wall Committee (Ms. Yuhui Hu)

2. Explication of the Payment for Benching (Mr. Pankow)

3. INDOT CAD Standards Manual (Ms. Phillips)

4. Revise Design Manual Figure 404-4B (Ms. Phillips)

5. Revise Design Manual Figure 404-4D (Ms. Phillips)

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

OLD BUSINESS

(No items on this agenda)

NEW BUSINESS

Item No. 01 09/20/12 (2012 SS) Mr. Boruff pg 16

Standard Drawings:

802-SNGP-01	SIGN PLACEMENT
802-SNGP-03	SIGN PANEL DETAILS
805-SGSP-04	BASE PLATE FOR SIGNAL STEEL STRAIN POLE

Item No. 02 09/20/12 (2012 SS) Ms. Phillips pg 27

Standard Drawings:

706-TTFC-01	CONCRETE BRIDGE RAILING PLAN AND ELEVATION
706-TTFC-02	CONCRETE BRIDGE RAILING SECTIONS
706-TTFC-03	CONCRETE BRIDGE RAILING REINFORCING BAR BENDING DETAILS

cc: Committee Members (11)
FHWA (2)
ICA (1)

Ms. Yuhui Hu
Date: 09/20/12

CONCEPTUAL PROPOSAL 1

ESTABLISHMENT OF THE MODULAR BLOCK WALL COMMITTEE

CONCEPTUAL

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Large Modular Block Wall is a relatively new wall system which has been used in U.S. with significant heights for bridges and structures. Currently, modular block walls can only be used for non-structures no more than 5 feet high. State of Indiana has not a criterion to evaluate those type of walls. If we could develop the criterion and approve some of the wall systems, more product providers would be considered for contractors and designers. The consequent competition will benefit INDOT to have a larger pool of products to choose quality products at a lower price.

PROPOSED SOLUTION: Establish modular block wall committee to review modular block wall systems and create a specification and guidance for designers on when to use.

APPLICABLE STANDARD SPECIFICATIONS: 732

APPLICABLE STANDARD DRAWINGS: NONE

APPLICABLE DESIGN MANUAL SECTION: TBD; most likely 410-5.02

APPLICABLE SECTION OF GIFE: TBD

APPLICABLE RECURRING SPECIAL PROVISIONS: TBD

PAY ITEMS AFFECTED: TBD

Submitted By: Yuhui Hu

Title: Geotechnical Engineer

Organization: Office of Geotechnical Services

Phone Number: 610-7251 Ext. 220

Date: 6/26/2012

APPLICABLE SUB-COMMITTEE ENDORSEMENT:

CONCEPTUAL PROPOSAL 2

EXPLICATION OF THE PAYMENT FOR BENCHING

CONCEPTUAL

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Payment for benching is inconsistent within Section 203. Benching is measured and paid for in 203.21 based on the class of excavation encountered. Benching is not paid for in 203.22.

PROPOSED SOLUTION: All benching should be considered incidental to the work and should not be paid for directly.

APPLICABLE STANDARD SPECIFICATIONS: 203.21 and 203.22

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: 17-2.05

APPLICABLE SECTION OF GIFE: 3.10

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

PAY ITEMS AFFECTED: Common Excavation

Submitted By: Jeff James

Title: Construction Field Engineer

Organization: INDOT

Phone Number: 317/232-5082

Date: 8/2/12

APPLICABLE SUB-COMMITTEE ENDORSEMENT: N/A

CONCEPTUAL PROPOSAL 3

INDOT CAD Standards Manual

CONCEPTUAL

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: CAD/Drafting standards are not currently included in the Indiana Design Manual. Current Ch. 14 refers designers to a Ch. 15 Drafting Guidelines, "to be submitted in the future" and a non-existant INDOT CADD System User Guide for guidance regarding CAD/Drafting standards for INDOT production plans. In the absence of such documentation, the appearance of INDOT plans produced both in-house and by consultants has not been consistent.

PROPOSED SOLUTION: Adopt the INDOT CAD Standards manual (see attached). This manual will be provided as a supplement to the Design Manual, and contains information for both the missing Ch. 15 as well as the CAD system tools available to drafters/designers to facilitate their compliance with documented INDOT drafting standards. This manual will be directly referenced and linked in the forthcoming IDM Rewrite Ch. 103.

APPLICABLE STANDARD SPECIFICATIONS: none

APPLICABLE STANDARD DRAWINGS: none

APPLICABLE DESIGN MANUAL SECTION: Rewrite Ch. 103, Current Ch. 15

APPLICABLE SECTION OF GIFE: none

APPLICABLE RECURRING SPECIAL PROVISIONS: none

PAY ITEMS AFFECTED: none

Submitted By: Elizabeth Phillips

Title: Manager, Office of Bridge Standards and Policy

Organization: INDOT

Phone Number: 317-232-6775

Date: August 27, 2012

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Anne Rearick, John Wright, CAD Peer Group

Ms. Phillips
Date: 09/20/12

CONCEPTUAL PROPOSAL 4

Revise Design Manual Figure 404-4B

CONCEPTUAL

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The bridge railing types, TL-2 table in Design Manual 404-4B incorrectly indicates that railing types PF-1, PF-2 and TX are pedestrian height railings.

PROPOSED SOLUTION: Revise the Design Manual Figure 404-4B to show railing types PF-1, PF-2 and TX as Common height railings. Also correct additional information as shown on attached markups and final draft of proposed revised figure.

APPLICABLE STANDARD SPECIFICATIONS: none

APPLICABLE STANDARD DRAWINGS: none

APPLICABLE DESIGN MANUAL SECTION: Figure 404-4B

APPLICABLE SECTION OF GIFE: none

APPLICABLE RECURRING SPECIAL PROVISIONS: none

PAY ITEMS AFFECTED: none

Submitted By: Elizabeth Phillips

Title: Manager, Office of Bridge Standards and Policy

Organization: INDOT

Phone Number: 317-232-6775

Date: August 27, 2012

APPLICABLE SUB-COMMITTEE ENDORSEMENT: none

CONCEPTUAL PROPOSAL 4

Revise Design Manual Figure 404-4B

Railing Designation	TS-1 *	PF-2	PS-2	TX **
Height Designation	Common	~~Common Pedestrian~~	Pedestrian	~~Common Pedestrian~~
Mounting Location	On bridge coping	Flush with bridge deck	Atop sidewalk of minimum 5 ft width	~~Either atop sdwk. of 5 ft min. width, or~~ flush with bridge deck
Railing Elements	Thrie-beam with steel posts	2 steel tubes with steel posts on concrete parapet	~~2~~ 4 steel tubes with steel posts on concrete parapet	Concrete
Total Height	2'-9"	3'-6"	3'-6"	3'-6"
Bridge-Railing Standard Drawings	n/a	706-BRPP-02, and -05, -06	706-BRPP-04, and -05, -06	706-BRTX-01 through -04
Bridge-Railing Transition	none	TPF-2	TPS-2	TTX
Br.-Rlg.-Trans. Standard Drawings	n/a	706-TTPP-03, and -04	706-TTPP-07 and -08	706-TTTX-01 and -02
Guardrail Transition	TGS-1	TGB	TGB	TGB
Gdrl.-Trans. Standard Drawings	n/a	601-TTGB-01 through -05	601-TTGB-01 through -05	601-TTGB-01 through -05

* Bridge railing type TS-1 may be used only on a local-public-agency collector or local road. Details for the bridge railing and transition are shown in INDOT Recurring Plan Detail 706-B-140d.

** Bridge railing type TX should be considered for an aesthetically-sensitive area.

BRIDGE-RAILING TYPES
TEST LEVEL 2

Figure 404-4B
(Page 1 of 3)

CONCEPTUAL PROPOSAL 4

Revise Design Manual Figure 404-4B

Railing Designation	FC	TR ***	PS-1	PF-1
Height Designation	Common	Common	Pedestrian	Common ~~Pedestrian~~
Mounting Location	Flush with bridge deck	On existing concrete parapet	Atop sidewalk of minimum 5 ft width	Flush with bridge deck
Railing Elements	Concrete, shape F	Thrie beam with steel posts	2 steel tubes with steel posts on concrete parapet	1 steel tube with steel posts on concrete parapet
Total Height	2'-9"	2'-10"	3'-6"	3'-6"
Bridge-Railing Standard Drawings	706-BRSF-01, and -03	706-BRTR-01, through -04	706-BRPP-03, and -05, -06	706-BRPP-01, and -05, -06
Bridge-Railing Transition	TFC	none	TPS-1	TPF-1
Br.-Rlg.-Trans. Standard Drawings	706-TTFC-01 through -03	n/a	706-TTPP-05 and -06	706-TTPP-01 and -02
Guardrail Transition	TGB	TGR	TGB	TGB
Gdrl.-Trans. Standard Drawings	601-TTGB-01 through -05	706-BRTR-05 and -06	601-TTGB-01 through -05	601-TTGB-01 through -05

*** Bridge-railing type TR should be used only to replace existing aluminum bridge railing where no other modifications to a bridge are to be made, either as a spot improvement or within the limits of a 3R or 4R project.

