NCHRP 12-79

BRIDGE DRAWINGS

(Drawings in this Appendix are in alphabetical order)
### ADDITIONAL LONGITUDINAL REINFORCING STEEL IN TOP OF DECK SLAB OVER PERRS

**Steel No. 1 and 2 Details:**

- **Location:**
  - Pier 1: 64'-0" to 50'-0"
  - Pier 2: 50'-0" to 62'-0"
  - Pier 3: 62'-0" to 50'-0"
  - Pier 4: 50'-0" to 62'-0"
  - Pier 5: 62'-0" to 50'-0"
  - Pier 6: 50'-0" to 62'-0"
  - Pier 7: 33'-0" to 60'-0"
  - Pier 8: 60'-0" to 40'-0"
  - Pier 9: 40'-0" to 60'-0"

*All bars to be #8 unless otherwise noted on the drawing column.*

### Typical Parapet Reinforcing Detail

- **Scale:** 1" = 1'-0"
- **Normal Deck Reinforcing:**
  - 3" = 1'-0"
  - 1'-0" x 1'-0"

### Typical Section

- **Scale:** 1" = 1'-0"

#### Notes:

1. For parapet details, see drawing numbers 25-100 and 25-101.
2. For parapet panel details, see drawing numbers 25-20.

---

**Ramp C1 Typical Section**

- **Steel Size:**
  - S-240
  - S-240
  - S-240
  - S-240
  - S-240
  - S-240
  - S-240
  - S-240
  - S-240
  - S-240
  - S-240
  - S-240
  - S-240
  - S-240
  - S-240
  - S-240
  - S-240

---

**ADDITIONAL LONGITUDINAL REINFORCING STEEL IN TOP OF DECK SLAB OVER PERRS**

**Steel No. 1 and 2 Details:**

- **Location:**
  - Pier 1: 64'-0" to 50'-0"
  - Pier 2: 50'-0" to 62'-0"
  - Pier 3: 62'-0" to 50'-0"
  - Pier 4: 50'-0" to 62'-0"
  - Pier 5: 62'-0" to 50'-0"
  - Pier 6: 50'-0" to 62'-0"
  - Pier 7: 33'-0" to 60'-0"
  - Pier 8: 60'-0" to 40'-0"
  - Pier 9: 40'-0" to 60'-0"

*All bars to be #8 unless otherwise noted on the drawing column.*

### Typical Parapet Reinforcing Detail

- **Scale:** 1" = 1'-0"
- **Normal Deck Reinforcing:**
  - 3" = 1'-0"
  - 1'-0" x 1'-0"

### Typical Section

- **Scale:** 1" = 1'-0"

#### Notes:

1. For parapet details, see drawing numbers 25-100 and 25-101.
2. For parapet panel details, see drawing numbers 25-20.
FRAMING PLAN - SPANS 1 & 2

NOTES:
1. At locations where transverse stifferers conflict with field-splined transverse stifferers, shall be located 1'-6" from end of field-splined plate.
2. Jacking stifferers at supports and pier 4 located to accept future jacking beam. Jacking stifferers at all other piers located to allow jacking directly under column. See details 1 & 2 on this sheet for additional information.

DETAIL 1

Detail 2

SCALE: 1" = 20'-0"
FRAMING PLAN - SPANS 9 & 10

SCALE = 1" = 20'-0"

1. AT LOCATIONS WHERE TRANSVERSE STIFFENER PINES CONTACT FIELD SPACED TRANSVERSE STIFFENERS SHALL BE LOCATED 0'-4" FROM EDGE OF FIELD SPACED PLATE.

2. TRANSVERSE STIFFENERS AT INTERSECTIONS AND FIELD 9' LOCATED TO ACCEPT TRANSVERSE DUAL STIFFENERS AT ALL OTHER POINTS LOCATED TO ALLOW JAKING DIRECTLY UNDER GIRDER. SEE DETAILS 9 & 10 FOR ADDITIONAL INFORMATION.

NOTES:

FRAMING KEY PLAN

SCALE = 1" = 20'-0"

JACKING STIFFENERS AT INTERSECTIONS ARE FIELD STIFFENERS. SEE DETAIL A & DETAIL B.
### GIRDERS ELEVATION - SPAN I - DIMENSIONS

<table>
<thead>
<tr>
<th>GIRDERS NUMBER</th>
<th>SPANNED LENGTH (Ft)</th>
<th>ADJ CLEAN PLATES</th>
<th>H</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-1</td>
<td>170&quot; * D7</td>
<td>148.56</td>
<td>15&quot;</td>
<td>15&quot;</td>
<td>71.5&quot;</td>
<td>34.5&quot;</td>
<td>43&quot;</td>
<td>47&quot;</td>
<td>42&quot;</td>
</tr>
<tr>
<td>G-2</td>
<td>170&quot; * C7</td>
<td>148.47</td>
<td>15&quot;</td>
<td>15&quot;</td>
<td>73.5&quot;</td>
<td>34.5&quot;</td>
<td>43&quot;</td>
<td>44&quot;</td>
<td>49&quot;</td>
</tr>
<tr>
<td>G-3</td>
<td>170&quot; * C7</td>
<td>148.30</td>
<td>15&quot;</td>
<td>15&quot;</td>
<td>73.5&quot;</td>
<td>34.5&quot;</td>
<td>43&quot;</td>
<td>44&quot;</td>
<td>49&quot;</td>
</tr>
<tr>
<td>G-4</td>
<td>181.42</td>
<td>147.17</td>
<td>15&quot;</td>
<td>15&quot;</td>
<td>81.42</td>
<td>44.54</td>
<td>48&quot;</td>
<td>48&quot;</td>
<td>48&quot;</td>
</tr>
<tr>
<td>G-5</td>
<td>182.20</td>
<td>146.22</td>
<td>15&quot;</td>
<td>15&quot;</td>
<td>83.20</td>
<td>44.50</td>
<td>48&quot;</td>
<td>48&quot;</td>
<td>48&quot;</td>
</tr>
</tbody>
</table>

### SPICE TYPES - SPAN I

<table>
<thead>
<tr>
<th>GIRDERS NUMBER</th>
<th>TYPE</th>
<th>KEY</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>G-2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>G-3</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>G-4</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>G-5</td>
<td>1</td>
<td>14</td>
</tr>
</tbody>
</table>

**NOTES:**

1. The girders shown are 1-4" thick and 6" deep.
2. The girders have a 1/4" fillet at the ends.
3. The girders are designed to support live loads and static loads.
4. The girders are designed to be used in conjunction with other structural members.
5. The girders are designed to meet all applicable codes and standards.
ORDER ELEVATION - SPAN 3

NOTE: TO SCALE

ORDER ELEVATION - SPAN 3 - DIMENSIONS

<table>
<thead>
<tr>
<th>STRUCTURE NUMBER</th>
<th>SPAN LENGTH</th>
<th>PLATE NUMBER</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-0</td>
<td>229'-6&quot;</td>
<td>B-409.67&quot;</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>0-1</td>
<td>233'-6&quot;</td>
<td>B-414.07&quot;</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>0-2</td>
<td>237'-11&quot;</td>
<td>B-420.00&quot;</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>0-3</td>
<td>241'-6&quot;</td>
<td>B-426.00&quot;</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>0-4</td>
<td>245'-11&quot;</td>
<td>B-431.17&quot;</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>0-5</td>
<td>250'-0&quot;</td>
<td>B-437.00&quot;</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

NOTES:
1. FOR BURST SPACER SPLIT DETAILS: SEE STANDARD DETAIL NO. 38-S-56.4-111, 115-119.
2. NO WELDING OF WELD PLATE TO FLANGE PLATE WILL BE ALLOWED IN TENSION AND STRESS REVERSAL AREAS.
3. SPACE STEEL STUD SHEAR DEVELOPERS TO WISS BOLT HEADS IN FIELD SPLICE. SEE STANDARD DETAIL NO. 38-S-56.4-61.74-61.
4. FOR TRANSVERSE STIFFENER LOCATIONS: SEE DESIGN NO. 38-61.

SPACE TYPES - SPAN 3

<table>
<thead>
<tr>
<th>STRUCTURE NUMBER</th>
<th>SPAN LENGTH</th>
<th>PLATE NUMBER</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-0</td>
<td>229'-6&quot;</td>
<td>B-409.67&quot;</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>0-1</td>
<td>233'-6&quot;</td>
<td>B-414.07&quot;</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>0-2</td>
<td>237'-11&quot;</td>
<td>B-420.00&quot;</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>0-3</td>
<td>241'-6&quot;</td>
<td>B-426.00&quot;</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>0-4</td>
<td>245'-11&quot;</td>
<td>B-431.17&quot;</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>0-5</td>
<td>250'-0&quot;</td>
<td>B-437.00&quot;</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

5/16M DOWEL STEEL SPACING (4 PER ROW) - SPAN 3

<table>
<thead>
<tr>
<th>STRUCTURE NUMBER</th>
<th>PLATE NUMBER</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-0</td>
<td>229'-6&quot;</td>
<td>B-409.67&quot;</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>0-1</td>
<td>233'-6&quot;</td>
<td>B-414.07&quot;</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>0-2</td>
<td>237'-11&quot;</td>
<td>B-420.00&quot;</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>0-3</td>
<td>241'-6&quot;</td>
<td>B-426.00&quot;</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>0-4</td>
<td>245'-11&quot;</td>
<td>B-431.17&quot;</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>0-5</td>
<td>250'-0&quot;</td>
<td>B-437.00&quot;</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

NOTES:
1. FOR BURST SPACER SPLIT DETAILS: SEE STANDARD DETAIL NO. 38-S-56.4-111, 115-119.
2. NO WELDING OF WELD PLATE TO FLANGE PLATE WILL BE ALLOWED IN TENSION AND STRESS REVERSAL AREAS.
3. SPACE STEEL STUD SHEAR DEVELOPERS TO WISS BOLT HEADS IN FIELD SPLICE. SEE STANDARD DETAIL NO. 38-S-56.4-61.74-61.
4. FOR TRANSVERSE STIFFENER LOCATIONS: SEE DESIGN NO. 38-61.
ORDER ELEVATION - SPAN 5

<table>
<thead>
<tr>
<th>ORDER NUMBER</th>
<th>SPAN LENGTH</th>
<th>PLATES</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td>218'-0&quot;Pf	n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-2</td>
<td>218'-0&quot;Pf	n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-3</td>
<td>218'-0&quot;Pf	n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-4</td>
<td>220'-0&quot;Pf	n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5</td>
<td>220'-0&quot;Pf	n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

splice types - span 5

<table>
<thead>
<tr>
<th>ORDER NUMBER</th>
<th>SPAN LENGTH</th>
<th>PLATES</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td>218'-0&quot;Pf	n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-2</td>
<td>218'-0&quot;Pf	n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-3</td>
<td>218'-0&quot;Pf	n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-4</td>
<td>220'-0&quot;Pf	n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5</td>
<td>220'-0&quot;Pf	n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[1/4" DIA STEEL STUD SPACING (4 PER ROW) - SPAN 5\]

<table>
<thead>
<tr>
<th>ORDER NUMBER</th>
<th>SPAN LENGTH</th>
<th>PLATES</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td>218'-0&quot;Pf	n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-2</td>
<td>218'-0&quot;Pf	n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-3</td>
<td>218'-0&quot;Pf	n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-4</td>
<td>220'-0&quot;Pf	n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5</td>
<td>220'-0&quot;Pf	n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**
1. FOR ORDER SPICE DETAILS. SEE STANDARD DETAIL NO. BR-1001-111-06.173.
2. MMS ELIGE OF 32-PLATE (2-PLATE ROWS TO 3-PLATE ROWS WILL BE ALLOWED IN SPICE AND SPICE PAPER HAGA.
3. SPACE STEEL STUD SHEAR DEVELOPERS TO MISS BOLT HEADS IN SPICE SPICE. SEE STANDARD DETAIL NO. BR-1001-111-06.173.
4. FOR CONCRETE END DIAHETRO DS AT PIER. SEE STANDARD DETAIL NO. BR-1001-111-06.173
5. FOR TRANSVERSE STUDFILMER LOCATIONS. SEE DETAIL NO. SE-01.28-06.173.
**ORDER ELEVATION - SPAN 7**

**DIMENSIONS**

<table>
<thead>
<tr>
<th>SPAN NUMBER</th>
<th>SPAN LENGTH</th>
<th>STUD PLATES</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-1</td>
<td>205'-0&quot;</td>
<td>TOP FLANGE</td>
<td>24&quot; x 37-3/8&quot;</td>
<td>24&quot; x 37-3/8&quot;</td>
<td>24&quot; x 37-3/8&quot;</td>
<td>24&quot; x 37-3/8&quot;</td>
<td>24&quot; x 37-3/8&quot;</td>
<td>24&quot; x 37-3/8&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JOIST</td>
<td>8&quot; x 23&quot;</td>
<td>8&quot; x 23&quot;</td>
<td>8&quot; x 23&quot;</td>
<td>8&quot; x 23&quot;</td>
<td>8&quot; x 23&quot;</td>
<td>8&quot; x 23&quot;</td>
</tr>
</tbody>
</table>

**FIELD SPLICE**

- 1/2" x 1 1/2" DRILLED HOLE
- 1/2" x 1 1/2" BRACKETS

**PLATE - SEE TABLE (SP )**

**FOOTNOTES:**

1. FOR SPINNER SPICE DETAILS, SEE STANDARD DETAIL NO. DR-5010-37.0-57.13.
2. NO WELDING OF STUDDS IN PLATE SPICE FORMS TO TOP FLANGE: PLATE WILL BE ALLOWED ON SPINNER SPICE FORMS.
3. SPACE STEEL STUD SHEAR DEVELOPMENTS TO MISS DRILL HOLES IN FIELD SPLICE. SEE STANDARDS 3511, NO. DR-5010-37.13-70.13.
4. FOR TRANSVERSE STIFFENER LOCATIONS, SEE ENG. NO. 56-99.

**SPLICE TYPES - SPAN 7**

- TYPE 1
- TYPE 2
- TYPE 3
- TYPE 4
- TYPE 5

---

**REVISED**

**MARYLAND TRANSPORTATION AUTHORITY**

**JMT**

**ENGINEERING DIVISION**

---

**ADDITIONS & REVISIONS**

- **REVISION DATE:** 5/9/74
- **DRAWN BY:** DREXEL, BURBEY
- **CHECKED BY:** BARR

---

**60' ORM STEEL STUD SPACING 14 PER ROW - SPAN 7**

**NOTES:**

- 1 FOR SPINNER SPICE DETAILS, SEE STANDARD DETAIL NO. DR-5010-37.0-57.13.
- NO WELDING OF STUDDS IN PLATE SPICE FORMS TO TOP FLANGE: PLATE WILL BE ALLOWED ON SPINNER SPICE FORMS.
- SPACE STEEL STUD SHEAR DEVELOPMENTS TO MISS DRILL HOLES IN FIELD SPLICE. SEE STANDARDS 3511, NO. DR-5010-37.13-70.13.
- FOR TRANSVERSE STIFFENER LOCATIONS, SEE ENG. NO. 56-99.

---

**ordaexpress toll lanes i-495 interchange general purpose roadways and ramps**

**ORDER ELEVATION - SPAN 7**

**COORDINATE:**

- **CONTACT:** 301-309-000-006
- **DRAWING NO.:** S6 - 97
- **DESIGNED BY:** DREXEL, BURBEY
- **CHECKED BY:** BARR
- **CONTRACT NO.:** JMT - 01006-MD-0011
- **DATE:** MAY 1974

---

**THE ESTIMATED NUMBER OF STEEL STUD SHEAR DEVELOPMENTS REQUIRED IS 23.004**

---

**JMT**

**ENGINEERING DIVISION**

---

**MARYLAND TRANSPORTATION AUTHORITY**

**JMT**

**ENGINEERING DIVISION**

---

**ADDITIONS & REVISIONS**

- **REVISION DATE:** 5/9/74
- **DRAWN BY:** DREXEL, BURBEY
- **CHECKED BY:** BARR

---

**60' ORM STEEL STUD SPACING 14 PER ROW - SPAN 7**

**NOTES:**

- 1 FOR SPINNER SPICE DETAILS, SEE STANDARD DETAIL NO. DR-5010-37.0-57.13.
- NO WELDING OF STUDDS IN PLATE SPICE FORMS TO TOP FLANGE: PLATE WILL BE ALLOWED ON SPINNER SPICE FORMS.
- SPACE STEEL STUD SHEAR DEVELOPMENTS TO MISS DRILL HOLES IN FIELD SPLICE. SEE STANDARDS 3511, NO. DR-5010-37.13-70.13.
- FOR TRANSVERSE STIFFENER LOCATIONS, SEE ENG. NO. 56-99.

---

**ordaexpress toll lanes i-495 interchange general purpose roadways and ramps**

**ORDER ELEVATION - SPAN 7**

**COORDINATE:**

- **CONTACT:** 301-309-000-006
- **DRAWING NO.:** S6 - 97
- **DESIGNED BY:** DREXEL, BURBEY
- **CHECKED BY:** BARR
- **CONTRACT NO.:** JMT - 01006-MD-0011
- **DATE:** MAY 1974

---

**THE ESTIMATED NUMBER OF STEEL STUD SHEAR DEVELOPMENTS REQUIRED IS 23.004**

---

**JMT**

**ENGINEERING DIVISION**

---

**MARYLAND TRANSPORTATION AUTHORITY**

**JMT**

**ENGINEERING DIVISION**

---

**ADDITIONS & REVISIONS**

- **REVISION DATE:** 5/9/74
- **DRAWN BY:** DREXEL, BURBEY
- **CHECKED BY:** BARR

---

**60' ORM STEEL STUD SPACING 14 PER ROW - SPAN 7**

**NOTES:**

- 1 FOR SPINNER SPICE DETAILS, SEE STANDARD DETAIL NO. DR-5010-37.0-57.13.
- NO WELDING OF STUDDS IN PLATE SPICE FORMS TO TOP FLANGE: PLATE WILL BE ALLOWED ON SPINNER SPICE FORMS.
- SPACE STEEL STUD SHEAR DEVELOPMENTS TO MISS DRILL HOLES IN FIELD SPLICE. SEE STANDARDS 3511, NO. DR-5010-37.13-70.13.
- FOR TRANSVERSE STIFFENER LOCATIONS, SEE ENG. NO. 56-99.

---

**ordaexpress toll lanes i-495 interchange general purpose roadways and ramps**

**ORDER ELEVATION - SPAN 7**

**COORDINATE:**

- **CONTACT:** 301-309-000-006
- **DRAWING NO.:** S6 - 97
- **DESIGNED BY:** DREXEL, BURBEY
- **CHECKED BY:** BARR
- **CONTRACT NO.:** JMT - 01006-MD-0011
- **DATE:** MAY 1974

---

**THE ESTIMATED NUMBER OF STEEL STUD SHEAR DEVELOPMENTS REQUIRED IS 23.004**

---

**JMT**

**ENGINEERING DIVISION**

---

**MARYLAND TRANSPORTATION AUTHORITY**

**JMT**

**ENGINEERING DIVISION**

---

**ADDITIONS & REVISIONS**

- **REVISION DATE:** 5/9/74
- **DRAWN BY:** DREXEL, BURBEY
- **CHECKED BY:** BARR

---

**60' ORM STEEL STUD SPACING 14 PER ROW - SPAN 7**

**NOTES:**

- 1 FOR SPINNER SPICE DETAILS, SEE STANDARD DETAIL NO. DR-5010-37.0-57.13.
- NO WELDING OF STUDDS IN PLATE SPICE FORMS TO TOP FLANGE: PLATE WILL BE ALLOWED ON SPINNER SPICE FORMS.
- SPACE STEEL STUD SHEAR DEVELOPMENTS TO MISS DRILL HOLES IN FIELD SPLICE. SEE STANDARDS 3511, NO. DR-5010-37.13-70.13.
- FOR TRANSVERSE STIFFENER LOCATIONS, SEE ENG. NO. 56-99.
1. ALL BOLTS TO BE 1" O.D. HIGH STRENGTH BOLTS CONFORMING TO A-325. TYPE A. ALL BOLT HOLES SHALL BE 1/2" THRU.
2. IN FELLA FRAME THE BOLTS SHALL BE PLACED SO THAT THE BOLT HEAD IS VISIBLE ON THE INSIDE FACE OF BEAM.
3. ALL BOLTS ON FLANGE SPACES SHALL HAVE BOLT HEADS ON THE BOTTOM.
4. BOLTS NOT SHOWN IN SPICE.
5. SPICE SHEAR STICKS TO NEED TOP FLANGE SPICE BOLTS.
6. A MINIMUM OF 5" OF SPICE IS THE MIN. TOP FLANGE AND BOTTOM FLANGE SPICE BOLTS SHALL BE IN PLACE ON THE STICKS TO LEFT UNPERFORATED.
7. WHEN FLANGE IS LARGER THAN ADJACENT FLANGE BY MORE THAN 2", THE LARGER FLANGE SHALL BE ADJUSTED TO THE SMALLEST FLANGE BOLT (IN A DISTANCE OF 1/2" LENGTH OF SPICE OR PLATE BOTTOM FLANGE BOLT).
8. SPICE SUBLTIES SHALL BE COMPLETELY SHAPED ADJUSTED AND WASHED THOURGOUT ALL SIDE WELDING HAS BEEN COMPLETED. CONTACT SURFACES SHALL BE FREE OF ALL DIRT AND STRAY.

**TYPE**

- **LOCATION**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SUFFIX</td>
</tr>
</tbody>
</table>

**RAMP CC**

**GENERAL PURPOSE ROADWAYS AND RAMPS**

**FIELD SPICE DETAII**

**FIELD SPICE DETAII - TYPE XI**

**FIELD SPICE DETAII - TYPE XII**

**SUFFIX**

- SUFFIX

**1-95 EXPRESS TOLL LANES 1-465 INTERCHANGE**

**M ARYLAN D TRANSPORTATION AUTHORITY**

**J OHNSTON, BROWN & THOMPSON**

**Engineering Division**
DECK POURING SEQUENCE NOTES:
1. THE CONTRACTOR SHOULD FOLLOW THE POURING SEQUENCE SHOWN ON THESE PLANS.
2. THE CONTRACTOR MUST SUBMIT EVIDENCE FOR PROVING A MINIMUM POURING RATE OF 50 CUBIC YARDS PER HOUR FOR ALL POURS.
3. THE POURING SEQUENCE FOR THE REINFORCE DECK SLAB SHALL BE MADE IN THE NUMBERED ORDER INDICATED.
4. AN ALTERNATIVE SEQUENCE FOR DECK PLACEMENT WOULD BE AS follows:
   - POURING SEQUENCE WOULD BE MADE ON THE FIRST FOUR DAYS USING TWO INDIVIDUAL SCREENS, PLACING CEMENT AND SAND.
   - POURING SEQUENCE WOULD BE MADE ON THE SECOND FOUR DAYS USING ONE SHARED SCREEN, PLACING CEMENT AND SAND.
   - POURING SEQUENCE WOULD BE MADE ON THE THIRD FOUR DAYS USING THREE INDIVIDUAL SCREENS, PLACING CEMENT AND SAND.
   - POURING SEQUENCE WOULD BE MADE ON THE FOURTH FOUR DAYS USING TWO SHARED SCREENS, PLACING CEMENT AND SAND.
5. THE CONTRACTOR MUST SUBMIT EVIDENCE FOR PROVING A MINIMUM POURING RATE OF 50 CUBIC YARDS PER HOUR FOR ALL POURS.
6. CONSIDER THE POURING SEQUENCE DATE WHICH IS HANDLED INDEPENDENTLY OF THE POURING SEQUENCE DETAILS FOR SPANS 1 THROUGH 4 ON THE PREVIOUS SHEET.
7. FOR DECK SLAB CONSTRUCTION DETAILS, SEE ND 5A DETAIL NO. 09-5518-071-17-06.

DECK POURING SEQUENCE – SPANS 5 THROUGH 10
SCALE 1" = 20'-0"
STAGE 2

LEGEND

♀️ • HOLD OR LIFT CRANE
○ • TIE DOWN
□ • TEMPORARY SUPPORT STRUCTURE

HOLD CRANE ON G2 ONLY
BRACE POINT ON G1 & G2 TOP FLANGE ONLY
BRACE POINT ON G1 & G2 TOP FLANGE ONLY
BRACE POINT ON G1 & G2 TOP FLANGE ONLY
BRACE POINT ON G1 & G2 TOP FLANGE ONLY
BRACE POINT ON G1 & G2 TOP FLANGE ONLY
BRACE POINT ON G1 & G2 TOP FLANGE ONLY
LEGEND

\[\checkmark\] • HOLD OR LIFT CRANE

○ • TIE DOWN

□ • TEMPORARY SUPPORT STRUCTURE

STAGE 6

- TEMP SUPPORT AT XF LOCATIONS ON G1 & G5.  
  0.25 XF SPA ON G2  
  0.50 XF SPA ON G3  
  0.75 XF SPA ON G4
LEGEND

▼ Hold or Lift Crane
○ Tie Down
□ Temporary Support Structure

NCHRP 12-79
BRIDGE DECOM
GENERAL ERECTION PROCEDURE
SHEET 5 OF 18

STAGE 10

TEMP SUPPORT AT
XF LOCATIONS ON G1 & G5.
0.25 XF SPA ON G2
0.50 XF SPA ON G3
0.75 XF SPA ON G4
ALL GIRDERS HAVE VERTICAL + LATERAL (ROTATIONAL) TIE DOWN AT TEMP SUPPORT
LEGEND
- HOLD OR LIFT CRANE
- TIE DOWN
- TEMPORARY SUPPORT STRUCTURE

C L BRG. SUPPORT 1
C L BRG. SUPPORT 2
C L BRG. SUPPORT 3
C L BRG. SUPPORT 4
C L BRG. SUPPORT 5
C L BRG. SUPPORT 6
C L BRG. SUPPORT 7

C L F.S.
SPAN 1
SPAN 2
SPAN 3
SPAN 4
SPAN 5
SPAN 6

TEMP SUPPORT AT
XF LOCATIONS ON G1 & G5.
0.25 XF SPA ON G2
0.50 XF SPA ON G3
0.75 XF SPA ON G4

ALL GIRDER HAVE VERTICAL + LATERAL
(ROTATIONAL) TIE DOWN AT TEMP SUPPORT

STAGE 11
LEGEND

\(\forall\) - HOLD OR LIFT CRANE

O - TIE DOWN

\(\square\) - TEMPORARY SUPPORT STRUCTURE

NCHRP 12-79
BRIDGE EICCR4
GENERAL ERECTION PROCEDURE
SHEET 7 OF 18

ALL GIRDERS HAVE VERTICAL + LATERAL (ROTATIONAL) TIE DOWN AT TEMP SUPPORT

0.25 XF SPA ON G2
0.50 XF SPA ON G3
0.75 XF SPA ON G4

TEMP SUPPORT AT XF LOCATIONS ON G1 & G5.

STAGE 15
LEGEND

△ • HOLD OR LIFT CRANE
○ • TIE DOWN
□ • TEMPORARY SUPPORT STRUCTURE

ALL GIRDERS HAVE VERTICAL • LATERAL (ROTATIONAL) TIE DOWN AT TEMP SUPPORT AT XF LOCATIONS ON G1 & G5.
0.25 XF SPA ON G2
0.50 XF SPA ON G3
0.75 XF SPA ON G4

STAGE 16
STAGE 27
LEGEND

▼ • HOLD OR LIFT CRANE
○ • TIE DOWN
□ • TEMPORARY SUPPORT STRUCTURE

STAGE 35
NCHRP 12-79

EICCR11
LEGEND:

A - CROSS FRAME TO GIRDER CONNECTION REQUIRES A TYPE A CONNECTION PLATE DETAIL. SEE SHEET 42.

NOTES:

FOR GENERAL NOTES, SEE SHEET 2.

FOR GIRDER ELEVATIONS, SEE SHEETS 3B THROUGH 41.

FOR MISCELLANEOUS GIRDER DETAILS, SEE SHEETS 42 AND 43.

FOR GIRDER SPLICES, SEE SHEETS 44 THROUGH 48.

FOR CROSS FRAME SPLICES, SEE SHEETS 49 THROUGH 50.

FOR SECURITY ACCESS DATA, INSPECTION RAILWAY, AND INSPECTION PLATFORM DETAILS, SEE SHEETS 51 THROUGH 52.

UNLESS NOTED OTHERWISE, ALL CROSS FRAME TO GIRDER CONNECTIONS REQUIRE A TYPE A CONNECTION PLATE DETAIL. SEE SHEET 42, AND LEGEND THIS SHEET - A.

PARTIAL FRAMING PLAN

SCALE = 1/125

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

ARMSTRONG COUNTY
S.R. 0128 SEC. 013
SEG. 0280 OFFSET 0
S.R. 0128 STA. 1+871.500
OVER ALLEGHENY RIVER & PITTSBURG & SHAWMUT R.R.
3-SPAN CONTINUOUS STEEL PLATE GIRDER BRIDGE
PARTIAL FRAMING PLAN - 2

RECOMMENDED DATE: 11/2/2016
SHEET 17 OF 17

5-22234
NOTES:

FOR GENERAL NOTES, SEE SHEET 2.

FOR FRAMING PLAN, SEE SHEETS 16 AND 31.

FOR SHEAR CONNECTOR, DRIP PLATE, AND FUTURE STIFFENER DETAILS, SEE SHEETS 42 AND 43.

FOR SPACER DETAIL, SEE SHEETS 44 THROUGH 48.

CHART V-NOTCH TESTING IS REQUIRED ON ALL TENON PLATES, MEMBERS, STEEL BARS, AND SPACER PLATES.

SHEAR CONNECTORS SHALL COMPLY WITH ADOT 616B 045114.

FOR ALLEGHENY RIVER & PITTSBURG & SWAN RIDGE R.R.
3-SPAN CONTINUOUS STEEL PLATE GIRDER BRIDGE

GIRDER I ELEVATION

NO SCALE

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
ARMSTRONG COUNTY
S.R. 0128 SEC. 013
SEG. 0250, OFFSET 0
S.R. 0128 STA. 1611.500
OVER ALLEGHENY RIVER & PITTSBURG & SWAN RIDGE R.R.
3-SPAN CONTINUOUS STEEL PLATE GIRDER BRIDGE
GIRDER I ELEVATION

RECOMMENDED: JULY 1998

Sheet 38 of 1/2

LEGEND:

(C) DENOTES TENSION FLANGE
(1) DENOTES COMPRESSION FLANGE

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

S.R. 0128 SEC. 013
SEG. 0250, OFFSET 0
S.R. 0128 STA. 1611.500
OVER ALLEGHENY RIVER & PITTSBURG & SWAN RIDGE R.R.
3-SPAN CONTINUOUS STEEL PLATE GIRDER BRIDGE
GIRDER I ELEVATION

NOTE: FOR GENERAL NOTES, SEE SHEET 2.

FOR FRAMING PLAN, SEE SHEETS 16 AND 31.

FOR SHEAR CONNECTOR, DRIP PLATE, AND FUTURE STIFFENER DETAILS, SEE SHEETS 42 AND 43.

FOR SPACER DETAIL, SEE SHEETS 44 THROUGH 48.

CHART V-NOTCH TESTING IS REQUIRED ON ALL TENON PLATES, MEMBERS, STEEL BARS, AND SPACER PLATES.

SHEAR CONNECTORS SHALL COMPLY WITH ADOT 616B 045114.

FOR ALLEGHENY RIVER & PITTSBURG & SWAN RIDGE R.R.
3-SPAN CONTINUOUS STEEL PLATE GIRDER BRIDGE
GIRDER I ELEVATION

RECOMMENDED: JULY 1998

Sheet 38 of 1/2

LEGEND:

(C) DENOTES TENSION FLANGE
(1) DENOTES COMPRESSION FLANGE

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

S.R. 0128 SEC. 013
SEG. 0250, OFFSET 0
S.R. 0128 STA. 1611.500
OVER ALLEGHENY RIVER & PITTSBURG & SWAN RIDGE R.R.
3-SPAN CONTINUOUS STEEL PLATE GIRDER BRIDGE
GIRDER I ELEVATION

NOTE: FOR GENERAL NOTES, SEE SHEET 2.

FOR FRAMING PLAN, SEE SHEETS 16 AND 31.

FOR SHEAR CONNECTOR, DRIP PLATE, AND FUTURE STIFFENER DETAILS, SEE SHEETS 42 AND 43.

FOR SPACER DETAIL, SEE SHEETS 44 THROUGH 48.

CHART V-NOTCH TESTING IS REQUIRED ON ALL TENON PLATES, MEMBERS, STEEL BARS, AND SPACER PLATES.

SHEAR CONNECTORS SHALL COMPLY WITH ADOT 616B 045114.

FOR ALLEGHENY RIVER & PITTSBURG & SWAN RIDGE R.R.
3-SPAN CONTINUOUS STEEL PLATE GIRDER BRIDGE
GIRDER I ELEVATION

RECOMMENDED: JULY 1998

Sheet 38 of 1/2

LEGEND:

(C) DENOTES TENSION FLANGE
(1) DENOTES COMPRESSION FLANGE
NOTES:

FOR GENERAL NOTES, SEE SHEET 2.

FOR LOCATION OF SPLICES, SEE SHEETS 36 THROUGH 41.

ALL SPLICE PLATES SHALL BE 3/8 IN. THICK.

ALL SPLICE MATERIAL SHALL BE AKS TO MTO, GRADE 345NM.

FOR FLANGE SPlice AND WEB SPlice DETAILS, SEE SHEET 42.

SHARPEN 2-NOTCH ALL SPLICE PLATES, WEBs AND FLANGE PLATES.

ALL TIE PLATES LESS THAN 2 IN. THICK CAN BE OMITTED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

ARMSTRONG COUNTY
S.R. 0128 SEC. 013
SEG. 0250 OFFSET 0
S.R. 0128 STA. 1+871.500
OVER ALLEGHENY RIVER & PITTSBURG & SHANNON R.R.
3-SPAN CONTINUOUS STEEL PLATE GIRDER BRIDGE
GIRDER SPLICES - 1
ELEVATION - FIELD SPlice Type AA

ELEVATION - FIELD SPlice Type BB

BOTTOM FLANGE SPlice

BOTTOM FLANGE SPlice

NOTES:

FOR GENERAL NOTES, SEE SHEET 2.
FOR LOCATION OF SPlices, SEE SHEETS 36 THROUGH 41.
ALL SPlice BOLTS SHALL BE N22 HIGH. 20,50, 45, 65 WITH
SHEAR PLANE HARDNESS. THREADS EXCLUDED FROM THE
SHEAR PLANE MATERIAL. THREADS EXCLUDED FROM THE
SHEAR PLANE MATERIAL.
ALL SPlice MATERIAL SHALL BE AASHTO M360, GRADE
340M.
FOR FLANGE SPlice AND WEB SPlice DETAILS, SEE
SHEET 42.
SHARPEN NOTCH ALL SPlice PLATES, WEBS AND
FLANGES.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

ARMSTRONG COUNTY
S.R. 0128 SEC. 013
S.R. 0128 STA. 1+671.500
OVER ALLEGHENY RIVER & PITTSBURG & SHAMMUT R.R.
3-Span Continuous Steel Plate Girder Bridge
Girder Splices - 2

RECOMMENDED JUNE 21, 1989

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

S.R. 0128 SEC. 013
S.R. 0128 STA. 1+671.500
OVER ALLEGHENY RIVER & PITTSBURG & SHAMMUT R.R.
3-Span Continuous Steel Plate Girder Bridge
Girder Splices - 2

RECOMMENDED JUNE 21, 1989

S-22234
CROSS FRAME CF-2 DETAIL

BOLTED INTERIOR GIRDERS ARE SHOWN.
FASCIA GIRDERS ARE SIMILAR.

SCALE = 1:10

SECTION C-C

SCALE = 1:10

NOTES:

FOR LOCATION OF CROSS FRAME, SEE SHEETS 36 AND 37.

FOR CROSS FRAME DETAILS NOT SHOWN, SEE BC-154-W.

FOR CROSS FRAME CONNECTION PLATES, SEE SHEET 42.

USE 2.5-9/16 DIAMETER HOLES IN CONNECTION PLATES, BOLTED PLATES, AND RT-5.

USE 20, 9/16 DIAMETER ADJACENT M4 BOLTS WITH NUTS EXCLUDED FROM SHEET PLATE.

FOR FILLET WELD SIZES SEE TABLE ON SHEET 43.

USE THE NUMBER OF BOLTS SHOWN IN DETAILS.
ALL CROSS FRAMES W/C HORIZONTAL CONNECTION PLATES SHALL BE SUBJECT TO CHARYBY V-TEST AS PER SPECIFICATIONS.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

ARMSTRONG COUNTY
S.R. 0128 SEC. 013
SEG. 0250 OFFSET 0
S.R. 0128 STA. 1+61.500
OVER ALLEGHENY RIVER & PITTSBURG & SHAMUT R.R.
3-SPAN CONTINUOUS STEEL PLATE GIRDER BRIDGE
CROSS FRAME CF-2 DETAILS

RECOMMENDED: J.R. 1/18

S-22294

REVISIONS

<table>
<thead>
<tr>
<th>Work</th>
<th>Description</th>
<th>By</th>
<th>CHK'd</th>
<th>Apprv'd</th>
<th>Date</th>
</tr>
</thead>
</table>

SHEET NO. OF 1/2
CROSS FRAME CF-4 DETAIL

SECTION D-D
(SECTION E-E SIMILAR)

NOTES:

FOR LOCATION OF CROSS FRAMES, SEE SHEETS 36 AND 37.

FOR CROSS FRAME DETAILS NOT SHOWN, SEE 86-1500.

FOR BEARING STIFFENER DETAILS, SEE SHEET 42.

USE 23-CH DIA. HOLE IN BEARING STIFFENERS, GUSSET PLATES, AND CROSS FRAME MEMBERS.

USE 2 1/2" DIA. AASHTO W14A BOLTS WITH THREADS EXCLUDED FROM SHEAR PLANE.

USE THE NUMBER OF BOLTS SHOWN IN DETAILS.

ALL CROSS FRAME MATERIAL (INCLUDING BEARING STIFFENERS) SHALL BE SUBJECTED TO CHAPPAQUA NOTCH TESTING AS PER SPECIFICATIONS.
NOTES:
ALL COUNTERWEIGHT COMPONENTS PLACED LEVEL.
FOR CROSS SECTION OF COUNTERWEIGHT, SEE SHEET 52.
UNDER FULL DEAD LOAD: ALL COUNTERWEIGHT CONNECTION
PLATES ARE POSITIVE, NO MISMATCH ACCEPTABLE.
ADJUSTMENT AND CONSTRUCTION
TOLERANCES.
POT BEARING SCHEDULE

LOCATION

<table>
<thead>
<tr>
<th>GROUP I</th>
<th>BEARING DESIGN LOADS, kN SERVICE LOADS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VERTICAL LOAD</td>
</tr>
<tr>
<td>DEAD LOAD</td>
<td>MINIMUM</td>
</tr>
<tr>
<td>1</td>
<td>4,457</td>
</tr>
<tr>
<td>2</td>
<td>2,364</td>
</tr>
<tr>
<td>5</td>
<td>1,454</td>
</tr>
<tr>
<td>4</td>
<td>1,428</td>
</tr>
<tr>
<td>1</td>
<td>2,260</td>
</tr>
<tr>
<td>5</td>
<td>1,428</td>
</tr>
<tr>
<td>5</td>
<td>1,428</td>
</tr>
</tbody>
</table>


PROVIDE MATERIALS, FABRICATE AND INSTALL THE BEARINGS IN ACCORDANCE WITH ASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES INCLUDING 1993, 1994 ASHTO DESIGN SPECIFICATIONS.

BEARINGS SHOWN ON THE DATA TABLE ON SHEET 5 SHALL BE FABRICATED IN ACCORDANCE WITH ASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES INCLUDING 1993 AND 1994 ASHTO DESIGN SPECIFICATIONS.

ADJUST BEARING SEAT ELEVATIONS AS NECESSARY, BASED ON THE ACTUAL DEPTH OF SEAT AS SUPPLIED BY THE MANUFACTURER.

THE COEFFICIENT OF FRICTION FOR THE PIPE/STAINLESS STEEL IS TO BE 0.04, MAXIMUM.

THE ROTATIONS INDICATED IN THE BEARING TABLE INCLUDE BOTH DEAD AND LIVE LOAD MOVEMENT.

DO NOT DISMANTLE THE BEARING UNIT DURING SHIPMENT OR CONSTRUCTION.

PROTECT THE ELASTOMER AND PIPE MATERIALS FROM ANY WEARING, SCRATCHING OR COMPRESSION IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

ADJUST BEARING SEAT ELEVATIONS AS NECESSARY, BASED ON THE ACTUAL DEPTH OF SEAT AS SUPPLIED BY THE MANUFACTURER.

THE ROTATIONS INDICATED IN THE BEARING TABLE INCLUDE BOTH DEAD AND LIVE LOAD MOVEMENT.

IN THE CASE OF A CONTRACTOR'S ALTERNATE BEARING DESIGN, THE COMPLETE BEARING ASSEMBLY FOR THE LOADS, ROTATION AND MOVEMENTS SHOWN IN THE BEARING TABLE, ALL LOADS SHOWN ARE SERVICE LOADS, PROVIDE A BOLTED TOP CONNECTION PLATE FOR THE LOADS, AND PROVIDE ALL NEEDED BEARING SLAB AND REINFORCING STEEL TO FULLY ATTACH THE BEARINGS AND BEARING SLABS TO THE BEARING SLAB AND REINFORCING STEEL.

