

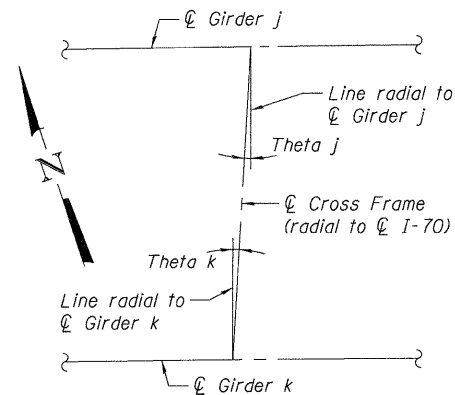
**D9 - TYPICAL INTERIOR CROSS FRAME**

(47 thus)

\*\* D9A similar to D9, except all connection plates shall have 5 bolts, min.

**D9A - TYPICAL INTERIOR CROSS FRAME**

(3 thus)

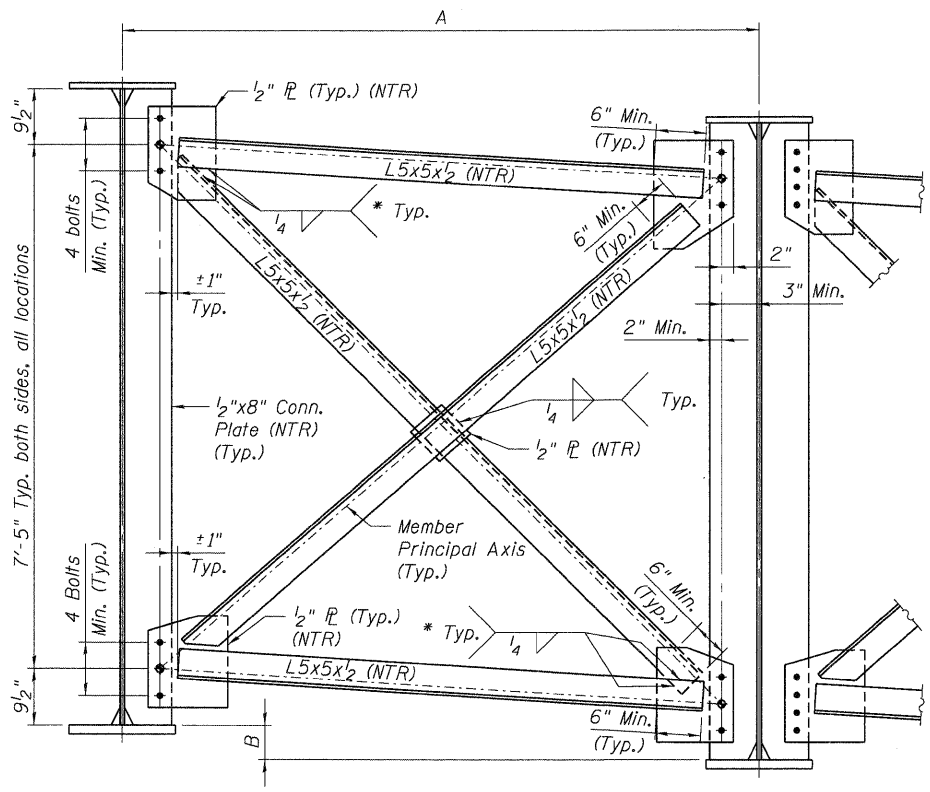


**CROSS FRAME PLAN VIEW**

Note: Cross Frame - Girder skew measured in degrees.

