INDIANA DEPARTMENT OF TRANSPORTATION
Driving Indiana's Economic Growth

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Room N925
Indianapolis, Indiana 46204

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

APPROVED MINUTES

June 20, 2013 Standards Committee Meeting

(Changes by the Action of the Committee on September 19, 2013 meeting highlighted yellow)

MEMORANDUM

September 26, 2013

TO: Standards Committee

FROM: Scott Trammell, Secretary

RE: Minutes from the June 20, 2013 Standards Committee Meeting

A Standards Committee meeting was called to order by Mr. Miller at 09:03 a.m. on June 20, 2013 in the N955 Bay Window Conference Room. The meeting was adjourned at 11:00 a.m.

The following committee members were in attendance:

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

**Proxy for* Bob Cales

Also in attendance were the following:

John Crist, EJ Constr.
Paul Berebitsky, ICA
Lana Podorvanova, INDOT
David Holtz, INDOT
Dudley Bonte, Rieth-Riley Constr.
Matt Beeson, INDOT
Steve Fisher, INDOT
Lalit Garg, INDOT
Wendy Chiles, INDOT
Michael Prather, INDOT
Scott Trammell, INDOT
Alfredo Hanza, 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 May 16, 2013 meeting.

DISCUSSION: Mr. Miller requested a motion to accept the minutes from the last meeting, as presented. Mr. Boruff and Mr. Prather offered a revision to item No. 3 of the minutes. Since this issue will be discussed today, Mr. Miller suggested delaying discussion of that revision for now. Ms. Phillips suggested approving the minutes at the end of today's meeting.

Mr. Miller said we'll wait to the end of the meeting.
Mr. Prather's item was approved, and Mr. Prather would like to simply revise the last minutes to reflect the change to the reference to 401.15, from 412.

Motion: Mr. Boruff
Second: Mr. Buening
Ayes: 9
Nays: 0

ACTION: PASSED AS REVISED

2. Effective dates of approved items.

DISCUSSION: Mr. Miller stated that there have been too many changes being made that make the current spec book obsolete. Mr. Miller also noted that the new 2014 Standard Specifications book currently is at the printer and there are already items on the agenda to revise the Standard Specifications. Mr. Miller suggested making all revisions effective in September of each year. Anything approved after June would have to wait until September of the following year.

Mr. Walker expressed concern over items that have been tried and tested and that they make changes accordingly. Mr. Miller offered that perhaps those revisions had not been researched long enough prior to being brought to the committee.

B. CONCEPTUAL PROPOSAL ITEMS

OLD BUSINESS

(No items were listed)

NEW BUSINESS

(No items were listed)

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

OLD BUSINESS

(No items were listed)

NEW BUSINESS

Item No. 01 06/20/13 (2014 SS) Ms. Phillips pg 05

Standard Drawings:

605-CCSJ-01	CONCRETE AND ~~ASPHALT~~*HMA* CURBS AND SAWED JOINTS
706-MSRW-01	RAILING TYPE FC AND MOMENT SLAB ASIDE MSE WALL - PCCP
706-MSRW-02	RAILING TYPE FT AND MOMENT SLAB ASIDE MSE WALL - PCCP
706-MSRW-03	RAILING TYPE FC AND MOMENT SLAB ASIDE MSE WALL – HMA PAVEMENT
706-MSRW-04	RAILING TYPE FT AND MOMENT SLAB ASIDE MSE WALL – HMA PAVEMENT
706-MSRW-05	RAILING TYPE FC AND MOMENT SLAB ATOP MSE WALL – PCCP
706-MSRW-06	RAILING TYPE FT AND MOMENT SLAB ATOP MSE WALL – PCCP
706-MSRW-07	RAILING TYPE FC AND MOMENT SLAB ATOP MSE WALL – HMA PAVEMENT
706-MSRW-08	RAILING TYPE FT AND MOMENT SLAB ATOP MSE WALL – HMA PAVEMENT
706-MSRW-09	MOMENT SLAB JOINTS
706-MSRW-10	RAILING AND MOMENT SLAB AT MSE WALL *GENERAL NOTES AND REINFORCING BAR – BENDING DIAGRAMS*
706-TTTX-01	CONCRETE BRIDGE RAILING TRANSITION, TTX
706-TTTX-02	CONCRETE BRIDGE RAILING TRANSITION, TTX

ACTION: PASSED AS REVISED, except 706-MSRW-01 thru -10 (see COMMENTS AND ACTION)

Item No. 02 06/20/13 (2014 SS) Mr. Walker pg 33

Recurring Special Provision:

400-R-XXX	*HMA VIBRATORY COMPACTION PROHIBITION*

ACTION: PASSED AS SUBMITTED

Item No. 03 06/20/13 (2014 SS) Mr. Walker pg 36

401.05	Volumetric Mix Design
401.06	Recycled Materials
401.09	Acceptance of Mixtures
401.16	Density
401.14	Spreading and Finishing
410.09	Acceptance of Mixtures

410.16	Density
904.02(b)	For HMA Mixtures

ACTION: PASSED AS REVISED

Item No. 04 06/20/13 (2014 SS) Mr. Boruff pg 43

Standard Drawings:

802-SCSB-01	*SIGN CANTILEVER STRUCTURE BUTTERFLY DRAWING INDEX*
802-SCSB-02	*SIGN CANTILEVER STRUCTURE BUTTERFLY PLAN, ELEVATION, MEMBER SIZE, AND CAMBER*
802-SCSB-03	*SIGN CANTILEVER STRUCTURE BUTTERFLY QUADRI-CHORD AND FLANGE DETAILS*
802-SCSB-04	*SIGN CANTILEVER STRUCTURE BUTTERFLY UPPER CHORDS CONNECTION*
802-SCSB-05	*SIGN CANTILEVER STRUCTURE BUTTERFLY LOWER CHORDS CONNECTION AND WIRE OUTLET DETAIL*
802-SCSB-06	*SIGN CANTILEVER STRUCTURE BUTTERFLY BASE PLATE, ANCHOR BOLT, AND METAL SKIRT DETAILS*
802-SCSB-07	*SIGN CANTILEVER STRUCTURE BUTTERFLY HANDHOLE AND I.D. TAG DETAILS*
802-SCSB-08	*SIGN CANTILEVER STRUCTURE BUTTERFLY FOUNDATION AT 33" CONCRETE BARRIER*
802-SCSB-09	*SIGN CANTILEVER STRUCTURE BUTTERFLY FOUNDATION AT 45" CONCRETE BARRIER*

ACTION: PASSED AS REVISED

Item No. 05 06/20/13 (2014 SS) Ms. Gottschalk pg 54

Recurring Special Provision:

105-C-224	CONSTRUCTION ENGINEERING AND ~~INSPECTION FOR~~*MONITORING OF* UTILITY RELOCATION *WORK*

ACTION: WITHDRAWN PRIOR TO THE MEETING

Item No. 06 06/20/13 (2014 SS) Mr. Buening pg 60

Recurring Special Provision:

401-R-581	JOINT ADHESIVE

ACTION: PASSED AS REVISED

cc: Committee Members
FHWA
ICA

SPECIFICATION, SPECIAL PROVISIONS AND DRAWINGS

REVISION TO STANDARD DRAWINGS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The following Standard Drawings contain errors or misleading information and require editorial corrections.

PROPOSED SOLUTION: The following editorial revisions to Standard Drawings are submitted for comment. Markups of existing drawings and final drafts incorporating proposed revisions are included.

605-CCSJ-01: Corrected drawing of HMA Curb to more accurately reflect 4" height, updated terminology to agree with current practice and pay items ("Mountable" changed to "Sloping", "Barrier" changed to "Vertical", "Asphalt" changed to "HMA"), reorganized sections at joint, updated drawing format in general.

706-MSRW-01 thru -10: Relocated dowel bars in moment slab to reflect 6" minimum clearance from edge of pavement, updated drawing format in general.

706-TTTX-01 and -02: Corrected spacing description in Elevation, updated terminology to agree with current practice and pay items ("Steel" changed to "Bars"), updated drawing format in general.

APPLICABLE STANDARD SPECIFICATIONS: none

APPLICABLE STANDARD DRAWINGS: 605-CCSJ-01, 706-MSRW-01 thru -10, 706-TTTX-01 and -02.

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 Standards & Policy

Organization: INDOT

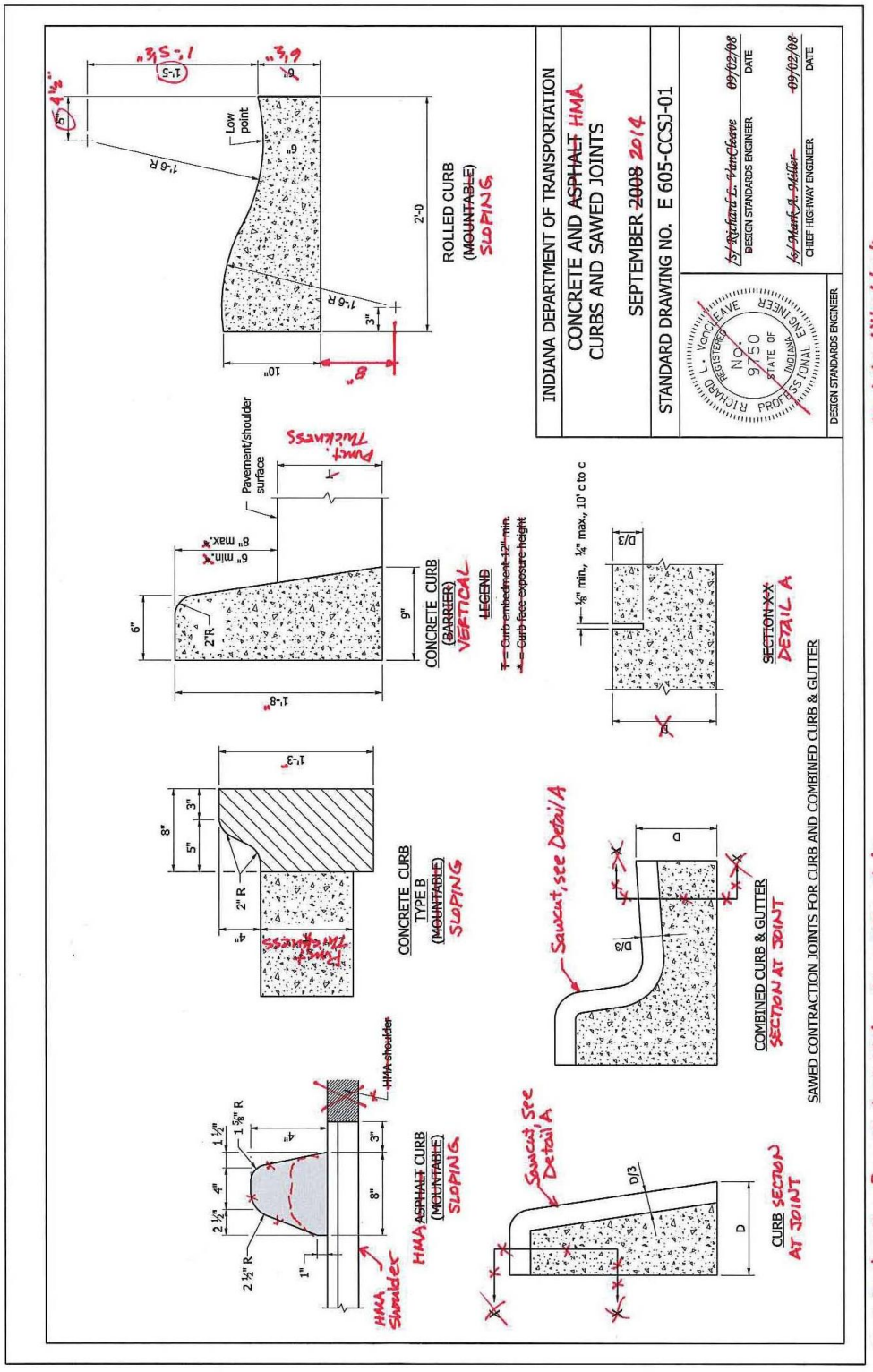
Phone Number: 232-6775

Date: May 23, 2013

APPLICABLE SUB-COMMITTEE ENDORSEMENT:

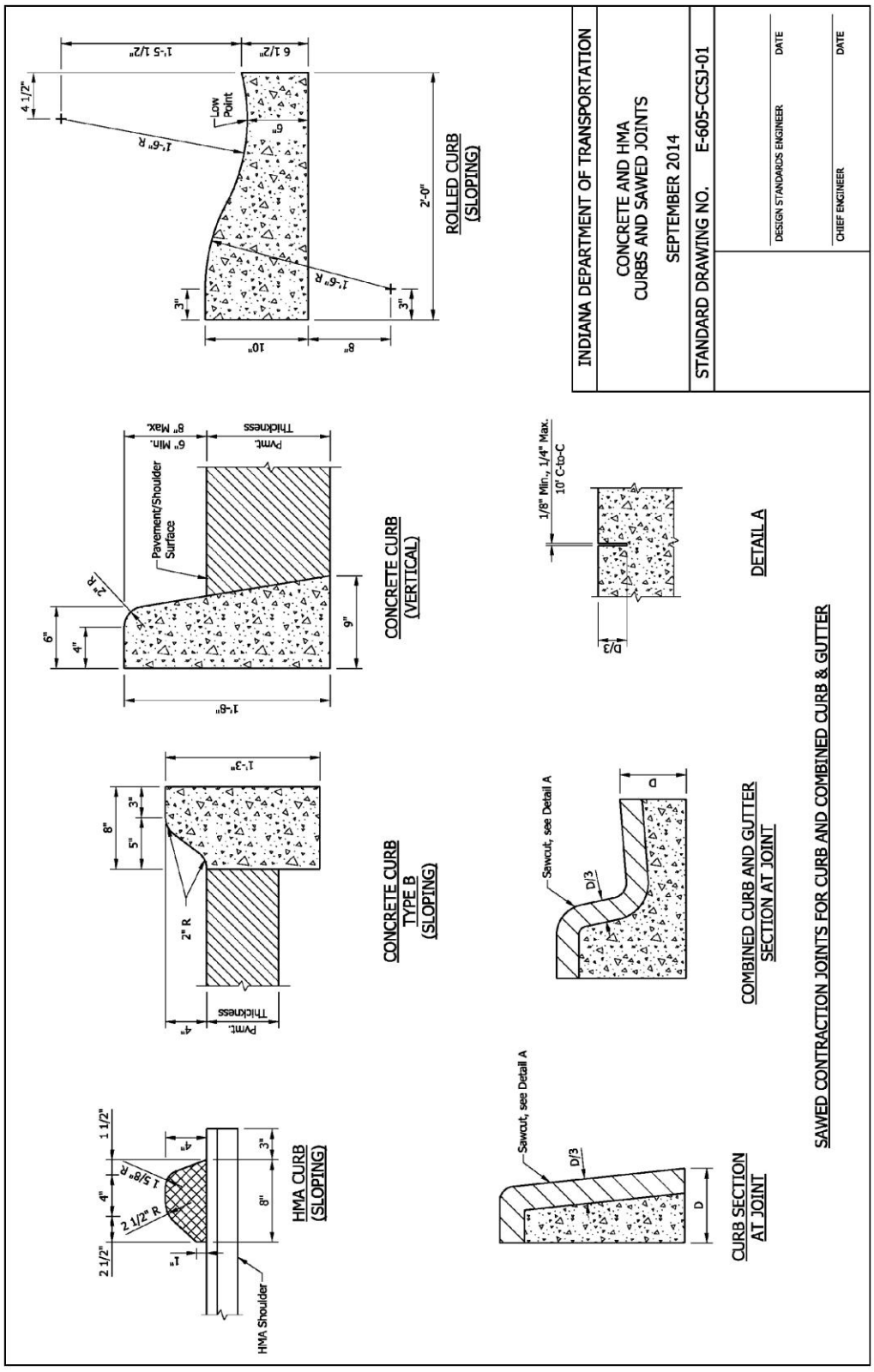
REVISION TO STANDARD DRAWINGS

605-CCSJ-01 CONCRETE AND ASPHALT CURBS AND SAWED JOINTS (WITH MARKUPS)



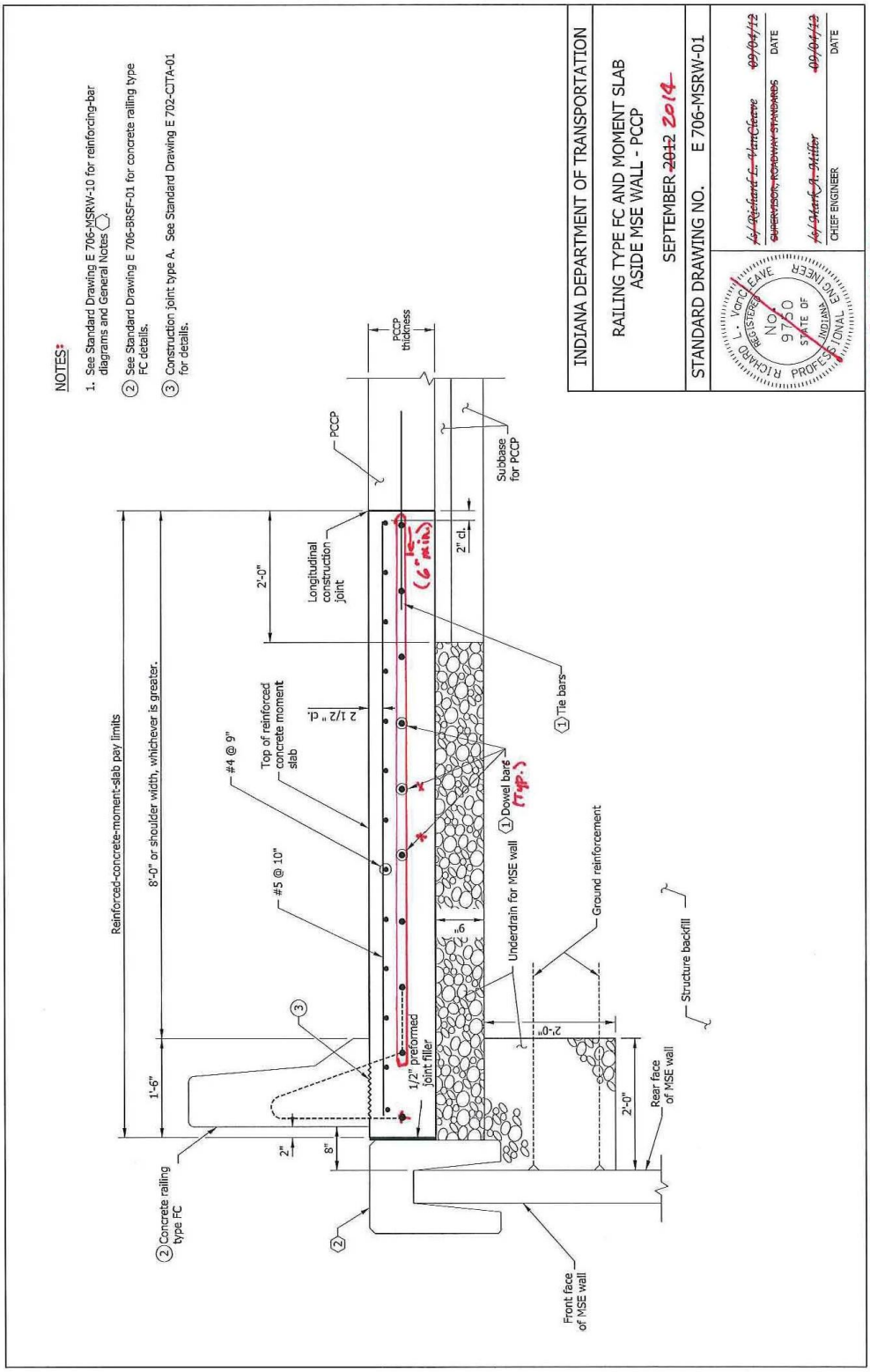
REVISION TO STANDARD DRAWINGS

605-CCSJ-01 CONCRETE AND HMA CURBS AND SAWED JOINTS (DRAFT)



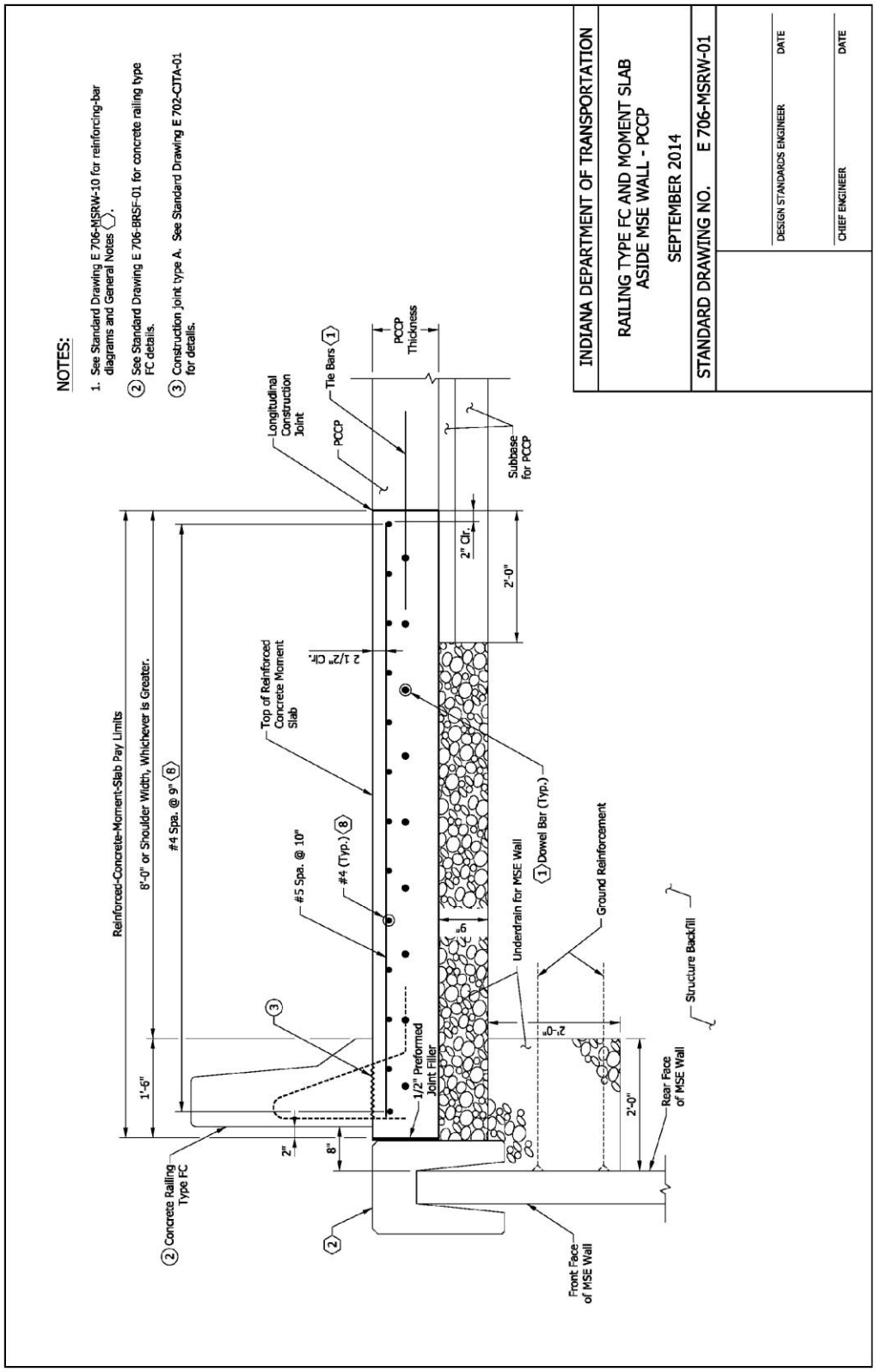
REVISION TO STANDARD DRAWINGS

706-MSRW-01 RAILING TYPE FC AND MOMENT SLAB ASIDE MSE WALL - PCCP (WITH MARKUPS)