BRIDGE-RAILING TYPES
TEST LEVEL 4

Figure 404-4B
(Page 2 of 3)

CONCEPTUAL PROPOSAL 4

Revise Design Manual Figure 404-4B

(NO CHANGES, THIS PAGE)

Railing Designation	FT	TF-2
Height Designation	Truck	Truck
Mounting Location	Flush with bridge deck	Flush with bridge deck
Railing Element	Concrete, shape F	2 steel tubes with steel posts on concrete parapet
Total Height	3'-9"	4'-2"
Bridge-Railing Standard Drawings	706-BRSF-02, and -03	706-BRTF-01 through -04
Bridge-Railing Transition	TFT	TTF-2
Br.-Rlg.-Trans. Standard Drawings	706-TTFT-01 through -03	706-TTTF-01 through -04
Guardrail Transition	TGB	TGB
Gdrl.-Trans. Standard Drawings	601-TTGB-01 through -05	601-TTGB-01 through -05

BRIDGE-RAILING TYPES
TEST LEVEL 5

Figure 404-4B
(Page 3 of 3)

CONCEPTUAL PROPOSAL 4

Revise Design Manual Figure 404-4B

Railing Designation	TS-1 *	PF-2	PS-2	TX **
Height Designation	Common	Common	Pedestrian	Common
Mounting Location	On bridge coping	Flush with bridge deck	Atop sidewalk of minimum 5 ft width	Flush with bridge deck
Railing Elements	Thrie-beam with steel posts	2 steel tubes with steel posts on concrete parapet	4 steel tubes with steel posts on concrete parapet	Concrete
Total Height	2'-9"	3'-6"	3'-6"	3'-6"
Bridge-Railing Standard Drawings	n/a	706-BRPP-02, and -05, -06	706-BRPP-04, and -05, -06	706-BRTX-01 through -04
Bridge-Railing Transition	none	TPF-2	TPS-2	TTX
Br.-Rlg.-Trans. Standard Drawings	n/a	706-TTPP-03, and -04	706-TTPP-07 and -08	706-TTTX-01 and -02
Guardrail Transition	TGS-1	TGB	TGB	TGB
Gdrl.-Trans. Standard Drawings	n/a	601-TTGB-01 through -05	601-TTGB-01 through -05	601-TTGB-01 through -05

* Bridge railing type TS-1 may be used only on a local-public-agency collector or local road. Details for the bridge railing and transition are shown in INDOT Recurring Plan Detail 706-B-140d.

** Bridge railing type TX should be considered for an aesthetically-sensitive area.

BRIDGE-RAILING TYPES
TEST LEVEL 2

Figure 404-4B
(Page 1 of 3)

PROPOSED

CONCEPTUAL PROPOSAL 4

Revise Design Manual Figure 404-4B

Railing Designation	FC	TR ***	PS-1	PF-1
Height Designation	Common	Common	Pedestrian	Common
Mounting Location	Flush with bridge deck	On existing concrete parapet	Atop sidewalk of minimum 5 ft width	Flush with bridge deck
Railing Elements	Concrete, shape F	Thrie beam with steel posts	2 steel tubes with steel posts on concrete parapet	1 steel tube with steel posts on concrete parapet
Total Height	2'-9"	2'-10"	3'-6"	3'-6"
Bridge-Railing Standard Drawings	706-BRSF-01, and -03	706-BRTR-01, through -04	706-BRPP-03, and -05, -06	706-BRPP-01, and -05, -06
Bridge-Railing Transition	TFC	none	TPS-1	TPF-1
Br.-Rlg.-Trans. Standard Drawings	706-TTFC-01 through -03	n/a	706-TTPP-05 and -06	706-TTPP-01 and -02
Guardrail Transition	TGB	TGR	TGB	TGB
Gdrl.-Trans. Standard Drawings	601-TTGB-01 through -05	706-BRTR-05 and -06	601-TTGB-01 through -05	601-TTGB-01 through -05

*** Bridge-railing type TR should be used only to replace existing aluminum bridge railing where no other modifications to a bridge are to be made, either as a spot improvement or within the limits of a 3R or 4R project.

BRIDGE-RAILING TYPES
TEST LEVEL 4

Figure 404-4B
(Page 2 of 3)

PROPOSED

CONCEPTUAL PROPOSAL 4

Revise Design Manual Figure 404-4B

Railing Designation	FT	TF-2
Height Designation	Truck	Truck
Mounting Location	Flush with bridge deck	Flush with bridge deck
Railing Element	Concrete, shape F	2 steel tubes with steel posts on concrete parapet
Total Height	3'-9"	4'-2"
Bridge-Railing Standard Drawings	706-BRSF-02, and -03	706-BRTF-01 through -04
Bridge-Railing Transition	TFT	TTF-2
Br.-Rlg.-Trans. Standard Drawings	706-TTFT-01 through -03	706-TTTF-01 through -04
Guardrail Transition	TGB	TGB
Gdrl.-Trans. Standard Drawings	601-TTGB-01 through -05	601-TTGB-01 through -05

BRIDGE-RAILING TYPES
TEST LEVEL 5

Figure 404-4B
(Page 3 of 3)

PROPOSED

CONCEPTUAL PROPOSAL 5

Revise Design Manual Figure 404-4D

CONCEPTUAL

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: With the publication of corrected Standard Drawings 706-BRPP-03 and -04, the bridge railing construction shown in Design Manual Figure 404-4D is no longer consistent with the Standard Drawings for pedestrian bridge rail in combination with a concrete sidewalk. The concrete bridge rail should not be shown sitting atop the sidewalk.

PROPOSED SOLUTION: Revise the Design Manual Figure 404-4D for consistency with the pedestrian bridge rail Standard Drawings 706-BRPP-03 and -04. See attached markup and final draft of proposed revised figure.

APPLICABLE STANDARD SPECIFICATIONS: none

APPLICABLE STANDARD DRAWINGS: none

APPLICABLE DESIGN MANUAL SECTION: Figure 404-4D

APPLICABLE SECTION OF GIFE: none

APPLICABLE RECURRING SPECIAL PROVISIONS: none

PAY ITEMS AFFECTED: none

Submitted By: Elizabeth Phillips

Title: Manager, Office of Bridge Standards and Policy

Organization: INDOT

Phone Number: 317-232-6775

Date: August 27, 2012

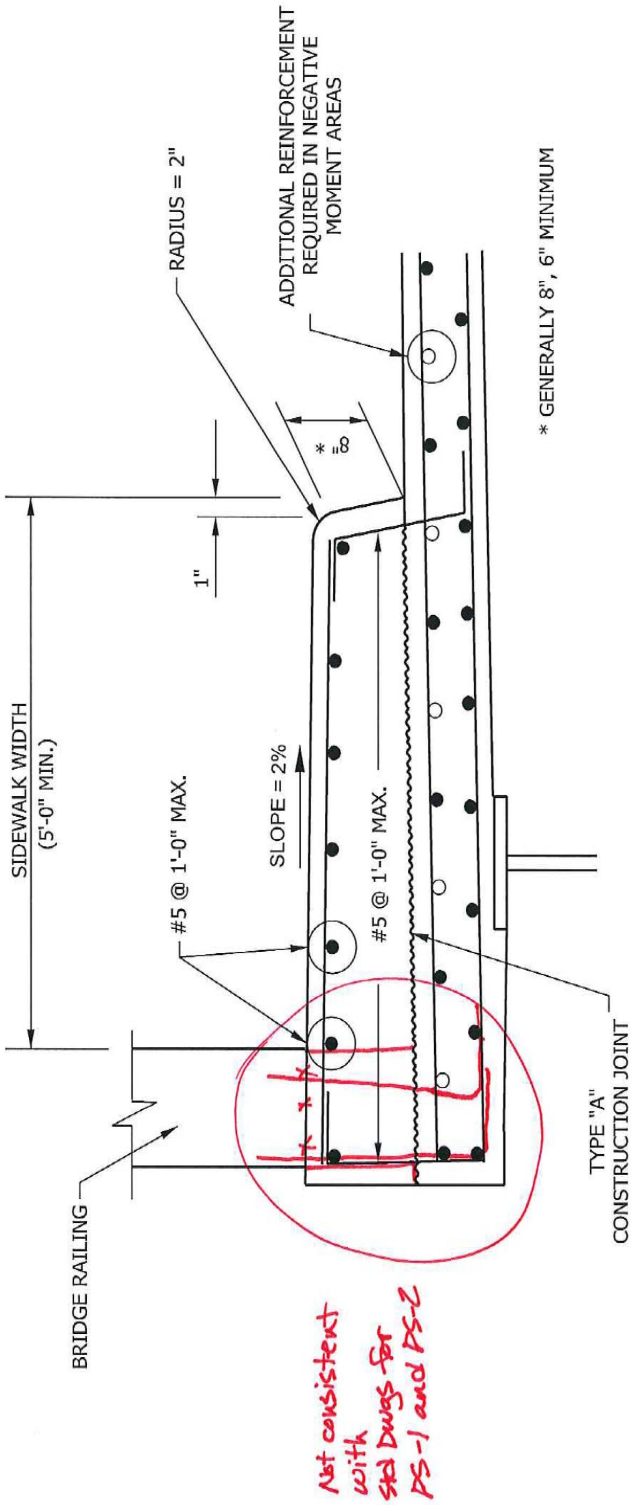
APPLICABLE SUB-COMMITTEE ENDORSEMENT: none

