Mr. Strain
Date: 03/15/12

SPECIFICATION, SPECIAL PROVISIONS AND DRAWINGS

REVISION TO STANDARD SPECIFICATIONS AND DRAWINGS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Bridge Standards 707 thru 731 need to be revised and updated for content and presentation.

PROPOSED SOLUTION: The Bridge Standards 707 thru 731 have been revised and updated.

707-BPBB-01.....Propose to delete
707-BPBF-01 thru 03.....Propose to revise
707-BPDP-01 & 02, 04 & 05.....Propose to delete
711-BREB-01 .....Propose to delete
711-BSTS-01 & 02 .....Propose to delete
724-BJTS-02.....Propose to delete
724 BJTS-03 .....Propose to revise
724 BJTS-04, 05, 06 .....Propose to delete
731 BRRW-01 & 02 .....New Designation: 731-MSEW-01, 02, & 03

APPLICABLE STANDARD SPECIFICATIONS: 707

APPLICABLE STANDARD DRAWINGS:

707-BPBB-01
707-BPBF-01 thru 03
707-BPDP-01 & 02, 04 & 05
711-BREB-01
711-BSTS-01 thru 02
724-BJTS-02 thru 06
731-BRRW-01 thru 02

APPLICABLE DESIGN MANUAL SECTION: 406-12A Figure showing transverse tensioning rods will be deleted.

APPLICABLE SECTION OF GIFE: none

APPLICABLE RECURRING SPECIAL PROVISIONS: none

SPECIFICATION, SPECIAL PROVISIONS AND DRAWINGS

REVISION TO STANDARD SPECIFICATIONS AND DRAWINGS

(CONTINUED)

Submitted By: Randy Strain

Title: Bridge Standard and Policy Engineer

Organization: INDOT

Phone Number: 317-232-3339

Date: Feb 17, 2012

APPLICABLE SUB-COMMITTEE ENDORSEMENT: none

REVISION TO STANDARD SPECIFICATIONS

SECTION 707 – PRECAST AND PRECAST PRESTRESSED CONCRETE STRUCTURAL MEMBERS
707.01 DESCRIPTION
707.02 MATERIALS
707.09 PLACING STRUCTURAL MEMBERS
707.10 PRECAST PRESTRESSED CONCRETE DECK PANELS
707.11 METHOD OF MEASUREMENTS
707.12 BASIS OF PAYMENT

The Standard Specifications are revised as follows:

SECTION 707, BEGIN LINE 4, DELETE AS FOLLOWS:

707.01 Description

This work shall consist of fabricating, furnishing, and installing reinforced precast concrete structural members~~, concrete deck panels~~ cast outside the structure, transported to, and incorporated into the structure, or precast prestressed concrete structural members having a design 28-day concrete compressive strength, f'c, of up to and including 8,000 psi ~~(55.2 MPa)~~, all in accordance with 105.03.

SECTION 707, BEGIN LINE 37, DELETE AS FOLLOWS:

~~Tensioning rods and steel plates used with adjacent prestressed concrete box beams shall be in accordance with ASTM A 706, Grade 36 (A 706M, Grade 250). Nuts used with such tensioning rods shall be heavy hex in accordance with ASTM A 563 (A 563M). Grout used with such beams shall be non-shrink in accordance with ASTM C 1107.~~

All precast non-prestressed structural members shall be manufactured by a Department Certified Precast Concrete Producer in accordance with ITM 813. All precast prestressed structural members including, but not limited to concrete ~~deck panels,~~ box-beams, I-beams, U-beams, and bulb-T beams shall be manufactured in a Department approved plant in accordance with ITM 814.

SECTION 707, BEGIN LINE 490, DELETE AS FOLLOWS:

~~After adjacent prestressed concrete box beams are in place, the transverse tensioning rods shall be preliminarily tightened as shown on the plans. The rods shall be final tensioned as shown on the plans. The final tensioning shall yield 20,000 psi (138 MPa) as developed by means of a torque of 19 lb/ft (271 N/m). The tensioning rod recesses and longitudinal joints between beams shall be filled with grout.~~

SECTION 707, BEGIN LINE 496, DELETE AND INSERT AS FOLLOWS:

707.10 ~~Precast Prestressed Concrete Deck Panels~~*Blank*

~~Precast prestressed concrete deck panels shall be designed as a non-composite section to support the dead load of the panel, reinforcement, plastic concrete, and a construction load of 50 lb/sq ft (2.4 kPa).~~

~~When the Contractor elects to use precast prestressed deck panels, the panel shall be designed as a composite section with class C concrete to support the live load. The Contractor~~

REVISION TO STANDARD SPECIFICATIONS

SECTION 707 – PRECAST AND PRECAST PRESTRESSED CONCRETE STRUCTURAL MEMBERS
707.01 DESCRIPTION
707.02 MATERIALS
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707.10 PRECAST PRESTRESSED CONCRETE DECK PANELS
707.11 METHOD OF MEASUREMENTS
707.12 BASIS OF PAYMENT

~~shall revise the area of top longitudinal reinforcing bars in the deck over interior supports for negative moment to be equal to the total area of top and bottom longitudinal reinforcing bars.~~

~~Working drawings shall be submitted in accordance with 105.02. Design calculations shall be submitted only for total slab thicknesses greater than 8 in. (200 mm) or clear spans in excess of 7 ft 6 in. (2.3 m). Design shall be in accordance with the AASHTO LRFD Bridge Design Specifications as shown on the plans. Details such as type, size, and location of the reinforcing bars, the prestressing strands, WWR, and concrete shall be as shown on the plans.~~

~~The concrete for deck panels shall be placed in accordance with 702.20. The concrete shall be vibrated to prevent honeycombs and voids, especially at the corners and edges of the panels. The tops of the deck panels shall be broom or wire brush finished in the direction of the prestressing strands. The corrugations formed shall be uniform in appearance and shall not be more than 1/4 in. (6 mm) in depth. The coarse aggregate shall not be displaced when preparing the roughened surface.~~

SECTION 707, BEGIN LINE 527, DELETE AS FOLLOWS:

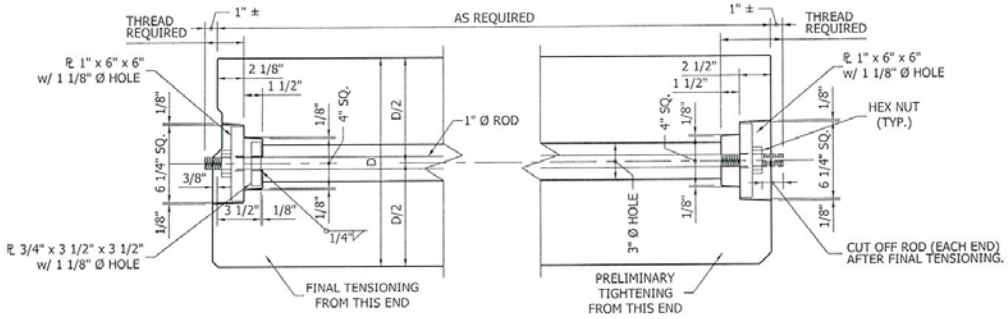
~~When the Contractor elects to use precast prestressed concrete deck panels, the panels will not be measured for payment~~.

SECTION 707, BEGIN LINE 560, DELETE AS FOLLOWS:

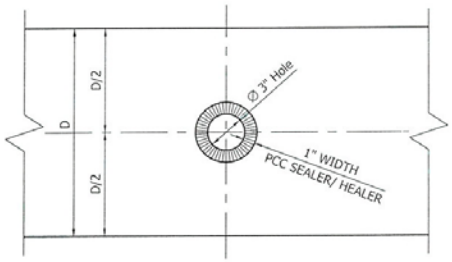
~~When the Contractor elects to use precast prestressed concrete deck panels, the cost of the panels shall be included in the cost of class C concrete in superstructure~~.

REVISION TO STANDARD DRAWINGS

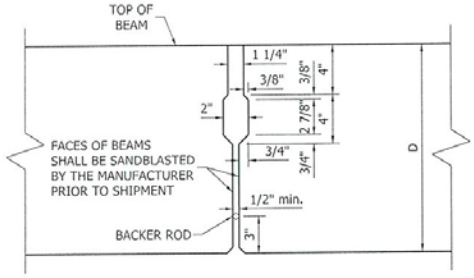
EXISTING 707-BPBB-01 BRIDGE PRESTRESSED BOX BEAM ADJACENT BOX BEAM (PROPOSE TO DELETE)



SECTION SHOWING TRANSVERSE TENSIONING ROD



SECTION AT FACE OF BEAM



SECTION SHOWING JOINT BETWEEN BEAMS

1" ℄ rod

$A = \pi r^2 = 3.14159(.5)^2$

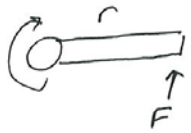
$A = .785$ "

$.785 in^2 (20{,}000 lb/in^2) =$

15707 lb/in

15707 lbs/rod

T = r + F



INDIANA DEPARTMENT OF TRANSPORTATION

BRIDGE PRESTRESSED BOX BEAM
ADJACENT BOX BEAM
TRANSVERSE TENSIONING ROD DETAILS
SEPTEMBER 2010

STANDARD DRAWING NO. E 707-BPBB-01

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

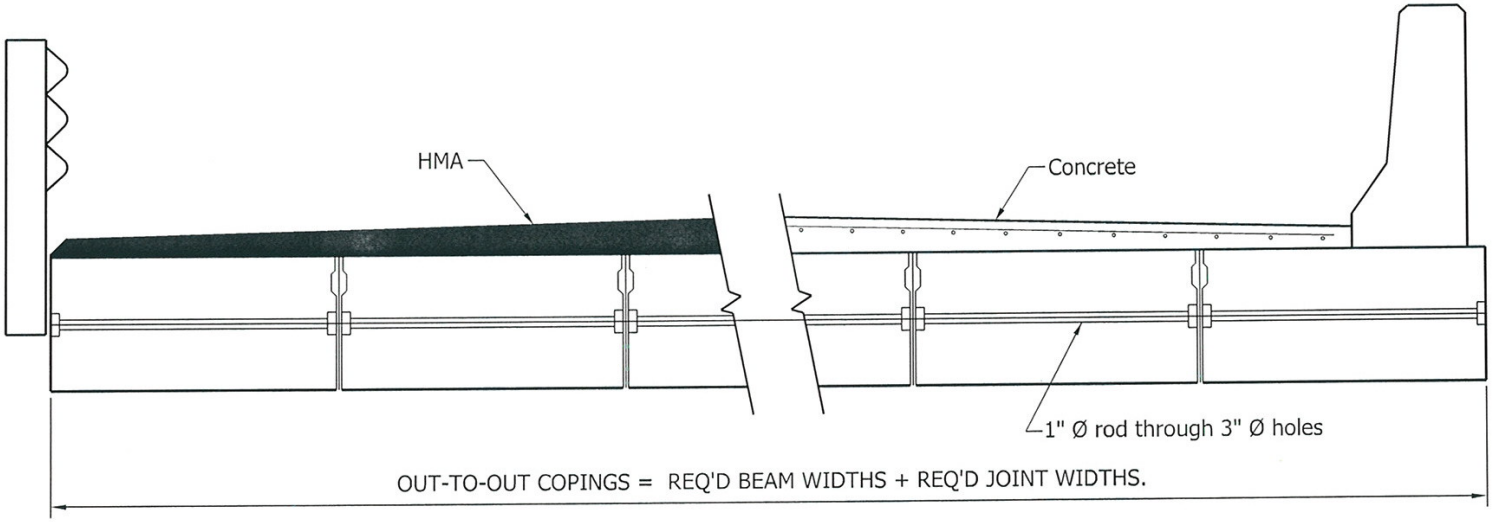
/s/ Richard L. VanCleave 09/01/10
DESIGN STANDARDS ENGINEER DATE

/s/ Mark A. Miller 09/01/10
CHIEF HIGHWAY ENGINEER DATE

DESIGN STANDARDS ENGINEER

REVISION TO STANDARD DRAWINGS

EXISTING IDM FIGURE 406-12A ADJACENT BOX BEAM WITH TRANSVERSE TENSIONING RODS (PROPOSE TO DELETE)