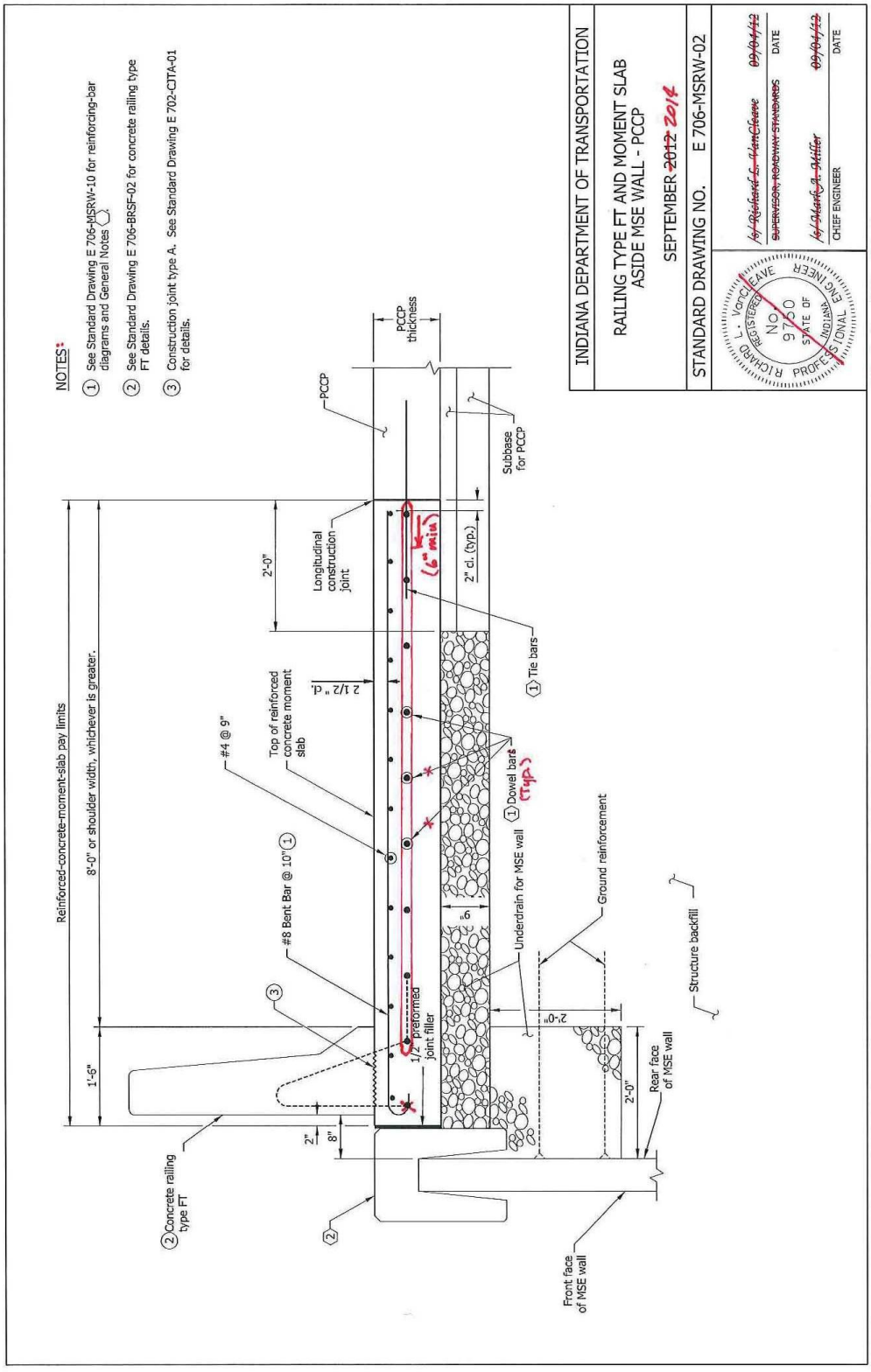
REVISION TO STANDARD DRAWINGS

706-MSRW-01 RAILING TYPE FC AND MOMENT SLAB ASIDE MSE WALL - PCCP
(DRAFT) (WITHDRAWN)



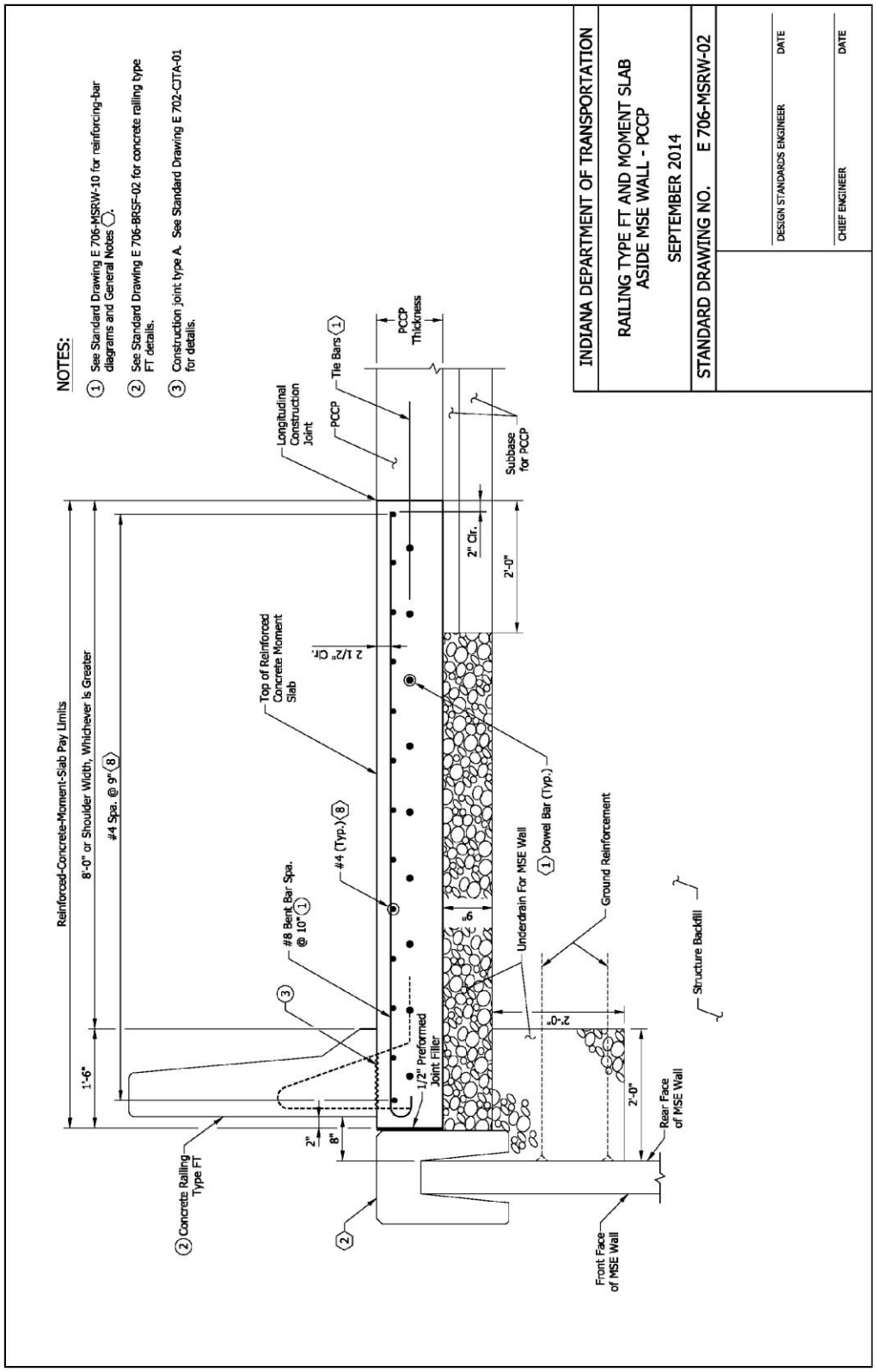
REVISION TO STANDARD DRAWINGS

706-MSRW-02 RAILING TYPE FT AND MOMENT SLAB ASIDE MSE WALL - PCCP (WITH MARKUPS)



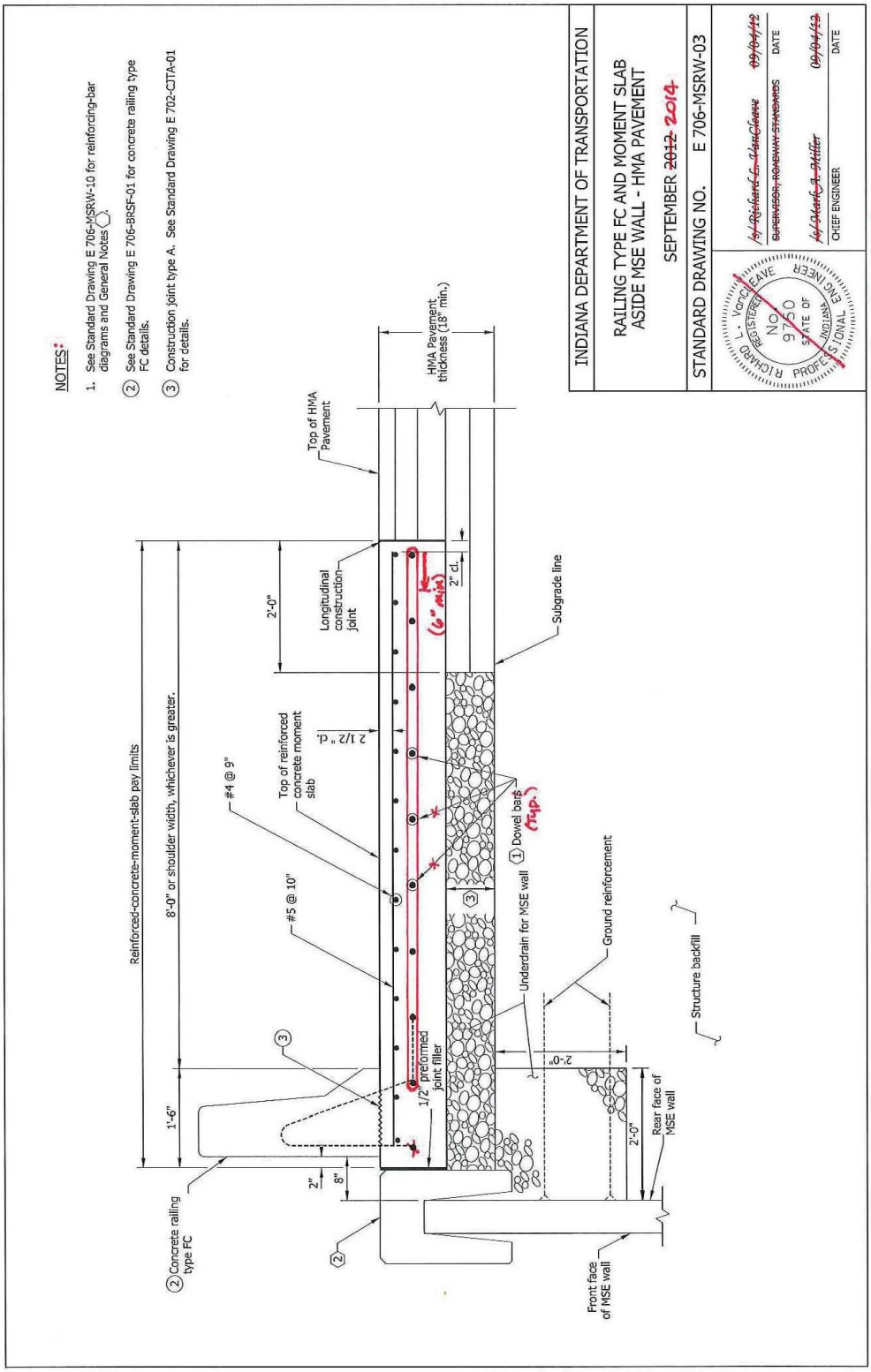
REVISION TO STANDARD DRAWINGS

706-MSRW-02 RAILING TYPE FT AND MOMENT SLAB ASIDE MSE WALL - PCCP
(DRAFT) (WITHDRAWN)



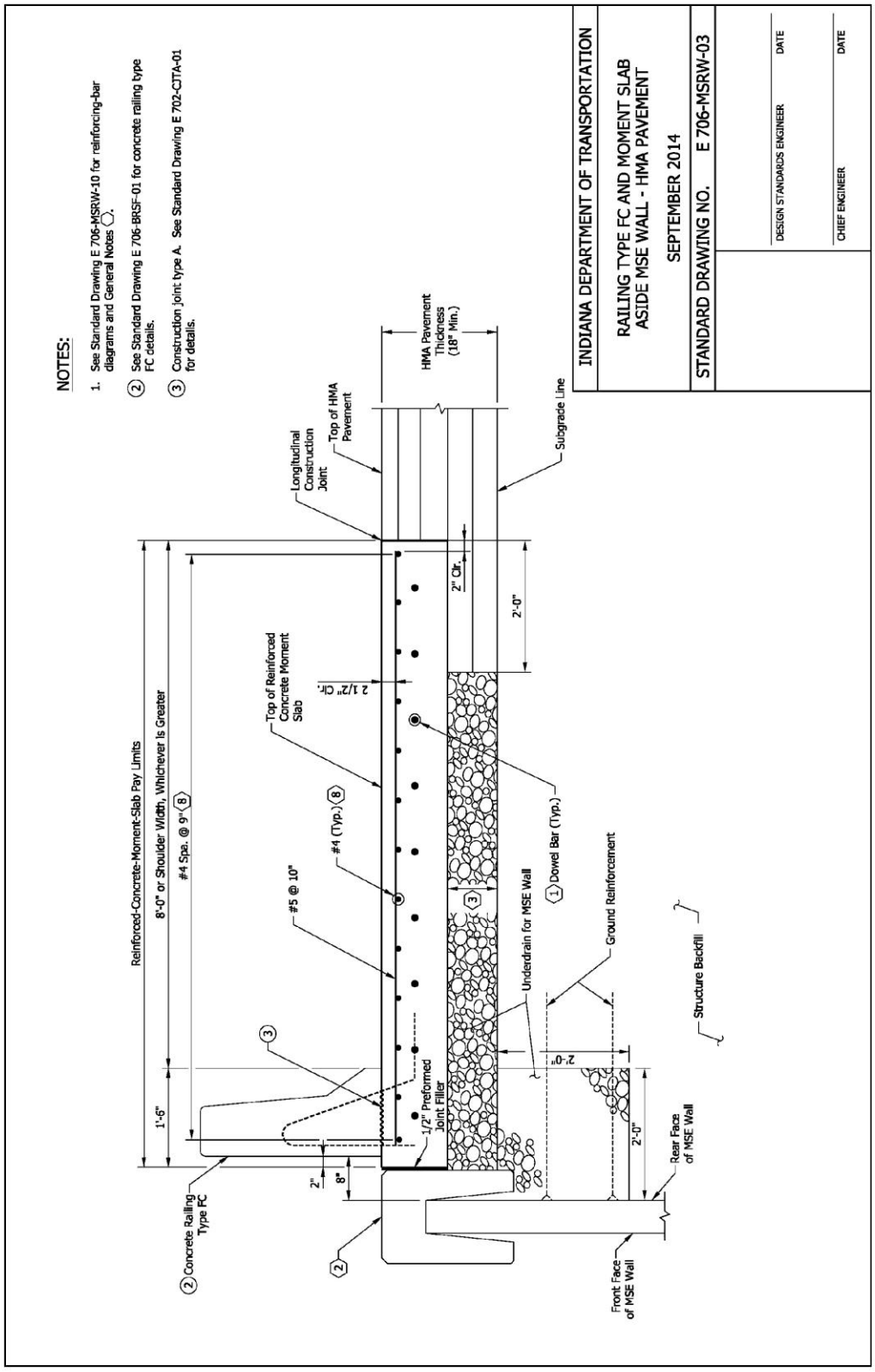
REVISION TO STANDARD DRAWINGS

706-MSRW-03 RAILING TYPE FC AND MOMENT SLAB ASIDE MSE WALL – HMA PAVEMENT (WITH MARKUPS)



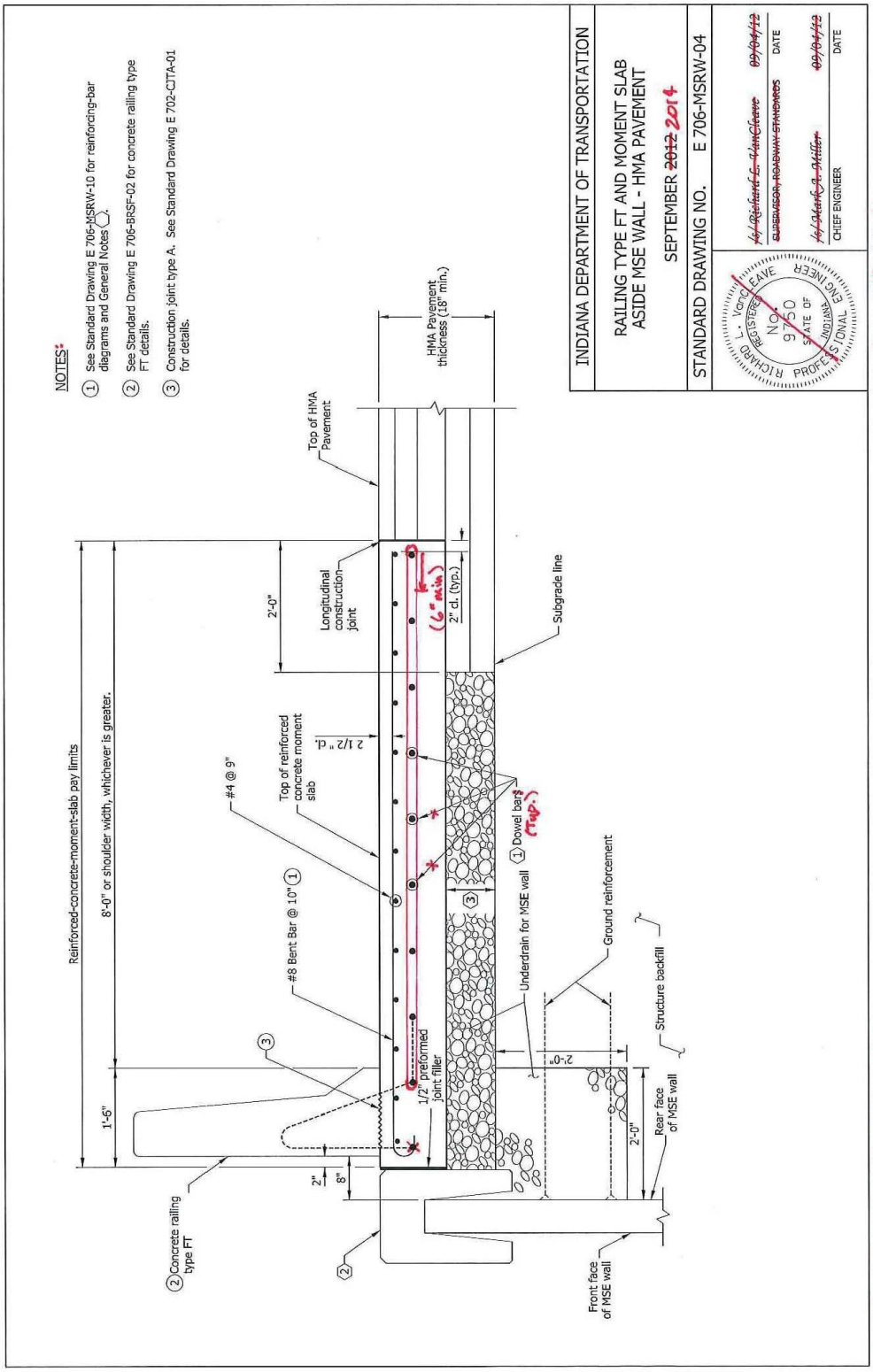
REVISION TO STANDARD DRAWINGS

706-MSRW-03 RAILING TYPE FC AND MOMENT SLAB ASIDE MSE WALL – HMA PAVEMENT (DRAFT) (WITHDRAWN)



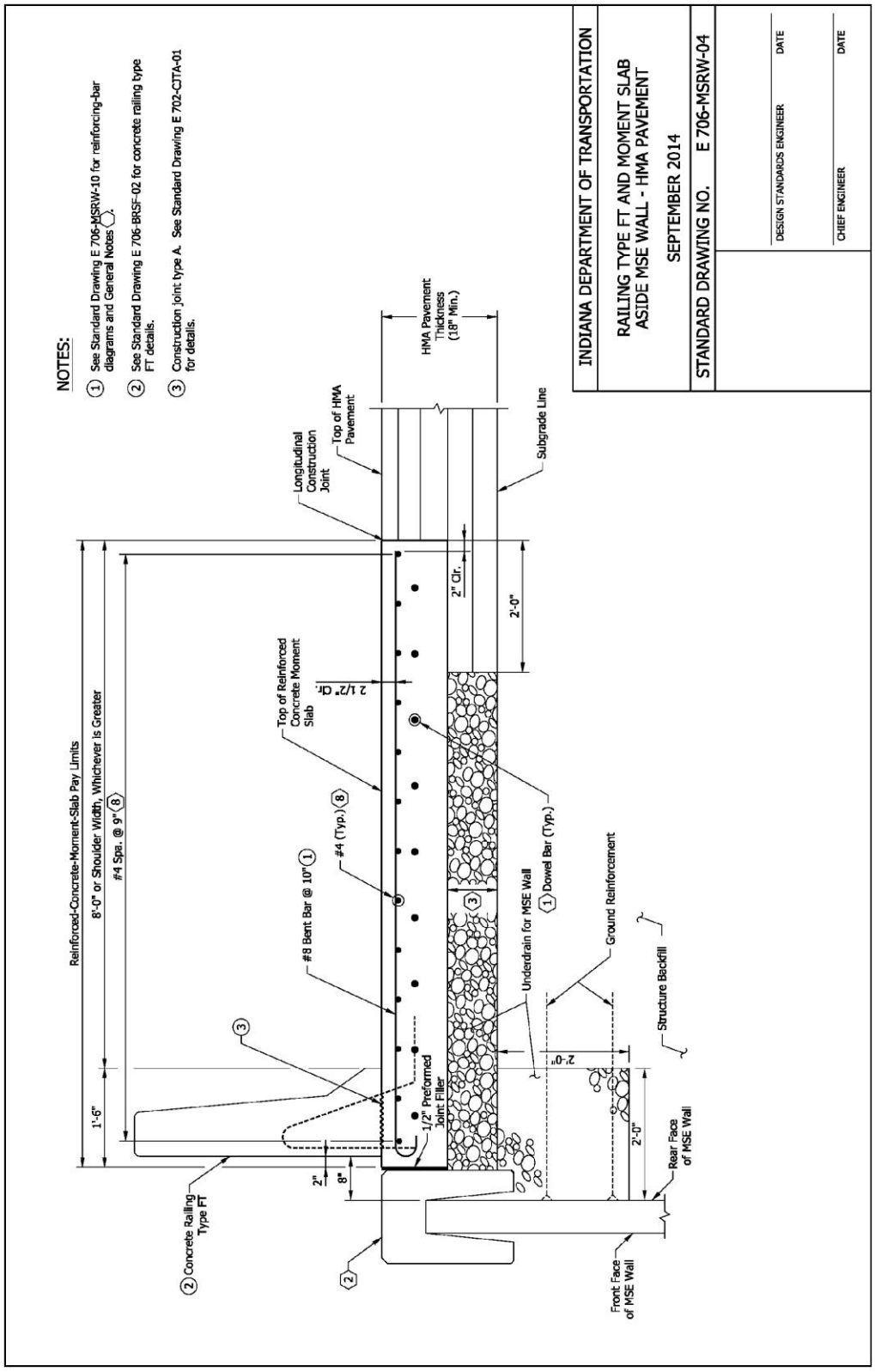
REVISION TO STANDARD DRAWINGS

706-MSRW-04 RAILING TYPE FT AND MOMENT SLAB ASIDE MSE WALL – HMA PAVEMENT (WITH MARKUPS)



