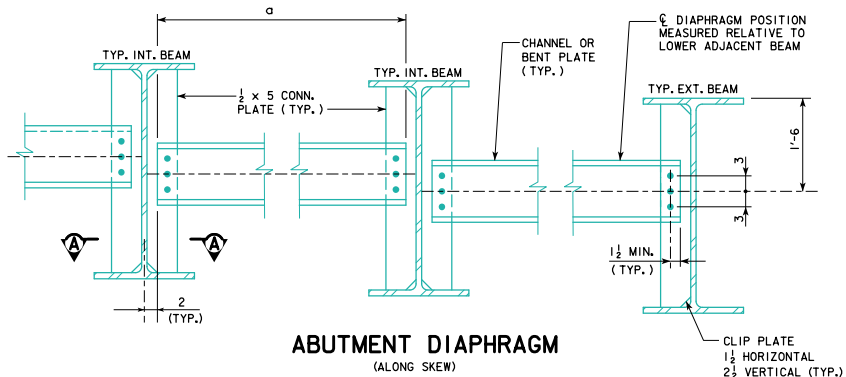
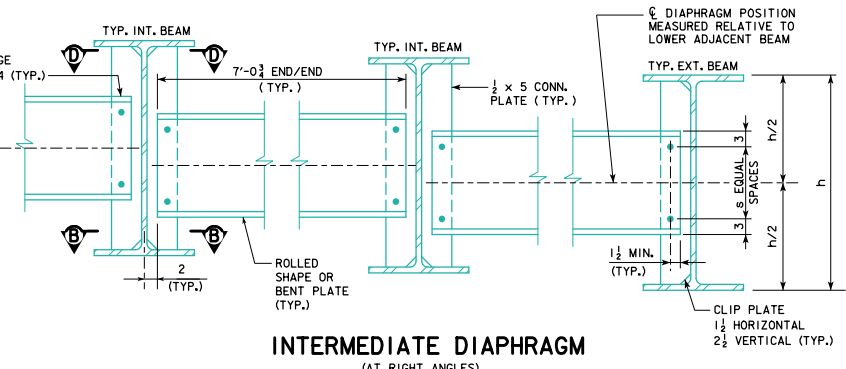


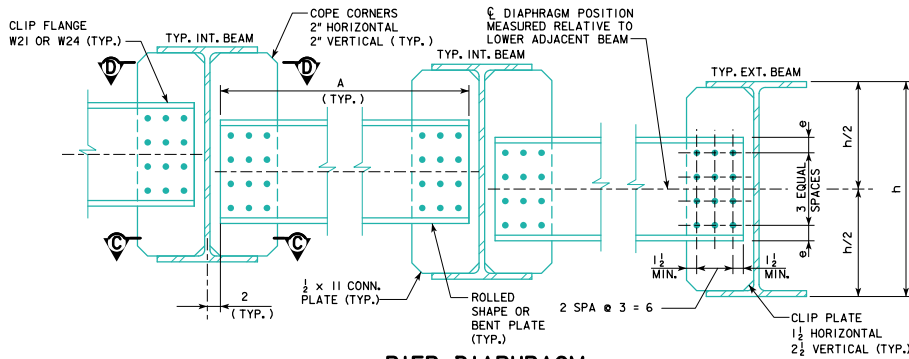
REVISED 08-2018 - REVISED INTERMEDIATE & PIER DIAPHRAGM SIZES & BOLTED CONNECTION DTLS. FOR BRIDGE LENGTHS 200'-0 TO 340'-0, ADDED SECTION D-D. UPDATED BRIDGE ENGINEER SIGNATURE.