REVISIONS

COMMUNONAL OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

ARMSTRONG COUNTY
S.R. 0128 SEC. 013
S.E. 0550 OFFSET 0
S.R. 0128 STA. 1,671.500
OVER ALLEGHENY RIVER & PITTSBURG & SHAMUT R.R.
3-SPAN CONTINUOUS STEEL PLATE GIRDERS BRIDGE

POT BEARING NOTES

NOWlished by: 4-9-98
Checkered by: CLE

S-22234
LEGEND

- ▽ - HOLD OR LIFT CRANE
- ◯ - TIE DOWN
- □ - TEMPORARY SUPPORT STRUCTURE

NOTE:
- STAGE 2: ERECT G2 SECTION
- STAGE 3: ERECT G4 SECTION
- STAGE 4: ERECT G1 SECTION
STAGE 5

NOTE:
ERECT STAGE 6 = G2 SECTION + XF'S
ERECT STAGE 7 = G4 SECTION + XF'S
ERECT STAGE 8 = G1 SECTION + XF'S

STAGE 8

NOTE:
ERECT STAGE 6 = G2 SECTION + XF'S
ERECT STAGE 7 = G4 SECTION + XF'S
ERECT STAGE 8 = G1 SECTION + XF'S

LEGEND

◇ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE

NCHRP 12-79
BRIDGE EICCR11
GIRDER ERECTION PROCEDURE
SHEET 2 OF 6
NOTE:
ERECT STAGE 9 - G2 OVER SUPPORT 4
ERECT STAGE 10 - G3 OVER SUPPORT 2

LEGEND

△ - HOLD OR LIFT CRANE
● - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE

STAGE 10

STAGE 11
LEGEND

- Hold or lift crane
- Tie down
- Temporary support structure

NOTE:
STAGE 13 - G4 over Support 2
STAGE 14 - G1 over Support 2
LEGEND

- HOLD OR LIFT CRANE
- TIE DOWN
- TEMPORARY SUPPORT STRUCTURE

NOTE:
STAGE 15 = G2 - FS #4 TO FS #5
STAGE 16 = G3 - FS #4 TO FS #5
STAGE 17 = G4 - FS #4 TO FS #5
STAGE 18 = G1 - FS #4 TO FS #5
STAGES 19 THRU 22 = FS #10 TO SUPPORT #4, ORDER = G2, G3, G4, G1
STAGES 23 THRU 26 = FS #7 TO FS #8, ORDER = G2, G3, G4, G1
LEGEND

- Hold or lift crane
- Tie down
- Temporary support structure

NOTE:

STAGE 28: G4, FS 8 to FS 10
STAGE 29: G1, FS 8 to FS 10
STAGES 30 THRU 33: FS 6 TO FS 7, ORDER = G2, G3, G4, G1

STAGE 35: G3 - FS 5 TO FS 6
STAGE 36: G4 - FS 5 TO FS 6
STAGE 37: G1 - FS 5 TO FS 6, AND
REMOVE TEMP. SUPPORT #3

NOTE:

STAGE 33

G1
G2
G3
G4
SPAN 1
SPAN 2
SPAN 3
BRG SUPPORT 1
BRG SUPPORT 2
BRG SUPPORT 3
BRG SUPPORT 4
C F.S. 1
C F.S. 2
C F.S. 3
C F.S. 4
C F.S. 5
C F.S. 6
C F.S. 7
C F.S. 8
C F.S. 9
C F.S. 10
NOTE:

STAGE 28: G4, FS 8 TO FS 10
STAGE 29: G1, FS 8 TO FS 10
STAGES 30 THRU 33: FS 6 TO FS 7, ORDER = G2, G3, G4, G1

STAGE 34

G1
G2
G3
G4
SPAN 1
SPAN 2
SPAN 3
BRG SUPPORT 1
BRG SUPPORT 2
BRG SUPPORT 3
BRG SUPPORT 4
C F.S. 1
C F.S. 2
C F.S. 3
C F.S. 4
C F.S. 5
C F.S. 6
C F.S. 7
C F.S. 8
C F.S. 9
C F.S. 10

NCHRP 12-79
BRIDGE EICCR11
GIRDER ERECTION
PROCEDURE
SHEET 6 OF 6
NOTE:
1. ALL DIMENSIONS TAKEN ALONG G1.

- O - NON-GUIDED EXPANSION POT BEARING
- □ - LONGITUDINALLY GUIDED POT BEARING
- □■ - TRANSVERSELY GUIDED POT BEARING
FRAMING PLAN

1. ALL DIMENSIONS TAKEN ALONG G1.

- NON-GUIDED EXPANSION POT BEARING
- LONGITUDINALLY GUIDED POT BEARING
- TRANSVERSELY GUIDED POT BEARING
TYPICAL SECTION

NOTE:
1. CROSS-FRAMES ARE NOT SHOWN FOR CLARITY.
ELEVATION - GIRDER G3, G4, AND G5

GIRDER AND PLATE LENGTHS

<table>
<thead>
<tr>
<th></th>
<th>AA</th>
<th>BB</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>209.703'</td>
<td>208.537'</td>
<td>207.370'</td>
<td>271.052'</td>
<td>95.703'</td>
</tr>
<tr>
<td>BB</td>
<td>209.703'</td>
<td>208.537'</td>
<td>207.370'</td>
<td>271.052'</td>
<td>95.703'</td>
</tr>
<tr>
<td>X</td>
<td>209.703'</td>
<td>208.537'</td>
<td>207.370'</td>
<td>271.052'</td>
<td>95.703'</td>
</tr>
<tr>
<td>Y</td>
<td>209.703'</td>
<td>208.537'</td>
<td>207.370'</td>
<td>271.052'</td>
<td>95.703'</td>
</tr>
<tr>
<td>Z</td>
<td>209.703'</td>
<td>208.537'</td>
<td>207.370'</td>
<td>271.052'</td>
<td>95.703'</td>
</tr>
</tbody>
</table>
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.
DECK PLACEMENT SEQUENCE
(MEASURED ALONG GIRDER G1)
DECK PLACEMENT SEQUENCE
(MEASURED ALONG GIRDER G1)
LEGEND

▽ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE

STAGE 5

STAGE 6
LEGEND

▽ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE
NCHRP 12-79

EICCR22A
**Frame Arrangement**

1. Longitudinally guided bearings are used at supports 1 and 9, for all girders.
2. Fixed bearings are used at supports 2 through 8, for all girders.
3. Bearing arrangements not shown on framing plan for clarity.

**Cross-Frame Spacing**

<table>
<thead>
<tr>
<th>Cross-Frame</th>
<th>Dimensions Along Girder G1</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1 SPA @ 8.694'</td>
</tr>
<tr>
<td>B</td>
<td>6 SPA @ 20.594'</td>
</tr>
<tr>
<td>C</td>
<td>4 SPA @ 10.351'</td>
</tr>
</tbody>
</table>

**Framing Plan**

1. All dimensions taken along G1.

**Notes:**

- 0.625"×8.000" Intermediate Cross-Frame Conn. Plate (typ all spans)
- 0.625"×6.000" Transverse Stiffener (typ all spans)
- 1250"×8.000" Bearing Stiffener (typ all spans)
- 1 SPAN 1 173.661'

**Reference:**

NCHRP 12-79

Bridge EICCR22a

Framing Plan

Sheet 1 of X
FRAMING PLAN

NOTE:
1. ALL DIMENSIONS TAKEN ALONG G1.

CROSS-FRAME SPACING
DIMENSIONS ALONG GIRDER G1

<table>
<thead>
<tr>
<th></th>
<th>SPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4 SPA @ 11.529'</td>
</tr>
<tr>
<td>B</td>
<td>5 SPA @ 25.998'</td>
</tr>
<tr>
<td>C</td>
<td>4 SPA @ 11.529'</td>
</tr>
</tbody>
</table>

NCHRP 12-79
BRIDGE EICCR22a
FRAMING PLAN
SHEET 2 OF X
FRAMING PLAN

NOTE:
1. ALL DIMENSIONS TAKEN ALONG G1.

CROSS-FRAME SPACING
DIMENSIONS ALONG GIRDER G1

| 4 SPA. @ 11.529' |
| 5 SPA. @ 26.014' |
| 4 SPA. @ 11.529' |

NCHRP 12-79
BRIDGE EICCR22a
FRAMING PLAN
SHEET 3 OF X
NOTE:
1. ALL DIMENSIONS TAKEN ALONG G1.

CROSS-FRAME SPACING
DIMENSIONS ALONG GIRDER G1

- 4 SPA @ 12.083'
- 4 SPA @ 25.807'
- 4 SPA @ 12.083'
NOTE:

1. ALL DIMENSIONS TAKEN ALONG G1.
FRAMING PLAN

NOTE:
1. ALL DIMENSIONS TAKEN ALONG G1.

<p>| CROSS-FRAME SPACING |</p>
<table>
<thead>
<tr>
<th>Dimensions Along Girder G1</th>
</tr>
</thead>
<tbody>
<tr>
<td>① 4 SPA. @ 10.581&quot;</td>
</tr>
<tr>
<td>② 4 SPA. @ 22.802&quot;</td>
</tr>
</tbody>
</table>

NCHRP 12-79
BRIDGE EICCR22a
FRAMING PLAN
SHEET 6 OF X
NOTE:

1. ALL DIMENSIONS TAKEN ALONG G1.

CROSS-FRAME SPACING
DIMENSIONS ALONG GIRDER G1

<table>
<thead>
<tr>
<th>Position</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4 SPA @ 11.440'</td>
</tr>
<tr>
<td>2</td>
<td>3 SPA @ 24.790'</td>
</tr>
<tr>
<td>3</td>
<td>4 SPA @ 11.440'</td>
</tr>
</tbody>
</table>

NCHRP 12-79
BRIDGE EICCR22a
FRAMING PLAN
SHEET 7 OF X
NOTE:
1. ALL DIMENSIONS TAKEN ALONG G1.

<table>
<thead>
<tr>
<th>CROSS-FRAME SPACING</th>
<th>DIMENSIONS ALONG GIRDER G1</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>4 SPA. @ 11.755'</td>
</tr>
<tr>
<td>Y</td>
<td>6 SPA. @ 23.455'</td>
</tr>
<tr>
<td>Z</td>
<td>1 SPA. @ 8.694'</td>
</tr>
</tbody>
</table>

FRAMING PLAN
ELEVATION OF SPAN 2 THRU 7 GIRDERs

NOTE:
1. FOR DIMENSIONS AND FLANGE SIZES
   SEE SHEETS XX TO XX.
ELEVATION OF SPAN 8 GIRDERs

NOTE:

1. FOR DIMENSIONS AND FLANGE SIZES SEE SHEETS XX TO XX.

NCHRP 12-79
BRIDGE EICCR22a
GIRDER ELEVATIONS
SHEET 10 OF X
TYPICAL INTERMEDIATE CROSS FRAME

NOTE:
1. ALL CROSS FRAME MEMBERS ARE L8x6x112 (LLV).
2. GIRDER CONNECTION PLATE IS 0.625"x8.000".

TYPICAL CROSS FRAME AT SUPPORT

NOTE:
1. ALL CROSS FRAME MEMBERS ARE L8x6x1/2 (LLV).
2. GIRDER CONNECTION PLATE IS 1.250"x8.000".

LOADING NOTES:
1. STEEL DEAD LOAD INCREASED BY 5% (MDX AND LARSA), 10% (APPROX.), AND 2% (3D) TO ACCOUNT FOR MISC. DETAILS.
2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.
NOTE:
1. CROSS-FRAMES ARE NOT SHOWN FOR CLARITY.
ERECTION SEQUENCE
STAGE 1-A

LEGEND
▽ = HOLD OR LIFT CRANE
▪ = TIE DOWN
□ = TEMPORARY SUPPORT STRUCTURE
FS = FIELD SPlice
ERECTION SEQUENCE
STAGE 2-A

LEGEND
▽ = HOLD OR LIFT CRANE
⊙ = TIE DOWN
□ = TEMPORARY SUPPORT STRUCTURE
FS = FIELD SPICE

NCHRP  12-79
BRIDGE EICCR22a
ERECTION SEQUENCE
SHEET 17 OF X
ERECTION SEQUENCE
STAGE 2-B

LEGEND

△ = HOLD OR LIFT CRANE
○ = TIE DOWN
[ ] = TEMPORARY SUPPORT STRUCTURE
FS = FIELD SPlice
ERECTION SEQUENCE
STAGE 2-E

LEGEND

▽ - HOLD OR LIFT CRANE
Ο - TIE DOWN
☐ - TEMPORARY SUPPORT STRUCTURE
FS - FIELD SPlice
ERECTION SEQUENCE
STAGE 3-A

LEGEND

▽ - HOLD OR LIFT CRANE
○ - TIE DOWN
☐ - TEMPORARY SUPPORT STRUCTURE
FS - FIELD SPlice

NCHRP 12-79
BRIDGE EICCR22a
ERECTION SEQUENCE
SHEET 20 OF X
LEGEND

▽ = HOLD OR LIFT CRANE
○ = TIE DOWN
□ = TEMPORARY SUPPORT STRUCTURE
FS = FIELD SPlice
ERECTION SEQUENCE
STAGE 3-E

LEGEND
▽ - HOLD OR LIFT CRANE
○ - TIE DOWN
☐ - TEMPORARY SUPPORT STRUCTURE
FS - FIELD SPlice

NCHRP 12-79
BRIDGE EICCR22a
ERECTION SEQUENCE
SHEET 22 OF X
ERECTION SEQUENCE
STAGE 4-A

LEGEND

▽ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE
FS - FIELD SPLICE
ERECTION SEQUENCE
STAGE 4-B

LEGEND

▽ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE
FS - FIELD SPlice
ERECTION SEQUENCE
STAGE 4-E

LEGEND

▼ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE
FS - FIELD SPlice

TEMPORARY SUPPORT STRUCTURE FOR ALL GIRDERS
ERECTION SEQUENCE
STAGE 5-A

LEGEND
△ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE
FS - FIELD SPlice
ERECTION SEQUENCE
STAGE 5-B

LEGEND
△ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE
FS - FIELD SPlice
ERECTION SEQUENCE
STAGE 5-E

LEGEND
▽ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE
FS - FIELD SPlice
ERECTION SEQUENCE
STAGE 6-A

LEGEND
▽ - HOLD OR LIFT CRANE
☐ - TIE DOWN
☐ - TEMPORARY SUPPORT STRUCTURE
FS - FIELD SPlice
ERECTION SEQUENCE
STAGE 6-B

LEGEND
△ - HOLD OR LIFT CRANE
○ - TIE DOWN
☐ - TEMPORARY SUPPORT STRUCTURE
FS - FIELD SPLICE

NCHRP 12-79
BRIDGE EICCR22a
ERECTION SEQUENCE
SHEET 30 OF X
ERECTION SEQUENCE
STAGE 6-E

LEGEND
▽ - HOLD OR LIFT CRANE
□ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE
FS - FIELD SPLICE

NCHRP 12-79
BRIDGE EICCR22a
ERECTION SEQUENCE
SHEET 31 OF X
ERECTION SEQUENCE
STAGE 7-A TO E

7-A - ERECT G5

7-B - ERECT G4 AND CROSSFRAMES BETWEEN G4 AND G5.

7-C - ERECT G3 AND CROSSFRAMES BETWEEN G3 AND G4.

7-D - ERECT G2 AND CROSSFRAMES BETWEEN G2 AND G3.

7-E - ERECT G1 AND CROSSFRAMES BETWEEN G1 AND G2.

LEGEND
\( \n\) - HOLD OR LIFT CRANE
O - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE
FS - FIELD SPICE

NCHRP 12-79
BRIDGE EICCR22a
ERECTION SEQUENCE
SHEET 32 OF X
ERECTION SEQUENCE
STAGE 8-A

LEGEND
△ - HOLD OR LIFT CRANE
○ - TIE DOWN
☐ - TEMPORARY SUPPORT STRUCTURE
FS - FIELD SPLICE

NCHRP 12-79
BRIDGE EICCR22a
ERECTION SEQUENCE
SHEET 33 OF X
ERECTION SEQUENCE
STAGE 8-B TO 8-E

8-B - ERECT G4 AND CROSSFRAMES BETWEEN G4 AND G5.

8-C - ERECT G3 AND CROSSFRAMES BETWEEN G3 AND G4.

8-D - ERECT G2 AND CROSSFRAMES BETWEEN G2 AND G3.

8-E - ERECT G1 AND CROSSFRAMES BETWEEN G1 AND G2.

LEGEND
▽ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE
FS - FIELD SPLICE
ERECTION SEQUENCE
STAGE 9-A

LEGEND
▽ - HOLD OR LIFT CRANE
⊙ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE
FS - FIELD SPLICE

NCHRP 12-79
BRIDGE EICCR22a
ERECTION SEQUENCE
SHEET 35 OF X
ERECTION SEQUENCE
STAGE 10-A THRU E

LEGEND

\(\triangledown\) - HOLD OR LIFT CRANE
\(\bigcirc\) - TIE DOWN
\(\square\) - TEMPORARY SUPPORT STRUCTURE
FS - FIELD SPLICE

10-A - ERECT G1
10-B - ERECT G2 AND CROSSFRAMES BETWEEN G1 AND G2.
10-C - ERECT G3 AND CROSSFRAMES BETWEEN G2 AND G3.
NCHRP 12-79

EICCS1
NOTE:

1. FOR BILL OF REINFORCEMENT AND ESTIMATED QUANTITIES, SEE BRIDGE SHEET NO. 96.
2. FOR HALT DETAILS, SEE BRIDGE SHEET NO. 15.
3. FOR LANDSCAPE PILE FOUNDATION DETAILS AND RAPS, SEE BRIDGE SHEET NO. 11.

DECK POURING SEQUENCE

N.T.O.
FRAMING PLAN - SPAN NO. 1
Scales 1/2"=1'-0"

NOTES:
1. STRUCTURAL STEEL SHALL CONFORM TO ASHRTD NTEA GRADE 363.
2. GIRDER SHALL BE CANNED FOR DEAD LOAD DEFORMATION AND VERTICAL CURVATURE. GUN MOLD SHALL BE CUT TO PROVIDE CURVATURE.
3. ALL FLANGE PLATES SHALL BE HORIZONTAL ALL PLATES OR FLAT PLATE FLANGE CUT FROM WIDPlATE.
4. GIRDER RISER AND BEARING SUPPORTS SHALL BE VERTICAL ALL OTHER SUPPORTS. CROSS FRAMES FIELD BOLTED SPACERS AND SHIP SPACERS SHALL BE PERPENDICULAR TO THE FLANGE.
5. ALL CANTER SUPPORTS ARE REFERENCED TO CHORDS BETWEEN SUPPORTS.
6. HOLES IN FIELD SPACER CONNECTIONS SHALL BE SUBDIVIDED AND MEASURED ON DRIED T.L. STONE WIRE ASSOCIATED.
7. FIELD CONNECTIONS SHALL BE REVISED TO NOH SLOTTED BOLTS AND NUTS WITH holes UNLESS OTHERWISE NOTED.
8. FLANGE PLATES MAY BE NEXT-CUT FROM WIDPlATE TO THE RISERS SHOWN OR GRINDERS MAY BE COVERED BY HOLE SPACER RIBBON FOR USE IN CLEARANCE HOLES PLOID FS1, FS2, FS3, FS4, FS5, FS6, FS7, FS8, FS9, FS10, FS11, FS12, FS13.
9. FOR HOLLOW ELEVATIONS. SEE BRIDGE SHEET NO. 5652.

FRAMING PLAN - SPAN NO. 2
Scales 1/2"=1'-0"

NOTES:
10. DIMENSIONS SHOWN ARE IN METERS, WITH THE EXCEPTION OF STATIONS AND ELEVATIONS UNLESS OTHERWISE NOTED.

ALABAMA DEPARTMENT OF TRANSPORTATION
BRIDGE SHEET NO. 19 OF 19
ERICTION ENGINEERS
DAVID VOLKERT AND ASSOCIATES, INC.
METRIC
FRAMING PLAN SPANS 1 - 4 (SET 1 OF 2)
NOTE:
1. CHECK SAMPLE PLATE:
   OBTAIN SAMPLE FROM TOP FLANGE PLATE, ORDER A, END OF ORDER IN SPAN C.

2. FOR ORDER DIMENSIONS, SEGMENTS AND FLANGE SIZE, SEE BRIDGE SHEET NO. 10.

3. FOR SHOP WELDED SPlice DETAILS, SEE BRIDGE SHEET NO. 13.

4. FOR DETAILS OF CROSS FRAMES, SEE BRIDGE SHEET NO. 21.

5. FOR DETAILS OF STOPPLIES, SEE BRIDGE SHEET NO. 22.

6. FOR DETAILS OF SHEAR CONNECTION, SEE BRIDGE SHEET NO. 23.

7. FOR DETAILS OF BEARINGS, SEE BRIDGE SHEET NO. 24.

8. FOR EXPANSION DAM DETAILS, SEE BRIDGE SHEET NO. 25.

9. SPL + INDICATES SPlice TYPE NUMBER 1;
   ** Indicates stopplies TYPE NUMBER 2.

10. ALL INTERMEDIATE CROSS FRAMES NOT SPECIALLY MARKED ON THIS SHEET ARE TYPE L.

11. ALL INTERMEDIATE STOPPLIES, NOT SPECIALLY MARKED, ARE OF TYPE FL.

NOTE:
ALL DIMENSIONS SHOWN ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
**FIELD SPICE TYPE SPL1**

**FIELD SPICE TYPE SPL2**

**FIELD SPICE TYPE SPL3**

**FIELD SPICE TYPE SPL4**

---

### FILL R THICKNESSES AT SPICE JOINTS

<table>
<thead>
<tr>
<th>SPICE TYPE</th>
<th>FILL R</th>
<th>FILL R</th>
<th>FILL R</th>
<th>NO. JOINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPLAT</td>
<td>12</td>
<td>19</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>SPL2 AT</td>
<td>32</td>
<td>32</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>SPL2 AT</td>
<td># Shown</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPL2 AT</td>
<td>32</td>
<td>32</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>SPL2 AT</td>
<td>35</td>
<td>35</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>SPL2 AT</td>
<td>44</td>
<td>44</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

---

**NOTE:**

For location of cross frames and struts, see framing plan (bridge sheet no. 252-20) and for splice type 2, cross elevation (bridge sheet no. 235-12). Plate sizes are in W.A. units, converted from "THK" units. These are not rounded to standard weight plate sizes. Use of double random orientation, use non-equivalents of the rounded-up metric sizes as available.

---

**ALABAMA DEPARTMENT OF TRANSPORTATION**

**BRIDGE SHEET NO. 28 (OF 35)**

**CONSULTING ENGINEERS**

**PROJECT No. 4-010**

**STEEL DETAILS, SPAN 1 - 4 (Sheet 3 of 4)**

---

**ALABAMA DEPARTMENT OF TRANSPORTATION**

**BRIDGE SHEET NO. 28 (OF 35)**

**CONSULTING ENGINEERS**

**PRODUCT No. 4-010**

**STEEL DETAILS, SPAN 1 - 4 (Sheet 3 of 4)**

---
LEGEND

☑ HOLD OR LIFT CRANE

☐ TIE DOWN

☐ TEMPORARY SUPPORT STRUCTURE

STAGE 1

STAGE 2

STAGE 5

NCHRP 12-79
BRIDGE EICCS1
GENERAL ERECTION PROCEDURE
SHEET 1 OF 4
NCHRP 12-79

EICCS10
SPICE PLATE CHART

```
<table>
<thead>
<tr>
<th>BEAM</th>
<th>LOCATION</th>
<th>PLATE A</th>
<th>PLATE B</th>
<th>PLATE C</th>
<th>PLATE D</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO. 1</td>
<td>FIELD SPICE NO. 2</td>
<td>D9 x 4 x 2.0</td>
<td>10 x X</td>
<td>10 x X</td>
<td>6 x X</td>
</tr>
<tr>
<td>NO. 2</td>
<td>FIELD SPICE NO. 3</td>
<td>D9 x 4 x 2.0</td>
<td>10 x X</td>
<td>10 x X</td>
<td>6 x X</td>
</tr>
<tr>
<td>NO. 3</td>
<td>FIELD SPICE NO. 4</td>
<td>D9 x 4 x 2.0</td>
<td>10 x X</td>
<td>10 x X</td>
<td>6 x X</td>
</tr>
<tr>
<td>NO. 4</td>
<td>FIELD SPICE NO. 5</td>
<td>D9 x 4 x 2.0</td>
<td>10 x X</td>
<td>10 x X</td>
<td>6 x X</td>
</tr>
</tbody>
</table>

NOTES:
- SPICE DESIGN IS FOR STRUCTURAL STEEL SPEC. 300.
- ALL PLATES SHALL BE STRUCTURAL STEEL, MINIMUM THICKNESS 9/16".
```

FILL PLATE CHART

```
<table>
<thead>
<tr>
<th>BEAM 1</th>
<th>BEAM 2</th>
<th>BEAM 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOP FLANGE</td>
<td>BOTTOM FLANGE</td>
<td>TOP FLANGE</td>
</tr>
<tr>
<td>FIELD SPICE NO. 2</td>
<td>10 x X</td>
<td>10 x X</td>
</tr>
<tr>
<td>FIELD SPICE NO. 3</td>
<td>10 x X</td>
<td>10 x X</td>
</tr>
<tr>
<td>FIELD SPICE NO. 4</td>
<td>10 x X</td>
<td>10 x X</td>
</tr>
<tr>
<td>FIELD SPICE NO. 5</td>
<td>10 x X</td>
<td>10 x X</td>
</tr>
</tbody>
</table>
```

AS BUILT

CERTIFIED BY: ______________________
SIGNATURE: ______________________
DATE: 6-11-1994

STRUCTURAL STEEL DETAILS

SHEET NO. 45 OF 73 SHEETS

BRIDGE NO.

27998
PLAN VIEW
AT INTERMEDIATE BEAMS

SECTION B-B
PLATE CONNECTION AT INTERMEDIATE BEAMS

SECTION D-D
PLATE CONNECTION DETAIL

NOTES:
ALL STEEL SHALL CONFORM TO SPEC. 330L.

(1) SEE DETAIL B410.
(2) MINIMUM PLATE THICKNESS SHALL BE 3/4".
(3) BOLT PLATE TO BEAM FLANGE PRIOR TO WELDING PLATE TO BEAM STIFFENER PLATE.
(4) RPM'S MUST BE STATED AND MUST COME FROM CONTACT AREA AT DEFORMATION CONNECTION SURFACE.
(5) USE ON UPPER TENSION FLANGE WITHIN AREA "A", USE ON LOWER TENSION FLANGE OUTSIDE OF AREA "A".

PLACING SOLE PLATE AT BEARING

AS BUILT

CERTIFIED BY:

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
BRIDGES AND STRUCTURES

DETAIL No.
B410

BOLTED FLANGE TO STIFFENER DETAIL
FOR STEEL BEAMS

TABLE

<table>
<thead>
<tr>
<th>DIMENSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/8&quot; x 7/8&quot;</td>
</tr>
<tr>
<td>5/8&quot;</td>
</tr>
<tr>
<td>3/8&quot;</td>
</tr>
</tbody>
</table>

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
STIFFENER DETAILS
FOR STEEL BEAMS

DETAIL No.
B411

BRIDGE NO.
27998

SHEET NO. 49 OF 73 SHEETS

REF. NO. 7335

COMPLIANCE CERTIFICATE FOR STRUCTURAL SHEET METAL AND REINFORCEMENT.
CORNER DETAILS
LEGEND

- HOLD OR LIFT CRANE
- TIE DOWN
- TEMPORARY SUPPORT STRUCTURE

STAGE 3

STAGE 4
LEGEND

▽ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE
LEGEND

- HOLD OR LIFT CRANE
- TIE DOWN
- TEMPORARY SUPPORT STRUCTURE

STAGE 7

STAGE 8
(FINAL STEEL DL)
TYPICAL CROSS SECTION
NOTES:
1. WEB THICKNESS IS 0.750" FOR ALL FIELD PIECES AND ALL GIRDERS.
NOTES:
1. WEB THICKNESS IS 0.750" FOR ALL FIELD PIECES AND ALL GIRDERS.
### Dimensions (FT)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>182.453</td>
<td>103.539</td>
<td>167.016</td>
<td>182.453</td>
<td>103.339</td>
<td>81.516</td>
<td>133.953</td>
<td>74.589</td>
<td>111.516</td>
</tr>
<tr>
<td>G2</td>
<td>183.737</td>
<td>106.251</td>
<td>168.549</td>
<td>183.737</td>
<td>106.251</td>
<td>83.049</td>
<td>135.237</td>
<td>77.501</td>
<td>113.049</td>
</tr>
<tr>
<td>G3</td>
<td>185.094</td>
<td>109.332</td>
<td>170.228</td>
<td>185.094</td>
<td>109.332</td>
<td>84.728</td>
<td>136.594</td>
<td>80.582</td>
<td>114.728</td>
</tr>
<tr>
<td>G4</td>
<td>186.531</td>
<td>112.595</td>
<td>172.072</td>
<td>186.531</td>
<td>112.595</td>
<td>86.572</td>
<td>138.031</td>
<td>83.845</td>
<td>118.572</td>
</tr>
<tr>
<td>G5</td>
<td>188.054</td>
<td>116.059</td>
<td>174.103</td>
<td>188.054</td>
<td>116.059</td>
<td>88.603</td>
<td>139.554</td>
<td>87.309</td>
<td>118.603</td>
</tr>
<tr>
<td>G6</td>
<td>189.672</td>
<td>119.744</td>
<td>176.341</td>
<td>189.672</td>
<td>119.744</td>
<td>90.841</td>
<td>141.172</td>
<td>90.994</td>
<td>120.841</td>
</tr>
<tr>
<td>G7</td>
<td>191.388</td>
<td>123.676</td>
<td>178.817</td>
<td>191.388</td>
<td>123.676</td>
<td>93.317</td>
<td>142.888</td>
<td>94.926</td>
<td>123.314</td>
</tr>
<tr>
<td>G8</td>
<td>193.212</td>
<td>127.878</td>
<td>181.573</td>
<td>193.212</td>
<td>127.878</td>
<td>96.073</td>
<td>144.712</td>
<td>99.128</td>
<td>126.073</td>
</tr>
</tbody>
</table>

### Radii

<table>
<thead>
<tr>
<th></th>
<th>SPAN LENGTHS (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>2586.458 258.953 214.589 217.016</td>
</tr>
<tr>
<td>G2</td>
<td>2575.042 270.237 217.501 218.549</td>
</tr>
<tr>
<td>G3</td>
<td>2563.625 271.594 220.582 220.228</td>
</tr>
<tr>
<td>G4</td>
<td>2552.208 273.031 223.845 222.072</td>
</tr>
<tr>
<td>G5</td>
<td>2540.792 274.554 227.309 224.103</td>
</tr>
<tr>
<td>G6</td>
<td>2529.375 276.172 230.994 226.341</td>
</tr>
<tr>
<td>G7</td>
<td>2517.958 277.888 234.926 228.817</td>
</tr>
<tr>
<td>G8</td>
<td>2506.542 279.712 239.128 231.573</td>
</tr>
</tbody>
</table>

### Spacing

<table>
<thead>
<tr>
<th>SPACING</th>
<th>LENGTH (FT)</th>
<th>SPACING</th>
<th>LENGTH (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>15.731</td>
<td>17</td>
<td>22.093</td>
</tr>
<tr>
<td>2</td>
<td>16.007</td>
<td>18</td>
<td>22.666</td>
</tr>
<tr>
<td>3</td>
<td>16.292</td>
<td>19</td>
<td>23.275</td>
</tr>
<tr>
<td>4</td>
<td>16.585</td>
<td>20</td>
<td>23.925</td>
</tr>
<tr>
<td>5</td>
<td>16.892</td>
<td>21</td>
<td>24.621</td>
</tr>
<tr>
<td>6</td>
<td>17.213</td>
<td>22</td>
<td>25.361</td>
</tr>
<tr>
<td>7</td>
<td>17.542</td>
<td>23</td>
<td>26.160</td>
</tr>
<tr>
<td>8 7 SPA @ 21.813</td>
<td>24 3 SPA @ 16.305</td>
<td>25 24.593</td>
<td>26 25.338</td>
</tr>
<tr>
<td>9</td>
<td>18.207</td>
<td>27</td>
<td>26.137</td>
</tr>
<tr>
<td>10</td>
<td>18.585</td>
<td>28</td>
<td>27.004</td>
</tr>
<tr>
<td>11</td>
<td>18.973</td>
<td>29</td>
<td>27.339</td>
</tr>
<tr>
<td>12</td>
<td>19.380</td>
<td>30</td>
<td>28.959</td>
</tr>
<tr>
<td>13</td>
<td>19.808</td>
<td>31</td>
<td>30.0174</td>
</tr>
<tr>
<td>14</td>
<td>20.255</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>20.725</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>4 SPA @ 19.664</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% (MDX AND LARSA), 10% (APPROX), AND 2% (3D) TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10 PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. DIAPHRAGM MEMBER CALL-OUTS ARE IN UNITS OF INCHES.

TYPICAL END AND INTERMEDIATE DIAPHRAGM
DECK POUR SEQUENCE

70,000' (ALONG EACH GIRDER)
STAGE 1

LEGEND

- Hold or lift crane
- Tie down
- Temporary support structure

STAGE 2
ERECT STAGES THAT FOLLOW:
10 - ERECT G7, AND CROSS FRAMES BETWEEN G7 AND G8
11 - ERECT G6 AND CROSS FRAMES
12 - ERECT G5 AND CROSS FRAMES
13 - ERECT G4 AND CROSS FRAMES
14 - ERECT G3 AND CROSS FRAMES
15 - ERECT G2 AND CROSS FRAMES
16 - ERECT G1 AND CROSS FRAMES

LEGEND
▽ = HOLD OR LIFT CRANE
○ = TIE DOWN
□ = TEMPORARY SUPPORT STRUCTURE

NCHRP 12-79
BRIDGE ECCS27
GIRDER ERECTION PROCEDURE
SHEET 11 OF 13
STAGE 17

ERECTION STAGES THAT FOLLOW:

- 19 - ERECT G6, AND CROSS FRAMES
- 20 - ERECT G5 AND CROSS FRAMES
- 21 - ERECT G4 AND CROSS FRAMES
- 22 - ERECT G3 AND CROSS FRAMES
- 23 - ERECT G2 AND CROSS FRAMES
- 24 - ERECT G1 AND CROSS FRAMES

STAGE 18

LEGEND

▽ • HOLD OR LIFT CRANE
○ • TIE DOWN
□ • TEMPORARY SUPPORT STRUCTURE
STAGE 18

ERECTION STAGES THAT FOLLOW:

26-ERECT G7, AND CROSS FRAMES
27-ERECT G6, AND CROSS FRAMES
28-ERECT G5 AND CROSS FRAMES
29-ERECT G4 AND CROSS FRAMES
30-ERECT G3 AND CROSS FRAMES
31-ERECT G2 AND CROSS FRAMES
32-ERECT G1 AND CROSS FRAMES
33-REMOVE TEMPORARY SUPPORTS
NCHRP 12-79

EICSS1
DESIGN NOTES

DESIGN SPECIFICATIONS
IN ACCORDANCE WITH: "AASHTO LRFD BRIDGE DESIGN SPECIFICATION" 2nd EDITION.

DESIGN PROCEDURES
DECK SLAB DESIGNED USING EMPIRICAL DESIGN METHOD, PIER DESIGNED FOR VENICULAR COLLISION FORCE, GIRDERS DESIGNED USING MERLIN-DASH VERSION 2.2 LRFD COMPUTER PROGRAM, WING WALLS DESIGNED FOR AT-REST SOIL CONDITION.

DESIGN LOADS

PERMANENT LOADS

DC
UNIT WEIGHT OF REINFORCED CONCRETE
25.8 kN/m³

UNIT WEIGHT OF STRUCTURAL STEEL
100 kN/m³

WEIGHT OF DECKAndWait PARAPET
0.245 kN/m²

METAL DECK FORMS
0.77 kN/m²

CONCRETE PARAPET (CONCRETE ONLY)
0.0 kN/m²

BICYCLE RAIL
1.29 kN/m²

FUTURE WEARING SURFACE
1.1 kN/m²

UNIT WEIGHT OF SOIL
17.1 kN/m³

ANGLE OF INTERNAL FRICTION
34°

DEW

EQUIVALENT ACTIVE FLUID PRESSURE
5.5 kPa/m

EQUIVALENT REST FLUID PRESSURE
8.6 kPa/m

TRANSIENT LOADS

LL
HI-93 INCLUDING PAIR OF DESIGN TANDEMS
IN NEGATIVE MOMENT REGIONS

IW
DYNAMIC ALLOWANCE APPLIED TO TRUCK & TANDEM

LS
LIVE LOAD SURCHARGE AT ABUTMENT
0.0 m

LIVE LOAD SURCHARGE AT WINDOW
0.0 m

THERMAL LOADS

TU
UNIFORM TEMPERATURE RANGE
-13°C TO 50°C

BASE SETTING TEMPERATURE
16°C

EXTREME EVENT LOADS

ED
ACCELERATION COEFFICIENT
0.13 g

SOIL PROFILE TYPE
1

SEISMIC PERFORMANCE ZONE
2

CT
PILING TEST LEVEL
7-4

VENICULAR COLLISION FORCE
1800 kN

LOAD FACTORS

IN ACCORDANCE WITH ITO LRFD MANUAL

PILE DESIGN LOADS

ABIMENTS 1 & 2

STRENGTH LIMIT STATE VERTICAL

RESISTANCE FACTOR p_r
0.5

p_g
130 kN/PILE

p_w
796 kN/PILE

p_m
27 kN/PILE (U PILE)

SERVICE LIMIT STATE (LATERAL - STRONG AXIS)

DESIGN FACTOR p
1.00

V
133 kN/PILE

Y
36 kN/PILE

* BASED ON PILE DISPLACEMENT - 6.40 mm

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS
MATERIALS, CONSTRUCTION AND WORKSHIPS SHALL BE IN ACCORDANCE WITH THE STATE OF IDAHO TRANSPORTATION DEPARTMENT, "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION", 1999 EDITION, THE PROJECT PLANS AND SUPPLEMENTAL SPECIFICATIONS UNLESS NOTED OTHERWISE.

MATERIAL

CONCRETE: DECK SLAB AND PARAPET - CLASS 27.5 AF
HUBBOTS AND WINGS - CLASS 27.5 BF
METAL REINFORCEMENT: AASHTO W3L GRAD 420
STRUCTURAL STEEL: GIRDERS FLANGES & WEBS - AASHTO MW20 GRADE HPS 485 kW
CRoss-FRAMES & STIFFENERS - AASHTO MW20 GRADE 350 kW
CARBON STEEL BOLTS: AASHTO M25 TYPE 3
ELASTOMERIC BEARINGS: GRADE 4, 60-DIAMETER POLYISOPRENE.

PLANT DIMENSIONS AND ELEVATIONS

ALL EXPOSED EDGES OF CONCRETE SHALL BE BEVELED 20 mm UNLESS NOTED OTHERWISE. ALL DIMENSIONS TO REFINING STRUCTURE ARE TO CENTERLINE OF BAR UNLESS NOTED OTHERWISE. CONCRETE COVER MEASURED FROM THE FACE OF THE CONCRETE TO THE FACE OF ANY REINFORCING BAR SHALL BE 50 mm UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

CONSTRUCTION

ALL REINFORCING STEEL TO BE EPOXY COATED IS DESIGNATED BY "E" AFTER THE BAR MARK. CONSTRUCTION JOINTS WILL BE PERMITTED ONLY AT THE LOCATIONS SHOWN ON THE PLANS OR AS APPROVED BY THE ENGINEER. ALL SURFACES OF THE SUBSTRUCTURE EXCEPT WINGWALLS WHICH WILL BE EXPOSED ON THE COMPLETED STRUCTURE SHALL BE PROTECTED TO PREVENT STAINING WITH PLASTIC SHEETS OR OTHER APPROVED METHODS UNTIL DECK PLACEMENT IS COMPLETED AND GIRDERS ARE BLED CLEAN. WELDED FABRICATION SHALL BE IN ACCORDANCE WITH ANSI/AASHTO/WAAS D 1.5 AND ALL INTERIM REVISIONS PUBLISHED BY AASHTO.

INCIDENTAL ITEMS

ALL ITEMS SHOWN OR NOTED ON PLANS WHICH ARE NOT SPECIFICALLY BID FOR ARE CONSIDERED INCIDENTAL ITEMS. THE COST OF FURNISHING AND INSTALLING ALL INCIDENTAL ITEMS WIL NOT BE PAID SEPARATELY BUT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OTHER ITEMS, UNLESS NOTED OTHERWISE.
ANCHOR BOLTS & NUTS SHALL BE ASTM F-1554 GRADE 56 HOT DIP ZINC COATED. STRUCTURAL STEEL SHALL CONFORM TO AASHTO M326 354G. GROUT SHALL MEET THE REQUIREMENTS OF SUBSECTION 506.03.1.2 FOR GROUT, TYPE B CLASS 1. ALL EXPOSED METAL SURFACES SHALL BE CLEANED AND PRIMED AT THE FABRICATION PLANT. THE SURFACES SHALL BE PAINTED IN ACCORDANCE WITH SECTION 627, PAINT SYSTEM NO. D, EXCEPT THAT COLOR SHALL BE GRAY TO MATCH THAT OF CONCRETE.

THE COST OF FURNISHING AND INSTALLING BEARING UNITS SHALL BE INCLUDED IN THE UNIT PRICE BID. 5500 EOV SP-BRIDGE, STEEL BRIDGE (HIPSP) SHOP DRAWINGS SHALL BE IN ACCORDANCE WITH SUBSECTION 504.01.G.

PIN BEARING

127 x 446 PIN BLOCK SHALL CONFORM TO ASTM E68 CLASS D WITH SUPPLEMENTAL REQUIREMENTS 54.
76 # PIN SHALL CONFORM TO ASTM E68 CLASS G WITH SUPPLEMENTAL REQUIREMENTS 54.
PIN NUTS SHALL CONFORM TO AASHTO M231 GRADE D.
CLEAN BEARING PIN AND ADJOINING SURFACES AND COAT THESE SURFACES WITH SOLID ALLOY 369 DRY FILM LUBRICANT OR APPROVED EQUAL. LINE DRILL UPPER AND LOWER BEARING BLOCK AFTER ASSEMBLY. TIGHTEN PIN NUTS TO 250 TO 300N.M., THEN SET TO 10 mm SOCKET HEAD SET SCREW. UPPER TABS AND UPPER BEARING CRADLE SHALL BE WELDED TOGETHER PRIOR TO WELDING WHOLE ASSEMBLY TO SOLE PLATE. WELD UPPER TABS AND BEARING CRADLE TO SOLE PLATE WITH ONE ALL-AROUND WELD.

EXTRACTION BEARING

ELASTOMERIC PADS SHALL BE STEEL REINFORCED MADE OF 60-DIAMETER HARDNESS ELASTOMER. THE PADS MUST BE SHOP BONDED TO INTERMEDIATE PLATES AT THE FABRICATION PLANT.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
GIRDER G1 - THROUGH G9 WEB CAMBER DATA
SPAN 1 & 2

* NOT SYMMETRICAL BECAUSE IT IS BASED ON A 2 PART DECK PLACEMENT SEQUENCE

TOTAL WEB CAMBER

0 152 280 373 425 439 449 393 378 352 290 281 289 314 351 363 384 402 390 343 258 141 0
LEGEND

- HOLD OR LIFT CRANE
- TIE DOWN
- TEMPORARY SUPPORT STRUCTURE

NOTE:
ERECTION IS SHOWN FOR MODEL 1 ONLY (PHASE 1). MODEL 2 (PHASE 2) WILL FOLLOW SIMILAR PROCEDURE.
NOTE:
ERECTION IS SHOWN FOR MODEL 1 ONLY (PHASE 1). MODEL 2 (PHASE 2) WILL FOLLOW SIMILAR PROCEDURE.

LEGEND

- HOLD OR LIFT CRANE
- TIE DOWN
- TEMPORARY SUPPORT STRUCTURE
GENERAL ERECTION PROCEDURE

STAGE 13

STAGE 14

NOTE:
ERECTION IS SHOWN FOR MODEL 1 ONLY (PHASE 1). MODEL 2 (PHASE 2) WILL FOLLOW SIMILAR PROCEDURE.