CONCEPTUAL PROPOSAL 5

Revise Design Manual Figure 404-4D

2012

Back

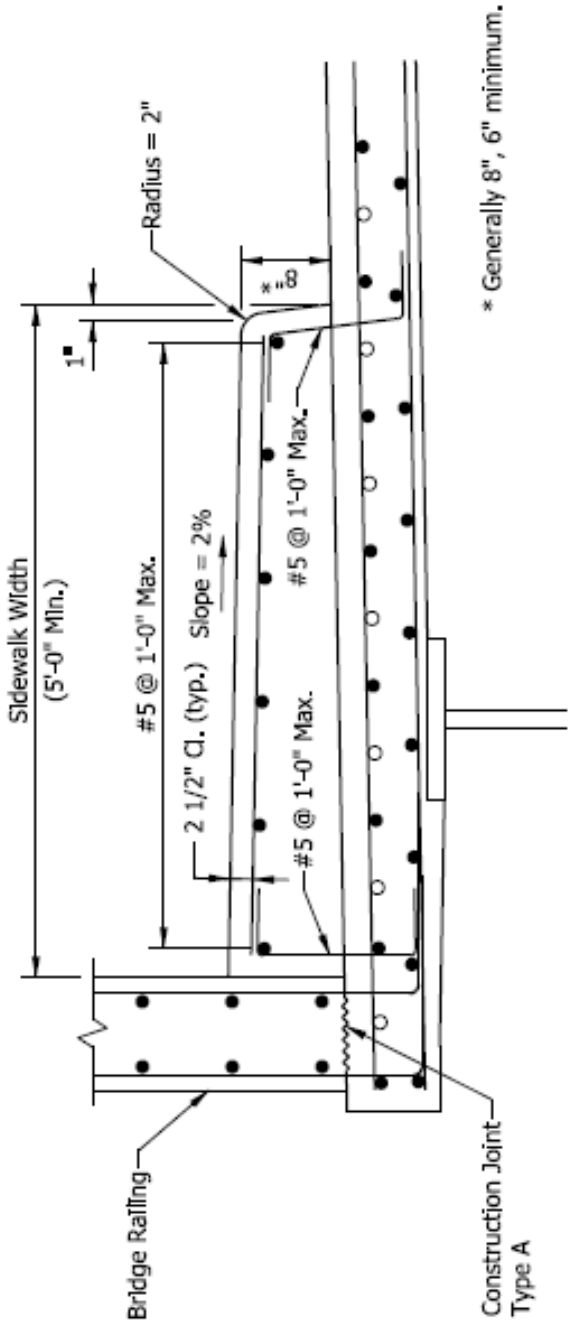


TYPICAL REINFORCEMENT IN BRIDGE SIDEWALK

Figure 404-4D

CONCEPTUAL PROPOSAL 5

Revise Design Manual Figure 404-4D



TYPICAL REINFORCEMENT IN BRIDGE SIDEWALK

Figure 404-4D

Mr. Boruff
Date: 09/20/12

SPECIFICATION, SPECIAL PROVISIONS AND DRAWINGS
REVISION TO STANDARD DRAWINGS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED:

1. On panel sign assemblies the distance between the bottom of the panel sign and the top of the fuse plate often varies from one post to the other in the same assembly. This may lead to the breakaway mechanism not functioning correctly.

2. Clips that attach the sign panel to the support I-beams are not being installed on both sides of the I-beam for signs wider than 24' as they should be. This makes it more likely that the sign will separate from the supports.

3. Standard Drawing 805-SGSP-04 for signal strain poles contains incorrect dimensions for the base plate thickness and anchor bolt hole diameter.

PROPOSED SOLUTION:

1. Add a note to Standard drawing 802-SNGP-01 that "The distance from top of the fuse plate to the bottom of the sign shall be the same for all posts"

2. Revise Standard drawing 802-SNGP-03 to indicate that clips on both the left side and right side of the posts are required for signs wider than 24'.

3. Revise Standard drawing 805-SGSP-04 by correcting the anchor bolt hole diameter to 2 1/2" (currently shown as 2") and the base plate thickness to 2 1/2" (also currently shown as 2").

APPLICABLE STANDARD SPECIFICATIONS: 802.08(b); 922.10(a) (see RSP 922-T-168) – no changes need it.

APPLICABLE STANDARD DRAWINGS: 802-SNGP-01, 802-SNGP-03, 805-SGSP-04

APPLICABLE DESIGN MANUAL SECTION:

APPLICABLE SECTION OF GIFE:

APPLICABLE RECURRING SPECIAL PROVISIONS:

Submitted By: Dave Boruff

Title: Manager, Traffic Administration Section

SPECIFICATION, SPECIAL PROVISIONS AND DRAWINGS

REVISION TO STANDARD DRAWINGS

(CONTINUED)

Organization: INDOT

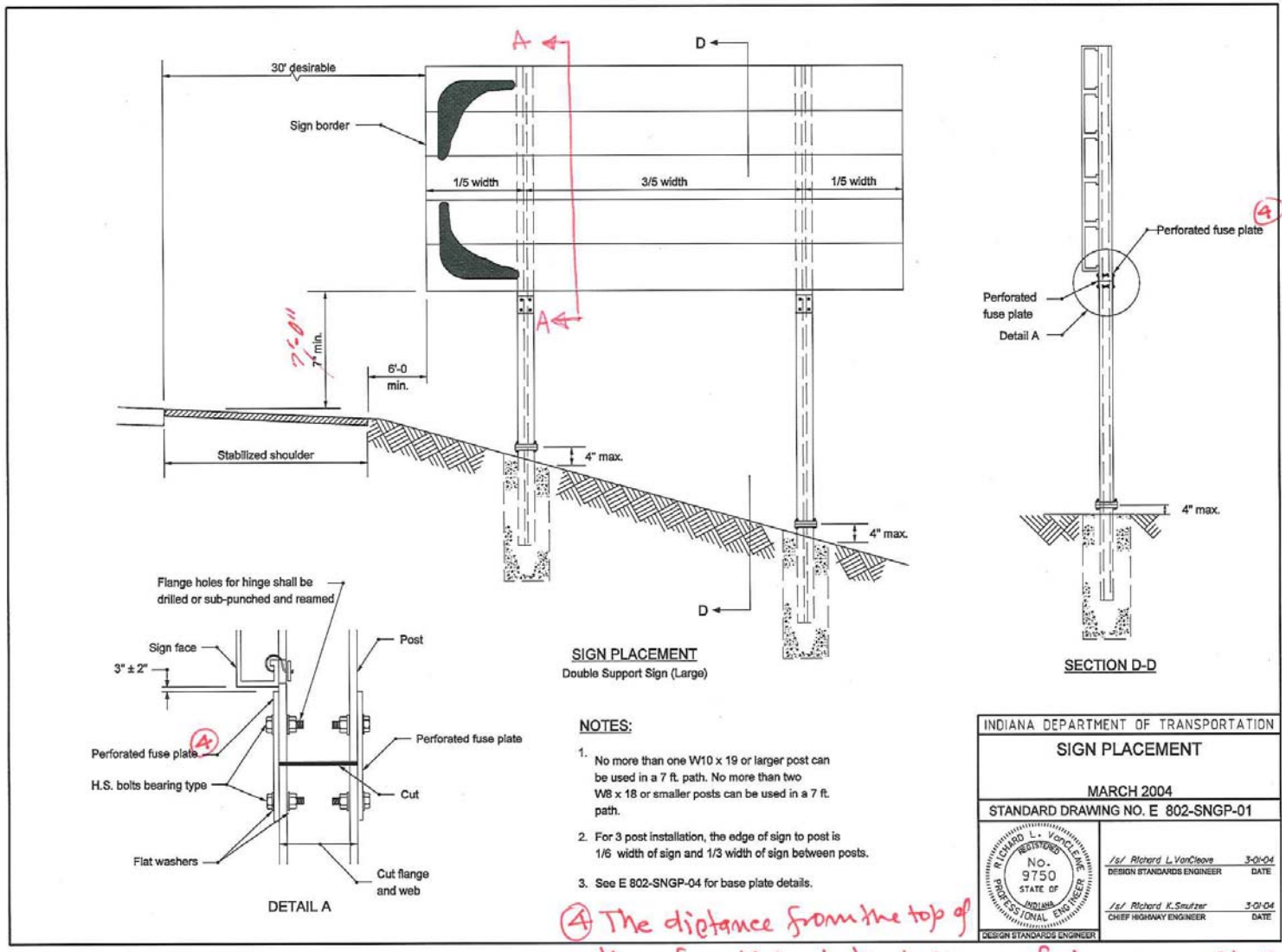
Phone Number: 317-234-7975

Date: 8/13/12

APPLICABLE SUB-COMMITTEE ENDORSEMENT? ad hoc review by District Traffic, District Maintenance, Praksh Patel, and Ken Oyler (industry).