**D9 & D9A CROSS FRAME DIMENSIONS**

Station	Bay [j-k]	A	B	Theta j [deg.]	Theta k [deg.]
133+47.87	1-2	7'-1"	4 <sup>9</sup> / <sub>16</sub> "	0.17	0.17
133+47.87	2-3	7'-1"	4 <sup>9</sup> / <sub>16</sub> "	0.17	0.17
133+47.87	3-4	7'-1"	4 <sup>9</sup> / <sub>16</sub> "	0.17	0.17
133+47.87	4-5	7'-1"	4 <sup>9</sup> / <sub>16</sub> "	0.17	0.17
133+47.87	5-6	7'-1 <sup>1</sup> / <sub>8</sub> "	4 <sup>5</sup> / <sub>8</sub> "	0.17	0.00
133+72.24	1-2	7'-1"	4 <sup>9</sup> / <sub>16</sub> "	0.89	0.89
133+72.24	2-3	7'-1"	4 <sup>9</sup> / <sub>16</sub> "	0.89	0.89
133+72.24	3-4	7'-1"	4 <sup>9</sup> / <sub>16</sub> "	0.89	0.89
133+72.24	4-5	7'-1 <sup>1</sup> / <sub>8</sub> "	4 <sup>5</sup> / <sub>8</sub> "	0.89	0.44
133+72.24	5-6	7'-3 <sup>1</sup> / <sub>2</sub> "	4 <sup>1</sup> / <sub>8</sub> "	0.44	0.00
133+96.61	1-2	7'-1 <sup>1</sup> / <sub>8</sub> "	4 <sup>9</sup> / <sub>16</sub> "	1.60	1.60
133+96.61	2-3	7'-1 <sup>1</sup> / <sub>8</sub> "	4 <sup>5</sup> / <sub>8</sub> "	1.60	1.33
** 133+96.61	3-4	7'-2 <sup>5</sup> / <sub>8</sub> "	4 <sup>1</sup> / <sub>8</sub> "	1.33	0.87
** 133+96.61	4-5	7'-4 <sup>1</sup> / <sub>8</sub> "	4 <sup>3</sup> / <sub>8</sub> "	0.87	0.43
** 133+96.61	5-6	7'-5 <sup>3</sup> / <sub>8</sub> "	4 <sup>1</sup> / <sub>8</sub> "	0.43	0.00
134+20.98	1-2	7'-2 <sup>7</sup> / <sub>8</sub> "	4 <sup>5</sup> / <sub>8</sub> "	2.23	1.74
134+20.98	2-3	7'-3 <sup>5</sup> / <sub>8</sub> "	4 <sup>3</sup> / <sub>8</sub> "	1.74	1.28
** 134+20.98	3-4	7'-5"	4 <sup>1</sup> / <sub>8</sub> "	1.28	0.83
** 134+20.98	4-5	7'-6 <sup>5</sup> / <sub>16</sub> "	4 <sup>7</sup> / <sub>8</sub> "	0.83	0.41
134+20.98	5-6	7'-7 <sup>1</sup> / <sub>8</sub> "	4 <sup>1</sup> / <sub>8</sub> "	0.41	0.00
134+45.35	1-2	7'-4 <sup>5</sup> / <sub>8</sub> "	4 <sup>1</sup> / <sub>8</sub> "	2.13	1.66
134+45.35	2-3	7'-6"	4 <sup>1</sup> / <sub>8</sub> "	1.66	1.22
** 134+45.35	3-4	7'-7 <sup>1</sup> / <sub>4</sub> "	4 <sup>1</sup> / <sub>8</sub> "	1.22	0.79
** 134+45.35	4-5	7'-8 <sup>1</sup> / <sub>4</sub> "	5"	0.79	0.39
** 134+45.35	5-6	7'-9 <sup>9</sup> / <sub>16</sub> "	5 <sup>1</sup> / <sub>8</sub> "	0.39	0.00
134+69.72	1-2	7'-7 <sup>1</sup> / <sub>8</sub> "	4 <sup>1</sup> / <sub>8</sub> "	2.03	1.58