LEGEND

☑️ • HOLD OR LIFT CRANE
☒ • TIE DOWN
☐ • TEMPORARY SUPPORT STRUCTURE
NOTE:
ERECTION IS SHOWN FOR MODEL 1 ONLY (PHASE 1).
MODEL 2 (PHASE 2) WILL FOLLOW SIMILAR PROCEDURE.
PHASE 1

* See Traffic Control Plans for CTB quantities.

PHASE 2

FINAL PHASE

NOT TO SCALE

© STRUCTURE DEPTH AT ABUTMENT

SECTION A-A

NOT TO SCALE

NOTES:

SECTION A-A DIMENSIONS ARE IN FEET.

WIDER ABUT CAP IS USED TO ACCOMODATE BEARING PLATE IN SEVERE SKIN ANGLE.

CAP DIMENSIONS ASSUME PLACEMENT OF SEES END EXPANSION BEARING.

CAP DIMENSIONS SHOULD BE ADJUSTED IF DIFFERENT SIZED BEARING IS USED.
At Contractor's option, alternating Bored Piles may end at K. Outside Girder's.

TYPICAL SECTION

SIDEWALK NOTES:

Installation of sidewalks and/or median dowels shall be in accordance with Item 420.3.19.

The holes for dowels shall be drilled with rotary coring type drilling equipment. Percussion (shovel) or masonry drill type drilling equipment shall not be used. Holes must be wide enough to allow for complete removal of core and clean to bottom. The hole shall be washed out with water or air to remove debris and irregularities. The anchoring adhesive shall be Type III Class 4 as specified in Item 4.12.000 and shall be applied per manufacturer's instructions.

TABLE OF ESTIMATED QUANTITIES

<table>
<thead>
<tr>
<th>BAR TABLE</th>
<th>TABLE OF ESTIMATED QUANTITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bar Size</td>
<td>Reinforced Concrete Slab</td>
</tr>
<tr>
<td>A</td>
<td>#5</td>
</tr>
<tr>
<td>B</td>
<td>#5</td>
</tr>
<tr>
<td>C</td>
<td>#5</td>
</tr>
<tr>
<td>D</td>
<td>#5</td>
</tr>
<tr>
<td>E</td>
<td>#5</td>
</tr>
<tr>
<td>F</td>
<td>#5</td>
</tr>
<tr>
<td>G</td>
<td>#5</td>
</tr>
<tr>
<td>H</td>
<td>#5</td>
</tr>
<tr>
<td>I</td>
<td>#5</td>
</tr>
<tr>
<td>J</td>
<td>#5</td>
</tr>
<tr>
<td>K</td>
<td>#5</td>
</tr>
<tr>
<td>L</td>
<td>#5</td>
</tr>
<tr>
<td>M</td>
<td>#5</td>
</tr>
<tr>
<td>N</td>
<td>#5</td>
</tr>
<tr>
<td>O</td>
<td>#5</td>
</tr>
<tr>
<td>P</td>
<td>#5</td>
</tr>
<tr>
<td>Q</td>
<td>#5</td>
</tr>
<tr>
<td>R</td>
<td>#5</td>
</tr>
<tr>
<td>S</td>
<td>#5</td>
</tr>
<tr>
<td>T</td>
<td>#5</td>
</tr>
<tr>
<td>U</td>
<td>#5</td>
</tr>
<tr>
<td>V</td>
<td>#5</td>
</tr>
<tr>
<td>W</td>
<td>#5</td>
</tr>
<tr>
<td>X</td>
<td>#5</td>
</tr>
<tr>
<td>Y</td>
<td>#5</td>
</tr>
<tr>
<td>Z</td>
<td>#5</td>
</tr>
</tbody>
</table>

1. Reinforcing Steel weight is calculated using an approximate factor of 0.16 lbs/ft.
2. Medium Concrete quantities are subsidiary to slab.
3. Quantities shown for Contractor's Information only.

HEADING:

289.50' CONTINUOUS PLATE GIRDERS (SPANS 1 & 2) US 82 ML UNDERPASS AT 19TH STREET WB

DESIGNER: TOSHI.C. TSUBOTA

9-24-04
SECTION A-A
(Lean on bracing system)

SECTION B-B
(Lean on bracing system)

SECTION C-C
(Lean on bracing system)

(For Details not shown see sheet 4 of 6
for Lean on bracing details)

Girder Placement Sequence:
The bolts fastened on the struts are structural bolts. The structural and erection bolts must be tightened in accordance with Item 441 "Structural Bolting" before hanging point girders or before releasing zones for single girders.

Crane cables must remain in tension during girder placement until end diaphragms are attached and bolted.

End Diaphragms should be positioned and bolted after the placement of each pair or individual girder before placing another girder or pair of girders.

The girder placement sequence does not release the contractor from the responsibility of submitting girder erection plans to the Engineer of Record, girder erection plans must be submitted to the Engineer.

The contractor may reverse the girder placement sequence as stated below; however, the erection sequence must begin with the exterior girders.

1. Field splices in span shall be completed before lifting girders to supports.
2. All end diaphragms, cross-frames, and struts shall be positioned and bolted between girders 4 and 6.
3. Girder 4 and 6 shall be lifted and placed as a paired unit.
4. All end diaphragms, cross-frames, and struts shall be positioned and bolted between girders 3 and 4.
5. Lift and place girders 3 and 4 as a paired unit.
6. Position and bolt the end diaphragm and a minimum of every other pair of struts between girders 1 and 2.
7. All end diaphragms, cross-frames, and struts shall be positioned between girders 1 and 2.
8. Lift and place girders 1 and 2 as a paired unit.
9. Position and bolt end diaphragms and a minimum of every other pair of struts between girders 2 and 1.
10. Once the first span of girders has been placed successfully, the contractor may begin to place girder sections of the final girder sections. The timing and placement of the final sections must follow the same steps and sequence explained above.

REVISED 11-24-04
WELD DETAIL - CROSS FRAMES AND END DIAPHRAGM

LEAN ON BRACING SYSTEM DETAILS

LEAN ON BRACING SYSTEM DETAILS

LEAD ON BRACING SYSTEM DETAILS

Lean on Bracing system details shall be used at all locations except along g set Plate and interior bear.

CROSS-FRAMES

INTERIOR DIAPHRAGMS ARE PERPENDICULAR OR PARALLEL TO GIRDERS UNLESS SHOWN.

DIAPHRAGMS AT INTERIOR BEARINGS ARE PARALLEL TO THE AXES UNLESS SHOWN.

The designer shall ensure that the forces in the cross-frames and end diaphragms members and connections, obtained by analysis, do not exceed allowable.

END DIAPHRAGM

See SPUD Standard for details not shown.

Drip Tab Details

Drill Tab, where indicated on the girder framing plan, shall be located 8 or 10 from the bent measured along the girder.

PLATE GIRDERS INVOLVED

US 82 ML UNDERPASS
AT 19TH STREET WB

HS20 LOADING SHEET 4 OF 6

Texas Department of Transportation

289.50 CONTINUOUS PLATE GIRDERS (SPANS 1 & 2)

REVIEWED 11-20-04

DRAFT DIP @ 2005

REVISED JUN 2004
STEEL GIRDER FABRICATION NOTES:

All structural steel, including connection plates and diaphragms, shall conform to the requirements of AISC Specification for Structural Steel Buildings. AASHTO Load and Resistance Factor Design (LRFD) shall be used for the Unit Price Std for Structures Sheet.

Girders tension flanges and webs are classified as tension components and shall conform to Item 442.3(k).

Field Splices shall be made by full penetration groove welds. Except as changes in section, shop or field flange and web splices in plate girders may be located as desirable to optimize plate lengths and erection procedures, except that splices will not be allowed where a 40" or less unsplashed length would suffice. Neither tension flange splices shall be allowed within 0.055 either side of the centerline of the interior panel. Field Splice shall be made with the end splices at the centerline of the interior panel, with a maximum horizontal distance between 0.055 and 0.055 from the end bearings, 0.15680 of the length of the interior panel. Field Splices shall be made in accordance with the Item 442, "Steel Structures".

Flange and Web Splices shall be made by full penetration groove welds in accordance with the Item 442, "Steel Structures".

All dimensions shown in Girders Elevations are Horizontal.

Hs20 Loading SHEET 5 OF 6

289.50' CONTINUOUS PLATE GIRDER UNIT (SPANS 1 & 2)
US 82 ML UNDERPASS AT 19TH STREET WB

Texas Department of Transportation Bridge Division

4001 Poydras, Suite 2400 New Orleans, LA 70130

4-7-06

1.6 Spa at 4" = 2'-0"
# Table of Dead Load Deflections

<table>
<thead>
<tr>
<th>Location</th>
<th>Spans</th>
<th>Deflections due to cost-in-place concrete only</th>
<th>Total dead load deflections (including steel)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ALL 1-3 4-6</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>18 NS</td>
<td>0.000 0.000 0.000</td>
<td>0.000 0.000</td>
</tr>
<tr>
<td>1</td>
<td>18 NS</td>
<td>0.000 0.000</td>
<td>0.127 0.132</td>
</tr>
<tr>
<td>2</td>
<td>18 NS</td>
<td>0.161 0.228</td>
<td>0.237 0.237</td>
</tr>
<tr>
<td>3</td>
<td>18 NS</td>
<td>0.208 0.195</td>
<td>0.208 0.307</td>
</tr>
<tr>
<td>4</td>
<td>18 NS</td>
<td>0.225 0.320</td>
<td>0.225 0.320</td>
</tr>
<tr>
<td>5</td>
<td>18 NS</td>
<td>0.213 0.304</td>
<td>0.213 0.304</td>
</tr>
<tr>
<td>6</td>
<td>18 NS</td>
<td>0.175 0.251</td>
<td>0.175 0.251</td>
</tr>
<tr>
<td>7</td>
<td>18 NS</td>
<td>0.123 0.176</td>
<td>0.123 0.176</td>
</tr>
<tr>
<td>8</td>
<td>18 NS</td>
<td>0.109 0.156</td>
<td>0.109 0.156</td>
</tr>
<tr>
<td>9</td>
<td>18 NS</td>
<td>0.089 0.099</td>
<td>0.089 0.099</td>
</tr>
<tr>
<td>10</td>
<td>18 NS</td>
<td>0.025 0.055</td>
<td>0.025 0.055</td>
</tr>
<tr>
<td>11</td>
<td>18 NS</td>
<td>0.000 0.000</td>
<td>0.000 0.000</td>
</tr>
<tr>
<td>12</td>
<td>18 NS</td>
<td>0.000 0.000</td>
<td>0.000 0.000</td>
</tr>
<tr>
<td>13</td>
<td>18 NS</td>
<td>0.015 0.026</td>
<td>0.015 0.026</td>
</tr>
<tr>
<td>14</td>
<td>18 NS</td>
<td>0.039 0.060</td>
<td>0.039 0.060</td>
</tr>
<tr>
<td>15</td>
<td>18 NS</td>
<td>0.045 0.072</td>
<td>0.045 0.072</td>
</tr>
<tr>
<td>16</td>
<td>18 NS</td>
<td>0.065 0.099</td>
<td>0.065 0.099</td>
</tr>
<tr>
<td>17</td>
<td>18 NS</td>
<td>0.087 0.130</td>
<td>0.087 0.130</td>
</tr>
<tr>
<td>18</td>
<td>18 NS</td>
<td>0.098 0.150</td>
<td>0.098 0.150</td>
</tr>
<tr>
<td>19</td>
<td>18 NS</td>
<td>0.112 0.177</td>
<td>0.112 0.177</td>
</tr>
<tr>
<td>20</td>
<td>18 NS</td>
<td>0.043 0.065</td>
<td>0.043 0.065</td>
</tr>
<tr>
<td>21</td>
<td>18 NS</td>
<td>0.000 0.000</td>
<td>0.000 0.000</td>
</tr>
</tbody>
</table>

**Notes:**
- Deflections shown include total dead load deflection and vertical curve corrections.
- Dash lines may be cut on straight lines between ordinates or to a smooth curve at the fabricator’s option.
- All dimensions are in feet.

**Vertical Curve:**
- Top of unstrained web of plate girder.
CONCRETE PLACEMENT SEQUENCE
(CONTINUOUS PLACEMENT SHALL NOT BE PERMITTED)
TABLE OF ESTIMATED QUANTITIES

<table>
<thead>
<tr>
<th>Bar</th>
<th>Size</th>
<th>Reinforced Concrete Side</th>
<th>Class 5' Conc (HPF)</th>
<th>Structural Steel Side</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>S</td>
<td>C</td>
</tr>
<tr>
<td>A</td>
<td>#5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>#5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>#5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>#5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>#5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>#5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>#5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>#5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>#5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>#4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>#4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>#4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z</td>
<td>#4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>58700</strong></td>
<td><strong>358.6</strong></td>
<td><strong>37.5</strong></td>
<td><strong>58700</strong></td>
</tr>
</tbody>
</table>

1. Reinforcing steel weight is calculated using an approximate factor of 0.95 lbs/ft.
2. Median concrete quantities are subsidiary to slab.
3. Quantities shown for Contractor's information only.

TYPICAL MEDIAN SECTION

TYPICAL SECTION

SIDEWALK NOTES:
Installation of sidewalks and/or median dowels shall be in accordance with Item 420.11.9.1.
The holes for dowels shall be drilled with percussion (mallet) or mechanical drilling equipment shall not be used. Holes shall be wire brushed and then cleaned with compressed air which shall have no oil or water in suspension. The holes shall be clean and dry prior to placing adhesive and grout. The Anchoring adhesive shall be Type III Class A as specified in DMD-610 and shall be applied per manufacturer's instructions.

9-24-04
SECTION A-A
(Lean on bracing system)

SECTION B-B
(Lean on bracing system)

SECTION C-C
(Lean on bracing system)

FRAMING PLAN

Girder Placement Sequence:
The bolts fastened on the struts are structural bolts. The structural and erection bolts must be tightened in accordance with Item 445 “Structural Bolting” before hanging paired girders or before releasing girders for single girders.

Crimp cables must remain in tension during girder placement until End Diaphragms are attached and bolted.

End Diaphragms should be positioned and bolted after the placement of each pair or individual girder before placing another girder or pair of girders.

The girder placement sequence does not release the contractor from the responsibility of submitting girder erection plans to the Engineer of record. Girder erection plans must be submitted to the Engineer.

The contractor may reverse the girder placement sequence as stated below; however, the erection sequence must begin with the exterior girders.

1. Field splices in span one shall be completed before lifting girders to supports.
2. All end diaphragms, cross-frames, and struts shall be positioned and bolted between girders 3 and 4.
3. Girders 5 and 6 shall be lifted and placed as a paired unit.
4. All girders, cross-frames, and struts shall be positioned and bolted between girders 3 and 4.
5. Lift and place girders 3 and 4 as a paired unit.
6. Position and bolt the end diaphragm and a minimum of every other pair of struts between girders 4 and 5.
7. All end diaphragms, cross-frames, and struts shall be positioned between girders 5 and 6.
8. Lift and place girders 1 and 2 as a paired unit.
9. Position and bolt end diaphragms and a minimum of every other pair of struts between girders 2 and 3.
10. Once the first span of girders has been placed successfully, the contractor may begin lifting and placing the final girder sections. The lifting and placement of the final sections must follow the same steps and sequence explained above.

REVISED 11-24-04
STEEL GIRDER FABRICATION NOTES:

All structural steel, including connection plates and barforms, shall conform to the requirements of A369 Grade 50 A and shall be paid for at the Unit price listed for "Structural Steel, A369".

Girders tension flanges and webs are classified as tension components and shall conform to Item 442.311.

Field splices shall be made by full penetration groove welds, except for changes in section, shop or field flange and web splices in plate girders may be located as desirable to overlap plate lengths and erection procedures, except that splices will not be allowed where a 40' or less unspliced length would suffice, and all tension flange splices shall be located within the range between 0.35S and 0.55S from the end bearings. 6' length c.o. Bearing of Span in which the splice is made.

Flange and web splices shall be made by full penetration groove welds in accordance with the Item 441, "Steel Structures".

All dimensions shown in Girder Elevations are Horizontal.

Bolted Field Splice shall not be permitted on this Structure.
Top of unstressed web of plate girder.

Tenth point unless noted otherwise.

**WEB CUTTING DIAGRAM**

Note: Web may be cut on straight lines between ordinates shown or to a smooth curve at the fabricator's option. Ordinates shown include total dead load deflection and vertical curve corrections.

**CAMBER DIAGRAM TABLE**

"T" Values in feet

<table>
<thead>
<tr>
<th>CIRDER</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#1</td>
</tr>
</tbody>
</table>

| SPAN 1 | 0        | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 1        | 0.015    | 0.193    | 0.235    | 0.192    | 0.190    |
|        | 2        | 0.037    | 0.235    | 0.354    | 0.285    | 0.218    |
|        | 3        | 0.061    | 0.235    | 0.488    | 0.424    | 0.354    |
|        | 4        | 0.090    | 0.235    | 0.571    | 0.504    | 0.431    |
|        | 5        | 0.126    | 0.235    | 0.618    | 0.550    | 0.476    |
|        | 6        | 0.167    | 0.235    | 0.666    | 0.588    | 0.524    |
|        | 7        | 0.213    | 0.235    | 0.715    | 0.620    | 0.566    |
|        | 8        | 0.262    | 0.235    | 0.761    | 0.654    | 0.606    |
|        | 9        | 0.313    | 0.235    | 0.808    | 0.683    | 0.647    |
|        | 10       | 0.366    | 0.235    | 0.856    | 0.712    | 0.686    |
|        | 11       | 0.421    | 0.235    | 0.905    | 0.741    | 0.725    |
|        | 12       | 0.478    | 0.235    | 0.954    | 0.771    | 0.764    |
|        | 13       | 0.537    | 0.235    | 1.005    | 0.801    | 0.803    |
|        | 14       | 0.598    | 0.235    | 1.057    | 0.831    | 0.842    |
|        | 15       | 0.661    | 0.235    | 1.110    | 0.862    | 0.881    |
|        | 16       | 0.726    | 0.235    | 1.164    | 0.893    | 0.920    |
|        | 17       | 0.793    | 0.235    | 1.219    | 0.924    | 0.959    |
|        | 18       | 0.862    | 0.235    | 1.275    | 0.955    | 0.999    |
|        | 19       | 0.933    | 0.235    | 1.332    | 0.986    | 1.039    |
|        | 20       | 1.006    | 0.235    | 1.390    | 1.017    | 1.079    |

| SPAN 2 | 0        | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 1        | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 2        | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 3        | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 4        | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 5        | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 6        | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 7        | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 8        | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 9        | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 10       | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 11       | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 12       | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 13       | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 14       | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 15       | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 16       | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 17       | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 18       | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 19       | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |
|        | 20       | 0.000    | 0.000    | 0.000    | 0.000    | 0.000    |

**TABLE OF DEAD LOAD DEFLECTIONS**

<table>
<thead>
<tr>
<th>SPAN</th>
<th>Deflections due to post-in-place concrete only</th>
<th>Total dead load deflections (including steel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>2</td>
<td>0.099</td>
<td>0.132</td>
</tr>
<tr>
<td>3</td>
<td>0.161</td>
<td>0.228</td>
</tr>
<tr>
<td>4</td>
<td>0.206</td>
<td>0.307</td>
</tr>
<tr>
<td>5</td>
<td>0.225</td>
<td>0.357</td>
</tr>
<tr>
<td>6</td>
<td>0.213</td>
<td>0.315</td>
</tr>
<tr>
<td>7</td>
<td>0.175</td>
<td>0.261</td>
</tr>
<tr>
<td>8</td>
<td>0.123</td>
<td>0.183</td>
</tr>
<tr>
<td>9</td>
<td>0.069</td>
<td>0.103</td>
</tr>
<tr>
<td>10</td>
<td>0.005</td>
<td>0.097</td>
</tr>
<tr>
<td>11</td>
<td>0.005</td>
<td>0.097</td>
</tr>
<tr>
<td>12</td>
<td>0.000</td>
<td>0.097</td>
</tr>
<tr>
<td>13</td>
<td>0.000</td>
<td>0.097</td>
</tr>
<tr>
<td>14</td>
<td>0.000</td>
<td>0.097</td>
</tr>
<tr>
<td>15</td>
<td>0.000</td>
<td>0.097</td>
</tr>
<tr>
<td>16</td>
<td>0.000</td>
<td>0.097</td>
</tr>
<tr>
<td>17</td>
<td>0.000</td>
<td>0.097</td>
</tr>
<tr>
<td>18</td>
<td>0.000</td>
<td>0.097</td>
</tr>
<tr>
<td>19</td>
<td>0.000</td>
<td>0.097</td>
</tr>
<tr>
<td>20</td>
<td>0.000</td>
<td>0.097</td>
</tr>
</tbody>
</table>
LEGEND

\(\triangledown\) • HOLD OR LIFT CRANE

\(\bigcirc\) • TIE DOWN

\(\square\) • TEMPORARY SUPPORT STRUCTURE

NOTE:
GIRDERS ARE ERECTED IN PAIRS.
LEGEND

✦ • HOLD OR LIFT CRANE

⊙ • TIE DOWN

☐ • TEMPORARY SUPPORT STRUCTURE

NOTE:

GIRDERS ARE ERECTED IN PAIRS.
NCHRP 12-79

EISCR1
NOTES:

1. **STEEL DEAD LOAD INCREASED BY 5% TO ACCOUNT FOR MISC. DETAILS.**

2. **FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.**

**TYPICAL CROSS - FRAME**
STAGE 1

STAGE 2

LEGEND

△ = HOLD OR LIFT CRANE
○ = TIE DOWN
□ = TEMPORARY SUPPORT STRUCTURE

NCHRP 12-79
BRIDGE EISCR1
GENERAL ERECTION PROCEDURE
SHEET 4 OF 4
NCHRP 12-79

EISCS3
TYPICAL SECTION

8.000" CONC. DECK SLAB

NCHRP 12-79
BRIDGE EISCS3
CROSS-SECTION
SHEET 2 OF 5
END DIAPHRAGM @ ABUT. 1

END DIAPHRAGM @ ABUT. 2

INTERMEDIATE DIAPHRAGM - TYPE I

INTERMEDIATE DIAPHRAGM - TYPE II
STAGE I
NOTE: HORIZONTAL DIMENSIONS ARE RADIAL TO "SURVEY -75" OR "EXIST-1-26."

STAGE II
NOTE: HORIZONTAL DIMENSIONS ARE RADIAL TO "SURVEY -75" OR "EXIST-1-26."

MODIFIED DECK CONSTRUCTION JOINT LOCATIONS.
NOTES

1. PROVIDE 6/4" REBAR BOLSTERS IN ALL JOISTS TO SUPPORT THE BOTTOM WIDTH OF "A" BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH QUALITY (C31) CEMENT FOR METAL DECK PLACEMENT IN "A" BARS, WITH A HEIGHT TO SUPPORT THE BOTTOM WIDTH OF "A" BARS A CLEAR DISTANCE OF 2 1/2 ABOVE THE TOP OF THE REMOVABLE FORMS.

2. PROVIDE 1" REBAR BOLSTERS AT THE TOP OF EACH "A" BARS TO SUPPORT THE TOP WIDTH OF "A" BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS CEMENT FOR METAL DECK PLACEMENT IN "A" BARS, WITH A HEIGHT TO SUPPORT THE TOP WIDTH OF "A" BARS A CLEAR DISTANCE OF 2 1/2 ABOVE THE TOP OF THE REMOVABLE FORMS.

3. STAIRS IN PLACE METAL FORMS (C31)

4. STRUCTURAL STEEL Erection IN A STAGE SHALL BE COMPLETE BEFORE FALSEWORK OR FORMS ARE PLACED ON THE SPAN.

5. The CONTRACTOR MAY, WHEN NECESSARY, PROPOSE A SCHEME FOR AVOIDING INTERFERENCE BETWEEN STAIR-IN-PLACE METAL FORM SUPPORTS, OR FORMS, AND BEAM/CHORD STIFFENERS OR CONNECTOR PLATES. THE PROPOSAL SHALL BE INTEGARATED AS APPROPRIATELY ON EITHER THE STAIR WORKING DRAWINGS OR THE STAIR-IN-PLACE METAL FORM WORKING DRAWINGS.

6. PRECIPITATE CONCRETE IN A STAGE SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST.

7. MEDIAN HARPERS SHALL NOT BE CAST UNTIL ALL STAGE II SLAB CONCRETE HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

TYPICAL SECTION – STAGE I

PROJECT NO.  R-28139
BUNCOMBE COUNTY

RELEASE FOR CONSTRUCTION
DATE:  07-20-06

SUPERSTRUCTURE

DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION
STAGE 1
**TYPICAL SECTION – STAGE II**

**NOTES**

FOR CLOSURE POUR DETAILS, SEE "TYPICAL SECTION - STAGE 2" SHEET.

FOR NOTES, SEE "TYPICAL SECTION - STAGE 2" SHEET.
FRAMING PLAN - STAGE 1

NOTES

ALL INTERMEDIATE CROSS FRAMES ARE
RAISED TO % SURVEY -13.
ALL DIMENSIONS SHOWN ARE HORIZONTAL.
CONNECTOR PLATES NOT SHOWN FOR CLARITY.

BEARING STIFFENERS SHALL BE PLACED NORMAL TO WEB OF THE
CROSS AND SHALL BE PLUMB.

FOR HIGH PERFORMANCE STAGE, THE FABRICATOR MAY USE A
THREE-MACHINE CONTROLLED PROCESS (3-MOP) PLATE
STEEL UP TO 2 INCHES IN THICKNESS.

FOR HIGH PERFORMANCE STEEL, SEE SPECIAL PROVISIONS.

SHOP SPREDES ARE PERMITTED TO LIMIT THE MAXIMUM REQUIRED
FLANGE PIECE LENGTH TO 60 FEET AND WEB SPREAD LENGTHS TO
40 FEET. PERMITTED FLANGE AND WEB SPREAD SPREADS SHALL NOT
BE LOCATED WITHIN 11 FEET OF MAXIMUM DEAD LOAD DEFLATION.

MINIMUM SPREAD BETWEEN CONNECTOR PLATE WELDS OR
TRANSVERSE SPREAD WELDS AND WEB OR FLANGE SPREAD
SPREADS.

SHEAR STOPS ON SPREADS MAY BE REQUIRED TO COMPLETE
FRAMING SPREADS ON FLANGE.

CHAMFER Y-NOTCH TESTS ARE REQUIRED FOR ALL FLANGE
PLATES, ALL WEB PLATES, ALL BEARING FLANGE SPREADS
PLATES AND ALL WEB SPREADS SPECIFIED IN ARTICLES 1072-9.

CHAMFER Y-NOTCH TESTS FOR SPECIAL PROVISIONS.

FOR SHOPPING STEEL STRUCTURAL MEMBERS, SEE SPECIAL
PROVISIONS.

THE CONTRACTOR SHALL MAINTAIN STABILITY OF CURVED ORDERS
UNTIL ALL FIELD SPREADS AND CROSS FRAME CONNECTIONS
HAVE BEEN COMPLETED. THE CONTRACTOR'S ATTENTION IS CALLED TO
THE LARGE CURVED DEFORMATIONS AND MOVEMENTS.

FOR FALDURION AND FORNORNEN, SEE SPECIAL PROVISIONS.

STRUCTURAL STEEL ERECTION SHALL BE COMPLETE
BEFORE ANY FORMS ARE PLACED ON ANY CROSS FRAME.

INTERMEDIATE CROSS FRAMES OF CROSS 3 SHALL NOT BE ATTACHED TO
ORDERS 1 OR ORDER 7 UNTIL ORDER 9 HAS REACHED A
COMPREHENSIVE STRENGTH OF 80 P.S.I.

INTERMEDIATE CROSS FRAMES OF CROSS 3 SHALL NOT BE ATTACHED TO
ORDER 14 OR ORDER 15 UNTIL ORDER 16 HAS REACHED A
COMPREHENSIVE STRENGTH OF 80 P.S.I.

THE DIAGONAL AND CHORD LIMITS FOR EACH INTERMEDIATE
CROSS FRAME OF CROSS 3 SHALL BE DETERMINED BY THE FABRICATOR
AND SHALL BE STRAIGHT LINES DRAWN FROM THE
ADJOINT ORDERS AT THE TIME OF INSTALLATION.

FABRICATION OF STEEL ORDERS MAY BE ACCOMPLISHED BY CUTTING
PLATES OR BY HEAT TREATING TO THE REQUIRED STIRLING ORDER
ORDERS, SEE SPECIAL PROVISIONS.
SOLE PLATE DETAILS

<table>
<thead>
<tr>
<th>GIRDERS NO.</th>
<th>END BENT 1</th>
<th>END BENT 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2'-4&quot; 1-1/4&quot;</td>
<td>0.005</td>
<td>0.007</td>
</tr>
<tr>
<td>2'-6&quot; 2-1/4&quot;</td>
<td>0.007</td>
<td>0.009</td>
</tr>
<tr>
<td>2'-6&quot; 2-1/2&quot;</td>
<td>0.007</td>
<td>0.009</td>
</tr>
<tr>
<td>2'-6&quot; 2-3/8&quot;</td>
<td>0.007</td>
<td>0.009</td>
</tr>
</tbody>
</table>

ANCHOR BOLT ASSEMBLY
(END BENT 2)

TABLE FOR PLATE SETTING DATA
(Expansion Pot Bearings)

<table>
<thead>
<tr>
<th>TEMPERATURE</th>
<th>AT TIME</th>
<th>OF SETTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>30°F</td>
<td>60°F</td>
<td>90°F</td>
</tr>
<tr>
<td>END BENT 2</td>
<td>0°</td>
<td>0°</td>
</tr>
</tbody>
</table>

* Correction for end rotation due to weight of slab and composite dead load.

TEMPERATURE SETTING DETAIL

<table>
<thead>
<tr>
<th>BEARING LOCATION</th>
<th>LOADS (Kips)</th>
<th>TOTAL MOVEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE-FIXED</td>
<td>881</td>
<td>310</td>
</tr>
<tr>
<td>PRE-EXPOSED</td>
<td>881</td>
<td>310</td>
</tr>
</tbody>
</table>

PROJECT NO. R-2813B
BUNCOMBE COUNTY
STATION: 48 + 63.74 "L" R.O.C.

RELEASE FOR CONSTRUCTION DATE: 12/1/19
NCHRP 12-79

EISSS3
NOTES

1. All structural steel shall be A36 with grade B213A steel and painted in accordance with system R of Article 447 of the Special Specifications unless otherwise noted on the plans.

2. All dimensions shown are horizontal or vertical, unless otherwise noted.

3. All field connections to be 302.3 mm dia. 3% yield strength bolts unless otherwise noted.

4. Tension on the A36 steel bolts shall be calculated using direct tension indicated herein in accordance with Article 440-13 of the Special Specifications.

5. Bearing stiffeners are to be placed normal to the web of the girder at ends and 4 (4-1/2 in. wide) and shall be plumb. At all points of support in spans 4-1/2, all anchor bolts shall be threaded or stud bolt with an additional stud bolt of the size of the nut and bolt shall then be brazed with a sharp-pointed tool.

6. All joints are to be welded to the maximum required flange plate on the upper side and the welds shall be of the required size as noted. Maximum weld load shall be 2500 lbs with 4 hoisting connections of 250 lbs each. Keep 760 mm minimum between weld and flange shop splice. Keep 300 mm minimum between connector plate or gusset plate and web or flange shop splice.

7. Studs on columns may be sheared up to 3000 if necessary to clear flange splice weld.

8. End of columns shall be plumb. A sharp thin iron sheet is required for web plates between flange plates, to prevent web plates from chipping side plates of used for all columns in spans 4-1/2.

9. Shelf angles are required for web plates between flange plates, to prevent web plates from chipping side plates of used for all columns in spans 4-1/2.

DIAPHRAGM AT BENT 1 MODIFIED TO INCLUDE STUDS.

REV. NO 1 - ADDED EVAZOTE JOINT AT BENT 1.

ALL FIELD CONNECTIONS TO BE 22.23 mm DIA. HIGH STRENGTH BOLTS UNLESS NOTED.

ALL DIMENSIONS SHOWN ARE HORIZONTAL OR VERTICAL, UNLESS OTHERWISE NOTED.
FOR ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. THE THREADS OF THE NUT AND BOLT SHALL THEN BE BURIED WITH A SHARP POINTED TOOL.

THE PAYMENT FOR THE PIPE SLEEVES SHALL BE INCLUDED IN THE SEVERAL PAY ITEMS.

FOR ASH蓬勃 W30 STRUCTURAL STEEL SOLE PLATE, NUTS SHALL BE FULL LOW DRIED BOLTS AND NUTS SHALL BE replacements in accordance with the standard specifications.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTA M270 GRADE 345W STRUCTURAL STEEL. THE REQUIREMENTS OF ASTA M270, SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

WHEN FIELD WELDING THE SOLE PLATE TO THE GIRDER FLANGE SUB-TYPE SUBS DEPENDABLE, USE CLEAR THERMISTORS OR OTHER SUITABLE MEANS TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 149°C. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

---

**LOAD RATINGS**

| TYPE V | 3,453 kN |

---

**SUPERSTRUCTURE ELASTOMERIC BEARING DETAILS**

**USE 0014 X SCALE FOR PE SEAL**
LEGEND

☑️ = HOLD OR LIFT CRANE

◯ = TIE DOWN

☐ = TEMPORARY SUPPORT STRUCTURE

NCHRP 12-79
BRIDGE EBSS3
GIRDER ERECTION
PROCEDURE
SHEET 1 OF 1
NCHRP 12-79

EISSS5
**BEARING SCHEDULE**

<table>
<thead>
<tr>
<th>GROUP</th>
<th>MAXIMUM VERTICAL LOAD</th>
<th>MINIMUM VERTICAL LOAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9,000 KIPS</td>
<td>9,000 KIPS</td>
</tr>
<tr>
<td>2</td>
<td>10,000 KIPS</td>
<td>10,000 KIPS</td>
</tr>
<tr>
<td>3</td>
<td>11,000 KIPS</td>
<td>11,000 KIPS</td>
</tr>
<tr>
<td>4</td>
<td>12,000 KIPS</td>
<td>12,000 KIPS</td>
</tr>
<tr>
<td>5</td>
<td>13,000 KIPS</td>
<td>13,000 KIPS</td>
</tr>
</tbody>
</table>

**HORIZONTALLY載荷**

<table>
<thead>
<tr>
<th>GROUP</th>
<th>MAXIMUM VERTICAL LOAD</th>
<th>MINIMUM VERTICAL LOAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9,000 KIPS</td>
<td>9,000 KIPS</td>
</tr>
<tr>
<td>2</td>
<td>10,000 KIPS</td>
<td>10,000 KIPS</td>
</tr>
<tr>
<td>3</td>
<td>11,000 KIPS</td>
<td>11,000 KIPS</td>
</tr>
<tr>
<td>4</td>
<td>12,000 KIPS</td>
<td>12,000 KIPS</td>
</tr>
<tr>
<td>5</td>
<td>13,000 KIPS</td>
<td>13,000 KIPS</td>
</tr>
</tbody>
</table>

**MINIMUM DESIGN ROTATIONS (RADIAN)**

| ANGLE | 0.045 |

**ANTICIPATED MOVEMENTS**

| TRANSVERSE | 1.2 INCHES |
| DOWNSLIDE | 1.2 INCHES |

**NUMBER OF BEARINGS**

| GROUP | 6 EACH |

**BOLTED EXPANSION**

| MATERIAL | 8 EACH |

**ALLOWABLE BEARING PRESSURE**

| MATERIAL | 5,000 PSF |

**ALLOWABLE CONCRETE PRESSURE**

| MATERIAL | 0.5 PSF |

**ANCHORAGE REQUIREMENTS**

| MATERIAL | SEE DETAIL TABLE |

**ALLOWABLE COEFFICIENT OF FRICTION**

| MATERIAL | 0.08 |

**PAINT ALL EXPOSED STEEL PLATES WITH THE SAME PAINT SYSTEM AS THE MAIN BRIDGE MEMBER.**

---

**SECTION A-A**

**EXPANSION BEARING DETAILS**

**TEMPORARY GIRD BEARING DETAILS**

**PLAN**

- 1-1/2" HOLE IN MASONRY PLATE & 2" HOLE IN SOLE PLATE FOR 1-1/2" SWEDGED ANCHOR BOLT + 4 REQUIRED

**SECTION B-B**

**EXPANSION BEARING DETAILS**

**PLAN**

- 1-1/2" HOLE IN MASONRY PLATE & 2" HOLE IN SOLE PLATE FOR 1-1/2" SWEDGED ANCHOR BOLT + 4 REQUIRED

---

**COMMONWEALTH OF PENNSYLVANIA**

**DEPARTMENT OF TRANSPORTATION**

**BUREAU OF DESIGN**

**CUMBERLAND COUNTY**

**S.R. 0581, SECTION 01**

**S-R 0581 - 02**

**Wallingford, Stratford, Day, 105-7997 over R.R. 481**

**SINGLE SPAN COMPOSITE STEEL MULTI ORDER BRIDGE BEARINGS**

**RECOMMENDED**

**MAY 13, 1960**

**S-20590**
LEGEND

- • HOLD OR LIFT CRANE
- ○ TIE DOWN
- □ TEMPORARY SUPPORT STRUCTURE

STAGE 3
LEGEND

☑️ • HOLD OR LIFT CRANE

〇 • TIE DOWN

☐ • TEMPORARY SUPPORT STRUCTURE

NCHRP 12-79
BRIDGE ETC14M
GIRDER ERECTION
PROCEDURE
SHEET 1 OF 1
NCHRP 12-79

ETCCCR15
1. See Sheet 45 for bearing layout and location-specific dimensions.

2. Design bolts connection between top plate and shank plate for a minimum of 12 times the combined specified horizontal loads.

3. Anchor bolts shall be designed to transmit all loads in the plane of the connections without interference from anchor bolts or other obstructions after bearing is installed.

4. Tapped hole arrangement shown may be replaced by bolting down through the grout bottom plate using slotted washer plates below the bolt heads.

5. Holes in top plate may be slotted or oversized as required to facilitate steel erection, if oversize holes are used, the connection shall be designed as a shear connection.

6. Note that specified bearing loads are intended for working stress design and are included in the design of the monotube column of Table 2.21A of AASHTO Standard Specifications. No further reduction is permitted.

7. Crown angle shown is left hand forward 30° - such angles that are right hand forward will be opposite to that shown.

8. Grout shall be high-modulus, flame retardant epoxy in grout, Drakol, or accepted equal.

9. For payment purposes, grouting materials and installation are considered incidental to the pay item for the bearing assembly.

10. Holes in Masonry Plate shall be a maximum of 1/2" larger than the specified anchor bolt diameters.

11. Top Plate, Shank Plate and Masonry Plates are aligned with the grout and/or the pier below, even for guided bearings with a non-zero skew angle, the movement direction is as shown.

12. Masonry Plate thickness to be selected by the bearing designer, minimum 12".

13. Bearing Bolts shall be in accordance with ASTM F814 and F820 and hot-dip galvanized in accordance with AASHTO M32.
<table>
<thead>
<tr>
<th>FIELD SPICE</th>
<th>STATION</th>
<th>TOP FLANGE SPICE</th>
<th>WEB SPICE</th>
<th>BOTTOM FLANGE SPICE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>T1</td>
<td>T2</td>
<td>T3</td>
</tr>
<tr>
<td>1</td>
<td>450E+178,92</td>
<td>(\bar{A})</td>
<td>(\bar{A})</td>
<td>2-7/16&quot;</td>
</tr>
<tr>
<td>2</td>
<td>450E+178,92</td>
<td>(\bar{A})</td>
<td>(\bar{A})</td>
<td>2-7/16&quot;</td>
</tr>
<tr>
<td>3</td>
<td>450E+178,92</td>
<td>(\bar{A})</td>
<td>(\bar{A})</td>
<td>2-7/16&quot;</td>
</tr>
<tr>
<td>4</td>
<td>450E+178,92</td>
<td>(\bar{A})</td>
<td>(\bar{A})</td>
<td>2-7/16&quot;</td>
</tr>
<tr>
<td>5</td>
<td>450E+178,92</td>
<td>(\bar{A})</td>
<td>(\bar{A})</td>
<td>2-7/16&quot;</td>
</tr>
<tr>
<td>6</td>
<td>450E+178,92</td>
<td>(\bar{A})</td>
<td>(\bar{A})</td>
<td>4-7/16&quot;</td>
</tr>
<tr>
<td>7</td>
<td>450E+178,92</td>
<td>(\bar{A})</td>
<td>(\bar{A})</td>
<td>4-7/16&quot;</td>
</tr>
<tr>
<td>8</td>
<td>450E+178,92</td>
<td>(\bar{A})</td>
<td>(\bar{A})</td>
<td>4-7/16&quot;</td>
</tr>
<tr>
<td>9</td>
<td>450E+178,92</td>
<td>(\bar{A})</td>
<td>(\bar{A})</td>
<td>2-7/16&quot;</td>
</tr>
<tr>
<td>10</td>
<td>450E+178,92</td>
<td>(\bar{A})</td>
<td>(\bar{A})</td>
<td>3-7/16&quot;</td>
</tr>
</tbody>
</table>

NOTES
1. SEE SHEET 55 FOR TYPICAL FIELD SPICE LAYOUTS THAT DEFINE THE CONTENTS OF THIS TABLE.
2. ALL BOLTS IN ORDER SPACES ARE \(\bar{A}\) IN DIAMETER ASTM A325 TYPE L.
3. ALL HOLES SHALL BE STANDARD DIAMETER - NO OVERSIZE HOLES.
4. ALL CONNECTIONS SHALL BE FABRICATED AND ASSEMBLED AS SUPER-CRITICAL CONNECTIONS.
5. ALL SPICE PLATES SHALL BE GRADE HPS TOW.