REVISION TO STANDARD DRAWINGS

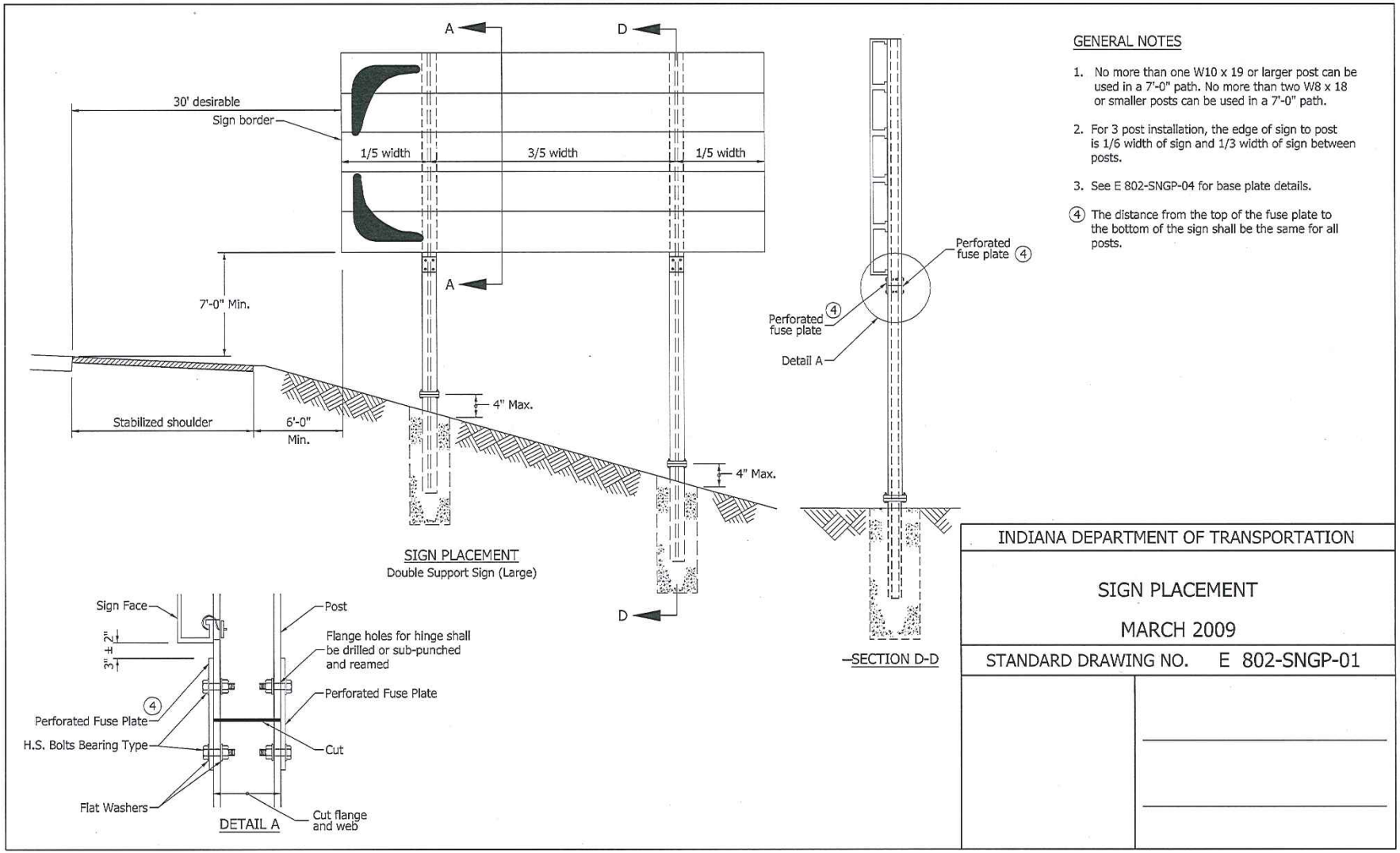
EXISTING STANDARD DRAWING 802-SNGP-01 SIGN PLACEMENT (WITH MARKUPS)



(4) The distance from the top of the fuse plate to the bottom of the sign shall the same for all posts.

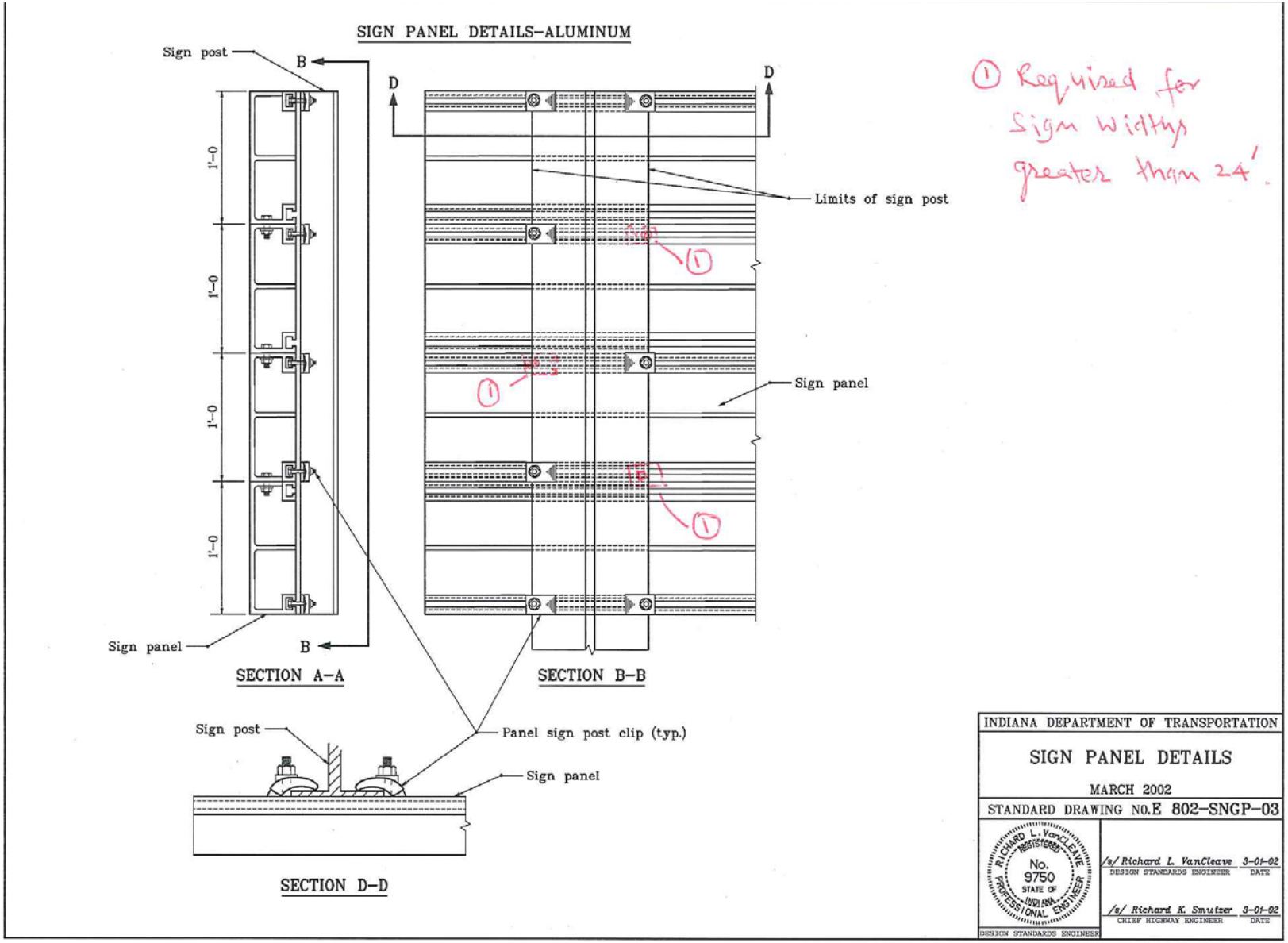
REVISION TO STANDARD DRAWINGS

REVISED STANDARD DRAWING 802-SNGP-01 SIGN PLACEMENT (DRAFT)



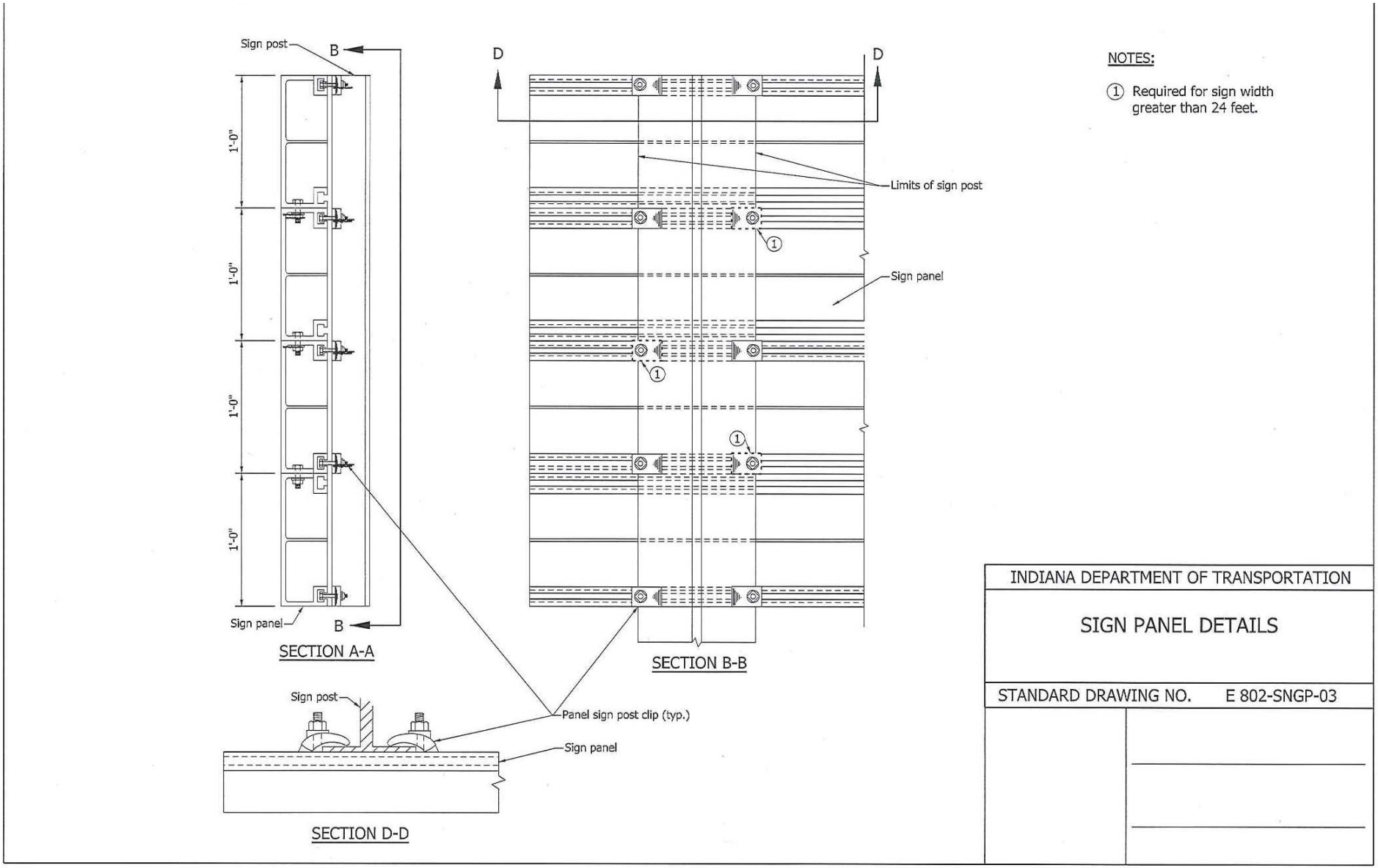
REVISION TO STANDARD DRAWINGS

EXISTING STANDARD DRAWING 802-SNGP-03 SIGN PANEL DETAILS (WITH MARKUPS)