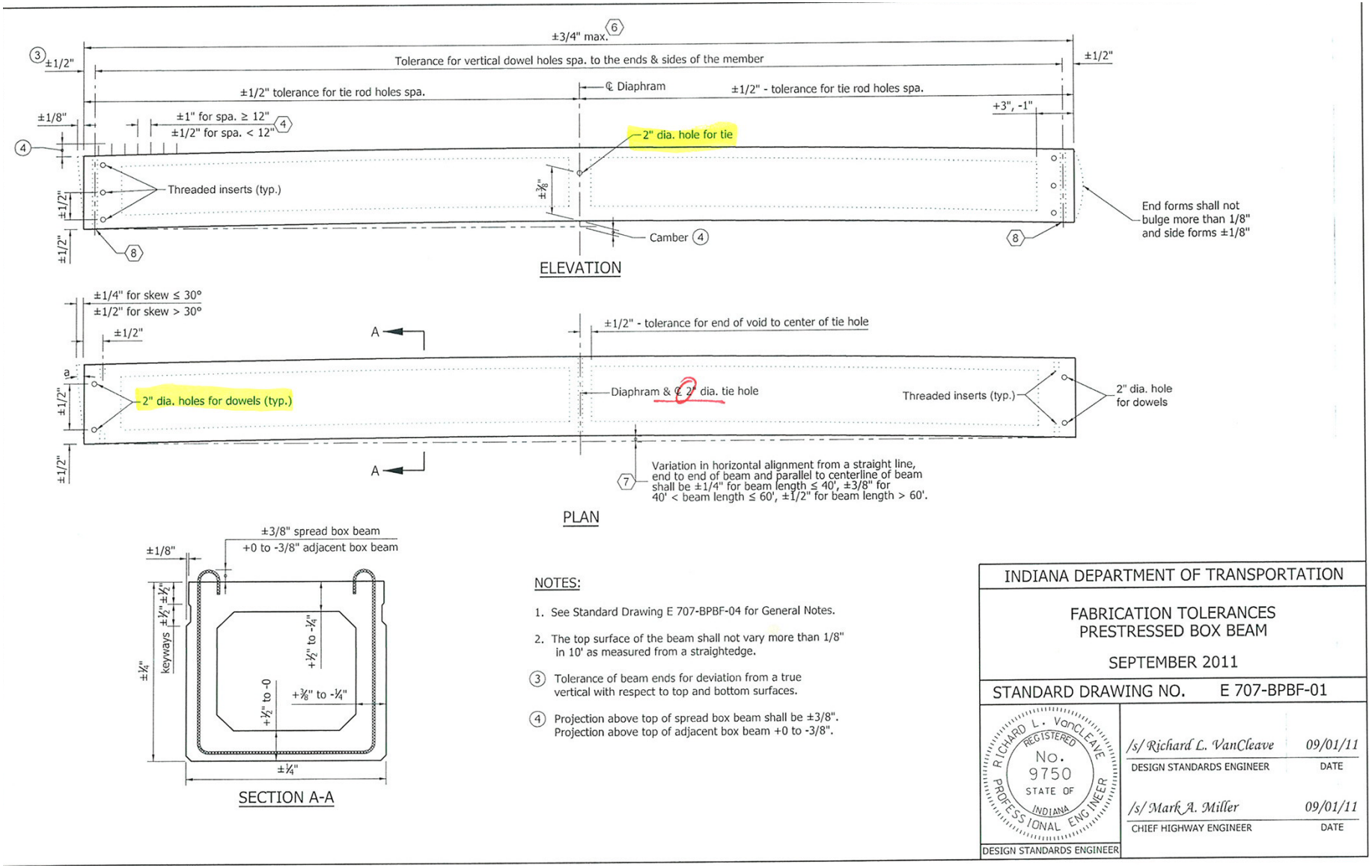
ADJACENT BOX BEAMS WITH TRANSVERSE TENSIONING RODS
(Section View)

Figure 406-12A

Back

REVISION TO STANDARD DRAWINGS

EXISTING 707-BPBF-01 FABRICATION TOLERANCES PRESTRESSED BOX BEAM (WITH MARKUPS)



NOTES:

1. See Standard Drawing E 707-BPBF-04 for General Notes.
2. The top surface of the beam shall not vary more than 1/8" in 10' as measured from a straightedge.
3. Tolerance of beam ends for deviation from a true vertical with respect to top and bottom surfaces.
4. Projection above top of spread box beam shall be ±3/8". Projection above top of adjacent box beam +0 to -3/8".

INDIANA DEPARTMENT OF TRANSPORTATION

FABRICATION TOLERANCES
PRESTRESSED BOX BEAM

SEPTEMBER 2011

STANDARD DRAWING NO. E 707-BPBF-01

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

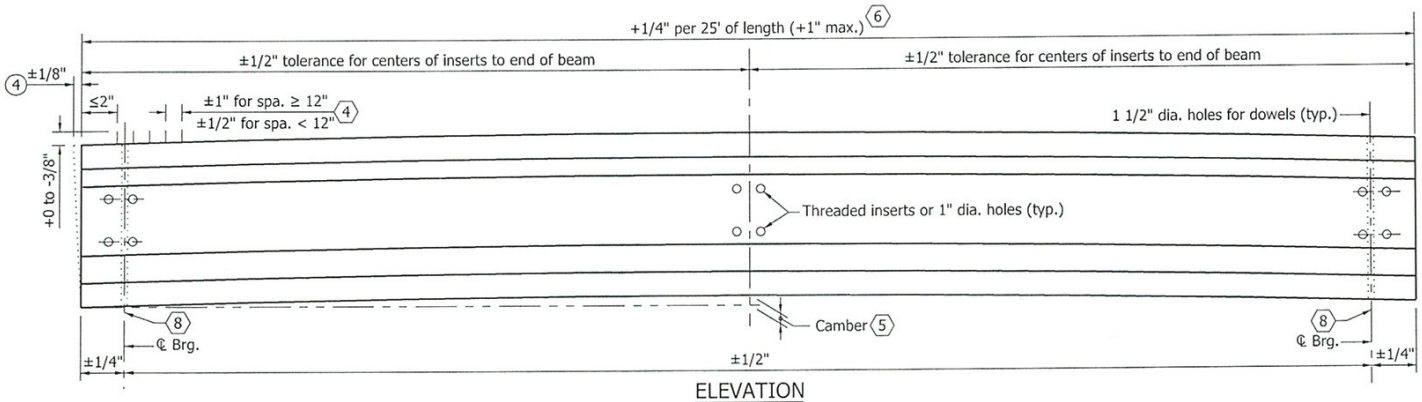
DESIGN STANDARDS ENGINEER

/s/ Richard L. VanCleave 09/01/11
DESIGN STANDARDS ENGINEER DATE

/s/ Mark A. Miller 09/01/11
CHIEF HIGHWAY ENGINEER DATE

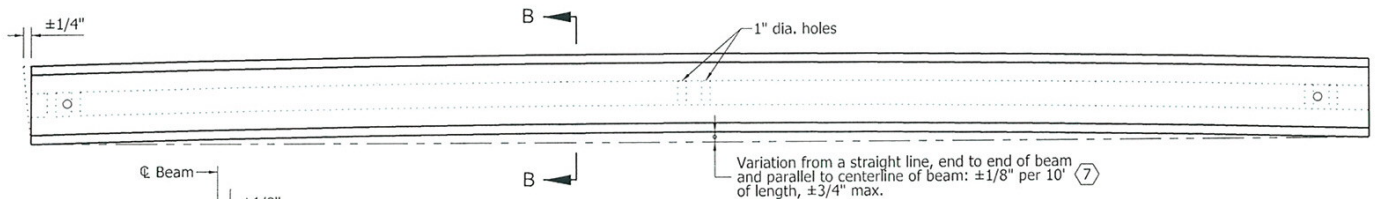
REVISION TO STANDARD DRAWINGS

EXISTING 707-BPBF-02 FABRICATION TOLERANCES PRESTRESSED I BEAM (WITH MARKUPS)

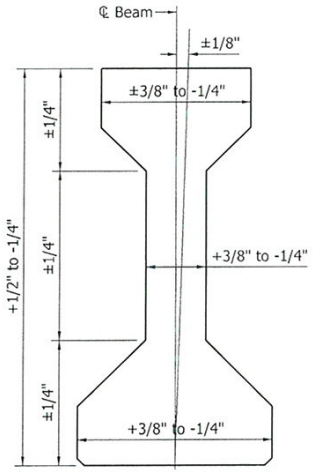


ELEVATION

Tolerance added for holes



PLAN



SECTION B-B

NOTES:

1. See Standard Drawing E 707-BPBF-04 for General Notes.
2. Center of gravity of depressed-strands group at the end of beam shall not be more than ±1/2".
3. Tolerance of position of post-tensioning duct shall be ±1/4".

4 Horizontal tolerance of beam ends for deviation from a true vertical with respect to top and bottom sufaces. Vertical tolerance shall be ±1/8" per 12" of beam height.

INDIANA DEPARTMENT OF TRANSPORTATION

FABRICATION TOLERANCES
PRESTRESSED I BEAM

SEPTEMBER 2011

STANDARD DRAWING NO. E 707-BPBF-02

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

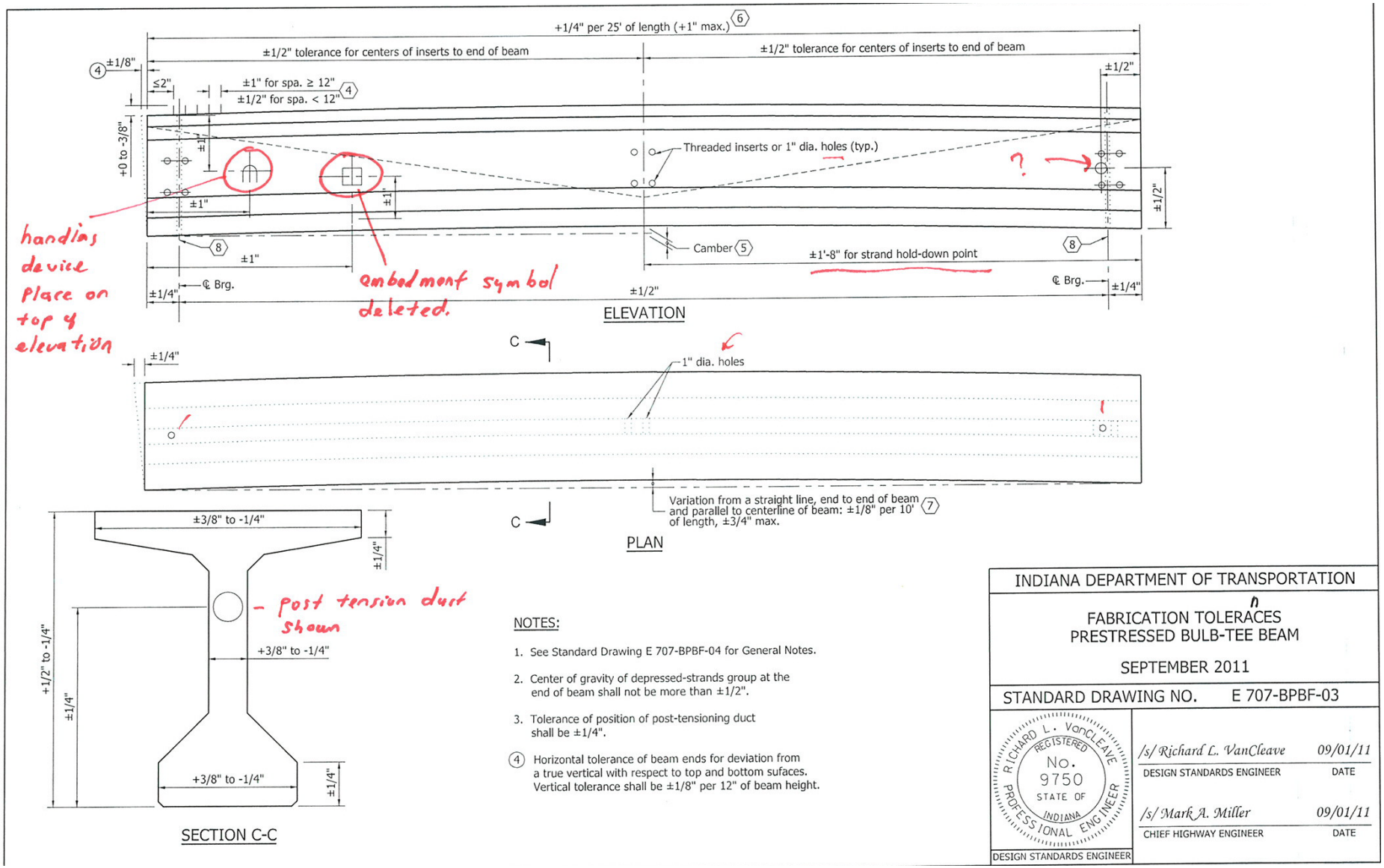
DESIGN STANDARDS ENGINEER

/s/ Richard L. VanCleave 09/01/11
DESIGN STANDARDS ENGINEER DATE

/s/ Mark A. Miller 09/01/11
CHIEF HIGHWAY ENGINEER DATE

REVISION TO STANDARD DRAWINGS

EXISTING 707-BPBF-03 FABRICATION TOLERANCES PRESTRESSED BULB-TEE BEAM (WITH MARKUPS)



NOTES:

1. See Standard Drawing E 707-BPBF-04 for General Notes.
2. Center of gravity of depressed-strands group at the end of beam shall not be more than ±1/2".
3. Tolerance of position of post-tensioning duct shall be ±1/4".

(4) Horizontal tolerance of beam ends for deviation from a true vertical with respect to top and bottom sufaces. Vertical tolerance shall be ±1/8" per 12" of beam height.

