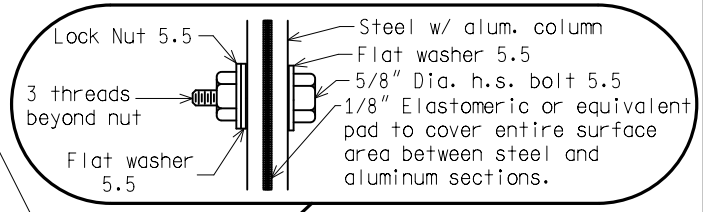


Aluminum column
(see graph on sheet #4 for size)



** Bolt Detail

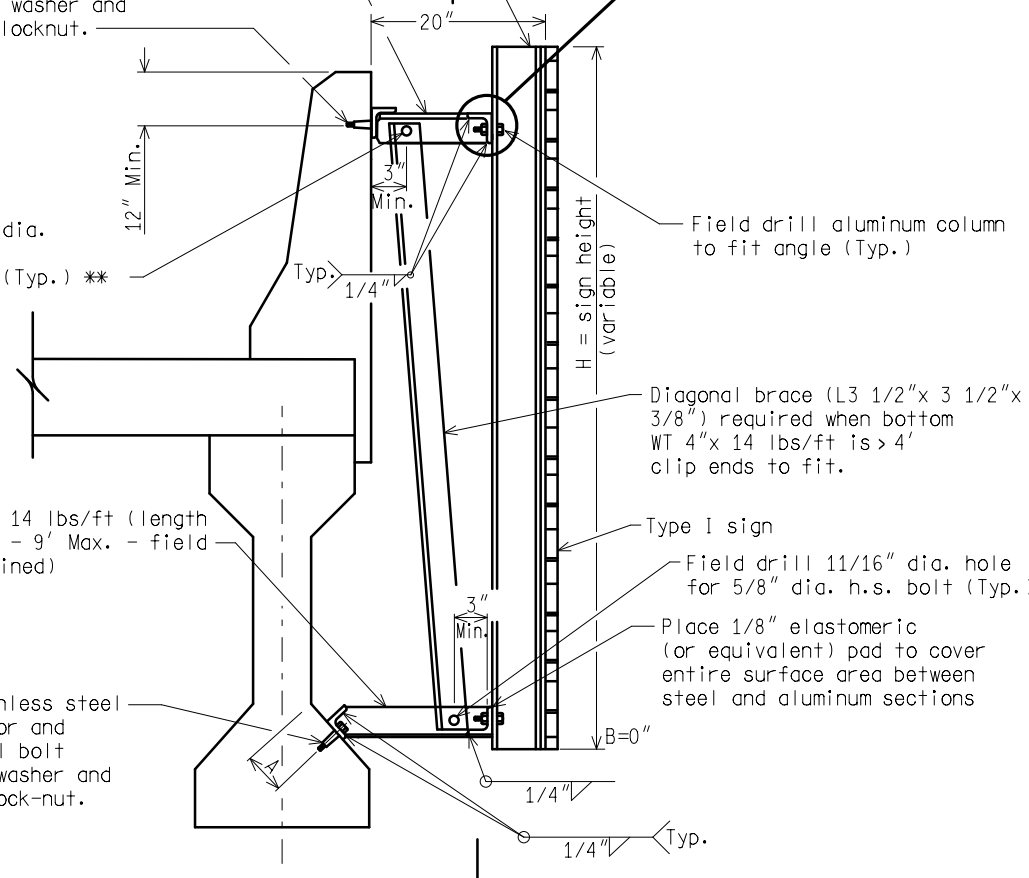
WT 4"x 14 lbs/ft x 15" (Min.)

3/4" Dia. stainless steel expansion anchor bolt with one flat washer and nylon insert locknut.

Field drill 11/16" dia. hole for 5/8" dia. high strength bolt (Typ.) **

WT 4"x 14 lbs/ft (length varies - 9' Max. - field determined)

3/4" Dia. stainless steel expansion anchor and stainless steel bolt with one flat washer and nylon insert lock-nut.