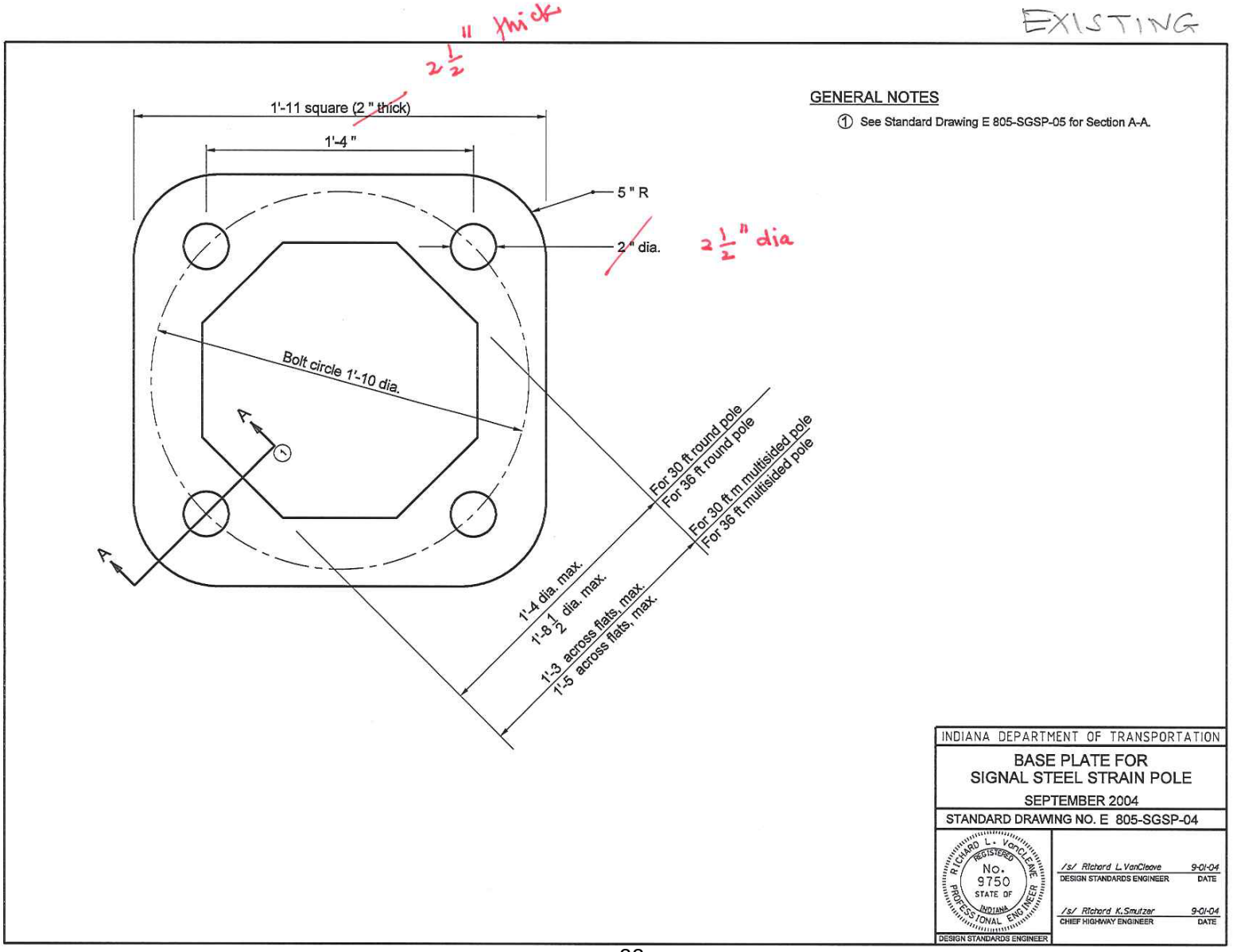
REVISION TO STANDARD DRAWINGS

REVISED STANDARD DRAWING 802-SNGP-03 SIGN PANEL DETAILS (DRAFT)



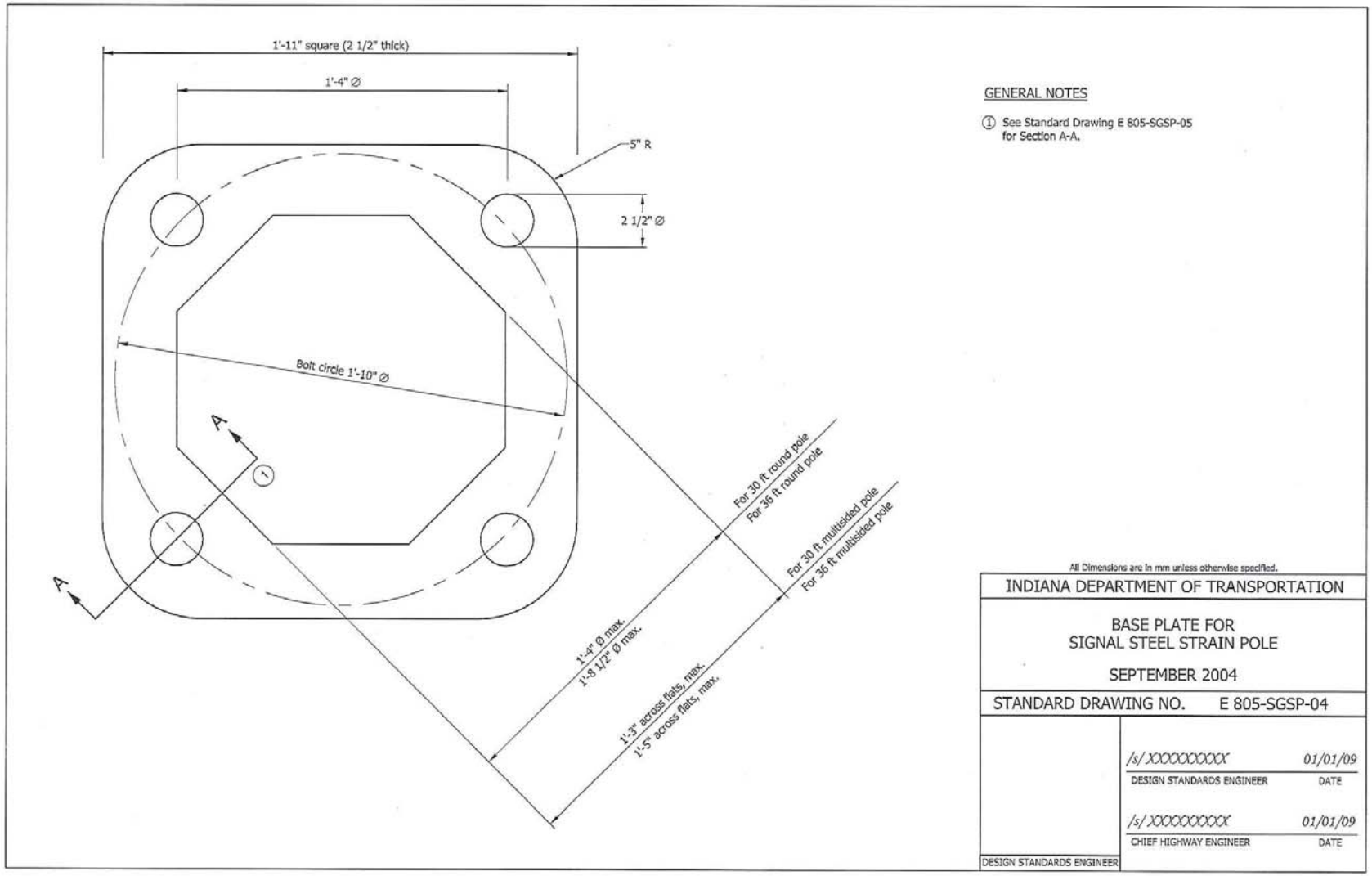
REVISION TO STANDARD DRAWINGS

EXISTING STANDARD DRAWING 805-SGSP-01 BASE PLATE FOR SIGNAL STEEL STRAIN POLE (WITH MARKUPS)