FIELD SPICE TABLE
NOT TO SCALE

TYPICAL SECTION AT DIAPHRAGM

DIAPHRAGM PLATE FIT TIGHT TO TOP FLANGE BUT NOT WELDED

COLLAR OPENING

LARGER WELD AT CROSS FRAME LOOSING ONLY

CLIP LEGS TO CLEAR WEB

LIGHTING CONDUIT SEE LIGHTING PLANS

EXTERNAL CROSS FRAME AT SOME LOCATIONS SEE SHEET 50

PLAN VIEW

DETAIL 1

DETAIL 2

TYPICAL SECTION AT STRUT

NOTES
1. BOLTS CONNECTING STRUTS TO TOP FLANGE ARE 3/4" DIAMETER ASTM A325 TYPE L
2. BOLTS CONNECTING DIAPHRAGM WEB PLATES TO DOUBLE ANGLE TOP STRUTS ARE 3/4" DIAMETER ASTM A325 TYPE L
3. DIAPHRAGMS AND STRUTS ARE ALIGNED NORMAL TO THE GRID UNLESS OTHERWISE NOTED.
NOTES:
1. ALL BOLTS CONNECTING CROSS FRAMES ARE 2 Diam. ASTM A572 Type 3.
2. ALL HOLES SHALL BE STANDARDS DIAMETER- NO OVERTSIZED HOLES.
3. ALL CONNECTIONS SHALL BE FABRICATED AND ASSEMBLED AS SLIP-CRITICAL CONNECTIONS.
4. CROSS FRAME WELS AND FLANGES SHALL BE GRADE CRS 70.
5. STEEL GRADE FOR CONNECTION PLATES SHALL MATCH THE BOX GIRDERS STEEL GRADE AT THE CROSS FRAME LOCATION.
6. CROSS FRAMES ARE ALIGNED NORMAL TO THE GIRDERS.
7. CONNECTION PLATES SHALL BE LOCATED DIRECTLY IN LINE WITH THE CORRESPONDING PLATE DIAPHRAGM LOCATED INSIDE THE BOX.
LEGEND

- Hold or lift crane
- Tie down
- Temporary support structure

STAGE 5

STAGE 6
CONSTRUCTION SEQUENCE

A. BEAM ERECTION

STAGE 1
1. Construct end bends, pier footings, and columns, surrounding side walls and embankments.
2. Construct erection towers and falsework, protect erection towers with temporary barriers. See note 1.

STAGE 2
1. Erect end bent girder sections.

STAGE 3
1. Place remaining pier girder sections.

STAGE 4
1. Remove erection towers and temporary barrier.

B. DECK POURS

STAGE 5A
1. Place positive moment deck pours following pouring sequence on Sheet B-20. See note 3.

STAGE 5B
1. Place remaining deck pours.

STAGE 7
1. Cast concrete parapets.

NOTES:

1. Erection towers shall be designed by a Florida P.E., calculations and drawings shall be submitted for approval.
2. Girders shall be supported temporarily on the erection towers by a neoprene bearing pad.
3. Contractor is responsible for the temporary stability of the structure and shall engage the services of a Specialty Engineer to develop a detailed erection sequence and to verify the adequacy of the structure to resist the actual compensation loads.
4. Erection steps shown are a schematic representation of the assumptions made for design. Contractor shall coordinate construction details with the maintenance of traffic requirements shown in the roadway plans.
5. A sequence of construction conforming to the plans for the maintenance of traffic during construction, is shown on this sheet. Changes in sequence are permissible, but will require structural analysis by the contractor's Specialty Engineer, and they shall be reviewed and approved by the Engineer. Girder deflections and cambered elevations shall be computed by the Contractor and reviewed by the Engineer. Fabrication of steel boxes shall not commence until the shop drawings have been approved by the Engineer.
TYPICAL SECTION

NOTES:
1. * denotes dimensions along cross slope.

STEEL ALTERNATIVE - BRIDGE NO.72070

FINANCIAL PROJECT IDENTIFIED

FLORIDA DEPARTMENT OF TRANSPORTATION

3A

ENGINEER OF RECORD: LOCHNER

HANS W. LOCHNER, INC.

03-04-09

SHEET NO. 1

TYPICAL SECTION (Sheet 1 of 2)

SR 9A & SR 202 (JAMES T. BUTLER) INTERCHANGE
RAMP AS OVER RAMP C2 AND S.T.A.
36'-6"  33'-0"
39 Bars 5/8" @ 1'4" (Top of slab over piers)
40 Bars 5/8" @ 1'6" (Top of slab)

- Continuous V-Groove

Børs 6 ft
Bar E
5/8" Børs

Traffic Rolling Barrier (32° F-Shape) (Typ)
2" conduit
1/2" Continuous V-Groove

Reinforcing geometry about Bridge

*T. Bar 55 & 5Y bled with Traffic Rolling Barrier.

9" 3" 6'-0"

* 8"-2" (Typ along slope) 6'-0" 1'-0"

0.08' J'

13 Bars @ 6" 1'-0"

8" 5/8" Børs

Pour

Pour 1

8" 402 or 463

Pour 2

Pour 3

Pour 4

3'-0"

10 Bars @ 61/2" (Typ)

1-0"

Børs 4B spacing

(100 @ 6") (Bottom of slab)

3" 13 Bars @ 6" 1'-0"

Børs 5/8" or 5V

1/2" Slab

NOTE:
1. For Reinforcing Bar List see sheet B-39.
2. For your location, see Slab Pouring Sequence & Superstructure Details.

DECK SECTION AT DRAIN INLET - END BENT 1

FLORIDA DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION (Sheet 2 of 2)

STEEL ALTERNATIVE - BRIDGE NO. 72070
NOTES
1. For Reinforcing Bar List see sheet B-39.
2. Work this sheet with sheets B-17 & B-20.
3. For Bars 44, vary lap lengths accordingly, starting from a minimum of 2'-6" for the longest bar.
4. For Superstructure Section and bottom reinforcement spacing see sheet B-17.
5. For Estimated Quantities see sheet B-17.
6. For Section M-W see sheet B-20.
7. For construction joint locations and resting sequence see sheet B-20.
8. Alternate splice locations for Bars 585.

PLAN

STEEL ALTERNATIVE - BRIDGE NO. 73076

SUPERSTRUCTURE SPAN I

ECDriver

FLORIDA DEPARTMENT OF TRANSPORTATION

11/24/04

10910-1-42-09

SUPERIOR BRIDGE ENGINEERING

CIVIL ENGINEERS

RAMP A2 OVER RAMP C2 AND J.T.B. BLVD.
NOTES:
1. For Reinforcing Bar List see sheet B-39.
2. Work this sheet with sheets B-17 & B-20.
3. For Bars 450, vary lap lengths accordingly, starting from a minimum of 12'-0" for the longest bar.
4. For Superstructure Section and bottom reinforcement spacing see sheet B-17.
5. For all other Quantities see sheet B-17.
6. For Situation M-W see sheet B-20.
7. For construction joint location and pouring sequence see sheet B-20.
8. Alternate splice locations for Bars 505.
**FIELD WELD**

Do not weld to or permit weld spatter on supporting Steel Striders, Diaphragms, Bracing, etc.

Electrical grounding to structural steel is prohibited. See Section 400-5.7 of the Specifications for Field Welding of SJP Forms. In place and painting of the top flange (Typ.).

**SLAB POURING SEQUENCE**

(2 Span Continuous Unit)

**SECTION M'-M' (END BENT 1)**

**SECTION Z-Z**

**SECTION M-M (PIER 2)**

**NOTE:**

1. No unit shall be placed adjacent to a previously placed unit that is not a minimum of 72 hours old.

2. After placement of the first unit, succeeding placements shall begin at the end away from and proceed toward the most previously placed unit.

3. The Contractor may submit for approval a revised casting sequence. The submitted shall include structural analysis by the specialty engineer reflecting the new casting sequence and its effect on the canyon diagram. The revision shall be in conformance with Chapter 2B of the Plans Preparation Manual.
### Camber Diagram

**Location**

**Box B Centerline of Web Box B 17**

<table>
<thead>
<tr>
<th>Item</th>
<th>SPAN 1</th>
<th>B</th>
<th>0.0</th>
<th>0.2</th>
<th>0.3</th>
<th>0.4</th>
<th>0.5</th>
<th>0.6</th>
<th>0.7</th>
<th>0.9</th>
<th>1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel (in.)</td>
<td>B/A</td>
<td>0.00</td>
<td>-0.50</td>
<td>-1.20</td>
<td>-1.90</td>
<td>-2.50</td>
<td>-3.00</td>
<td>-3.50</td>
<td>-4.00</td>
<td>-4.60</td>
<td>-5.20</td>
</tr>
<tr>
<td>Slab (in.)</td>
<td>B/A</td>
<td>0.00</td>
<td>-0.30</td>
<td>-0.70</td>
<td>-1.20</td>
<td>-1.70</td>
<td>-2.20</td>
<td>-2.70</td>
<td>-3.20</td>
<td>-3.70</td>
<td>-4.20</td>
</tr>
<tr>
<td>Total (in.)</td>
<td>B/A</td>
<td>0.00</td>
<td>-0.80</td>
<td>-1.90</td>
<td>-3.00</td>
<td>-4.10</td>
<td>-5.20</td>
<td>-6.30</td>
<td>-7.40</td>
<td>-8.50</td>
<td>-9.60</td>
</tr>
<tr>
<td>Vertical Curve (in.)</td>
<td>B/A</td>
<td>0.00</td>
<td>0.80</td>
<td>1.60</td>
<td>2.30</td>
<td>3.00</td>
<td>3.70</td>
<td>4.40</td>
<td>5.10</td>
<td>5.80</td>
<td>6.50</td>
</tr>
<tr>
<td>Required Camber (in.)</td>
<td>B/A</td>
<td>0.00</td>
<td>3.70</td>
<td>6.73</td>
<td>9.73</td>
<td>12.73</td>
<td>15.73</td>
<td>18.73</td>
<td>21.73</td>
<td>24.73</td>
<td>27.73</td>
</tr>
</tbody>
</table>

**Box B Centerline of Web Box B 18**

<table>
<thead>
<tr>
<th>Item</th>
<th>SPAN 1</th>
<th>B</th>
<th>0.0</th>
<th>0.2</th>
<th>0.3</th>
<th>0.4</th>
<th>0.5</th>
<th>0.6</th>
<th>0.7</th>
<th>0.9</th>
<th>1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel (in.)</td>
<td>B/A</td>
<td>0.00</td>
<td>-0.50</td>
<td>-1.20</td>
<td>-1.90</td>
<td>-2.50</td>
<td>-3.00</td>
<td>-3.50</td>
<td>-4.00</td>
<td>-4.60</td>
<td>-5.20</td>
</tr>
<tr>
<td>Slab (in.)</td>
<td>B/A</td>
<td>0.00</td>
<td>-0.30</td>
<td>-0.70</td>
<td>-1.20</td>
<td>-1.70</td>
<td>-2.20</td>
<td>-2.70</td>
<td>-3.20</td>
<td>-3.70</td>
<td>-4.20</td>
</tr>
<tr>
<td>Total (in.)</td>
<td>B/A</td>
<td>0.00</td>
<td>-0.80</td>
<td>-1.90</td>
<td>-3.00</td>
<td>-4.10</td>
<td>-5.20</td>
<td>-6.30</td>
<td>-7.40</td>
<td>-8.50</td>
<td>-9.60</td>
</tr>
<tr>
<td>Vertical Curve (in.)</td>
<td>B/A</td>
<td>0.00</td>
<td>0.80</td>
<td>1.60</td>
<td>2.30</td>
<td>3.00</td>
<td>3.70</td>
<td>4.40</td>
<td>5.10</td>
<td>5.80</td>
<td>6.50</td>
</tr>
<tr>
<td>Required Camber (in.)</td>
<td>B/A</td>
<td>0.00</td>
<td>3.70</td>
<td>6.73</td>
<td>9.73</td>
<td>12.73</td>
<td>15.73</td>
<td>18.73</td>
<td>21.73</td>
<td>24.73</td>
<td>27.73</td>
</tr>
</tbody>
</table>

**Steel Alternative - Bridge No. 72870**

---

## Camber Diagram (1 of 2)

**Engineer of Record:**

**Florida Department of Transportation (FDOT)**

**Location:**

**BRIE: SR 9A & SR 202 (JAMES T. BUTLER) INTERCHANGE RAMP AZ OVER RAMP CZ AND JTB.**

**Record No.:**

---

![Camber Diagram](image-url)
NOTES FOR STRUCTURAL STEEL BOXES

1. STRUTS AND CROSS FRAMES ARE RADIAL TO CENTER LINE OF BOX A, WHEREAS DIAPHRAGMS ARE ALONG CENTER LINE OF SUPPORTS.
2. ALL LONGITUDINAL AND TRANSVERSE DIMENSIONS ARE IN A HORIZONTAL PLANE, UNLESS OTHERWISE NOTED OR SHOWN.
3. DIMENSIONS FOR STRESS REVERSIBLE AND TENSION REGIONS ARE ALONG W BOXES.
4. FOR DETAILS OF WELDING FOR THE FOLLOWING ITEMS, SEE SHEET B-32.
   a. TRANSITION BETWEEN WELDABLE PLATE AND WELDABLE PLATE
   b. FLANGE TRANSITION
   c. WEBSHOP WELD
   d. FLANGE TO WELD WELD (TOP AND BOTTOM)
   e. FOR INTERNAL CROSS FRAMES, EXTERNAL CROSS FRAMES AND DETAILS, SEE SHEETS B-30 AND B-31.
   f. FOR END BEAM AND FIRST DIAPHRAGM, SEE SHEETS B-26 THRU B-29.
   g. FOR ACCESS OPENING DETAILS, SEE SHEET A-48.
   h. FOR ACCESS PANEL DETAILS, SEE SHEET A-25.
   i. FOR DETAILS OF SHEAR CONNECTORS AND CROSS-TRANSITION OF FLANGE, SEE SHEET B-32.
   j. FOR FIELD SPICE DETAILS, SEE SHEET B-33.
   k. ALL BOX GIRDERS AND WEBS, DIAPHRAGMS, BEARING STIFFENERS, SPLICE PLATES, AND ALL OTHER COMPONENTS INCLUDING TEMPORARY CROSS FRAMES AND INTERNAL CROSS FRAMES SHALL BE ASTM A470 GRADE 50 STEEL UNLESS NOTED OTHERWISE.


14. a. DENOTES STRESS REVERSIBLE REGION
   b. DENOTES TENSION IN TOP FLANGE
   c. DENOTES TENSION IN BOTTOM FLANGE
   d. FOR LAYOUT AND DETAILS OF POWER RECEPTACLES INSIDE THE BOXES, SEE HIGHWAY LIGHTING PLANS.
   e. CROSS- FRAMES INSIDE BOX GIRDERS AND TOP LATERAL BRACING SHALL BE INSTALLED PRIOR TO SHIPMENT AND ERECTED TO THE GIRDERS.
   f. A SEE GENERAL NOTES ON SHEET A-44 FOR STRUCTURAL MATERIALS, CONNECTIONS WELDING, PAINTING, ETC.
   g. ALL BOLT CONNECTIONS SHALL BE MADE WITH A36/A-325 HIGH STRENGTH BOLTS (SHEW CRITICAL BOLT CONNECTIONS, THE SPLICE CONNECTION SHALL BE MADE WITH 50-8 HIGH STRENGTH BOLTS AND ALL OTHER CONNECTIONS SHALL BE MADE AS INDICATED ON THE PLANS.
   h. ALL PARTS OF EACH FIELD SPICE SHALL BE COMPLETELY SHIPPED ASSEMBLED TAKING INTO ACCOUNT THEIR RELATIVE POSITION IN THE FINISHED STRUCTURE DUE TO GRADE AND CAMBER.
   i. GENERAL READING OF THE HOLES FOR EACH FIELD SPICE SHALL BE REQUIRED WHILE ALL PARTS FOR EACH SPICE ARE COMpletely SHIPPED ASSEMBLED IN THE CORRECT POSITION.
   j. ALL DIAPHRAGMS AT BEARINGS SHALL BE PLACED TO BE VERTICAL AFTER DEAD LOAD DEFLECTIONS.
   k. SHEAR PLATES AT CLEAR AS REQUIRED.
   l. SHEAR PLATES AT CLEAR AS REQUIRED.
   m. CONTRACTOR SHALL SUPERVISE AND ERECT EACH BOX GIRDERS DURING CONSTRUCTION, LIFTING POINTS, SHALL BE DETERMINED BY THE CONTRACTOR AND SHALL BE LOCATED SUCH THAT THE STEEL MEMBER IS STABLE AND WILL NOT BE OVERSTRESSED.
   n. FOR WELDING REQUIREMENTS OF BEARING STIFFENERS, CROSS FRAMES AND SHIP SPICES OF WEB AND FLANGE PLATES, SEE SHEETS B-26 THRU B-32.

STEEL ALTERNATIVE - BRIDGE NO. 72070
DIAPHRAGM ELEVATION

Notes:
Transverse dimensions are measured along bottom of the top flange and top of bottom flange.

The 25½" x 5" opening in the interior diaphragm is required for Maintenance Box Lighting conduit (Typical Box A and B)

NOTES:
1. For Sections A-A and B-B and C-C see Diaphragm Detail Sheet 1 of 3.
2. For Strap Plate Connections, Views D-D, E-E, F-F and G-G, see Diaphragm Detail Sheet 2 of 3.
3. For Sections J-J and K-K see Diaphragm Detail Sheet 3 of 3.
4. External diaphragm opening and 3½" x 7½" horizontal stifferener at end diaphragm only.

STEEL ALTERNATIVE - BRIDGE NO. 720720
EXTERNAL DIAPHRAGM CONNECTOR PLATE DETAIL

NOTES:
For location of Sections K-K & J-J see Diaphragm Sheet.
NOTE:
The contact surfaces between connector plate & flanges shall be free of oil and bolts shall be properly torqued prior to stiffener fillet weld.

CROSS FRAME

SECTION T-T
(TOP FLANGE SIMILAR)

TRANSVERSE STIFFENER TOP FLANGE DETAIL AT CROSS FRAMES

TRANSVERSE STIFFENER BOTTOM FLANGE DETAIL (STRESS REVERSAL REGION AND BOTTOM FLANGE IN TENSION REGION)

TRANSVERSE STIFFENER BOTTOM FLANGE DETAIL (TOP FLANGE IN TENSION REGION WITH BOTTOM FLANGE IN COMPRESSION REGION)

LATERAL BRACING (WT 7 X 21.5)
CONNECTION DETAIL
STEEL ALTERNATIVE – BRIDGE NO. 72070

Florida Department of Transportation
Structural Steel Details
(SHEET 1 OF 3)

NOTE:
The contact surfaces between connector plate & flanges shall be free of oil and bolts shall be properly torqued prior to stiffener fillet weld.
TEMPORARY EXTERNAL CROSS FRAME
(To be removed after the concrete deck is constructed)

* L8 x 6 x 1/2 is to be removed and the 3/8" H.S. bolts reinserted in the holes and tightened after the external cross frame is removed. Slot holes in 6" lag of angle along axis of angle.
STEEL ALTERNATIVE - BRIDGE NO.78570

VENT HOLE & DRAIN HOLE NOTES:

1. PLACE VENT HOLES AND DRAIN HOLES AT 30'-O" MAXIMUM SPACING, VENT HOLES TO BE LOCATED 25'-O" MINIMUM AND DRAIN HOLES AT 3'-O" MINIMUM FROM E. PIER/FRAME.

2. COVER VENT HOLES AND DRAIN HOLES WITH 20 GAUGE GALVANIZED WELDED METAL SCREENING/3/4" OPENING, TACK WELD TO GIRDER WEBS/FLANGES.

SECTION - FLANGE WELD SPICE DETAIL

ELEVATION - SHOP WEB SPICE DETAIL

COVER HOLE WITH 3/4" x 3/4" Web.
1/4" No. 20 expanded metal screening.

A. PLACE VENT HOLES AND DRAIN HOLES AT 30'-O" MAXIMUM SPACING, VENT HOLES TO BE LOCATED 25'-O" MINIMUM AND DRAIN HOLES AT 3'-O" MINIMUM FROM E. PIER/FRAME.

B. COVER VENT HOLES AND DRAIN HOLES WITH 20 GAUGE GALVANIZED WELDED METAL SCREENING/3/4" OPENING, TACK WELD TO GIRDER WEBS/FLANGES.
Top surface of plate

BEVELED PLATE ISOMETRIC VIEW

BEVELED PLATE TABLE OF DIMENSIONS

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>W</td>
</tr>
<tr>
<td>END BENT 1</td>
<td></td>
</tr>
<tr>
<td>Box A</td>
<td>5.08</td>
</tr>
<tr>
<td>Box B</td>
<td>5.08</td>
</tr>
<tr>
<td>END BENT 3</td>
<td></td>
</tr>
<tr>
<td>Box A</td>
<td>5.30</td>
</tr>
<tr>
<td>Box B</td>
<td>5.30</td>
</tr>
</tbody>
</table>

BEVELED PLATE NOTES

1. For fabrication and installation purposes, the direction of stationing, top & bottom surfaces and intended locations of the beveled plates shall be clearly marked on each individual beveled plate. For example, Pier No. 2, Unit 1, Box A.

2. Extreme care shall be taken to ensure the beveled plates are installed in their correct locations and in the correct direction.

BEVELED PLATE DETAILS

STEEL ALTERNATIVE - BRIDGE NO. 720701

END BENT 1, Unit 1, Box A

END BEND 3, Unit 1, Box A
LEGEND

- HOLD OR LIFT CRANE
- TIE DOWN
- TEMPORARY SUPPORT STRUCTURE

STAGE 2

STAGE 3

NCHRP 12-79
BRIDGE ETCCS5a
GENERAL ERECTION PROCEDURE
SHEET 1 OF 2
NCHRP 12-79

ETCCS6
The Contractor shall develop and submit a detailed steel erection and overall bridge construction sequence for approval by the Engineer prior to construction of this bridge, including prior to ordering or fabrication of materials. The erection/construction sequence shall provide details of demobilization of the existing bridge, removal and/or relocation of existing utilities, temporary supports, blocking, equipment placement and types, staging areas, and workers and schedule of operations, etc. The following requirements shall be met:

1. The bridge construction sequence shall be coordinated with the roadway construction sequence.

2. Divers shall not be erected over traffic.

3. Traffic may be closed on I-64 and Midway Boulevard only between 12:00 AM and 6:00 AM. However, no closure period may exceed 60 minutes, and the duration between closure periods shall be at least 30 minutes. In addition, traffic may be closed in one direction during a closure period.

4. Traffic may not be closed on I-64 before the 6:00 PM before the following holidays: New Year's Day, Easter Day, and the day following Easter Day, Independence Day, Labor Day and the day following Labor Day, Thanksgiving Day and the day following Thanksgiving Day, and Christmas Day; a holiday period will include Saturday and Sunday if a holiday falls on either a Monday or Friday.

5. Traffic will be permitted to pass under an erected steel girder section only if the section is fully tied and supported at three or more locations. The existing bridge piers and/or additional temporary supports shall be provided to the Engineer prior to placing any steel girder section.

6. The Contractor shall submit calculations which demonstrate the structural adequacy of all supports.

7. All structural steel within a construction stage (see Sheet 4 for staging) shall be fully erected and connected as a system prior to placement of any deck slab concrete.

8. A longitudinal deck closure strip, between Stages 1 and 2 (see Sheet 4), will be permitted, subject to approval of the Contractor's proposed details by the Engineer.

9. Based on the erection/construction sequence selected by the Contractor, the Contractor shall submit a deck pouring sequence; deck stresses, girder deflections, blockages, torques, moments, shears, and stresses, diaphragm and bracing forces and stresses; all supporting calculations and computer input/output files; for approval by the Engineer prior to fabrication of any structural steel. It is temperature sensitive to complete construction activities as soon as possible to minimize any deflections and stresses resulting from long-term concrete creep, as well as required revisions to shear and slab spacing.

10. In order to address differential settlements due to staged construction, MSE walls shall have a temporary wire face and a permanent concrete toe. The concrete face will match the appearance of other MSE walls used in the project.

11. All costs associated with complying with the above requirements will be considered incidental to other bid items for this project.

Note: Foundations are not shown. See Sheet 2.
EXISTING TRANSVERSE SECTION
Scale 1:50

STAGE I - TRANSVERSE SECTION
Scale 1:50

STAGE II - TRANSVERSE SECTION
Scale 1:50

Notes:
1. Traffic Barrier Service Concrete is not included in the Bridge Contract.
2. All dimensions on this sheet are approximate.
3. For additional construction sequence information, see roadway plans and Sheet 3.
SLAB PLAN

Scale 1/200

Notes:
1. SC bars next to ends of slab and radial construction joints shall have 15 mm clear cover from end of slab.
2. Reinforcing shear key shall be adjusted as required to clear shear studs.
3. SL300, SL200, SL100, and SL2210 Bars are located in deck slab pour over the pier. These bars shall be identified and paid for based on the Concrete Placement Schedule on Sheet 1.
4. In location where reinforcement is spaced between construction stages, the Contractor may provide mechanical splash instead of the lap splices shown, subject to the approval of the Engineer and without additional compensation.
FRAMING PLAN
Scale 1:200

Key:
PRO - Pier Plate Diaphragm
M10 - ø 10 mm Nut Bolt

Notes:
1. Top Lateral Bracing Transverse Members shall alternate with intermediate diaphragms along both spans between End Plate Diaphragms of obliquely and Pier Plate Diaphragms.
2. All cross frames shall be radial to baselines.
3. All girders shall be concentric to baselines.
4. Face of boxwall is parallel to centerline bearings.
5. Web lines are shown at top of web.
6. See lighting plans for box girder interior lighting.
7. Webgirders shall be located inside box girders near end plate diaphragms and near every other intermediate diaphragm. For additional webgirder requirements see Typical Box Girder Section on Sheet 5.

For Details See Sheet 10
Note:
All bolt spacings are typical.

END PLATE DIAPHRAGM AT ABUTMENTS
Scale 1/25

VIEW A-A
Scale 1/25

SECTION B-B
Scale 1/25

SECTION C-C
Scale 1/25

COPE DETAIL
Score 1/25

CONCEINWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
STRUCTURE AND BRIDGE DIVISION
DIAPHRAGM DETAILS

©2003, Commonwealth of Virginia

[Diagram of structural details]
PIER PLATE DIAPHRAGM

Scale 1:25

BOLTED OPTION

Notes:
1. Size plate to accommodate attachment for lighting conduit.
2. Connection Plates shall be welded to the girder webs and top/bottom flanges with 8 mm welds on both sides.

See Detail A

WELDED OPTION

INTERMEDIATE INTERIOR DIAPHRAGM

Scale 1:25

BOLTED OPTION

WELDED OPTION

TOP LATERAL BRACING CONNECTION BETWEEN DIAGONALS

Scale 1:25

Note:
Top Flange shown, Bottom Flange arrow.
Notes:
   Steel - AISI 1018 or ASTM A572.
2. Elastomeric bearings shall be rented as a single unit.
3. See Sheet 15 for additional information.

<table>
<thead>
<tr>
<th>Order</th>
<th>Location</th>
<th>L</th>
<th>B</th>
<th>H</th>
<th>n1</th>
<th>n2</th>
<th>n3</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Abut. A</td>
<td>800</td>
<td>300</td>
<td>100</td>
<td>6</td>
<td>5</td>
<td>14</td>
<td>6</td>
<td>3</td>
<td>1.160</td>
<td>975</td>
</tr>
<tr>
<td>G1</td>
<td>Par. I</td>
<td>900</td>
<td>600</td>
<td>150</td>
<td>6</td>
<td>5</td>
<td>13</td>
<td>10</td>
<td>3</td>
<td>-0.450</td>
<td>3117</td>
</tr>
<tr>
<td></td>
<td>Abut. B</td>
<td>800</td>
<td>405</td>
<td>133</td>
<td>11</td>
<td>5</td>
<td>15</td>
<td>7</td>
<td>3</td>
<td>-2.250</td>
<td>957</td>
</tr>
<tr>
<td></td>
<td>Abut. A</td>
<td>800</td>
<td>300</td>
<td>100</td>
<td>6</td>
<td>5</td>
<td>14</td>
<td>6</td>
<td>3</td>
<td>1.160</td>
<td>967</td>
</tr>
<tr>
<td>G2</td>
<td>Par. I</td>
<td>900</td>
<td>600</td>
<td>150</td>
<td>6</td>
<td>5</td>
<td>13</td>
<td>10</td>
<td>3</td>
<td>-0.398</td>
<td>3914</td>
</tr>
<tr>
<td></td>
<td>Abut. B</td>
<td>800</td>
<td>405</td>
<td>133</td>
<td>9</td>
<td>7</td>
<td>13</td>
<td>6</td>
<td>3</td>
<td>-2.250</td>
<td>1289</td>
</tr>
<tr>
<td></td>
<td>Abut. A</td>
<td>800</td>
<td>300</td>
<td>95</td>
<td>10</td>
<td>4</td>
<td>15</td>
<td>5</td>
<td>3</td>
<td>1.160</td>
<td>892</td>
</tr>
<tr>
<td>G3</td>
<td>Par. I</td>
<td>900</td>
<td>600</td>
<td>150</td>
<td>6</td>
<td>5</td>
<td>15</td>
<td>10</td>
<td>3</td>
<td>-0.287</td>
<td>3115</td>
</tr>
<tr>
<td></td>
<td>Abut. B</td>
<td>800</td>
<td>405</td>
<td>133</td>
<td>11</td>
<td>6</td>
<td>15</td>
<td>7</td>
<td>3</td>
<td>-2.250</td>
<td>965</td>
</tr>
<tr>
<td></td>
<td>Abut. A</td>
<td>800</td>
<td>300</td>
<td>105</td>
<td>15</td>
<td>4</td>
<td>15</td>
<td>5</td>
<td>3</td>
<td>1.160</td>
<td>696</td>
</tr>
<tr>
<td>G4</td>
<td>Par. I</td>
<td>900</td>
<td>600</td>
<td>150</td>
<td>6</td>
<td>5</td>
<td>13</td>
<td>10</td>
<td>3</td>
<td>-0.217</td>
<td>3305</td>
</tr>
<tr>
<td></td>
<td>Abut. B</td>
<td>800</td>
<td>405</td>
<td>133</td>
<td>9</td>
<td>7</td>
<td>13</td>
<td>6</td>
<td>3</td>
<td>-2.250</td>
<td>2089</td>
</tr>
</tbody>
</table>
NOTE:
ERECTION PROCEDURE IS SHOWN FOR PHASE 1 ONLY.
PHASE 2 WILL FOLLOW SIMILAR PROCEDURE.
NOTE:
ERECTION PROCEDURE IS SHOWN FOR PHASE 1 ONLY.
PHASE 2 WILL FOLLOW SIMILAR PROCEDURE.
STEEL GENERAL NOTES

All members subject to tension, as designed on the plans, shall be tested in accordance with ASTM A709W and Supplemental Requirements S33 or S84 as noted below:

- Redundant members, as designated on the plans, shall be tested in accordance with Table S12 (Zone 2.1 of ASTM A709W-S33).

- Welds requiring non-destructive testing shall be radiographically inspected, except where the geometry of the weld does not permit satisfactory information to be secured for verification of the weld quality. When such geometrical conditions exist, other inspection procedures or combinations of procedures such as ultrasonic inspection, dye penetration inspection, and/or magnaflux inspection may be required.

- All members designed as Critical shall be fabricated in accordance with Chapter 16 of the AASHTO Bridge Design Specifications.

- All bolted connections shall be made with 24 diameter high strength friction type bolts in accordance with AASHTO Specification M165M. ASTM Specification A325M unless shown otherwise.

Erection Notes:

- The contractor detailed erection scheme shall be submitted to the engineer in accordance with the Special Provisions.

- If the contractor could not obtain required permits to haul the full length of the box beam to the location of Sylvan Bridge, haul and erect each box beam in one segment, in such a case one cross frame might be eliminated.

- All high-strength fasteners shall be installed with mechanically galvanized street-tensioned washers meeting the requirements of ASTM F1859 and the special provisions.

- Gasket-type sealant shall be used, and exterior of and adjacent to the beam shall be clean.

- Steel box flanges and welds, end disassembly, and welds in accordance with the Special Provisions.
**TYP. CONC. PAD**

No Scale

**SECTION A-A @ BEAM CONNECTION**

Scale 1:25

- #6 Box beam
- #19 @ 150
- #16 @ 200 "L" Bar
- #25 x 300 Sheds @ 300
- 25.4 x 400 steel plate
- #16 @ 200 Stopper with "L" Bars
- Box beam
- Bent: #6 Bearing
- See ELEVATION: END OF BOX BEAM (this end)

**SECTION C-C: END BEAM DETAIL**

Scale 1:25

- Top of deck
- #6 Box beam
- 4-22.2 x 150 Sheds @ 300
- (measured along the screw)

**SECTION B-B @ END BEAM**

Scale 1:25

- #6 Box beam
- 22.2 x 150 Sheds @ 450
- #6 Bent: @ 450
- #25 x 300 Sheds
- 25 x 250 (typ)
- (measured normal to steel box beam)
- 370, 210, 520, 210, 370
- 260
- 280
- 414
- 450
- 1110

**NOTE:** All dimensions are in millimeters (mm) except as noted.
LEGEND

- HOLD OR LIFT CRANE
- TIE DOWN
- TEMPORARY SUPPORT STRUCTURE

**STAGE 3**

**STAGE 4**
CONCRETE DECK PLACED ON G1 THRU G3
STAGE 7

STAGE 8
CONCRETE DECK PLACED ON G4 THRU G6

STAGE 9
CONNECT CROSSFRAMES BETWEEN G3 & G4
AND DECK CLOSURE POUR

LEGEND

∀ • HOLD OR LIFT CRANE
○ • TIE DOWN
□ • TEMPORARY SUPPORT STRUCTURE
NOTE:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. ALL GIRDERS, WEB 1 = WEB 2 = WEB 3 = 0.750".
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>122.930</td>
<td>117.643</td>
<td>112.357</td>
<td>107.070</td>
</tr>
<tr>
<td>B</td>
<td>75.000</td>
<td>75.000</td>
<td>75.000</td>
<td>75.000</td>
</tr>
<tr>
<td>C</td>
<td>90.430</td>
<td>85.143</td>
<td>79.875</td>
<td>74.570</td>
</tr>
<tr>
<td>D</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
</tr>
<tr>
<td>E</td>
<td>83.844</td>
<td>79.615</td>
<td>75.385</td>
<td>71.156</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>30.000</td>
<td>1.500</td>
<td>30.000</td>
<td>1.500</td>
</tr>
<tr>
<td>TF2</td>
<td>30.000</td>
<td>2.000</td>
<td>30.000</td>
<td>2.000</td>
</tr>
<tr>
<td>TF3</td>
<td>30.000</td>
<td>1.500</td>
<td>30.000</td>
<td>1.500</td>
</tr>
<tr>
<td>TF4</td>
<td>30.000</td>
<td>2.000</td>
<td>30.000</td>
<td>2.000</td>
</tr>
<tr>
<td>TF5</td>
<td>30.000</td>
<td>1.500</td>
<td>30.000</td>
<td>1.500</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

#### Bottom Flange

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>30.000</td>
<td>1.500</td>
<td>30.000</td>
<td>1.500</td>
</tr>
<tr>
<td>BF2</td>
<td>30.000</td>
<td>2.000</td>
<td>30.000</td>
<td>2.000</td>
</tr>
<tr>
<td>BF3</td>
<td>30.000</td>
<td>1.500</td>
<td>30.000</td>
<td>1.500</td>
</tr>
<tr>
<td>BF4</td>
<td>30.000</td>
<td>2.000</td>
<td>30.000</td>
<td>2.000</td>
</tr>
<tr>
<td>BF5</td>
<td>30.000</td>
<td>1.500</td>
<td>30.000</td>
<td>1.500</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 26.500'.
   D. NUMBER OF DESIGN LANES = 2.
   E. HL93 LIVE LOAD.
   F. DESIGN SPEED = 35 MPH.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN UNITS OF INCHES.
DECK POURING SEQUENCE

NOTE: MEASURED ALONG G1
LEGEND

▼ • HOLD OR LIFT CRANE
○ • TIE DOWN
□ • TEMPORARY SUPPORT STRUCTURE

STAGE 13

STAGE 14
**LEGEND**

- ▽: HOLD OR LIFT CRANE
- ○: TIE DOWN
- □: TEMPORARY SUPPORT STRUCTURE

**STAGE 15**

**STAGE 16**
LEGEND

△ • HOLD OR LIFT CRANE
○ • TIE DOWN
√ • TEMPORARY SUPPORT STRUCTURE

STAGE 17
NOTES:
1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.
2. ALL GIRDER, WEB 1 = WEB 2 = WEB 3 = 0.750"
<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>128.019</td>
<td>123.515</td>
<td>119.010</td>
<td>114.505</td>
<td>110.000</td>
<td>105.495</td>
<td>100.990</td>
<td>96.485</td>
<td>91.981</td>
</tr>
<tr>
<td>B</td>
<td>80.000</td>
<td>80.000</td>
<td>80.000</td>
<td>80.000</td>
<td>80.000</td>
<td>80.000</td>
<td>80.000</td>
<td>80.000</td>
<td>80.000</td>
</tr>
<tr>
<td>C</td>
<td>88.019</td>
<td>83.515</td>
<td>79.000</td>
<td>74.505</td>
<td>70.000</td>
<td>65.495</td>
<td>60.990</td>
<td>56.485</td>
<td>51.981</td>
</tr>
<tr>
<td>D</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
</tr>
<tr>
<td>E</td>
<td>104.416</td>
<td>100.812</td>
<td>97.208</td>
<td>93.604</td>
<td>90.000</td>
<td>86.396</td>
<td>82.792</td>
<td>79.188</td>
<td>75.585</td>
</tr>
</tbody>
</table>

**Girder Plate Lengths**

*All dimensions are in feet.*

<table>
<thead>
<tr>
<th>Top Flange</th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>26.000</td>
<td>1.250</td>
<td>20.000</td>
</tr>
<tr>
<td>TF2</td>
<td>26.000</td>
<td>1.750</td>
<td>20.000</td>
</tr>
<tr>
<td>TF3</td>
<td>26.000</td>
<td>1.250</td>
<td>20.000</td>
</tr>
<tr>
<td>TF4</td>
<td>26.000</td>
<td>1.250</td>
<td>20.000</td>
</tr>
<tr>
<td>TF5</td>
<td>26.000</td>
<td>1.250</td>
<td>20.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

<table>
<thead>
<tr>
<th>Bottom Flange</th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>26.000</td>
<td>1.250</td>
<td>20.000</td>
</tr>
<tr>
<td>BF2</td>
<td>26.000</td>
<td>1.750</td>
<td>20.000</td>
</tr>
<tr>
<td>BF3</td>
<td>26.000</td>
<td>1.250</td>
<td>20.000</td>
</tr>
<tr>
<td>BF4</td>
<td>26.000</td>
<td>1.250</td>
<td>20.000</td>
</tr>
<tr>
<td>BF5</td>
<td>26.000</td>
<td>1.250</td>
<td>20.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. **Steel Dead Load Increased by**
   5% for MDX and LARSA models;
   2% for 3D model; and 10% for
   approximate analysis to account
   for misc. details.

2. **Formwork Load of 10psf is included**
   in concrete dead load.

3. **Additional Design Parameters:**
   A. 1,500' parapet width both sides.
   B. 700 lb/ft uniform load assumed
      for parapet weight.
   C. Roadway width = 76.500'.
   D. Number of Design lanes = 6.
   E. HL-93 Live Load.
   F. Design Speed = 35 MPH.