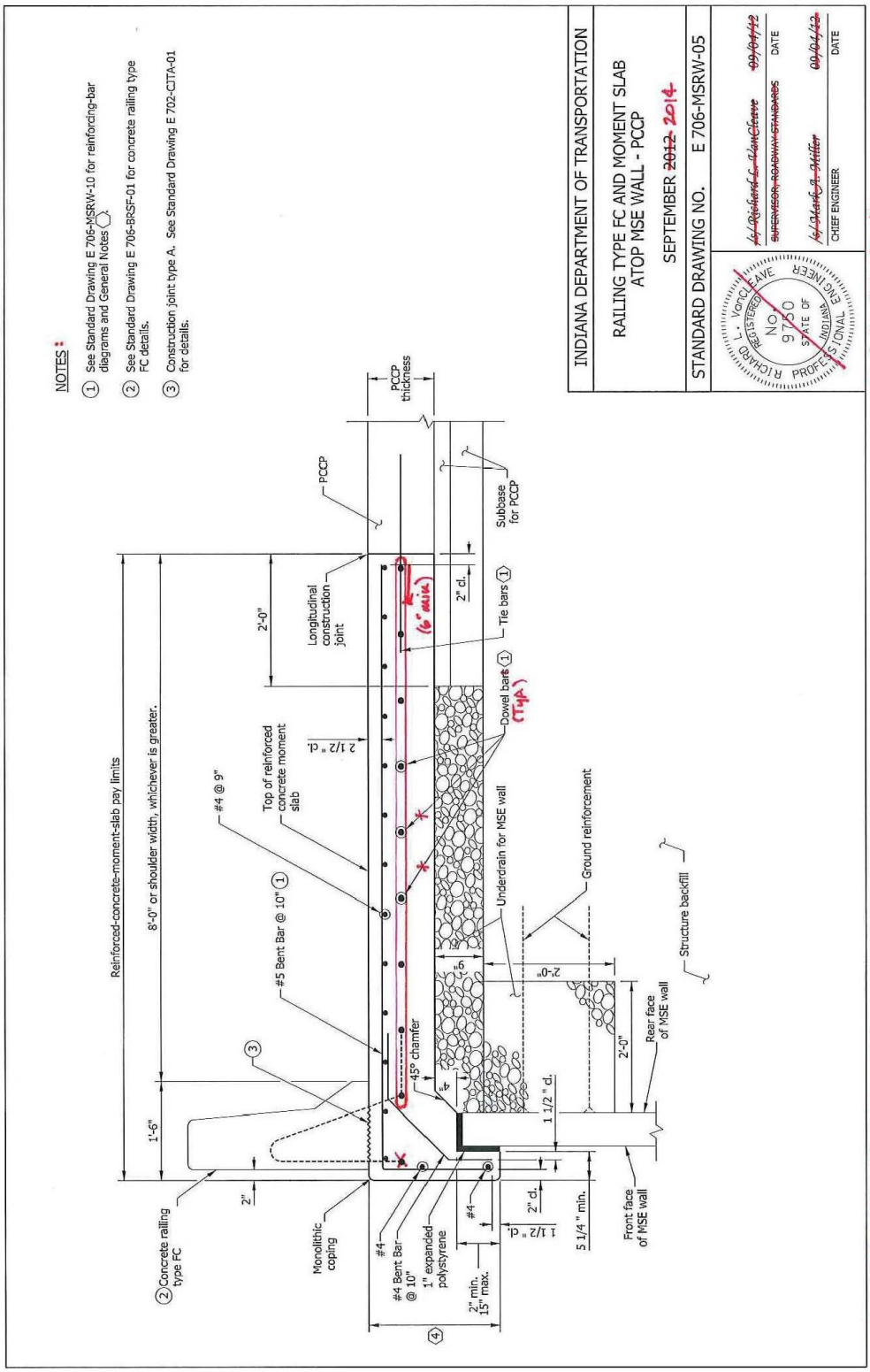
REVISION TO STANDARD DRAWINGS

706-MSRW-04 RAILING TYPE FT AND MOMENT SLAB ASIDE MSE WALL – HMA PAVEMENT (DRAFT) (WITHDRAWN)



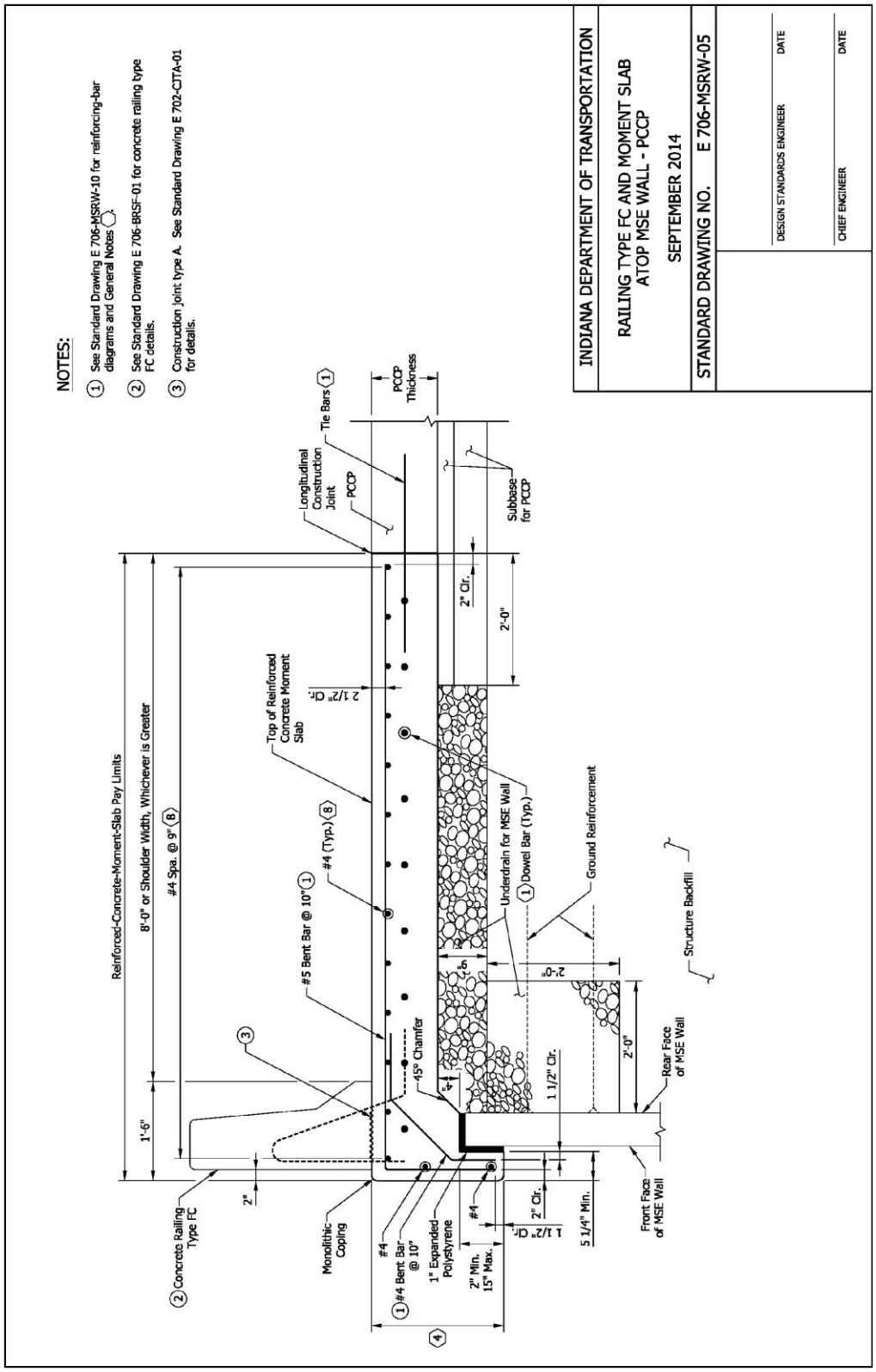
REVISION TO STANDARD DRAWINGS

706-MSRW-05 RAILING TYPE FC AND MOMENT SLAB ATOP MSE WALL – PCCP (WITH MARKUPS)



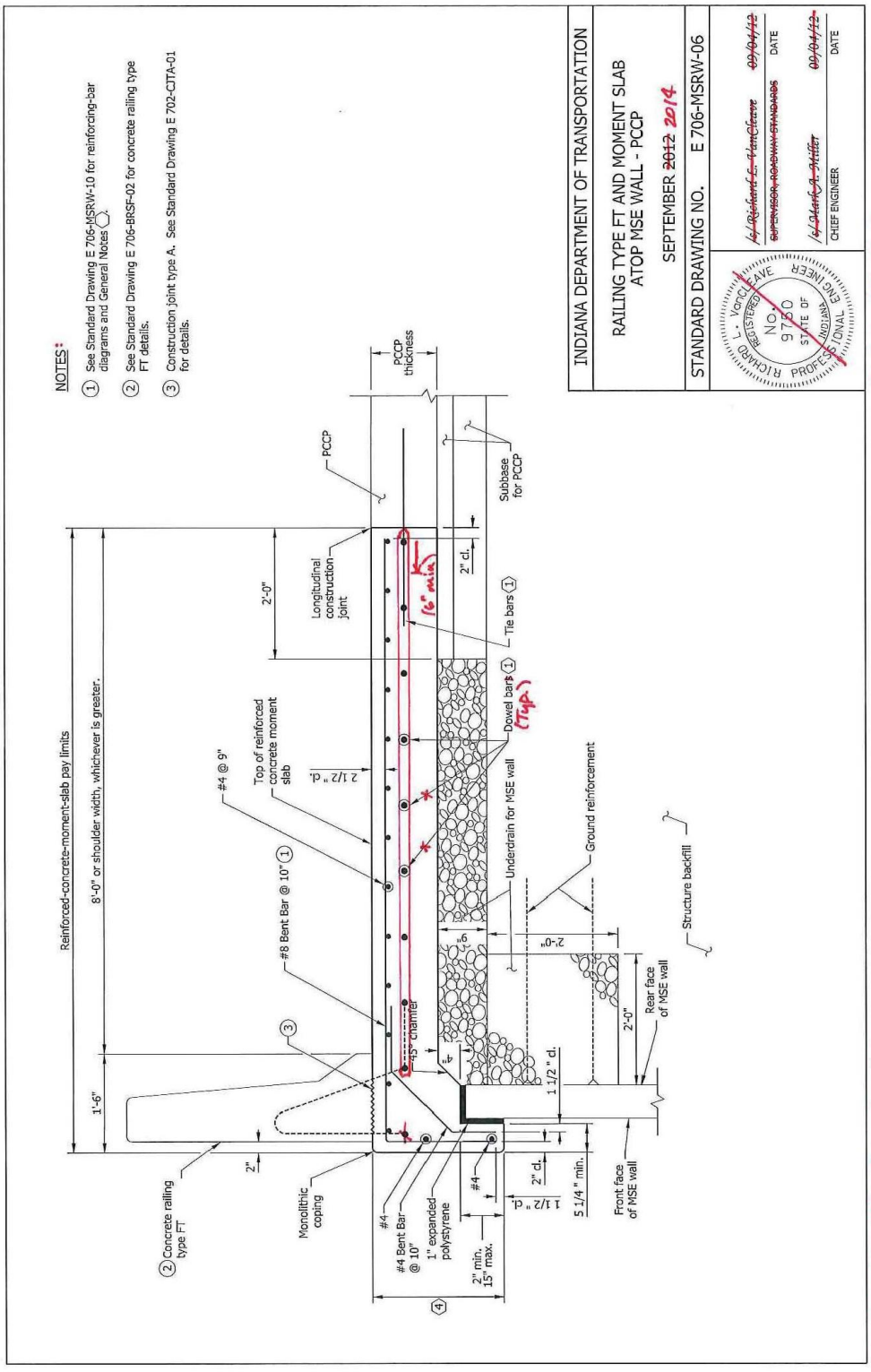
REVISION TO STANDARD DRAWINGS

706-MSRW-05 RAILING TYPE FC AND MOMENT SLAB ATOP MSE WALL – PCCP
(DRAFT) (WITHDRAWN)



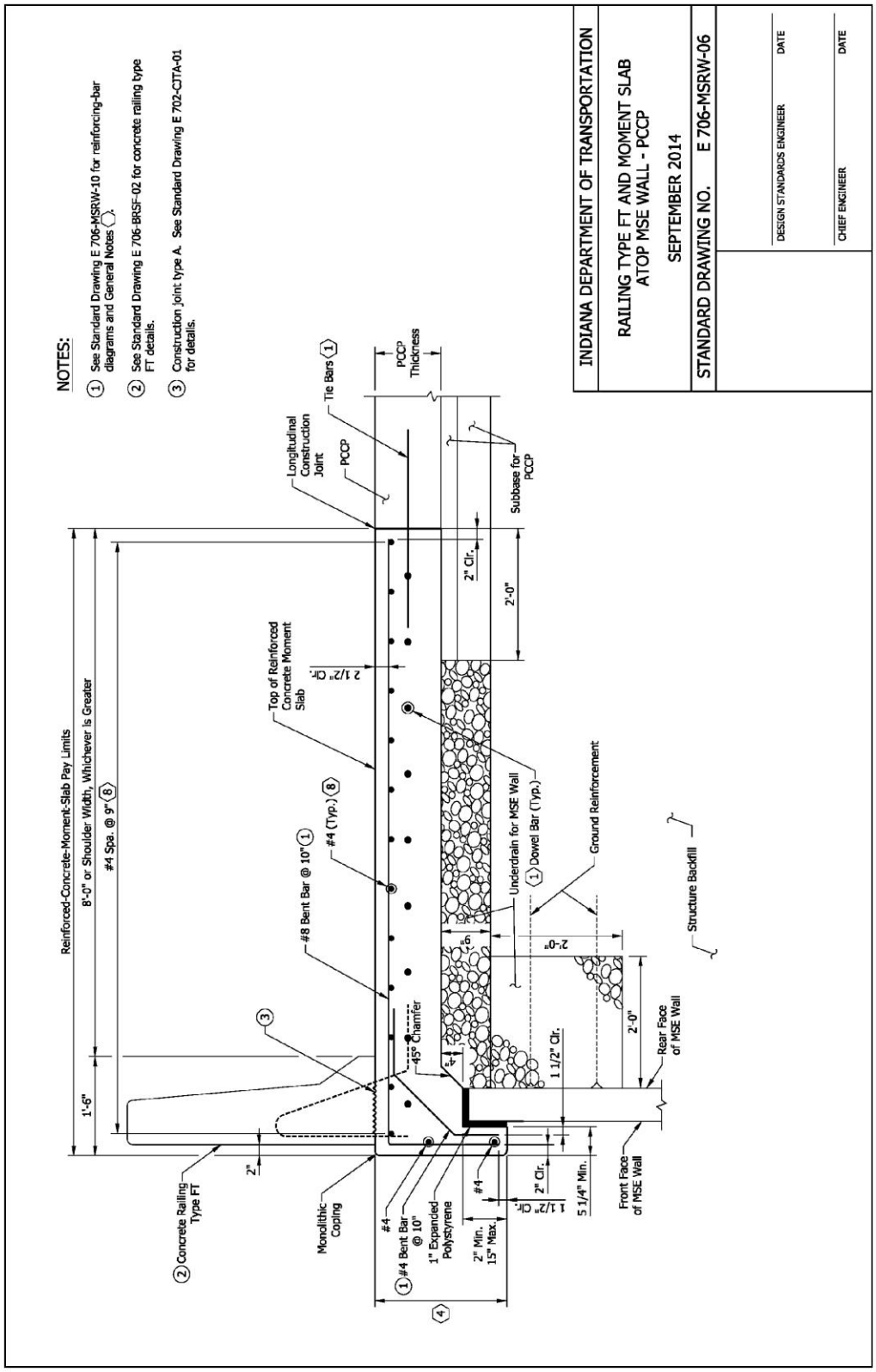
REVISION TO STANDARD DRAWINGS

706-MSRW-06 RAILING TYPE FT AND MOMENT SLAB ATOP MSE WALL – PCCP (WITH MARKUPS)



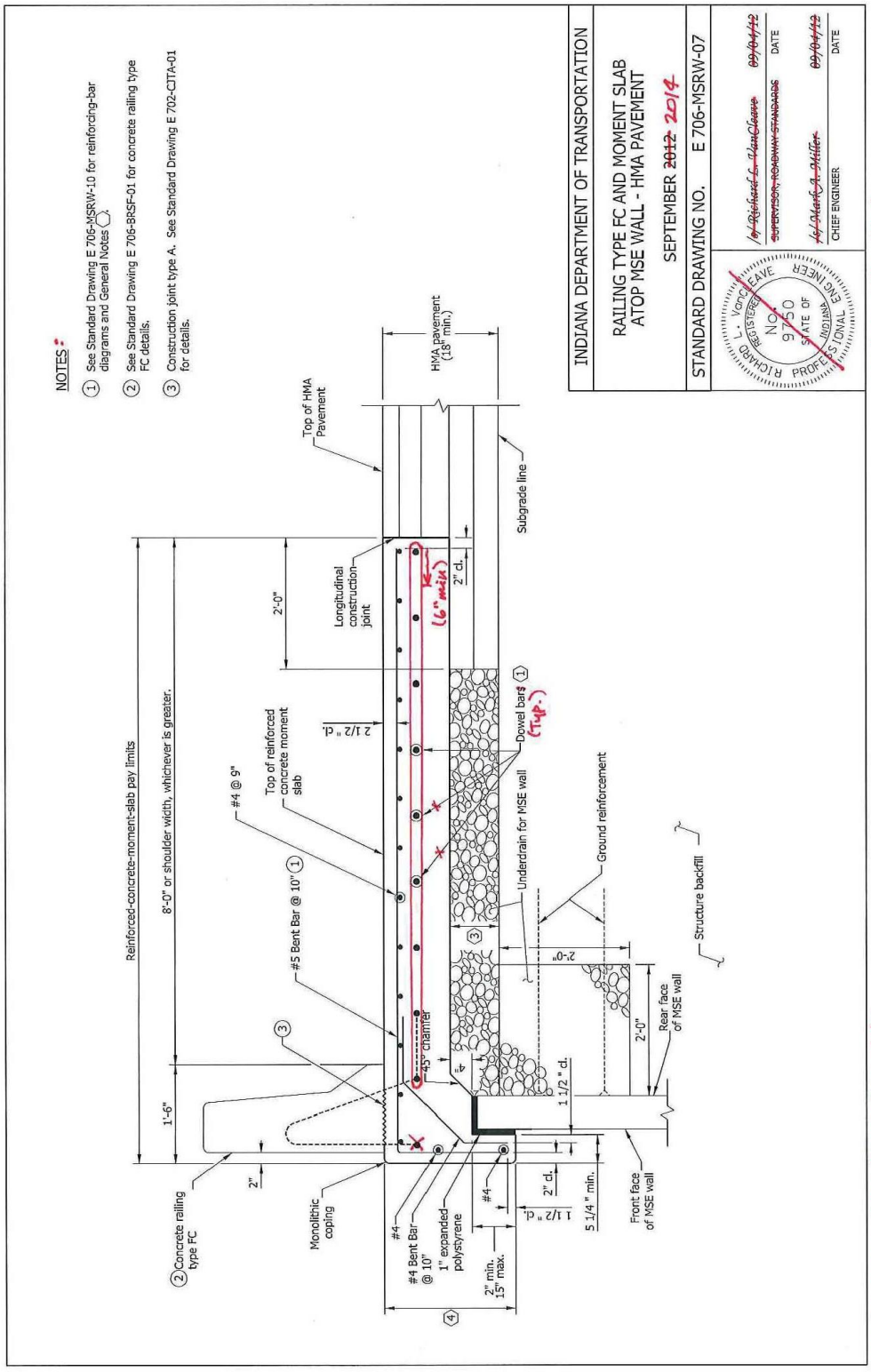
REVISION TO STANDARD DRAWINGS

706-MSRW-06 RAILING TYPE FT AND MOMENT SLAB ATOP MSE WALL – PCCP
(DRAFT) (WITHDRAWN)



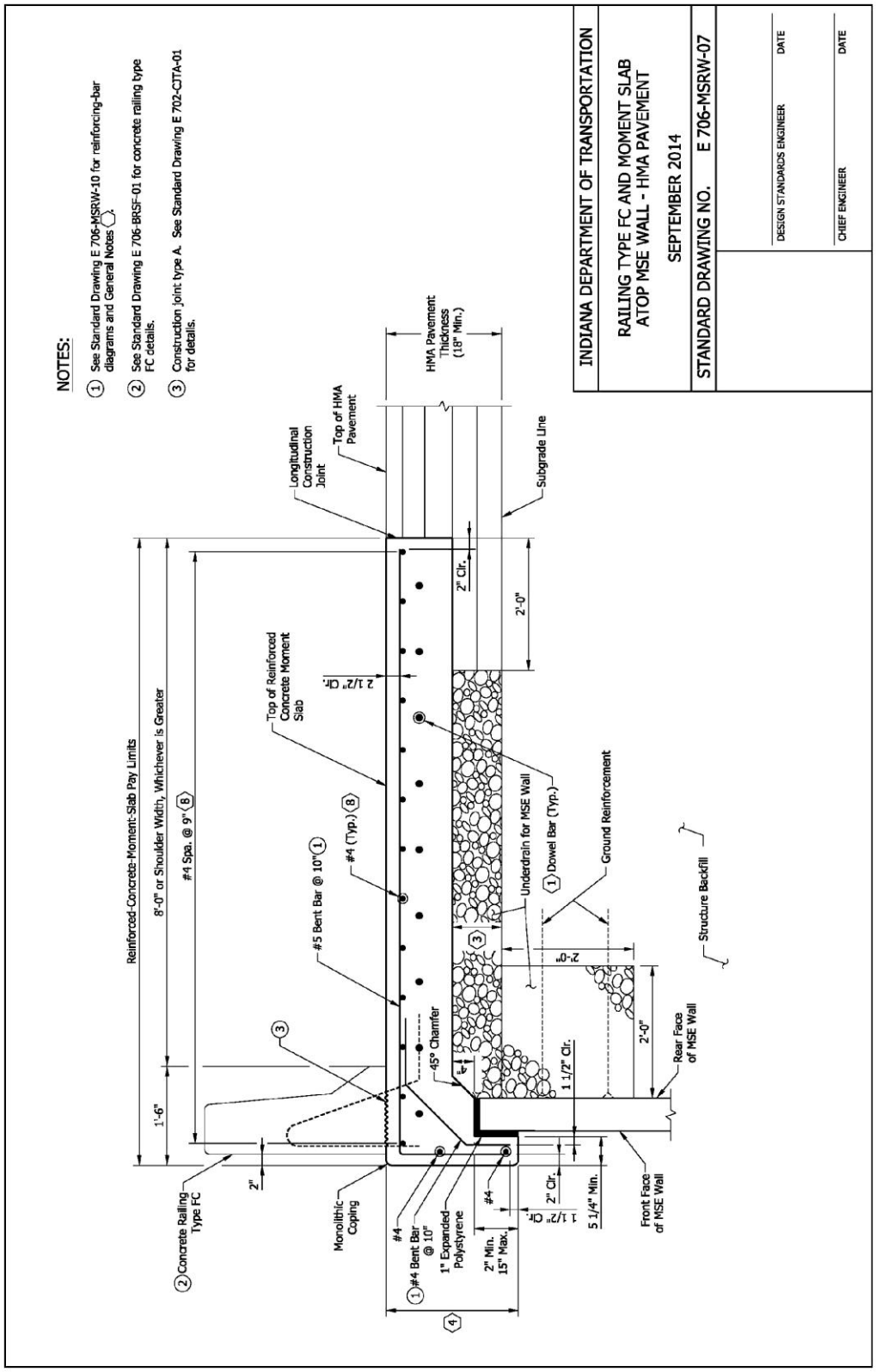
REVISION TO STANDARD DRAWINGS

706-MSRW-07 RAILING TYPE FC AND MOMENT SLAB ATOP MSE WALL – HMA PAVEMENT (WITH MARKUPS)