REVISION TO STANDARD DRAWINGS

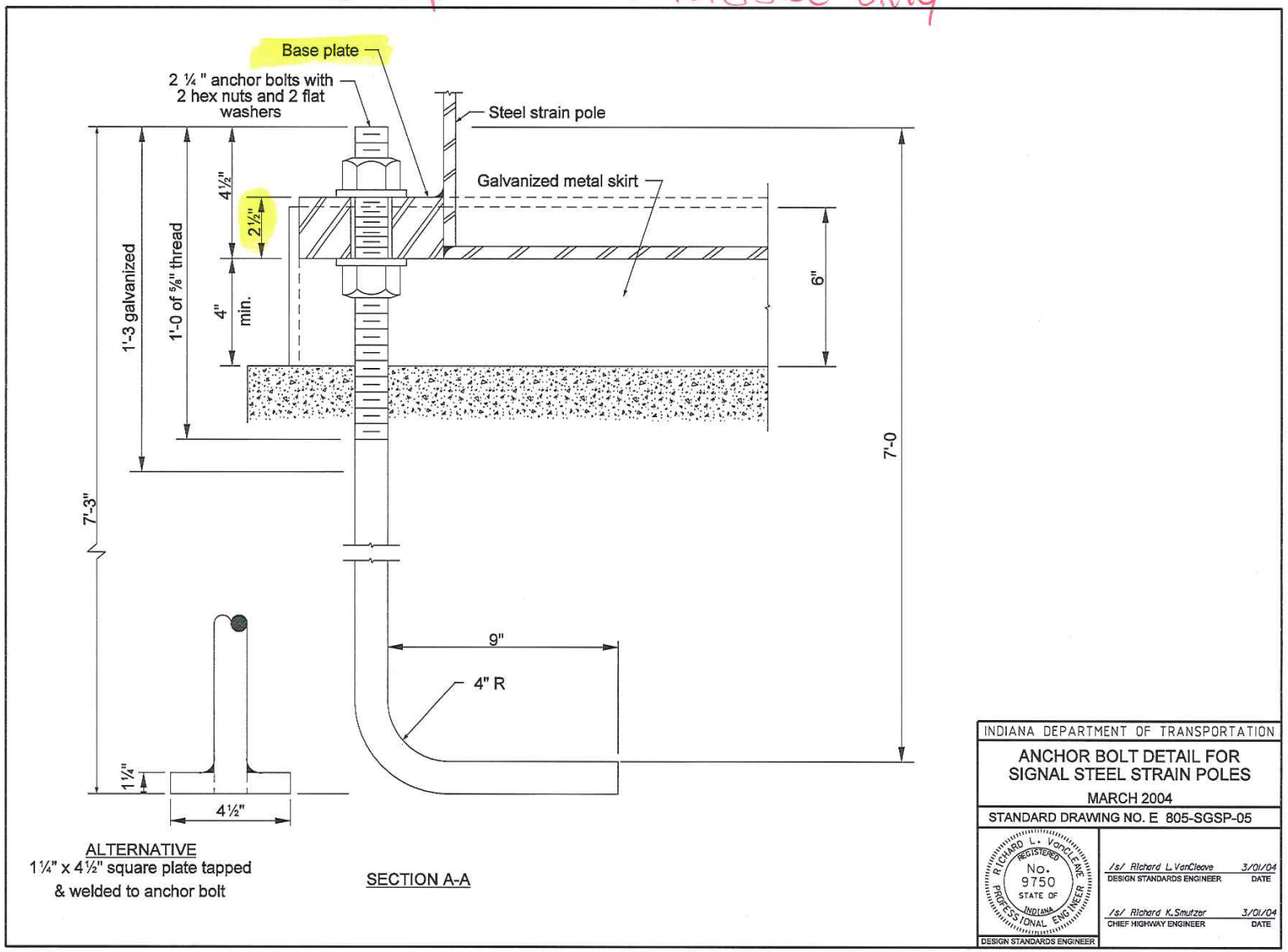
REVISED STANDARD DRAWING 805-SGSP-04 BASE PLATE FOR SIGNAL STEEL STRAIN POLE (DRAFT)



REVISIONS TO STANDARD DRAWINGS

BACKUP 01: EXISTING STANDARD DRAWING 805-SGSP-05 ANCHOR BOLT DETAIL FOR SIGNAL STEEL STRAIN POLES

Backup 01 - For Reference Only



REVISION TO STANDARD DRAWINGS

802-SNGP-01 SIGN PLACEMENT
802-SNGP-03 SIGN PANEL DETAILS
805-SGSP-04 BASE PLATE FOR SIGNAL STEEL STRAIN POLE

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REVISION TO STANDARD DRAWINGS

802-SNGP-01 SIGN PLACEMENT
802-SNGP-03 SIGN PANEL DETAILS
805-SGSP-04 BASE PLATE FOR SIGNAL STEEL STRAIN POLE

Motion: Mr. Second: Mr. Ayes: Nays:	Action: _____ Passed as Submitted _____ Passed as Revised _____ Withdrawn
Standard Specifications Sections affected: 802.08(b) pg 723; 922.05(a) pg 1009. Recurring Special Provision affected: NONE Standard Sheets affected: 802-SNGP-01; -03; 805-SGSP-04 Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	_____ 2014 Standard Specifications Book _____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ _____ Create RPD (No. _____) Effective _____ Letting _____ Technical Advisory GIFE Update Req'd.? Y ___ N ___ By _____ Addition or _____ Revision Frequency Manual Update Req'd? Y___N___ By _____ Addition or _____ Revision Received FHWA Approval? _____

Item No. 02
Ms. Phillips
Date: 09/20/12

REVISION TO STANDARD DRAWINGS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: A review of Standard Drawing 706-TTFC-01 through -03 revealed an error in the location of a section and consequently, an incorrect bill of materials.

PROPOSED SOLUTION: Revise the drawings to show the correct location of the section and quantities in the bill of materials. See attached markups and final drafts of proposed revised drawings.

APPLICABLE STANDARD SPECIFICATIONS: none

APPLICABLE STANDARD DRAWINGS: 706-TTFC-01 through -03

APPLICABLE DESIGN MANUAL SECTION: none

APPLICABLE SECTION OF GIFE: none

APPLICABLE RECURRING SPECIAL PROVISIONS: none

PAY ITEMS AFFECTED: none

Submitted By: Elizabeth Phillips

Title: Manager, Office of Bridge Standards and Policy

Organization: INDOT

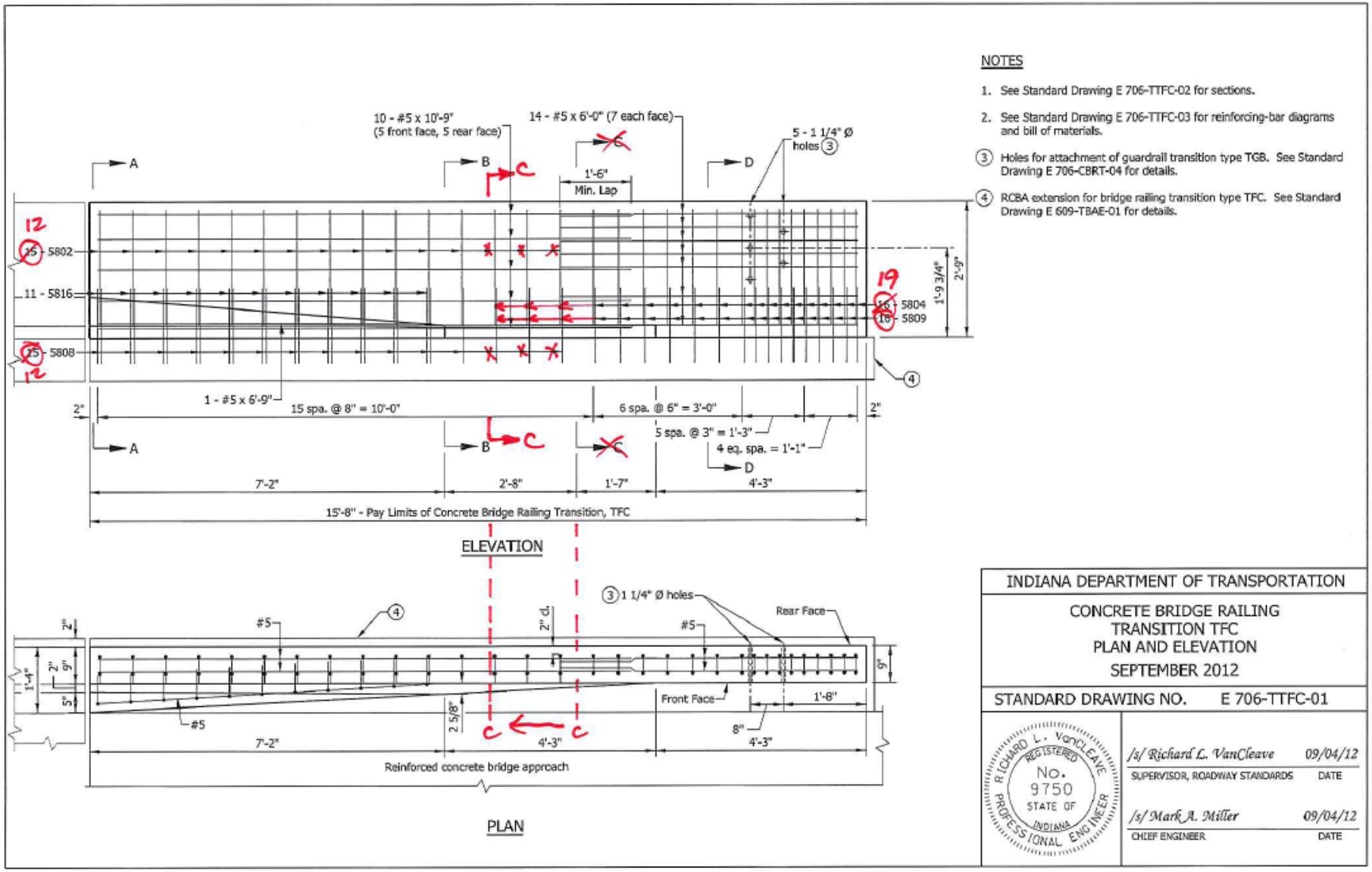
Phone Number: 317-232-6775

Date: August 27, 2012

APPLICABLE SUB-COMMITTEE ENDORSEMENT: none

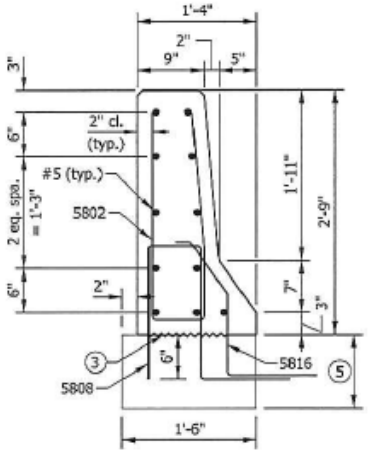
REVISION TO STANDARD DRAWINGS

EXISTING STANDARD DRAWING E 706-TTFC-01 CONCRETE BRIDGE RAILING (WITH MARKUPS)