4. **Diaphragm Member Call-Outs are in**
   English units.
NOTE:
1. DECK POUR LENGTHS ARE MEASURED ALONG G1.
STAGE 11

STAGES 12 THRU 18

LEGEND

- • HOLD OR LIFT CRANE
- ○ TIE DOWN
- □ TEMPORARY SUPPORT STRUCTURE
NCHRP 12-79

NICCR12
NOTE:

NO INT. TRANSV. STIFFS.
BRG. STIFFENERS = 12.000" x 2.000"

BEARING LEGEND

- NON-GUIDED
- LONGITUDINALLY GUIDED
- TRANSVERSELY GUIDED
- FIXED

NCHRP 12-79
BRIDGE NCORP12
FRAMING PLAN AND CROSS-SECTION
SHEET 1 OF 16
NOTE:
NO INT. TRANSV. STIFFS,
BRG. STIFFENERS = 12.000"x2.000"

BEARING LEGEND

- NON-GUIDED
- LONGITUDINALLY GUIDED
- TRANSVERSELY GUIDED
- FIXED

MATCH LINE SHEET 1
8 SPA @ 9.250" = 74.000'

NOTE:
NO INT. TRANSV. STIFFS,
BRG. STIFFENERS = 12.000"x2.000"
CROSS-SECTION
(DIAPHRAGMS NOT SHOWN)
NOTES:
SEE TABLES ON SHEETS 7, 8 AND 9 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

(*) G1, G2, G3, WEB 1 • WEB 2 • WEB 3 • 1.125", WEB 4 • 1.250"
G4, G5, G6, WEB 1 • WEB 2 • WEB 3 • 1.125", WEB 4 • 1.250"
G7, G8, G9, WEB 1 • WEB 2 • WEB 3 • WEB 4 • 1.125"

"E", "TF 5", "BF 5", INCLUDES LEFT AND RIGHT OF SUPPORT 2

NCHRP 12-79
BRIDGE NCCER12
GIRDER ELEVATION SPAN 1
SHEET 4 OF 16
"E", "TF 5", "BF 5", "WEB 4" INCLUDES LEFT AND RIGHT OF SUPPORT 2

"J", "TF10", "BF10", "WEB 7" INCLUDES LEFT AND RIGHT OF SUPPORT 3

NOTES:
SEE TABLES ON SHEETS 7, 8 AND 9 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

(G1, G2, G3, WEB 4 = WEB 7 = 1.250", WEB 5 = WEB 6 = 1.125"
G4, G5, G6, WEB 4 = 1.250", WEB 5 = WEB 6 = WEB 7 = 1.125"
G7, G8, G9, WEB 4 = WEB 5 = WEB 6 = WEB 7 = 1.125"
"J", "TF10", "BF10", "WEB 7" INCLUDES LEFT AND RIGHT OF SUPPORT 3

NOTES:
SEE TABLES ON SHEETS 7, 8 AND 9 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

(G1, G2, G3, WEB 7 - 1.250", WEB 8 - WEB 9 - 1.125"
(G4, G5, G6, WEB 7 - WEB 8 - WEB 9 - 1.125"
G7, G8, G9, WEB 7 - WEB 8 - WEB 9 - 1.125"

NCHRP 12-79
BRIDGE NICO12
GIRDER ELEVATION SPAN 3
SHEET 6 OF 18
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>84.248</td>
<td>63.618</td>
<td>62.990</td>
<td>62.362</td>
<td>61.734</td>
<td>61.105</td>
<td>60.477</td>
<td>59.849</td>
<td>59.221</td>
</tr>
<tr>
<td>B</td>
<td>120.000</td>
<td>118.827</td>
<td>117.653</td>
<td>116.480</td>
<td>115.307</td>
<td>114.133</td>
<td>112.960</td>
<td>111.786</td>
<td>110.613</td>
</tr>
<tr>
<td>C</td>
<td>120.000</td>
<td>118.827</td>
<td>117.653</td>
<td>116.480</td>
<td>115.307</td>
<td>114.133</td>
<td>112.960</td>
<td>111.786</td>
<td>110.613</td>
</tr>
<tr>
<td>D</td>
<td>30.000</td>
<td>29.707</td>
<td>29.413</td>
<td>29.120</td>
<td>28.827</td>
<td>28.533</td>
<td>28.240</td>
<td>27.947</td>
<td>27.653</td>
</tr>
<tr>
<td>E</td>
<td>60.000</td>
<td>59.413</td>
<td>58.827</td>
<td>58.240</td>
<td>57.653</td>
<td>57.067</td>
<td>56.480</td>
<td>55.893</td>
<td>55.307</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

<table>
<thead>
<tr>
<th>TOP FLANGE</th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>36.000</td>
<td>2.250</td>
<td>32.000</td>
</tr>
<tr>
<td>TF2</td>
<td>36.000</td>
<td>2.500</td>
<td>32.000</td>
</tr>
<tr>
<td>TF3</td>
<td>36.000</td>
<td>2.250</td>
<td>32.000</td>
</tr>
<tr>
<td>TF4</td>
<td>42.000</td>
<td>2.250</td>
<td>38.000</td>
</tr>
<tr>
<td>TF5</td>
<td>42.000</td>
<td>2.750</td>
<td>38.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

### Girder Flange Dimensions

<table>
<thead>
<tr>
<th>BOTTOM FLANGE</th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>36.000</td>
<td>2.500</td>
<td>32.000</td>
</tr>
<tr>
<td>BF2</td>
<td>36.000</td>
<td>2.750</td>
<td>32.000</td>
</tr>
<tr>
<td>BF3</td>
<td>36.000</td>
<td>2.500</td>
<td>32.000</td>
</tr>
<tr>
<td>BF4</td>
<td>42.000</td>
<td>2.500</td>
<td>38.000</td>
</tr>
<tr>
<td>BF5</td>
<td>42.000</td>
<td>3.000</td>
<td>38.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>30.00</td>
<td>29.707</td>
<td>29.413</td>
<td>29.120</td>
<td>28.827</td>
<td>28.533</td>
<td>28.240</td>
<td>27.947</td>
<td>27.653</td>
</tr>
<tr>
<td>G</td>
<td>122.123</td>
<td>120.929</td>
<td>119.735</td>
<td>118.541</td>
<td>117.347</td>
<td>116.153</td>
<td>114.958</td>
<td>113.764</td>
<td>112.570</td>
</tr>
<tr>
<td>H</td>
<td>122.123</td>
<td>120.929</td>
<td>119.735</td>
<td>118.541</td>
<td>117.347</td>
<td>116.153</td>
<td>114.958</td>
<td>113.764</td>
<td>112.570</td>
</tr>
<tr>
<td>I</td>
<td>30.00</td>
<td>29.707</td>
<td>29.413</td>
<td>29.120</td>
<td>28.827</td>
<td>28.533</td>
<td>28.240</td>
<td>27.947</td>
<td>27.653</td>
</tr>
<tr>
<td>J</td>
<td>60.00</td>
<td>59.413</td>
<td>58.827</td>
<td>58.240</td>
<td>57.653</td>
<td>57.067</td>
<td>56.480</td>
<td>55.893</td>
<td>55.307</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF</td>
<td></td>
<td>1.750</td>
<td>1.500</td>
</tr>
<tr>
<td>TF</td>
<td>42.00</td>
<td>2.250</td>
<td>32.00</td>
</tr>
<tr>
<td>BF</td>
<td>38.00</td>
<td>1.750</td>
<td>1.500</td>
</tr>
<tr>
<td>TF</td>
<td>36.00</td>
<td>1.500</td>
<td>1.500</td>
</tr>
<tr>
<td>BF</td>
<td>32.00</td>
<td>1.500</td>
<td>1.500</td>
</tr>
<tr>
<td>TF</td>
<td>36.00</td>
<td>1.500</td>
<td>1.500</td>
</tr>
<tr>
<td>BF</td>
<td>32.00</td>
<td>2.000</td>
<td>1.750</td>
</tr>
<tr>
<td>TF</td>
<td>36.00</td>
<td>2.250</td>
<td>2.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

#### Bottom Flange

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF</td>
<td></td>
<td>2.000</td>
<td>1.750</td>
</tr>
<tr>
<td>BF</td>
<td>36.00</td>
<td>2.500</td>
<td>2.250</td>
</tr>
<tr>
<td>BF</td>
<td>38.00</td>
<td>1.750</td>
<td>1.500</td>
</tr>
<tr>
<td>BF</td>
<td>32.00</td>
<td>1.750</td>
<td>1.500</td>
</tr>
<tr>
<td>BF</td>
<td>32.00</td>
<td>2.500</td>
<td>2.250</td>
</tr>
<tr>
<td>BF</td>
<td>36.00</td>
<td>1.750</td>
<td>1.500</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>30.000</td>
<td>29.707</td>
<td>29.413</td>
<td>29.120</td>
<td>28.827</td>
<td>28.533</td>
<td>28.240</td>
<td>27.947</td>
<td>27.653</td>
</tr>
<tr>
<td>L</td>
<td>120.000</td>
<td>118.827</td>
<td>117.653</td>
<td>116.480</td>
<td>115.307</td>
<td>114.133</td>
<td>112.960</td>
<td>111.786</td>
<td>110.613</td>
</tr>
<tr>
<td>M</td>
<td>111.397</td>
<td>110.308</td>
<td>109.219</td>
<td>108.129</td>
<td>107.040</td>
<td>105.951</td>
<td>104.862</td>
<td>103.772</td>
<td>102.683</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF11</td>
<td>36.000</td>
<td>32.000</td>
<td>30.000</td>
</tr>
<tr>
<td>TF12</td>
<td>36.000</td>
<td>32.000</td>
<td>30.000</td>
</tr>
<tr>
<td>TF13</td>
<td>30.000</td>
<td>32.000</td>
<td>30.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

#### Bottom Flange

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF11</td>
<td>36.000</td>
<td>32.000</td>
<td>30.000</td>
</tr>
<tr>
<td>BF12</td>
<td>36.000</td>
<td>32.000</td>
<td>30.000</td>
</tr>
<tr>
<td>BF13</td>
<td>36.000</td>
<td>32.000</td>
<td>30.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
1. **Steel Dead Load Increased by** 5% for MDX and LARSA Models; 2% for 3D Model; and 10% for Approximate Analysis to Account for Misc. Details.

2. **Formwork Load of 10psf is Included in Concrete Dead Load.**

3. **Additional Design Parameters:**
   - A. 1,500' Parapet Width Both Sides.
   - B. 700 lb/ft Uniform Load Assumed for Parapet Weight.
   - C. Roadway Width = 76.500'.
   - D. Number of Design Lanes = 6.
   - E. HL93 Live Load.
   - F. Design Speed = 35 MPH.

4. **Diaphragm Member Call-Outs are in English Units.**
DECK POURING SEQUENCE
STAGE 10

STAGE 11

STAGES 12 THRU 18

LEGEND

- HOLD OR LIFT CRANE
- TIE DOWN
- TEMPORARY SUPPORT STRUCTURE
STAGE 29

STAGES 30 THRU 36

STAGE 37

LEGEND

- HOLD OR LIFT CRANE
- TIE DOWN
- TEMPORARY SUPPORT STRUCTURE

NCHRP 12-79
BRIDGE NICCR12
GENERAL ERECTION PROCEDURE
SHEET 15 OF 16
LEGEND

- HOLD OR LIFT CRANE
- TIE DOWN
- TEMPORARY SUPPORT STRUCTURE

STAGES 38 THRU 45

TEMP SUPPORT # 1
TEMP SUPPORT # 2
TEMP SUPPORT # 3

STAGE 46

TEMP SUPPORT # 1
TEMP SUPPORT # 2
TEMP SUPPORT # 3

STAGES 48 THRU 54

TEMP SUPPORT # 1
TEMP SUPPORT # 2
TEMP SUPPORT # 3

STAGE 55

STAGE 56

STAGE 57

REMOVE TEMP SUPPORT # 3
REMOVE TEMP SUPPORT # 2
REMOVE TEMP SUPPORT # 1
NOTES:
1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.
2. ALL GIRDER, WEB 1 • WEB 2 • WEB 3 • 0.750"
<table>
<thead>
<tr>
<th>GIRDER PLATE LENGTHS</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LENGTH</strong></td>
<td><strong>G1</strong></td>
<td><strong>G2</strong></td>
<td><strong>G3</strong></td>
<td><strong>G4</strong></td>
</tr>
<tr>
<td>A</td>
<td>103.736</td>
<td>104.550</td>
<td>105.483</td>
<td>106.565</td>
</tr>
<tr>
<td>B</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
</tr>
<tr>
<td>C</td>
<td>40.000</td>
<td>40.000</td>
<td>40.000</td>
<td>40.000</td>
</tr>
<tr>
<td>D</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
</tr>
<tr>
<td>E</td>
<td>112.929</td>
<td>107.643</td>
<td>102.357</td>
<td>97.070</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

<table>
<thead>
<tr>
<th>GIRDER FLANGE DIMENSIONS</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOP FLANGE</strong></td>
<td><strong>G1</strong></td>
<td><strong>G2</strong></td>
<td><strong>G3</strong></td>
<td><strong>G4</strong></td>
</tr>
<tr>
<td>TF1</td>
<td>30.000</td>
<td>1.750</td>
<td>30.000</td>
<td>1.750</td>
</tr>
<tr>
<td>TF2</td>
<td>30.000</td>
<td>2.000</td>
<td>30.000</td>
<td>2.000</td>
</tr>
<tr>
<td>TF3</td>
<td>30.000</td>
<td>2.500</td>
<td>30.000</td>
<td>2.500</td>
</tr>
<tr>
<td>TF4</td>
<td>30.000</td>
<td>2.000</td>
<td>30.000</td>
<td>2.000</td>
</tr>
<tr>
<td>TF5</td>
<td>30.000</td>
<td>1.750</td>
<td>30.000</td>
<td>1.750</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

<table>
<thead>
<tr>
<th>GIRDER FLANGE DIMENSIONS</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BOTTOM FLANGE</strong></td>
<td><strong>G1</strong></td>
<td><strong>G2</strong></td>
<td><strong>G3</strong></td>
<td><strong>G4</strong></td>
</tr>
<tr>
<td>BF1</td>
<td>30.000</td>
<td>2.500</td>
<td>30.000</td>
<td>2.500</td>
</tr>
<tr>
<td>BF2</td>
<td>30.000</td>
<td>2.500</td>
<td>30.000</td>
<td>2.500</td>
</tr>
<tr>
<td>BF3</td>
<td>30.000</td>
<td>2.500</td>
<td>30.000</td>
<td>2.500</td>
</tr>
<tr>
<td>BF4</td>
<td>30.000</td>
<td>2.500</td>
<td>30.000</td>
<td>2.500</td>
</tr>
<tr>
<td>BF5</td>
<td>30.000</td>
<td>2.500</td>
<td>30.000</td>
<td>2.500</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:
1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.
2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.
3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 26.500'.
   D. NUMBER OF DESIGN LANES = 2.
   E. HL-93 LIVE LOAD.
   F. DESIGN SPEED = 35 MPH.
4. DIAPHRAGM MEMBER CALL-OUTS ARE IN ENGLISH UNITS.
STAGE 1

- Hold or lift crane
- Tie down
- Temporary support structure

STAGE 2

- Hold or lift crane
- Tie down
- Temporary support structure

Legend:

- ▼ Hold or lift crane
- ○ Tie down
- □ Temporary support structure

NCHRP 12-79
Bridge NICCS2
General Erection Procedure
Sheet 5 of 9
TIE DOWN

LEGEND

- HOLD OR LIFT CRANE
- TIE DOWN
- TEMPORARY SUPPORT STRUCTURE

STAGE 3

STAGE 4

NCHRP 12-79
BRIDGE NICCS2
GENERAL ERECTION PROCEDURE
SHEET 6 OF 9
NOTES:

1. DECK POUR LENGTHS ARE MEASURED ALONG G1.
CROSS-SECTION
(DIAPHRAGMS NOT SHOWN)

FRAMING PLAN

BEARING LEGEND
- O NON-GUIDED
- □ LONGITUDINALLY GUIDED
- ◊ TRANSVERSELY GUIDED
- □ FIXED

NCHRP 12-79
BRIDGE NICCS3
FRAMING PLAN AND CROSSECTION
SHEET 1 OF 9
NOTES:
1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.
2. ALL GIRDER, WEB 1 = WEB 3 = 0.625", WEB 2 = 0.750"
### GIRDER PLATE LENGTHS

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>103.736</td>
<td>104.550</td>
<td>105.483</td>
<td>106.565</td>
</tr>
<tr>
<td>B</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
</tr>
<tr>
<td>C</td>
<td>40.000</td>
<td>40.000</td>
<td>40.000</td>
<td>40.000</td>
</tr>
<tr>
<td>D</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
</tr>
<tr>
<td>E</td>
<td>103.736</td>
<td>104.550</td>
<td>105.483</td>
<td>106.565</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### GIRDER FLANGE DIMENSIONS

<table>
<thead>
<tr>
<th>TOP FLANGE</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BF</td>
<td>TF</td>
<td>BF</td>
<td>TF</td>
</tr>
<tr>
<td>TF1</td>
<td>24.000</td>
<td>1.000</td>
<td>24.000</td>
<td>1.000</td>
</tr>
<tr>
<td>TF2</td>
<td>24.000</td>
<td>1.500</td>
<td>24.000</td>
<td>1.500</td>
</tr>
<tr>
<td>TF3</td>
<td>24.000</td>
<td>2.500</td>
<td>24.000</td>
<td>2.500</td>
</tr>
<tr>
<td>TF4</td>
<td>24.000</td>
<td>1.500</td>
<td>24.000</td>
<td>1.500</td>
</tr>
<tr>
<td>TF5</td>
<td>24.000</td>
<td>1.000</td>
<td>24.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

### GIRDER FLANGE DIMENSIONS (continuation)

<table>
<thead>
<tr>
<th>BOTTOM FLANGE</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BF</td>
<td>TF</td>
<td>BF</td>
<td>TF</td>
</tr>
<tr>
<td>BF1</td>
<td>24.000</td>
<td>1.500</td>
<td>24.000</td>
<td>1.500</td>
</tr>
<tr>
<td>BF2</td>
<td>24.000</td>
<td>1.500</td>
<td>24.000</td>
<td>1.500</td>
</tr>
<tr>
<td>BF3</td>
<td>24.000</td>
<td>2.500</td>
<td>24.000</td>
<td>2.500</td>
</tr>
<tr>
<td>BF4</td>
<td>24.000</td>
<td>1.500</td>
<td>24.000</td>
<td>1.500</td>
</tr>
<tr>
<td>BF5</td>
<td>24.000</td>
<td>1.500</td>
<td>24.000</td>
<td>1.500</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

---

NCHRP 12-79
BRIDGE NICCS3
GIRDER ELEVATION TABLES
SHEET 3 OF 9
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 26.500'.
   D. NUMBER OF DESIGN LANES = 2.
   E. HL93 LIVE LOAD.
   F. DESIGN SPEED = 35 MPH.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN ENGLISH UNITS.
DECK POURING SEQUENCE

NOTES:
1. DECK POUR LENGTHS ARE MEASURED ALONG GIRDER G1.
LEGEND

- HOLD OR LIFT CRANE
- TIE DOWN
- TEMPORARY SUPPORT STRUCTURE
LEGEND

▽ - HOLD OR LIFT CRANE
Ο - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE
NOTES:
1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.
2. ALL GIRDERS, WEB 1 • WEB 2 • WEB 3 • 0.750"
### GIRDER PLATE LENGTHS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>80.000</td>
<td>88.213</td>
<td>96.838</td>
<td>90.000</td>
<td>100.292</td>
<td>111.501</td>
<td>105.000</td>
<td>120.111</td>
<td>120.000</td>
</tr>
<tr>
<td>C</td>
<td>40.000</td>
<td>40.000</td>
<td>40.000</td>
<td>40.000</td>
<td>40.000</td>
<td>40.000</td>
<td>40.000</td>
<td>40.000</td>
<td>40.000</td>
</tr>
<tr>
<td>E</td>
<td>95.000</td>
<td>92.453</td>
<td>89.906</td>
<td>105.000</td>
<td>101.938</td>
<td>98.877</td>
<td>95.815</td>
<td>111.326</td>
<td>107.651</td>
</tr>
</tbody>
</table>

*ALL DIMENSIONS ARE IN FEET.*

### GIRDER FLANGE DIMENSIONS

#### TOP FLANGE

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLange</td>
<td>BF</td>
<td>TF</td>
<td>BF</td>
</tr>
<tr>
<td>TF1</td>
<td>24.000</td>
<td>1.000</td>
<td>20.000</td>
</tr>
<tr>
<td>TF2</td>
<td>24.000</td>
<td>1.500</td>
<td>20.000</td>
</tr>
<tr>
<td>TF3</td>
<td>24.000</td>
<td>2.500</td>
<td>20.000</td>
</tr>
<tr>
<td>TF4</td>
<td>24.000</td>
<td>1.500</td>
<td>20.000</td>
</tr>
<tr>
<td>TF5</td>
<td>24.000</td>
<td>1.000</td>
<td>20.000</td>
</tr>
</tbody>
</table>

*ALL DIMENSIONS ARE IN INCHES.*

#### BOTTOM FLANGE

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLange</td>
<td>BF</td>
<td>TF</td>
<td>BF</td>
</tr>
<tr>
<td>BF1</td>
<td>24.000</td>
<td>1.500</td>
<td>20.000</td>
</tr>
<tr>
<td>BF2</td>
<td>24.000</td>
<td>1.500</td>
<td>20.000</td>
</tr>
<tr>
<td>BF3</td>
<td>24.000</td>
<td>2.750</td>
<td>20.000</td>
</tr>
<tr>
<td>BF4</td>
<td>24.000</td>
<td>1.500</td>
<td>20.000</td>
</tr>
<tr>
<td>BF5</td>
<td>24.000</td>
<td>1.750</td>
<td>20.000</td>
</tr>
</tbody>
</table>

*ALL DIMENSIONS ARE IN INCHES.*
NOTES:

1. **STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.**

2. **FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.**

3. **ADDITIONAL DESIGN PARAMETERS:**
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 77.000'.
   D. NUMBER OF DESIGN LANES = 6.
   E. HL93 LIVE LOAD.
   F. DESIGN SPEED = 35 MPH.

4. **DIAPHRAGM MEMBER CALL-OUTS ARE IN ENGLISH UNITS.**
NCHRP 12-79

NICCS13
NOTE:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. ALL GIRDERS, WEB 1 = WEB 2 = WEB 4 = WEB 5 = 0.875".
   WEB 3 = 1.000".

NCHRP 12-79
BRIDGE NICCS13
GIRDER ELEVATION
SHEET 2 OF 9
## Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>54.732</td>
<td>62.557</td>
<td>70.520</td>
<td>78.636</td>
</tr>
<tr>
<td>B</td>
<td>130.000</td>
<td>128.292</td>
<td>126.584</td>
<td>124.877</td>
</tr>
<tr>
<td>C</td>
<td>37.500</td>
<td>37.008</td>
<td>36.515</td>
<td>36.023</td>
</tr>
<tr>
<td>D</td>
<td>50.000</td>
<td>49.343</td>
<td>48.686</td>
<td>48.029</td>
</tr>
<tr>
<td>E</td>
<td>37.500</td>
<td>37.007</td>
<td>36.515</td>
<td>36.022</td>
</tr>
<tr>
<td>F</td>
<td>130.000</td>
<td>128.292</td>
<td>126.585</td>
<td>124.877</td>
</tr>
<tr>
<td>G</td>
<td>57.193</td>
<td>58.442</td>
<td>55.690</td>
<td>54.939</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

## Girder Flange Dimensions

<table>
<thead>
<tr>
<th>TOP FLANGE</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>30.000</td>
<td>1.500</td>
<td>24.000</td>
<td>1.000</td>
</tr>
<tr>
<td>TF2</td>
<td>30.000</td>
<td>1.500</td>
<td>24.000</td>
<td>1.000</td>
</tr>
<tr>
<td>TF3</td>
<td>36.000</td>
<td>2.250</td>
<td>32.000</td>
<td>1.500</td>
</tr>
<tr>
<td>TF4</td>
<td>36.000</td>
<td>2.750</td>
<td>32.000</td>
<td>2.500</td>
</tr>
<tr>
<td>TF5</td>
<td>36.000</td>
<td>2.250</td>
<td>32.000</td>
<td>1.500</td>
</tr>
<tr>
<td>TF6</td>
<td>30.000</td>
<td>1.500</td>
<td>24.000</td>
<td>1.000</td>
</tr>
<tr>
<td>TF7</td>
<td>30.000</td>
<td>1.500</td>
<td>24.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

<table>
<thead>
<tr>
<th>BOTTOM FLANGE</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>30.000</td>
<td>1.750</td>
<td>24.000</td>
<td>1.000</td>
</tr>
<tr>
<td>BF2</td>
<td>30.000</td>
<td>1.750</td>
<td>24.000</td>
<td>1.000</td>
</tr>
<tr>
<td>BF3</td>
<td>36.000</td>
<td>2.250</td>
<td>32.000</td>
<td>2.000</td>
</tr>
<tr>
<td>BF4</td>
<td>36.000</td>
<td>3.000</td>
<td>32.000</td>
<td>2.500</td>
</tr>
<tr>
<td>BF5</td>
<td>36.000</td>
<td>2.250</td>
<td>32.000</td>
<td>2.000</td>
</tr>
<tr>
<td>BF6</td>
<td>32.000</td>
<td>2.250</td>
<td>24.000</td>
<td>1.000</td>
</tr>
<tr>
<td>BF7</td>
<td>32.000</td>
<td>2.000</td>
<td>24.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 26.500'.
   D. NUMBER OF DESIGN LANES = 2.
   E. HL93 LIVE LOAD.
   F. DESIGN SPEED = 35 MPH.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN UNITS OF INCHES.
DECK POURING SEQUENCE

MEASURED ALONG G1.
LEGEND

△ END OR LIFT CRANE
○ TIE DOWN
□ TEMPORARY SUPPORT STRUCTURE

STAGE 7

TEMP SUPPORT #1
AT XF'S ON G1 + G4
AT 0.5 XF ON G2 + G3

STAGE 8

TEMP SUPPORT #2
AT XF'S ON G1 + G4
AT 0.5 XF ON G2 + G3

STAGE 9

TIE DOWN

TEMP SUPPORT #2
AT XF'S ON G1 + G4
AT 0.5 XF ON G2 + G3
HOLD OR LIFT CRANE

TIE DOWN

TEMPORARY SUPPORT STRUCTURE

LEGEND

- ▽ - HOLD OR LIFT CRANE
- • - TIE DOWN
- □ - TEMPORARY SUPPORT STRUCTURE

STAGE 12

STAGE 13

(REMOVE ALL TEMP SUPPORTS)

STAGE 17

STAGE 18

NCHRP 12-79
BRIDGE NICCS13
GENERAL ERECTION PROCEDURE
SHEET 8 OF 9
LEGEND

△ • HOLD OR LIFT CRANE
● • TIE DOWN
□ • TEMPORARY SUPPORT STRUCTURE

STAGE 20

STAGE 21

STAGE 22
(REMOVE TEMP SUPPORT #3)

BRIDGE NICCS13
GENERAL ERECTION PROCEDURE
SHEET 9 OF 9
NCHRP 12-79

NICCS14
NOTE:
1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.
2. G1, G2: WEB 1 = WEB 3 = WEB 5 = 1.000", WEB 2 = WEB 4 = 0.875"
   G3, G4: ALL WEBS = 0.875"
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>56.693</td>
<td>62.391</td>
<td>65.099</td>
<td>67.816</td>
</tr>
<tr>
<td>B</td>
<td>125.000</td>
<td>123.358</td>
<td>121.716</td>
<td>120.074</td>
</tr>
<tr>
<td>C</td>
<td>40.000</td>
<td>39.475</td>
<td>38.949</td>
<td>38.424</td>
</tr>
<tr>
<td>D</td>
<td>50.000</td>
<td>49.343</td>
<td>48.686</td>
<td>48.029</td>
</tr>
<tr>
<td>E</td>
<td>40.000</td>
<td>39.475</td>
<td>38.949</td>
<td>38.424</td>
</tr>
<tr>
<td>F</td>
<td>125.000</td>
<td>123.358</td>
<td>121.716</td>
<td>120.074</td>
</tr>
<tr>
<td>G</td>
<td>65.025</td>
<td>64.171</td>
<td>63.317</td>
<td>62.463</td>
</tr>
</tbody>
</table>

* All dimensions are in feet.

### Girder Flange Dimensions

<table>
<thead>
<tr>
<th>TOP FLANGE</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>30.000</td>
<td>1.625</td>
<td>30.000</td>
<td>1.625</td>
</tr>
<tr>
<td>TF2</td>
<td>30.000</td>
<td>1.625</td>
<td>30.000</td>
<td>1.625</td>
</tr>
<tr>
<td>TF3</td>
<td>36.000</td>
<td>2.250</td>
<td>36.000</td>
<td>2.250</td>
</tr>
<tr>
<td>TF4</td>
<td>36.000</td>
<td>2.750</td>
<td>36.000</td>
<td>2.750</td>
</tr>
<tr>
<td>TF5</td>
<td>36.000</td>
<td>2.250</td>
<td>36.000</td>
<td>2.250</td>
</tr>
<tr>
<td>TF6</td>
<td>30.000</td>
<td>1.625</td>
<td>30.000</td>
<td>1.625</td>
</tr>
<tr>
<td>TF7</td>
<td>30.000</td>
<td>1.625</td>
<td>30.000</td>
<td>1.625</td>
</tr>
</tbody>
</table>

* All dimensions are in inches.

### Bottom Flange Dimensions

<table>
<thead>
<tr>
<th>BOTTOM FLANGE</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>30.000</td>
<td>2.250</td>
<td>30.000</td>
<td>2.250</td>
</tr>
<tr>
<td>BF2</td>
<td>30.000</td>
<td>2.250</td>
<td>30.000</td>
<td>2.250</td>
</tr>
<tr>
<td>BF3</td>
<td>36.000</td>
<td>2.250</td>
<td>36.000</td>
<td>2.250</td>
</tr>
<tr>
<td>BF4</td>
<td>36.000</td>
<td>3.000</td>
<td>36.000</td>
<td>3.000</td>
</tr>
<tr>
<td>BF5</td>
<td>36.000</td>
<td>2.250</td>
<td>36.000</td>
<td>2.250</td>
</tr>
<tr>
<td>BF6</td>
<td>30.000</td>
<td>2.250</td>
<td>30.000</td>
<td>2.250</td>
</tr>
<tr>
<td>BF7</td>
<td>30.000</td>
<td>2.250</td>
<td>30.000</td>
<td>2.250</td>
</tr>
</tbody>
</table>

* All dimensions are in inches.
TYPICAL SUPPORT DIAPHRAGMS AND INTERMEDIATE DIAPHRAGMS

NOTES:
1. STEEL DEAD LOAD INCREASED BY
   5% FOR MDX AND LARSA MODELS;
   2% FOR 3D MODEL; AND 10% FOR
   APPROXIMATE ANALYSIS TO ACCOUNT
   FOR MISC. DETAILS.
2. FORMWORK LOAD OF 10PSF IS INCLUDED
   IN CONCRETE DEAD LOAD.
3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED
      FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 26.500'.
   D. NUMBER OF DESIGN LANES = 2.
   E. HL93 LIVE LOAD.
   F. DESIGN SPEED = 35 MPH.
DECK POURING SEQUENCE

NOTE:
DECK POUR LENGTH ARE MEASURED ALONG L G1.
LEGEND

▽ • HOLD OR LIFT CRANE
○ • TIE DOWN
□ • TEMPORARY SUPPORT STRUCTURE

STAGE 5

STAGE 6

STAGES 7 AND 8
NCHRP 12-79

NICCS24
NOTE:
NO INTERMEDIATE TRANSV. STIFFS.
ALL BRG. STIFFENERS = 12.000"x2.000"

BEARING LEGEND
○ NON-GUIDED
■ LONGITUDINALLY GUIDED
□ TRANSVERSELY GUIDED
□ FIXED

CROSS - SECTION
(DIAPHRAGMS NOT SHOWN)
NOTES:
SEE TABLES ON SHEETS 4 AND 5 FOR GIRDER ELEVATION
DIMENSIONS AND PLATE SIZES.

( ) G1, G2, G3, WEB 1 • WEB 2 • WEB 3 • 1.125", WEB 4 • 1.375"
G4, G5, G6, WEB 1 • WEB 2 • WEB 3 • 1.125", WEB 4 • 1.250"
G7, G8, G9, WEB 1 • WEB 2 • WEB 3 • WEB 4 • 1.125"

"E", "TF 3", "BF 5", WEB 4 INCLUDES LEFT AND RIGHT OF SUPPORT 2
NOTES:

SEE TABLES ON SHEETS 4 AND 5 FOR GIRDER ELEVATION
DIMENSIONS AND PLATE SIZES.

(x) G1, G2, G3, WEB 4 = 1.375", WEB 5 = WEB 6 = WEB 7 = 1.125"
G4, G5, G6, WEB 4 = 1.250", WEB 5 = WEB 6 = WEB 7 = 1.125"
G7, G8, G9, WEB 4 = WEB 5 = WEB 6 = WEB 7 = 1.125"

"E", "TF 5", "BF 5", WEB 4 INCLUDES
LEFT AND RIGHT OF SUPPORT 2

NCHRP 12-79
BRIDGE NICCS24
GIRDER ELEVATION
SPAN 2
SHEET 3 OF 11
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>Length</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>57.980</td>
<td>57.413</td>
<td>56.846</td>
<td>56.279</td>
<td>55.712</td>
<td>55.145</td>
<td>54.578</td>
<td>54.011</td>
<td>53.444</td>
</tr>
<tr>
<td>B</td>
<td>130.000</td>
<td>128.729</td>
<td>127.458</td>
<td>126.187</td>
<td>124.915</td>
<td>123.644</td>
<td>122.373</td>
<td>121.102</td>
<td>119.831</td>
</tr>
<tr>
<td>C</td>
<td>130.000</td>
<td>128.729</td>
<td>127.458</td>
<td>113.130</td>
<td>111.990</td>
<td>110.850</td>
<td>96.155</td>
<td>95.156</td>
<td>94.157</td>
</tr>
<tr>
<td>D</td>
<td>34.281</td>
<td>33.946</td>
<td>33.611</td>
<td>34.502</td>
<td>34.154</td>
<td>33.806</td>
<td>34.747</td>
<td>34.386</td>
<td>34.026</td>
</tr>
<tr>
<td>E</td>
<td>48.597</td>
<td>48.121</td>
<td>47.646</td>
<td>48.843</td>
<td>48.352</td>
<td>47.860</td>
<td>49.118</td>
<td>48.608</td>
<td>48.097</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th>Top Flange</th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>36.000</td>
<td>2.000</td>
<td>30.000</td>
</tr>
<tr>
<td>TF2</td>
<td>36.000</td>
<td>2.000</td>
<td>30.000</td>
</tr>
<tr>
<td>TF3</td>
<td>36.000</td>
<td>2.000</td>
<td>30.000</td>
</tr>
<tr>
<td>TF4</td>
<td>42.000</td>
<td>2.250</td>
<td>36.000</td>
</tr>
<tr>
<td>TF5</td>
<td>42.000</td>
<td>3.000</td>
<td>36.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

#### Bottom Flange

<table>
<thead>
<tr>
<th>Bottom Flange</th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>36.000</td>
<td>2.250</td>
<td>30.000</td>
</tr>
<tr>
<td>BF2</td>
<td>36.000</td>
<td>2.250</td>
<td>30.000</td>
</tr>
<tr>
<td>BF3</td>
<td>36.000</td>
<td>2.250</td>
<td>30.000</td>
</tr>
<tr>
<td>BF4</td>
<td>42.000</td>
<td>2.250</td>
<td>36.000</td>
</tr>
<tr>
<td>BF5</td>
<td>42.000</td>
<td>3.000</td>
<td>36.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
## Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>48.597</td>
<td>48.121</td>
<td>47.646</td>
<td>48.843</td>
<td>48.352</td>
<td>47.860</td>
<td>49.118</td>
<td>48.608</td>
<td>48.097</td>
</tr>
<tr>
<td>F</td>
<td>40.446</td>
<td>40.051</td>
<td>39.655</td>
<td>40.602</td>
<td>40.193</td>
<td>39.784</td>
<td>40.775</td>
<td>40.351</td>
<td>39.928</td>
</tr>
<tr>
<td>G</td>
<td>119.334</td>
<td>118.167</td>
<td>117.000</td>
<td>124.650</td>
<td>123.394</td>
<td>122.138</td>
<td>130.000</td>
<td>128.650</td>
<td>127.299</td>
</tr>
<tr>
<td>H</td>
<td>108.924</td>
<td>107.849</td>
<td>106.773</td>
<td>105.698</td>
<td>104.622</td>
<td>103.547</td>
<td>102.471</td>
<td>101.395</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>57.855</td>
<td>57.289</td>
<td>56.724</td>
<td>56.158</td>
<td>55.592</td>
<td>55.027</td>
<td>54.461</td>
<td>53.895</td>
<td>53.329</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

## Girder Flange Dimensions

### Top Flange

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF</td>
<td>TF</td>
<td>BF</td>
<td>TF</td>
</tr>
<tr>
<td>TF5</td>
<td>42.000</td>
<td>3.000</td>
<td>36.00</td>
</tr>
<tr>
<td>TF6</td>
<td>42.000</td>
<td>2.250</td>
<td>36.00</td>
</tr>
<tr>
<td>TF7</td>
<td>36.000</td>
<td>2.000</td>
<td>30.000</td>
</tr>
<tr>
<td>TF8</td>
<td>36.000</td>
<td>2.000</td>
<td>30.000</td>
</tr>
<tr>
<td>TF9</td>
<td>36.000</td>
<td>2.000</td>
<td>30.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

### Bottom Flange

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF</td>
<td>TF</td>
<td>BF</td>
<td>TF</td>
</tr>
<tr>
<td>BF5</td>
<td>42.000</td>
<td>3.000</td>
<td>36.00</td>
</tr>
<tr>
<td>BF6</td>
<td>42.000</td>
<td>2.250</td>
<td>36.00</td>
</tr>
<tr>
<td>BF7</td>
<td>36.000</td>
<td>2.250</td>
<td>30.000</td>
</tr>
<tr>
<td>BF8</td>
<td>36.000</td>
<td>2.250</td>
<td>30.000</td>
</tr>
<tr>
<td>BF9</td>
<td>36.000</td>
<td>2.250</td>
<td>30.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 76.500'.
   D. NUMBER OF DESIGN LANES = 6.
   E. HL-93 LIVE LOAD.
   F. DESIGN SPEED = 35 MPH.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN ENGLISH UNITS.
DECK POURING SEQUENCE

NCHRP 12-79
BRIDGE NICCS24
DECK POURING SEQUENCE
SHEET 7 OF 11
LEGEND

- HOLD OR LIFT CRANE
- TIE DOWN
- TEMPORARY SUPPORT STRUCTURE

STAGE 1

STAGE 2

STAGE 3
LEGEND

▼ * HOLD OR LIFT CRANE

○ * TIE DOWN

□ * TEMPORARY SUPPORT STRUCTURE

STAGES 4 THRU 9
(G4 THRU G9)

STAGE 10

STAGES 11 - 18

NCHRP 12-79
BRIDGE NICCS24
GENERAL ERECTION PROCEDURE
SHEET 9 OF 11
STAGE 19

STAGES 20 THRU 27
(G2 THRU G9)

STAGE 28
REMOVAL TEMP SUPPORT • 2

LEGEND

- □ • HOLD OR LIFT CRANE
- ○ • TIE DOWN
- □ • TEMPORARY SUPPORT STRUCTURE
HOLD OR LIFT CRANE
TIE DOWN
TEMPORARY SUPPORT STRUCTURE

LEGEND

- HOLD OR LIFT CRANE
- TIE DOWN
- TEMPORARY SUPPORT STRUCTURE

STAGES 30 THRU 37
STAGE 38
STAGES 39 THRU 46
STAGE 47
STAGE 48

STAGES 39 THRU 46
(G2 THRU G9)

STAGE 47
REMOVE TEMP SUPPORT • 3

STAGE 48
REMOVE TEMP SUPPORT • 1

NCHRP 12-79
BRIDGE NICCS24
GENERAL ERECTION PROCEDURE
SHEET 11 OF 11
HAUNCH 4.000"

FRAMING PLAN

CROSS - SECTION
(DIAPHRAGMS NOT SHOWN)
NOTES:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. ALL GIRDERS, WEB 1 • WEB 3 • 0.5625”
   WEB 2 • 0.750”.
<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>80.000</td>
<td>80.000</td>
<td>80.000</td>
<td>80.000</td>
</tr>
<tr>
<td>B</td>
<td>30.000</td>
<td>30.000</td>
<td>30.000</td>
<td>30.000</td>
</tr>
<tr>
<td>C</td>
<td>80.000</td>
<td>80.000</td>
<td>80.000</td>
<td>80.000</td>
</tr>
<tr>
<td>D</td>
<td>30.000</td>
<td>30.000</td>
<td>30.000</td>
<td>30.000</td>
</tr>
<tr>
<td>E</td>
<td>80.000</td>
<td>80.000</td>
<td>80.000</td>
<td>80.000</td>
</tr>
</tbody>
</table>

*ALL DIMENSIONS ARE IN FEET.*

<table>
<thead>
<tr>
<th>TOP FLANGE</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>16.000</td>
<td>1.000</td>
<td>16.000</td>
<td>1.000</td>
</tr>
<tr>
<td>TF2</td>
<td>16.000</td>
<td>0.875</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF3</td>
<td>16.000</td>
<td>1.875</td>
<td>16.000</td>
<td>1.875</td>
</tr>
<tr>
<td>TF4</td>
<td>16.000</td>
<td>0.875</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF5</td>
<td>16.000</td>
<td>1.000</td>
<td>16.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*ALL DIMENSIONS ARE IN INCHES.*

<table>
<thead>
<tr>
<th>BOTTOM FLANGE</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>18.000</td>
<td>1.000</td>
<td>18.000</td>
<td>1.000</td>
</tr>
<tr>
<td>BF2</td>
<td>18.000</td>
<td>0.875</td>
<td>18.000</td>
<td>0.875</td>
</tr>
<tr>
<td>BF3</td>
<td>18.000</td>
<td>1.875</td>
<td>18.000</td>
<td>1.875</td>
</tr>
<tr>
<td>BF4</td>
<td>18.000</td>
<td>0.875</td>
<td>18.000</td>
<td>0.875</td>
</tr>
<tr>
<td>BF5</td>
<td>18.000</td>
<td>1.000</td>
<td>18.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*ALL DIMENSIONS ARE IN INCHES.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 
   2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT 
   FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500’ PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 26.500’.
   D. NUMBER OF DESIGN LANES = 2.
   E. HL93 LIVE LOAD.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN UNITS OF INCHES.
DECK POURING SEQUENCE

SHEET 5 OF 9

NCHRP 12-79
BRIDGE NICSS1
DECK POURING SEQUENCE
SHEET 5 OF 9
STAGE 9

NOTE:
STAGE 7 - ERECT G1, SPAN 2
STAGE 8 - ERECT G2 AND CROSS FRAMES, SPAN 2

STAGE 10

LEGEND
▼ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE
NCHRP 12-79

NICSS3
NOTE:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. ALL GIRDER, WEB 1 - WEB 3 = 0.5625"
WEB 2 = 0.750"
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90.000</td>
<td>90.000</td>
<td>90.000</td>
<td>90.000</td>
</tr>
<tr>
<td>B</td>
<td>28.299</td>
<td>31.100</td>
<td>33.900</td>
<td>36.701</td>
</tr>
<tr>
<td>C</td>
<td>55.000</td>
<td>55.000</td>
<td>55.000</td>
<td>55.000</td>
</tr>
<tr>
<td>D</td>
<td>28.299</td>
<td>31.100</td>
<td>33.900</td>
<td>36.701</td>
</tr>
<tr>
<td>E</td>
<td>90.000</td>
<td>90.000</td>
<td>90.000</td>
<td>90.000</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th>FLANGE</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>16.000</td>
<td>1.000</td>
<td>16.000</td>
<td>1.000</td>
</tr>
<tr>
<td>TF2</td>
<td>16.000</td>
<td>0.875</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF3</td>
<td>16.000</td>
<td>1.750</td>
<td>16.000</td>
<td>1.750</td>
</tr>
<tr>
<td>TF4</td>
<td>16.000</td>
<td>0.875</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF5</td>
<td>16.000</td>
<td>1.000</td>
<td>16.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

#### Bottom Flange

<table>
<thead>
<tr>
<th>FLANGE</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>18.000</td>
<td>1.000</td>
<td>18.000</td>
<td>1.000</td>
</tr>
<tr>
<td>BF2</td>
<td>18.000</td>
<td>0.875</td>
<td>18.000</td>
<td>0.875</td>
</tr>
<tr>
<td>BF3</td>
<td>18.000</td>
<td>1.750</td>
<td>18.000</td>
<td>1.750</td>
</tr>
<tr>
<td>BF4</td>
<td>18.000</td>
<td>0.875</td>
<td>18.000</td>
<td>0.875</td>
</tr>
<tr>
<td>BF5</td>
<td>18.000</td>
<td>1.000</td>
<td>18.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 26.500'.
   D. NUMBER OF DESIGN LANES = 2.
   E. HL93 LIVE LOAD.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN UNITS OF INCHES.
**STAGE 1**

**STAGE 2**
- Erect G1 and Cross Frames

**STAGE 3**
- Erect G4 and Cross Frames

**LEGEND**
- ▽ Hold or Lift Crane
- ○ Tie Down
- □ Temporary Support Structure

NCHRP 12-79
Bridge NCISS3
General Erection Procedure
Sheet 6 of 8
NOTES:
1. STAGE 4 - ERECT G2, TIE DOWN AT SUPPORT 1
2. STAGE 5 - ERECT G3 AND CROSS FRAMES
3. STAGE 6 - REMOVE ALL TEMP. SUPPORTS

NOTES:
1. STAGE 7 - ERECT G1 AND CROSS FRAMES
2. STAGE 8 - ERECT G4 AND CROSS FRAMES
NOTES:
1. STAGE 10 - ERECT G2 AND CROSS FRAMES
2. STAGE 11 - ERECT G3 AND CROSS FRAMES
NOTE:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. ALL GIRDLERS, WEB - 0.6875" THICKNESS

NCHRP 12-79
BRIDGE NICSS16
GIRDER ELEVATION
SHEET 2 OF 9
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>B</td>
<td>65</td>
<td>65</td>
<td>65</td>
<td>65</td>
<td>65</td>
<td>65</td>
<td>65</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>C</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>D</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td>E</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

<table>
<thead>
<tr>
<th>TOP FLANGE</th>
<th>G1 THRU G9</th>
<th>G1 THRU G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>18</td>
<td>0.75</td>
</tr>
<tr>
<td>BF2</td>
<td>18</td>
<td>1.75</td>
</tr>
<tr>
<td>BF3</td>
<td>18</td>
<td>0.75</td>
</tr>
<tr>
<td>BF4</td>
<td>18</td>
<td>1.75</td>
</tr>
<tr>
<td>BF5</td>
<td>18</td>
<td>0.75</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BOTTOM FLANGE</th>
<th>G1 THRU G9</th>
<th>G1 THRU G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>18</td>
<td>0.75</td>
</tr>
<tr>
<td>BF2</td>
<td>18</td>
<td>1.75</td>
</tr>
<tr>
<td>BF3</td>
<td>18</td>
<td>0.75</td>
</tr>
<tr>
<td>BF4</td>
<td>18</td>
<td>1.75</td>
</tr>
<tr>
<td>BF5</td>
<td>18</td>
<td>0.75</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. DIAPHRAGM MEMBER CALL-OUTS ARE IN UNITS OF INCHES.
STAGE 11
(RESULTS REQ'D)

STAGES 12 THRU 18
(RESULTS REQ'D STG 18 ONLY)

LEGEND

△ • HOLD OR LIFT CRANE
O • TIE DOWN
□ • TEMPORARY SUPPORT STRUCTURE
NCHRP 12-79

NICSS25
FRAMING PLAN
AT BRG SUPPORT 2
NOTE:

1. SEE TABLES ON SHEET 4 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. ALL GIRDER, WEB 1 - WEB 3 - WEB 5 - WEB 7 - 1.125" WEB 2 - WEB 4 - WEB 6 - 1.250".