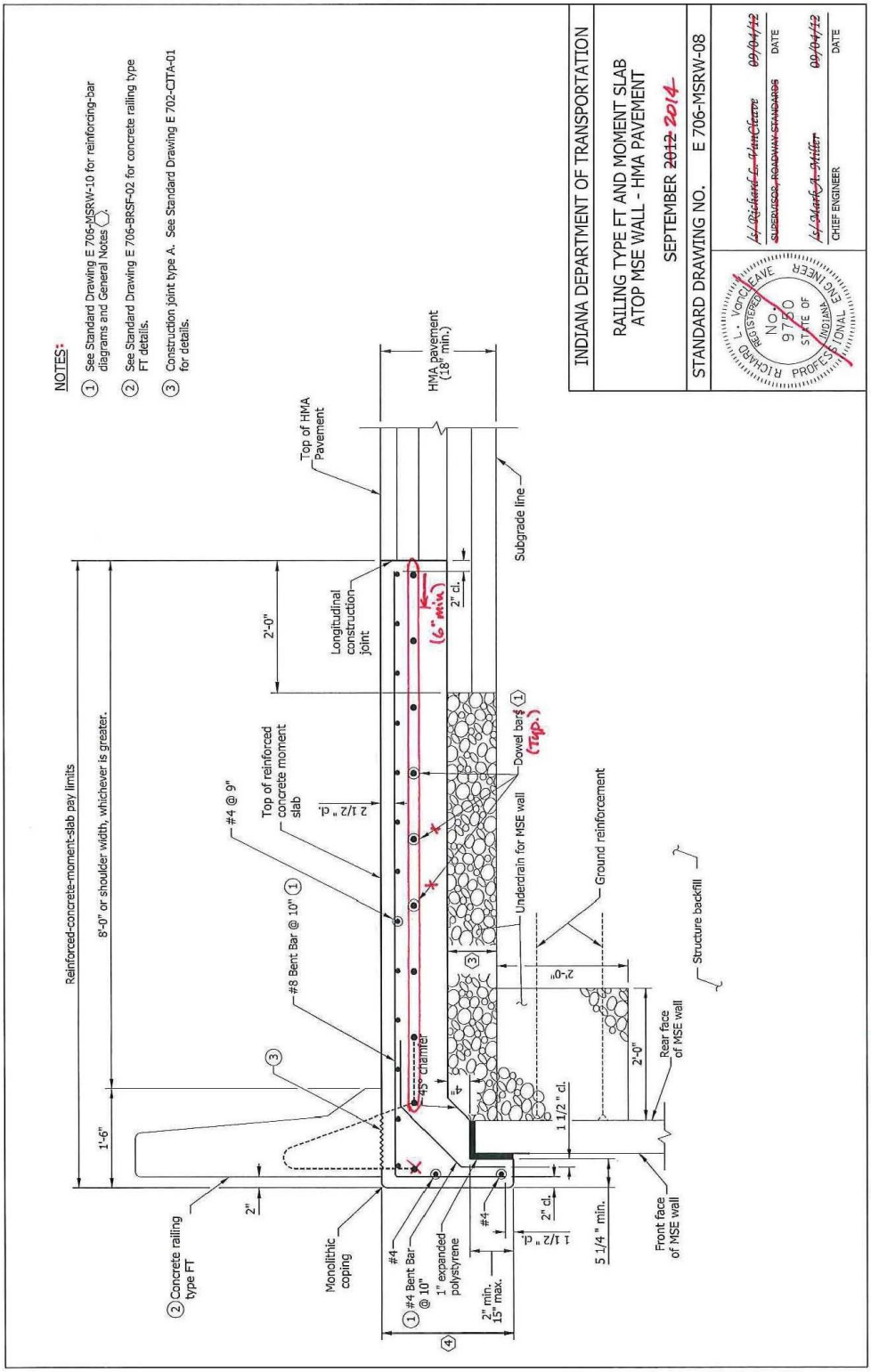
REVISION TO STANDARD DRAWINGS

706-MSRW-07 RAILING TYPE FC AND MOMENT SLAB ATOP MSE WALL – HMA PAVEMENT (DRAFT) (WITHDRAWN)



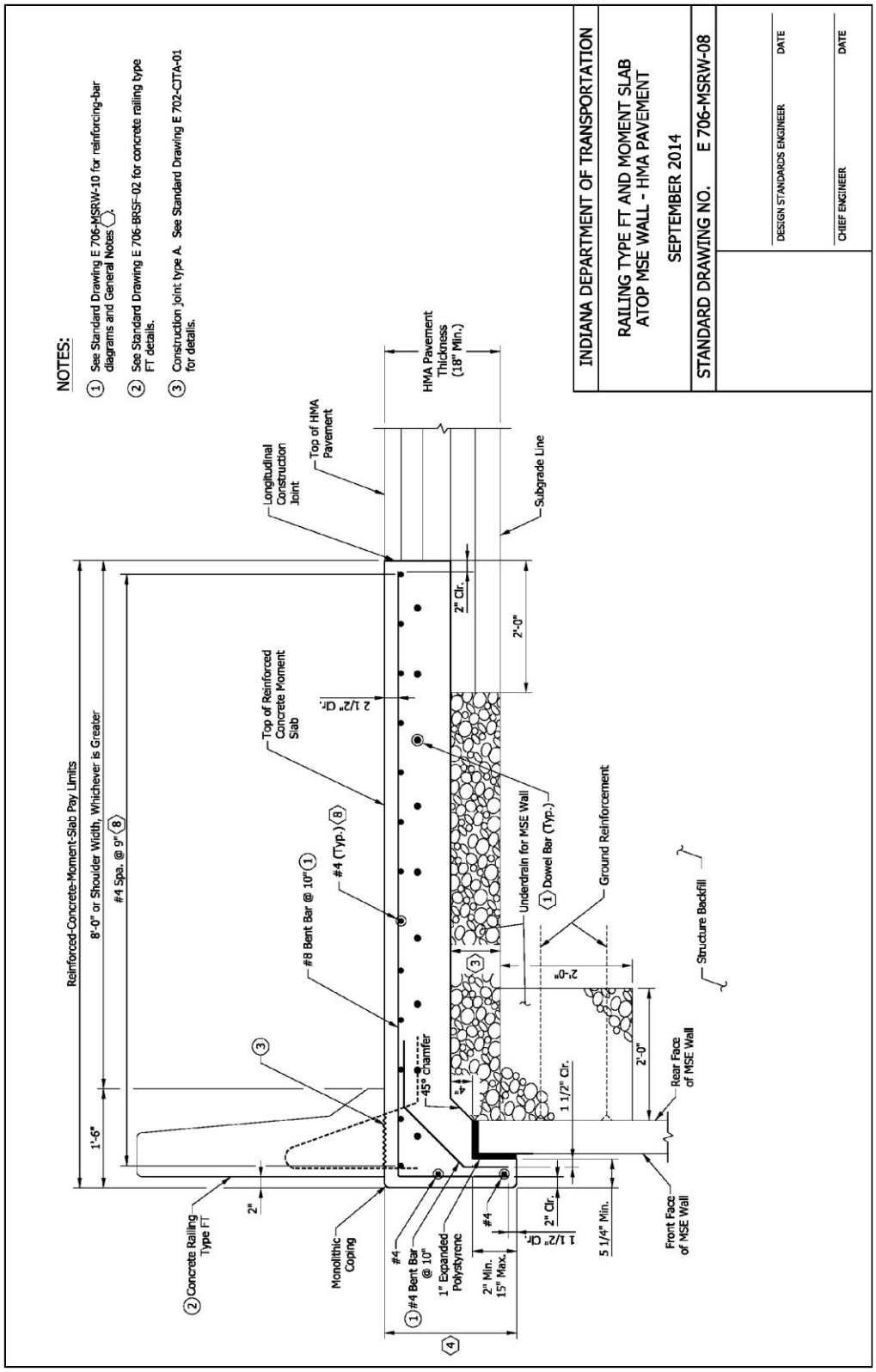
REVISION TO STANDARD DRAWINGS

706-MSRW-08 RAILING TYPE FT AND MOMENT SLAB ATOP MSE WALL – HMA PAVEMENT (WITH MARKUPS)



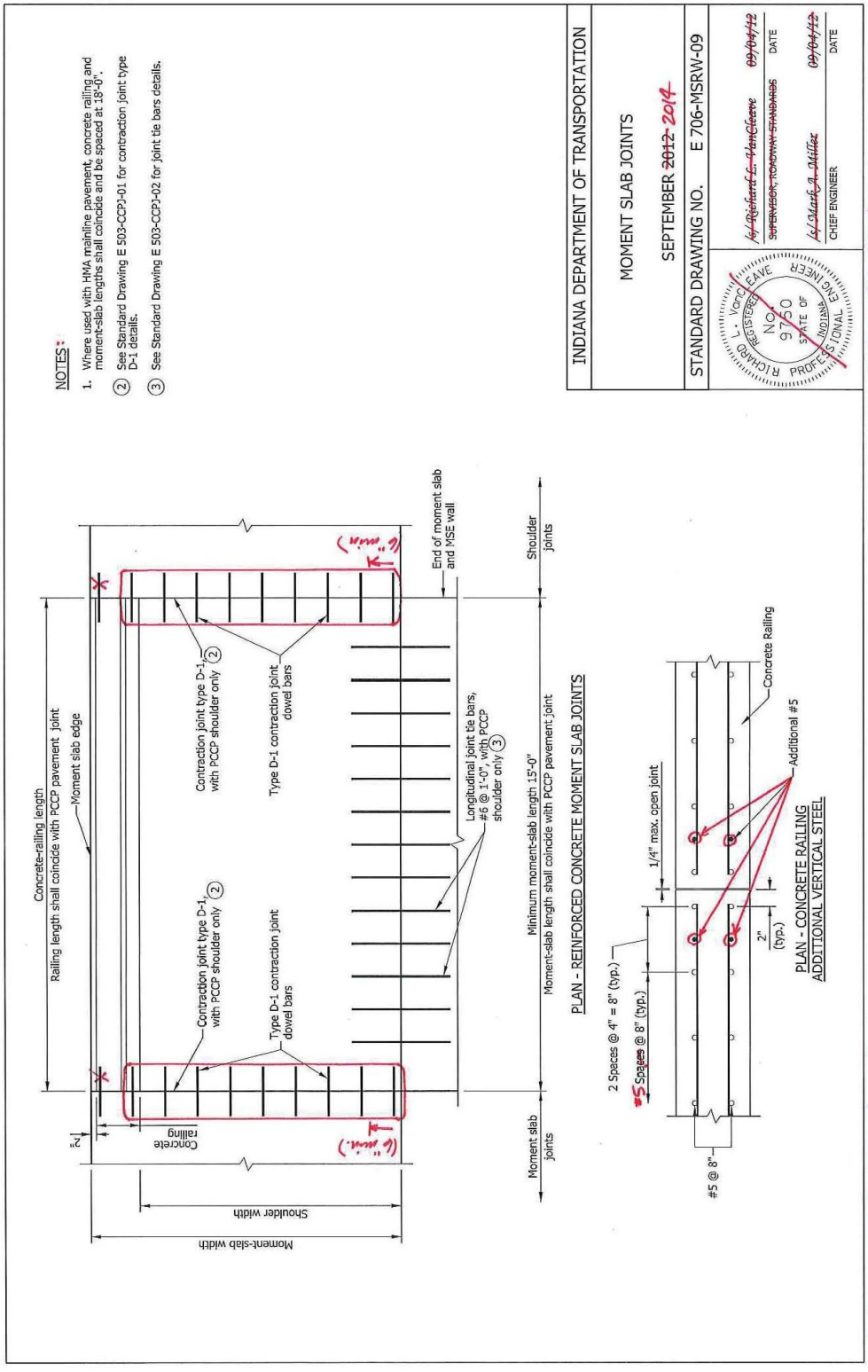
REVISION TO STANDARD DRAWINGS

706-MSRW-08 RAILING TYPE FT AND MOMENT SLAB ATOP MSE WALL – HMA PAVEMENT (DRAFT) (WITHDRAWN)



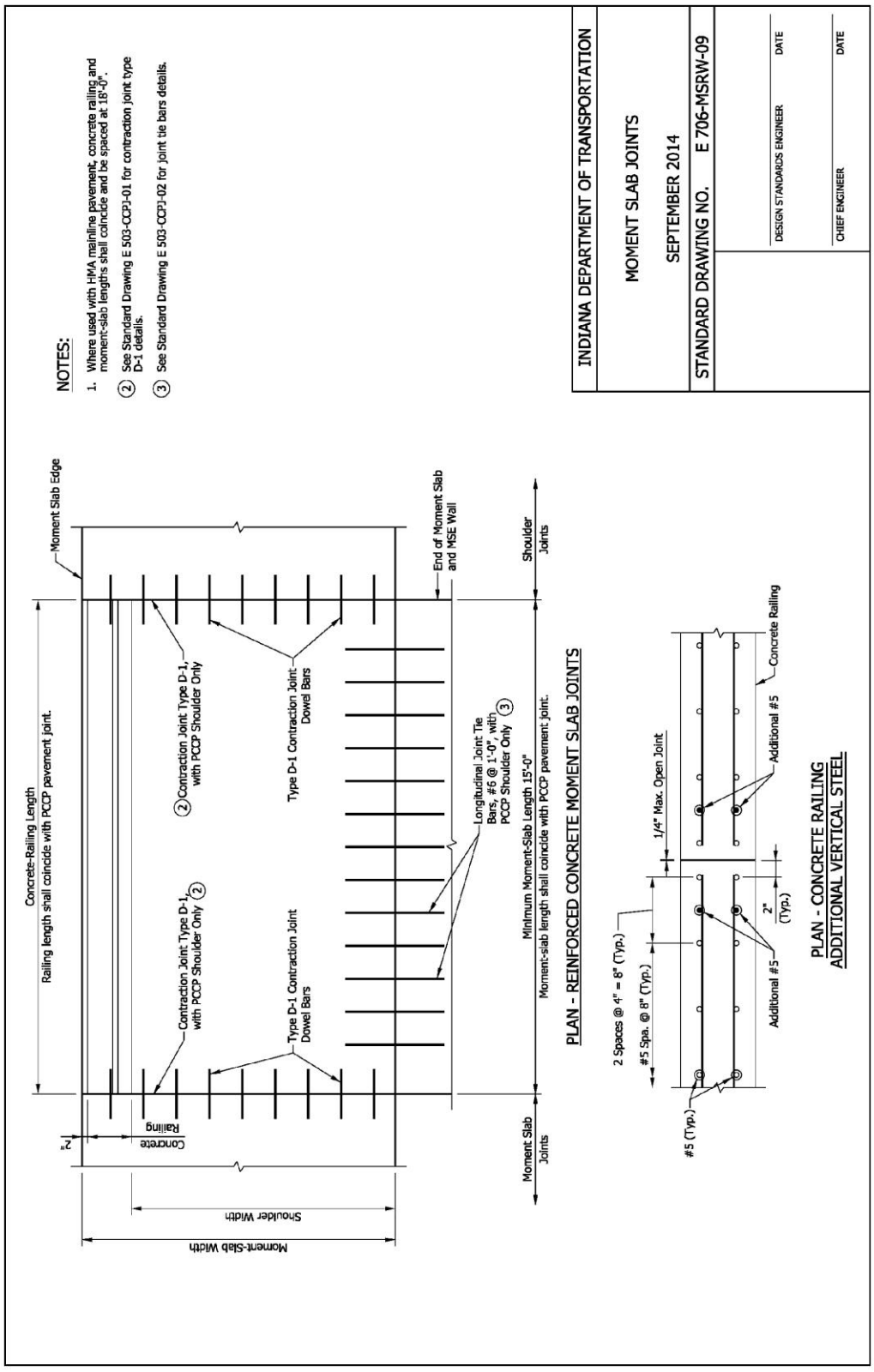
REVISION TO STANDARD DRAWINGS

706-MSRW-09 MOMENT SLAB JOINTS (WITH MARKUPS)



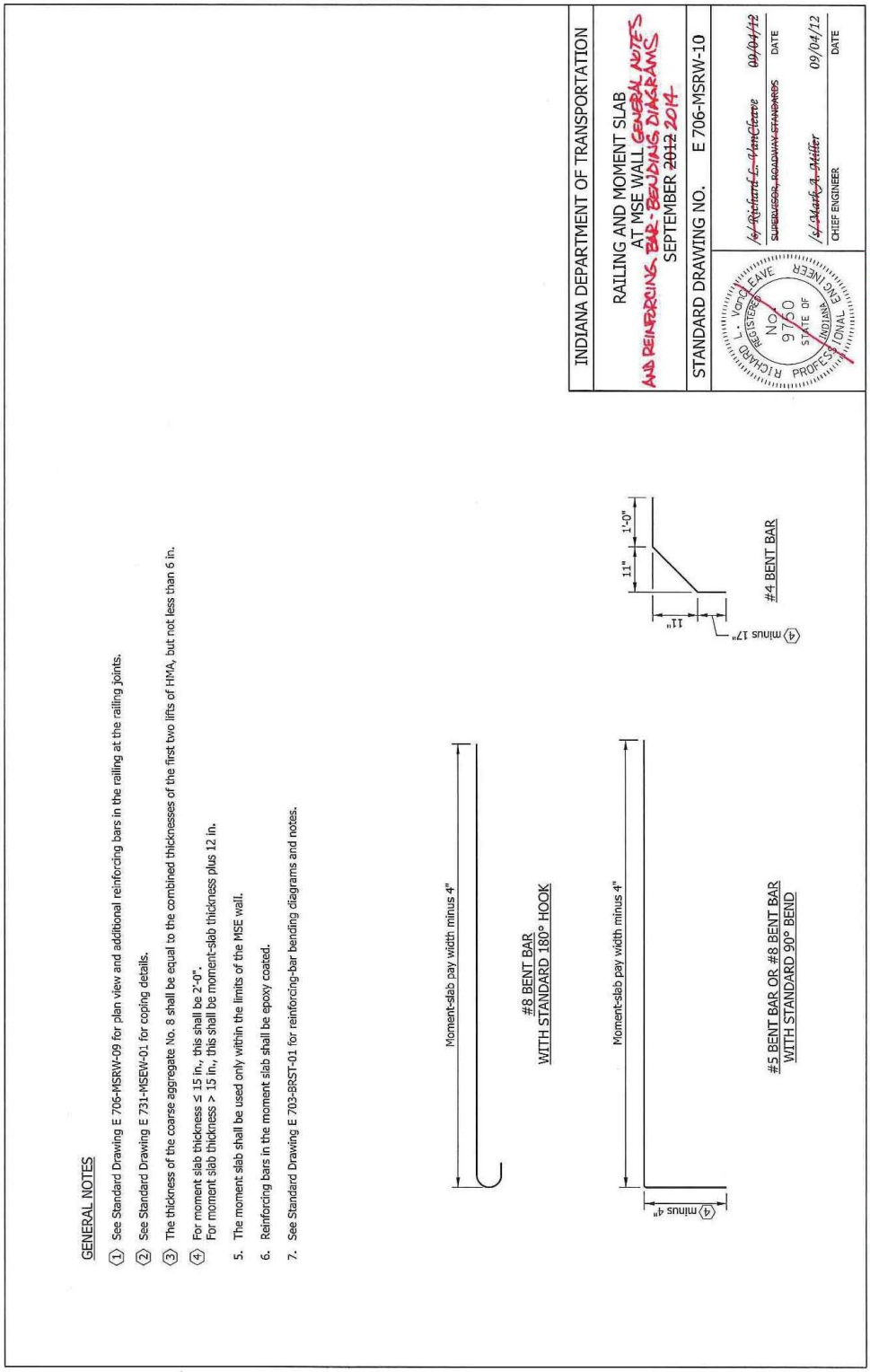
REVISION TO STANDARD DRAWINGS

706-MSRW-09 MOMENT SLAB JOINTS (DRAFT) (WITHDRAWN)



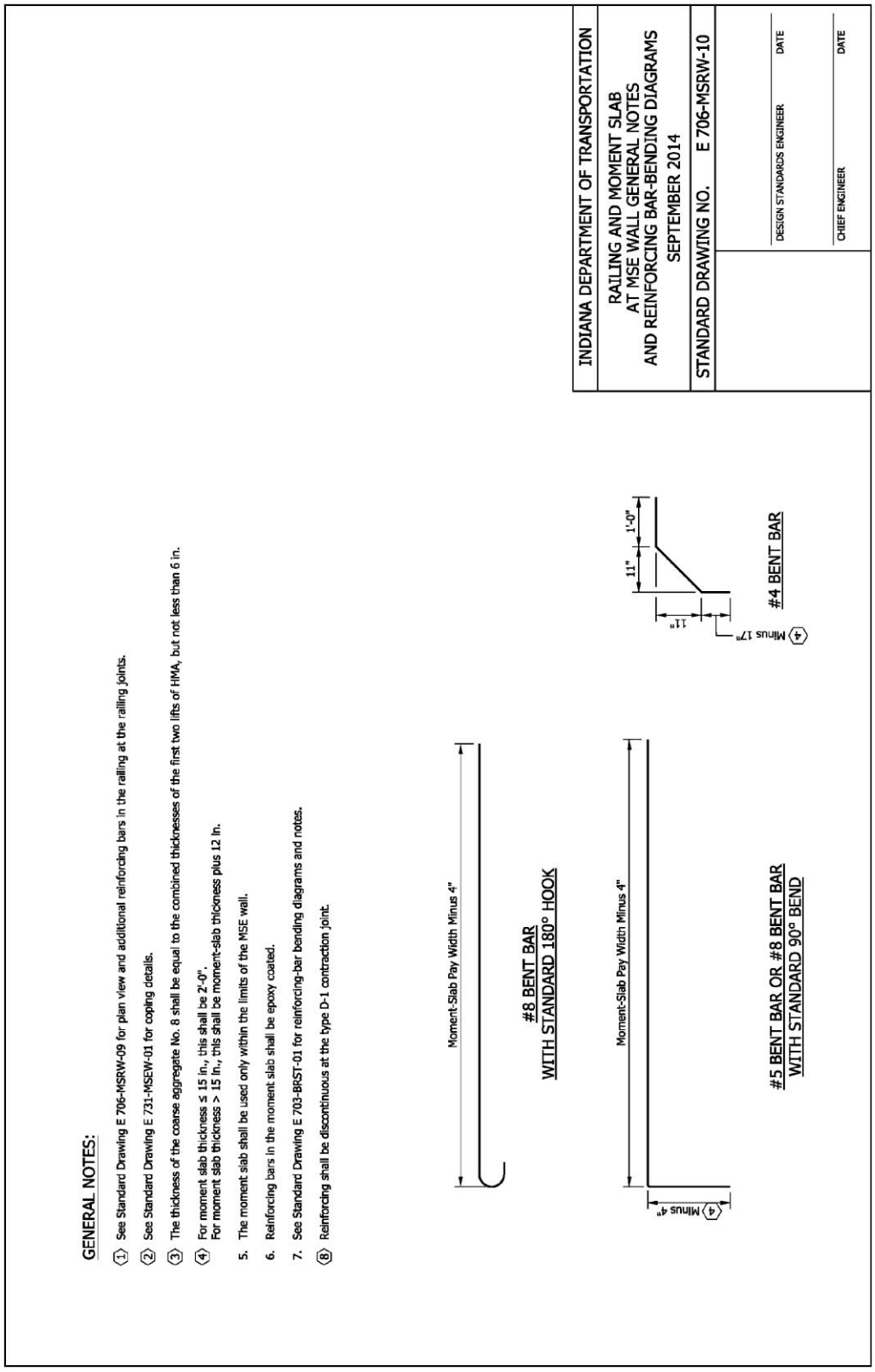
REVISION TO STANDARD DRAWINGS

706-MSRW-10 RAILING AND MOMENT SLAB AT MSE WALL (WITH MARKUPS)