134+69.72	2-3	7'-8 <sup>1</sup> / <sub>4</sub> "	5"	1.58	1.16
134+69.72	3-4	7'-9 <sup>7</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>8</sub> "	1.16	0.76
134+69.72	4-5	7'-10 <sup>1</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>8</sub> "	0.76	0.37
134+69.72	5-6	7'-11 <sup>1</sup> / <sub>2</sub> "	5 <sup>3</sup> / <sub>8</sub> "	0.37	0.00
134+94.09	1-2	7'-9 <sup>5</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>8</sub> "	1.93	1.50
134+94.09	2-3	7'-10 <sup>7</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>8</sub> "	1.50	1.10
134+94.09	3-4	7'-11 <sup>1</sup> / <sub>2</sub> "	5 <sup>1</sup> / <sub>8</sub> "	1.10	0.72
134+94.09	4-5	8'-0 <sup>1</sup> / <sub>8</sub> "	5 <sup>3</sup> / <sub>8</sub> "	0.72	0.35
134+94.09	5-6	8'-1 <sup>3</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>4</sub> "	0.35	0.00
135+18.46	1-2	7'-11 <sup>1</sup> / <sub>2</sub> "	5 <sup>3</sup> / <sub>8</sub> "	1.82	1.43
135+18.46	2-3	8'-0 <sup>3</sup> / <sub>8</sub> "	5 <sup>3</sup> / <sub>8</sub> "	1.43	1.04
135+18.46	3-4	8'-1 <sup>7</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>4</sub> "	1.04	0.68
135+18.46	4-5	8'-2 <sup>5</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>8</sub> "	0.68	0.33
135+18.46	5-6	8'-3 <sup>1</sup> / <sub>8</sub> "	5 <sup>3</sup> / <sub>8</sub> "	0.33	0.00
135+34.05	1-2	8'-0 <sup>1</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>4</sub> "	1.76	1.37
135+34.05	2-3	8'-1 <sup>3</sup> / <sub>4</sub> "	5 <sup>1</sup> / <sub>4</sub> "	1.37	1.01
135+34.05	3-4	8'-2 <sup>5</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>8</sub> "	1.01	0.66
135+34.05	4-5	8'-3 <sup>1</sup> / <sub>8</sub> "	5 <sup>3</sup> / <sub>8</sub> "	0.66	0.32
135+34.05	5-6	8'-4 <sup>3</sup> / <sub>8</sub> "	5 <sup>7</sup> / <sub>8</sub> "	0.32	0.00
135+47.53	1-2	8'-1 <sup>1</sup> / <sub>8</sub> "	5 <sup>5</sup> / <sub>8</sub> "	1.70	1.33
135+47.53	2-3	8'-2 <sup>1</sup> / <sub>8</sub> "	5 <sup>5</sup> / <sub>8</sub> "	1.33	0.98
135+47.53	3-4	8'-3 <sup>5</sup> / <sub>8</sub> "	5 <sup>3</sup> / <sub>8</sub> "	0.98	0.64
135+47.53	4-5	8'-4 <sup>3</sup> / <sub>8</sub> "	5 <sup>7</sup> / <sub>8</sub> "	0.64	0.31
135+47.53	5-6	8'-5 <sup>1</sup> / <sub>8</sub> "	5 <sup>7</sup> / <sub>8</sub> "	0.31	0.00