NCHRP 12-79
BRIDGE NICSS25
GIRDER ELEVATION
SHEET 3 OF 9
### GIRDER PLATE LENGTHS

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>100.908</td>
<td>94.431</td>
<td>87.954</td>
<td>81.477</td>
<td>75.000</td>
<td>68.523</td>
<td>62.046</td>
<td>55.569</td>
<td>49.092</td>
</tr>
<tr>
<td>B</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
</tr>
<tr>
<td>C</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
</tr>
<tr>
<td>D</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
</tr>
<tr>
<td>E</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
</tr>
<tr>
<td>F</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
</tr>
<tr>
<td>G</td>
<td>49.092</td>
<td>55.569</td>
<td>62.046</td>
<td>68.523</td>
<td>75.000</td>
<td>81.477</td>
<td>87.954</td>
<td>94.431</td>
<td>100.908</td>
</tr>
</tbody>
</table>

**ALL DIMENSIONS ARE IN FEET.**

### GIRDER FLANGE DIMENSIONS

<table>
<thead>
<tr>
<th>TOP FLANGE</th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>BF 28.000</td>
<td>TF 1.250</td>
<td>BF 28.000</td>
</tr>
<tr>
<td>TF2</td>
<td>BF 28.000</td>
<td>TF 1.500</td>
<td>BF 28.000</td>
</tr>
<tr>
<td>TF3</td>
<td>BF 28.000</td>
<td>TF 1.250</td>
<td>BF 28.000</td>
</tr>
<tr>
<td>TF4</td>
<td>BF 32.000</td>
<td>TF 2.250</td>
<td>BF 32.000</td>
</tr>
<tr>
<td>TF5</td>
<td>BF 28.000</td>
<td>TF 1.250</td>
<td>BF 28.000</td>
</tr>
<tr>
<td>TF6</td>
<td>BF 28.000</td>
<td>TF 1.500</td>
<td>BF 28.000</td>
</tr>
<tr>
<td>TF7</td>
<td>BF 28.000</td>
<td>TF 1.250</td>
<td>BF 28.000</td>
</tr>
</tbody>
</table>

**ALL DIMENSIONS ARE IN INCHES.**

### GIRDER FLANGE DIMENSIONS

<table>
<thead>
<tr>
<th>BOTTOM FLANGE</th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>BF 30.000</td>
<td>TF 1.250</td>
<td>BF 30.000</td>
</tr>
<tr>
<td>TF2</td>
<td>BF 30.000</td>
<td>TF 1.500</td>
<td>BF 30.000</td>
</tr>
<tr>
<td>TF3</td>
<td>BF 30.000</td>
<td>TF 1.250</td>
<td>BF 30.000</td>
</tr>
<tr>
<td>TF4</td>
<td>BF 34.000</td>
<td>TF 2.250</td>
<td>BF 34.000</td>
</tr>
<tr>
<td>TF5</td>
<td>BF 30.000</td>
<td>TF 1.250</td>
<td>BF 30.000</td>
</tr>
<tr>
<td>TF6</td>
<td>BF 30.000</td>
<td>TF 1.500</td>
<td>BF 30.000</td>
</tr>
<tr>
<td>TF7</td>
<td>BF 30.000</td>
<td>TF 1.250</td>
<td>BF 30.000</td>
</tr>
</tbody>
</table>

**ALL DIMENSIONS ARE IN INCHES.**
NOTES:

1. STEEL DEAD LOAD INCREASED BY
   5% FOR MDX AND LARSA MODELS;
   2% FOR 3D MODEL; AND 10% FOR
   APPROXIMATE ANALYSIS TO ACCOUNT
   FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED
   IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS :
   A. 1.5' PARAPET WIDTH BOTH SIDES.
   B. 700 lb UNIFORM LOAD ASSUMED
      FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 77.000".
   D. NUMBER OF DESIGN LANES = 6.
   E. HL93 LIVE LOAD.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN
   UNITS OF INCHES.
DECK POURING SEQUENCE
STAGES 19 THRU 27

STAGE 28

(REMOVE TEMP SUPPORT 2)

STAGES 29 THRU 37
STAGES 38 THRU 46

STAGE 47
(REMOVE TEMP SUPPORTS 1 AND 3)

NOTES:
1. LOCATION OF TEMP SUPPORT 1, 2
   G1, G5, G9 AT XF'S
   G2, G4, G6, G8 AT 0.25/0.75 XF SPACE
   G3, G7 AT 0.5 XF SPACE
NOTE:

1. SEE TABLES ON SHEET 4 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. ALL GIRDERS, WEB 1 - WEB 3 - WEB 5 - WEB 7 - 1.125"
WEB 2 - WEB 4 - WEB 6 - 1.250".

NCHRP 12-79
BRIDGE NICSS27
GIRDER ELEVATION
SHEET 3 OF 10
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
</tr>
<tr>
<td>B</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
</tr>
<tr>
<td>C</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
</tr>
<tr>
<td>D</td>
<td>120.000</td>
<td>120.000</td>
<td>120.000</td>
<td>120.000</td>
<td>120.000</td>
<td>120.000</td>
<td>120.000</td>
<td>120.000</td>
<td>120.000</td>
</tr>
<tr>
<td>E</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
</tr>
<tr>
<td>F</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
</tr>
<tr>
<td>G</td>
<td>44.092</td>
<td>50.569</td>
<td>57.048</td>
<td>63.523</td>
<td>70.000</td>
<td>76.477</td>
<td>82.954</td>
<td>89.431</td>
<td>95.908</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

| TF1 | 28.000 | 1.250 | 28.000 | 1.250 | 28.000 | 1.250 |
| TF2 | 28.000 | 1.500 | 28.000 | 1.500 | 28.000 | 1.500 |
| TF3 | 28.000 | 1.250 | 28.000 | 1.250 | 28.000 | 1.250 |
| TF4 | 32.000 | 2.000 | 32.000 | 2.000 | 34.000 | 2.250 |
| TF5 | 28.000 | 1.250 | 28.000 | 1.250 | 28.000 | 1.250 |
| TF6 | 28.000 | 1.500 | 28.000 | 1.500 | 28.000 | 1.500 |
| TF7 | 28.000 | 1.250 | 28.000 | 1.250 | 28.000 | 1.250 |

*All dimensions are in inches.*

#### Bottom Flange

| TF1 | 30.000 | 1.250 | 30.000 | 1.250 | 30.000 | 1.250 |
| TF2 | 30.000 | 1.500 | 30.000 | 1.500 | 30.000 | 1.500 |
| TF3 | 30.000 | 1.250 | 30.000 | 1.250 | 30.000 | 1.250 |
| TF4 | 34.000 | 2.000 | 34.000 | 2.000 | 36.000 | 2.500 |
| TF5 | 30.000 | 1.250 | 30.000 | 1.250 | 30.000 | 1.250 |
| TF6 | 30.000 | 1.500 | 30.000 | 1.500 | 30.000 | 1.500 |
| TF7 | 30.000 | 1.250 | 30.000 | 1.250 | 30.000 | 1.250 |

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1.500' PARAPET WIDTH BOTH SIDES.
   B. 700 lb\text{/}\text{ft} UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 77.000".
   D. NUMBER OF DESIGN LANES = 6.
   E. HL93 LIVE LOAD.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN UNITS OF INCHES.
DECK POURING SEQUENCE
STAGES 19 THRU 27

STAGES 28 THRU 36

STAGE 37
(REMOVE TEMP SUPPORTS 1 AND 3)
STAGES 38 THRU 46

STAGES 47 THRU 55
STAGES 56 THRU 64

STAGE 65
(REMOVE TEMP SUPPORTS 2, 4, AND 5)

NOTE:
1. LOCATION OF TEMP SUPPORT 4, 5
   G1, G5, G9 AT XF'S
   G2, G4, G6, G8 AT 0.25/0.75 XF SPACE
   G3, G7 AT 0.5 XF SPACE
NCHRP 12-79

NISCR1
NOTE:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.
2. FOR G1 AND G2, WEB 1 = WEB 2 = 0.750"
3. FOR G3 AND G4, WEB 1 = WEB 2 = 0.625"

NCHRP 12-79
BRIDGE NISCR2
GIRDER ELEVATION
SHEET 2 OF 6
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>Length</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>20.000</td>
<td>19.644</td>
<td>19.289</td>
<td>18.933</td>
</tr>
<tr>
<td>B</td>
<td>20.000</td>
<td>19.644</td>
<td>19.289</td>
<td>18.933</td>
</tr>
<tr>
<td>C</td>
<td>74.110</td>
<td>72.793</td>
<td>71.475</td>
<td>70.158</td>
</tr>
<tr>
<td>D</td>
<td>20.000</td>
<td>19.644</td>
<td>19.289</td>
<td>18.933</td>
</tr>
<tr>
<td>E</td>
<td>20.000</td>
<td>19.644</td>
<td>19.289</td>
<td>18.933</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th></th>
<th>G2</th>
<th></th>
<th>G3</th>
<th></th>
<th>G4</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>BF</td>
<td>TF</td>
<td>BF</td>
<td>TF</td>
<td>BF</td>
<td>TF</td>
<td>BF</td>
<td>TF</td>
</tr>
<tr>
<td>TF2</td>
<td>22.000</td>
<td>1.000</td>
<td>22.000</td>
<td>1.000</td>
<td>20.000</td>
<td>1.000</td>
<td>20.000</td>
<td>1.000</td>
</tr>
<tr>
<td>TF3</td>
<td>22.000</td>
<td>1.250</td>
<td>22.000</td>
<td>1.250</td>
<td>20.000</td>
<td>1.000</td>
<td>20.000</td>
<td>1.000</td>
</tr>
<tr>
<td>TF4</td>
<td>22.000</td>
<td>2.000</td>
<td>22.000</td>
<td>2.000</td>
<td>20.000</td>
<td>1.500</td>
<td>20.000</td>
<td>1.500</td>
</tr>
<tr>
<td>TF5</td>
<td>22.000</td>
<td>1.250</td>
<td>22.000</td>
<td>1.250</td>
<td>20.000</td>
<td>1.000</td>
<td>20.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

#### Bottom Flange

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th></th>
<th>G2</th>
<th></th>
<th>G3</th>
<th></th>
<th>G4</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>BF</td>
<td>TF</td>
<td>BF</td>
<td>TF</td>
<td>BF</td>
<td>TF</td>
<td>BF</td>
<td>TF</td>
</tr>
<tr>
<td>BF2</td>
<td>26.000</td>
<td>1.250</td>
<td>26.000</td>
<td>1.250</td>
<td>24.000</td>
<td>1.000</td>
<td>24.000</td>
<td>1.000</td>
</tr>
<tr>
<td>BF3</td>
<td>26.000</td>
<td>2.000</td>
<td>26.000</td>
<td>2.000</td>
<td>24.000</td>
<td>1.250</td>
<td>24.000</td>
<td>1.250</td>
</tr>
<tr>
<td>BF4</td>
<td>26.000</td>
<td>2.750</td>
<td>26.000</td>
<td>2.750</td>
<td>24.000</td>
<td>2.000</td>
<td>24.000</td>
<td>2.000</td>
</tr>
<tr>
<td>BF5</td>
<td>26.000</td>
<td>1.250</td>
<td>26.000</td>
<td>1.250</td>
<td>24.000</td>
<td>1.000</td>
<td>24.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. Steel dead load increased by 5% for MDX and LARSA models; 2% for 3D model; and 10% for approximate analysis to account for misc. details.

2. Formwork load of 10psf is included in concrete dead load.

3. Additional design parameters:
   A. 1,500' parapet width both sides.
   B. 700 lb/ft uniform load assumed for parapet weight.
   C. Roadway width = 27,000'.
   D. Number of design lanes = 3.
   E. HL93 live load.

4. Diaphragm member callouts are in units of inches.
LEGEND

▽ = HOLD OR LIFT CRANE
○ = TIE DOWN
□ = TEMPORARY SUPPORT STRUCTURE
STAGE 3

STAGE 4

LEGEND

▽ = HOLD OR LIFT CRANE
○ = TIE DOWN
□ = TEMPORARY SUPPORT STRUCTURE
NCHRP 12-79

NISCR5
FRAMING PLAN

DIAPHRAGM (TYP)

CONN. @ 1.000" x 12.000"

HAUNCH 4.000"

9.000" (INCLUDING 0.500"
INTTEGRAL WEARING SURFACE)

DIAPHRAGM SPACING

ALONG G1

3.000'

3 SPA @ 8.000' = 24.000'

30.000'

BENDING LEGEND

O NON-GUIDED
□ LONGITUDINALLY GUIDED
□ TRANSVERSELY GUIDED
□ FIXED

CROSS-SECTION

(DIAPHRAGMS NOT SHOWN)
NOTE:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. ALL GIRDETS, WEB 1 = WEB 2 = WEB 3 = 1.125"
### GIRDER PLATE LENGTHS

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>32.175</td>
<td>31.728</td>
<td>31.281</td>
<td>30.834</td>
</tr>
<tr>
<td>B</td>
<td>54.000</td>
<td>54.000</td>
<td>54.000</td>
<td>54.000</td>
</tr>
<tr>
<td>C</td>
<td>130.000</td>
<td>129.326</td>
<td>128.651</td>
<td>127.977</td>
</tr>
<tr>
<td>D</td>
<td>54.000</td>
<td>54.000</td>
<td>54.000</td>
<td>54.000</td>
</tr>
<tr>
<td>E</td>
<td>32.175</td>
<td>31.728</td>
<td>31.281</td>
<td>30.834</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### GIRDER FLANGE DIMENSIONS

#### TOP FLANGE

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th></th>
<th>G2</th>
<th></th>
<th>G3</th>
<th></th>
<th>G4</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>38.000</td>
<td>1.500</td>
<td>38.000</td>
<td>1.500</td>
<td>32.000</td>
<td>1.375</td>
<td>32.000</td>
<td>1.375</td>
</tr>
<tr>
<td>TF2</td>
<td>38.000</td>
<td>2.750</td>
<td>38.000</td>
<td>2.750</td>
<td>32.000</td>
<td>1.375</td>
<td>32.000</td>
<td>1.375</td>
</tr>
<tr>
<td>TF3</td>
<td>38.000</td>
<td>3.250</td>
<td>38.000</td>
<td>3.250</td>
<td>32.000</td>
<td>2.000</td>
<td>32.000</td>
<td>2.000</td>
</tr>
<tr>
<td>TF4</td>
<td>38.000</td>
<td>2.750</td>
<td>38.000</td>
<td>2.750</td>
<td>32.000</td>
<td>1.375</td>
<td>32.000</td>
<td>1.375</td>
</tr>
<tr>
<td>TF5</td>
<td>38.000</td>
<td>1.500</td>
<td>38.000</td>
<td>1.500</td>
<td>32.000</td>
<td>1.375</td>
<td>32.000</td>
<td>1.375</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

#### BOTTOM FLANGE

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th></th>
<th>G2</th>
<th></th>
<th>G3</th>
<th></th>
<th>G4</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>44.000</td>
<td>1.875</td>
<td>44.000</td>
<td>1.875</td>
<td>36.000</td>
<td>1.500</td>
<td>36.000</td>
<td>1.500</td>
</tr>
<tr>
<td>BF2</td>
<td>44.000</td>
<td>2.750</td>
<td>44.000</td>
<td>2.750</td>
<td>36.000</td>
<td>1.500</td>
<td>36.000</td>
<td>1.500</td>
</tr>
<tr>
<td>BF3</td>
<td>44.000</td>
<td>3.250</td>
<td>44.000</td>
<td>3.250</td>
<td>36.000</td>
<td>2.500</td>
<td>36.000</td>
<td>2.500</td>
</tr>
<tr>
<td>BF4</td>
<td>44.000</td>
<td>2.750</td>
<td>44.000</td>
<td>2.750</td>
<td>36.000</td>
<td>1.500</td>
<td>36.000</td>
<td>1.500</td>
</tr>
<tr>
<td>BF5</td>
<td>44.000</td>
<td>1.875</td>
<td>44.000</td>
<td>1.875</td>
<td>36.000</td>
<td>1.500</td>
<td>36.000</td>
<td>1.500</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 26.500'.
   D. NUMBER OF DESIGN LANES = 2.
   E. HL93 LIVE LOAD.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN ENGLISH UNITS.
LEGEND

◼ - HOLD OR LIFT CRANE

○ - TIE DOWN

□ - TEMPORARY SUPPORT STRUCTURE

STAGE 3

STAGE 4

NCHRP 12-79
BRIDGE NISCR5
GENERAL ERECTION PROCEDURE
SHEET 6 OF 8
LEGEND

▽ - HOLD OR LIFT CRANE
☐ - TIE DOWN
☐ - TEMPORARY SUPPORT STRUCTURE

STAGE 7

TEMP. SUPPORT
REMOVE AFTER ALL STEEL IS ERECTED

STAGE 8
NCHRP 12-79

NISCR7
FRAMING PLAN

DIAPHRAGM (TYP)  R = 243.000'

6 SPA @ 21.000' = 126.000'

DIAPHRAGM SPACING ALONG G1

DIAPHRAGM SPACING 8 SPA @ 9.250' = 74.000'

R = 243.000'

HAUNCH 4.000''

9.500'' (0.500'' INTEGRAL WEARING SURFACE)

TYP. DIAPHRAGM CONN.  L 0.875'' x 8.000''

80.000'

3.000'

8 SPA @ 9.250' - 74.000' - 3.000'

NCHRP 12-79
BRIDGE NISCR7
FRAMING PLAN AND CROSS-SECTION
SHEET 1 OF 6
NOTE:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. GIRDER G1, G2, G3, WEB 1 - WEB 2 - 0.750".

3. GIRDER G4 - G9, WEB 1 - WEB 2 - 0.625".
### GIRDER PLATE LENGTHS

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>69.821</td>
<td>67.784</td>
<td>65.747</td>
<td>63.709</td>
<td>61.672</td>
<td>59.635</td>
<td>57.597</td>
<td>55.560</td>
<td>53.522</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.

### GIRDER FLANGE DIMENSIONS

#### TOP FLANGE

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BF</td>
<td>TF</td>
<td>BF</td>
</tr>
<tr>
<td>TF1</td>
<td>24.000</td>
<td>1.000</td>
<td>20.000</td>
</tr>
<tr>
<td>TF2</td>
<td>24.000</td>
<td>1.500</td>
<td>20.000</td>
</tr>
<tr>
<td>TF3</td>
<td>24.000</td>
<td>2.250</td>
<td>20.000</td>
</tr>
<tr>
<td>TF4</td>
<td>24.000</td>
<td>1.500</td>
<td>20.000</td>
</tr>
<tr>
<td>TF5</td>
<td>24.000</td>
<td>1.000</td>
<td>20.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.

#### BOTTOM FLANGE

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BF</td>
<td>TF</td>
<td>BF</td>
</tr>
<tr>
<td>BF1</td>
<td>30.000</td>
<td>1.250</td>
<td>22.000</td>
</tr>
<tr>
<td>BF2</td>
<td>30.000</td>
<td>2.250</td>
<td>22.000</td>
</tr>
<tr>
<td>BF3</td>
<td>30.000</td>
<td>3.000</td>
<td>22.000</td>
</tr>
<tr>
<td>BF4</td>
<td>30.000</td>
<td>2.250</td>
<td>22.000</td>
</tr>
<tr>
<td>BF5</td>
<td>30.000</td>
<td>1.250</td>
<td>22.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 77.000'.
   D. NUMBER OF DESIGN LANES = 6.
   E. HL93 LIVE LOAD.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN UNITS OF INCHES.
LEGEND

- ☑️ HOLD OR LIFT CRANE
- ⬤ TIE DOWN
- ☐ TEMPORARY SUPPORT STRUCTURE

STAGE 1

G1 G2 G3 G4 G5 G6 G7 G8 G9

STAGE 2

G1 G2 G3 G4 G5 G6 G7 G8
NOTE:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. GIRDER G1 - G4, WEB 1 - WEB 2 - 0.688".

3. GIRDER G5 - G9, WEB 1 - WEB 2 - 0.625".
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>63.210</td>
<td>61.490</td>
<td>60.660</td>
<td>59.380</td>
<td>58.100</td>
<td>56.820</td>
<td>55.540</td>
<td>52.260</td>
<td>52.980</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>20.000</td>
<td>1.000</td>
<td>20.000</td>
</tr>
<tr>
<td>TF2</td>
<td>20.000</td>
<td>1.250</td>
<td>20.000</td>
</tr>
<tr>
<td>TF3</td>
<td>20.000</td>
<td>2.250</td>
<td>20.000</td>
</tr>
<tr>
<td>TF4</td>
<td>20.000</td>
<td>1.250</td>
<td>20.000</td>
</tr>
<tr>
<td>TF5</td>
<td>20.000</td>
<td>1.000</td>
<td>20.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

#### Bottom Flange

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>24.000</td>
<td>1.250</td>
<td>20.000</td>
</tr>
<tr>
<td>BF2</td>
<td>24.000</td>
<td>2.250</td>
<td>20.000</td>
</tr>
<tr>
<td>BF3</td>
<td>24.000</td>
<td>2.750</td>
<td>20.000</td>
</tr>
<tr>
<td>BF4</td>
<td>24.000</td>
<td>2.250</td>
<td>20.000</td>
</tr>
<tr>
<td>BF5</td>
<td>24.000</td>
<td>1.250</td>
<td>20.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. LIVE LOAD = HL93
NO. OF DESIGN LANES = 6.

4. BARRIER WEIGHT = 700 LBS/LF (UNIFORM LOAD).
LEGEND

▽ = HOLD OR LIFT CRANE
○ = TIE DOWN
□ = TEMPORARY SUPPORT STRUCTURE
LEGEND

\( \triangleright \) = HOLD OR LIFT CRANE

\( \circ \) = TIE DOWN

\( \square \) = TEMPORARY SUPPORT STRUCTURE
NOTE:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. ALL GIRDERS, WEB 1 = WEB 2 = WEB 3 = 0.875".
### GIRDER PLATE LENGTHS

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
</tr>
<tr>
<td>C</td>
<td>130.000</td>
<td>128.379</td>
<td>126.759</td>
<td>125.138</td>
<td>123.518</td>
<td>121.897</td>
<td>120.276</td>
<td>118.656</td>
<td>117.035</td>
</tr>
<tr>
<td>D</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### GIRDER FLANGE DIMENSIONS

#### TOP FLANGE

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TF1</strong></td>
<td>24.000 1.000</td>
<td>20.000 1.000</td>
<td>20.000 1.000</td>
</tr>
<tr>
<td><strong>TF2</strong></td>
<td>24.000 1.750</td>
<td>20.000 1.000</td>
<td>20.000 1.000</td>
</tr>
<tr>
<td><strong>TF3</strong></td>
<td>24.000 3.000</td>
<td>20.000 1.000</td>
<td>20.000 1.000</td>
</tr>
<tr>
<td><strong>TF4</strong></td>
<td>24.000 1.750</td>
<td>20.000 1.000</td>
<td>20.000 1.000</td>
</tr>
<tr>
<td><strong>TF5</strong></td>
<td>24.000 1.000</td>
<td>20.000 1.000</td>
<td>20.000 1.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

#### BOTTOM FLANGE

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BF1</strong></td>
<td>30.000 1.250</td>
<td>20.000 1.000</td>
<td>20.000 1.000</td>
</tr>
<tr>
<td><strong>BF2</strong></td>
<td>30.000 2.250</td>
<td>20.000 1.000</td>
<td>20.000 1.000</td>
</tr>
<tr>
<td><strong>BF3</strong></td>
<td>30.000 3.250</td>
<td>20.000 1.500</td>
<td>20.000 1.500</td>
</tr>
<tr>
<td><strong>BF4</strong></td>
<td>30.000 2.250</td>
<td>20.000 1.000</td>
<td>20.000 1.000</td>
</tr>
<tr>
<td><strong>BF5</strong></td>
<td>30.000 1.250</td>
<td>20.000 1.000</td>
<td>20.000 1.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 77.000'.
   D. NUMBER OF DESIGN LANES = 6.
   E. HL93 LIVE LOAD.
   F. DESIGN SPEED = 45 MPH.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN ENGLISH UNITS.
STAGE 1
- Erect G3-1 and G3-2 and adjacent cross frames

STAGE 2
- Temp. Support

STAGE 3
- Erect G4-1 and G4-2 and adjacent cross frames

STAGE 4
- Erect G4-1 and G4-2 and adjacent cross frames

LEGEND
- ▽ - Hold or lift crane
- ○ - Tie down
- □ - Temporary support structure
LEGEND

▽ - HOLD OR LIFT CRANE

□ - TIE DOWN

□ - TEMPORARY SUPPORT STRUCTURE

STAGE 11

STAGE 12
NCHRP 12-79

NISCR11
NOTE:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. ALL GIRDERS, WEB 1 = WEB 2 = WEB 3 = 1.125".

3. BRG. STIFFENER WIDTH = 1.750"x18" FOR G1, G2, G3
   BRG. STIFFENER WIDTH = 1.500"x16" FOR G4, G5, G6
   BRG. STIFFENER WIDTH = 1.500"x12" FOR G7, G8, G9
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>46.105</td>
<td>44.898</td>
<td>43.690</td>
<td>42.483</td>
<td>41.276</td>
<td>40.069</td>
<td>38.861</td>
<td>37.654</td>
<td>36.447</td>
</tr>
<tr>
<td>B</td>
<td>54.000</td>
<td>54.000</td>
<td>54.000</td>
<td>54.000</td>
<td>54.000</td>
<td>54.000</td>
<td>54.000</td>
<td>54.000</td>
<td>54.000</td>
</tr>
<tr>
<td>C</td>
<td>115.000</td>
<td>113.613</td>
<td>112.226</td>
<td>110.839</td>
<td>109.452</td>
<td>108.066</td>
<td>106.679</td>
<td>105.292</td>
<td>103.905</td>
</tr>
<tr>
<td>D</td>
<td>54.000</td>
<td>54.000</td>
<td>54.000</td>
<td>54.000</td>
<td>54.000</td>
<td>54.000</td>
<td>54.000</td>
<td>54.000</td>
<td>54.000</td>
</tr>
<tr>
<td>E</td>
<td>46.105</td>
<td>44.898</td>
<td>43.690</td>
<td>42.483</td>
<td>41.276</td>
<td>40.069</td>
<td>38.861</td>
<td>37.654</td>
<td>36.447</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>40.000</td>
<td>1.750</td>
<td>32.000</td>
</tr>
<tr>
<td>TF2</td>
<td>40.000</td>
<td>2.750</td>
<td>32.000</td>
</tr>
<tr>
<td>TF3</td>
<td>40.000</td>
<td>3.250</td>
<td>32.000</td>
</tr>
<tr>
<td>TF4</td>
<td>40.000</td>
<td>2.750</td>
<td>32.000</td>
</tr>
<tr>
<td>TF5</td>
<td>40.000</td>
<td>1.750</td>
<td>32.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

#### Bottom Flange

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>46.000</td>
<td>2.000</td>
<td>38.000</td>
</tr>
<tr>
<td>BF2</td>
<td>46.000</td>
<td>2.750</td>
<td>38.000</td>
</tr>
<tr>
<td>BF3</td>
<td>46.000</td>
<td>3.250</td>
<td>38.000</td>
</tr>
<tr>
<td>BF4</td>
<td>46.000</td>
<td>2.750</td>
<td>38.000</td>
</tr>
<tr>
<td>BF5</td>
<td>46.000</td>
<td>2.000</td>
<td>38.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
TYPICAL END AND INTERMEDIATE DIAPHRAGM

NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 77.000'.
   D. NUMBER OF DESIGN LANES = 6.
   E. HL93 LIVE LOAD.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN ENGLISH UNITS.
LEGEND

▽ - HOLD OR LIFT CRANE
○ - TIE DOWN
■ - TEMPORARY SUPPORT STRUCTURE

STAGE 8

STAGE 1 - ERECT G9 - 1
STAGE 2 - ERECT G8 - 1
   AND XF'S BETWEEN G8 & G9
STAGE 3 - ERECT G7 - 1 AND XF'S
STAGE 4 - ERECT G6 - 1 AND XF'S
STAGE 5 - ERECT G5 - 1 AND XF'S
STAGE 6 - ERECT G4 - 1 AND XF'S
STAGE 7 - ERECT G3 - 1 AND XF'S
STAGE 8 - ERECT G2 - 1 AND XF'S
STAGE 9 - ERECT G1 - 1 AND XF'S
STAGE 10 - ERECT G1 - 3 W/TIE DOWNS
STAGE 11 - ERECT G2 - 3 AND XF'S BETWEEN G1 AND G2
STAGE 12 - ERECT G3 - 3 AND XF'S
STAGE 13 - ERECT G4 - 3 AND XF'S
STAGE 14 - ERECT G5 - 3 AND XF'S
STAGE 15 - ERECT G6 - 3 AND XF'S
STAGE 16 - ERECT G7 - 3 AND XF'S
STAGE 17 - ERECT G8 - 3 AND XF'S

LEGEND

- HOLD OR LIFT CRANE
- TIE DOWN
- TEMPORARY SUPPORT STRUCTURE
STAGE 20

STAGE 21 • ERECT G3 - 2 AND XF'S
STAGE 22 • ERECT G4 - 2 AND XF'S
STAGE 23 • ERECT G5 - 2 AND XF'S
STAGE 24 • ERECT G6 - 2 AND XF'S
STAGE 25 • ERECT G7 - 2 AND XF'S
STAGE 26 • ERECT G8 - 2 AND XF'S
STAGE 27 • ERECT G9 - 2 AND XF'S
STAGE 28 • REMOVE TEMP. SUPPORTS

LEGEND
△ - HOLD OR LIFT CRANE
□ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE
NOTE:

1. See tables on sheet 3 for girder elevation dimensions and plate sizes.

2. Girder G1 and G2, WEB 1 = WEB 2 = 0.750"
   Girder G3 and G4, WEB 1 = WEB 2 = 0.625"
## Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>25.000</td>
<td>24.560</td>
<td>24.110</td>
<td>23.670</td>
</tr>
<tr>
<td>B</td>
<td>20.000</td>
<td>19.640</td>
<td>19.290</td>
<td>18.930</td>
</tr>
<tr>
<td>C</td>
<td>72.460</td>
<td>65.760</td>
<td>59.020</td>
<td>52.230</td>
</tr>
<tr>
<td>D</td>
<td>20.000</td>
<td>19.640</td>
<td>19.290</td>
<td>18.930</td>
</tr>
<tr>
<td>E</td>
<td>25.000</td>
<td>24.560</td>
<td>24.110</td>
<td>23.670</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

## Girder Flange Dimensions

### Top Flange

<table>
<thead>
<tr>
<th>TOP FLANGE</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>24.000</td>
<td>1.000</td>
<td>18.000</td>
<td>1.000</td>
</tr>
<tr>
<td>TF2</td>
<td>24.000</td>
<td>1.750</td>
<td>18.000</td>
<td>1.000</td>
</tr>
<tr>
<td>TF3</td>
<td>24.000</td>
<td>2.750</td>
<td>18.000</td>
<td>1.000</td>
</tr>
<tr>
<td>TF4</td>
<td>24.000</td>
<td>1.750</td>
<td>18.000</td>
<td>1.000</td>
</tr>
<tr>
<td>TF5</td>
<td>24.000</td>
<td>1.250</td>
<td>18.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

### Bottom Flange

<table>
<thead>
<tr>
<th>BOTTOM FLANGE</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>28.000</td>
<td>1.250</td>
<td>18.000</td>
<td>1.000</td>
</tr>
<tr>
<td>BF2</td>
<td>28.000</td>
<td>2.500</td>
<td>18.000</td>
<td>1.000</td>
</tr>
<tr>
<td>BF3</td>
<td>28.000</td>
<td>3.125</td>
<td>18.000</td>
<td>1.500</td>
</tr>
<tr>
<td>BF4</td>
<td>28.000</td>
<td>2.500</td>
<td>18.000</td>
<td>1.000</td>
</tr>
<tr>
<td>BF5</td>
<td>28.000</td>
<td>1.500</td>
<td>18.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

---

NCHRP 12-79
BRIDGE NISC53
GIRDER ELEVATION TABLES
SHEET 3 OF 6
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 27.000'.
   D. NUMBER OF DESIGN LANES = 2.
   E. HL93 LIVE LOAD.
   F. DESIGN SPEED = 45 MPH.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN ENGLISH UNITS.
STAGE 1
(RESULTS NOT REQ'D)

STAGE 2
(RESULTS REQ'D)

LEGEND
☑ - HOLD OR LIFT CRANE
☐ - TIE DOWN
☐ - TEMPORARY SUPPORT STRUCTURE
LEGEND

☐ • HOLD OR LIFT CRANE

☐ • TIE DOWN

☐ • TEMPORARY SUPPORT STRUCTURE

STAGE 3
(RESULTS REQ'D)

STAGE 4
STEEL DL + TOTAL NONCOMP DL RESULTS
NOTES:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. ALL GIRDERS, WEB 1 = WEB 2 = 0.750"
### Girder Plate Lengths

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>18.000</td>
<td>21.000</td>
<td>21.000</td>
<td>22.000</td>
</tr>
<tr>
<td>B</td>
<td>18.000</td>
<td>21.000</td>
<td>21.000</td>
<td>22.000</td>
</tr>
<tr>
<td>C</td>
<td>71.663</td>
<td>70.954</td>
<td>77.378</td>
<td>84.427</td>
</tr>
<tr>
<td>D</td>
<td>17.000</td>
<td>17.000</td>
<td>17.000</td>
<td>16.500</td>
</tr>
<tr>
<td>E</td>
<td>17.000</td>
<td>17.000</td>
<td>17.000</td>
<td>16.500</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

**Top Flange**

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>24.000</td>
<td>24.000</td>
<td>24.000</td>
<td>24.000</td>
</tr>
<tr>
<td>TF2</td>
<td>24.000</td>
<td>24.000</td>
<td>24.000</td>
<td>24.000</td>
</tr>
<tr>
<td>TF3</td>
<td>24.000</td>
<td>24.000</td>
<td>24.000</td>
<td>24.000</td>
</tr>
<tr>
<td>TF4</td>
<td>24.000</td>
<td>24.000</td>
<td>24.000</td>
<td>24.000</td>
</tr>
<tr>
<td>TF5</td>
<td>24.000</td>
<td>24.000</td>
<td>24.000</td>
<td>24.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

**Bottom Flange**

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>28.000</td>
<td>28.000</td>
<td>24.000</td>
<td>24.000</td>
</tr>
<tr>
<td>BF2</td>
<td>28.000</td>
<td>28.000</td>
<td>24.000</td>
<td>24.000</td>
</tr>
<tr>
<td>BF3</td>
<td>28.000</td>
<td>28.000</td>
<td>24.000</td>
<td>24.000</td>
</tr>
<tr>
<td>BF4</td>
<td>28.000</td>
<td>28.000</td>
<td>24.000</td>
<td>24.000</td>
</tr>
<tr>
<td>BF5</td>
<td>28.000</td>
<td>28.000</td>
<td>24.000</td>
<td>24.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 77.000'.
   D. NUMBER OF DESIGN LANES = 6.
   E. HL93 LIVE LOAD.
   F. DESIGN SPEED = 35 MPH.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN ENGLISH UNITS.
LEGEND

△• HOLD OR LIFT CRANE

○• TIE DOWN

☐• TEMPORARY SUPPORT STRUCTURE
LEGEND

• HOLD OR LIFT CRANE
○ TIE DOWN
□ TEMPORARY SUPPORT STRUCTURE

STAGE 3

STAGE 4
LEGEND

▽ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE

STAGE 5

STAGE 6
ALL TEMP SUPPORTS REMOVED
NOTES:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. ALL GIRDERS, WEB 1 = WEB 2 = 0.750"
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>15.000</td>
<td>16.000</td>
<td>15.000</td>
<td>17.500</td>
<td>17.500</td>
<td>20.000</td>
<td>20.000</td>
<td>27.500</td>
<td>35.000</td>
</tr>
<tr>
<td>B</td>
<td>15.000</td>
<td>16.000</td>
<td>15.000</td>
<td>17.500</td>
<td>17.500</td>
<td>20.000</td>
<td>20.000</td>
<td>27.500</td>
<td>35.000</td>
</tr>
<tr>
<td>C</td>
<td>65.826</td>
<td>69.740</td>
<td>78.003</td>
<td>67.712</td>
<td>75.000</td>
<td>78.068</td>
<td>77.240</td>
<td>73.084</td>
<td>71.777</td>
</tr>
<tr>
<td>D</td>
<td>14.000</td>
<td>14.000</td>
<td>14.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
</tr>
<tr>
<td>E</td>
<td>14.000</td>
<td>14.000</td>
<td>14.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF</td>
<td>TF</td>
<td>BF</td>
</tr>
<tr>
<td>TF1</td>
<td>20.000</td>
<td>1.000</td>
</tr>
<tr>
<td>TF2</td>
<td>20.000</td>
<td>1.000</td>
</tr>
<tr>
<td>TF3</td>
<td>20.000</td>
<td>2.000</td>
</tr>
<tr>
<td>TF4</td>
<td>20.000</td>
<td>1.000</td>
</tr>
<tr>
<td>TF5</td>
<td>20.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

#### Bottom Flange

<table>
<thead>
<tr>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF</td>
<td>TF</td>
<td>BF</td>
</tr>
<tr>
<td>BF1</td>
<td>28.000</td>
<td>1.500</td>
</tr>
<tr>
<td>BF2</td>
<td>28.000</td>
<td>1.500</td>
</tr>
<tr>
<td>BF3</td>
<td>28.000</td>
<td>2.250</td>
</tr>
<tr>
<td>BF4</td>
<td>28.000</td>
<td>1.500</td>
</tr>
<tr>
<td>BF5</td>
<td>28.000</td>
<td>1.500</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 77.000'.
   D. NUMBER OF DESIGN LANES = 6.
   E. HL93 LIVE LOAD.
   F. DESIGN SPEED = 35 MPH.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN ENGLISH UNITS.
LEGEND

◇ = HOLD OR LIFT CRANE
○ = TIE DOWN
□ = TEMPORARY SUPPORT STRUCTURE
NCHRP 12-79

NISCS15
NOTE:
1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.
2. GIRDELS G1, G2, G3, WEB 1 = WEB 2 = 0.875"
   GIRDERS G4, G5, G6, WEB 1 = WEB 2 = 0.6875"
   GIRDERS G7, G8, G9, WEB 1 = WEB 2 = 0.625".
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>65.053</td>
<td>57.691</td>
<td>50.264</td>
<td>42.763</td>
<td>35.174</td>
<td>27.479</td>
<td>126.897</td>
<td>115.124</td>
<td>103.165</td>
</tr>
<tr>
<td>B</td>
<td>130.000</td>
<td>126.206</td>
<td>122.413</td>
<td>118.620</td>
<td>114.826</td>
<td>111.033</td>
<td>000.000</td>
<td>000.000</td>
<td>000.000</td>
</tr>
</tbody>
</table>

All dimensions are in feet.

### Girder Flange Dimensions

<table>
<thead>
<tr>
<th>TOP FLANGE</th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>30.000</td>
<td>26.000</td>
<td>24.000</td>
</tr>
<tr>
<td>TF2</td>
<td>30.000</td>
<td>26.000</td>
<td>1.500</td>
</tr>
</tbody>
</table>

All dimensions are in inches.

<table>
<thead>
<tr>
<th>TOP FLANGE</th>
<th>G1</th>
<th>G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>32.000</td>
<td>32.000</td>
<td>28.000</td>
<td>24.000</td>
</tr>
<tr>
<td>BF2</td>
<td>32.000</td>
<td>32.000</td>
<td>28.000</td>
<td>1.500</td>
</tr>
</tbody>
</table>

All dimensions are in inches.
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1.500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 76.500'.
   D. NUMBER OF DESIGN LANES = 6.
   E. HL93 LIVE LOAD.
   F. DESIGN SPEED = 35 MPH.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN ENGLISH UNITS.
LEGEND

• HOLD OR LIFT CRANE
○ TIE DOWN
□ TEMPORARY SUPPORT STRUCTURE

STAGE 5

STAGE 6
STAGE 9

STAGE 10

STAGE 11

LEGEND

△ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE

NCHRP 12-79
BRIDGE - NISC515
GIRDER ERECTION PROCEDURE
SHEET 9 OF 10
NCHRP 12-79

NISCS37
FRAMING PLAN

BEARING LEGEND

- NON-GUIDED
- LONGITUDINALLY GUIDED
- TRANSVERSELY GUIDED
- FIXED

DIAPHRAGM (TYP)
- SPACING ALONG G9
- SPACING ALONG G1

DIAPHRAGM SPACING
- 8 SPA @ 9.250' = 74.000'
- 16 SPA @ 17.035' = 272.560'

3.000'
8 SPA @ 9.250' - 74.000'
3.000'

80.000'

CROSS - SECTION
(DIAPHRAGMS NOT SHOWN)

NCHRP 12-79
BRIDGE NISCS37
FRAMING PLAN AND CROSS-SECTION
SHEET 1 OF 6
NOTE:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION
   DIMENSIONS AND PLATE SIZES.