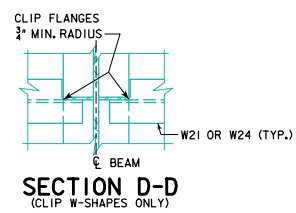
**ABUTMENT DIAPHRAGM**  
(ALONG SKEW)



**INTERMEDIATE DIAPHRAGM**  
(AT RIGHT ANGLES)

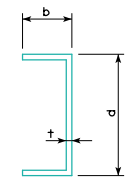


**PIER DIAPHRAGM**  
(ALONG SKEW FOR 0°, 10°, 20° AND 30° SKEW)  
(AT RIGHT ANGLES FOR 45° SKEW)



**SECTION D-D**  
(CLIP W-SHAPES ONLY)

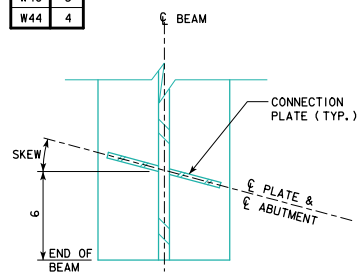
**BENT PLATE DIAPHRAGM OPTION**



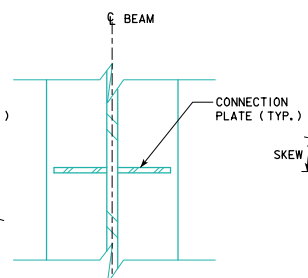
SKEW	a (FT-IN)
0°	7'-0 1/2
10°	7'-2 1/8
20°	7'-6 3/8
30°	8'-1 1/8
45°	9'-11 1/8

BEAM SIZE	s
W30	2
W33	3
W36	3
W40	3
W44	4

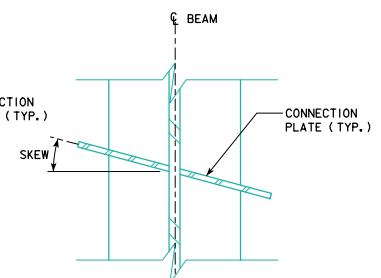
DIAPHRAGM LOCATION		BEAM SIZE	ROLLED SHAPE OPTION		BENT PLATE OPTION			
			DESIGNATION	CONN. BOLTS	d (IN)	b (IN)	t (IN)	CONN. BOLTS
INTERMEDIATE		W30	C15x33.9	3 - 3/8"	15	4	3/8	3 - 7/8"
INTERMEDIATE	W33 & W36	MC18x42.7	4 - 7/8"	18	4	3/8	4 - 7/8"	
INTERMEDIATE	W40	W21x50	4 - 7/8"	21	4	3/8	4 - 7/8"	
INTERMEDIATE	W44	W24x62	5 - 7/8"	24	4	1/2	5 - 7/8"	
ABUTMENT	ALL	C12x20.7	3 - 7/8"	12	4	3/8	3 - 7/8"	
PIER	W30	C15x33.9	12 - 7/8"	15	4	3/8	12 - 7/8"	
PIER	W33 & W36	MC18x42.7	12 - 7/8"	18	4	3/8	12 - 7/8"	
PIER	W40	W21x50	12 - 7/8"	21	4	3/8	12 - 7/8"	
PIER	W44	W24x62	12 - 7/8"	24	4	1/2	12 - 7/8"	



**SECTION A-A**



**SECTION B-B**



**SECTION C-C**

FOR 45° SKEW, CONNECTION PLATES ARE AT RIGHT ANGLES

- NOTES:  
 1. EITHER ROLLED SHAPE OR BENT PLATE DIAPHRAGM OPTION MAY BE SELECTED AT CONTRACTOR'S OPTION.  
 2. CLIP FLANGES OF W21 AND W24 DIAPHRAGMS AT CONNECTION PLATES. WEB OF W-SHAPE DIAPHRAGM SHALL BE IN CONTACT WITH CONNECTION PLATE FOR FULL HEIGHT OF DIAPHRAGM.

SKEW	A (FT-IN)
0°	7'-0 1/2
10°	7'-2 1/8
20°	7'-6 3/8
30°	8'-1 1/8
45°	9'-11 1/8

BEAM SIZE	e (IN)
W30	3
W33	3
W36	3
W40	3
W44	3 1/2

08-2018  
LATEST REVISION DATE  
  
APPROVED BY BRIDGE ENGINEER

**IOWADOT** Highway Division  
 STANDARD DESIGN - 40' ROADWAY, 3 SPAN BRIDGES  
**ROLLED STEEL BEAM BRIDGES**  
 JUNE, 2010

**DIAPHRAGM DETAILS**  
SHEET I

**RS40-081-10**