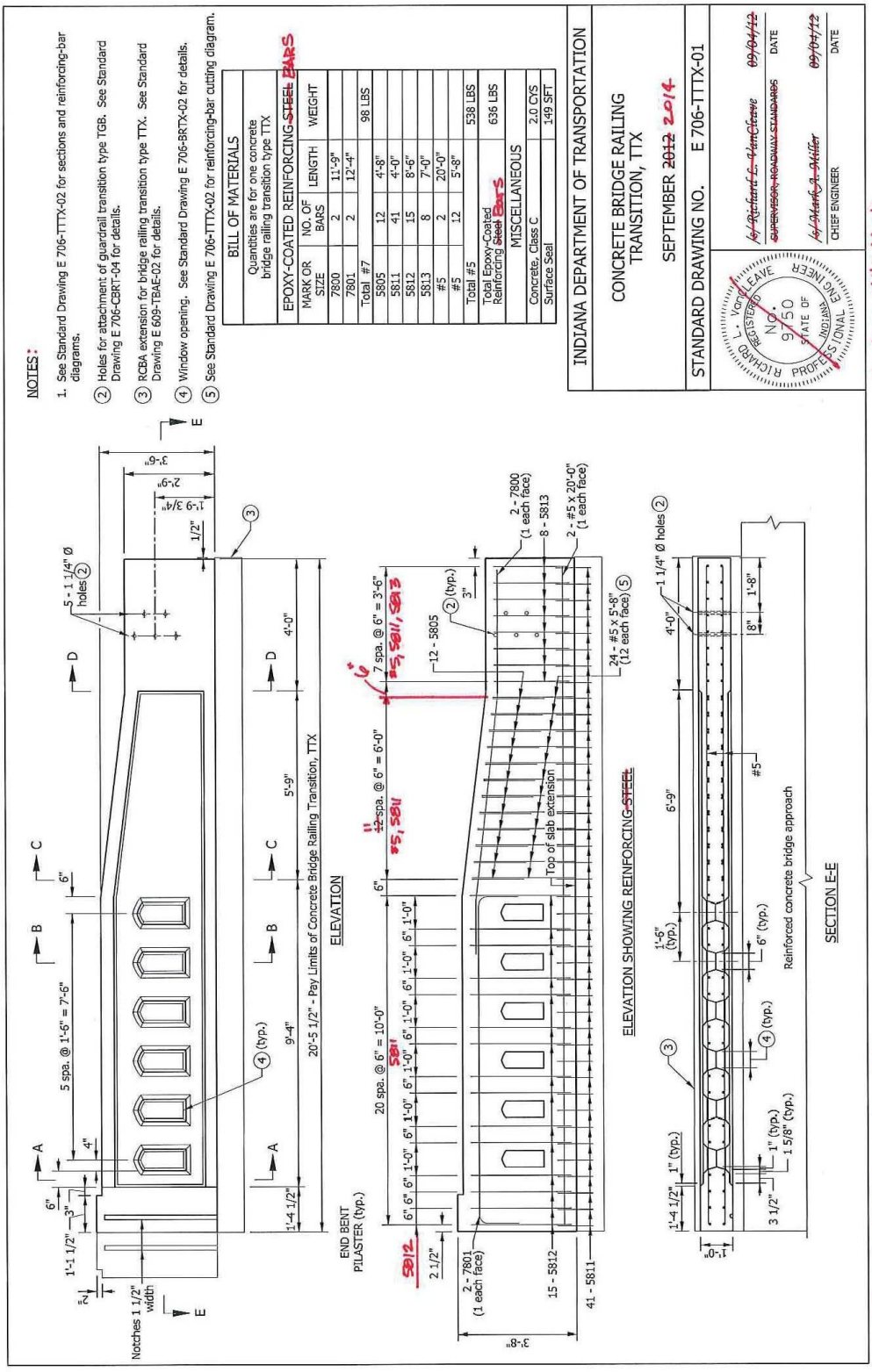
REVISION TO STANDARD DRAWINGS

706-MSRW-10 RAILING AND MOMENT SLAB AT MSE WALL GENERAL NOTES AND REINFORCING BAR – BENDING DIAGRAMS (DRAFT) (WITHDRAWN)



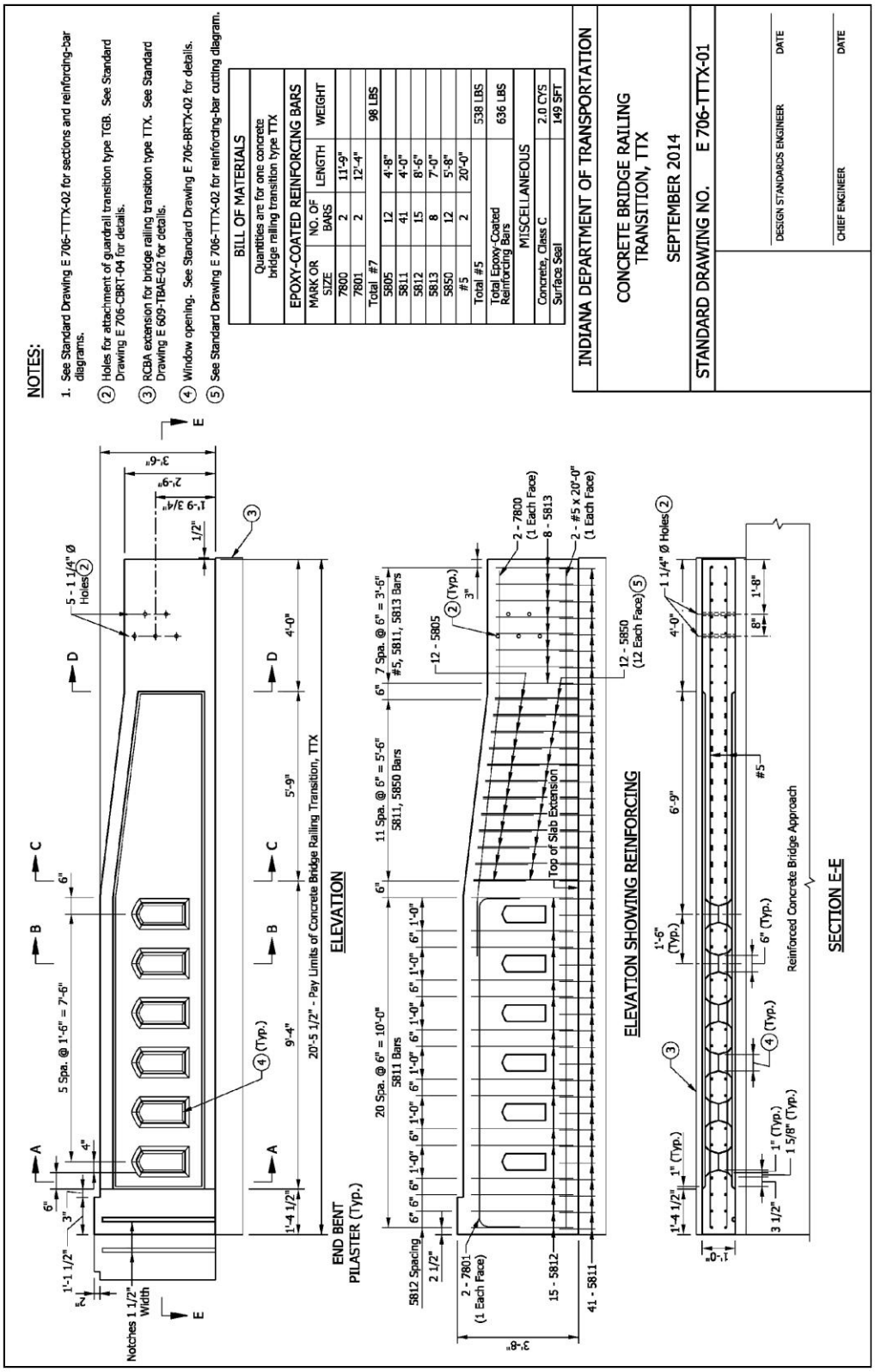
REVISION TO STANDARD DRAWINGS

706-TTTX-01 CONCRETE BRIDGE RAILING TRANSITION, TTX (WITH MARKUPS)



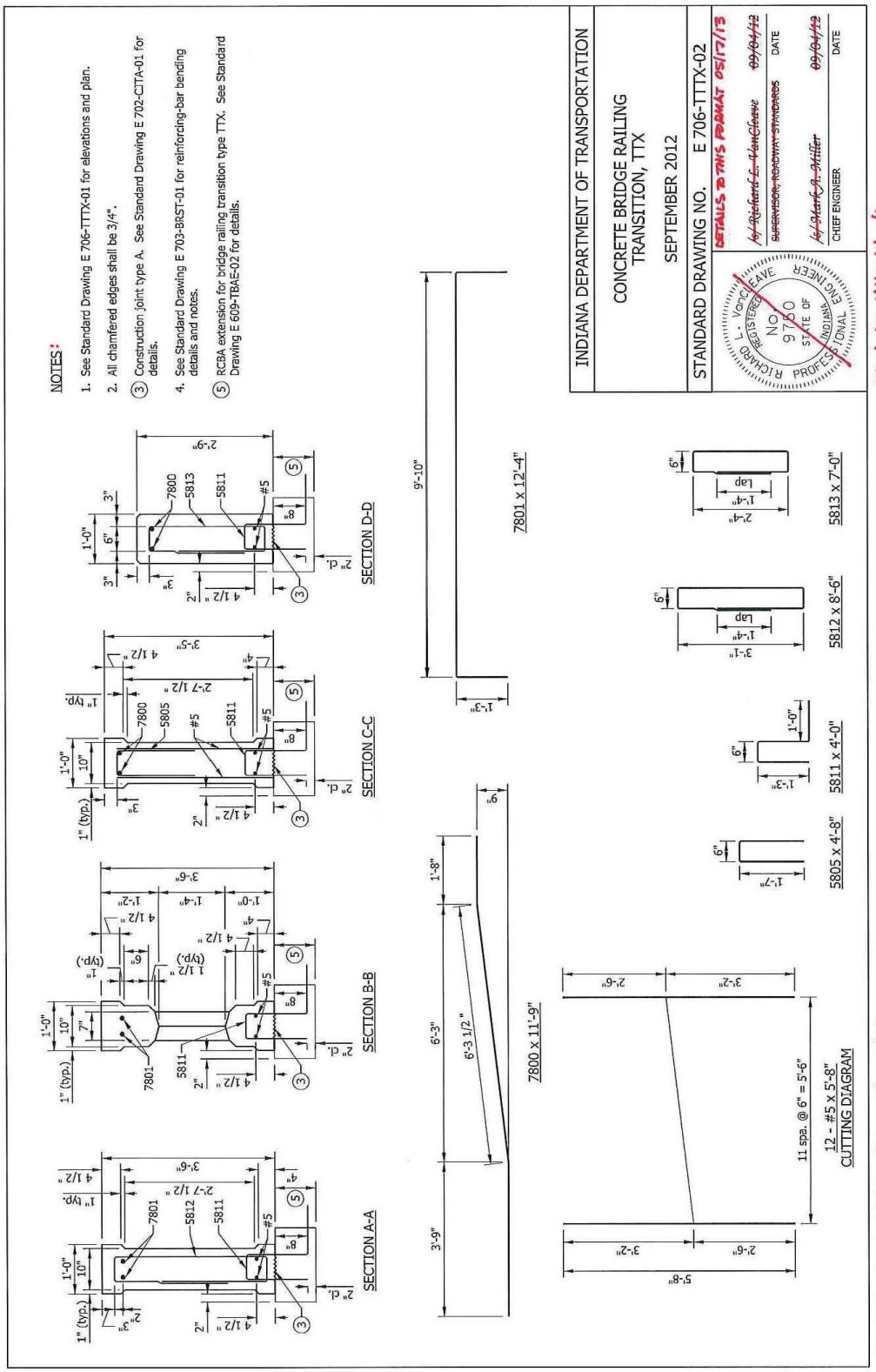
REVISION TO STANDARD DRAWINGS

706-TTTX-01 CONCRETE BRIDGE RAILING TRANSITION, TTX (REVISED DRAFT)



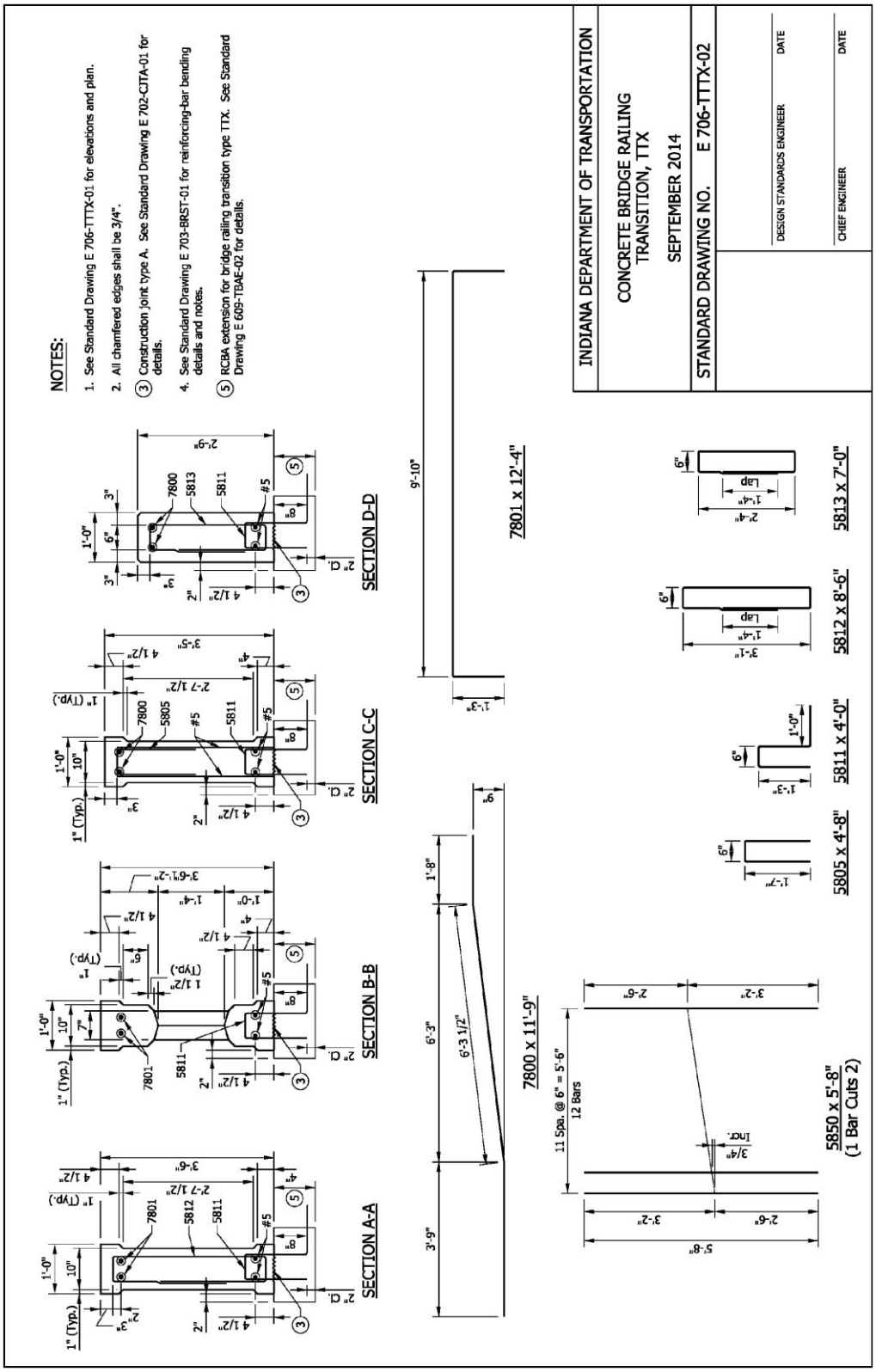
REVISION TO STANDARD DRAWINGS

706-TTTX-02 CONCRETE BRIDGE RAILING TRANSITION, TTX (WITH MARKUPS)



REVISION TO STANDARD DRAWINGS

706-TTTX-02 CONCRETE BRIDGE RAILING TRANSITION, TTX (REVISED DRAFT)



COMMENTS AND ACTION

605-CCSJ-01
706-MSRW-01 THRU -10
706-TTTX-01 AND -02

DISCUSSION: Ms. Phillips addressed the group and directed everyone's attention to the accompanying drawings which were in need of editorial revisions.
Mr. Pankow asked about what happens when a description or name is changed, in that it would not be editorial, especially if it affects a pay item.

Ms. Phillips clarified that editorial revisions would be merely presented as a conceptual proposal. However, since this time it is presented as an agenda item, Ms. Phillips moved that this item be approved as presented. Mr. Buening seconded that motion.

Ms. Phillips then explained the revisions made on the accompanying drawings. Further discussion ensued concerning the revisions made to the moment slab drawings. Minor edits were suggested for the open grade layer under the moment slab (drawings 706-MSRW-01 thru -08) with regards to the underdrains. Ms. Phillips said she will make those editorial revisions. Mr. Miller asked if direction will be needed for each contract, and Ms. Phillips agreed. Ms. Phillips said she will withdraw the moment slab series from this proposal and bring it back at a later date.

Ms. Phillips then addressed the rest of the drawings presented.
There were no further discussion and the motion was revised.

Motion: Ms. Phillips Second: Mr. Buening Ayes: 9 Nays: 0	Action: _____ Passed as Submitted __X__ Passed as Revised (except 706-MSRW) __X__ Withdrawn 706-MSRW-01 thru -10
Standard Specifications Sections affected: NONE Recurring Special Provision affected: NONE Standard Sheets affected: 605-CCSJ-01; 706-MSRW-01 THRU -10; 706-TTTX-01 and -02. Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	____ 2016 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 Sept. 01, 2014 ____ 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? YES

Mr. Walker
Date: 06/20/13

SPECIFICATION, SPECIAL PROVISIONS AND DRAWINGS

REVISION TO SPECIAL PROVISIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED:

1. Currently, when vibratory rollers are not permitted in some areas, a special provision is inserted in the contract or the decision to waive the density is not made until after the contract is let.

PROPOSED SOLUTION:

1. Produce a Recurring Special Provision for vibratory roller prohibition to be inserted into contracts that have sections where vibratory rollers are not permitted. Density will be required on the other sections.

APPLICABLE STANDARD SPECIFICATIONS: 400

APPLICABLE STANDARD DRAWINGS:

APPLICABLE DESIGN MANUAL SECTION:

APPLICABLE SECTION OF GIFE:

APPLICABLE RECURRING SPECIAL PROVISIONS:

PAY ITEMS AFFECTED:

Submitted By: Ron Walker

Title: Manager, Office of Materials Management

Organization: INDOT

Phone Number: 317-610-7251 x 204

Date: 05-29-13

APPLICABLE SUB-COMMITTEE ENDORSEMENT: These specification revisions are recommended by the INDOT/APAI Technical Committee.

REVISION TO SPECIAL PROVISIONS

PROPOSED NEW 400-R-XXX HMA VIBRATORY COMPACTION PROHIBITION

400-R-XXX HMA VIBRATORY COMPACTION PROHIBITION

(Adopted XX-XX-13)

The Standard Specifications are revised as follows:

SECTION 401, AFTER LINE 381 (IN 2014 SS, AFTER LINE 383), INSERT AS FOLLOWS:

Vibratory rollers in accordance with 409.03(d)4 shall not be operated in the vibratory mode at locations indicated on the plans. Oscillatory rollers in accordance with 409.03(d)5 will be permitted for use but the vertical impact force capability shall not be used. Density acceptance shall be in accordance with 401.16.

SECTION 402, AFTER LINE 275, (IN 2014 SS, AFTER LINE 285) INSERT AS FOLLOWS:

Vibratory rollers in accordance with 409.03(d)4 shall not be operated in vibratory mode at locations indicated on the plans. Oscillatory rollers in accordance with 409.03(d)5 will be permitted for use but the vertical impact force capability shall not be used. Density acceptance shall be in accordance with 402.15.

SECTION 410, BEGIN LINE 286, (FOR 2014 SS, BEGIN LINE 298) DELETE AS FOLLOWS:

The rollers shall be operated to avoid shoving of the SMA and at speeds not to exceed 3 mph. Rollers shall be in accordance with 409.03(d)1, 2, or 6 *(7, in 2014 SS)*. Vibratory rollers meeting the requirements of 409.03(d)4 may be used but shall not be operated in vibratory mode, ~~except the vibratory mode may be used on the 1st (first) pass to the paver.~~

COMMENTS AND ACTION

400-R-XXX HMA VIBRATORY COMPACTION PROHIBITION

DISCUSSION: This item was introduced and presented by Mr. Walker who explained the need for a recurring special provision for when vibratory rollers should not be utilized. This is an attempt to make exceptions which will be shown on the plans. Mr. Walker and Mr. Beeson stated that the regular density requirement will not be waived with respect to 401 pavements. Mr. Walker stated that more and more contractors are utilizing oscillatory rollers. Mr. Bonte, with Rieth-Riley, concurred.

Mr. Pankow suggested that compaction requirements and limits should be added to the Project Manager's checklist, especially when compacting near historic buildings or sensitive areas.

Mr. Miller asked getting a design memo out to designers to limit the use of vibratory rollers in sensitive areas. Ms. Phillips said she would draft the design memo. Mr. Bonte stated he has no issues with this provision as long as they know ahead of time. Mr. Walker stated that this may be an issue in every LPA job, since they typically involve going through towns.

Mr. Miller asked how quickly we can get this implemented. Can it be placed in the general notes? Mr. Keefer suggested it be placed on the plan view. All agreed that it should be stated on the plan view.

Mr. Miller stated that this can be used as a Unique Special Provision until the RSP effective date.

Motion: Mr. Walker Second: Mr. Keefer Ayes: 9 Nays: 0	Action: __X__ Passed as Submitted _____ Passed as Revised _____ Withdrawn
Standard Specifications Sections affected: 401.14; 402.13 and 410.14. Recurring Special Provision affected: NONE Standard Sheets affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	__X__ 2016 Standard Specifications Book ____ Revise Pay Items List __X__ Create RSP (No.400-R-611) Effective Sept. 01, 2014 Letting RSP Sunset Date: Sept. 01, 2015 ____ 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? YES

SPECIFICATION, SPECIAL PROVISIONS AND DRAWINGS

REVISION TO SPECIAL PROVISIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED:

1. A Unique Special Provision has been used for 4.75 mm surface mixtures for the past three years. The use of this specification has improved the surface friction performance of this mixture when compared to the current Section 401 4.75 mm mixture.

2. 9.5 mm open graded mixtures used for bond breaking layers prior to placing a PCCP Overlay are currently specified by a Unique Special Provision and should be added to Section 401.

3. Acceptance of QC/QA HMA dense graded mixtures quantities less than 300 t was recently changed to Type D Certification with the use of the standard rolling train for density. However, acceptance QC/QA open graded mixtures were left unchanged. This procedure would allow the possibility of having a mixture with plate sample acceptance underneath layers of mixture without plate sample acceptance.

4. Through design and specification changes, we have attempted to eliminate sections where QC/QA mixtures would need to be placed with a widener or other non-standard paving devices. However, small sections that are narrow or odd-shaped still exist on some projects, and if a sample is taken in these areas, the sample may not be representative of the sublot that was placed with a paver.

PROPOSED SOLUTION:

1. Incorporate 4.75 mm Unique Special Provision into 401 section

2. Incorporate 9.5 mm OG layer into 401 section

3. Accept QC/QA HMA open graded mixture by Type D Certification

4. Only take acceptance samples in areas placed with a paver in accordance with 409.03(c)1

APPLICABLE STANDARD SPECIFICATIONS: 401, 410, 904

APPLICABLE STANDARD DRAWINGS:

APPLICABLE DESIGN MANUAL SECTION:

APPLICABLE SECTION OF GIFE:

APPLICABLE RECURRING SPECIAL PROVISIONS:

SPECIFICATION, SPECIAL PROVISIONS AND DRAWINGS

REVISION TO SPECIAL PROVISIONS

(CONTINUED)

PAY ITEMS AFFECTED:

Submitted By: Ron Walker

Title: Manager, Office of Materials Management

Organization: INDOT

Phone Number: 317-610-7251 x 204

Date: 05-28-13

APPLICABLE SUB-COMMITTEE ENDORSEMENT: These specification revisions are recommended by the INDOT/APAI Technical Committee.