2. GIRDER G1: WEB 1 = WEB 2 = WEB 3 = 1.375"
   GIRDER G2 & G3: WEB 1 = WEB 2 = WEB 3 = 1.125"
   GIRDERS G4 - G9: WEB 1 = WEB 2 = WEB 3 = 1.00"
### GIRDER PLATE LENGTHS

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>35.000</td>
<td>35.000</td>
<td>35.000</td>
<td>35.000</td>
<td>35.000</td>
<td>35.000</td>
<td>35.000</td>
<td>35.000</td>
<td>35.000</td>
</tr>
<tr>
<td>B</td>
<td>44.800</td>
<td>46.070</td>
<td>47.600</td>
<td>48.670</td>
<td>50.000</td>
<td>51.350</td>
<td>52.720</td>
<td>54.110</td>
<td>55.520</td>
</tr>
<tr>
<td>C</td>
<td>130.000</td>
<td>130.000</td>
<td>130.000</td>
<td>130.000</td>
<td>130.000</td>
<td>130.000</td>
<td>130.000</td>
<td>130.000</td>
<td>130.000</td>
</tr>
<tr>
<td>D</td>
<td>44.800</td>
<td>46.070</td>
<td>47.600</td>
<td>48.670</td>
<td>50.000</td>
<td>51.350</td>
<td>52.720</td>
<td>54.110</td>
<td>55.520</td>
</tr>
<tr>
<td>E</td>
<td>35.000</td>
<td>35.000</td>
<td>35.000</td>
<td>35.000</td>
<td>35.000</td>
<td>35.000</td>
<td>35.000</td>
<td>35.000</td>
<td>35.000</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### GIRDER FLANGE DIMENSIONS

**TOP FLANGE**

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4-G6</th>
<th>G7-G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>48.000</td>
<td>1.750</td>
<td>48.000</td>
<td>1.875</td>
<td>36.000</td>
</tr>
<tr>
<td>TF2</td>
<td>48.000</td>
<td>2.6250</td>
<td>48.000</td>
<td>2.000</td>
<td>36.000</td>
</tr>
<tr>
<td>TF3</td>
<td>48.000</td>
<td>3.375</td>
<td>48.000</td>
<td>2.500</td>
<td>36.000</td>
</tr>
<tr>
<td>TF4</td>
<td>48.000</td>
<td>2.500</td>
<td>48.000</td>
<td>2.000</td>
<td>36.000</td>
</tr>
<tr>
<td>TF5</td>
<td>48.000</td>
<td>1.750</td>
<td>48.000</td>
<td>1.875</td>
<td>36.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

**BOTTOM FLANGE**

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4-G6</th>
<th>G7-G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>48.000</td>
<td>1.750</td>
<td>48.000</td>
<td>1.875</td>
<td>36.000</td>
</tr>
<tr>
<td>BF2</td>
<td>48.000</td>
<td>2.6250</td>
<td>48.000</td>
<td>2.000</td>
<td>36.000</td>
</tr>
<tr>
<td>BF3</td>
<td>48.000</td>
<td>3.375</td>
<td>48.000</td>
<td>2.500</td>
<td>36.000</td>
</tr>
<tr>
<td>BF4</td>
<td>48.000</td>
<td>2.500</td>
<td>48.000</td>
<td>2.000</td>
<td>36.000</td>
</tr>
<tr>
<td>BF5</td>
<td>48.000</td>
<td>1.750</td>
<td>48.000</td>
<td>1.875</td>
<td>36.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

NCHRP 12-79
BRIDGE NISC537
GIRDER ELEVATION TABLES
SHEET 3 OF 6
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1.500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 76.500'.
   D. NUMBER OF DESIGN LANES = 6.
   E. HL93 LIVE LOAD.
   F. DESIGN SPEED = 45 MPH.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN ENGLISH UNITS.
STAGES 1 THRU 15
(NO RESULTS REQ'D)

STAGES 16 THRU 23
(RESULTS REQ'D)
STAGES 24 THRU 27
(RESULTS REQ'D)

STAGE 28
REMOVE TEMP. SUPPORTS

STAGE 29
STEEL DL
CONCRETE DL
NOTES:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. GIRDERS, WEB 1 • WEB 2 • WEB 3 • 1.125"
### GIRDER PLATE LENGTHS

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>60.00</td>
<td>75.00</td>
<td>75.00</td>
<td>75.00</td>
<td>85.00</td>
<td>92.246</td>
<td>104.00</td>
<td>110.00</td>
<td>118.00</td>
</tr>
<tr>
<td>B</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>C</td>
<td>129.216</td>
<td>126.057</td>
<td>123.408</td>
<td>130.000</td>
<td>125.000</td>
<td>130.000</td>
<td>122.025</td>
<td>126.857</td>
<td>129.387</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>E</td>
<td>60.00</td>
<td>60.00</td>
<td>75.00</td>
<td>81.352</td>
<td>90.000</td>
<td>92.246</td>
<td>104.00</td>
<td>110.00</td>
<td>118.00</td>
</tr>
</tbody>
</table>

* All dimensions are in feet.

### GIRDER FLANGE DIMENSIONS

#### TOP FLANGE

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>36.00</td>
<td>1.750</td>
<td>36.00</td>
</tr>
<tr>
<td>TF1</td>
<td>1.750</td>
<td>30.000</td>
<td>36.000</td>
</tr>
<tr>
<td>TF2</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>TF3</td>
<td>36.000</td>
<td>2.250</td>
<td>36.000</td>
</tr>
<tr>
<td>TF4</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>TF5</td>
<td>36.000</td>
<td>1.750</td>
<td>36.000</td>
</tr>
</tbody>
</table>

* All dimensions are in inches.

#### BOTTOM FLANGE

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>36.00</td>
<td>2.000</td>
<td>36.00</td>
</tr>
<tr>
<td>BF2</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>BF3</td>
<td>36.000</td>
<td>2.500</td>
<td>36.000</td>
</tr>
<tr>
<td>BF4</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>BF5</td>
<td>36.000</td>
<td>2.000</td>
<td>36.00</td>
</tr>
</tbody>
</table>

* All dimensions are in inches.
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 77.000'.
   D. NUMBER OF DESIGN LANES = 6.
   E. HL93 LIVE LOAD.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN UNITS OF INCHES.
LEGEND

▼ - HOLD OR LIFT CRANE
○ - TIE DOWN
☐ - TEMPORARY SUPPORT STRUCTURE

STAGE 15

STAGE 16
LEGEND

▽ - HOLD OR LIFT CRANE

○ - TIE DOWN

□ - TEMPORARY SUPPORT STRUCTURE
LEGEND

△ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE

STAGE 23
TEMP SUPPORTS

STAGE 24
REMOVE TEMPORARY SUPPORTS

STAGE 25
(RESULTS REQ'D)
NCHRP 12-79

NISCS39
NOTE:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. GIRDERs, WEB 1 = WEB 2 = WEB 3 = 1.250".

3. TOP FLANGE STEEL: G1, G2, G3 = HPS 70W
   G4 THRU G5 = GR 50W.

4. BOTTOM FLANGE: G1, G2, G3 = HPS 70W
   G4 THRU G5 = GR 50W.

5. WEB STEEL: ALL GIRDERs = GR 50W

NCHRP 12-79
BRIDGE NISC39
GIRDER ELEVATION
SHEET 2 OF 8
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>115.000</td>
<td>107.570</td>
<td>100.108</td>
<td>92.610</td>
<td>85.075</td>
<td>77.499</td>
<td>69.881</td>
<td>62.216</td>
<td>54.501</td>
</tr>
<tr>
<td>B</td>
<td>35.001</td>
<td>35.362</td>
<td>35.724</td>
<td>36.086</td>
<td>36.448</td>
<td>36.810</td>
<td>34.671</td>
<td>35.033</td>
<td>35.395</td>
</tr>
<tr>
<td>C</td>
<td>59.999</td>
<td>59.276</td>
<td>58.552</td>
<td>57.828</td>
<td>57.105</td>
<td>56.381</td>
<td>55.658</td>
<td>54.934</td>
<td>54.210</td>
</tr>
<tr>
<td>D</td>
<td>35.001</td>
<td>35.362</td>
<td>35.724</td>
<td>36.086</td>
<td>36.448</td>
<td>36.810</td>
<td>34.671</td>
<td>35.033</td>
<td>35.395</td>
</tr>
<tr>
<td>E</td>
<td>95.818</td>
<td>93.035</td>
<td>90.371</td>
<td>87.648</td>
<td>84.925</td>
<td>82.202</td>
<td>84.478</td>
<td>81.755</td>
<td>79.032</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th>FLANGE</th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>44.000</td>
<td>2.500</td>
<td>36.000</td>
</tr>
<tr>
<td>TF2</td>
<td>44.000</td>
<td>3.000</td>
<td>36.000</td>
</tr>
<tr>
<td>TF3</td>
<td>44.000</td>
<td>3.000</td>
<td>36.000</td>
</tr>
<tr>
<td>TF4</td>
<td>44.000</td>
<td>3.000</td>
<td>36.000</td>
</tr>
<tr>
<td>TF5</td>
<td>44.000</td>
<td>2.500</td>
<td>36.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

#### Bottom Flange

<table>
<thead>
<tr>
<th>FLANGE</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>46.000</td>
<td>2.500</td>
<td>38.000</td>
</tr>
<tr>
<td>BF2</td>
<td>46.000</td>
<td>3.500</td>
<td>38.000</td>
</tr>
<tr>
<td>BF3</td>
<td>46.000</td>
<td>3.500</td>
<td>38.000</td>
</tr>
<tr>
<td>BF4</td>
<td>46.000</td>
<td>3.500</td>
<td>38.000</td>
</tr>
<tr>
<td>BF5</td>
<td>46.000</td>
<td>2.500</td>
<td>38.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 77.000'.
   D. NUMBER OF DESIGN LANES = 6.
   E. HL93 LIVE LOAD.
   F. DESIGN SPEED = 35 MPH.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN ENGLISH UNITS.

NOTES:

LOADING ON G8 AND G9

6 SPA, @ 5,000' = 30,000'
12.5k 12.5k 12.5k 12.5k 12.5k 12.5k

CONCRETE COUNTERWEIGHT INFORMATION

12,000'

30,000'

5,500'

12,000'

NCHRP 12-79
BRIDGE NISC39
MISC. DETAILS AND NOTES
SHEET 4 OF 8
LEGEND

△ • HOLD OR LIFT CRANE
○ • TIE DOWN
□ • TEMPORARY SUPPORT STRUCTURE

STAGE 1

STAGES 2 THRU 9
LEGEND

▽ • HOLD OR LIFT CRANE
○ • TIE DOWN
□ • TEMPORARY SUPPORT STRUCTURE

STAGE 19

STAGES 10 THRU 18
(GIRDERS G1 THRU G9)

HOLD CRANE

TEMP SUPPORT
LEGEND

△ • HOLD OR LIFT CRANE
○ • TIE DOWN
□ • TEMPORARY SUPPORT STRUCTURE
STAGE 28
PLACE COUNTERWEIGHT ON G8 - G9

STAGE 29
REMOVE ALL TEMPORARY SUPPORTS
NCHRP 12-79

NISSS2
FRAMING PLAN

CROSS - SECTION
(DIAPHRAGMS NOT SHOWN)
NOTE:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION
   DIMENSIONS AND PLATE SIZES.

2. ALL GIRDERS, WEB 1 - WEB 2 - 0.6250".
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>B</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>C</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
</tr>
<tr>
<td>D</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>E</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

**Top Flange**

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>16.000</td>
<td>0.875</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TF2</td>
<td>16.000</td>
<td>0.875</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TF3</td>
<td>16.000</td>
<td>1.250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TF4</td>
<td>16.000</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TF5</td>
<td>16.000</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Bottom Flange**

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>18.000</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BF2</td>
<td>18.000</td>
<td>1.500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BF3</td>
<td>18.000</td>
<td>2.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BF4</td>
<td>18.000</td>
<td>1.500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BF5</td>
<td>18.000</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1.500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 26.500'.
   D. NUMBER OF DESIGN LANES = 2.
   E. HL93 LIVE LOAD.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN UNITS OF INCHES.
STAGE 3

STAGE 4

LEGEND

▽ = HOLD OR LIFT CRANE
○ = TIE DOWN
□ = TEMPORARY SUPPORT STRUCTURE
NOTE:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. ALL GIRDERS, WEB 1 - WEB 2 - 0.6250".
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>B</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>C</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
</tr>
<tr>
<td>D</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>E</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF</td>
<td>TF</td>
<td>BF</td>
<td>TF</td>
</tr>
<tr>
<td>TF1</td>
<td>16.000</td>
<td>0.875</td>
<td>16.000</td>
</tr>
<tr>
<td>TF2</td>
<td>16.000</td>
<td>0.875</td>
<td>16.000</td>
</tr>
<tr>
<td>TF3</td>
<td>16.000</td>
<td>1.125</td>
<td>16.000</td>
</tr>
<tr>
<td>TF4</td>
<td>16.000</td>
<td>1.000</td>
<td>16.000</td>
</tr>
<tr>
<td>TF5</td>
<td>16.000</td>
<td>1.000</td>
<td>16.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

#### Bottom Flange

<table>
<thead>
<tr>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF</td>
<td>TF</td>
<td>BF</td>
<td>TF</td>
</tr>
<tr>
<td>BF1</td>
<td>18.000</td>
<td>1.000</td>
<td>18.000</td>
</tr>
<tr>
<td>BF2</td>
<td>18.000</td>
<td>1.500</td>
<td>18.000</td>
</tr>
<tr>
<td>BF3</td>
<td>18.000</td>
<td>2.000</td>
<td>18.000</td>
</tr>
<tr>
<td>BF4</td>
<td>18.000</td>
<td>1.500</td>
<td>18.000</td>
</tr>
<tr>
<td>BF5</td>
<td>18.000</td>
<td>1.000</td>
<td>18.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 26.500'.
   D. NUMBER OF DESIGN LANES = 2.
   E. HL93 LIVE LOAD.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN UNITS OF INCHES.
LEGEND

△ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE
NCHRP 12-79

NISSS6
NOTE:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. ALL GIRDERS, WEB 1 - WEB 2 - 0.6250".
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>B</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>C</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
</tr>
<tr>
<td>D</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>E</td>
<td>5.699</td>
<td>15.233</td>
<td>24.767</td>
<td>34.301</td>
</tr>
</tbody>
</table>

**Note:** All dimensions are in feet.

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th>BF</th>
<th>TF</th>
<th>BF</th>
<th>TF</th>
<th>BF</th>
<th>TF</th>
<th>BF</th>
<th>TF</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>18.000</td>
<td>0.875</td>
<td>18.000</td>
<td>0.875</td>
<td>18.000</td>
<td>0.875</td>
<td>18.000</td>
</tr>
<tr>
<td>TF2</td>
<td>18.000</td>
<td>0.875</td>
<td>18.000</td>
<td>0.875</td>
<td>18.000</td>
<td>0.875</td>
<td>18.000</td>
</tr>
<tr>
<td>TF3</td>
<td>18.000</td>
<td>1.250</td>
<td>18.000</td>
<td>1.250</td>
<td>18.000</td>
<td>1.250</td>
<td>18.000</td>
</tr>
<tr>
<td>TF4</td>
<td>18.000</td>
<td>1.000</td>
<td>18.000</td>
<td>1.000</td>
<td>18.000</td>
<td>1.000</td>
<td>18.000</td>
</tr>
<tr>
<td>TF5</td>
<td>18.000</td>
<td>1.000</td>
<td>18.000</td>
<td>1.000</td>
<td>18.000</td>
<td>1.000</td>
<td>18.000</td>
</tr>
</tbody>
</table>

**Note:** All dimensions are in inches.

#### Bottom Flange

<table>
<thead>
<tr>
<th>BF</th>
<th>TF</th>
<th>BF</th>
<th>TF</th>
<th>BF</th>
<th>TF</th>
<th>BF</th>
<th>TF</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>20.000</td>
<td>1.000</td>
<td>20.000</td>
<td>1.000</td>
<td>20.000</td>
<td>1.000</td>
<td>20.000</td>
</tr>
<tr>
<td>BF2</td>
<td>20.000</td>
<td>1.000</td>
<td>20.000</td>
<td>1.000</td>
<td>20.000</td>
<td>1.000</td>
<td>20.000</td>
</tr>
<tr>
<td>BF3</td>
<td>20.000</td>
<td>1.500</td>
<td>20.000</td>
<td>1.500</td>
<td>20.000</td>
<td>2.000</td>
<td>20.000</td>
</tr>
<tr>
<td>BF4</td>
<td>20.000</td>
<td>1.250</td>
<td>20.000</td>
<td>1.250</td>
<td>20.000</td>
<td>1.750</td>
<td>20.000</td>
</tr>
<tr>
<td>BF5</td>
<td>20.000</td>
<td>1.250</td>
<td>20.000</td>
<td>1.250</td>
<td>20.000</td>
<td>1.250</td>
<td>20.000</td>
</tr>
</tbody>
</table>

**Note:** All dimensions are in inches.
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 26.500'.
   D. NUMBER OF DESIGN LANES = 2.
   E. HL93 LIVE LOAD.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN UNITS OF INCHES.
LEGEND

△ = HOLD OR LIFT CRANE
○ = TIE DOWN
□ = TEMPORARY SUPPORT STRUCTURE

STAGE 1

STAGE 2
STAGE 3

STAGE 4

LEGEND

▼ = HOLD OR LIFT CRANE

= TIE DOWN

= TEMPORARY SUPPORT STRUCTURE
NOTE:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. ALL GIRDER, WEB 1 - WEB 2 - 0.6250\".

NCHRP 12-79
BRIDGE NISSS11
GIRDER ELEVATION
SHEET 2 OF 6
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>B</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>C</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
</tr>
<tr>
<td>D</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>E</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
</tbody>
</table>

All dimensions are in feet.

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>16.000</td>
<td>0.750</td>
<td>16.000</td>
</tr>
<tr>
<td>TF2</td>
<td>16.000</td>
<td>0.750</td>
<td>16.000</td>
</tr>
<tr>
<td>TF3</td>
<td>16.000</td>
<td>1.000</td>
<td>16.000</td>
</tr>
<tr>
<td>TF4</td>
<td>16.000</td>
<td>0.750</td>
<td>16.000</td>
</tr>
<tr>
<td>TF5</td>
<td>16.000</td>
<td>0.750</td>
<td>16.000</td>
</tr>
</tbody>
</table>

All dimensions are in inches.

#### Bottom Flange

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>18.000</td>
<td>1.000</td>
<td>18.000</td>
</tr>
<tr>
<td>BF2</td>
<td>18.000</td>
<td>1.500</td>
<td>18.000</td>
</tr>
<tr>
<td>BF3</td>
<td>18.000</td>
<td>2.000</td>
<td>18.000</td>
</tr>
<tr>
<td>BF4</td>
<td>18.000</td>
<td>1.500</td>
<td>18.000</td>
</tr>
<tr>
<td>BF5</td>
<td>18.000</td>
<td>1.000</td>
<td>18.000</td>
</tr>
</tbody>
</table>

All dimensions are in inches.
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH - 77.000'.
   D. NUMBER OF DESIGN LANES - 6.
   E. HL93 LIVE LOAD.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN UNITS OF INCHES.
LEGEND

△ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE

STAGE 1
STAGE 2

STAGE 3 - ERECT G3 AND ADJACENT CROSS FRAMES
STAGE 4 - ERECT G4 AND ADJACENT CROSS FRAMES
STAGE 5 - ERECT G5 AND ADJACENT CROSS FRAMES
STAGE 6 - ERECT G6 AND ADJACENT CROSS FRAMES
STAGE 7 - ERECT G7 AND ADJACENT CROSS FRAMES

NCHRP 12-79
BRIDGE NISSS11
GENERAL ERECTION PROCEDURE
SHEET 5 OF 6
LEGEND

▽ = HOLD OR LIFT CRANE
○ = TIE DOWN
□ = TEMPORARY SUPPORT STRUCTURE
NOTE:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. ALL GIRDER, WEB 1 - WEB 2 - 0.6250".
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>B</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>C</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>D</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>E</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
</tbody>
</table>

**NOTES:**
- All dimensions are in feet.

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th>GIRDER FLANGE DIMENSIONS</th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOP FLANGE</td>
<td>BF</td>
<td>TF</td>
<td>BF</td>
</tr>
<tr>
<td>TF1</td>
<td>16.000</td>
<td>0.750</td>
<td>16.000</td>
</tr>
<tr>
<td>TF2</td>
<td>16.000</td>
<td>0.750</td>
<td>16.000</td>
</tr>
<tr>
<td>TF3</td>
<td>16.000</td>
<td>1.250</td>
<td>16.000</td>
</tr>
<tr>
<td>TF4</td>
<td>16.000</td>
<td>0.750</td>
<td>16.000</td>
</tr>
<tr>
<td>TF5</td>
<td>16.000</td>
<td>0.750</td>
<td>16.000</td>
</tr>
</tbody>
</table>

**NOTES:**
- All dimensions are in inches.

#### Bottom Flange

<table>
<thead>
<tr>
<th>GIRDER FLANGE DIMENSIONS</th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOTTOM FLANGE</td>
<td>BF</td>
<td>TF</td>
<td>BF</td>
</tr>
<tr>
<td>BF1</td>
<td>18.000</td>
<td>1.000</td>
<td>18.000</td>
</tr>
<tr>
<td>BF2</td>
<td>18.000</td>
<td>1.500</td>
<td>18.000</td>
</tr>
<tr>
<td>BF3</td>
<td>18.000</td>
<td>2.000</td>
<td>18.000</td>
</tr>
<tr>
<td>BF4</td>
<td>18.000</td>
<td>1.500</td>
<td>18.000</td>
</tr>
<tr>
<td>BF5</td>
<td>18.000</td>
<td>1.000</td>
<td>18.000</td>
</tr>
</tbody>
</table>

**NOTES:**
- All dimensions are in inches.
TYPICAL END AND INTERMEDIATE DIAPHRAGM

NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 77,000'.
   D. NUMBER OF DESIGN LANES = 6.
   E. HL93 LIVE LOAD.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN UNITS OF INCHES.
STAGE 9

LEGEND

▽ = HOLD OR LIFT CRANE
○ = TIE DOWN
☐ - TEMPORARY SUPPORT STRUCTURE
FRAMING PLAN

CROSS - SECTION
(DIAPHRAGMS NOT SHOWN)

BEARING LEGEND
○ NON-GUIDED
☒ LONGITUDINALLY GUIDED
☐ TRANSVERSELY GUIDED
☒ FIXED

NCHRP 12-79
BRIDGE NISSS14
FRAMING PLAN AND CROSS-SECTION
SHEET 1 OF 6
NOTE:
1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.
2. ALL GIRDER S, WEB 1 - WEB 2 = 0.625"
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>B</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>C</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
</tr>
<tr>
<td>D</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>E</td>
<td>20.000</td>
<td>20.000</td>
<td>20.000</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th>TOP FLANGE</th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF</td>
<td>16.000</td>
<td>16.000</td>
<td>16.000</td>
</tr>
<tr>
<td>TF</td>
<td>0.750</td>
<td>0.750</td>
<td>0.750</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

#### Bottom Flange

<table>
<thead>
<tr>
<th>BOTTOM FLANGE</th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF</td>
<td>18.000</td>
<td>18.000</td>
<td>18.000</td>
</tr>
<tr>
<td>TF</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 77,000'.
   D. NUMBER OF DESIGN LANES = 6.
   E. HL93 LIVE LOAD.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN ENGLISH UNITS.
STAGE 1

LEGEND
▼ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE

STAGE 2

STAGE 3 - ERECT G3 AND ADJACENT CROSS FRAMES
STAGE 4 - ERECT G4 AND ADJACENT CROSS FRAMES
STAGE 6 - ERECT G6 AND ADJACENT CROSS FRAMES
STAGE 7 - ERECT G7 AND ADJACENT CROSS FRAMES

STAGE 8 - ERECT G8 AND ADJACENT CROSS FRAMES

STAGE 9 - ERECT G9 AND ADJACENT CROSS FRAMES

LEGEND

▽ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE

NCHRP 12-79
BRIDGE NSS14
GENERAL ERECTION PROCEDURE
SHEET 6 OF 6
FRAMING PLAN

BEARING LEGEND

- O NON-GUIDED
- ☐ LONGITUDINALLY GUIDED
- ☐ TRANSVERSELY GUIDED
- ☐ FIXED

CROSS - SECTION
(DIAPHRAGMS NOT SHOWN)
NOTE:
1. See tables on Sheet 3 for girder elevation dimensions and plate sizes.
2. All girders, Web 1 = Web 2 = 0.6250".

1.500"x8.000" BRG. STIFFENER L (EACH SIDE)

1.000"
72.000" (TYP.)

NCHRP 12-79
BRIDGE
NISSH16
GIRDER ELEVATION

SHEET 2 OF 6
### GIRDER PLATE LENGTHS

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>25.453</td>
<td>30.964</td>
<td>36.476</td>
<td>19.488</td>
<td>20.000</td>
<td>25.512</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
</tr>
<tr>
<td>B</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>20.000</td>
<td>25.000</td>
<td>25.000</td>
<td>30.000</td>
<td>35.000</td>
<td>40.000</td>
</tr>
<tr>
<td>C</td>
<td>55.000</td>
<td>55.000</td>
<td>55.000</td>
<td>60.000</td>
<td>60.000</td>
<td>60.000</td>
<td>62.047</td>
<td>63.071</td>
<td>64.095</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>20.000</td>
<td>25.000</td>
<td>25.000</td>
<td>30.000</td>
<td>35.000</td>
<td>40.000</td>
</tr>
<tr>
<td>E</td>
<td>25.453</td>
<td>30.964</td>
<td>36.476</td>
<td>19.488</td>
<td>20.000</td>
<td>25.512</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### GIRDER FLANGE DIMENSIONS

#### TOP FLANGE

<table>
<thead>
<tr>
<th>FLANGE</th>
<th>BF</th>
<th>TF</th>
<th>BF</th>
<th>TF</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>18.000</td>
<td>0.750</td>
<td>18.000</td>
<td>1.000</td>
</tr>
<tr>
<td>TF2</td>
<td>N/A</td>
<td>N/A</td>
<td>18.000</td>
<td>1.000</td>
</tr>
<tr>
<td>TF3</td>
<td>18.000</td>
<td>1.000</td>
<td>18.000</td>
<td>1.250</td>
</tr>
<tr>
<td>TF4</td>
<td>N/A</td>
<td>N/A</td>
<td>18.000</td>
<td>1.000</td>
</tr>
<tr>
<td>TF5</td>
<td>18.000</td>
<td>0.750</td>
<td>18.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

### BOTTOM FLANGE

<table>
<thead>
<tr>
<th>FLANGE</th>
<th>BF</th>
<th>TF</th>
<th>BF</th>
<th>TF</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>18.000</td>
<td>1.000</td>
<td>20.000</td>
<td>1.000</td>
</tr>
<tr>
<td>BF2</td>
<td>N/A</td>
<td>N/A</td>
<td>20.000</td>
<td>1.500</td>
</tr>
<tr>
<td>BF3</td>
<td>18.000</td>
<td>1.250</td>
<td>20.000</td>
<td>2.000</td>
</tr>
<tr>
<td>BF4</td>
<td>N/A</td>
<td>N/A</td>
<td>20.000</td>
<td>1.500</td>
</tr>
<tr>
<td>BF5</td>
<td>18.000</td>
<td>1.000</td>
<td>20.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

NCHRP 12-79
BRIDGE NISSS16
GIRDER ELEVATION TABLES
SHEET 3 OF 6
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 77.000'.
   D. NUMBER OF DESIGN LANES = 6.
   E. HL93 LIVE LOAD.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN UNITS OF INCHES.
STAGE 1

STAGE 2

LEGEND

▽ = HOLD OR LIFT CRANE

○ = TIE DOWN

☐ = TEMPORARY SUPPORT STRUCTURE

NCHRP 12-79
BRIDGE NISS16
GENERAL ERECTION PROCEDURE
SHEET 5 OF 6
FRAMING PLAN

CROSSFRAME SPACING TABLE

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.976'</td>
<td>23.524'</td>
<td>18.023'</td>
<td>12.500'</td>
<td>25.000'</td>
<td>8.476'</td>
<td>18.000'</td>
<td>13.976'</td>
<td>9.952'</td>
</tr>
</tbody>
</table>

CHAUCH 4.000"
9.500"
(0.500" INTEGRAL WEARING SURFACE)

BEARING LEGEND

- O NON-GUIDED
- ☐ LONGITUDINALLY GUIDED
- ☐ TRANSVERSELY GUIDED
- ☐ FIXED

CROSS-SECTION

(DIAPHRAGMS NOT SHOWN)
1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. ALL GIRDERS, WEB 1 & WEB 3 = 0.875", WEB 2 = 1.000".
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>25.453</td>
<td>30.964</td>
<td>31.476</td>
<td>34.488</td>
<td>35.000</td>
<td>40.512</td>
<td>36.024</td>
<td>39.036</td>
<td>39.547</td>
</tr>
<tr>
<td>B</td>
<td>30.000</td>
<td>30.000</td>
<td>35.000</td>
<td>35.000</td>
<td>40.000</td>
<td>40.000</td>
<td>45.000</td>
<td>45.000</td>
<td>50.000</td>
</tr>
<tr>
<td>C</td>
<td>70.000</td>
<td>70.000</td>
<td>70.000</td>
<td>75.000</td>
<td>75.000</td>
<td>75.000</td>
<td>85.000</td>
<td>90.000</td>
<td>90.000</td>
</tr>
<tr>
<td>D</td>
<td>30.000</td>
<td>30.000</td>
<td>35.000</td>
<td>35.000</td>
<td>40.000</td>
<td>40.000</td>
<td>45.000</td>
<td>45.000</td>
<td>50.000</td>
</tr>
<tr>
<td>E</td>
<td>25.453</td>
<td>30.964</td>
<td>31.476</td>
<td>34.488</td>
<td>35.000</td>
<td>40.512</td>
<td>36.024</td>
<td>39.036</td>
<td>39.547</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th>TOP FLANGE</th>
<th>G1, G2</th>
<th>G3, G4, G5</th>
<th>G6, G7</th>
<th>G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TF1</td>
<td>20.000</td>
<td>1.000</td>
<td>22.000</td>
<td>1.000</td>
</tr>
<tr>
<td>TF2</td>
<td>20.000</td>
<td>1.000</td>
<td>22.000</td>
<td>1.250</td>
</tr>
<tr>
<td>TF3</td>
<td>20.000</td>
<td>1.250</td>
<td>22.000</td>
<td>1.500</td>
</tr>
<tr>
<td>TF4</td>
<td>20.000</td>
<td>1.000</td>
<td>22.000</td>
<td>1.250</td>
</tr>
<tr>
<td>TF5</td>
<td>20.000</td>
<td>1.000</td>
<td>22.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

#### Bottom Flange

<table>
<thead>
<tr>
<th>BOTTOM FLANGE</th>
<th>G1, G2</th>
<th>G3, G4, G5</th>
<th>G6, G7</th>
<th>G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>24.000</td>
<td>1.250</td>
<td>24.000</td>
<td>1.250</td>
</tr>
<tr>
<td>BF2</td>
<td>24.000</td>
<td>1.625</td>
<td>24.000</td>
<td>1.750</td>
</tr>
<tr>
<td>BF3</td>
<td>24.000</td>
<td>2.000</td>
<td>24.000</td>
<td>2.250</td>
</tr>
<tr>
<td>BF4</td>
<td>24.000</td>
<td>1.625</td>
<td>24.000</td>
<td>1.750</td>
</tr>
<tr>
<td>BF5</td>
<td>24.000</td>
<td>1.250</td>
<td>24.000</td>
<td>1.250</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 77.000'.
   D. NUMBER OF DESIGN LANES = 6.
   E. HL93 LIVE LOAD.
   F. DESIGN SPEED = 55 MPH.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN UNITS OF INCHES.
NCHRP 12-79

NISSS37
SPAN LENGTH ALONG G9 = 265.346'

DIAPHRAGM (TYP)  
CONN. L 0.875"x 8.000"

8 SPA @ 9.250' = 74.000'

F.S.

5 SPA @ 25.000' = 125.000'

DIAPHRAGM (TYP)

CONN. L 0.875"x 8.000"

(0.500" INTEGRAL WEARING SURFACE)

SPAN LENGTH ALONG G1 - 184.654'

BEARING LEGEND

○ NON-GUIDED

○ LONGITUDINALLY GUIDED

○ TRANSVERSELY GUIDED

○ FIXED

CROSS - SECTION
(DIAPHRAGMS NOT SHOWN)
NOTE:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. ALL GIRDERS, WEB 1 - WEB 2 - WEB 3 - 0.875".
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>Length</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>33.827</td>
<td>38.870</td>
<td>43.941</td>
<td>48.957</td>
<td>54.000</td>
<td>59.043</td>
<td>64.087</td>
<td>69.130</td>
<td>74.173</td>
</tr>
<tr>
<td>B</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
</tr>
<tr>
<td>C</td>
<td>67.000</td>
<td>67.000</td>
<td>67.000</td>
<td>67.000</td>
<td>67.000</td>
<td>67.000</td>
<td>67.000</td>
<td>67.000</td>
<td>67.000</td>
</tr>
<tr>
<td>D</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
<td>25.000</td>
</tr>
<tr>
<td>E</td>
<td>33.827</td>
<td>38.870</td>
<td>43.941</td>
<td>48.957</td>
<td>54.000</td>
<td>59.043</td>
<td>64.087</td>
<td>69.130</td>
<td>74.173</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th>Top Flange</th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom</td>
<td>BF</td>
<td>TF</td>
<td>BF</td>
</tr>
<tr>
<td>TF1</td>
<td>20.000</td>
<td>1.000</td>
<td>24.000</td>
</tr>
<tr>
<td>TF2</td>
<td>20.000</td>
<td>1.000</td>
<td>24.000</td>
</tr>
<tr>
<td>TF3</td>
<td>20.000</td>
<td>1.000</td>
<td>24.000</td>
</tr>
<tr>
<td>TF4</td>
<td>20.000</td>
<td>1.000</td>
<td>24.000</td>
</tr>
<tr>
<td>TF5</td>
<td>20.000</td>
<td>1.000</td>
<td>24.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

#### Bottom Flange

<table>
<thead>
<tr>
<th>Bottom Flange</th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Flange</td>
<td>BF</td>
<td>TF</td>
<td>BF</td>
</tr>
<tr>
<td>BF1</td>
<td>24.000</td>
<td>1.000</td>
<td>28.000</td>
</tr>
<tr>
<td>BF2</td>
<td>24.000</td>
<td>1.000</td>
<td>28.000</td>
</tr>
<tr>
<td>BF3</td>
<td>24.000</td>
<td>1.000</td>
<td>28.000</td>
</tr>
<tr>
<td>BF4</td>
<td>24.000</td>
<td>1.000</td>
<td>28.000</td>
</tr>
<tr>
<td>BF5</td>
<td>24.000</td>
<td>1.000</td>
<td>28.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
TYPICAL END AND INTERMEDIATE DIAPHRAGM

NOTES:

1. **Steel dead load increased by 5% for MDX and LARSA models; 2% for 3D model; and 10% for approximate analysis to account for misc. details.**

2. **Formwork load of 10psf is included in concrete dead load.**

3. **Additional design parameters:**
   - A. 1,500' parapet width both sides.
   - B. 700 lb/ft uniform load assumed for parapet weight.
   - C. Roadway width = 77.000'.
   - D. Number of design lanes = 6.
   - E. HL93 live load.

4. **Diaphragm member call-outs are in English units.**
STAGE 2

NOTE:
STAGE 1: G1 ERECTED.

LEGEND

- Hold or lift crane
- Tie down
- Temporary support structure

STAGE 4

NOTE:
STAGE 3: G3 AND XF'S ERECTED.
STAGE 8

NOTE:
STAGE 5 = G5 AND XF'S ERECTED
STAGE 6 = G6 ANDXF'S ERECTED
STAGE 7 = G7 AND XF'S ERECTED.

STAGE 9

LEGEND

△ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE
NCHRP 12-79

NISSS53
NOTE:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. ALL GIRDER, WEB 1 - WEB 2 - 1.000".
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
</tr>
<tr>
<td>B</td>
<td>50.000</td>
<td>50.000</td>
<td>50.000</td>
</tr>
<tr>
<td>C</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
</tr>
<tr>
<td>D</td>
<td>50.000</td>
<td>50.000</td>
<td>50.000</td>
</tr>
<tr>
<td>E</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

**Top Flange**

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>26.000</td>
<td>1.125</td>
<td>26.000</td>
</tr>
<tr>
<td>TF2</td>
<td>26.000</td>
<td>1.500</td>
<td>26.000</td>
</tr>
<tr>
<td>TF3</td>
<td>26.000</td>
<td>2.000</td>
<td>26.000</td>
</tr>
<tr>
<td>TF4</td>
<td>26.000</td>
<td>1.500</td>
<td>26.000</td>
</tr>
<tr>
<td>TF5</td>
<td>26.000</td>
<td>1.125</td>
<td>26.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

**Bottom Flange**

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>30.000</td>
<td>1.250</td>
<td>30.000</td>
</tr>
<tr>
<td>BF2</td>
<td>30.000</td>
<td>1.750</td>
<td>30.000</td>
</tr>
<tr>
<td>BF3</td>
<td>30.000</td>
<td>2.250</td>
<td>30.000</td>
</tr>
<tr>
<td>BF4</td>
<td>30.000</td>
<td>1.750</td>
<td>30.000</td>
</tr>
<tr>
<td>BF5</td>
<td>30.000</td>
<td>1.250</td>
<td>30.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
TYPICAL END AND INTERMEDIATE DIAPHRAGM

NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 77.000'.
   D. NUMBER OF DESIGN LANES = 6.
   E. HLP3 LIVE LOAD.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN UNITS OF INCHES.
STAGE 1

STAGE 2

STAGE 3 - ERECT G3 AND ADJACENT CROSS FRAMES
STAGE 4 - ERECT G4 AND ADJACENT CROSS FRAMES
STAGE 5 - ERECT G5 AND ADJACENT CROSS FRAMES
STAGE 6 - ERECT G6 AND ADJACENT CROSS FRAMES
STAGE 7 - ERECT G7 AND ADJACENT CROSS FRAMES

LEGEND

△ = HOLD OR LIFT CRANE
O = TIE DOWN
□ = TEMPORARY SUPPORT STRUCTURE

NCHRP 12-79
BRIDGE NISSS53
GENERAL ERECTION PROCEDURE
SHEET 5 OF 6
NOTE:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. ALL GIRDER, WEB 1 = WEB 2 = WEB 3 = 1.000".
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
</tr>
<tr>
<td>B</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
</tr>
<tr>
<td>C</td>
<td>120.000</td>
<td>120.000</td>
<td>120.000</td>
<td>120.000</td>
<td>120.000</td>
<td>120.000</td>
<td>120.000</td>
<td>120.000</td>
<td>120.000</td>
</tr>
<tr>
<td>D</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
</tr>
<tr>
<td>E</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
<td>45.000</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th></th>
<th>G1, G2, G3</th>
<th>G4, G5, G6</th>
<th>G7, G8, G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF</td>
<td>28.000</td>
<td>28.000</td>
<td>28.000</td>
</tr>
<tr>
<td>TF</td>
<td>1.250</td>
<td>1.250</td>
<td>1.250</td>
</tr>
<tr>
<td>TF1</td>
<td>28.000</td>
<td>28.000</td>
<td>28.000</td>
</tr>
<tr>
<td>TF2</td>
<td>28.000</td>
<td>28.000</td>
<td>28.000</td>
</tr>
<tr>
<td>TF3</td>
<td>28.000</td>
<td>28.000</td>
<td>28.000</td>
</tr>
<tr>
<td>TF4</td>
<td>28.000</td>
<td>28.000</td>
<td>28.000</td>
</tr>
<tr>
<td>TF5</td>
<td>28.000</td>
<td>28.000</td>
<td>28.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

#### Bottom Flange

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF</td>
<td>30.000</td>
<td>30.000</td>
<td>30.000</td>
</tr>
<tr>
<td>TF</td>
<td>1.250</td>
<td>1.250</td>
<td>1.250</td>
</tr>
<tr>
<td>BF1</td>
<td>30.000</td>
<td>30.000</td>
<td>30.000</td>
</tr>
<tr>
<td>BF2</td>
<td>30.000</td>
<td>30.000</td>
<td>30.000</td>
</tr>
<tr>
<td>BF3</td>
<td>30.000</td>
<td>30.000</td>
<td>30.000</td>
</tr>
<tr>
<td>BF4</td>
<td>30.000</td>
<td>30.000</td>
<td>30.000</td>
</tr>
<tr>
<td>BF5</td>
<td>30.000</td>
<td>30.000</td>
<td>30.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
TYPICAL INTERMEDIATE DIAPHRAGM

TYPICAL END DIAPHRAGM

NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 77.000'
   D. NUMBER OF DESIGN LANES = 6.
   E. HL-93 LIVE LOAD

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN UNITS OF INCHES.
LEGEND

▽ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE

STAGE 1

STAGE 2

NCHRP 12-79
BRIDGE NISS54
GENERAL ERECTION
PROCEDURE
SHEET 5 OF 10
LEGEND

▽ - HOLD OR LIFT CRANE
⊙ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE

STAGE 3

STAGE 4

STAGE 5 - G2-3 AND XF'S
STAGE 6 - G3-3 AND XF'S
REMOVE TEMP. SUPPORTS AFTER STAGE 6.
LEGEND

△ - HOLD OR LIFT CRANE
○ - TIE DOWN
☐ - TEMPORARY SUPPORT STRUCTURE

STAGE 11

STAGE 12

STAGE 13 - G7-1, G7-2 AND XF'S
STAGE 14 - G7-3 AND XF'S
STAGE 15 - G8-1, G8-2 AND XF'S
STAGE 16 - G8-3 AND XF'S
STAGE 17 - G9-1, G9-2 AND XF'S

NCHRP 12-79
BRIDGE NISSS54
GENERAL ERECTION PROCEDURE
SHEET 9 OF 10
NCHRP 12-79

NISSS56
NOTES:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION
   DIMENSIONS AND PLATE SIZES.