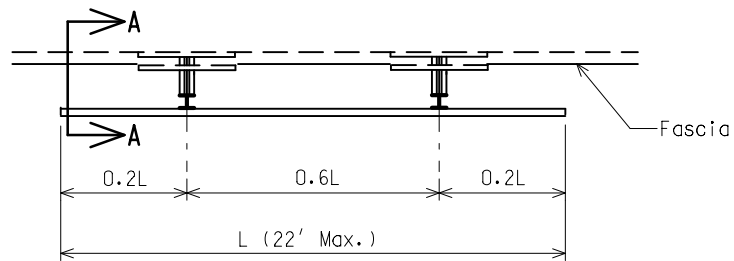
SECTION A-A

PRESTRESSED I-BEAM SIZE	A
28" (TYPE I)	4"
36" (TYPE II)	4"
45" (TYPE III)	4 1/2"
54" (TYPE IV)	6 1/2"

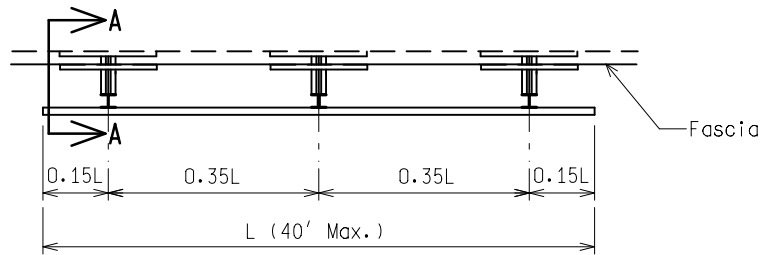
TO BE USED FOR MAINTENANCE PURPOSES FOR EXISTING BRIDGE CONNECTIONS ONLY

OLD VIII-800E

<p>PREPARED BY DESIGN DIVISION</p> <p>DRAWN BY: <u>DHD</u></p> <p>CHECKED BY: <u>AJU</u></p>	<p>DEPARTMENT DIRECTOR Kirk T. Steudle</p> <p>APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES</p>	<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR</p> <p>BRIDGE CONNECTION TO CONCRETE BEAMS</p>		
	<p>APPROVED BY: _____ (SPECIAL DETAIL) DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT</p>	<p>(SPECIAL DETAIL) F.H.W.A. APPROVAL</p>	<p>03/20/12 PLAN DATE</p>	<p>SIGN-896-A</p>
	<p>SHEET 1 OF 4</p>			