REVISION TO STANDARD SPECIFICATIONS

401.05 VOLUMETRIC MIX DESIGN
401.06 RECYCLED MATERIALS
401.09 ACCEPTANCE OF MIXTURES
401.14 SPREADING AND FINISHING
401.16 DENSITY
410.09 ACCEPTANCE OF MIXTURES
410.16 DENSITY
904.02(b) FOR HMA MIXTURES

(Note: Proposed changes shown as to 2014 Standard Specifications and highlighted gray.
The 2014 Standard Specifications book is available on-line at
http://www.in.gov/dot/div/contracts/standards/book/index.html)

The Standard Specifications are revised as follows:

SECTION 401, BEGIN LINE 68, DELETE AND INSERT AS FOLLOWS:

Dense Graded, Mixture Designation – Control Point (Percent Passing)					
	25.0 mm	19.0 mm	12.5 mm	9.5 mm	4.75 mm**
Sieve Size					
50.0 mm					
37.5 mm	100.0				
25.0 mm	90.0 - 100.0	100.0			
19.0 mm	< 90.0	90.0 - 100.0	100.0		
12.5 mm		< 90.0	90.0 - 100.0	100.0	100.0
9.5 mm			< 90.0	90.0 - 100.0	95.0 - 100.0
4.75 mm				< 90.0	90.0 - 100.0
2.36 mm	19.0 - 45.0	23.0 - 49.0	28.0 - 58.0	32.0 - 67.0*	
1.18 mm					30.0 - ~~60.0~~*55.0*
600 µm					
300 µm					
75 µm	1.0 - 7.0	2.0 - 8.0	2.0 - 10.0	2.0 - 10.0	~~6.0 - 12.0~~*3.0 - 8.0*
* The mix design gradation shall be less than or equal to the PCS control point for 9.5 mm category 3, 4 and 5 surface mixtures.					
*** The total blended aggregate gradation for the 4.75 mm mixture shall have a fineness modulus greater than or equal to 3.30 as determined in accordance with AASHTO T 27.*					

PCS Control Point for Mixture Designation (Percent Passing)					
Mixture Designation	25.0 mm	19.0 mm	12.5 mm	9.5 mm	4.75 mm
Primary Control Sieve	4.75 mm	4.75 mm	2.36 mm	2.36 mm	NA
PCS Control Point	40	47	39	47	NA

Open Graded, Mixture Designation – Control Point (Percent Passing)			
	OG9.5	OG19.0	OG25.0
Sieve Size			
37.5 mm			100.0
25.0 mm		100.0	70.0 – 98.0
19.0 mm		70.0 – 98.0	50.0 – 85.0
12.5 mm	*100.0*	40.0 – 68.0	28.0 – 62.0
9.5 mm	*75.0-100.0*	20.0 – 52.0	15.0 – 50.0
4.75 mm	*10.0-35.0*	10.0 – 30.0	6.0 – 30.0
2.36 mm	*0.0-15.0*	7.0 – 23.0	7.0 – 23.0
1.18 mm		2.0 – 18.0	2.0 – 18.0
600 µm		1.0 – 13.0	1.0 – 13.0
300 µm		0.0 – 10.0	0.0 – 10.0
150 µm		0.0 – 9.0	0.0 – 9.0

REVISION TO STANDARD SPECIFICATIONS

401.05 VOLUMETRIC MIX DESIGN
401.06 RECYCLED MATERIALS
401.09 ACCEPTANCE OF MIXTURES
401.14 SPREADING AND FINISHING
401.16 DENSITY
410.09 ACCEPTANCE OF MIXTURES
410.16 DENSITY
904.02(b) FOR HMA MIXTURES

75 µm	*0-6.0*	0.0 – 8.0	0.0 – 8.0
% of Binder	*> 3.0*	> 3.0	> 3.0

Dust/Calculated Effective Binder Ratio shall be taken from 0.6 to 1.2, when the aggregate gradation passes above the primary control sieve, PCS, control point and 0.8 to 1.6 when the aggregate gradation is less than or equal to the PCS. The Dust/Calculated Effective Binder Ratio for 4.75 mm mixtures shall be ~~0.9~~ *0.8* to 2.0.

The optimum binder content shall produce the following air voids at N_{des}:

Air Voids at Optimum Binder Content								
	Dense Graded					*Open Graded*		
Mixture Designation	*25.0 mm*	*19.0 mm*	*12.5 mm*	*9.5 mm*	*4.75 mm*	*25.0 mm*	*19.0 mm*	*9.5 mm*
Air Voids	*4.0%*	*4.0%*	*4.0%*	*4.0%*	*5.0%*	*15.0% - 20.0%*		*10.0% - 15.0%*

~~The optimum binder content for dense graded mixtures shall produce 4.0% air voids at N_{des} and for open graded mixtures shall produce 15.0% – 20.0% air voids at N_{des}.~~ The design for dense graded mixtures shall have at least four points, including a minimum of two points above and one point below the optimum. A one point design may be used for open graded mixtures. The maximum specific gravity shall be mass determined in water in accordance with AASHTO T 209. The bulk specific gravity of the gyratory specimens shall be determined in accordance with AASHTO T 166, Method A or AASHTO T 275, if required, for dense graded mixtures and AASHTO T 331 for open graded mixtures.

SECTION 401, BEGIN LINE 127, DELETE AND INSERT AS FOLLOWS:

VOIDS FILLED WITH ASPHALT, VFA, CRITERIA @ N_{des}	
ESAL	VFA, %
< 300,000	70 – 80
300,000 to < 3,000,000	65 – 78
3,000,000 to < 10,000,000	65 – 75
10,000,000 to < 30,000,000	65 – 75
≥ 30,000,000	65 – 75

Notes:
1. For 9.5 mm mixtures, the specified VFA range shall be 73% to 76% for design traffic levels ≥ 3 million ESALs.
2. For 25.0 mm mixtures, the specified lower limit of the VFA shall be 67% for design traffic levels < 0.3 million ESALs.
3. For 4.75 mm mixtures, the specified VFA range shall be ~~75% to 78%~~*66% to 79%*. ~~for design traffic levels ≥ 3 million ESALs.~~
4. For *OG 9.5 mm*, OG19.0 mm, ~~and~~ OG25.0 mm mixtures, VFA is not applicable.

REVISION TO STANDARD SPECIFICATIONS

401.05 VOLUMETRIC MIX DESIGN
401.06 RECYCLED MATERIALS
401.09 ACCEPTANCE OF MIXTURES
401.14 SPREADING AND FINISHING
401.16 DENSITY
410.09 ACCEPTANCE OF MIXTURES
410.16 DENSITY
904.02(b) FOR HMA MIXTURES

SECTION 401, BEGIN LINE 152, INSERT AS FOLLOWS:

RAS may be obtained from either pre-consumer or post-consumer asphalt shingles. Post-consumer asphalt shingles shall be in accordance with AASHTO MP 15 and prepared by a processing company with an IDEM Legitimate Use Approval letter. A copy of this letter shall be submitted to the Engineer. Deleterious material present in post-consumer asphalt shingles shall be limited to the percentages stated in AASHTO MP 15. Pre-consumer and post-consumer asphalt shingles shall not be blended for use in HMA mixtures ~~and shall be stockpiled separately from other materials~~.

SECTION 401, BEGIN LINE 202, INSERT AS FOLLOWS:

401.09 Acceptance of Mixtures

Acceptance of mixtures for binder content, 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 300 t. 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 300 t. *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.*

Acceptance of mixtures for binder content and air voids at N_{des} for each lot will be based on tests performed by the Engineer for open graded mixtures *with original contract pay item quantities greater than or equal to 300 t. 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 open graded mixtures with original pay item quantities less than 300 t, except the air voids tolerance shall be ±3.5% from the DMF or JMF.*

SECTION 401, AFTER LINE 265, INSERT AS FOLLOWS:

Samples shall not be obtained from areas placed with paving equipment in accordance with 409.03(c)2 or 409.03(c)3. If a random location falls within this area, the Engineer will randomly select another location within the sublot for sampling. If an entire sublot falls within this area, test results from the previous sublot will be used for acceptance. If the previous sublot is not available, the subsequent sublot will be used for acceptance.

SECTION 401, BEGIN LINE 377, INSERT AS FOLLOWS:

The finished thickness of any course shall be at least two times but not more than four times the maximum particle size as shown on the DMF, *except 4.75 mm mixtures shall be at least 1.5 times but not more than 3 times the maximum particle size shown on the DMF.*

REVISION TO STANDARD SPECIFICATIONS

401.05 VOLUMETRIC MIX DESIGN
401.06 RECYCLED MATERIALS
401.09 ACCEPTANCE OF MIXTURES
401.14 SPREADING AND FINISHING
401.16 DENSITY
410.09 ACCEPTANCE OF MIXTURES
410.16 DENSITY
904.02(b) FOR HMA MIXTURES

Vibratory rollers in accordance with 409.03(d)4 shall not be operated in vibratory mode when placing 4.75 mm mixtures. Oscillatory rollers in accordance with 409.03(d)5 will be permitted for use when placing 4.75 mm mixture but the vertical impact force capability shall not be used.

SECTION 401, AFTER LINE 437, INSERT AS FOLLOWS:

Cores shall not be obtained from areas placed with paving equipment in accordance with 409.03(c)2 or 409.03(c)3. If a random location falls within this area, the Engineer will randomly select another location within the sublot for coring. If an entire sublot falls within this area, test results from the previous sublot will be used for acceptance. If the previous sublot is not available, the subsequent sublot will be used for acceptance.

SECTION 410, AFTER LINE 231, INSERT AS FOLLOWS:

Samples shall not be obtained from areas placed with paving equipment in accordance with 409.03(c)2 or 409.03(c)3. If a random location falls within this area, the Engineer will randomly select another location within the sublot for sampling. If an entire sublot falls within this area, test results from the previous sublot will be used for acceptance. If the previous sublot is not available, the subsequent sublot will be used for acceptance.

SECTION 410, AFTER LINE 348, INSERT AS FOLLOWS:

Cores shall not be obtained from areas placed with paving equipment in accordance with 409.03(c)2 or 409.03(c)3. If a random location falls within this area, the Engineer will randomly select another location within the sublot for coring. If an entire sublot falls within this area, test results from the previous sublot will be used for acceptance. If the previous sublot is not available, the subsequent sublot will be used for acceptance.

SECTION 904, BEGIN LINE 128, INSERT AS FOLLOWS:

FINE AGGREGATE ANGULARITY		
TRAFFIC ESAL	DEPTH FROM SURFACE	
	≤ 4 in.	> 4 in.
< 300,000	*(Note 1)*	~~*(Note 1)*~~
300,000 to < 3,000,000	40 *(Note 1)*	40 ~~*(Note 1)*~~
3,000,000 to < 10,000,000	45	40
10,000,000 to < 30,000,000	45	40
≥ 30,000,000	45	45
Note 1: For 4.75 mm mixtures, the fine aggregate angularity shall be 40 for <300,000 ESAL and 45 for 300,000 to <3,000,000 ESAL.		

COMMENTS AND ACTION

401.05 VOLUMETRIC MIX DESIGN
401.06 RECYCLED MATERIALS
401.09 ACCEPTANCE OF MIXTURES
401.14 SPREADING AND FINISHING
401.16 DENSITY
410.09 ACCEPTANCE OF MIXTURES
410.16 DENSITY
904.02(b) FOR HMA MIXTURES

DISCUSSION: This item was introduced and presented by Mr. Walker who explained the desire to incorporate the existing Unique Special Provisions into the Standard Specifications. Mr. Walker asked to revise the table in 904, removing the reference to *(Note 1)* from the >4 in. column. Mr. Walker then asked this proposal be accepted as revised. Mr. Keefer seconded that motion.

Mr. Walker, along with Mr. Beeson, further explained the revisions shown in this proposal.

Mr. Beuchel said it could make it for this September lettings.

Motion: Mr. Walker Second: Mr. Keefer Ayes: 9 Nays: 0	Action: _____ Passed as Submitted __X__ Passed as Revised _____ Withdrawn
Standard Specifications Sections affected: 401.05; 401.06; 401.09; 401.14; 401.16; 410.09; 410.16 and 904.02. Recurring Special Provision affected: NONE Standard Sheets affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	__X__ 2016 Standard Specifications Book ____ Revise Pay Items List __X__ Create RSP (No.400-R-610) Effective Sept. 01, 2013 Letting RSP Sunset Date: Sept. 01, 2015 ____ 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? YES

SPECIFICATION, SPECIAL PROVISIONS AND DRAWINGS

REVISION TO STANDARD DRAWINGS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: INDOT does not have standard design and drawings for butterfly (cantilever) sign structures .

PROPOSED SOLUTION: Create new standard drawings detailing butterfly structures that have been designed to meet the current AASTHO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals. This specification includes fatigue considerations.

APPLICABLE STANDARD SPECIFICATIONS: Sections 802 & 910 per 2014 book.

APPLICABLE STANDARD DRAWINGS: E 802-SCSB-01 Thru 09 (proposed new)

APPLICABLE DESIGN MANUAL SECTION: Chapter 75

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

PAY ITEMS AFFECTED: Overhead Sign Structure, Buttrefly Cantilever EACH

Submitted By: David Boruff

Title: Manager, Office of Traffic Administration

Organization: INDOT

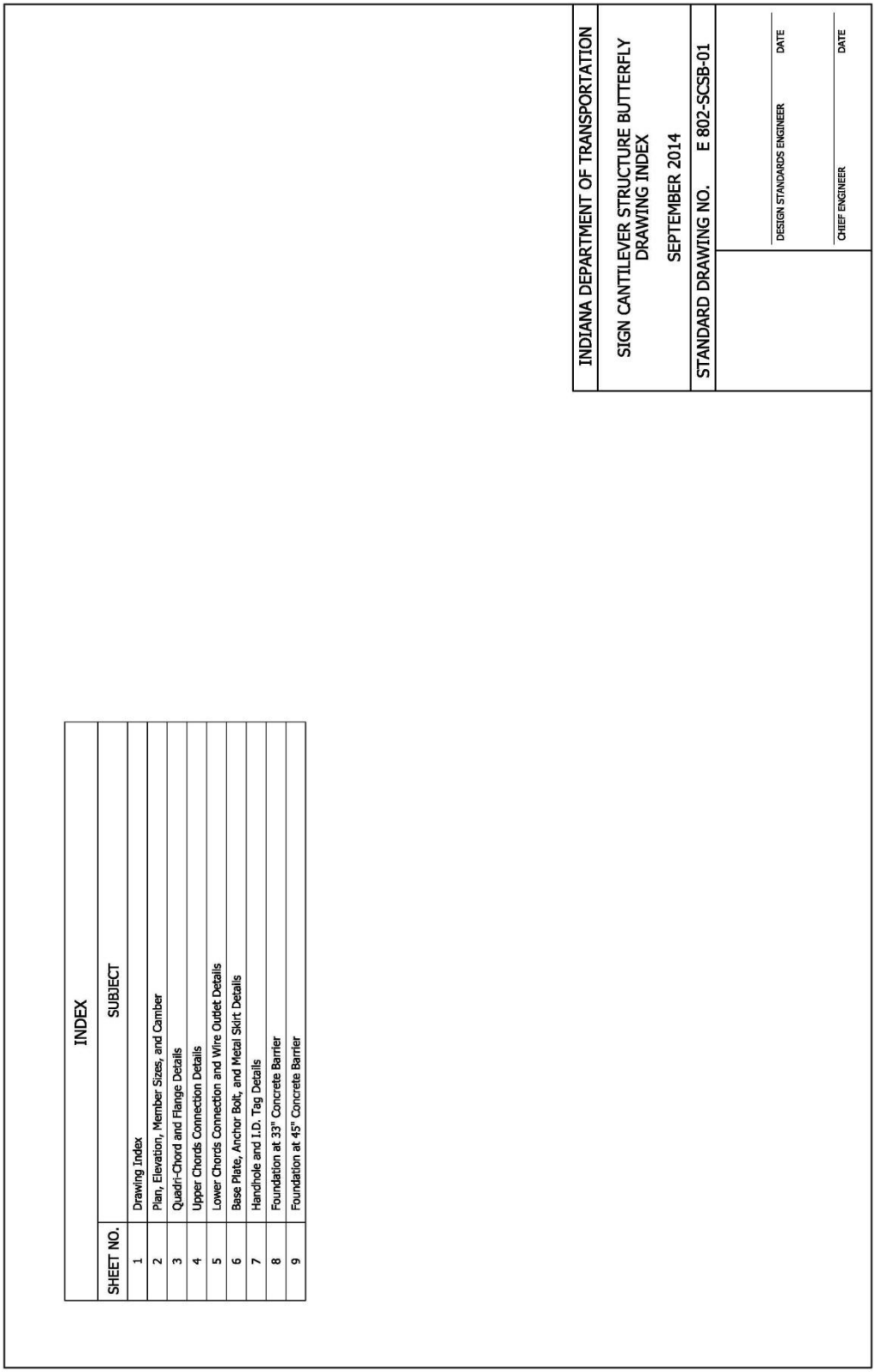
Phone Number: 317 234 7975

Date: 5-29-2013

APPLICABLE SUB-COMMITTEE ENDORSEMENT:

REVISION TO STANDARD DRAWINGS

802-SCSB-01 SIGN CANTILEVER STRUCTURE BUTTERFLY DRAWING INDEX (DRAFT)



INDEX

SHEET NO.	SUBJECT
1	Drawing Index
2	Plan, Elevation, Member Sizes, and Camber
3	Quadri-Chord and Flange Details
4	Upper Chords Connection Details
5	Lower Chords Connection and Wire Outlet Details
6	Base Plate, Anchor Bolt, and Metal Skirt Details
7	Handhole and I.D. Tag Details
8	Foundation at 33° Concrete Barrier
9	Foundation at 45° Concrete Barrier

INDIANA DEPARTMENT OF TRANSPORTATION

SIGN CANTILEVER STRUCTURE BUTTERFLY
DRAWING INDEX
SEPTEMBER 2014

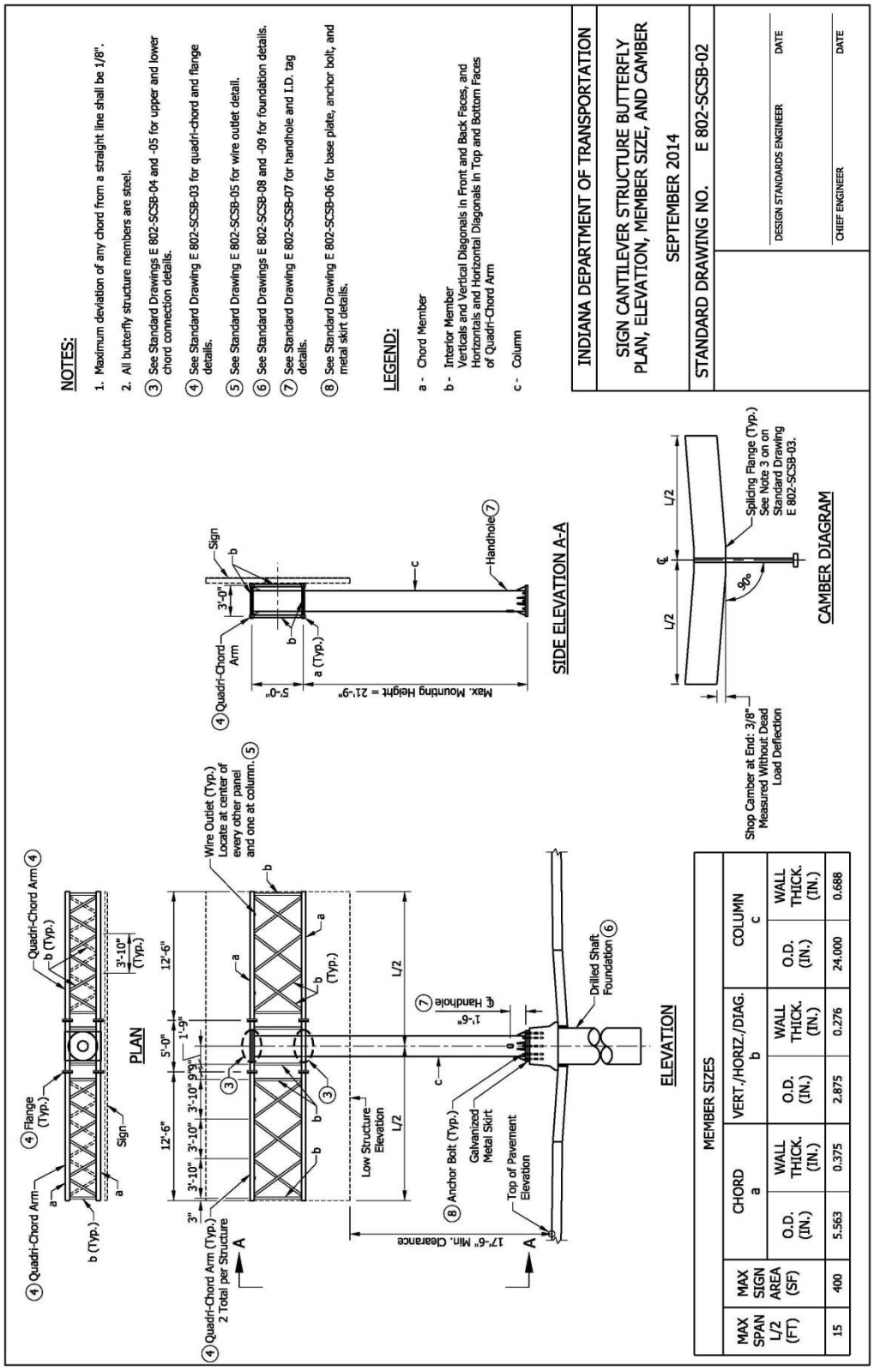
STANDARD DRAWING NO. E 802-SCSB-01

DESIGN STANDARDS ENGINEER DATE

CHIEF ENGINEER DATE

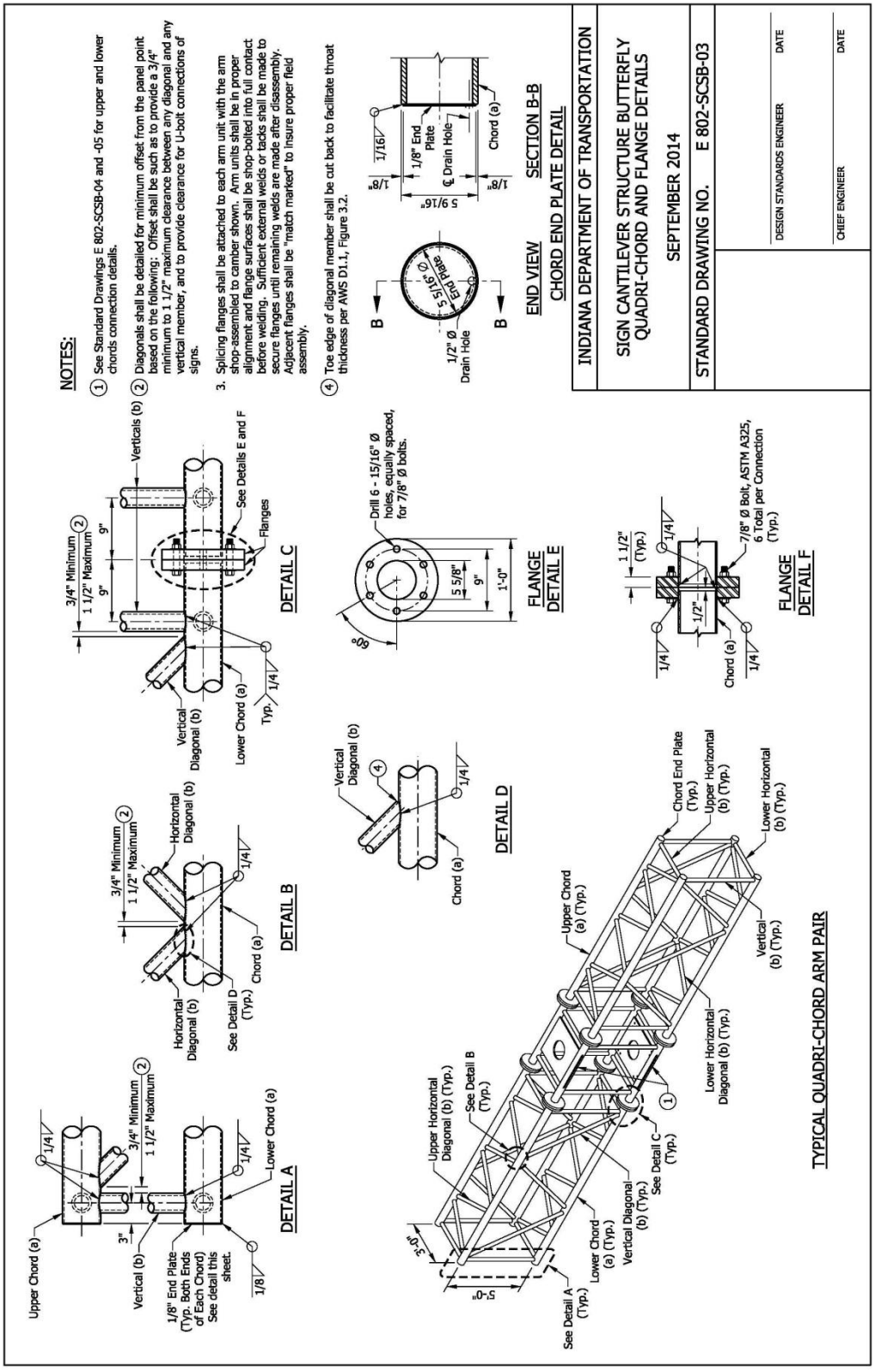
REVISION TO STANDARD DRAWINGS

802-SCSB-02 SIGN CANTILEVER STRUCTURE BUTTERFLY PLAN, ELEVATION, MEMBER SIZE, AND CAMBER (DRAFT)