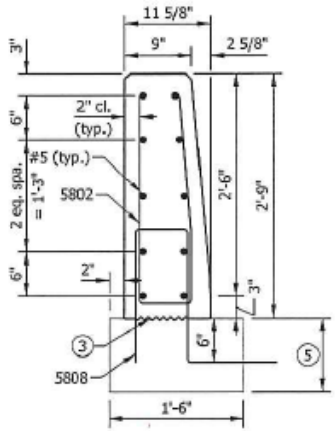


REVISION TO STANDARD DRAWINGS

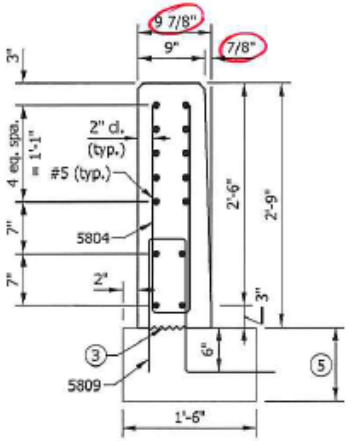
EXISTING STANDARD DRAWING E 706-TTFC-02 CONCRETE BRIDGE RAILING (WITH MARKUPS)



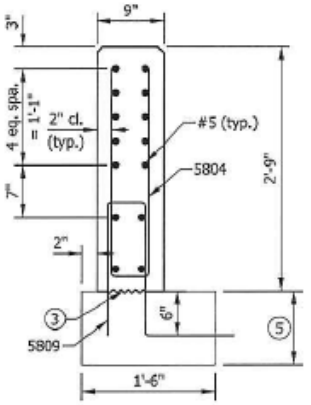
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

NOTES

1. See Standard Drawing E 706-TTFC-01 for elevation and plan.
2. All chamfered edges shall be 3/4".
3. Construction joint type A. See Standard Drawing E 702-CJTA-01 for details.
4. See Standard Drawing E 706-TTFC-03 for reinforcing-bar diagrams.
5. RCBA extension for bridge railing type TFC. See Standard Drawing E 609-TBAE-01 for details.

INDIANA DEPARTMENT OF TRANSPORTATION

CONCRETE BRIDGE RAILING
TRANSITION, TFC
SECTIONS

SEPTEMBER 2012

STANDARD DRAWING NO. E 706-TTFC-02

RICHARD L. VANCLEAVE REGISTERED No. 9750 STATE OF INDIANA PROFESSIONAL ENGINEER

/s/ Richard L. VanCleave 09/04/12
SUPERVISOR, ROADWAY STANDARDS DATE

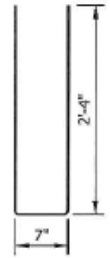
/s/ Mark A. Miller 09/04/12
CHIEF ENGINEER DATE

REVISION TO STANDARD DRAWINGS

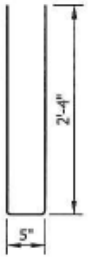
EXISTING STANDARD DRAWING E 706-TTFC-03 CONCRETE BRIDGE RAILING (WITH MARKUPS)

NOTE

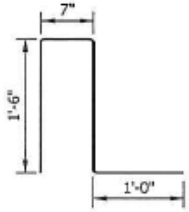
1. See Standard Drawing E 703-BRST-01 for reinforcing-bar bending details and notes.



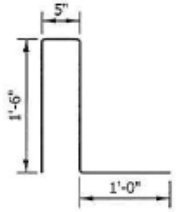
5802 x 5'-3"



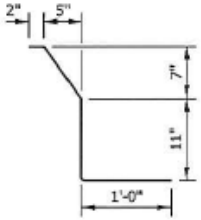
5804 x 5'-1"



5808 x 4'-7"



5809 x 4'-5"



5816 x 2'-10"

BILL OF MATERIALS			
Quantities are for one concrete bridge railing transition type TFC			
EPOXY-COATED REINFORCING STEEL			
MARK OR SIZE	NO. OF BARS	LENGTH	WEIGHT
5802	15	5'-3"	
5804	16	5'-1"	
5808	15	4'-7"	
5809	16	4'-5"	
5816	11	2'-10"	
#5	10	10'-9"	
#5	1	6'-9"	
#5	14	6'-0"	
Total Epoxy-Coated Reinforcing Steel			552 LBS
MISCELLANEOUS			
Concrete, Class C			1.2 CYS
Surface Seal			100 SFT

INDIANA DEPARTMENT OF TRANSPORTATION

CONCRETE BRIDGE RAILING TRANSITION, TFC

SEPTEMBER 2012

STANDARD DRAWING NO. E 706-TTFC-03

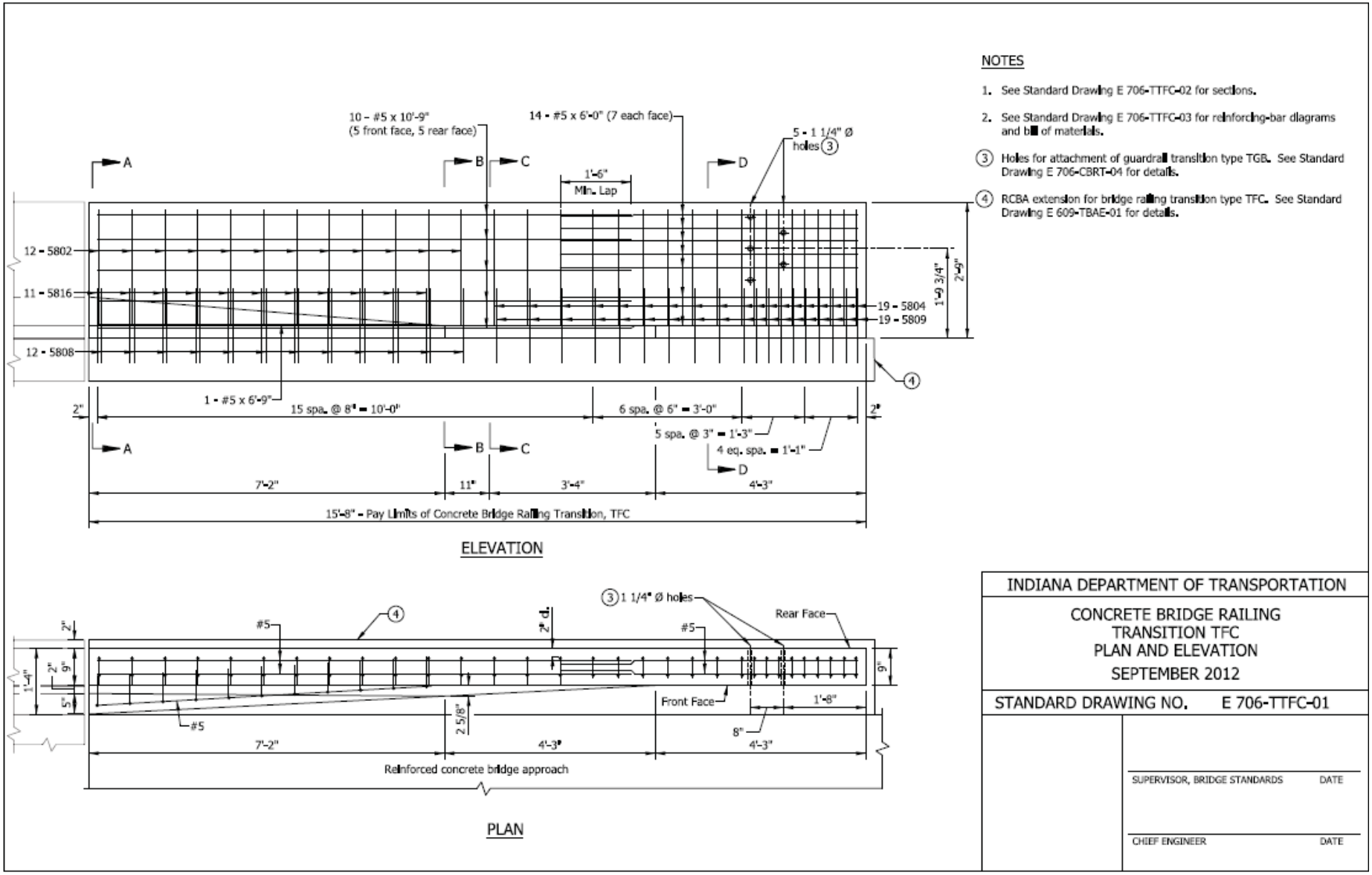
RICHARD L. VanCLEAVE REGISTERED No. 9750 STATE OF INDIANA PROFESSIONAL ENGINEER

/s/ Richard L. VanCleave 09/04/12
SUPERVISOR, ROADWAY STANDARDS DATE

/s/ Mark A. Miller 09/04/12
CHIEF ENGINEER DATE

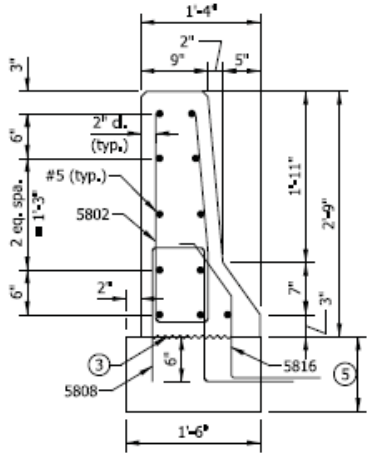
REVISION TO STANDARD DRAWINGS

EXISTING STANDARD DRAWING E 706-TTFC-01 CONCRETE BRIDGE RAILING (PROPOSED)