**D10 - TYPICAL INTERIOR CROSS FRAME**

(61 thus)

\*\*\* D10A similar to D10, except all connection plates shall have 5 bolts, min.

**D10A - TYPICAL INTERIOR CROSS FRAME**

(4 thus)

**D10 & D10A CROSS FRAME DIMENSIONS**

Station	Bay [j-k]	A	B	Theta j [deg.]	Theta k [deg.]
135+74.47	1-2	8'-4 <sup>1</sup> / <sub>8</sub> "	5 <sup>3</sup> / <sub>8</sub> "	1.59	1.24
135+74.47	2-3	8'-4 <sup>1</sup> / <sub>8</sub> "	5 <sup>7</sup> / <sub>8</sub> "	1.24	0.91
135+74.47	3-4	8'-5 <sup>1</sup> / <sub>2</sub> "	5 <sup>1</sup> / <sub>2</sub> "	0.91	0.59
135+74.47	4-5	8'-6 <sup>3</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>2</sub> "	0.59	0.29
135+74.47	5-6	8'-6 <sup>3</sup> / <sub>8</sub> "	5 <sup>9</sup> / <sub>8</sub> "	0.29	0.00
135+87.95	1-2	8'-5 <sup>1</sup> / <sub>8</sub> "	5 <sup>7</sup> / <sub>8</sub> "	1.53	1.20
135+87.95	2-3	8'-5 <sup>3</sup> / <sub>4</sub> "	5 <sup>1</sup> / <sub>2</sub> "	1.20	0.88
135+87.95	3-4	8'-6 <sup>1</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>2</sub> "	0.88	0.57
135+87.95	4-5	8'-7"	5 <sup>9</sup> / <sub>8</sub> "	0.57	0.28
135+87.95	5-6	8'-7 <sup>5</sup> / <sub>8</sub> "	5 <sup>5</sup> / <sub>8</sub> "	0.28	0.00
136+04.58	1-2	8'-6 <sup>1</sup> / <sub>4</sub> "	5 <sup>1</sup> / <sub>2</sub> "	1.46	1.14
136+04.58	2-3	8'-6 <sup>7</sup> / <sub>8</sub> "	5 <sup>9</sup> / <sub>8</sub> "	1.14	0.84
136+04.58	3-4	8'-7 <sup>1</sup> / <sub>2</sub> "	5 <sup>9</sup> / <sub>8</sub> "	0.84	0.55
136+04.58	4-5	8'-8 <sup>1</sup> / <sub>8</sub> "	5 <sup>5</sup> / <sub>8</sub> "	0.55	0.27
136+04.58	5-6	8'-8 <sup>9</sup> / <sub>8</sub> "	5 <sup>5</sup> / <sub>8</sub> "	0.27	0.00
136+28.87	1-2	8'-7 <sup>7</sup> / <sub>8</sub> "	5 <sup>5</sup> / <sub>8</sub> "	1.36	1.06
136+28.87	2-3	8'-8 <sup>1</sup> / <sub>8</sub> "	5 <sup>5</sup> / <sub>8</sub> "	1.06	0.78
136+28.87	3-4	8'-8 <sup>5</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>8</sub> "	0.78	0.51
136+28.87	4-5	8'-9 <sup>7</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>8</sub> "	0.51	0.25
136+28.87	5-6	8'-9 <sup>3</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>8</sub> "	0.25	0.00
136+53.15	1-2	8'-9 <sup>3</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>8</sub> "	1.26	0.98
136+53.15	2-3	8'-9 <sup>3</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>8</sub> "	0.98	0.72
136+53.15	3-4	8'-10 <sup>5</sup> / <sub>16</sub> "	5 <sup>3</sup> / <sub>4</sub> "	0.72	0.47
136+53.15	4-5	8'-10 <sup>1</sup> / <sub>8</sub> "	5 <sup>3</sup> / <sub>4</sub> "	0.47	0.23
136+53.15	5-6	8'-11 <sup>1</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>8</sub> "	0.23	0.00
136+77.44	1-2	8'-10 <sup>1</sup> / <sub>8</sub> "	5 <sup>3</sup> / <sub>4</sub> "	1.15	0.90
136+77.44	2-3	8'-11 <sup>1</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>8</sub> "	0.90	0.66
136+77.44	3-4	8'-11 <sup>9</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>8</sub> "	0.66	0.43
*** 136+77.44	4-5	8'-11 <sup>7</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>8</sub> "	0.43	0.21
*** 136+77.44	5-6	9'-0 <sup>1</sup> / <sub>4</sub> "	5 <sup>1</sup> / <sub>8</sub> "	0.21	0.00
137+01.73	1-2	9'-0 <sup>1</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>8</sub> "	1.05	0.82
137+01.73	2-3	9'-0 <sup>3</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>8</sub> "	0.82	0.60