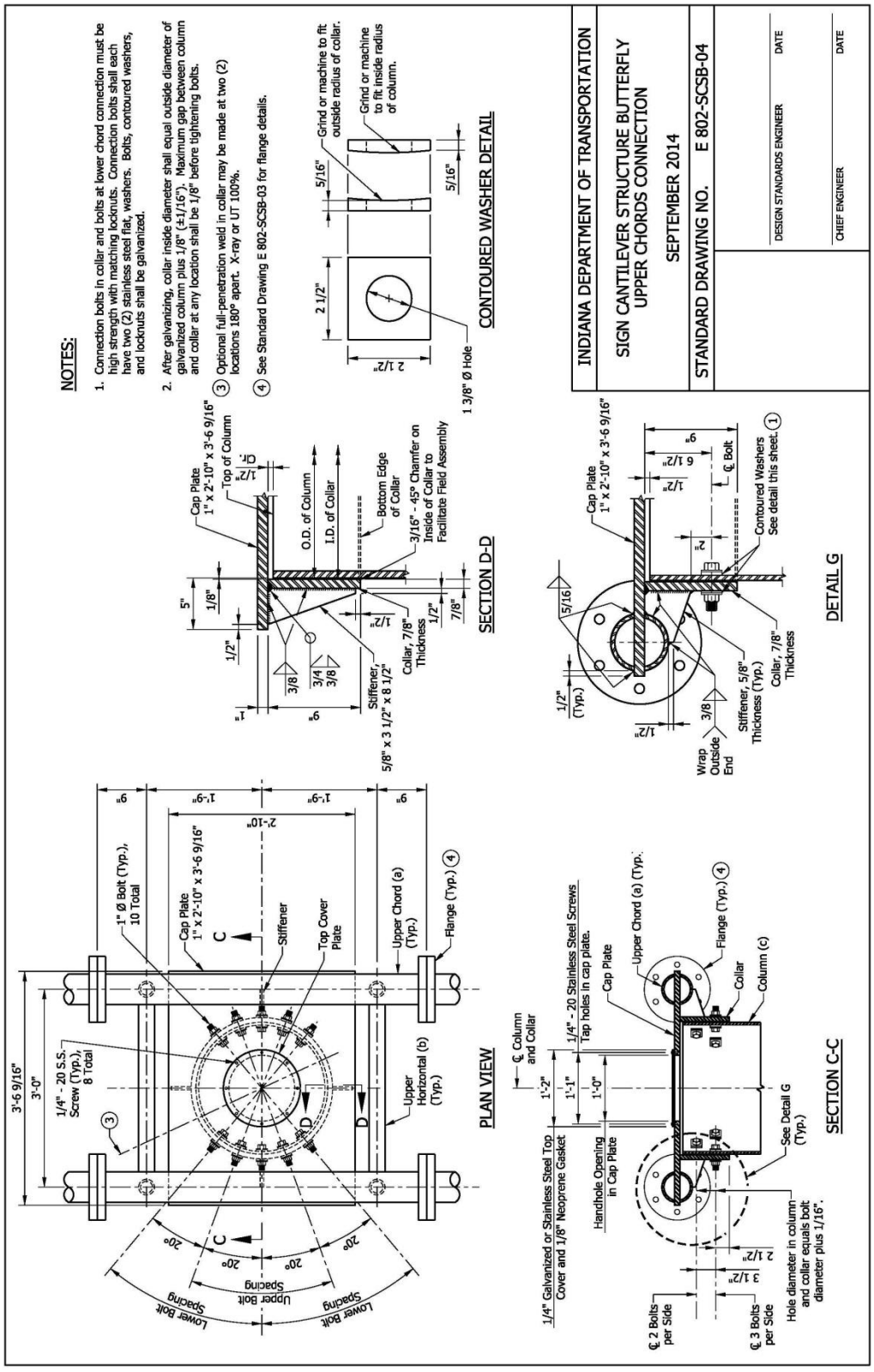
REVISION TO STANDARD DRAWINGS

802-SCSB-03 SIGN CANTILEVER STRUCTURE BUTTERFLY QUADRI-CHORD AND FLANGE DETAILS (DRAFT)



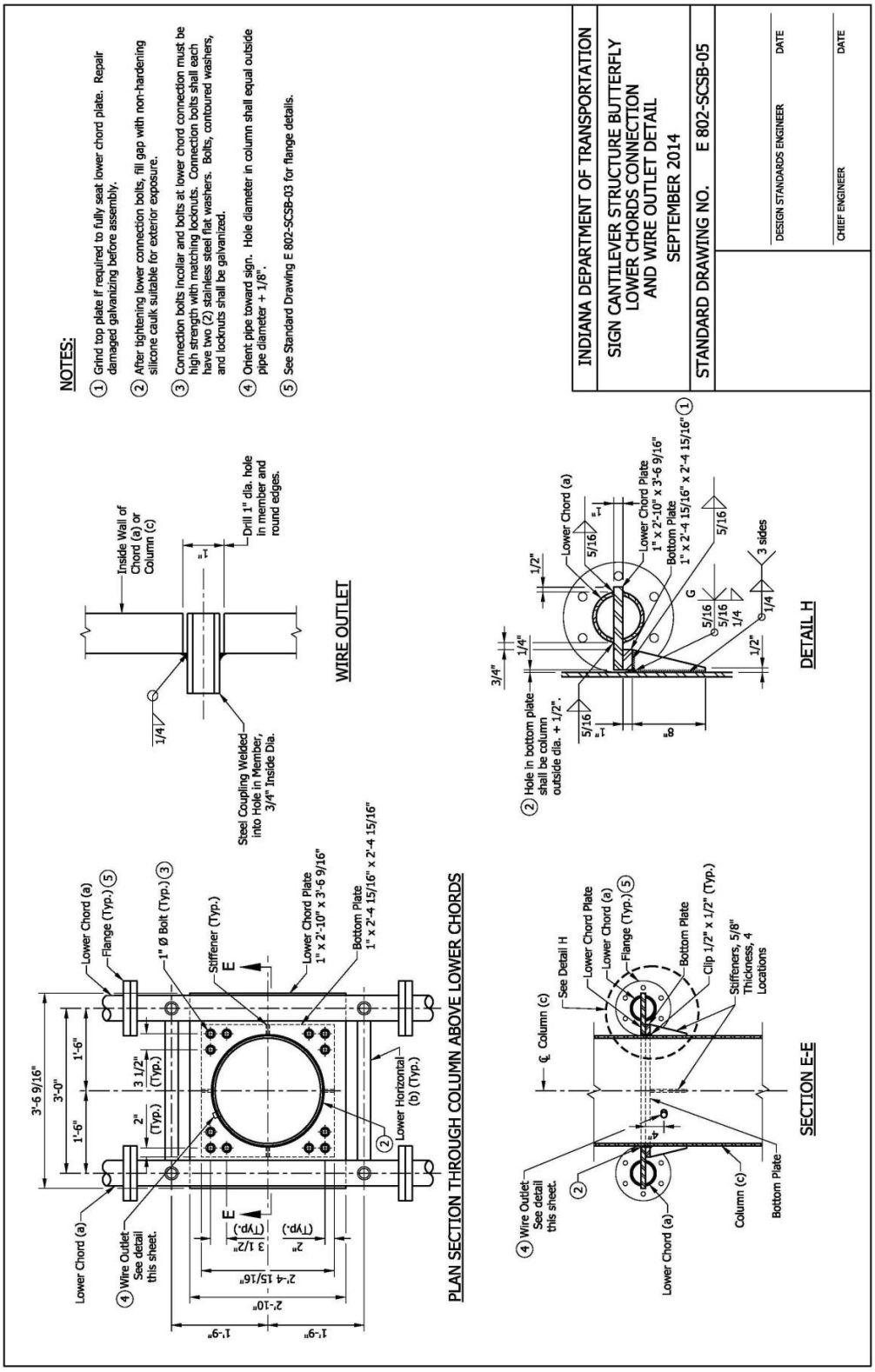
REVISION TO STANDARD DRAWINGS

802-SCSB-04 SIGN CANTILEVER STRUCTURE BUTTERFLY UPPER CHORDS CONNECTION (DRAFT)



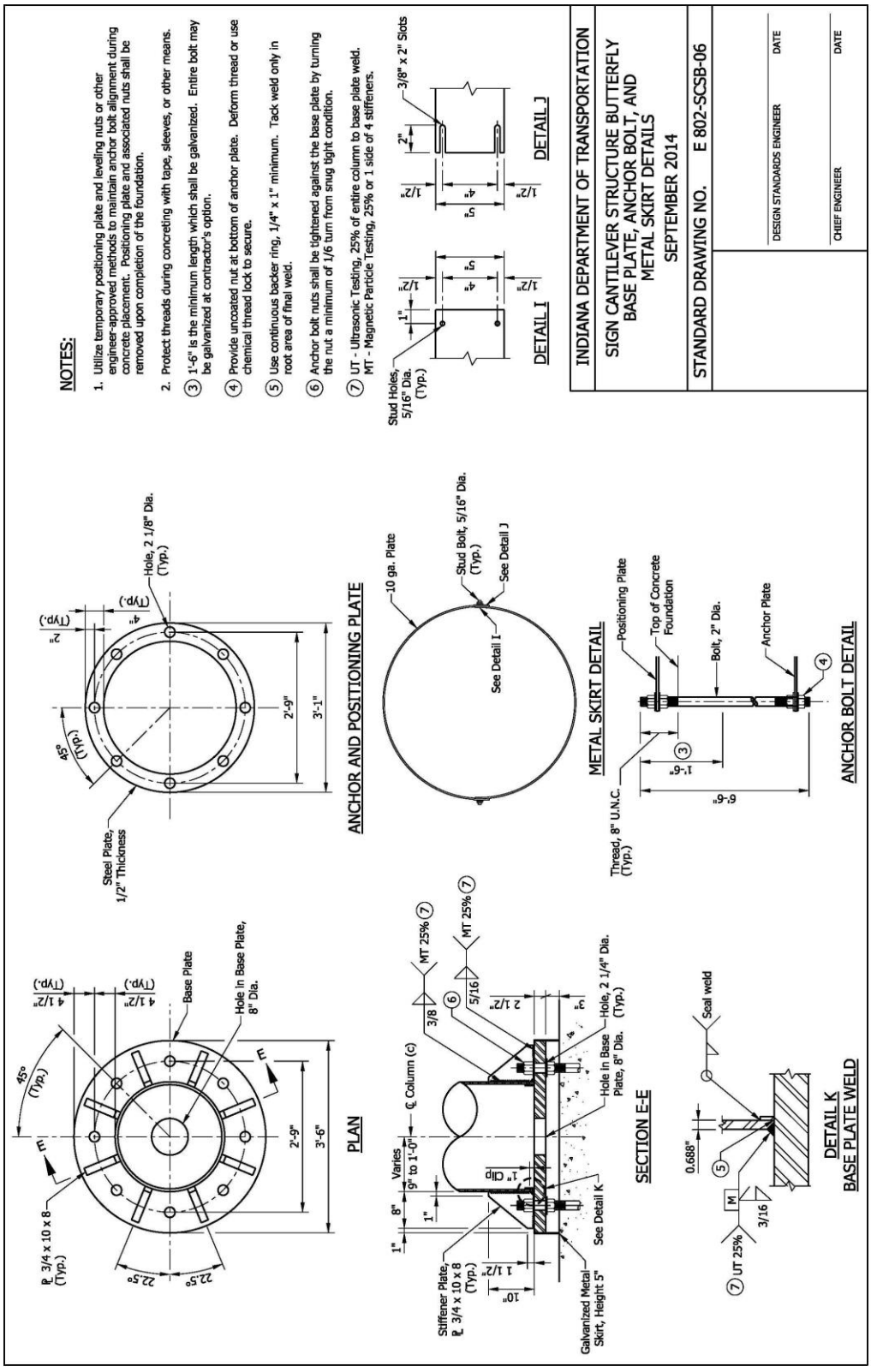
REVISION TO STANDARD DRAWINGS

802-SCSB-05 SIGN CANTILEVER STRUCTURE BUTTERFLY LOWER CHORDS CONNECTION AND WIRE OUTLET DETAIL (DRAFT)



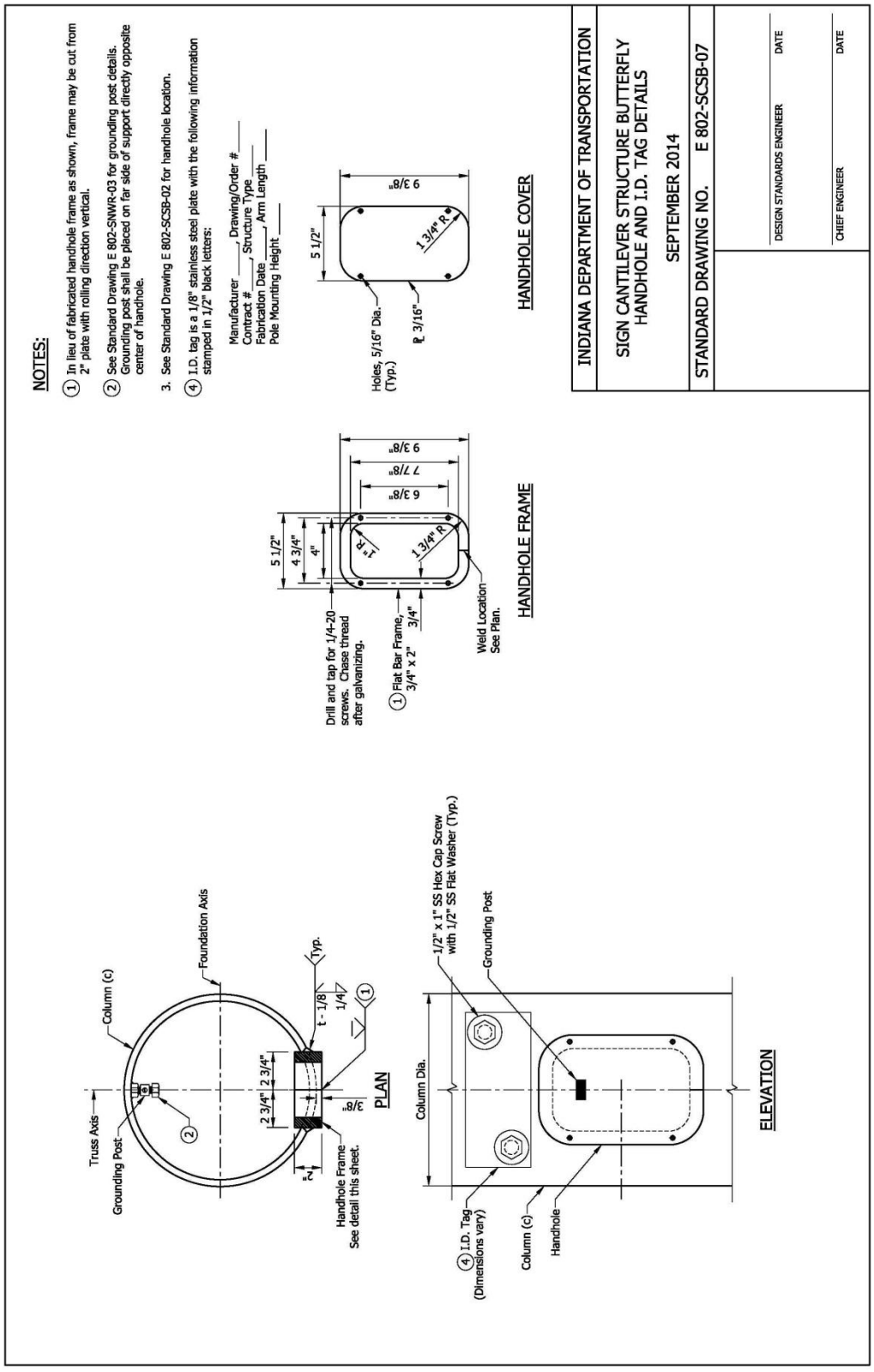
REVISION TO STANDARD DRAWINGS

802-SCSB-06 SIGN CANTILEVER STRUCTURE BUTTERFLY BASE PLATE, ANCHOR BOLT, AND METAL SKIRT DETAILS (REVISED DRAFT, approved on September 19, 2013)



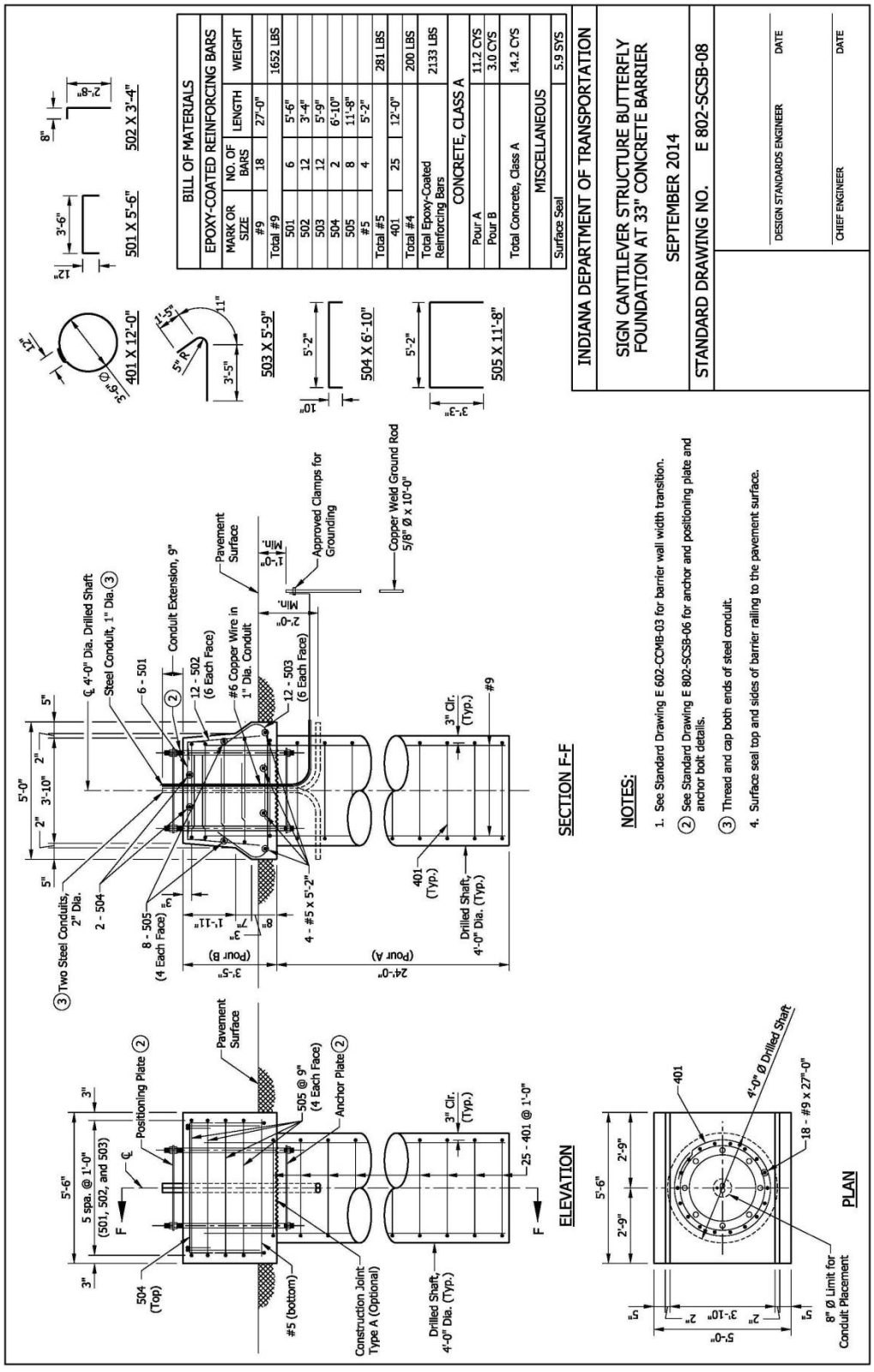
REVISION TO STANDARD DRAWINGS

802-SCSB-07 SIGN CANTILEVER STRUCTURE BUTTERFLY HANDHOLE AND I.D. TAG DETAILS (DRAFT)



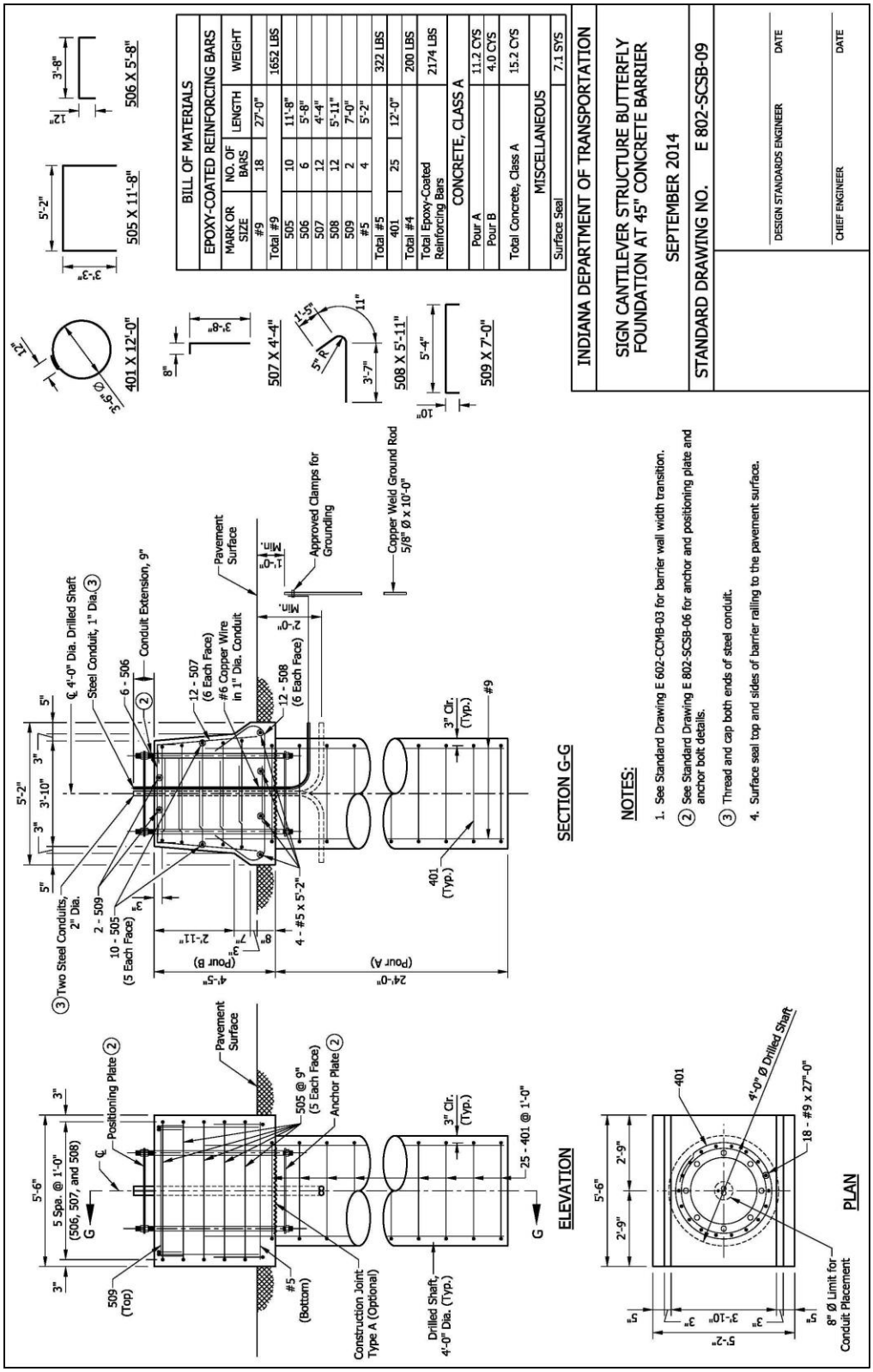
REVISION TO STANDARD DRAWINGS

802-SCSB-08 SIGN CANTILEVER STRUCTURE BUTTERFLY FOUNDATION AT 33" CONCRETE BARRIER (REVISED DRAFT)



REVISION TO STANDARD DRAWINGS

802-SCSB-09 SIGN CANTILEVER STRUCTURE BUTTERFLY FOUNDATION AT 45" CONCRETE BARRIER (REVISED DRAFT, approved on September 19, 2013)



COMMENTS AND ACTION

802-SCSB-01 THRU -09 SIGN CANTILEVER STRUCTURE BUTTERFLY

DISCUSSION: Mr. Boruff introduced and presented this item declaring the need to create new standard drawings detailing butterfly structures that have been designed to meet the current AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. The designs also include fatigue considerations in accordance with those specifications.