PLAN VIEW
2 SUPPORT



PLAN VIEW
3 SUPPORT

TO BE USED FOR MAINTENANCE PURPOSES FOR EXISTING BRIDGE CONNECTIONS ONLY

OLD VIII-800E

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN

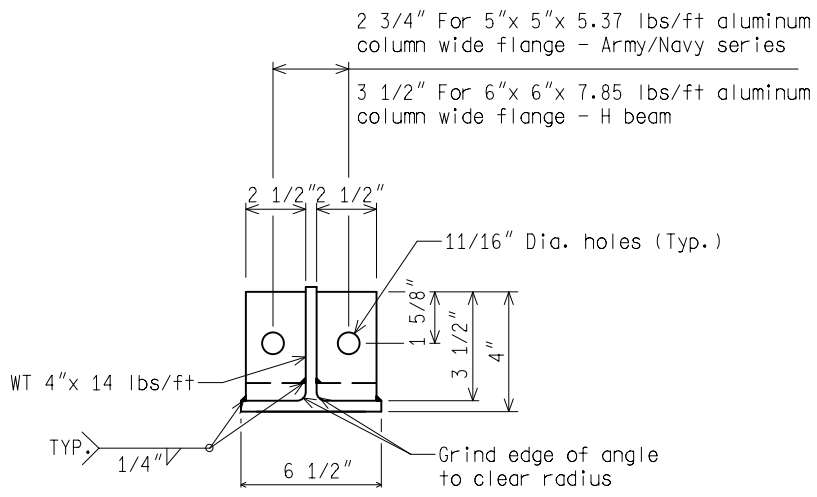
(SPECIAL DETAIL)
F.H.W.A. APPROVAL

03/20/12
PLAN DATE

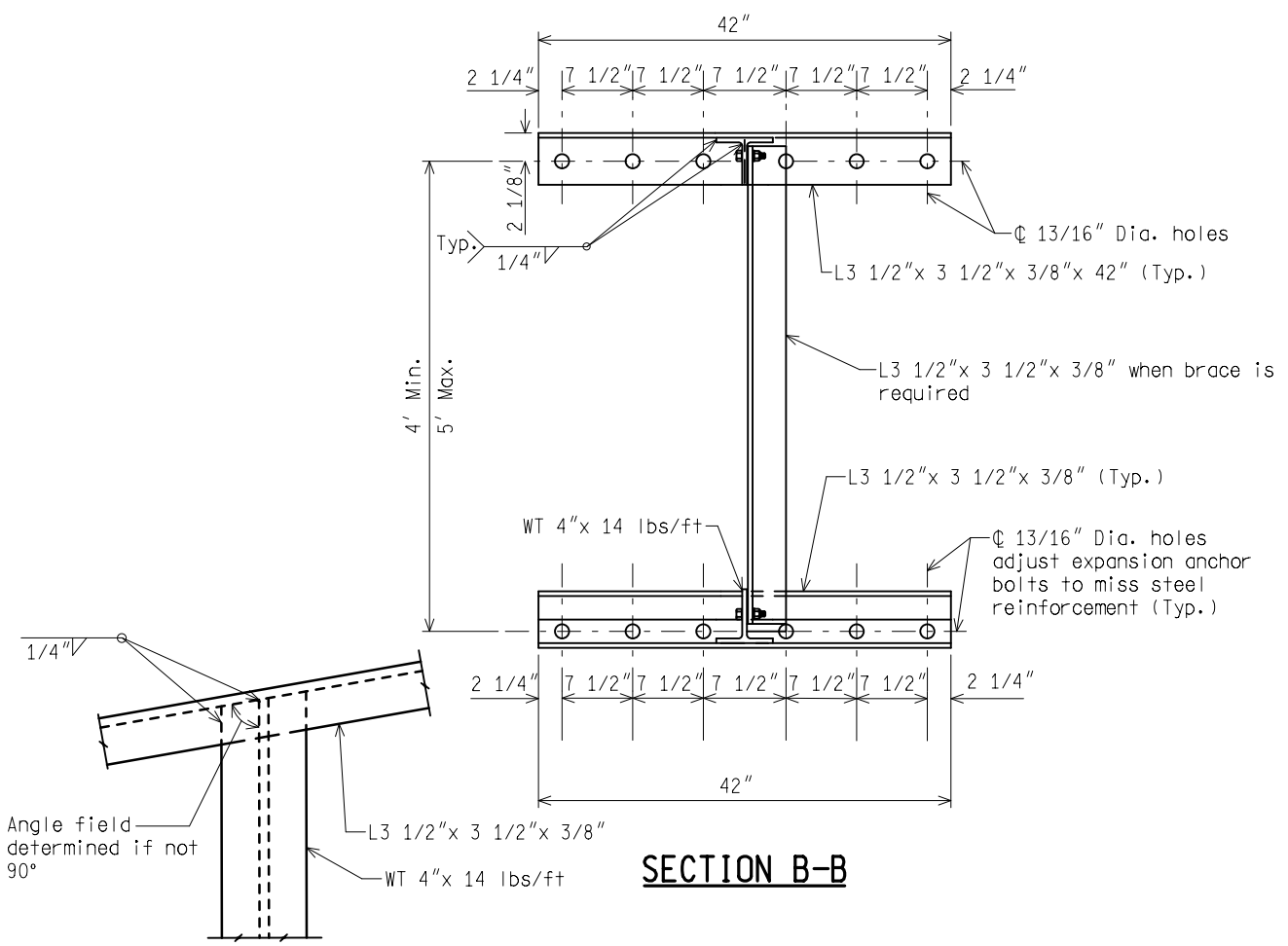
SIGN-896-A

SHEET
2 OF 4

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.



ALUMINUM COLUMN CONNECTION DETAIL
 (USE FOR ALL CONNECTIONS TO ALUMINUM COLUMNS)