INDIANA DEPARTMENT OF TRANSPORTATION

FABRICATION TOLERACES
PRESTRESSED BULB-TEE BEAM

SEPTEMBER 2011

STANDARD DRAWING NO. E 707-BPBF-03

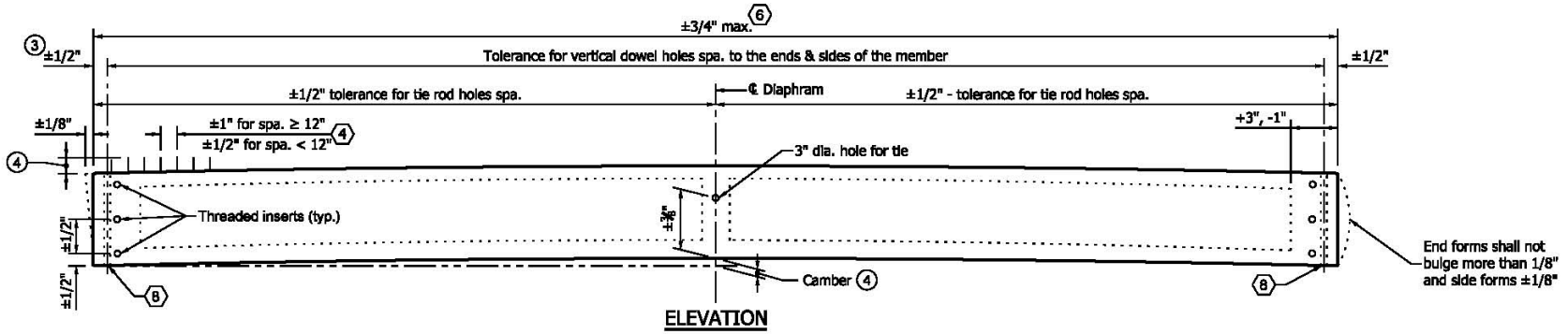
RICHARD L. VanCLEAVE REGISTERED No. 9750 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

/s/ Richard L. VanCleave 09/01/11
DESIGN STANDARDS ENGINEER DATE

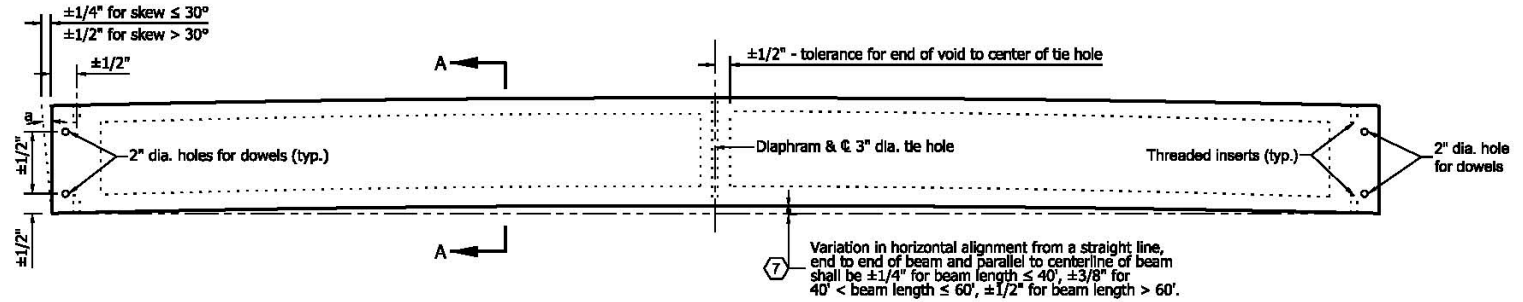
/s/ Mark A. Miller 09/01/11
CHIEF HIGHWAY ENGINEER DATE

REVISION TO STANDARD DRAWINGS

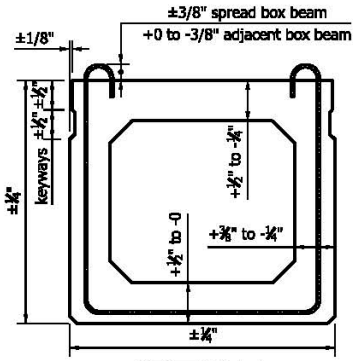
707-BPBF-01 FABRICATION TOLERANCES PRESTRESSED BOX BEAM (DRAFT)



ELEVATION



PLAN



SECTION A-A

NOTES:

1. See Standard Drawing E 707-BPBF-04 for General Notes.
2. The top surface of the beam shall not vary more than 1/8" in 10' as measured from a straightedge.

③ Tolerance of beam ends for deviation from a true vertical with respect to top and bottom surfaces.

④ Projection above top of spread box beam shall be ±3/8". Projection above top of adjacent box beam +0 to -3/8".

INDIANA DEPARTMENT OF TRANSPORTATION

FABRICATION TOLERANCES
PRESTRESSED BOX BEAM

SEPTEMBER 2011

STANDARD DRAWING NO. E 707-BPBF-01

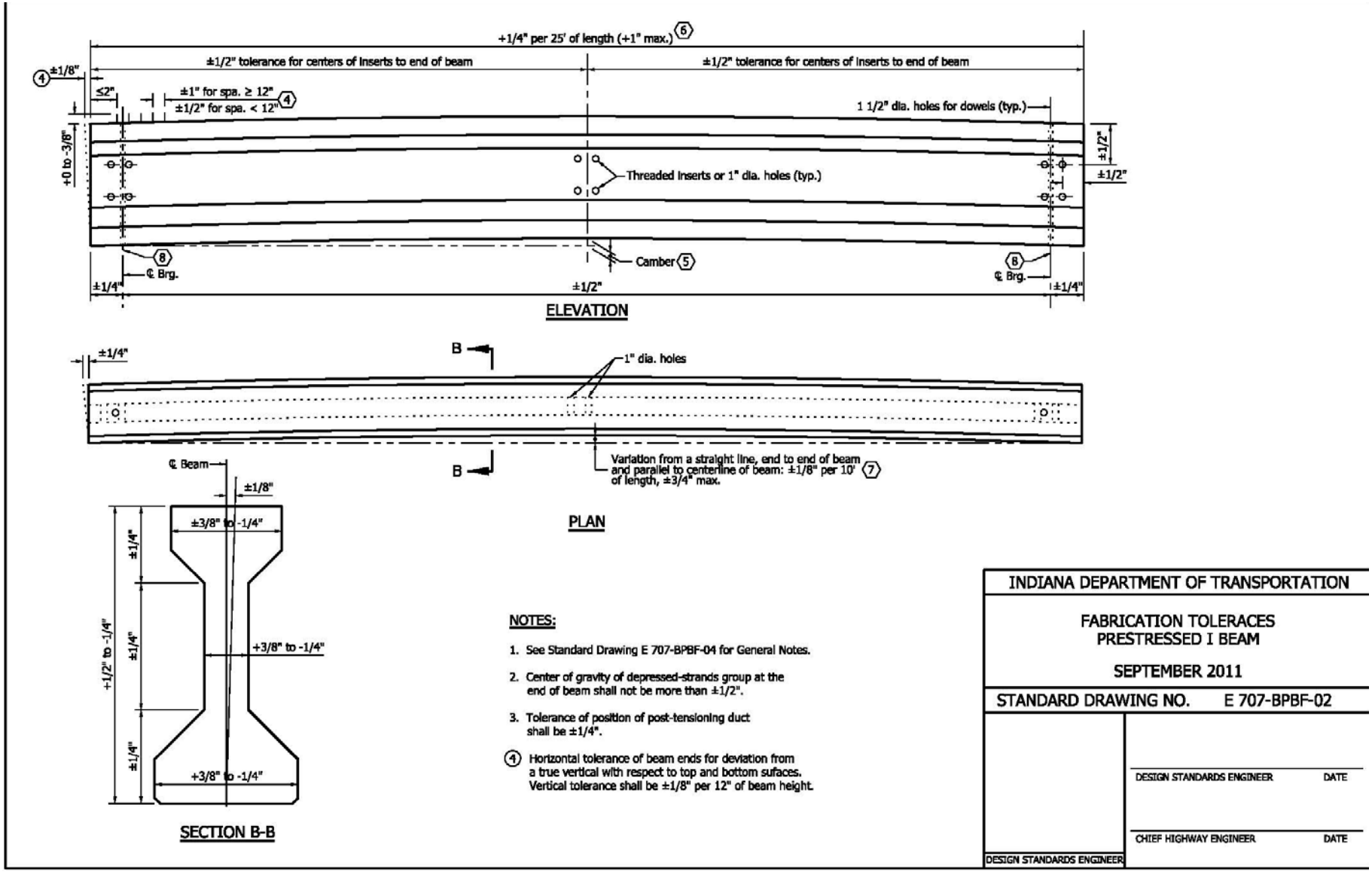
DESIGN STANDARDS ENGINEER DATE

CHIEF HIGHWAY ENGINEER DATE

DESIGN STANDARDS ENGINEER

REVISION TO STANDARD DRAWINGS

707-BPBF-02 FABRICATION TOLERANCES PRESTRESSED I BEAM (DRAFT)



NOTES:

1. See Standard Drawing E 707-BPBF-04 for General Notes.
2. Center of gravity of depressed-strands group at the end of beam shall not be more than ±1/2".
3. Tolerance of position of post-tensioning duct shall be ±1/4".

4 Horizontal tolerance of beam ends for deviation from a true vertical with respect to top and bottom sufaces. Vertical tolerance shall be ±1/8" per 12" of beam height.