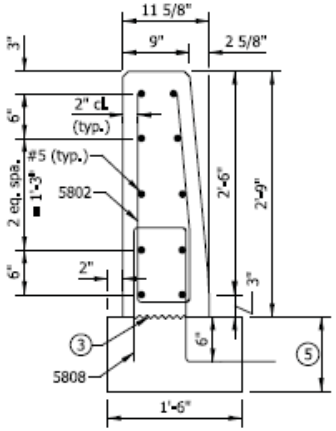


REVISION TO STANDARD DRAWINGS

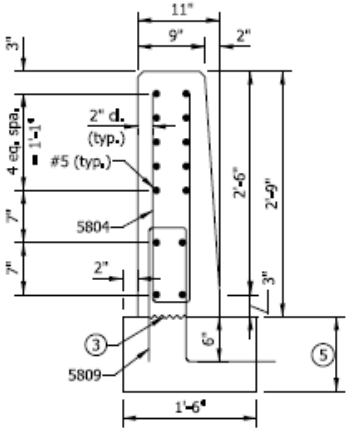
EXISTING STANDARD DRAWING E 706-TTFC-02 CONCRETE BRIDGE RAILING (PROPOSED)



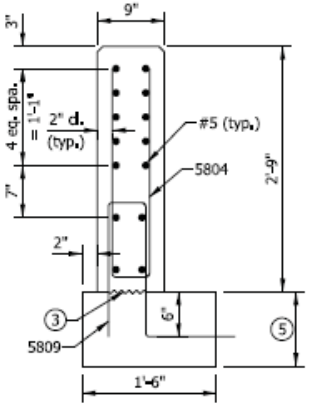
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

NOTES

1. See Standard Drawing E 706-TTFC-01 for elevation and plan.
2. All chamfered edges shall be 3/4".
3. Construction joint type A. See Standard Drawing E 702-CJTA-01 for details.
4. See Standard Drawing E 706-TTFC-03 for reinforcing-bar diagrams.
5. RCBA extension for bridge railing type TFC. See Standard Drawing E 609-TBAE-01 for details.

INDIANA DEPARTMENT OF TRANSPORTATION

CONCRETE BRIDGE RAILING
TRANSITION, TFC
SECTIONS

SEPTEMBER 2012

STANDARD DRAWING NO. E 706-TTFC-02

SUPERVISOR, BRIDGE STANDARDS DATE

CHIEF ENGINEER DATE

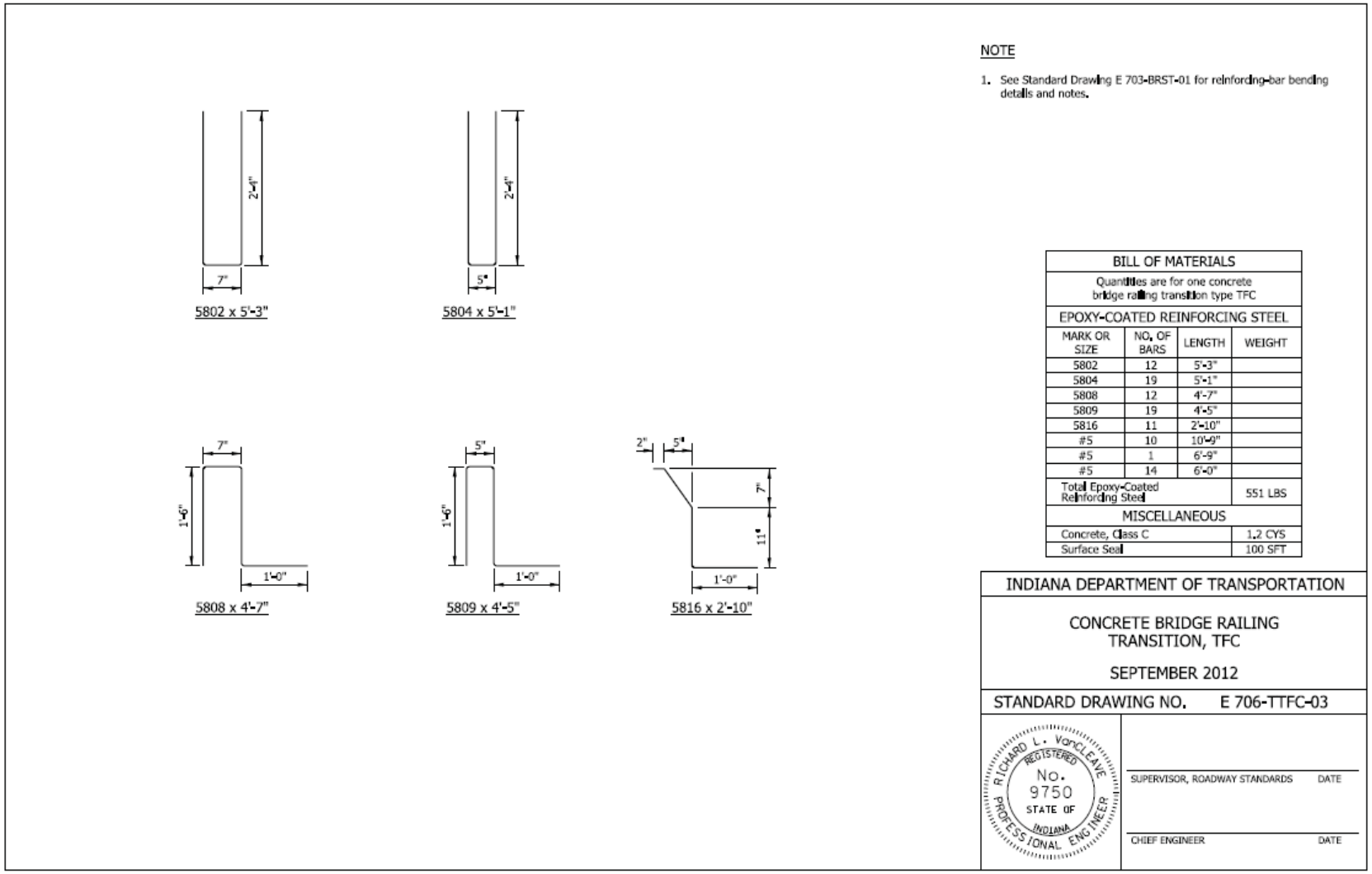
Item No. 02

Ms. Phillips

Ms. Phillips
Date: 09/20/12

REVISION TO STANDARD DRAWINGS

706-TTFC-01 CONCRETE BRIDGE RAILING, PLAN AND ELEVATION
706-TTFC-02 CONCRETE BRIDGE RAILING, SECTIONS
706-TTFC-03 REINFORCING BAR BENDING



NOTE

1. See Standard Drawing E 703-BRST-01 for reinforcing-bar bending details and notes.

BILL OF MATERIALS			
Quantities are for one concrete bridge railing transition type TFC			
EPOXY-COATED REINFORCING STEEL			
MARK OR SIZE	NO. OF BARS	LENGTH	WEIGHT
5802	12	5'-3"	
5804	19	5'-1"	
5808	12	4'-7"	
5809	19	4'-5"	
5816	11	2'-10"	
#5	10	10'-9"	
#5	1	6'-9"	
#5	14	6'-0"	
Total Epoxy-Coated Reinforcing Steel			551 LBS
MISCELLANEOUS			
Concrete, Class C			1.2 CYS
Surface Seal			100 SFT

INDIANA DEPARTMENT OF TRANSPORTATION

CONCRETE BRIDGE RAILING TRANSITION, TFC

SEPTEMBER 2012

STANDARD DRAWING NO. E 706-TTFC-03

RICHARD L. VanCLEAVE REGISTERED No. 9750 STATE OF INDIANA PROFESSIONAL ENGINEER

SUPERVISOR, ROADWAY STANDARDS DATE

CHIEF ENGINEER DATE

Item No. 02
Ms. Phillips
Date: 09/20/12

REVISION TO STANDARD DRAWINGS

706-TTFC-01 CONCRETE BRIDGE RAILING, PLAN AND ELEVATION
706-TTFC-02 CONCRETE BRIDGE RAILING, SECTIONS
706-TTFC-03 REINFORCING BAR BENDING

Motion: Mr. Second: Mr. Ayes: Nays:	Action: _____ Passed as Submitted _____ Passed as Revised _____ Withdrawn
Standard Specifications Sections affected: 706. Recurring Special Provision affected: NONE Standard Sheets affected: 706-TTFC-01; -03. Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	_____ 2014 Standard Specifications Book _____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ _____ Create RPD (No. _____) Effective _____ Letting _____ Technical Advisory GIFE Update Req'd.? Y ___ N ___ By _____ Addition or _____ Revision Frequency Manual Update Req'd? Y___N___ By _____ Addition or _____ Revision Received FHWA Approval? _____