TOP VIEW FOR ANGLE

TO BE USED FOR MAINTENANCE PURPOSES FOR EXISTING BRIDGE CONNECTIONS ONLY

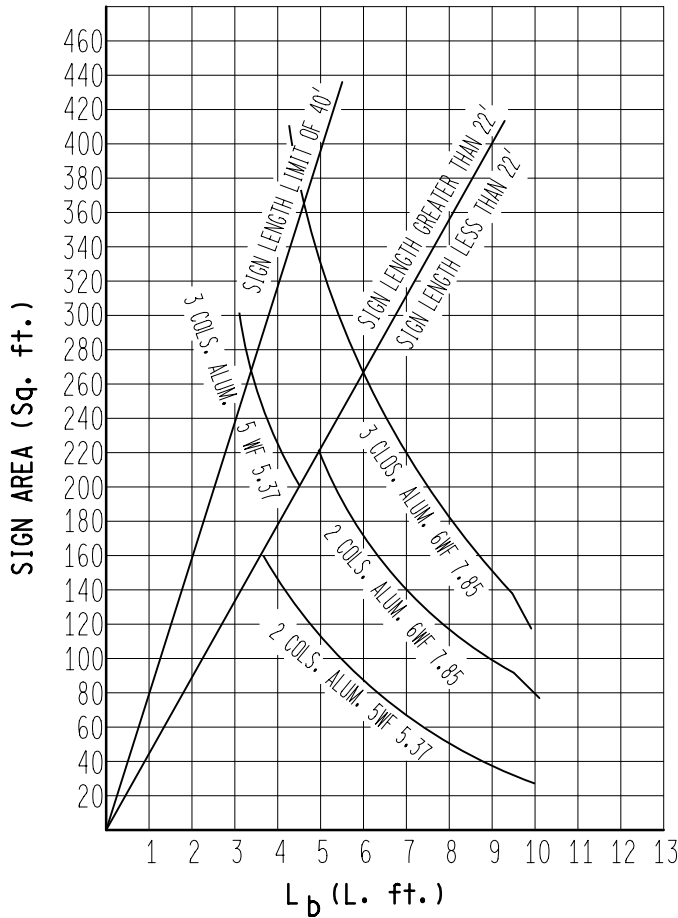
OLD VIII-800E

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN	(SPECIAL DETAIL) F.H.W.A. APPROVAL	03/20/12 PLAN DATE	SIGN-896-A	SHEET 3 OF 4
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NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

TYPE	ALUMINUM COLUMN
I	5" x 5" x 5.37 lbs/ft WIDE FLANGE-ARMY NAVY
II	6" x 6" x 7.85 lbs/ft WIDE FLANGE-H BEAM



COLUMN SELECTION PROCEDURE

1. Determine b using the longest required column. ($b=1.25'$ min.)
2. $L_b = 1/2$ of the distance between the top of the sign and the top clip angle bolt.
 $L_b = 1/2 (h + b - 2')$
3. Determine the sign area (ft²) according to the example given below include exit no. sign if any,

$$A = \text{exit no. sign } 10 \text{ ft} \times 2 \text{ ft} = 20.0(\text{ft}^2)$$

$$A = \text{parent sign } 15 \text{ ft} \times 7.5 \text{ ft} = 112.5(\text{ft}^2)$$

$$\text{TOTAL AREA} = 132.5(\text{ft}^2)$$

$$\text{Average height} = H = \frac{\text{TOTAL AREA (ft}^2\text{)}}{\text{PARENT SIGN LENGTH (ft)}}$$

$$\text{Average height} = H = \frac{132.5(\text{ft}^2)}{15.0 (\text{ft})} = 8.83\text{ft}$$

4. Use the chart on this sheet, to determine the size and number of columns required.

NOTES:

1. All bolts shall be galvanized high strength bolts except as noted.
2. All bolts, nuts, and washers shall be hot dip galvanized. Nuts shall be tapped 0.015" oversize.
3. All aluminum and steel components shall be per current MDOT Standard Specifications for Construction.
4. All steel components shall be hot-dip galvanized.
5. All stainless steel expansion anchors should accommodate 3/4" dia. stainless steel bolt and shall provide a minimum pull-out resistance of 15,000 lbs at 1/16" maximum slippage.
6. The bottom edge of the sign shall be horizontal when erected.
7. Extreme caution shall be exercised when drilling holes for the 3/4" expansion anchors.
8. For open parapet railing top connection should be in the slab fascia.
9. Expansion anchors shall be chosen from the current qualified products list.
10. Expansion anchors shall be installed as per manufacturer's recommendations.

TO BE USED FOR MAINTENANCE PURPOSES FOR EXISTING BRIDGE CONNECTIONS ONLY

OLD VIII-800E

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN

(SPECIAL DETAIL)
F.H.W.A. APPROVAL

03/20/12
PLAN DATE

SIGN-896-A

SHEET
4 OF 4