INDIANA DEPARTMENT OF TRANSPORTATION

FABRICATION TOLERACES
PRESTRESSED I BEAM

SEPTEMBER 2011

STANDARD DRAWING NO. E 707-BPBF-02

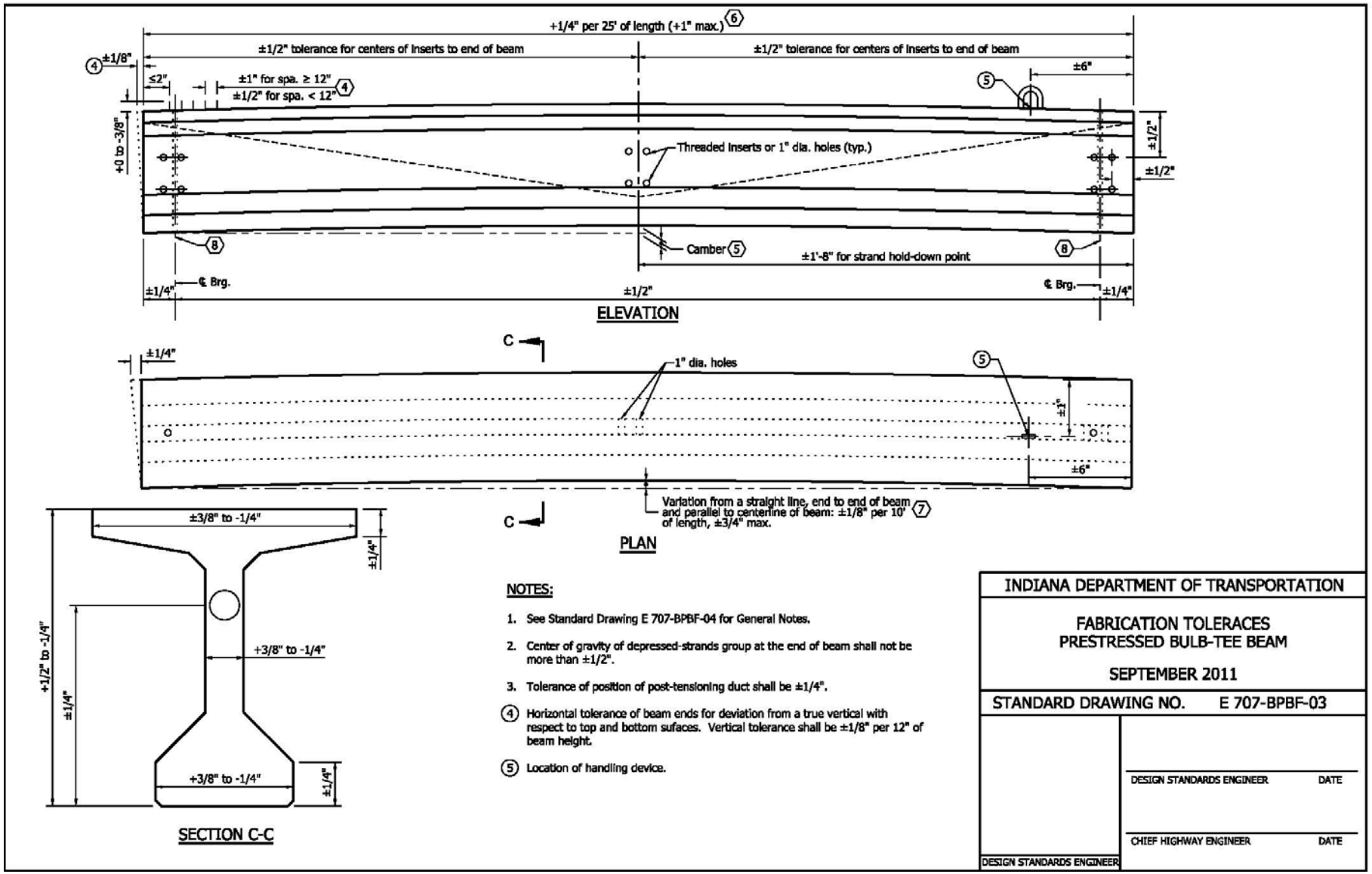
DESIGN STANDARDS ENGINEER DATE

CHIEF HIGHWAY ENGINEER DATE

DESIGN STANDARDS ENGINEER

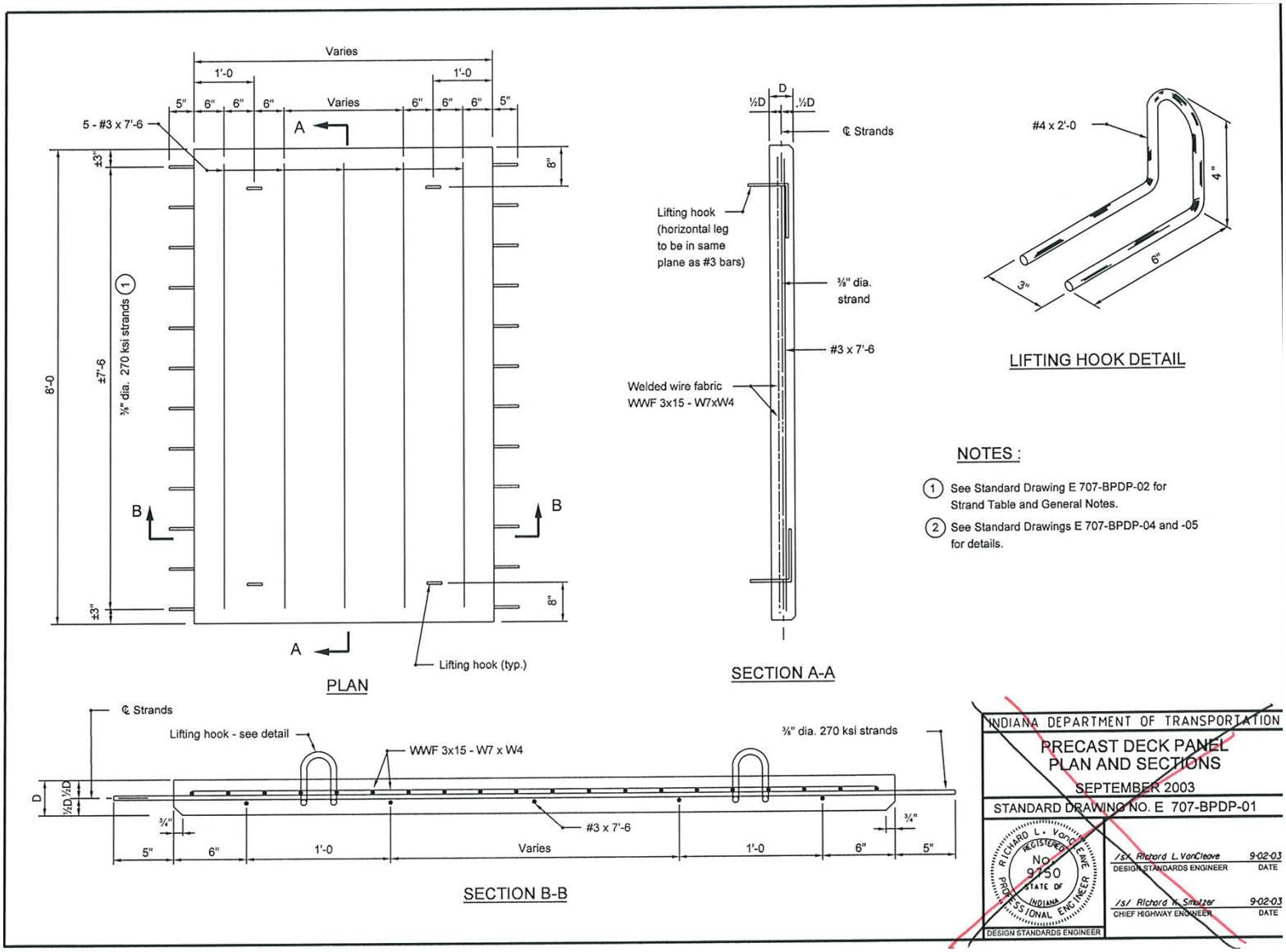
REVISION TO STANDARD DRAWINGS

707-BPBF-03 FABRICATION TOLERANCES PRESTRESSED BULB-TEE BEAM (DRAFT)



REVISION TO STANDARD DRAWINGS

EXISTING 707-BPDP-01 PRECAST DECK PANEL PLAN AND SECTIONS (PROPOSE TO DELETE)



REVISION TO STANDARD DRAWINGS

EXISTING 707-BPDP-02 PRECAST DECK PANEL STRAND TABLE & NOTES (PROPOSE TO DELETE)

STRAND TABLE

Deck panel thickness		Clear span				
		Under 4'	4' through 5'	5' through 6'	6' through 7'	7' through 7'-6
3" Panel, Stress Relieved Strands	No. of Strands	10	12	14	18	20
	Strand Spacing	9 @ 10"	11 @ 8 1/2"	13 @ 6 7/8"	17 @ 5 1/4"	19 @ 4 3/4"
3" Panel, Low Relaxation Strands	No. of Strands	9	11	13	16	18
	Strand Spacing	8 @ 11 1/4"	10 @ 9"	12 @ 7 1/2"	16 @ 6"	17 @ 5 1/4"
2 1/2" Panel, Stress Relieved Strands	No. of Strands	10	11	13	18	22
	Strand Spacing	9 @ 10"	10 @ 9"	12 @ 7 1/2"	17 @ 5 1/4"	21 @ 4 1/4"
2 1/2" Panel, Low Relaxation Strands	No. of Strands	9	10	12	17	18
	Strand Spacing	8 @ 11 1/4"	9 @ 10"	11 @ 8 1/2"	16 @ 5 7/8"	17 @ 5 1/4"

GENERAL NOTES :

1. Details shown on this sheet are based on an 8 ft panel width. Alternate widths will be permitted, subject to the approval of the Engineer.
2. Initial tension per strand to be 16070 lbs for stress relieved strands or 17210 lbs for low relaxation strands.
3. Nominal steel area of a 3/8" dia. grade 270 ksi strand to be 0.111 sq in.
4. Precast deck panel concrete:
   Minimum compressive strength at 28 days shall be 5000 psi.
   Minimum compressive strength at time of initial prestressing shall be 4000 psi.

INDIANA DEPARTMENT OF TRANSPORTATION
PRECAST DECK PANEL
STRAND TABLE & NOTES
MAY 2000
STANDARD DRAWING NO. E 707-BPDP-02

ANTHONY L. UREMOVICH No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

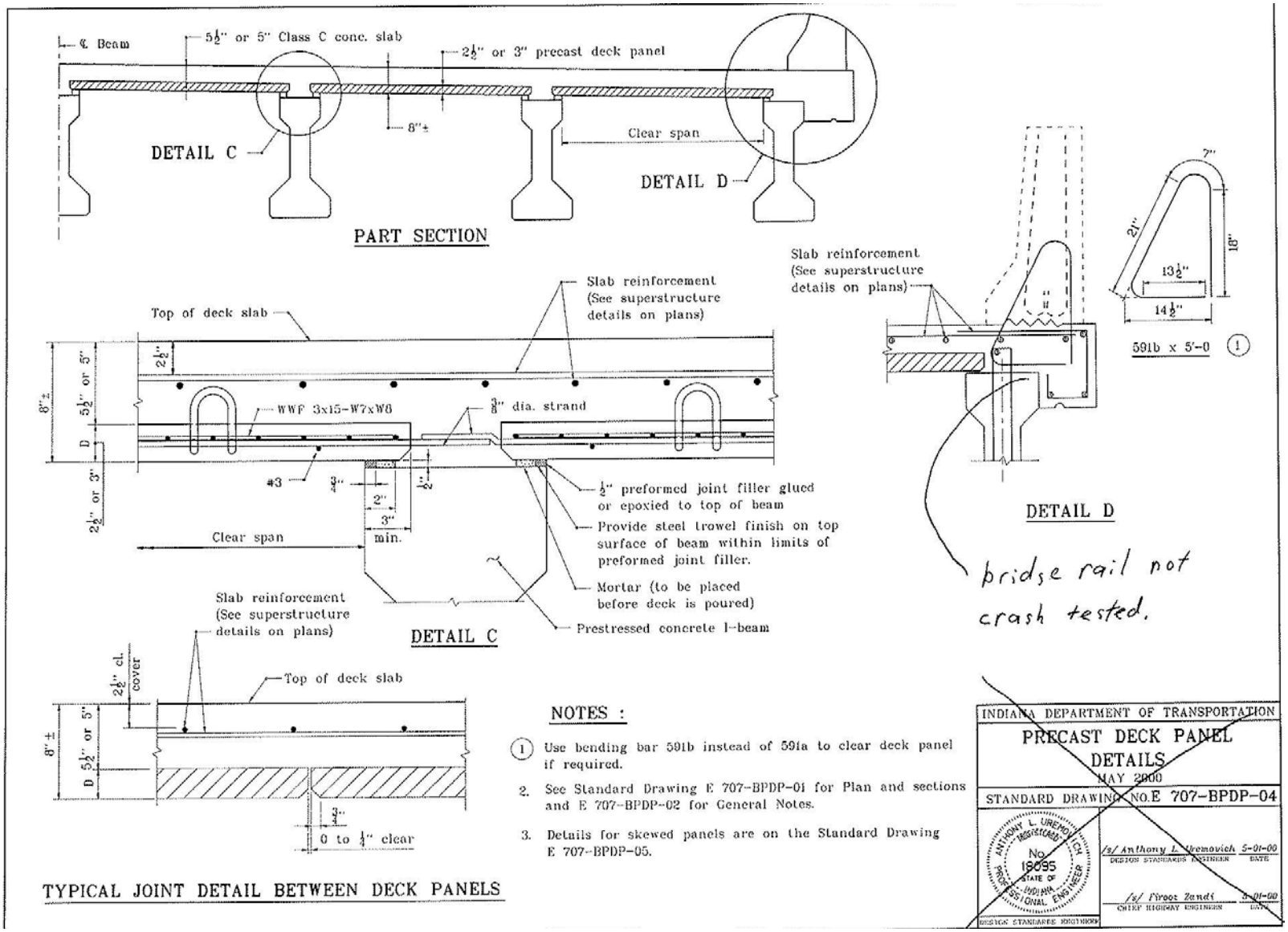
/s/ Anthony L. Uremovich 5-01-00
DESIGN STANDARDS ENGINEER DATE

/s/ Firooz Zandi 5-01-00
CHIEF HIGHWAY ENGINEER DATE

DESIGN STANDARDS ENGINEER

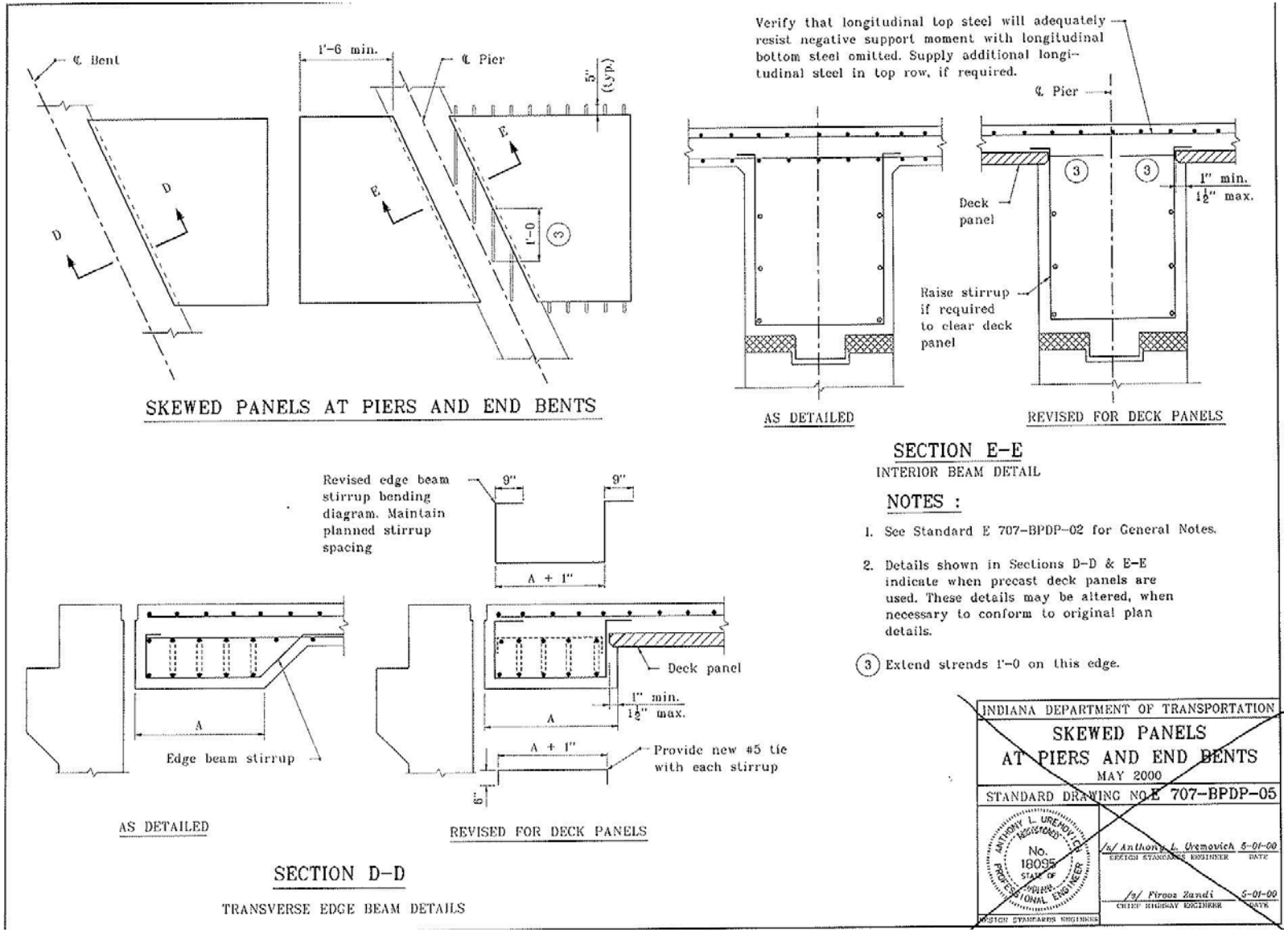
REVISION TO STANDARD DRAWINGS

EXISTING 707-BPDP-04 PRECAST DECK PANEL DETAILS (PROPOSE TO DELETE)



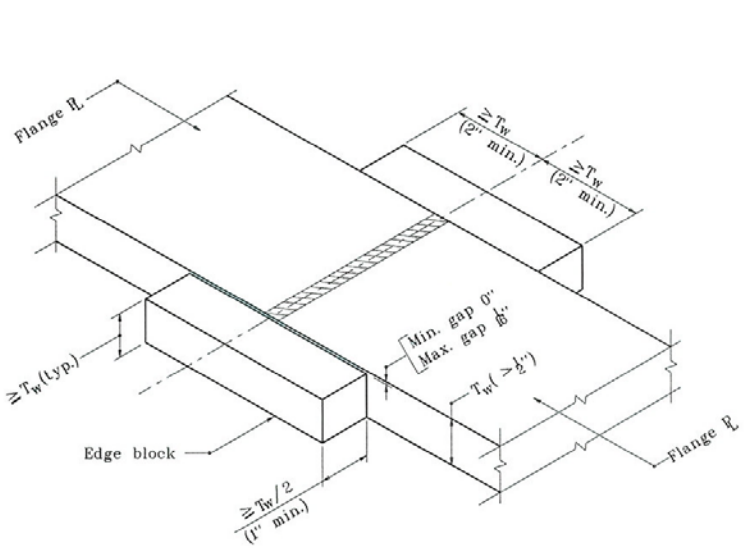
REVISION TO STANDARD DRAWINGS

EXISTING 707-BPDP-05 SKEWED PANELS AT PIERS AND END BENTS (PROPOSE TO DELETE)

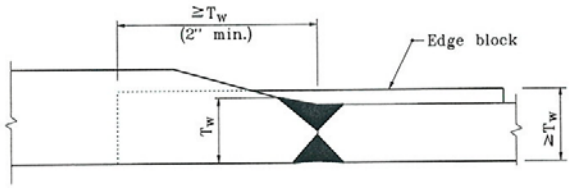


REVISION TO STANDARD DRAWINGS

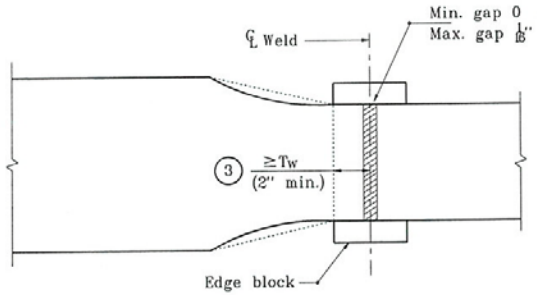
EXISTING 707-BREB-01 STEEL STRUCTURES (PROPOSE TO DELETE)



CONSTANT PLATE SIZE ACROSS JOINT



THICKNESS TRANSITION



WIDTH TRANSITION

Mike McCool IDM fig 407-1C

6.2 AASHTO/AWSD/D1.5:2010

NOTES :

1. This drawing shows the fabrication methods used in structural steel plates not having rolled edges.
2. Edge blocks shall be used when radiographing flange butt shop welds of greater than 1/2" thickness. Edge block shall not be tack welded.
3. The transition may start beyond the edge block.
4. T_W = Maximum weld thickness at joint.

INDIANA DEPARTMENT OF TRANSPORTATION

STEEL STRUCTURES

PLACEMENT OF RADIOGRAPHIC EDGE BLOCKS

MAY 2000

STANDARD DRAWING NO. E 711-BREB-01

ANTHONY L. UREMOVICH REGISTERED No. 18085 STATE OF INDIANA PROFESSIONAL ENGINEER

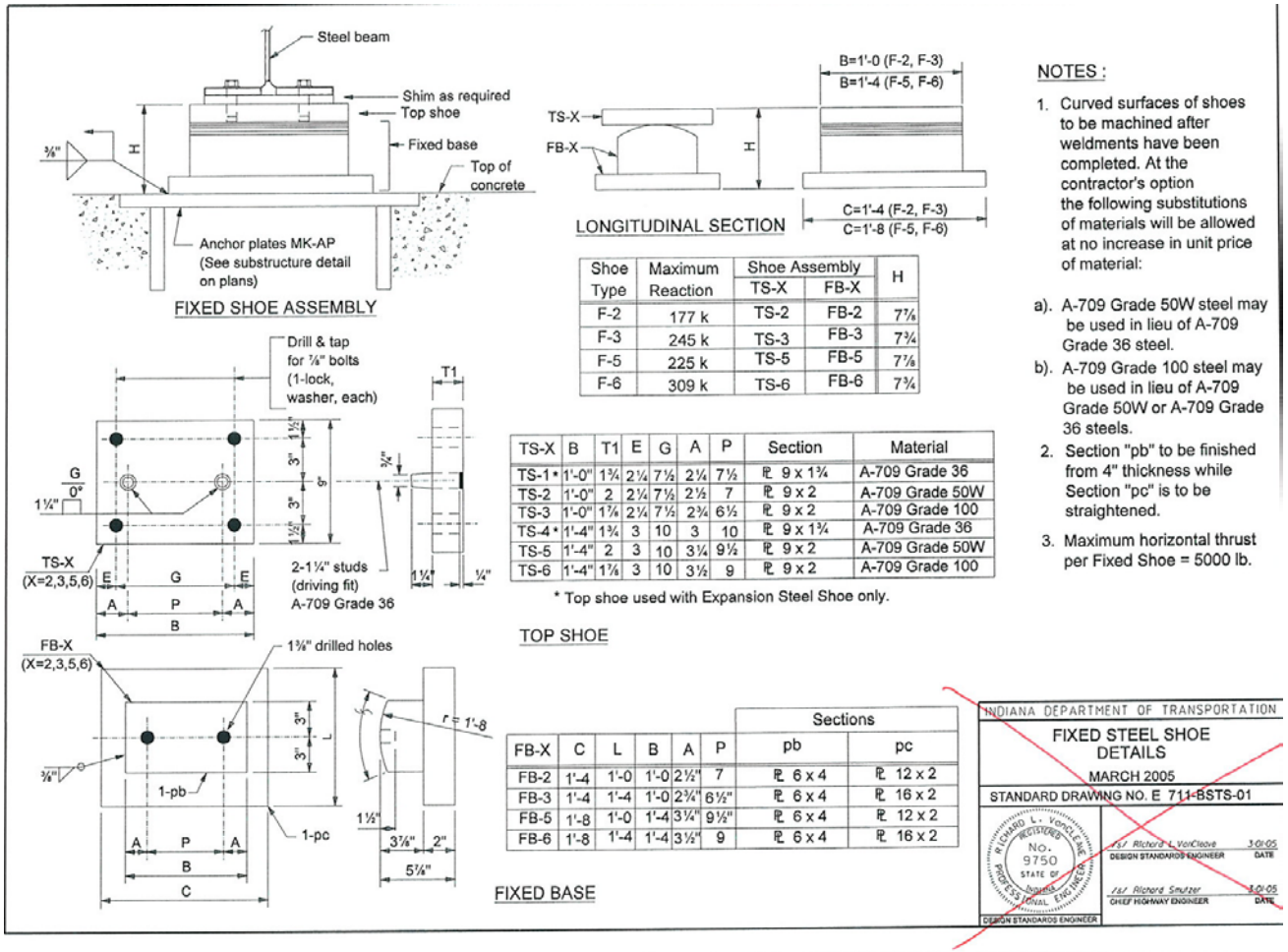
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Uremovich 5-01-00
DESIGN STANDARDS ENGINEER DATE

/s/ Firooz Zandi 5-01-00
CHIEF HIGHWAY ENGINEER DATE

REVISION TO STANDARD DRAWINGS

EXISTING 711-BSTS-01 FIXED STEEL SHOE DETAILS (PROPOSE TO DELETE)



Shoe Type	Maximum Reaction	Shoe Assembly TS-X	Shoe Assembly FB-X	H
F-2	177 k	TS-2	FB-2	7⅛
F-3	245 k	TS-3	FB-3	7¼
F-5	225 k	TS-5	FB-5	7⅛
F-6	309 k	TS-6	FB-6	7¼

TS-X	B	T1	E	G	A	P	Section	Material
TS-1*	1'-0"	1¾	2¼	7½	2¼	7½	PL 9 x 1¾	A-709 Grade 36
TS-2	1'-0"	2	2¼	7½	2½	7	PL 9 x 2	A-709 Grade 50W
TS-3	1'-0"	1⅞	2¼	7½	2¾	6½	PL 9 x 2	A-709 Grade 100
TS-4*	1'-4"	1¾	3	10	3	10	PL 9 x 1¾	A-709 Grade 36
TS-5	1'-4"	2	3	10	3¼	9½	PL 9 x 2	A-709 Grade 50W
TS-6	1'-4"	1⅞	3	10	3½	9	PL 9 x 2	A-709 Grade 100

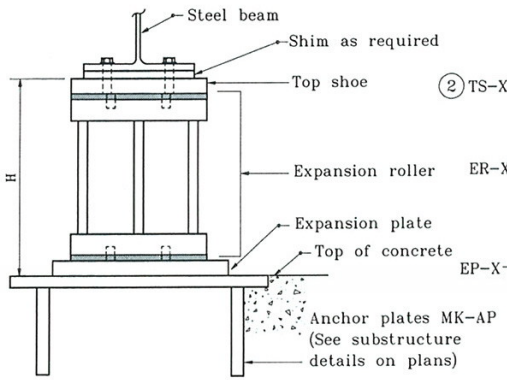
* Top shoe used with Expansion Steel Shoe only.

FB-X	C	L	B	A	P	Sections pb	Sections pc
FB-2	1'-4	1'-0	1'-0	2½"	7	PL 6 x 4	PL 12 x 2
FB-3	1'-4	1'-4	1'-0	2¾"	6½"	PL 6 x 4	PL 16 x 2
FB-5	1'-8	1'-0	1'-4	3¼"	9½"	PL 6 x 4	PL 12 x 2
FB-6	1'-8	1'-4	1'-4	3½"	9	PL 6 x 4	PL 16 x 2

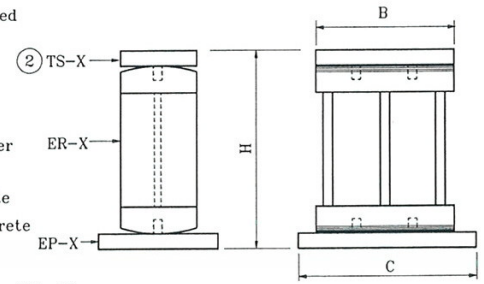
AASHTO 14.7
Such details should be avoided.
High risk of loss of bearing

REVISION TO STANDARD DRAWINGS

EXISTING 711-BSTS-02 EXPANSION STEEL SHOE DETAILS (PROPOSE TO DELETE)



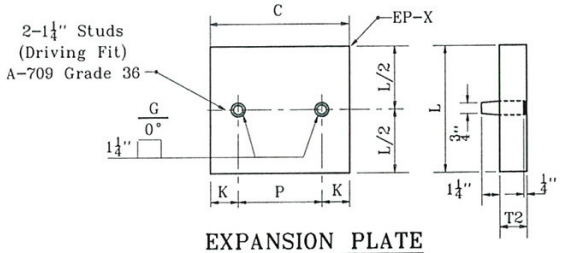
EXPANSION SHOE ASSEMBLY



EXPANSION SHOE

TABLE OF SHOE ASSEMBLY

Shoe Type	Maximum Reaction	Shoe Assembly			H
		TS-X	ER-X	EP-X	
E-1	95 k	TS-1	ER-1	EP-1	1'-6½"
E-2	154 k	TS-2	ER-2	EP-2	1'-7
E-3	240 k	TS-3	ER-3	EP-3	1'-3¾"
E-4	137 k	TS-4	ER-4	EP-4	1'-6½"
E-5	200 k	TS-5	ER-5	EP-5	1'-7
E-6	300 k	TS-6	ER-6	EP-6	1'-3¾"



EXPANSION PLATE

EP-X	C	L	T2	K	P	Section	Material
EP-1	1'-4	9"	1¾"	4¼"	7½"	℄ 9 x 1¾"	A-709 Grade 36
EP-2	1'-4	10"	2"	4½"	7	℄ 10 x 2	A-709 Grade 50W
EP-3	1'-4	1'-3	1⅞"	4¾"	6½"	℄ 15 x 2	A-709 Grade 100
EP-4	1'-8	9"	1¾"	5"	10	℄ 9 x 1¾"	A-709 Grade 36
EP-5	1'-8	10"	2"	5¼"	9½"	℄ 10 x 2	A-709 Grade 50W
EP-6	1'-8	1'-3	1⅞"	5½"	9	℄ 15 x 2	A-709 Grade 100

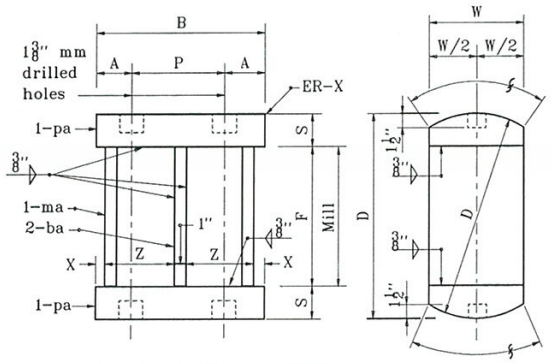
NOTES :

1. Curved surfaces of shoes to be machined after weldments have been completed. At the contractor's option the following substitutions of materials will be allowed at no increase in unit price of material.

a). A-709 Grade 50W steel may be used in lieu of A-709 Grade 36 steel.

b). A-709 Grade 100 steel may be used in lieu of A-709 Grade 50W or A-709 Grade 36 steels.

(2) Top shoe TS-X details are shown on Standard Drawing E 711-BSTS-01.



EXPANSION ROLLER

ER-X	B	W	D	S	F	A	P	X	Z	Sections			Note
										ma	ba	pa	
ER-1	1'-0	8	1'-3	2⅜"	10¼"	2¼"	7½"	5/16"	4 5/16"	W 10 x 88	BAR 3½ x 1	℄ 8 x 2½"	A-709 Grade 36
ER-2	1'-0	8	1'-3	2⅜"	10¼"	2½"	7"	5/16"	4 5/16"	W 10 x 88	BAR 3½ x 1	℄ 8 x 2½"	A-709 Grade 50W
ER-3	1'-0	6	1'-0	1⅞"	8¼"	2¾"	6½"	5/16"	4 5/16"	W 10 x 88	BAR 2½ x 1	℄ 6 x 2	A-709 Grade 100
ER-4	1'-4	8	1'-3	2⅜"	10¼"	3"	10"	11/16"	6 13/16"	W 14 x 132	BAR 3½ x 1	℄ 8 x 2½"	A-709 Grade 36
ER-5	1'-4	8	1'-3	2⅜"	10¼"	3¼"	9½"	11/16"	6 13/16"	W 14 x 132	BAR 3½ x 1	℄ 8 x 2½"	A-709 Grade 50W
ER-6	1'-4	6	1'-0	1⅞"	8¼"	3½"	9"	11/16"	6 13/16"	W 14 x 132	BAR 2½ x 1	℄ 6 x 2	A-709 Grade 100

INDIANA DEPARTMENT OF TRANSPORTATION

EXPANSION STEEL SHOE DETAILS

JANUARY 2001

STANDARD DRAWING NO. E 711-BSTS-02

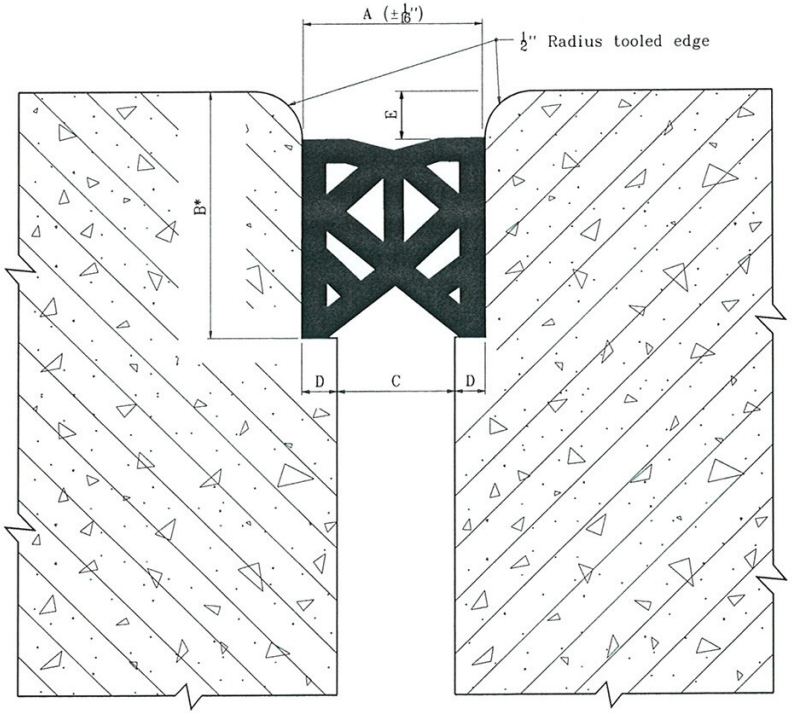
ANTHONY L. UREMOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

/s/ Anthony L. Uremovich 1-02-01
DESIGN STANDARDS ENGINEER DATE

/s/ Firooz Zandi 1-02-01
CHIEF HIGHWAY ENGINEER DATE

REVISION TO STANDARD DRAWINGS

EXISTING 724-BJTS-02 TYPE BS EXPANSION JOINT (PROPOSE TO DELETE)



*To be determined in the field

BRIDGE SEAL	A	B	C	D	E
BS2	1"	*	0	½"	½"(+½",–0")
BS6	1⅝"	*	⅞"±	⅜"	½"(+¼",–0")
BS8	2"	*	1¼"±	⅜"	½"(+¼",–0")
BS9	2⅜"	*	1⅜"±	½"	¾"(+¼",–0")
BS11	3⅛"	*	2⅛"±	½"	¾"(+¼",–0")

Standard was to be deleted - has not be approved for use for several years.

INDIANA DEPARTMENT OF TRANSPORTATION

TYPE BS
EXPANSION JOINT
JANUARY 1995

STANDARD DRAWING NO. E 724-BJTS-02

DETAILS PLACED IN THIS FORMAT 11-15-99

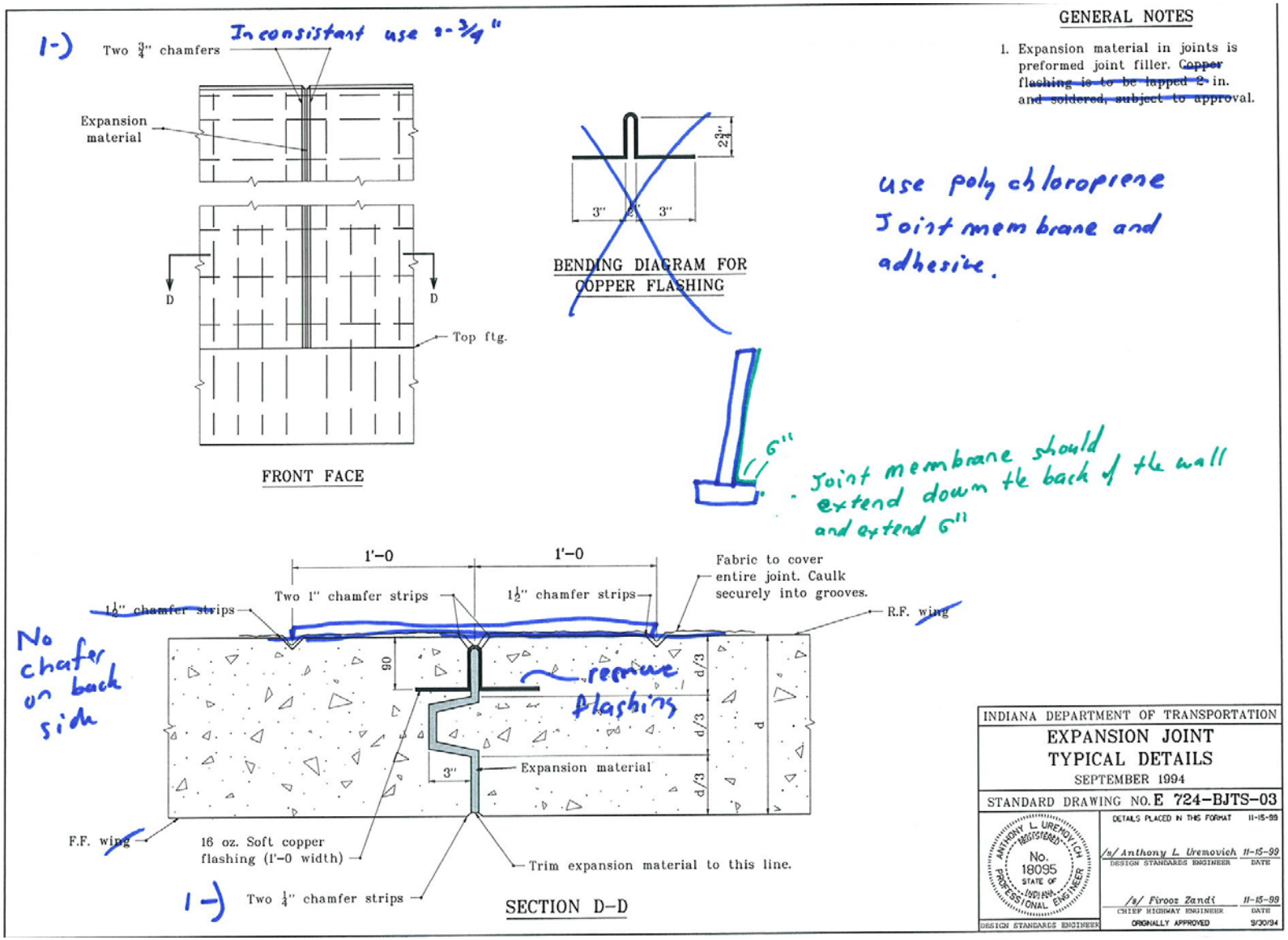
ANTHONY L. UREMOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Uremovich 11-15-95
DESIGN STANDARDS ENGINEER DATE

/s/ Firooz Zandi 11-15-95
CHIEF HIGHWAY ENGINEER DATE
ORIGINALLY APPROVED 1-03-95

REVISION TO STANDARD DRAWINGS

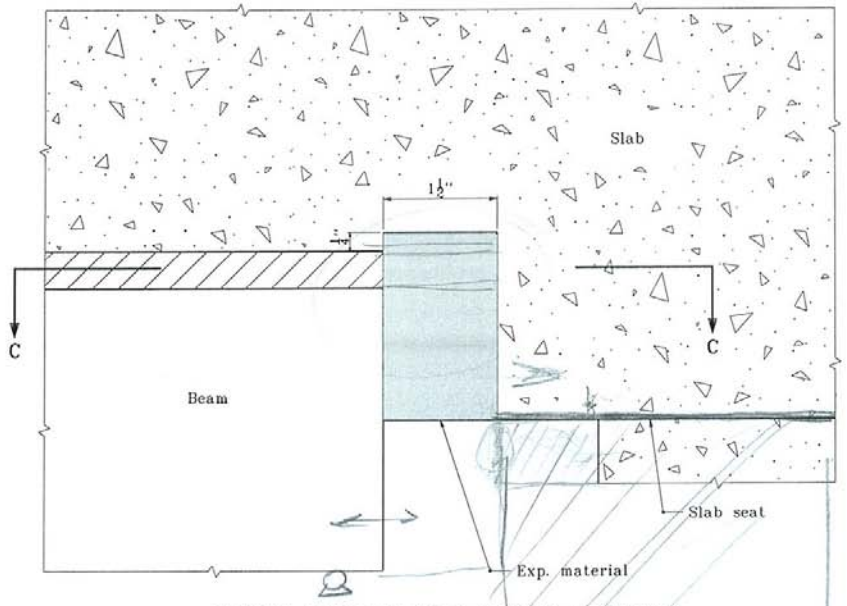
EXISTING 724-BJTS-03 EXPANSION JOINT TYPICAL DETAILS (WITH MARKUPS)



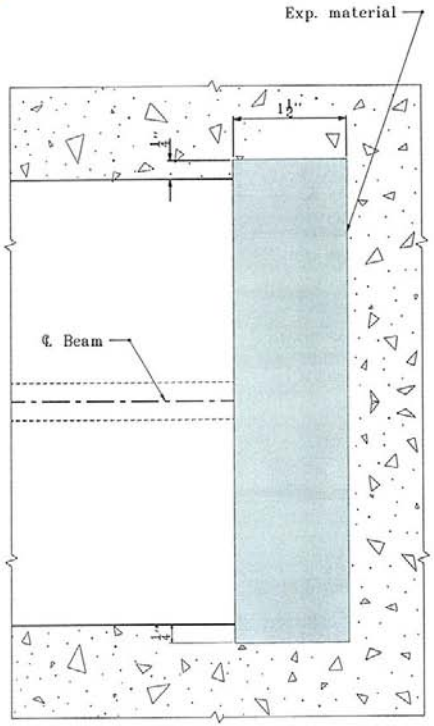
REVISION TO STANDARD DRAWINGS

EXISTING 724-BJTS-04 BEAM END SLAB NOTCH TYPICAL DETAILS (PROPOSE TO DELETE)

Non-composite - jointed bridge decks



SECTION THROUGH BEAM FLANGE AND SLAB



SECTION C-C

INDIANA DEPARTMENT OF TRANSPORTATION

BEAM END SLAB NOTCH TYPICAL DETAILS

SEPTEMBER 1994

STANDARD DRAWING NO. E 724-BJTS-04

DETAILS PLACED IN THIS FORMAT 11-15-99

ANTHONY L. UREMOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

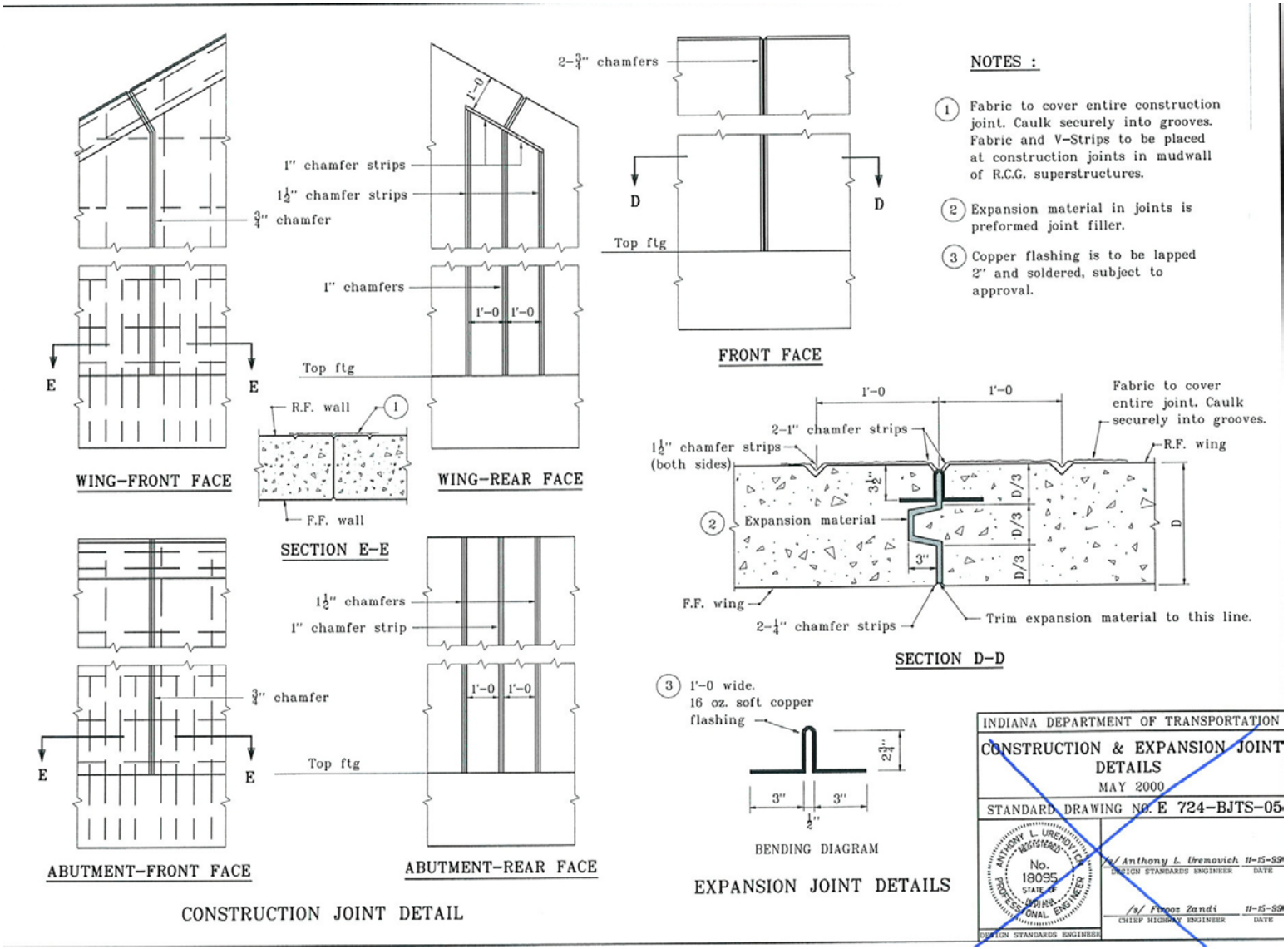
/s/ Anthony L. Uremovich 11-15-99
DESIGN STANDARDS ENGINEER DATE

/s/ Firooz Zandi 11-15-99
CHIEF HIGHWAY ENGINEER DATE

DESIGN STANDARDS ENGINEER ORIGINALLY APPROVED 9-30-94

REVISION TO STANDARD DRAWINGS

EXISTING 724-BJTS-05 CONSTRUCTION AND EXPANSION JOINT DETAILS (PROPOSE TO DELETE)



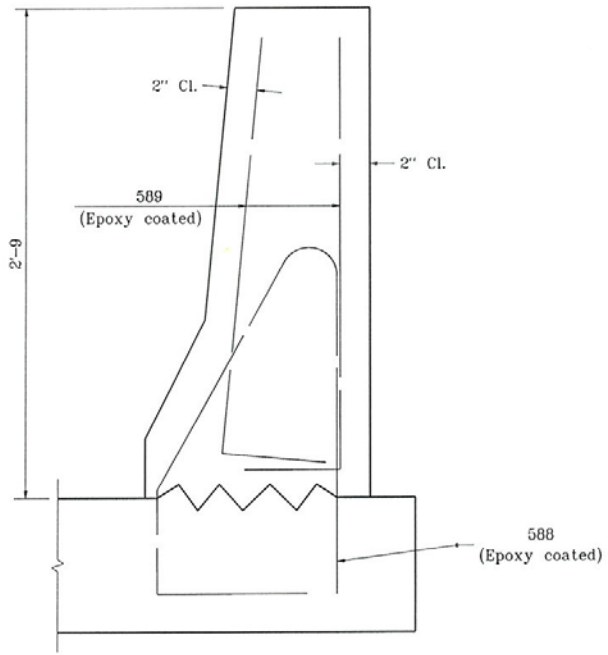
REVISION TO STANDARD DRAWINGS

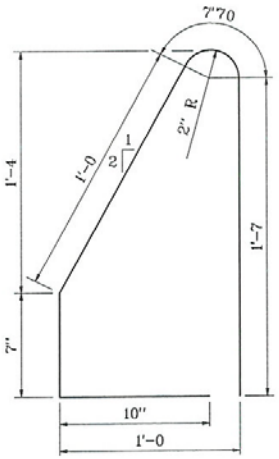
EXISTING 724-BJTS-06 OPTIONAL RAILING VERTICAL REINFORCEMENT SPLICE (PROPOSE TO DELETE)

GENERAL NOTES

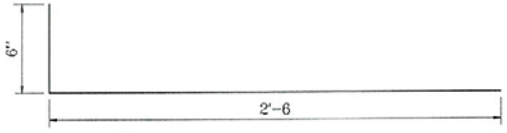
1. The optional vertical railing reinforcement shown may be used for bridge railing in lieu of that shown on the plans. Longitudinal reinforcing shall be as shown on the plans.
2. Vertical reinforcing lengths shown are for a 2'–9" railing height. If a higher rail is used, these lengths shall be increased accordingly.

This alternate can not be allowed. This reinforcement configuration has not been crash tested.





588 x 5'1



589 x 3'–0

INDIANA DEPARTMENT OF TRANSPORTATION

OPTIONAL RAILING VERTICAL REINFORCMENT SPLICE

SEPTEMBER 1997

STANDARD DRAWING NO. E 724-BJTS-06

DETAILS PLACED IN THIS FORMAT 11-15-99

ANTHONY L. URREMOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

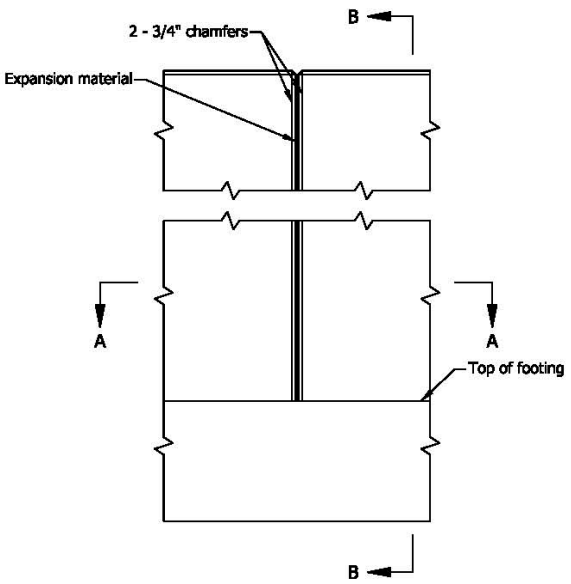
/s/ Anthony L. Urremovich 11-15-99
DESIGN STANDARDS ENGINEER DATE

/s/ Firooz Zandi 11-15-99
CHIEF HIGHWAY ENGINEER DATE

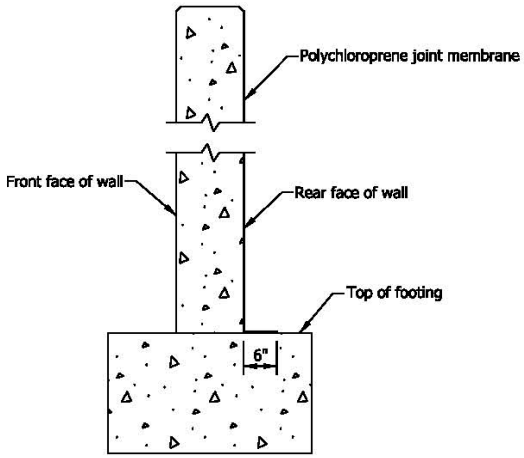
DESIGN STANDARDS ENGINEER ORIGINALLY APPROVED 9-01-97

REVISION TO STANDARD DRAWINGS

724-BJTS-01 EXPANSION JOINT (DRAFT)



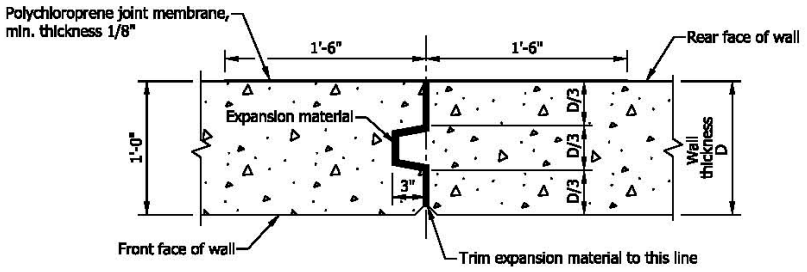
WALL FRONT FACE



SECTION B-B

NOTES

1. Expansion material in joints shall be preformed joint filler.
2. All chamfered edges shall be 3/4".



SECTION A-A

INDIANA DEPARTMENT OF TRANSPORTATION

EXPANSION JOINT

SEPTEMBER 1994

STANDARD DRAWING NO. E 724-BJTS-01

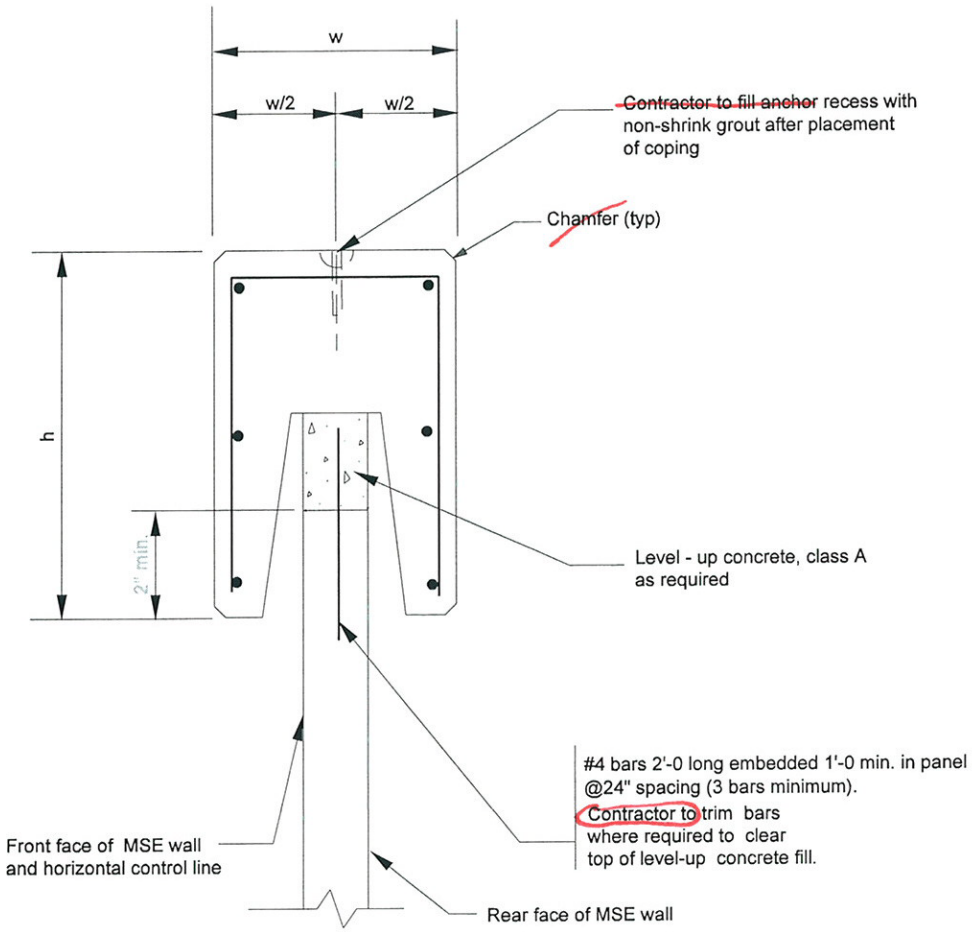
DESIGN STANDARDS ENGINEER DATE

CHIEF HIGHWAY ENGINEER DATE

DESIGN STANDARDS ENGINEER

REVISION TO STANDARD DRAWINGS

EXISTING 731-BRRW-01 MSE WALL PRECAST CONCRETE COPING DETAILS (WITH MARKUPS)



NOTES:

1. Standard precast coping unit shall be 10'-0 long .
2. Reinforcing steel in precast coping shall be determined by the manufacurer.

3) chamfer note

4) BEST - bent bars

bent bar added.

INDIANA DEPARTMENT OF TRANSPORTATION

MSE WALL PRECAST CONCRETE COPING DETAILS

SEPTEMBER 2006

STANDARD DRAWING NO. E 731-BRRW-01

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

DESIGN STANDARDS ENGINEER

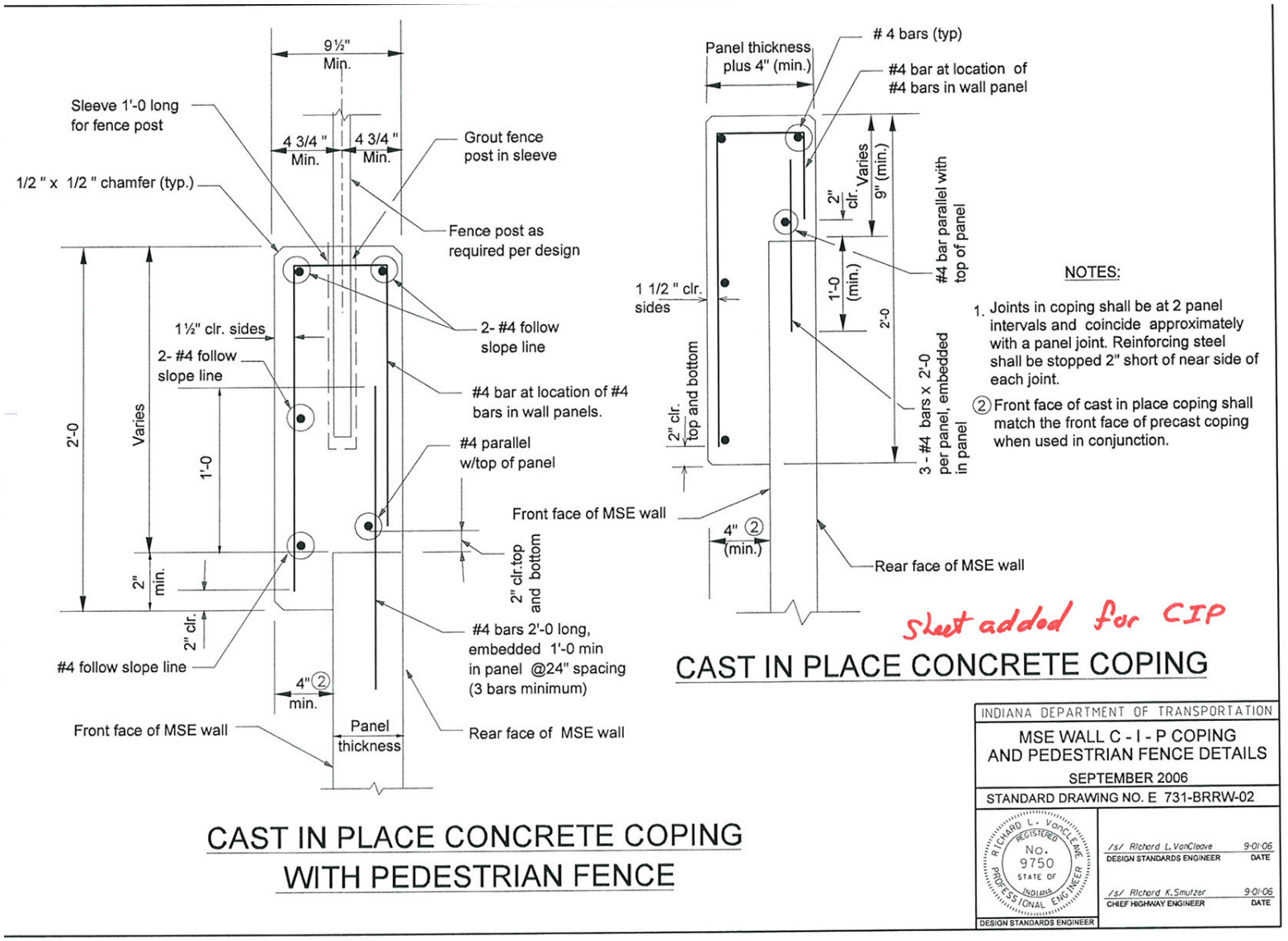
/s/ Richard L VanCleave 9-01-06
DESIGN STANDARDS ENGINEER DATE

/s/ Richard K. Smutzer 9-01-06
CHIEF HIGHWAY ENGINEER DATE

PRECAST CONCRETE COPING DETAIL

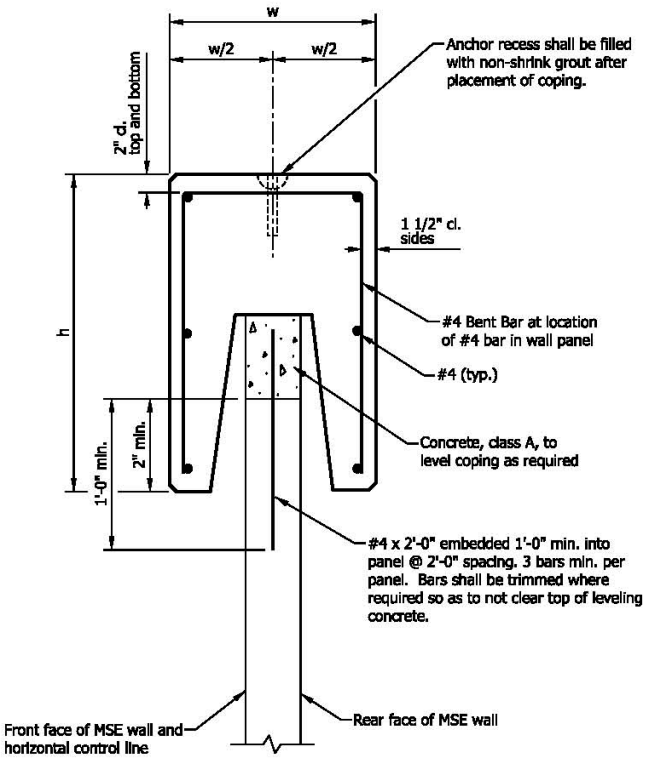
REVISION TO STANDARD DRAWINGS

EXISTING 731-BRRW-02 MSE WALL C-I-P COPING AND PEDESTRIAN FENCE DETAILS (WITH MARKUPS)



REVISION TO STANDARD DRAWINGS

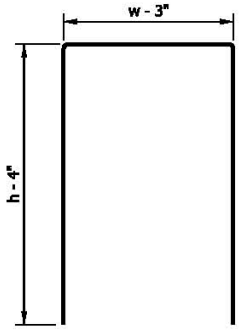
731-MSEW-01 MSE WALL PRECAST CONCRETE COPING (DRAFT)



TYPICAL SECTION

NOTES

1. Precast coping unit length shall be 10'-0".
2. Reinforcing bars' size, length, and spacing shall be determined by the manufacturer.
3. All chamfered edges shall be 3/4".
4. See Standard Drawing E 703-BRST-01 for reinforcing-bar bending details and notes.



#4 BENT BAR

INDIANA DEPARTMENT OF TRANSPORTATION

MSE WALL
PRECAST CONCRETE COPING

SEPTEMBER 2006

STANDARD DRAWING NO. E 731-MSEW-01

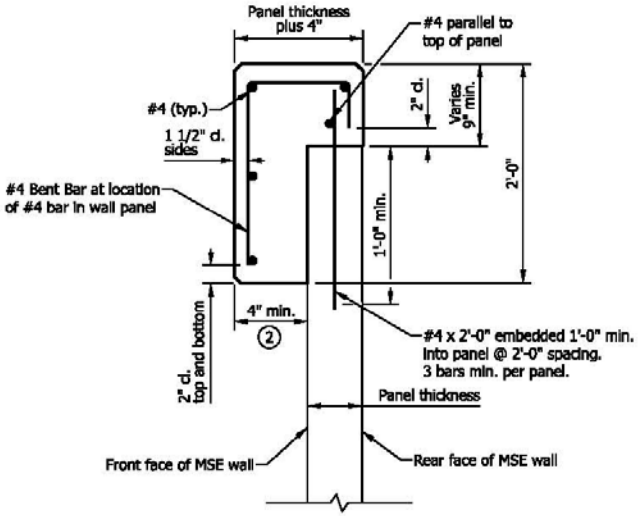
DESIGN STANDARDS ENGINEER DATE

CHIEF HIGHWAY ENGINEER DATE

DESIGN STANDARDS ENGINEER

REVISION TO STANDARD DRAWINGS

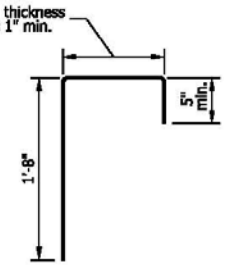
731-MSEW-02 MSE WALL CAST-IN-PLACE CONCRETE COPING (DRAFT)



TYPICAL SECTION

NOTES

1. Coping joints shall coincide approximately with the panel joints. Reinforcing bars' ends shall be 2" short of near side of each joint.
2. The front face of a cast-in-place coping shall match the front face of a precast coping where used in conjunction.
3. All chamfered edges shall be 3/4".
4. See Standard Drawing E 703-BRST-01 for reinforcing-bar bending details and notes.



#4 BENT BAR

INDIANA DEPARTMENT OF TRANSPORTATION

MSE WALL
CAST-IN-PLACE CONCRETE COPING

SEPTEMBER 2006

STANDARD DRAWING NO. E 731-MSEW-02

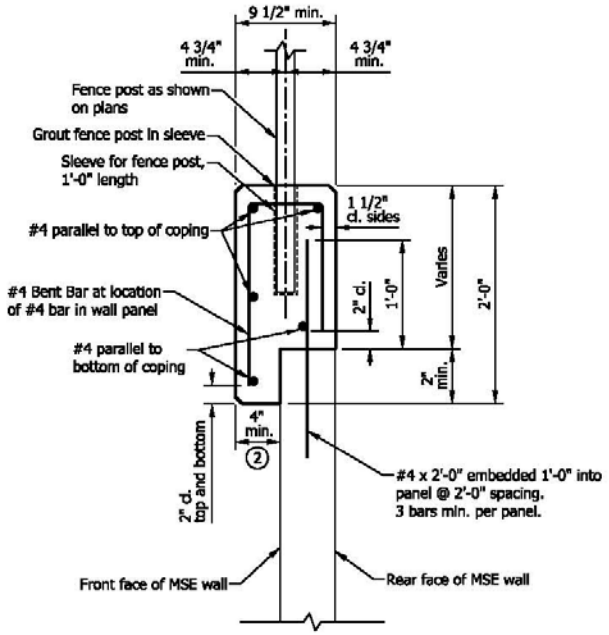
DESIGN STANDARDS ENGINEER DATE

CHIEF HIGHWAY ENGINEER DATE

DESIGN STANDARDS ENGINEER

REVISION TO STANDARD DRAWINGS

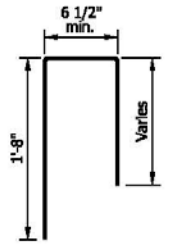
731-MSEW-03 MSE WALL CAST-IN-PLACE CONCRETE COPING WITH PEDESTRIAN FENCE (DRAFT)



TYPICAL SECTION

NOTES

1. Coping joints shall coincide approximately with the panel joints. Reinforcing bars' ends shall be 2" short of near side of each joint.
2. The front face of a cast-in-place coping shall match the front face of a precast coping where used in conjunction.
3. All chamfered edges shall be 3/4".
4. See Standard Drawing E 703-BRST-01 for reinforcing-bar bending details and notes.



#4 BENT BAR

INDIANA DEPARTMENT OF TRANSPORTATION

MSE WALL
CAST-IN-PLACE CONCRETE COPING
WITH PEDESTRIAN FENCE

SEPTEMBER 2006

STANDARD DRAWING NO. E 731-MSEW-03

DESIGN STANDARDS ENGINEER DATE

CHIEF HIGHWAY ENGINEER DATE

DESIGN STANDARDS ENGINEER

COMMENTS AND ACTION

707.01 DESCRIPTION
707.02 MATERIALS
707.09 PLACING STRUCTURAL MEMBERS
707.10 PRECAST PRESTRESSED CONCRETE DECK PANELS
707.11 METHOD OF MEASUREMENTS
707.12 BASIS OF PAYMENT
707-BPBB-01; 707-BPBF-01 thru 03; 707-BPDP-01 & 02, 04 & 05;
711-BREB-01; 711-BSTS-01 thru 02; 724-BJTS-02 thru 06;
731-BRRW-01 thru 02

Motion: Second: Ayes: Nays:	Action: _____ Passed as Submitted _____ Passed as Revised _____ Withdrawn
Standard Specifications Sections affected: SECTION 707 pg 529; 539; 540; 541. Recurring Special Provision affected: NONE Standard Sheets affected: 707-BPBB-01; 707-BPBF-01 - 03; 707-BPDP-01 & 02, 04 & 05; 711-BREB-01; 711-BSTS-01 - 02; 724-BJTS-02 - 06; 731-BRRW-01 – 02. Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	____ 20__ 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? ____