Mr. Hanza asked to make a change to Note 1 on drawing 802-SCSB-09 concerning the 28° friction angle. Mr. Hanza would like to change it to 30°. Ms. Phillips confirmed that the 30° is consistent with the other foundation designs, as is shown on drawing 802-SCSB-08. Following the meeting it was decided to remove Note 1 on sheets 8 and 9 of this set of drawings to be consistent with sign and signal traffic structures (sign cantilever, tri-chord, DMS, etc.) standard drawings recently approved. The remaining notes were renumbered accordingly. The revised drafts of these sheets are shown in these minutes.

Further discussion ensued between Mr. Garg and Mr. Hanza concerning other aspects of the designs and Mr. Hanza stressed that calculations would need to be made to back up any further changes.
Mr. Pankow inquired about certifying the welds and a discussion ensued concerning testing and inspecting the welds. Mr. Miller asked if there had been any issues with the welds thus far, and Mr. Hanza confirmed that there have yet to be any issues or problems with the welds on existing structures. Mr. Garg stated that Type C certifications are required and that all welds are inspected to verify that they are as shown on the working drawings.

Motion: Mr. Boruff Second: Mr. Buening Ayes: 9 Nays: 0	Action: _____ Passed as Submitted __X__ Passed as Revised _____ Withdrawn
Standard Specifications Sections affected: NONE Recurring Special Provision affected: NONE Standard Sheets affected: PROPOSED NEW 802-SCSB-01 THRU -09. Design Manual Sections affected: CHAPTER 75. GIFE Sections cross-references: NONE	_____ 2016 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 Sept. 01, 2014 __X__ Create RPD (No. 802-T-197d) Effective Sept. 01, 2013 Letting (Revision approved on September 19, 2013 meeting to be effective on December 01, 2013) ____ 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? YES

COMMENTS AND ACTION

802-SCSB-01 THRU -09 SIGN CANTILEVER STRUCTURE BUTTERFLY

SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO SPECIAL PROVISIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Utility facilities relocated to the incorrect location may result in claims for delay costs due to errant placement of those utilities.

PROPOSED SOLUTION: Revise current Recurring Special Provision 105-C-224 that requires the contractor to provide construction engineering and monitoring of the placement of the utility facilities. The inclusion of this special provision will put the responsibility and motivation on the Contractor for diligent monitoring of placement in the specified areas to ensure that errant placement is identified quickly and that the Contractor will report it expeditiously in the interest of being paid for any potential delays caused by errant placement. Also, any delays, if encountered, may be shorter as a result of being caught in a more timely manner.

APPLICABLE STANDARD SPECIFICATIONS: 105

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: 104

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: 105-C-224

PAY ITEMS AFFECTED: Construction Engineering for Utility Placement

Submitted By: Michelle Gottschalk

Title: Construction Technical Support Director

Organization: INDOT

Phone Number: 317-232-7758

Date: 5/27/2013

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Kenny Franklin, Scott Trammell, Joe Gundersen

REVISION TO SPECIAL PROVISIONS

105-C-224 CONSTRUCTION ENGINEERING AND INSPECTION FOR UTILITY RELOCATION

(Note: The proposed changes are shown as follows:
insertions are in italics and highlighted gray; deletions shown as strikethroughs.
Proposed final draft of this RSP shown as a backup to this item beginning on page 57.)

105-C-224 CONSTRUCTION ENGINEERING AND *MONITORING OF* ~~INSPECTION FOR~~ UTILITY RELOCATION *WORK*

(Revised xx-xx-xx)

Description

The Contractor shall provide construction engineering and *monitoring of utility* ~~inspection for~~ relocation *work in accordance with 105.06 and 105.08(b)* ~~of utilities~~ within the *areas noted below* ~~project limits~~.

Utility Relocation Areas		
No.	*Utility*	*Location and Description*

Construction Requirements

Construction engineering *for this* work shall consist of staking of right-of-way, staking of structure locations, plan reading and interpretation of the plans for the utilities, and all other *efforts* ~~construction engineering work~~ required to facilitate *accurate placement* ~~relocation~~ of utilities *within the areas noted*.

Monitoring for this ~~Inspection~~ work shall consist of observing*, measuring, recording* and reporting to the Department all utility relocation work within the *areas noted. Reports* ~~project limits. Inspection reports~~ for utility relocation work shall be prepared daily and submitted to the Engineer weekly. The reports shall be in a format acceptable to the Engineer. A separate report shall be submitted for each utility and shall include at a minimum the name of the utility, the *service type, the* name of the *entity* ~~utility's contractor~~ performing the *relocation* work, the location of the work, and the *station, offset and elevation of the utility as measured* ~~verification performed~~ by the Contractor*. Measurements* ~~of the utility's location including elevations. The report shall indicate the location, results, and method of verification. Verification~~ shall be *made* ~~performed~~ at *all* critical points for *each utility within the areas noted. Critical points are as shown on the plans or as* ~~all utilities and planned contract work. The method and frequency of verification shall be~~ determined by the *Engineer* ~~Contractor~~.

The Contractor shall immediately notify the Engineer of any error greater than the allowable tolerance between the planned location and the actual location of a utility. The allowable tolerance for any error is one-half of the smallest unit of the specified dimension. The planned location of a utility shall be obtained from the specified station, elevation and offset detailed in the approved utility relocation plans, permits and permit addendums. The actual location of the utility shall be measured at the construction site by a field survey. Failure to report any error in a timely manner may result in quality adjustments not to exceed 0.1% of the total contract amount per day until the error is corrected.

REVISION TO SPECIAL PROVISIONS

105-C-224 CONSTRUCTION ENGINEERING AND INSPECTION FOR UTILITY RELOCATION

Utilities shall be relocated only to locations as shown on approved utility relocation plans, permits, and permit addendums as provided by the Department. The Contractor shall record the actual station, elevation and offset of each identified critical point on the plans.

~~The Engineer shall be notified immediately of any discrepancy between the planned relocation of a utility and the actual relocation, within accepted industry tolerances.~~

~~Plans will be provided by the Department showing the proposed location for each utility that will be relocated. The Contractor shall mark the plans to show the actual location of each relocated utility and the data from each verification check.~~ The plans shall be kept current with the utility relocation work and shall be made available to the Engineer upon request. The plans shall be submitted to the Engineer upon completion of the project.

The Contractor's responsibility for construction engineering and inspection of utility relocation work shall begin *seven*~~7~~ days from the date of the notice to proceed and shall continue until the date of final acceptance. Contract adjustments for delays resulting from incorrect relocation of utilities during the Contractor's period of responsibility will only be considered if the Contractor fulfills the requirements herein*, and in accordance with 105.06.*

Method of Measurement

The work described in this provision will not be measured for payment.

Basis of Payment

Payment for furnishing all necessary personnel, equipment, and materials for construction engineering and inspection of utility relocation will be made at the contract lump sum price.

Payment will be made under:

Pay Item	**Pay Unit Symbol**
Construction Engineering *for*~~and Inspection,~~ Utility Relocation	LS

The cost of all work required, including utility location verification by the methods determined by the Contractor shall be included in the cost of pay item.

REVISION TO SPECIAL PROVISIONS

BACKUP: PROPOSED FINAL DRAFT OF 105-C-224 CONSTRUCTION ENGINEERING AND INSPECTION FOR UTILITY RELOCATION

105-C-224 CONSTRUCTION ENGINEERING AND MONITORING OF UTILITY RELOCATION WORK

(Revised XX-XX-13)

Description

The Contractor shall provide construction engineering and monitoring of utility relocation work in accordance with 105.06 and 105.08(b) within the areas noted below.

Utility Relocation Areas		
No.	*Utility*	*Location and Description*

Construction Requirements

Construction engineering for this work shall consist of staking of right-of-way, staking of structure locations, plan reading and interpretation of the plans for the utilities, and all other efforts required to facilitate accurate placement of utilities within the areas noted.

Monitoring for this work shall consist of observing, measuring, recording and reporting to the Department all utility relocation work within the areas noted. Reports for utility relocation work shall be prepared daily and submitted to the Engineer weekly. The reports shall be in a format acceptable to the Engineer. A separate report shall be submitted for each utility and shall include at a minimum the name of the utility, the service type, the name of the entity performing the relocation work, the location of the work, and the station, offset and elevation of the utility as measured by the Contractor. Measurements shall be made at all critical points for each utility within the areas noted. Critical points are as shown on the plans or as determined by the Engineer.

The Contractor shall immediately notify the Engineer of any error greater than the allowable tolerance between the planned location and the actual location of a utility. The allowable tolerance for any error is one-half of the smallest unit of the specified dimension. The planned location of a utility shall be obtained from the specified station, elevation and offset detailed in the approved utility relocation plans, permits and permit addendums. The actual location of the utility shall be measured at the construction site by a field survey. Failure to report any error in a timely manner may result in quality adjustments not to exceed 0.1% of the total contract amount per day until the error is corrected.

Utilities shall be relocated only to locations as shown on approved utility relocation plans, permits, and permit addendums as provided by the Department. The Contractor shall record the actual station, elevation and offset of each identified critical point on the plans. The plans shall be kept current with the utility relocation work and shall be made available to the Engineer upon request. The plans shall be submitted to the Engineer upon completion of the project.

REVISION TO SPECIAL PROVISIONS

BACKUP: PROPOSED FINAL DRAFT OF 105-C-224 CONSTRUCTION ENGINEERING AND INSPECTION FOR UTILITY RELOCATION

The Contractor's responsibility for construction engineering and inspection of utility relocation work shall begin seven days from the date of the notice to proceed and shall continue until the date of final acceptance. Contract adjustments for delays resulting from incorrect relocation of utilities during the Contractor's period of responsibility will only be considered if the Contractor fulfills the requirements herein, and in accordance with 105.06.

Method of Measurement

The work described in this provision will not be measured for payment.

Basis of Payment

Payment for furnishing all necessary personnel, equipment, and materials for construction engineering and inspection of utility relocation will be made at the contract lump sum price.

Payment will be made under:

Pay Item	***Pay Unit Symbol***
Construction Engineering for Utility Relocation.....	*LS*

The cost of all work required, including utility location verification by the methods determined by the Contractor shall be included in the cost of pay item.

COMMENTS AND ACTION

105-C-224 CONSTRUCTION ENGINEERING AND INSPECTION FOR UTILITY RELOCATION

DISCUSSION: This item had been withdrawn prior to the meeting pending further review.

This subject will be addressed further at the ICA/INDOT Statewide Joint Cooperative Committee meeting on Tuesday, June 25, 2013.

Motion: Second: Ayes: Nays:	Action: _____ Passed as Submitted _____ Passed as Revised __X__ Withdrawn
Standard Specifications Sections affected: SECTION 105. Recurring Special Provision affected: 105-C-224 CONSTRUCTION ENGINEERING AND INSPECTION FOR UTILITY RELOCATION Standard Sheets affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	_____ 2016 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? _____

SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO SPECIAL PROVISIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED:

1. Need a faster curing emulsion as the liquid asphalt sealant

2. Identify the HMA mixtures for which the adhesive and liquid asphalt sealant would apply

3. Need a method of measurement and pay item for liquid asphalt sealant

PROPOSED SOLUTION:

1. Using on-site tack coat materials has been a goal to achieve. A recent trial involving AE-NT material on a non-state job proved the concept could work.

   The AE-F material is applied at 0.06 gallon/sys; this material is a SS-1h asphalt emulsion with a minimum residue content of 27% after dilution with water. The concept would be to use SS-1h (minimum residue content of 57%) or AE-NT (minimum residue content of 50%) undiluted asphalt emulsions. The application rates would be adjusted to account for the higher residue contents; the application rates for undiluted SS-1h or AE-NT asphalt emulsions would be 0.03 gallons/sys to assure equivalent residue content achieved with AE-F material.

2. The adhesive would apply to the top course of all dense graded intermediate mixtures; the adhesive would apply to all dense graded 4.75 mm, 9.5 mm and 12.5 mm surface mixtures in addition to all 9.5 mm and 12.5 mm SMA surface mixtures.

   The liquid asphalt sealant would apply to all dense graded 9.5 mm and 12.5 mm surface mixtures only.

3. Establish linear foot as the method of measurement and create a pay-item for liquid asphalt sealant.

APPLICABLE STANDARD SPECIFICATIONS: 401 and 410

APPLICABLE STANDARD DRAWINGS:

APPLICABLE DESIGN MANUAL SECTION:

APPLICABLE SECTION OF GIFE:

APPLICABLE RECURRING SPECIAL PROVISIONS:

PAY ITEMS AFFECTED: Joint Adhesive, (course type)...LFT

Submitted By: Michael Prather for Mike Buening

SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO SPECIAL PROVISIONS

(continued)

Title: Area Pavement Engineer

Phone Number: 234-8250

Date: 06/07/13

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Joint INDOT/APAI Tech Committee

REVISION TO SPECIAL PROVISIONS

401-R-581 JOINT ADHESIVE

(Note: The proposed changes are shown highlighted gray.
Basis For Use: Required for all contracts with 401, 402, 403 or 410 (surface) pay items.
A copy of the 2014 SS is available on-line at
http://www.in.gov/dot/div/contracts/standards/book/index.html.)

401-R-581 JOINT ADHESIVE

(Revised xx-xx-13)

The Standard Specifications are revised as follows:

SECTION 401, AFTER LINE ~~353~~*388*, INSERT AS FOLLOWS:

Hot poured joint adhesive in accordance with 906 shall be applied to longitudinal joints constructed between two adjacent HMA courses in the top course of dense graded intermediate mixtures and all 4.75 mm, 9.5 mm and 12.5 mm surface mixture courses. This includes joints within the traveled way as well as between any of the following: traveled way and an auxiliary lane, traveled way and a paved shoulder, and auxiliary lane and a paved shoulder.

The material shall be heated in a jacketed, double boiler melting kettle. The kettle shall have an attached pressure feed wand system with applicator shoe.

The joint adhesive shall be applied to the face of the previously constructed edge at the joint using a wand applicator. Prior to application of the joint adhesive, the joint face shall be dry and free of loose material and foreign objects. The adhesive shall be applied on the joint face 1/8 in. thick at the temperature recommended by the manufacturer. Excess joint adhesive shall not be allowed to pool on the top of the previously constructed pavement course or the pavement to be overlaid. The application of the adhesive shall be made within the same day, but at least 15 minutes prior to construction of the longitudinal joint.

All 9.5 mm and 12.5 mm surface mixture longitudinal joints that have the joint adhesive applied shall be sealed using ~~AE-F~~ SS-1h or AE-NT asphalt emulsion in accordance with 902.01(b). The sealing operation shall not begin until all density cores in accordance with 401.16 and 401.20 have been obtained and the installation of ~~milled centerline~~pavement corrugations, when specified in accordance with 606, has been completed.

The liquid asphalt sealant, ~~AE-F~~, shall be a minimum width of 24 in., centered on the joint line, and shall be extended, when necessary, to provide coverage beyond the edge of the pavement corrugation. ~~AE-F~~The sealant shall be applied at an application rate of ~~0.06 ± 0.02~~0.03 ±0.01 gal./sq yd onto a dry surface, free of any foreign or loose material, using a distributor in accordance with 409.03(a). Areas receiving greater than 0.04 gal./sq yd shall be lightly broomed to reduce the effects of excess sealant on the pavement surface. The sealant temperature at the time of application shall be at least 135 ~~± 5~~°F and shall not exceed 180°F. The ambient air and pavement temperatures at the time of application shall be greater than 32°F.

Temporary pavement markings in accordance with 801.12 shall be offset a sufficient distance from the longitudinal joint so as ~~to~~ not to obstruct the installation of the ~~milled~~

REVISION TO SPECIAL PROVISIONS

401-R-581 JOINT ADHESIVE

~~centerline~~*pavement corrugations or the application of the liquid asphalt sealant. The ~~AE-F~~sealant shall be cured a minimum of five days prior to applying the permanent pavement traffic markings in accordance with 808.*

SECTION 401, AFTER LINE 771, INSERT AS FOLLOWS:

Joint adhesive will be measured by the linear foot in accordance with 109.01(a). Liquid asphalt sealant will be measured by the linear foot.

SECTION 401, AFTER LINE 785, INSERT AS FOLLOWS:

Joint adhesive will be paid for by the linear foot, complete in place. Liquid asphalt sealant will be paid for by the linear foot.

SECTION 401, AFTER LINE 789, INSERT AS FOLLOWS:

Joint Adhesive, _____ .....LFT
course type
Liquid Asphalt Sealant.....LFT

~~SECTION 401, AFTER LINE 799, INSERT AS FOLLOWS:~~

~~*The cost of the liquid asphalt sealant for the joint adhesive and centerline corrugations shall be included in the cost of the joint adhesive.*~~

SECTION 410, AFTER LINE 312, INSERT AS FOLLOWS:

Hot poured joint adhesive in accordance with 906 shall be applied to longitudinal joints constructed between two adjacent HMA courses in the top course of dense graded intermediate mixtures and all 9.5 mm and 12.5 mm SMA surface mixture courses. This includes joints within the traveled way as well as between any of the following: traveled way and an auxiliary lane, traveled way and a paved shoulder, and auxiliary lane and a paved shoulder.

The material shall be heated in a jacketed, double boiler melting kettle. The kettle shall have an attached pressure feed wand system with applicator shoe.

The joint adhesive shall be applied to the face of the previously constructed edge at the joint using a wand applicator. Prior to application of the joint adhesive, the joint face shall be dry and free of loose material and foreign objects. The adhesive shall be applied on the joint face 1/8 in. thick at the temperature recommended by the manufacturer. Excess joint adhesive shall not be allowed to pool on the top of the previously constructed pavement course or the pavement to be overlaid. The application of the adhesive shall be made within the same day, but at least 15 min prior to construction of the longitudinal joint.

SECTION 410, AFTER LINE 485, INSERT AS FOLLOWS:

Joint adhesive will be measured by the linear foot in accordance with 109.01(a).

SECTION 410, AFTER LINE 492, INSERT AS FOLLOWS:

Joint adhesive will be paid for by the linear foot, complete in place.

SECTION 410, AFTER LINE 503, INSERT AS FOLLOWS:

Joint Adhesive, _____.....LFT

REVISION TO SPECIAL PROVISIONS

401-R-581 JOINT ADHESIVE

course type

SECTION 906, AFTER LINE ~~94~~*93*, INSERT AS FOLLOWS:

5. Hot Poured Joint Adhesive

Joint adhesive is a hot applied asphalt material that is used to seal the longitudinal construction joint formed between the adjacent HMA pavement courses.

Joint adhesive shall be in accordance with the following:

Test	*Method*	*Test Results*
Softening Point, °F (°C)	*AASHTO T 53*	*> 170 (77)*
Ductility @ 77°F (25°C), mm	*AASHTO T 51*	*> 300*
Ductility @ 39°F (4°C), mm	*AASHTO T 51*	*> 300*
Apparent Viscosity @ 400°F (204°C), cp	*ASTM D 2669*	*4,000 – 11,000*
Asphalt Compatibility	*ASTM D 5329*	*Pass*
Cone Penetration @ 77°F (25°C), mm	*ASTM D 5329*	*50.0 – 100.0*
Flow @ 140°F (60°C), mm	*ASTM D 5329*	*< 5*
Resilience @ 77°F (25°C), %	*ASTM D 5329*	*> 30*
Tensile Adhesion @ 77°F (25°C), mm	*ASTM D 5329*	*> 500*
Flexibility @ 0°F (-18°C)	*ASTM D 3111*	*Pass*
Flash Point, °F (°C)	*AASHTO T 48*	*> 410 (210)*

The joint adhesive will be accepted by type A certification in accordance with 916 for each batch or lot of material furnished.

COMMENTS AND ACTION

401-R-581 JOINT ADHESIVE

DISCUSSION: Mr. Buening made some minor editorial changes prior to the discussion, and moved that this item be approved as revised. This was seconded by Mr. Boruff.

This item was introduced by Mr. Buening and presented by Mr. Prather who explained the details associated with the revisions shown. Mr. Prather explained that the AE-F material is being revised to use SS-1h and the AE-NT since those will set sooner. Also, the AE-F is essentially the SS-1h which has been diluted with 50% water, which means the water has to bleed out before it can set. Mr. Prather also expressed the need to be able to pay for the liquid sealant separately instead of referring to 412 so this mixture can be used with or without the joint sealant. Mr. Prather further explained the rest of the revisions shown.

Mr. Prather also expressed the desire to change the reference in item 3 from last month's meeting from 412 to 401.15. Mr. Miller asked if we would still require 5 days for the sealant to cure prior to striping. Mr. Prather and Mr. Walker confirmed the 5 day requirement.

Motion: Mr. Buening Second: Mr. Boruff Ayes: 9 Nays: 0	Action: _____ Passed as Submitted __X__ Passed as Revised _____ Withdrawn
Standard Specifications Sections affected: SECTIONS 401, 410 AND 906. Recurring Special Provision affected: 401-R-581 JOINT ADHESIVE Standard Sheets affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	_____ 2016 Standard Specifications Book ____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ __X__ Revise RSP (No.401-R-581) Effective Sept. 01, 2013 Letting (Revision approved on September 19, 2013 meeting to be effective on December 01, 2013) 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? YES

COMMENTS AND ACTION

401-R-581 JOINT ADHESIVE