*** 137+01.73	3-4	9'-0 <sup>1</sup> / <sub>8</sub> "	5 <sup>7</sup> / <sub>8</sub> "	0.60	0.39
*** 137+01.73	4-5	9'-1"	5 <sup>1</sup> / <sub>8</sub> "	0.39	0.19
137+01.73	5-6	9'-1 <sup>1</sup> / <sub>4</sub> "	5 <sup>7</sup> / <sub>8</sub> "	0.19	0.00
137+26.01	1-2	9'-1 <sup>1</sup> / <sub>4</sub> "	5 <sup>1</sup> / <sub>8</sub> "	0.95	0.74
137+26.01	2-3	9'-1 <sup>1</sup> / <sub>2</sub> "	5 <sup>1</sup> / <sub>8</sub> "	0.74	0.54
137+26.01	3-4	9'-1 <sup>3</sup> / <sub>4</sub> "	5 <sup>1</sup> / <sub>8</sub> "	0.54	0.35
*** 137+26.01	4-5	9'-2"	5 <sup>1</sup> / <sub>8</sub> "	0.35	0.17
137+26.01	5-6	9'-2 <sup>3</sup> / <sub>8</sub> "	5 <sup>1</sup> / <sub>8</sub> "	0.17	0.00
137+50.30	1-2	9'-2 <sup>1</sup> / <sub>4</sub> "	5 <sup>1</sup> / <sub>8</sub> "	0.84	0.66
137+50.30	2-3	9'-2 <sup>1</sup> / <sub>2</sub> "	5 <sup>1</sup> / <sub>8</sub> "	0.66	0.48
137+50.30	3-4	9'-2 <sup>1</sup> / <sub>8</sub> "	6"	0.48	0.32
137+50.30	4-5	9'-2 <sup>1</sup> / <sub>8</sub> "	6"	0.32	0.15
137+50.30	5-6	9'-3"	6"	0.15	0.00
137+74.59	1-2	9'-3 <sup>1</sup> / <sub>8</sub> "	6"	0.74	0.58
137+74.59	2-3	9'-3 <sup>5</sup> / <sub>8</sub> "	6"	0.58	0.42
137+74.59	3-4	9'-3 <sup>1</sup> / <sub>2</sub> "	6"	0.42	0.28
137+74.59	4-5	9'-3 <sup>5</sup> / <sub>8</sub> "	6"	0.28	0.14
137+74.59	5-6	9'-3 <sup>3</sup> / <sub>4</sub> "	6 <sup>1</sup> / <sub>8</sub> "	0.14	0.00
137+98.87	1-2	9'-4"	6 <sup>1</sup> / <sub>8</sub> "	0.64	0.50
137+98.87	2-3	9'-4 <sup>1</sup> / <sub>8</sub> "	6 <sup>1</sup> / <sub>8</sub> "	0.50	0.37
137+98.87	3-4	9'-4 <sup>3</sup> / <sub>8</sub> "	6 <sup>1</sup> / <sub>8</sub> "	0.37	0.24
137+98.87	4-5	9'-4 <sup>5</sup> / <sub>8</sub> "	6 <sup>1</sup> / <sub>8</sub> "	0.24	0.12
137+98.87	5-6	9'-4 <sup>1</sup> / <sub>6</sub> "	6 <sup>1</sup> / <sub>8</sub> "	0.12	0.00
138+15.55	1-2	9'-4 <sup>1</sup> / <sub>6</sub> "	6 <sup>1</sup> / <sub>8</sub> "	0.57	0.44
138+15.55	2-3	9'-4 <sup>9</sup> / <sub>16</sub> "	6 <sup>1</sup> / <sub>8</sub> "	0.44	0.32
138+15.55	3-4	9'-4 <sup>3</sup> / <sub>8</sub> "	6 <sup>1</sup> / <sub>8</sub> "	0.32	0.21
138+15.55	4-5	9'-4 <sup>3</sup> / <sub>4</sub> "	6 <sup>1</sup> / <sub>8</sub> "	0.21	0.10
138+15.55	5-6	9'-4 <sup>1</sup> / <sub>6</sub> "	6 <sup>1</sup> / <sub>8</sub> "	0.10	0.00
138+28.27	1-2	9'-4 <sup>1</sup> / <sub>6</sub> "	6 <sup>1</sup> / <sub>8</sub> "	0.51	0.40
138+28.27	2-3	9'-4 <sup>1</sup> / <sub>8</sub> "	6 <sup>1</sup> / <sub>8</sub> "	0.40	0.29
138+28.27	3-4	9'-4 <sup>1</sup> / <sub>8</sub> "	6 <sup>1</sup> / <sub>8</sub> "	0.29	0.19
138+28.27	4-5	9'-5"	6 <sup>1</sup> / <sub>8</sub> "	0.19	0.09
138+28.27	5-6	9'-5 <sup>1</sup> / <sub>6</sub> "	6 <sup>1</sup> / <sub>8</sub> "	0.09	0.00

◆ Centroid of bolt group and workpoint of member principal axes

**NOTE:**  
See Sht. S-67 for notes.

FILE NAME = ... 08220318-CONN-99-001-50.DGN  
 USER NAME = #USER#  
 DESIGNED - JLR  
 DRAWN - MDB  
 CHECKED - TCU  
 DATE - 06/04/10  
 REVISED -  
 REVISED -  
 REVISED -  
 REVISED -  
 STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION  
 I-TO CONNECTION OVER  
 NS, TRRA, MCT AND INDUSTRIAL DR.  
 STEEL DETAILS  
 3 OF 6  
 F.A.P. SECTION COUNTY TOTAL SHEETS SHEET NO.  
 998 82-2-IHV ST. CLAIR 285 179  
 SN 082-0318 (EB) & 0319 (WB) CONTRACT NO. 76C44  
 FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT