END DIAPHRAGM CONNECTIONS - WEB DEPTHS ≤ 48"
**INTERMEDIATE DIAPHRAGM SIZES**

<table>
<thead>
<tr>
<th>GIRDER DEPTH</th>
<th>INTERMEDIATE DIAPHRAGMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>36&quot;</td>
<td>WEB x 43.2</td>
</tr>
<tr>
<td>33&quot;</td>
<td>WEB x 43.7</td>
</tr>
<tr>
<td>30&quot;</td>
<td>CB x 33.0</td>
</tr>
<tr>
<td>27&quot;</td>
<td>CB x 28.7</td>
</tr>
<tr>
<td>24&quot;</td>
<td>CB x 21.5</td>
</tr>
<tr>
<td>21&quot;</td>
<td>CB x 14.3</td>
</tr>
<tr>
<td>18&quot;</td>
<td>CB x 9.5</td>
</tr>
</tbody>
</table>

**NOTES**

- Diaphragms shall be horizontal except when the difference in adjacent girder elevations is or exceeds that necessitates sloping the diaphragms. When diaphragms are sloped, place center of magnitude that necessitates sloping the diaphragms. Diaphragms shall be horizontal except when the difference in adjacent girder elevations is or exceeds that necessitates sloping the diaphragms.
- All bolted connections shall be made with 3/8" high strength ASTM A325 bolts.

**DESIGNER NOTES**

- See standard 24.02 for connection bar corner cope & weld details.

**ROLLED GIRDER DIAPHRAGMS**

Bill Oliva
NOTES
1. FOR WELDING DETAIL SEE "CONNECTION STIFFENER DETAILS" ON STANDARD 24.02.
2. EXPANSION HINGE JOINT DETAILS
3. EXPANSION HINGE JOINT DETAILS
4. EXPANSION HINGE JOINT DETAILS

DESIGNER NOTES
1. HINGE PLATES AND BEARING PLATES ARE ALL PERPENDICULAR TO FLANGES.
2. ANGLES, MINIMUM PLATE SIZE SHOWN. DESIGN ACTUAL SIZE REQUIRED.
3. FOR WELDING DETAILS SEE "CONNECTION STIFFENER DETAILS" ON STANDARD 24.02.
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**Designer Notes**

Haunch heights will normally be made 2" at edge of girder, at abutments, bridges, and field splices.

Haunch depth variations need not be shown on the plans.

If haunch variations exceed 2" the order shall be amended to reduce the variations in haunch thickness.

**Notes**

- T = Haunch height at centroid of girder.
- To determine 'T' after all structural steel has been erected, elevations of the top flanges shall be taken at underside of bearings and at 3 points.
- Top of deck elevation at final grade
- Top of steel elevation after steel erection
- Conc. only. Deflection: downward deflection is added, upward deflection is subtracted.
- Slab thickness
  - False value for setting haunch

**Blocking Diagram**

**Sections Thru Slab**

**Elevations at Top of Deck (T.O.D.) & Top of Steel (T.O.S.)**

<table>
<thead>
<tr>
<th>ORDER</th>
<th>T.O.D.</th>
<th>0.2 SPAN</th>
<th>0.4 SPAN</th>
<th>0.6 SPAN</th>
<th>T.O.S.</th>
<th>0.4 SPAN</th>
<th>0.6 SPAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORDER 1</td>
<td>860.04</td>
<td>860.08</td>
<td>860.12</td>
<td>860.16</td>
<td>860.13</td>
<td>860.17</td>
<td>860.21</td>
</tr>
<tr>
<td>ORDER 2</td>
<td>860.04</td>
<td>860.08</td>
<td>860.12</td>
<td>860.16</td>
<td>860.13</td>
<td>860.17</td>
<td>860.21</td>
</tr>
<tr>
<td>ORDER X</td>
<td>859.80</td>
<td>859.84</td>
<td>859.88</td>
<td>859.92</td>
<td>859.80</td>
<td>859.84</td>
<td>859.88</td>
</tr>
</tbody>
</table>

These elevations are to top of steel, faces and cover plate. Thickness of slab is included. These shall be cut at the field, if necessary, with chisels, and trimmed to full length. After erection and before permanently setting the superstructure at full span.

**Treatment of Exterior Order**

**At Sidewalk Overhang**

**Blocking & Slab Haunch Details**

**Standard 24.09**

**Approved**

**Date: 1-12**

**Bill Oliva**

**Bureau of Structures**
KINKED GIRDER LAYOUT

CURVED GIRDER LAYOUT

GENERAL NOTES

Sketches and notes apply to any number of spans. Number and size of girders and location of field splices to be determined by design.

For horizontal curves with a radius of less than 25'-0" the girders shall be fabricated along the curve. For a radius greater than and equal to 25'-0", consideration shall be given to making girders at field splice locations.

For kinked girder layout, all substructure units and field splices are to be held parallel to each other when possible. Field splices are to be held parallel to each other between field splices.

For curved girder layout, place substructure units on radial lines when possible. Field splices may be held for more severe curvatures.

Approved:         Date: 7-10
Scot Becker
**Ideal Deck Pour Sequence**

1. **Continuous Steel Girder - 2 Spans Shown**
2. **Continuous Steel Girder - 3 Spans Shown**
3. **Continuous Steel Girder - Any Number of Spans Shown**

**Designer Notes**
- **Optional Transverse Construction Joints**
- **Required Transverse Construction Joints**
- **Ideal Deck Pour Sequence**

**Ideal Deck Pour Sequence**

**Plan View** - Showing Placement of Transverse Construction Joints

**Notes**
- The rate of placing concrete small slabs or exceed 1/3 span length per hour may not exceed 100 cu. yds. per hour. Required only for continuous steel girder superstructures.
- If optional joints are required, two or more sequential pours may be combined and placed in one continuous operation, two or more alternate deck joints 60% of span may be placed on the same day.
- Pour next deck joint can be made no less than 72 hours after the previous pour.
- The contractor may submit an alternate pouring sequence subject to the approval of the structures design section.

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SECTION THRU EXPANSION END
SHOWING EXISTING STEEL GIRDER
WITHOUT EXISTING STEEL DIAPHRAGM
(SEE STD. 40.04 FOR ADDITIONAL DETAILS)

DESIGNER NOTE
#7 MINIMUM STAINLESS INCREASED TO ACCOMMODATE LARGE EXPANSION DEVICES.

RATIONALE
• Bars placed parallel to girders. Spacing perpendicular to girders.
• Dimension is taken normal to g. alignment.

NOTES
FOR REHABILITATION PROJECTS:
• DIAPHRAGM SUPPORT ANGLES SHALL BE ASTM A325 TYPE 1.
• ALL SUPPORT ANGLES SHALL BE HOT-DIPPED GALVANIZED.
• ALL SUPPORT ANGLES AND BOLTS SHELL BE HOT-DIPPED GALVANIZED.
• ALL SUPPORT ANGLES AND BOLTS SHELL BE HOT-DIPPED GALVANIZED.

BARS
• #4 AT 9” CTRS. BETWEEN JT. OPENING
• #4 AT 9” CTRS. BETWEEN JT. OPENING
• 5-#7’S AT EQ. SPA. FOR DIAPHRAGM
• 5-#6’S AT EQ. SPA. FOR DIAPHRAGM

DIAPHRAGM SUPPORT ANGLES SHALL BE ASTM A709 GRADE 36.