2. ALL GIRDER, WEB 1 - WEB 2 - WEB 3 - 1.125".
## Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>17.953</td>
<td>23.465</td>
<td>28.977</td>
<td>34.488</td>
<td>40.000</td>
<td>45.512</td>
<td>51.024</td>
<td>56.536</td>
<td>62.048</td>
</tr>
<tr>
<td>B</td>
<td>17.953</td>
<td>23.465</td>
<td>28.977</td>
<td>34.488</td>
<td>40.000</td>
<td>45.512</td>
<td>51.024</td>
<td>56.536</td>
<td>62.048</td>
</tr>
<tr>
<td>C</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
<td>110.000</td>
</tr>
<tr>
<td>D</td>
<td>55.000</td>
<td>55.000</td>
<td>55.000</td>
<td>55.000</td>
<td>55.000</td>
<td>55.000</td>
<td>55.000</td>
<td>55.000</td>
<td>55.000</td>
</tr>
<tr>
<td>E</td>
<td>55.000</td>
<td>55.000</td>
<td>55.000</td>
<td>55.000</td>
<td>55.000</td>
<td>55.000</td>
<td>55.000</td>
<td>55.000</td>
<td>55.000</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

## Girder Flange Dimensions

### Top Flange

<table>
<thead>
<tr>
<th>TOP FLANGE</th>
<th>G1, G2</th>
<th>G3, G4</th>
<th>G5</th>
<th>G6, G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>28.000</td>
<td>1.250</td>
<td>28.000</td>
<td>1.250</td>
<td>28.000</td>
<td>1.250</td>
</tr>
<tr>
<td>TF2</td>
<td>28.000</td>
<td>1.250</td>
<td>28.000</td>
<td>1.250</td>
<td>28.000</td>
<td>1.250</td>
</tr>
<tr>
<td>TF3</td>
<td>28.000</td>
<td>1.250</td>
<td>28.000</td>
<td>1.500</td>
<td>28.000</td>
<td>1.750</td>
</tr>
<tr>
<td>TF4</td>
<td>28.000</td>
<td>1.250</td>
<td>28.000</td>
<td>1.250</td>
<td>28.000</td>
<td>1.250</td>
</tr>
<tr>
<td>TF5</td>
<td>28.000</td>
<td>1.250</td>
<td>28.000</td>
<td>1.250</td>
<td>28.000</td>
<td>1.250</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

### Bottom Flange

<table>
<thead>
<tr>
<th>BOTTOM FLANGE</th>
<th>G1, G2</th>
<th>G3, G4</th>
<th>G5</th>
<th>G6, G7</th>
<th>G8</th>
<th>G9</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>30.000</td>
<td>1.250</td>
<td>30.000</td>
<td>1.250</td>
<td>30.000</td>
<td>1.250</td>
</tr>
<tr>
<td>TF2</td>
<td>30.000</td>
<td>1.250</td>
<td>30.000</td>
<td>1.250</td>
<td>30.000</td>
<td>1.250</td>
</tr>
<tr>
<td>TF3</td>
<td>30.000</td>
<td>1.250</td>
<td>30.000</td>
<td>1.500</td>
<td>30.000</td>
<td>1.750</td>
</tr>
<tr>
<td>TF4</td>
<td>30.000</td>
<td>1.250</td>
<td>30.000</td>
<td>1.250</td>
<td>30.000</td>
<td>1.250</td>
</tr>
<tr>
<td>TF5</td>
<td>30.000</td>
<td>1.250</td>
<td>30.000</td>
<td>1.250</td>
<td>30.000</td>
<td>1.250</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 77.000'.
   D. NUMBER OF DESIGN LANES = 6.
   E. HL93 LIVE LOAD.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN UNITS OF INCHES.
LEGEND

- HOLD OR LIFT CRANE
- TIE DOWN
- TEMPORARY SUPPORT STRUCTURE

STAGE 11

STAGE 17
FRAMING PLAN

NOTES:
1. TYP. INTERNAL K-FRAME CONNECTION L = 0.875"x6.000".
2. ALL BRG. STIFFENERS = 1.5000"x12.000".
NOTES:
1. TYP. INTERNAL K-FRAME CONNECTION L = 0.875"x6.000".
2. ALL BRG. STIFFENERS = 1.5000"x12.000".
MATCH LINE SHEET 2
FRAMING PLAN
CL BRG. SUPPORT 3
116.646' SPAN 3
12.932'
6 SPA, @ 15.128'
   @ 15.128'
   @ 90.771'
14 SPA, @ 7.565'
   @ 105.906'
123.354' SPAN 3

CL BRG. SUPPORT 4
12.932'
90.000'
MEASURED ALONG G2

8.000'
MEASURED ALONG G1

L FLANGE

6 SPA @ 15.128'
   @ 90.771'

14 SPA @ 7.565'
   @ 105.906'

14 SPA @ 8.000'
   @ 112.000'

6 SPA @ 8.000'
   @ 96.000'

NOTES:
1. TYP. INTERNAL K-FRAME CONNECTION L - 0.875" x 6.000".
2. ALL BRG. STIFFENERS - 1.500" x 12.000".
NOTES:
1. SEE TABLES ON SHEET 6 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.
2. WEB 1 = WEB 2 = WEB 3 = 66.000"x0.6875" FOR G1
3. WEB 1 = WEB 2 = WEB 3 = 66.000"x0.6250" FOR G2
### GIRDER PLATE LENGTHS

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>112.000</td>
<td>108.000</td>
</tr>
<tr>
<td>B</td>
<td>90.000</td>
<td>83.000</td>
</tr>
<tr>
<td>C</td>
<td>71.000</td>
<td>69.000</td>
</tr>
<tr>
<td>D</td>
<td>67.000</td>
<td>64.000</td>
</tr>
<tr>
<td>E</td>
<td>91.750</td>
<td>84.250</td>
</tr>
</tbody>
</table>

*ALL DIMENSIONS ARE IN FEET.*

### GIRDER FLANGE DIMENSIONS

**TOP FLANGE**

<table>
<thead>
<tr>
<th>FLANGE</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF2</td>
<td>16.000</td>
<td>2.125</td>
</tr>
<tr>
<td>TF3</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF4</td>
<td>16.000</td>
<td>1.375</td>
</tr>
<tr>
<td>TF5</td>
<td>16.000</td>
<td>0.875</td>
</tr>
</tbody>
</table>

*ALL DIMENSIONS ARE IN INCHES.*

**BOTTOM FLANGE**

<table>
<thead>
<tr>
<th>FLANGE</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>67.000</td>
<td>0.875</td>
</tr>
<tr>
<td>BF2</td>
<td>67.000</td>
<td>1.750</td>
</tr>
<tr>
<td>BF3</td>
<td>67.000</td>
<td>0.875</td>
</tr>
<tr>
<td>BF4</td>
<td>67.000</td>
<td>1.250</td>
</tr>
<tr>
<td>BF5</td>
<td>67.000</td>
<td>0.875</td>
</tr>
</tbody>
</table>

*ALL DIMENSIONS ARE IN INCHES.*
NOTES:

1. Steel dead load increased by 15% for MDX and LARSA models; 2% for 3D model; and 20% for approximate analysis to account for misc. details.

2. Formwork load of 10psf is included in concrete dead load.

3. Additional design parameters:
   A. 1,500' parapet width both sides.
   B. 700 lb/ft uniform load assumed for parapet weight.
   C. Roadway width = 26.500'.
   D. Number of design lanes = 2.
   E. HL-93 live load.
   F. Design speed = 35 MPH.

4. Diaphragm member call-outs are in English units.
TYPICAL INTERMEDIATE EXTERNAL DIAPHRAGM

TYPICAL INTERNAL DIAPHRAGMS AT SUPPORTS
LEGEND

▽ = HOLD OR LIFT CRANE
○ = TIE DOWN
□ = TEMPORARY SUPPORT STRUCTURE

STAGE 3
TEMP. SUPPORT (Θ INT. K-FRAME)

STAGE 4
TEMP. SUPPORT (Θ INT. K-FRAME)

STAGE 5
REMOVE TEMP. SUPPORT IN SPAN #1
LEGEND

▼ • HOLD OR LIFT CRANE

○ • TIE DOWN

□ • TEMPORARY SUPPORT STRUCTURE

STAGE 6
(RESULTS REQ'D)

STAGE 7

TEMP. SUPPORT (@ INT. K-FRAME)

NCHRP 12-79
BRIDGE NTCCR1
GENERAL ERECTION PROCEDURE
SHEET 11 OF 13
STAGE 8

STAGE 9

STAGE 10

REMOVE TEMP. SUPPORT IN SPAN #3

LEGEND

△ = HOLD OR LIFT CRANE

⊙ = TIE DOWN

□ = TEMPORARY SUPPORT STRUCTURE
NOTE:

1. INT. TRANSV. STIFFS. AND INTERNAL K-FRAME CONNECTION PLATES = 0.875"x6.000"

2. DIMENSIONS
   A = 7.953'
   B = 4.760'
   C = 7.865'
   D = 4.708'

FRAMING PLAN
FRAMING PLAN

278.479' SPAN 3
16 SPA @ ABT. 15.823' = 253.229'
34 SPA @ ABT. 7.917' = 269.063'

FULL DEPTH EXT. DIAPH. (TYP. ALL SUPPORTS)

90.000" (TYP. ALL BENTS)

MEASURED ALONG L GIRDER G2

MEASURED ALONG L GIRDER G1

FRAMING PLAN

NCHRP 12-79
BRIDGE NTCCSR5
FRAMING PLAN AND CROSS-SECTION
SHEET 3 OF 20
NOTES:
1. SEE TABLES ON SHEETS 8, 9 AND 10 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.
NOTES:
1. SEE TABLES ON SHEETS 8, 9 AND 10 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.
NOTES:
1. SEE TABLES ON SHEETS 8, 9 AND 10 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>66.900</td>
<td>60.100</td>
</tr>
<tr>
<td>B</td>
<td>96.000</td>
<td>101.000</td>
</tr>
<tr>
<td>C</td>
<td>128.000</td>
<td>126.000</td>
</tr>
<tr>
<td>D</td>
<td>32.000</td>
<td>32.000</td>
</tr>
<tr>
<td>E</td>
<td>58.000</td>
<td>58.000</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th>TOP FLANGE</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>24.000</td>
<td>1.250</td>
</tr>
<tr>
<td>TF2</td>
<td>24.000</td>
<td>1.750</td>
</tr>
<tr>
<td>TF3</td>
<td>24.000</td>
<td>1.750</td>
</tr>
<tr>
<td>TF4</td>
<td>24.000</td>
<td>1.750</td>
</tr>
<tr>
<td>TF5</td>
<td>24.000</td>
<td>2.250</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

### Girder Flange Dimensions

#### Bottom Flange

<table>
<thead>
<tr>
<th>BOTTOM FLANGE</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>40.000</td>
<td>2.000</td>
</tr>
<tr>
<td>BF2</td>
<td>40.000</td>
<td>2.500</td>
</tr>
<tr>
<td>BF3</td>
<td>40.000</td>
<td>2.500</td>
</tr>
<tr>
<td>BF4</td>
<td>40.000</td>
<td>1.750</td>
</tr>
<tr>
<td>BF5</td>
<td>40.000</td>
<td>3.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
### GIRDER FLANGE DIMENSIONS

<table>
<thead>
<tr>
<th>TOP FLANGE</th>
<th>G1 BF</th>
<th>G1 TF</th>
<th>G2 BF</th>
<th>G2 TF</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF6</td>
<td>24.000</td>
<td>1.750</td>
<td>24.000</td>
<td>1.750</td>
</tr>
<tr>
<td>TF7</td>
<td>24.000</td>
<td>1.250</td>
<td>24.000</td>
<td>1.250</td>
</tr>
<tr>
<td>TF8</td>
<td>24.000</td>
<td>1.250</td>
<td>24.000</td>
<td>1.250</td>
</tr>
<tr>
<td>TF9</td>
<td>24.000</td>
<td>1.250</td>
<td>24.000</td>
<td>1.250</td>
</tr>
<tr>
<td>TF10</td>
<td>24.000</td>
<td>1.500</td>
<td>24.000</td>
<td>1.500</td>
</tr>
</tbody>
</table>

**ALL DIMENSIONS ARE IN INCHES.**

### GIRDER PLATE LENGTHS

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1 BF</th>
<th>G2 BF</th>
<th>G1 TF</th>
<th>G2 TF</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>32.000</td>
<td>32.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>80.000</td>
<td>78.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>69.900</td>
<td>69.100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>80.000</td>
<td>80.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>31.000</td>
<td>30.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ALL DIMENSIONS ARE IN FEET.**

### GIRDER FLANGE DIMENSIONS

<table>
<thead>
<tr>
<th>BOTTOM FLANGE</th>
<th>G1 BF</th>
<th>G1 TF</th>
<th>G2 BF</th>
<th>G2 TF</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF6</td>
<td>40.000</td>
<td>1.750</td>
<td>40.000</td>
<td>1.750</td>
</tr>
<tr>
<td>BF7</td>
<td>40.000</td>
<td>1.250</td>
<td>40.000</td>
<td>1.250</td>
</tr>
<tr>
<td>BF8</td>
<td>40.000</td>
<td>1.250</td>
<td>40.000</td>
<td>1.250</td>
</tr>
<tr>
<td>BF9</td>
<td>40.000</td>
<td>1.250</td>
<td>40.000</td>
<td>1.250</td>
</tr>
<tr>
<td>BF10</td>
<td>40.000</td>
<td>1.750</td>
<td>40.000</td>
<td>1.500</td>
</tr>
</tbody>
</table>

**ALL DIMENSIONS ARE IN INCHES.**
GIRDERS: PLATE LENGTHS

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>58.000</td>
<td>58.000</td>
</tr>
<tr>
<td>L</td>
<td>30.000</td>
<td>29.000</td>
</tr>
<tr>
<td>M</td>
<td>128.000</td>
<td>126.000</td>
</tr>
<tr>
<td>N</td>
<td>95.500</td>
<td>95.500</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

GIRDERS: FLANGE DIMENSIONS

<table>
<thead>
<tr>
<th>TOP FLANGE</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF11</td>
<td>24.000</td>
<td>2.250</td>
</tr>
<tr>
<td>TF12</td>
<td>24.000</td>
<td>1.500</td>
</tr>
<tr>
<td>TF13</td>
<td>24.000</td>
<td>1.250</td>
</tr>
<tr>
<td>TF14</td>
<td>24.000</td>
<td>1.250</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

<table>
<thead>
<tr>
<th>BOTTOM FLANGE</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF11</td>
<td>40.000</td>
<td>2.500</td>
</tr>
<tr>
<td>BF12</td>
<td>40.000</td>
<td>1.750</td>
</tr>
<tr>
<td>BF13</td>
<td>40.000</td>
<td>1.750</td>
</tr>
<tr>
<td>BF14</td>
<td>40.000</td>
<td>1.750</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
1. Steel dead load increased by 15% for MDX and LARSA models; 2% for 3D model; and 20% for approximate analysis to account for misc. details.

2. Formwork load of 10psf is included in concrete dead load.

3. Additional design parameters:
   A. 1,500' parapet width both sides.
   B. 700 lb/ft uniform load assumed for parapet weight.
   C. Roadway width = 26.500'.
   D. Number of design lanes = 2.
   E. HL 93 live load.
   F. Design speed = 35 MPH.

4. Diaphragm member call-outs are in English units.
INTERMEDIATE EXTERNAL DIAPHRAGM

TYPICAL INTERNAL DIAPHRAGMS AT SUPPORTS
LEGEND

▲ • HOLD OR LIFT CRANE
○ • TIE DOWN
□ • TEMPORARY SUPPORT STRUCTURE

STAGE 5

STAGE 6

STAGE 7

REMOVE TEMP SUPPORT • 2
STAGE 13

STAGE 14

STAGE 15

LEGEND

△  HOLD OR LIFT CRANE

○  TIE DOWN

□  TEMPORARY SUPPORT STRUCTURE

TEMP SUPPORT 1
BRG. SUPPORT 1
F.S.

TEMP SUPPORT 2
BRG. SUPPORT 2
F.S.

TEMP SUPPORT 3
BRG. SUPPORT 3
F.S.

TEMP SUPPORT 4
BRG. SUPPORT 4
F.S.

TEMP SUPPORT 5
BRG. SUPPORT 5
F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.

F.S.
LEGEND

- ▼ • HOLD OR LIFT CRANE
- ○ • TIE DOWN
- □ • TEMPORARY SUPPORT STRUCTURE

STAGE 18

STAGE 19

STAGE 20

REMOVE TEMP SUPPORTS #3 AND #6
NCHRP 12-79

NTCCS22
FRAMING PLAN

NOTES:
1. TYP. INTERNAL K-FRAME CONNECTION PLATE = 0.875"x6.000".
2. ALL BRG. STIFFENERS = 1.750"x20.000"
   D = 4.844', E = 6.188'

NCHRP 12-79
BRIDGE NTCCS22
FRAMING PLAN AND CROSS-SECTION
SHEET 1 OF 11
NOTES:

1. TYP. INTERNAL K-FRAME CONNECTION PLATE = 0.875"x6.000".

2. ALL BRG. STIFFENERS = 1.750"x20.000"

   D = 4.844', E = 6.188'

FRAMING PLAN
NOTES:
1. SEE TABLES ON SHEET 4 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

2. G1 WEB 1 THRU WEB 5 = 0.9375"
3. G2 WEB 1 THRU WEB 5 = 0.875"
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>54.750</td>
<td>55.083</td>
</tr>
<tr>
<td>B</td>
<td>130.000</td>
<td>130.000</td>
</tr>
<tr>
<td>C</td>
<td>35.000</td>
<td>35.000</td>
</tr>
<tr>
<td>D</td>
<td>60.000</td>
<td>60.000</td>
</tr>
<tr>
<td>E</td>
<td>35.000</td>
<td>35.000</td>
</tr>
<tr>
<td>F</td>
<td>130.000</td>
<td>127.000</td>
</tr>
<tr>
<td>G</td>
<td>57.500</td>
<td>55.333</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions (Top)

<table>
<thead>
<tr>
<th>TOP FLANGE</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>20.000</td>
<td>1.250</td>
</tr>
<tr>
<td>TF2</td>
<td>20.000</td>
<td>1.250</td>
</tr>
<tr>
<td>TF3</td>
<td>20.000</td>
<td>1.500</td>
</tr>
<tr>
<td>TF4</td>
<td>20.000</td>
<td>2.500</td>
</tr>
<tr>
<td>TF5</td>
<td>20.000</td>
<td>1.500</td>
</tr>
<tr>
<td>TF6</td>
<td>20.000</td>
<td>1.250</td>
</tr>
<tr>
<td>TF7</td>
<td>20.000</td>
<td>1.250</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

### Girder Flange Dimensions (Bottom)

<table>
<thead>
<tr>
<th>BOTTOM FLANGE</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>46.000</td>
<td>1.250</td>
</tr>
<tr>
<td>BF2</td>
<td>46.000</td>
<td>1.250</td>
</tr>
<tr>
<td>BF3</td>
<td>46.000</td>
<td>1.500</td>
</tr>
<tr>
<td>BF4</td>
<td>46.000</td>
<td>2.750</td>
</tr>
<tr>
<td>BF5</td>
<td>46.000</td>
<td>1.500</td>
</tr>
<tr>
<td>BF6</td>
<td>46.000</td>
<td>1.250</td>
</tr>
<tr>
<td>BF7</td>
<td>46.000</td>
<td>1.250</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 15% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 20% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 26.500'.
   D. NUMBER OF DESIGN LANES = 2.
   E. HL-93 LIVE LOAD.
   F. DESIGN SPEED = 35 MPH.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN ENGLISH UNITS.
TYPICAL INTERMEDIATE EXTERNAL DIAPHRAGM

1.000" x 12.000"

TYPICAL INTERNAL DIAPHRAGMS AT SUPPORTS

1.250" WEB

ACCESS HOLE
STAGE 3

STAGE 4

STAGE 5

LEGEND

▽ • HOLD OR LIFT CRANE
○ • TIE DOWN
□ • TEMPORARY SUPPORT STRUCTURE

NCHRP 12-79
BRIDGE NTCCS22
GENERAL ERECTION PROCEDURE
SHEET 9 OF 11
DECK POURING SEQUENCE
NCHRP 12-79

NTSCR1
NOTES:
1. SEE TABLES ON SHEET 4 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>21.406</td>
<td>18.594</td>
</tr>
<tr>
<td>B</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>C</td>
<td>70.000</td>
<td>70.000</td>
</tr>
<tr>
<td>D</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>E</td>
<td>21.406</td>
<td>18.594</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th></th>
<th>G2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TOP</td>
<td>BF</td>
<td>TF</td>
<td>BF</td>
<td>TF</td>
</tr>
<tr>
<td>TF1</td>
<td>16.000</td>
<td>0.875</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF2</td>
<td>16.000</td>
<td>0.875</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF3</td>
<td>16.000</td>
<td>0.875</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF4</td>
<td>16.000</td>
<td>0.875</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF5</td>
<td>16.000</td>
<td>0.875</td>
<td>16.000</td>
<td>0.875</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

### Girder Flange Dimensions

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th></th>
<th>G2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BOTTOM</td>
<td>BF</td>
<td>TF</td>
<td>BF</td>
<td>TF</td>
</tr>
<tr>
<td>BF1</td>
<td>64.000</td>
<td>0.875</td>
<td>64.000</td>
<td>0.875</td>
</tr>
<tr>
<td>BF2</td>
<td>64.000</td>
<td>0.875</td>
<td>64.000</td>
<td>0.875</td>
</tr>
<tr>
<td>BF3</td>
<td>64.000</td>
<td>1.250</td>
<td>64.000</td>
<td>1.000</td>
</tr>
<tr>
<td>BF4</td>
<td>64.000</td>
<td>0.875</td>
<td>64.000</td>
<td>0.875</td>
</tr>
<tr>
<td>BF5</td>
<td>64.000</td>
<td>0.875</td>
<td>64.000</td>
<td>0.875</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 5% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 10% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1,500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 26.500'.
   D. NUMBER OF DESIGN LANES = 2.
   E. HL93 LIVE LOAD.
   F. DESIGN SPEED = 35 MPH.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN ENGLISH UNITS.
INTERMEDIATE EXTERNAL DIAPHRAGM

TYPICAL INTERNAL DIAPHRAGMS AT SUPPORTS
NOTE:
NO INT. TRANSV. STIFFENERS
CONN E = 6.000"x0.875"
BRG. STIFFENER = 8.000"x1.500"
ONE INT. EXT. CROSS FRAME @
MIDSPAN (RADIAL)
LENGTH
TOP FLANGE
SIZE

BRG. STIFFENER L (EACH SIDE) (TYP)

BOTTOM FLANGE
SIZE

WEB THICKNESS

NOTES:
1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION
DIMENSIONS AND PLATE SIZES.

NCHRP  12-79
BRIDGE  NTSCR2
GIRDER ELEVATION
SHEET 2 OF 7
### GIRDER PLATE LENGTHS  

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>20.938</td>
<td>19.063</td>
</tr>
<tr>
<td>B</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>C</td>
<td>70.000</td>
<td>70.000</td>
</tr>
<tr>
<td>D</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>E</td>
<td>20.938</td>
<td>19.063</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### GIRDER FLANGE DIMENSIONS  

#### TOP FLANGE

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF</td>
<td>16.000</td>
<td>16.000</td>
</tr>
<tr>
<td>TF</td>
<td>0.875</td>
<td>0.875</td>
</tr>
</tbody>
</table>

#### BOTTOM FLANGE

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF</td>
<td>64.000</td>
<td>64.000</td>
</tr>
<tr>
<td>TF</td>
<td>0.875</td>
<td>0.875</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
1. Steel dead load increased by 5% for MDX and LARSA models; 2% for 3D model; and 10% for approximate analysis to account for Misc. Details.

2. Formwork load of 10PSF is included in concrete dead load.

3. Additional design parameters:
   A. 1,500' parapet width both sides.
   B. 700 LB/FT uniform load assumed for parapet weight.
   C. Roadway width = 26.500'.
   D. Number of design lanes = 2.
   E. HL93 live load.
   F. Design speed = 35 MPH.

4. Diaphragm member call-outs are in English units.
INTERMEDIATE EXTERNAL DIAPHRAGM

TYPICAL INTERNAL DIAPHRAGMS AT SUPPORTS
TEMP SUPPORT

LEGEND

☑️ HOLD OR LIFT CRANE
☐ TIE DOWN
☐ TEMPORARY SUPPORT STRUCTURE

STAGE 3

STAGE 4

STAGE 5
REMOVE TEMP SUPPORT
FRAMING PLAN

NOTES:
1. TYP. INTERNAL K-FRAMES CONNECTION PLATE = 0.875"x6.000".
2. ALL BRG. STIFFENERS = 1.500"x8.000".
NOTE:
1. TYP. INTERNAL K-FRAMES CONNECTION PLATE = 0.875"x6.000".
2. ALL BRG. STIFFENERS = 1.500"x8.000"
NOTES:
1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.
## Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>45.000</td>
<td>45.000</td>
</tr>
<tr>
<td>B</td>
<td>45.000</td>
<td>45.000</td>
</tr>
<tr>
<td>C</td>
<td>121.654</td>
<td>118.346</td>
</tr>
<tr>
<td>D</td>
<td>45.000</td>
<td>45.000</td>
</tr>
<tr>
<td>E</td>
<td>45.000</td>
<td>45.000</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

## Girder Flange Dimensions

### Top Flange

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th></th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF</td>
<td>24.000</td>
<td>1.500</td>
<td>24.000</td>
</tr>
<tr>
<td>TF</td>
<td>24.000</td>
<td>1.500</td>
<td>24.000</td>
</tr>
<tr>
<td>TF1</td>
<td>24.000</td>
<td>2.250</td>
<td>24.000</td>
</tr>
<tr>
<td>TF2</td>
<td>24.000</td>
<td>1.500</td>
<td>24.000</td>
</tr>
<tr>
<td>TF3</td>
<td>24.000</td>
<td>1.500</td>
<td>24.000</td>
</tr>
<tr>
<td>TF4</td>
<td>24.000</td>
<td>1.500</td>
<td>24.000</td>
</tr>
<tr>
<td>TF5</td>
<td>24.000</td>
<td>1.500</td>
<td>24.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

### Bottom Flange

<table>
<thead>
<tr>
<th></th>
<th>G1</th>
<th></th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF</td>
<td>40.000</td>
<td>1.500</td>
<td>40.000</td>
</tr>
<tr>
<td>BF1</td>
<td>40.000</td>
<td>2.000</td>
<td>40.000</td>
</tr>
<tr>
<td>BF2</td>
<td>40.000</td>
<td>2.750</td>
<td>40.000</td>
</tr>
<tr>
<td>BF3</td>
<td>40.000</td>
<td>2.000</td>
<td>40.000</td>
</tr>
<tr>
<td>BF4</td>
<td>40.000</td>
<td>1.500</td>
<td>40.000</td>
</tr>
<tr>
<td>BF5</td>
<td>40.000</td>
<td>1.500</td>
<td>40.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 15% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 20% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 26.500'.
   D. NUMBER OF DESIGN LANES = 2.
   E. HL-93 LIVE LOAD.
   F. DESIGN SPEED = 35 MPH.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN ENGLISH UNITS.
TYPICAL INTERMEDIATE EXTERNAL DIAPHRAGM

TYPICAL INTERNAL DIAPHRAGMS AT SUPPORTS
LEGEND

△= HOLD OR LIFT CRANE
○= TIE DOWN
□= TEMPORARY SUPPORT STRUCTURE
STAGE 3

STAGE 4

STAGE 5

LEGEND

△ HOLD OR LIFT CRANE
O TIE DOWN
☐ TEMPORARY SUPPORT STRUCTURE

REMOVE ALL TEMP SUPPORTS

NCHRP 12-79
BRIDGE NTSCR5
GENERAL ERECTION PROCEDURE
SHEET 9 OF 9
FRAMING PLAN

NOTES:
1. INT. TRANSV. STIFFENERS - 0.875"x6.000"
2. BRG. STIFFENER - 1.500"x12.000"
NOTES:

1. SEE TABLES ON SHEET 4 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>B</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>C</td>
<td>70.000</td>
<td>70.000</td>
</tr>
<tr>
<td>D</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>E</td>
<td>20.000</td>
<td>20.000</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th>TOP FLANGE</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF2</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF3</td>
<td>16.000</td>
<td>1.250</td>
</tr>
<tr>
<td>TF4</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF5</td>
<td>16.000</td>
<td>0.875</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

#### Bottom Flange

<table>
<thead>
<tr>
<th>BOTTOM FLANGE</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>70.000</td>
<td>1.000</td>
</tr>
<tr>
<td>BF2</td>
<td>70.000</td>
<td>1.000</td>
</tr>
<tr>
<td>BF3</td>
<td>70.000</td>
<td>1.375</td>
</tr>
<tr>
<td>BF4</td>
<td>70.000</td>
<td>1.000</td>
</tr>
<tr>
<td>BF5</td>
<td>70.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 15% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 20% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1.500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 26.500'.
   D. NUMBER OF DESIGN LANES = 2.
   E. HL93 LIVE LOAD.
   F. DESIGN SPEED = 35 MPH.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN ENGLISH UNITS.
INTERMEDIATE EXTERNAL DIAPHRAGM

TYPICAL INTERNAL DIAPHRAGMS AT SUPPORTS
NOTE:
1. INT. TRANSV. STIFFENERS AND INT. K-FRAMES
   CONNECTION PLATES = 0.875"x6.000"

2. ALL BEARING STIFFENER - 1.500"x12.000"
NOTES:
1. SEE TABLES ON SHEET 4 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

G1 = 0.938" FOR WEB 1, WEB 2, WEB 3
G2 = 0.875" FOR WEB 1, WEB 2, WEB 3
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>29.000</td>
<td>29.000</td>
</tr>
<tr>
<td>B</td>
<td>29.000</td>
<td>29.000</td>
</tr>
<tr>
<td>C</td>
<td>108.950</td>
<td>109.050</td>
</tr>
<tr>
<td>D</td>
<td>29.000</td>
<td>29.000</td>
</tr>
<tr>
<td>E</td>
<td>29.000</td>
<td>29.000</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th>TF</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>TF</td>
<td>1.250</td>
<td>1.250</td>
</tr>
</tbody>
</table>

#### Bottom Flange

<table>
<thead>
<tr>
<th>BF</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF</td>
<td>46.000</td>
<td>46.000</td>
</tr>
<tr>
<td>TF</td>
<td>1.250</td>
<td>1.250</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

---

**NCHRP 12-79**  
**BRIDGE NTSCS29**  
**GIRDER ELEVATION TABLES**  
**SHEET 5 OF 9**
1. **Steel Dead Load Increased by** 15% for MDX and LARSA Models; 2% for 3D Model; and 20% for Approximate Analysis to Account for Misc. Details.

2. Formwork Load of 10PSF is Included in Concrete Dead Load.

3. **Additional Design Parameters:**
   - 1.500' Parapet Width Both Sides.
   - 700 LB/FT Uniform Load Assumed for Parapet Weight.
   - Roadway Width = 26.500'.
   - Number of Design Lanes = 2.
   - HL93 Live Load.
   - Design Speed = 35 MPH.

4. Diaphragm Member Call-Outs Are in English Units.
INTERMEDIATE EXTERNAL DIAPHRAGM

TYPICAL INTERNAL DIAPHRAGMS AT SUPPORTS
LEGEND

◇ = HOLD OR LIFT CRANE
○ = TIE DOWN
□ = TEMPORARY SUPPORT STRUCTURE

STAGE 3

STAGE 4

STAGE 5
REMOVE TEMP SUPPORTS
NCHRP 12-79

NTSSS1
FRAMING PLAN

NOTES:
1. INTERNAL K-FRAME CONNECTION
   L = 0.875" x 6.000'.

CROSS - SECTION
NOTES:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>B</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>C</td>
<td>70.000</td>
<td>70.000</td>
</tr>
<tr>
<td>D</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>E</td>
<td>20.000</td>
<td>20.000</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th>TF</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF2</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF3</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF4</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF5</td>
<td>16.000</td>
<td>0.875</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

### Bottom Flange

<table>
<thead>
<tr>
<th>BF</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>64.000</td>
<td>0.875</td>
</tr>
<tr>
<td>BF2</td>
<td>64.000</td>
<td>0.875</td>
</tr>
<tr>
<td>BF3</td>
<td>64.000</td>
<td>1.000</td>
</tr>
<tr>
<td>BF4</td>
<td>64.000</td>
<td>0.875</td>
</tr>
<tr>
<td>BF5</td>
<td>64.000</td>
<td>0.875</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 15% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 20% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.
2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.
3. ADDITIONAL DESIGN PARAMETERS:
   A. 1.500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 26.500'.
   D. NUMBER OF DESIGN LANES = 2.
   E. HL93 LIVE LOAD.
   F. DESIGN SPEED = 35 MPH.
4. DIAPHRAGM MEMBER CALL-OUTS ARE IN ENGLISH UNITS.
LEGEND

▽ * Hold or Lift Crane

○ * Tie Down

☐ * Temporary Support Structure

STAGE 3

STAGE 4

STAGE 5

REMOVE ALL TEMP SUPPORTS
NCHRP 12-79

NTSSS2
NOTES:
1. INTERMEDIATE TRANSVERSE STIFFENERS = 0.875"x6.000".
2. INTERNAL K-FRAMES CONNECTION = 0.875"x6.000".

FRAMING PLAN

CROSS-SECTION
NOTES:
1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.
### GIRDER PLATE LENGTHS

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>B</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>C</td>
<td>70.000</td>
<td>70.000</td>
</tr>
<tr>
<td>D</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>E</td>
<td>20.000</td>
<td>20.000</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### GIRDER FLANGE DIMENSIONS

#### TOP FLANGE

<table>
<thead>
<tr>
<th>TOP FLANGE</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF2</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF3</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF4</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF5</td>
<td>16.000</td>
<td>0.875</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

#### BOTTOM FLANGE

<table>
<thead>
<tr>
<th>BOTTOM FLANGE</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>64.000</td>
<td>1.000</td>
</tr>
<tr>
<td>BF2</td>
<td>64.000</td>
<td>1.000</td>
</tr>
<tr>
<td>BF3</td>
<td>64.000</td>
<td>1.250</td>
</tr>
<tr>
<td>BF4</td>
<td>64.000</td>
<td>1.000</td>
</tr>
<tr>
<td>BF5</td>
<td>64.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. **Steel Dead Load** increased by 15% for MDX and LARSA models; 2% for 3D model; and 20% for approximate analysis to account for Misc. Details.

2. Formwork load of 10psf is included in concrete dead load.

3. Additional design parameters:
   A. 1,500' parapet width both sides.
   B. 700 lb/ft uniform load assumed for parapet weight.
   C. Roadway width = 26.500'.
   D. Number of design lanes = 2.
   E. HL93 Live Load.
   F. Design Speed = 35 MPH.

4. Diaphragm member call-outs are in English units.

**Typical End Diaphragm**

**Typical Internal Cross Frame**

**Typical Internal End Diaphragm**
STAGE 3

STAGE 4

STAGE 5

REMOVE TEMP ALL SUPPORTS

LEGEND

◊ • HOLD OR LIFT CRANE
○ • TIE DOWN
□ • TEMPORARY SUPPORT STRUCTURE
NCHRP 12-79

NTSSS4
NOTES:

1. SEE TABLES ON SHEET 3 FOR GIRDER ELEVATION DIMENSIONS AND PLATE SIZES.

NCHRP 12-79
BRIDGE NTSSS4
GIRDER ELEVATION
SHEET 2 OF 7
### Girder Plate Lengths

<table>
<thead>
<tr>
<th>LENGTH</th>
<th>G1</th>
<th>G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>17.854</td>
<td>22.146</td>
</tr>
<tr>
<td>B</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>C</td>
<td>70.000</td>
<td>70.000</td>
</tr>
<tr>
<td>D</td>
<td>20.000</td>
<td>20.000</td>
</tr>
<tr>
<td>E</td>
<td>17.854</td>
<td>22.146</td>
</tr>
</tbody>
</table>

*All dimensions are in feet.*

### Girder Flange Dimensions

#### Top Flange

<table>
<thead>
<tr>
<th>TF</th>
<th>BF1</th>
<th>TF1</th>
<th>BF2</th>
<th>TF2</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>16.000</td>
<td>0.875</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF2</td>
<td>16.000</td>
<td>0.875</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF3</td>
<td>16.000</td>
<td>0.875</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF4</td>
<td>16.000</td>
<td>0.875</td>
<td>16.000</td>
<td>0.875</td>
</tr>
<tr>
<td>TF5</td>
<td>16.000</td>
<td>0.875</td>
<td>16.000</td>
<td>0.875</td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*

#### Bottom Flange

<table>
<thead>
<tr>
<th>BF</th>
<th>BF1</th>
<th>BF2</th>
<th>BF3</th>
<th>BF4</th>
<th>BF5</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF1</td>
<td>64.000</td>
<td>0.875</td>
<td>64.000</td>
<td>0.875</td>
<td></td>
</tr>
<tr>
<td>BF2</td>
<td>64.000</td>
<td>0.875</td>
<td>64.000</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>BF3</td>
<td>64.000</td>
<td>1.000</td>
<td>64.000</td>
<td>0.875</td>
<td></td>
</tr>
<tr>
<td>BF4</td>
<td>64.000</td>
<td>0.875</td>
<td>64.000</td>
<td>0.875</td>
<td></td>
</tr>
<tr>
<td>BF5</td>
<td>64.000</td>
<td>0.875</td>
<td>64.000</td>
<td>0.875</td>
<td></td>
</tr>
</tbody>
</table>

*All dimensions are in inches.*
NOTES:

1. STEEL DEAD LOAD INCREASED BY 15% FOR MDX AND LARSA MODELS; 2% FOR 3D MODEL; AND 20% FOR APPROXIMATE ANALYSIS TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10PSF IS INCLUDED IN CONCRETE DEAD LOAD.

3. ADDITIONAL DESIGN PARAMETERS:
   A. 1.500' PARAPET WIDTH BOTH SIDES.
   B. 700 LB/FT UNIFORM LOAD ASSUMED FOR PARAPET WEIGHT.
   C. ROADWAY WIDTH = 26.500'.
   D. NUMBER OF DESIGN LANES = 2.
   E. HL93 LIVE LOAD.
   F. DESIGN SPEED = 35 MPH.

4. DIAPHRAGM MEMBER CALL-OUTS ARE IN ENGLISH UNITS.
TYPICAL INTERMEDIATE EXTERNAL DIAPHRAGM

TYPICAL INTERNAL DIAPHRAGMS AT SUPPORTS
LEGEND

△ Hold or lift crane
○ Tie down
□ Temporary support structure

STAGE 1

STAGE 2

STAGE 3

Remove temp. support
LEGEND

▽* HOLD OR LIFT CRANE
○ * TIE DOWN
□* TEMPORARY SUPPORT STRUCTURE

STAGE 4
HOLD CRANE PICK POINTS

STAGE 5
HOLD CRANE PICK POINTS

STAGE 6
REMOVE HOLD CRANES
NCHRP 12-79

XICCS7
5 SPACES AT 22'-1 1/4"
30'-0"
23'-0 5/8"
27'-10"

6 SPACES AT 22'-3 5/8"
542'-5 3/8" Ë BRG ABUT 1 TO Ë BRG ABUT 2
30'-0"
27'-10 1/4"
23'-3"

6 SPACES AT 22'-8 1/4"
5 SPACES AT 21'-9 1/4"
17'-9 3/4"
21'-11 5/8"

4 SPACES AT 22'-4"
21'-3 3/8"
240x455 4 SPACES AT 21'-1"
3'-9"
21'-1"

21'-1"
17'-11 1/4"
29'-6"

5 SPACES AT 21'-7 3/4"
5 SPACES AT 21'-3 3/8"
57%%d47'14"
57%%d47'14"

3'-9"
3 SPACES AT 11'-0" = 33'-0"
3'-9"

CROSS FRAME SPACING
AT GIRDER 4
CROSS FRAME SPACING
AT GIRDER 3
CROSS FRAME SPACING
AT GIRDER 1

HALF SECTION AT Piers
AND INTERIOR GIRDERS
TYPICAL CROSS SECTION

1'-6" BARRIER
37'-6" ROADWAY
3 LANES AT 12'-0"

-1 1/2" DECK
HAUNCH
40'-6"

HALF SECTION AT ABUTMENTS
CROSS FRAME
AT ABUTMENT
INTERMEDIATE CROSS FRAME
AND CROSS FRAME AT Piers

PLATE GIRDER
(92" WEB DEPTH)
(G4) G3 G2 G1

40'-6"
1'-1 1/2" HAUNCH

LRFD AND ANALYSIS OF SKEWED
AND CURVED STEEL BRIDGES
I-GIRDER DESIGN EXAMPLE

NHI COURSE NO. 130095
7/14/2009 7:32:25 AM
Yads-FRMPLN01.DGN
FRAMING PLAN

BEARING LEGEND

○ NON-GUIDED
☑️ LONGITUDINALLY GUIDED
☑️ TRANSVERSELY GUIDED
□ FIXED

HAUNCH 3.500"
9.500"

3.500'
3 SPA @ 12.000' - 36.000'
43.000'
3.500'

CROSS - SECTION
(DIAPHRAGMS NOT SHOWN)

NCHRP 12-79
BRIDGE XICSN1
FRAMING PLAN AND CROSS SECTION
SHEET 1 OF 11
Notes:

1. Steel dead load increased by 5% (MDX and LARSA), 10% (approx), and 2% (3D) to account for Misc. Details.

2. Formwork load of 10 psf is included in concrete dead load.
STAGE 1

STAGE 2

LEGEND

▽ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE

NCHRP 12-79
BRIDGE XICSN1
GENERAL ERECTION PROCEDURE
SHEET 5 OF 11
LEGEND

▽ - HOLD OR LIFT CRANE

⊙ - TIE DOWN

□ - TEMPORARY SUPPORT STRUCTURE

STAGE 3

STAGE 4
LEGEND

▽ - HOLD OR LIFT CRANE

○ - TIE DOWN

□ - TEMPORARY SUPPORT STRUCTURE
LEGEND

▽ - HOLD OR LIFT CRANE
〇 - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE

STAGE 9

STAGE 10
NCHRP 12-79

XICSS5
43.000'
40.000' ROADWAY
9.500" SLAB
2.000'
1.500'
3.500" 3.500'
3.500'
10.2000"
9.500" SLAB
3.500'
3.500'
3.500'
3 SPA AT 12.000' - 36.000'
3.500'

TYPICAL SECTION
NOTES:

1. STEEL DEAD LOAD INCREASED
   BY 5% (MDX AND LARSA), 10% (APPROX.), AND 2% (3D) TO ACCOUNT FOR MISC. DETAILS.

2. FORMWORK LOAD OF 10 PSF IS INCLUDED IN CONCRETE DEAD LOAD.
STAGE 1

STAGE 2

LEGEND

▽ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE

NCHRP 12-79
BRIDGE XICSS5
GENERAL ERECTION PROCEDURE
SHEET 6 OF 11
LEGEND

▽ - HOLD OR LIFT CRANE

□ - TIE DOWN

□ - TEMPORARY SUPPORT STRUCTURE
STAGE 5

STAGE 6

LEGEND

\(\triangledown\) - HOLD OR LIFT CRANE

○ = TIE DOWN

□ - TEMPORARY SUPPORT STRUCTURE
LEGEND

▼ - HOLD OR LIFT CRANE
○ - TIE DOWN
□ - TEMPORARY SUPPORT STRUCTURE
NCHRP 12-79

XTCCR8
NCHRP 12-79

XTCSN3
LEGEND

тир. • HOLD OR LIFT CRANE
• TIE DOWN
• TEMPORARY SUPPORT STRUCTURE

STAGE 1

STAGE 2
LEGEND

♀️ - HOLD OR LIFT CRANE
⊙ - TIE DOWN
□️ - TEMPORARY SUPPORT STRUCTURE

NCHRP 12-79
BRIDGE XTCSN3
GIRDER ERECTION
PROCEDURE
SHEET 3 OF 5
STAGE 7

STAGE 8

LEGEND

- Hold or Lift Crane
- Tie Down
- Temporary Support Structure